UNITED STATES AIR FORCE
JOINT BASE ELMENDORF-RICHARDSON, ALASKA

ENVIRONMENTAL RESTORATION PROGRAM

DP009 – BUILDING 986 DRY WELL SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT ADDENDUM

FINAL

JULY 2024

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FINAL
DP009 – BUILDING 986 DRY WELL AREA SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT ADDENDUM

JOINT BASE ELMENDORF-RICHARDSON, ALASKA

Prepared for
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EXECUTIVE SUMMARY

A supplemental remedial investigation (SRI) addendum was conducted for DP009 (Alaska Department of Environmental Conservation [ADEC] Contaminated Sites Database Hazard Identification Number 943), which is located south of Building 986 at the intersection of Warehouse Street and Otter Lake Road on Joint Base Elmendorf-Richardson (JBER) Alaska. The objective of the SRI was to close data gaps listed in the SRI work plan regarding soil contaminant delineation south of Building 986 and completion of a vapor intrusion (VI) evaluation within Building 986.

An SRI report for DP009 was finalized in September 2019 and that report recommended a feasibility study. This 2023 SRI report was developed to resolve the incorrect conclusion of the 2019 SRI report that a feasibility study was needed. This report will resolve the incorrect conclusion by (1) comparing data to the current screening levels and toxicity information that will be compared to the acceptable risk ranges defined by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) guidance, and (2) obtaining regulatory concurrence to proceed to a No Action Proposed Plan as the next step in the CERCLA process.

DP009 Description

DP009 (formerly FTRS-09) was identified in the 1994 Three-Party Agreement between the U.S. Army, ADEC, and the U.S. Environmental Protection Agency (EPA) (U.S. Army 1994b) as part of Operable Unit (OU) A at JBER. DP009 (ADEC Contaminated Sites Database Hazard Identification Number 943) is known as the Building 986 Dry Well Area. The primary source of contamination is a former dry well that was connected to a sink in Building 986. Building 986 functioned as a petroleum, oil, and lubricants (POL) laboratory.

Investigation Summary

Site investigations occurred at DP009 in 1995, 2003, 2013, 2014, and 2018. Investigations from 1995 to 2014 focused primarily on sampling soil, groundwater, and soil gas. However, no cumulative risk evaluation was completed for the site during those investigations. A In 2018, SRI activities were conducted to add resolution of subsurface soil contamination delineation, assess the VI pathway in Building 986, and assess potential human-health risks from exposure to soil, groundwater, and indoor air using sample data from all of the investigations (USAF 2018).

Nature and Extent of Contamination

No actionable risk is present at DP009. The nature and extent of soil contamination is well understood, no groundwater contamination has been identified, and VI risks at Building 986 are within acceptable limits. Findings are discussed in the following subsections by media.

Soil

No contaminants of potential concern were detected in soil at concentrations greater than the human-health based screening levels.

Groundwater

In 1995, as part of the OUA remedial investigation (RI), groundwater samples were collected from five monitoring wells. Chloroform was detected in groundwater samples at well AP-3648 with a maximum detection of 11.8 micrograms per liter (µg/L) in the primary sample and 11 µg/L in the field duplicate.

Methylene chloride was also detected. All other site-related contaminants were not detected in groundwater samples (U.S. Army 1996a).

In 2013, groundwater monitoring well AP-3648 was sampled for gasoline-range organics, diesel-range organics/residual-range organics, volatile organic compounds (VOCs), extractable petroleum hydrocarbons, volatile petroleum hydrocarbons, and polycyclic aromatic hydrocarbons. The only analyte detected above the screening level was chloroform, at 0.52 µg/L, which was much lower than reported in 1995. The groundwater data from the 2013 sampling event was used to determine cumulative risk from groundwater. The current screening level for chloroform is 0.22 µg/L (EPA 2023b). The EPA maximum contaminant level is 70 µg/L for chloroform (EPA 2023a). No other analytes were detected above screening levels. Depth to groundwater at monitoring well AP-3648 is approximately 122.5 feet below ground surface (bgs) (USAF 2014a).

Vapor Intrusion

Subslab soil gas, indoor air, and outdoor air were collected in 2018 as multiple lines of evidence to assess whether a complete VI pathway exists at Building 986 under current conditions. The only analyte detected in subslab soil gas above the commercial occupation scenario screening levels was naphthalene. Naphthalene and benzene were the only analytes found above the screening levels in indoor air samples. The building inspection noted that the facility is used as the POL laboratory and that indoor source of petroleum-related VOCs were present.

Multiple lines of evidence were evaluated to assess the potential for VI for Building 986, summarized as follows:

- The presence of petroleum-based products such as petroleum-based fuels during both the non-heating and heating season sampling events likely influence indoor air concentrations of target VOCs. Evidence supporting this includes the non-similar ratios of target VOCs in subslab soil gas and indoor air, as well as outdoor and indoor air target VOC ratios.
- The recorded pressure differential between indoor and subslab during the non-heating and heating seasons indicates that VI is unlikely because of the positive pressure gradient from indoor to subslab under operating conditions.
- Even though naphthalene was detected in subslab soil gas above the screening level, Building 986 lacks indication that a potentially complete VI pathway is significantly contributing to indoor air levels of VOCs.

Human Health Risk Assessment

Data collected during historical and 2018 field investigations were used to assess potential site-specific risks to human health and the environment based on current site conditions. Future construction worker and hypothetical future residential and industrial land use scenarios (indoor and outdoor workers) were also considered. Potential exposure pathways were based on current and reasonably anticipated future land and groundwater uses. The current and reasonably anticipated future land use for DP009 is industrial. No recreational activities occur at the site. Groundwater is not currently used as a drinking water source.

Because cumulative risk for soil, groundwater, indoor air, subslab soil gas, and source area soil gas does not exceed a excess lifetime cancer risk (ELCR) threshold of 1×10^{-4} or a hazard index of 1, no contaminants of concern have been identified in the human health evaluation.

Conclusions and Recommendations

Residual contamination from the use of the former drywell exists below applicable human-health based screening levels in soil across a relatively small total area (less than 0.1 acre) to a depth of 35 feet bgs. The baseline human health risk assessment determined ELCR was within the allowable range of 10^{-4} to 10^{-6} and the hazard index was less than 1. The RI and risk assessment CERCLA process milestone is achieved and it is recommended that a No Action Proposed Plan be completed for the site.

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ABBREVIATIONS AND ACRONYMS

°F	degree(s) Fahrenheit
µg/L	microgram(s) per liter
µg/m^3	microgram(s) per cubic meter
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ATL	Air Technology Laboratories, Inc.
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
COPC	contaminant of potential concern
CSM	conceptual site model
CUL	cleanup level
DCA	dichloroethane
DCE	dichloroethylene
DQE	data quality evaluation
DQO	data quality objective
DRO	diesel-range organics
ELCR	excess lifetime cancer risk
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
ESF	Environmental Staging Facility
FD	field duplicate
FFA	Federal Facility Agreement
GRO	gasoline-range organics
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
HVAC	heating, ventilation, and air conditioning
IDW	investigation-derived waste
JBER	Joint Base Elmendorf-Richardson
JBER-E	JBER-Elmendorf
JBER-R	JBER-Richardson
MDC	maximum detected concentration
MDL	method detection limit
mg/kg	milligram(s) per kilogram
MS	matrix spike
MSD	matrix spike duplicate
NAD 83	North American Datum of 1983
NPL	National Priorities List
OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon

PCE	tetrachloroethylene
PFAS	per- and polyfluoroalkyl substances
PID	photoionization detector
POL	petroleum, oil, and lubricants
PPE	personal protective equipment
QC	quality control
RBC	risk-based concentration
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
RL	reporting limit
RRO	residual-range organics
RSL	Regional Screening Level
SIM	selective ion monitoring
SRI	supplemental remedial investigation
SSL	soil screening level
SSLC	Soil Screening Level Calculator
SVE	soil vapor extraction
SVOC	semivolatile organic compound
TB	trip blank
TCE	trichloroethylene
TCR	target cancer risk
TMB	trimethylbenzene
UFP-QAPP	Uniform Federal Policy-Quality Assurance Project Plan
USAF	U.S. Air Force
VI	vapor intrusion
VISL	vapor intrusion screening level
VOC	volatile organic compound

1. INTRODUCTION

This supplemental remedial investigation (SRI) report summarizes the results of previous investigations, presents the results of the 2018 SRI sampling activities, provides the nature and extent of contamination, and evaluates potential risks to human health at DP009 – Building 986 Dry Well Area (formerly FTRS-09). DP009 is located within Joint Base Elmendorf-Richardson (JBER)-Richardson (JBER-R) (the former Fort Richardson Army Post) in Anchorage, Alaska (Figure 1-1). DP009 was identified in the 1994 Three-Party Agreement between the U.S. Army, Alaska Department of Environmental Conservation (ADEC), and the U.S. Environmental Protection Agency (EPA) (U.S. Army 1994b) as part of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Operable Unit (OU) A at JBER. Under the Federal Facility Agreement (FFA), the U.S. Army was also required to act at DP009 to comply with the Resource Conservation and Recovery Act (RCRA) requirements (U.S. Army 2006). The area was referred to as Solid Waste Management Unit 60 under RCRA.

SRI activities conducted in June, July, and November 2018 were performed under the Final Joint Base Elmendorf-Richardson, Uniform Federal Policy-Quality Assurance Project Plan, Supplemental Remedial Investigations for AT029 and DP009, Remedial Investigation for SS019, and Preliminary Source Evaluation 2 for SS120 (UFP-QAPP) (USAF 2018), which was approved by EPA and ADEC on 21 May 2018. This work was authorized by the Air Force Civil Engineer Center under Contract Number FA8903-16-D-0026, Task Order Number 0075. This 2023 revision has been prepared under Optimized Remediation Contract W911KB20D0020, Task Order Number W911KB20F0109.

1.1 Purpose of Report

The purpose of this addendum to the SRI report is to summarize results from the 2018 SRI field activities, characterize the nature and extent of contamination at DP009 using historic and recent data, and assess potential risks to human health in accordance with EPA risk assessment guidance. The objective of the SRI was to close data gaps listed in the SRI work plan regarding soil contaminant delineation south of Building 986 and completion of a vapor intrusion (VI) evaluation within Building 986. This addendum also resolves the incorrect conclusion of the SRI report that a feasibility study was needed although cumulative risk did not exceed a 1×10^{-4} excess lifetime cancer risk (ELCR) or a hazard index (HI) of 1.

1.2 JBER Description and History

JBER comprises JBER-R and JBER-Elmendorf (JBER-E) (former Elmendorf Air Force Base) and is located adjacent to the city of Anchorage, Alaska (Figure 1-1). At 74,000 acres, JBER is the largest U.S. Air Force (USAF) installation in Alaska. The 673rd Air Base Wing is the host unit at JBER. JBER is also home to headquarters, Alaskan Command, Alaskan NORAD Region and 11th Air Force; headquarters, U.S. Army Alaska; headquarters, Alaska Department of Military and Veterans Affairs, Alaska National Guard; 3rd Wing; 176th Wing; 4th Infantry Brigade Combat Team (Airborne), 25th Infantry Division; 477th Fighter Group; and more than 40 other mission partners. Because of the 2005 Department of Defense Base Realignment and Closure Commission recommendations, the two installations were merged to form JBER in 2010.

JBER is bounded by the Municipality of Anchorage to the south, Knik Arm to the north and northwest, and primarily undeveloped lands to the east; most of which are part of Chugach State Park and the Chugach Mountains (Figure 1-1). Elevations for the installation range from sea level along the Knik Arm shoreline to 3,800 feet above mean sea level in the Chugach Mountains located to the south and east.

1.2.1 Regulatory Background

JBER-R was placed on the CERCLA National Priorities List (NPL) in 1994. After the NPL listing and in accordance with applicable requirements of CERCLA, JBER-R was required to negotiate an FFA with EPA and ADEC that would become the legal framework to execute all future remedial cleanup activities on each respective installation. USAF assumed installation management and support responsibility, including environmental restoration, under the Fort Richardson FFA (U.S. Army 1994b) for sites with CERCLA contaminants signed by the U.S. Army, ADEC, and EPA.

1.3 DP009 Location

DP009 (ADEC Contaminated Sites Database Hazard Identification Number 943) is known as the Building 986 Dry Well Area and is located south of Building 986 at the intersection of Warehouse Street and Otter Lake Road, on JBER-R (Figure 1-2). DP009 location information is provided in Table 1-1.

Table 1-1. DP009 Location Information

Northing (NAD 83)	Easting (NAD 83)	Date of Collection	Method of Collection	Reference Point for Which the Coordinates Were Established	Scale of Map Used to Acquire Coordinates	Estimated Accuracy and Associated Unit of Measure
6795225.51	354264.6	8/31/2009	Professional Survey	AP-3648	Not applicable	0.01 foot

NAD 83 = North American Datum of 1983

DP009 (formerly FTRS-09) was identified in the 1994 Three-Party Agreement between the U.S. Army, ADEC, and EPA (U.S. Army 1994b) as part of Operable Unit (OU) A at JBER. Under the Federal Facility Agreement, the U.S. Army was also required to act at DP009 to comply with requirements under the Resource Conservation and Recovery Act (RCRA) (U.S. Army 2006). The area was referred to as Solid Waste Management Unit 60 under RCRA.

The dry well was used from the 1950s until 1998s to receive drainage for a sink petroleum, oil, and lubricants (POL) laboratory (Building 986). The 15-foot-deep dry well was approximately 4 feet in diameter. Numerous chemicals were used in the POL laboratory during quality testing of fuels at the former Fort Richardson Army Installation (now called JBER-Richardson), including motor gas; aviation fuel; jet propulsion fuel, grade 4; arctic-grade diesel; spent reagents; solvents; heavy metals including mercury, lead, silver, and barium; and waste solutions. The dry well was connected to a pipe that led from the laboratory sink. The dry well was removed in 1998, along with piping and sludge found at the bottom of the well. The laboratory sink and associated subsurface piping, fixtures, and plumbing were removed at that time (U.S. Army 2000).

1.4 Organization of Report

This SRI report is organized as follows:

- **Section 1: Introduction –** presents the purpose of this report, JBER installation description and history and the regulatory framework for investigating and remediating the site, DP009 location, and report organization.

- **Section 2: Physical Characteristics –** presents the JBER installation and site-specific physical features: climate, ecology, general geology, hydrogeology, and hydrology.
- **Section 3: Investigation History and Methods –** summarizes the previous investigations and cleanup actions conducted at the site, summarizes SRI activities, and identifies any deviations from the UFP-QAPP (USAF 2018).
- **Section 4: Nature and Extent of Contamination –** presents the screening levels and the soil and groundwater analytical results from the 2018 field investigation, identifies potential data limitations, and summarizes the nature and extent of contaminants of potential concern (COPCs).
- **Section 5: Contaminant Fate and Transport –** discusses the potential routes of migration (exposure pathways), human and ecological receptors, and contaminant fate and migration.
- **Section 6: Baseline Human Health Risk Assessment –** describes the general process for evaluating potential risks to human health, presents basic assumptions and site-specific input parameters, and identifies the site-specific pathways and contaminants of concern (COCs) posing potential unacceptable risks based on current and potential future land use scenarios, as well as the limitations of the data and methodology (uncertainties).
- **Section 7: Conceptual Site Model (CSM)** – describes residual contamination as it relates to potential receptors, migration, and exposure pathways.
- **Section 8: Conclusions –** presents a summary of the nature and extent of COPCs, fate and transport, and risk evaluation results and presents the conclusions of the report.
- **Section 9: References –** lists reference materials used in preparation of this report.

Additional tables, figures, and appendices follow Section 9.

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2. PHYSICAL CHARACTERISTICS

This section presents general and site-specific physical characteristics such as geology, hydrology, hydrogeology, ecology, and climate for JBER-R and DP009.

2.1 JBER Physical Characteristics

This subsection presents the general demographics and land use, climate, ecology, geology, hydrogeology, and hydrology for JBER (primarily JBER-R).

2.1.1 Demographics and Land Use

The land surrounding JBER-R is zoned for State of Alaska wildlife preservation and military, residential, and commercial development. The community of Eagle River is located north of JBER, and the city of Anchorage is located south. Both Eagle River and Anchorage are within 10 miles of JBER and have a combined population of approximately 288,000 residents (U.S. Census Bureau 2021).

2.1.2 Climate

JBER is located in a semi-arid area of south-central Alaska. Cook Inlet moderates the climate seasonally, and four surrounding mountain ranges protect the area from Gulf of Alaska storms and extreme winter temperatures from the northern Alaska interior. Typical summer (May through August) daily mean temperatures range from 56 degrees Fahrenheit (°F) to 66°F and winter (November through February) daily mean temperatures range from 11°F to 18°F. Extreme temperature range from -34°F to 90°F. Average annual precipitation in the Anchorage area is 16.4 inches. Most of the precipitation falls from July through September, when the wind is from the southwest. Snowfall averages 77.9 inches The depth of snow on the ground does not normally exceed 24 inches (National Weather Service 2020).

2.1.3 Ecology

Rothe et al. (1983) completed a vegetation survey that provided an inventory and description of the vegetation types, a plant species list, a search for threatened or endangered species, and an inventory of information for a proposed firewood-gathering program. The vegetation survey excluded the developed areas of the airfield and cantonment. Most of these developed areas are vegetated by short grasses (USAF 2014b).

Of the 476 vascular plant species expected to occur in the Anchorage area, Rothe et al. (1983) found 221. In addition, 15 major lichens and mosses were identified. Rothe found no plant species that were listed or proposed as candidates for listing as threatened or endangered species or plants known to be locally rare in the Anchorage area.

The Alaska Department of Fish and Game has noted the following terrestrial mammals in the region: brown bear, black bear, moose, lynx, snowshoe hare, beaver, porcupine, marmot, shrew, red squirrel, red-backed vole, ermine, marten, wolverine, fox, coyote, and wolf (ADFG 2013).

2.1.4 Geology

The geology underlying JBER-R consists of a relatively complex stratigraphy of glacial deposits, glacial-marine, glacial-fluvial, alluvial deposits, and metamorphic rock (Hunter et al. 2000a, 2000b). JBER straddles both the alluvial fan complex of the Anchorage Plain and the moraine and glacial alluvium complex near the shoreline of Knik Arm. The gravel alluvium of the Anchorage Plain underlies both the main cantonment area and the south training range complex. The northern portions of JBER are part of

the Elmendorf Moraine complex that is made up of numerous east-west trending ridges that parallel Knik Arm.

JBER is located within the Cook Inlet-Susitna Lowland Section of the Coastal Trough Physiographic Province of Alaska. The area lies near the eastern border of the Cook Inlet forearc basin, a deep structural trough filled with Tertiary rocks that extends northeastward toward Denali. Multiple advance and retreat phases associated with the last glaciation (Late Wisconsinan) deposited sediments that cover bedrock in the Anchorage lowland. The following paragraphs summarize the Quaternary history of the Anchorage area from Schmoll et al. (1999) and Hunter et al. (2000a, 2000b).

JBER is underlain by a thick sequence of clay, silt, sand, gravel, and diamicton deposited during multiple glacial advances and retreats. About 20,000 years ago, glaciers flowed out of the Alaska Range and the Chugach and the Talkeetna Mountains, coalescing in Cook Inlet and the Susitna Lowland. Glacier ice filled Knik Arm and covered the Chugach Mountains. The retreat of this large ice mass from Cook Inlet probably began 18,000 to 20,000 years ago and was accompanied by a marine transgression over the isostatically depressed basin. During this period, glacial-marine sediments were deposited over subglacial ground moraines and outwash gravels deposited during the preceding glaciation.

A larger retreat to the north of unknown distance followed, with a marine incursion depositing the lowermost sections of the Bootlegger Cove Formation. The Bootlegger Cove Formation was deposited between 14,000 and 16,500 years ago and consists of up to 115 feet of gray to light gray silty clay and clayey silt with minor interbedded silt, fine to medium sand, and thin beds of diamicton (Updike and Carpenter 1986). The Bootlegger Cove Formation is a common aquitard and confining unit in the area. The unit is from 125 to 250 feet thick and the top of the formation ranges from approximately 1 to 70 feet below ground surface (bgs). Ice re-advanced into the Anchorage basin and deposited a ground moraine on top of the Bootlegger Cove Formation in the JBER area. During the next retreat phase, JBER was submerged about 460 feet below sea level. Glacier ice returned to Knik Arm during the Elmendorf re-advance around 13,500 to 14,000 years ago (Reger et al. 1995), during which the Elmendorf Moraine was deposited.

The Elmendorf Moraine deposits are located directly northwest of the main JBER-R cantonment area. These soils are composed of fine-grained, poorly sorted glacial materials with interbedded heterogeneous layers of boulders, cobbles, gravel, sand, silt, and clays.

Multiple catastrophic drainages of ice- or moraine-dammed lakes in the Eagle River Valley during the final retreat of ice from the Anchorage region caused erosion of existing glacial deposits and deposition of a stratified outwash fan (the Mountain View Fan). The outwash fan emanates from the Eagle River Valley and slopes gently to the west-southwest under JBER and downtown Anchorage; it is truncated to the west by sea bluffs along Knik Arm. The outwash is composed of fine- to medium-grained sand and gravel and ranges in thickness from 230 to 320 feet thick at JBER and up to 700 feet elsewhere in the Anchorage basin. The fan is bordered on the north by the Elmendorf Moraine, which forms a large, low-relief ridge from Knik Arm to the mouth of the Eagle River Valley. Rapid retreat of the Elmendorf ice sheet left hummocky topography in the Susitna Valley and upper Knik Arm. JBER-R is located on the Elmendorf Moraine with a generally flat topography, gently sloping to the south-southwest. Most of JBER lies less than 330 feet above sea level.

Mountains composed of metamorphic bedrock make up the south-central and southern areas of JBER-R (Hunter et al. 1999).

Frequent earthquakes, fault-cut Quaternary deposits, and recent volcanic activity indicate that this region is very tectonically active. The Anchorage basin is bounded to the west by a major strike-slip structure referred to as the Bruin Bay-Castle Mountain fault system. The Bootlegger Cove Formation is particularly susceptible to liquefaction when saturated and has exhibited massive slope failure during major seismic events (Updike and Carpenter 1986). Other facies in the area, which consist of coarse silt and sand, are generally noncohesive.

2.1.5 Hydrogeology

One shallow and one deep groundwater system have been identified in the JBER-R area (Freethey 1976). However, three separate aquifers exist in the cantonment area, including a shallow unconfined aquifer, a locally confined aquifer, and a deeper confined aquifer.

The shallow unconfined aquifer occurs in the Anchorage Plain deposits and in unconfined to semiconfined conditions in the till of the Elmendorf Moraine. Shallow perched groundwater of limited volume and extent exists in localized areas within the Elmendorf Moraine till deposits. Groundwater in the Anchorage Plain deposits occurs between 10 and 20 feet bgs. Flow in the Anchorage Plain is westerly along Ship Creek (USAF 2014a).

Groundwater in the locally confined aquifer system is most often found at approximately 80 feet within the central part of the cantonment area. The confining layer that creates the locally confined aquifer pinches out just north of Davis Highway, and, in that area, the unconfined and confined aquifers become hydraulically connected at approximately 125 feet bgs. Overall, the direction of flow in the locally confined aquifer tends to be to the northwest. However, evidence suggests flow within the locally confined aquifer can be influenced by discontinuous, fine-grained units that result in local groundwater flow directions that diverge from the regional pattern (Astley et al. 2000).

Groundwater in the deep confined aquifer is at its shallowest depths (130 feet bgs) in the northern area of JBER-R. The flow in the deep confined system is generally toward Knik Arm in a westerly to northwesterly direction, with a hydraulic gradient between 0.02 and 0.0025 foot per foot. The deep confined aquifer serves as a secondary drinking water source for JBER-R, JBER-E, and the Municipality of Anchorage when there is low stream flow (Freethey 1976). Three standby water supply wells supplement the surface water system with a maximum of two of the wells in use at a time during peak demand. The water source for the standby wells is a confined aquifer in the Knik outwash deposit (USAF 2014b).

2.1.6 Hydrology

The most significant stream channels within JBER are Eagle River, Ship Creek, Six Mile Creek (including Upper and Lower Six Mile Lakes), and Chester Creek, which flow generally north and west through the ground moraine north of the cantonment areas. Eagle River, Ship Creek, and Chester Creek all headwater in the Chugach Mountains, flow generally to the north and west and bisect the Elmendorf Moraine and outwash plain (Rothe et al. 1983; USAF 2014b).

The closest surface water body to DP009 is Ship Creek, which is approximately 1.3 miles south of the site. The headwater area of Ship Creek is located south and east of JBER and the Municipality of Anchorage in Ship Lake. Ship Creek is predominately fed by a combination of snow melt and numerous springs located along its course. Ship Creek passes through JBER-R before entering JBER-E and flowing through the Alaska Railroad Terminal Reserve (an industrialized area) downstream from JBER-E before flowing into Knik Arm (Figure 1-1). Ship Creek provides the most data of all surface water flows for JBER and the Municipality of Anchorage. A gauging station was established on Ship Creek in 1946 and has continuously operated since then. Since 1912, Ship Creek has been impounded in various locations as the water source for the Municipality of Anchorage and JBER. Currently, JBER operates Ship Creek Dam, which provides raw water to the JBER-R Water Treatment Plant and remains an alternate raw water source for the Municipality of Anchorage (USAF 2014b).

Ship Creek is a “gaining” water course until it enters the outwash plain downstream of Ship Creek Dam where it becomes a “losing” water course. It is also in this general area where it is thought that the Bootlegger Clay is thinning out. It has been hypothesized that Ship Creek, along with snowmelt and rain that flows off the western flanks of the Chugach Mountains, are the sources of water found in the deep aquifer that lies beneath JBER. However, because of insufficient data, this hypothesis cannot be

confirmed. Ship Creek surface flow historically becomes subsurface between the western portions of JBER-R and eastern portions of JBER-E during the winter months because of insufficient flow of water upstream of Ship Creek Dam. Ship Creek becomes a "gaining" water course again in the lower portions as it exits JBER and enters the Railroad Terminal Reserve area. This "gaining" is suspected to originate from groundwater flow that is exiting the outwash plain and bluffs north and south of Ship Creek Valley (USAF 2014b).

2.2 DP009 Physical Characteristics

This subsection presents site-specific geology, hydrogeology, and hydrology.

2.2.1 Geology and Soils

Subsurface geology observed during the 2018 SRI was predominantly well graded gravel with silt and sand to approximately 30 feet bgs. Discontinuous layers of gravel with silty sand were encountered at most borings. Subsurface lithology at depths of 50 and 64 feet bgs (the maximum depth sampled) consisted of a mix of poorly or well graded gravel with sand. This lithology is generally consistent with previous investigation findings.

2.2.2 Hydrology

The nearest surface water body to DP009 is Ship Creek, which is approximately 1.3 miles south of the site and Otter Lake, 1.6 miles north of the site. Ship Creek serves as the main source of drinking water for JBER-R.

2.2.3 Hydrogeology

Based on previous investigations, an unconfined aquifer ranging from 113 to 122 feet bgs is present beneath DP009. Groundwater was measured in existing monitoring well AP-3648 at 122.5 feet bgs during the 2013 site investigation. No further assessment of depth to groundwater occurred in the 2018 supplemental investigation. No significant changes in annual precipitation levels occurred since the 2013 water level measurement and the depth to groundwater is assumed to be the same.

Groundwater flows toward the northwest with a hydraulic gradient of approximately 0.001 to 0.006 foot per foot (U.S. Army 1997). As part of the OUA RI, slug tests were performed at wells AP-3648 (adjacent to the dry well), AP-3649 (north of the site), and AP-3652 (northwest of the site) in October 1995. Consistent with the regional aquifer, slug test data showed an average hydraulic conductivity of almost 30 feet per day at the site.

3. INVESTIGATION HISTORY AND METHODS

This section summarizes the previous investigations and cleanup actions conducted at the site and identifies data gaps that provide the basis for further SRI activities in 2018. It also summarizes SRI activities and identifies deviations from the UFP-QAPP (USAF 2018).

3.1 DP009 Description and History

DP009 consists of a former dry well located near Building 986 (POL laboratory). The 15-foot-deep dry well was approximately 4 feet in diameter and was located south of Building 986. The dry well was used from the 1950s to the 1990s for the disposal of drain and sink water from the adjacent POL laboratory. Numerous chemicals were used in the POL laboratory during quality testing of fuels at JBER-R, including motor gas; aviation fuel; jet propulsion fuel, grade 4; arctic-grade diesel; spent reagents; solvents; heavy metals including mercury, lead, silver, and barium; and waste solutions. The dry well was connected to a pipe that led from the laboratory sink. The dry well was removed in 1998, along with piping and sludge waste found at the bottom of the well. In addition, the laboratory sink was removed along with its associated subsurface piping, fixtures, and plumbing (U.S. Army 2000). Building 986 is currently in use as a POL laboratory.

3.2 DP009 Previous Investigations

The following subsections summarize the previous field activities conducted at DP009.

3.2.1 Operable Unit A Remedial Investigation (1992 and 1995)

In 1992, DP009 was investigated under CERCLA as part of OUA. The U.S. Army sampled the dry well to determine the presence and extent of contaminants in the well. There were 18 inches of water and 6 to 8 inches of sludge observed in the well at 15 feet bgs. Samples taken from the sludge and water revealed that petroleum hydrocarbons, heavy metals (including arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), and volatile organic compounds (VOCs) (1,2-dichlorobenzene, 1,4-dichlorobenzene, and 1,3,5-trimethylbenzene [TMB]) were present (U.S. Army 1997).

In 1995, as part of the OUA remedial investigation (RI), eight soil borings were advanced and five monitoring wells installed (U.S. Army 1996a). Diesel-range organics (DRO) and gasoline-range organics (GRO) were detected in soil samples from boring locations within a 40-foot radius of the former dry well, with the highest concentrations detected at a depth of 15 feet bgs. Multiple heavy metals were also detected in soil borings, and all but chromium were determined to be unrelated to the dry well. Groundwater samples were collected from five monitoring wells (AP-3650 and AP-3651 – upgradient wells; AP-3648 – source area well; AP-3649 and AP-3652 – downgradient wells) (Figure 3-1). Site-related contaminants were not detected in groundwater samples (U.S. Army 1996a). The baseline risk assessment for the site indicated that contamination did not pose unacceptable risk to human health or the environment under CERCLA (U.S. Army 1997).

3.2.2 Soil Vapor Extraction Remediation

Following completion of the RI for DP009 in 1995, no further action was selected in the Record of Decision for Operable Units A and B (U.S. Army 1997), and the site was closed under CERCLA and transferred to the Two-Party Agreement (U.S. Army 1994a) to address remaining petroleum-hydrocarbon contaminated soil. In 1998, the dry well, associated piping, and sludge waste found at the bottom of the well were removed, along with the laboratory sink and its associated subsurface piping, fixtures, and plumbing. A soil vapor extraction (SVE) system was installed in 1998, consisting of three vapor extraction wells (U.S. Army 1999). The SVE system operated until reduced removal rates were reported

in July 1999, and the system was converted to a bioventing system consisting of 14 bioventing wells. The bioventing system operated from October 1999 to December 2003. The SVE/bioventing system significantly reduced DRO, GRO, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations in soil at the site (U.S. Army 2004).

From 1999 through 2003, 15 soil borings were advanced to support remediation monitoring of the SVE/bioventing system and the ultimate shutdown and decommissioning of the system in May 2004 (U.S. Army 2004). Soil samples were analyzed for GRO, DRO, and BTEX. In 2003, DRO and benzene were detected above the ADEC Table B1 cleanup levels (CULs) for migration to groundwater at 250 and 0.025 milligrams per kilogram (mg/kg), respectively. However, these results do not exceed the most stringent human health CUL of 10,250 mg/kg for DRO or the EPA residential soil Regional Screening Levels (RSLs) of 1.2 mg/kg for benzene. The maximum concentration of DRO in soil was 746 mg/kg at CB-13 (15 feet bgs), and the maximum concentration of benzene was 0.0862 mg/kg at CB-15 (15 feet bgs) (Figure 3-1, Table 3-1). No impacts to groundwater were observed (USAF 2014a).

The U.S. Army implemented institutional controls to restrict site access to petroleum-contaminated soils. ADEC approved closure of the site with institutional controls in 2004, and the site was assigned a "Cleanup Complete with Institutional Controls" designation (USAF 2014a).

In 2006, Solid Waste Management Unit 60 was recommended for closure under the RCRA because all tanks and containers had been removed, the dry well was closed, and site cleanup was conducted in accordance with the FFA and the Two-Party Agreement (U.S. Army 2006).

3.2.3 Site Characterization (2013)

In 2013, additional site characterization activities were conducted to further characterize the nature of residual COPCs in soil at DP009 and to evaluate potential risks to human health and the environment. Two soil borings were installed and sampled to depths of 40 feet bgs. The highest concentration of DRO detected in 2013 (413 mg/kg) was in the source area at boring DP009-SB02 from 15 to 20 feet bgs, adjacent to the former dry well. GRO was also detected at DP009-SB01 at a concentration of 339 mg/kg from 15 to 20 feet bgs (USAF 2014a) (Table 3-1, Figure 3-1). Neither concentration constitutes an exceedance when compared to the current criteria.

In 2013, benzene was detected at concentrations up to 0.46 mg/kg (20 to 25 feet bgs in DP009-SB01), and with concentrations of 0.0561 mg/kg in surface soil (0 to 5 feet bgs) (0 to 5 feet bgs in DP009-SB02). The highest historical concentration of benzene was 0.0862 mg/kg (at 15 feet bgs in CB-15 in 2003). During the 2013 field investigation, benzene, trichloroethylene (TCE), and tetrachloroethylene (PCE) were also detected in soil (USAF 2014a). TCE and PCE had not been detected before 2013. In 2013, TCE was detected at concentrations up to 0.028 mg/kg (20 to 25 feet bgs), and PCE was detected at concentrations up to 0.0397 mg/kg (15 to 20 feet bgs). The vertical extent of PCE and TCE in soil was delineated during the 2013 site characterization to a maximum depth of 35 feet bgs (USAF 2014a). Current screening levels for these analytes are the EPA RSLs for residential soil as follows: benzene at 1.2 mg/kg, PCE at 8.1 mg/kg, and TCE at 0.41 mg/kg.

Groundwater was not encountered in the borings advanced in 2013 before termination at 40 feet bgs. However, groundwater monitoring well AP-3648 was sampled for GRO, DRO/residual-range organics (RRO), VOCs, extractable petroleum hydrocarbons, volatile petroleum hydrocarbons, and polycyclic aromatic hydrocarbons (PAHs). None of the analytes were detected above prior cleanup or current screening levels. The depth to groundwater at monitoring well AP-3648 is approximately 122.5 feet bgs (USAF 2014a) (Figure 3-1). Groundwater results from 1995 and 2013 are presented in Table 3-2.

3.2.4 Site Characterization Addendum (2014)

In 2014, field activities consisted of installation of six soil gas probes (DP009-SV01 through DP009-SV06), soil gas screening at five locations, soil gas sampling for laboratory analysis at two locations, and a building survey at Building 986 (USAF 2015).

During the 2014 investigation, TCE and PCE were detected in soil gas screening samples at concentrations up to 18,457 and 2,566 micrograms per cubic meter ($\mu g/m^3$), respectively (DP009-SV03 located near the former dry well). Soil gas screening results indicated that the former dry well at DP009 was the source of PCE and TCE contamination at the site because PCE and TCE in soil gas were limited to the area surrounding the former dry well. However, all laboratory analytical results analyzed by EPA Method TO-15 were below screening levels.

3.3 2018 Supplemental Remedial Investigation Field Methods

SRI activities were performed at DP009 in 2018 as described in the following subsections. Activities were conducted in accordance with the UFP-QAPP (USAF 2018).

Field logbooks are provided in Appendix A-1. Soil boring logs are provided in Appendix A-2, and a photo log is provided in Appendix A-3. Completed building survey forms and field sample forms are provided in Appendices A-4 and A-5, respectively.

3.3.1 Pre- and Post-investigation Activities

An initial site visit was performed by CH2M HILL Engineers, Inc. (now Jacobs Engineering Group Inc.) field personnel on 30 May 2018 to identify and mark planned soil boring locations based on global positioning system coordinates. Potential hazards and access restraints were also assessed at that time, and none were noted.

A JBER dig permit was acquired before drilling began to identify potential current and abandoned utilities or pipelines. Third party utility locates were performed on 30 May 2018 by Geotek Alaska, Inc. at each proposed boring location to identify potential underground utility hazards.

Upon conclusion of soil sampling efforts, the soil boring locations were surveyed by Lantech, Inc. surveyors on 26 July 2018. Survey elevation measurements and coordinates are provided in Table 3-3.

3.3.2 Subsurface Soil Sampling

Six soil borings, DP009-SB03 through DP009-SB08, were drilled to depths ranging from 50 to 64 feet bgs and sampled at DP009 by Geotek Alaska, Inc, using a Geoprobe 8040DT drill rig (boring locations shown on Figure 3-2). The upper 30 feet of borings were installed using a direct-push method by advancing a dual-core, 5-foot-long, 1.6-inch-inside-diameter stainless-steel barrel (macrocore) lined with a disposable acetate liner ahead of the casing using hydraulic down-pressure and down-hole hammer. The direct-push method collects a continuous soil core from the surface to the desired depth. From 30 to 45 feet bgs, drilling was completed using a down-hole hammer. From 45 feet bgs to the total depth of the boring, macrocore was used. Total borehole depths ranged from 50 to 64 feet bgs.

Continuous logging of soil type and stratigraphy, moisture or groundwater, visual observations of staining or liquid phase petroleum, photoionization detector (PID) readings, and other observations were performed in the field for each boring. PID readings for the upper 25 feet as well as the deeper sample depth intervals were recorded on each soil boring log (Appendix A-2). Two soil samples were collected from each boring. The first sample was collected at a predetermined depth likely to contain the highest concentration (based on existing data) or at the interval with the highest PID response. The second soil sample was collected at the total depth of each boring. Soil samples were analyzed for GRO, DRO/RRO,

VOCs, low-level VOCs, semivolatile organic compounds (SVOCs) (including 1,4-dioxane), PAHs, and RCRA metals (including nickel and vanadium) All soil samples were collected using the methods described in Standard Operating Procedure 07 in Appendix I of the UFP-QAPP (USAF 2018). All samples were assigned a unique identification number in the field. Table 3-4 presents a summary of the soil samples collected during the 2018 SRI investigation, described further in the following list:

- Four soil borings (DP009-SB03, DP009-SB04, DP009-SB06, and DP009-SB07) were advanced to 50 feet bgs to assess the lateral and vertical extent of soil contamination.
- Two soil borings (DP009-SB05 and DP009-SB08) were advanced to depths greater than 50 feet bgs (60 and 64 feet bgs, respectively) to better assess the vertical extent of contaminated soil based on elevated PID readings at the planned termination depth.
- Twelve primary and two field duplicate (FD) soil samples were collected and submitted to EMAX Laboratories, Inc. for analysis of GRO, DRO/RRO, full-suite VOCs, low-level VOCs, SVOCs (including 1,4-dioxane), PAHs, and RCRA metals (including nickel and vanadium).
- Three types of field quality control (QC) samples were collected to meet data quality standards: FDs, matrix spike/matrix spike duplicates (MS/MSDs), and trip blanks (TBs). Two FDs, one MS/MSD, and two TBs were submitted for analysis. The number of QC samples collected satisfies the requirements established in the UFP-QAPP (USAF 2018).

Elevated PID readings (up to 1,472 parts per million) and POL odor were observed in the upper 10 feet bgs at DP009-SB05 and elevated PID readings (up to 1,000 parts per million), POL odor, and staining were observed in the upper 25 feet at DP009-SB08. Both borings were sampled at the depths with the highest PID readings.

3.3.3 Building 986 Vapor Intrusion Investigation

The VI investigation included a building survey, differential pressure monitoring, and two rounds of sampling (July and November 2018). During each VI sampling event (the summer [non-heating season event in July] and winter [heating season event in November]), indoor air, outdoor air, and subslab soil gas samples were collected and shipped overnight and analyzed for benzene, 1,2-dichloroethane (DCA), naphthalene, PCE, and TCE by EPA Method TO-15 selective ion monitoring (SIM) and for analysis of TMB by EPA Method TO-15. A second building survey was completed before the winter sampling to identify potential new sources or changes to building characteristics since the first event.

As a part of the non-heating season sampling event, a building survey (ADEC 2017c, Appendix H) was completed on 23 July 2018 to assist in the development of a CSM, select optimal 24-hour indoor air sampling locations based on the current use of the building, and help determine if any potential indoor sources of VOCs were present. Additionally, utility locate surveys were conducted at the proposed subslab sample locations before the installation of subslab probes (Cox and Colvin Vapor Pins) on 23 July 2018. Subslab probes act as a sample port through the building slab allowing collection of subslab soil gas for analysis. A total of two subslab probes were installed within Building 986—one in Room 102 (SS01) and the other in Room 113 (SS02). Figure 3-3 presents Building 986 sample locations without results. Results are presented and discussed in Section 4. Subslab probe installation field forms are included in Appendix A-5.

Two subslab soil gas samples were collected on 24 July 2018. One outdoor air sample (OA01) and four indoor air samples (IA01 through IA04) were collected on 25 July 2018, from the locations shown on Figure 3-3. The outdoor air and indoor air samples were collected in 6-liter Summa canisters using 24-hour flow controllers. The subslab vapor samples were collected in 1-liter Summa canisters using 5-minute flow controllers. One FD was collected, and all samples were shipped overnight for analysis by a certified laboratory (Air Technology Laboratories, Inc. [ATL]). Outdoor and indoor air samples were

analyzed for benzene, 1,2- DCA, naphthalene, PCE, and TCE by EPA Method TO-15 SIM, and subslab soil gas samples were analyzed for the same analytes by EPA Method TO-15. The number of QC samples collected satisfies the requirements established in the UFP-QAPP (USAF 2018).

The second round of VI sampling took place in November 2018 during the heating season. Subslab soil gas samples were collected from SS01 and SS02 on 5 November 2018. Four indoor air and one outdoor air samples were also collected simultaneously on 6 November 2018. One FD was collected, and all samples were shipped overnight to ATL and analyzed using the same methods as the non-heating season sampling event. An additional analyte, 1,2,4-TMB, was added to the heating season analyte list.

Table 3-4 presents a summary of the indoor air, outdoor air, and subslab soil gas samples collected during the 2018 SRI investigation.

3.3.4 Waste Handling and Disposal

Wastes generated during SRI activities include general refuse (expended personal protective equipment [PPE], paper towels, plastic bags, and plastic water containers) and investigation-derived waste (IDW) (soil drill cuttings and wastewater from decontamination activities).

Consistent with the UFP-QAPP (USAF 2018), wastes were taken to the Environmental Staging Facility (ESF), which is located at Building 955 on Warehouse Street near the intersection with Otter Lake Road. The following describes how specific wastes were handled:

- General refuse and expended PPE were disposed of daily in JBER refuse waste containers at the ESF.
- Soil cuttings were placed into a 55-gallon drum during soil boring advancement and transported to the ESF. The drum was labeled with date, project name, well/boring number, contents, depths of material, corresponding analytical sample numbers, analysis to be performed, and the contractor point of contact.
- One composite sample was collected per 10 IDW soil drums and sent for analysis. Results were compared to the ADEC CULs for decisions on disposal. The IDW soil drums were transported offsite for disposal on 31 January 2019, in accordance with the UFP-QAPP (USAF 2018). Disposal records will be on file and sent to ADEC upon completion.
- Decontamination water was collected in 15-gallon containers, transported to the ESF, transferred into open-top 55-gallon drums, and labeled. Decontamination water was then batch treated with other IDW water. After treatment, the water was sampled for constituents in the JBER water discharge permit and discharged to the storm drain after verifying that constituents were below permit requirements.

3.3.5 Deviations from the UFP-QAPP

Field activities were conducted in accordance with the UFP-QAPP (USAF 2018), with the following exceptions:

- Soil borings DP009-SB05 and DP009-SB08 were drilled to 60 and 64 feet bgs rather than 50 feet bgs as indicated in the UFP-QAPP to better assess the vertical extent of contaminated soil based on elevated PID readings.
- Proposed subslab soil gas probe locations in the UFP-QAPP had to be reduced from four to two because of the presence of asbestos tiles throughout Building 986. Rooms 102 and 113 were the only locations without asbestos tiles; therefore, these two locations were selected for subslab probe installation. These two subslab probes provided the necessary access to characterize subslab soil gas.

- 1,2,4-TMB was not analyzed in non-heating season outdoor and indoor air samples because of a miscommunication with ATL before shipment and analysis of these samples. ATL added 1,2,4-TMB to the analytical EPA Method TO-15 SIM before analysis of heating season outdoor and indoor air samples.

4. NATURE AND EXTENT OF CONTAMINATION

This section summarizes the 2018 SRI analytical soil, indoor air, outdoor air, and subslab soil gas results and presents the nature and extent of contamination based on these 2018 results and previous investigations. Table 4-1 presents a summary of the 2018 analytical data for soil at DP009. Table 4-2 presents metal concentrations in soil compared to background metal soil concentrations. PID readings collected during drilling are shown on the soil boring logs (Appendix A-2). Appendix B presents complete, validated laboratory data, including a data quality evaluation (DQE) report.

VOC analytical data for indoor and outdoor air collected at Building 986 are presented in Table 4-3. Table 4-4 presents VOC analytical data for Building 986 subslab soil gas. Historical soil gas data are shown on Figure 4-1. VOC, DRO, and GRO results for soil are shown on Figure 4-2. Figure 4-3 shows a cross section of DRO/RRO/GRO concentrations in soil, and the cross-section line is shown on Figure 4-2. Figures 4-4 and 4-5 show the indoor air, outdoor air, and subslab soil gas sample locations along with screening level exceedances for Building 986 for the non-heating (July 2018) and heating (November 2018) sampling events, respectively.

4.1 Screening Levels

Consistent with the UFP-QAPP (USAF 2018), laboratory data were initially compared with project screening levels based on ADEC cleanup criteria to confirm the presence and characterize the nature and extent of COPCs in soil and Building 986 indoor air as well as subslab soil gas. Screening levels have been updated in this addendum to the SRI report and are intended for screening purposes only; detections greater than a screening level are not an indication of unacceptable risk. The screening levels described in this report are consistently used across JBER for sites investigated as part of the CERCLA process.

Laboratory data were compared with screening levels to confirm the presence and characterize the nature and extent of COPCs in soil and groundwater. These are intended for screening purposes only; detections above a screening level are not an indication of unacceptable risk. Note that for this addendum to the DP009 – Building 986 Dry Well SRI Report, the screening levels have been updated to the current screening levels, as follows:

- Primary screening levels: EPA RSLs for residential soil and tapwater (target risk = 1×10^{-6}, hazard quotient [HQ] = 0.1) (EPA 2023b)
- In cases without an EPA RSL: one-tenth the ADEC Method Two Table B1 under 40-inch zone soil CULs for human health or one-tenth the Table C groundwater CUL (ADEC 2023)
- Fuels: The most stringent of ADEC Table B2 inhalation/ingestion CULs for soil and the Table C groundwater CULs (ADEC 2023)
- Migration to groundwater: A site-specific soil screening level was calculated for chloroform only
- Soil gas: EPA commercial target subslab vapor intrusion screening level (VISL) (total cancer risk = 1×10^{-6} and HQ = 0.1) (EPA 2023b)
- Indoor Air: EPA commercial indoor air RSLs (total cancer risk = 1×10^{-6} and HQ = 0.1) (EPA 2023b)

Screening levels for soil consider cumulative exposure of human receptors to contaminants in soil through direct contact and outdoor inhalation. Soil screening levels (SSLs) are derived from the EPA Regional Screening Levels (RSLs) for residential soil (target cancer risk [TCR] of 1×10^{-6} and HQ of 0.1). For analytes for which an EPA RSL does not exist, the ADEC *Title 18 Alaska Administrative Code (AAC) Chapter 75* (18 AAC 75) Method Two one-tenth the most stringent of human health CUL (for sites with less than 40 inches of precipitation) is used (ADEC 2023). For fuels, the ADEC most stringent human health CUL is used.

Groundwater screening levels are the EPA RSLs for residential tapwater with a TCR of 1×10^{-6} and HQ of 0.1. For analytes for which an EPA RSL does not exist, one-tenth of the ADEC 18 AAC 75 Table C human health CUL is used (ADEC 2023). For fuels, the ADEC Table C value is used.

Indoor air and soil gas screening levels are the EPA commercial VISLs (TCR = 1×10^{-6} and HQ = 0.1) (EPA 2023b).

In addition to screening levels, some common naturally occurring analytes (that is, metals in soil and groundwater) were compared to established background concentrations to determine whether detected analytes are related to site activities or are naturally occurring. Metals concentrations were compared to screening levels, site-specific background concentrations (U.S. Army 1996a), JBER-R background concentrations (U.S. Army 1996b), and a range for Alaska surficial soils (USGS 1988).

4.2 Source of Contamination

The source of the contamination at DP009 is the former dry well located south of Building 986 (Figure 1-2). In 1998, the dry well, associated piping, and sludge waste found at the bottom of the well were removed, along with the laboratory sink and its associated subsurface piping, fixtures, and plumbing.

4.3 2018 Soil Analytical Results

This section presents the analytical concentrations in soil measured during the 2018 SRI field efforts.

4.3.1 Volatile Organic Compounds in Soil

Twelve primary soil samples and two FD samples were collected for laboratory analysis of full-suite and low-level VOCs in 2018. Several VOCs were detected in soil samples; however, all concentrations were below screening levels.

4.3.2 Petroleum Hydrocarbons in Soil

Twelve primary soil samples and two FD samples were collected for laboratory analysis of petroleum hydrocarbons in 2018. All petroleum hydrocarbons (that is, GRO, DRO, and RRO) were either not detected or detected below their respective human-health based screening levels in all samples.

4.3.3 Semivolatile Organics and Polycyclic Aromatic Hydrocarbons in Soil

Twelve primary soil samples and two FD samples were submitted for laboratory analyses of SVOCs and PAHs. Several SVOCs and PAHs were detected in soil samples, but all concentrations were detected below screening levels.

4.3.4 Metals in Soil

Twelve primary soil samples and two FD samples were submitted for laboratory analyses of metals in soil. Aluminum, arsenic, cobalt, iron, manganese, mercury, and vanadium were detected at concentrations greater than the screening levels in all samples. Maximum concentrations of these metals were detected at the following locations (EPA residential soil RSL provided in parentheses):

- Aluminum: 15,800 mg/kg (7,700 mg/kg) at DP009-SB05 from 23 to 25 feet bgs
- Arsenic: 8.23 J mg/kg (0.68 mg/kg) at DP009-SB07 from 23 to 25 feet bgs
- Cobalt: 11.7 mg/kg (2.3 mg/kg) at DP009-SB04 from 23 to 25 feet bgs
- Iron: 33,000 mg/kg (5,500 mg/kg) at DP009-SB05 from 23 to 25 feet bgs
- Manganese: 989 mg/kg (180 mg/kg) at DP009-SB03 from 48 to 50 feet bgs

- Mercury: 1.14 mg/kg (2.3 mg/kg) at DP009-SB06 from 13 to 15 feet bgs
- Vanadium: 62 mg/kg (39 mg/kg) at DP009-SB05 from 48 to 50 feet bgs

A comparison of maximum concentrations of these metals to established JBER background values (USAF 1993) shows that concentrations of aluminum, arsenic, cobalt, and iron are within the JBER background values. Maximum concentrations of manganese and vanadium were detected above the JBER background values and were well within the range for Alaska surficial soils values (USGS 1988). Mercury was detected at concentrations above the JBER background value for deep soil (greater than 3 feet bgs) (0.17 mg/kg) at only one location. Alaska surficial soils values for mercury are not available (USGS 1988). All other metals were either not detected or detected at concentrations below the screening level.

4.4 2018 Indoor Air and Subslab Soil Gas from Building 986

This section presents the analytical VOC concentrations in indoor air, outdoor air, and subslab soil gas from Building 986 collected during the SRI. The results were collected during the non-heating season (July 2018) and heating season (November 2018) to evaluate if a complete VI pathway may exist into Building 986. The target VOCs for analysis in indoor air, outdoor air, and subslab soil gas were 1,2,4-TMB, 1,2-DCA, benzene, naphthalene, PCE, and TCE. Figures 4-5 and 4-6 show the indoor air, outdoor air, and subslab soil gas sample locations along with screening level exceedances for Building 986 for the non-heating (July 2018) and heating (November 2018) sampling events, respectively. Tables 4-3 and 4-4 show the results for indoor/outdoor air and subslab soil gas, respectively.

4.4.1 Subslab Soil Gas

Non-heating Season. Two primary subslab soil gas samples were submitted to ATL for VOC analysis via EPA Method TO-15. Naphthalene was the only VOC detected above the commercial subslab soil gas screening level and was detected at both subslab sample locations. However, the naphthalene results in all soil gas samples are considered estimated due to naphthalene being omitted from the associated laboratory control samples. Additionally, the reported naphthalene limit of detection (20 µg/m^3) is greater than the project screening level (12 µg/m^3).

Heating Season. Two primary subslab soil gas samples were submitted to ATL for VOC analysis via EPA Method TO-15. Naphthalene was detected above the commercial subslab soil gas screening levels at location SS02. However, detected naphthalene results in all soil gas samples are considered estimated due to high naphthalene recovery in the associated laboratory control samples. Additionally, the reported naphthalene limit of detection (20 µg/m^3) is greater than the project screening level (12 µg/m^3).

4.4.2 Indoor Air

Non-heating Season. Four primary indoor air samples and one FD sample were submitted to ATL for VOC analysis via EPA Method TO-15 SIM. All target VOCs were detected in Building 986 indoor air below their respective commercial indoor air screening level, except for naphthalene. Naphthalene was detected above the indoor air screening level (0.36 µg/m^3) at location IA03, at a concentration of 0.72 µg/m^3. Naphthalene was detected at a concentration of 1.1 µg/m^3 in outdoor air, collected simultaneously with indoor air (Section 4.4.3). Indoor air concentrations of naphthalene were likely influenced by outdoor air concentrations. However, the naphthalene results in all soil gas samples are considered estimated due to naphthalene being omitted from the associated laboratory control samples.

Heating Season. Four primary indoor air samples and one FD sample were submitted to ATL for VOC analysis via EPA Method TO-15 SIM. Although all six target VOCs were detected in Building 986 indoor air, only benzene and naphthalene were measured above their respective commercial indoor air screening

levels in all four samples including the FD. However, detected naphthalene results in all soil gas samples are considered estimated due to high naphthalene recovery in the associated laboratory control samples.

4.4.3 Outdoor Air

Outdoor air samples were collected from near Building 986 during the non-heating and heating season VI sampling events. These sample were collected simultaneous with indoor air samples to help evaluate if outdoor VOC concentrations may be influencing indoor air VOC concentrations.

Non-heating Season. One primary outdoor air sample was submitted to ATL for VOC analysis via EPA Method TO-15 SIM. Naphthalene was detected in outdoor air at a concentration of 1.1 µg/m^3. All other target VOCs were detected in outdoor air at concentrations that were similar or greater than measured indoor air concentrations. Detections of target VOCs were reported in outdoor air samples collected during the sampling event at Building 986. These detections are of similar magnitude as those found reported from indoor air samples. This suggest outdoor air is contributing to indoor air concentrations. However, the naphthalene results in all soil gas samples are considered estimated due to naphthalene being omitted from the associated laboratory control samples.

Heating Season. One primary outdoor air sample was submitted to ATL for VOC analysis via EPA Method TO-15 SIM. All target VOCs were detected in outdoor air. Detections of target VOCs were reported in outdoor air samples collected during the sampling event at Building 986. These detections are of similar magnitude as those found reported from indoor air samples. This suggest outdoor air is contributing to indoor air concentrations. However, detected naphthalene results in all soil gas samples are considered estimated due to high naphthalene recovery in the associated laboratory control samples.

4.5 Data Quality Evaluation

Sample receipt forms, laboratory data review checklists, and a comprehensive DQE report are included in Appendix B-1. The goal of the DQE is to demonstrate that enough representative samples were collected and that the resulting analytical data can be used to support the decision-making process. The following summary highlights the DQE findings:

1. The completeness objectives are 95 percent for air samples and 90 percent for soil samples; completeness objectives were met for all method/matrix/analyte combinations. Completeness for all method/matrix/analyte combinations was 100 percent with the exceptions of 1,1,2,2-tetrachloroethane; 1,2,3-trichlorobenzene; 1,2,3-trichloropropane; 1,2,4-trichlorobenzene; 1,2,4-TMB; 1,2-dibromo-3-chloropropane; 1,2-dichlorobenzene; 1,3-dichlorobenzene; 1,4-dichlorobenzene; 2-chlorotoluene; 4-chlorotoluene; bromobenzene; bromoform; hexachlorobutadiene; naphthalene; and n-propylbenzene for Method SW8260B-Low in soil; completeness for each of these analytes was 93 percent because of low internal standard recoveries.
2. Approximately 1 percent of the soil data for Method SW8260B-Low were qualified because of low-level detections in the TBs. The degree to which blank contamination was observed is within reasonable method expectations.
3. FD relative percent difference exceedances were observed in 10 analytes in soil samples associated with the Method SW8260B-Low analysis and 1 analyte in air samples associated with TO-15 SIM; 22 results were qualified as estimated.
4. Laboratory control sample/laboratory control sample duplicate recovery exceedances were observed for VI samples associated with Methods TO-15 and TO-15 SIM; seven results were qualified as estimated.

5. Surrogate recovery exceedances were observed for some soil samples associated with Method SW8260B-Low; 36 results were qualified as estimated.
6. Internal standard recovery exceedances were observed for some soil samples associated with Method SW8260B-Low; nine results were qualified as estimated.
7. One analyte was not spiked in the laboratory control sample for Methods TO-15 and TO-15 SIM; eight VI sample results were qualified as estimated.
8. MS/MSD recovery exceedances were observed for some soil samples associated with Methods SW6020A and SW8260B-Low; 10 results were qualified as estimated.
9. A serial dilution relative percent difference exceedance was observed for a soil sample associated with Method SW6020A; one result was qualified as estimated.
10. Although some data were qualified as estimated because of QC exceedances no sample results were rejected. Overall precision and accuracy of the data as measured by field and laboratory QC indicators, suggest the data are usable for projects objectives.

4.6 Nature and Extent of Contamination

The distribution of COPCs in soil at DP009 was evaluated in this addendum to the SRI report by comparing data collected during the previous investigations and the 2018 SRI field investigation to current screening levels. Data are considered sufficient to define the lateral and vertical extent of contamination.

Figure 4-2 shows VOC, DRO, and GRO results in soil, which depicts a cross-section line of DRO/RRO/GRO concentrations in soil. Figure 4-3 shows the corresponding cross section.

Additionally, the distribution of COPCs in indoor/outdoor air and subslab soil gas at Building 986 was evaluated to determine if the VI pathway is complete at Building 986. Figures 4-4 and 4-5 show non-heating and heating season indoor air, outdoor air, and subslab soil gas results from Building 986, respectively.

4.6.1 Soil

No petroleum compounds, VOCs, or SVOCs were detected in 2018 soil samples above their respective screening levels (Figure 4-2). Mercury was detected at concentrations of 1.11 mg/kg and 1.14 mg/kg, which are greater than the screening level (1.1 mg/kg) and the background concentration range detected in 1995 boring AP-3618 at 5 feet bgs and 2018 boring DP009-SB06 from 13 to 15 feet bgs. Because these detections are isolated occurrences, located at distances approximately 10 feet or greater from the dry well, and only slightly detected at concentrations greater than the screening level, they are not considered to be a result of a site-related release.

Few detections of chlorinated VOCs (TCE and PCE) were reported in historic samples. None of the reported TCE or PCE detections in historic soil samples or samples collected under the 2018 supplemental investigation exceeded the 2018 project screening levels. The petroleum compounds and those inherent in petroleum are delineated both laterally and vertically. Contamination identified in subsurface soil for petroleum compounds, VOCs, or SVOCs do not exceed the human-health based screening levels. Some of the analyte detections in subsurface soil do exceed migration to groundwater screening levels in the 10- to 35-foot bgs interval. However, soil sample data from deeper intervals from 40 to 60 feet bgs do not exceed migration to groundwater screening levels.

Table 4-1 presents the soil analytical data.

Chloroform was detected in two soil samples at 0.0015 J and 0.0023 J mg/kg, which are both below the EPA residential soil RSL of 0.32 mg/kg. However, chloroform was the only analyte detected in groundwater samples above screening levels (refer to Section 4.6.3). For this reason, a site-specific protection of groundwater SSL was calculated using the EPA SSL Calculator (SSLC) to determine if soil is likely to be a continuing source of contamination to groundwater (EPA 2002). The site-specific protection of groundwater SSL was calculated at 0.266 mg/kg.

4.6.2 Exterior Soil Gas

Six soil gas probes were installed and sampled in 2014 (DP009-SV01 through DP009-SV06). All six probes were installed to a depth of 8 feet bgs. Five soil gas screening samples (that is, screened in the field) were collected at locations DP009-SV01 through DP009-SV05. Two soil gas samples and one FD sample for fixed-lab analysis (EPA Method TO-15) were collected from DP009-SV03 and DP009-SV06. The field screening reporting limit (RL) for TCE (137 $\mu g/m^3$) was greater than the commercial soil gas screening level (8.4 $\mu g/m^3$).

Soil Gas Screening Results. TCE and PCE were detected in soil gas at concentrations above the calibrated detection limit (137 and 172 $\mu g/m^3$, respectively) in both the primary and FD sample from location DP009-SV03. TCE was detected at a concentration of 14,265 $\mu g/m^3$ in the primary sample and 18,457 $\mu g/m^3$ in the duplicate sample, and PCE was detected at a concentration of 1,787 $\mu g/m^3$ in the primary sample and 2,566 $\mu g/m^3$ in the duplicate sample at location DP009-SV03. Location DP009-SV03 is near the former dry well (Figure 4-1). PCE was observed at concentrations below the calibrated detection limits at two other locations: DP009-SV01 and DP009-SV05. TCE and PCE were not detected at locations DP009-SV02 and DP009-SV04. These soil gas screening results indicate that the former dry well is the source of TCE and PCE in soil and that the contamination is likely confined to the area around the former dry well.

Soil Gas Sample Results. Results of the TO-15 analysis of the two primary soil gas samples and one FD soil gas samples collected from 7.5 to 8 feet bgs are shown on Figure 4-1. PCE, TCE, ethylbenzene, toluene, and xylenes were detected in soil gas at DP009-SV03 and DP009-SV06. Soil gas concentrations of ethylbenzene and TCE at DP009-SV06 exceeded residential screening levels. Soil gas concentrations of ethylbenzene, TCE, and PCE at DP009-SV03 exceeded residential screening levels. However, no commercial soil gas screening levels were exceeded. No PCE or TCE degradation compounds (1,1-dichloroethylene [DCE], cis-1,2-DCE, trans-1,2-DCE, or vinyl chloride) were detected in soil gas samples from DP009-SV03 or DP009-SV06, indicating that degradation of PCE and TCE is not likely occurring. PCE was detected at concentrations ranging from 5.93 J $\mu g/m^3$ to 45.3 $\mu g/m^3$, and TCE was detected at concentrations ranging from 2.84 J $\mu g/m^3$ to 4.21 J $\mu g/m^3$. The analytical soil gas concentrations at DP009-SV03 are several orders of magnitude lower than the soil gas screening results from the same location (Figure 4-2). Benzene was not detected in soil gas at location DP009-SV06 even though soil samples collected in 2013 at the same location contained benzene concentrations of 0.039 and 0.145 mg/kg at 0 to 5 feet bgs and 10 to 15 feet bgs, respectively, and 0.46 mg/kg at 20 to 25 feet bgs. Examination of the field documentation (field notes, soil gas probe completion logs, and soil gas sampling logs) for locations DP009-SV03 and DP009-SV06 and discussions with the field team provided no indication of soil gas sample collection error.

4.6.3 Groundwater

In 1995, as part of the OUA RI, groundwater samples were collected from five monitoring wells (AP-3650 and AP-3651 – upgradient wells, AP-3648 – source area well, AP-3649 and AP-3652 – downgradient wells) (Figure 1-2). Site-related contaminants were not detected in groundwater samples (U.S. Army 1996a) but chloroform was found above the screening levels at 11.8 micrograms per liter

(µg/L). The chloroform detection from 1995 was qualified as potentially biased high due to blank contamination.

In 2013, groundwater monitoring well AP-3648 was sampled for GRO, DRO/RRO, VOCs, extractable petroleum hydrocarbons, volatile petroleum hydrocarbons, and PAHs because it was the only well with reported detections in 1995. Chloroform was detected at a maximum concentration of 0.52 µg/L, which is above the screening level of 0.22 µg/L (EPA 2023b) but much lower than reported in 1995 and lower than the EPA maximum contaminant level for chloroform of 70 µg/L. The depth to groundwater at monitoring well AP-3648 is approximately 122.5 feet bgs (USAF 2014a).

4.6.4 Subslab Soil Gas

Non-heating Season. Two primary subslab soil gas samples were submitted to ATL for VOC analysis via EPA Method TO-15. No exceedances were reported.

Heating Season. Two primary subslab soil gas samples were submitted to ATL for VOC analysis via EPA Method TO-15. Naphthalene was detected above the commercial subslab soil gas screening levels at location SS02. The naphthalene result was non-detect at location SS01, but with a detection limit greater than the screening level.

4.6.5 Indoor Air

Non-heating Season. Four primary indoor air samples and one FD sample were submitted to ATL for VOC analysis via EPA Method TO-15 SIM. All target VOCs were detected in Building 986 indoor air below the commercial indoor air screening levels, except for naphthalene. In location IA03, naphthalene was detected above the indoor air screening level (0.36 µg/m^3) at a concentration of 0.72 J µg/m^3. Naphthalene was detected at a concentration of 1.1 µg/m^3 in the outdoor air sample collected simultaneously with indoor air (Section 4.4.3). It is likely that indoor air concentrations of naphthalene were influenced by outdoor air.

Heating Season. Four primary indoor air samples and one FD sample were submitted to ATL for VOC analysis via EPA Method TO-15 SIM. All target VOCs were detected in Building 986 indoor air. Benzene ranging from 3.6 to 5.5 µg/m^3 and naphthalene ranging from 0.72 J to 3.7 µg/m^3 were detected above the commercial indoor air screening levels in all four samples and the FD.

4.6.6 Outdoor Air

Outdoor air samples were collected from an upwind location from Building 986 during the non-heating and heating season VI sampling events. These samples were collected simultaneous with indoor air samples to help evaluate if outdoor VOC concentrations may be influencing indoor air VOC concentrations. Naphthalene was detected at a concentration of 1.1 µg/m^3 in the outdoor air sample during the non-heating season sampling event, which is greater than the indoor air screening level (0.36 µg/m^3). During heating season, naphthalene was reported below the screening levels at a concentration of 0.32 J µg/m^3.

4.6.7 Differential Pressure

To better assess potential vapor migration from subslab to indoor air, the pressure differential between subslab and indoor air were measured during the non-heating and heating season sampling events. The operational status of the heating, ventilation, and air conditioning (HVAC) system was not recorded during the VI sampling efforts.

Non-heating Season. Indoor air versus subslab differential pressure data were collected in Rooms 112 and 102 during the non-heating season sampling event and are presented as a timeseries plot on Figure 4-6. The average differential pressures in Room 112 and 102 were -8.35 and -6.08 Pascals,

respectively. A negative differential pressure indicates indoor pressure is greater than subslab pressure ($P_{subslab} - P_{indoor}$ = differential pressure). The differential pressures measured at Building 986 during the non-heating season indicate that the pressure gradient is from indoor to subslab; therefore, VI is unlikely to occur.

Heating Season. Indoor air versus subslab differential pressure data were collected in Room 102 during the heating season sampling event and are presented on Figure 4-7. The average differential pressure in Room 102 was -2.39 Pascals, indicating that the pressure gradient is from indoor to subslab; therefore, VI is unlikely to occur.

5. CONTAMINANT FATE AND TRANSPORT

5.1 Potential Routes of Migration

The highest detected concentrations of petroleum-hydrocarbon compounds were within the dry well source area between 15 and 25 feet bgs (DP009-SB01 and DP009-SB08) and all other contamination (primarily VOCs) is co-located with it. The dry well was 15 feet deep, which corresponds to the highest concentrations of petroleum-related compounds.

When a release occurs from a below-grade feature such as the dry well, the release initially will tend to spread in response to a pressure gradient around the release location. In the vadose zone, the infiltrating contaminants from a subsurface release tend to flow primarily vertically under the influence gravity through larger air-filled soil pores and infiltrating water, although capillary forces may cause some lateral spreading. If a relatively small volume is released, the product will likely be immobilized in the soil above the water table. Because the spills at DP009 are decades old, gravity drainage and flow of the contaminants to a point of immobility are interpreted to have already occurred as the dry well and the sink connected to it were removed in 1995.

Soil data collected in 2018 contained no target analytes above screening levels. Aside from low levels of chloroform, contamination was not detected above screening levels in monitoring well AP-3648. Volatilization of VOCs from soil or groundwater vapor sources is a potential route of migration. Such volatilization is the first step in vapor migration from a source to a building. Several basic mechanisms by which VOCs can migrate from a subsurface vapor source to a building are discussed in this section. In addition, there are mechanisms that can reduce (attenuate) VOC concentrations along the migration pathway.

Generally, VOCs in soil gas migrate initially through the process of diffusion, through soil gas from locations with higher concentrations to those with lower concentrations. In addition, soil texture and moisture significantly affect the rate of diffusion transport. Finer grained or moist soil has lower air-filled porosity and, therefore, a lower cross-sectional area through which diffusion can occur.

Near the ground surface, both atmospheric pressure changes and pressure gradients because of air movement in and out of the building's slab cause advection (VOC mass transport in flowing air). The relative importance of diffusion versus advection can vary depending on vadose zone characteristics (for example, soil type, soil-water retention characteristics, porosity, and moisture content) and environmental conditions (for example, long-term and diurnal barometric pressure changes, wind, temperature changes, snow cover, and precipitation/infiltration).

There is no significant surface water runoff or sediment transport from the site to surface water bodies. The nearest surface water body is Ship Creek, which is approximately 1.3 miles south of the site.

5.2 Migration to Groundwater Evaluation

Petroleum products and VOCs were detected in subsurface soil above migration to groundwater screening levels. The groundwater pathway does not appear to be a compete pathway or a potentially complete pathway in the future based on the lines of evidence gathered during the multiple rounds of investigation. The lines of evidence include the analysis of groundwater in 1995, the second round of groundwater testing in 2014, the lateral and vertical delineation of soil contamination that indicates a vertical distance of 70 feet between the deepest contamination and the groundwater interface, and the primary source of contamination, the dry well, was removed in 1998.

There are few detections of chlorinated solvents and the low concentration of those few detections do not indicate a significant release of chlorinated solvents has occurred.

Only chloroform exceeded the screening level in groundwater. As such, a migration to groundwater evaluation was conducted to determine whether a soil source for groundwater contamination was present at DP009 using the following steps:

1. Was the contaminant detected in groundwater above the applicable screening level? Do available analytical data indicate that the contaminant is present due to site-related contamination and not the presence of naturally occurring chemicals? Does exposure to groundwater present an unacceptable risk?

2. Chloroform was the only exceedance in groundwater from the only well sampled in 2013, AP-3648; chloroform was reported in AP-3468 in the groundwater sample collected in 1995. Chloroform exceeded the EPA tapwater RSL of 0.22 µg/L in both the sample collected in 2013 with a concentration of 0.52 and the sample from the same well in 1995 with a concentration of 11.8 µg/L. The sample from 2013 was used to calculate cumulative risk because it is the most recent result from that well. The ELCR and HI associated with groundwater exposure to hypothetical future residents is 2×10^{-6}. Samples from another well adjacent to the drywell, AP-3020, and other onsite wells AP-3652, AP-3649, and AP-3651 did not identify contamination during the 1995 drywell decommissioning.

3. *Does the suspected age and type of release, and contaminant characteristics (for example, chemical/physical) indicate the potential for migration from soil to groundwater? A groundwater temperature of 8 degrees Celsius will be used to evaluate the physical state of the contaminant.*

   Chloroform-containing products (for example, refrigerants) or effluent (for example, cleaning with solvents) may have been discharged into the former dry well located south of Building 986. The dry well was in use from the 1950s to the 1990s and removed in 1998. Chloroform is highly soluble and does not sorb to soil particles; it migrates readily through the soil column and persists in groundwater. Chloroform is prevalent in groundwater at JBER because it may be a result of disinfection processes used in drinking water and difficult to source. Chloroform was not reported for DP009 soil sample analyses in 1995, 2003, or 2013. The maximum detected concentration (MDC) of chloroform in soil in 2018 was 0.0023 J mg/kg, which does not exceed the project screening level, from 48 to 50 feet bgs.

4. *Is the vertical distribution of contaminant concentration(s) in soil suggestive of migration through the soil column? For example, do contaminant concentrations reach from shallow to deeper intervals?*

   No surface soil samples were collected. However, all other vadose zone soil samples were non-detect for chloroform other than a positive detection at 48 to 50 feet bgs. The groundwater interface at AP-3648 was 122.5 feet bgs in 2013.

5. *Do the contaminant concentrations within the vadose zone exceed site-specific protection of groundwater SSLs calculated using EPA's SSLC (EPA 2002) using the following inputs:*

   a. *A range of target HQ of 1 and TCR of 1×10^{-4} (upper end of the EPA risk management range) and a target HQ of 0.1 and TCR of 1×10^{-6} (lower end of the EPA risk management range) were selected for this fate and transport evaluation. One assumption in the SSLC is "uniformly distributed contamination from the surface to the top of the aquifer" (EPA 2002). As such, using the maximum concentration is a conservative approach. Risk due to groundwater contamination is evaluated separately in. Risk due to groundwater contamination is evaluated separately in the human health risk assessment (HHRA), based on cumulative risk calculations at the lower end of the EPA risk management range and representative groundwater data, not potential migration to groundwater effects.*

   b. *The Method 1 option (partitioning equation) for ongoing transport from a constant source will be used unless site-specific data collected during the RI suggest that the Method 2 option (mass-limit*

equation) is appropriate. If the Method 2 option is proposed, the details regarding the selection of that method will be provided in the RI Report.

c. *Appendix D presents the physical and chemical parameters used in the SSLC.*

The risk-based migration to groundwater SSL for chloroform was calculated at 0.27 mg/kg at a target HQ of 1 and TCR of 1×10^{-4} and at 0.0027 mg/kg at a target HQ of 0.1 and TCR of 1×10^{-6}, both of which are below the project screening level of 0.32 mg/kg.

6. *Was the contaminant detected in soil at concentrations greater than the site-specific protection of groundwater screening level in soil sampled above the water table (that is, in the vadose zone just above the capillary fringe and any contaminant smear zone)? Historical groundwater elevation data will be reviewed to ensure that the deepest soil samples are collected above the level where contaminants may be present due to contamination in groundwater.*

No. Chloroform in soil at DP009 does not exceed the project screening level or the migration to groundwater SSL at either risk level.

Appendix D includes the migration to groundwater calculations.

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6. BASELINE HUMAN HEALTH RISK ASSESSMENT

This baseline HHRA uses standard-of-practice procedures to assess the potential for current and future adverse effects on humans from exposure to chemical hazards. The results of the HHRA described herein will be used in risk management decisions to determine whether further action is appropriate or if remedial actions are necessary.

6.1 Introduction

This baseline HHRA is a component of the SRI to assess contamination associated with DP009. This baseline HHRA assesses the potential for adverse health effects for identified receptors that may contact impacted soil or groundwater associated with the DP009 investigation area. This baseline risk assessment also includes an evaluation of the potential for contaminant migration from external source areas and subslab soil gas to indoor air.

To provide risk managers with information necessary to assist in potential remedial decisions and meet risk management goals, the HHRA assesses potential risk to human receptors under current and reasonably anticipated future land use conditions.

An ecological scoping evaluation was conducted as a part of the 2013 site characterization (USAF 2014a). No further evaluation of ecological risk was determined to be required because of the following information:

- No visible staining of surface soils was observed.
- No stunted vegetation was observed.
- There is no significant surface water runoff or sediment transport to surface water bodies.
- Groundwater is not likely to cause a violation of the water quality standards in 18 AAC 70 for surface water (ADEC 2020). Groundwater at the site is not closely connected hydrologically to nearby surface water and does not discharge to surface water near to the site. Groundwater was measured in the nearby monitoring well AP-3648 at approximately 122.5 feet bgs (USAF 2014a). Soil contamination at DP009 is from 23 to 25 feet bgs.
- DP009 was found not to contain habitat that supports valued species, critical habitat, or anadromous fish species.

As presented in Worksheet #10 in Appendix B of the UFP-QAPP (USAF 2018), based on previous ecological scoping evaluations conducted in accordance with the ADEC ecological risk guidance and 18 AAC 75.325 (ADEC 2014, 2023), no further evaluation of ecological risk was determined to be required at DP009. Therefore, ecological evaluations are not included in this risk assessment.

This HHRA was conducted consistent with the following:

- EPA Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual, including Part A (1989), Part B (1991), Part E (2004), and Part F (2009)
- Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors (EPA 2014a)
- Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air (EPA 2015)
- Appropriate supporting guidelines published by ADEC (2017a, 2017b, 2018a, 2018b, 2018c, 2023).

6.2 Human Health Risk Assessment Approach

The EPA HHRA framework consists of the following four basic steps:

- **Data Evaluation:** The first step consists of reviewing and evaluating available data, identifying COPCs in media at the site.
- **Exposure Assessment:** The second step involves evaluating potential exposure pathways for COPCs and the reasonably anticipated human receptors that could be exposed to them, either now or in the future. Exposure point concentrations (EPCs) are estimated from measured or modeled concentrations, and pathway-specific exposure parameters and assumptions are evaluated.
- **Toxicity Assessment:** The third step consists of compiling toxicity values that characterize potential adverse health effects from exposure to COPCs.
- **Risk Characterization:** The fourth step combines the results of the previous three steps to quantitatively characterize the potential risks to human health associated with exposure to COPCs at the area evaluated. Potential cancer risk and adverse non-cancer health effects are estimated.

Each HHRA step for DP009 is described in detail in the following sections. All tables and attachments discussed in the baseline HHRA are provided in Appendices C-1 and C-2.

6.2.1 Data Evaluation

The data evaluation step of the HHRA consists of reviewing and evaluating available laboratory data and identifying COPCs.

Data sets were compiled for use in the risk assessment based on the following criteria:

- Media of concern (that is, soil, groundwater, soil gas, indoor air). Field data is excluded from the data set used to quantitatively assess risk (that is, data of unknown accuracy and precision)
- Soil depth intervals of concern depending on the identified potential receptors and physical features of the site
- Sample date

The following data reduction steps were used in the HHRA data set compilation:

- Chemical results with final validation qualifiers of any letter(s) other than those containing a “U” or “R” were considered detected.
- Estimated values (flagged with “J” qualifiers) were treated as detected concentrations.
- Chemical results with final validation qualifiers containing an “R” were considered rejected data and not used in the baseline HHRA.
- Samples analyzed using multiple methods were reduced in accordance with Guidelines For Treatment Of Non-Detect Values, Data Reduction For Multiple-Detections And Comparison Of Quantitation Limits To Cleanup Values (ADEC 2017b). If more than one contaminant result is reported because of multiple analyses by a single method, the highest detected value was used (on a compound-specific basis). If more than one result is reported from alternate analytical methods for a single contaminant, the highest detected value or the result from the confirmatory method will be used:
  - VOCs – Where both SW8260C and SW8260-Low (low-detection limit) methods are used, the higher detected result was retained. If both results are non-detect, the SW8260-Low non-detect result was retained.
  - PAHs – Where SIM (low-detection limit) analysis was used, the SIM results were retained.

- Metals – Where the 7000-series analytical methods were used, they were retained over Method 6010 or 6020.
- Native and duplicate (FD) sample pairs for soil and groundwater were reduced as follows. For soil gas and indoor air samples, both native and FD samples were evaluated:
  - If there were two detections, the higher of the two concentrations was used.
  - If there was one detection and one non-detection, the detected value was used.
  - If there were two non-detections, the lowest detection limit was used.

For soil, the HHRA data set is limited to the source area around the former dry well, south of Building 986, and, except for boring AP-3618, excludes the periphery samples used to delineate the extent of contamination as shown on Figure 3-2. Because mercury was detected at boring AP-3618 at concentrations exceeding the screening level, the data were included in the HHRA.

The soil data set includes the following sample locations by date:

- 2018: DP009-SB06
- 2013: DP009-SB01 and DP009-SB02
- 2003: CB-11 through CB-15
- 1995: AP-3618

Appendix C includes the summary of the soil data used in the HHRA (Table C-1.1).

For groundwater, the data set only includes samples collected in 2013 at source area monitoring well (AP-3648) shown on Figure 3-1. Groundwater samples collected in 1995 were not included in the HHRA, as the data set collected in 2013 are considered representative of current conditions. Appendix C includes the summary of the groundwater data used in the HHRA (Table C-1.2).

The data set for indoor air includes 10 indoor air samples, collected in 2018 at 4 locations (DP009-IA01 through DP009-IA04) in Building 986, shown on Figure 3-3. Appendix C includes the summary of indoor air data (Table C-1.3).

For soil gas, four subslab soil gas samples collected in 2018 at two locations (DP009-SS01 and DP009-SS01 shown on Figure 3-3) and three source area exterior soil gas samples (two native and one FD at DP009-SV03 from 7 to 8 feet bgs and DP009-SV06 from 7 to 8 feet bgs) collected in 2014 (Figure 3-1) were used to evaluate the VI pathway. Appendix C includes the summaries of subslab soil gas samples at Building 986 and source area exterior soil gas samples (Tables C-1.4 and C-1.5, respectively).

6.2.1.1 Soil Exposure Scenarios

One exposure area, the former dry well area (Figure 3-1), was evaluated for soil. “Exposure area” describes a location or area, often hypothetical, where humans might encounter one or more contaminated environmental media on a regular basis.

Surface soil samples from 0 to 2 feet bgs have not been collected at DP009. Because the dry well depth was 15 feet bgs, and total petroleum hydrocarbons, VOCs, and SVOCs were not detected above screening levels in soil samples collected in the interval from 0 to 5 feet bgs, surface soil was not evaluated in the HHRA.

Soil data were used in the evaluations of the future indoor industrial worker, future outdoor industrial worker, future construction worker, and hypothetical future resident potential exposure scenarios: 0 to 15 feet bgs (that is, mixed-zone [surface + subsurface soil]). Soil samples deeper than 15 feet bgs were excluded from the HHRA data set.

6.2.1.2 Groundwater Exposure Scenarios

For groundwater at DP009, one exposure area was evaluated. Groundwater data from the source area monitoring well (AP-3648) were evaluated for the exposure area.

6.2.1.3 Indoor Air Exposure Scenarios

Building 986 is located immediately north of the source area, so the current exposure pathway is potentially complete. To evaluate the current and reasonably anticipated future VI industrial exposure scenario at DP009, indoor air and subslab soil gas samples from Building 986, respectively, were used.

To evaluate the future VI residential and industrial exposure scenarios at DP009, source area exterior soil gas samples collected in the source area were used. The operational status of the HVAC system was not recorded during the VI sampling efforts.

6.2.1.4 Chemicals of Potential Concern

The data evaluation step includes the selection of COPCs for the exposure area. COPCs are constituents that are included in the quantitative exposure estimation and risk characterization steps.

For soil, groundwater, indoor air, and soil gas, COPCs include chemicals with MDCs exceeding the following screening levels:

- Primary screening levels: EPA RSLs for residential soil, residential air, and tapwater (target risk = 1×10^{-6}, HQ=0.1) (EPA 2023b)
- Soil gas: Soil gas VISLs calculated from the residential air RSLs (EPA 2023b) and a generic soil-gas-to-indoor-air attenuation factor of 0.03 per VI guidance (EPA 2015)
- Fuels: the most stringent of ADEC Table B2 inhalation/ingestion CULs for soil and Table C for groundwater (ADEC 2023)
- Compounds that are detected but do not have a screening level were screened with appropriate surrogates (ADEC 2023), listed as follows:
  - Pyrene screening level is used as surrogate for benzo(g,h,i)perylene and phenanthrene
  - m-Xylene screening level was used as surrogate for m-&p-xylene
  - Cumene screening level was used as surrogate for p-isopropyltoluene

The COPCs identified in each exposure medium are presented in Appendix C Table C-1.1 (mixed-zone soil), Table C-1.2 (groundwater), Table C-1.3 (indoor air), Table C-1.4 (subslab soil gas), and Table C-1.5 (source area exterior soil gas) and are summarized as follows:

- Mixed-zone soil: aluminum, arsenic, cobalt, iron, manganese, mercury, and vanadium
- Groundwater: chloroform
- Indoor air: 1,2,4-TMB, 1,2-DCA, benzene, and naphthalene
- Subslab soil gas: naphthalene
- Source area exterior soil gas: no COPCs.

In addition to the comparison of MDC to the screening level, the MDCs of metals were compared to JBER background concentrations (U.S. Army 1996a; USGS 1988). The background data used represents similar soil type(s) and sample depths to those of the investigation samples. Metals are not considered to be site-related COPCs when their MDCs do not exceed the JBER background concentrations. Among the seven metals identified as COPCs in mixed-zone soil, the MDCs of two analytes (aluminum and cobalt) did not exceed their respective JBER background concentrations; therefore, aluminum and cobalt detected

in mixed-zone soil are not considered site-related (Appendix C, Table C-1.6). However, they were retained as COPCs and were assessed quantitatively in the subsequent risk assessment process.

6.2.2 Exposure Assessment

The exposure assessment step of the HHRA involves evaluating potential exposure pathways for COPCs and the potential human populations that could be exposed to them, either now or in the future. EPCs are estimated from measured or modeled concentrations, and pathway-specific exposure parameters and assumptions are evaluated, including receptor-specific exposure or intake factors that determine the amount of chemical that enters the body (either orally, absorbed through the skin, or inhaled). The exposure assessment includes the following steps:

- Evaluate the exposure setting, including a description of the land use and the reasonably anticipated exposed human receptors
- Develop the human health CSM to identify the source of contamination, the contamination transport and release mechanisms, the exposure media, the exposure routes, and the reasonably anticipated exposed human receptors
- Evaluate EPCs for each COPC and complete exposure pathway for receptors identified in the CSM
- Identify the exposure models and parameters used to calculate the exposure intakes
- Calculate the exposure intakes

6.2.2.1 Current and Potential Future Human Receptors and Exposure Pathways

An exposure pathway describes a mechanism by which a population or individual may be exposed to chemicals present at a site. A complete exposure pathway requires the following four components:

- A source
- A mechanism from transport of the chemical from the source to an exposure medium
- An exposure point for humans
- A route of entry (that is, exposure pathway)

All four components must exist for an exposure pathway to be complete and for exposure to occur. Incomplete exposure pathways are not evaluated in the risk characterization.

Potential exposure pathways, the means by which people might encounter COPCs in environmental media, at DP009 were evaluated in accordance with EPA guidance (1989) and ADEC's *Policy Guidance on Developing Conceptual Site Models* (2017a). The human health CSM graphic form and the human health CSM scoping form for DP009 are provided in Appendix C-2.

Potential exposure pathways are based on current and reasonably anticipated future land and groundwater uses. The current and reasonably anticipated future land use for DP009 and adjacent sites/areas is industrial. No recreational activities occur at the site. Recreational activities (running and cycling) take place along Otter Lake Road adjacent to DP009. Groundwater is not currently used as a drinking water source; however, drinking water is considered a potential beneficial use of groundwater. Future construction worker and hypothetical future residential land use scenarios were also considered. Building 986 (POL laboratory) is the only occupied structure at DP009 and is occupied on daily basis for an average of 8 hours a day.

Receptors identified in the CSM include current and future industrial workers (indoor and outdoor), future construction workers, current/future site visitors, and hypothetical future residents. Risks for site visitors are expected to be lower than those for other receptors simply due to the time spent on the site. As a result, any risk-management decision that is protective of industrial workers and hypothetical future

residents is necessarily protective of site visitors; therefore, exposure scenarios for site visitors were not evaluated quantitively in the HHRA.

The following potential exposure pathways were evaluated for DP009 in the HHRA and included in cumulative risk calculations. Note that current indoor and outdoor industrial workers could potentially be exposed to surface soil, defined as 0 to 2 feet bgs. However, because the dry well depth was 15 feet bgs, and total petroleum hydrocarbons, VOCs, and SVOCs were not detected above screening levels in soil samples collected in the interval from 0 to 5 feet bgs, risk from exposure to surface soil is considered insignificant and surface soil was not quantitatively evaluated in the HHRA.

- **Current and future indoor industrial workers** could be exposed to volatile contaminants in subsurface soil and groundwater via inhalation of indoor air. Future indoor industrial workers could be exposed to mixed-zone soil (0 to 15 feet bgs). Potentially complete routes of exposure to soil would include incidental ingestion, inhalation of vapors volatilizing from or through surface soil to air, and inhalation of suspended soil particles (dust).
- **Current and future outdoor industrial workers** could potentially be exposed to mixed-zone soil (0 to 15 feet bgs). Potentially complete routes of exposure to soil would include incidental ingestion, dermal contact, inhalation of vapors volatilizing from or through surface soil to air, and inhalation of suspended soil particles (dust).
- **Future construction workers** may be exposed to mixed-zone soil (0 to 15 feet bgs) during excavation activities through incidental ingestion, dermal contact, inhalation of vapors volatilizing from soil surface to air, and inhalation of suspended soil particles (dust). Because construction activities (digging, excavation, and grading) are of short exposure duration but may generate high levels of dust, soil exposure parameters for construction activities are different than for general outdoor industrial worker activities (landscaping, grounds maintenance, and surveying).
- **Hypothetical future residents** could potentially be exposed to mixed-zone soils (0 to 15 feet bgs). Potentially complete routes of exposure to soil would include incidental ingestion, dermal contact, inhalation of vapors volatilizing from the soil surface to air, and inhalation of suspended soil particles (dust). This receptor may also be exposed to volatile contaminants in subsurface soil and groundwater via inhalation of indoor air. Hypothetical future residents could potentially be exposed to groundwater through its tapwater use. Potentially complete routes of exposure to groundwater would include ingestion, dermal contact, and inhalation during household activities.

Direct exposure to groundwater during construction or other site activities is considered an incomplete exposure pathway because the depth to groundwater is too deep (approximately 122 feet bgs).

Direct exposure to surface water is considered an incomplete exposure pathway because there are no surface water bodies onsite, and the limited amount of direct precipitation that occurs infiltrates quickly into the soil.

Although future industrial workers could potentially be exposed to groundwater through tapwater use, only the more conservative hypothetical residential scenario was evaluated quantitatively.

For current and future indoor industrial workers at Building 986, the indoor air and subslab soil gas results from the previous VI risk assessment conducted at Building 986 (USAF 2018) were evaluated in the HHRA, respectively. For the future indoor industrial worker and hypothetical residential exposure scenarios, exposure to VOCs in subsurface and groundwater through the inhalation of volatile constituents that migrate from groundwater to indoor air were evaluated with source area exterior soil gas data collected in 2014 from approximately 7 to 8 feet bgs.

6.2.2.2 Exposure Point Concentrations

MDCs were used as the EPCs in mixed-zone soil (from 0 to 15 feet bgs) because the sample size was too small (that is, fewer than eight) to calculate 95 percent upper confidence limit of the mean

For groundwater, the detected concentrations at monitoring well (AP-3648) were used as the EPCs in the risk calculations to represent the core of the plume.

Indoor air, subslab soil gas, and source area external soil gas data were evaluated on a sample-specific basis, rather than aggregating data. The maximum risk estimates from each sample were used in the cumulative risk calculations.

6.2.2.3 Exposure Parameters and Assumptions

Table 6-1 includes the exposure parameters used during the HHRA. For the residential and industrial exposure scenarios, EPA-published default reasonable maximum exposure parameters (EPA 2014a, 2023b) were used in the risk estimate calculations.

For the construction worker exposure scenario, EPA default exposure assumptions were used (EPA 2023b), with the exception of the exposure frequencies. The exposure frequency for soil is estimated to be 90 days per year based on the short field season in Alaska (approximately 5 days per week for 18 weeks). In addition, "soil-other construction activities" was selected in the RSL calculator, and the following conservative site-specific parameters are assumed for the calculation of particulate emission factor and volatilization factors:

- Total acres: 0.1 (estimate of exposure area)
- Area dozed: 0.1 acre (estimate of exposure area)
- Area graded: 0.1 acre (estimate of exposure area)
- Area excavated: 405 square meters (assumes entire exposure area is excavated)
- Dozing and grading blade length: 3.7 meters (based on standard equipment)
- Average depth of excavation: 4.6 meters (assume maximum depth of 15 feet)

6.2.3 Toxicity Assessment

The toxicity assessment evaluates the relationship between the magnitude of exposure to a chemical from the exposure area and the likelihood of adverse health effects on potentially exposed populations. This assessment provides, where possible, a numerical estimate of the increased likelihood of adverse effects associated with chemical exposure (EPA 1989). The toxicity assessment contains two steps: hazard characterization and dose response evaluation. These two components are discussed in the following subsections.

6.2.3.1 Toxicity Values

The toxicity assessment step of the HHRA identifies chronic reference values (oral reference doses and inhalation reference concentrations), carcinogenic toxicity values (oral slope factors and inhalation unit risks) used to evaluate adverse non-cancer health effects and cancer risks, respectively.

Toxicity values for soil, groundwater, and soil vapor were selected following the EPA recommended hierarchy (EPA 2003, 2013; ECOS 2007):

- Tier 1: EPA Integrated Risk Information System toxicity values
- Tier 2: EPA Provisional Peer-Reviewed Toxicity Values
- Tier 3: Other Toxicity Values. Tier 3 includes additional EPA and non-EPA sources of toxicity information. If no Tier 1 or Tier 2 values is available, vetted Tier 3 values were considered

For the construction worker exposure scenario, subchronic reference doses and reference concentrations (presented in Appendix C-3) were used, if available. If subchronic toxicity values are not available but chronic toxicity values are available, chronic values were used in the HHRA.

6.2.3.2 Mutagenic Chemicals

Early-in-life susceptibility to carcinogens has been recognized by the scientific community as a public health concern. In its revised Cancer Assessment Guidelines, EPA concluded that existing risk assessment approaches did not adequately address the possibility that exposures to a chemical in early life can result in higher lifetime cancer risks than a comparable duration adult exposure (EPA 2005). To address this potential for increased risk, EPA recommends use of a potency adjustment to account for early-in-life exposures. Chemicals with mutagenic mode of action was evaluated using EPA (2005) default age-dependent adjustment factors as follows:

- 10-fold adjustment for 0 to less than 2 years
- 3-fold adjustment for 2 to less than 16 years
- No adjustment for 16 years or greater
- For TCE, the standard cancer and mutagen equations are combined. TCE requires the use of different toxicity values for cancer and mutagen equations, thus a toxicity value adjustment factor for cancer and mutagens is used in the risk evaluation (EPA 2023c). The adjustments are done for inhalation toxicity values as presented in the equations in the EPA RSL User's Guide (EPA 2023c).

6.2.3.3 Surrogate Chemicals

No COPCs without toxicity values were identified. Therefore, no surrogate chemicals were used in the risk assessment.

6.2.4 Risk-based Concentrations

Risk-based concentrations (RBCs) were used in the risk characterization step (Section 6.2.5) to estimate cancer and non-cancer risks. RBCs were derived for the exposure scenarios discussed in previous sections for the COPCs, using exposure assumptions presented in Table 6-1 and toxicity values discussed in Section 6.2.3.1. The RBC for each COPC is based on a TCR of 1×10^{-6} and a target non-cancer HQ of 1. The derivation of the RBCs for each receptor and media are described in the following subsections.

6.2.4.1 Soil

For the residential exposure scenario, carcinogenic and noncarcinogenic soil RBCs protective of human health direct contact exposure to soil through the ingestion, dermal contact, and inhalation exposure pathways are the residential soil RSLs (EPA 2023ba). For the industrial exposure scenario, carcinogenic and noncarcinogenic soil RBCs protective of human health direct contact exposure to soil through the ingestion, dermal contact (outdoor worker only), and inhalation exposure pathways were computed using the EPA's standard exposure factors presented in Table 6-1. The RBCs for each COPC were calculated using the EPA RSL calculator for the indoor and outdoor industrial worker exposure scenarios (EPA 2023d). The equations used to derive the residential and industrial soil RSLs are presented in the EPA RSL User's Guide (EPA 2023c). The indoor industrial worker and outdoor industrial worker soil RBCs, along with exposure parameters and toxicity values, are provided in Appendix C-3.

For the construction worker exposure scenario, carcinogenic and noncarcinogenic soil RBCs protective of human health direct contact exposure to soil through the ingestion, dermal contact, and inhalation exposure pathways were computed using EPA exposure equations in the EPA RSL User's Guide (EPA

2023c) and exposure factors presented in Table 6-1. RBCs, along with exposure parameters, and toxicity values for the construction worker exposure scenario are provided in Appendix C-3.

6.2.4.2 Groundwater

Carcinogenic and noncarcinogenic groundwater RBCs protective of human health direct contact exposure to tapwater through the ingestion, dermal contact, and inhalation exposure pathways were developed for the residential exposure scenarios. The carcinogenic and noncarcinogenic groundwater RBCs protective of human health direct contact exposure to groundwater through the ingestion, dermal contact, and inhalation exposure pathways are the tapwater RSLs (EPA 2023b). The equations used to derive the tapwater RSLs presented in the EPA RSL User's Guide (EPA 2023c).

6.2.4.3 Indoor Air and Soil Gas

Carcinogenic and noncarcinogenic indoor air RBCs protective of inhalation through the VI exposure pathway were compiled for the current indoor industrial worker exposure scenario. The carcinogenic and noncarcinogenic indoor air RBCs are the EPA industrial air RSLs (EPA 2023b). The equations used to derive the indoor air RSLs presented in the EPA RSL User's Guide (EPA 2023c).

Carcinogenic and noncarcinogenic soil gas RBCs protective of inhalation through the VI exposure pathway were compiled for the future indoor industrial worker and hypothetical future residential exposure scenarios. Soil gas RBCs are developed based on EPA and ADEC guidance (EPA 2015, 2023e; ADEC 2017c) and are the EPA industrial and residential air RSLs divided by the soil gas-to-indoor air attenuation factor. The attenuation factor used to derive the soil gas RBCs was the generic soil-gas-to-indoor-air attenuation factor of 0.03 per VI guidance (EPA 2015). The equations used to derive the indoor air RSLs presented in the EPA RSL User's Guide (EPA 2023c).

6.2.5 Risk Characterization

Risk characterization combines the results of the previous steps to quantitatively characterize potential risks to human health associated with exposure to COPCs at the exposure area evaluated. The risk characterization summarizes the estimated health risks for potentially complete exposure pathways, expressed as cancer risk and non-cancer HQ estimates for each COPC. The risk characterization was completed following EPA (1989) guidelines.

The RBCs for each medium, exposure scenario, and COPC were used to calculate the cancer risk and non-cancer HQ estimates.

Risks and hazards were calculated for each potentially complete exposure scenario for soil, soil gas, indoor air, and groundwater. Cancer risk and non-cancer hazards were calculated using following equations:

$$\text{Cancer Risk} = \text{EPC} \times \text{TRL} / \text{RBCc}$$

$$\text{HQ} = \text{EPC} \times \text{THQ} / \text{RBCnc}$$

Where:

Cancer Risk = chemical-specific cancer risk estimate (unitless)

EPC = exposure point concentration, refer to Section 6.2.2.2 (mg/kg for soil, µg/m^3 for soil gas and indoor air, µg/L for groundwater)

TRL = target cancer risk level used in the derivation of the RBCc, 1×10^{-6} (or 1E-06) (unitless)

RBCc = RBC (cancer effects) (mg/kg for soil, µg/m^3 for indoor air and soil gas, µg/L for groundwater)

HQ = chemical-specific non-cancer HQ estimate (unitless)

THQ = target HQ used in the derivation of the RBCnc, 1 (unitless)

RBCnc = soil RBC (non-cancer effects) (mg/kg for soil, µg/m^3 for indoor air and soil gas, µg/L for groundwater)

For each receptor, the risk estimates for each medium, COPC, and exposure pathway were summed to generate cumulative risk estimates using the following equations:

Total ELCR estimate in an exposure medium = sum of ELCR estimates for all COPCs in an exposure medium

Total non-cancer HI estimate in an exposure medium = sum of non-cancer HQs for all COPCs in an exposure medium

Cumulative risk was estimated using the following equations:

Cumulative ELCR estimates for an exposure scenario = sum of ELCR estimates in all exposure media evaluated for the exposure scenario

Cumulative non-cancer HI Estimate for an exposure scenario = sum of non-cancer HQs in all exposure media evaluated for the exposure scenario

6.2.5.1 Risk Calculation Results

ELCR and HQ estimates for each receptor, medium, and COPC, including sums across exposure routes for each COPC, were compiled in tables. Cumulative risks and hazards for each exposure scenario include the following pathways:

- **Current indoor industrial worker at Building 986**: indoor air
- **Future indoor industrial worker at Building 986**: mixed-zone soil (ingestion and inhalation) and subslab soil gas to indoor-air (VI)
- **Future indoor industrial worker at future buildings:** mixed-zone soil (ingestion and inhalation) and source area exterior soil gas to indoor air (VI)
- **Future outdoor industrial worker:** mixed-zone soil (ingestion, dermal contact, and inhalation)
- **Future construction worker:** mixed-zone soil (ingestion, dermal contact, and inhalation)
- **Hypothetical future resident:** mixed-zone soil (ingestion, dermal contact, and inhalation), groundwater (tapwater ingestion, dermal contact, and inhalation during household use), and source area exterior soil gas to indoor air (VI)

Considerable uncertainty is associated with ELCR, HQ, and HI estimates. Therefore, EPA recommends that they be rounded to one significant figure for presentation in an HHRA (EPA 1989). Calculation tables show results to two significant figures for individual COPCs for transparency, but the cumulative risks were rounded to one significant figure for presentation and discussion.

When the non-cancer HI for a receptor (as summed across chemicals and media) exceeds 1, HI values were segregated by target organ as recommended by EPA (EPA 1989). COCs are identified when the site-related cumulative cancer risk exceeds 1×10^{-4} or a non-cancer target organ HI exceeds 1. COCs are those COPCs contributing a chemical-specific cancer risk greater than 1×10^{-6} or a HQ greater than 1 for the scenario with the cumulative cancer risk or non-cancer target organ HI exceeds the target levels discussed above.

The summary of risk estimates for each receptor scenario is provided in the following subsections.

6.2.5.2 Current Indoor Industrial Worker Scenario at Building 986

Potential risks for the current industrial exposure scenario at Building 986 are presented in Appendix C (Table C-1.3) for indoor air. For the current indoor industrial worker exposure to indoor air, the ELCR ranges from 7×10^{-7} to 1×10^{-5} and the HQ ranges from 0.02 to 0.4. No COCs were identified in indoor air because the cumulative ELCR was 1×10^{-5} and HI was 0.4, which are below the target threshold value of 1×10^{-4} and 1, respectively (Appendix C, Table C-1.7).

TCE was detected at all four indoor air sampling locations (DP009-IA01 through DP009-IA04), at concentrations ranging from 0.0057 to 0.05 µg/m^3 (all are estimated "J" flagged values). The detected concentrations did not exceed the EPA indoor air TCE threshold value of 2 µg/m^3, which is based in part on the developmental toxicity endpoint of increased incidence of fetal cardiac malformations (EPA 2014b).

6.2.5.3 Future Indoor Industrial Worker Scenario at Building 986

Potential risks for the future indoor industrial exposure scenario at Building 986 are presented in Appendix C Table C-1.6 for mixed-zone soil 0 to 15 feet bgs, and Table C-1.4 for subslab soil gas.

For the future indoor industrial worker exposure to mixed-zone soil from 0 to 15 feet bgs, the ELCR is 1×10^{-6} and the HQ is 0.1, (Appendix C, Table C-1.6).

For the future indoor industrial worker exposure to subslab soil gas through the VI pathway (Appendix C, Table C-1.4), the ELCR is 4×10^{-6} and the HQ is 0.1 based on the results from a single sample (DP009-SS02). No COPCs were identified in other subslab soil gas samples.

No COCs were identified in mixed-zone soil or subslab soil gas at Building 986 because the cumulative ELCR was 4×10^{-6} and HI was 0.1, which are below the target threshold value of 1×10^{-4} and 1, respectively (Appendix C, Table C-1.7).

6.2.5.4 Future Indoor Industrial Worker Scenario at Future Buildings

Potential risks for the future industrial exposure scenario at future buildings are presented in Appendix C Table C-1.6 for mixed-zone soil 0 to 15 feet bgs, and Table C-1.5 for source area exterior soil gas.

For the future indoor industrial worker exposure to mixed-zone soil from 0 to 15 feet bgs, the ELCR is 1×10^{-6} and the HQ is 0.1 (Appendix C, Table C-1.6).

For the future indoor industrial worker exposure to source area exterior soil gas through the VI pathway (Appendix C, Table C-1.5), no COPCs were identified.

No COCs were identified in mixed-zone soil or source area exterior soil gas in future building because the cumulative ELCR was 1×10^{-6} and HI was 0.1, which are below the target threshold value of 1×10^{-4} and 1, respectively (Appendix C, Table C-1.7).

6.2.5.5 Future Outdoor Industrial Worker Scenario

Potential risks for the future outdoor industrial exposure scenario are presented in Appendix C Table C-1.6 for mixed-zone soil 0 to 15 feet bgs.

For the future outdoor industrial worker exposure to mixed-zone soil from 0 to 15 feet bgs, the ELCR is 1×10^{-6} and the HQ is 0.2 (Appendix C, Table C-1.6).

No COCs were identified in mixed-zone soil because the cumulative ELCR and HI are below the target threshold value of 1×10^{-4} and 1, respectively (Appendix C, Table C-1.7).

6.2.5.6 Future Construction Worker Scenario

Potential risks for the future construction worker exposure scenario are presented in Appendix C Table C-1.6 for mixed-zone soil 0 to 15 feet bgs.

For the future construction worker exposure to mixed-zone soil from 0 to 15 feet bgs, the ELCR is 1×10^{-7} and the HQ is 0.8 (Appendix C, Table C-1.6).

No COCs were identified in mixed-zone soil because the cumulative ELCR and HI are below the target threshold value of 1×10^{-4} and 1, respectively (Appendix C, Table C-1.7).

6.2.5.7 Hypothetical Future Residential Scenario

Potential risks for the hypothetical future residential exposure scenario are presented in Appendix C Table C-1.6 for mixed-zone soil 0 to 15 feet bgs, Appendix C Table C-1.2 for groundwater, and Table C-1.5 for source area exterior soil gas.

For hypothetical residential exposure to mixed-zone soil from 0 to 15 feet bgs (Appendix C, Table C-1.6), the ELCR is 1×10^{-5} and the HI is 2. Because the non-cancer HI exceeds the threshold of 1, HI values were segregated by target organ as recommended by EPA (EPA 1989). None of the target-organ-specific HI exceeds the threshold value of 1 (the highest target-organ-specific His were 0.6 based on nervous effects and gastrointestinal tract effects).

For hypothetical residential exposure to groundwater as tapwater (Appendix C, Table C-1.2), the ELCR is 2×10^{-6} and the HI is 0.005.

No COPCs were identified for the hypothetical residential exposure to source area exterior soil gas through the VI pathway (Appendix C, Table C-1.5).

No COCs were identified in mixed-zone soil, groundwater, or source area exterior soil gas because the cumulative ELCR and HI are below the target threshold value of 1×10^{-4} and 1, respectively (Appendix C, Table C-1.7).

6.2.5.8 Summary of Potential Human Health Risks

As shown in Appendix C Table C-1.7), cumulative ELCRs and non-cancer His (in the case of the hypothetical future residential exposure scenario, target-organ-specific His) for the exposure scenarios evaluated in this HHRA did not exceed the cancer risk threshold value of 1×10^{-4} or non-cancer threshold value of 1. Therefore, no COCs were identified in any of the exposure media (mixed-zone soil, groundwater, indoor air, subslab soil gas, and source area exterior soil gas) evaluated in this HHRA.

6.2.6 Uncertainty Discussion

Several uncertainties are inherent in the estimates of potential cancer risks and non-cancer health hazards that are presented in an HHRA. These uncertainties are generally associated with the sampling strategy and site characterization process or the assumptions and models that make up the risk assessment process. The potential effect of the uncertainties on risk estimates (overestimation or underestimation) varies from readily predicted to difficult-to-assess. Possible uncertainties associated with sampling and analysis, exposure assumptions, toxicity values, and risk characterization are discussed in the context of the four-step risk assessment process.

6.2.6.1 Uncertainties Associated with Sampling, Analysis, and COPC Selection

While the quality assurance and QC program used to conduct the sampling and analysis serves to reduce errors, it cannot eliminate all errors associated with sampling and analysis. These sampling and analysis errors could overestimate or underestimate risks.

The number and location of samples at the site are considered adequate for risk assessment purposes. The type of contaminants and exposure concentrations identified are representative of potential releases at the site.

Because the soil samples used in the risk evaluation were generally collected from the most contaminated area, concentrations used to represent the exposure area are likely biased high and may overestimate risks.

Groundwater samples were collected in the source area, and therefore are likely biased high and may overestimate risks. In addition, the use of the MDC as the EPC tends to overestimate risks for the groundwater samples used.

An evaluation of the RL was conducted for 100 percent non-detect analytes in a given exposure medium to assess the potential impacts from elimination of these analytes as COPCs on the overall risk assessment conclusions. Because of the limited access to the historical data, this evaluation was conducted only on the 2018 soil dataset for soil, while the evaluation was conducted on the entire groundwater dataset (that is, the samples collected at AP-3648) used in the HHRA. In addition to RLs, method detection limits (MDLs) of non-detect analytes were compared to the screening levels used in the COPC identification (Section 6.2.1.4) to assess if there are any of these analytes who may be present at the concentrations below their respective reporting but potentially posing unacceptable risk. MDLs were added to the comparison because if a chemical is present between MDL and RL, a concentration is typically presented as a positively detected but estimated value (for example, J-flagged concentration).

The MDL of the following 100 percent non-detect analytes exceed their respective screening level in the 2018 soil data set (one metal, five SVOCs, and four VOCs):

- Metal: thallium
- SVOCs: bis(2-chloroehtyl ether), dibenz(a,h)anthracene, hexachlorobenzene, n-Nitrosodimethlyamine, n-Nitrosodipropylamine
- VOCs: 1,2,3-trichloropropane, 1,2-dibromo-3-chloropropane, ethylene dibromide, and vinyl chloride

The MDL of the following 100 percent non-detect analytes (VOCs) exceeded their respective screening level in the 2014 groundwater dataset:

- 1,1,2,2-PCE
- 1,1,2-TCE
- 1,2,3-trichloropropane
- 1,2-dibromoe-3-chloropropane
- 1,2-DCE
- 1,3-butadine
- bromodichloromethane
- ethylene dibromide
- hexachlorobutadiene
- vinyl chloride

In general, this evaluation found that the MDLs/RLs of amines in soil and chlorinate VOCs both in soil and groundwater are elevated in comparison to their respective screening levels. It is possible that they are present at the site above the screening levels despite their non-detect status; however, it is unlikely that the elimination of these analytes as COPCs significantly impacted the overall risk assessment

conclusions. Based on the known site history, amine compounds have not been used or produced at DP009. Although chlorinated VOCs such as TCE and PCE are detected at the concentrations exceeding their respective screening levels in soil gas samples, they are not detected at elevated concentrations in soil or groundwater. It is acknowledged that vinyl chloride, a breakdown product of TCE, is included in the list of the elevated MDL/RL analytes; however, if it is present in these exposure media at concentrations posing unacceptable level, other groups of chlorinated VOCs would have been detected at elevated concentrations (for example, concentrations exceeding their respective screening levels).

The MDCs of two analytes (aluminum and cobalt) did not exceed their respective JBER background concentrations (U.S. Army 1996a; USGS 1988) and aluminum and cobalt detected in mixed-zone soil are not considered site-related. Therefore, inclusion of aluminum and cobalt in the risk estimates overestimated the risk associated with site-related soil impacts.

Groundwater has not been analyzed for per- and polyfluoroalkyl substances (PFAS); however, DP009 is not a suspected source area for PFAS. Although, aqueous film-forming foam has been used on the base and could have migrated in groundwater from an offsite location, PFAS was not identified above screening levels in groundwater at the nearest potential source area, AT052 Landfill Fire Training Area, which is located approximately 1 mile northeast (crossgradient) of DP009, or the location or the nearest upgradient potential source (SS166P [Fire Station #4]) located approximately 1.5 miles southwest. JBER continues to address the potential for PFAS contamination as part of basewide efforts under a separate contract.

6.2.6.2 Uncertainties Associated with Exposure Assessment

The estimation of exposure requires many assumptions to describe potential exposure situations. There are uncertainties regarding the likelihood of exposure, frequency of contact with contaminated media, the concentration of contaminants at exposure points, and the period of exposure. These assumptions tend to simplify and approximate actual site conditions. In general, they are upper-bound estimates intended to be conservative and yield an overestimate of the true risk or hazard.

Maximum concentrations were used as EPCs in soil because insufficient data were available to calculate a 95 percent upper confidence limit of the mean. Typically, this statistic is used as an EPC representative of an upper bound of the average concentrations for an entire exposure area. Therefore, the use of MDCs is likely to result in EPCs that are biased high and subsequently an overestimation of the calculated risks.

Future soil, groundwater, and soil gas EPCs were assumed to be equal to the concentrations at the time of sampling and analysis. This assumption does not account for fate and transport processes (such as biological degradation or leaching) likely to occur and reduce COPC concentrations in the future. For instance, the volatiles, identified as COPCs in soil gas, will likely be released from soil over time; therefore, risk estimates are likely to be overestimated for both current and future exposure scenarios.

6.2.6.3 Uncertainties Associated with Toxicity Assessment

There are uncertainties associated with the toxicological database used to calculate risks. EPA has outlined some of the sources of uncertainty in the *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, Part A* (Interim Final) (EPA 1989). These sources might include or result from any or all of the following:

- Extrapolation of toxicities from high-to-low doses and from animals to humans
- Species, gender, age, and strain differences in a toxin’s uptake
- Metabolism, organ distribution, and target site susceptibility

- Variability of the human population with respect to diet, environment, activity patterns, and cultural factors

6.2.6.4 Uncertainties Associated with Risk Characterization

In the risk characterization, the assumption is made that the total risk of developing cancer from exposure to site contaminants is the sum of the risk attributed to each individual contaminant. Likewise, the potential for the development of non-cancer adverse effects is the sum of the HQs estimated for exposure to each individual contaminant. This approach is consistent with EPA guidance; however, the approach does not account for the possibility that constituents act synergistically or antagonistically. Therefore, there is uncertainty associated with the estimated cumulative risks for carcinogens and with the His for noncarcinogens. Estimated risks may either be over- or underestimated.

6.3 Contaminants of Concern

No COCs in the potential exposure media at DP009 (mixed-zone soil, groundwater, indoor air, subslab soil gas, or source area exterior soil gas) were identified based on the results of the HHRA. GRO, DRO and/or RRO were detected in some site samples. However, none of the detections were reported above their respective human health-based screening levels.

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7. CONCEPTUAL SITE MODEL

This section presents a summary of the DP009 CSM and conclusions based on the nature and extent of COPCs and the results of the VI CSM for Building 986.

7.1 Nature and Extent of Contamination

No COPCs were detected above screening levels and site-related risks were within range or below acceptable thresholds for all media. Low levels of fuel and VOC-related contamination attributed to the former dry well remain but have not impacted groundwater or resulted in VI risk. It is noted that this facility functioned as a POL laboratory. There are no records of chlorinated solvent use at the facility that would result in a dense non-aqueous phase liquid migration scenario through the soil column. This is confirmed by a lack of significant chlorinated solvent detections from soil collected from the dry well area.

7.2 Building 986 Vapor Intrusion CSM

VI is a process by which VOCs in soil and/or groundwater migrate to indoor air. As discussed in Section 4, various media (soil, groundwater, soil gas, indoor air, and outdoor air) were analyzed for site-specific COPCs as multiple lines of evidence to assist the VI investigation of Building 986. The following text provides a general overview of the VI CSM.

VI CSMs integrate available, relevant, and reliable information into a comprehensive representation of the VI exposure pathway, which consists of three fundamental components:

- **Subsurface vapor sources:** Soil or groundwater contaminated with VOCs.
- **Receptors:** Workers or residents occupying buildings near the vapor source.
- **Vapor migration:** The path that vapors travel between source and receptors. Typically, this involves VOCs moving upward through soil, through a building slab, and into indoor air. Vapors may also move from a vapor source to a building through preferential pathways such as utility lines (for example, sewers, drain lines).

If one or more of these fundamental components is absent or insignificant, the VI pathway will not be a concern, and further assessment is not needed. In addition to the three primary components of the CSM, background sources of VOCs are important because they may affect interpretation of indoor air VOC samples.

The following text describes the detailed data evaluation process to establish the VI CSMs for Building 986. The multiple lines of evidence collected to assess VI migration pathways support evaluation of the vapor sources, the types of receptors, and the current and future potential for the VI pathway.

7.2.1 Subsurface Vapor Sources

The initial step of CSM development is identifying known and suspected vapor sources at a site. Vapor sources include VOCs in the pore space of unsaturated soil or VOCs dissolved in groundwater.

Sampled media at DP009 that provide vapor source data consist of groundwater, soil, exterior soil gas, and subslab soil gas. Groundwater results are presented in Table 2-2 and discussed in Section 4.6.3. Soil and subslab soil gas results are discussed in Sections 4.6.1 and 4.6.4, and are presented in Tables 4-1 and 4-4, respectively. Exterior soil gas results are presented on Figure 4-2 and discussed in Section 4.6.2.

Groundwater: Based on the depth to groundwater (122.5 feet bgs) and available groundwater analytical data (that is, lack of detections of VOCs), groundwater at DP009 is not likely a subsurface vapor source that may contribute to VI at Building 986.

Soil: VOC concentrations in soil samples were relatively low (below screening levels) and therefore not a likely subsurface vapor source. Note that soil data are useful to ascertain the locations of releases but are not suitable for directly assessing VI potential (that is, soil-to-indoor-air VI screening levels are not available) (EPA 2015).

Exterior Soil Gas: VOC concentrations in exterior soil gas samples were below soil-gas-to-indoor-air screening level, except for at DP009-SV03 where field screening results indicated PCE and TCE exceeded soil gas screening levels. However, analytical laboratory results collected from this same location on the same date indicated PCE and TCE soil gas concentrations were below screening levels. The exterior soil gas analytical laboratory data indicate that VOC concentrations are below screening levels and EPA VI screening levels (TCR = 1×10^{-6} and HQ = 0.1) (EPA 2023b).

Subslab Soil Gas: Naphthalene was the only VOC that exceeded EPA VI screening levels (TCR = 1×10^{-6} and HQ = 0.1) in subslab soil gas collected from beneath Building 986 (Table 4-4). A VI screening level exceedance does not equate to unacceptable risk or automatically trigger mitigation or subsurface remediation. However, exceeding a VI screening level generally suggests that further evaluation of the VI pathway is appropriate (EPA 2015).

7.2.2 Receptors

For the purpose of this VI CSM data evaluation, receptors are occupants of buildings within 100 feet of a vapor source. A distance of 100 feet is considered a critical distance that defines an initial lateral inclusion zone for VI assessment (that is, for identifying buildings that are “near” a subsurface vapor source and generally warrant assessment) (EPA 2015). Relevant receptor data for the CSM considers land use, locations of buildings, types of buildings, and demographics. The presence, absence, and types of receptors is an important CSM consideration because a building may be unoccupied or so infrequently occupied that detailed evaluation of VI under current conditions is not warranted and because types of receptors affect how exposures and risks for site-related VOCs are estimated. Building 986 is the only occupied structure at DP009 and is occupied on daily basis for an average of 8 hours a day. The building is used for a testing facility related to various petroleum-based products including diesel and gasoline fuels.

7.2.3 Vapor Migration

There are several basic mechanisms by which VOCs can migrate from the subsurface vapor source to receptors (buildings). Volatilization of VOCs from soil or groundwater vapor sources is the first step in vapor migration from a source to a building. Vapor can migrate through soil pore space and into buildings via diffusion—concentration gradient (high-to-low), advection (pressure gradient), and preferential pathway (for example, floor cracks/penetrations, sewer lines, and utility corridors).

Building 986 construction is slab on-grade with limited slab penetrations for plumbing and electrical conduits. The slab is in good condition with no large cracks. Potential VI pathways into Building 986 may be floor cracks that develop over time and utility penetrations through the slab. A summary of the lines of evidence used to assess the potential for vapor migration into Building 986 is presented in the next subsection.

7.2.4 Vapor Intrusion Data Evaluation

Two rounds of indoor and outdoor air samples were collected—non-heating season (July 2018) and heating season (November 2018)—to assess potential vapor migration. These samples were analyzed for the following target VOCs: 1,2,4-TMB, 1,2-DCE, benzene, naphthalene, TCE, and PCE (Table 4-3). Only two petroleum target VOCs—benzene and naphthalene—were detected above their respective commercial indoor air screening levels. The building inventory and air sampling questionnaire completed prior to the non-heating season indoor air sampling event identified several sources that may contribute to indoor air detections. These sources include petroleum-powered equipment stored inside the building and petroleum-based products present in the facility.

Non-heating Season. All target VOCs were detected in Building 986 indoor air below their respective commercial indoor air screening level, except for naphthalene. Naphthalene was detected above the commercial indoor air screening level (0.36 µg/m^3) at location IA03, at a concentration of 0.72 µg/m^3.

Naphthalene was detected at a concentration of 1.1 µg/m^3 in outdoor air collected simultaneously with indoor air (Section 4.4.3). Other target VOCs detected in outdoor air were detected at concentrations similar (that is, within 2 to 5 times [Kuehster et al. 2004; McAlary et al. 2002; ITRC 2007; Johnston and Gibson 2014]) to those in indoor air (Table 4-3). The HVAC system of Building 986 was designed to pull in outdoor air as makeup; therefore, it is likely that indoor air concentrations of target VOCs detected in indoor air were influenced by outdoor. However, target VOC ratios in outdoor air were different from indoor air ratios, suggesting that there may be another VOC source (for example, indoor background source or subslab soil gas). Target VOC ratios in subslab soil gas were different from indoor air ratios, indicating that target VOCs detected in indoor air are not likely caused by vapor migration from subslab.

Heating Season. All target VOCs were detected in Building 986 indoor air with benzene and naphthalene detected above their respective commercial indoor air screening levels at all four sample locations, including the FD. All target VOCs were detected in outdoor air as well, albeit below indoor air screening levels. Target VOCs were detected in outdoor at concentrations 2 to 5 times less than indoor air concentrations; therefore, measured concentrations of target VOC in indoor air were likely influenced by outdoor air. The detection of target VOCs in outdoor air may likely be related to nearby military activities. Additionally, target VOC ratios in subslab soil gas were different from indoor air ratios, indicating that target VOCs detected in indoor air are not likely caused by vapor migration from subslab.

Background Sources. Numerous chemicals are present in Building 986 during quality testing of fuels used at JBER-R, including motor gas; aviation fuel; jet propulsion fuel, grade 4; arctic-grade diesel; spent reagents; solvents; heavy metals including mercury, lead, silver, and barium; and waste solutions. During indoor air sampling, various petroleum-based products were present, including diesel and gasoline fuels. The presence of these products likely influenced indoor air sample results making it unclear whether VOCs detected in indoor air are related to VI or not. Furthermore, the presence of background sources may explain why ratios of target VOCs in subslab soil gas, indoor air, and outdoor air are not similar. That is, if the VI pathway was complete at Building 986, the target VOC ratios between indoor air and subslab soil gas would be similar. However, if indoor concentrations of target VOCs are influenced by background sources, the target VOC ratios between subslab soil gas and indoor air will not be comparable. The same applies to the target VOC ratios between indoor and outdoor air.

Differential Pressure. The pressure differential between indoor and subslab at Building 986 was measured at two locations to assess whether building conditions were conducive for potential VI. The average indoor versus subslab differential pressures ($P_{subslab} - P_{indoor}$ = differential pressure) at the two measured locations during the non-heating season were -8.35 and -6.08 Pascals, respectively. The average differential pressure measured at one location during the heating season was -2.39 Pascals. These negative differential pressures indicate indoor pressure is greater than subslab pressure, suggesting that the pressure gradient is from indoor to subslab. Therefore, VI is unlikely to occur under these conditions.

Additionally, the reduction in pressure differential during the heating season indicates reduced HVAC activity (that is, less pulled-in outdoor air) from cold exterior temperatures. This reduction in pulled-in outdoor air equates to less dilution air to reduce indoor VOC concentrations resulting from the presence of indoor background sources.

7.2.5 Building 986 Vapor Intrusion CSM Summary

Multiple lines of evidence were evaluated to assess the potential for VI at Building 986 and are summarized in this subsection and Table 7-1.

Even though naphthalene was detected in subslab soil gas above the screening level, there is a lack of a strong VI VOC source at Building 986. This is supported by the fact that VOCs were not detected above screening levels in groundwater, soil, and exterior soil gas, which indicates a lack of a strong VOC source.

Target VOC ratios in subslab soil gas are different from indoor air, indicating that a VOC source other than subslab soil gas is influencing indoor air concentrations of target VOCs.

Background concentrations of target VOCs in outdoor air were similar or greater than indoor air concentrations during the non-heating season and within a 2- to 5-times range of heating season indoor air concentrations, indicating that measured target VOC concentrations in indoor air during the non-heating and heating season were likely influenced by outdoor air. Furthermore, the HVAC system of Building 986 was designed to pull in outdoor air as makeup air.

The presence of petroleum-based products such as petroleum-based fuels during both the non-heating and heating season sampling events likely influence indoor air concentrations of target VOCs. Evidence supporting this is the non-similar ratios of target VOCs in subslab soil gas and indoor air, as well as outdoor and indoor air target VOC ratios.

The recorded pressure differential between indoor and subslab during the non-heating and heating seasons indicates that VI is unlikely caused by the positive pressure gradient from indoor to subslab under operating conditions.

It is unlikely Building 986 has a complete VI pathway that is causing indoor air to exceed screening levels, but has the potential for this in the future based on the multiple lines of evidence summarized in Table 7-1. No unacceptable cumulative cancer risk or non-cancer HI was identified for the current indoor worker. The available evidence indicates it is unlikely that the potential for future VI that would result in indoor air concentrations of target VOCs that would exceed a cancer risk of 1×10^{-4} or an HI of 1. None of the target VOCs in indoor air or subslab soil gas exceed a cancer risk of 1×10^{-4} or an HI of 1.

8. CONCLUSIONS

Data collected in 2018 were determined to be usable for project objectives and satisfied data quality objectives (DQOs) identified in the UFP-QAPP (USAF 2018). Nature and extent of target analytes (petroleum hydrocarbons, VOCs, SVOCs, PAHs, and metals) in soil, groundwater, exterior soil gas, subslab soil gas, and indoor air were adequately characterized to make remedial decisions.

The following DQOs identified in the UFP-QAPP were successfully met:

- DQO 1: Characterize Nature and Sources of Soil Contamination
- DQO 2: Delineate the Extent of Soil Contamination
- DQO 3: Characterize the Nature of Groundwater Contamination
- DQO 4: Perform a VI Investigation
- DQO 5: Perform a Baseline Risk Assessment

No COCs in soil, groundwater, indoor air, subslab soil gas, or source area exterior soil gas were identified in the baseline HHRA (Appendix C, Table C-1.7). As shown in Table C-1.7, cumulative ELCRs for the exposure scenarios evaluated for DP009 do not exceed the upper end of the EPA risk management range of 1×10^{-4} and His do not exceed the regulatory threshold of 1.

The information from multiple lines of evidence evaluation indicates that there is an unlikely complete VI pathway at Building 986 under current conditions that is causing indoor air to exceed screening levels. Additionally, the cumulative indoor air ELCR does not exceed 1×10^{-4} and the non-cancer HI is less than 1. Further, the available evidence indicates it is unlikely that the potential for future VI would result in indoor air concentrations of target VOCs exceeding a cancer risk of 1×10^{-4} or an HI of 1.

The RI is complete, and the site is recommended to move to a No Action Proposed Plan under the CERCLA process.

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Tables

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Table 3-1. Historical Soil Sample Results

Soil Sample Location[a]	Soil Sample Depth (feet bgs)	Year	DRO[e] (mg/kg)	GRO[e] (mg/kg)	1,2,4-TMB[f] (mg/kg)	1,2-DCA[f] (mg/kg)	Benzene[f] (mg/kg)	Naphthalene[f] (mg/kg)	TCE[f] (mg/kg)
Project Screening Levels			**10,250**	**1,400**	**30**	**0.46**	**1.2**	**2**	**0.41**
AP-3621[b]	6.5	1995	**42**	0.22 U	0.0026 R	0.0037 R	0.0027 R	0.004 R	0.003 R
	11.5	1995	**7.3**	**0.79**	0.0022 UJ	0.0032 UJ	0.0023 R	0.0035 UJ	0.0026 UJ
	16.5	1995	**6**	0.19 U	0.0022 UJ	0.0033 UJ	0.0024 UJ	0.0035 UJ	0.0027 UJ
	21.5	1995	**2**	0.2 U	0.0023 U	0.0033 UJ	0.0024 UJ	0.0036U	0.0027 UJ
	31.5	1995	**2.4**	0.2 U	0.0022 UJ	0.0032 UJ	0.0023 UJ	0.0035 UJ	0.0026 UJ
	41.5	1995	**4.9**	0.2 U	0.0023 UJ	0.0033 UJ	0.0024 UJ	0.0036 UJ	0.0027 UJ
	51.5	1995	**3.5**	**0.34**	0.0022 UJ	0.0033 UJ	0.0023 UJ	0.0035 UJ	0.0026 UJ
AP-3622[b]	6.5	1995	**8**	**2**	0.0021 U	0.0033 U	0.0024 U	0.0036 U	0.0027 U
	11.5	1995	**3**	0.18 U	0.002 UJ	0.0031 UJ	0.0022 UJ	0.0033 UJ	0.0025 UJ
	16.5	1995	**2**	0.19 U	0.002 UJ	0.0032 UJ	0.0023 UJ	0.0033 UJ	0.0026 UJ
	21.5	1995	2.2 U	0.19 U	0.002 U	0.0031 UJ	0.0023 UJ	0.0034 UJ	0.0025 UJ
	31.5	1995	2.1 U	0.19 U	0.002 U	0.0031 UJ	0.0023 UJ	0.0034 UJ	0.0025 UJ
	41.5	1995	2.1 U	**0.42**	0.002 U	0.0031 U	0.0022 UJ	0.0033 U	0.0025 U
	51.5	1995	2 U	0.19 U	0.002 U	0.0031 U	0.0023 UJ	0.0034 U	0.0025 U
AP-3628[b]	6.5	1995	36 J	0.47 UJ	NA	NA	NA	NA	NA
	11.5	1995	32 J	0.47 UJ	0.0021 U	0.0031 U	0.0023 U	0.0034 U	0.0025 U
	16.5	1995	15 J	0.45 UJ	0.0022 U	0.0033 U	0.0023 U	0.0034 U	0.0026 U
	21.5	1995	4.9 J	0.48 UJ	0.0023 U	0.0033 U	0.0024 U	0.0036 UJ	0.0027 U
	31.5	1995	4.7 J	0.49 UJ	0.0022 U	0.0033 U	0.0024 U	0.0035 UJ	0.0027 U
	41.5	1995	6.5 J	0.47 UJ	0.0022 U	0.0033 U	0.0024 U	0.0035 UJ	0.0028 U
	51.5	1995	4.5 J	0.45 UJ	0.0022 U	0.0032 U	0.0023 U	0.0034 UJ	0.0028 U
	61.5	1995	**140**	1.7 U	0.0399 U	0.0643 U	0.0238 U	0.0061 U	0.0371 U
CB-11[c]	10	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	15	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	20	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	30	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	40	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	50	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
CB-12[c]	10	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	15	2003	**96.5**	**16.4**	NA	NA	**0.0296**	**0.009**	NA
	20	2003	22.0 U	1.53 U	NA	NA	**0.01**	0.005 U	NA
	30	2003	22.0 U	1.53 U	NA	NA	**0.015**	0.005 U	NA
	40	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	50	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA

Table 3-1. Historical Soil Sample Results

Soil Sample Location[a]	Soil Sample Depth (feet bgs)	Year	DRO[e] (mg/kg)	GRO[e] (mg/kg)	1,2,4-TMB[f] (mg/kg)	1,2-DCA[f] (mg/kg)	Benzene[f] (mg/kg)	Naphthalene[f] (mg/kg)	TCE[f] (mg/kg)
CB-13[c]	12	2003	**27.4**	1.53 U	NA	NA	**0.0375**	0.005 U	NA
	15	2003	**746**	1.53 U	NA	NA	**0.043**	0.005 U	NA
	20	2003	**241**	**28.3**	NA	NA	**0.0633**	**0.067**	NA
	30	2003	22.0 U	1.53 U	NA	NA	**0.0276**	0.005 U	NA
	40	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	50	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
CB-14[c]	10	2003	**318**	1.53 U	NA	NA	**0.0202**	0.005 U	NA
	15	2003	22.0 U	**1.94**	NA	NA	**0.0259**	**0.006**	NA
	20	2003	**296**	**6.73**	NA	NA	**0.0292**	0.005 U	NA
	30	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	40	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	50	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
CB-15[c]	10	2003	22.0 U	1.53 U	NA	NA	**0.0221**	0.005 U	NA
	15	2003	**40.7**	**16.1**	NA	NA	**0.0862**	**0.017**	NA
	20	2003	**218**	**14.1**	NA	NA	**0.0792**	**0.035**	NA
	30	2003	22.0 U	1.53 U	NA	NA	**0.0432**	0.005 U	NA
	40	2003	22.0 U	1.53 U	NA	NA	**0.0204**	0.005 U	NA
	50	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
	82	2003	22.0 U	1.53 U	NA	NA	0.008 U	0.005 U	NA
DP009-SB01[d]	0-5	2013	**38.2**	0.489 U	0.0122 U	0.0122 U	**0.039**	0.0122 U	0.0122 U
	5-10	2013	**110**	**26.8 J**	**0.0162 J**	0.0201 U	0.0201 U	**0.0202 J**	0.0201 U
	10-15	2013	**107**	NA	NA	0.0113 U	**0.145 J**	NA	**0.0248**
	10-15	2013	NA	**108 J**	**0.583 J**	NA	NA	**0.121**	NA
	15-20	2013	**315**	**339**	**0.443**	0.0206 U	0.0206 U	**0.106**	0.0206 U
	20-25	2013	**20.6 J**	**18.7**	**0.0264**	0.00987 U	**0.46**	**0.0152 J**	0.00987 U
	25-30	2013	**5.26 B**	**2.31**	**0.121**	0.0093 U	**0.172**	**0.0285**	0.0093 U
	30-35	2013	**41.6**	**2.64**	0.00816 U	**0.00747 J**	**0.022**	0.00816 U	0.00816 U
	35-40	2013	**3.57 B**	**0.794 J**	0.0104 U	0.0104 U	**0.0217**	0.0104 U	0.0104 U
DP009-SB02[d]	0-5	2013	**11.3 B**	**0.632 J**	0.0146 U	0.0146 U	**0.0561**	**0.00309**	0.0146 U
	5-10	2013	**72.1**	**19.4**	0.0131 U	0.0131 U	**0.0139 J**	0.0131 U	0.0131 U
	10-15	2013	**39.4**	**6.18**	**0.0217**	0.00991 U	**0.0353**	**0.0295**	**0.00802 J**
	15-20	2013	**413**	**17.6 J**	**1.21**	0.0101 U	**0.0924**	**0.786**	0.0101 U
	20-25	2013	**3.14 B**	**0.768 J**	0.00949 U	**0.00888 J**	**0.0253**	0.00949 U	**0.028**
	30-35	2013	**5.4 B**	**0.335 J**	0.00924 U	**0.00891 J**	**0.0205**	0.00924 U	0.00924 U
	35-40	2013	**2.67 B**	**0.213 J**	0.00982 U	**0.0105 J**	**0.0206**	0.00982 U	0.00982 U

Table 3-1. Historical Soil Sample Results

Soil Sample Location[a]	Soil Sample Depth (feet bgs)	Year	DRO[e] (mg/kg)	GRO[e] (mg/kg)	1,2,4-TMB[f] (mg/kg)	1,2-DCA[f] (mg/kg)	Benzene[f] (mg/kg)	Naphthalene[f] (mg/kg)	TCE[f] (mg/kg)

[a] Historical analytical soil data for 1995 soil boring AP-3618 was not available. However, the Operable Unit A Remedial Investigation Report[b] text indicated that mercury was the only compound detected at AP-3618 at concentrations of **2.2 mg/kg** at 5 feet bgs and 0.96 mg/kg at 10 feet bgs. The concentration of 2.2 mg/kg is greater than the project screening level of 1.1 mg/kg.

[b] U.S. Army 1996a

[c] U.S. Army 2004

[d] USAF 2014a

[e] ADEC Table C Groundwater Cleanup Levels, February 2023

[f] Residential Soil Regional Screening Level (hazard quotient = 0.1 and target cancer risk = 1E-6) (EPA 2023b)

Notes:

Bold indicates the analyte was detected.

ADEC = Alaska Department of Environmental Conservation

B = The analyte was detected in the associated method and/or calibration blank.

bgs = below ground surface

DCA = dichloroethane

DRO = diesel-range organics

GRO = gasoline-range organics

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

mg/kg = milligram(s) per kilogram

NA = not applicable/criteria not established

TCE = trichloroethylene

TMB = trimethylbenzene

U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.

UJ = The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

Table 3-2. Summary of Historical Groundwater Sample Results

Groundwater Monitoring Well	Sample Depth (feet bgs)	Sample Year	DRO[c] (µg/L)	GRO[c] (µg/L)	1,2,4-TMB[d] (µg/L)	1,2-DCA[d] (µg/L)	Benzene[d] (µg/L)	Naphthalene[d] (µg/L)	TCE[e] (µg/L)	Chloroform[d] (µg/L)
Project Screening Levels			**1500**	**2200**	**5.6**	**0.17**	**0.46**	**0.12**	**0.26**	**0.22**
AP-3648[a]	122.5	2013	**35.3 B**	50 U	0.25 U	0.25 U	0.25 U	**0.0693 B**	0.25 U	**0.52**
	NA	1995	100 U	50 U	NA	NA	NA	NA	NA	**11.8 B**
AP-3649[b]	NA	1995	63 U	10 U	0.092 U	0.5 U	0.17 U	0.39 U	0.26 U	NA
AP-3650[b]	NA	1995	63 U	10 U	0.092 U	0.5 U	0.17 U	0.39 U	0.26 U	NA
AP-3651[b]	NA	1995	63 U	10 U	0.092 U	0.5 U	0.17 U	0.39 U	0.26 U	NA
AP-3652[b]	NA	1995	63 U	10 U	0.092 U	0.5 U	0.17 U	0.39 U	0.26 U	NA

[a] USAF 2014a

[b] U.S. Army 1996a

[c] ADEC Table C Groundwater Cleanup Levels (ADEC 2023)

[d] Tapwater Regional Screening Level (hazard quotient = 0.1 and total cancer risk = 1E-6) (EPA 2023b)

[e] EPA Region 10 Office of Environmental Assessment Recommendation (EPA 2012)

Notes:

SHADING indicates the analyte was detected above its project screening level.

Bold indicates the analyte was detected.

µg/L = microgram(s) per liter

ADEC = Alaska Department of Environmental Conservation

B = The analyte was detected in the associated method and/or calibration blank.

bgs = below ground surface

DCA = dichloroethane

DRO = diesel-range organics

EPA = U.S. Environmental Protection Agency

GRO = gasoline-range organics

NA = not available

TCE = trichloroethylene

TMB = trimethylbenzene

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

Table 3-3. Survey Coordinates

Location	Grid Northing (feet)	Grid Easting (feet)	Elevation (feet)	Date/Time	Survey Method	Survey Equipment	Spatial Reference	Relative Hz Precision (feet)	Relative Vrt Precision (feet)
DP009 SB03	2654068.268	1690105.615	300.00	7/26/18 12:48 PM	Hz and Vrt: RTK GPS	Topcon GR5 GPS	Hz: NAD83 (2011), State Plane Zone 4, Feet; Vrt: NAVD88	±0.10	±0.10
DP009 SB04	2654031.307	1690149.802	299.80	7/26/18 12:43 PM					
DP009 SB05	2653991.067	1690142.730	298.70	7/26/18 12:44 PM					
DP009 SB06	2654011.713	1690112.087	299.90	7/26/18 12:45 PM					
DP009 SB07	2653984.640	1690078.229	297.80	7/26/18 12:46 PM					
DP009 SB08	2654024.436	1690077.868	299.50	7/26/18 12:47 PM					

Notes:
GR5 GPS = a Topcon global positioning system
Hz = horizontal
NAD## = North American Datum [year]
RTK GPS = real-time kinematic global positioning system
Vrt = vertical

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Table 3-4. 2018 Soil and Vapor Intrusion Sample Summary

Location	Sample ID	Matrix	Sample Type	Depth (feet)	Collection Date	AK101	AK102/103	SW8260B	SW8260B-Low	SW8270	SW8270C-SIM	SW7470A/SW7471B	TO-15	TO-15 SIM
Vapor Intrusion Non-Heating Season Sampling Event														
DP009-IA01	18Q3DP009-IA01-IA-0	IA	N	N/A	25-Jul-18									X
DP009-IA02	18Q3DP009-IA02-IA-0	IA	N	N/A	25-Jul-18									X
DP009-IA03	18Q3DP009-IA03-IA-0	IA	N	N/A	25-Jul-18									X
DP009-IA04	18Q3DP009-IA04-IA-0	IA	N	N/A	25-Jul-18									X
	18Q3DP009-IA04-IA-1	IA	FD	N/A	25-Jul-18									X
DP009-OA01	18Q3DP009-OA01-OA-0	OA	N	N/A	25-Jul-18									X
DP009-SS01	18Q3DP009-SS01-SS-0	SS	N	N/A	24-Jul-18								X	
DP009-SS02	18Q3DP009-SS02-SS-0	SS	N	N/A	24-Jul-18								X	
Vapor Intrusion Heating Season Sampling Event														
DP009-IA01	18Q4DP009-IA01-IA-0	IA	N	N/A	06-Nov-18									X
DP009-IA02	18Q4DP009-IA02-IA-0	IA	N	N/A	06-Nov-18									X
DP009-IA03	18Q4DP009-IA03-IA-0	IA	N	N/A	06-Nov-18									X
DP009-IA04	18Q4DP009-IA04-IA-0	IA	N	N/A	06-Nov-18									X
	18Q4DP009-IA04-IA-1	IA	FD	N/A	06-Nov-18									X
DP009-OA01	18Q4DP009-OA01-OA-0	OA	N	N/A	06-Nov-18									X
DP009-SS01	18Q4DP009-SS01-SS-0	SS	N	N/A	05-Nov-18								X	
DP009-SS02	18Q4DP009-SS02-SS-0	SS	N	N/A	05-Nov-18								X	
Subsurface Soil Sampling														
DP009-SB03	18Q2DP009-SB0301-SO-0	Soil	N	28-30	23-Jun-18	X	X	X	X	X	X	X		
	18Q2DP009-SB0302-SO-0	Soil	N	48-50	23-Jun-18	X	X	X	X	X	X	X		
DP009-SB04	18Q2DP009-SB0401-SO-0	Soil	N	23-25	21-Jun-18	X	X	X	X	X	X	X		
	18Q2DP009-SB0401-SO-1	Soil	FD	23-25	21-Jun-18	X	X	X	X	X	X	X		
	18Q2DP009-SB0402-SO-0	Soil	N	48-50	21-Jun-18	X	X	X	X	X	X	X		
DP009-SB05	18Q2DP009-SB0501-SO-0	Soil	N	23-25	22-Jun-18	X	X	X	X	X	X	X		
	18Q2DP009-SB0502-SO-0	Soil	N	48-50	22-Jun-18	X	X	X	X	X	X	X		
DP009-SB06	18Q2DP009-SB0601-SO-0	Soil	N	13-15	23-Jun-18	X	X	X	X	X	X	X		
	18Q2DP009-SB0601-SO-1	Soil	FD	13-15	23-Jun-18	X	X	X	X	X	X	X		
	18Q2DP009-SB0602-SO-0	Soil	N	48-50	23-Jun-18	X	X	X	X	X	X	X		
DP009-SB07	18Q2DP009-SB0701-SO-0	Soil	N	23-25	22-Jun-18	X	X	X	X	X	X	X		
	18Q2DP009-SB0702-SO-0	Soil	N	48-50	22-Jun-18	X	X	X	X	X	X	X		
DP009-SB08	18Q2DP009-SB0801-SO-0	Soil	N	23-25	21-Jun-18	X	X	X	X	X	X	X		
	18Q2DP009-SB0802-SO-0	Soil	N	48-50	21-Jun-18	X	X	X	X	X	X	X		

Notes:

AK101 = gasoline-range organics
AK102/103 = diesel-range organics/residual-range organics
IA = indoor air
FD = field duplicate
N = normal
N/A = not applicable
OA = outdoor air
RCRA = Resource Conservation and Recovery Act
SIM = selective ion monitoring
SS = subslab soil gas
SW8260B = Volatile organic compound
SW8260B-Low = Low-level volatile organic compound
SW8270C = Semivolatile organic compounds
SW8270C-SIM = Polynuclear aromatic hydrocarbons
SW7470A/SW7471B = RCRA Metals (including nickel and vanadium)
TO-15/TO-15 SIM = limited volatile organic compounds

Table 4-1. 2018 Soil Results

	Project Screening Level (PSL)	Location	DP009-SB03		DP009-SB04			DP009-SB05	
		Sample ID	18Q2DP009-SB0301-SO-0	18Q2DP009-SB0302-SO-0	18Q2DP009-SB0401-SO-0	18Q2DP009-SB0401-SO-1	18Q2DP009-SB0402-SO-0	18Q2DP009-SB0501-SO-0	18Q2DP009-SB0502-SO-0
		Sample Depth (ft)	28 - 30	48 - 50	23 - 25	23 - 25	48 - 50	23 - 25	48 - 60
		Sample Date	6/23/2018	6/23/2018	6/21/2018	6/21/2018	6/21/2018	6/22/2018	6/22/2018
Analyte		PSL Source							
Hydrocarbons (mg/kg)									
DRO	10250	A	5.2 U	5.3 U	5.3 U	5.2 U	**3.6 J**	5.2 U	5.2 U
GRO	1400	A	**0.27 J**	0.53 U	0.53 U	0.52 U	0.53 U	0.52 U	0.52 U
RRO	10000	A	10 U	11 U	11 U	10 U	**5.4 J**	10 U	**5.1 J**
Metals (mg/kg)									
Aluminum	7700	B	**13900**	**13000**	**14100**	**14400**	**12700**	**15800**	**14600**
Antimony	3.1	B	**0.167 J**	**0.169 J**	**0.211 J**	**0.18 J**	**0.208 J**	**0.387 J**	**0.19 J**
Arsenic	0.68	B	**6.64**	**5.02**	**6.41**	**5.94**	**4.88**	**7.91**	**5.79**
Barium	1500	B	**41.9**	**59.3**	**33.4**	**37.7**	**50.9**	**49.2 J**	**58.5**
Beryllium	16	B	**0.323 J**	**0.257 J**	**0.326 J**	**0.359 J**	**0.291 J**	**0.418 J**	**0.359 J**
Cadmium	7.1	B	**0.215 J**	**0.268 J**	**0.207 J**	**0.248 J**	**0.207 J**	**0.282 J**	**0.226 J**
Calcium	--		**5780**	**7070**	**5330**	**6750**	**8910**	**7140**	**12500**
Chromium	12000	B	**31.2**	**25.3**	**35.2**	**35**	**29.8**	**41 J**	**39**
Cobalt	2.3	B	**11**	**10.4**	**11.7**	**11.6**	**9.93**	**11.7 J**	**10.9**
Copper	310	B	**23**	**22.4**	**25.4**	**22.7**	**24.5**	**32.4 J**	**21.8**
Iron	5500	B	**28700**	**25500**	**29400**	**28600**	**24800**	**33000**	**30200**
Lead	400	B	**5.6**	**4.46**	**6.35**	**5.5**	**4.38**	**6.05**	**4.64**
Magnesium	--		**9500**	**8280**	**13300**	**12000**	**8300**	**11000 J**	**9400**
Manganese	180	B	**635**	**989**	**552**	**551**	**499**	**613**	**501**
Mercury	1.1	B	**0.0221 J**	**0.0419 J**	**0.0347 J**	**0.0369 J**	**0.0647 J**	**0.065 J**	**0.0413 J**
Molybdenum	39	B	**0.363 J**	**0.4 J**	**0.309 J**	**0.393 J**	**0.914**	**0.438 J**	**0.511 J**
Nickel	150	B	**34.3**	**31**	**68.7**	**53.5**	**28.2**	**42.7**	**30.6**
Potassium	--		**800**	**756**	**649**	**741**	**779**	**814 J**	**714**
Selenium	39	B	**0.131 J**	**0.0753 J**	**0.119 J**	**0.141 J**	**0.0759 J**	**0.171 J**	**0.0986 J**
Silver	39	B	**0.0875 J**	**0.0634 J**	**0.0802 J**	**0.0939 J**	**0.0577 J**	**0.0934 J**	**0.0716 J**
Sodium	--		**115**	**140**	**87.3 J**	**109**	**184**	**129**	**135**
Thallium	0.078	B	0.103 U	0.106 U	0.103 U	0.104 U	0.102 U	0.102 U	0.103 U
Vanadium	39	B	**53.4**	**51.4**	**49.1**	**50.7**	**51.1**	**61.2**	**62**
Zinc	2300	B	**56.7**	**58.8**	**57.7**	**58.7**	**52.2**	**64.5**	**56.4**
SVOCs (mg/kg)									
1-Methylnaphthalene	18	B	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
2,4,5-Trichlorophenol	630	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2,4,6-Trichlorophenol	6.3	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2,4-Dichlorophenol	19	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2,4-Dimethylphenol	130	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2,4-Dinitrophenol	13	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2,4-Dinitrotoluene	1.7	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2,6-Dinitrotoluene	0.36	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2-Chloronaphthalene	480	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2-Chlorophenol	39	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2-Methylnaphthalene	24	B	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
2-Methylphenol	320	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2-Nitroaniline	63	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2-Nitrophenol	--		0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
3,3-Dichlorobenzidine	1.2	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
3- & 4-Methylphenol	130	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
3-Nitroaniline	--		0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
4,6-Dinitro-2-Methylphenol	0.51	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
4-Bromophenyl Phenyl Ether	--		0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
4-Chloro-3-Methylphenol	630	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
4-Chloroaniline	2.7	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
4-Chlorophenyl Phenyl Ether	--		0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
4-Nitroaniline	25	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
4-Nitrophenol	--		0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Acenaphthene	360	B	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U

Table 4-1. 2018 Soil Results

Analyte	Project Screening Level (PSL)	Location	DP009-SB06			DP009-SB07		DP009-SB08	
		Sample ID	18Q2DP009-SB0601-SO-0	18Q2DP009-SB0601-SO-1	18Q2DP009-SB0602-SO-0	18Q2DP009-SB0701-SO-0	18Q2DP009-SB0702-SO-0	18Q2DP009-SB0801-SO-0	18Q2DP009-SB0802-SO-0
		Sample Depth (ft)	13 - 15	13 - 15	48 - 50	23 - 25	48 - 50	23 - 25	48 - 64
		Sample Date	6/23/2018	6/23/2018	6/23/2018	6/22/2018	6/22/2018	6/21/2018	6/21/2018
		PSL Source							
Hydrocarbons (mg/kg)									
DRO	10250	A	**440**	**520**	**4.4 J**	5.3 U	5.2 U	**1000**	5.3 U
GRO	1400	A	**19**	**26**	0.53 U	0.53 U	0.52 U	**200**	0.53 U
RRO	10000	A	**450**	**520**	11 U	11 U	10 U	**80**	11 U
Metals (mg/kg)									
Aluminum	7700	B	**14500**	**13000**	**12500**	**14200**	**13700**	**13200**	**12000**
Antimony	3.1	B	**0.28 J**	**0.318 J**	**0.257 J**	**0.302 J**	**0.214 J**	**0.233 J**	**0.134 J**
Arsenic	0.68	B	**6.76**	**7.67**	**7.65**	**8.32**	**5.57**	**5.39**	**5.21**
Barium	1500	B	**48.5**	**58.9**	**44**	**51.2**	**62.6**	**60.3**	**47.6**
Beryllium	16	B	**0.272 J**	**0.294 J**	**0.304 J**	**0.344 J**	**0.304 J**	**0.321 J**	**0.269 J**
Cadmium	7.1	B	**0.278 J**	**0.245 J**	**0.226 J**	**0.232 J**	**0.236 J**	**0.249 J**	**0.194 J**
Calcium	--		**5660**	**4860**	**8370**	**6620**	**8390**	**6430**	**7510**
Chromium	12000	B	**227**	**302**	**26.7**	**33.9**	**30.4**	**30.1**	**32.8**
Cobalt	2.3	B	**7.79**	**7.12**	**10**	**10.5**	**10.3**	**10.8**	**8.3**
Copper	310	B	**34.4**	**36.2**	**27.9**	**38.3**	**26**	**23**	**20.6**
Iron	5500	B	**30100**	**25800**	**27700**	**28600**	**29800**	**25700**	**23300**
Lead	400	B	**16.5**	**15**	**5.48**	**4.51**	**4.8**	**5.61**	**3.98**
Magnesium	--		**8640**	**7040**	**8000**	**9240**	**9250**	**9030**	**7620**
Manganese	180	B	**376**	**315**	**502**	**503**	**521**	**469**	**467**
Mercury	1.1	B	**1.14**	**1.11**	**0.0521 J**	**0.0716 J**	**0.0519 J**	**0.0678 J**	**0.0304 J**
Molybdenum	39	B	**0.422 J**	**0.517 J**	**0.339 J**	**0.68**	**0.504 J**	**0.478 J**	**0.485 J**
Nickel	150	B	**34**	**31.3**	**29.8**	**33.1**	**30.9**	**34.1**	**24**
Potassium	--		**745**	**852**	**658**	**991**	**803**	**813**	**644**
Selenium	39	B	**0.11 J**	**0.0967 J**	**0.0988 J**	**0.12 J**	**0.0892 J**	**0.0915 J**	**0.0779 J**
Silver	39	B	**0.189 J**	**0.474 J**	**0.0702 J**	**0.125 J**	**0.0677 J**	**0.0717 J**	**0.0563 J**
Sodium	--		**116**	**112**	**124**	**190**	**129**	**105 J**	**140**
Thallium	0.078	B	0.106 U	0.105 U	0.101 U	0.103 U	0.101 U	0.107 U	0.104 U
Vanadium	39	B	**56.3**	**50.6**	**48**	**53**	**59.8**	**54.4**	**49.4**
Zinc	2300	B	**55.6**	**57.1**	**59.6**	**56**	**60**	**60.3**	**50**
SVOCs (mg/kg)									
1-Methylnaphthalene	18	B	**0.022**	**0.014 J**	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
2,4,5-Trichlorophenol	630	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2,4,6-Trichlorophenol	6.3	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2,4-Dichlorophenol	19	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2,4-Dimethylphenol	130	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2,4-Dinitrophenol	13	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2,4-Dinitrotoluene	1.7	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2,6-Dinitrotoluene	0.36	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2-Chloronaphthalene	480	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2-Chlorophenol	39	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2-Methylnaphthalene	24	B	**0.031**	**0.019 J**	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
2-Methylphenol	320	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2-Nitroaniline	63	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2-Nitrophenol	--		0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
3,3-Dichlorobenzidine	1.2	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
3- & 4-Methylphenol	130	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
3-Nitroaniline	--		0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,6-Dinitro-2-Methylphenol	0.51	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4-Bromophenyl Phenyl Ether	--		0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4-Chloro-3-Methylphenol	630	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4-Chloroaniline	2.7	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4-Chlorophenyl Phenyl Ether	--		0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4-Nitroaniline	25	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4-Nitrophenol	--		0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Acenaphthene	360	B	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U

Table 4-1. 2018 Soil Results

	Project Screening Level (PSL)	Location	DP009-SB03		DP009-SB04			DP009-SB05	
		Sample ID	18Q2DP009-SB0301-SO-0	18Q2DP009-SB0302-SO-0	18Q2DP009-SB0401-SO-0	18Q2DP009-SB0401-SO-1	18Q2DP009-SB0402-SO-0	18Q2DP009-SB0501-SO-0	18Q2DP009-SB0502-SO-0
		Sample Depth (ft)	28 - 30	48 - 50	23 - 25	23 - 25	48 - 50	23 - 25	48 - 60
		Sample Date	6/23/2018	6/23/2018	6/21/2018	6/21/2018	6/21/2018	6/22/2018	6/22/2018
Analyte		PSL Source							
Acenaphthylene	230	C	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Anthracene	1800	B	0.0026 U	0.0027 U	**0.003 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Azobenzene	5.6	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Benzo(a)anthracene	1.1	B	0.0052 U	**0.0035 J**	**0.0035 J**	0.0052 U	0.0053 U	0.0052 U	0.0052 U
Benzo(a)pyrene	0.11	B	0.0026 U	**0.0027 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Benzo(b)fluoranthene	1.1	B	0.0026 U	**0.0034 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Benzo(g,h,i)perylene	230	C	0.0026 U	**0.0026 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Benzo(k)fluoranthene	11	B	0.0026 U	**0.003 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Benzoic acid	25000	B	0.69 U	0.71 U	0.7 U	0.7 U	0.7 U	0.69 U	0.69 U
Benzyl alcohol	630	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
bis(2-Chloroethoxy)methane	19	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
bis(2-Chloroethyl)ether	0.23	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
bis(2-Chloroisopropyl)ether	310	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
bis(2-Ethylhexyl)phthalate	39	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Butyl Benzyl Phthalate	290	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Carbazole	--		0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Chrysene	110	B	0.0052 U	**0.0036 J**	**0.0029 J**	0.0052 U	0.0053 U	0.0052 U	0.0052 U
di-n-Butyl Phthalate	630	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
di-n-Octyl Phthalate	63	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Dibenz(a,h)anthracene	0.11	B	0.0026 U	**0.0022 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Dibenzofuran	7.8	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Diethyl phthalate	5100	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Dimethyl phthalate	6600	C	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Fluoranthene	240	B	0.0026 U	**0.0026 J**	**0.0032 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Fluorene	240	B	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Hexachlorobenzene	0.078	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Hexachloroethane	1.8	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Indeno(1,2,3-cd)pyrene	1.1	B	0.0026 U	**0.0023 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Isophorone	570	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
N-Nitrosodimethylamine (NDMA)	0.002	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
N-Nitrosodiphenylamine	110	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
N-Nitrosodipropylamine	0.078	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Nitrobenzene	5.1	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Pentachlorophenol	1	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Phenanthrene	230	C	0.0026 U	0.0027 U	**0.003 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U
Phenol	1900	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Pyrene	180	B	0.0026 U	**0.0028 J**	**0.0038 J**	0.0026 U	0.0026 U	0.0026 U	0.0026 U
VOCs (mg/kg)									
1,1,1,2-Tetrachloroethane	2	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,1,1-Trichloroethane	810	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,1,2,2-Tetrachloroethane	0.6	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,1,2-Trichloroethane	0.15	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,1,2-Trichlorotrifluoroethane	670	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
1,1-Dichloroethane	3.6	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,1-Dichloroethene	23	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,1-Dichloropropene	1.8	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,2,3-Trichlorobenzene	6.3	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
1,2,3-Trichloropropane	0.0051	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
1,2,4-Trichlorobenzene	5.8	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
1,2,4-Trimethylbenzene	30	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
1,2-Dibromo-3-Chloropropane	0.0053	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
1,2-Dichlorobenzene	180	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,2-Dichloroethane	0.46	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,2-Dichloropropane	1.6	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,3,5-Trimethylbenzene	27	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U

Table 4-1. 2018 Soil Results

	Project Screening Level (PSL)	Location	DP009-SB06			DP009-SB07		DP009-SB08	
		Sample ID	18Q2DP009-SB0601-SO-0	18Q2DP009-SB0601-SO-1	18Q2DP009-SB0602-SO-0	18Q2DP009-SB0701-SO-0	18Q2DP009-SB0702-SO-0	18Q2DP009-SB0801-SO-0	18Q2DP009-SB0802-SO-0
		Sample Depth (ft)	13 - 15	13 - 15	48 - 50	23 - 25	48 - 50	23 - 25	48 - 64
		Sample Date	6/23/2018	6/23/2018	6/23/2018	6/22/2018	6/22/2018	6/21/2018	6/21/2018
Analyte		PSL Source							
Acenaphthylene	230	C	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Anthracene	1800	B	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Azobenzene	5.6	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Benzo(a)anthracene	1.1	B	0.011 U	0.011 U	0.0053 U	0.0053 U	0.0052 U	0.0055 U	0.0053 U
Benzo(a)pyrene	0.11	B	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Benzo(b)fluoranthene	1.1	B	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Benzo(g,h,i)perylene	230	C	**0.0031 J**	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Benzo(k)fluoranthene	11	B	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Benzoic acid	25000	B	1.4 U	1.4 U	0.7 U	0.71 U	0.7 U	0.73 U	0.7 U
Benzyl alcohol	630	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
bis(2-Chloroethoxy)methane	19	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
bis(2-Chloroethyl)ether	0.23	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
bis(2-Chloroisopropyl)ether	310	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
bis(2-Ethylhexyl)phthalate	39	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Butyl Benzyl Phthalate	290	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Carbazole	--		0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Chrysene	110	B	0.011 U	0.011 U	0.0053 U	0.0053 U	0.0052 U	0.0055 U	0.0053 U
di-n-Butyl Phthalate	630	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
di-n-Octyl Phthalate	63	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Dibenz(a,h)anthracene	0.11	B	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Dibenzofuran	7.8	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Diethyl phthalate	5100	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Dimethyl phthalate	6600	C	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Fluoranthene	240	B	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Fluorene	240	B	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Hexachlorobenzene	0.078	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Hexachloroethane	1.8	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Indeno(1,2,3-cd)pyrene	1.1	B	0.0054 U	0.0054 U	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Isophorone	570	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
N-Nitrosodimethylamine (NDMA)	0.002	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
N-Nitrosodiphenylamine	110	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
N-Nitrosodipropylamine	0.078	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Nitrobenzene	5.1	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Pentachlorophenol	1	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Phenanthrene	230	C	**0.012 J**	**0.011 J**	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
Phenol	1900	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Pyrene	180	B	**0.0049 J**	**0.0049 J**	0.0026 U	0.0027 U	0.0026 U	0.0027 U	0.0026 U
VOCs (mg/kg)									
1,1,1,2-Tetrachloroethane	2	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
1,1,1-Trichloroethane	810	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
1,1,2,2-Tetrachloroethane	0.6	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.061 U	0.0011 U
1,1,2-Trichloroethane	0.15	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
1,1,2-Trichlorotrifluoroethane	670	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
1,1-Dichloroethane	3.6	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
1,1-Dichloroethene	23	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
1,1-Dichloropropene	1.8	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
1,2,3-Trichlorobenzene	6.3	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.12 U	0.0021 U
1,2,3-Trichloropropane	0.0051	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.12 U	0.0021 U
1,2,4-Trichlorobenzene	5.8	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.12 U	0.0021 U
1,2,4-Trimethylbenzene	30	B	**0.001 J**	**0.012 J**	0.0025 U	0.0021 U	0.0022 U	0.12 U	0.0021 U
1,2-Dibromo-3-Chloropropane	0.0053	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.12 U	0.0021 U
1,2-Dichlorobenzene	180	B	0.0013 U	**0.0017 J**	0.0012 U	0.001 U	0.0011 U	0.061 U	0.0011 U
1,2-Dichloroethane	0.46	B	**0.00078 J**	**0.00095 J**	**0.034 J**	0.001 U	**0.037 J**	0.0013 U	0.0011 U
1,2-Dichloropropane	1.6	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
1,3,5-Trimethylbenzene	27	B	0.11 U	**0.0073 J**	0.0025 U	0.0021 U	0.0022 U	**0.0059 J**	0.0021 U

Table 4-1. 2018 Soil Results

	Project Screening Level (PSL)	Location	DP009-SB03		DP009-SB04			DP009-SB05	
		Sample ID	18Q2DP009-SB0301-SO-0	18Q2DP009-SB0302-SO-0	18Q2DP009-SB0401-SO-0	18Q2DP009-SB0401-SO-1	18Q2DP009-SB0402-SO-0	18Q2DP009-SB0501-SO-0	18Q2DP009-SB0502-SO-0
		Sample Depth (ft)	28 - 30	48 - 50	23 - 25	23 - 25	48 - 50	23 - 25	48 - 60
		Sample Date	6/23/2018	6/23/2018	6/21/2018	6/21/2018	6/21/2018	6/22/2018	6/22/2018
Analyte		PSL Source							
1,3-Butadiene	0.058	B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,3-Dichlorobenzene	6.2	C	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,3-Dichloropropane	160	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,4-Dichlorobenzene	2.6	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
1,4-Dioxane	5.3	B	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
2,2-Dichloropropane	1.6	C	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
2-Butanone (MEK)	2700	B	0.0057 U	**0.017**	0.0056 U	0.0072 U	0.0058 U	0.0047 U	0.0048 U
2-Chlorotoluene	160	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
2-Hexanone	20	B	0.0057 U	0.005 U	0.0056 U	0.0072 U	0.0058 U	0.0047 U	0.0048 U
4-Chlorotoluene	160	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
4-Methyl-2-Pentanone (MIBK)	3300	B	0.0057 U	0.005 U	0.0056 U	0.0072 U	0.0058 U	0.0047 U	0.0048 U
Acetone	7000	B	**0.019 B**	**0.25 B**	**0.02 B**	**0.03 B**	**0.011 B**	**0.029 B**	**0.028 B**
Benzene	1.2	B	**0.036 J**	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Bromobenzene	29	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Bromochloromethane	15	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Bromodichloromethane	0.29	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Bromoform	19	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
Bromomethane	0.68	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
Carbon Disulfide	77	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Carbon Tetrachloride	0.65	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Chlorobenzene	28	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Chloroethane	540	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
Chloroform	0.32	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Chloromethane	11	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
cis-1,2-Dichloroethene	6.3	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
cis-1,3-Dichloropropene	1.8	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Cyclohexane	650	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
Dibromochloromethane	8.3	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Dibromomethane	2.4	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Dichlorodifluoromethane	8.7	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
Ethylbenzene	5.8	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Ethylene Dibromide (EDB)	0.036	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Hexachlorobutadiene	1.2	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
Isopropylbenzene	190	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
m- & p-Xylene	55	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
Methyl tert-Butyl Ether (MTBE)	47	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Methylene Chloride	35	B	0.0057 U	0.005 U	0.0056 U	0.0072 U	0.0058 U	0.0047 U	0.0048 U
n-Butylbenzene	390	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
n-Hexane	61	B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
n-Propylbenzene	380	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Naphthalene	2	B	0.0023 U	0.002 U	0.0022 U	**0.002 J**	0.0023 U	0.0019 U	0.0019 U
o-Xylene	64	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
p-Isopropyltoluene	31	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
sec-Butylbenzene	780	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Styrene	600	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
tert-Butylbenzene	780	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Tetrachloroethene (PCE)	8.1	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Toluene	490	B	**0.031 J**	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Total Xylenes	58	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
trans-1,2-Dichloroethene	7	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
trans-1,3-Dichloropropene	1.8	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Trichloroethene (TCE)	0.41	B	0.0011 U	0.001 U	0.0011 U	0.0014 U	0.0012 U	0.00095 U	0.00096 U
Trichlorofluoromethane	2300	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
Vinyl Acetate	91	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U
Vinyl Chloride	0.059	B	0.0023 U	0.002 U	0.0022 U	0.0029 U	0.0023 U	0.0019 U	0.0019 U

Table 4-1. 2018 Soil Results

	Project Screening Level (PSL)	Location	DP009-SB06			DP009-SB07		DP009-SB08	
		Sample ID	18Q2DP009-SB0601-SO-0	18Q2DP009-SB0601-SO-1	18Q2DP009-SB0602-SO-0	18Q2DP009-SB0701-SO-0	18Q2DP009-SB0702-SO-0	18Q2DP009-SB0801-SO-0	18Q2DP009-SB0802-SO-0
		Sample Depth (ft)	13 - 15	13 - 15	48 - 50	23 - 25	48 - 50	23 - 25	48 - 64
		Sample Date	6/23/2018	6/23/2018	6/23/2018	6/22/2018	6/22/2018	6/21/2018	6/21/2018
Analyte		PSL Source							
1,3-Butadiene	0.058	B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,3-Dichlorobenzene	6.2	C	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.061 U	0.0011 U
1,3-Dichloropropane	160	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
1,4-Dichlorobenzene	2.6	B	0.0013 U	**0.0012 J**	0.0012 U	0.001 U	0.0011 U	0.061 U	0.0011 U
1,4-Dioxane	5.3	B	0.36 U	0.36 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
2,2-Dichloropropane	1.6	C	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
2-Butanone (MEK)	2700	B	**0.0078 J**	**0.014 J**	0.0062 U	0.0052 U	0.0054 U	**0.022 J**	0.0054 U
2-Chlorotoluene	160	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.061 U	0.0011 U
2-Hexanone	20	B	0.0063 U	0.0057 U	0.0062 U	0.0052 U	0.0054 U	0.0067 U	0.0054 U
4-Chlorotoluene	160	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.061 U	0.0011 U
4-Methyl-2-Pentanone (MIBK)	3300	B	0.0063 U	0.0057 U	0.0062 U	0.0052 U	0.0054 U	0.0067 U	0.0054 U
Acetone	7000	B	**0.054 B**	**0.082 J**	**0.02 B**	**0.043 B**	**0.012 B**	**0.11 J**	**0.012 B**
Benzene	1.2	B	**0.13 J**	**0.17 J**	**0.00081 J**	0.001 U	0.0011 U	**0.038 J**	0.0011 U
Bromobenzene	29	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.061 U	0.0011 U
Bromochloromethane	15	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Bromodichloromethane	0.29	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Bromoform	19	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.12 U	0.0021 U
Bromomethane	0.68	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
Carbon Disulfide	77	B	0.0013 U	**0.0023 J**	0.0012 U	**0.00097 J**	0.0011 U	**0.017 J**	0.0011 U
Carbon Tetrachloride	0.65	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Chlorobenzene	28	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Chloroethane	540	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
Chloroform	0.32	B	0.0013 U	0.0011 U	**0.0015 J**	0.001 U	**0.0023 J**	0.0013 U	0.0011 U
Chloromethane	11	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
cis-1,2-Dichloroethene	6.3	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
cis-1,3-Dichloropropene	1.8	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Cyclohexane	650	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
Dibromochloromethane	8.3	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Dibromomethane	2.4	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Dichlorodifluoromethane	8.7	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
Ethylbenzene	5.8	B	**0.00067 J**	**0.0031 J**	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Ethylene Dibromide (EDB)	0.036	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Hexachlorobutadiene	1.2	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.12 U	0.0021 U
Isopropylbenzene	190	B	0.0025 U	**0.00074 J**	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
m- & p-Xylene	55	B	**0.0021 J**	**0.057 J**	0.0025 U	0.0021 U	0.0022 U	**0.0051 J**	0.0021 U
Methyl tert-Butyl Ether (MTBE)	47	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Methylene Chloride	35	B	0.0063 U	0.0057 U	0.0062 U	0.0052 U	0.0054 U	0.0067 U	0.0054 U
n-Butylbenzene	390	B	0.057 U	**0.012 J**	0.0012 U	0.001 U	0.0011 U	**0.17 J**	0.0011 U
n-Hexane	61	B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
n-Propylbenzene	380	B	0.0013 U	**0.0018 J**	0.0012 U	0.001 U	0.0011 U	0.061 U	0.0011 U
Naphthalene	2	B	**0.008 J**	**0.0099 J**	0.0025 U	0.0021 U	0.0022 U	**0.18 J**	0.0021 U
o-Xylene	64	B	**0.00093 J**	**0.0038 J**	0.0012 U	0.001 U	0.0011 U	**0.0034 J**	0.0011 U
p-Isopropyltoluene	31	B	0.057 U	**0.0067 J**	0.0012 U	0.001 U	0.0011 U	**0.072 J**	0.0011 U
sec-Butylbenzene	780	B	0.0013 U	**0.004 J**	0.0012 U	0.001 U	0.0011 U	**0.017 J**	0.0011 U
Styrene	600	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
tert-Butylbenzene	780	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	**0.0059 J**	0.0011 U
Tetrachloroethene (PCE)	8.1	B	**0.0014 J**	**0.039 J**	0.0012 U	**0.00076 J**	0.0011 U	**0.033 J**	0.0011 U
Toluene	490	B	**0.13 J**	**0.12 J**	0.0012 U	0.001 U	0.0011 U	**0.0038 J**	0.0011 U
Total Xylenes	58	B	**0.003 J**	**0.057 J**	0.0012 U	0.001 U	0.0011 U	**0.0085 J**	0.0011 U
trans-1,2-Dichloroethene	7	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
trans-1,3-Dichloropropene	1.8	B	0.0013 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Trichloroethene (TCE)	0.41	B	**0.0012 J**	**0.029 J**	0.0012 U	0.001 U	0.0011 U	0.0013 U	0.0011 U
Trichlorofluoromethane	2300	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
Vinyl Acetate	91	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U
Vinyl Chloride	0.059	B	0.0025 U	0.0023 U	0.0025 U	0.0021 U	0.0022 U	0.0027 U	0.0021 U

Table 4-1. 2018 Soil Results

PSL Sources:
A = ADEC 18 AAC 75 Table B2 Method Two-Under 40-inch Ingestion Cleanup Level (ADEC 2023)
B = EPA Residential Soil RSL (HQ 0.1 and TCR 1x10-6) (EPA 2023b)
C = 1/10th ADEC 18 AAC 75 Human Health Soil Cleanup Level (ADEC 2023)

Notes:
-- = not established
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
B = The analyte was detected in the associated method and/or calibration blank.
DRO = diesel-range organics
GRO = gasoline-range organics
HQ = hazard quotient
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
mg/kg = milligrams per kilogram
NA = not analyzed
PSL = project screening level
RRO = residual-range organics
RSL = Regional Screening Level
SVOC = semivolatile organic compounds
TCR = target cancer risk
U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
VOC = volatile organic compounds

Bold indicates the analyte was detected
Shading indicates the result exceeded screening criteria

Table 4-2. Comparison of Detected Soil Metal Concentrations above Project Screening Levels to JBER and Alaska Surficial Soil Concentrations

Analyte	Project Screening Level (PSL) (mg/kg)	PSL Source	Concentration (mg/kg)		Background Data Set						
					JBER Background (mg/kg)[a]						Range for Alaska Surficial Soils[b] (mg/kg)
			Minimum	Maximum	Minimum Root Zone (0.5 - 3 ft bgs)	Maximum Root Zone (0.5 - 3 ft bgs)	95%UTL Root Zone Soils	Minimum Deep Soil (>3 ft bgs)	Maximum Deep Soil (>3 ft bgs)	95%UTL Deep Soil	
Aluminum	7,700	A	12,000	15,800	14,850	23,800	31,655	9,830	16,600	18,013	1,200 to 100,000
Antimony	3.6	B	5		1.20	1.60	NA	1.10	3.10	NA	NA
Arsenic	0.68	A	4.88	8.32	4.70	9.60	11.40	3.50	8.35	9.24	< 10 to 750
Barium	1100	B			43.40	171.00	214.30	37.10	82.50	95.00	39 to 3100
Beryllium	20	A			0.29	0.55	0.70	0.09	0.48	0.63	< 1 to 7
Cadmium	5	B			0.93	1.90	2.53	0.96	2.70	3.03	0.04 to 10
Calcium	NA				1330.00	8210.00	4021.00	1730.00	10800.00	4327 to 6165	
Chromium	25	B			19.00	45.30	54.40	18.50	80.90	76.10	5 to 390
Cobalt	2.3	A	7.79	11.7	7.20	14.30	20.20	7.20	16.60	17.50	< 2 to 55
Copper	410	A			14.00	28.30	34.70	14.50	59.90	59.20	3 to 810
Iron	5,500	A	23,300	33,000	23,450	32,000	38,818	18,500	38,000	38,210	5,500 to 100,000
Lead	40	A			4.10	7.00	8.78	3.00	9.10	10.00	< 4 to 310
Magnesium	NA				769.00	6610.00	4332.00	2160.00	14800.00	7737 to 9060	
Manganese	180	A	315	989	193.50	742.50	970.50	375.00	640.00	705.80	< 200 to 4,000
Mercury	1.1	B	1.11	1.14	0.04	0.22	0.23	0.04	0.17	0.20	NA
Nickel	86	B			11.00	44.50	60.60	17.60	73.10	71.10	< 3 to 320
Potassium					244.00	685.00	508.50	221.00	842.00	550.3 to 697.3	
Selenium	3.4	B			0.05	0.29	0.47	0.04	0.40	NA	NA
Silver	11.2	B			0.16	1.20	1.62	0.15	0.78	1.05	NA
Sodium					242.00	381.00	364.90	178.50	317.00	258.7 to 285	
Thallium	0.078	A	0.142	0.142	0.09	0.12	NA	0.08	0.19	NA	< 1.6 to 76
Vanadium	39	A	43.7	62	46.90	76.60	91.30	33.20	59.90	84.80	11 to 490
Zinc	3040	A			33.70	62.90	49.90	34.10	63.00	75.70	< 20 to 2700

Notes:

[a] Soil background values from USAF 1993.

[b] USGS 1988

PSL Sources:

A = EPA Residential Soil RSL (HQ 0.1 and TCR $1x10^{-6}$) (EPA 2023b)

B = 2012 ADEC Table B1 Method Two Soil Cleanup Level (Under-40-inch) – Migration to Groundwater (ADEC 2023)

EPA = U.S. Environmental Protection Agency

ft bgs = feet below ground surface

HQ = hazard quotient

JBER = Joint Base Elmendorf Richardson

mg/kg = milligram(s) per kilogram

NA = background concentration not evaluated

RSL = Regional Screening Level

Table 4-2. Comparison of Detected Soil Metal Concentrations above Project Screening Levels to JBER and Alaska Surficial Soil Concentrations

Analyte	Project Screening Level (PSL) (mg/kg)	PSL Source	Concentration (mg/kg)		Background Data Set						
					JBER Background (mg/kg)[a]						Range for Alaska Surficial Soils[b] (mg/kg)
			Minimum	Maximum	Minimum Root Zone (0.5 - 3 ft bgs)	Maximum Root Zone (0.5 - 3 ft bgs)	95%UTL Root Zone Soils	Minimum Deep Soil (>3 ft bgs)	Maximum Deep Soil (>3 ft bgs)	95%UTL Deep Soil	

TCR = target cancer risk

USAF = U.S. Air Force

USGS = U.S. Geological Survey

UTL = upper tolerance limit

Table 4-3. 2018 Building 986 Indoor and Outdoor Air Results above Project Screening Levels

Analyte	Location / Sample ID / Sample Depth (feet) / Sample Date / Project Screening Level	Project Screening Level Source	DP009-IA01		DP009-IA02		DP009-IA03	
	Sample ID		18Q3DP009-IA01-IA-0	18Q4DP009-IA01-IA-0	18Q3DP009-IA02-IA-0	18Q4DP009-IA02-IA-0	18Q3DP009-IA03-IA-0	18Q4DP009-IA03-IA-0
	Sample Depth (feet)		0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date		7/25/2018	11/6/2018	7/25/2018	11/6/2018	7/25/2018	11/6/2018
VOCs (µg/m^3)			Summer	Winter	Summer	Winter	Summer	Winter
1,2,4-Trimethylbenzene	26	A	NA	**14**	NA	**25**	NA	**14**
1,2-Dichloroethane	0.47	A	**0.047**	0.012 U	**0.075**	0.012 U	**0.064**	0.012 U
Benzene	1.6	A	**0.24**	**4.1**	**0.2**	**5.7**	**0.37**	**3.8**
Naphthalene	0.36	A	**0.34 J**	**2.7 J**	**0.32 J**	**3.7 J**	**0.72 J**	**2.6 J**
Tetrachloroethene (PCE)	17.5	A	**0.048 J**	**0.25**	**0.034 J**	**0.45**	**0.049 J**	**0.52**
Trichloroethene (TCE)	0.88	A	0.0054 U	**0.048 J**	0.0054 U	**0.031 J**	**0.013 J**	**0.024 J**

Table 4-3. 2018 Building 986 Indoor and Outdoor Air Results above Project Screening Levels

Analyte	Location / Sample ID / Sample Depth (feet) / Sample Date / Project Screening Level	Project Screening Level Source	DP009-IA04				DP009-OA01	
	Sample ID		18Q3DP009-IA04-IA-0	18Q3DP009-IA04-IA-1	18Q4DP009-IA04-IA-0	18Q4DP009-IA04-IA-1	18Q3DP009-OA01-OA-0	18Q4DP009-OA01-OA-0
	Sample Depth (feet)		0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date		7/25/2018	7/25/2018	11/6/2018	11/6/2018	7/25/2018	11/6/2018
	Project Screening Level							
VOCs (µg/m^3)			Summer	Summer	Winter	Winter	Summer	Winter
1,2,4-Trimethylbenzene	26	A	NA	NA	**14**	**12**	NA	**0.81**
1,2-Dichloroethane	0.47	A	**0.06**	**0.061**	0.012 U	**0.16**	**0.071**	**0.1**
Benzene	1.6	A	**0.19**	**0.21**	**3.7**	**3.6**	**0.23**	**1.2**
Naphthalene	0.36	A	**0.26 J**	**0.24 J**	**2.6 J**	**1.8 J**	**1.1 J**	**0.32 J**
Tetrachloroethene (PCE)	17.5	A	**0.036 J**	0.034 U	**0.69**	**0.68**	**0.079**	**0.055 J**
Trichloroethene (TCE)	0.88	A	**0.0057 J**	**0.0064 J**	**0.05 J**	**0.036 J**	**0.013 J**	**0.023 J**

Table 4-3. 2018 Building 986 Indoor and Outdoor Air Results above Project Screening Levels

PSL Sources:

A = EPA Commercial Indoor Air RSLs [TCR=1E 06, HQ = 0.1] (EPA 2023b)

Notes:

µg/m^3 = micrograms per cubic meter

ADEC = Alaskan Department of Environmental Conservation

HQ = hazard quotient

J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

NA = Not analyzed (1,2,4-TMB was inadvertently omitted for non-heating season sampling.)

RSL = Regional Screening Level

TCR = target cancer risk

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

Bold indicates the analyte was detected

Shading indicates the result exceeded project screening level

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Table 4-4. 2018 Building 986 Subslab Soil Gas Results above Project Screening Levels

Analyte	Project Screening Level	Project Screening Level Source	DP009-SS01		DP009-SS02	
Location			DP009-SS01		DP009-SS02	
Sample ID			18Q3DP009-SS01-SS-0	18Q4DP009-SS01-SS-0	18Q3DP009-SS02-SS-0	18Q4DP009-SS02-SS-0
Sample Depth (feet)			0 - 0	0 - 0	0 - 0	0 - 0
Sample Date			7/24/2018	11/5/2018	7/24/2018	11/5/2018
VOCs (µg/m^3)			Summer	Winter	Summer	Winter
1,2,4-Trimethylbenzene	880	[a]	**9.1 J**	2.4 U	2.4 U	**72**
1,2-Dichloroethane	16	[a]	2 U	2 U	2 U	2 U
Benzene	52	[a]	3.1 U	3.1 U	3.1 U	**11**
Naphthalene	12	[a]	20 UJ	20 U	20 UJ	**47 J**
Tetrachloroethylene	580	[a]	**5.6 J**	**20**	**3.7 J**	**4 J**
Trichloroethylene	29	[a]	2.6 U	2.6 U	2.6 U	2.6 U

[a] EPA Commercial Target Subslab VISLs (EPA 2023e) (target cancer risk = 1E-06, hazard quotient = 0.1)

Notes:
Bold indicates the analyte was detected
Shading indicates the result exceeded project screening level
µg/m^3 = microgram(s) per cubic meter
ADEC = Alaskan Department of Environmental Conservation
EPA = U.S. Environmental Protection Agency
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
NA = not analyzed
U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.
UJ = The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
VISL = vapor intrusion screening level
VOC = volatile organic compound

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Table 6-1. Exposure Assumptions for the Human Health Evaluation

Exposure Parameter	Symbol	Units	Current and Future Industrial Worker	Source	Future Construction Worker	Source	Hypothetical Future Resident	Source
Exposure Concentration (soil)	C_s	mg/kg	Maximum detected concentration	[a]	Maximum detected concentration	[a]	Maximum detected concentration	[a]
Exposure Concentration (groundwater)	C_w	µg/L	--	--	--	--	Detected concentration at monitoring well (AP-3648)	[a]
Exposure Concentration (soil gas/indoor air)	C_{sg}	µg/m^3	Sample-specific	[a]	--	--	Sample-specific	[a]
Adult Body Weight	BW_a	kg	80	[b]	80	[b]	80	[b]
Child Body Weight	BW_c	kg	--	--	--	--	15	[b]
Exposure Frequency (soil)	EF_s	days/yr	Outdoor worker: 225 Indoor worker: 250	[b]	90	c	350	[b]
Exposure Frequency (groundwater)	EF_w	days/yr	--	[b]	--	--	350	[b]
Exposure Frequency (soil gas/indoor air)	EFsg	days/yr	Indoor worker: 250 Outdoor worker: NA	[b]	--	--	350	[b]
Adult Exposure Duration	ED_a	years	25	[b]	1	[b]	20[d]	[b]
Child Exposure Duration	ED_c	years	--	--	--	--	6[d]	[b]
Exposure Time	ET	hrs/day	8	[b]	8	[b]	24	[b]
Carcinogenic Averaging Time	AT_c	days	25,550	[b]	25,550	[b]	25,550	[b]
Adult Noncarcinogenic Averaging Time	AT_n	days	9,125	[b]	126	[c]	7,300	[b]
Child Noncarcinogenic Averaging Time	AT_n	days	--	--	--	--	2,190	[b]
Adult Incidental Soil Ingestion Rate	IRS_a	mg/day (dry)	Outdoor worker: 100 Indoor worker: 50	[b]	330	[e]	100	[b]
Child Incidental Soil Ingestion Rate	IRS_c	mg/day (dry)	--	--	--	--	200	[b]
Adult Groundwater Ingestion Rate	IRW_a	L/day	--	--	--	--	2.5	[b]
Child Groundwater Ingestion Rate	IRW_c	L/day	--	--	--	--	0.78	[b]
Adult Skin Surface Area (soil)	SA_a	cm^2	Outdoor worker: 3,527 Indoor worker: NA	[b]	3,527	[b]	6,032	[b]
Child Skin Surface Area (soil)	SA_c	cm^2	--	--	--	--	2,373	[b]
Adult Skin Surface Area (groundwater)	SA_a	cm^2	--	--	--	--	19,652	[b]
Child Skin Surface Area (groundwater)	SA_c	cm^2	--	--	--	--	6,365	[b]
Dermal Absorption Fraction (from soil)	ABS	unitless	Outdoor worker: Chemical-specific Indoor worker: NA	[f]	Chemical-specific	[f]	Chemical-specific	[f]
Dermal Permeability Coefficient (groundwater)	K_p	cm/hr	--	--	--	--	Chemical-specific	[f]
Dermal Event Duration, Child (groundwater)	t_{event}	hr/event	--	--	--	--	0.54	[b]
Dermal Event Duration, Adult (groundwater)	t_{event}	hr/event	--	--	--	--	0.71	[b]
Adult Soil-to-Skin Adherence Factor	AF_a	mg/cm^2	Outdoor worker: 0.12 Indoor worker: NA	[b]	0.3	[e]	0.07	[b]
Child Soil-to-Skin Adherence Factor	AF_c	mg/cm^2	--	--	--	--	0.2	[b]
Particulate Emission Factor	PEF	m^3/kg	1.36E+09	e	Site-specific	[f]	1.36E+09	[e]
Volatilization Factor	VF	m^3/kg	Chemical-specific	e	Chemical-specific	[e]	Chemical-specific	[e]

[a] Based on historical and supplemental remedial investigation sampling.
[b] EPA 2014
[c] For soil, based on estimated field season length of approximately 4 months for Alaska sites. Exposure frequency is 90 days per year (assumed 5 days per week for 18 weeks) and averaging time is 126 days (18 weeks).
[d] Chemicals with mutagenic mode of action was evaluated using EPA (2005) default age-dependent adjustment factors, as described in the EPA Regional Screening Level User's Guide (2023c).
[e] EPA 2002
[f] EPA 2023d

Notes:

Attachment 1 contains age-adjusted and mutagenic parameters.
µg/L = microgram(s) per liter
µg/m^3 = microgram(s) per cubic meter
cm/hr = centimeter(s) per hour
cm^2 = square centimeter(s)
days/yr = days per year
EPA = U.S. Environmental Protection Agency
hr/day = hour(s) per day
hr/event = hour(s) per event
kg = kilogram(s)
L/day = liter(s) per day
m^3/kg = cubic meter(s) per kilogram
mg/cm^2 = milligram(s) per square centimeter
mg/day (dry) = milligram(s) per day (dry weight)
mg/kg = milligram(s) per kilogram

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Table 7-1. Vapor Intrusion Multiple Lines of Evidence Evaluation

Lines of Evidence	Non-heating Season July 2018	Heating Season November 2018
Comparison to Screening Levels		
GW VOC concentrations > PSL within 100 feet of building?	No	
SS VI COPC concentrations > PSL?	No	**Naphthalene**
IA VI COPC concentrations > PSL?	**Naphthalene**	**Benzene, Naphthalene**
Lines of Evidence Used to Evaluate IA Data		
Building located within 100 feet of exterior soil vapor sample location > PSL?	No VI COPCs detected in exterior soil gas laboratory samples collected in 2013 exceeded PSLs. TCE and PCE exterior soil gas concentrations measured with a field screening instrument exceed PSLs.	
Soil vapor results within 100 feet indicate sufficient source strength for potential VI if preferential pathways (such as utility conduits) are present?	No	
OA (sitewide) similar or greater than IA concentrations, indicating background VOCs?	**Naphthalene outdoor concentration slightly higher than IA concentrations.**	**All VI COPCs were detected in outdoor air, albeit less than IA concentrations.**
Potential indoor VOC sources identified during building survey and/or HAPSITE investigation?	Various petroleum based products present. Building 986 is a petroleum, oils, lubricants laboratory.	
Indoor pressure > subslab pressure?	Yes	
Building construction/conditions that could increase or decrease likelihood of VI?	Yes (Building under positive pressure in relation to subslab pressure. Building slab in good condition [no large cracks])	
IA ≥ SS concentration?	No	
Mismatched ratios between SS and IA concentrations for different indoor air target analytes?	Yes (SS VI COPCs ratios do not match those of IA VI COPCs)	
Discrepancy between sampling event results?	IA and SS concentrations during heating season > IA and SS concentrations during non-heating season	
VI CSM Category		
Likely currently complete VI pathway that is causing IA > SLs, and has potential for this in the future		
Possibly currently complete VI pathway that is causing IA > SLs, and has potential for this in the future		
Unlikely currently complete VI pathway that is causing IA > SLs, but has potential for complete VI pathway to cause IA>SLs in the future	X	
Unlikely currently complete VI pathway causing IA > SLs, and unlikely potential for IA > SLs in the future		

Table 7-1. Vapor Intrusion Multiple Lines of Evidence Evaluation

Lines of Evidence	Non-heating Season July 2018	Heating Season November 2018
Current Scenario: Site-related COPCs	None	
Future Scenario: Site-related COPCs	None	

Notes:
COPC = contaminant of potential concern
CSM = conceptual site model
GW = groundwater
IA = indoor air
OA = outdoor air
PCE = tetrachloroethylene
PSL = project screening level
SL = screening level
SS = subslab soil vapor
TCE = trichloroethylene
VI = vapor intrusion
VOC = volatile organic compound

Figures

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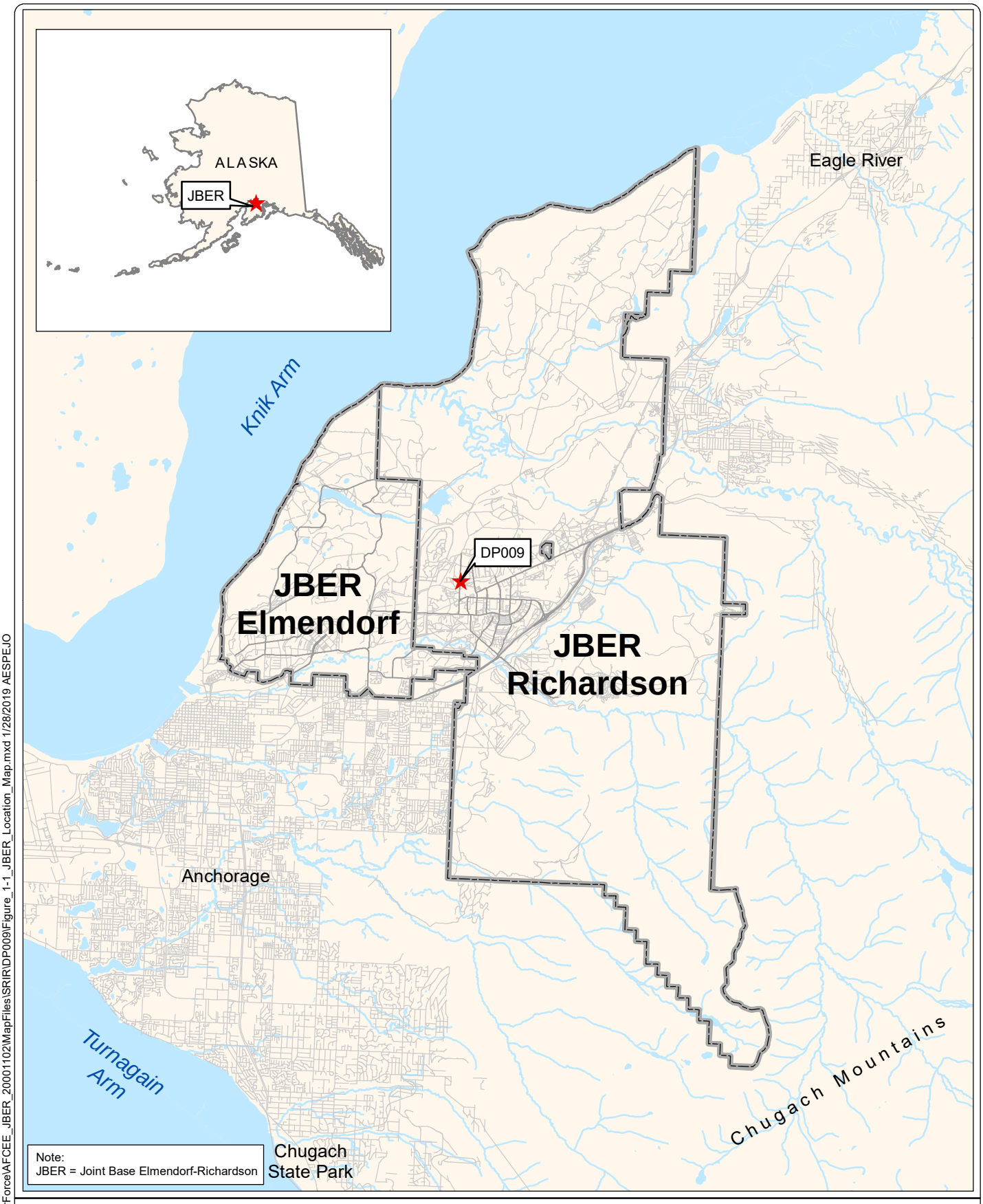

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JOINT BASE ELMENDORF-RICHARDSON LOCATION MAP

Figure

1-1

DP009 – Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

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DP009 SITE LOCATION

Figure

1-2

DP009 – Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

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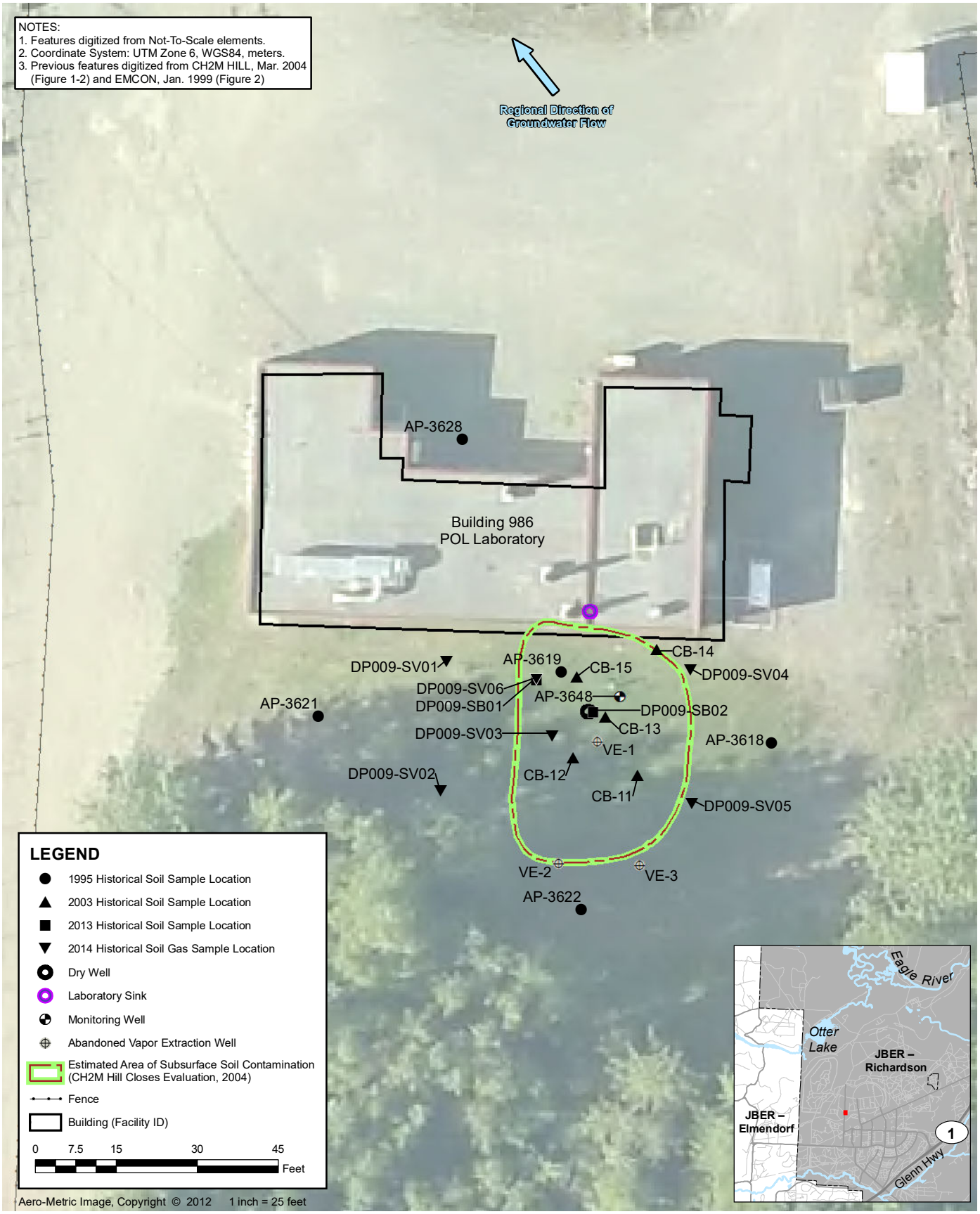

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HISTORICAL DP009 SAMPLE LOCATIONS

Figure

3-1

DP009 – Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

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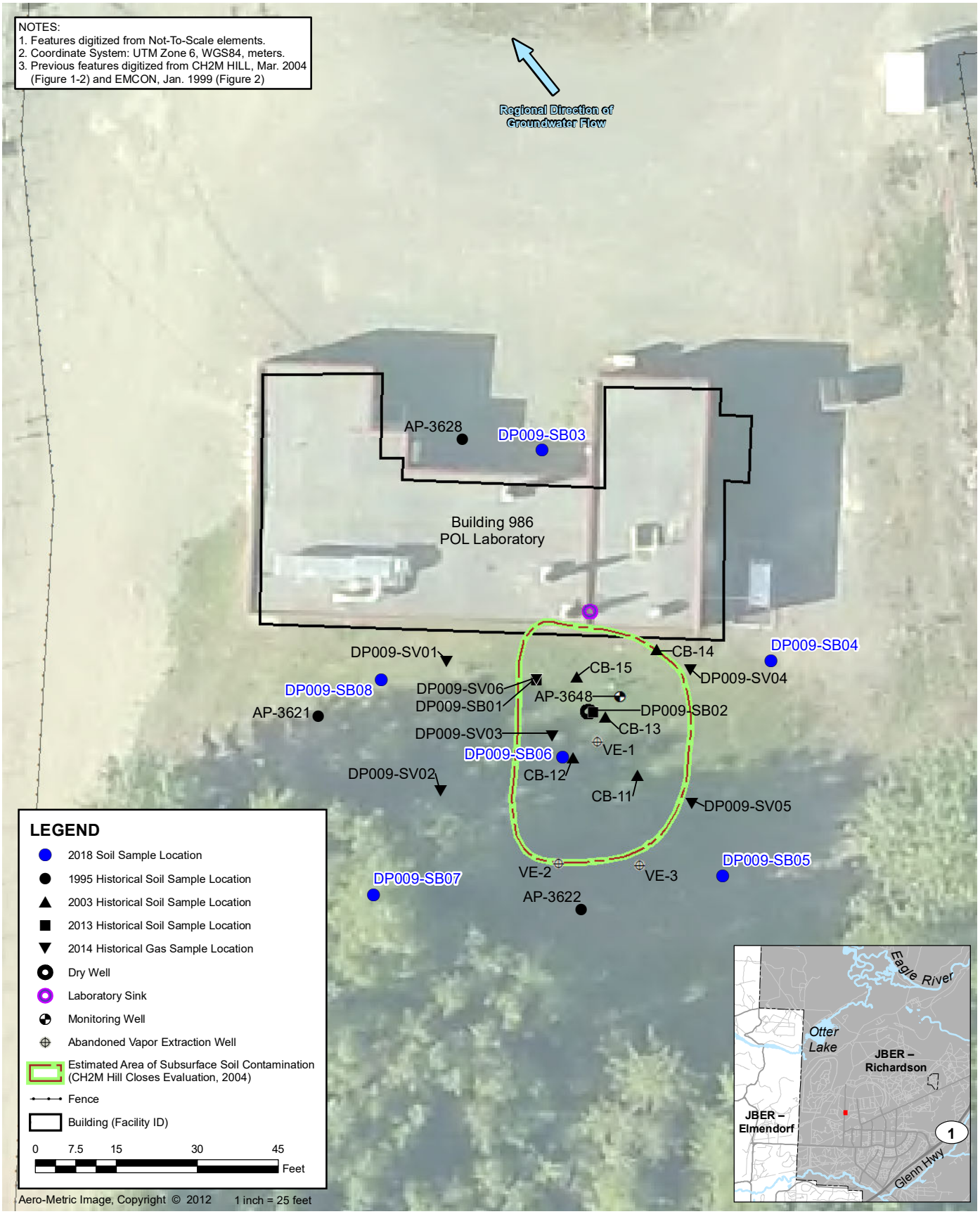

2018 SUPPLEMENTAL RI SAMPLE LOCATIONS

Figure

3-2

DP009 – Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

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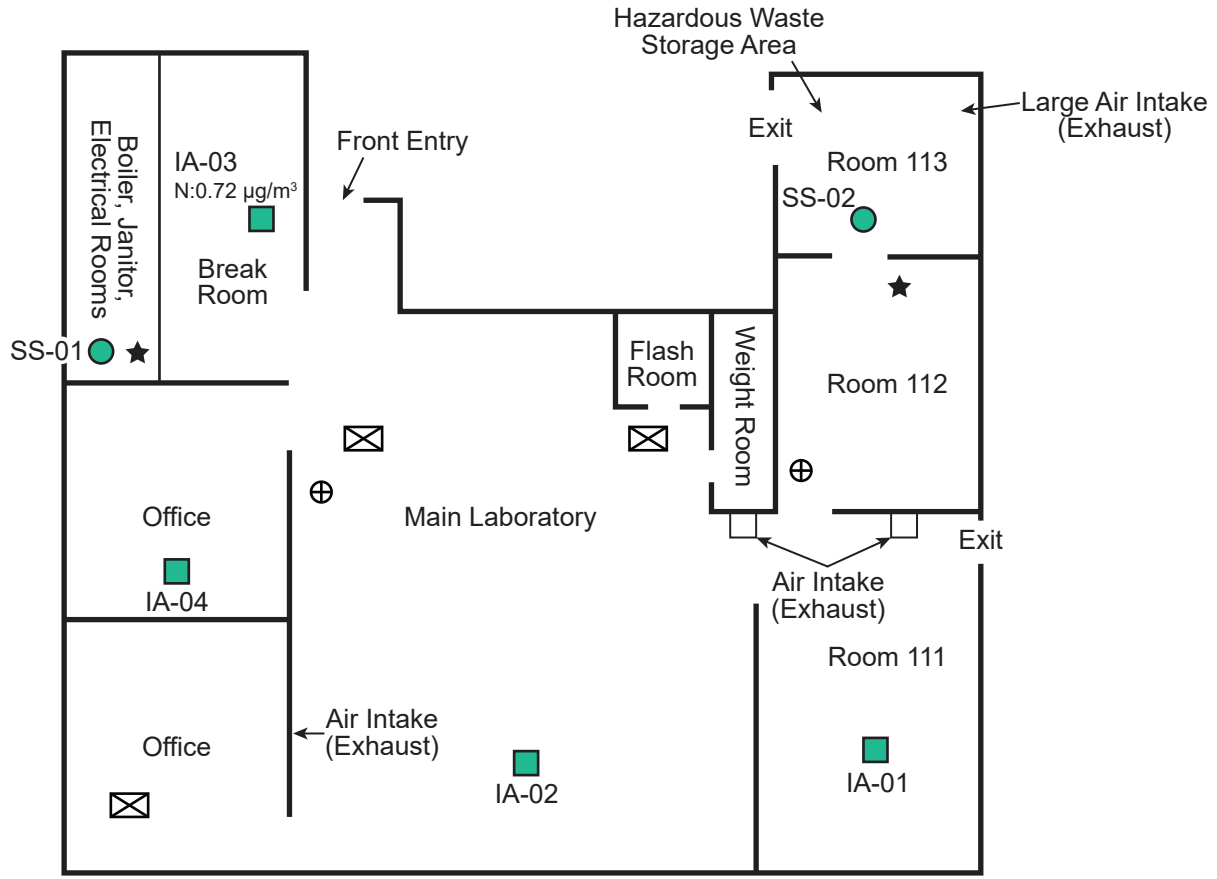

Legend

- Soil Gas Point Locations
- Indoor and Outdoor Air Sample Locations
- Forced Air Into Building
- Floor Drain
- Differential Pressure Monitoring Location
- N: Napthalene
- µg/m³ micrograms per cubic meter

BUILDING 986 INDOOR AIR, OUTDOOR AIR AND SUBSLAB SOIL GAS SAMPLE LOCATIONS

DP009 - Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

Figure
3-3

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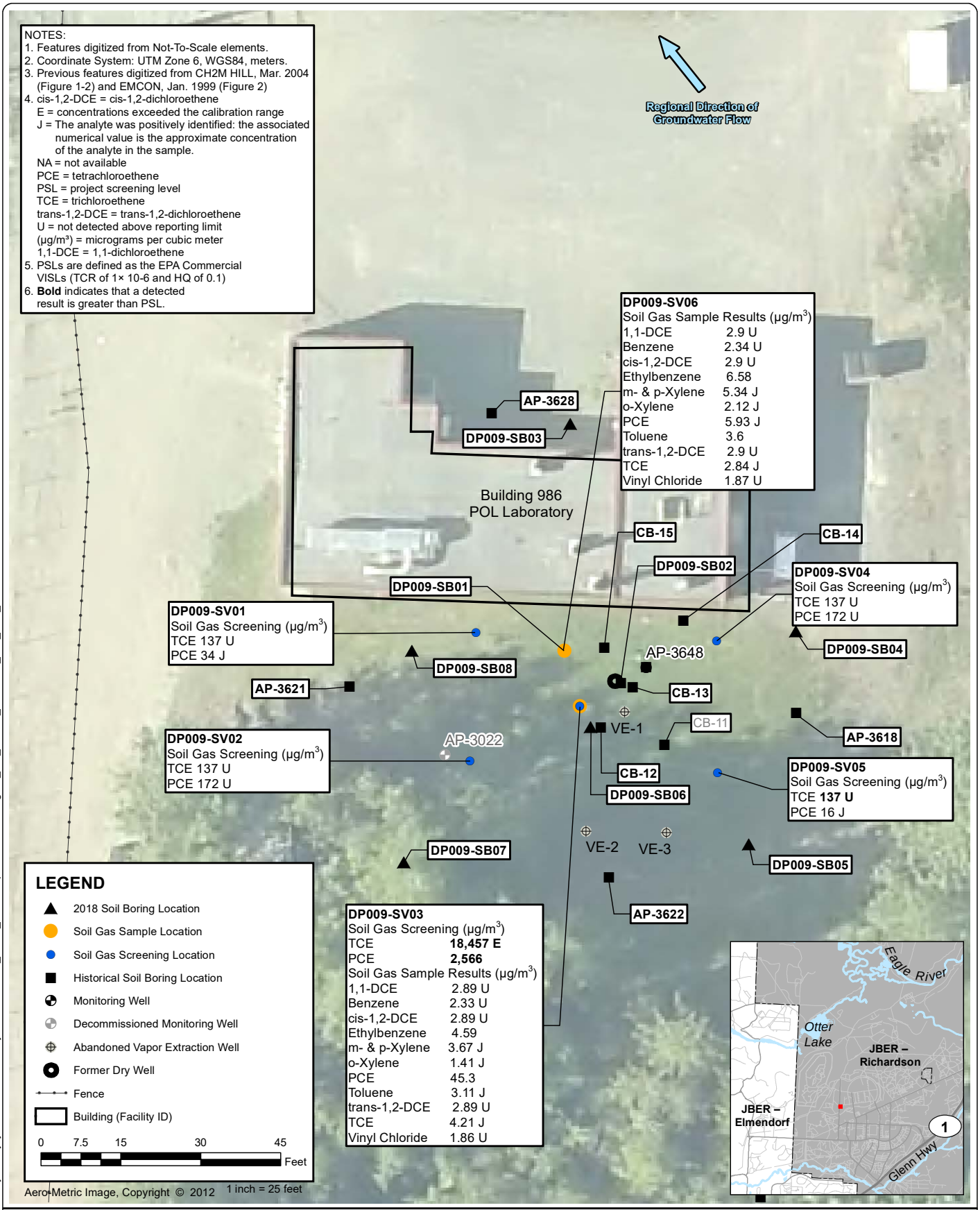

HISTORICAL SOIL GAS RESULTS

Figure

4-1

DP009 – Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

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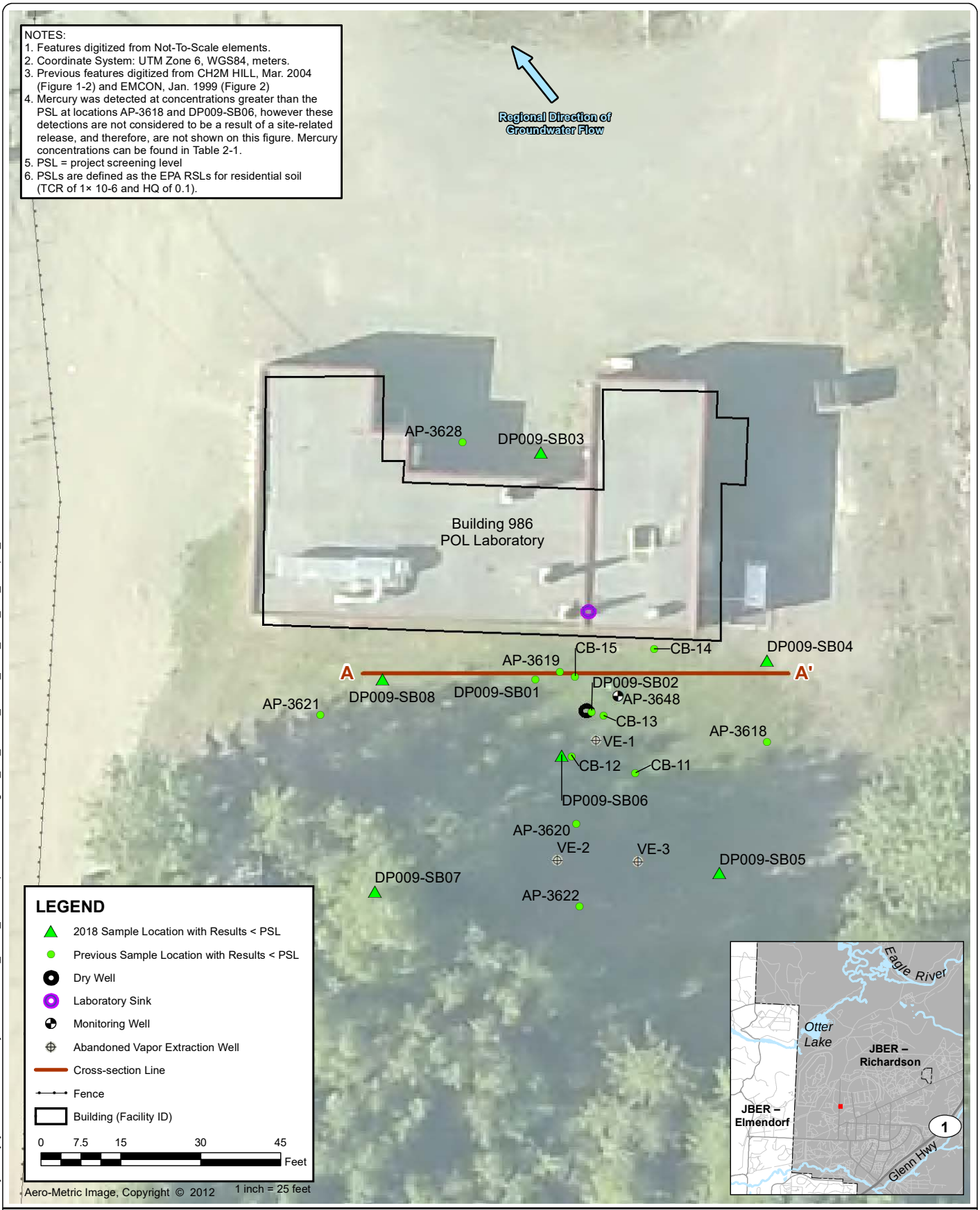

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SOIL RESULTS

Figure

4-2

DP009 – Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

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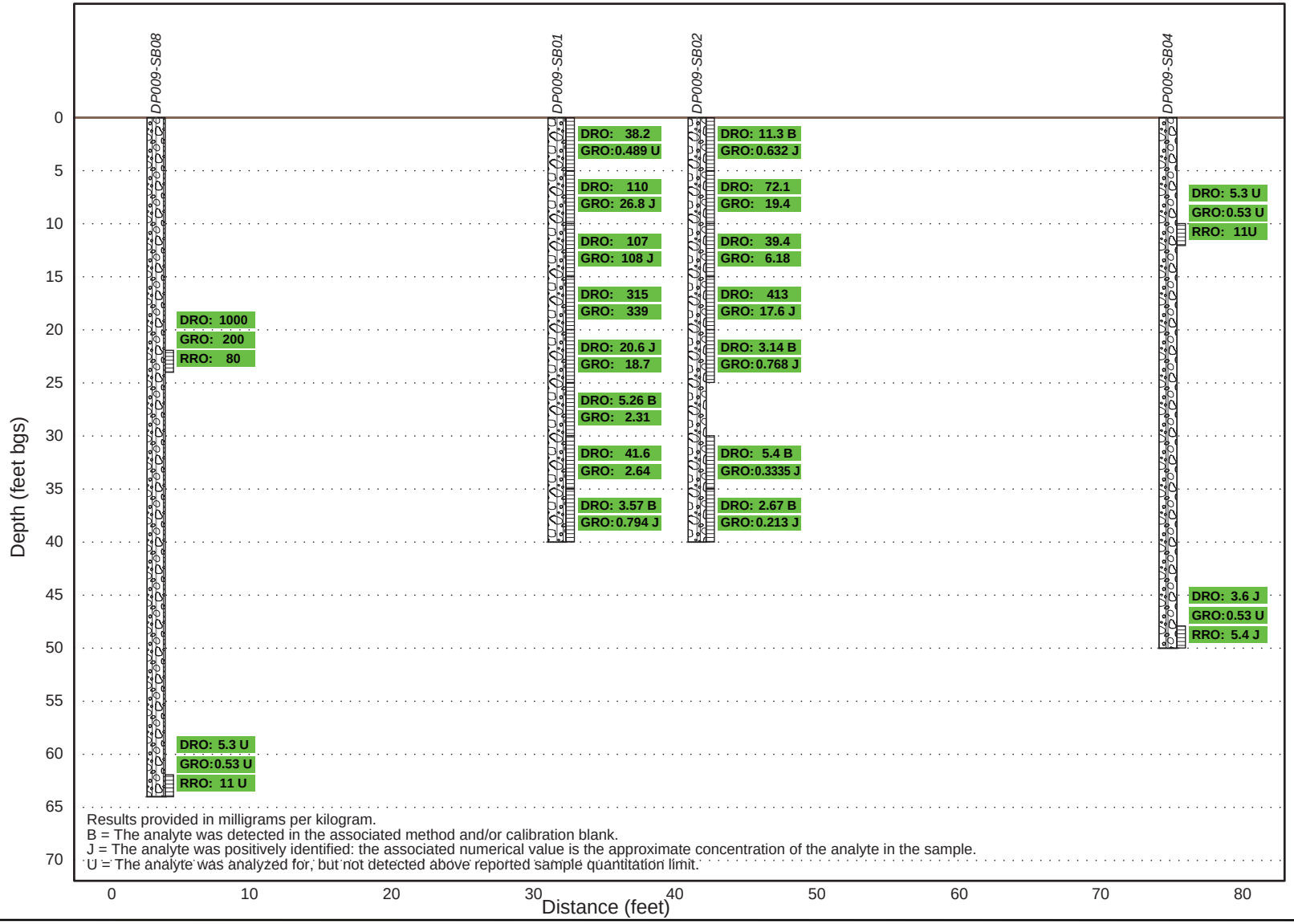

LEGEND

DP009-SB08 Sample Location

Sample below screening level

Sample Interval

bgs = below ground surface

DRO = diesel-range organics

GRO = gasoline-range organics

SOIL AND LITHOLOGY

RELATIVE PERMEABILITY

GW, GP, GW-GM, GP-GM, GW-GC, GP-GC, SW, SP, SW-SM, SP-SM, SP-SC

GM, GC, SM, SC

ML, MH, CL, CH, OL

SOIL CROSS SECTION A-A'

DP009 – Building 986 Dry Well
Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

Figure
4-3

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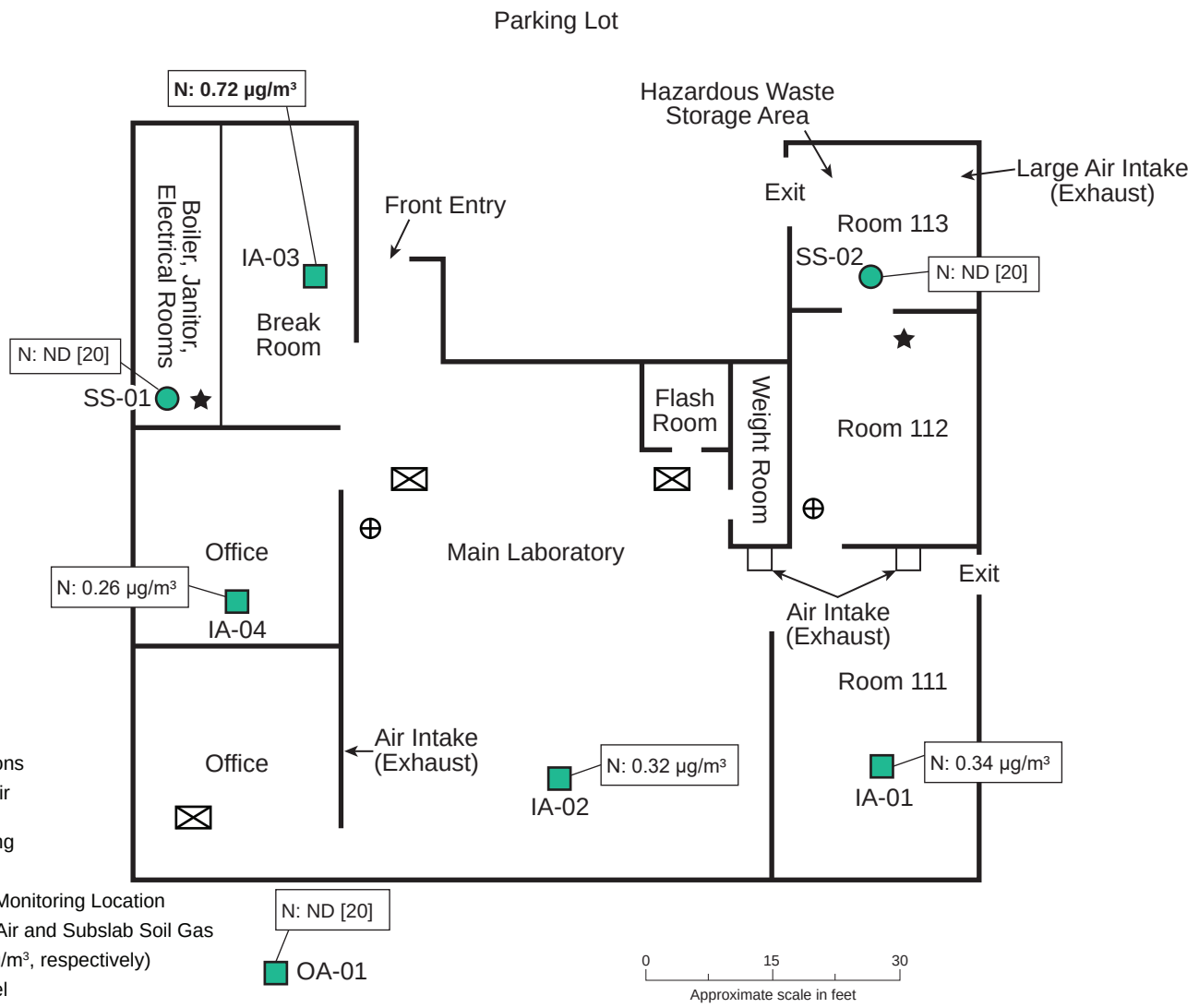

Legend

- Soil Gas Point Locations
- Indoor and Outdoor Air Sample Locations
- Forced Air Into Building
- Floor Drain
- Differential Pressure Monitoring Location
- N: Naphthalene (Indoor Air and Subslab Soil Gas PSL = 0.36 and 12 µg/m³, respectively)
- PSL: Project screening level
- µg/m³ micrograms per cubic meter
- ND = nondetect [limit of detection]
- **Bold** = detected result exceeds the PSL.

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INDOOR AIR, OUTDOOR AIR AND SUBSLAB SOIL GAS RESULTS, JULY 2018

Figure **4-4**

DP009 - Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

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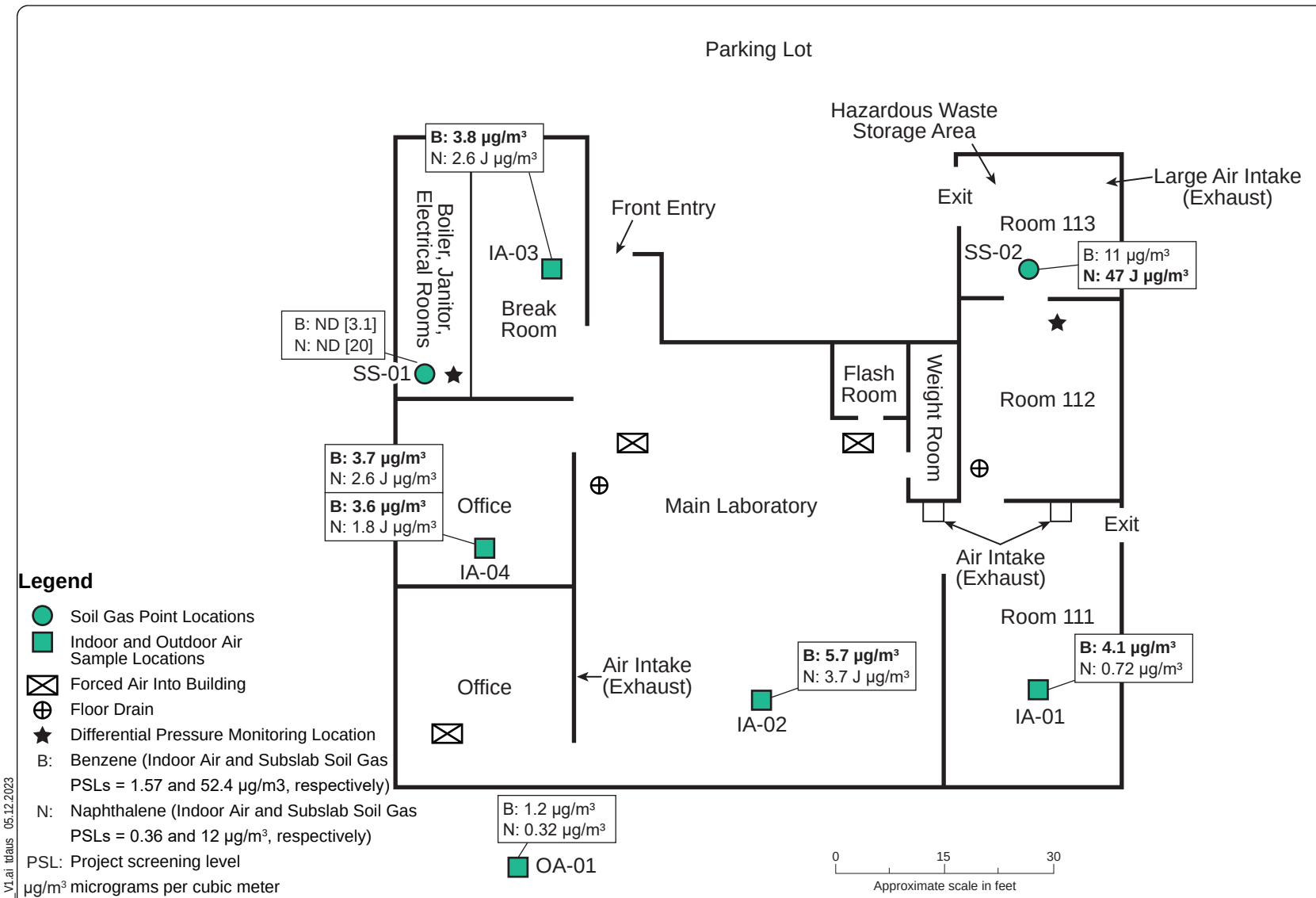

Legend

- Soil Gas Point Locations
- Indoor and Outdoor Air Sample Locations
- Forced Air Into Building
- Floor Drain
- Differential Pressure Monitoring Location
- B: Benzene (Indoor Air and Subslab Soil Gas PSLs = 1.57 and 52.4 µg/m3, respectively)
- N: Naphthalene (Indoor Air and Subslab Soil Gas PSLs = 0.36 and 12 µg/m³, respectively)
- PSL: Project screening level
- µg/m³ micrograms per cubic meter
- J: The analyte was positively identified; approximate concentration.
- **Bold** = detected result exceeds the PSL.
- ND = nondetect [limit of detection]

ES062612224557SAC_DP009_Figure_4-5_V1.ai tdaus 05.12.2023

INDOOR AIR, OUTDOOR AIR AND SUBSLAB SOIL GAS RESULTS, NOVEMBER 2018

DP009 - Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

Figure
4-5

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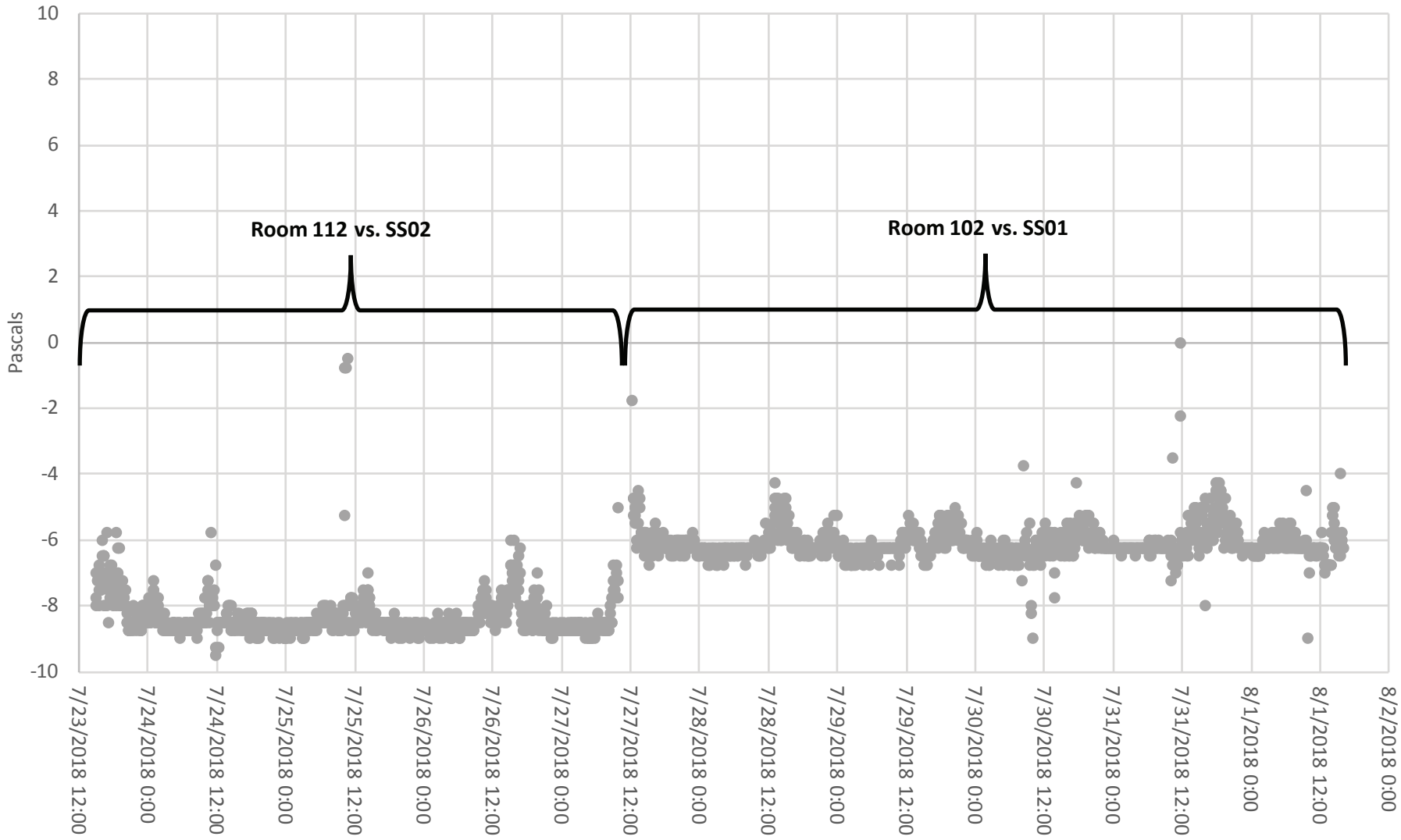

N
W E
S

Building 986 Non-Heating Season Indoor vs. Subslab Differential Pressure Timeseries Plot

DP009 – Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

Figure
4-6

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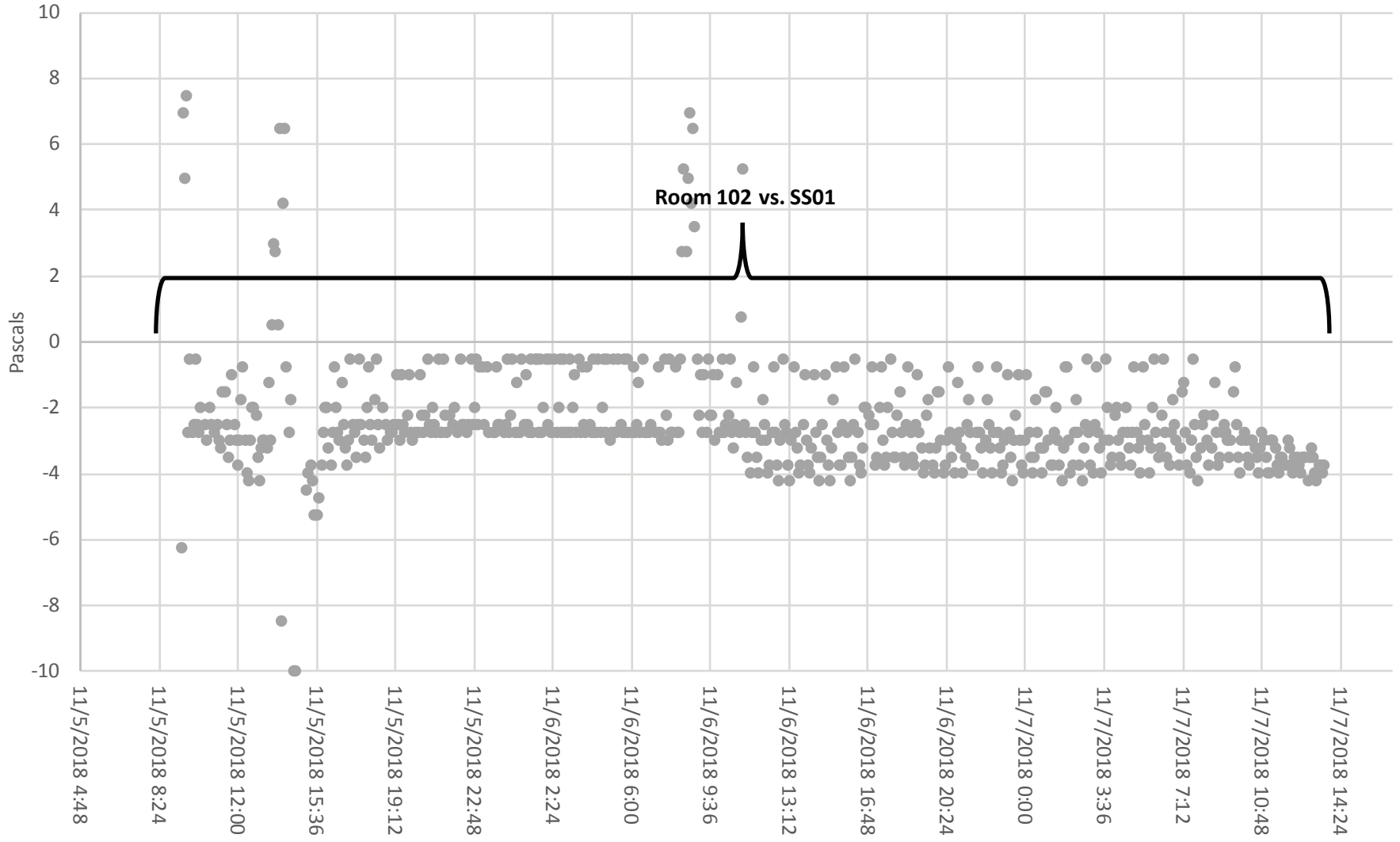

N
W E
S

Building 986 Heating Season Indoor vs. Subslab Differential Pressure Timeseries Plot

DP009 – Building 986 Dry Well Supplemental Remedial Investigation Report
Joint Base Elmendorf-Richardson, Alaska

Figure
4-7

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Appendix A
Field Logs and Data Collection Forms

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Appendix A-1
Field Logbook

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Location AT029/DP009 Date 6/21/18

Project / Client TO 075 / AFCEC

55°, overcast

REBECCA REYES } JACOBS
KRISTEN STEVENS }
LOGAN HERMANNS } GEOTEK
THOMAS BELL }

0700 CALIBRATE EQUIPMENT, ~~MOB~~
GEOTEK

0740 SITE WALK @ DP009

0830 BEGIN LOADING OF IDW DRUMS @ AT029

1045 SETTING UP ~~RIG~~ GEAR @ DP009,
GEOTEK OFF TO PETERBILT (PT) FOR
1 2 HYDRAULIC FITTINGS

1245 GEOTEK BACK ON-SITE,
INSTALLING FITTINGS

RQ 6/21/18

Location DP009 Date 6-21-18

Project / Client TO 075 / AFCEC

1435 PID RENTAL FROM TTT HAS SLOW RESPONSE READINGS, TAKING HEADSPACE READINGS TAKES UP TO 6 MINUTES IN SOME CASES. BUMP TEST PERFORMED THROUGHOUT BOREHOLE & IN RANGE. CALLED ANNIKA SEAY (CH/JACOBS) & USED TO Ø03 PID, but IT WAS OUT OF CALIBRATION & REMAINED OUT AFTER RE-CALIBRATING. AFTER GETTING USED TO SLOW RESPONSE FROM RENTAL PID, CONTINUED TO USE RENTAL & FREQUENTLY RAN BUMP TESTS

1610
~~1630~~ 18QZDPØØ9SB04$^{01}_{11}$-SO-Ø (RW 6-21-18)
2x40mL VOA
1x4oz Amber MeOH, 124.24
1x8oz "
2x40mL; SW8260B-LOW
1x4oz; AK101, SW8260B
1x8oz; AK102/103, SW6020A, SW7471B, SW8270C, SW8270C-SIM

Location DP009 Date 6-21-18

Project / Client TO 075/AFCEC

(RW 6-21-18)

1611 18QZDPØØ9SBØ4$^{01}_{11}$-SO-1
2x40mL VOA
1x4oz Amber, MeOH, 124.29
1x8oz "
* see pg 52 for DP009 ANALYSES

(RW 6-21-18)

1630 18QZDPØØ9SBØ4$^{02}_{11}$-SO-Ø
2x40mL VOA
1x4oz Amber, MeOH,
1x8oz "

1850 18QZDPØØ9SB0801-SO-Ø
2x40mL VOA
1x8oz Amber
1x4oz " , MeOH, 124.62

1945 18QZDPØØ9SB802-SO-Ø
2x40mL VOA
1x4oz AMBER, MeOH, 124.86
1x8oz "

2030 OFF SITE

6/21/18

Rite in the Rain

Location DP009 Date 6-22-18

Project / Client TO 075 / AFCEC

52°, Light Rain

REBECCA REYES } JACOBS
KRISTEN STEVENS }
LOGAN HERMANNS } GEO TEK
THOMAS BELLI }

0700 CALIBRATE EQUIPMENT - PID RENTAL WILL NOT CALIBRATE, MEET GEO TEK

0800 GEOTEK PULLING UP SB08 ROD.
CALLED TTT FOR ANOTHER PID - FINALLY HAVE CALIBRATIONS HOLDING, REPEATED CAL & WILL NOT USE UNTIL NEW RENTAL ARRIVES

830 PHOTO 4924: SETTING UP @ SB05 FACING SOUTH.

RReyes 6.22.18

Location DP009 Date 6-22-18

Project / Client TO 075 / AFCEC

0915 TTT Rental PID (new to us) on site, EB 6 22 18

1150 DP009 18Q2 SB05 01-SO-0
1x40mL VOA
1x4oz AMBER MeOH 124.56
1x8oz "
EB 6 22 18

DP009 18Q2 SB05 01-SO-MS
1x40mL VOA
1x4oz AMBER MeOH 124.70
1x8oz "
EB 6 22 18

DP009 18Q2 SB05 01-SO-SD
1x40mL VOA
1x4oz Amber MeOH 124.74
1x8oz "
EB 6-22-18

1230 DP009 18Q2 SB05 02-SO-0
1x40mL VOA
1x8oz Amber
1x4oz MeOH Amber 124.90

RReyes 6/22/18

Rite in the Rain

Location DP009 Date 6/22/18

Project / Client TO 075 / AFCEC

1355	18Q2 DP009 SB07 01 - SO - 0 2x40 mL VOA 1x4 oz Amber MeOH, 124, 54 1x8 oz "
1415	18Q2 DP009 SB07 02 - SO - 0 2x40 mL VOA 1x4oz Amber MeOH 1x8oz "
1500	BACK TO OFFICE

6/22/18

Location Date

Project / Client

Location DPOC9 Date 6/23/10

Project / Client TO075/AFCEC

50° overcast

REBECCA REYES } JACOBS
KRISTEN STEVENS }
LOGAN HERMANNS } GeoTek
THOMAS BELLI }

0800 CALIBRATE, MEET GEOTEK
-see CAL LOG

1015 18Q2DP0095B0301-SO-0
1x40mL VOA
1x4oz Amber, MeOH
1x8oz "
*see pg 52 for DPOC9 analyses

1035 18Q2DP0095B0302-SO-0
1x40mL VOA
1x4oz Amber, MeOH
1x8oz "

1035 GeoTek moved to SB06 & starts Drilling

1045 Start LOGGING BORING & COLLECTING HEADSPACE

Rite in the Rain

Location DP009 Date 6/23/10

Project / Client TO 075 / AFCEC

1055	VERY POOR RECOVERY 5-10', WILL STEP OUT AFTER BORING COMPLETION
1210	GEOTEK @ 50' & PULLING UP ROD
1215	10Q2DP009-SB0602-SO-0 2x40mL VOA 1x4 oz Amber, MeOH 1x8 oz "
1215	GEOTEK DRILLS TO RECOLLECT 5-10', HAD TO DRILL TWO TIMES FOR RECOVERY
1230	COLLECT HEADSPACE FOR 5-10'
1240	GEOTEK ENDS DRILLING & ROD PULLED UP
1250	10Q2DP009-SB0601-SO-0 2x40mL VOA 1x4 oz Amber, MeOH 1x8 oz "

6/23/10

Location DP009 Date 6/23/10

Project / Client TO075 / AFCEC

1251	10Q2DP009-SB0601-SO-1 2x40mL VOA 1x4 oz Amber, MeOH 1x8 oz "
1300	GEOTEK TO GET SKIDSTEER & BENTONITE
1310	GEOTEK PUTTING BENTONITE & COLD PATCH @ SB03
1320	10Q2DP009-IDW-SO01 1x4 oz Amber, MeOH 1x8 oz "
1330	BEGIN MOVING ONE IDW SOIL DRUM TO POL YARD
1335	END MOVING
1340	Demob from site, GEOTEK LOADING RIG on TRAILER
1355	GEOTEK MOVING DECON WATER TO POL YARD - 7 GALLONS

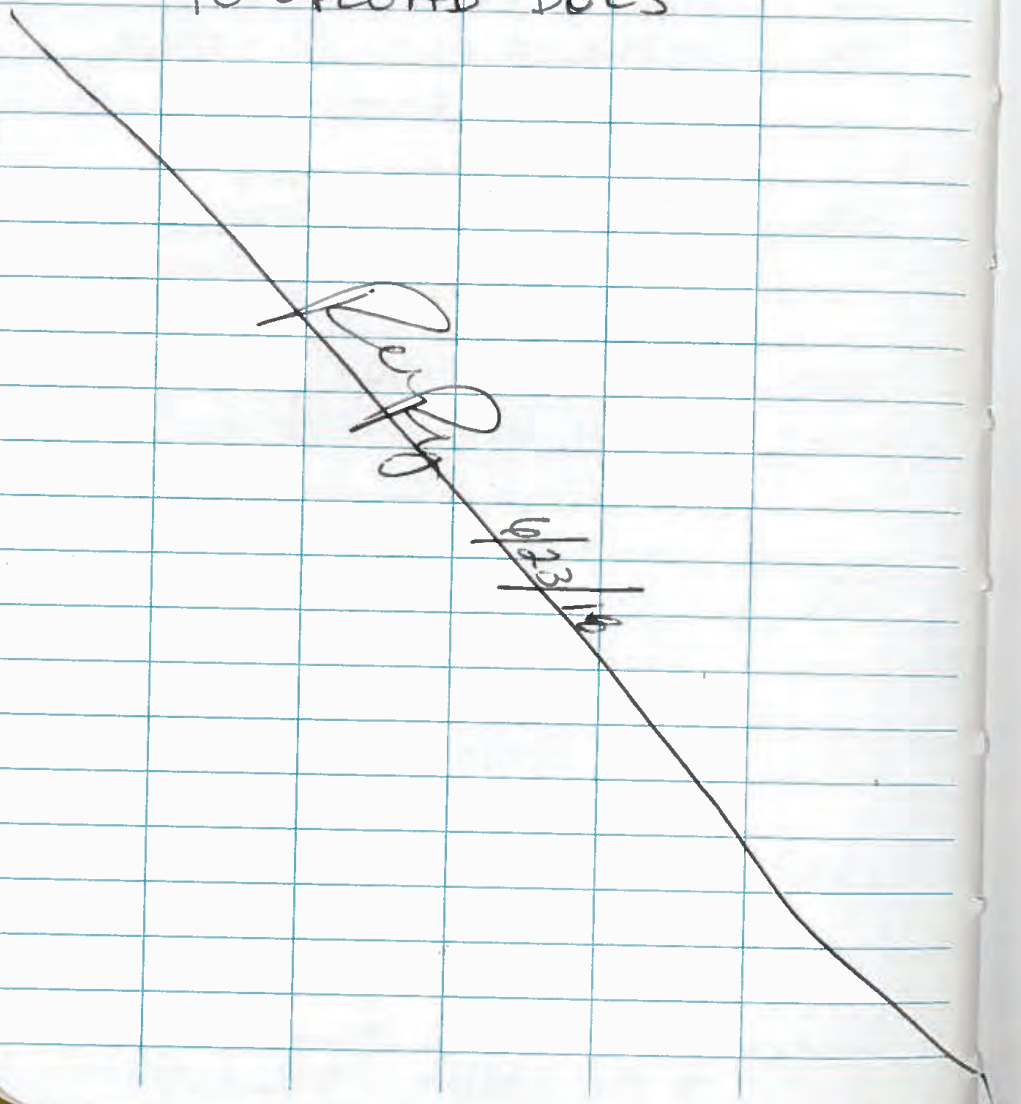
Rite in the Rain

Location DP009 Date 6/23/18

Project / Client ~~AT~~ T0075 / AFCEC

1405 Leaving DP009, back to FIELD OFFICE

1415 GEOTEK BACK TO THEIR OFFICE, HEADED TO CH OFFICE TO UPLOAD DOCS



Location Date

Project / Client

Rite in the Rain

1/3 FBER - DPU09 7-23-18

Personnel: GGB, Larry Arnstrong, Jared (Geotek)
Objective: Bldg 996 bldg survey, select and clear ~~soil~~ subslab soil vapor probe locations
Equipment: field forms, UL equipment,
Weather: Cloudy, 62°F
0730 MOB to D Gate.
0800 Arrived @ D Gate. Unable to procure badge due to system crash. Don and Larry coming to sponsor me on.
0935 Don Aide got me access to base. Sponsor not for 1 week.
1015 Arrived @ trailer. Completed PTBP. Faxed from Geotek ~~from completed~~ Signed PTBP.
1030 Arrived @ Bldg 996. Tate not @ Bldg 996 Called him and he will be back @ 1105.
1036 Inventoried Summa canisters
5 = 6-L Other canisters
4 = 1-L Summa canisters

Rite in the Rain

2/3

7-23-18

1105 Tek arrived @ Bldg 986. Allowed entrance and gave tour of bldg.
Began bldg survey.
~~Jack~~ 08 7/23/18

1127 Jared (GeoTek AK) clearing potential subslab vapor pin install location in Room 102 (Boiler Room)

1130 Carey off-site to pickup field supplies from office and Home Depot.

1143 Discussed proposed vapor pin locations w/ Carey S. are the same as well as the IA sample locations.

1400 Subslab point SS01 installed. Boiler Room 102 Slab thickness = ~8 inches

1420 ~~Sub~~ Subslab point SS01 + DP point in Room 113. Slab thickness = 10 inches

1439 Installed Ominguard IV DP monitor in Room 113. Note IA pressure probe was in Room immediately South of Room 113. because

→ SS02 12/21/18 X194

3/3

7-23-14

From 113 has its own HVAC system from remainder of building

Note: Negative DP indicates indoor pressure > outside pressure

1530 off-site

1600 Drafted daily summary email and future plan email

Alt. By 2/3/14 END

Rite in the Rain

JBER Roots
Bldg 986
7/24/18

Personel: QGB/LA

Objective: Collect subslab soil gas and 24-hr indoor/outdoor sample @ Bldg 986.

Equipment: - 1-L + 6-L summas
- 4-gas meter
- field tools

0830 prep to building 986.

0900 Arrived @ Bldg 986. Began recording initial vacuums on canisters.

0940 Larry A. on-site completed, discussed, and signed PTOP.

0950 Larry A. off-site to pick up 4-gas meter & 9V battery

1015 Set out 24-hr canisters. Not turned on yet.

1030 Larry A. back on-site

1035 Setup @ SS02 to collect sample.

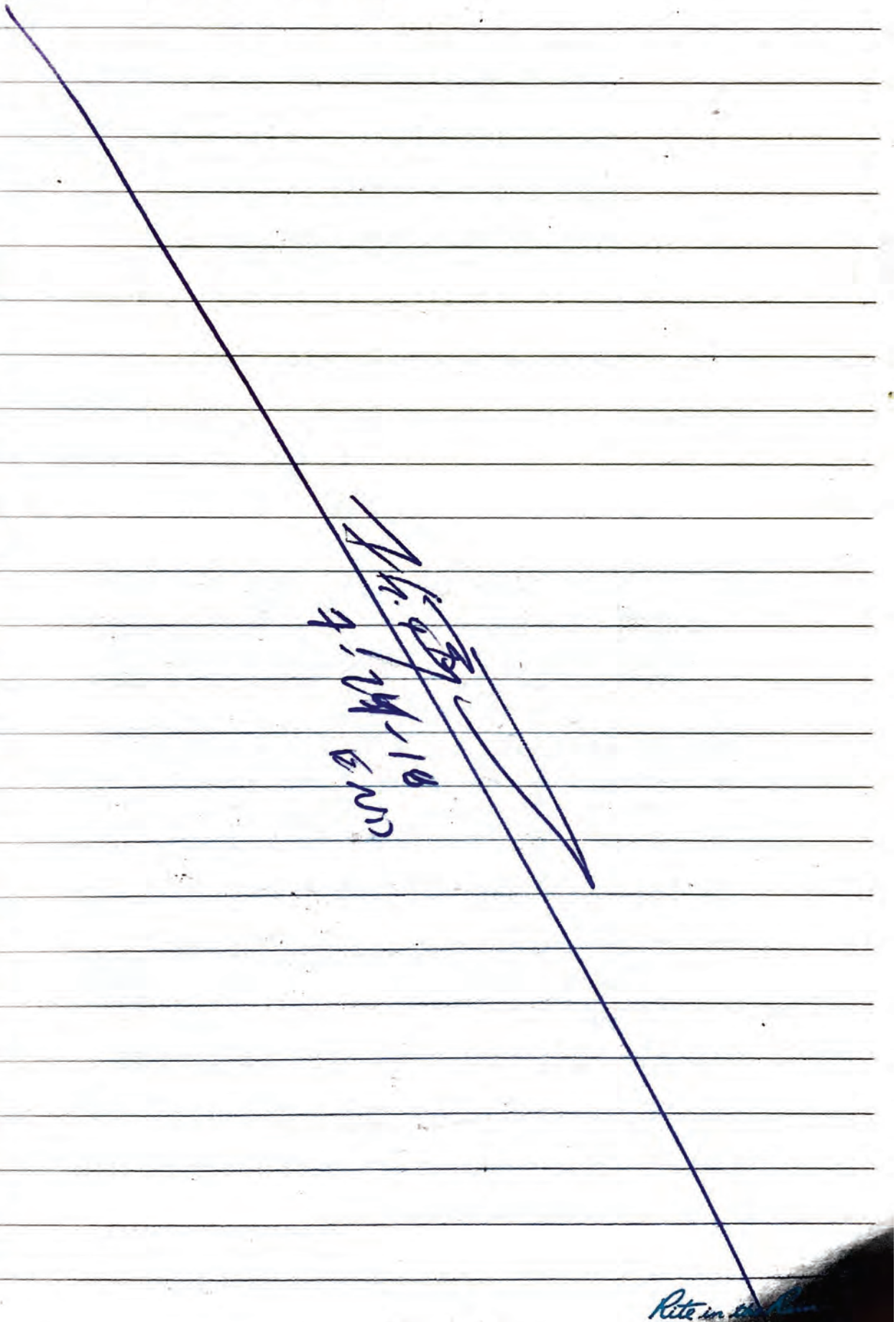
1115 Set up to sample SS01 in Boiler Room 102.

See sample forms for subslab sample details.

2/2

7-24-18

Rec Left site.



52 1/3 FBER TO CW75
DP009 Bldg 986 7-25-16

Passed: QGB
Objective: Check remaining vacuum on 24-hr canisters and retrieve these cans.
Equipment: Digital vacuum gauge
Weather: Cloudy, rain, 57°F
0730 MVB to Bldg 986
0909 Arrived @ Bldg 986
0911 Checked remaining vacuum on 6-L canisters @ Bldg 986. All vacuums looked ok (i.e., -7.5 to -10.5 inHg)
0900 Stopped by CH2M office since I got an email from Sara Jackson saying she has a box for me. Upon arrival Sara indicated she doesn't have a box nor sent the FM today. Weird.
0945 Back @ Bldg 986 Downloaded Chromeleon IV software
0958 Loretta back @ Bldg 986 to allow entry.

2/3 JBER TO OUTS
DPOW Bldg 996 7/25/18

1020 Downloaded DP data.

NOTE: Subslab DP is located in Rm 113 which has its own HVAC system. The Indoor DP point is in Rm 112 which shares the same HVAC system w/ the rest of the bldg (except Rm 113). The average DP measured from 55 pt in Rm 113 and IA pt in Rm 112 is -8.3 Pa after 2+ days of monitoring. When both DP pts are measuring in Rm 113 the DP is the inverse of the above (+8 - +9 Pa). Negative DP indicates that Indoor Pressure > SS pressure. ~~Rm 113~~

1046 Larry A. on-site. Canister ~~vacuum~~ readings are still around -6 inHg. Allowing more time for system to ~~decrease~~ level -5 inHg.

Rite in the Rain.

3/3

JBER TV CO75

DPUOG Bldg 986 7/25/18

1110 Retrieved all 24-hr (6-C) summa canisters. All final vacuums ~ -5 inHg.

1200 Completed COC and shipping labels.

1224 MOB to FEDEX to ship samples and vacuum pumps.

1400 Canisters and vacuum pump dropped

Cindi Gallup 7/25/18

1/2 JBER TO CO75
DP009 Bldg 986 7/27/18
694734.02.02.09.01

Personnel: QGB

Objective: Relocate DP datalogger from Rm 113 to Rm 102.

Equipment: Omniguard III differential pressure data logger
SN: G502312 / 6797618X

Weather: Cloudy 57°F

0730 MOB to D Gate to procure base badge... just in case I return for future work.

0800 Arrived @ D Gate contractor office. Took forever to get my badge. Issues w/ badge printer.

0930 Arrived @ field trailer to ~~the~~ retrieve spanner wrench to remove sill vapor pin caps.

0945 Arrived @ Bldg 986. Relocated Omniguard to Room 102 (was in Room 113). As mentioned in previous days notes. Room 113 has its own

Rite in the Rain.

JEER TO W75

4/2 DP09 B986 7/27/18

air handler that is continually pulling air out of the room and exhaust to the exterior. The rest of Bldg 986 is on a different air handling system.

DP datalogger logging interval: 5min

1025 Left Bldg 986 to FEDEX to ship remaining equipment.

1045 Ship remaining equipment @ FEDEX ship center.

1059 MOB to ANC office.

[signature]
7/27/18
END

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Appendix A-2
Soil Boring Logs

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SHEET 1 of 2

PROJECT NUMBER: 694734

BORING NUMBER: *DP009-SB03*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 50.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 300.00 feet	**NORTHING (ALASKA ZONE 4):** 2654068.27	**EASTING (ALASKA ZONE 4):** 1690105.62	**DATE STARTED:** 6/23/2018	**DATE COMPLETED:** 6/23/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
0		76			ASPHALT.			Ground surface = asphalt. Drilling with Dual Tube 45.
1					POORLY-GRADED GRAVEL WITH SAND (GP). Dusky yellowish brown (10YR 2/2), damp, mostly fine gravel, some fine to coarse sand, trace fines; fill material.		86.7	Sample headspace collected every 2-foot interval.
2								
3					WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dark yellowish brown (10YR 4/2), mostly fine to coarse gravel, some fine to coarse sand, with fines.		83.0	
4								
5		76				0.0	72.3	
6					WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dusky yellowish brown (10YR 2/2), moist, mostly fine to coarse gravel, some fine to coarse sand changing to medium to coarse sand at 6-feet bgs, minor fines.			
7							76.8	
8			18Q2DP009-SB0301-SO-0		WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), damp, mostly fine to coarse gravel, some fine to coarse sand, trace fines.			Soil sample collected from 8 to 10-feet bgs.
9							93.6	
10								
11		84					78.4	
12								
13							3.9	
14					POORLY-GRADED GRAVEL WITH SILT AND SAND (GP-GM). Dark yellowish brown (10YR 4/2), moist, mostly fine gravel, some fine to coarse sand, with fines; coal present.			
15						0.0	9.0	Drilling with Macro-Core.
16		66						
17							47.8	
18								
19							79.6	
20						0.0		
21		86			POORLY-GRADED SAND WITH SILT AND GRAVEL (SP-SM). Darky yellowish brown (10YR 4/2), moist, minor fine gravel, mostly medium to coarse sand, with fines; coal present.		4.5	
22								
23					WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dark yellowish brown (10YR 4/2), mostly fine to coarse gravel, some fine to coarse sand, minor fines; coal present.		1.6	
24								
25							2.9	
26		84			POORLY-GRADED SAND WITH GRAVEL (SP). Dark yellowish brown (10YR 4/2), minor fine gravel, mostly medium to coarse sand, trace fines; coal present.		2.4	
27							2.2	
28								
29					WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dark yellowish brown (10YR 4/2), mostly fine to coarse gravel, some fine to coarse sand, minor fines; coal present.		1.5 2.4	
30								

ch2m.

SHEET 2 of 2	PROJECT NUMBER: 694734	BORING NUMBER: *DP009-SB03*

SOIL BORING LOG

PROJECT NAME:		HOLE DEPTH (ft):	DRILLING CONTRACTOR:	
TO0075, Site DP009 Supplemental RI		50.0	GEOTEK ALASKA	
SURFACE ELEVATION:	**NORTHING (ALASKA ZONE 4):**	**EASTING (ALASKA ZONE 4):**	**DATE STARTED:**	**DATE COMPLETED:**
300.00 feet	2654068.27	1690105.62	6/23/2018	6/23/2018
STATIC WATER LEVEL:	**DRILLING METHOD:**		**DRILLING EQUIPMENT:**	
N/A	DUAL CORE/AIR HAMMER		GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
31					POORLY-GRADED GRAVEL WITH SAND (GP). Olive gray (5Y 4/1) to light bluish gray (5B 7/1), dry, fine angular pulverized to subrounded non-pulverized gravel, fine to coarse sand.			Drilling with air hammer. Soil description based on chips.
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45						0.0	2.4	
46		88			WELL-GRADED GRAVEL WITH SAND (GW). Olive gray (5Y 4/1), moist, mostly fine to coarse gravel, some fine to coarse sand, trace fines; coal present.			Drilling with Macro-Core.
47								
48			18Q2DP009-SB0302-SO-0				1.5	Soil sample collected from 48 to 50-feet bgs.
49						0.0		
50					Boring Terminated at 50.0 feet bgs			

ch2m.SM

SHEET 1 of 2

PROJECT NUMBER: 694734

BORING NUMBER: *DP009-SB04*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 50.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 299.80 feet	**NORTHING (ALASKA ZONE 4):** 2654031.31	**EASTING (ALASKA ZONE 4):** 1690149.80	**DATE STARTED:** 6/21/2018	**DATE COMPLETED:** 6/21/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
1		68			WELL-GRADED SAND WITH GRAVEL (SW). Dusky yellowish brown (10YR 2/2), damp, some fine round gravel, mostly fine to coarse sand, trace fines.		372	Ground surface = gravel landing. Drilling with Dual Tube 45. Sample headspace collected every 2-foot interval.
2					POORLY-GRADED GRAVEL WITH SILT AND SAND (GP-GM). Dark yellowish brown (10YR 4/2), damp, mostly fine gravel, some fine to coarse sand, with fines.			
3							328	
4								
5					POORLY-GRADED GRAVEL WITH SILT AND SAND (GP-GM). Moderate brown (5YR 3/4), moist, mostly coarse gravel, some fine to coarse sand, with fines; chemical odor from 5 to 5.5-feet bgs.		302	
6		58			POORLY-GRADED SAND WITH GRAVEL (SP). Dark yellowish brown (10YR 4/2), moist to dry, some fine to coarse gravel, mostly medium to coarse sand, trace fines.			
7							327	
8								
9							410	
10								
11		66	18Q2DP009-SB0401-SO-0 18Q2DP009-SB0401-SO-1			0.0	466	Soil sample collected from 10 to 12-feet bgs.
12					WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), moist to damp, mostly fine to coarse gravel, some medium to coarse sand, trace fines.			
13							25.4	
14								
15							9.1	Drilling with Macro-Core.
16		70			WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dark yellowish brown (10YR 4/2), damp, mostly fine to coarse gravel, some fine sand, with fines.			
17							1.8	
18								
19					WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), wet, mostly fine to coarse gravel, some medium to coarse sand, trace fines.		2.6	
20					WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dark yellowish brown (10YR 4/2), damp, mostly fine to coarse gravel, some fine sand, with fines; coal present.	0.0		
21		84			POORLY-GRADED GRAVEL WITH SAND (GP). Dark yellowish brown (10YR 4/2), damp, mostly fine gravel and fine to coarse gravel from 25 to 30-feet bgs, some medium sand, trace fines; coal present.		2.9	
22								
23							1.7	
24								
25							2.1	
26		88						
27							3.8	
28								
29							7.4	
30								

PROJECT NUMBER:	BORING NUMBER:
694734	*DP009-SB04*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 50.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 299.80 feet	**NORTHING (ALASKA ZONE 4):** 2654031.31	**EASTING (ALASKA ZONE 4):** 1690149.80	**DATE STARTED:** 6/21/2018	**DATE COMPLETED:** 6/21/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
31					POORLY-GRADED GRAVEL WITH SAND (GP). Olive gray (5Y 4/1) to light bluish gray (5B 7/1), dry, fine angular pulverized to subrounded non-pulverized gravel, fine to coarse sand.	0.0		Drilling with air hammer. Soil description from chips.
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46					WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), damp, mostly fine to coarse gravel, some medium to coarse sand, trace fines.			Drilling with Macro-Core.
47							8.9	Sample headspace collected from top and bottom half of interval.
48			118Q2DP009-SB0402-SO-0					
49						0.0	10.2	
50					Boring Terminated at 50.0 feet bgs			

ch2m.

SHEET 1 of 2

PROJECT NUMBER: 694734

BORING NUMBER: *DP009-SB05*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 60.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 298.70 feet	**NORTHING (ALASKA ZONE 4):** 2653991.07	**EASTING (ALASKA ZONE 4):** 1690142.73	**DATE STARTED:** 6/22/2018	**DATE COMPLETED:** 6/22/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
1		70			SANDY ORGANIC SOIL WITH GRAVEL (OL). Moderate brown (5YR 4/4), damp, with fine round gravel, some fine sand, mostly organice silt; fine rootlets.		12.7	Ground surface = grass. Drilling with Dual Tube 45.
2					POORLY-SORTED SAND WITH GRAVEL (SP). Light brown (5YR 5/6), damp, with fine round gravel, mostly fine sand, trace fines.			Sample headspace collected every 2-foot interval.
3					WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), damp, mostly fine with coarse gravel to mostly coarse with fine gravel at 10-feet bgs, some medium to coarse sand, trace fines; chemical odor from 1.4 to 8-feet bgs.		1,436	
4								
5							12.8	
6		64	18Q2DP009-SB0501-SO-0 18Q2DP009-SB0501-SO-MS 18Q2DP009-SB0501-SO-SD					Soil sample collected from 6 to 8-feet bgs.
7							1,472	
8								
9							52.7	
10						0.0		
11		66					7.5	
12					WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Olive gray (5Y 4/1), damp to moist, mostly fine to coarse gravel, some fine to coarse sand, with fines.			
13							29.4	
14								
15							63.5	Drilling with Macro-Core.
16		86			POORLY-GRADED GRAVEL WITH SAND (GP). Dark yellowish brown (10YR 4/2), mostly fine with coarse gravel, fine to coarse sand changing to medium to coarse sand at 18-feet bgs, trace fines; coal present.			
17							370	
18								
19							329	
20						0.0		
21		78			POORLY-GRADED SAND WITH GRAVEL (SP). Olive gray (5Y 4/1), damp, some fine to coarse gravel, mostly medium sand, trace fines; coal present.		280	
22								
23					WELL-GRADED GRAVEL WITH SAND (GW). Damp, mostly fine to coarse gravel, some medium sand, trace fines.		31.9	
24								
25							59.6	
26		90						
27							99.3	
28								
29							138	
30								
31					POORLY-GRADED GRAVEL WITH SAND (GP). Olive gray (5Y 4/1) to light bluish gray (5B 7/1), dry, fine angular pulverized to subrounded non-pulverized gravel, fine to coarse sand.			Drilling with air hammer. Soil description based on chips.
32								
33								
34								
35								

SHEET 2 of 2

PROJECT NUMBER: 694734

BORING NUMBER: *DP009-SB05*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 60.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 298.70 feet	**NORTHING (ALASKA ZONE 4):** 2653991.07	**EASTING (ALASKA ZONE 4):** 1690142.73	**DATE STARTED:** 6/22/2018	**DATE COMPLETED:** 6/22/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
36					POORLY-GRADED GRAVEL WITH SAND (GP). Olive gray (5Y 4/1) to light bluish gray (5B 7/1), dry, fine angular pulverized to subrounded non-pulverized gravel, fine to coarse sand.	0.0		Drilling with air hammer. Soil description based on chips.
37								
38								
39								
40								
41								
42								
43								
44								
45								
46		96			POORLY-GRADED SAND WITH GRAVEL (SP). Olive gray (5Y 4/1), moist, some fine with coarse gravel, mostly medium to coarse sand, trace fines; coal present.			Drilling with Dual Core.
47							4.9	Sample headspace collected from top and bottom halves of intervals.
48								
49					POORLY-GRADED SAND (SP). Olive gray (5Y 4/1), moist, trace fine to coarse gravel, mostly fine to medium sand, trace fines.		38.9	
50								
51		92			POORLY-GRADED GRAVEL WITH SAND (GP). Dark yellowish brown (10YR 4/2), damp, mostly fine with coarse gravel with increasingly coarse gravel, some fine to medium sand, trace fines; coal present.	0.0	42.6	
52								
53								
54							68.7	
55								
56		68						
57							11.1	
58			18Q2DP009-SB0502-SO-0					Soil sample collected from 58 to 60-feet bgs.
59							12.7	
60						0.0		
					Boring Terminated at 60.0 feet bgs			

ch2m.

SHEET 1 of 2

PROJECT NUMBER: 694734

BORING NUMBER: *DP009-SB06*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 50.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 299.90 feet	**NORTHING (ALASKA ZONE 4):** 2654011.71	**EASTING (ALASKA ZONE 4):** 1690112.09	**DATE STARTED:** 6/23/2018	**DATE COMPLETED:** 6/23/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
1		74			SANDY ORGANIC SOIL WITH GRAVEL (OL). Grayish brown (5YR 3/2), damp, minor fine gravel, some fine to coarse sand, mostly organic silt; fine rootlets.		125	Ground surface = grass. Drilling with Dual Tube 45. Sample headspace collected every 2-foot interval.
2					WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Moderate brown (5YR 4/4), damp, mostly fine to coarse gravel, some fine to coarse sand, with fines.			
3							97.9	
4								
5					WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Moderate brown (5YR 4/4), damp to moist, mostly fine to coarse gravel, some fine sand, with fines; textile liner at 5.5-feet bgs.	0.0	5.6	
6								
7							2.2	
8								
9							1.6	
10								
11					WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dark yellowish brown (10YR 4/2), damp to wet, mostly fine to coarse gravel, some fine to coarse sand, with fines; strong chemical odor with staining in middle of boring.		45.0	
12			18Q2DP009-SB0601-SO-0 18Q2DP009-SB0601-SO-1					Soil sample collected from 12 to 14-feet bgs.
13							241	
14								
15					WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), damp to wet, mostly fine to coarse gravel, some fine to coarse sand, trace fines; coal present and mild chemical odor.	0.0	36.4	Drilling with Macro-Core.
16								
17							20.6	
18								
19							35.6	
20								
21		90			WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), damp, mostly fine to coarse gravel, some fine to coarse sand, trace fines; mild chemical odor, coal present, and cobble present at 28.5-feet bgs.		26.3	
22								
23							10.5	
24								
25							14.9	
26		86						
27							3.8	
28								
29					POORLY-GRADED SAND WITH GRAVEL (SP). Dark yellowish brown (10YR 4/2), moist, minor fine gravel, mostly fine to medium sand, trace fines.		6.4	
30								

ch2m.

SHEET 2 of 2

PROJECT NUMBER: 694734

BORING NUMBER: *DP009-SB06*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 50.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 299.90 feet	**NORTHING (ALASKA ZONE 4):** 2654011.71	**EASTING (ALASKA ZONE 4):** 1690112.09	**DATE STARTED:** 6/23/2018	**DATE COMPLETED:** 6/23/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
31					POORLY-GRADED GRAVEL WITH SAND (GP). Olive gray (5Y 4/1) to light bluish gray (5B 7/1), dry, fine angular pulverized to subrounded non-pulverized gravel, fine to coarse sand.	0.0		Drilling with air hammer. Soil description based on chips.
32								
33								
34								
35								
36								
37								
38								
39								
40						0.0		
41								
42								
43								
44								
45								
46		98			WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dark yellowish brown (10YR 4/2), damp to wet, mostly fine to coarse gravel, some fine to coarse sand, minor fines; slight chemical odor, and coal present.			Drilling with Macro-Core.
47							2.6	
48			18Q2DP009-SB0602-SO-0		POORLY-GRADED SAND WITH GRAVEL (SP). Dark yellowish brown (10YR 4/2), damp, minor fine gravel, mostly medium sand, trace fines.			Soil sample collected from 47.5 to 50-feet bgs.
49					POORLY-GRADED GRAVEL WITH SAND (GP). Dark yellowish brown (10YR 4/2), damp, mostly coarse gravel, some medium sand, trace fines; coal present.	0.0	2.4	
50					Boring Terminated at 50.0 feet bgs			

ch2m.

SHEET 1 of 2	PROJECT NUMBER: 694734	BORING NUMBER: *DP009-SB07*

SOIL BORING LOG

PROJECT NAME:		HOLE DEPTH (ft):	DRILLING CONTRACTOR:	
TO0075, Site DP009 Supplemental RI		50.0	GEOTEK ALASKA	
SURFACE ELEVATION:	**NORTHING (ALASKA ZONE 4):**	**EASTING (ALASKA ZONE 4):**	**DATE STARTED:**	**DATE COMPLETED:**
297.80 feet	2653984.64	1690078.23	6/22/2018	6/22/2018
STATIC WATER LEVEL:	**DRILLING METHOD:**		**DRILLING EQUIPMENT:**	
N/A	DUAL CORE/AIR HAMMER		GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
1		60			SANDY ORGANIC SOIL WITH GRAVEL (OL). Moderate brown (5YR 4/4), damp, with fine gravel, some fine sand, mostly organic silt; fine rootlets.		18.2	Ground surface = plants and grass. Drilling with Dual Core 45. Sample headspace collected every 2-foot interval.
2					WELL-GRADED GRAVEL WITH SAND (GW). Light brown (5YR 5/6), damp, mostly round fine to coarse gravel, some fine sand, trace fines.			
3					POORLY-GRADED GRAVEL WITH SAND (GP). Dark yellowish brown (10YR 4/2), damp, mostly fine with coarse gravel, some fine to coarse sand, trace fines; 4-inch plus cobbles present from 5 to 5.5-feet bgs, chemical odors and staining from 5 to 10-feet bgs.		90.9	
4								
5		72					16.3	
6								
7							130	
8								
9							40.1	
10		74	18Q2DP009-SB0701-SO-0		WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dark yellowish brown (10YR 4/2), damp, mostly fine to coarse gravel, some fine to coarse sand, with fines; coal present, cobble at 10-feet bgs about 4 inches in length.	0.0		Soil sample collected from 10 to 12-feet bgs.
11							205	
12								
13							159	
14								
15		70				0.0	6.8	Drilling with Macro-Core.
16								
17							104	
18								
19							11.3	
20		72			WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), damp to moist, mostly fine to coarse gravel, some medium to coarse sand, trace fines; coal present.			
21							5.7	
22								
23							8.0	
24								
25		96			POORLY-GRADED GRAVEL WITH SILT AND SAND (GW-GM). Dark yellowish brown (10YR 4/2), damp, mostly fine gravel, some fine to coarse sand, with fines.		5.9	
26								
27					WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), damp to moist, mostly fine to coarse gravel, some medium to coarse sand, trace fines; coal present.		2.6	
28								
29							2.3	
30								

ch2m.

PROJECT NUMBER:	BORING NUMBER:
694734	*DP009-SB07*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 50.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 297.80 feet	**NORTHING (ALASKA ZONE 4):** 2653984.64	**EASTING (ALASKA ZONE 4):** 1690078.23	**DATE STARTED:** 6/22/2018	**DATE COMPLETED:** 6/22/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
31					POORLY-GRADED GRAVEL WITH SAND (GP). Olive gray (5Y 4/1) to light bluish gray (5B 7/1), dry, fine angular pulverized to subrounded non-pulverized gravel, fine to coarse sand.	0.0		Drilling with air hammer. Soil description from chips.
32								
33								
34								
35						0.0		
36								
37								
38								
39								
40								
41								
42								
43								
44								
45						0.0		Drilling with Macro-Core.
46					POORLY-GRADED GRAVEL WITH SAND (GP). Dark yellowish brown (10YR 4/2), damp to moist, mostly fine with coarse gravel, some medium to coarse sand, trace fines; coal present.		1.4	
47								
48			18Q2DP009-SB0702-SO-0					Soil sample collected from 47.5 to 50-feet bgs.
49							1.7	
50					Boring Terminated at 50.0 feet bgs			

SHEET 1 of 2

PROJECT NUMBER: 694734

BORING NUMBER: *DP009-SB08*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 64.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 299.50 feet	**NORTHING (ALASKA ZONE 4):** 2654024.44	**EASTING (ALASKA ZONE 4):** 1690077.87	**DATE STARTED:** 6/21/2018	**DATE COMPLETED:** 6/21/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
1		54			SANDY ORGANIC SOIL WITH GRAVEL (OL). Moderate brown (5YR 4/4), damp, with fine to coarse gravel, with fine sand, mostly organic silt; fine rootlets.		326	Ground surface = grass. Drilling with Dual Tube 45.
2					POORLY-GRADED SAND WITH GRAVEL (SP). Dark yellowish brown (10YR 4/2), damp, with fine to coarse gravel, mostly fine to medium sand, trace fines.			
3							286	Sample headspace collected every 2-foot interval.
4								
5					POORLY-GRADED SAND WITH GRAVEL (SP). Moderate brown (5YR 4/4), moist, with fine to coarse gravel, mostly fine sand, trace fines.	0.0	280	
6		60			WELL-GRADED SAND WITH GRAVEL (SW). Dark yellowish brown (10YR 4/2), dry to damp, some fine to coarse gravel, mostly fine to coarse sand, trace fines; 4-inch plus cobbles present.			
7							275	
8								
9							309	
10						0.0		
11		80			WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), damp, mostly fine and coarse gravel, some fine to coarse sand, trace fines; staining and very slight chemical odor form 10 to 10.5-feet bgs.		302	
12								
13					WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), moist to wet, mostly coarse to fine gravel, some coarse sand, trace fines.		282	
14								
15					WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), moist, mostly coarse to fine gravel, some fine to medium sand, trace fines; coal present.		294	Drilling with Macro-Core.
16		86			WELL-GRADED GRAVEL WITH SAND (GW). Dark yellowish brown (10YR 4/2), damp to moist, mostly fine to coarse gravel, some fine sand, trace fines; coal present.			
17							86.3	
18								
19							229	
20						0.0		
21		86					239	
22			18Q2DP009-SB0801-SO-0					Soil sample collected from 22 to 24 feet bgs.
23					WELL-GRADED SAND WITH GRAVEL (SW). Moist to wet, some fine to coarse gravel, mostly fine to coarse sand, trace fines; coal present, and strong POL odor and staining from 22.5 to 25-feet bgs.		1,000	
24								
25							13.8	
26		94						
27							16.2	
28								
29							213	
30								
31					POORLY-GRADED GRAVEL WITH SAND (GP). Olive gray (5Y 4/1) to light bluish gray (5B 7/1), dry, fine angular pulverized to subrounded non-pulverized gravel, fine to coarse sand.			Drilling with air hammer. Soil description based on chips.
32								
33								
34								
35								

SHEET 2 of 2

PROJECT NUMBER: 694734

BORING NUMBER: *DP009-SB08*

SOIL BORING LOG

PROJECT NAME: TO0075, Site DP009 Supplemental RI		**HOLE DEPTH (ft):** 64.0	**DRILLING CONTRACTOR:** GEOTEK ALASKA	
SURFACE ELEVATION: 299.50 feet	**NORTHING (ALASKA ZONE 4):** 2654024.44	**EASTING (ALASKA ZONE 4):** 1690077.87	**DATE STARTED:** 6/21/2018	**DATE COMPLETED:** 6/21/2018
STATIC WATER LEVEL: N/A	**DRILLING METHOD:** DUAL CORE/AIR HAMMER		**DRILLING EQUIPMENT:** GEOPROBE 8040 DT	
LOCATION: JBER, AK			**LOGGED BY:** R. REYES/ANC	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE ID	GRAPHIC	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	PID (ppm): CORE/ CUTTINGS	PID (ppm): HEAD SPACE	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
36						0.0		
37								
38								
39								
40								
41								
42								
43								
44								
45								
46		86			POORLY-GRADED SAND WITH GRAVEL (SP). Olive gray (5Y 4/1), wet, with fine gravel, mostly medium sand, trace fines; moderate POL odor.			Drilling with Macro-Core.
47							296	Sample headspace collected from top and bottom of intervals.
48					WELL-GRADED GRAVEL WITH SAND (GW). Olive gray (5Y 4/1), moist, mostly fine to coarse gravel, some fine to medium sand, trace fines; coal present.			
49							275	
50								
51								
52								
53								
54								
55								
56								
57							109	
58								
59							119	
60								
61		100			POORLY-GRADED SAND WITH GRAVEL (SP). Moist, some fine gravel, mostly medium to coarse sand, trace fines.		178	
62			18Q2DP009-SB0802-SO-0		WELL-GRADED GRAVEL WITH SAND (GW). Olive gray (5Y 4/1), moist, mostly fine to coarse gravel, some fine to medium sand, trace fines; coal present.			Soil sample collected from 62 to 64 feet bgs.
63							80.6	
64								
					Boring Terminated at 64.0 feet bgs			Refusal at 64 feet bgs.

ch2m.

Appendix A-3
Photographic Log

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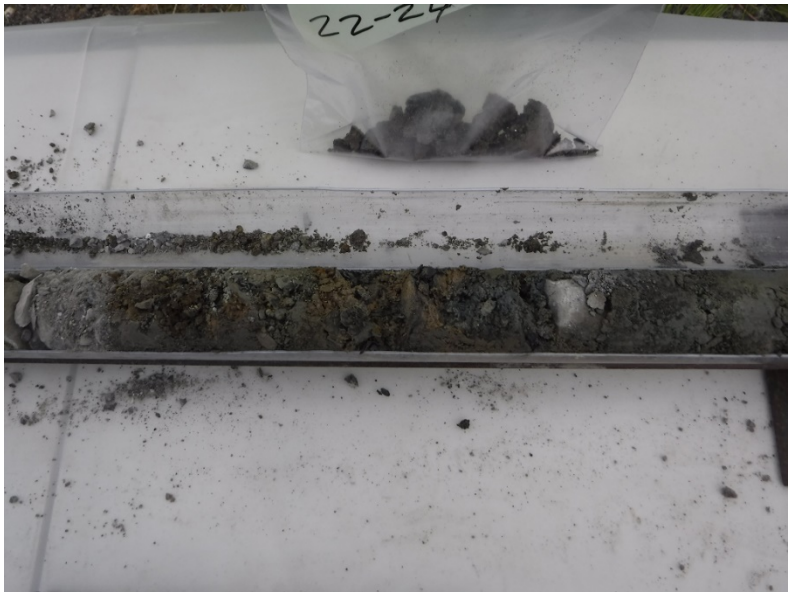

Photo 1: Macro-core sample from SB04 at 22 to 24 feet bgs, staining of soil.

Photo 2: Direct push drilling at DP009 – SB08.

Photo 3: Soil staining at DP009 – SB06, strong chemical odor noted upon opening.

Photo 4: Strong chemical odor noted and staining at DP009 – SB06.

Photo 5: Textile liner at 5.5 feet bgs at AT029 – SB06.

Photo 6: Petroleum, Oil, and Lubricants Building backyard after drilling activities completed.

Photo 7: Building 986 24-hour indoor air sample location IA01.

Photo 8: Building 986 24-hour indoor air sample location IA04.

Photo 9: Building 986 24-hour outdoor air sample location OA01.

Photo 10: Building 986 24-hour indoor air sample location IA02.

Photo 11: Subslab soil gas probe SS01 with rebar grid marks.

Photo 12: Differential pressure datalogger at SS02 (Room 113).

Photo 13: Flammables cabinets in Room 113.

Photo 14: Containers of test fuels in Room 113 flammables cabinet.

Photo 15: Product stored in Room 113 flammables cabinet.

Photo 16: Products stored in Room 113 flammables cabinet.

Photo 17: Building 986 exterior.

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Appendix A-4
Building Survey Forms

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Building Survey Form for Vapor Intrusion Investigations

Property ID: Building 796

Site/Project Name: JBER TO0075 DP009

Date of Survey: 7-23-19

Preparer(s): AGB/LA

Building Occupancy and Use

1. What is the estimated number of building occupants?

up to 4

(Make general observations about age range and percentage of male to female ratio)

2. Are there any sensitive receptors in the building? (elderly, children, immuno-compromised, women of child bearing age, etc.)

3. How long have the current occupants occupied the building? 3 yrs (Robert Tate)

4. What is the building type/use? Circle all that apply and describe.

Residential (single family, duplex, apartments) / Office / Strip Mall / Commercial / Industrial / Other:

Petroleum Laboratory

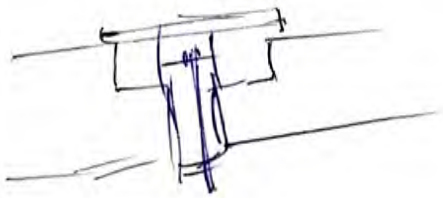
Describe building use (circle all that apply):

Residential / Manufacturing / Storage / Chemical Storage / Administrative / Instrumentation / Other:

Petroleum Laboratory / Test fuels

5. What are the historical activities within the building (if different than above)?

Tate believes the building has always been a petr petro Lab.



Building Occupancy and Use - continued

Questions 6 - 8 are applicable to non-residential buildings only.

6. What type of work is performed within the building? Fuel testing

7. How many hours per day or week do workers spend in the building?

8 hours

8. Is the building accessed by the public? (Describe approximate number of persons, frequency of visits, and duration of visits.)

No. Employees only

Building Construction

1. What year was the building constructed?

2. Have there been additions to the building? If so, when? (Identify on building sketch)

Asbestos floor tiles covered w/ sheet vinyl flooring in 2012

3. What are the approximate dimensions of the building?

4. What are the construction materials of the exterior of the building?

Cinder block and sheet metal exterior

5. How many floors does the building have? One

Does the main floor sit on, below, or above grade? Slab on grade.
(How many feet above or below grade?)

Number of floors at or above grade? one

Number of floors below grade? Zero
(How many feet below grade?)

Building Construction - continued

6. Describe the basement (if present): NA

Does the building have a basement and/or crawl space? NO

How many feet below grade?

Approximate square footage:

Approximate ceiling height (give range if varying height):

Is the basement separated into multiple rooms? Describe (note use, if space is finished/unfinished):

Construction materials of walls (i.e. poured concrete, cinderblock, brick, etc.; are the walls covered with epoxy?):

Are significant cracks present in the walls?

7. Describe the main floor:

Approximate square footage: 3,414

Approximate ceiling height (give range if varying height): 8-ft (drop tile ceiling)

Is the main floor separated into multiple rooms? Yes. Breakroom, Mechanical Room, offices, Storage rooms, Lab space

Construction materials of walls (i.e. framing, siding, cinderblock, etc.):

Cinder block exterior, w/ drywall interior

Building Construction - continued

8. Describe the building slab:

Construction materials of floor/slab: Concrete slab w/ asbestos tiles covered w/ static dissipating flooring (installed 2012)

Describe the floor coverings (epoxy paint, carpet, tile, etc.) static dissipating cover throughout building

If concrete slab, are expansion joints present? yes

Are they sealed/showing deterioration? sealed (good shape)

Are significant cracks present in the slab? NO

Are there any penetrations in the slab? (utility conduits, etc.) floor drains

Is there a subslab vapor/moisture barrier in place? NO

Are any floor drains or sumps present? Is there standing water in them? floor drains in boiler room, Lab.

Are there any subsurface vaults present? (if so describe and add locations to building sketch)

No

9. Does the building have a moisture/dampness problem?

(No) / Rarely (less than 1 time per year) / Occasionally (1-2 times per year) / Frequently

10. Does the building ever flood?

(No) / Rarely (less than 1 time per year) / Occasionally (1-2 times per year) / Frequently

11. Is there a septic system? [ ] Yes [ ] Yes, but not in use [ ] No

12. Is there irrigation or a private well? [ ] Yes [ ] Yes, but not in use [✓] No

13. Type of ground cover outside: (Grass) / Concrete / Gravel / (Asphalt) / Other Asphalt (north area) Grass/Native (south area)

14. Additional notes on building construction:

Utilities (gas + water + electric) enter building on east exterior wall

Existing Vapor Mitigation Systems

1. Has a radon or vapor mitigation system been installed in this building? (Show location on building sketch)

NO

If yes: Installation Date: _____

Type of System: Passive Venting / Active Subslab Depressurization
Crack and Crevice Sealing / Dilution Ventilation Control / Other

Notes: _____

Air Flow Within the Building and Outdoor Air Exchange

1. Are there any areas of the building that are positively or negatively pressurized (look for doors not opening and/or closing properly, perceptible air flow, audible fan noises)?

Entire building has air exchanger to maintain clean air due to nature of tasks performed in buildings. Room 113 (Haz Waste Storage) has large ceiling mounted air handler

2. Is there one HVAC zone or multiple zones? How many zones? Add thermostat locations to building floorplan, if available.

Room 113 appears to have its own HVAC system
Rest of bldg is one air zone / HVAC zone

3. Type of ventilation system (circle all that apply):

Central Air Condition / Mechanical Fans / Bathroom Ventilation Fans / Individual Air Condition Units
Kitchen Range Hood Fan / Outside Air Intake / Industrial Floor Fans
Whole-Building Attic Exhaust Fan / Other: Air exchanger system

4. Type of heating system (circle all that apply):

Forced Hot Air / Hot Air Radiation / Wood / Steam Radiation / Heat Pump / Individual Heater / Hot Water Radiation
Kerosene Heater / Fireplace / Electric Baseboard / Other: _____

5. Type of fuel utilized (circle all that apply):

Natural Gas / Electric / Fuel Oil / Wood / Coal / Solar / Kerosene / Other: _____

6. Are there any sources of outdoor air?

☑ Mechanical (AHU) ☐ Doors
☑ Windows ☐ Other

Are windows/doors left open routinely (seasonal differences)? Not often

Evaluation of Potential Indoor VOC Sources

1. Are SDSs available for chemicals used with in the building? If possible, obtain a copy of the Table of Contents. List items in additional notes section (include approximate quantities and frequency).

☑ Yes ☐ No

2. Do any of the products stored in the building contain VOCs?

☑ Yes ☐ No Petro products / No chlorinated VOC visible

3. Are any of the target analytes used in the building?

☑ Yes ☐ No likely benzene

If yes, is the usage confined to a specific room/area?

☐ Yes ☑ No likely to be found in air throughout bldg since often doors are left open to lab area

4. Are pesticides used for indoor pest control?

☐ Yes ☑ No

If yes: Name of product: _____

Frequency of use: _____

Has there been an application within the last 6 months? _____

5. Is smoking permitted inside the building?

☐ Yes ☑ No

If yes, does smoking typically occur within a specific room/area?

☐ Yes ☐ No Notes: _____

How often? _____

Last time someone smoked in the building? _____

6. Has there been any remodeling or construction within the past 6 months (i.e. new carpeting/tiling, painting, additions, new furniture, etc.)

☐ Yes ☑ No

_____

_____

_____

Is there any planned for the near future?

☐ Yes ☐ No

- ext. doors are hinges to be replaced
- Repainting floors w/ static dissipating paint
- Back up generator installed on exterior east wall

Evaluation of Potential Indoor VOC Sources - continued

7. Does the building have an attached garage or do vehicles regularly enter the space (example: a vehicle repair shop)?
☐ Yes ☑ No

8. Are gas-powered equipment or cans of gasoline/fuels stored in the building or attached garage?
☑ Yes ☐ No
Room 113 (fuels stored in this room)

9. Do building occupants dry clean their clothes? ☐ Yes ☑ No

If yes, how often? Weekly / Monthly / Infrequently (3-4 times a year)

10. Has there ever been a fire in the building? ☐ Yes ☑ No

11. Has there ever been a known chemical spill immediately outside or inside the building?
☑ Yes ☐ No
historical exterior well sump

12. Was the building screened with a ppbRAE to identify indoor VOC sources? If yes, describe the results:
☐ Yes ☐ No

Evaluation of Potential Outside VOC Sources

1. Are there stationary sources nearby (i.e. gas stations, emission stacks, hazardous waste storage, etc.):
☑ Yes ☐ No
vehicles parked outside building

2. Is there heavy vehicular traffic nearby (or other mobile sources)?
☐ Yes ☑ No

ALASKA DEPARTMENT OF ENVIRONMENAL CONSERVATION
BUILDING INVENTORY AND INDOOR AIR SAMPLING QUESTIONNAIRE

This form should be prepared by a person familiar with indoor air assessments with assistance from a person knowledgeable about the building. Complete this form for each building in which interior samples (e.g., indoor air, crawl space, or subslab soil gas samples) will be collected. Section I of this form should be used to assist in choosing an investigative strategy during work-plan development. Section II should be used to assist in identification of complicating factors during a presampling building walkthrough.

Preparer's Name Dawn Bingham Date/Time Prepared 7/13/16

Preparer's Affiliation ARCADIS Phone No. 435-770-4319

Purpose of Investigation HI assessment at Bldg 986

SECTION I: BUILDING INVENTORY

1. **OCCUPANT OR BUILDING PERSONNEL:**

Interviewed: (Y) N

Last Name Tate First Name Robert

Address Bldg 986

County

Phone No. 907-227-1607

Number of Occupants/persons at this location 1 – 3 Age of Occupants 25 – 55

2. **OWNER or LANDLORD:** (Check if same as occupant ___)

Interviewed: Y / N

Last Name First Name

Address

County

Phone No

3. **BUILDING CHARACTERISTICS**

Type of Building: (Circle appropriate response)

Residential (Industrial) School Church Commercial/Multi-use Other

Petro, Oil, Lubricant Laboratory

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other_____

If multiple units, how many?_____

If the property is commercial, type?

Business Types(s) Petro, Oil, Lubricant Laboratory

Does it include residences (i.e., multi-use)? Y / N If yes, how many?_____

Other characteristics:

Number of floors 1 Building age Mc. Tech erected 1950's?

Is the building insulated? (Y) / N How air tight? (Tight) / Average / Not Tight

Have occupants noticed chemical odors in the building? (Y) / N

If yes, please describe: POL Laboratory - odors due to products tested

4. **AIRFLOW**

Use air current tubes, tracer smoke, or knowledge about the building to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Single story / NA

Airflow in building near suspected source

Room 113 contains multiple flammables cabinets w/ POL. This room appears to be kept under negative pressure (air handler pulling air out of room to exterior)

Outdoor air infiltration

Rest of building appears to be kept @ positive pressure / outdoor air brought in by air handlers

Infiltration into air ducts

5. **BASEMENT AND CONSTRUCTION CHARACTERISTICS** (Circle all that apply)

No basement

a. Above grade construction:	wood frame	log	concrete	~~N/A~~ (brick) cinder block
	constructed on pilings with enclosed air space		constructed on pilings with open air space	
b. Basement type:	full	crawlspace	slab-on-grade	other_____
c. Basement floor:	concrete	dirt	stone	other_____
d. Basement floor:	unsealed	sealed	sealed with_____	
e. Foundation walls:	poured	block	stone	other_____
f. Foundation walls:	unsealed	sealed	sealed with_____	
g. The basement is:	wet	damp	dry	
h. The basement is:	finished	unfinished	partially finished	
i. Sump present?	Y / N			
j. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade_____(feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

No basement, slab-on-grade construction. Slab is in great shape. No obvious soil entry points. Only 4" clean caps on floor may be potential soil entry point (Room 111)

6. **HEATING, VENTING and AIR CONDITIONING** (Circle all that apply)

Type of heating system(s) used in this building: (Circle all that apply – not primary)

Hot air circulation	Heat pump	(Hot water baseboard)	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other_____

The primary type of fuel used is:

(Natural Gas)	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by_____

Boiler/furnace located in: Basement Outdoors (Main Floor) Other_____

Do any of the heating appliances have cold-air intakes? Y (N)

Type of air conditioning or ventilation used in this building: → windows / No AC

Central Air | Window units | Open Windows | None

Commercial HVAC | Heat-recovery system | Passive air system

Are there air distribution ducts present? Y / N

Describe the ventilation system in the building, its condition where visible, and the tightness of duct joints. Indicate the locations of air supply and exhaust points on the floor plan.

Air handler located on roof

Is there a radon mitigation system for the building/structure? Y / N **Date of Installation** _____

Is the system active or passive? Active/Passive

7. OCCUPANCY

8 hr/day @ least 1 person

Is basement/lowest level occupied? Full-time | Occasionally | Seldom | Almost Never

Level	**General Use of Each Floor (e.g. family room, bedroom, laundry, workshop, storage)**
Basement	
1st Floor	POL Laboratory
2nd Floor	
3rd Floor	

8. WATER AND SEWAGE

Water Supply: Public Water | Drilled Well | Driven Well | Dug Well | Other_____

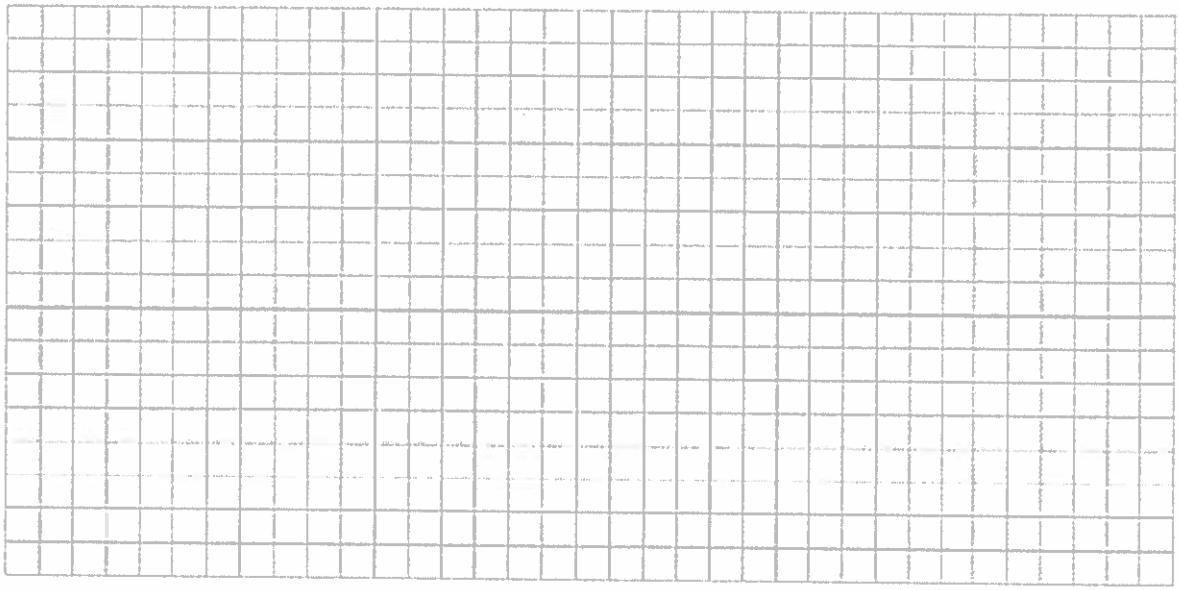
Sewage Disposal: Public Sewer | Septic Tank | Leach Field | Dry Well | Other_____

Base

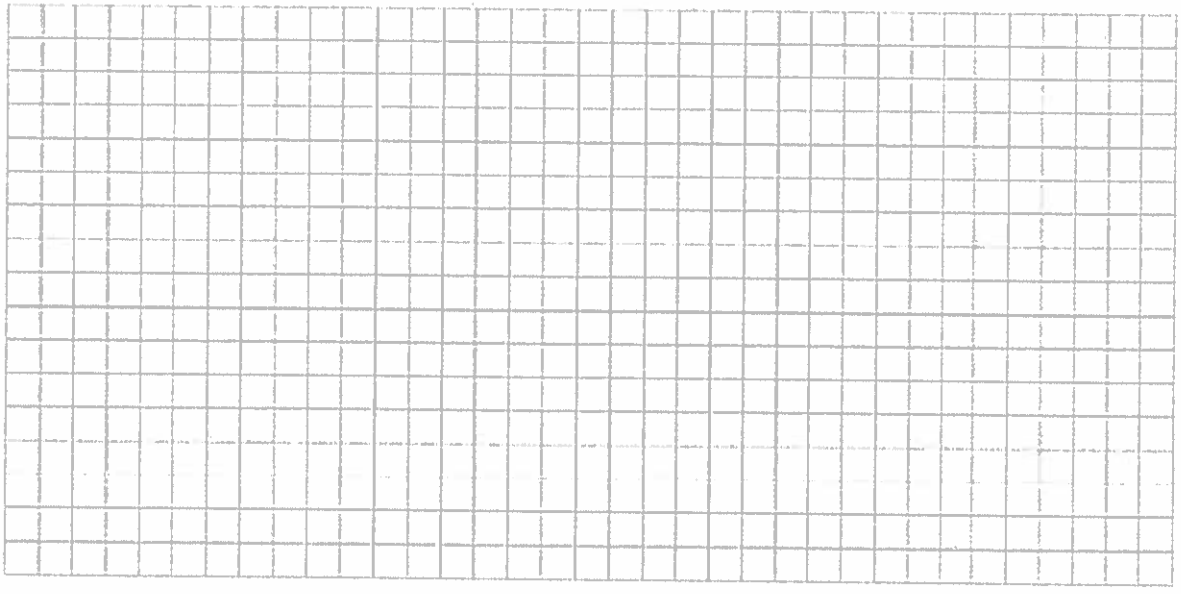
9. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



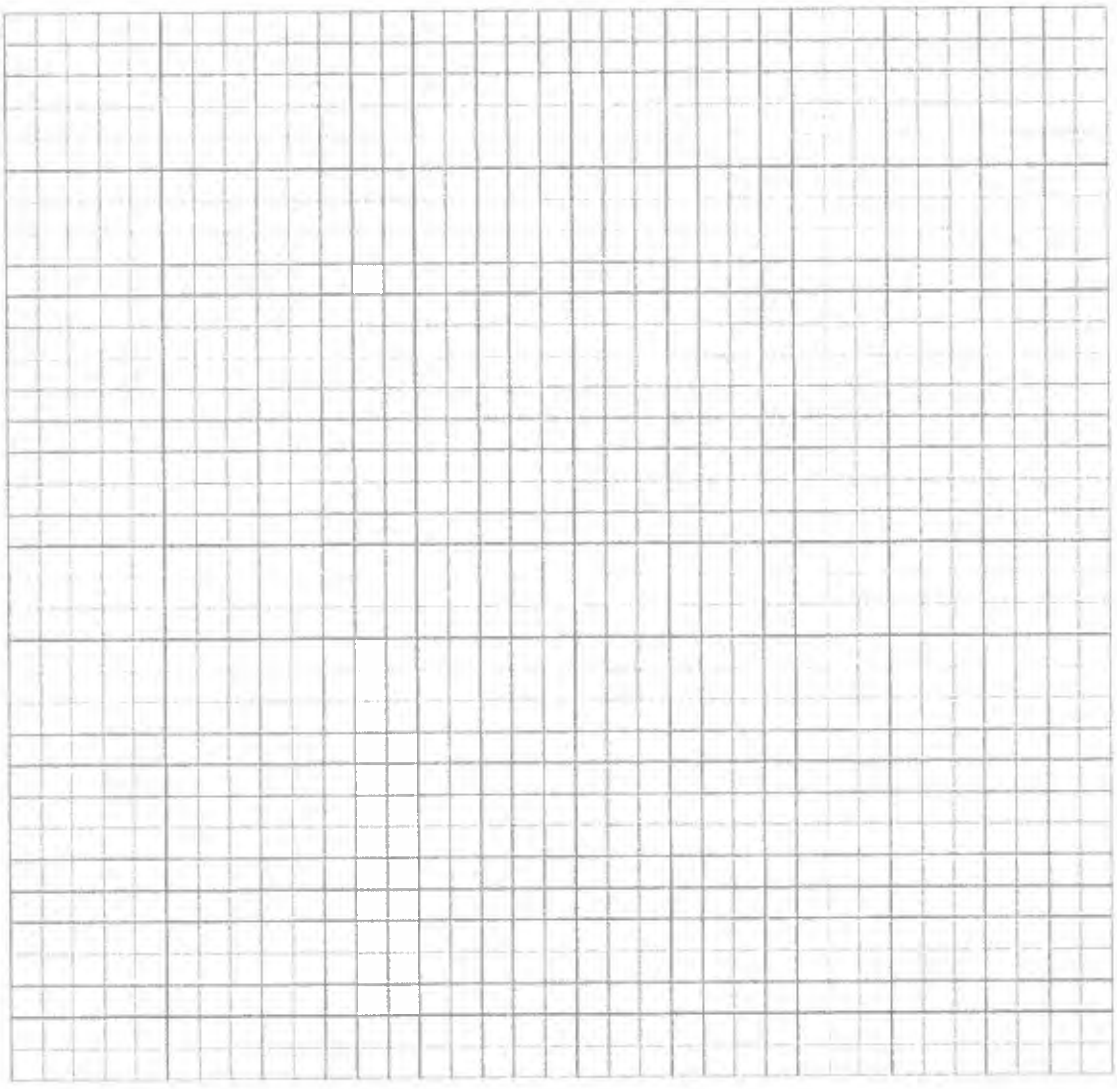
First Floor:



10. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



SECTION II: INDOOR AIR SAMPLING QUESTIONNAIRE

This section should be completed during a presampling walkthrough. If indoor air sources of COCs are identified and removed, consider ventilating the building prior to sampling. However, ventilation and heating systems should be operating normally for 24 hours prior to sampling.

a) **1. FACTORS THAT MAY influence INDOOR AIR QUALITY**

Is there an attached garage? (Y)/ N Room 113 has Large Bay Door

Does the garage have a separate heating unit? (Y)/ N / NA grounds maintenance equipment stored here (weed eater, etc)

Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, ATV, car) (Y)/ N /NA

Please specify weed eaters w/ gas canisters

Has the building ever had a fire? Y /(N) When?_____

Is a kerosene or unvented gas space heater present? Y /(N) Where?_____

Is there a workshop or hobby/craft area? Y /(N) Where & Type_____

Is there smoking in the building? Y /(N) How frequently?_____

Has painting/staining been done in the last 6 months? Y /(N) Where & When?_____

Is there new carpet, drapes or other textiles? Y /(N) Where & When?_____

Is there a kitchen exhaust fan? Y /(N) If yes, where vented?_____

Is there a bathroom exhaust fan? (Y)/ N If yes, where vented? Roof

Is there a clothes dryer? Y /(N) If yes, is it vented outside? Y / N

Are cleaning products, cosmetic products, or pesticides used that could interfere with indoor air sampling? Y / N

If yes, please describe POL, petroleum based products in Room 113

Do any of the building occupants use solvents at work? Y /(N)

(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used?_____

If yes, are their clothes washed at work? Y /(N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) (No)

Yes, use dry-cleaning infrequently (monthly or less) Unknown

Yes, work at a dry-cleaning services

2. **PRODUCT INVENTORY FORM** (For use during building walkthrough)

Make & Model of field instrument used_____

List specific products found in the residence that have the potential to affect indoor air quality:

Location	Product Description	Site (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**

** Photographs of the front and back of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

This form modified from:

ITRC (Interstate Technology & Regulatory Council). 2007. *Vapor Intrusion Pathway: A Practical Guideline*. VI-1. Washington, D.C.: Interstate Technology & Regulatory Council, Vapor Intrusion Team. www.itrcweb.org.

The Alaska Department of Environmental Conservation's Contaminated Sites Program protects human health and the environment by managing the cleanup of contaminated soil and groundwater in Alaska. For more information, please contact our staff at the Contaminated Site program closest to you:
Juneau: 907-465-5390 / Anchorage: 907-269-7500

ALASKA DEPARTMENT OF ENVIRONMENAL CONSERVATION
BUILDING INVENTORY AND INDOOR AIR SAMPLING QUESTIONNAIRE

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Preparer's Name LARRY AMSKOLD Date/Time Prepared _____

Preparer's Affiliation JACOBS ENGINEERING (CH2M) Phone No. 907. 280. 8862

Purpose of Investigation VAPOR INVESTIGATION (WINTER EVENT) @ DP009

SECTION I: BUILDING INVENTORY

1. **OCCUPANT OR BUILDING PERSONNEL:**

   Interviewed: Y / N

   Last Name TATE First Name ROBERT

   Address _____

   City _____

   Phone No. 907- 227- 1609

   Number of Occupants/people at this location 4 Age of Occupants 47, 55, 32, 28

2. **OWNER or LANDLORD:** (Check if same as occupant ____.)

   Interviewed: Y / N

   Last Name _____ First Name _____

   Address _____

   City _____

   Phone No. _____

3. **BUILDING CHARACTERISTICS**

   Type of Building: (Circle appropriate response.)

Residential	School	Commercial/Multi-use
(Industrial)	Church	Other _____

If the property is residential, what type? (Circle appropriate response.)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouse/Condo
Modular	Log Home	Other_____

If multiple units, how many?_____

If the property is commercial, what type?

Business types(s)_____

Does it include residences (i.e., multi-use)? Y / N If yes, how many?_____

Other characteristics:

Number of floors_____ Building age_____

Is the building insulated? Y / N How airtight? Tight / Average / Not Tight

Have occupants noticed chemical odors in the building? Y / N

If yes, please describe:_____

4. AIRFLOW

Use air current tubes, tracer smoke, or knowledge about the building to evaluate airflow patterns and qualitatively describe:

Airflow between floors

N/A

Airflow in building near suspected source

N/A

Outdoor air infiltration

N/A

Infiltration into air ducts

N/A

5. **BASEMENT AND CONSTRUCTION CHARACTERISTICS** (Circle all that apply.)

a. Above-grade construction:	wood frame	log	concrete	(brick) CINDER BLOCK
	constructed on pilings with enclosed air space		constructed on pilings with open air space	
b. Basement type:	full	crawlspace	slab-on-grade	other_____
c. Basement floor:	concrete	dirt	stone	other_____
d. Basement floor:	unsealed	sealed	sealed with_____	
e. Foundation walls:	poured	block	stone	other_____
f. Foundation walls:	unsealed	sealed	sealed with_____	
g. The basement is:	wet	damp	dry	
h. The basement is:	finished	unfinished	partially finished	
i. Sump present?	Y / N			
j. Water in sump?	Y / N / not applicable			

Basement or lowest level depth below grade_____(feet).

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, and drains).

_____

_____

6. **HEATING, VENTING, and AIR CONDITIONING** (Circle all that apply.)

Type of heating system(s) used in this building: (Circle all that apply – not just primary.)

Hot air circulation	Heat pump	(Hot water baseboard)	
Space heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other_____

The primary type of fuel used is:

(Natural gas)	Fuel oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank is fueled by:_____

Boiler/furnace is located in: Basement Outdoors (Main floor) Other_____

Do any of the heating appliances have cold-air intakes? Y / N

Type of air conditioning or ventilation used in this building:

Central air	(Window units)	Open windows	(None)
Commercial HVAC	Heat-recovery system	Passive air system	

Are there air distribution ducts present? Y / N

Describe the ventilation system in the building, its condition where visible, and the tightness of duct joints. Indicate the location of air supply and exhaust points on the floor plan.

AIR HANDLER - AIR EXCHANGE FROM ROOF

↳ PER REGULATIONS (DOD - combined Facility manual)

Is there a radon mitigation system for the building/structure? Y / (N) Date of Installation_____

Is the system active or passive? Active/Passive

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost never

Level	**General Use of Each Floor (e.g., family room, bedroom, laundry, workshop, or storage).**
Basement	
1st Floor	
2nd Floor	
3rd Floor	

8. WATER AND SEWAGE

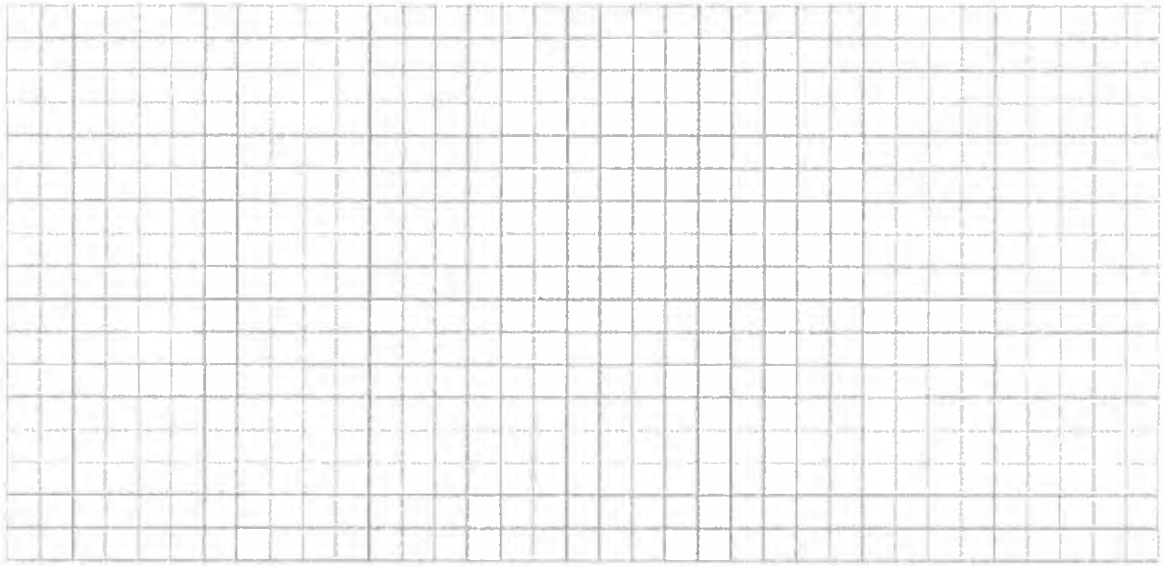
Water supply: Public water Drilled well Driven well Dug well Other_____

Sewage disposal: Public sewer Septic tank Leach field Dry well Other_____

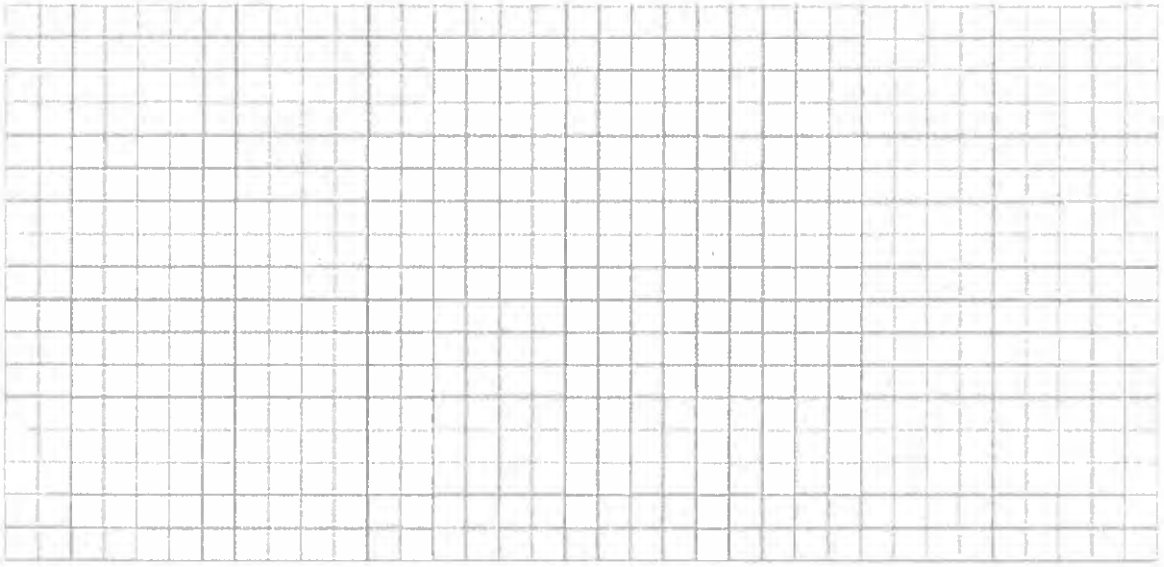
9. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note that.

Basement:



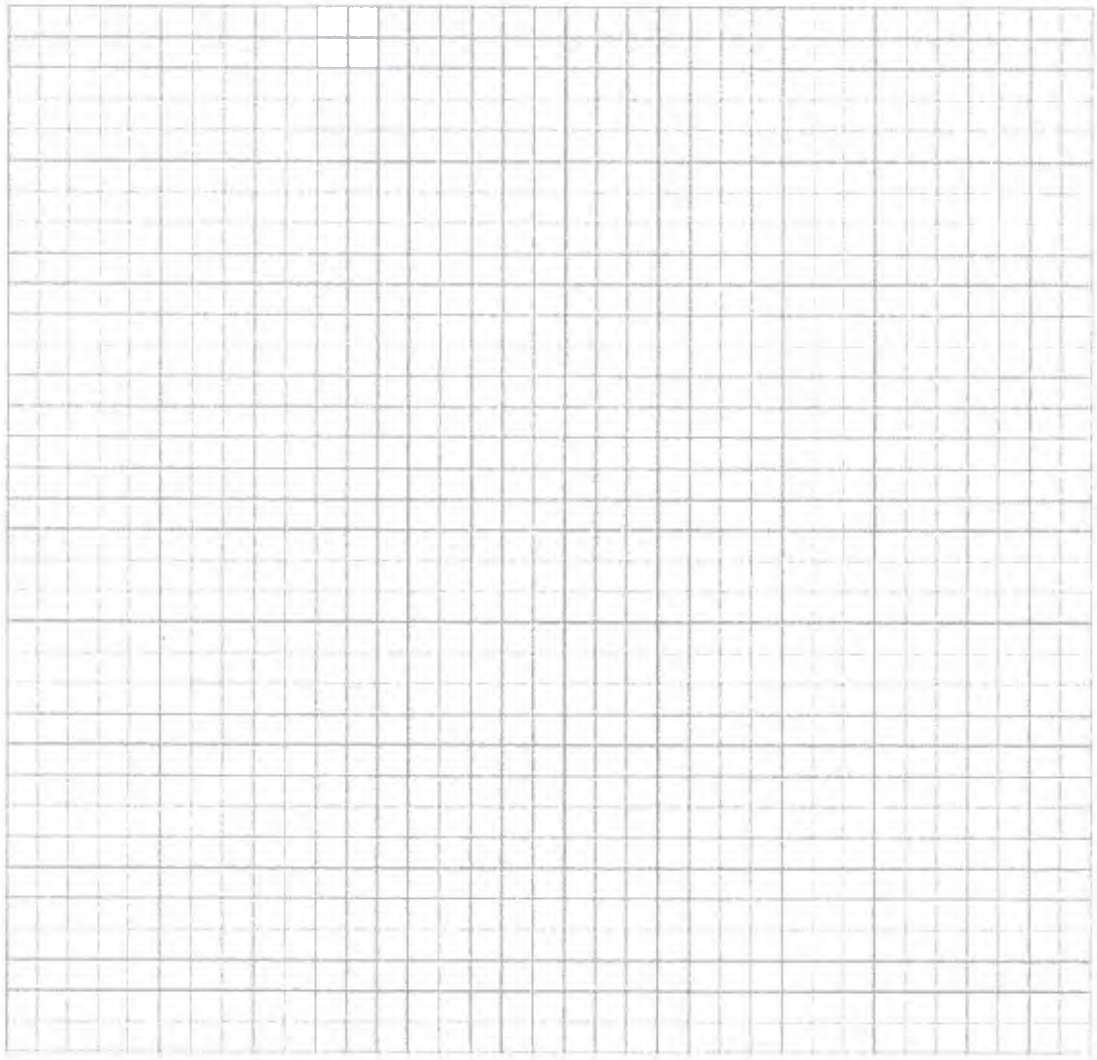
First Floor:



10. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (e.g., industries, gas stations, repair shops, landfills, etc.), outdoor air sampling locations and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the location of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



SECTION II: INDOOR AIR SAMPLING QUESTIONNAIRE

This section should be completed during a presampling walk-through. If indoor air sources of COCs are identified and removed, consider ventilating the building prior to sampling. However, ventilation and heating systems should be operating normally for 24 hours prior to sampling.

a) 1. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

Is there an attached garage? Y /(N)

Does the garage have a separate heating unit? Y /(N)/ NA

Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, ATV, or car) Y /(N)/NA

Please specify_____

Has the building ever had a fire? Y /(N) When?_____

Is a kerosene or unvented gas space heater present? Y /(N) Where?_____

Is there a workshop or hobby/craft area? Y /(N) Where and type_____

Is there smoking in the building? Y (N) How frequently?_____

Has painting/staining been done in the last six months? Y (N) Where and when?_____

Is there new carpet, drapes or other textiles? Y /(N) Where and when?_____

Is there a kitchen exhaust fan? Y (N) If yes, where is it vented?_____

Is there a bathroom exhaust fan? Y (N) If yes, where is it vented?_____

Is there a clothes dryer? Y /(N) If yes, is it vented outside? Y / N

Are cleaning products, cosmetic products, or pesticides used that could interfere with indoor air sampling? (Y)/ N

If yes, please describe THIS LOCATION IS A FUEL LABORATORY. THERE ARE VARIOUS CHEMICALS (PHOTO OF MSDS LOG) USED IN GENERAL CHEMICALS ARE STORED IN FUME HOOD OR HAZ WASTE STORAGE. BUILDING IS VENTED

Do any of the building occupants use solvents at work? (Y)/ N

(For example, is the building used for chemical manufacturing or a laboratory, auto mechanic or auto body shop, painting shop, fuel oil delivery area, or do any of the occupants work as a boiler mechanic, pesticide applicator, or cosmetologist?)

If yes, what types of solvents are used? PHOTOGRAPH OF SDS

If yes, are his/her/their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry cleaning regularly (weekly) (No)

Yes, use dry cleaning infrequently (monthly or less) Unknown

Yes, work at a dry cleaning services

2. **PRODUCT INVENTORY FORM** (For use during building walk-through.)

Make and model of field instrument used: N/A

List specific products found in the residence that have the potential to affect indoor air quality:

Location	Product Description	Site (units)	Condition[1]	Chemical Ingredients	Field Instrument Reading (units)	Photo[2] Y / N
Room 113	FD4	4 gals	U/UO		-	N
"	HZ DEGR	6 gals	U/UO		-	N
"	Isopropyl alcohol	15 gals	U/UO		-	N
"	Petroleum Ether	<5 gals	U/UO		-	N
"	Solvjet	5 gals	U/UO		-	N
"	Acetone	2 gals	U/UO		-	N
"	n-Heptane	2 gals	U/UO		-	N
"	TOLUENE	4 gals	U/UO		-	N
"	Heptane	6 gals	U/UO		-	N
"	AVGAS	2 gals	U/UO		-	N
"	unleaded gas	2 gals	U/UO		-	N
"	HAZ WASTE	6 gals	U/UO		-	N
"	Fuel samples	2.5 gals	U/UO		-	N
"	↳ KEROSENE					

[1] Describe the condition of the product containers as **Unopened (UO), Used (U), or Deteriorated (D).**

[2] Photographs of the front and back of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

This form was modified from:

ITRC (Interstate Technology and Regulatory Council). 2007. *Vapor Intrusion Pathway: A Practical Guideline.* VI-1. Washington, D.C.: Interstate Technology and Regulatory Council, Vapor Intrusion Team. Available at: www.itrcweb.org.

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Appendix A-5
Indoor Air, Outdoor Air, and Subslab Soil Gas Forms

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AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME
Standard ☑ 48 hours ☐
Same Day ☐ 72 hours ☐
24 hours ☐ 96 hours ☐
Other:

DELIVERABLES
EDD ☑
EDF ☐
LEVEL 3 ☐
LEVEL 4 ☑ Labspec ✓

PAGE: 1 OF 1

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.: 694734.02.02.09.01
Project Name: JBER TO 0075 DP009 Bldg 986
Report To: Corey Schwabenlaender
Company: JACOBS
Street: 4246 S. Riverboat Rd., Suite 210
City/State/Zip: Taylorsville, UT ~~84123~~ 84123
Phone& Fax: 385-474-8554
e-mail: Corey.Schwabenlaender@JACOBS.com

BILLING
P.O. No.:
Bill to:

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	CONTAINER TYPE	TO-15	TO-15 SIM (Benzene, 1,2DCA, Naphthalene, PCE, TCE)				
	18Q3DP009-OA01-OA-0	7/25/18	1125	OA	6-L	✓	✓				
	18Q3DP009-IA01-IA-0		1119	IA		✓	✓				
	18Q3DP009-IA02-IA-0		1105			✓	✓				
	18Q3DP009-IA03-IA-0		1116			✓	✓				
	18Q3DP009-IA04-IA-0		1110			✓	✓				
	18Q3DP009-IA04-IA-1		1110			✓	✓				
	18Q3DP009-SS01-SS-0	7/24/18	~~1054~~	SS	1-L	✓	✓				
	18Q3DP009-SS02-SS-0	7/24/18	1059	SS	1-L	✓	✓				

AUTHORIZATION TO PERFORM WORK	COMPANY	DATE/TIME
SAMPLED BY	COMPANY	DATE/TIME
	JACOBS	7/24 - 7/25/18 VS
RELINQUISHED BY / DATE/TIME	RECEIVED BY / DATE/TIME	
RELINQUISHED BY / DATE/TIME	RECEIVED BY / DATE/TIME	
RELINQUISHED BY / DATE/TIME	RECEIVED BY / DATE/TIME	

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____

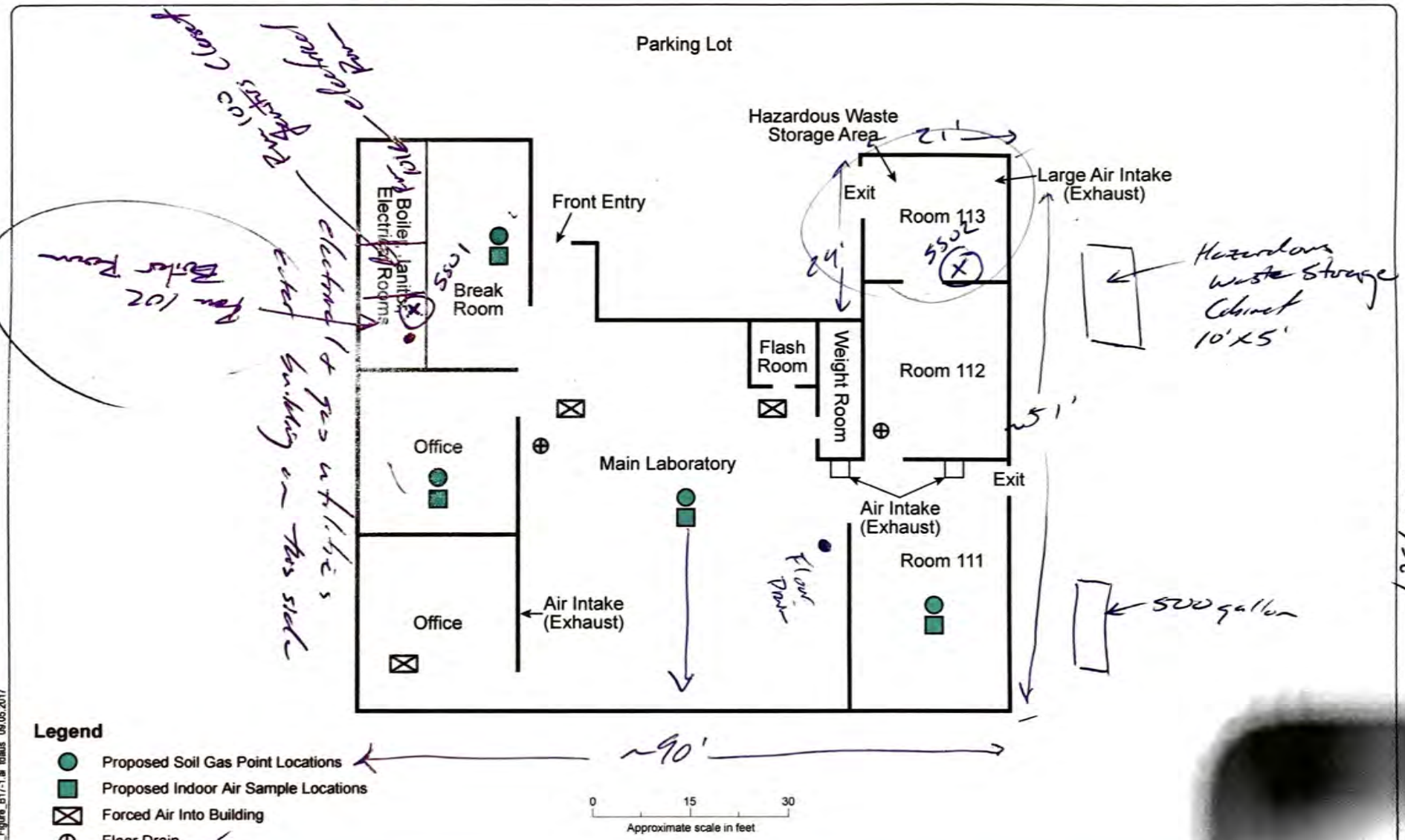
COMMENTS
OA = outdoor air
IA = indoor air
SS = Subslab soil gas

TO-15 SIM = Benzene, 1,2DCA, Naphthalene, PCE, TCE

★ Samples may contain high concentrations of PAHs.

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCL **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other



ES062612224557SAC_DP009_Figure_B17-1.ai tdaus 09.05.2017

DP009 BUILDING 986 PROPOSED INDOOR AIR AND SUBSLAB SOIL GAS SAMPLE LOCATIONS

DP009 Supplemental Remedial Investigation Work Plan
UFP-QAPP, Limited Field Investigations for AT029, DP009, SS019, and SS120
Joint Base Elmendorf-Richardson, Alaska

Figure
B17-1

Indoor, Outdoor, Crawlspace Air Sampling Log - Canister Method

Project: FBER TO 0075

Building: Building 986

Field Sample ID	Location	Canister ID	Flow Controller ID	Initial Pressure ("Hg)	Start Date	Start Time	Check (6/20 hr) Time	Check (6/20 hr) Pressure ("Hg)	End Date	End Time	Final Pressure ("Hg)	
18QBDP004-OA01-OA-0	Southside of bldg	5414	2067	-29.85	7/24/18	1150	0813	-8.0	7/25/18	11:25	-5.2	
18QBDP004-IA01-IA-0	Room 111	3140	2115	-29.83	"	1142	0811	-7.5	"	1114	-4.61	
18QBDP004-IA02-IA-0	Main Lab	3649	2060	-29.84	"	1142	0810	-7.5	"	1105	-5.01	
18QBDP004-IA03-IA-0	Break Room	3601	2053	-29.74	"	1141	0813	-10.5	"	1116	-5.96	
18QBDP004-IA04-IA-0	Office 106	1438	2048	-29.93	"	1142	0812	-8.0	"	1110	-5.80	
18QBDP004-IA04-IA-1	" "	5227	2116	-29.50	"	1142	0812	-8.5	"	1110	-3.38	
18QBDP004-SS01-SS-0	Room 102	5302	3078	-29.42	"	1119	—	—	"	1124	-4.41	Subslab Soil Gas
18QBDP004-SS02-SS-0	Room 113	R1351	3222	-29.41	"	1059	—	—	"	1059	-3.11	

Weather Conditions

General weather conditions: Cloudy, 55°-65°F Slight Rain

Temperature Range (indoor and outdoor):

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Light Rain

Subslab Soil Vapor Sampling Log

ch2m

Project: JBER TCR075 DP009 Bldg 986

Sampler: QB/LA

Sample Location Information

Property ID/Address: Bldg 986

Condition of slab in the surrounding area: Good/Excellent

Location ID: SS02 Sample ID: 18QIDP009-SS02-SS-0

Sample Location Description (Room Name/Number and surrounding, identifying features):

Subslab Soil Vapor Probe Leak Checking and Sampling Log

Manifold Leak Check

Manifold leak check (procedure: ensure manifold holds pressure at -10 "Hg for 30 seconds). If using a pelican-case pump, open the lid during leak check to ensure all interior pieces are in-tact.	Pass	Fail
	✓	

Describe corrective measures taken to pass the manifold leak test:

Subslab Soil Vapor Probe Water Dam Leak Check and Purge Results

Purge rate (mL/Min): 200

Start Time: 1049

Purge Vacuum ("Hg): 1

End Time: 1054

Probe Leak Check Result*:	Pass	Fail
	✓	

*The subslab soil vapor probe passes the water dam leak check if there are no bubbles observed and the water level does not draw down during purge. Do NOT collect a subslab soil vapor sample if the leak check fails.

Field Analysis (required readings are determined on a project-specific basis. Fill in all that are necessary):

MiniRAE or MultiRAE Photoionization Detector				LandTec GEM Landfill Gas Meter	
Total VOCs (ppm):	0.1	O_2 (%):	20.9	O2 (%):	
H_2S (ppm):	0	LEL (%):	0	CO2 (%):	
CO (ppm):	7			CH4 (%):	

Sampling Information

Evacuated Canister or Bottle-Vac

Container Size (L): 1

Container ID: R1351

Flow Controller ID: 3222

Sampling Rate (mL/min, hours): 200

Sampling Vacuum ("Hg): 1

Initial Pressure (" Hg): -29.41

Start Date and Time: 7/24 1054

End Date and Time: 7/24 1054

Final Pressure (" Hg): -3.11

Tedlar Bag

Tedlar Bag size (L):

Sampling Rate (mL/min):

Start Date and Time:

End Date and Time:

Sorbent Tube

Sorbent Tube type and size:

Sorbent Tube ID:

Initial Flow Rate (mL/min):

Calculated Sampling Volume:

Start Date and Time:

End Date and Time:

Final Flow Rate (mL/min)

Weather Conditions and Additional Notes

Weather Conditions During Sampling: PARTLY CLOUDY ~ 60 F

Additional Notes:

Subslab Soil Vapor Sampling Log

ch2m

Project: JBER TO#75 DP##9 BLDG 986

Sampler: QB/CA

Sample Location Information

Property ID/Address: BLDG 986

Condition of slab in the surrounding area: GOOD/EXCELLENT

Location ID: SS02 Sample ID: 18Q1DP009-SS02-SS-0

Sample Location Description (Room Name/Number and surrounding, identifying features):

Subslab Soil Vapor Probe Leak Checking and Sampling Log

Manifold Leak Check

Manifold leak check (procedure: ensure manifold holds pressure at -10 "Hg for 30 seconds). If using a pelican-case pump, open the lid during leak check to ensure all interior pieces are in-tact.	Pass	Fail
	✓	

Describe corrective measures taken to pass the manifold leak test:

Subslab Soil Vapor Probe Water Dam Leak Check and Purge Results

Purge rate (mL/Min): 200

Start Time: 1114

Purge Vacuum ("Hg): 1

End Time: 1119

Probe Leak Check Result*:	Pass	Fail
	✓	

*The subslab soil vapor probe passes the water dam leak check if there are no bubbles observed and the water level does not draw down during purge. Do NOT collect a subslab soil vapor sample if the leak check fails.

Field Analysis (required readings are determined on a project-specific basis. Fill in all that are necessary):

MiniRAE or MultiRAE Photoionization Detector				LandTec GEM Landfill Gas Meter	
Total VOCs (ppm):	0.1	O_2 (%):	20.9	O2 (%):	
H_2S (ppm):	0	LEL (%):	0	CO2 (%):	
CO (ppm):	0			CH4 (%):	

Sampling Information

Evacuated Canister or Bottle-Vac

Container Size (L): 1

Container ID: 5302

Flow Controller ID: 3078

Sampling Rate (mL/min, hours): 200

Sampling Vacuum ("Hg): 1

Initial Pressure (" Hg): -29.42

Start Date and Time: 7/24 1119

End Date and Time: 7/24 1124

Final Pressure (" Hg): -4.41

Tedlar Bag

Tedlar Bag size (L):

Sampling Rate (mL/min):

Start Date and Time:

End Date and Time:

Sorbent Tube

Sorbent Tube type and size:

Sorbent Tube ID:

Initial Flow Rate (mL/min):

Calculated Sampling Volume:

Start Date and Time:

End Date and Time:

Final Flow Rate (mL/min)

Weather Conditions and Additional Notes

Weather Conditions During Sampling: PARTLY CLOUDY ~60 F

Additional Notes:

J110805

CHAIN OF CUSTODY RECORD

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

TURNAROUND TIME

Standard ☑ 48 hours ☐
Same Day ☐ 72 hours ☐
24 hours ☐ 96 hours ☐
Other:

DELIVERABLES

EDD ☑ 4
EDF ☐
LEVEL 3 ☐
LEVEL 4 ☑ LABSPEC

PAGE: 1 OF 1

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.:	694734.02.02.09.01
Project Name:	JBER TO#75 DPOOG BLDG 986
Report To:	ANDI BEAUSANG / QUIN BINGHAM
Company:	JACOBS
Street:	949 E 36th, SUITE 500
City/State/Zip:	ANCHORAGE / AK / 99501
Phone& Fax:	907-762-1500
e-mail:	ANDREA.BEAUSANG@JACOBS.COM, QUIN.BINGHAM@JACOBS.COM

BILLING

P.O. No.:
Bill to:

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	CONTAINER TYPE	TO-15 (Benzene, 12-DCA, Naphthalene, PCE, TCE, 124-TMB per 11/9/18)	TO-15 (SIM) (Benzene, 12-DCA, Naphthalene, PCE, TCE, 124-TMB)				
J110805-01	18Q4DP##9-OA#1-OA-#	11/6/18	1128	OA	6-L	~~✓~~	–				
-02	" - IA#1-IA-#		1138	IA		~~✓~~	–				
-03	" - IA#2-IA-#		1140			~~✓~~	–				
-04	" - IA#3-IA-#		1135			~~✓~~	–				
-05	" - IA#4-IA-#		1147			~~✓~~	–				
-06	" - IA#4-IA-1		1147			~~✓~~	–				
-07	" - SS#1-SS-#	11/5/18	1501	SS	1-L	–	~~✓~~				
-08	" - SS#2-SS-#	"	1540	SS	1-L	–	~~✓~~				

AUTHORIZATION TO PERFORM WORK	**COMPANY**		**DATE/TIME**
SAMPLED BY	**COMPANY**		**DATE/TIME**
[signature]	JACOBS		11/5 - 11/6
RELINQUISHED BY	**DATE/TIME**	**RECEIVED BY**	**DATE/TIME**
[signature]	11/6/18 1430		
RELINQUISHED BY	**DATE/TIME**	**RECEIVED BY**	**DATE/TIME**
FedEx		[signature]	11/8/18 9:20a
RELINQUISHED BY	**DATE/TIME**	**RECEIVED BY**	**DATE/TIME**

METHOD OF TRANSPORT (circle one): Walk-In (FedEx) UPS Courier ATLI Other _____

COMMENTS

OA = OUTDOOR AIR
IA = INDOOR AIR
SS = SUBSLAB SOIL GAS
*SAMPLES MAY CONTAIN HIGH CONCENTRATIONS OF PHC.

TO-15 SIM & Scan
BENZENE 12DCA
NAPHTHALENE
TCE, PCE
124-TMB
Scan → LR
SIM → GR @ 11/8/18 per QB

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCL **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other

Rev. 03 - 5/7/09

cc: Bernice Kidd @ 11/9/18 per BK

Indoor, Outdoor, Crawlspace Air Sampling Log - Canister Method

Project: JBER TO #75

Building: BUILDING 986

Field Sample ID	Location	Canister ID	Flow Controller ID	Initial Pressure ("Hg)	Start Date	Start Time	Check (6/20 hr)		End Date	End Time	Final Pressure ("Hg)
							Time	Pressure ("Hg)			
1BG4DP009_CA01-OA-0	SOUTHSIDE OF BLDG	1423	2116	-29.85	11/5/18	1405	0905	-9.84	11/6/18	1128	-6.65
1BG4DP009-IA01-IA-0	ROOM 111	1471	2115	-29.64	"	1355	0921	-9.32	11/6/18	1138	-6.90
" -IA02-IA-0	MAIN LAB	1425	2037	-29.66	"	1359	0918	-9.48	11/6/18	1140	-7.12
" -IA03-IA-0	BREAK ROOM	5469	2042	-30.04	11/5/18	1355	0910	-9.44	11/6/18	1135	-7.18
" -IA04-IA-0	OFFICE 106	1456	2048	-29.78	"	1357	0915	-9.38	11/6/18	1147	-6.44
-IA04-IA-1	OFFICE 106	1453	2014	-29.72	"	1357	0915	-7.89	11/6/18	1147	-4.54
1BG4DP009-SS01-SS-0	ROOM 102	5810	3134	-29.53	"	1456	N/A	N/A	11/5/18	1501	-5.20
1BG4DP009-SS02-SS-0	ROOM 113	A7646	3101	-29.59	"	1535	N/A	N/A	11/5/18	1540	-4.28

Weather Conditions

General weather conditions: CLEAR ~20-50 F

Temperature Range (indoor and outdoor): INDOOR 65-80 OUTDOOR 5-30

Was there significant precipitation within 12 hours prior to (or during) the sampling event? NO

Subslab Soil Vapor Sampling Log

ch2m

Project: JBER TO#75

Sampler: L. AMSKOLD

Sample Location Information

Property ID/Address: BLDG 486

Condition of slab in the surrounding area: INTACT

Location ID: Room 102 Sample ID: 1864DP009-SS01-SS-20

Sample Location Description (Room Name/Number and surrounding, identifying features):

Subslab Soil Vapor Probe Leak Checking and Sampling Log

Manifold Leak Check

Manifold leak check (procedure: ensure manifold holds pressure at -10 "Hg for 30 seconds). If using a pelican-case pump, open the lid during leak check to ensure all interior pieces are in-tact.	*Pass*	*Fail*
	✓	

Describe corrective measures taken to pass the manifold leak test:

Subslab Soil Vapor Probe Water Dam Leak Check and Purge Results

Purge rate (mL/Min): 20

Start Time: 1446

Purge Vacuum ("Hg): 0.0

End Time: 1451

Probe Leak Check Result*:	*Pass*	*Fail*
	✓	

*The subslab soil vapor probe passes the water dam leak check if there are no bubbles observed and the water level does not draw down during purge. Do NOT collect a subslab soil vapor sample if the leak check fails.

Field Analysis (required readings are determined on a project-specific basis. Fill in all that are necessary):

(MiniRAE) or MultiRAE Photoionization Detector			LandTec GEM Landfill Gas Meter	
Total VOCs (ppm):	1.3 ppm	O_2 (%):	O2 (%):	
H_2S (ppm):		LEL (%):	CO2 (%):	
CO (ppm):			CH4 (%):	

Sampling Information

Evacuated Canister or Bottle-Vac

Container Size (L):	1 L	Initial Pressure (" Hg):	-24.53
Container ID:	5810	Start Date and Time:	11/5/18 1456
Flow Controller ID:	3134	End Date and Time:	11/5/18 1501
Sampling Rate (mL/min, hours):		Final Pressure (" Hg):	-5.20
Sampling Vacuum ("Hg):			

Tedlar Bag

Tedlar Bag size (L):	5	Start Date and Time:	
Sampling Rate (mL/min):		End Date and Time:	

Sorbent Tube

Sorbent Tube type and size:		Start Date and Time:	
Sorbent Tube ID:		End Date and Time:	
Initial Flow Rate (mL/min):		Final Flow Rate (mL/min	
Calculated Sampling Volume:			

Weather Conditions and Additional Notes

Weather Conditions During Sampling: CLEAR

Additional Notes:

Subslab Soil Vapor Sampling Log

ch2m

Project: JBER TO 075

Sampler: L. AMSKOLD

Sample Location Information

Property ID/Address: BLDG 986

Condition of slab in the surrounding area: INTACT

Location ID: RM 113 Sample ID: 18Q4DP004-SS02-SS-00

Sample Location Description (Room Name/Number and surrounding, identifying features):

Subslab Soil Vapor Probe Leak Checking and Sampling Log

Manifold Leak Check

Manifold leak check (procedure: ensure manifold holds pressure at -10 "Hg for 30 seconds). If using a pelican-case pump, open the lid during leak check to ensure all interior pieces are in-tact.	*Pass*	*Fail*
	✓	

Describe corrective measures taken to pass the manifold leak test:

Subslab Soil Vapor Probe Water Dam Leak Check and Purge Results

Purge rate (mL/Min): 200

Start Time: 1525 1529 1534 n/s

Purge Vacuum ("Hg): ~~+30~~ 0 1a n/s

End Time: 1530 1534 1538 n/s

Probe Leak Check Result*:	*Pass*	*Fail*
	✓	

*The subslab soil vapor probe passes the water dam leak check if there are no bubbles observed and the water level does not draw down during purge. Do NOT collect a subslab soil vapor sample if the leak check fails.

Field Analysis (required readings are determined on a project-specific basis. Fill in all that are necessary):

(MiniRAE or MultiRAE Photoionization Detector				LandTec GEM Landfill Gas Meter	
Total VOCs (ppm):	0.5 ppm	O_2 (%):		O2 (%):	
H_2S (ppm):		LEL (%):		CO2 (%):	
CO (ppm):				CH4 (%):	

Sampling Information

Evacuated Canister or Bottle-Vac

Container Size (L):	1	Initial Pressure (" Hg):	-29.59
Container ID:	A7648	Start Date and Time:	11/5/18 1535
Flow Controller ID:	3101	End Date and Time:	~~1535~~ 11/5/18 1540
Sampling Rate (mL/min, hours):		Final Pressure (" Hg):	-4.28
Sampling Vacuum ("Hg):			

Tedlar Bag

Tedlar Bag size (L):		Start Date and Time:	
Sampling Rate (mL/min):		End Date and Time:	

Sorbent Tube

Sorbent Tube type and size:		Start Date and Time:	
Sorbent Tube ID:		End Date and Time:	
Initial Flow Rate (mL/min):		Final Flow Rate (mL/min	
Calculated Sampling Volume:			

Weather Conditions and Additional Notes

Weather Conditions During Sampling:

Additional Notes:

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Appendix B
Laboratory Reports and Data Quality Evaluation

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B. DP009 – BUILDING 986 DRY WELL 2018 SUPPLEMENTAL REMEDIAL INVESTIGATION DATA QUALITY EVALUATION REPORT JOINT BASE ELMENDORF-RICHARDSON, ALASKA

B.1 Introduction

This data quality evaluation (DQE) report assesses the data quality of the analytical results for air and soil samples collected at DP009 at Joint Base Elmendorf-Richardson, Alaska. Samples were collected and analyzed in support of the Supplemental Remedial Investigation. The data may be used to support future activities such as risk assessments, fate and transport modeling, and remedial actions. Individual method requirements and guidelines from the *Joint Base Elmendorf-Richardson, Uniform Federal Policy-Quality Assurance Project Plan, Supplemental Remedial Investigations for AT029 and DP009, Remedial Investigation for SS019, and Preliminary Source Evaluation 2 for SS120* (Work Plan) (USAF 2018) were used in this assessment.

This report is intended as a general data quality assessment designed to summarize data issues.

B.2 Analytical Data

This DQE report covers 12 primary soil samples, 2 field duplicates (FDs), 2 soil FDs, 2 trip blanks (TBs), 4 primary indoor air samples, 1 indoor air FD, 1 primary outdoor air sample, and 2 primary subslab soil gas samples. Samples were collected between June 21 and July 25, 2018 and November 6, 2018. Attachment B-1 includes a list of samples associated with this DQE.

The Work Plan requires a collection frequency of 10 percent for FDs and 5 percent for matrix spike/ matrix spike duplicate (MS/MSD) sets; collection frequencies are outlined by method in Table B-1.

Equipment blanks (EBs) were not required for soil sampling because dedicated equipment was used for sample collection.

MS/MSDs and EBs were not collected for air samples.

Table B-1. Percentage of FD, EB, and MS/MSD Collected by Method

Method	Matrix	Count of Primary Samples	Count of FD	Percent of FD	Count of MS/MSD	Percent of MS/MSD	Count of EB	Percent of EB
TO-15/ TO-15SIM	Air	14	2	14.2	NA	NA	NA	NA
AK101	Soil	12	2	16.7	1	8.3	NA	NA
AK102/103	Soil	12	2	16.7	1	8.3	NA	NA
SW6020A	Soil	12	2	16.7	1	8.3	NA	NA
SW7471B	Soil	12	2	16.7	1	8.3	NA	NA
SW8260B	Soil	12	2	16.7	1	8.3	NA	NA
SW8260B-Low	Soil	12	2	16.7	1	8.3	NA	NA
SW8270C	Soil	12	2	16.7	1	8.3	NA	NA
SW8270C-SIM	Soil	12	2	16.7	1	8.3	NA	NA

NA = not applicable

SIM = selective ion monitoring

The sample results were reported as three sample delivery groups (SDGs):

- 18F187
- J072607
- J110805

The analyses were performed by EMAX Laboratories, Inc. in Torrance, California (EMXT) (Department of Defense Environmental Laboratory Accreditation Program Certification L2278). and Air Technology Laboratories, Inc. in City of Industry, California (ATL) (Department of Defense Environmental Laboratory Accreditation Program Certification ADE-1461). Samples were collected and shipped via overnight carrier to EMXT and ATL.

Twelve methods were used to analyze the environmental samples. Samples were analyzed for the analytes and methods presented in Table B-2.

Table B-2. Analytical Parameters

Parameter	Method
Gasoline-range organics (GRO)	AK101
Diesel- and residual-range organics (DRO/RRO)	AK102/103
Metals	SW6020A
Mercury	SW7470A/SW7471B
Volatile organic compounds (VOCs)	SW8260B
Low-level volatile organic compounds	SW8260B-Low
Low-level ethylene dibromide	SW8260B-SIM
Semivolatile organic compounds	SW8270C
Polycyclic aromatic hydrocarbons	SW8270C-SIM
VOCs in air	TO-15/TO-15SIM

The assessment of data includes a review of the following items:

- Chain-of-custody (COC) documentation
- Holding-time compliance
- Required quality control (QC) samples at the specified frequencies
- Method blanks
- Laboratory control sample/laboratory control sample duplicates (LCS/LCSD)
- Surrogate spike recoveries
- MS/MSD samples
- Initial and continuing calibration information
- Other method-specific criteria as defined by the Work Plan (USAF 2018)

Field samples were also reviewed to ascertain field compliance and data quality issues. This included a review of FDs and TBs.

Data flags were assigned according to the Work Plan (USAF 2018). Multiple flags were routinely applied to specific sample method/matrix/analyte combinations, but only one final flag was applied to the data and was the most conservative of the validation flags. The final flag also included matrix and blank sample impacts.

The data flags are defined as follows:

- B = The analyte was detected in the sample at a concentration less than or equal to 5 times (10 times for common laboratory contaminants) the blank concentration.
- J = The analyte was positively identified, and the quantitation is an estimation because of discrepancies in meeting certain analyte-specific QC criteria. Or the analyte was positively identified, but the associated concentration was estimated greater than or equal to the detection limit and below the limit of quantitation (LOQ).
- R = The data were rejected because of deficiencies in meeting QC criteria and may not be used for decision making.
- U = The analyte was analyzed for but not detected.
- UJ = The analyte was not detected; however, the result was estimated because of discrepancies in meeting certain analyte-specific QC criteria.

B.3 Findings

Summaries of the data validation findings are contained in the following subsections and Table B-3.

The Alaska Department of Environmental Conservation Laboratory Data Review Checklist (July 2017) and the Alaska Department of Environmental Conservation Air Laboratory Data Review Checklist (March 2015) are also included to document data validation findings. A checklist is provided for each laboratory SDG and can be found in Attachment B-2.

Where there were QC exceedances that did not affect sample results, the exceedance is not discussed in the text or in the checklists in Attachment B-2. Investigative-derived waste samples are also not discussed in the text or checklists.

B.3.1 Holding Times

All holding-time criteria were met.

B.3.2 Calibration

All initial and continuing calibration criteria were met.

B.3.3 Method Blanks

Method blanks were analyzed at the required frequency and were free of contamination that would affect the sample results.

B.3.4 Equipment Blanks

EBs were not required for this event because dedicated equipment was used for sample collection.

B.3.5 Trip Blanks

Two TBs were collected as required and were free of contamination that would affect the sample results with the following exceptions:

- Acetone was detected greater than the LOQ in the TBs Method SW8260B-Low.
- Twelve associated results in samples 18Q2DP009-SB0301-SO-0, 18Q2DP009-SB0302-SO-0, 18Q2DP009-SB0401-SO-0, 18Q2DP009-SB0401-SO-1, 18Q2DP009-SB0402-SO-0, 18Q2DP009-SB0501-SO-0, 18Q2DP009-SB0502-SO-0, 18Q2DP009-SB0601-SO-0, 18Q2DP009-SB0602-SO-0, 18Q2DP009-SB0701-SO-0, 18Q2DP009-SB0702-SO-0, and 18Q2DP009-SB0802-SO-0 were detected less than 10 times the blank concentrations and were qualified as estimated and flagged “B.”

Table B-3. Validation Flags

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
18Q2DP009-SB0301-SO-0	SW8260B-Low	Acetone	0.019	mg/kg	B	TB>LOQ
18Q2DP009-SB0302-SO-0	SW8260B-Low	Acetone	0.25	mg/kg	B	TB>LOQ
18Q2DP009-SB0401-SO-0	SW8260B-Low	Acetone	0.02	mg/kg	B	TB>LOQ
18Q2DP009-SB0401-SO-1	SW8260B-Low	Acetone	0.03	mg/kg	B	TB>LOQ
18Q2DP009-SB0402-SO-0	SW8260B-Low	Acetone	0.011	mg/kg	B	TB>LOQ
18Q2DP009-SB0501-SO-0	SW6020A	Barium	49.2	mg/kg	J	MS<LCL
18Q2DP009-SB0501-SO-0	SW6020A	Barium	49.2	mg/kg	J	SD<LCL
18Q2DP009-SB0501-SO-0	SW6020A	Chromium	41	mg/kg	J	MS<LCL
18Q2DP009-SB0501-SO-0	SW6020A	Chromium	41	mg/kg	J	SD<LCL
18Q2DP009-SB0501-SO-0	SW6020A	Cobalt	11.7	mg/kg	J	SerDilOut
18Q2DP009-SB0501-SO-0	SW6020A	Copper	32.4	mg/kg	J	MS<LCL
18Q2DP009-SB0501-SO-0	SW6020A	Copper	32.4	mg/kg	J	SD<LCL
18Q2DP009-SB0501-SO-0	SW6020A	Magnesium	11000	mg/kg	J	MS>UCL
18Q2DP009-SB0501-SO-0	SW6020A	Potassium	814	mg/kg	J	MS<LCL
18Q2DP009-SB0501-SO-0	SW6020A	Potassium	814	mg/kg	J	SD<LCL
18Q2DP009-SB0501-SO-0	SW8260B-Low	Acetone	0.029	mg/kg	J	SD>UCL
18Q2DP009-SB0501-SO-0	SW8260B-Low	Acetone	0.029	mg/kg	B	TB>LOQ
18Q2DP009-SB0502-SO-0	SW8260B-Low	Acetone	0.028	mg/kg	B	TB>LOQ
18Q2DP009-SB0601-SO-0	SW8260B-Low	1,2,4-Trimethylbenzene	0.001	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-0	SW8260B-Low	1,3,5-Trimethylbenzene	0.0025	mg/kg	UJ	FD>RPD

Table B-3. Validation Flags

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
18Q2DP009-SB0601-SO-0	SW8260B-Low	2-Butanone	0.0078	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-0	SW8260B-Low	Acetone	0.054	mg/kg	B	TB>LOQ
18Q2DP009-SB0601-SO-0	SW8260B-Low	Benzene	0.014	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-0	SW8260B-Low	m,p-Xylene	0.0021	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-0	SW8260B-Low	n-Butylbenzene	0.0013	mg/kg	UJ	FD>RPD
18Q2DP009-SB0601-SO-0	SW8260B-Low	p-Isopropyltoluene	0.0013	mg/kg	UJ	FD>RPD
18Q2DP009-SB0601-SO-0	SW8260B-Low	Tetrachloroethene	0.0014	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-0	SW8260B-Low	Toluene	0.0066	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-0	SW8260B-Low	Total Xylenes	0.003	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	1,2,4-Trimethylbenzene	0.012	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	1,2,4-Trimethylbenzene	0.012	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	1,2-Dichlorobenzene	0.0017	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	1,2-Dichloroethane	0.00095	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	1,3,5-Trimethylbenzene	0.0073	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	1,3,5-Trimethylbenzene	0.0073	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	1,4-Dichlorobenzene	0.0012	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	2-Butanone	0.014	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	2-Butanone	0.014	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	Acetone	0.082	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	Benzene	0.026	mg/kg	J	FD>RPD

Table B-3. Validation Flags

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
18Q2DP009-SB0601-SO-1	SW8260B-Low	Benzene	0.026	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	Carbon disulfide	0.0023	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	Ethylbenzene	0.0031	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	Isopropylbenzene	0.00074	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	m,p-Xylene	0.0098	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	m,p-Xylene	0.0098	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	Naphthalene	0.0046	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	n-Butylbenzene	0.012	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	n-Butylbenzene	0.012	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	n-Propylbenzene	0.0018	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	o-Xylene	0.0038	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	p-Isopropyltoluene	0.0067	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	p-Isopropyltoluene	0.0067	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	sec-Butylbenzene	0.004	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	Tetrachloroethene	0.025	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	Tetrachloroethene	0.025	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	Toluene	0.024	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	Toluene	0.024	mg/kg	J	Sur>UCL
18Q2DP009-SB0601-SO-1	SW8260B-Low	Total Xylenes	0.014	mg/kg	J	FD>RPD
18Q2DP009-SB0601-SO-1	SW8260B-Low	Total Xylenes	0.014	mg/kg	J	Sur>UCL

Table B-3. Validation Flags

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
18Q2DP009-SB0601-SO-1	SW8260B-Low	Trichloroethene	0.0037	mg/kg	J	Sur>UCL
18Q2DP009-SB0602-SO-0	SW8260B-Low	Acetone	0.02	mg/kg	B	TB>LOQ
18Q2DP009-SB0701-SO-0	SW8260B-Low	Acetone	0.043	mg/kg	B	TB>LOQ
18Q2DP009-SB0702-SO-0	SW8260B-Low	Acetone	0.012	mg/kg	B	TB>LOQ
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,1,2,2-Tetrachloroethane	0.0013	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,2,3-Trichlorobenzene	0.0027	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,2,3-Trichloropropane	0.0027	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,2,4-Trichlorobenzene	0.0027	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,2,4-Trimethylbenzene	0.0027	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,2-Dibromo-3-chloropropane	0.0027	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,2-Dichlorobenzene	0.0013	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,3,5-Trimethylbenzene	0.0059	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,3,5-Trimethylbenzene	0.0059	mg/kg	J	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,3-Dichlorobenzene	0.0013	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	1,4-Dichlorobenzene	0.0013	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	2-Butanone	0.022	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	2-Chlorotoluene	0.0013	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	4-Chlorotoluene	0.0013	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Acetone	0.11	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Benzene	0.014	mg/kg	J	Sur>UCL

Table B-3. Validation Flags

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
18Q2DP009-SB0801-SO-0	SW8260B-Low	Bromobenzene	0.0013	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Bromoform	0.0027	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Carbon disulfide	0.017	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Hexachlorobutadiene	0.0027	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	m,p-Xylene	0.0051	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	m,p-Xylene	0.0051	mg/kg	J	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Naphthalene	0.0027	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	n-Butylbenzene	0.17	mg/kg	J	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	n-Butylbenzene	0.17	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	n-Propylbenzene	0.0013	mg/kg	R	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	o-Xylene	0.0034	mg/kg	J	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	o-Xylene	0.0034	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	p-Isopropyltoluene	0.072	mg/kg	J	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	p-Isopropyltoluene	0.072	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	sec-Butylbenzene	0.017	mg/kg	J	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	sec-Butylbenzene	0.017	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	tert-Butylbenzene	0.0059	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	tert-Butylbenzene	0.0059	mg/kg	J	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Tetrachloroethene	0.022	mg/kg	J	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Tetrachloroethene	0.022	mg/kg	J	Sur>UCL

Table B-3. Validation Flags

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
18Q2DP009-SB0801-SO-0	SW8260B-Low	Toluene	0.0038	mg/kg	J	IS<LCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Toluene	0.0038	mg/kg	J	Sur>UCL
18Q2DP009-SB0801-SO-0	SW8260B-Low	Total xylenes	0.0085	mg/kg	J	Sur>UCL
18Q2DP009-SB0802-SO-0	SW8260B-Low	Acetone	0.012	mg/kg	B	TB>LOQ
18Q3DP009-IA01-IA-0	TO-15-SIM	Naphthalene	0.34	µg/m^3	J	NoLCS
18Q3DP009-IA02-IA-0	TO-15-SIM	Naphthalene	0.32	µg/m^3	J	NoLCS
18Q3DP009-IA03-IA-0	TO-15-SIM	Naphthalene	0.72	µg/m^3	J	NoLCS
18Q3DP009-IA04-IA-0	TO-15-SIM	Naphthalene	0.26	µg/m^3	J	NoLCS
18Q3DP009-IA04-IA-1	TO-15-SIM	Naphthalene	0.24	µg/m^3	J	NoLCS
18Q3DP009-OA01-OA-0	TO-15-SIM	Naphthalene	1.1	µg/m^3	J	NoLCS
18Q3DP009-SS01-SS-0	TO-15	Naphthalene	20	µg/m^3	UJ	NoLCS
18Q3DP009-SS02-SS-0	TO-15	Naphthalene	20	µg/m^3	UJ	NoLCS
18Q4DP009-IA01-IA-0	TO-15-SIM	Naphthalene	2.7	µg/m^3	J	LCS>UCL
18Q4DP009-IA01-IA-0	TO-15-SIM	Naphthalene	2.7	µg/m^3	J	LCSD>UCL
18Q4DP009-IA02-IA-0	TO-15-SIM	Naphthalene	3.7	µg/m^3	J	LCSD>UCL
18Q4DP009-IA02-IA-0	TO-15-SIM	Naphthalene	3.7	µg/m^3	J	LCS>UCL
18Q4DP009-IA03-IA-0	TO-15-SIM	Naphthalene	2.6	µg/m^3	J	LCSD>UCL
18Q4DP009-IA03-IA-0	TO-15-SIM	Naphthalene	2.6	µg/m^3	J	LCS>UCL
18Q4DP009-IA04-IA-0	TO-15-SIM	Naphthalene	2.6	µg/m^3	J	FD>RPD
18Q4DP009-IA04-IA-0	TO-15-SIM	Naphthalene	2.6	µg/m^3	J	LCSD>UCL

Table B-3. Validation Flags

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
18Q4DP009-IA04-IA-0	TO-15-SIM	Naphthalene	2.6	µg/m^3	J	LCS>UCL
18Q4DP009-IA04-IA-1	TO-15-SIM	Naphthalene	1.8	µg/m^3	J	FD>RPD
18Q4DP009-IA04-IA-1	TO-15-SIM	Naphthalene	1.8	µg/m^3	J	LCSD>UCL
18Q4DP009-IA04-IA-1	TO-15-SIM	Naphthalene	1.8	µg/m^3	J	LCS>UCL
18Q4DP009-OA01-OA-0	TO-15-SIM	Naphthalene	0.32	µg/m^3	J	LCSD>UCL
18Q4DP009-OA01-OA-0	TO-15-SIM	Naphthalene	0.32	µg/m^3	J	LCS>UCL
18Q4DP009-SS02-SS-0	TO-15	Naphthalene	47	µg/m^3	J	LCS>UCL
18Q4DP009-SS02-SS-0	TO-15	Naphthalene	47	µg/m^3	J	LCS>UCL

Notes:
FD>RPD = Field duplicate relative percent difference (RPD) criterion exceeded
IS<LCL = Internal standard recovery less than the lower control limit (LCL)
LCS>UCL = Laboratory control sample recovery greater than the upper control limit (UCL)
LCSD>UCL = Laboratory control sample duplicate recovery greater than the UCL
MS<LCL = MS recovery less than the LCL
MS>UCL = MS recovery greater than the UCL
NoLCS = Analyte was not spiked into the LCS
SD<LCL = MS duplicate recovery less than the LCL
SD>UCL = MS duplicate recovery greater than the UCL
SerDilOut = Serial dilution RPD criterion exceeded
Sur>UCL = Surrogate recovery greater than the UCL
TB>LOQ = TB concentration greater than the LOQ
µg/m^3 = microgram(s) per cubic meter
mg/kg = milligram(s) per kilogram

B.3.6 Field Duplicates

Four FD sets were collected, and precision was acceptable with the following exceptions:

- The RPD of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2-butanone, benzene, m,p-xylene, n-butylbenzene, p-isopropyltoluene, tetrachloroethene, toluene and total xylenes were greater than the acceptance criterion in soil FD set 18Q2DP009-SB0601-SO-0/18Q2DP009-SB0601-SO-1 for Method SW8260B-Low. The associated detected results in the FD set were qualified as estimated and flagged "J," and associated non-detect results in the FD set were qualified as estimated and flagged "UJ."
- The RPD of naphthalene was greater than the acceptance criterion in indoor air FD set 18Q4DP009-IA04-IA-0/18Q4DP009-IA04-IA-1 for Method TO-15SIM. The associated detected results in the FD set were qualified as estimated and flagged "J."

B.3.7 Matrix Spike Samples

The results of MS/MSD analyses provide information about the possible influence of the matrix on either accuracy or precision of the measurements. The field crew designated samples for MS/MSD analysis. Accuracy and precision criteria were met with the following exceptions:

- The recoveries of barium, chromium, copper and potassium were less than Work Plan criteria in the MS and MSD of soil sample 18Q2DP009-SB0501-SO-0 for Method SW6020A, indicating the associated sample results are possibly biased low. The associated detected results in the parent sample were qualified as estimated and flagged "J."
- The recovery of magnesium was greater than Work Plan criteria in the MS of soil sample 18Q2DP009-SB0501-SO-0 for Method SW6020A, indicating the associated sample result is possibly biased high. The associated detected result in the parent sample was qualified as estimated and flagged "J."
- The recovery of acetone was greater than Work Plan criteria in the MSD of soil sample 18Q2DP009-SB0501-SO-0 for Method SW8260B-low, indicating the associated sample result is possibly biased high. The associated detected result in the parent sample was qualified as estimated and flagged "J."

B.3.8 Serial Dilution

The serial dilution RPD of cobalt was greater than Work Plan criteria in soil sample 18Q2DP009-SB0501-SO-0 for Method SW6020A. The associated detected result was qualified as estimated and flagged "J."

B.3.9 Internal Standards

All internal standard criteria were met with the following exception: One internal standard recovery was less than Work Plan criteria, and one was less than 10 percent, in soil sample 18Q2DP009-SB0801-SO-0 for Method SW8260B-Low, indicating associated results are possibly biased low. For the low recovery; nine associated detected results were qualified as estimated and flagged "J." For the recovery less than 10 percent, 16 associated results were rejected for project use and flagged "R."

B.3.10 Surrogates

Surrogates were added to all samples for the methods requiring their use. Surrogate recoveries met criteria with the following exceptions:

- Surrogate recovery was greater than Work Plan criteria in soil samples 18Q2DP009-SB0601-SO-1 and 18Q2DP009-SB0801-SO-0 for Method SW8260B-Low, indicating associated sample results are possibly biased high.
- Thirty-six associated detected results were qualified as estimated and flagged "J."

B.3.11 Laboratory Control Samples

LCS/LCSDs were analyzed and all accuracy and precision criteria were met with the following exceptions:

- Naphthalene was not included in the LCS for Methods TO-15 and TO-15SIM. Two associated non-detect results were qualified as estimate and flagged "UJ," and six associated detected results were qualified as estimated and flagged "J."
- The recovery of naphthalene was greater than Work Plan criteria in the LCS/LCSD sets for Methods TO-15 and TO-15SIM, indicating associated sample results are possibly biased high. Seven associated detected results were qualified as estimated and flagged "J."

B.3.12 Chain-of-custody and Sample Receipt Discrepancies

SDG 18F187

There were collection date and time, preservation, and analytical method discrepancies between the container labels and COC documentation. Samples were logged in per the COC procedure; however, changes to container labels were not initialed and dated.

SDG J072607

No discrepancies noted.

SDG J110805

No discrepancies noted.

B.4 Overall Assessment

The final DQE activity is an assessment of whether data meet the data quality objectives. The goal of this assessment is to demonstrate that a sufficient number of representative samples were collected, and the resulting analytical data can be used to support the decision-making process. The precision, accuracy, representativeness, completeness and comparability are addressed in the Work Plan (USAF 2018). The following summary highlights the data evaluation findings for the specified parameters:

1. The completeness objectives are 95 percent for air samples and 90 percent for soil samples; completeness objectives were met for all method/matrix/analyte combinations. Completeness for all method/matrix/analyte combinations was 100 percent except for 1,1,2,2-tetrachloroethane; 1,2,3-trichlorobenzene; 1,2,3-trichloropropane; 1,2,4-trichlorobenzene; 1,2,4-trimethylbenzene; 1,2-dibromo-3-chloropropane; 1,2-dichlorobenzene; 1,3-dichlorobenzene; 1,4-dichlorobenzene; 2-chlorotoluene; 4-chlorotoluene; bromobenzene; bromoform; hexachlorobutadiene; naphthalene; and, n-propylbenzene for Method SW8260B-Low in soil; completeness for each of these analytes was 93 percent because of low internal standard recoveries.
2. Approximately 1 percent of the soil data for Method SW8260B-Low were qualified because of low-level detections in the TBs. The degree to which blank contamination was observed is within reasonable method expectations.
3. FD RPD exceedances were observed for Methods SW8260B-Low and TO-15SIM; 22 results were qualified as estimated.
4. LCS/LCSD recovery exceedances were observed for Methods TO-15 and TO-15SIM; seven results were qualified as estimated.
5. Surrogate recovery exceedances were observed for Method SW8260B-Low; 36 results were qualified as estimated.
6. Internal standard recovery exceedances were observed for Method SW8260B-Low; nine results were qualified as estimated.

7. One analyte was not spiked in the LCS for Methods TO-15 and TO-15SIM; eight results were qualified as estimated.
8. MS/MSD recovery exceedances were observed for Methods SW6020A and SW8260B-Low; 10 results were qualified as estimated.
9. A serial dilution RPD exceedance was observed for Method SW6020A; one result was qualified as estimated.
10. Although data were qualified as estimated due to QC exceedances, as noted, overall precision and accuracy of the data, as measured by field and laboratory QC indicators, suggest that data are usable for projects objectives, except for the rejected data.

Complete laboratory results are provided as Attachment B-3.

B.5 Reference

United States Air Force (USAF). 2018. *Joint Base Elmendorf-Richardson, Uniform Federal Policy-Quality Assurance Project Plan, Supplemental Remedial Investigations for AT029 and DP009, Remedial Investigation for SS019, and Preliminary Source Evaluation 2 for SS120*. Final. May.

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Attachment B-1
Samples Associated with DQE

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Attachment B-1 Samples Associated with DQE

Sample ID	Collection Date	Sample Type	Matrix
18Q2DP009-SB0401-SO-1	6/21/2018	FD	Soil
18Q2DP009-SB0601-SO-1	6/23/2018	FD	Soil
18Q3DP009-IA04-IA-1	7/25/2018	FD	Indoor Air
18Q4DP009-IA04-IA-1	11/6/2018	FD	Indoor Air
18Q2DP009-SB0301-SO-0	6/23/2018	N	Soil
18Q2DP009-SB0302-SO-0	6/23/2018	N	Soil
18Q2DP009-SB0401-SO-0	6/21/2018	N	Soil
18Q2DP009-SB0402-SO-0	6/21/2018	N	Soil
18Q2DP009-SB0501-SO-0	6/22/2018	N	Soil
18Q2DP009-SB0502-SO-0	6/22/2018	N	Soil
18Q2DP009-SB0601-SO-0	6/23/2018	N	Soil
18Q2DP009-SB0602-SO-0	6/23/2018	N	Soil
18Q2DP009-SB0701-SO-0	6/22/2018	N	Soil
18Q2DP009-SB0702-SO-0	6/22/2018	N	Soil
18Q2DP009-SB0801-SO-0	6/21/2018	N	Soil
18Q2DP009-SB0802-SO-0	6/21/2018	N	Soil
18Q3DP009-IA01-IA-0	7/25/2018	N	Indoor Air
18Q3DP009-IA02-IA-0	7/25/2018	N	Indoor Air
18Q3DP009-IA03-IA-0	7/25/2018	N	Indoor Air
18Q3DP009-IA04-IA-0	7/25/2018	N	Indoor Air
18Q3DP009-OA01-OA-0	7/25/2018	N	Outdoor Air
18Q3DP009-SS01-SS-0	7/24/2018	N	Soil Gas
18Q3DP009-SS02-SS-0	7/24/2018	N	Soil Gas
18Q2DP009-SOTB01L	6/21/2018	TB	Water
18Q2DP009-SOTB01M	6/21/2018	TB	Soil
18Q4DP009-IA01-IA-0	11/6/2018	N	Indoor Air
18Q4DP009-IA02-IA-0	11/6/2018	N	Indoor Air
18Q4DP009-IA03-IA-0	11/6/2018	N	Indoor Air
18Q4DP009-IA04-IA-0	11/6/2018	N	Indoor Air
18Q4DP009-OA01-OA-0	11/6/2018	N	Outdoor Air
18Q4DP009-SS01-SS-0	11/6/2018	N	Soil Gas
18Q4DP009-SS02-SS-0	11/6/2018	N	Soil Gas

Notes:

EB = equipment blank N = primary sample
FD = field duplicate TB = trip blank

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Attachment B-2
ADEC Checklists

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Laboratory Data Review Checklist

Completed By:

Berney Kidd

Title:

Project Chemist

Date:

10/25/2018

CS Report Name:

Report Date:

7/19/2018

Consultant Firm:

Jacobs/CH2M HILL

Laboratory Name:

EMAX Laboratories

Laboratory Report Number:

18F187

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☐ No Comments:

   No samples transferred.

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   ☑ Yes ☐ No Comments:

   There were collection date and time, preservation and analytical method discrepancies between the container labels and chain of custody. Samples were logged in per the chain of custody.

   Changes to container labels were not initialed and dated.

   b. Correct Analyses requested?

   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☑ Yes ☐ No Comments:

   Two coolers received at 2.9C and 3.6C.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☑ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☐ Yes ☐ No Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☐ Yes ☐ No Comments:

e. Data quality or usability affected?

Comments:

Data usable as reported.

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

☒ Yes ☐ No Comments:

Matrix spike exceedances.
Serial dilution exceedances.
Surrogate exceedances.

c. Were all corrective actions documented?

☒ Yes ☐ No Comments:

Re-extraction and reanalyses performed where required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Some data are qualified as estimated; data are usable as qualified.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No Comments:

b. All applicable holding times met?

☒ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

Data are reported ND at the LOD. All LODs meet PSLs except the following:
Thallium by Method SW6020A.
n-Nitrosodimethylamine and n-Nitrosodimethylamine by Method SW8270C.
1,2,3-Trichloropropane and 1,2-Dibromo-3-Chloropropane in sample 18Q2DP009-SB0801-SO-0 for Method SW8260B due to low percent solids.
bis(2-Chloroethyl)ether and Hexachlorobenzene in sample 18Q2DP009-SB0601-SO-0 for SW8270C due to dilution.
See site specific report for details.

e. Data quality or usability affected?

☐ Yes ☑ No Comments:

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

Data usable as reported.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No, data usable as reported.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☑ No Comments:

Surrogate recovery was greater than criteria in soil samples 18Q2DP009-SB0601-SO-1 and 18Q2DP009-SB0801-SO-0 for Method SW8260B-Low, indicating associated sample results are possibly biased high.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

Associated detected results were qualified as estimated and flagged "J".

iv. Data quality or usability affected?

Comments:

Data qualified as estimated; usable as qualified.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

☑ Yes ☐ No Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☑ Yes ☐ No Comments:

iii. All results less than LOQ?

☐ Yes ☒ No Comments:

Acetone was detected greater than the LOQ in the TBs for Method SW8260B-Low.

iv. If above LOQ, what samples are affected?

Comments:

18Q2DP009-SB0301-SO-0, 18Q2DP009-SB0302-SO-0, 18Q2DP009-SB0401-SO-0, 18Q2DP009-SB0401-SO-1, 18Q2DP009-SB0402-SO-0, 18Q2DP009-SB0501-SO-0, 18Q2DP009-SB0502-SO-0, 18Q2DP009-SB0601-SO-0, 18Q2DP009-SB0602-SO-0, 18Q2DP009-SB0701-SO-0, 18Q2DP009-SB0702-SO-0, and 18Q2DP009-SB0802-SO-0

v. Data quality or usability affected?

Comments:

Associated results less than ten times the blank concentrations were qualified as estimated and flagged "B".

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☒ Yes ☐ No Comments:

ii. Submitted blind to lab?

☒ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐ Yes ☒ No Comments:

The RPDs of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2-butanone, benzene, m,p-xylene, n-butylbenzene, p-isopropyltoluene, tetrachloroethene, toluene and total xylenes were greater than the acceptance criterion in soil FD set 18Q2DP009-SB0601-SO-0 /18Q2DP009-SB0601-SO-1 for Method SW8260B-Low. The associated detected results in the FD set were qualified as estimated and flagged "J"; associated nondetected results in the FD set were qualified as estimated and flagged "UJ".

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data qualified as estimated; usable as qualified.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

☐ Yes ☐ No ☒ Not Applicable

EBs were not required for soil sampling because dedicated equipment was used for sample collection.

i. All results less than LOQ?

☐ Yes ☐ No Comments:

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No, data usable as reported.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

MS/MSD:
The recoveries of barium, chromium, copper and potassium were less than criteria in the MS and MSD of soil sample 18Q2DP009-SB0501-SO-0 for Method SW6020A, indicating the associated sample results are possibly biased low. The associated detected results in the parent sample were qualified as estimated and flagged "J".

The recovery of magnesium was greater than criteria in the MS of soil sample 18Q2DP009-SB0501-SO-0 for Method SW6020A, indicating the associated sample result is possibly biased high. The associated detected result in the parent sample was qualified as estimated and flagged "J".

The recovery of acetone was greater than criteria in the MSD of soil sample 18Q2DP009-SB0501-SO-0 for Method SW8260B-low, indicating the associated sample result is possibly biased high. The associated detected result in the parent sample was qualified as estimated and flagged "J".

Serial Dilution:
The serial dilution RPD of cobalt was greater than criteria in soil sample 18Q2DP009-SB0501-SO-0 for Method SW6020A. The associated detected result was qualified as estimated and flagged "J".

Internal Standards:
One internal standard recovery was less than criteria, and one was less than 10 percent, in soil sample 18Q2DP009-SB0801-SO-0 for Method SW8260B-Low, indicating associated results are possibly biased Low. For the low recovery; nine associated detected results were qualified as estimated and flagged "J". For the recovery less than 10 percent, 16 associated results were rejected for project use and flagged "R".

Laboratory Data Review Checklist for Air Samples

Completed by:	Berney Kidd		
Title:	Project Chemist	Date:	10/25/2018
CS Report Name:		Report Date:	
Consultant Firm:	Jacobs/CH2M Hill		
Laboratory Name:	Air Technology Labs	Laboratory Report Number:	J072607
ADEC File Number:		ADEC Haz ID:	

1. Laboratory

a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

(•) Yes ( ) No ( ) NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

( ) Yes ( ) No (•) NA (Please explain.) Comments:

No samples transferred.

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

(•) Yes ( ) No ( ) NA (Please explain.) Comments:

b. Correct analyses requested?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented -Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

b. If there were any discrepancies, were they documented? For example, incorrect sample containers/ preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

○ Yes ○ No ◉ NA (Please explain) Comments:

No discrepancies.

c. Data quality or usability affected? (Please explain.)

○ Yes ◉ No ○ NA (Please explain) Comments:

4. Case Narrative

a. Present and understandable?

◉ Yes ○ No ○ NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

○ Yes ◉ No ○ NA (Please explain) Comments:

c. Were all corrective actions documented?

○ Yes ○ No ◉ NA (Please explain) Comments:

No corrective actions required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

◉ Yes ○ No ○ NA (Please explain) Comments:

b. Samples analyzed within 30 days of collection or within the time required by the method?

◉ Yes ○ No ○ NA (Please explain) Comments:

c. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

○ Yes ◉ No ○ NA (Please explain) Comments:

The soil gas LOD did not meet the soil gas PSL for naphthalene.

d. Data quality or usability affected?

Comments:

See site specific report for details.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. All method blank results less than PQL?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

( ) Yes ( ) No ( ) NA (Please explain) Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

Naphthalene was not included in the LCS for Methods TO-15 and TO-15SIM.

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

◉ Yes ○ No ○ NA (Please explain) Comments:

18Q3DP009-IA01-IA-0, 18Q3DP009-IA02-IA-0, 18Q3DP009-IA03-IA-0, 18Q3DP009-IA04-IA-0, 18Q3DP009-IA04-IA-1, 18Q3DP009-OA01-OA-0, 18Q3DP009-SS01-SS-0, 18Q3DP009-SS02-SS-0

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

◉ Yes ○ No ○ NA (Please explain) Comments:

Two associated nondetected results were qualified as estimate and flagged “UJ”; six associated detected results were qualified as estimated and flagged “J”.

vi. Data quality or usability affected? (Please explain.)

Comments:

Data qualified as estimated; usable as qualified.

c. Surrogates

i. Are surrogate recoveries reported for field, QC and laboratory samples?

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

◉ Yes ○ No ○ NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ○ NA (Please explain) Comments:

iv. Data quality or usability affected? (Please explain.)

Comments:

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 type (soil gas, indoor air etc.) samples?

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. Submitted blind to lab?

◉ Yes ○ No ○ NA (Please explain) Comments:

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

$$RPD\ (\%) = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

◉ Yes ○ No ○ NA (Please explain) Comments:

iv. Data quality or usability affected? (Please explain.) Comments:

e. Field Blank (If not used explain why).

○ Yes ○ No ◉ NA (Please explain) Comments:

Not collected.

i. All results less than PQL?

○ Yes ○ No ○ NA (Please explain) Comments:

ii. If above PQL, what samples are affected? Comments:

iii. Data quality or usability affected? (Please explain.)

Comments:

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

○ Yes ○ No ◉ NA (Please explain) Comments:

No other flags applied.

Reset Form

Laboratory Data Review Checklist for Air Samples

Completed by:	Berney Kidd		
Title:	Project Chemist	Date:	2/20/2018
CS Report Name:		Report Date:	
Consultant Firm:	Jacobs/CH2M Hill		
Laboratory Name:	Air Technology Labs	Laboratory Report Number:	J110805
ADEC File Number:		ADEC Haz ID:	

1. Laboratory

a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

(•) Yes ( ) No ( ) NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

( ) Yes ( ) No (•) NA (Please explain.) Comments:

No samples transferred.

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

(•) Yes ( ) No ( ) NA (Please explain.) Comments:

b. Correct analyses requested?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented -Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

b. If there were any discrepancies, were they documented? For example, incorrect sample containers/ preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

○ Yes ○ No ◉ NA (Please explain) Comments:

No discrepancies.

c. Data quality or usability affected? (Please explain.)

○ Yes ◉ No ○ NA (Please explain) Comments:

4. Case Narrative

a. Present and understandable?

◉ Yes ○ No ○ NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

◉ Yes ◉ No ○ NA (Please explain) Comments:

High LCS recoveries.

c. Were all corrective actions documented?

○ Yes ○ No ◉ NA (Please explain) Comments:

No corrective actions required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Some data qualified as estimated, usable as qualified.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

◉ Yes ○ No ○ NA (Please explain) Comments:

b. Samples analyzed within 30 days of collection or within the time required by the method?

◉ Yes ○ No ○ NA (Please explain) Comments:

c. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

○ Yes ◉ No ○ NA (Please explain) Comments:

The soil gas LOD did not meet the soil gas PSL for naphthalene.

d. Data quality or usability affected?

Comments:

See site specific report for details.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. All method blank results less than PQL?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

( ) Yes ( ) No ( ) NA (Please explain) Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

( ) Yes (•) No ( ) NA (Please explain) Comments:

The recovery of naphthalene was greater than the upper control limit for Methods TO-15 and TO-15SIM.

iii. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

18Q4DP009-IA01-IA-0, 18Q4DP009-IA02-IA-0, 18Q4DP009-IA03-IA-0, 18Q4DP009-IA04-IA-0, 18Q4DP009-IA04-IA-1, 18Q4DP009-OA01-OA-0, 18Q4DP009-SS02-SS-0

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

The associated detected results were qualified as estimated and flagged "J".

vi. Data quality or usability affected? (Please explain.)

Comments:

Data qualified as estimated; usable as qualified.

c. Surrogates

i. Are surrogate recoveries reported for field, QC and laboratory samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

( ) Yes ( ) No ( ) NA (Please explain) Comments:

iv. Data quality or usability affected? (Please explain.)

Comments:

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 type (soil gas, indoor air etc.) samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. Submitted blind to lab?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

$$RPD\ (\%) = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

○ Yes ◉ No ○ NA (Please explain) Comments:

The RPD of naphthalene was greater than criteria in FD set 18Q4DP009-IA04-IA-0/18Q4DP009-IA04-IA-1 for TO-15SIM.

iv. Data quality or usability affected? (Please explain.) Comments:

The associated detected results in the FD set were qualified as estimated and flagged "J". Usable as qualified.

e. Field Blank (If not used explain why).

○ Yes ○ No ◉ NA (Please explain) Comments:

Not collected.

i. All results less than PQL?

○ Yes ○ No ○ NA (Please explain) Comments:

ii. If above PQL, what samples are affected? Comments:

iii. Data quality or usability affected? (Please explain.)

Comments:

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

○ Yes ○ No ◉ NA (Please explain) Comments:

No other flags applied.

Reset Form

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Attachment B-3
Laboratory Reports

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EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 07-19-2018
EMAX Batch No.: 18F187

Attn: Bernice Kidd

CH2M Hill
2525 Airpark Drive
Redding, CA 96001

Subject: Laboratory Report
Project: JBER T0075

Enclosed is the Laboratory report for samples received on 06/26/18.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
18Q2DP009-SB0401-SO-0	F187-01	06/21/18	SOIL	VOCS WITH TIC VOLATILE ORGANICS (LOW) BY GC/MS GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM
18Q2DP009-SB0401-SO-1	F187-02	06/21/18	SOIL	VOCS WITH TIC VOLATILE ORGANICS (LOW) BY GC/MS GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM
18Q2DP009-SB0402-SO-0	F187-03	06/21/18	SOIL	VOCS WITH TIC VOLATILE ORGANICS (LOW) BY GC/MS GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM
18Q2DP009-SB0801-SO-0	F187-04	06/21/18	SOIL	VOCS WITH TIC VOLATILE ORGANICS (LOW) BY GC/MS GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM
18Q2DP009-SB0802-SO-0	F187-05	06/21/18	SOIL	VOCS WITH TIC VOLATILE ORGANICS (LOW) BY GC/MS GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Sample ID	Control #	Col Date	Matrix	Analysis
18Q2DP009-SOTB01L	F187-06	06/21/18	SOIL	VOLATILE ORGANICS (LOW) BY GC/MS
18Q2DP009-SB0501-SO-0	F187-07	06/22/18	SOIL	VOCS WITH TIC
				VOLATILE ORGANICS (LOW) BY GC/MS
				GRO BY AK101
				DRO & RRO BY AK102 & AK103
				TOTAL METALS BY ICP-MS
				MERCURY
				SEMIVOLATILE ORGANICS BY GCMS
				PAH BY 8270C SIM
18Q2DP009-SB0502-SO-0	F187-08	06/22/18	SOIL	VOCS WITH TIC
				VOLATILE ORGANICS (LOW) BY GC/MS
				GRO BY AK101
				DRO & RRO BY AK102 & AK103
				TOTAL METALS BY ICP-MS
				MERCURY
				SEMIVOLATILE ORGANICS BY GCMS
				PAH BY 8270C SIM
18Q2DP009-SOTB01M	F187-09	06/21/18	SOIL	VOCS WITH TIC
				GRO BY AK101
18Q2DP009-SB0701-SO-0	F187-10	06/22/18	SOIL	VOCS WITH TIC
				VOLATILE ORGANICS (LOW) BY GC/MS
				GRO BY AK101
				DRO & RRO BY AK102 & AK103
				TOTAL METALS BY ICP-MS
				MERCURY
				SEMIVOLATILE ORGANICS BY GCMS
				PAH BY 8270C SIM
18Q2DP009-SB0702-SO-0	F187-11	06/22/18	SOIL	VOCS WITH TIC
				VOLATILE ORGANICS (LOW) BY GC/MS
				GRO BY AK101
				DRO & RRO BY AK102 & AK103
				TOTAL METALS BY ICP-MS
				MERCURY
				SEMIVOLATILE ORGANICS BY GCMS
				PAH BY 8270C SIM
18Q2DP009-SB0301-SO-0	F187-12	06/23/18	SOIL	VOCS WITH TIC
				VOLATILE ORGANICS (LOW) BY GC/MS
				GRO BY AK101
				DRO & RRO BY AK102 & AK103
				TOTAL METALS BY ICP-MS
				MERCURY
				SEMIVOLATILE ORGANICS BY GCMS
				PAH BY 8270C SIM
18Q2DP009-SB0302-SO-0	F187-13	06/23/18	SOIL	VOCS WITH TIC
				VOLATILE ORGANICS (LOW) BY GC/MS
				GRO BY AK101
				DRO & RRO BY AK102 & AK103
				TOTAL METALS BY ICP-MS
				MERCURY
				SEMIVOLATILE ORGANICS BY GCMS
				PAH BY 8270C SIM
18Q2DP009-SB0602-SO-0	F187-14	06/23/18	SOIL	VOCS WITH TIC
				VOLATILE ORGANICS (LOW) BY GC/MS
				GRO BY AK101
				DRO & RRO BY AK102 & AK103
				TOTAL METALS BY ICP-MS
				MERCURY
				SEMIVOLATILE ORGANICS BY GCMS
				PAH BY 8270C SIM

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Sample ID	Control #	Col Date	Matrix	Analysis
18Q2DP009-SB0601-SO-0	F187-15	06/23/18	SOIL	VOCS WITH TIC VOLATILE ORGANICS (LOW) BY GC/MS GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM
18Q2DP009-SB0601-SO-1	F187-16	06/23/18	SOIL	VOCS WITH TIC VOLATILE ORGANICS (LOW) BY GC/MS GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM
18Q2DP009-IDW-SO01	F187-17	06/23/18	SOIL	VOCS WITH TIC GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM
18Q2DP009-SB0501-SO-0MS	F187-07M	06/22/18	SOIL	VOCS WITH TIC VOLATILE ORGANICS (LOW) BY GC/MS GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM
18Q2DP009-SB0501-SO-0MSD	F187-07S	06/22/18	SOIL	VOCS WITH TIC VOLATILE ORGANICS (LOW) BY GC/MS GRO BY AK101 DRO & RRO BY AK102 & AK103 TOTAL METALS BY ICP-MS MERCURY SEMIVOLATILE ORGANICS BY GCMS PAH BY 8270C SIM

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912017-13
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER: 694734.02.02.09.01
SAMPLE STORAGE

EMAX CONTROL NO. 18F187
PROJECT CODE:

CLIENT AFCEC
PROJECT Supplemental RI for DP009
COORDINATOR Corey Schwabenlander
TEL 907-280-8862 FAX EMAIL LARRY.AMSKOLD@JACOBS.COM, Bernice.Kidd@CH2M.com
SEND REPORT TO Bernice.Kidd@CH2M.com, Quin.Bingham@ch2m.com, Corey.Schwabenlander@jacobs.com
COMPANY CH2M/Jacobs
ADDRESS 949 E. 36th Ave, Ste. 500
Anchorage, AK 99508
EMAX PM Andy Mai

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	NH=NaHSO4

ANALYSIS REQUIRED: AK101 SW8260B; AK102/AK103 SW6020A SW7471B; SW8270C SW8270C-SIM; SW8260B-LOW

TAT: ☐ Rush __24__hrs. ☐ Rush __48_hrs ☐ Rush_72_hrs ☐ 7 days ☐ 14 days ☑ 21 days

	SAMPLE ID		SAMPLING			CONTAINER			MATRIX CODE	QC	PRESERVATIVE CODE									COMMENTS
	LAB	CLIENT	LOCATION	DATE	TIME	NO.	SIZE	TYPE			MeOH	IC	NH							
(1)	* 1	18Q2DP009-SB0401-SO-0	DP009-SB04	6/21/2018	16:10	1	4oz	Amber	SS	N	X									
	* 2	18Q2DP009-SB0401-SO-0	DP009-SB04	6/21/2018	16:10	2	40mL	VOA	SS	N			X							
(2)	* 3	18Q2DP009-SB0401-SO-1	DP009-SB04	6/21/2018	16:11	1	4oz	Amber	SS	FD	X									
	* 4	18Q2DP009-SB0401-SO-1	DP009-SB04	6/21/2018	16:11	2	40mL	VOA	SS	FD			X							
(3)	* 5	18Q2DP009-SB0402-SO-0	DP009-SB04	6/21/2018	16:30	1	4oz	Amber	SS	N	X									
	* 6	18Q2DP009-SB0402-SO-0	DP009-SB04	6/21/2018	16:30	2	40mL	VOA	SS	N			X							
(4)	* 7	18Q2DP009-SB0801-SO-0	DP009-SB08	6/21/2018	18:50	1	4oz	Amber	SS	N	X									
	* 8	18Q2DP009-SB0801-SO-0	DP009-SB08	6/21/2018	18:50	2	40mL	VOA	SS	N			X							
(5)	* 9	18Q2DP009-SB0802-SO-0	DP009-SB08	6/21/2018	19:45	1	4oz	Amber	SS	N	X									
(6)	10	18Q2DP009-SOTB01L	DP009	6/21/2018	8:00	2	40mL	VOA	SS	TB			X							

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.9	
2	3.6	

SAMPLER K. Stevens
COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
	6/25/18	1100	
	6/26/18	1025	

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CHAIN OF CUSTODY

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER: 694734.02.02.09.01

SAMPLE STORAGE

EMAX CONTROL NO. 18F187

PROJECT CODE:

CLIENT AFCEC

PROJECT Supplemental RI for DP009

COORDINATOR Corey Schwabenlander

TEL 907-280-8862 FAX EMAIL LARRY.AMSKOLD@JACOBS.COM, Bernice.Kidd@CH2M.com

SEND REPORT TO Bernice.Kidd@CH2M.com, Quin.Bingham@ch2m.com, Corey.Schwabenlander@jacobs.com

COMPANY CH2M/Jacobs

ADDRESS 949 E. 36th Ave, Ste. 500

Anchorage, AK 99508

EMAX PM Andy Mai

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SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	NH=NaHSO4

ANALYSIS REQUIRED: AK101 SW8260B; AK102/AK103 SW6020A SW7471B; SW8270C SW8270C-SIM; SW8260B-LOW

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☐ 14 days
- ☑ 21 days

	SAMPLE ID		SAMPLING			CONTAINER			MATRIX CODE	QC	PRESERVATIVE CODE			COMMENTS
LAB	CLIENT	LOCATION	DATE	TIME	NO.	SIZE	TYPE			MeOH	IC	NH	
11	18Q2DP009-SB0802-SO-0	DP009-SB08	6/21/2018	19:45	2	40mL	VOA	SS	N			X	
12	18Q2DP009-SB0501-SO-0	DP009-SB05	6/22/2018	11:50	1	4oz	Amber	SS	N	X			
13	18Q2DP009-SB0501-SO-0	DP009-SB05	6/22/2018	11:50	2	40mL	VOA	SS	N			X	
14	18Q2DP009-SB0501-SO-MS	DP009-SB05	6/22/2018	11:50	1	4oz	Amber	SS	MS	X			
15	18Q2DP009-SB0501-SO-MS	DP009-SB05	6/22/2018	11:50	2	40mL	VOA	SS	MS			X	
16	18Q2DP009-SB0501-SO-SD	DP009-SB05	6/22/2018	11:50	1	4oz	Amber	SS	MSD	X			
17	18Q2DP009-SB0501-SO-SD	DP009-SB05	6/22/2018	11:50	2	40mL	VOA	SS	MSD			X	
18	18Q2DP009-SB0502-SO-0	DP009-SB05	6/22/2018	12:30	1	4oz	Amber	SS	N	X			
19	18Q2DP009-SB0502-SO-0	DP009-SB05	6/22/2018	12:30	2	40mL	VOA	SS	N			X	
20	18Q2DP009-SOTB01M	DP009	6/21/2018	8:00	1	4oz	Amber	SS	TB	X			

(5) (7) (8) (9)

Instructions	Cooler #	Temp. (°C)	Sample #s
	6		

SAMPLER K. Stevens

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
	6/25/18	1100	
	6/26/18	1025	

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER: 694734.02.02.09.01

SAMPLE STORAGE

EMAX CONTROL NO. 18F187

PROJECT CODE:

CLIENT AFCEC

PROJECT Supplemental RI for DP009

COORDINATOR Corey Schwabenlander

TEL 907-280-8862 FAX EMAIL LARRY.AMSKOLD@JACOBS.COM, Bernice.Kidd@CH2M.com

SEND REPORT TO Bernice.Kidd@CH2M.com, Quin.Bingham@ch2m.com, Corey.Schwabenlander@jacobs.com

COMPANY CH2M/Jacobs

ADDRESS 949 E. 36th Ave, Ste. 500

Anchorage, AK 99508

EMAX PM Andy Mai

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
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SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
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ANALYSIS REQUIRED: AK101 SW8260B; AK102/AK103 SW6020A SW7471B; SW8270C SW8270C-SIM; SW8260B-LOW

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☐ 14 days
- ☑ 21 days

	SAMPLE ID		SAMPLING			CONTAINER			MATRIX CODE	QC	PRESERVATIVE CODE			COMMENTS
	LAB	CLIENT	LOCATION	DATE	TIME	NO.	SIZE	TYPE			MeOH	IC	NH	
10	30	18Q2DP009-SB0701-SO-0	DP009-SB07	6/22/2018	13:55	1	4oz	Amber	SS	N	X			
	31	18Q2DP009-SB0701-SO-0	DP009-SB07	6/22/2018	13:55	2	40mL	VOA	SS	N			X	
11	32	18Q2DP009-SB0702-SO-0	DP009-SB07	6/22/2018	14:15	1	4oz	Amber	SS	N	X			
	33	18Q2DP009-SB0702-SO-0	DP009-SB07	6/22/2018	14:15	2	40mL	VOA	SS	N			X	
12	34	18Q2DP009-SB0301-SO-0	DP009-SB03	6/23/2018	10:15	1	4oz	Amber	SS	N	X			
	35	18Q2DP009-SB0301-SO-0	DP009-SB03	6/23/2018	10:15	2	40mL	VOA	SS	N			X	
13	36	18Q2DP009-SB0302-SO-0	DP009-SB03	6/23/2018	10:35	1	4oz	Amber	SS	N	X			
	37	18Q2DP009-SB0302-SO-0	DP009-SB03	6/23/2018	10:35	2	40mL	VOA	SS	N			X	
14	38	18Q2DP009-SB0602-SO-0	DP009-SB06	6/23/2018	12:15	1	4oz	Amber	SS	N	X			
	39	18Q2DP009-SB0602-SO-0	DP009-SB06	6/23/2018	12:15	2	40mL	VOA	SS	N			X	

Instructions

Cooler #	Temp. (°C)	Sample #s
6		

SAMPLER K. Stevens

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
	6/25/18	1100	
	6/26/18	1025	

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CHAIN OF CUSTODY

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1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER: 694734.02.02.09.01
SAMPLE STORAGE

EMAX CONTROL NO. 18F187
PROJECT CODE:

CLIENT AFCEC
PROJECT Supplemental RI for DP009
COORDINATOR Corey Schwabenlander
TEL 907-280-8862 FAX EMAIL LARRY.AMSKOLD@JACOBS.COM, Bernice.Kidd@CH2M.com
SEND REPORT TO Bernice.Kidd@CH2M.com, Quin.Bingham@ch2m.com, Corey.Schwabenlander@jacobs.com
COMPANY CH2M/Jacobs
ADDRESS 949 E. 36th Ave, Ste. 500
Anchorage, AK 99508
EMAX PM Andy Mai

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
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WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	NH=NaHSO4

ANALYSIS REQUIRED: AK101 SW8260B; AK102/AK103 SW6020A SW7471B; SW8270C SW8270C-SIM; SW8260B-LOW

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☐ 14 days
- ☑ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE MeOH	IC	NH	COMMENTS
40	18Q2DP009-SB0601-SO-0	DP009-SB06	6/23/2018	12:50	1	4oz	Amber	SS	N	X			
41	18Q2DP009-SB0601-SO-0	DP009-SB06	6/23/2018	12:50	2	40mL	VOA	SS	N			X	
42	18Q2DP009-SB0601-SO-1	DP009-SB06	6/23/2018	12:51	1	4oz	Amber	SS	FD	X			
43	18Q2DP009-SB0601-SO-1	DP009-SB06	6/23/2018	12:51	2	40mL	VOA	SS	FD			X	
44	18Q2DP009-IDW-SO01	DP009	6/23/2018	13:20	1	4oz	Amber	SS	N	X			
45													
46													
47													
48													
49													

(15) (16) (17)

Instructions

Cooler #	Temp. (°C)	Sample #s
6		

SAMPLER K. Stevens
COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
[signature]	6/25/18	1100	
	6/26/18	1025	[signature]

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CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER: 694734.02.02.09.01

SAMPLE STORAGE

EMAX CONTROL NO. 18F187

PROJECT CODE:

CLIENT AFCEC

PROJECT Supplemental RI for DP009

COORDINATOR Corey Schwabenlander

TEL 907-280-8862 FAX EMAIL LARRY.AMSKOLD@JACOBS.COM, Bernice.Kidd@CH2M.com

SEND REPORT TO Bernice.Kidd@CH2M.com, Quin.Bingham@ch2m.com, Corey.Schwabenlander@jacobs.com

COMPANY CH2M/Jacobs

ADDRESS 949 E. 36th Ave, Ste. 500

Anchorage, AK 99508

EMAX PM Andy Mai

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	NH=NaHSO4

ANALYSIS REQUIRED: AK101 SW8260B; AK102/AK103 SW6020A SW7471B; SW8270C SW8270C-SIM; SW8260B-LOW

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☐ 14 days
- ☑ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE MeOH	PRESERVATIVE CODE IC	PRESERVATIVE CODE NH	COMMENTS
* 1	18Q2DP009-SB0401-SO-0	DP009-SB03	6/20/2018	15:10	1	8oz	Amber	SS	N		X		
* 2	18Q2DP009-SB0401-SO-1	DP009-SB04	6/21/2018	16:11	1	8oz	Amber	SS	FD		X		
* 3	18Q2DP009-SB0402-SO-0	DP009-SB04	6/21/2018	16:30	1	8oz	Amber	SS	N		X		
* 4	18Q2DP009-SB0801-SO-0	DP009-SB08	6/21/2018	18:50	1	8oz	Amber	SS	N		X		
* 5	18Q2DP009-SB0802-SO-0	DP009-SB08	6/21/2018	19:45	1	8oz	Amber	SS	N		X		
* 6	18Q2DP009-SB0501-SO-0	DP009-SB05	6/22/2018	11:50	1	8oz	Amber	SS	N		X		
(7) * 7	18Q2DP009-SB0501-SO-MS	DP009-SB05	6/22/2018	11:50	1	8oz	Amber	SS	MS		X		
8	18Q2DP009-SB0501-SO-SD	DP009-SB05	6/22/2018	11:50	1	8oz	Amber	SS	MSD		X		
(8) * 9	18Q2DP009-SB0502-SO-0	DP009-SB05	6/22/2018	12:30	1	8oz	Amber	SS	N		X		
(10) 10	18Q2DP009-SB0701-SO-0	DP009-SB07	6/22/2018	13:55	1	8oz	Amber	SS	N		X		

Instructions

Cooler #	Temp. (°C)	Sample #s
7		
1	2.9	
2	3.6	

SAMPLER K. Stevens

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
[signature]	6/25/18	1100	
	6/26/18	1025	[signature]

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Email: info@emaxlabs.com

PO NUMBER: 694734.02.02.09.01 | **EMAX CONTROL NO.** 18F187

SAMPLE STORAGE | **PROJECT CODE:**

CLIENT AFCEC

PROJECT Supplemental RI for DP009

COORDINATOR Corey Schwabenlander

TEL 907-280-8862 FAX EMAIL LARRY.AMSKOLD@JACOBS.COM, Bernice.Kidd@CH2M.com

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AR=Air	HS=H2SO4
O=	NH=NaHSO4

ANALYSIS REQUIRED: AK101 SW8260B; AK102/AK103 SW6020A SW7471B; SW8270C SW8270C-SIM; SW8260B-LOW

TAT: ☐ Rush __24__hrs. ☐ Rush __48_hrs ☐ Rush_72_hrs ☐ 7 days ☐ 14 days ☑ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE MeOH	IC	NH	COMMENTS
11	18Q2DP009-SB0702-SO-0	DP009-SB07	6/22/2018	14:15	1	8oz	Amber	SS	N		X		
12	18Q2DP009-SB0301-SO-0	DP009-SB03	6/23/2018	10:15	1	8oz	Amber	SS	N		X		
13	18Q2DP009-SB0302-SO-0	DP009-SB03	6/23/2018	10:35	1	8oz	Amber	SS	N		X		
14	18Q2DP009-SB0602-SO-0	DP009-SB06	6/23/2018	12:15	1	8oz	Amber	SS	N		X		
15	18Q2DP009-SB0601-SO-0	DP009-SB06	6/23/2018	12:50	1	8oz	Amber	SS	N		X		
16	18Q2DP009-SB0601-SO-1	DP009-SB06	6/23/2018	12:51	1	8oz	Amber	SS	FD		X		
17	18Q2DP009-IDW-SO01	DP009	6/23/2018	13:20	1	8oz	Amber	SS	N		X		
18													
19													
20													

Instructions

Cooler #	Temp. (°C)	Sample #s
7		

SAMPLER K. Stevens

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
	6/25/18	1100	
	6/26/18 ~~6/25~~	1025	
		6/26/18	

NOTICE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 18F187
☐ Fedex ☐ UPS ☐ GSO ☑ Others	027-3653-6662 / APAS Kit ACE	Recipient Nem castillo
☐ EMAX Courier ☐ Client Delivery		Date 6/26/18 Time 1025

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☑ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: Corrections on COC not initialed / dated

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 2.9 °C	☑ Cooler 2 3.4 °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	A - S/N_____	B - S/N 150555522	C - S/N_____	(D) S/N 150555630	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-16	1-67	D10		R1
1	4	D22	Containers match w/ one page correctly.	6/27/18 16:10
			~~2nd page containing Sample 1 has 1510 6/26/18" for date and time~~	
17	69	D2	SW8270C SIM not on label.	R1
6	2122	D17	"HCl" on label. Vial is a 5ml vial	follow label
1-5,8-17	3,7,11,15,19,24-31, 37,39,42,46,50,54, 58,62,66,68	D17	"MeOH + Surr" on label	R1

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: (*) D7: on page 1 of 2 - Label reads 6/4/18 @ 1610

LEGEND:

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	Sample on two diff pages of COC has different date/time
D23	
D24	

☐ **Continue to next page.**

Code	Description-Sample Management
R1	Proceed as indicated in ☑ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	
R9	
R10	
R11	
R12	

REVIEWS:

Sample Labeling _____ Date 6/26/18

SRF _____ Date 6/26/18

PM _____ Date 6/26/18

Shipper's Name and Address
CH2M Hill Inc (Federal Sh
9191 S Jamaica St
Englewood, CO 80111
USA
Tel: 303-771-0990

Shipper's Account Number
27442357390

Customer's ID Number
45240

Not Negotiable
Air Waybill
Issued By
Alaska. AIR CARGO
P.O. BOX 68900 SEATTLE, WA 98168
800-225-2752 ALASKACARGO.COM

Consignee's Name and Address
Emax Lab
1835 w. 205st
Torrence, CA 90501
USA
Tel: 310-618-8889

Consignee's Account Number

Also notify
Tel:

Issuing Carrier's Agent and City

Accounting Information 45240
CH2M Hill Inc (Federal Shipments)
9191 S Jamaica St
Englewood, CO 80111
USA

SRN/694734.02.090
GoldStreak

Agent's IATA Code

Account No.

Airport of Departure (Addr. of First Carrier) and Requested Routing
Anchorage

To	By First Carrier	To / By	To / By	Currency		WT/VAL		Other		Declared Value For Carriage	Declared Value For Customs
LAX	Alaska Airlines			USD	PX	X		X		NVD	NCV

Airport of Destination	Flight/Date	Flight/Date	Amount of Insurance
Los Angeles	AS 142/25		XXX

Handling Information
DANGEROUS GOODS IN EXCEPTED QUANTITIES DGD AND NOTOC NOT REQUIRED
2PCS CHILL

SCI

No of Pieces	Gross Weight	kg lb		Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (Incl Dimensions or Volume)
2	84.0	L	Q		84.0	1.81	152.04	ENVIORNMENTAL SAMPLE Dims: 24 x 13 x13 x 2 GSX REQ
2	84.0						152.04	Volume: 4.694

Prepaid 152.04 **Weight Charge** **Collect**

Valuation Charge

Tax 4.42

Total Other Charges Due Agent

Total Other Charges Due Carrier

Other Charges
XBC 0.00

Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. I consent to the inspection of this cargo.

For: CH2M Hill Inc
(Federal Shipments)

Signature of Shipper or his Agent

[ ] THIS SHIPMENT DOES NOT CONTAIN DANGEROUS GOODS

[X] THIS SHIPMENT DOES CONTAIN DANGEROUS GOODS

Total Prepaid	Total Collect
156.46	

25 Jun 2018 11:00 — Executed On (Date)
Anchorage — at (Place)
Alaska Airlines — Signature of Issuing Carrier or its Agent

027-3653 6662

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

CH2M HILL

JBER TO078

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS + TICs
(LOW LEVEL)

SDG#: 18F187

CASE NARRATIVE

Client : CH2M HILL

Project: JBER TO075

SDG : 18F187

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS + TICs
(LOW LEVEL)

A total of fifteen (15) soil samples were received on 06/26/18 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5035A/8260B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were four (4) CCVs (Data file ID: RFP610, RFP634, RGP042 and RGP060) associated with this SDG. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed. VS02F26B and VS02G03B were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two (2) sets of LCS/LCD were analyzed. VS02F26X/VS02F26C and VS02G03L/VS02G03C were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed and the following were noted: F187-07M/F187-07S - Percent recoveries for 2-Butanone and Acetone was not within MSD QC limit. Presence of matrix interference was suspected. The rest of the analytes were in control. Refer to Matrix QC summary form for details.

Surrogate
Surrogates were added on QC and field samples. For this SDG, all surrogate recoveries were within QC limits except for 4-Bromofluorobenzene and Toluene-D8 in F187-04 and Dibromofluoromethane in F187-16; due to apparent chromatographic interferents. Sample reanalysis in this case will likely deliver similar result. For this reason, no re-analysis was perfor ed. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter. 4-Bromofluorobenzene and P-Isopropyltoluene in F187-04 were manually integrated. Hence, the original chromatogram was retained and corrected chromatogram was initialed and dated. The secondary reviewer concurred with the manual integrations.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL
Project : JBER T0075

SDG NO. : 18F187
Instrument ID : 02

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	VS02F26B	1	NA	06/29/1812:16	06/29/1812:16	RFP615	RFP312	VS02F26	Method Blank
LCS1S	VS02F26X	1	NA	06/29/1811:26	06/29/1811:26	RFP613	RFP312	VS02F26	Lab Control Sample (LCS)
LCD1S	VS02F26C	1	NA	06/29/1811:00	06/29/1811:00	RFP612	RFP312	VS02F26	LCS Duplicate
18Q2DP009-SOTB01L	F187-06	1	NA	06/29/1812:41	06/29/1812:41	RFP616	RFP312	VS02F26	Field Sample
18Q2DP009-SB0401-SO-0	F187-01	1.06	4.8	06/29/1813:06	06/29/1813:06	RFP617	RFP312	VS02F26	Field Sample
18Q2DP009-SB0401-SO-1	F187-02	1.37	4.6	06/29/1813:31	06/29/1813:31	RFP618	RFP312	VS02F26	Field Sample
18Q2DP009-SB0402-SO-0	F187-03	1.09	5.3	06/29/1813:57	06/29/1813:57	RFP619	RFP312	VS02F26	Field Sample
18Q2DP009-SB0802-SO-0	F187-05	1.02	4.9	06/29/1814:21	06/29/1814:21	RFP620	RFP312	VS02F26	Field Sample
18Q2DP009-SB0502-SO-0	F187-08	0.93	3.5	06/29/1815:09	06/29/1815:09	RFP622	RFP312	VS02F26	Field Sample
18Q2DP009-SB0701-SO-0	F187-10	0.98	5.8	06/29/1815:35	06/29/1815:35	RFP623	RFP312	VS02F26	Field Sample
18Q2DP009-SB0702-SO-0	F187-11	1.03	4.7	06/29/1817:36	06/29/1817:36	RFP628	RFP312	VS02F26	Field Sample
18Q2DP009-SB0301-SO-0	F187-12	1.1	4.0	06/29/1818:00	06/29/1818:00	RFP629	RFP312	VS02F26	Field Sample
18Q2DP009-SB0302-SO-0	F187-13	0.94	6.5	06/29/1818:25	06/29/1818:25	RFP630	RFP312	VS02F26	Field Sample
18Q2DP009-SB0602-SO-0	F187-14	1.17	5.1	06/29/1818:49	06/29/1818:49	RFP631	RFP312	VS02F26	Field Sample
18Q2DP009-SB0601-SO-0	F187-15	1.17	7.6	06/29/1819:13	06/29/1819:13	RFP632	RFP312	VS02F26	Field Sample
18Q2DP009-SB0601-SO-1	F187-16	1.07	6.9	06/29/1819:37	06/29/1819:37	RFP633	RFP312	VS02F26	Field Sample
MBLK2S	VS02G03B	1	NA	07/05/1811:15	07/05/1811:15	RGP046	RFP312	VS02G03	Method Blank
LCS2S	VS02G03L	1	NA	07/05/1810:00	07/05/1810:00	RGP043	RFP312	VS02G03	Lab Control Sample (LCS)
LCD2S	VS02G03C	1	NA	07/05/1810:25	07/05/1810:25	RGP044	RFP312	VS02G03	LCS Duplicate
18Q2DP009-SB0501-SO-0	F187-07R	0.91	3.9	07/05/1812:31	07/05/1812:31	RGP049	RFP312	VS02G03	Field Sample
18Q2DP009-SB0801-SO-0	F187-04	1.22	8.6	07/05/1813:46	07/05/1813:46	RGP052	RFP312	VS02G03	Field Sample
18Q2DP009-SB0501-SO-0MS	F187-07M	0.94	3.9	07/05/1816:16	07/05/1816:16	RGP058	RFP312	VS02G03	Matrix Spike Sample (MS)
18Q2DP009-SB0501-SO-0MSD	F187-07S	1.04	3.9	07/05/1816:42	07/05/1816:42	RGP059	RFP312	VS02G03	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 13:06
Sample ID	: 18Q2DP009-SB0401-SO-0	Date Analyzed:	06/29/18 13:06
Lab Samp ID	: F187-01	Dilution Factor:	1.06
Lab File ID	: RFP617	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: 4.8
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0056	0.00056	0.0011
1,1,1-TRICHLOROETHANE	ND	0.0056	0.00056	0.0011
1,1,2,2-TETRACHLOROETHANE	ND	0.0056	0.00056	0.0011
1,1,2-TRICHLOROETHANE	ND	0.0056	0.00056	0.0011
1,1-DICHLOROETHANE	ND	0.0056	0.00056	0.0011
1,1-DICHLOROETHENE	ND	0.0056	0.00056	0.0011
1,1-DICHLOROPROPENE	ND	0.0056	0.00056	0.0011
1,2,3-TRICHLOROBENZENE	ND	0.0056	0.0011	0.0022
1,2,3-TRICHLOROPROPANE	ND	0.0056	0.0011	0.0022
1,2,4-TRICHLOROBENZENE	ND	0.0056	0.0011	0.0022
1,2,4-TRIMETHYLBENZENE	ND	0.0056	0.00061	0.0022
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0056	0.0011	0.0022
1,2-DIBROMOETHANE	ND	0.0056	0.00056	0.0011
1,2-DICHLOROBENZENE	ND	0.0056	0.00056	0.0011
1,2-DICHLOROETHANE	ND	0.0056	0.00056	0.0011
1,2-DICHLOROPROPANE	ND	0.0056	0.00056	0.0011
1,3,5-TRIMETHYLBENZENE	ND	0.0056	0.00066	0.0022
1,3-DICHLOROBENZENE	ND	0.0056	0.00058	0.0011
1,3-DICHLOROPROPANE	ND	0.0056	0.00056	0.0011
1,4-DICHLOROBENZENE	ND	0.0056	0.00056	0.0011
2,2-DICHLOROPROPANE	ND	0.0056	0.0011	0.0022
2-BUTANONE	ND	0.011	0.0028	0.0056
2-CHLOROTOLUENE	ND	0.0056	0.00091	0.0011
2-HEXANONE	ND	0.011	0.0032	0.0056
4-CHLOROTOLUENE	ND	0.0056	0.00075	0.0011
ACETONE	0.020	0.011	0.0035	0.0056
BENZENE	ND	0.0056	0.00056	0.0011
BROMOBENZENE	ND	0.0056	0.00056	0.0011
BROMOCHLOROMETHANE	ND	0.0056	0.00056	0.0011
BROMODICHLOROMETHANE	ND	0.0056	0.00056	0.0011
BROMOFORM	ND	0.0056	0.0011	0.0022
BROMOMETHANE	ND	0.011	0.0020	0.0022
CARBON DISULFIDE	ND	0.0056	0.00056	0.0011
CARBON TETRACHLORIDE	ND	0.0056	0.00060	0.0011
CHLOROBENZENE	ND	0.0056	0.00056	0.0011
CHLOROETHANE	ND	0.0056	0.0014	0.0022
CHLOROFORM	ND	0.0056	0.00056	0.0011
CHLOROMETHANE	ND	0.0056	0.0011	0.0022
CIS-1,2-DICHLOROETHYLENE	ND	0.0056	0.00056	0.0011
CIS-1,3-DICHLOROPROPENE	ND	0.0056	0.00056	0.0011
CYCLOHEXANE	ND	0.0056	0.0013	0.0022
DIBROMOCHLOROMETHANE	ND	0.0056	0.00056	0.0011
DIBROMOMETHANE	ND	0.0056	0.00056	0.0011
DICHLORODIFLUOROMETHANE	ND	0.0056	0.0013	0.0022
ETHYLBENZENE	ND	0.0056	0.00056	0.0011
HEXACHLOROBUTADIENE	ND	0.0056	0.0011	0.0022
ISOPROPYLBENZENE	ND	0.0056	0.00071	0.0022
METHYLENE CHLORIDE	ND	0.011	0.0022	0.0056
M,P-XYLENE	ND	0.0056	0.0011	0.0022
4-METHYL-2-PENTANONE	ND	0.011	0.0031	0.0056
TERT-BUTYL METHYL ETHER	ND	0.0056	0.00056	0.0011
NAPHTHALENE	ND	0.0056	0.0011	0.0022
N-BUTYLBENZENE	ND	0.0056	0.00078	0.0011
N-PROPYLBENZENE	ND	0.0056	0.00072	0.0011
O-XYLENE	ND	0.0056	0.00056	0.0011
P-ISOPROPYLTOLUENE	ND	0.0056	0.00069	0.0011
SEC-BUTYLBENZENE	ND	0.0056	0.00075	0.0011
STYRENE	ND	0.0056	0.00056	0.0011
TERT-BUTYLBENZENE	ND	0.0056	0.00069	0.0011
TETRACHLOROETHENE	ND	0.0056	0.00056	0.0011
TOLUENE	ND	0.0056	0.00056	0.0011
TRANS-1,2-DCE	ND	0.0056	0.00056	0.0011
TRANS-1,3-DICHLOROPROPENE	ND	0.0056	0.00056	0.0011
TCE	ND	0.0056	0.00056	0.0011
TRICHLOROFLUOROMETHANE	ND	0.0056	0.0012	0.0022
TRICHLOROTRIFLUOROETHANE	ND	0.0056	0.0011	0.0022
VINYL CHLORIDE	ND	0.0056	0.0016	0.0022
VINYL ACETATE	ND	0.0056	0.0014	0.0022
XYLENES, TOTAL	ND	0.0056	0.00056	0.0011

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0557	0.05567	100	71-136
4-BROMOFLUOROBENZENE	0.0585	0.05567	105	79-119
TOLUENE-D8	0.0597	0.05567	107	85-116
DIBROMOFLUOROMETHANE	0.0582	0.05567	104	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 13:06
Sample ID:	18Q2DP009-SB0401-SO-0	Date Analyzed:	06/29/18 13:06
Lab Samp ID:	F187-01	Dilution Factor:	1.06
Lab File ID:	RFP617	Matrix :	SOIL
Ext Btch ID:	VSO2F26	% Moisture :	4.8
Calib. Ref.:	RFP312	Instrument ID :	T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP617.D Vial: 9
Acq On : 29 Jun 2018 1:06 pm Operator: ODinh
Sample : 18F187-01 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:18 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

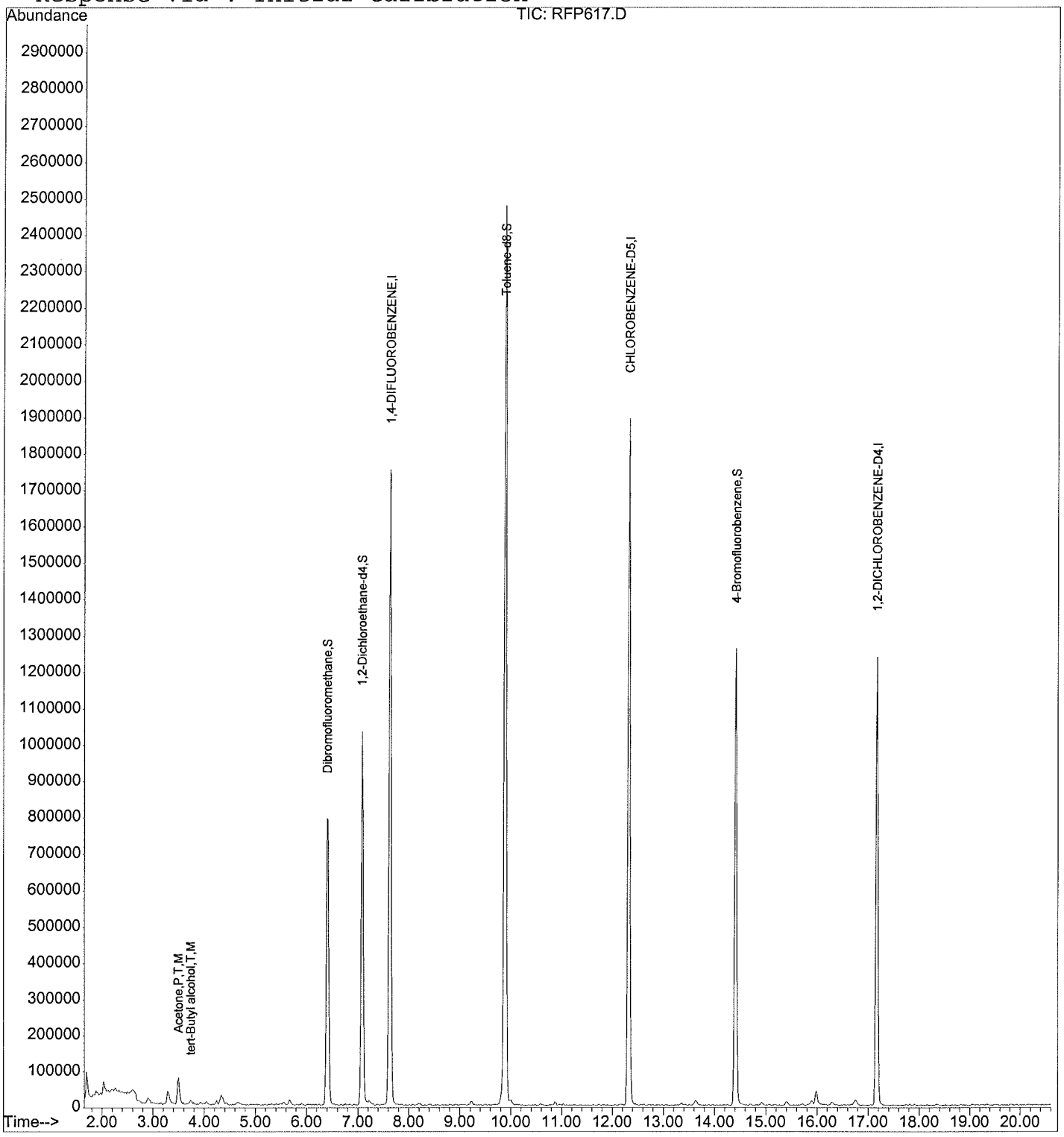
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2129757	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.32	117	1718531	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.17	152	609032	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.40	111	793152	52.23	ug/l	-0.03
Spiked Amount 50.000			Recovery =	104.46%		
43) 1,2-Dichloroethane-d4	7.08	65	942269	50.00	ug/l	-0.03
Spiked Amount 50.000			Recovery =	100.00%		
57) Toluene-d8	9.88	98	2715806	53.57	ug/l	-0.03
Spiked Amount 50.000			Recovery =	107.14%		
79) 4-Bromofluorobenzene	14.41	95	770547	52.51	ug/l	-0.01
Spiked Amount 50.000			Recovery =	105.02%		
Target Compounds						Qvalue
11) Acetone	3.50	43	138566	17.59	ug/l	92
13) tert-Butyl alcohol	3.73	59	23120	6.30	ug/l #	1

(#) = qualifier out of range (m) = manual integration
RFP617.D VO02F15.M Mon Jul 09 13:19:01 2018 Page 1

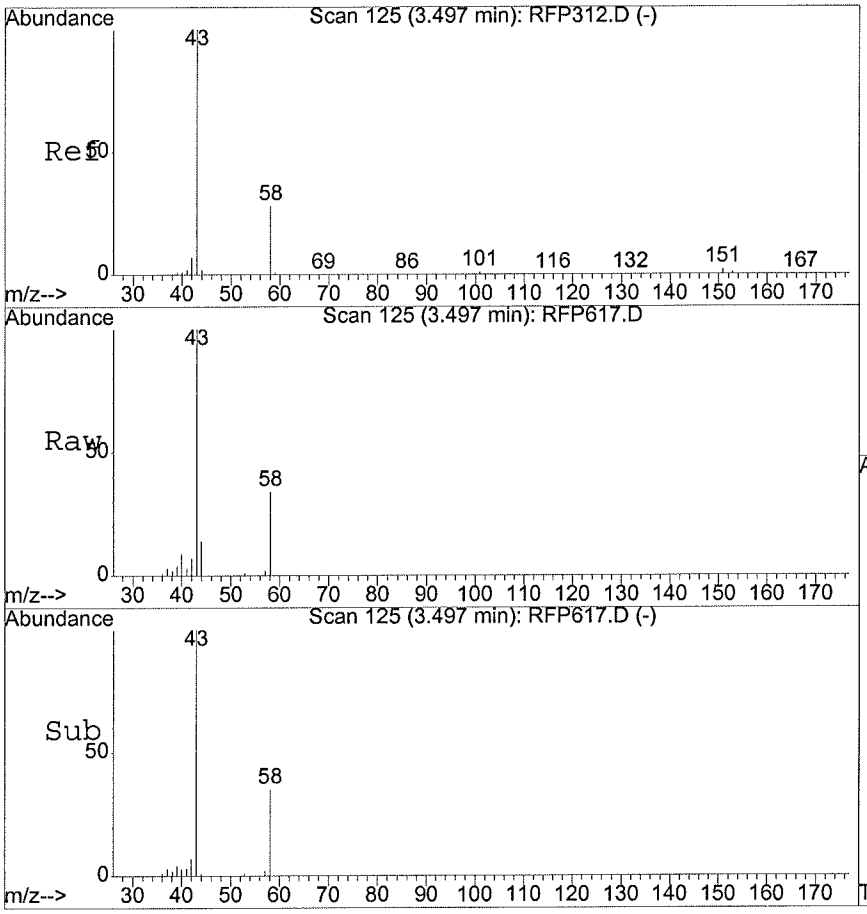
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP617.D Vial: 9
Acq On : 29 Jun 2018 1:06 pm Operator: ODinh
Sample : 18F187-01 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:18 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



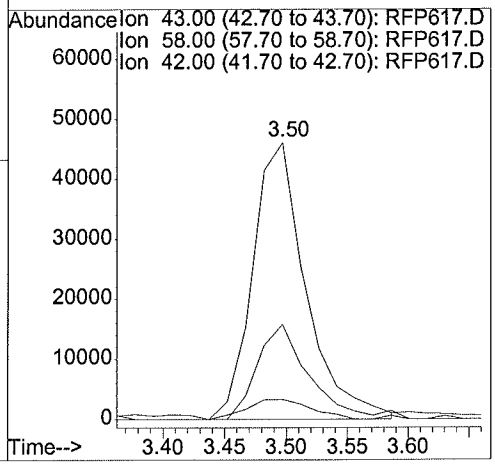
RFP617.D VO02F15.M Mon Jul 09 13:19:02 2018 Page 2

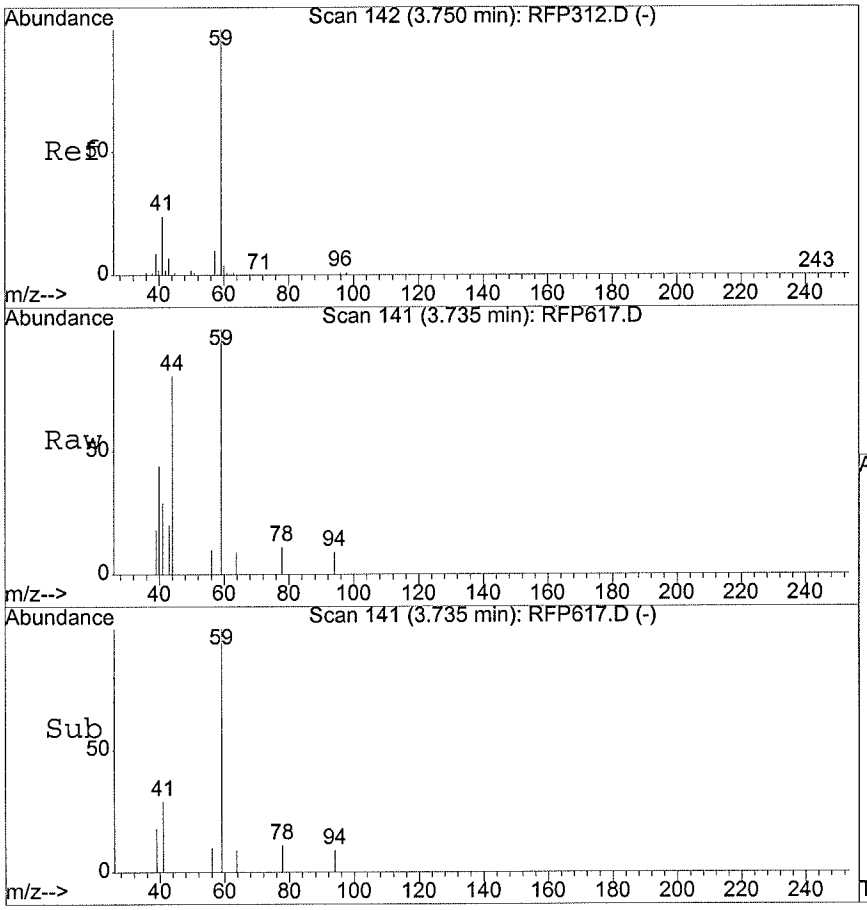


#11
Acetone
Concen: 17.59 ug/l
RT: 3.50 min Scan# 125
Delta R.T. -0.00 min
Lab File: RFP617.D
Acq: 29 Jun 2018 1:06 pm

Tgt Ion: 43 Resp: 138566

Ion	Ratio	Lower	Upper
43	100		
58	32.7	0.0	58.3
42	8.8	0.0	36.9

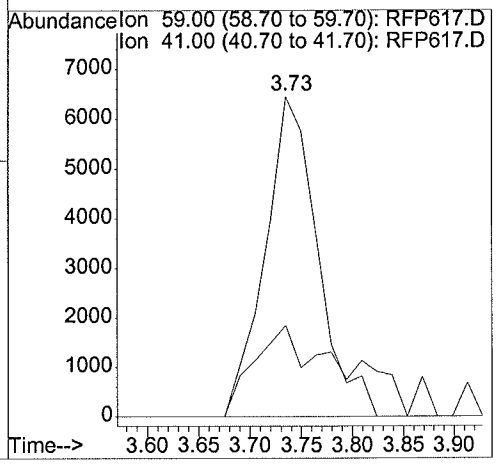




#13
tert-Butyl alcohol
Concen: 6.30 ug/l
RT: 3.73 min Scan# 141
Delta R.T. -0.01 min
Lab File: RFP617.D
Acq: 29 Jun 2018 1:06 pm

Tgt Ion: 59 Resp: 23120

Ion	Ratio	Lower	Upper
59	100		
41	51.1	171.3	231.3#



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP617.D Vial: 9
Acq On : 29 Jun 2018 1:06 pm Operator: ODinh
Sample : 18F187-01 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

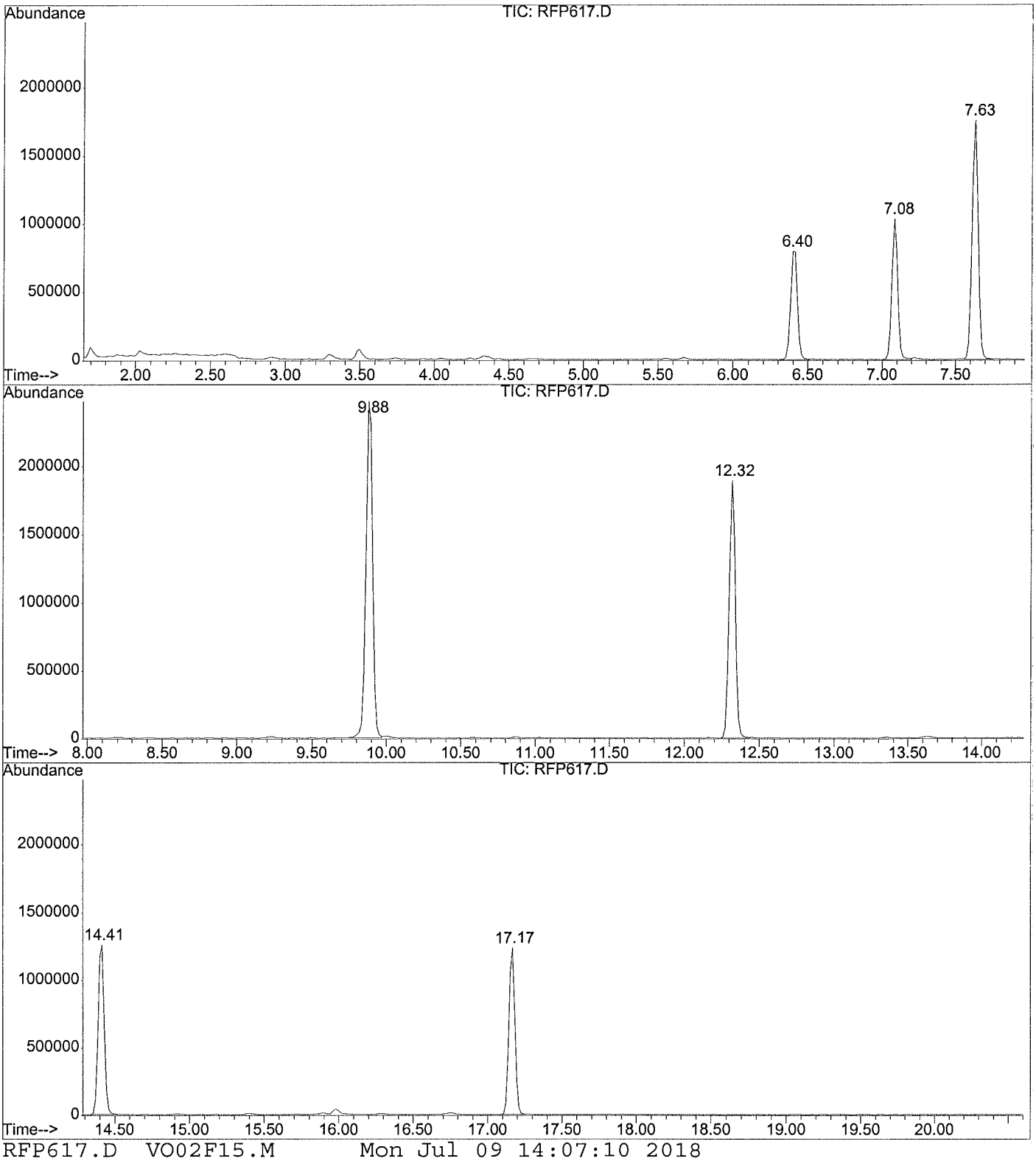
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.397	314	320	328	rBV	791134	2502253	33.29%	8.293%
2	7.081	360	366	374	rBV	1031704	2889715	38.44%	9.577%
3	7.632	398	403	411	rVB	1750108	4957404	65.95%	16.430%
4	9.878	545	554	560	rBV	2474088	7516535	100.00%	24.911%
5	12.317	713	718	726	rBV	1891244	5308494	70.62%	17.593%
6	14.414	854	859	866	rBV	1258535	3535658	47.04%	11.718%
7	17.166	1039	1044	1050	rBV	1233966	3463315	46.08%	11.478%

Sum of corrected areas: 30173374

RFP617.D VO02F15.M Mon Jul 09 14:07:10 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP617.D
Operator : ODinh
Acquired : 29 Jun 2018 1:06 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-01
Misc Info :
Vial Number: 9
Quant File :VO02F15.RES (RTE Integrator)



RFP617.D VO02F15.M Mon Jul 09 14:07:10 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 1:06 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP617.D
Name: 18F187-01
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RFP617.D VO02F15.M Mon Jul 09 14:07:10 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/21/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 13:31
Sample ID: 18Q2DP009-SB0401-SO-1	Date Analyzed: 06/29/18 13:31
Lab Samp ID: F187-02	Dilution Factor: 1.37
Lab File ID: RFP618	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : 4.6
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0072	0.00072	0.0014
1,1,1-TRICHLOROETHANE	ND	0.0072	0.00072	0.0014
1,1,2,2-TETRACHLOROETHANE	ND	0.0072	0.00072	0.0014
1,1,2-TRICHLOROETHANE	ND	0.0072	0.00072	0.0014
1,1-DICHLOROETHANE	ND	0.0072	0.00072	0.0014
1,1-DICHLOROETHENE	ND	0.0072	0.00072	0.0014
1,1-DICHLOROPROPENE	ND	0.0072	0.00072	0.0014
1,2,3-TRICHLOROBENZENE	ND	0.0072	0.0014	0.0029
1,2,3-TRICHLOROPROPANE	ND	0.0072	0.0014	0.0029
1,2,4-TRICHLOROBENZENE	ND	0.0072	0.0014	0.0029
1,2,4-TRIMETHYLBENZENE	ND	0.0072	0.00079	0.0029
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0072	0.0014	0.0029
1,2-DIBROMOETHANE	ND	0.0072	0.00072	0.0014
1,2-DICHLOROBENZENE	ND	0.0072	0.00072	0.0014
1,2-DICHLOROETHANE	ND	0.0072	0.00072	0.0014
1,2-DICHLOROPROPANE	ND	0.0072	0.00072	0.0014
1,3,5-TRIMETHYLBENZENE	ND	0.0072	0.00085	0.0029
1,3-DICHLOROBENZENE	ND	0.0072	0.00075	0.0014
1,3-DICHLOROPROPANE	ND	0.0072	0.00072	0.0014
1,4-DICHLOROBENZENE	ND	0.0072	0.00072	0.0014
2,2-DICHLOROPROPANE	ND	0.0072	0.0014	0.0029
2-BUTANONE	ND	0.014	0.0036	0.0072
2-CHLOROTOLUENE	ND	0.0072	0.0012	0.0014
2-HEXANONE	ND	0.014	0.0042	0.0072
4-CHLOROTOLUENE	ND	0.0072	0.00096	0.0014
ACETONE	0.030	0.014	0.0045	0.0072
BENZENE	ND	0.0072	0.00072	0.0014
BROMOBENZENE	ND	0.0072	0.00072	0.0014
BROMOCHLOROMETHANE	ND	0.0072	0.00072	0.0014
BROMODICHLOROMETHANE	ND	0.0072	0.00072	0.0014
BROMOFORM	ND	0.0072	0.0014	0.0029
BROMOMETHANE	ND	0.014	0.0026	0.0029
CARBON DISULFIDE	ND	0.0072	0.00072	0.0014
CARBON TETRACHLORIDE	ND	0.0072	0.00078	0.0014
CHLOROBENZENE	ND	0.0072	0.00072	0.0014
CHLOROETHANE	ND	0.0072	0.0019	0.0029
CHLOROFORM	ND	0.0072	0.00072	0.0014
CHLOROMETHANE	ND	0.0072	0.0014	0.0029
CIS-1,2-DICHLOROETHYLENE	ND	0.0072	0.00072	0.0014
CIS-1,3-DICHLOROPROPENE	ND	0.0072	0.00072	0.0014
CYCLOHEXANE	ND	0.0072	0.0017	0.0029
DIBROMOCHLOROMETHANE	ND	0.0072	0.00072	0.0014
DIBROMOMETHANE	ND	0.0072	0.00072	0.0014
DICHLORODIFLUOROMETHANE	ND	0.0072	0.0017	0.0029
ETHYLBENZENE	ND	0.0072	0.00072	0.0014
HEXACHLOROBUTADIENE	ND	0.0072	0.0014	0.0029
ISOPROPYLBENZENE	ND	0.0072	0.00092	0.0029
METHYLENE CHLORIDE	ND	0.014	0.0029	0.0072
M,P-XYLENE	ND	0.0072	0.0014	0.0029
4-METHYL-2-PENTANONE	ND	0.014	0.0040	0.0072
TERT-BUTYL METHYL ETHER	ND	0.0072	0.00072	0.0014
NAPHTHALENE	ND	0.0072	0.0014	0.0029
N-BUTYLBENZENE	ND	0.0072	0.0010	0.0014
N-PROPYLBENZENE	ND	0.0072	0.00093	0.0014
O-XYLENE	ND	0.0072	0.00072	0.0014
P-ISOPROPYLTOLUENE	ND	0.0072	0.00089	0.0014
SEC-BUTYLBENZENE	ND	0.0072	0.00096	0.0014
STYRENE	ND	0.0072	0.00072	0.0014
TERT-BUTYLBENZENE	ND	0.0072	0.00089	0.0014
TETRACHLOROETHENE	ND	0.0072	0.00072	0.0014
TOLUENE	ND	0.0072	0.00072	0.0014
TRANS-1,2-DCE	ND	0.0072	0.00072	0.0014
TRANS-1,3-DICHLOROPROPENE	ND	0.0072	0.00072	0.0014
TCE	ND	0.0072	0.00072	0.0014
TRICHLOROFLUOROMETHANE	ND	0.0072	0.0016	0.0029
TRICHLOROTRIFLUOROETHANE	ND	0.0072	0.0014	0.0029
VINYL CHLORIDE	ND	0.0072	0.0020	0.0029
VINYL ACETATE	ND	0.0072	0.0019	0.0029
XYLENES, TOTAL	ND	0.0072	0.00072	0.0014

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0729	0.07180	102	71-136
4-BROMOFLUOROBENZENE	0.0746	0.07180	104	79-119
TOLUENE-D8	0.0749	0.07180	104	85-116
DIBROMOFLUOROMETHANE	0.0748	0.07180	104	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 13:31
Sample ID:	18Q2DP009-SB0401-SO-1	Date Analyzed:	06/29/18 13:31
Lab Samp ID:	F187-02	Dilution Factor:	1.37
Lab File ID:	RFP618	Matrix :	SOIL
Ext Btch ID:	VS02F26	% Moisture :	4.6
Calib. Ref.:	RFP312	Instrument ID :	T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP618.D Vial: 10
Acq On : 29 Jun 2018 1:31 pm Operator: ODinh
Sample : 18F187-02 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:19 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

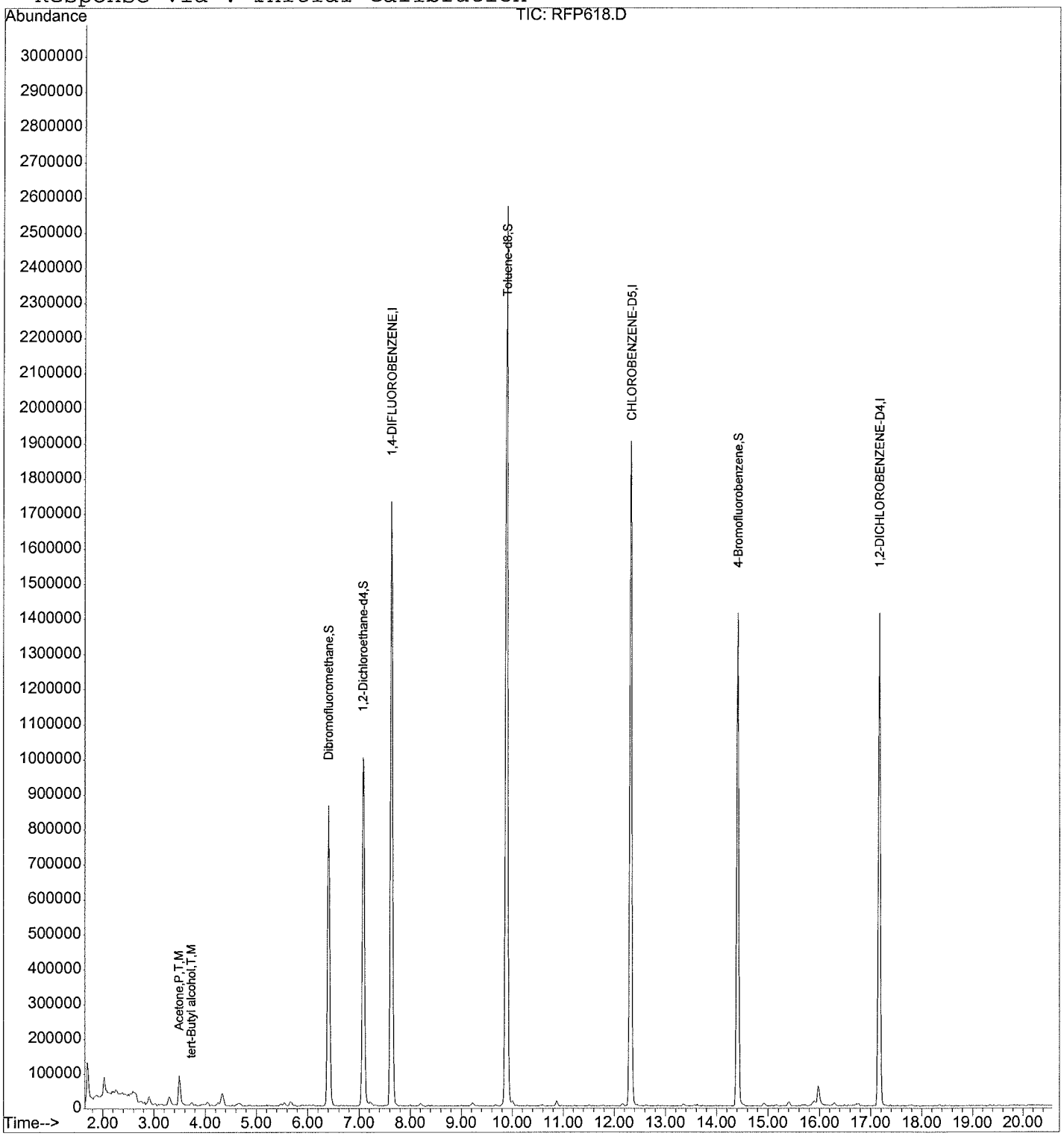
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2138749	50.00	ug/l	-0.04
56) CHLOROBENZENE-D5	12.33	117	1788047	50.00	ug/l	-0.02
76) 1,2-DICHLOROBENZENE-D4	17.16	152	675635	50.00	ug/l	-0.04
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	794380	52.09	ug/l	-0.02
Spiked Amount 50.000			Recovery =	104.18%		
43) 1,2-Dichloroethane-d4	7.08	65	960729	50.77	ug/l	-0.04
Spiked Amount 50.000			Recovery =	101.54%		
57) Toluene-d8	9.89	98	2751576	52.17	ug/l	-0.02
Spiked Amount 50.000			Recovery =	104.34%		
79) 4-Bromofluorobenzene	14.41	95	846058	51.98	ug/l	-0.02
Spiked Amount 50.000			Recovery =	103.96%		
Target Compounds						Qvalue
11) Acetone	3.49	43	167202	21.14	ug/l	91
13) tert-Butyl alcohol	3.73	59	16660	4.52	ug/l #	1

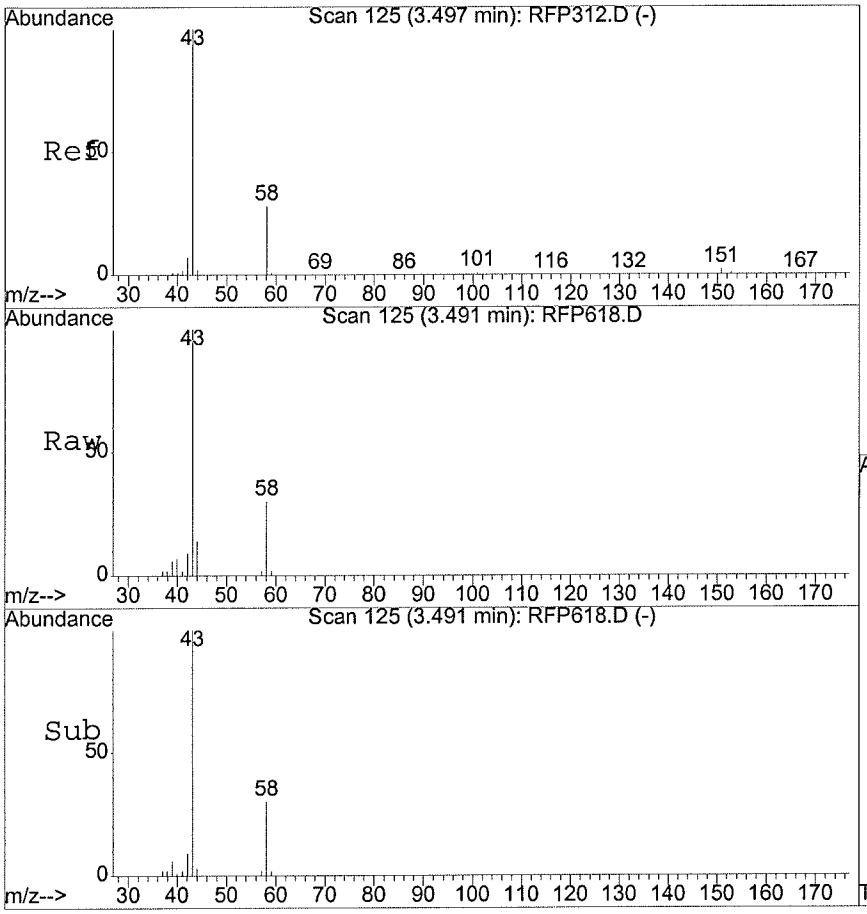
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP618.D Vial: 10
Acq On : 29 Jun 2018 1:31 pm Operator: ODinh
Sample : 18F187-02 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:19 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

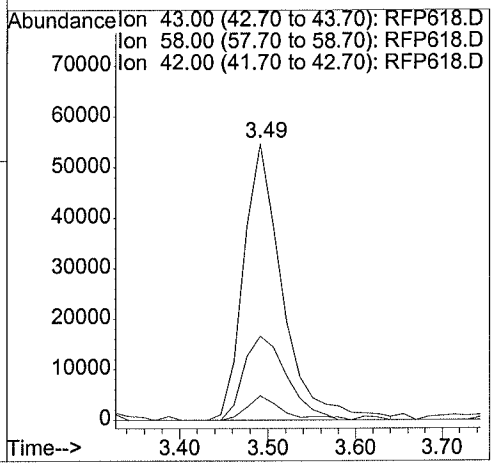


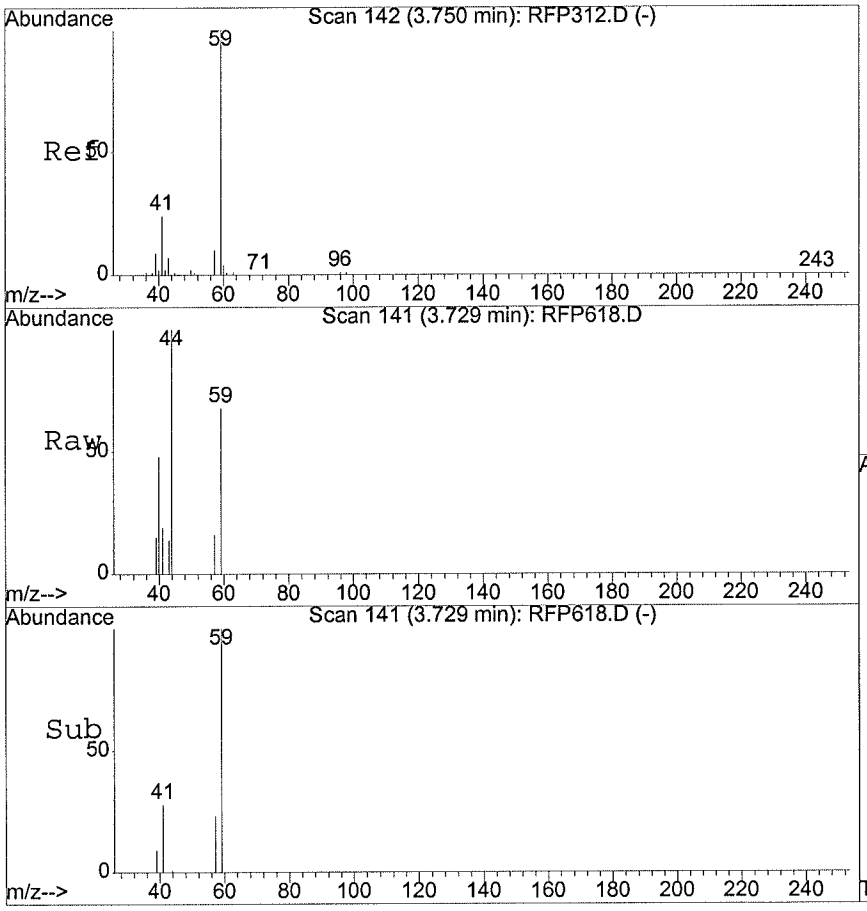


#11
Acetone
Concen: 21.14 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.01 min
Lab File: RFP618.D
Acq: 29 Jun 2018 1:31 pm

Tgt Ion: 43 Resp: 167202

Ion	Ratio	Lower	Upper
43	100		
58	33.6	0.0	58.3
42	8.1	0.0	36.9

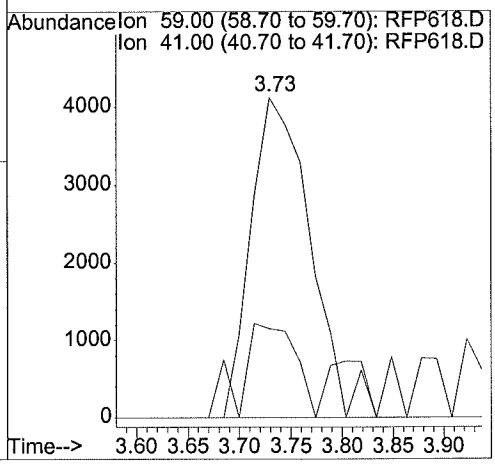




#13
tert-Butyl alcohol
Concen: 4.52 ug/l
RT: 3.73 min Scan# 141
Delta R.T. -0.02 min
Lab File: RFP618.D
Acq: 29 Jun 2018 1:31 pm

Tgt Ion: 59 Resp: 16660

Ion	Ratio	Lower	Upper
59	100		
41	26.6	171.3	231.3#



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP618.D Vial: 10
Acq On : 29 Jun 2018 1:31 pm Operator: ODinh
Sample : 18F187-02 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

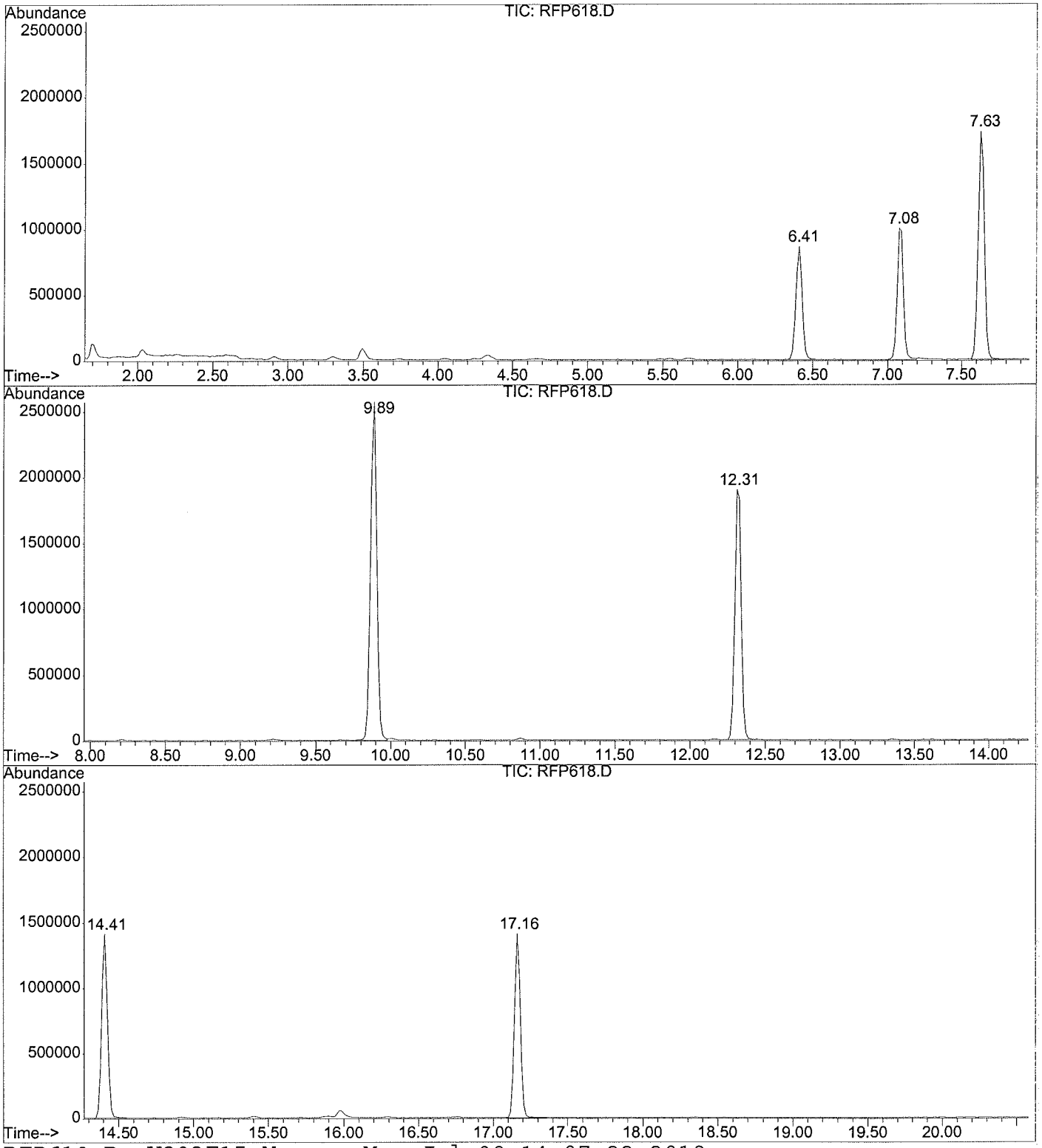
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.407	316	321	330	rVB	860858	2523626	33.58%	8.073%
2	7.076	360	366	374	rBV	999312	2989913	39.78%	9.565%
3	7.626	399	403	413	rVB	1728976	5037586	67.03%	16.115%
4	9.887	545	555	561	rBV	2570127	7515433	100.00%	24.041%
5	12.312	714	718	726	rBV	1899461	5520778	73.46%	17.661%
6	14.409	854	859	871	rVB	1409374	3797017	50.52%	12.146%
7	17.160	1039	1044	1057	rVB	1410593	3875954	51.57%	12.399%

Sum of corrected areas: 31260307

RFP618.D VO02F15.M Mon Jul 09 14:07:22 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP618.D
Operator : ODinh
Acquired : 29 Jun 2018 1:31 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-02
Misc Info :
Vial Number: 10
Quant File :VO02F15.RES (RTE Integrator)



RFP618.D VO02F15.M Mon Jul 09 14:07:22 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 1:31 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP618.D
Name: 18F187-02
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RFP618.D VO02F15.M Mon Jul 09 14:07:22 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 13:57
Sample ID	: 18Q2DP009-SB0402-SO-0	Date Analyzed:	06/29/18 13:57
Lab Samp ID	: F187-03	Dilution Factor:	1.09
Lab File ID	: RFP619	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: 5.3
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0058	0.00058	0.0012
1,1,1-TRICHLOROETHANE	ND	0.0058	0.00058	0.0012
1,1,2,2-TETRACHLOROETHANE	ND	0.0058	0.00058	0.0012
1,1,2-TRICHLOROETHANE	ND	0.0058	0.00058	0.0012
1,1-DICHLOROETHANE	ND	0.0058	0.00058	0.0012
1,1-DICHLOROETHENE	ND	0.0058	0.00058	0.0012
1,1-DICHLOROPROPENE	ND	0.0058	0.00058	0.0012
1,2,3-TRICHLOROBENZENE	ND	0.0058	0.0012	0.0023
1,2,3-TRICHLOROPROPANE	ND	0.0058	0.0012	0.0023
1,2,4-TRICHLOROBENZENE	ND	0.0058	0.0012	0.0023
1,2,4-TRIMETHYLBENZENE	ND	0.0058	0.00063	0.0023
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0058	0.0012	0.0023
1,2-DIBROMOETHANE	ND	0.0058	0.00058	0.0012
1,2-DICHLOROBENZENE	ND	0.0058	0.00058	0.0012
1,2-DICHLOROETHANE	ND	0.0058	0.00058	0.0012
1,2-DICHLOROPROPANE	ND	0.0058	0.00058	0.0012
1,3,5-TRIMETHYLBENZENE	ND	0.0058	0.00068	0.0023
1,3-DICHLOROBENZENE	ND	0.0058	0.00060	0.0012
1,3-DICHLOROPROPANE	ND	0.0058	0.00058	0.0012
1,4-DICHLOROBENZENE	ND	0.0058	0.00058	0.0012
2,2-DICHLOROPROPANE	ND	0.0058	0.0012	0.0023
2-BUTANONE	ND	0.012	0.0029	0.0058
2-CHLOROTOLUENE	ND	0.0058	0.00094	0.0012
2-HEXANONE	ND	0.012	0.0033	0.0058
4-CHLOROTOLUENE	ND	0.0058	0.00077	0.0012
ACETONE	0.011J	0.012	0.0036	0.0058
BENZENE	ND	0.0058	0.00058	0.0012
BROMOBENZENE	ND	0.0058	0.00058	0.0012
BROMOCHLOROMETHANE	ND	0.0058	0.00058	0.0012
BROMODICHLOROMETHANE	ND	0.0058	0.00058	0.0012
BROMOFORM	ND	0.0058	0.0012	0.0023
BROMOMETHANE	ND	0.012	0.0021	0.0023
CARBON DISULFIDE	ND	0.0058	0.00058	0.0012
CARBON TETRACHLORIDE	ND	0.0058	0.00062	0.0012
CHLOROBENZENE	ND	0.0058	0.00058	0.0012
CHLOROETHANE	ND	0.0058	0.0015	0.0023
CHLOROFORM	ND	0.0058	0.00058	0.0012
CHLOROMETHANE	ND	0.0058	0.0012	0.0023
CIS-1,2-DICHLOROETHYLENE	ND	0.0058	0.00058	0.0012
CIS-1,3-DICHLOROPROPENE	ND	0.0058	0.00058	0.0012
CYCLOHEXANE	ND	0.0058	0.0014	0.0023
DIBROMOCHLOROMETHANE	ND	0.0058	0.00058	0.0012
DIBROMOMETHANE	ND	0.0058	0.00058	0.0012
DICHLORODIFLUOROMETHANE	ND	0.0058	0.0014	0.0023
ETHYLBENZENE	ND	0.0058	0.00058	0.0012
HEXACHLOROBUTADIENE	ND	0.0058	0.0012	0.0023
ISOPROPYLBENZENE	ND	0.0058	0.00074	0.0023
METHYLENE CHLORIDE	ND	0.012	0.0023	0.0058
M,P-XYLENE	ND	0.0058	0.0012	0.0023
4-METHYL-2-PENTANONE	ND	0.012	0.0032	0.0058
TERT-BUTYL METHYL ETHER	ND	0.0058	0.00058	0.0012
NAPHTHALENE	ND	0.0058	0.0012	0.0023
N-BUTYLBENZENE	ND	0.0058	0.00081	0.0012
N-PROPYLBENZENE	ND	0.0058	0.00075	0.0012
O-XYLENE	ND	0.0058	0.00058	0.0012
P-ISOPROPYLTOLUENE	ND	0.0058	0.00071	0.0012
SEC-BUTYLBENZENE	ND	0.0058	0.00077	0.0012
STYRENE	ND	0.0058	0.00058	0.0012
TERT-BUTYLBENZENE	ND	0.0058	0.00071	0.0012
TETRACHLOROETHENE	ND	0.0058	0.00058	0.0012
TOLUENE	ND	0.0058	0.00058	0.0012
TRANS-1,2-DCE	ND	0.0058	0.00058	0.0012
TRANS-1,3-DICHLOROPROPENE	ND	0.0058	0.00058	0.0012
TCE	ND	0.0058	0.00058	0.0012
TRICHLOROFLUOROMETHANE	ND	0.0058	0.0013	0.0023
TRICHLOROTRIFLUOROETHANE	ND	0.0058	0.0012	0.0023
VINYL CHLORIDE	ND	0.0058	0.0016	0.0023
VINYL ACETATE	ND	0.0058	0.0015	0.0023
XYLENES, TOTAL	ND	0.0058	0.00058	0.0012

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0571	0.05755	99.2	71-136
4-BROMOFLUOROBENZENE	0.0588	0.05755	102	79-119
TOLUENE-D8	0.0596	0.05755	104	85-116
DIBROMOFLUOROMETHANE	0.0608	0.05755	106	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 13:57
Sample ID:	18Q2DP009-SB0402-SO-0	Date Analyzed:	06/29/18 13:57
Lab Samp ID:	F187-03	Dilution Factor:	1.09
Lab File ID:	RFP619	Matrix :	SOIL
Ext Btch ID:	VS02F26	% Moisture :	5.3
Calib. Ref.:	RFP312	Instrument ID :	T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP619.D Vial: 11
Acq On : 29 Jun 2018 1:57 pm Operator: ODinh
Sample : 18F187-03 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:26 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

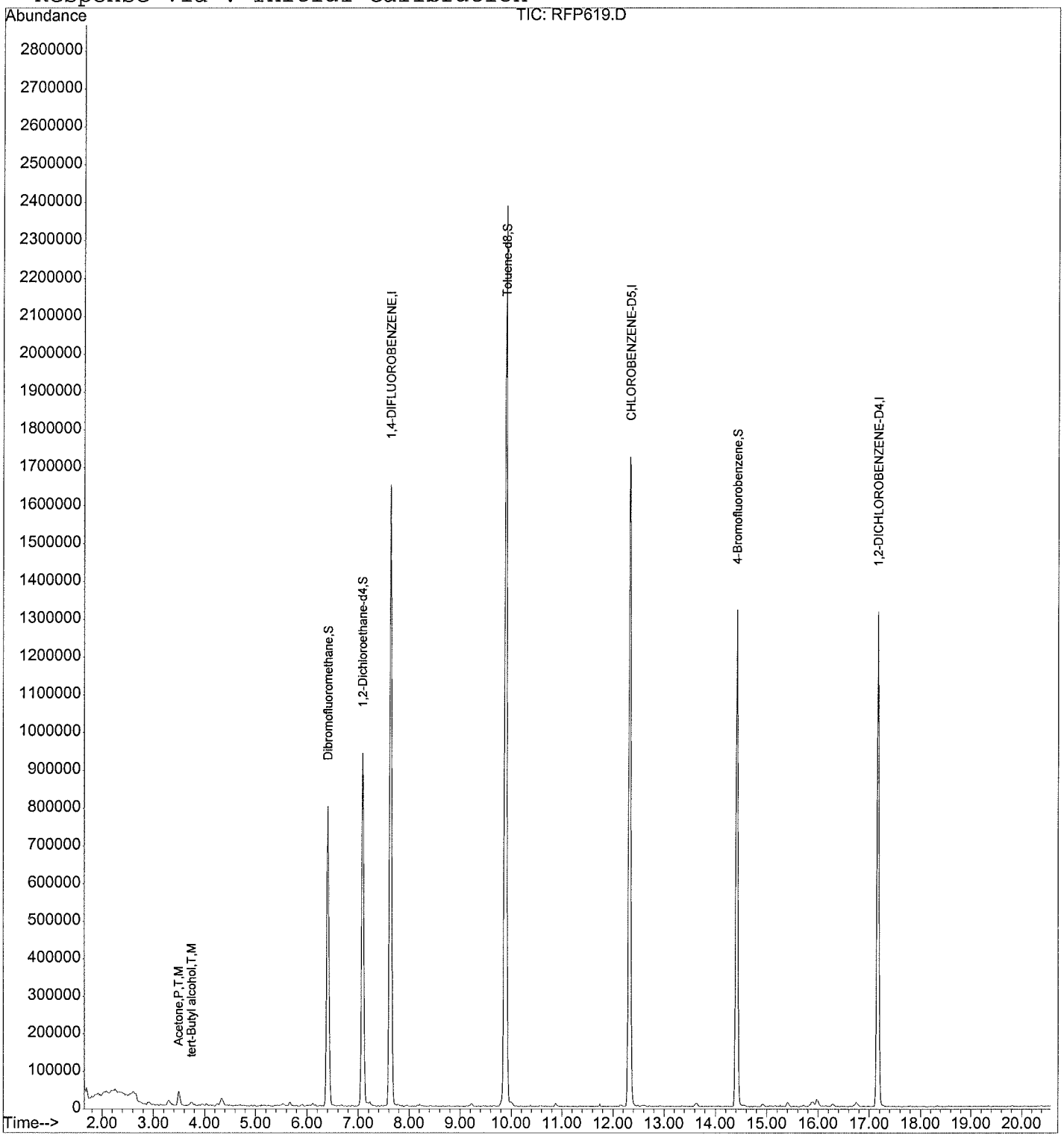
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2001369	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.33	117	1664836	50.00	ug/l	-0.02
76) 1,2-DICHLOROBENZENE-D4	17.16	152	620152	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	753707	52.82	ug/l	-0.02
Spiked Amount 50.000			Recovery =	105.64%		
43) 1,2-Dichloroethane-d4	7.08	65	878707	49.62	ug/l	-0.03
Spiked Amount 50.000			Recovery =	99.24%		
57) Toluene-d8	9.89	98	2542248	51.77	ug/l	-0.02
Spiked Amount 50.000			Recovery =	103.54%		
79) 4-Bromofluorobenzene	14.41	95	763483	51.10	ug/l	-0.02
Spiked Amount 50.000			Recovery =	102.20%		
Target Compounds						Qvalue
11) Acetone	3.49	43	72333	9.77	ug/l	87
13) tert-Butyl alcohol	3.75	59	19845	5.76	ug/l #	1

(#) = qualifier out of range (m) = manual integration
RFP619.D VO02F15.M Mon Jul 09 13:26:45 2018 Page 1

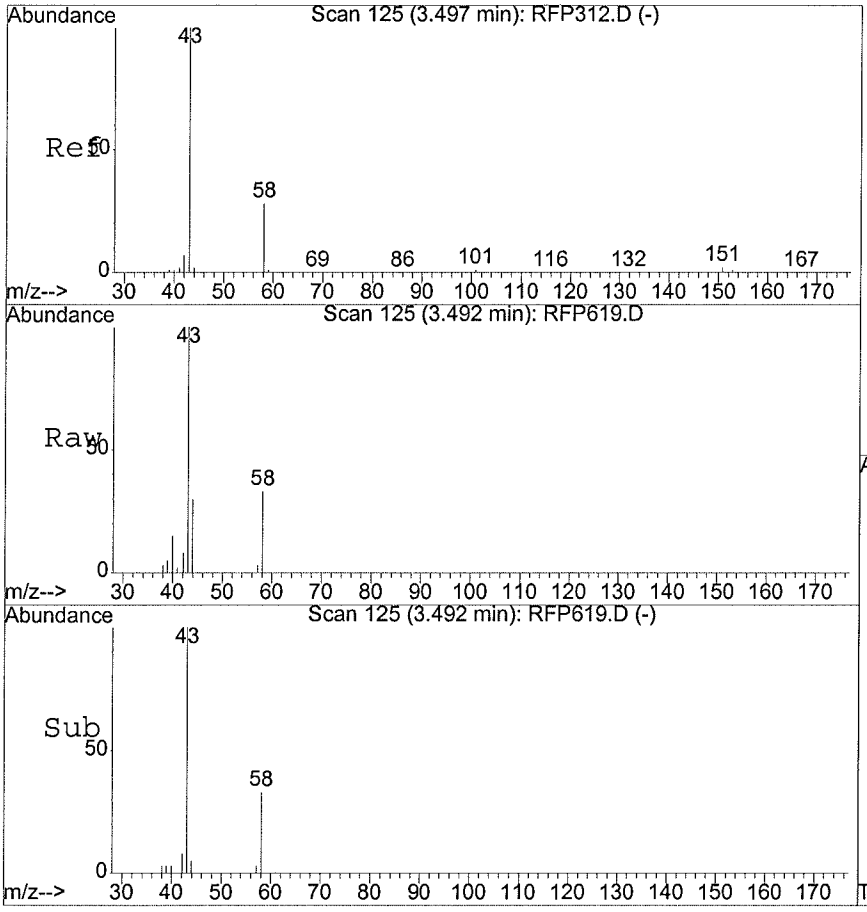
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP619.D Vial: 11
Acq On : 29 Jun 2018 1:57 pm Operator: ODinh
Sample : 18F187-03 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:26 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



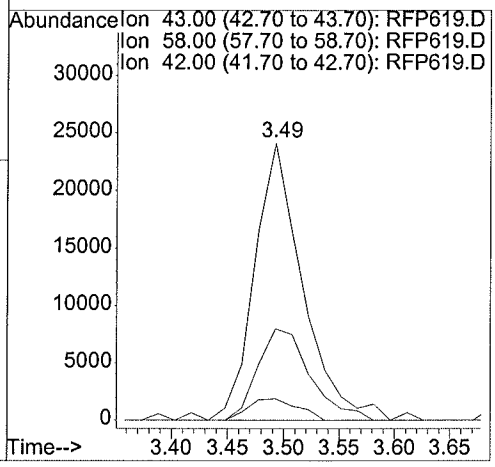
RFP619.D VO02F15.M Mon Jul 09 13:26:46 2018 Page 2

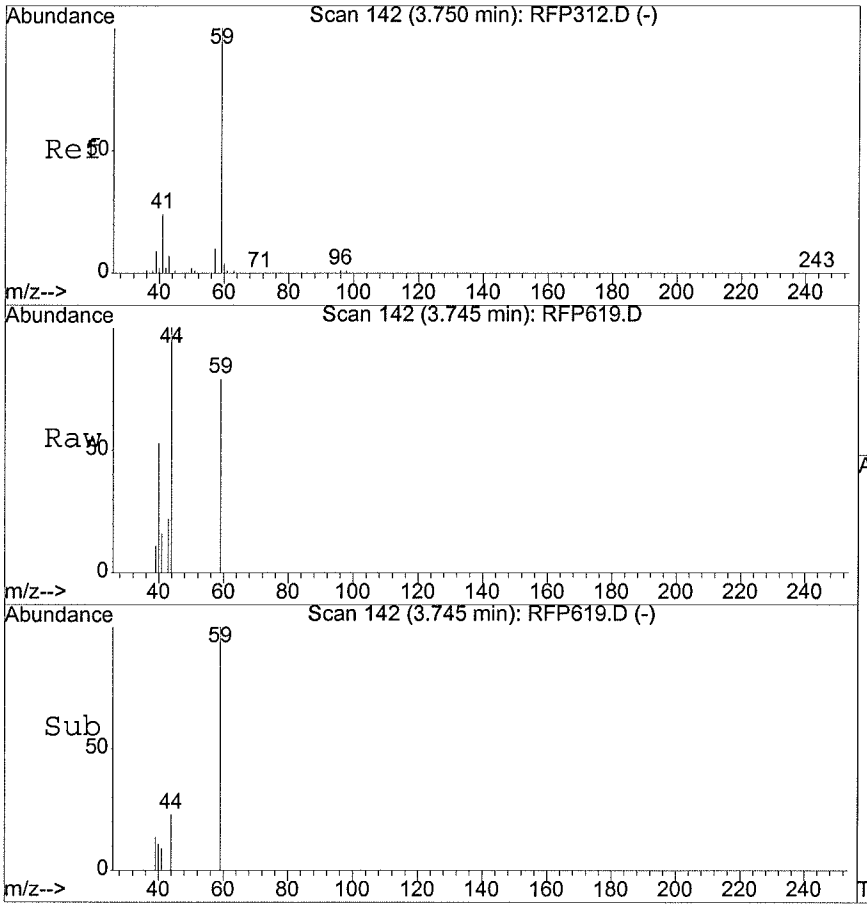


#11
Acetone
Concen: 9.77 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.00 min
Lab File: RFP619.D
Acq: 29 Jun 2018 1:57 pm

Tgt Ion: 43 Resp: 72333

Ion	Ratio	Lower	Upper
43	100		
58	36.3	0.0	58.3
42	8.1	0.0	36.9

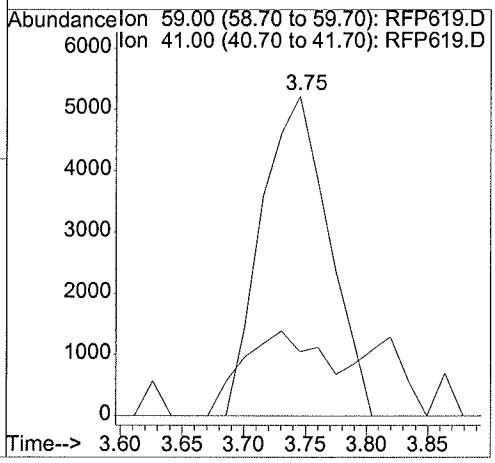




#13
tert-Butyl alcohol
Concen: 5.76 ug/l
RT: 3.75 min Scan# 142
Delta R.T. -0.00 min
Lab File: RFP619.D
Acq: 29 Jun 2018 1:57 pm

Tgt Ion: 59 Resp: 19845

Ion	Ratio	Lower	Upper
59	100		
41	31.2	171.3	231.3#



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP619.D Vial: 11
Acq On : 29 Jun 2018 1:57 pm Operator: ODinh
Sample : 18F187-03 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

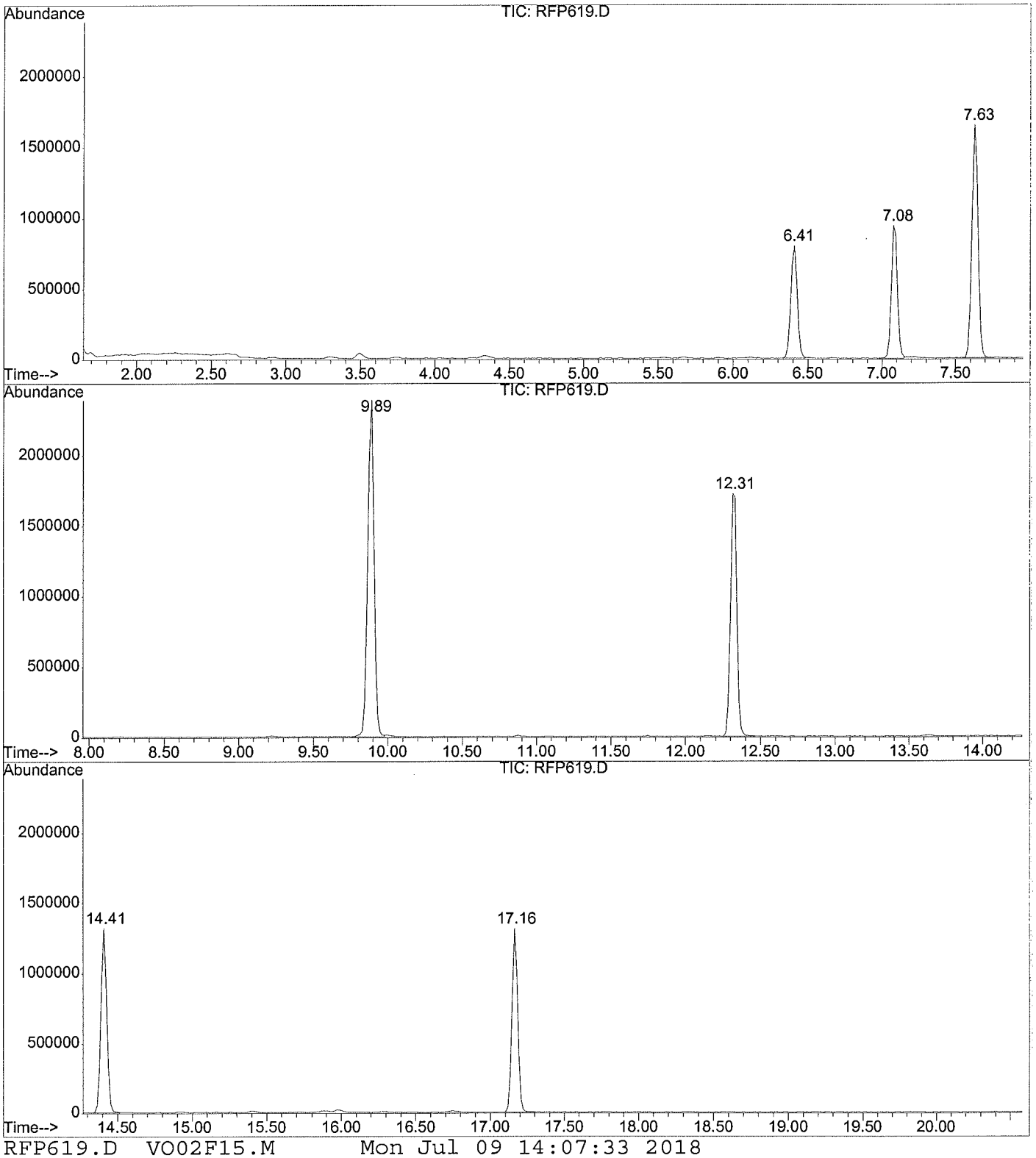
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.408	316	321	326	rBV	797541	2363380	33.44%	8.147%
2	7.077	359	366	371	rBV	938893	2710312	38.35%	9.343%
3	7.627	398	403	412	rBV	1646513	4703011	66.54%	16.212%
4	9.888	546	555	561	rBV	2384544	7067826	100.00%	24.365%
5	12.313	714	718	728	rBV	1720823	5102403	72.19%	17.589%
6	14.410	854	859	866	rBV	1318875	3503586	49.57%	12.078%
7	17.161	1039	1044	1054	rBV	1312569	3558066	50.34%	12.266%

Sum of corrected areas: 29008584

RFP619.D VO02F15.M Mon Jul 09 14:07:32 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP619.D
Operator : ODinh
Acquired : 29 Jun 2018 1:57 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-03
Misc Info :
Vial Number: 11
Quant File :VO02F15.RES (RTE Integrator)



RFP619.D VO02F15.M Mon Jul 09 14:07:33 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 1:57 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP619.D
Name: 18F187-03
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RFP619.D VO02F15.M Mon Jul 09 14:07:33 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/21/18
Project : JBER T0075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 07/05/18 13:46
Sample ID: 18Q2DP009-SB0801-SO-0	Date Analyzed: 07/05/18 13:46
Lab Samp ID: F187-04	Dilution Factor: 1.22
Lab File ID: RGP052	Matrix : SOIL
Ext Btch ID: VS02G03	% Moisture : 8.6
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0067	0.00067	0.0013
1,1,1-TRICHLOROETHANE	ND	0.0067	0.00067	0.0013
1,1,2,2-TETRACHLOROETHANE	ND	0.0067	0.00067	0.0013
1,1,2-TRICHLOROETHANE	ND	0.0067	0.00067	0.0013
1,1-DICHLOROETHANE	ND	0.0067	0.00067	0.0013
1,1-DICHLOROETHENE	ND	0.0067	0.00067	0.0013
1,1-DICHLOROPROPENE	ND	0.0067	0.00067	0.0013
1,2,3-TRICHLOROBENZENE	ND	0.0067	0.0013	0.0027
1,2,3-TRICHLOROPROPANE	ND	0.0067	0.0013	0.0027
1,2,4-TRICHLOROBENZENE	ND	0.0067	0.0013	0.0027
1,2,4-TRIMETHYLBENZENE	ND	0.0067	0.00073	0.0027
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0067	0.0013	0.0027
1,2-DIBROMOETHANE	ND	0.0067	0.00067	0.0013
1,2-DICHLOROBENZENE	ND	0.0067	0.00067	0.0013
1,2-DICHLOROETHANE	ND	0.0067	0.00067	0.0013
1,2-DICHLOROPROPANE	ND	0.0067	0.00067	0.0013
1,3,5-TRIMETHYLBENZENE	0.0059Q	0.0067	0.00079	0.0027
1,3-DICHLOROBENZENE	ND	0.0067	0.00069	0.0013
1,3-DICHLOROPROPANE	ND	0.0067	0.00067	0.0013
1,4-DICHLOROBENZENE	ND	0.0067	0.00067	0.0013
2,2-DICHLOROPROPANE	ND	0.0067	0.0013	0.0027
2-BUTANONE	0.022Q	0.013	0.0033	0.0067
2-CHLOROTOLUENE	ND	0.0067	0.0011	0.0013
2-HEXANONE	ND	0.013	0.0039	0.0067
4-CHLOROTOLUENE	ND	0.0067	0.00089	0.0013
ACETONE	0.11Q	0.013	0.0041	0.0067
BENZENE	0.014Q	0.0067	0.00067	0.0013
BROMOBENZENE	ND	0.0067	0.00067	0.0013
BROMOCHLOROMETHANE	ND	0.0067	0.00067	0.0013
BROMODICHLOROMETHANE	ND	0.0067	0.00067	0.0013
BROMOFORM	ND	0.0067	0.0013	0.0027
BROMOMETHANE	ND	0.013	0.0024	0.0027
CARBON DISULFIDE	0.017Q	0.0067	0.00067	0.0013
CARBON TETRACHLORIDE	ND	0.0067	0.00072	0.0013
CHLOROBENZENE	ND	0.0067	0.00067	0.0013
CHLOROETHANE	ND	0.0067	0.0017	0.0027
CHLOROFORM	ND	0.0067	0.00067	0.0013
CHLOROMETHANE	ND	0.0067	0.0013	0.0027
CIS-1,2-DICHLOROETHYLENE	ND	0.0067	0.00067	0.0013
CIS-1,3-DICHLOROPROPENE	ND	0.0067	0.00067	0.0013
CYCLOHEXANE	ND	0.0067	0.0016	0.0027
DIBROMOCHLOROMETHANE	ND	0.0067	0.00067	0.0013
DIBROMOMETHANE	ND	0.0067	0.00067	0.0013
DICHLORODIFLUOROMETHANE	ND	0.0067	0.0016	0.0027
ETHYLBENZENE	ND	0.0067	0.00067	0.0013
HEXACHLOROBUTADIENE	ND	0.0067	0.0013	0.0027
ISOPROPYLBENZENE	ND	0.0067	0.00085	0.0027
METHYLENE CHLORIDE	ND	0.013	0.0027	0.0067
M,P-XYLENE	0.0051Q	0.0067	0.0013	0.0027
4-METHYL-2-PENTANONE	ND	0.013	0.0037	0.0067
TERT-BUTYL METHYL ETHER	ND	0.0067	0.00067	0.0013
NAPHTHALENE	ND	0.0067	0.0013	0.0027
N-BUTYLBENZENE	0.17Q	0.0067	0.00093	0.0013
N-PROPYLBENZENE	ND	0.0067	0.00087	0.0013
O-XYLENE	0.0034Q	0.0067	0.00067	0.0013
P-ISOPROPYLTOLUENE	0.072Q	0.0067	0.00083	0.0013
SEC-BUTYLBENZENE	0.017Q	0.0067	0.00089	0.0013
STYRENE	ND	0.0067	0.00067	0.0013
TERT-BUTYLBENZENE	0.0059Q	0.0067	0.00083	0.0013
TETRACHLOROETHENE	0.022Q	0.0067	0.00067	0.0013
TOLUENE	0.0038Q	0.0067	0.00067	0.0013
TRANS-1,2-DCE	ND	0.0067	0.00067	0.0013
TRANS-1,3-DICHLOROPROPENE	ND	0.0067	0.00067	0.0013
TCE	ND	0.0067	0.00067	0.0013
TRICHLOROFLUOROMETHANE	ND	0.0067	0.0015	0.0027
TRICHLOROTRIFLUOROETHANE	ND	0.0067	0.0013	0.0027
VINYL CHLORIDE	ND	0.0067	0.0019	0.0027
VINYL ACETATE	ND	0.0067	0.0017	0.0027
XYLENES, TOTAL	0.0085Q	0.0067	0.00067	0.0013

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0628	0.06674	94.1	71-136
4-BROMOFLUOROBENZENE	0.0977	0.06674	146*	79-119
TOLUENE-D8	0.118	0.06674	177*	85-116
DIBROMOFLUOROMETHANE	0.0783	0.06674	117	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	07/05/18 13:46
Sample ID	: 18Q2DP009-SB0801-SO-0	Date Analyzed:	07/05/18 13:46
Lab Samp ID	: F187-04	Dilution Factor:	1.22
Lab File ID	: RGP052	Matrix :	SOIL
Ext Btch ID	: VSO2G03	% Moisture :	8.6
Calib. Ref.	: RFP312	Instrument ID :	T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 13 17:13 2018

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1842759	50.00	ug/l		-0.03
56) CHLOROBENZENE-D5	12.31	117	699860	50.00	ug/l		-0.03
76) 1,2-DICHLOROBENZENE-D4	17.18	152	86753	50.00	ug/l		-0.02
System Monitoring Compounds							
37) Dibromofluoromethane	6.39	111	770949	58.67	ug/l		-0.03
Spiked Amount 50.000			Recovery =	117.34%			
43) 1,2-Dichloroethane-d4	7.08	65	767250	47.06	ug/l		-0.03
Spiked Amount 50.000			Recovery =	94.12%			
57) Toluene-d8	9.87	98	1829644	88.63	ug/l		-0.03
Spiked Amount 50.000			Recovery =	177.26%			
79) 4-Bromofluorobenzene	14.41	95	152982m	73.19	ug/l		-0.02
Spiked Amount 50.000			Recovery =	146.38%			
Target Compounds							Qvalue
11) Acetone	3.49	43	559377	82.09	ug/l		72
13) tert-Butyl alcohol	3.74	59	35172	11.08	ug/l	#	1
16) Methyl Acetate	4.04	43	61326	2.25	ug/l		55
19) Carbon disulfide	4.24	76	567703	12.60	ug/l		99
28) 2-Butanone	5.66	43	228086	16.41	ug/l		99
36) Tetrahydrofuran	6.38	42	673312	82.20	ug/l	#	1
45) Benzene	7.23	78	607957	10.17	ug/l		98
58) Toluene	10.01	91	68304	2.84	ug/l		97
64) Tetrachloroethene	11.03	164	77572	16.61	ug/l		97
71) m-Xylene & p-Xylene	12.61	91	71104	3.83	ug/l		94
72) o-Xylene	13.37	91	49152	2.55	ug/l	#	49
84) 1,3,5-Trimethylbenzene	14.97	105	21391	4.42	ug/l		77
87) tert-Butylbenzene	15.60	134	4909	4.40	ug/l	#	1
89) sec-Butylbenzene	15.99	105	84082	12.95	ug/l		100
90) p-Isopropyltoluene	16.24	119	275627m	53.65	ug/l		
94) n-Butylbenzene	16.95	91	648998	126.38	ug/l	#	55

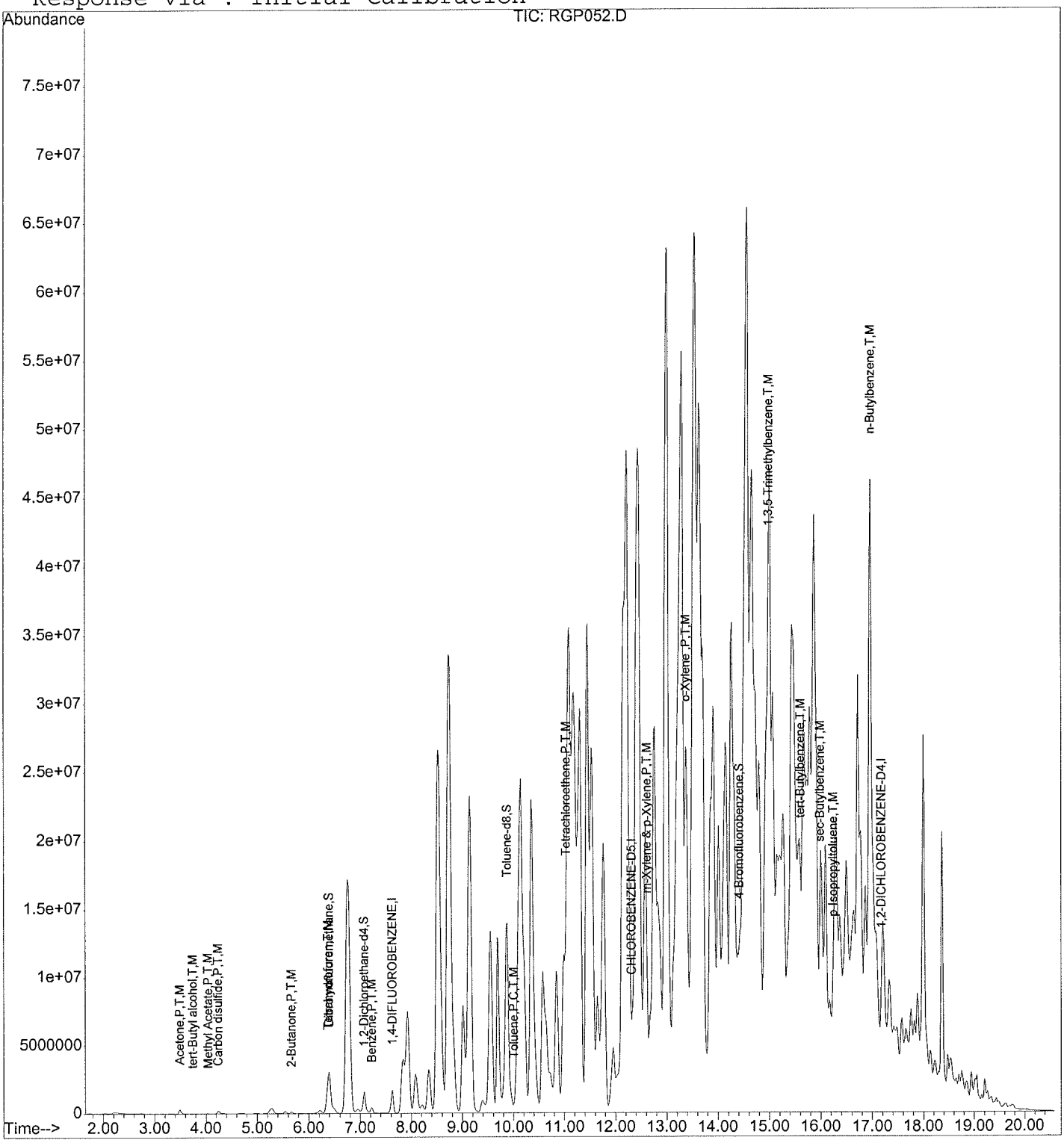
(#) = qualifier out of range (m) = manual integration

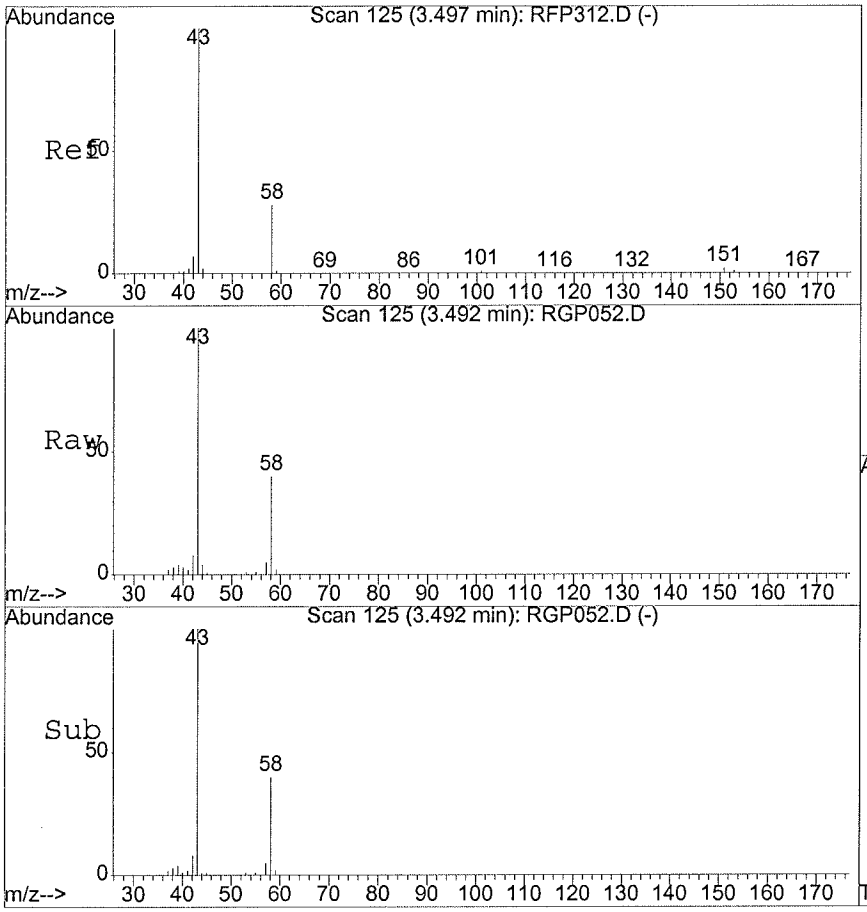
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 13 17:13 2018

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

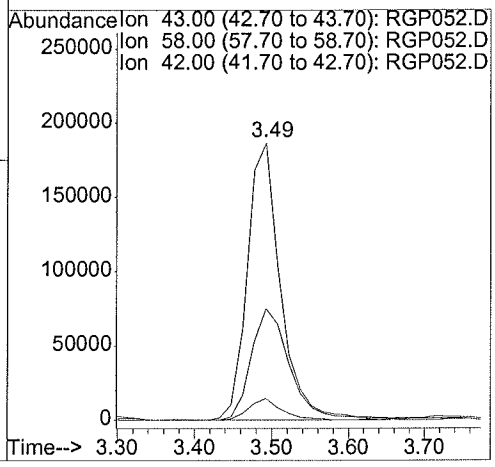


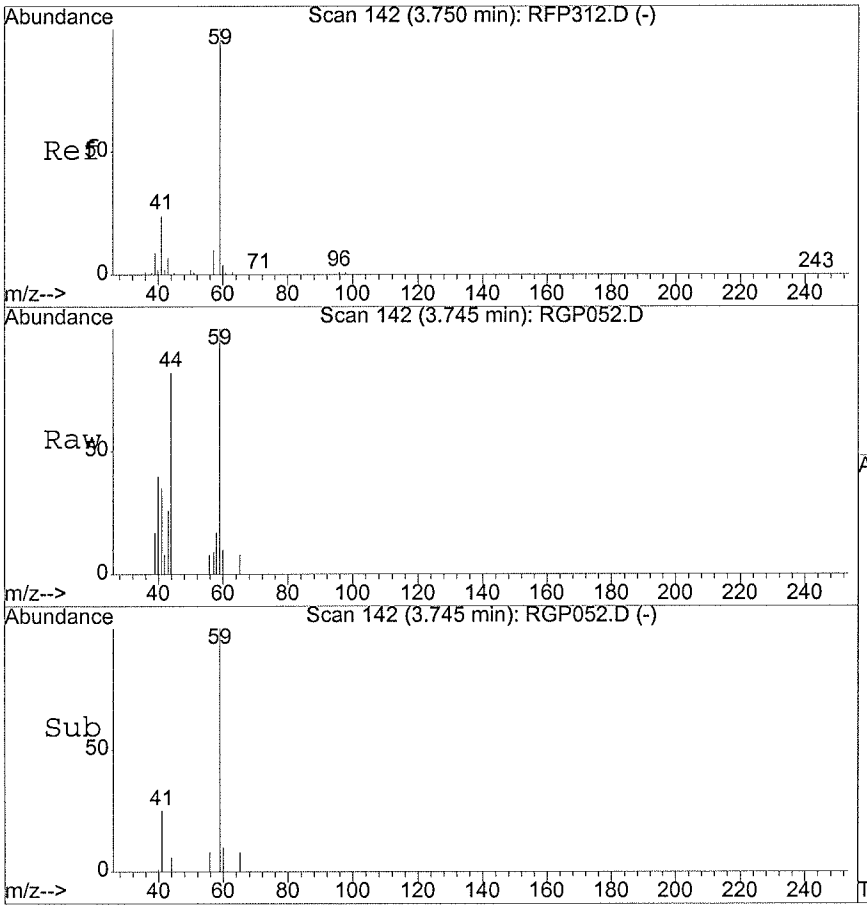


#11
Acetone
Concen: 82.09 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.00 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 43 Resp: 559377

Ion	Ratio	Lower	Upper
43	100		
58	46.4	0.0	58.3
42	7.7	0.0	36.9

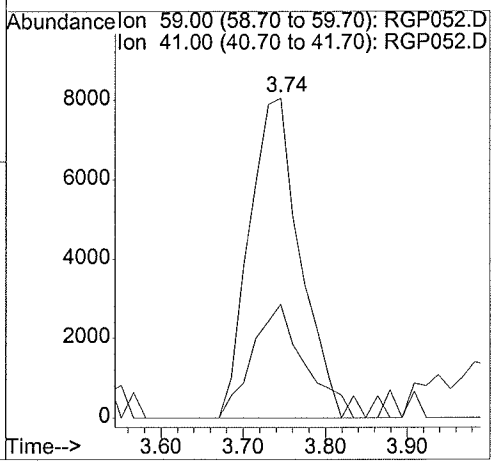


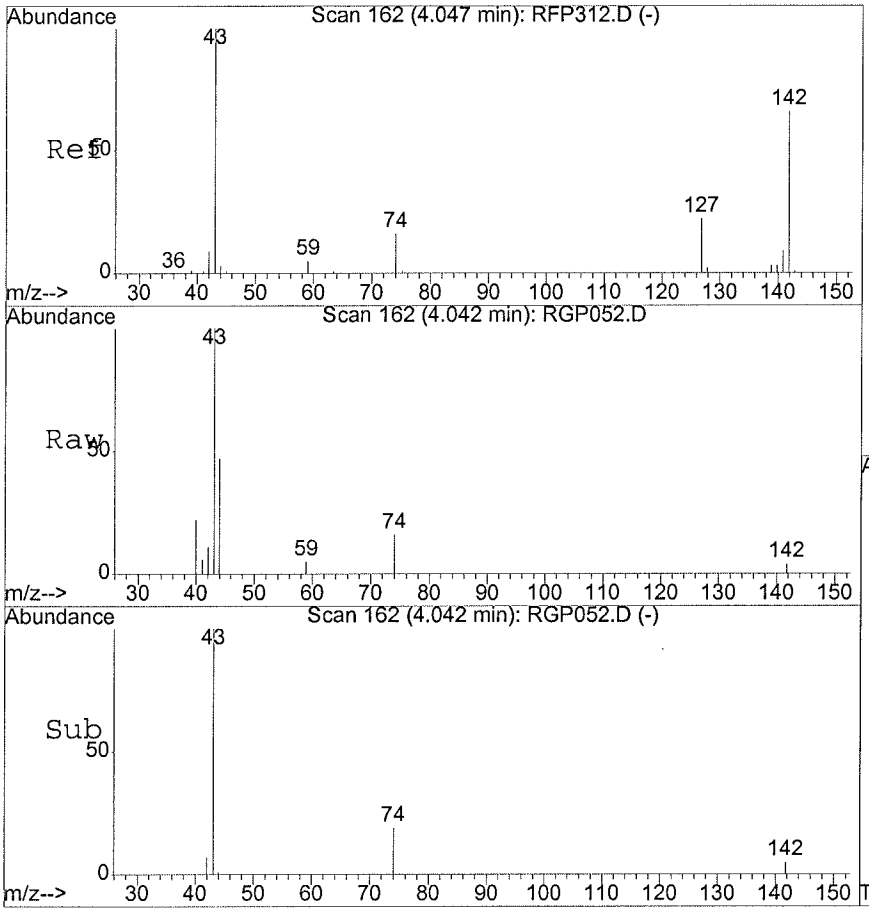


#13
tert-Butyl alcohol
Concen: 11.08 ug/l
RT: 3.74 min Scan# 142
Delta R.T. -0.00 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 59 Resp: 35172

Ion	Ratio	Lower	Upper
59	100		
41	35.8	171.3	231.3#

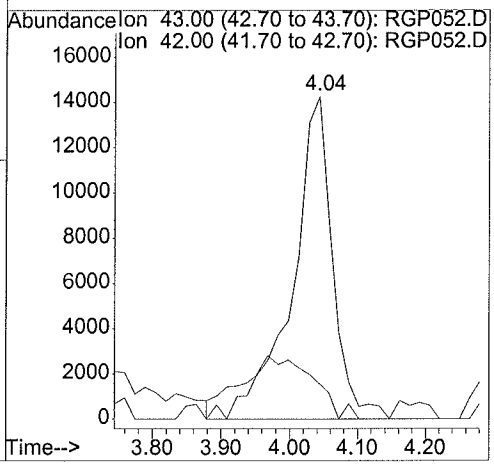


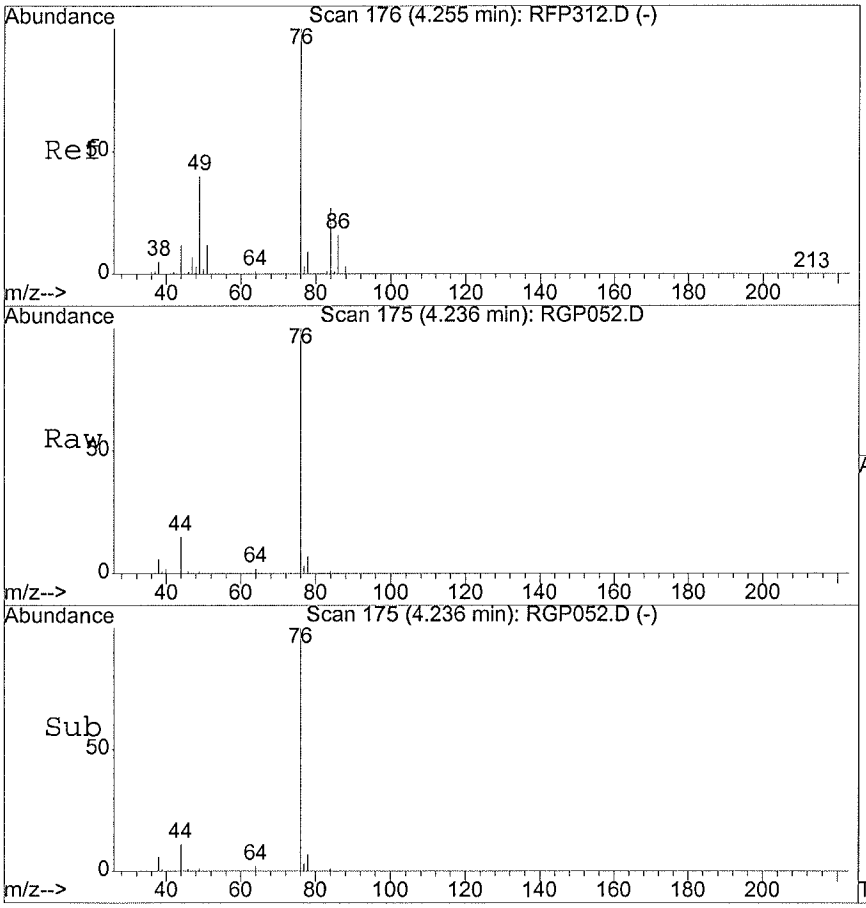


#16
Methyl Acetate
Concen: 2.25 ug/l
RT: 4.04 min Scan# 162
Delta R.T. -0.00 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 43 Resp: 61326

Ion	Ratio	Lower	Upper
43	100		
42	29.5	0.0	42.1

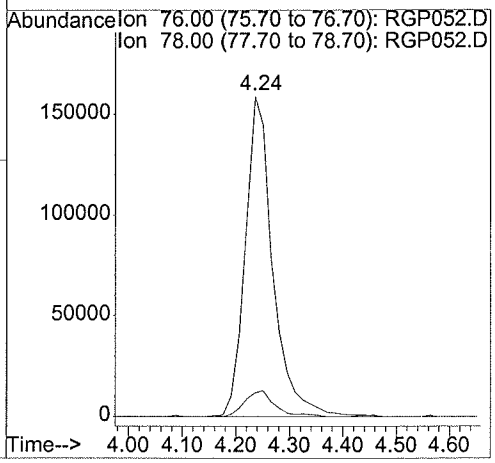


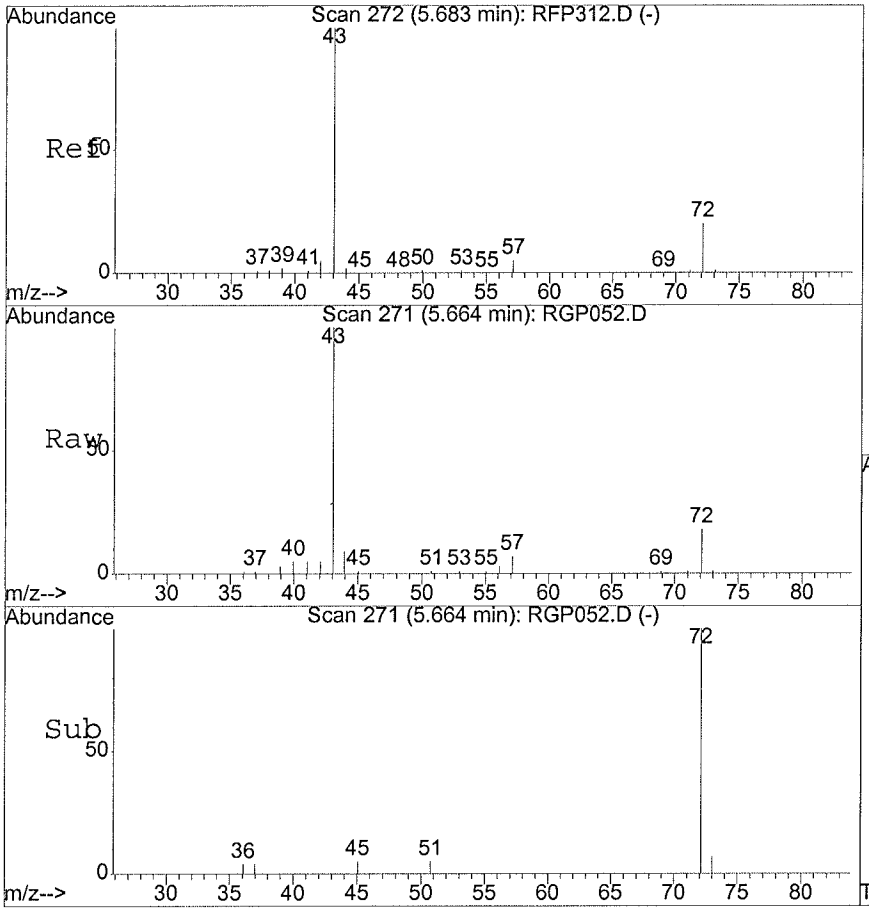


#19
Carbon disulfide
Concen: 12.60 ug/l
RT: 4.24 min Scan# 175
Delta R.T. -0.02 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 76 Resp: 567703

Ion	Ratio	Lower	Upper
76	100		
78	9.0	0.0	38.8

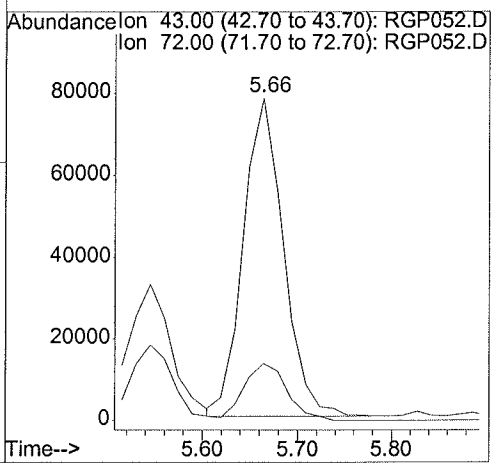


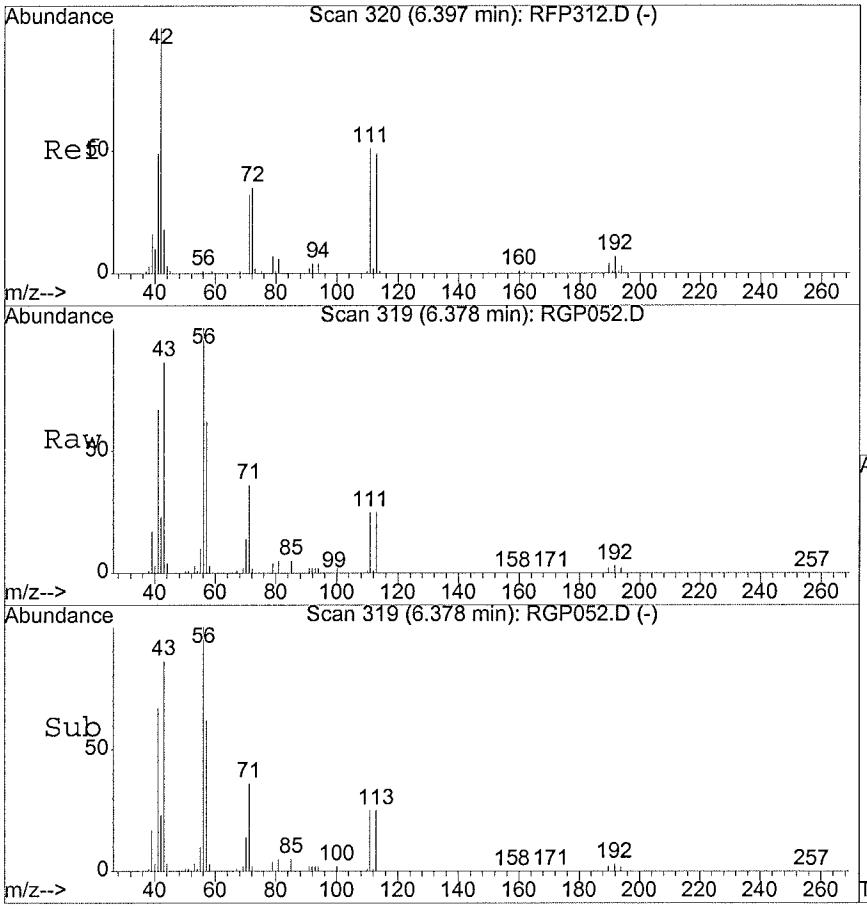


#28
2-Butanone
Concen: 16.41 ug/l
RT: 5.66 min Scan# 271
Delta R.T. -0.02 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 43 Resp: 228086

Ion	Ratio	Lower	Upper
43	100		
72	19.0	0.0	49.4

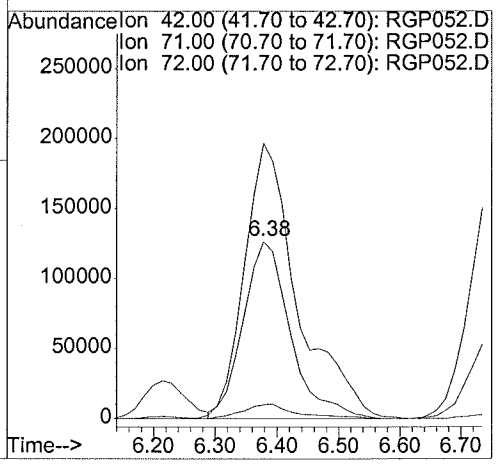


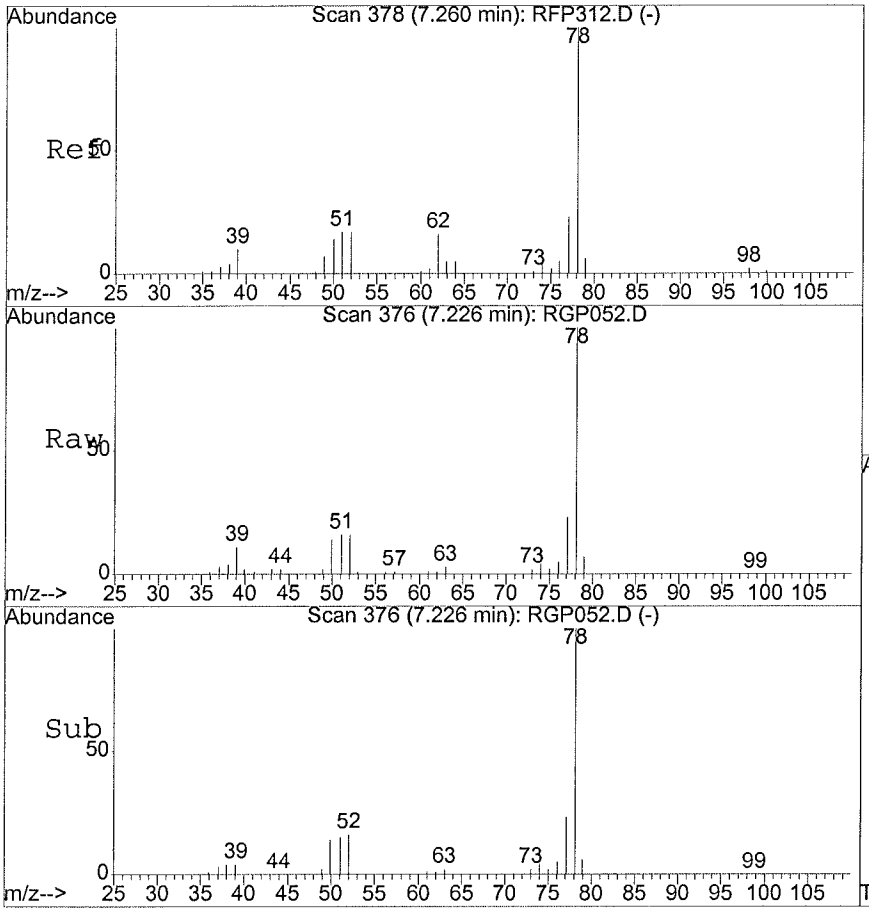


#36
Tetrahydrofuran
Concen: 82.20 ug/l
RT: 6.38 min Scan# 319
Delta R.T. -0.02 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 42 Resp: 673312

Ion	Ratio	Lower	Upper
42	100		
71	174.1	0.1	60.1#
72	9.5	3.2	63.2

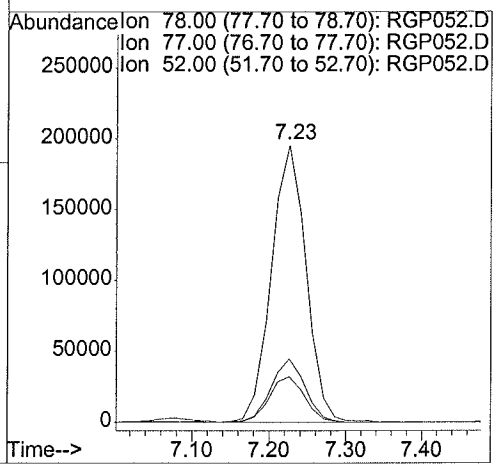


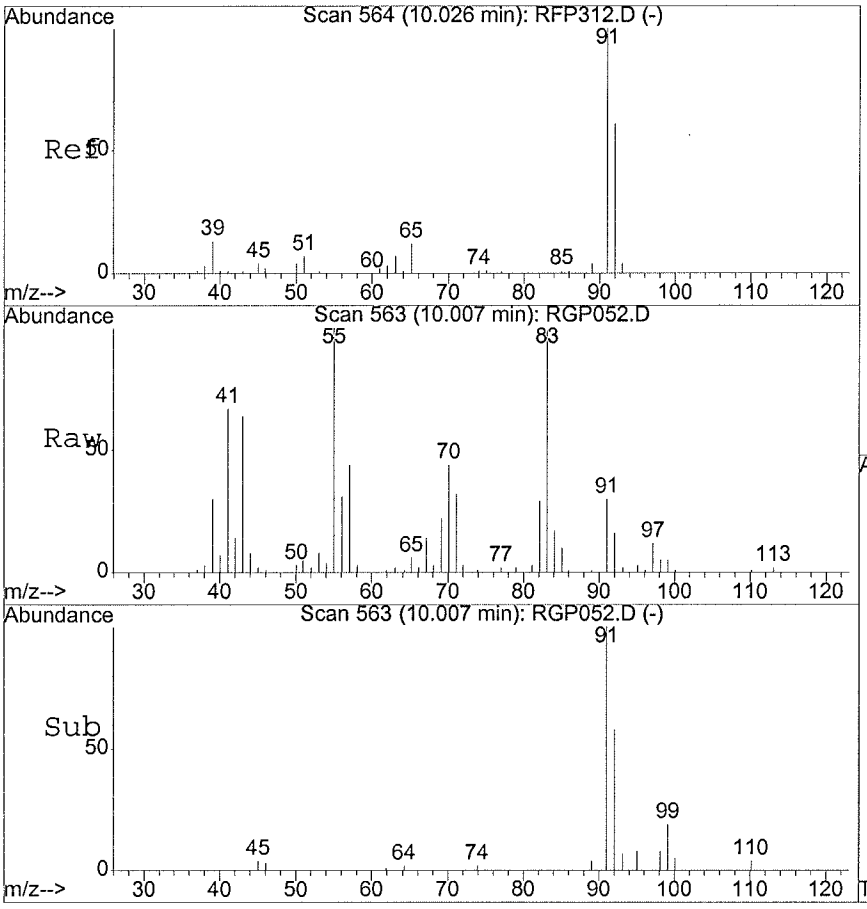


#45
Benzene
Concen: 10.17 ug/l
RT: 7.23 min Scan# 376
Delta R.T. -0.03 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 78 Resp: 607957

Ion	Ratio	Lower	Upper
78	100		
77	22.3	0.0	53.5
52	16.9	0.0	47.3

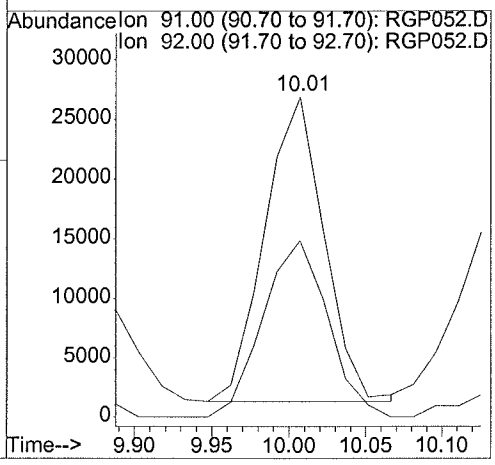


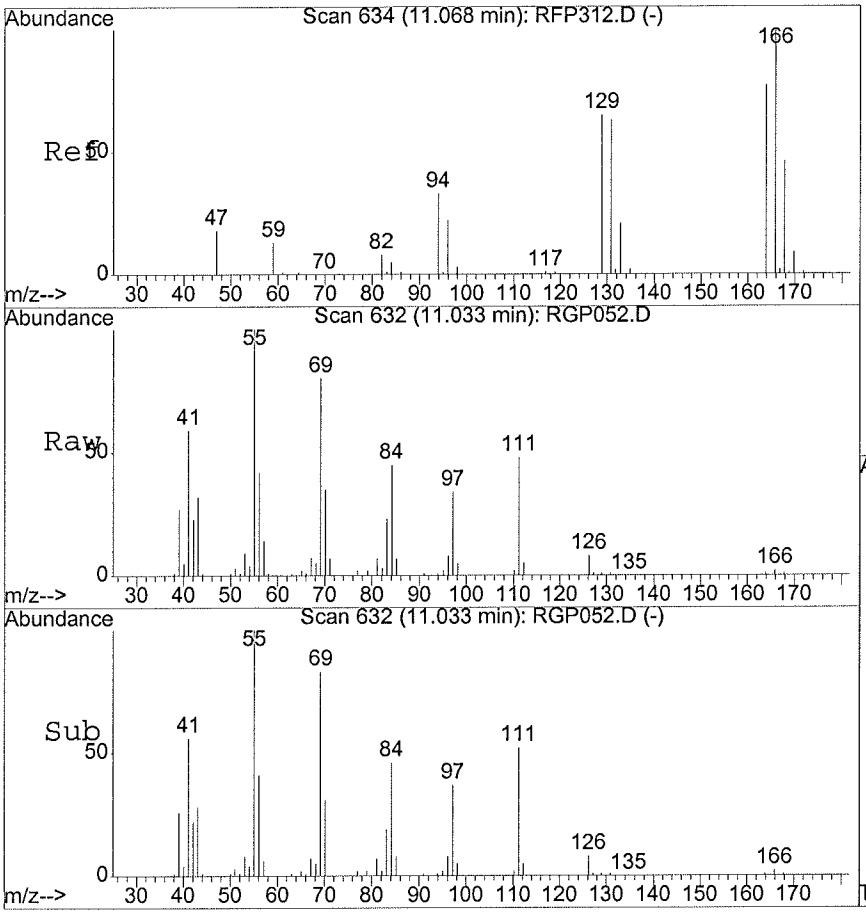


#58
Toluene
Concen: 2.84 ug/l
RT: 10.01 min Scan# 563
Delta R.T. -0.02 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 91 Resp: 68304

Ion	Ratio	Lower	Upper
91	100		
92	63.5	30.9	90.9

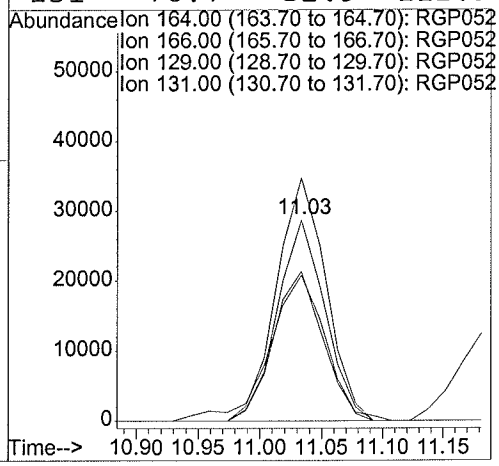


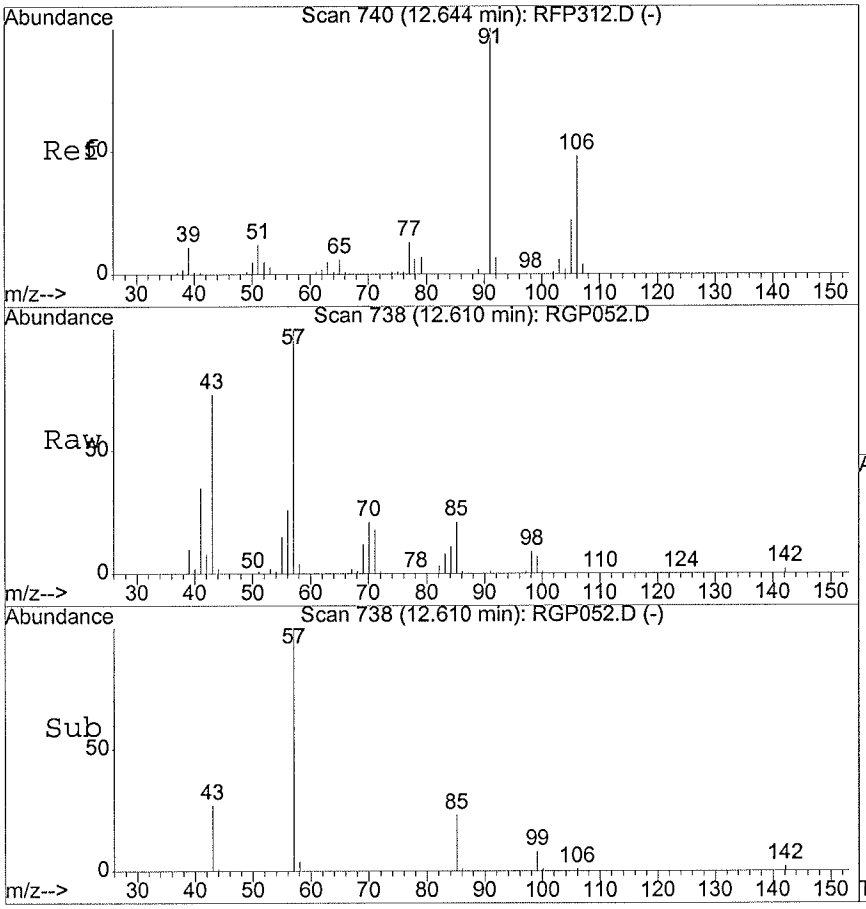


#64
Tetrachloroethene
Concen: 16.61 ug/l
RT: 11.03 min Scan# 632
Delta R.T. -0.03 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion:164 Resp: 77572

Ion	Ratio	Lower	Upper
164	100		
166	125.1	96.8	156.8
129	85.0	55.7	115.7
131	76.7	52.9	112.9

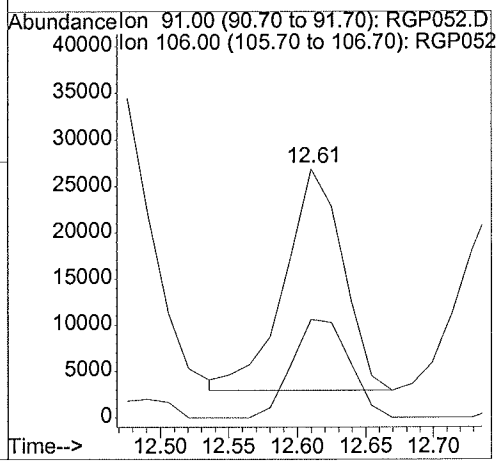


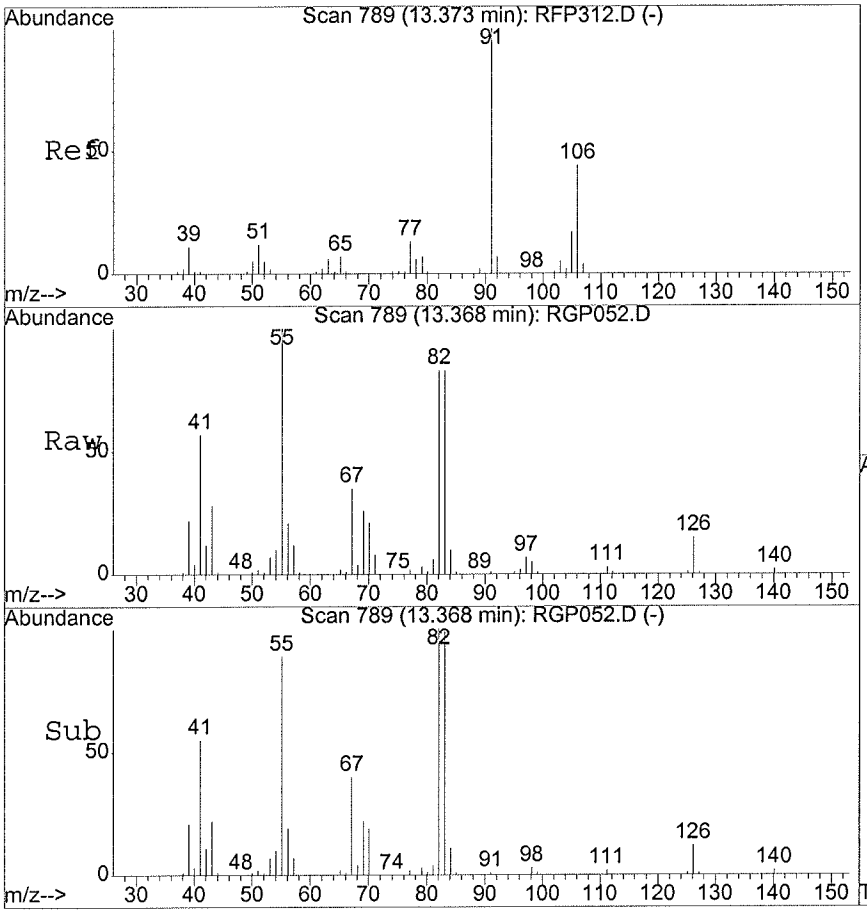


#71
m-Xylene & p-Xylene
Concen: 3.83 ug/l
RT: 12.61 min Scan# 738
Delta R.T. -0.03 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 91 Resp: 71104

Ion	Ratio	Lower	Upper
91	100		
106	43.4	17.2	77.2

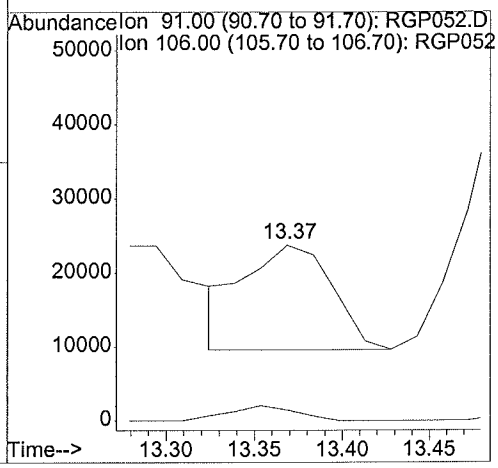


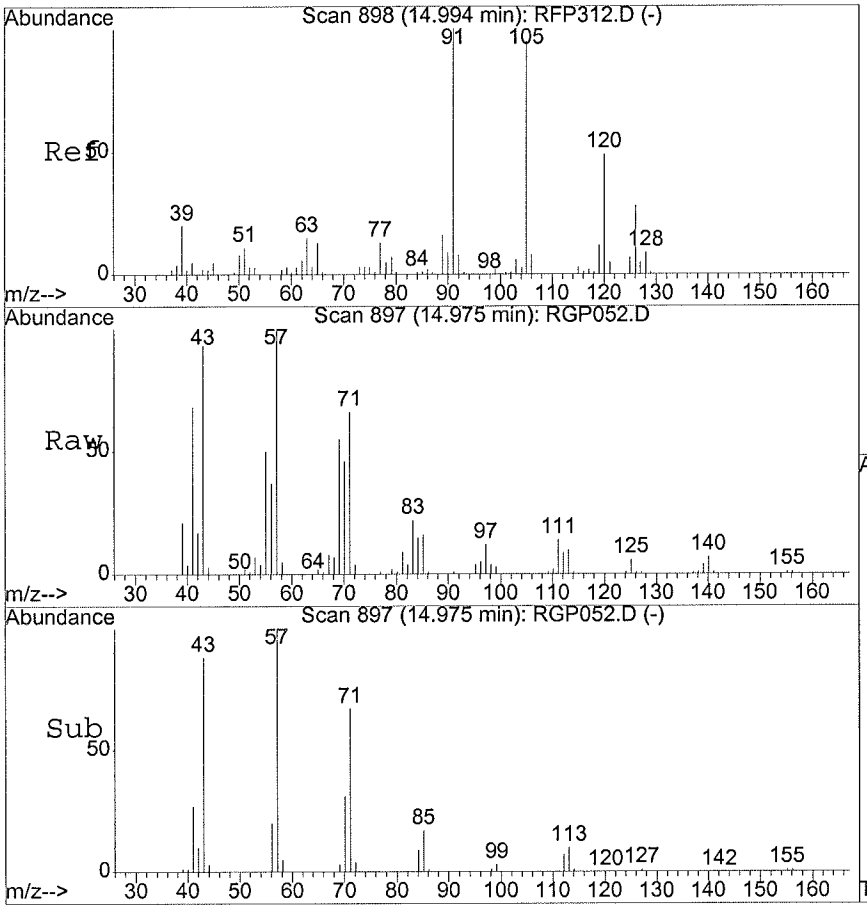


#72
o-Xylene
Concen: 2.55 ug/l
RT: 13.37 min Scan# 789
Delta R.T. -0.00 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 91 Resp: 49152

Ion	Ratio	Lower	Upper
91	100		
106	11.0	14.1	74.1#

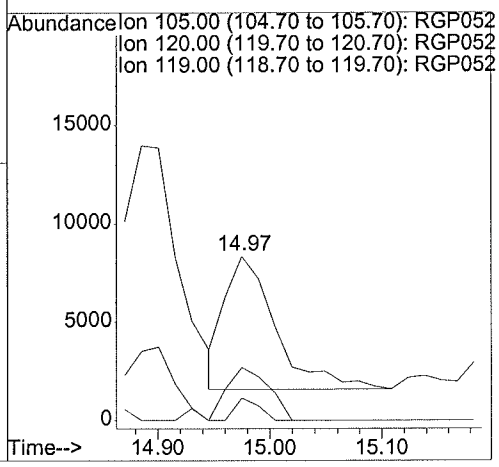


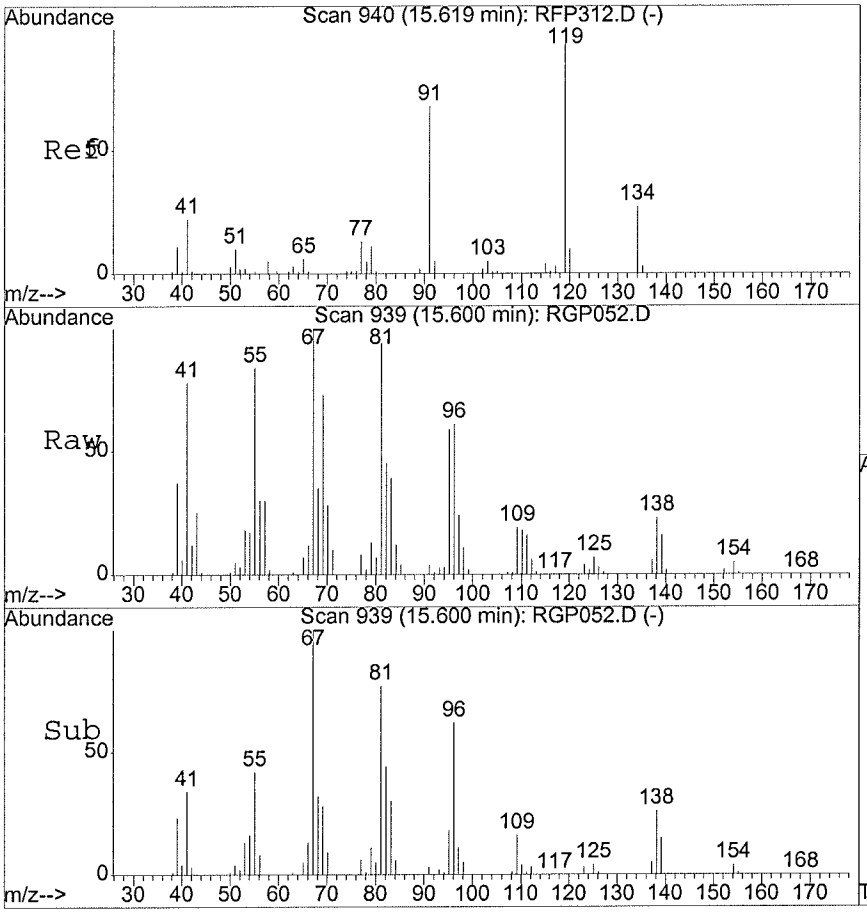


#84
1,3,5-Trimethylbenzene
Concen: 4.42 ug/l
RT: 14.97 min Scan# 897
Delta R.T. -0.02 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion:105 Resp: 21391

Ion	Ratio	Lower	Upper
105	100		
120	32.9	20.7	80.7
119	7.8	0.0	42.0

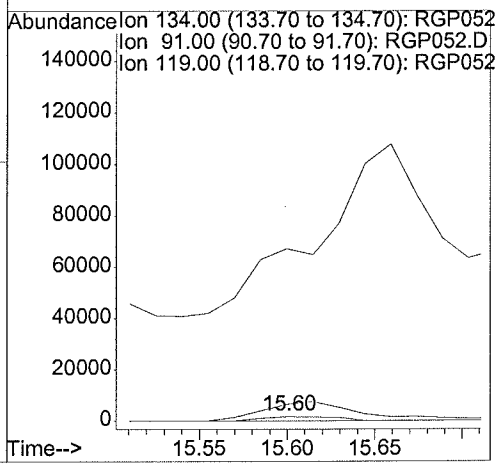


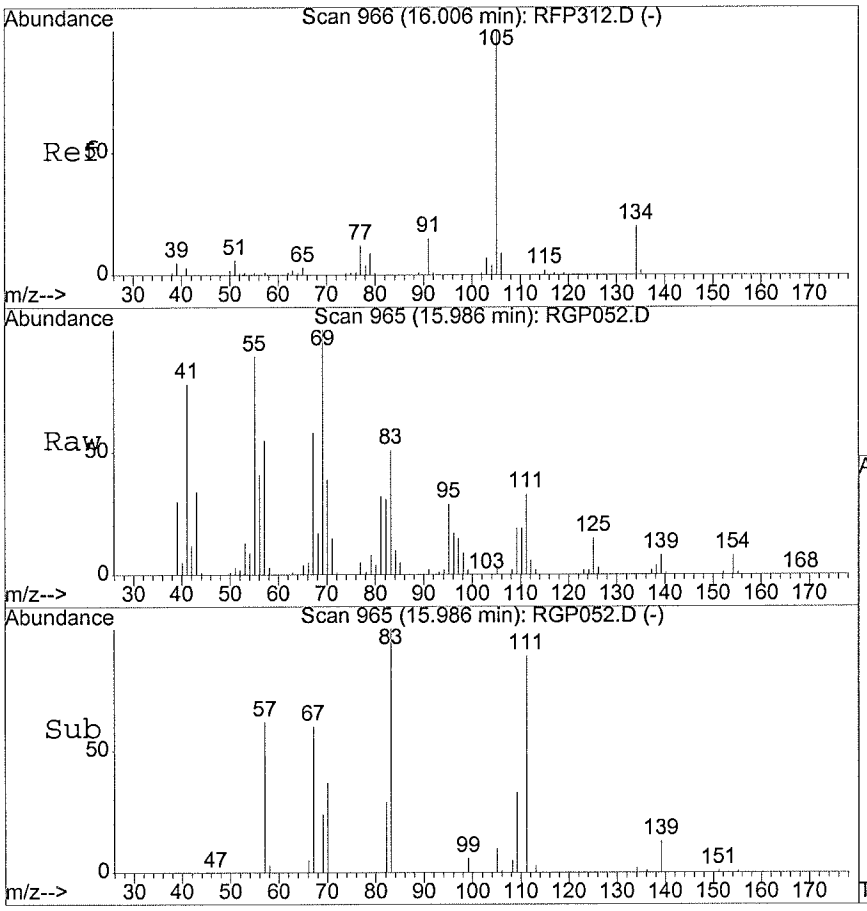


#87
tert-Butylbenzene
Concen: 4.40 ug/l
RT: 15.60 min Scan# 939
Delta R.T. -0.02 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion:134 Resp: 4909

Ion	Ratio	Lower	Upper
134	100		
91	7572.8	279.4	339.4#
119	598.0	407.6	467.6#

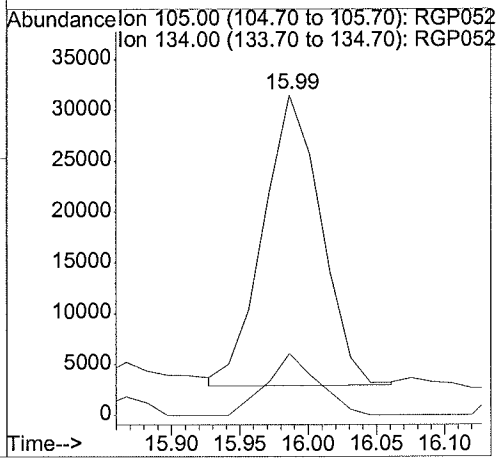


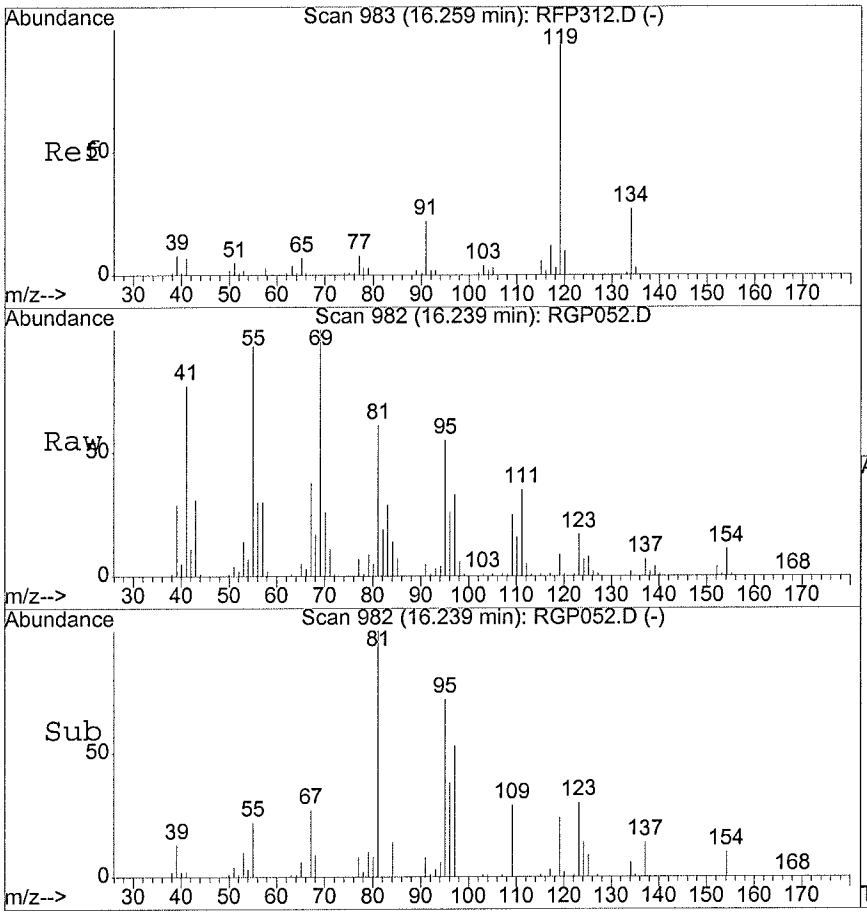


#89
sec-Butylbenzene
Concen: 12.95 ug/l
RT: 15.99 min Scan# 965
Delta R.T. -0.02 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion:105 Resp: 84082

Ion	Ratio	Lower	Upper
105	100		
134	18.8	0.0	48.9

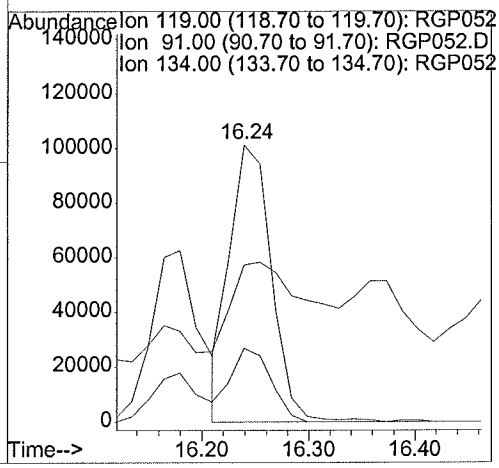


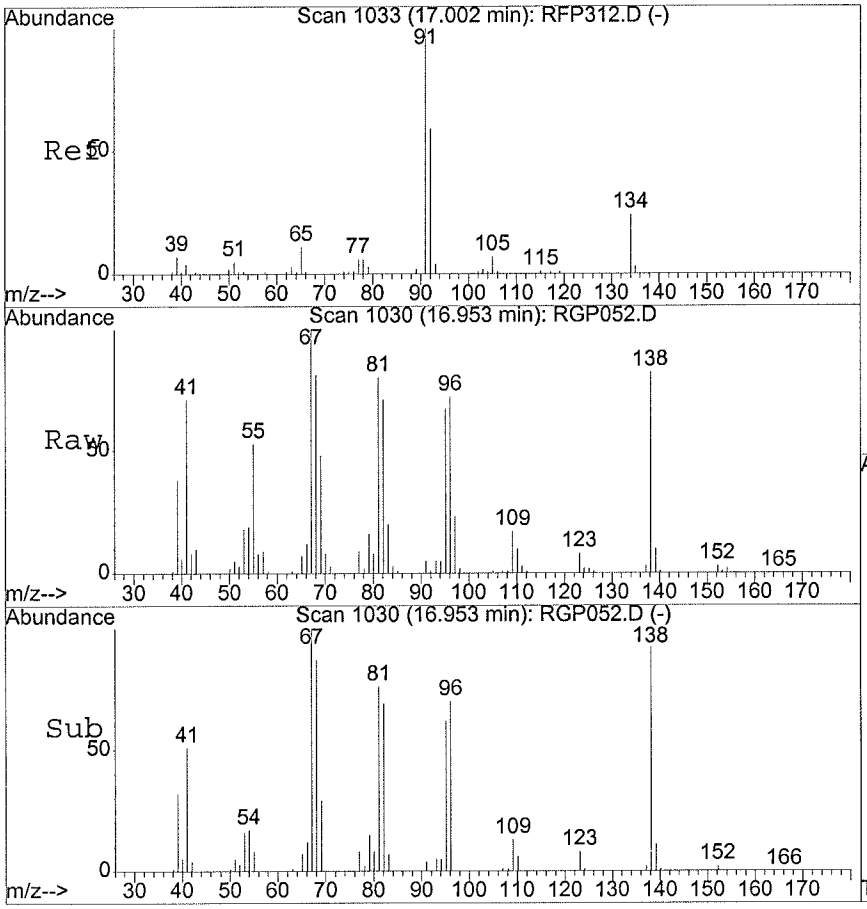


#90
p-Isopropyltoluene
Concen: 53.65 ug/l m
RT: 16.24 min Scan# 982
Delta R.T. -0.02 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion:119 Resp: 275627

Ion	Ratio	Lower	Upper
119	100		
91	10.8	0.0	52.4
134	19.6	0.0	56.2

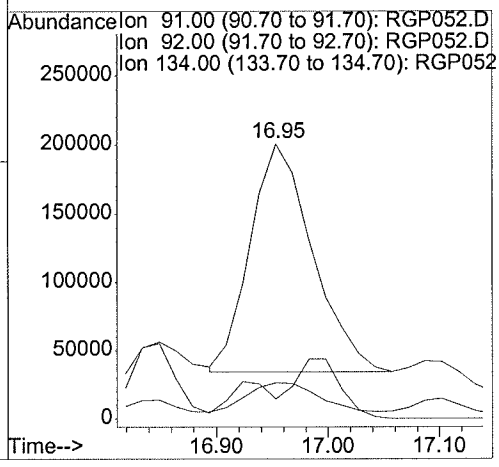




#94
n-Butylbenzene
Concen: 126.38 ug/l
RT: 16.95 min Scan# 1030
Delta R.T. -0.05 min
Lab File: RGP052.D
Acq: 5 Jul 2018 1:46 pm

Tgt Ion: 91 Resp: 648998

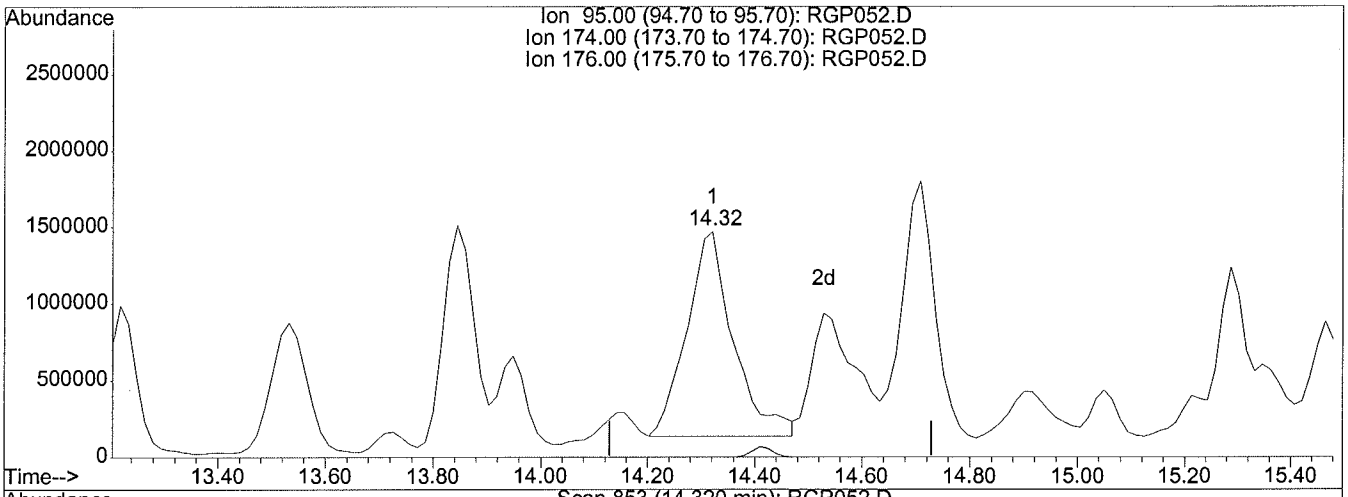
Ion	Ratio	Lower	Upper
91	100		
92	14.1	29.3	89.3#
134	19.4	0.0	53.5

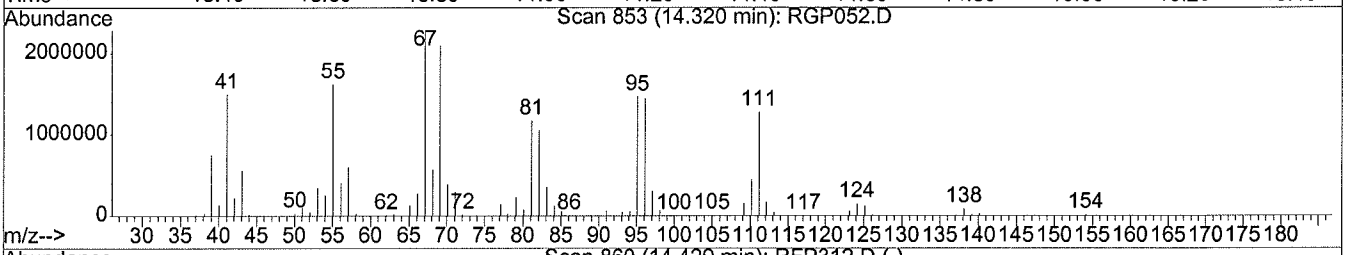


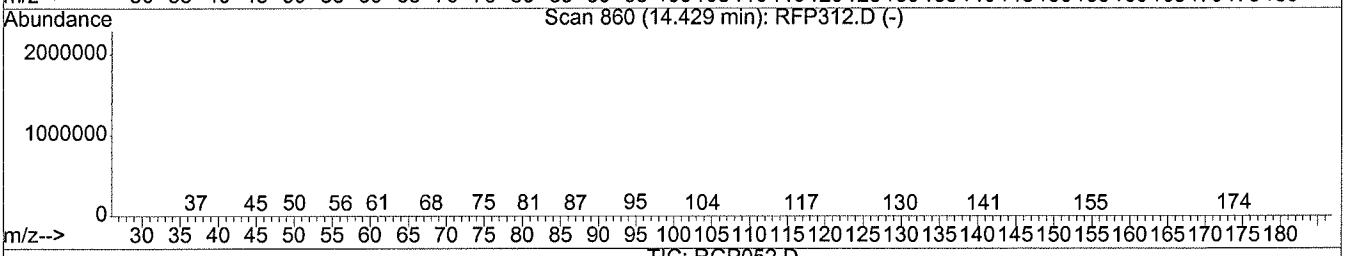
Quantitation Report (Qedit)

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:36 2018 Quant Results File: temp.res

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration







TIC: RGP052.D

(79) 4-Bromofluorobenzene (S)

14.32min 3824.95ug/l

response 7994474

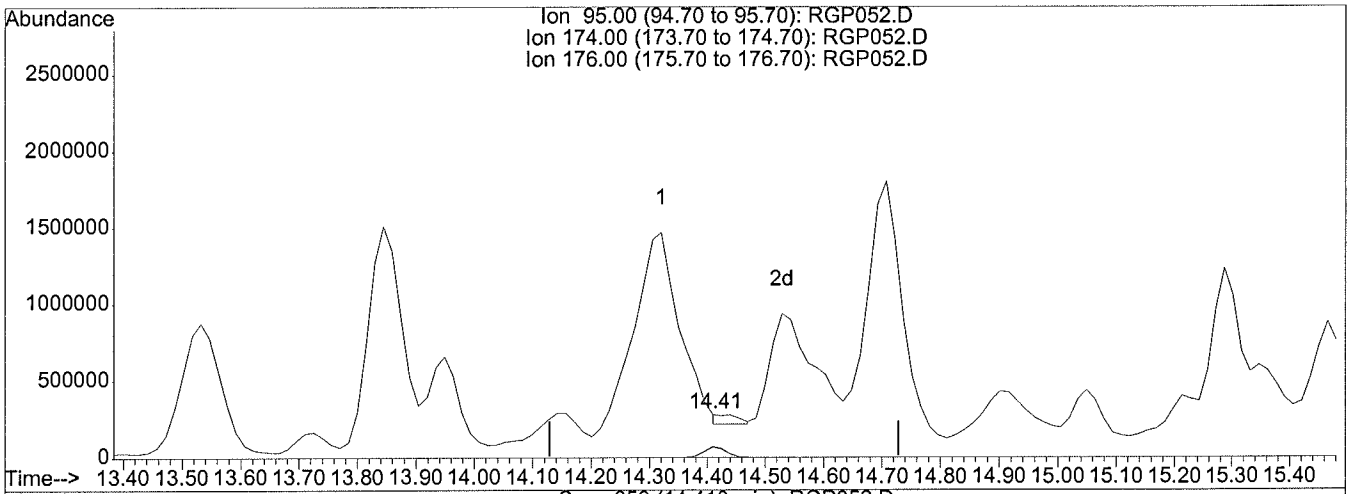
Ion	Exp%	Act%
95.00	100	100
174.00	79.70	2.34#
176.00	77.20	2.25#
0.00	0.00	0.00

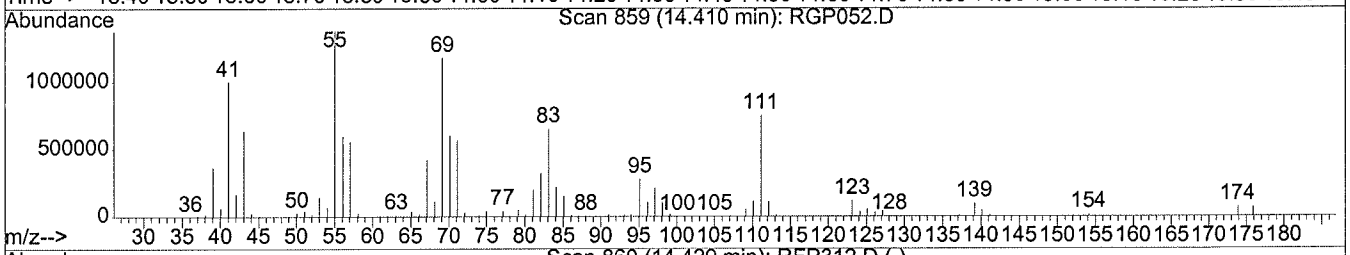
RGP052.D VO02F15.M Mon Jul 09 14:36:10 2018

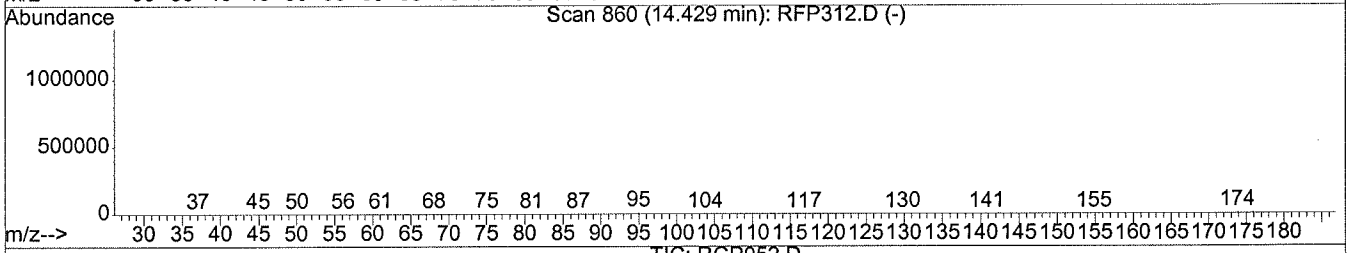
Quantitation Report (Qedit)

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:36 2018 Quant Results File: temp.res

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration







TIC: RGP052.D

(79) 4-Bromofluorobenzene (S)

14.41min 73.19ug/l m

response 152982

Ion	Exp%	Act%
95.00	100	100
174.00	79.70	122.24#
176.00	77.20	117.81#
0.00	0.00	0.00

☑ Incorrect Retention Time
☐ Incorrect Baseline
☐ Incorrect Integration
☐ Other Matrix interference

Initials OD 07/09/18

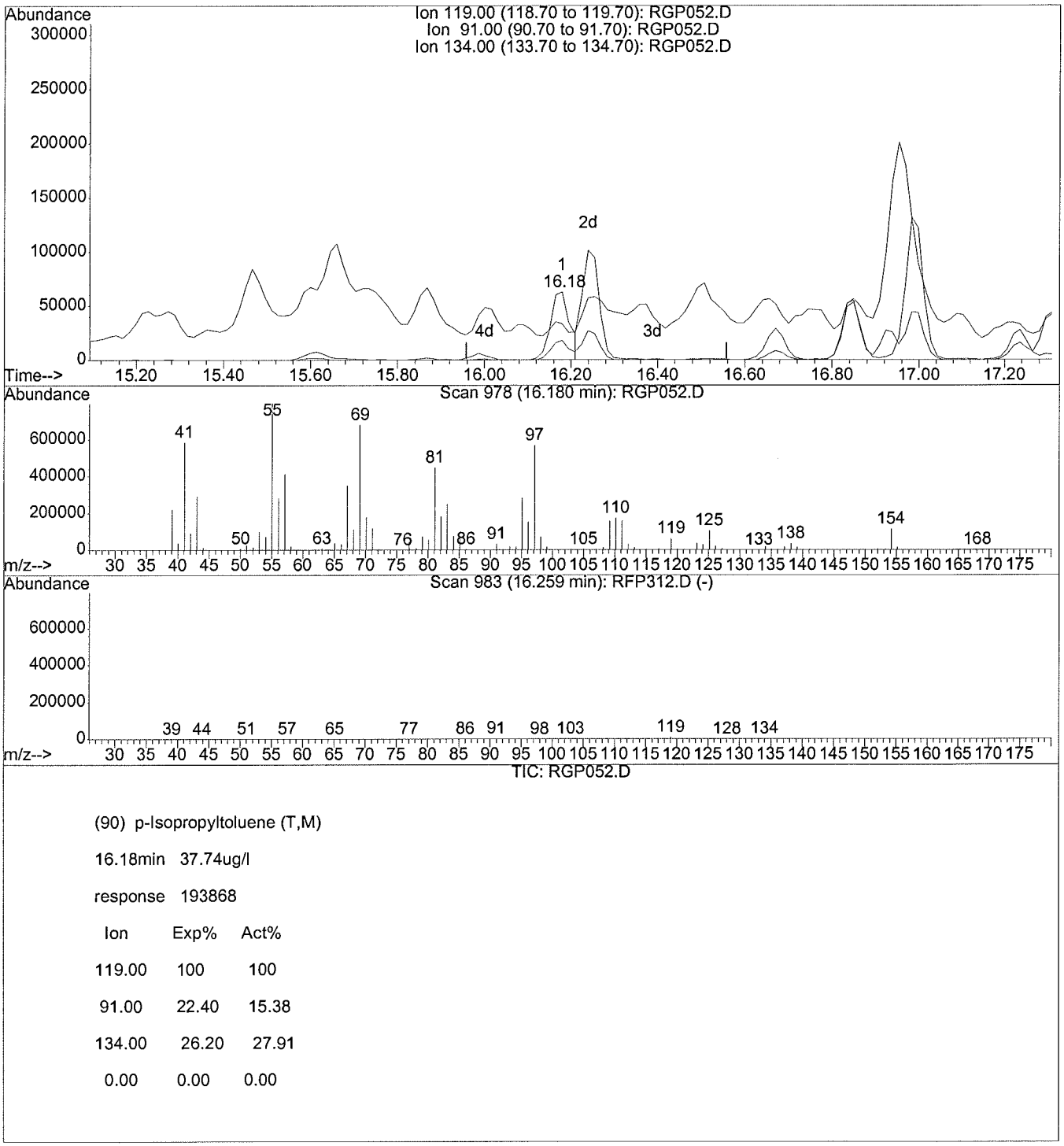
SV 1/23/18

RGP052.D VO02F15.M Mon Jul 09 14:36:22 2018

Quantitation Report (Qedit)

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:36 2018 Quant Results File: temp.res

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration



TIC: RGP052.D

(90) p-Isopropyltoluene (T,M)

16.18min 37.74ug/l

response 193868

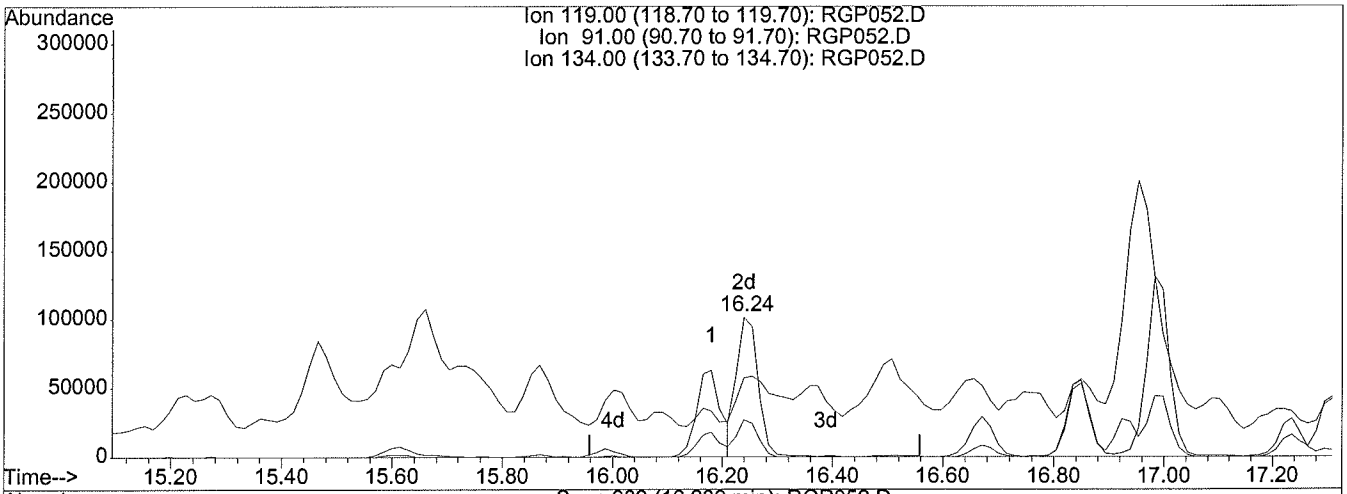
Ion	Exp%	Act%
119.00	100	100
91.00	22.40	15.38
134.00	26.20	27.91
0.00	0.00	0.00

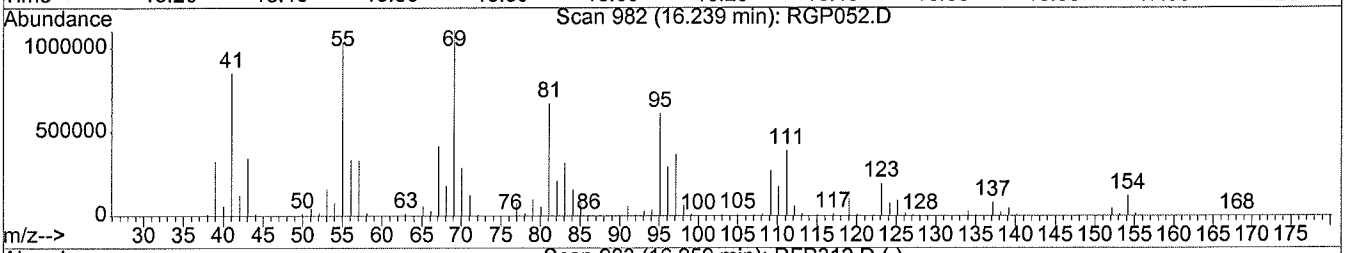
RGP052.D VO02F15.M Mon Jul 09 14:36:52 2018

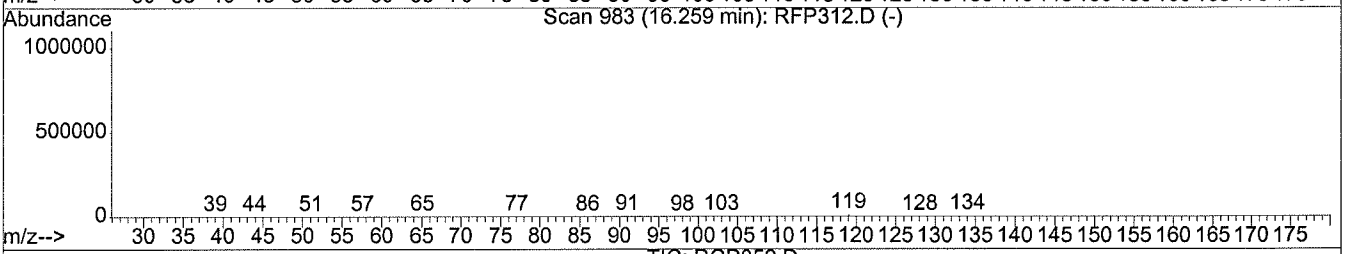
Quantitation Report (Qedit)

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:36 2018 Quant Results File: temp.res

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration







TIC: RGP052.D

(90) p-Isopropyltoluene (T,M)

16.24min 53.65ug/l m

response 275627

Ion	Exp%	Act%
119.00	100	100
91.00	22.40	10.82
134.00	26.20	19.63
0.00	0.00	0.00

☑ Incorrect Retention Time
☐ Incorrect Baseline
☐ Incorrect Integration
☐ Other _____

Initials OD 07/09/18

Sa 7/13/18

RGP052.D VO02F15.M Mon Jul 09 14:36:56 2018

LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.750	334	344	354	rBV	17181884	100912557	28.79%	1.852%
2	8.520	456	463	471	rVV	26353227	150447236	42.92%	2.761%
3	8.728	471	477	490	rVV2	33394192	199980911	57.06%	3.670%
4	9.144	499	505	516	rVB	23165381	119160927	34.00%	2.187%
5	9.546	525	532	538	rBV	12778413	57962655	16.54%	1.064%
6	9.680	538	541	547	rBV	12174158	39839340	11.37%	0.731%
7	9.873	547	554	562	rVB3	13401981	63053035	17.99%	1.157%
8	10.141	562	572	581	rBV2	23917198	171358576	48.89%	3.145%
9	10.349	581	586	596	rVB2	22277619	105176831	30.01%	1.930%
10	10.572	596	601	610	rBV	9729702	63605418	18.15%	1.167%
11	10.840	614	619	624	rVB2	9050387	37083932	10.58%	0.681%
12	10.989	624	629	630	rBV2	10261636	35387794	10.10%	0.649%
13	11.093	630	636	639	rBV	24357082	120464275	34.37%	2.211%
14	11.301	647	650	655	rVB3	27364802	107029708	30.54%	1.964%
15	11.450	655	660	663	rBV	33562872	147228112	42.00%	2.702%
16	11.524	663	665	670	rVV2	24368331	94786525	27.04%	1.740%
17	11.762	676	681	687	rVB	19231640	91256242	26.04%	1.675%
18	12.208	709	711	718	rVB3	41596707	159339525	45.46%	2.924%
19	12.431	718	726	732	rBV4	41760315	242067215	69.06%	4.443%
20	12.580	732	736	740	rVB	15533813	56157578	16.02%	1.031%
21	12.759	740	748	751	rBV2	22791783	104499727	29.81%	1.918%
22	12.982	758	763	770	rVB2	56885952	264269796	75.40%	4.850%
23	13.279	770	783	787	rBV3	49352056	350504034	100.00%	6.433%
24	13.368	787	789	794	rVB3	17608207	58077899	16.57%	1.066%
25	13.532	794	800	804	rBV2	55068719	299768262	85.52%	5.502%
26	13.621	804	806	810	rVB4	19033990	67243601	19.18%	1.234%
27	13.904	817	825	829	rBV3	25469928	154598052	44.11%	2.837%
28	14.008	829	832	835	rVV2	14128215	48512764	13.84%	0.890%
29	14.142	835	841	845	rVV	18408155	90932695	25.94%	1.669%
30	14.261	845	849	856	rVV2	25250996	128458287	36.65%	2.358%
31	14.558	861	869	872	rVV4	55907638	313761675	89.52%	5.758%

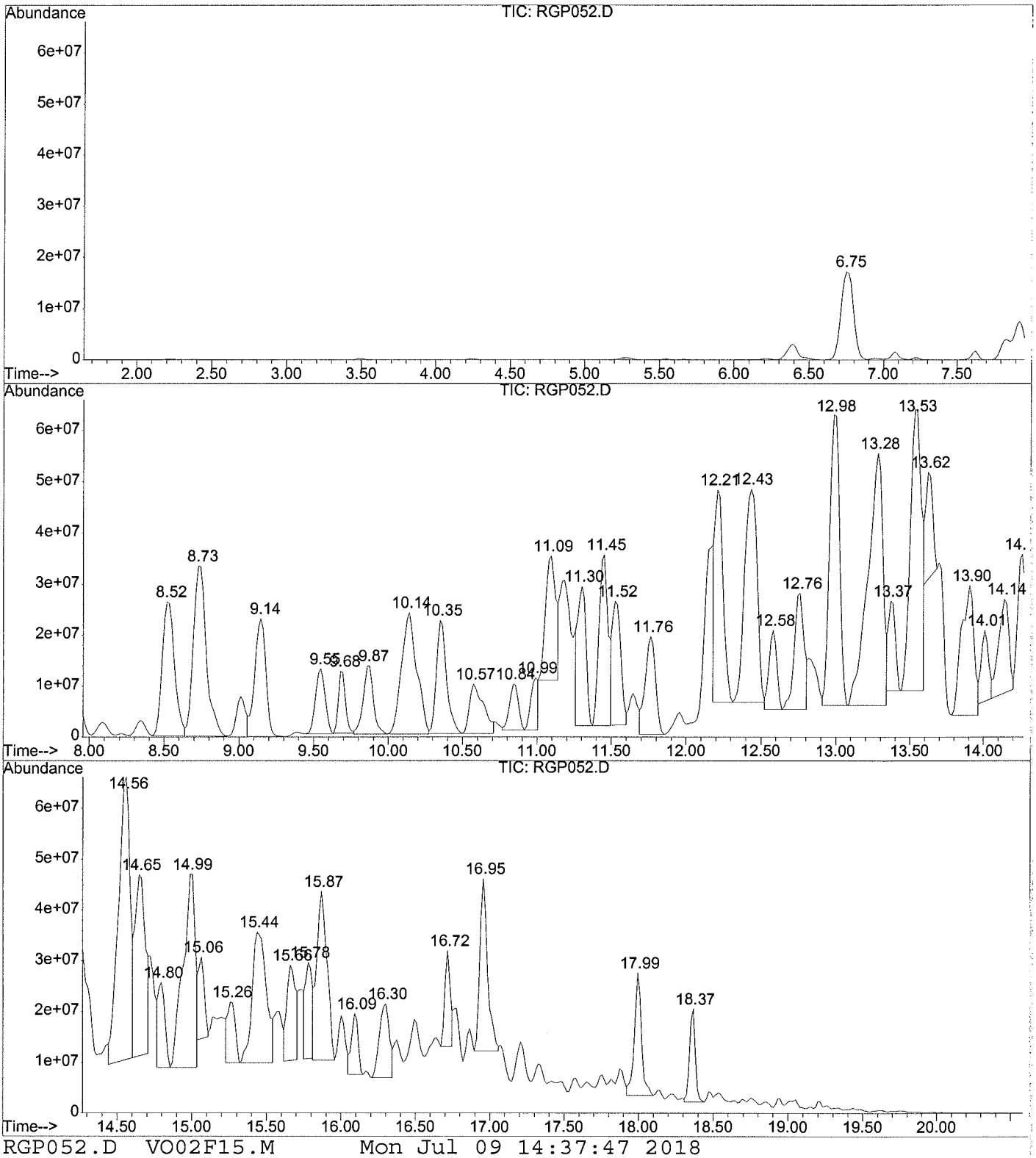
32	14.648	872	875	879	rVV2	35662945	173763330	49.58%	3.189%
33	14.796	883	885	889	rVB2	16757954	50882693	14.52%	0.934%
34	14.990	889	898	901	rBV3	38102894	219726473	62.69%	4.033%
35	15.064	901	903	906	rVV2	15915930	42713070	12.19%	0.784%
36	15.257	914	916	920	rVB4	11971675	41049379	11.71%	0.753%
37	15.436	920	928	935	rBV4	25794485	174436444	49.77%	3.201%
38	15.659	940	943	946	rVV3	18720924	78959996	22.53%	1.449%
39	15.778	949	951	953	rVV3	18883907	59086547	16.86%	1.084%
40	15.867	953	957	963	rVB4	33251369	160194736	45.70%	2.940%
41	16.090	969	972	976	rVB2	11980466	36258403	10.34%	0.665%
42	16.299	980	986	989	rBV3	14546495	69699316	19.89%	1.279%
43	16.715	1011	1014	1016	rBV	18957118	49444786	14.11%	0.907%
44	16.953	1026	1030	1037	rBV	33992911	122109492	34.84%	2.241%
45	17.994	1095	1100	1107	rVB2	24090947	79107504	22.57%	1.452%
46	18.366	1121	1125	1130	rVB	18320594	48329362	13.79%	0.887%

Sum of corrected areas: 5448686715

RGP052.D VO02F15.M Mon Jul 09 14:37:47 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Operator : ODinh
Acquired : 5 Jul 2018 1:46 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-04
Misc Info :
Vial Number: 12
Quant File :VO02F15.RES (RTE Integrator)



RGP052.D VO02F15.M Mon Jul 09 14:37:47 2018

Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

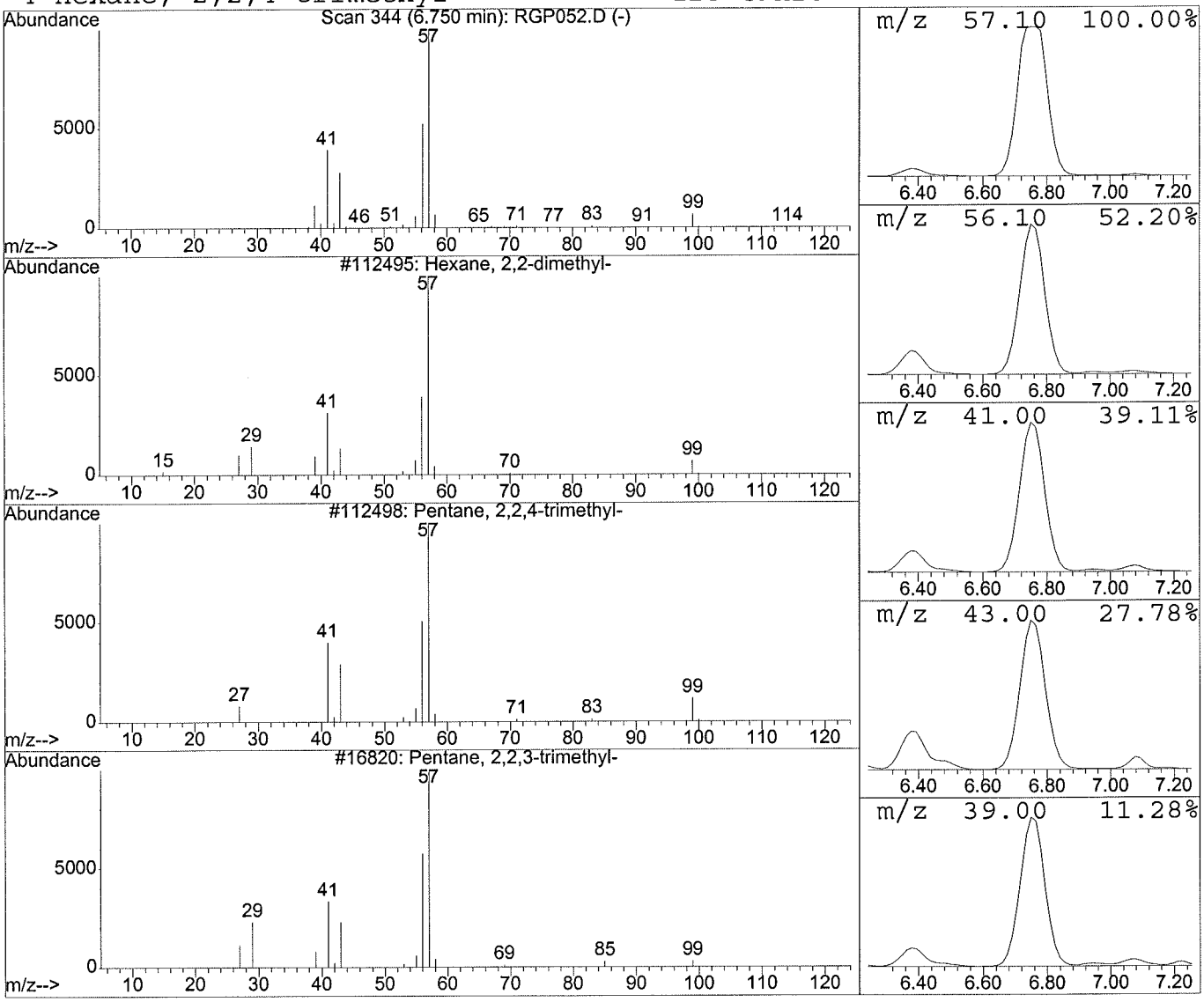
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 1 Hexane, 2,2-dimethyl- Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.75	50.00 ug/l	100913000	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Hexane, 2,2-dimethyl-	114	C8H18	000590-73-8	78
2	Pentane, 2,2,4-trimethyl-	114	C8H18	000540-84-1	74
3	Pentane, 2,2,3-trimethyl-	114	C8H18	000564-02-3	56
4	Hexane, 2,2,4-trimethyl-	128	C9H20	016747-26-5	56



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

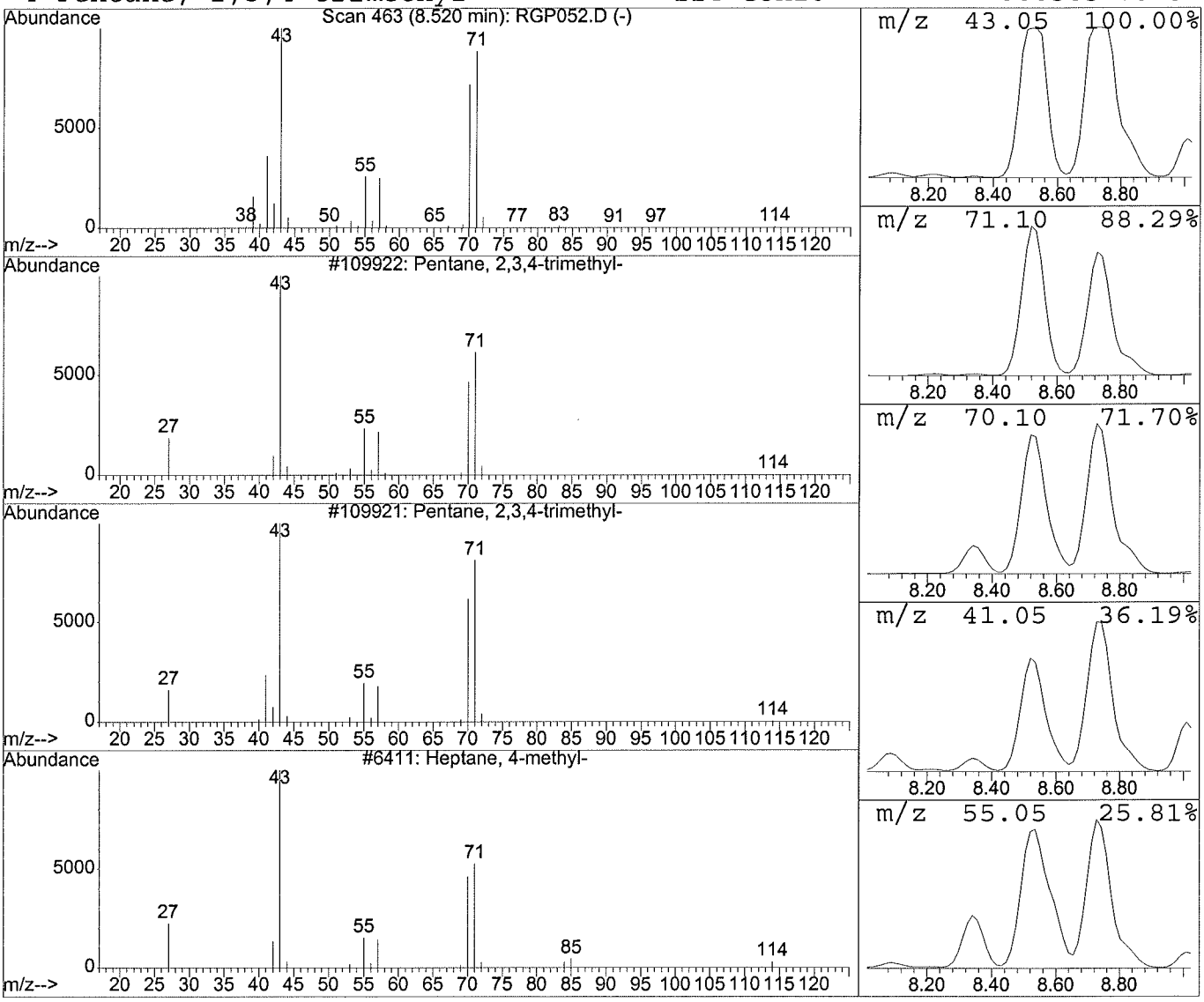
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 2 Pentane, 2,3,4-trimethyl- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.52	74.54 ug/l	150447000	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
2	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
3	Heptane, 4-methyl-	114	C8H18	000589-53-7	90
4	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	87



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

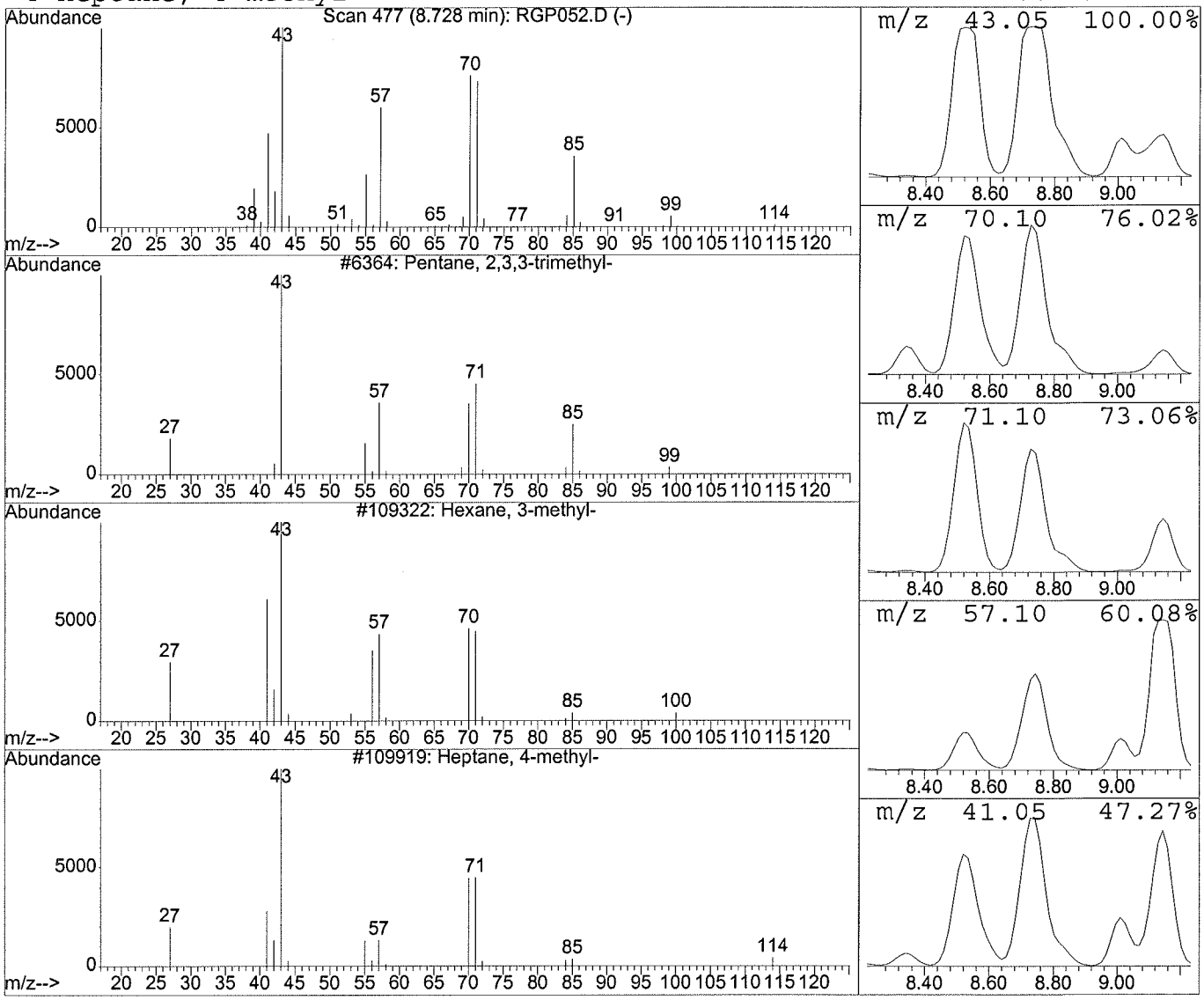
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 3 Pentane, 2,3,3-trimethyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.73	99.09 ug/l	199981000	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Pentane, 2,3,3-trimethyl-	114	C8H18	000560-21-4	90
2	Hexane, 3-methyl-	100	C7H16	000589-34-4	72
3	Heptane, 4-methyl-	114	C8H18	000589-53-7	72
4	Heptane, 4-methyl-	114	C8H18	000589-53-7	72



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

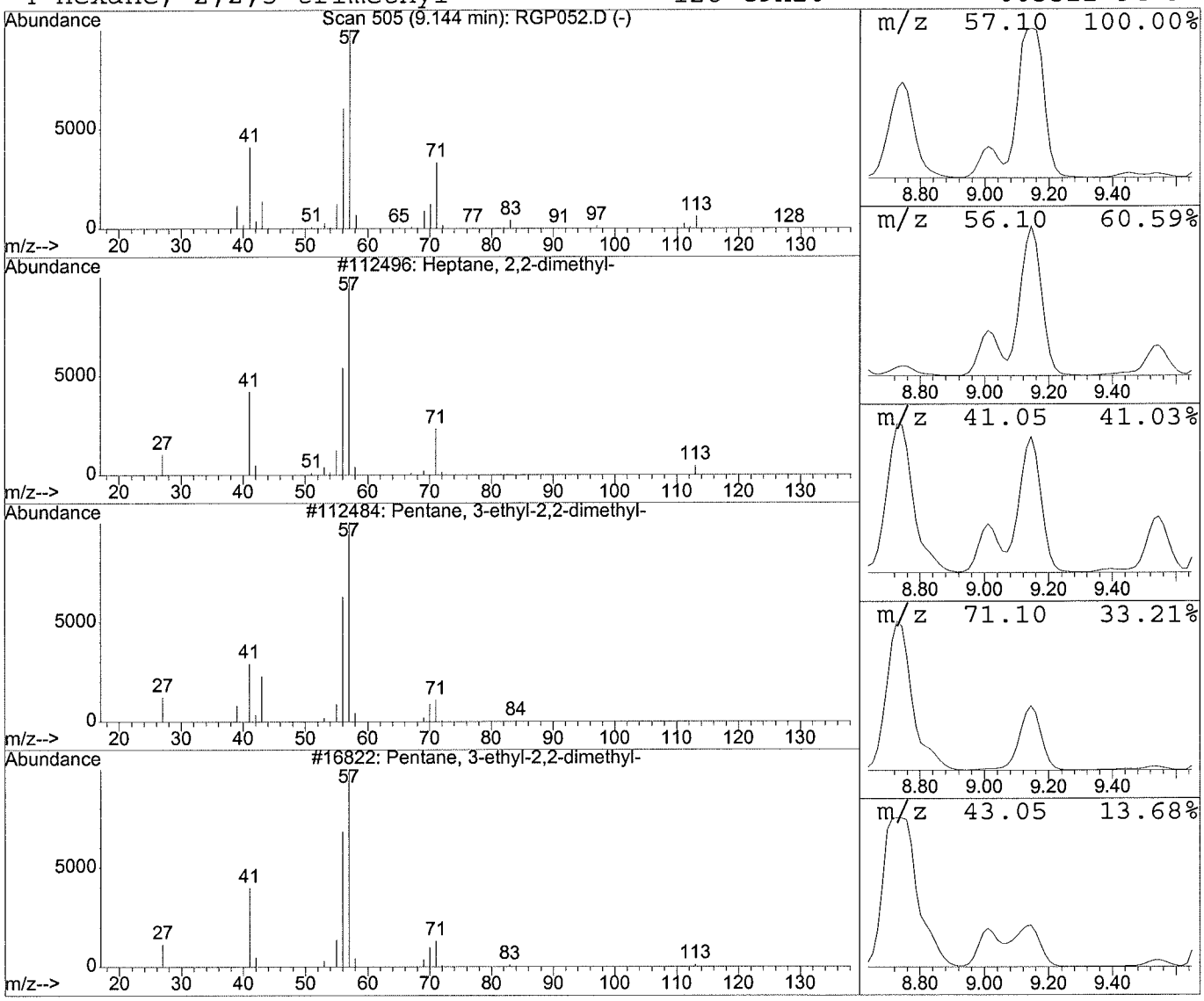
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 4 Heptane, 2,2-dimethyl- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.14	59.04 ug/l	119161000	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Heptane, 2,2-dimethyl-	128	C9H20	001071-26-7	64
2	Pentane, 3-ethyl-2,2-dimethyl-	128	C9H20	016747-32-3	53
3	Pentane, 3-ethyl-2,2-dimethyl-	128	C9H20	016747-32-3	53
4	Hexane, 2,2,5-trimethyl-	128	C9H20	003522-94-9	50



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

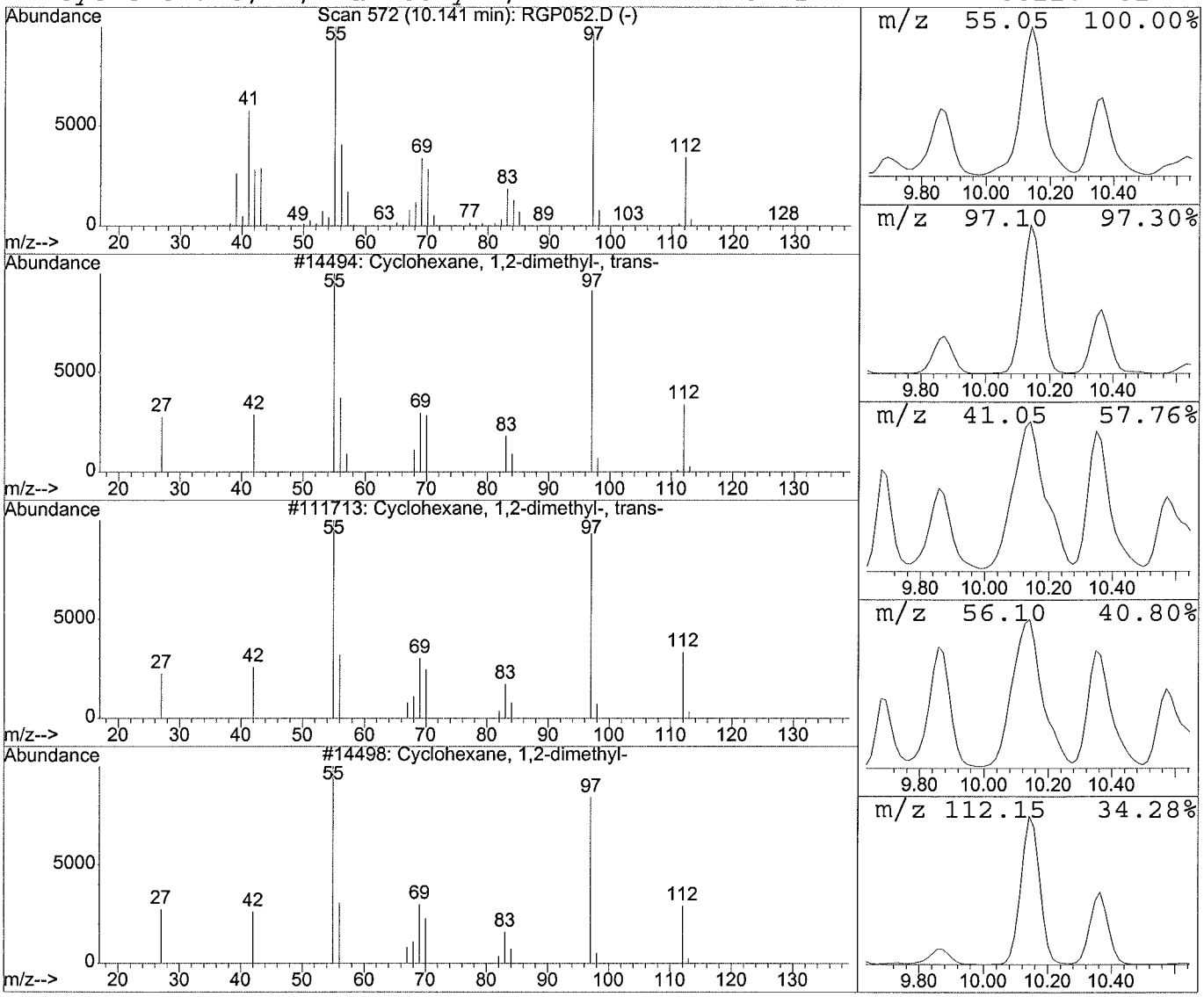
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 5 Cyclohexane, 1,2-dimethyl-, tr Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.14	53.77 ug/l	171359000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	96
2	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	96
3	Cyclohexane, 1,2-dimethyl-	112	C8H16	000583-57-3	96
4	Cyclohexane, 1,2-dimethyl-, cis-	112	C8H16	002207-01-4	93



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

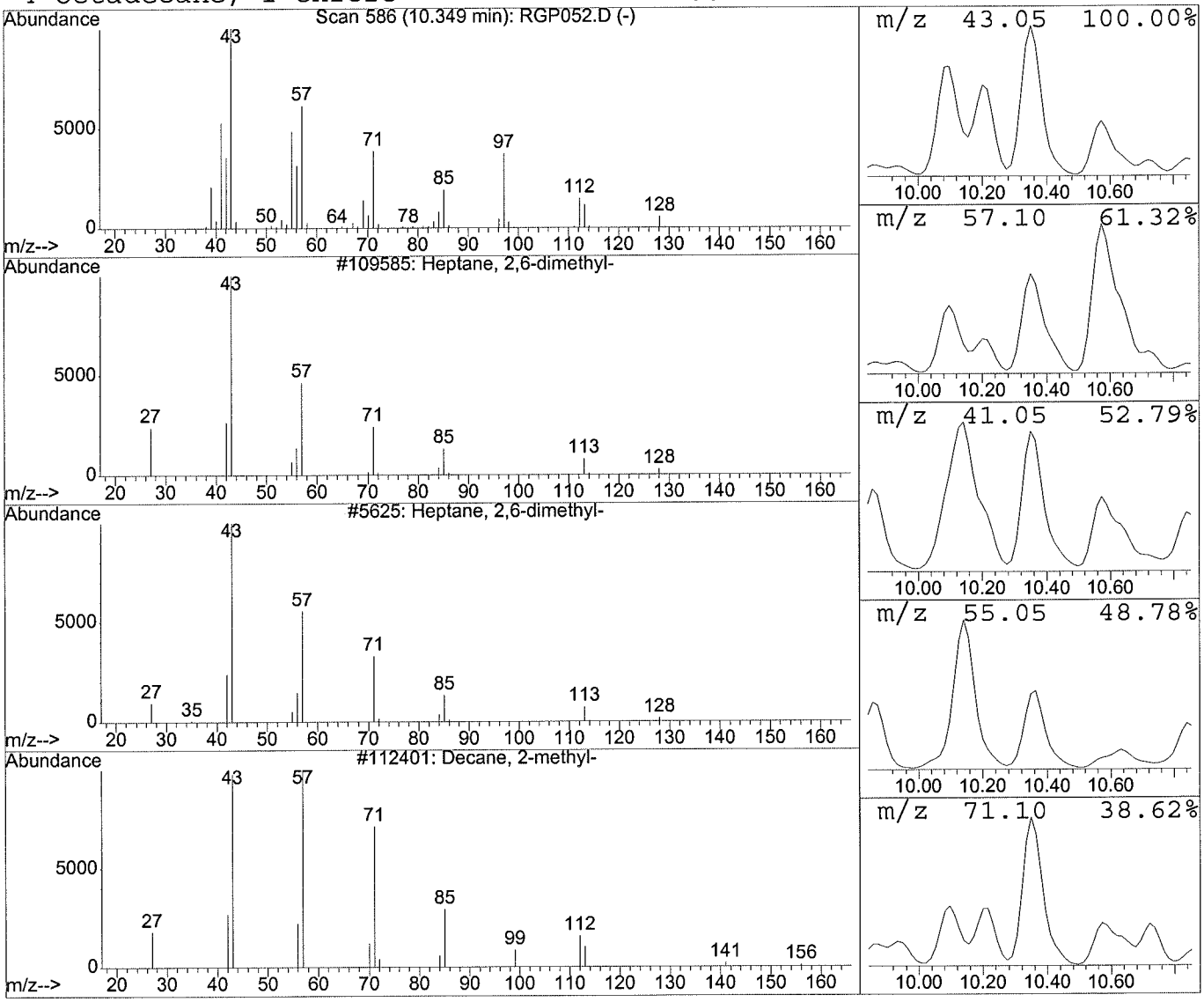
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 6 Heptane, 2,6-dimethyl- Concentration Rank 20

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.35	33.00 ug/l	105177000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptane, 2,6-dimethyl-	128	C9H20	001072-05-5	62
2	Heptane, 2,6-dimethyl-	128	C9H20	001072-05-5	53
3	Decane, 2-methyl-	156	C11H24	006975-98-0	53
4	Octadecane, 1-chloro-	288	C18H37Cl	003386-33-2	47



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

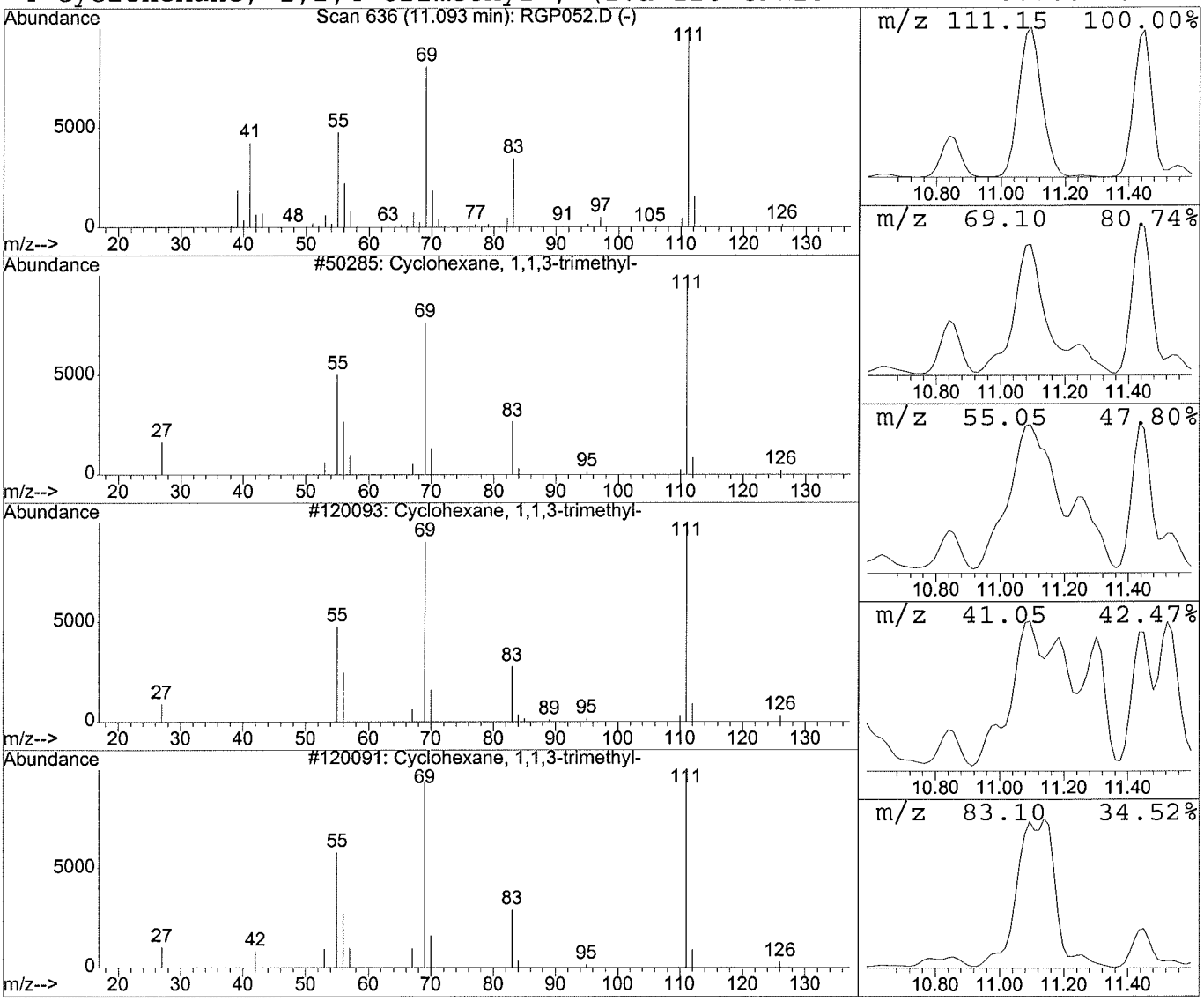
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 7 Cyclohexane, 1,1,3-trimethyl- Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.09	37.80 ug/l	120464000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,1,3-trimethyl-	126	C9H18	003073-66-3	90
2	Cyclohexane, 1,1,3-trimethyl-	126	C9H18	003073-66-3	83
3	Cyclohexane, 1,1,3-trimethyl-	126	C9H18	003073-66-3	74
4	Cyclohexane, 1,2,4-trimethyl-, (1.a	126	C9H18	007667-60-9	72



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

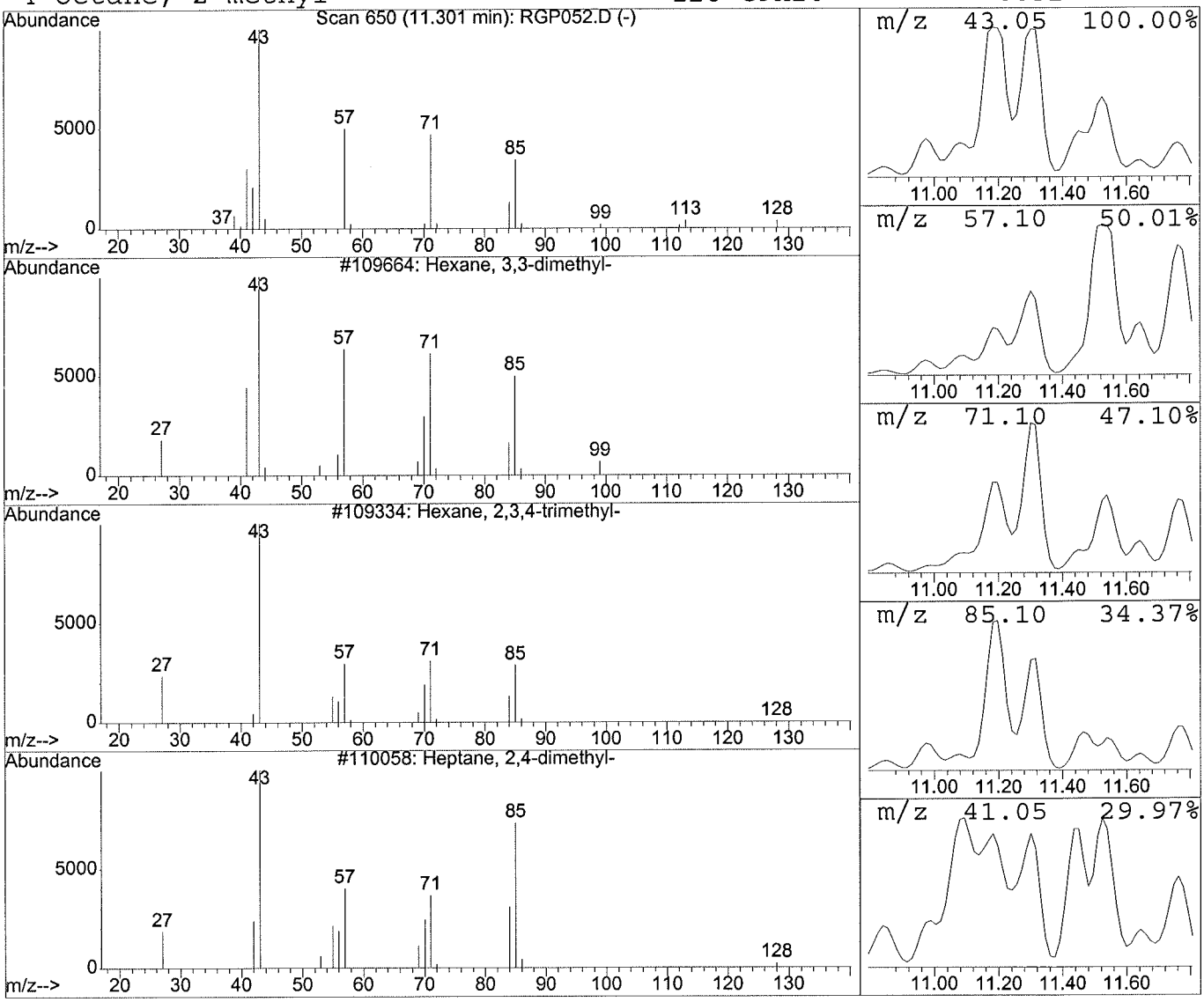
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 8 Hexane, 3,3-dimethyl- Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.30	33.59 ug/l	107030000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexane, 3,3-dimethyl-	114	C8H18	000563-16-6	59
2	Hexane, 2,3,4-trimethyl-	128	C9H20	000921-47-1	59
3	Heptane, 2,4-dimethyl-	128	C9H20	002213-23-2	59
4	Octane, 2-methyl-	128	C9H20	003221-61-2	53



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

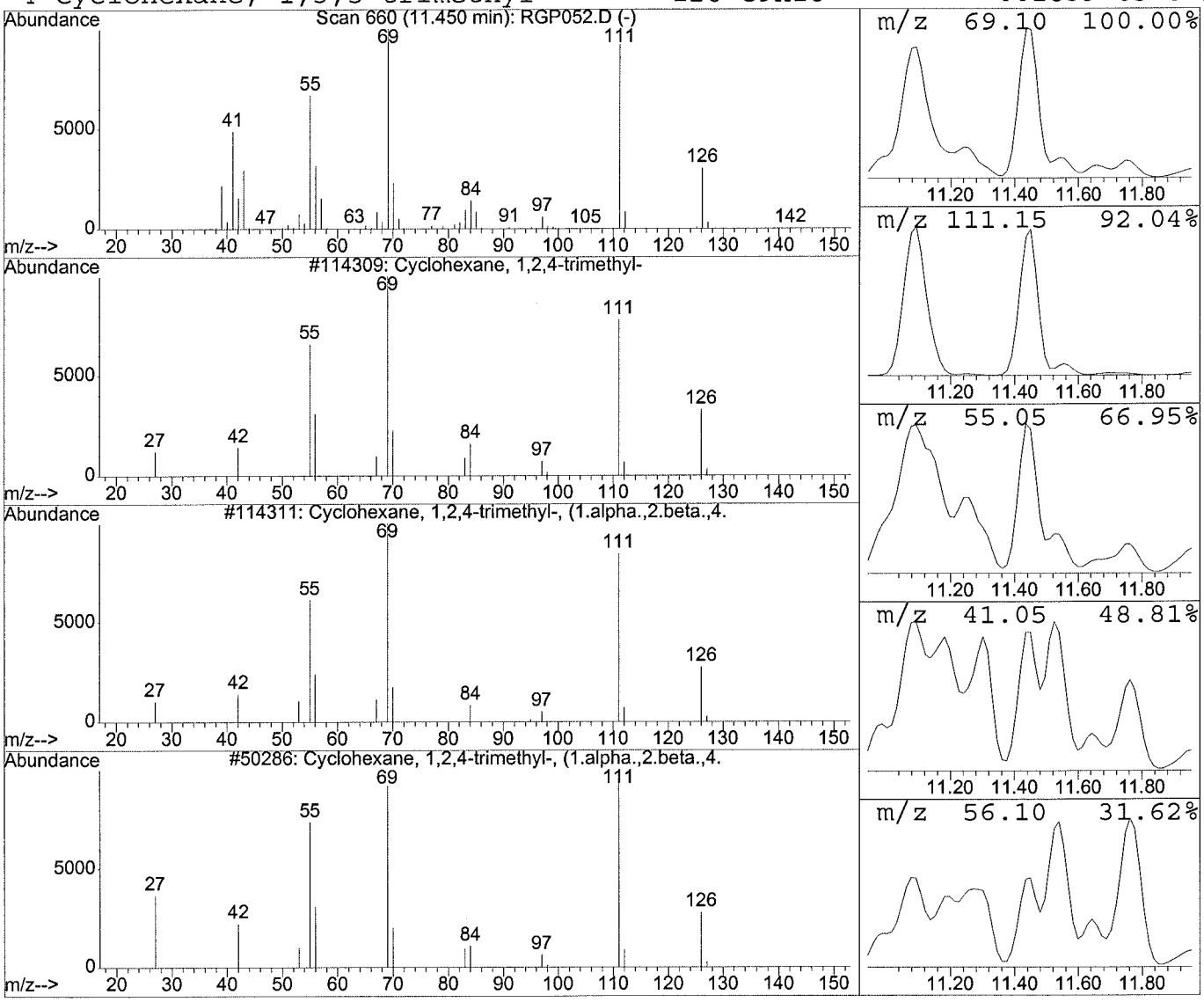
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 9 Cyclohexane, 1,2,4-trimethyl- Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.45	46.20 ug/l	147228000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,2,4-trimethyl-	126	C9H18	002234-75-5	96
2	Cyclohexane, 1,2,4-trimethyl-, (1.a	126	C9H18	007667-60-9	94
3	Cyclohexane, 1,2,4-trimethyl-, (1.a	126	C9H18	007667-60-9	94
4	Cyclohexane, 1,3,5-trimethyl-	126	C9H18	001839-63-0	90



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

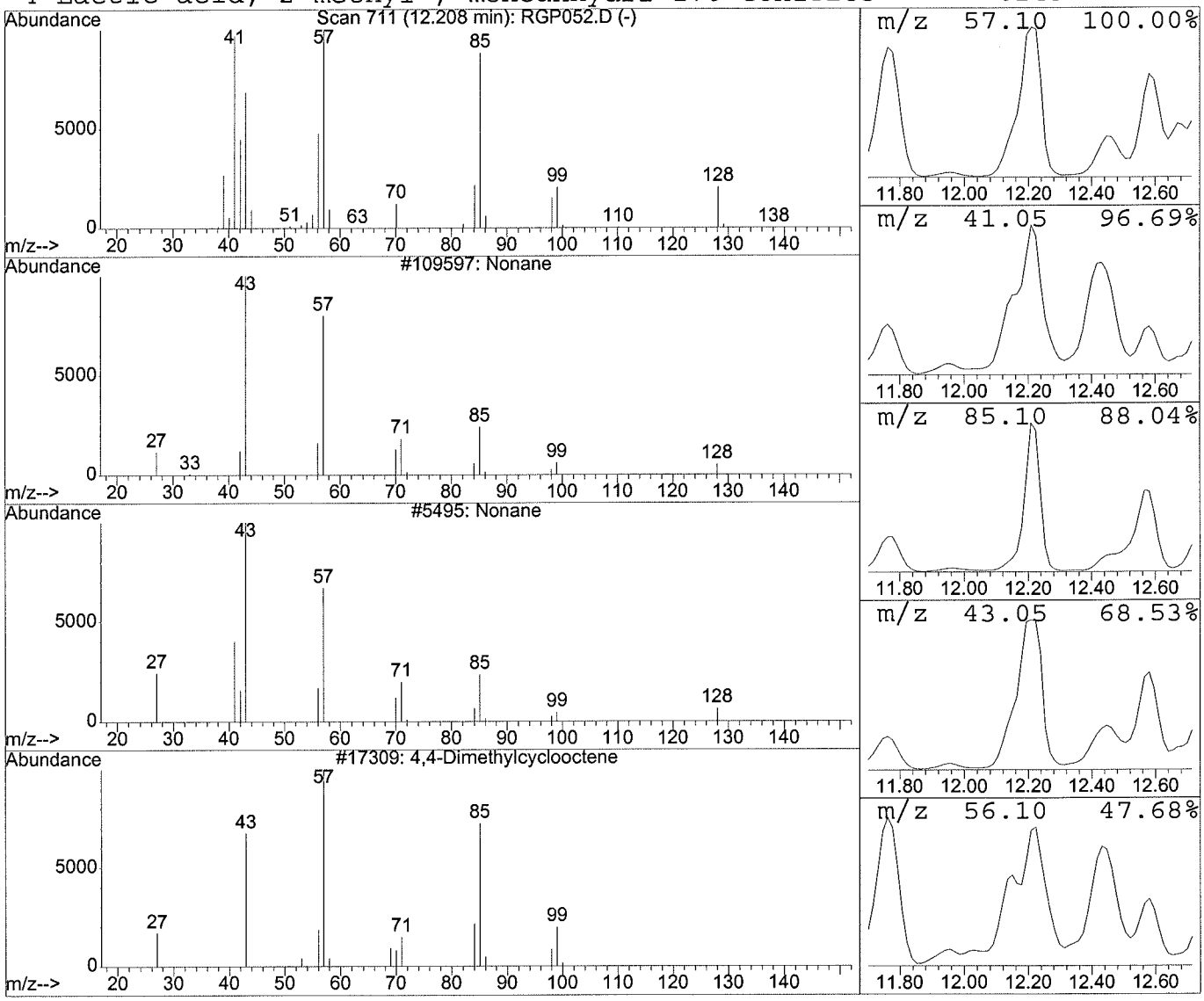
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 10 Nonane — Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.21	50.00 ug/l	159340000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Nonane	128	C9H20	000111-84-2	80
2	Nonane	128	C9H20	000111-84-2	50
3	4,4-Dimethylcyclooctene	138	C10H18	1000113-56-7	50
4	Lactic acid, 2-methyl-, monoanhydri	170	C8H15BO3	024372-02-9	47



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

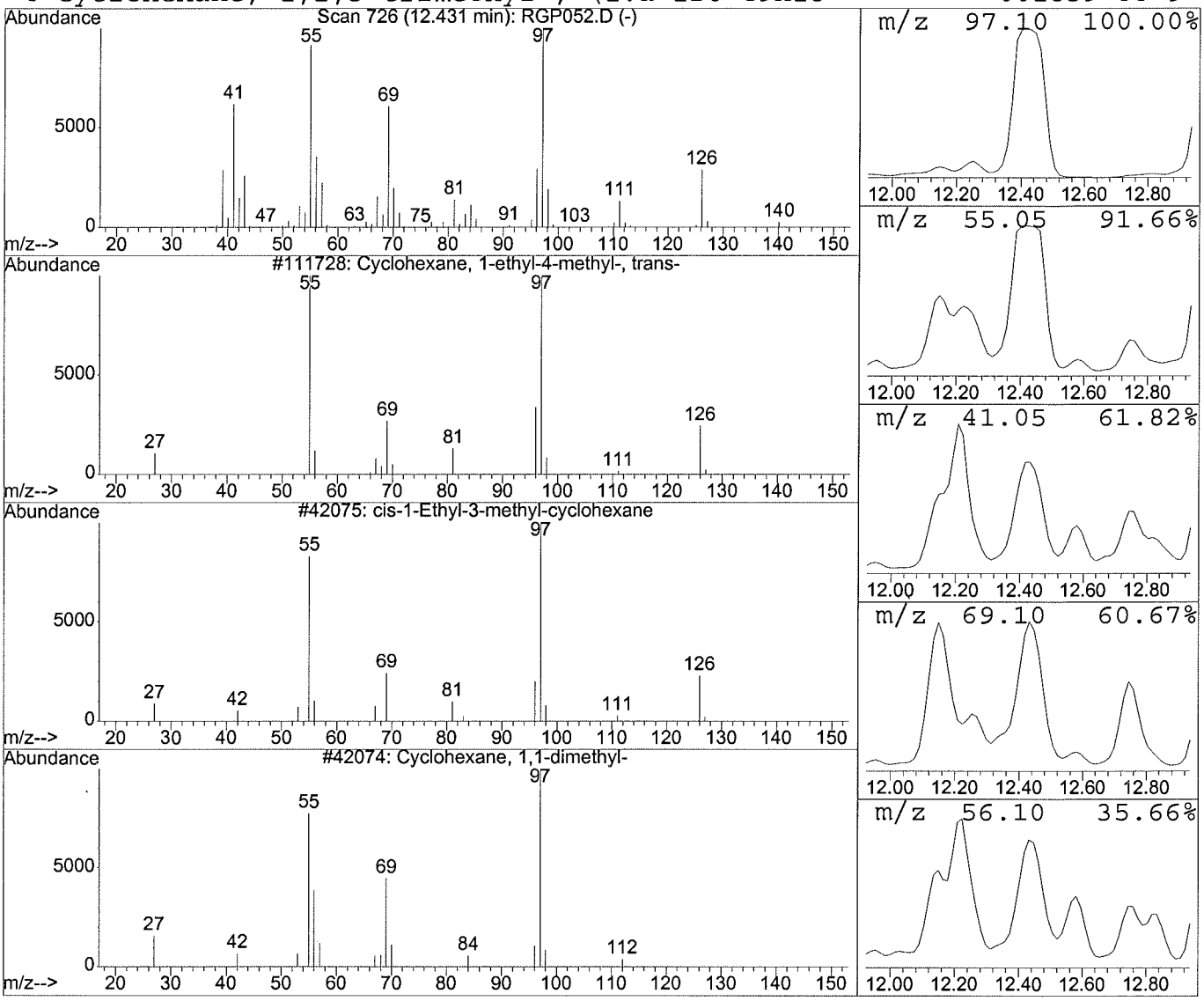
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 11 Cyclohexane, 1-ethyl-4-methyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.43	75.96 ug/l	242067000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1-ethyl-4-methyl-, tra	126	C9H18	006236-88-0	62
2	cis-1-Ethyl-3-methyl-cyclohexane	126	C9H18	019489-10-2	58
3	Cyclohexane, 1,1-dimethyl-	112	C8H16	000590-66-9	52
4	Cyclohexane, 1,2,3-trimethyl-, (1.a	126	C9H18	001839-88-9	46



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

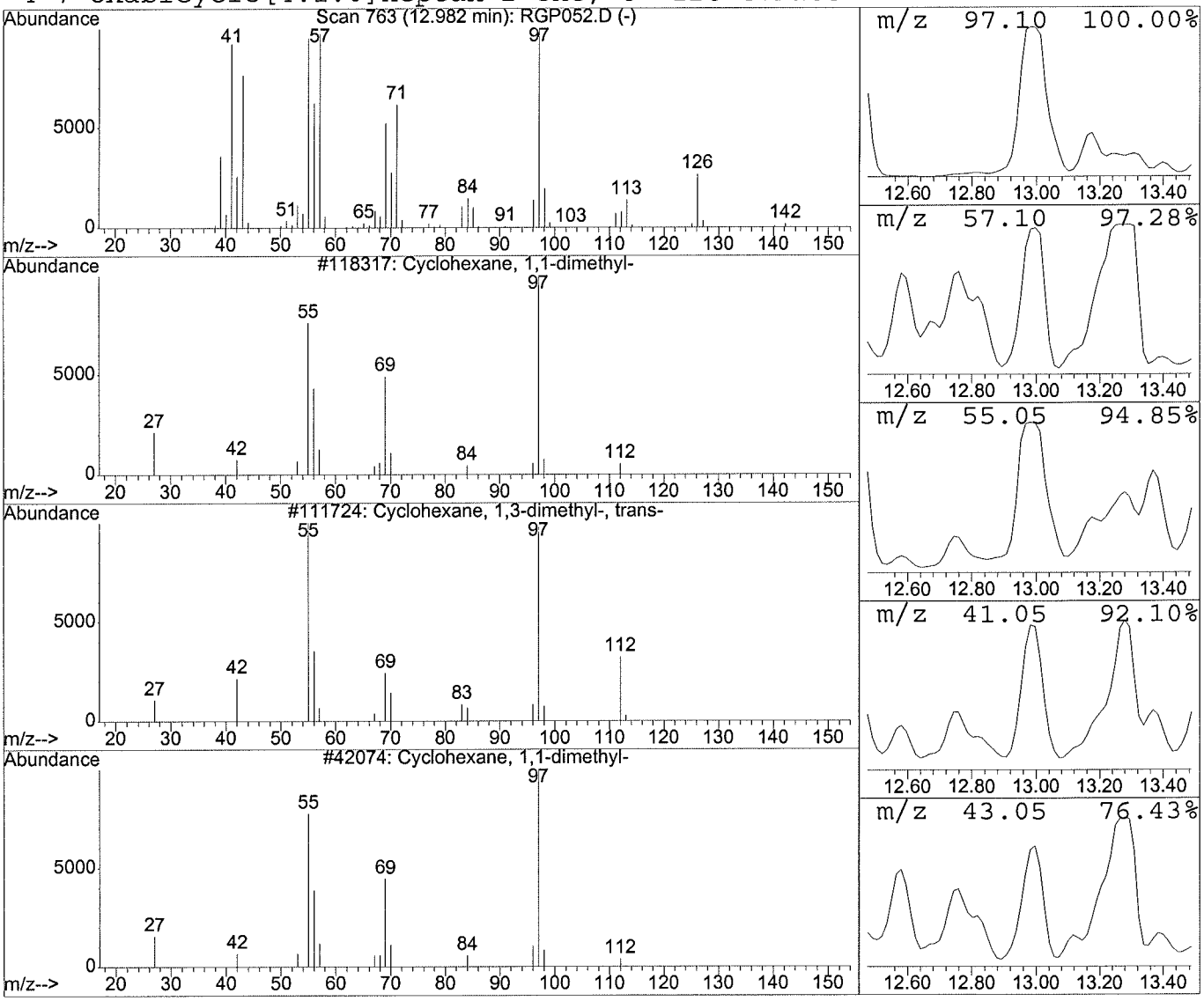
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 12 Cyclohexane, 1,1-dimethyl- Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.98	82.93 ug/l	264270000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,1-dimethyl-	112	C8H16	000590-66-9	46
2	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	43
3	Cyclohexane, 1,1-dimethyl-	112	C8H16	000590-66-9	43
4	7-Oxabicyclo[4.1.0]heptan-2-one, 6-	126	C7H10O2	021889-89-4	38



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

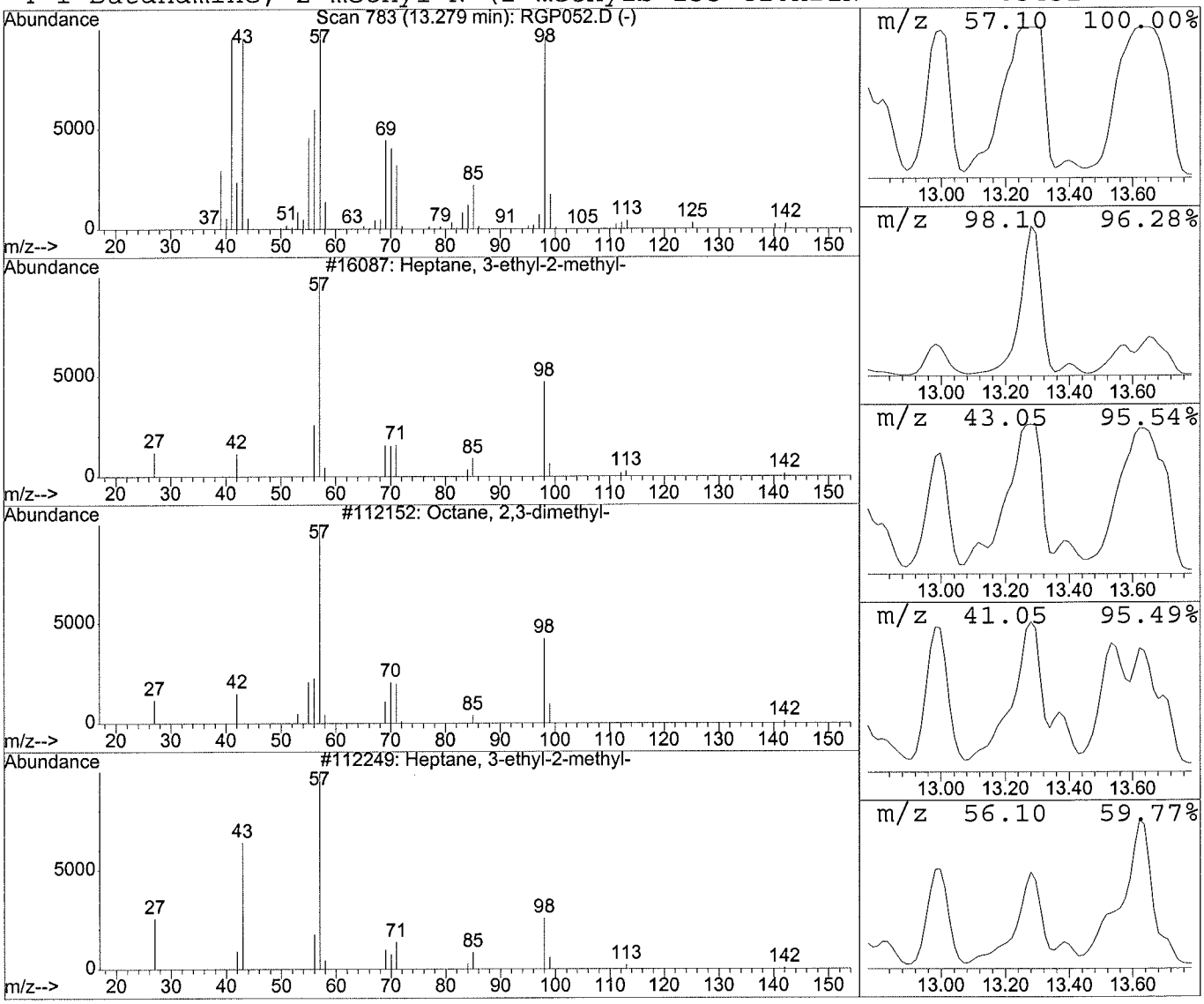
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 13 Heptane, 3-ethyl-2-methyl- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.28	109.99 ug/l	350504000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptane, 3-ethyl-2-methyl-	142	C10H22	014676-29-0	90
2	Octane, 2,3-dimethyl-	142	C10H22	007146-60-3	70
3	Heptane, 3-ethyl-2-methyl-	142	C10H22	014676-29-0	52
4	1-Butanamine, 2-methyl-N-(2-methylb	155	C10H21N	054518-97-7	50



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

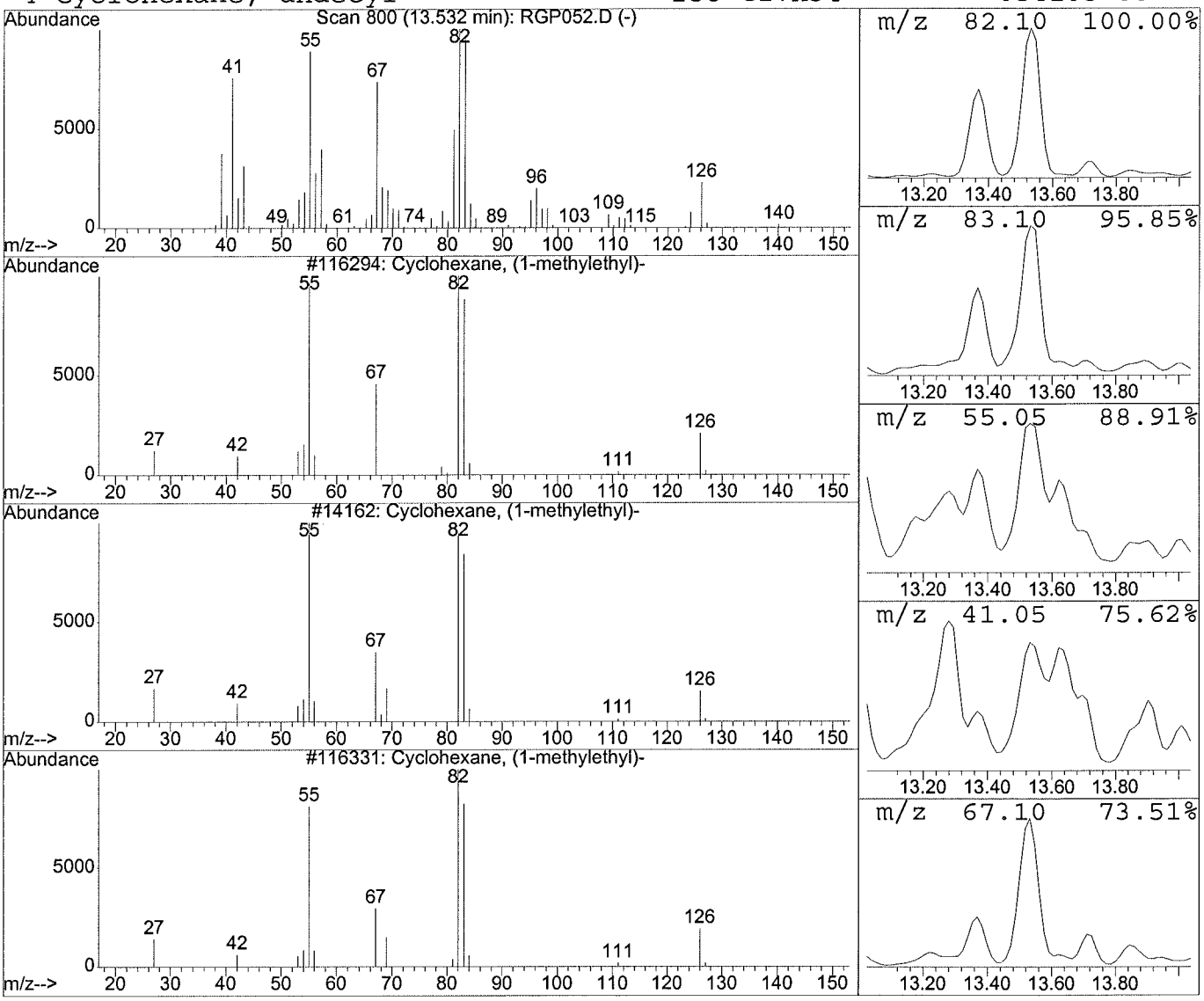
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 14 Cyclohexane, (1-methylethyl)- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.53	94.07 ug/l	299768000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	64
2	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	49
3	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	49
4	Cyclohexane, undecyl-	238	C17H34	054105-66-7	47



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

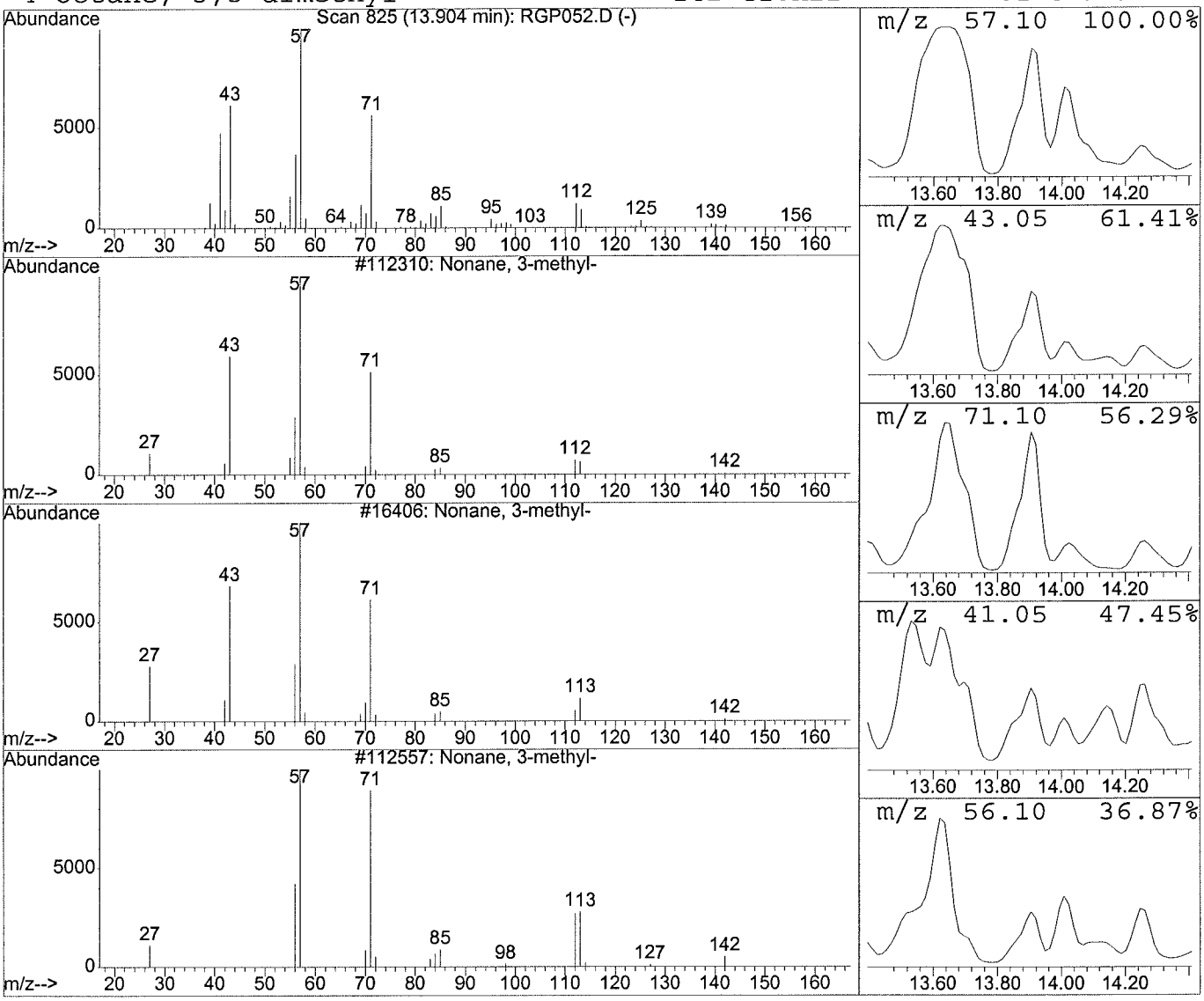
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 15 Nonane, 3-methyl- Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.90	48.51 ug/l	154598000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Nonane, 3-methyl-	142	C10H22	005911-04-6	81
2	Nonane, 3-methyl-	142	C10H22	005911-04-6	74
3	Nonane, 3-methyl-	142	C10H22	005911-04-6	72
4	Octane, 3,5-dimethyl-	142	C10H22	015869-93-9	72



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

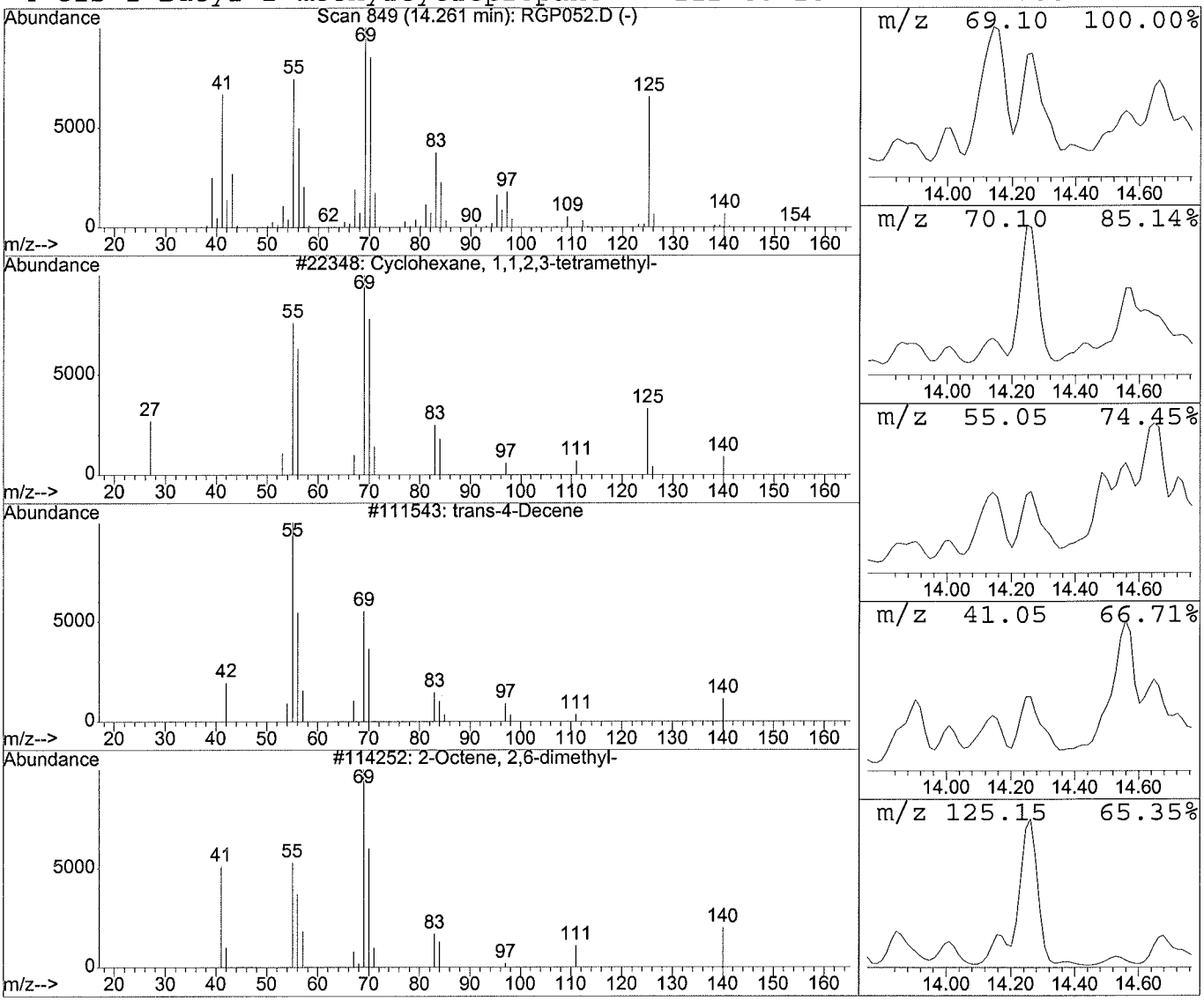
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 16 Cyclohexane, 1,1,2,3-tetrameth Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.26	40.31 ug/l	128458000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,1,2,3-tetramethyl-	140	C10H20	006783-92-2	72
2	trans-4-Decene	140	C10H20	019398-89-1	62
3	2-Octene, 2,6-dimethyl-	140	C10H20	004057-42-5	58
4	cis-1-Butyl-2-methylcyclopropane	112	C8H16	038851-69-3	55



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

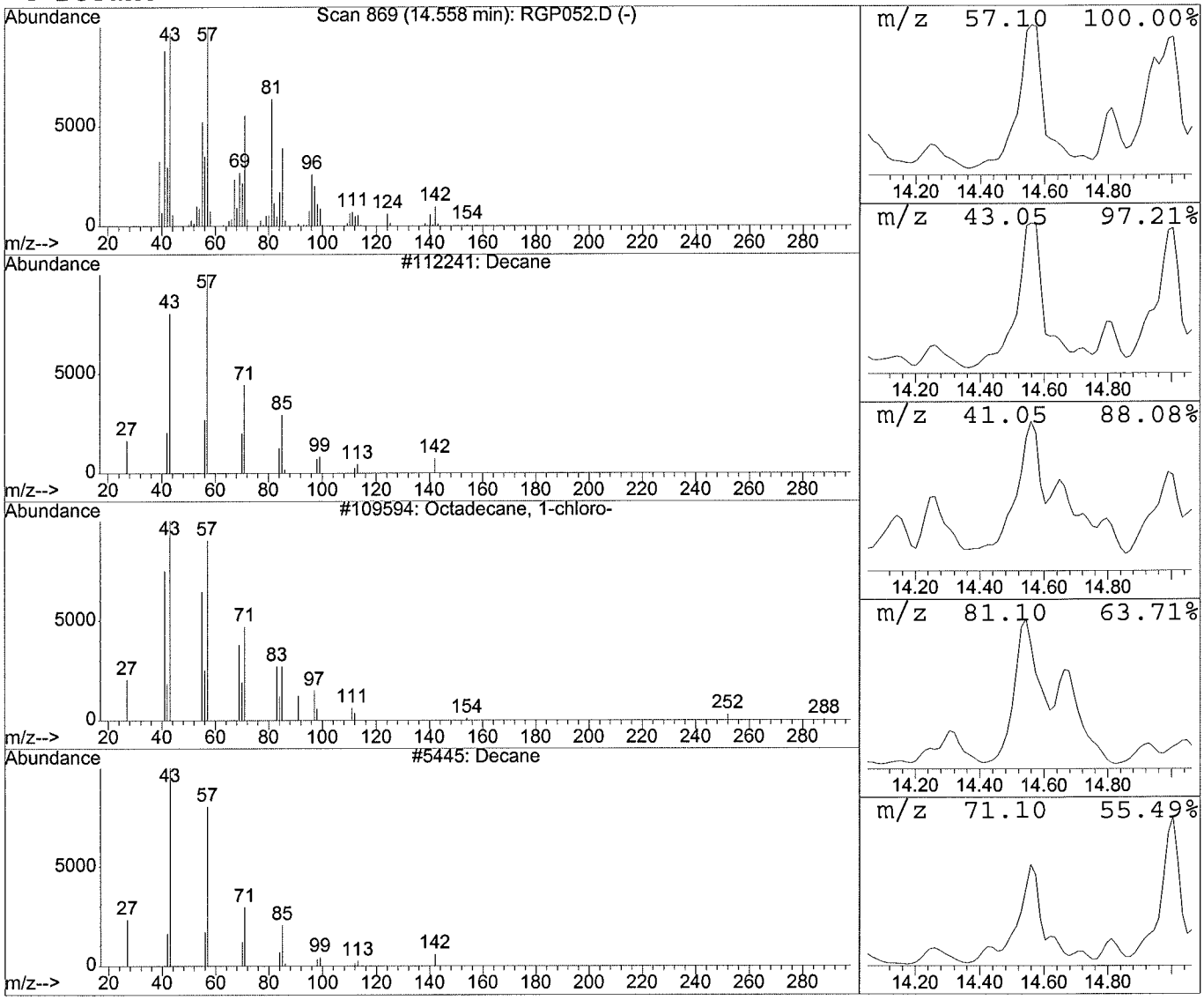
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 17 Decane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.56	98.46 ug/l	313762000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane	142	C10H22	000124-18-5	96
2	Octadecane, 1-chloro-	288	C18H37Cl	003386-33-2	64
3	Decane	142	C10H22	000124-18-5	60
4	Decane	142	C10H22	000124-18-5	53



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

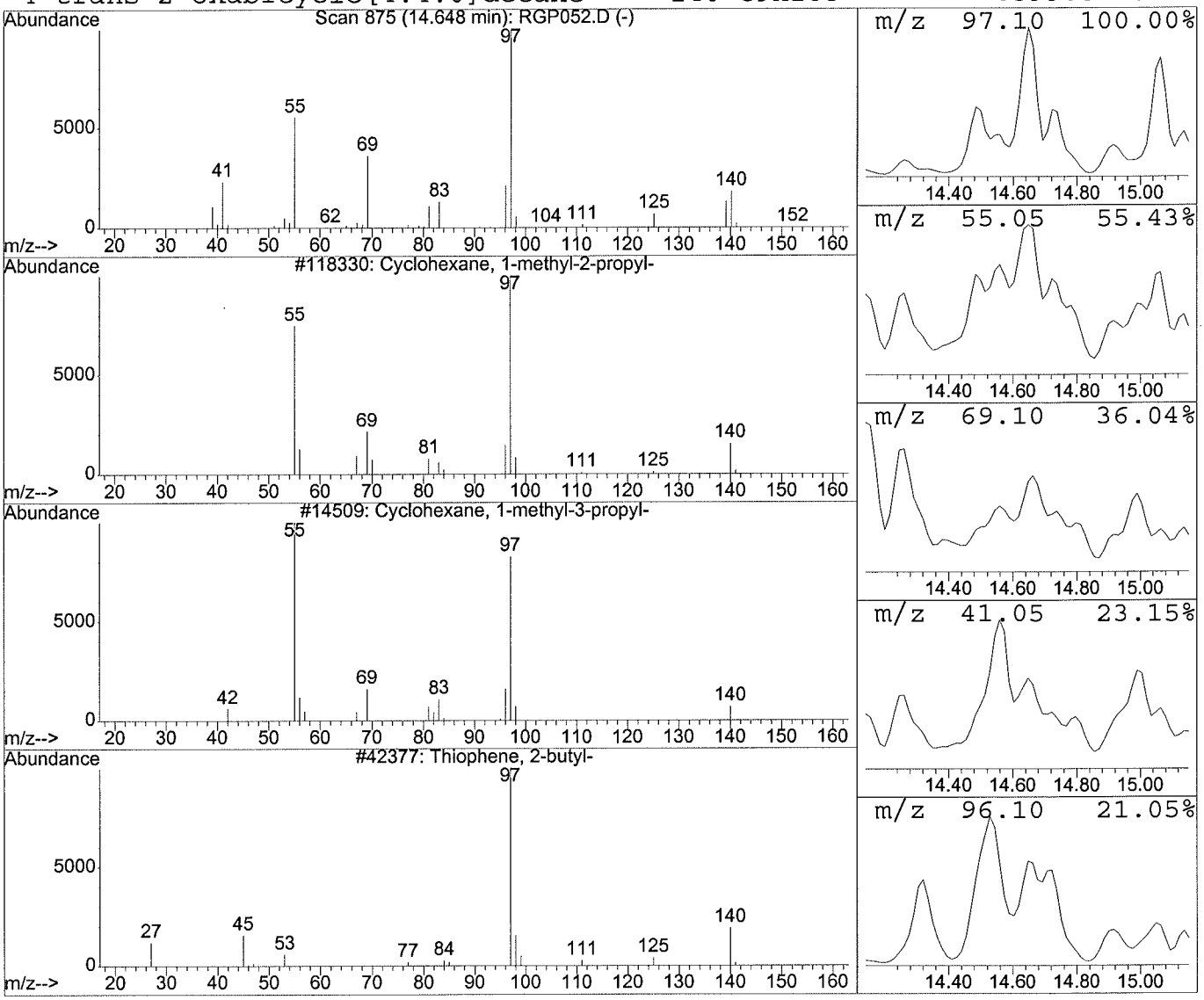
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 18 Cyclohexane, 1-methyl-2-propyl Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.65	54.53 ug/l	173763000	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1-methyl-2-propyl-	140	C10H20	004291-79-6	64
2	Cyclohexane, 1-methyl-3-propyl-	140	C10H20	004291-80-9	50
3	Thiophene, 2-butyl-	140	C8H12S	001455-20-5	47
4	trans-2-Oxabicyclo[4.4.0]decane	140	C9H16O	059958-46-2	42



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D
Acq On : 5 Jul 2018 1:46 pm
Sample : 18F187-04
Misc :
MS Integration Params: LSCINT.P

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00

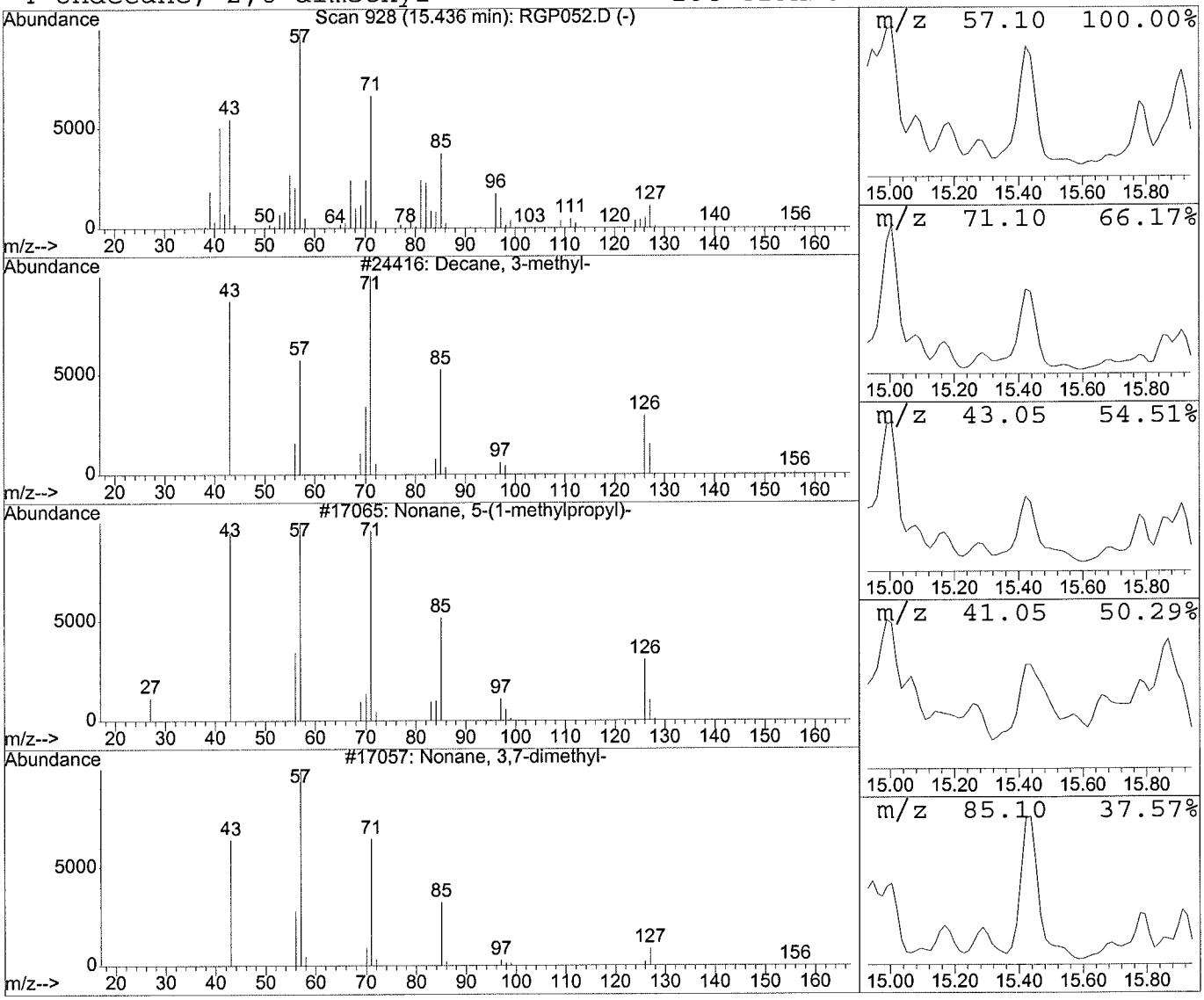
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 19 Decane, 3-methyl- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.44	71.43 ug/l	174436000	1,2-DICHLOROBENZENE-D4	17.18

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Decane, 3-methyl-	156	C11H24	013151-34-3	55
2	Nonane, 5-(1-methylpropyl)-	184	C13H28	062185-54-0	47
3	Nonane, 3,7-dimethyl-	156	C11H24	017302-32-8	45
4	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	38



Data File : D:\HPCHEM\1\DATA\18G05\RGP052.D Vial: 12
Acq On : 5 Jul 2018 1:46 pm Operator: ODinh
Sample : 18F187-04 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

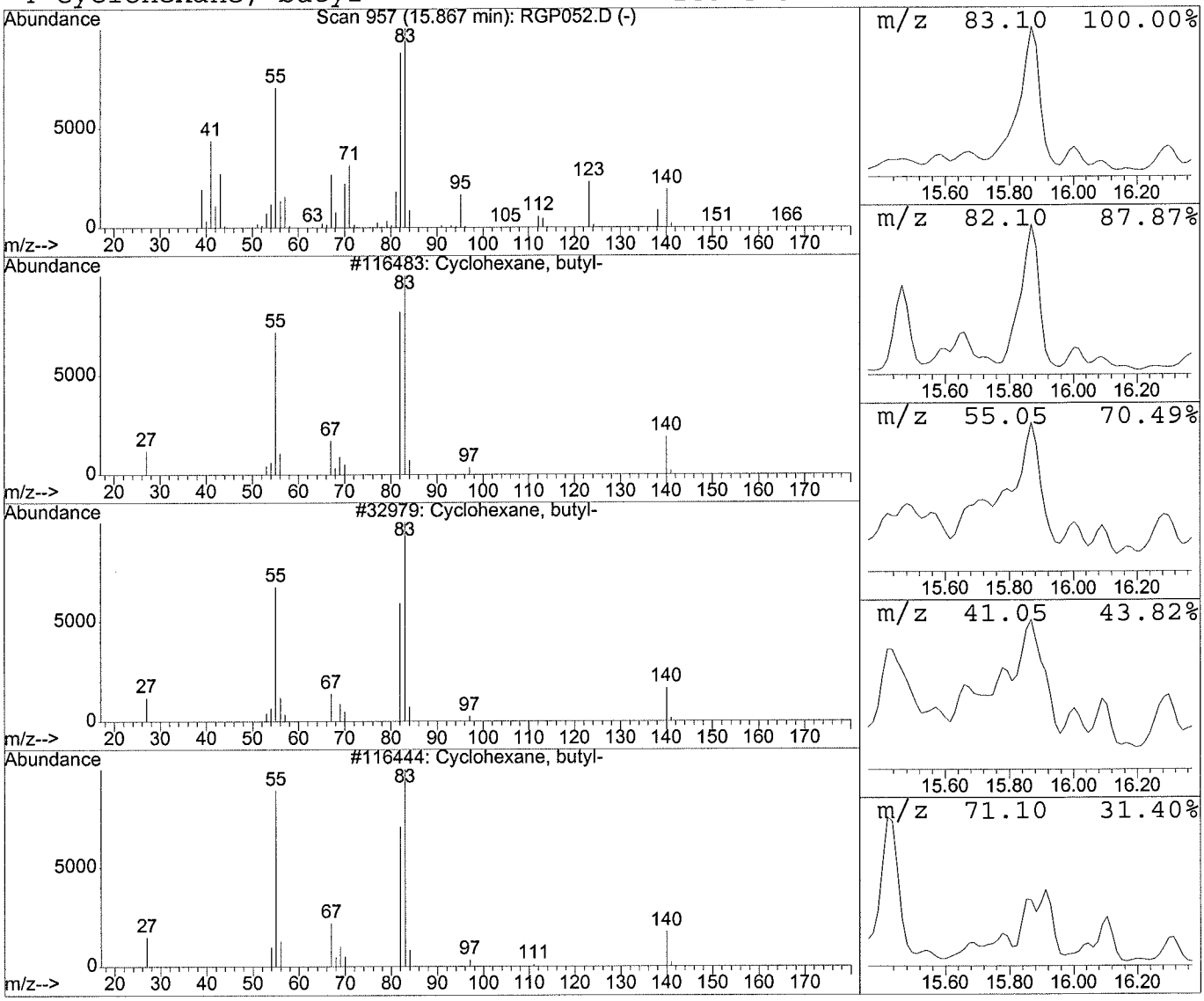
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 20 Cyclohexane, butyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.87	65.59 ug/l	160195000	1,2-DICHLOROBENZENE-D4	17.18

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, butyl-	140	C10H20	001678-93-9	62
2	Cyclohexane, butyl-	140	C10H20	001678-93-9	62
3	Cyclohexane, butyl-	140	C10H20	001678-93-9	62
4	Cyclohexane, butyl-	140	C10H20	001678-93-9	58



Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 5 Jul 2018 1:46 pm
Data File: D:\HPCHEM\1\DATA\18G05\RGP052.D
Name: 18F187-04
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Hexane, 2,2-dimethyl	6.75	50.0	ug/l	100913000	ISTD01	7.63	100913000	50.
Pentane, 2,3,4-trime	8.52	74.5	ug/l	150447000	ISTD01	7.63	100913000	50.
Pentane, 2,3,3-trime	8.73	99.1	ug/l	199981000	ISTD01	7.63	100913000	50.
Heptane, 2,2-dimethy	9.14	59.0	ug/l	119161000	ISTD01	7.63	100913000	50.
Cyclohexane, 1,2-dim	10.14	53.8	ug/l	171359000	ISTD02	12.31	159340000	50.
Heptane, 2,6-dimethy	10.35	33.0	ug/l	105177000	ISTD02	12.31	159340000	50.
Cyclohexane, 1,1,3-t	11.09	37.8	ug/l	120464000	ISTD02	12.31	159340000	50.
Hexane, 3,3-dimethyl	11.30	33.6	ug/l	107030000	ISTD02	12.31	159340000	50.
Cyclohexane, 1,2,4-t	11.45	46.2	ug/l	147228000	ISTD02	12.31	159340000	50.
Nonane	12.21	50.0	ug/l	159340000	ISTD02	12.31	159340000	50.
Cyclohexane, 1-ethyl	12.43	76.0	ug/l	242067000	ISTD02	12.31	159340000	50.
Cyclohexane, 1,1-dim	12.98	82.9	ug/l	264270000	ISTD02	12.31	159340000	50.
Heptane, 3-ethyl-2-m	13.28	110.0	ug/l	350504000	ISTD02	12.31	159340000	50.
Cyclohexane, (1-meth	13.53	94.1	ug/l	299768000	ISTD02	12.31	159340000	50.
Nonane, 3-methyl-	13.90	48.5	ug/l	154598000	ISTD02	12.31	159340000	50.
Cyclohexane, 1,1,2,3	14.26	40.3	ug/l	128458000	ISTD02	12.31	159340000	50.
Decane	14.56	98.5	ug/l	313762000	ISTD02	12.31	159340000	50.
Cyclohexane, 1-methy	14.65	54.5	ug/l	173763000	ISTD02	12.31	159340000	50.
Decane, 3-methyl-	15.44	71.4	ug/l	174436000	ISTD03	17.18	122109000	50.
Cyclohexane, butyl-	15.87	65.6	ug/l	160195000	ISTD03	17.18	122109000	50.

RGP052.D VO02F15.M Mon Jul 09 14:37:54 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/21/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 14:21
Sample ID: 18Q2DP009-SB0802-SO-0	Date Analyzed: 06/29/18 14:21
Lab Samp ID: F187-05	Dilution Factor: 1.02
Lab File ID: RFP620	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : 4.9
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1,1-TRICHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1,2,2-TETRACHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1,2-TRICHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1-DICHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1-DICHLOROETHENE	ND	0.0054	0.00054	0.0011
1,1-DICHLOROPROPENE	ND	0.0054	0.00054	0.0011
1,2,3-TRICHLOROBENZENE	ND	0.0054	0.0011	0.0021
1,2,3-TRICHLOROPROPANE	ND	0.0054	0.0011	0.0021
1,2,4-TRICHLOROBENZENE	ND	0.0054	0.0011	0.0021
1,2,4-TRIMETHYLBENZENE	ND	0.0054	0.00059	0.0021
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0054	0.0011	0.0021
1,2-DIBROMOETHANE	ND	0.0054	0.00054	0.0011
1,2-DICHLOROBENZENE	ND	0.0054	0.00054	0.0011
1,2-DICHLOROETHANE	ND	0.0054	0.00054	0.0011
1,2-DICHLOROPROPANE	ND	0.0054	0.00054	0.0011
1,3,5-TRIMETHYLBENZENE	ND	0.0054	0.00063	0.0021
1,3-DICHLOROBENZENE	ND	0.0054	0.00056	0.0011
1,3-DICHLOROPROPANE	ND	0.0054	0.00054	0.0011
1,4-DICHLOROBENZENE	ND	0.0054	0.00054	0.0011
2,2-DICHLOROPROPANE	ND	0.0054	0.0011	0.0021
2-BUTANONE	ND	0.011	0.0027	0.0054
2-CHLOROTOLUENE	ND	0.0054	0.00088	0.0011
2-HEXANONE	ND	0.011	0.0031	0.0054
4-CHLOROTOLUENE	ND	0.0054	0.00072	0.0011
ACETONE	0.012	0.011	0.0033	0.0054
BENZENE	ND	0.0054	0.00054	0.0011
BROMOBENZENE	ND	0.0054	0.00054	0.0011
BROMOCHLOROMETHANE	ND	0.0054	0.00054	0.0011
BROMODICHLOROMETHANE	ND	0.0054	0.00054	0.0011
BROMOFORM	ND	0.0054	0.0011	0.0021
BROMOMETHANE	ND	0.011	0.0019	0.0021
CARBON DISULFIDE	ND	0.0054	0.00054	0.0011
CARBON TETRACHLORIDE	ND	0.0054	0.00058	0.0011
CHLOROBENZENE	ND	0.0054	0.00054	0.0011
CHLOROETHANE	ND	0.0054	0.0014	0.0021
CHLOROFORM	ND	0.0054	0.00054	0.0011
CHLOROMETHANE	ND	0.0054	0.0011	0.0021
CIS-1,2-DICHLOROETHYLENE	ND	0.0054	0.00054	0.0011
CIS-1,3-DICHLOROPROPENE	ND	0.0054	0.00054	0.0011
CYCLOHEXANE	ND	0.0054	0.0013	0.0021
DIBROMOCHLOROMETHANE	ND	0.0054	0.00054	0.0011
DIBROMOMETHANE	ND	0.0054	0.00054	0.0011
DICHLORODIFLUOROMETHANE	ND	0.0054	0.0013	0.0021
ETHYLBENZENE	ND	0.0054	0.00054	0.0011
HEXACHLOROBUTADIENE	ND	0.0054	0.0011	0.0021
ISOPROPYLBENZENE	ND	0.0054	0.00069	0.0021
METHYLENE CHLORIDE	ND	0.011	0.0021	0.0054
M,P-XYLENE	ND	0.0054	0.0011	0.0021
4-METHYL-2-PENTANONE	ND	0.011	0.0030	0.0054
TERT-BUTYL METHYL ETHER	ND	0.0054	0.00054	0.0011
NAPHTHALENE	ND	0.0054	0.0011	0.0021
N-BUTYLBENZENE	ND	0.0054	0.00075	0.0011
N-PROPYLBENZENE	ND	0.0054	0.00070	0.0011
O-XYLENE	ND	0.0054	0.00054	0.0011
P-ISOPROPYLTOLUENE	ND	0.0054	0.00066	0.0011
SEC-BUTYLBENZENE	ND	0.0054	0.00072	0.0011
STYRENE	ND	0.0054	0.00054	0.0011
TERT-BUTYLBENZENE	ND	0.0054	0.00066	0.0011
TETRACHLOROETHENE	ND	0.0054	0.00054	0.0011
TOLUENE	ND	0.0054	0.00054	0.0011
TRANS-1,2-DCE	ND	0.0054	0.00054	0.0011
TRANS-1,3-DICHLOROPROPENE	ND	0.0054	0.00054	0.0011
TCE	ND	0.0054	0.00054	0.0011
TRICHLOROFLUOROMETHANE	ND	0.0054	0.0012	0.0021
TRICHLOROTRIFLUOROETHANE	ND	0.0054	0.0011	0.0021
VINYL CHLORIDE	ND	0.0054	0.0015	0.0021
VINYL ACETATE	ND	0.0054	0.0014	0.0021
XYLENES, TOTAL	ND	0.0054	0.00054	0.0011

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0544	0.05363	101	71-136
4-BROMOFLUOROBENZENE	0.0547	0.05363	102	79-119
TOLUENE-D8	0.0560	0.05363	104	85-116
DIBROMOFLUOROMETHANE	0.0571	0.05363	106	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 14:21
Sample ID	: 18Q2DP009-SB0802-SO-0	Date Analyzed:	06/29/18 14:21
Lab Samp ID	: F187-05	Dilution Factor:	1.02
Lab File ID	: RFP620	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: 4.9
Calib. Ref.:	RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP620.D Vial: 12
Acq On : 29 Jun 2018 2:21 pm Operator: ODinh
Sample : 18F187-05 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:27 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2062976	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.31	117	1732386	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.16	152	658039	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	782749	53.21	ug/l	-0.02
Spiked Amount 50.000			Recovery =	106.42%		
43) 1,2-Dichloroethane-d4	7.08	65	925115	50.68	ug/l	-0.03
Spiked Amount 50.000			Recovery =	101.36%		
57) Toluene-d8	9.89	98	2666645	52.18	ug/l	-0.02
Spiked Amount 50.000			Recovery =	104.36%		
79) 4-Bromofluorobenzene	14.41	95	809185	51.04	ug/l	-0.02
Spiked Amount 50.000			Recovery =	102.08%		
Target Compounds						Qvalue
11) Acetone	3.49	43	83146	10.90	ug/l	86
13) tert-Butyl alcohol	3.74	59	13440	3.78	ug/l #	1

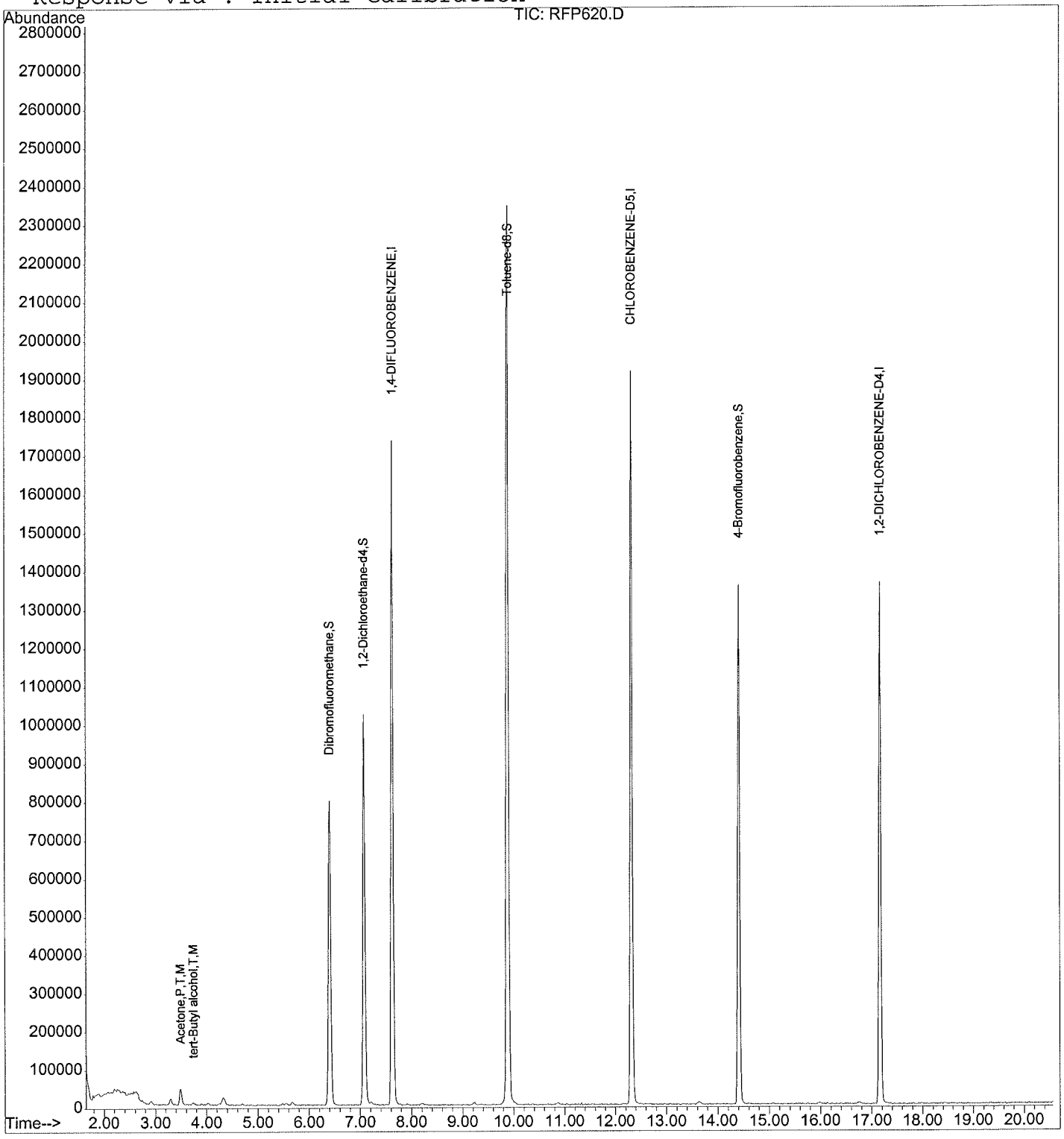
(#) = qualifier out of range (m) = manual integration

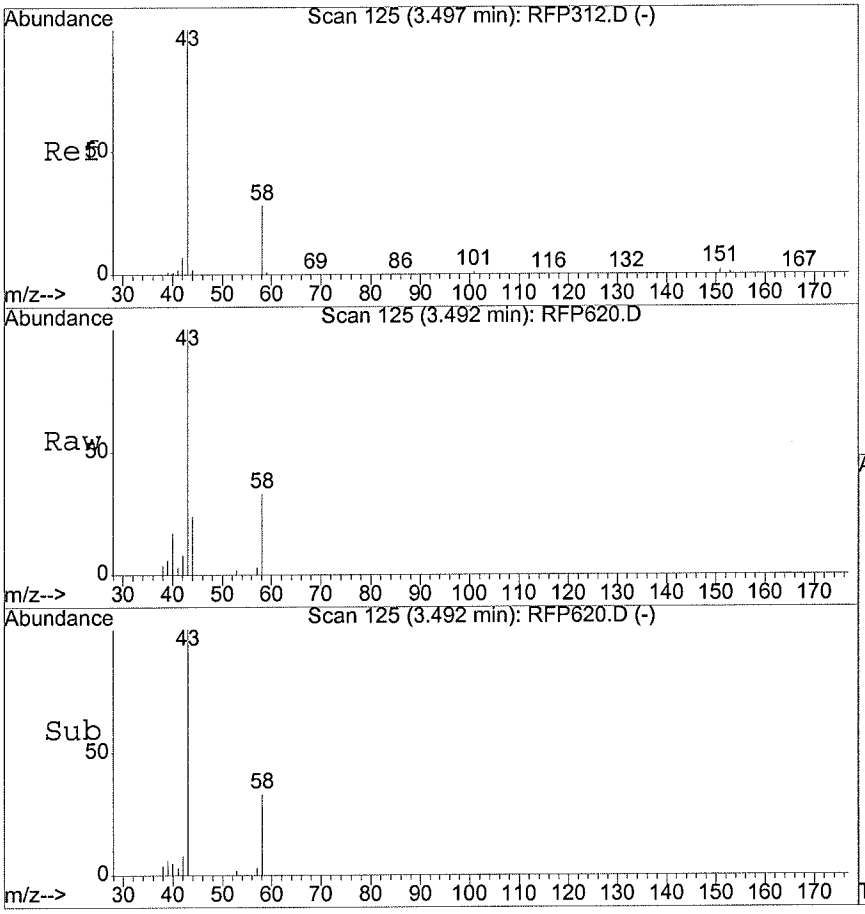
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP620.D
Acq On : 29 Jun 2018 2:21 pm
Sample : 18F187-05
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:27 2018

Vial: 12
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

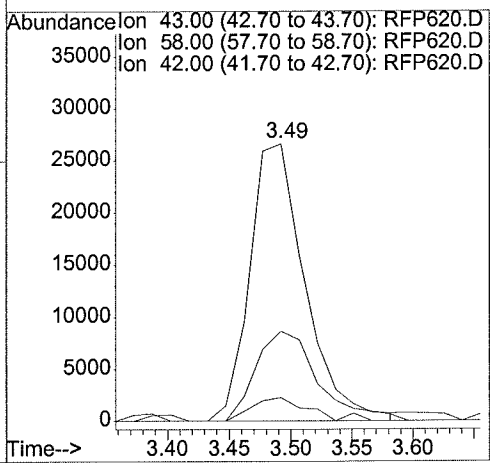


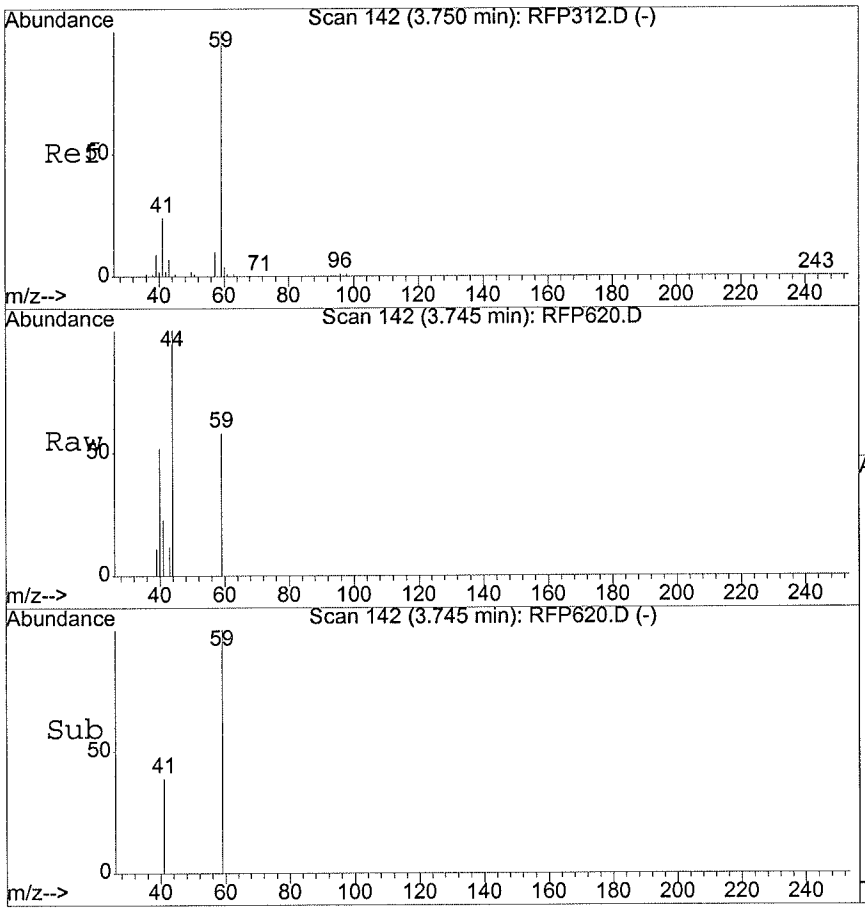


#11
Acetone
Concen: 10.90 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.00 min
Lab File: RFP620.D
Acq: 29 Jun 2018 2:21 pm

Tgt Ion: 43 Resp: 83146

Ion	Ratio	Lower	Upper
43	100		
58	36.6	0.0	58.3
42	8.9	0.0	36.9

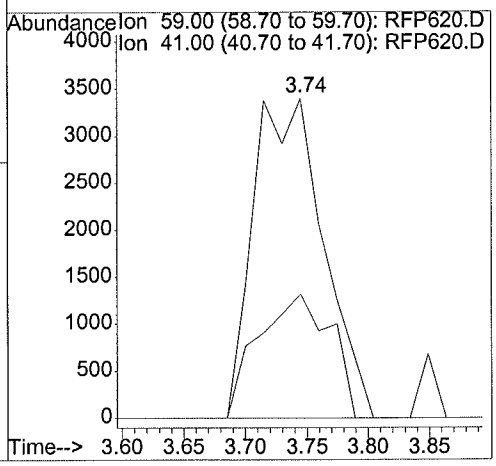




#13
tert-Butyl alcohol
Concen: 3.78 ug/l
RT: 3.74 min Scan# 142
Delta R.T. -0.00 min
Lab File: RFP620.D
Acq: 29 Jun 2018 2:21 pm

Tgt Ion: 59 Resp: 13440

Ion	Ratio	Lower	Upper
59	100		
41	40.0	171.3	231.3#



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP620.D Vial: 12
Acq On : 29 Jun 2018 2:21 pm Operator: ODinh
Sample : 18F187-05 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

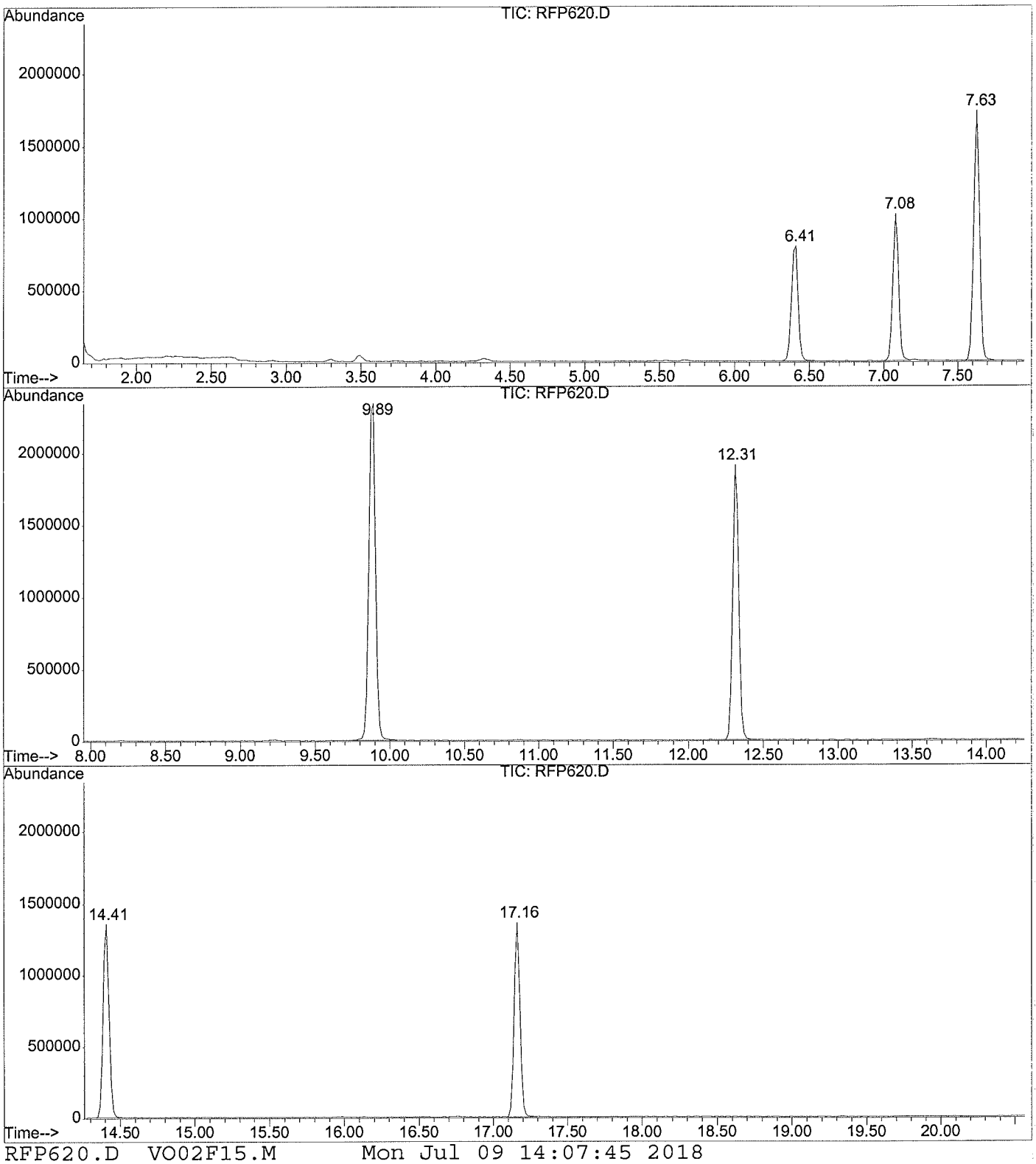
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.407	315	321	332	rVB	797043	2467751	33.84%	8.171%
2	7.077	361	366	373	rBV	1020858	2834870	38.87%	9.387%
3	7.627	398	403	411	rBV	1732301	4843651	66.42%	16.038%
4	9.888	545	555	567	rVB	2340789	7292680	100.00%	24.148%
5	12.312	713	718	728	rVB	1911678	5333532	73.14%	17.660%
6	14.409	854	859	869	rBV	1355465	3680742	50.47%	12.188%
7	17.161	1039	1044	1053	rBV	1361573	3747255	51.38%	12.408%

Sum of corrected areas: 30200481

RFP620.D VO02F15.M Mon Jul 09 14:07:45 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP620.D
Operator : ODinh
Acquired : 29 Jun 2018 2:21 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-05
Misc Info :
Vial Number: 12
Quant File :VO02F15.RES (RTE Integrator)



RFP620.D VO02F15.M Mon Jul 09 14:07:45 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 2:21 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP620.D
Name: 18F187-05
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RFP620.D VO02F15.M Mon Jul 09 14:07:45 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/21/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 12:41
Sample ID: 18Q2DP009-SOTB01L	Date Analyzed: 06/29/18 12:41
Lab Samp ID: F187-06	Dilution Factor: 1
Lab File ID: RFP616	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : NA
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,1-TRICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,2,2-TETRACHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,2-TRICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROETHENE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
1,2,3-TRICHLOROBENZENE	ND	0.0050	0.0010	0.0020
1,2,3-TRICHLOROPROPANE	ND	0.0050	0.0010	0.0020
1,2,4-TRICHLOROBENZENE	ND	0.0050	0.0010	0.0020
1,2,4-TRIMETHYLBENZENE	ND	0.0050	0.00055	0.0020
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0050	0.0010	0.0020
1,2-DIBROMOETHANE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROBENZENE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROPROPANE	ND	0.0050	0.00050	0.0010
1,3,5-TRIMETHYLBENZENE	ND	0.0050	0.00059	0.0020
1,3-DICHLOROBENZENE	ND	0.0050	0.00052	0.0010
1,3-DICHLOROPROPANE	ND	0.0050	0.00050	0.0010
1,4-DICHLOROBENZENE	ND	0.0050	0.00050	0.0010
2,2-DICHLOROPROPANE	ND	0.0050	0.0010	0.0020
2-BUTANONE	ND	0.010	0.0025	0.0050
2-CHLOROTOLUENE	ND	0.0050	0.00082	0.0010
2-HEXANONE	ND	0.010	0.0029	0.0050
4-CHLOROTOLUENE	ND	0.0050	0.00067	0.0010
ACETONE	0.026	0.010	0.0031	0.0050
BENZENE	ND	0.0050	0.00050	0.0010
BROMOBENZENE	ND	0.0050	0.00050	0.0010
BROMOCHLOROMETHANE	ND	0.0050	0.00050	0.0010
BROMODICHLOROMETHANE	ND	0.0050	0.00050	0.0010
BROMOFORM	ND	0.0050	0.0010	0.0020
BROMOMETHANE	ND	0.010	0.0018	0.0020
CARBON DISULFIDE	ND	0.0050	0.00050	0.0010
CARBON TETRACHLORIDE	ND	0.0050	0.00054	0.0010
CHLOROBENZENE	ND	0.0050	0.00050	0.0010
CHLOROETHANE	ND	0.0050	0.0013	0.0020
CHLOROFORM	ND	0.0050	0.00050	0.0010
CHLOROMETHANE	ND	0.0050	0.0010	0.0020
CIS-1,2-DICHLOROETHYLENE	ND	0.0050	0.00050	0.0010
CIS-1,3-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
CYCLOHEXANE	ND	0.0050	0.0012	0.0020
DIBROMOCHLOROMETHANE	ND	0.0050	0.00050	0.0010
DIBROMOMETHANE	ND	0.0050	0.00050	0.0010
DICHLORODIFLUOROMETHANE	ND	0.0050	0.0012	0.0020
ETHYLBENZENE	ND	0.0050	0.00050	0.0010
HEXACHLOROBUTADIENE	ND	0.0050	0.0010	0.0020
ISOPROPYLBENZENE	ND	0.0050	0.00064	0.0020
METHYLENE CHLORIDE	ND	0.010	0.0020	0.0050
M,P-XYLENE	ND	0.0050	0.0010	0.0020
4-METHYL-2-PENTANONE	ND	0.010	0.0028	0.0050
TERT-BUTYL METHYL ETHER	ND	0.0050	0.00050	0.0010
NAPHTHALENE	ND	0.0050	0.0010	0.0020
N-BUTYLBENZENE	ND	0.0050	0.00070	0.0010
N-PROPYLBENZENE	ND	0.0050	0.00065	0.0010
O-XYLENE	ND	0.0050	0.00050	0.0010
P-ISOPROPYLTOLUENE	ND	0.0050	0.00062	0.0010
SEC-BUTYLBENZENE	ND	0.0050	0.00067	0.0010
STYRENE	ND	0.0050	0.00050	0.0010
TERT-BUTYLBENZENE	ND	0.0050	0.00062	0.0010
TETRACHLOROETHENE	ND	0.0050	0.00050	0.0010
TOLUENE	ND	0.0050	0.00050	0.0010
TRANS-1,2-DCE	ND	0.0050	0.00050	0.0010
TRANS-1,3-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
TCE	ND	0.0050	0.00050	0.0010
TRICHLOROFLUOROMETHANE	ND	0.0050	0.0011	0.0020
TRICHLOROTRIFLUOROETHANE	ND	0.0050	0.0010	0.0020
VINYL CHLORIDE	ND	0.0050	0.0014	0.0020
VINYL ACETATE	ND	0.0050	0.0013	0.0020
XYLENES, TOTAL	ND	0.0050	0.00050	0.0010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0491	0.05000	98.2	71-136
4-BROMOFLUOROBENZENE	0.0486	0.05000	97.1	79-119
TOLUENE-D8	0.0510	0.05000	102	85-116
DIBROMOFLUOROMETHANE	0.0534	0.05000	107	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 12:41
Sample ID	: 18Q2DP009-SOTB01L	Date Analyzed:	06/29/18 12:41
Lab Samp ID	: F187-06	Dilution Factor:	1
Lab File ID	: RFP616	Matrix :	SOIL
Ext Btch ID	: VS02F26	% Moisture :	NA
Calib. Ref.	: RFP312	Instrument ID :	T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP616.D
Acq On : 29 Jun 2018 12:41 pm
Sample : 18F187-06
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:17 2018

Vial: 8
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2111858	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.32	117	1787949	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.17	152	702697	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.40	111	803940	53.39	ug/l	-0.03
Spiked Amount 50.000			Recovery =	106.78%		
43) 1,2-Dichloroethane-d4	7.08	65	917563	49.10	ug/l	-0.03
Spiked Amount 50.000			Recovery =	98.20%		
57) Toluene-d8	9.88	98	2691935	51.04	ug/l	-0.03
Spiked Amount 50.000			Recovery =	102.08%		
79) 4-Bromofluorobenzene	14.40	95	822241	48.57	ug/l	-0.03
Spiked Amount 50.000			Recovery =	97.14%		
Target Compounds						Qvalue
11) Acetone	3.48	43	202653	25.95	ug/l	99
13) tert-Butyl alcohol	3.74	59	14724	4.05	ug/l #	1
28) 2-Butanone	5.67	43	32438	2.04	ug/l	95

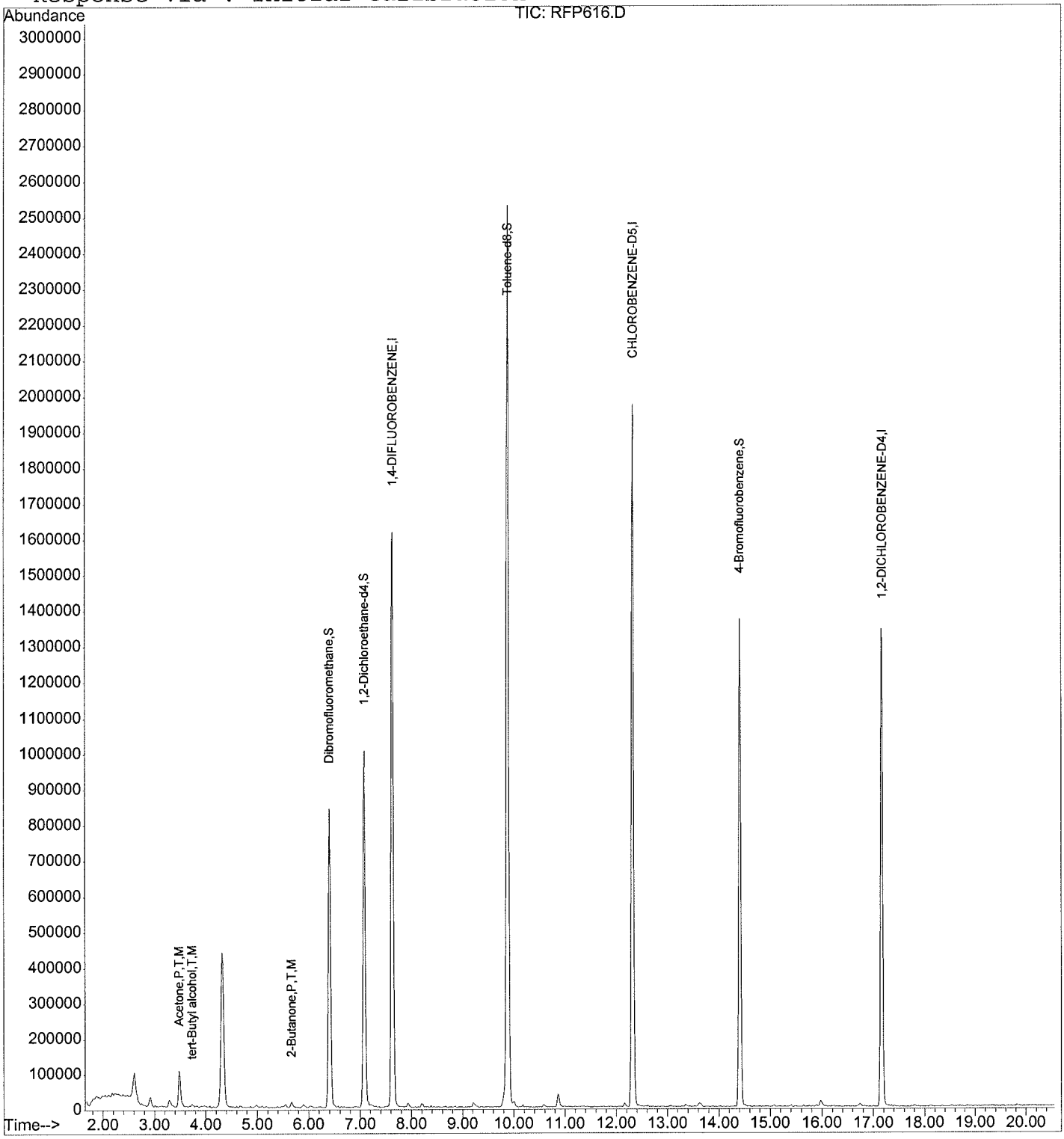
(#) = qualifier out of range (m) = manual integration

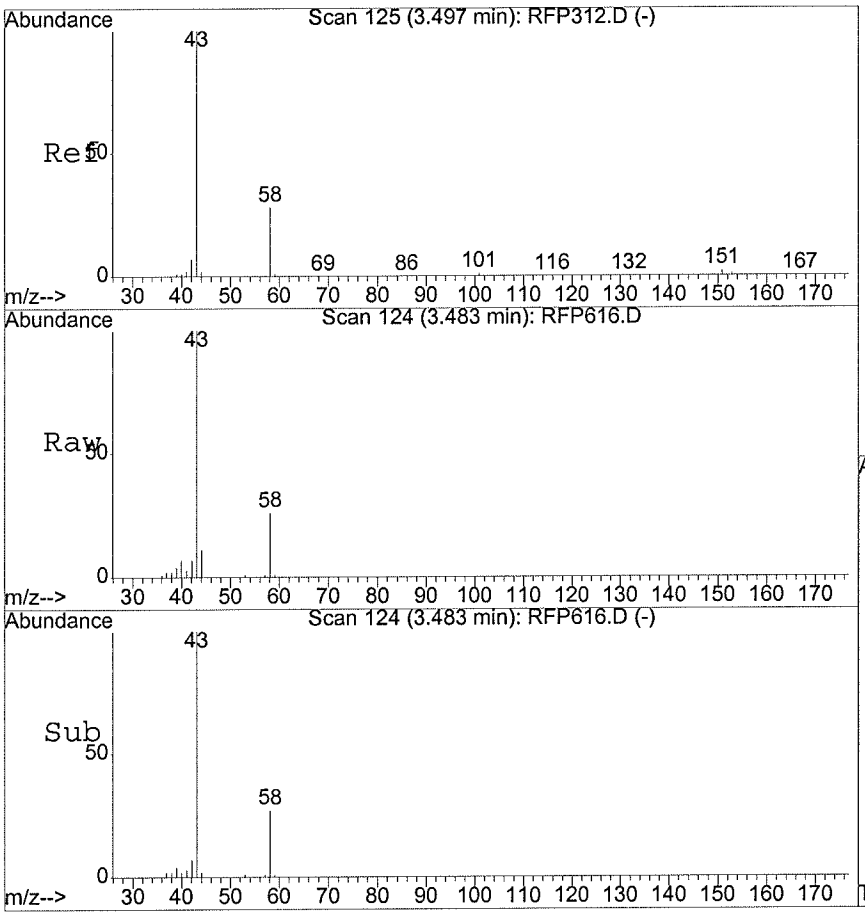
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP616.D
Acq On : 29 Jun 2018 12:41 pm
Sample : 18F187-06
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:17 2018

Vial: 8
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

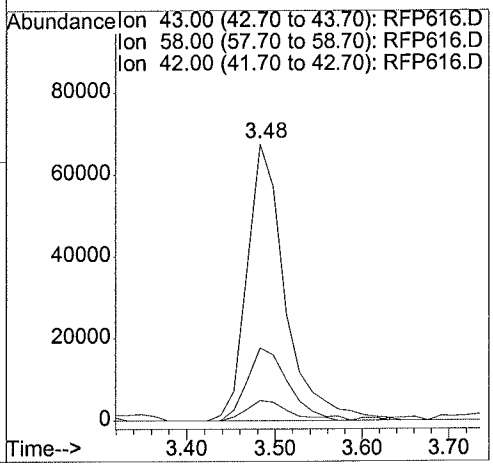


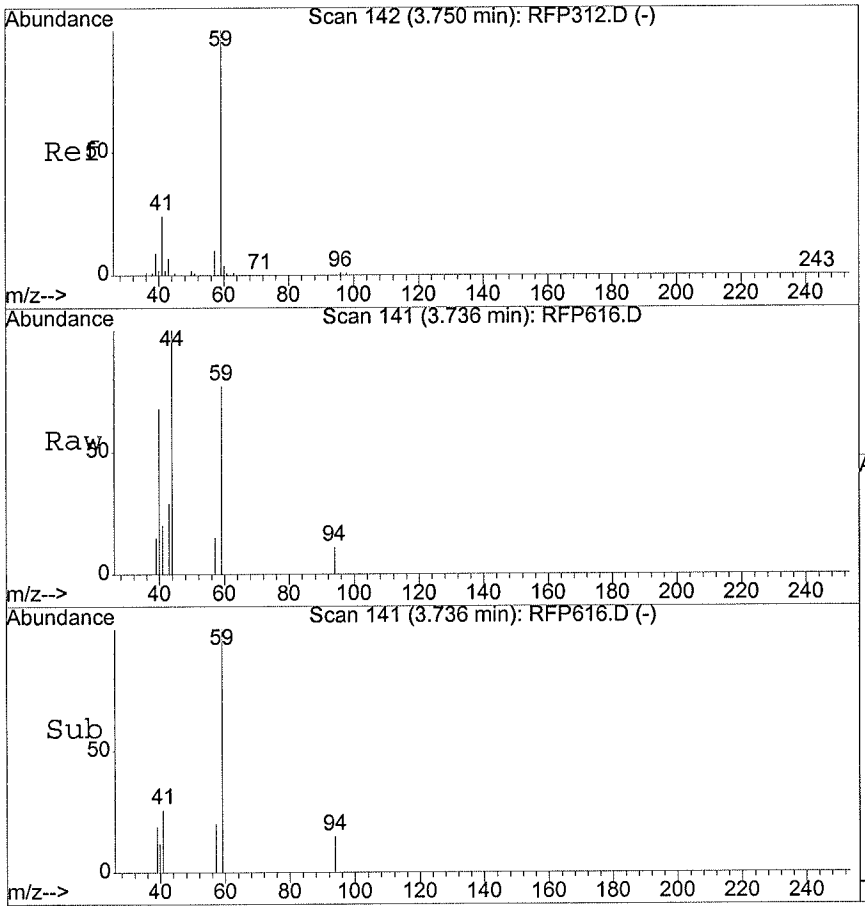


#11
Acetone
Concen: 25.95 ug/l
RT: 3.48 min Scan# 124
Delta R.T. -0.01 min
Lab File: RFP616.D
Acq: 29 Jun 2018 12:41 pm

Tgt Ion: 43 Resp: 202653

Ion	Ratio	Lower	Upper
43	100		
58	28.4	0.0	58.3
42	8.0	0.0	36.9

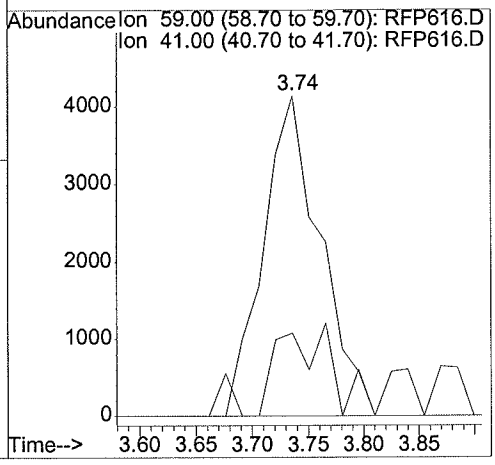


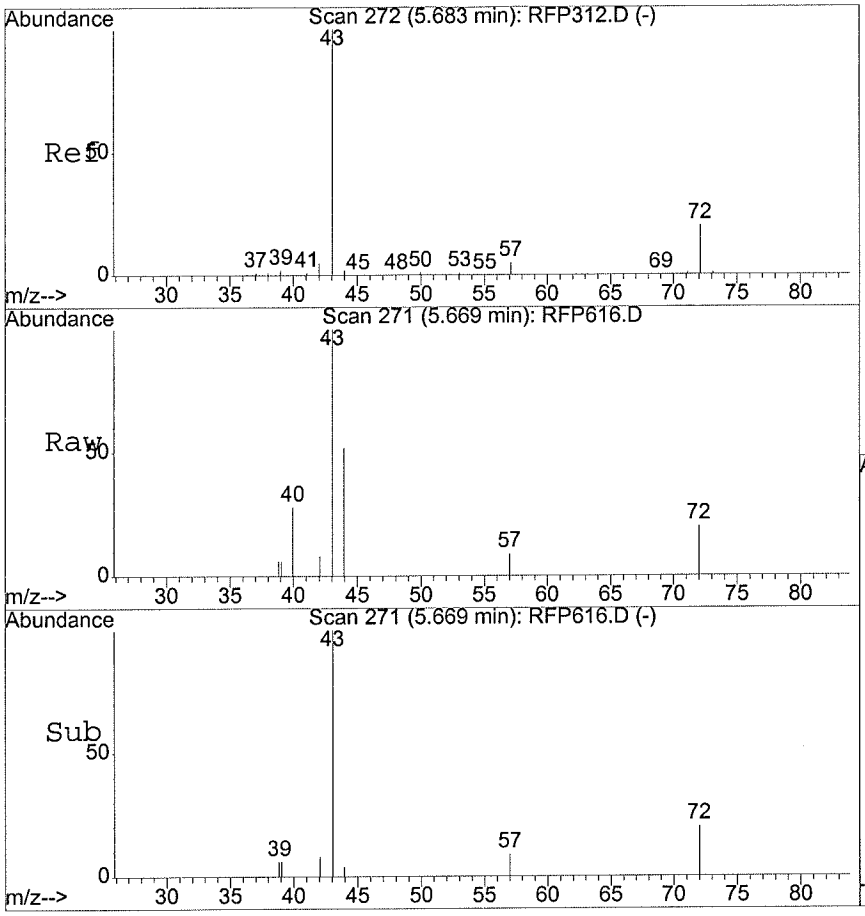


#13
tert-Butyl alcohol
Concen: 4.05 ug/l
RT: 3.74 min Scan# 141
Delta R.T. -0.01 min
Lab File: RFP616.D
Acq: 29 Jun 2018 12:41 pm

Tgt Ion: 59 Resp: 14724

Ion	Ratio	Lower	Upper
59	100		
41	27.2	171.3	231.3#

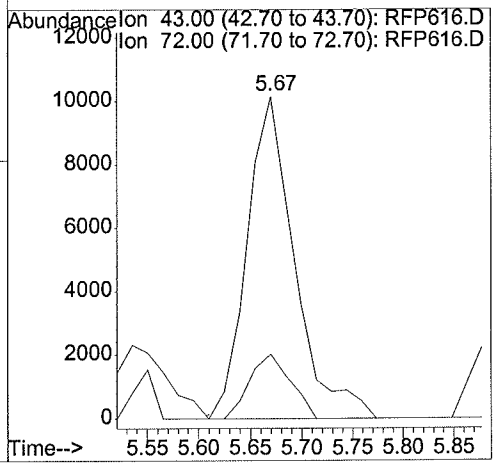




#28
2-Butanone
Concen: 2.04 ug/l
RT: 5.67 min Scan# 271
Delta R.T. -0.01 min
Lab File: RFP616.D
Acq: 29 Jun 2018 12:41 pm

Tgt Ion: 43 Resp: 32438

Ion	Ratio	Lower	Upper
43	100		
72	17.3	0.0	49.4



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP616.D
Acq On : 29 Jun 2018 12:41 pm
Sample : 18F187-06
Misc :
MS Integration Params: LSCINT.P

Vial: 8
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF
Filtering: 5
Sampling : 1
Min Area: 10 % of largest Peak
Start Thrs: 0.2
Max Peaks: 100
Stop Thrs : 0
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

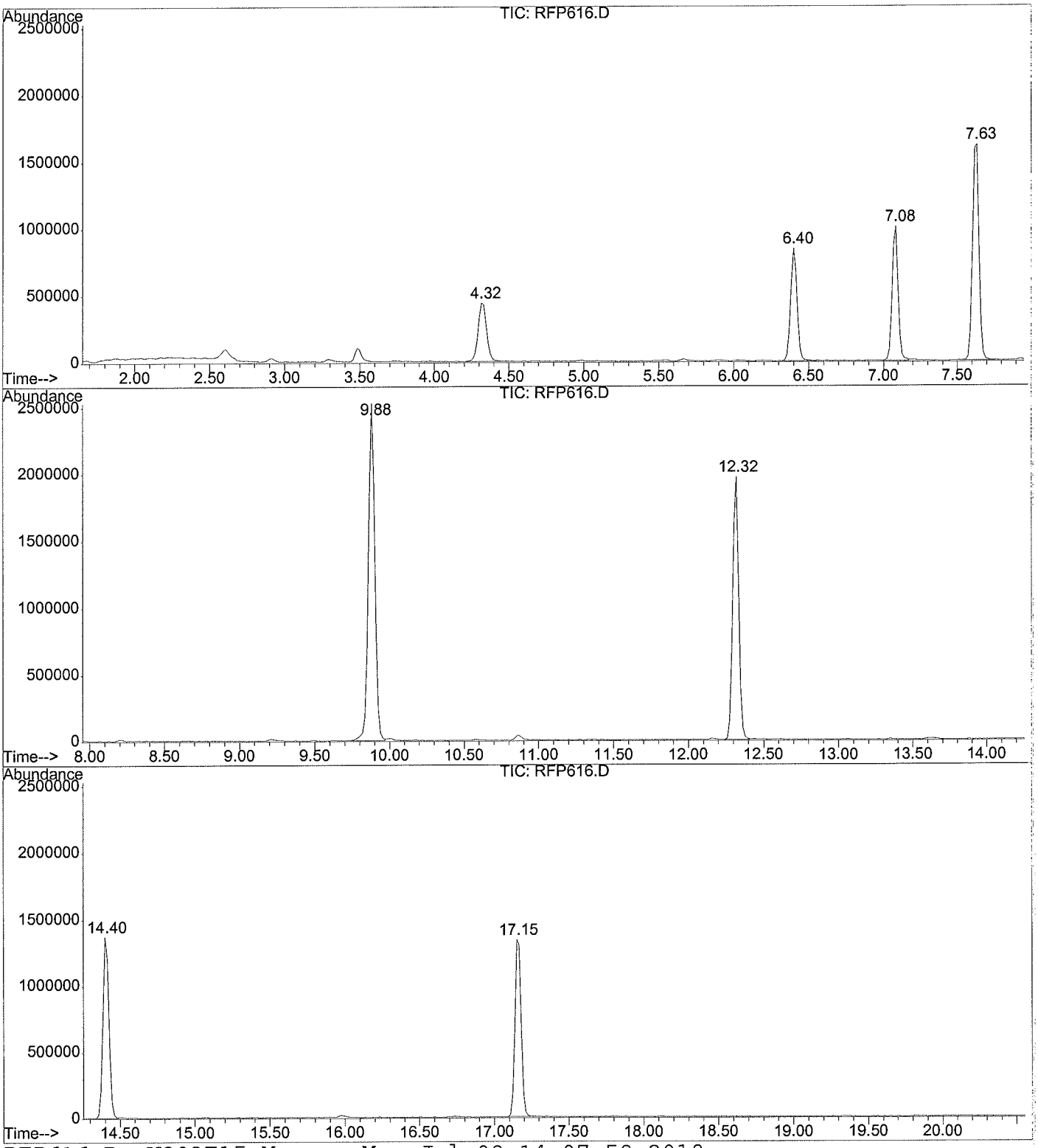
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.316	171	180	193	rVB2	436307	1751700	23.22%	5.351%
2	6.398	315	320	330	rBV	841448	2513936	33.32%	7.679%
3	7.082	360	366	372	rBV	1003233	2867669	38.01%	8.760%
4	7.633	397	403	411	rVB	1612961	4931562	65.37%	15.065%
5	9.879	543	554	560	rBV	2527029	7544506	100.00%	23.047%
6	12.318	713	718	724	rBV	1970189	5465851	72.45%	16.697%
7	14.400	854	858	864	rBV	1367793	3760096	49.84%	11.486%
8	17.152	1039	1043	1049	rBV	1338747	3900523	51.70%	11.915%

Sum of corrected areas: 32735843

RFP616.D VO02F15.M Mon Jul 09 14:07:59 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP616.D
Operator : ODinh
Acquired : 29 Jun 2018 12:41 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-06
Misc Info :
Vial Number: 8
Quant File :VO02F15.RES (RTE Integrator)



RFP616.D VO02F15.M Mon Jul 09 14:07:59 2018

Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP616.D
Acq On : 29 Jun 2018 12:41 pm
Sample : 18F187-06
Misc :
MS Integration Params: LSCINT.P

Vial: 8
Operator: ODinh
Inst : 02
Multiplr: 1.00

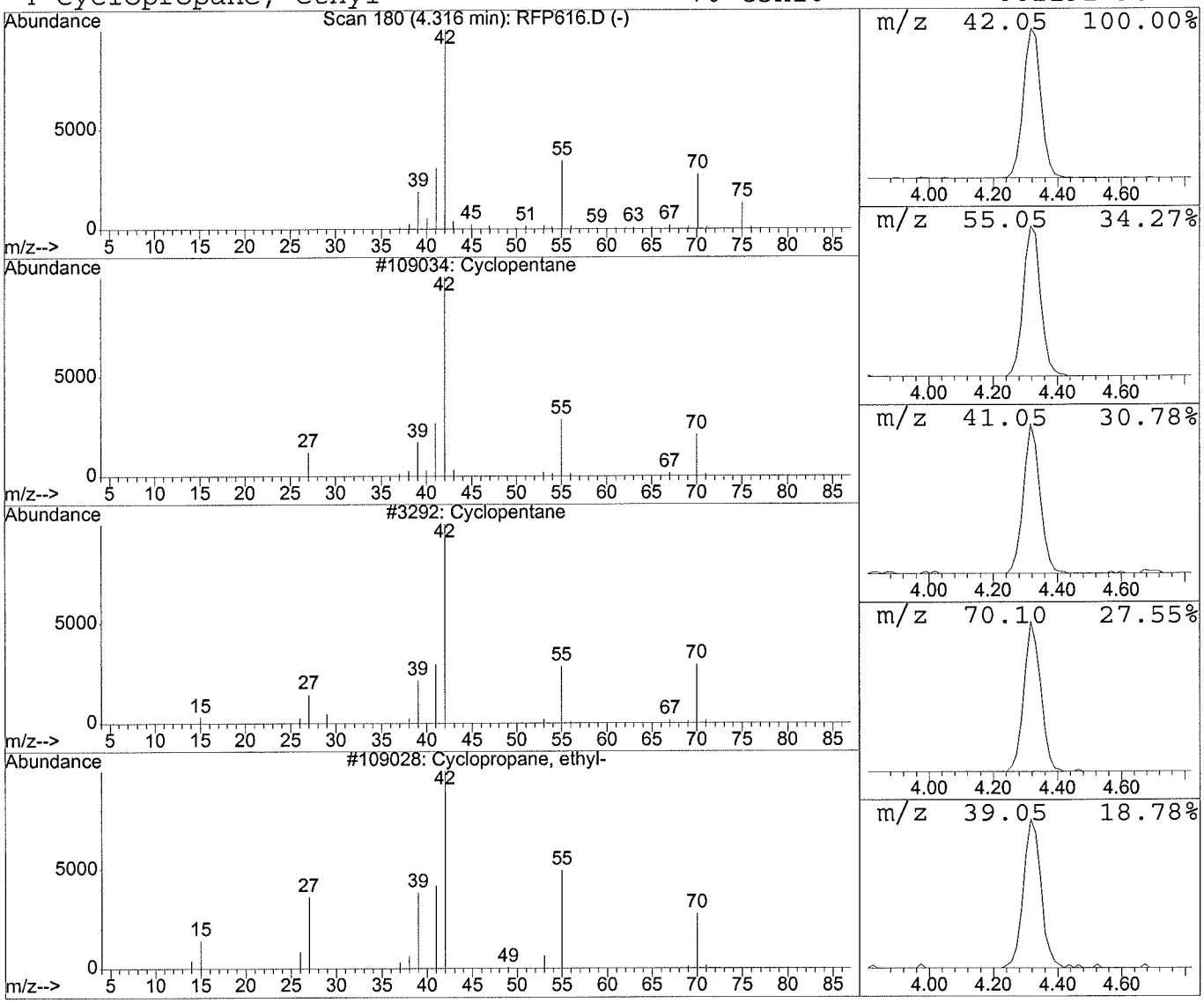
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 1 Cyclopentane Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.32	17.76 ug/l	1751700	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane	70	C5H10	000287-92-3	80
2	Cyclopentane	70	C5H10	000287-92-3	80
3	Cyclopropane, ethyl-	70	C5H10	001191-96-4	56
4	Cyclopropane, ethyl-	70	C5H10	001191-96-4	50



Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 12:41 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP616.D
Name: 18F187-06
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Cyclopentane	4.32	17.8	ug/l	1751700	ISTD01	7.63	4931560	50.0

RFP616.D VO02F15.M Mon Jul 09 14:08:00 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/22/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 07/05/18 12:31
Sample ID: 18Q2DP009-SB0501-SO-0	Date Analyzed: 07/05/18 12:31
Lab Samp ID: F187-07R	Dilution Factor: 0.91
Lab File ID: RGP049	Matrix : SOIL
Ext Btch ID: VS02G03	% Moisture : 3.9
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0047	0.00047	0.00095
1,1,1-TRICHLOROETHANE	ND	0.0047	0.00047	0.00095
1,1,2,2-TETRACHLOROETHANE	ND	0.0047	0.00047	0.00095
1,1,2-TRICHLOROETHANE	ND	0.0047	0.00047	0.00095
1,1-DICHLOROETHANE	ND	0.0047	0.00047	0.00095
1,1-DICHLOROETHENE	ND	0.0047	0.00047	0.00095
1,1-DICHLOROPROPENE	ND	0.0047	0.00047	0.00095
1,2,3-TRICHLOROBENZENE	ND	0.0047	0.00095	0.0019
1,2,3-TRICHLOROPROPANE	ND	0.0047	0.00095	0.0019
1,2,4-TRICHLOROBENZENE	ND	0.0047	0.00095	0.0019
1,2,4-TRIMETHYLBENZENE	ND	0.0047	0.00052	0.0019
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0047	0.00095	0.0019
1,2-DIBROMOETHANE	ND	0.0047	0.00047	0.00095
1,2-DICHLOROBENZENE	ND	0.0047	0.00047	0.00095
1,2-DICHLOROETHANE	ND	0.0047	0.00047	0.00095
1,2-DICHLOROPROPANE	ND	0.0047	0.00047	0.00095
1,3,5-TRIMETHYLBENZENE	ND	0.0047	0.00056	0.0019
1,3-DICHLOROBENZENE	ND	0.0047	0.00049	0.00095
1,3-DICHLOROPROPANE	ND	0.0047	0.00047	0.00095
1,4-DICHLOROBENZENE	ND	0.0047	0.00047	0.00095
2,2-DICHLOROPROPANE	ND	0.0047	0.00095	0.0019
2-BUTANONE	ND	0.0095	0.0024	0.0047
2-CHLOROTOLUENE	ND	0.0047	0.00078	0.00095
2-HEXANONE	ND	0.0095	0.0027	0.0047
4-CHLOROTOLUENE	ND	0.0047	0.00063	0.00095
ACETONE	0.029	0.0095	0.0029	0.0047
BENZENE	ND	0.0047	0.00047	0.00095
BROMOBENZENE	ND	0.0047	0.00047	0.00095
BROMOCHLOROMETHANE	ND	0.0047	0.00047	0.00095
BROMODICHLOROMETHANE	ND	0.0047	0.00047	0.00095
BROMOFORM	ND	0.0047	0.00095	0.0019
BROMOMETHANE	ND	0.0095	0.0017	0.0019
CARBON DISULFIDE	ND	0.0047	0.00047	0.00095
CARBON TETRACHLORIDE	ND	0.0047	0.00051	0.00095
CHLOROBENZENE	ND	0.0047	0.00047	0.00095
CHLOROETHANE	ND	0.0047	0.0012	0.0019
CHLOROFORM	ND	0.0047	0.00047	0.00095
CHLOROMETHANE	ND	0.0047	0.00095	0.0019
CIS-1,2-DICHLOROETHYLENE	ND	0.0047	0.00047	0.00095
CIS-1,3-DICHLOROPROPENE	ND	0.0047	0.00047	0.00095
CYCLOHEXANE	ND	0.0047	0.0011	0.0019
DIBROMOCHLOROMETHANE	ND	0.0047	0.00047	0.00095
DIBROMOMETHANE	ND	0.0047	0.00047	0.00095
DICHLORODIFLUOROMETHANE	ND	0.0047	0.0011	0.0019
ETHYLBENZENE	ND	0.0047	0.00047	0.00095
HEXACHLOROBUTADIENE	ND	0.0047	0.00095	0.0019
ISOPROPYLBENZENE	ND	0.0047	0.00061	0.0019
METHYLENE CHLORIDE	ND	0.0095	0.0019	0.0047
M,P-XYLENE	ND	0.0047	0.00095	0.0019
4-METHYL-2-PENTANONE	ND	0.0095	0.0027	0.0047
TERT-BUTYL METHYL ETHER	ND	0.0047	0.00047	0.00095
NAPHTHALENE	ND	0.0047	0.00095	0.0019
N-BUTYLBENZENE	ND	0.0047	0.00066	0.00095
N-PROPYLBENZENE	ND	0.0047	0.00062	0.00095
O-XYLENE	ND	0.0047	0.00047	0.00095
P-ISOPROPYLTOLUENE	ND	0.0047	0.00059	0.00095
SEC-BUTYLBENZENE	ND	0.0047	0.00063	0.00095
STYRENE	ND	0.0047	0.00047	0.00095
TERT-BUTYLBENZENE	ND	0.0047	0.00059	0.00095
TETRACHLOROETHENE	ND	0.0047	0.00047	0.00095
TOLUENE	ND	0.0047	0.00047	0.00095
TRANS-1,2-DCE	ND	0.0047	0.00047	0.00095
TRANS-1,3-DICHLOROPROPENE	ND	0.0047	0.00047	0.00095
TCE	ND	0.0047	0.00047	0.00095
TRICHLOROFLUOROMETHANE	ND	0.0047	0.0010	0.0019
TRICHLOROTRIFLUOROETHANE	ND	0.0047	0.00095	0.0019
VINYL CHLORIDE	ND	0.0047	0.0013	0.0019
VINYL ACETATE	ND	0.0047	0.0012	0.0019
XYLENES, TOTAL	ND	0.0047	0.00047	0.00095

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0464	0.04735	98.0	71-136
4-BROMOFLUOROBENZENE	0.0470	0.04735	99.2	79-119
TOLUENE-D8	0.0490	0.04735	104	85-116
DIBROMOFLUOROMETHANE	0.0491	0.04735	104	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	07/05/18 12:31
Sample ID	: 18Q2DP009-SB0501-SO-0	Date Analyzed:	07/05/18 12:31
Lab Samp ID	: F187-07R	Dilution Factor:	0.91
Lab File ID	: RGP049	Matrix :	SOIL
Ext Btch ID	: VS02G03	% Moisture :	3.9
Calib. Ref.	: RFP312	Instrument ID :	T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP049.D Vial: 9
Acq On : 5 Jul 2018 12:31 pm Operator: ODinh
Sample : 18F187-07R Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 9:43 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2258925	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.31	117	1829354	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.15	152	675985	50.00	ug/l	-0.05
System Monitoring Compounds						
37) Dibromofluoromethane	6.39	111	835771	51.89	ug/l	-0.03
Spiked Amount 50.000			Recovery =	103.78%		
43) 1,2-Dichloroethane-d4	7.08	65	979241	48.99	ug/l	-0.03
Spiked Amount 50.000			Recovery =	97.98%		
57) Toluene-d8	9.87	98	2792554	51.75	ug/l	-0.03
Spiked Amount 50.000			Recovery =	103.50%		
79) 4-Bromofluorobenzene	14.40	95	807970	49.61	ug/l	-0.03
Spiked Amount 50.000			Recovery =	99.22%		
Target Compounds						Qvalue
11) Acetone	3.48	43	260072	31.14	ug/l	93
13) tert-Butyl alcohol	3.73	59	30005	7.71	ug/l #	1

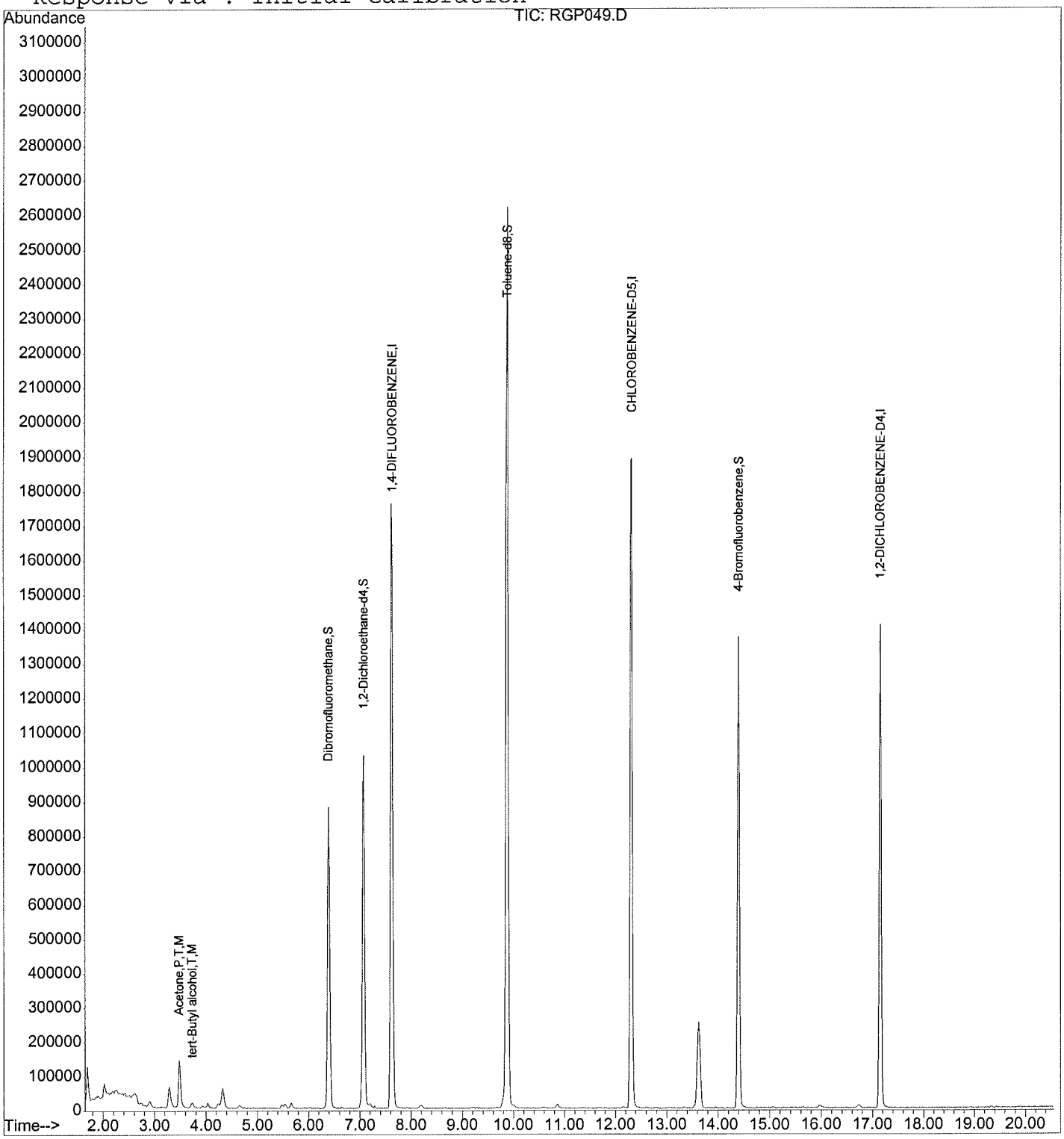
(#) = qualifier out of range (m) = manual integration

Quantitation Report

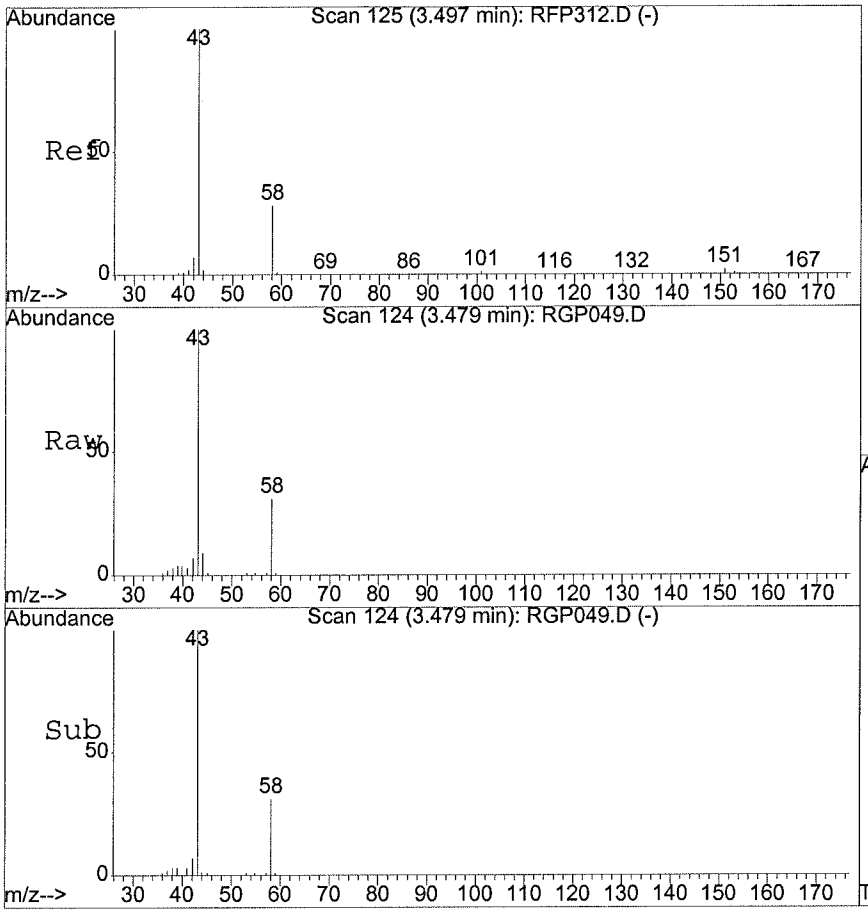
Data File : D:\HPCHEM\1\DATA\18G05\RGP049.D
Acq On : 5 Jul 2018 12:31 pm
Sample : 18F187-07R
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 9:43 2018

Vial: 9
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



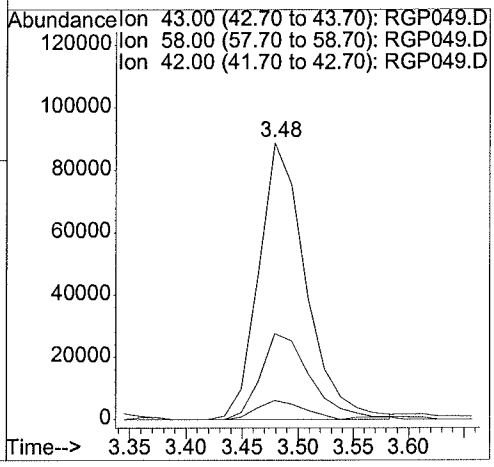
RGP049.D VO02F15.M Mon Jul 09 14:30:59 2018 Page 2

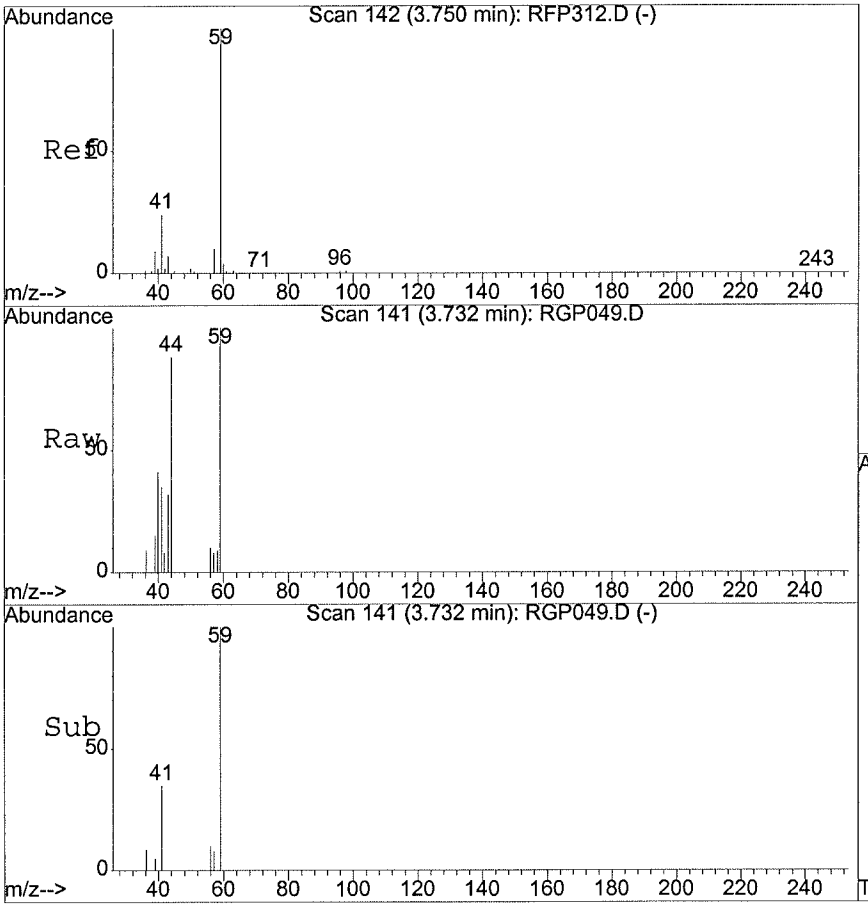


#11
Acetone
Concen: 31.14 ug/l
RT: 3.48 min Scan# 124
Delta R.T. -0.02 min
Lab File: RGP049.D
Acq: 5 Jul 2018 12:31 pm

Tgt Ion: 43 Resp: 260072

Ion	Ratio	Lower	Upper
43	100		
58	32.7	0.0	58.3
42	6.9	0.0	36.9

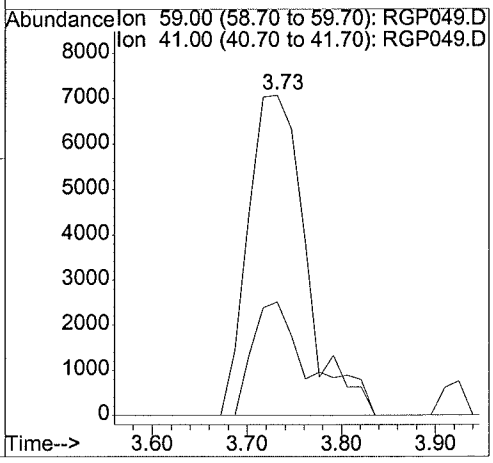




#13
tert-Butyl alcohol
Concen: 7.71 ug/l
RT: 3.73 min Scan# 141
Delta R.T. -0.02 min
Lab File: RGP049.D
Acq: 5 Jul 2018 12:31 pm

Tgt Ion: 59 Resp: 30005

Ion	Ratio	Lower	Upper
59	100		
41	36.5	171.3	231.3#



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP049.D Vial: 9
Acq On : 5 Jul 2018 12:31 pm Operator: ODinh
Sample : 18F187-07R Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

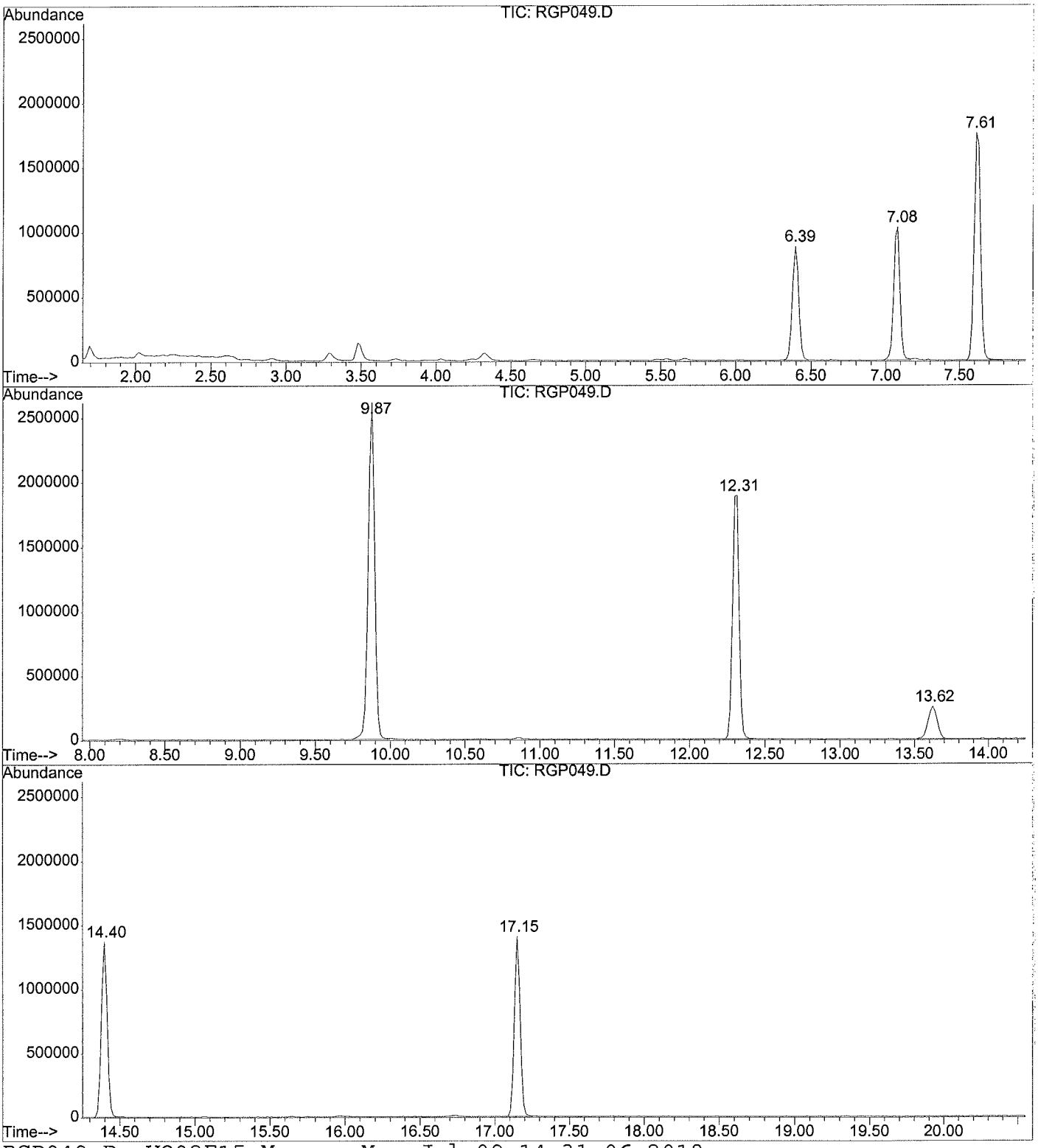
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.394	315	320	326	rVB	876894	2592202	33.25%	7.869%
2	7.078	359	366	372	rBV	1028316	3073544	39.43%	9.331%
3	7.614	397	402	414	rBV	1758072	5284661	67.79%	16.043%
4	9.875	545	554	562	rBV	2614961	7795649	100.00%	23.666%
5	12.314	713	718	725	rBV	1887724	5651689	72.50%	17.158%
6	13.623	798	806	812	rBV2	251423	1068795	13.71%	3.245%
7	14.396	853	858	868	rVB	1369610	3665334	47.02%	11.127%
8	17.148	1038	1043	1050	rBV	1405263	3808116	48.85%	11.561%

Sum of corrected areas: 32939990

RGP049.D VO02F15.M Mon Jul 09 14:31:06 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18G05\RGP049.D
Operator : ODinh
Acquired : 5 Jul 2018 12:31 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-07R
Misc Info :
Vial Number: 9
Quant File :VO02F15.RES (RTE Integrator)



RGP049.D VO02F15.M Mon Jul 09 14:31:06 2018

Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP049.D
Acq On : 5 Jul 2018 12:31 pm
Sample : 18F187-07R
Misc :
MS Integration Params: LSCINT.P

Vial: 9
Operator: ODinh
Inst : 02
Multiplr: 1.00

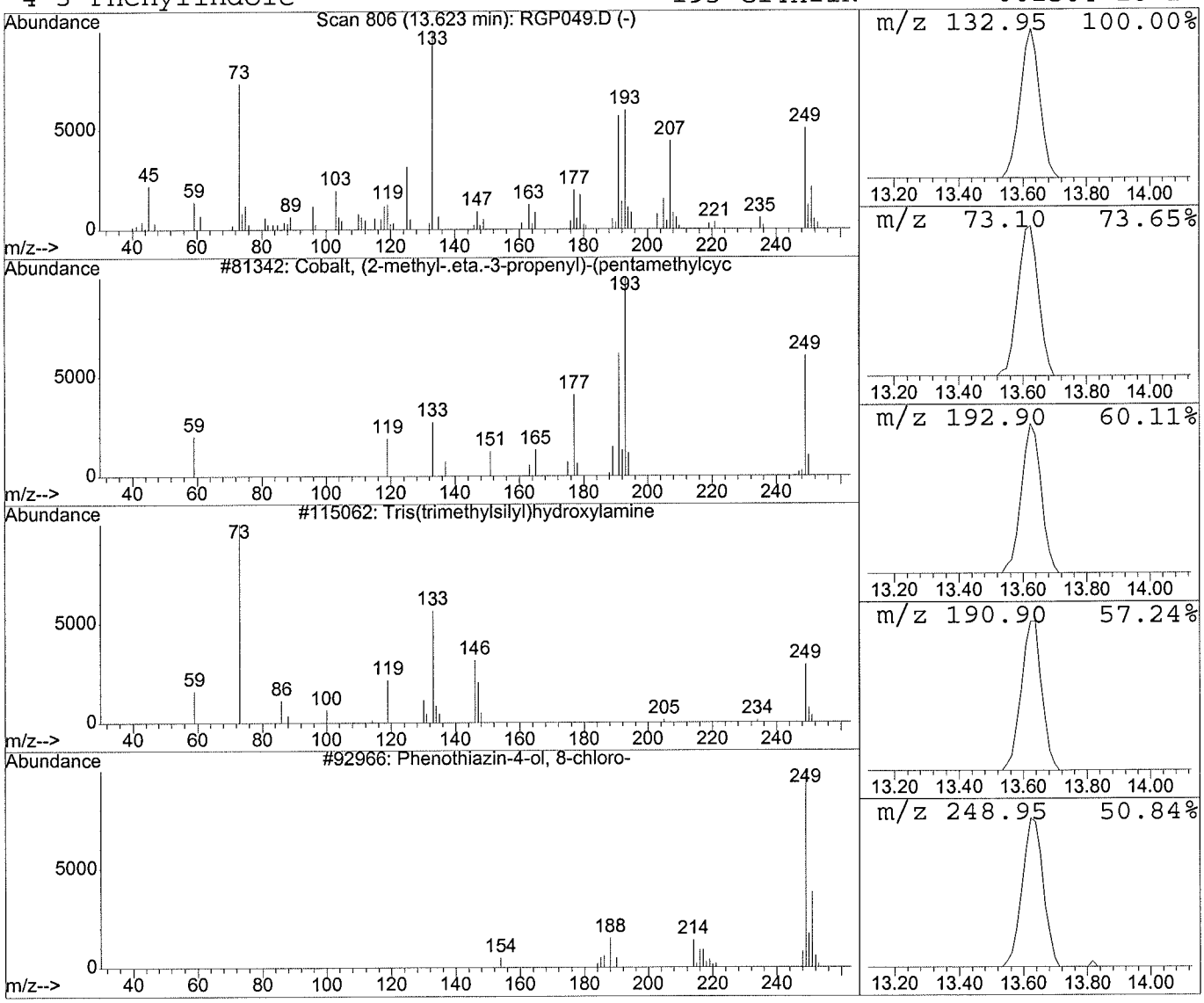
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 1 Cobalt, (2-methyl-.eta.-3-prop Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.62	9.46 ug/l	1068800	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cobalt, (2-methyl-.eta.-3-propenyl)	249	C14H22Co	1000157-04-3	41
2	Tris(trimethylsilyl)hydroxylamine	249	C9H27NOSi3	021023-20-1	14
3	Phenothiazin-4-ol, 8-chloro-	249	C12H8ClNOS	019807-55-7	11
4	3-Phenylindole	193	C14H11N	001504-16-1	11



Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 5 Jul 2018 12:31 pm
Data File: D:\HPCHEM\1\DATA\18G05\RGP049.D
Name: 18F187-07R
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Cobalt, (2-methyl-.e	13.62	9.5	ug/l	1068800	ISTD02	12.31	5651690	50.0

RGP049.D VO02F15.M Mon Jul 09 14:31:06 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/22/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 15:09
Sample ID: 18Q2DP009-SB0502-SO-0	Date Analyzed: 06/29/18 15:09
Lab Samp ID: F187-08	Dilution Factor: 0.93
Lab File ID: RFP622	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : 3.5
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0048	0.00048	0.00096
1,1,1-TRICHLOROETHANE	ND	0.0048	0.00048	0.00096
1,1,2,2-TETRACHLOROETHANE	ND	0.0048	0.00048	0.00096
1,1,2-TRICHLOROETHANE	ND	0.0048	0.00048	0.00096
1,1-DICHLOROETHANE	ND	0.0048	0.00048	0.00096
1,1-DICHLOROETHENE	ND	0.0048	0.00048	0.00096
1,1-DICHLOROPROPENE	ND	0.0048	0.00048	0.00096
1,2,3-TRICHLOROBENZENE	ND	0.0048	0.00096	0.0019
1,2,3-TRICHLOROPROPANE	ND	0.0048	0.00096	0.0019
1,2,4-TRICHLOROBENZENE	ND	0.0048	0.00096	0.0019
1,2,4-TRIMETHYLBENZENE	ND	0.0048	0.00053	0.0019
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0048	0.00096	0.0019
1,2-DIBROMOETHANE	ND	0.0048	0.00048	0.00096
1,2-DICHLOROBENZENE	ND	0.0048	0.00048	0.00096
1,2-DICHLOROETHANE	ND	0.0048	0.00048	0.00096
1,2-DICHLOROPROPANE	ND	0.0048	0.00048	0.00096
1,3,5-TRIMETHYLBENZENE	ND	0.0048	0.00057	0.0019
1,3-DICHLOROBENZENE	ND	0.0048	0.00050	0.00096
1,3-DICHLOROPROPANE	ND	0.0048	0.00048	0.00096
1,4-DICHLOROBENZENE	ND	0.0048	0.00048	0.00096
2,2-DICHLOROPROPANE	ND	0.0048	0.00096	0.0019
2-BUTANONE	ND	0.0096	0.0024	0.0048
2-CHLOROTOLUENE	ND	0.0048	0.00079	0.00096
2-HEXANONE	ND	0.0096	0.0028	0.0048
4-CHLOROTOLUENE	ND	0.0048	0.00065	0.00096
ACETONE	0.028	0.0096	0.0030	0.0048
BENZENE	ND	0.0048	0.00048	0.00096
BROMOBENZENE	ND	0.0048	0.00048	0.00096
BROMOCHLOROMETHANE	ND	0.0048	0.00048	0.00096
BROMODICHLOROMETHANE	ND	0.0048	0.00048	0.00096
BROMOFORM	ND	0.0048	0.00096	0.0019
BROMOMETHANE	ND	0.0096	0.0017	0.0019
CARBON DISULFIDE	ND	0.0048	0.00048	0.00096
CARBON TETRACHLORIDE	ND	0.0048	0.00052	0.00096
CHLOROBENZENE	ND	0.0048	0.00048	0.00096
CHLOROETHANE	ND	0.0048	0.0013	0.0019
CHLOROFORM	ND	0.0048	0.00048	0.00096
CHLOROMETHANE	ND	0.0048	0.00096	0.0019
CIS-1,2-DICHLOROETHYLENE	ND	0.0048	0.00048	0.00096
CIS-1,3-DICHLOROPROPENE	ND	0.0048	0.00048	0.00096
CYCLOHEXANE	ND	0.0048	0.0012	0.0019
DIBROMOCHLOROMETHANE	ND	0.0048	0.00048	0.00096
DIBROMOMETHANE	ND	0.0048	0.00048	0.00096
DICHLORODIFLUOROMETHANE	ND	0.0048	0.0012	0.0019
ETHYLBENZENE	ND	0.0048	0.00048	0.00096
HEXACHLOROBUTADIENE	ND	0.0048	0.00096	0.0019
ISOPROPYLBENZENE	ND	0.0048	0.00062	0.0019
METHYLENE CHLORIDE	ND	0.0096	0.0019	0.0048
M,P-XYLENE	ND	0.0048	0.00096	0.0019
4-METHYL-2-PENTANONE	ND	0.0096	0.0027	0.0048
TERT-BUTYL METHYL ETHER	ND	0.0048	0.00048	0.00096
NAPHTHALENE	ND	0.0048	0.00096	0.0019
N-BUTYLBENZENE	ND	0.0048	0.00067	0.00096
N-PROPYLBENZENE	ND	0.0048	0.00063	0.00096
O-XYLENE	ND	0.0048	0.00048	0.00096
P-ISOPROPYLTOLUENE	ND	0.0048	0.00060	0.00096
SEC-BUTYLBENZENE	ND	0.0048	0.00065	0.00096
STYRENE	ND	0.0048	0.00048	0.00096
TERT-BUTYLBENZENE	ND	0.0048	0.00060	0.00096
TETRACHLOROETHENE	ND	0.0048	0.00048	0.00096
TOLUENE	ND	0.0048	0.00048	0.00096
TRANS-1,2-DCE	ND	0.0048	0.00048	0.00096
TRANS-1,3-DICHLOROPROPENE	ND	0.0048	0.00048	0.00096
TCE	ND	0.0048	0.00048	0.00096
TRICHLOROFLUOROMETHANE	ND	0.0048	0.0011	0.0019
TRICHLOROTRIFLUOROETHANE	ND	0.0048	0.00096	0.0019
VINYL CHLORIDE	ND	0.0048	0.0013	0.0019
VINYL ACETATE	ND	0.0048	0.0013	0.0019
XYLENES, TOTAL	ND	0.0048	0.00048	0.00096

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0484	0.04819	101	71-136
4-BROMOFLUOROBENZENE	0.0481	0.04819	99.8	79-119
TOLUENE-D8	0.0500	0.04819	104	85-116
DIBROMOFLUOROMETHANE	0.0509	0.04819	106	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/22/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 15:09
Sample ID	: 18Q2DP009-SB0502-SO-0	Date Analyzed	: 06/29/18 15:09
Lab Samp ID	: F187-08	Dilution Factor	: 0.93
Lab File ID	: RFP622	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: 3.5
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP622.D Vial: 14
Acq On : 29 Jun 2018 3:09 pm Operator: ODinh
Sample : 18F187-08 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:27 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2077616	50.00	ug/l	-0.04
56) CHLOROBENZENE-D5	12.31	117	1731195	50.00	ug/l	-0.04
76) 1,2-DICHLOROBENZENE-D4	17.16	152	664419	50.00	ug/l	-0.04
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	782388	52.81	ug/l	-0.02
Spiked Amount 50.000			Recovery =	105.62%		
43) 1,2-Dichloroethane-d4	7.08	65	924162	50.27	ug/l	-0.04
Spiked Amount 50.000			Recovery =	100.54%		
57) Toluene-d8	9.89	98	2649003	51.87	ug/l	-0.02
Spiked Amount 50.000			Recovery =	103.74%		
79) 4-Bromofluorobenzene	14.41	95	798767	49.90	ug/l	-0.02
Spiked Amount 50.000			Recovery =	99.80%		
Target Compounds						Qvalue
11) Acetone	3.49	43	219589	28.58	ug/l	94
13) tert-Butyl alcohol	3.73	59	27192	7.60	ug/l #	1

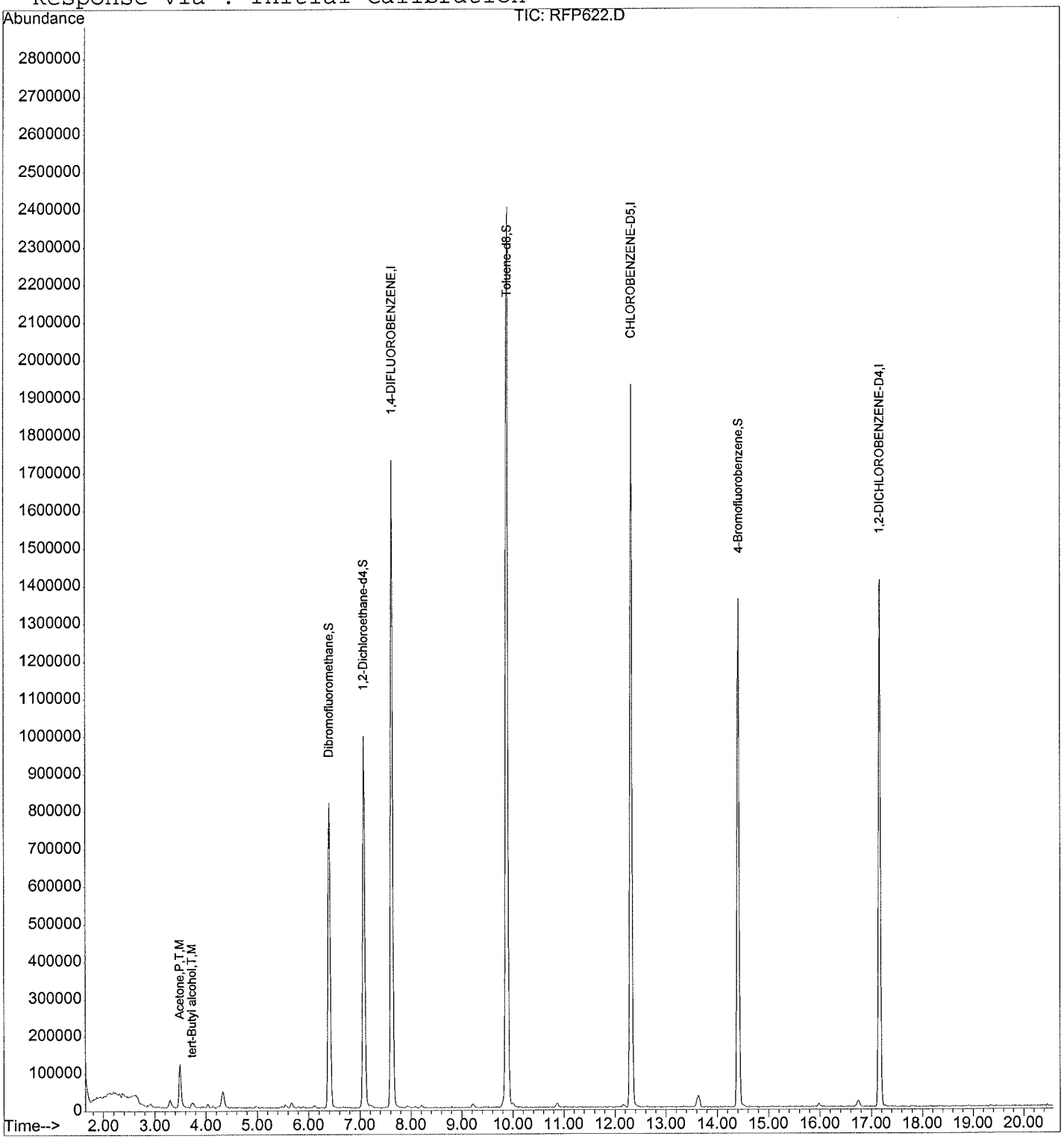
(#) = qualifier out of range (m) = manual integration
RFP622.D VO02F15.M Mon Jul 09 13:28:04 2018 Page 1

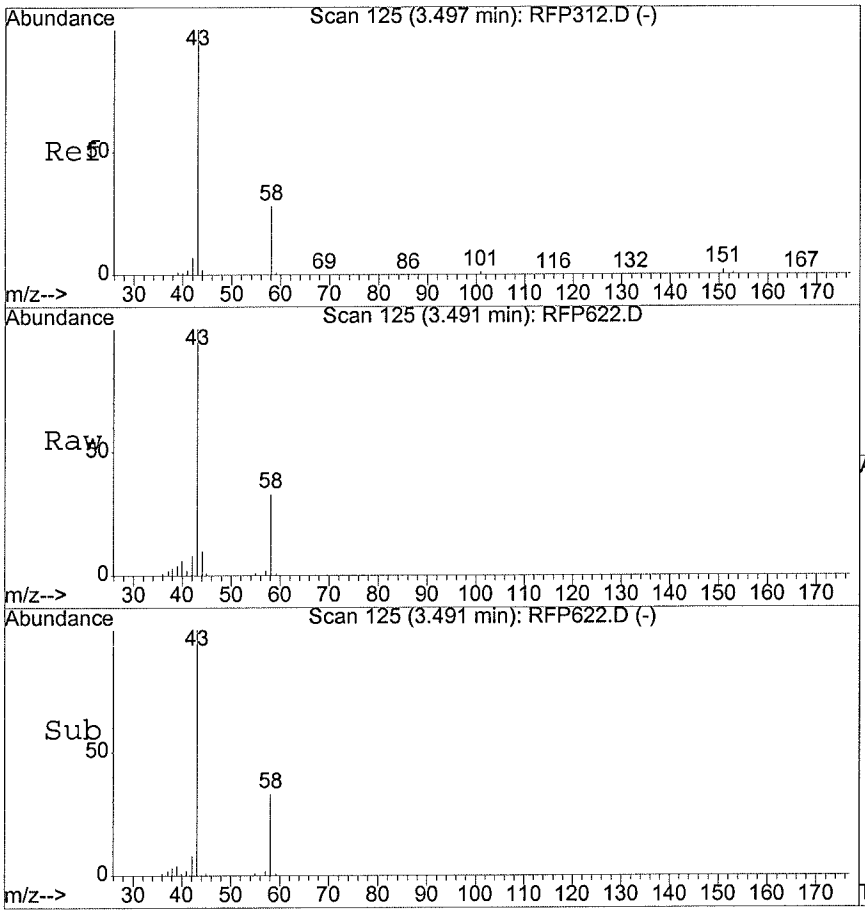
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP622.D
Acq On : 29 Jun 2018 3:09 pm
Sample : 18F187-08
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:27 2018

Vial: 14
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

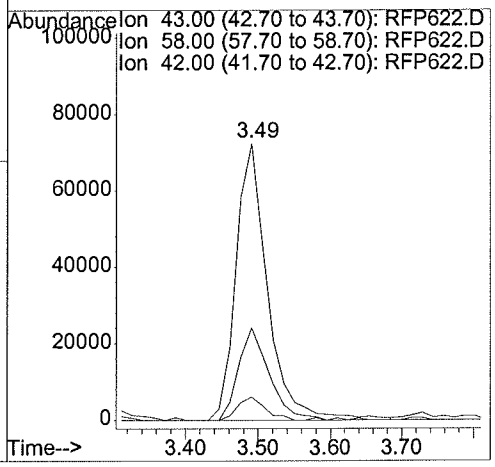


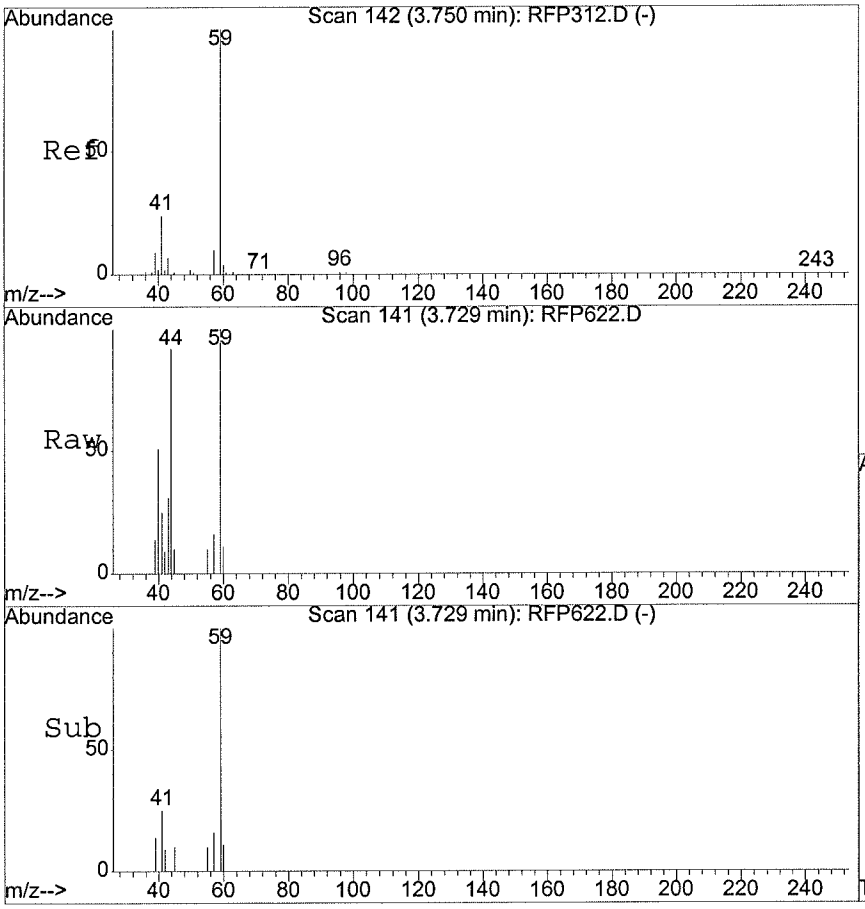


#11
Acetone
Concen: 28.58 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.01 min
Lab File: RFP622.D
Acq: 29 Jun 2018 3:09 pm

Tgt Ion: 43 Resp: 219589

Ion	Ratio	Lower	Upper
43	100		
58	32.3	0.0	58.3
42	7.4	0.0	36.9

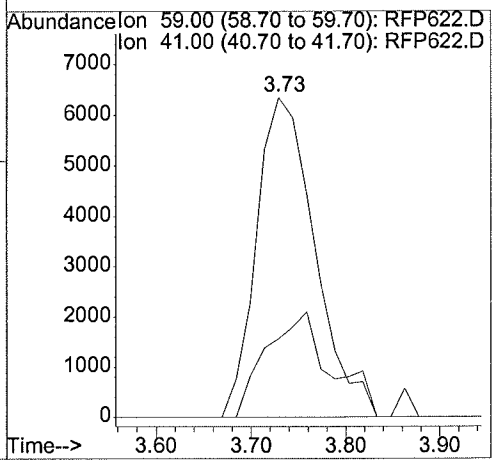




#13
tert-Butyl alcohol
Concen: 7.60 ug/l
RT: 3.73 min Scan# 141
Delta R.T. -0.02 min
Lab File: RFP622.D
Acq: 29 Jun 2018 3:09 pm

Tgt Ion: 59 Resp: 27192

Ion	Ratio	Lower	Upper
59	100		
41	36.4	171.3	231.3#



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP622.D Vial: 14
Acq On : 29 Jun 2018 3:09 pm Operator: ODinh
Sample : 18F187-08 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

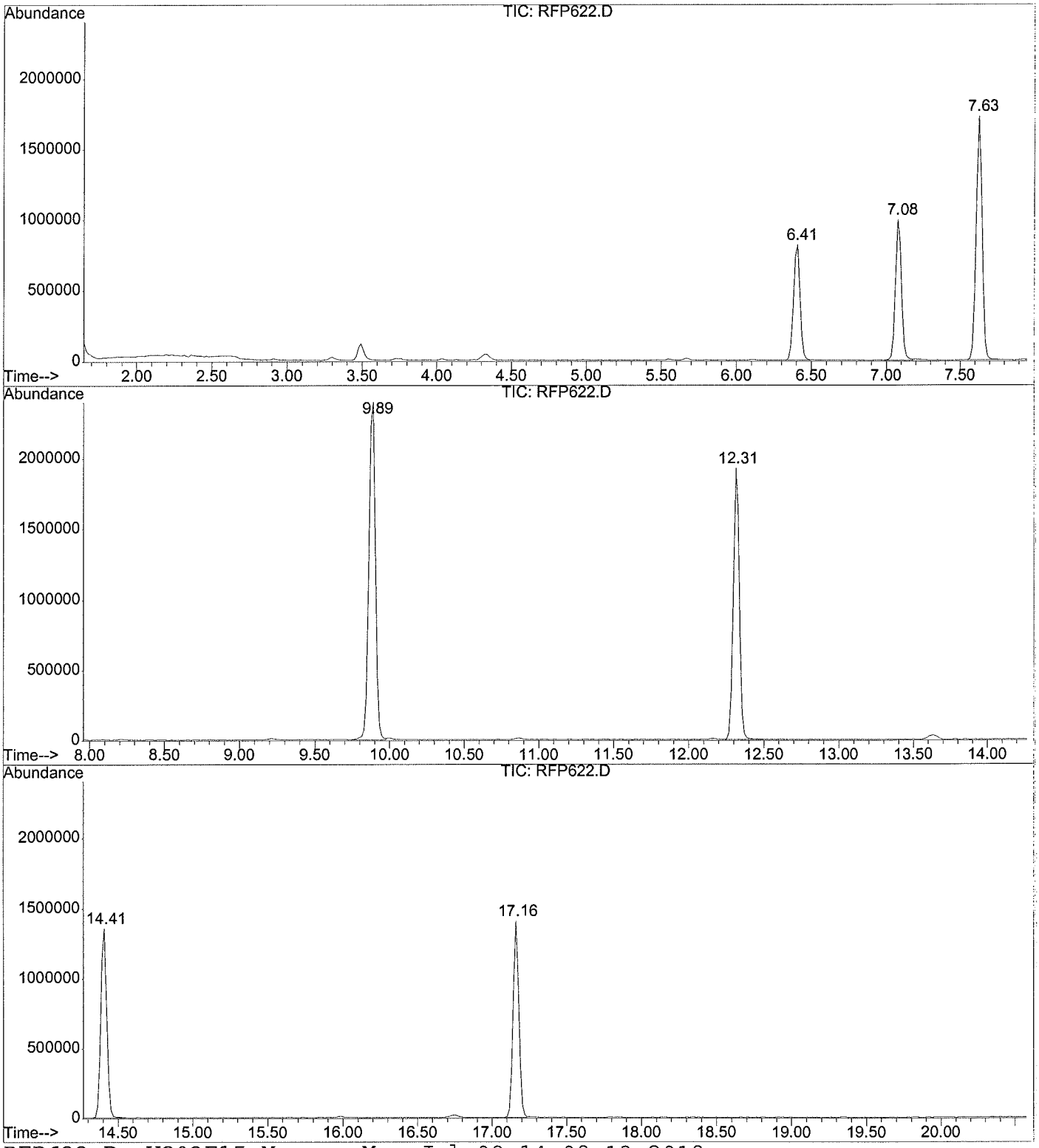
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.406	315	321	327	rBV	815579	2452971	33.44%	8.096%
2	7.075	359	366	373	rBV	993497	2810349	38.31%	9.275%
3	7.626	398	403	413	rVB	1726400	4874895	66.45%	16.089%
4	9.887	545	555	561	rBV	2398673	7336223	100.00%	24.212%
5	12.311	713	718	731	rBV	1927117	5385908	73.42%	17.775%
6	14.408	854	859	869	rVB	1356309	3694162	50.36%	12.192%
7	17.160	1039	1044	1049	rBV	1406160	3745134	51.05%	12.360%

Sum of corrected areas: 30299642

RFP622.D VO02F15.M Mon Jul 09 14:08:13 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP622.D
Operator : ODinh
Acquired : 29 Jun 2018 3:09 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-08
Misc Info :
Vial Number: 14
Quant File :VO02F15.RES (RTE Integrator)



RFP622.D VO02F15.M Mon Jul 09 14:08:13 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 3:09 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP622.D
Name: 18F187-08
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RFP622.D VO02F15.M Mon Jul 09 14:08:13 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/22/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 15:35
Sample ID: 18Q2DP009-SB0701-SO-0	Date Analyzed: 06/29/18 15:35
Lab Samp ID: F187-10	Dilution Factor: 0.98
Lab File ID: RFP623	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : 5.8
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0052	0.00052	0.0010
1,1,1-TRICHLOROETHANE	ND	0.0052	0.00052	0.0010
1,1,2,2-TETRACHLOROETHANE	ND	0.0052	0.00052	0.0010
1,1,2-TRICHLOROETHANE	ND	0.0052	0.00052	0.0010
1,1-DICHLOROETHANE	ND	0.0052	0.00052	0.0010
1,1-DICHLOROETHENE	ND	0.0052	0.00052	0.0010
1,1-DICHLOROPROPENE	ND	0.0052	0.00052	0.0010
1,2,3-TRICHLOROBENZENE	ND	0.0052	0.0010	0.0021
1,2,3-TRICHLOROPROPANE	ND	0.0052	0.0010	0.0021
1,2,4-TRICHLOROBENZENE	ND	0.0052	0.0010	0.0021
1,2,4-TRIMETHYLBENZENE	ND	0.0052	0.00057	0.0021
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0052	0.0010	0.0021
1,2-DIBROMOETHANE	ND	0.0052	0.00052	0.0010
1,2-DICHLOROBENZENE	ND	0.0052	0.00052	0.0010
1,2-DICHLOROETHANE	ND	0.0052	0.00052	0.0010
1,2-DICHLOROPROPANE	ND	0.0052	0.00052	0.0010
1,3,5-TRIMETHYLBENZENE	ND	0.0052	0.00061	0.0021
1,3-DICHLOROBENZENE	ND	0.0052	0.00054	0.0010
1,3-DICHLOROPROPANE	ND	0.0052	0.00052	0.0010
1,4-DICHLOROBENZENE	ND	0.0052	0.00052	0.0010
2,2-DICHLOROPROPANE	ND	0.0052	0.0010	0.0021
2-BUTANONE	ND	0.010	0.0026	0.0052
2-CHLOROTOLUENE	ND	0.0052	0.00085	0.0010
2-HEXANONE	ND	0.010	0.0030	0.0052
4-CHLOROTOLUENE	ND	0.0052	0.00070	0.0010
ACETONE	0.043	0.010	0.0032	0.0052
BENZENE	ND	0.0052	0.00052	0.0010
BROMOBENZENE	ND	0.0052	0.00052	0.0010
BROMOCHLOROMETHANE	ND	0.0052	0.00052	0.0010
BROMODICHLOROMETHANE	ND	0.0052	0.00052	0.0010
BROMOFORM	ND	0.0052	0.0010	0.0021
BROMOMETHANE	ND	0.010	0.0019	0.0021
CARBON DISULFIDE	0.00097J	0.0052	0.00052	0.0010
CARBON TETRACHLORIDE	ND	0.0052	0.00056	0.0010
CHLOROBENZENE	ND	0.0052	0.00052	0.0010
CHLOROETHANE	ND	0.0052	0.0014	0.0021
CHLOROFORM	ND	0.0052	0.00052	0.0010
CHLOROMETHANE	ND	0.0052	0.0010	0.0021
CIS-1,2-DICHLOROETHYLENE	ND	0.0052	0.00052	0.0010
CIS-1,3-DICHLOROPROPENE	ND	0.0052	0.00052	0.0010
CYCLOHEXANE	ND	0.0052	0.0012	0.0021
DIBROMOCHLOROMETHANE	ND	0.0052	0.00052	0.0010
DIBROMOMETHANE	ND	0.0052	0.00052	0.0010
DICHLORODIFLUOROMETHANE	ND	0.0052	0.0012	0.0021
ETHYLBENZENE	ND	0.0052	0.00052	0.0010
HEXACHLOROBUTADIENE	ND	0.0052	0.0010	0.0021
ISOPROPYLBENZENE	ND	0.0052	0.00067	0.0021
METHYLENE CHLORIDE	ND	0.010	0.0021	0.0052
M,P-XYLENE	ND	0.0052	0.0010	0.0021
4-METHYL-2-PENTANONE	ND	0.010	0.0029	0.0052
TERT-BUTYL METHYL ETHER	ND	0.0052	0.00052	0.0010
NAPHTHALENE	ND	0.0052	0.0010	0.0021
N-BUTYLBENZENE	ND	0.0052	0.00073	0.0010
N-PROPYLBENZENE	ND	0.0052	0.00068	0.0010
O-XYLENE	ND	0.0052	0.00052	0.0010
P-ISOPROPYLTOLUENE	ND	0.0052	0.00065	0.0010
SEC-BUTYLBENZENE	ND	0.0052	0.00070	0.0010
STYRENE	ND	0.0052	0.00052	0.0010
TERT-BUTYLBENZENE	ND	0.0052	0.00065	0.0010
TETRACHLOROETHENE	0.00076J	0.0052	0.00052	0.0010
TOLUENE	ND	0.0052	0.00052	0.0010
TRANS-1,2-DCE	ND	0.0052	0.00052	0.0010
TRANS-1,3-DICHLOROPROPENE	ND	0.0052	0.00052	0.0010
TCE	ND	0.0052	0.00052	0.0010
TRICHLOROFLUOROMETHANE	ND	0.0052	0.0011	0.0021
TRICHLOROTRIFLUOROETHANE	ND	0.0052	0.0010	0.0021
VINYL CHLORIDE	ND	0.0052	0.0015	0.0021
VINYL ACETATE	ND	0.0052	0.0014	0.0021
XYLENES, TOTAL	ND	0.0052	0.00052	0.0010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0525	0.05202	101	71-136
4-BROMOFLUOROBENZENE	0.0549	0.05202	106	79-119
TOLUENE-D8	0.0546	0.05202	105	85-116
DIBROMOFLUOROMETHANE	0.0545	0.05202	105	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/22/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 15:35
Sample ID	: 18Q2DP009-SB0701-SO-0	Date Analyzed	: 06/29/18 15:35
Lab Samp ID	: F187-10	Dilution Factor	: 0.98
Lab File ID	: RFP623	Matrix	: SOIL
Ext Btch ID	: VSO2F26	% Moisture	: 5.8
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP623.D
Acq On : 29 Jun 2018 3:35 pm
Sample : 18F187-10
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:28 2018

Vial: 15
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2132032	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.31	117	1756194	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.16	152	622904	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	796064	52.37	ug/l	-0.02
Spiked Amount 50.000			Recovery =	104.74%		
43) 1,2-Dichloroethane-d4	7.08	65	951376	50.43	ug/l	-0.03
Spiked Amount 50.000			Recovery =	100.86%		
57) Toluene-d8	9.89	98	2719650	52.50	ug/l	-0.02
Spiked Amount 50.000			Recovery =	105.00%		
79) 4-Bromofluorobenzene	14.41	95	792497	52.81	ug/l	-0.02
Spiked Amount 50.000			Recovery =	105.62%		
Target Compounds						Qvalue
11) Acetone	3.49	43	322532	40.91	ug/l	90
19) Carbon disulfide	4.24	76	48532	0.93	ug/l	98
28) 2-Butanone	5.68	43	35785	2.22	ug/l	96
64) Tetrachloroethene	11.03	164	8587	0.73	ug/l	80

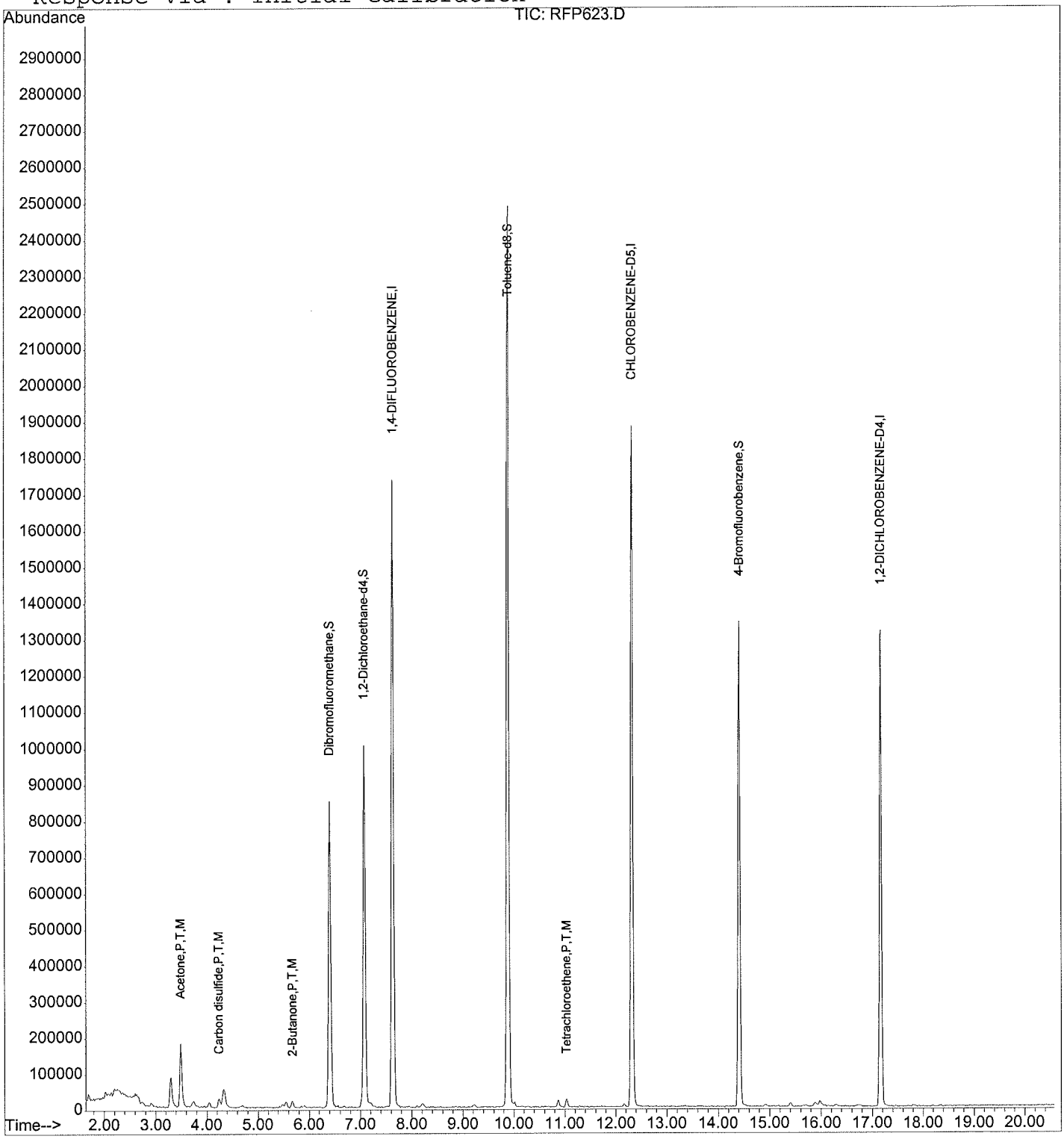
(#) = qualifier out of range (m) = manual integration

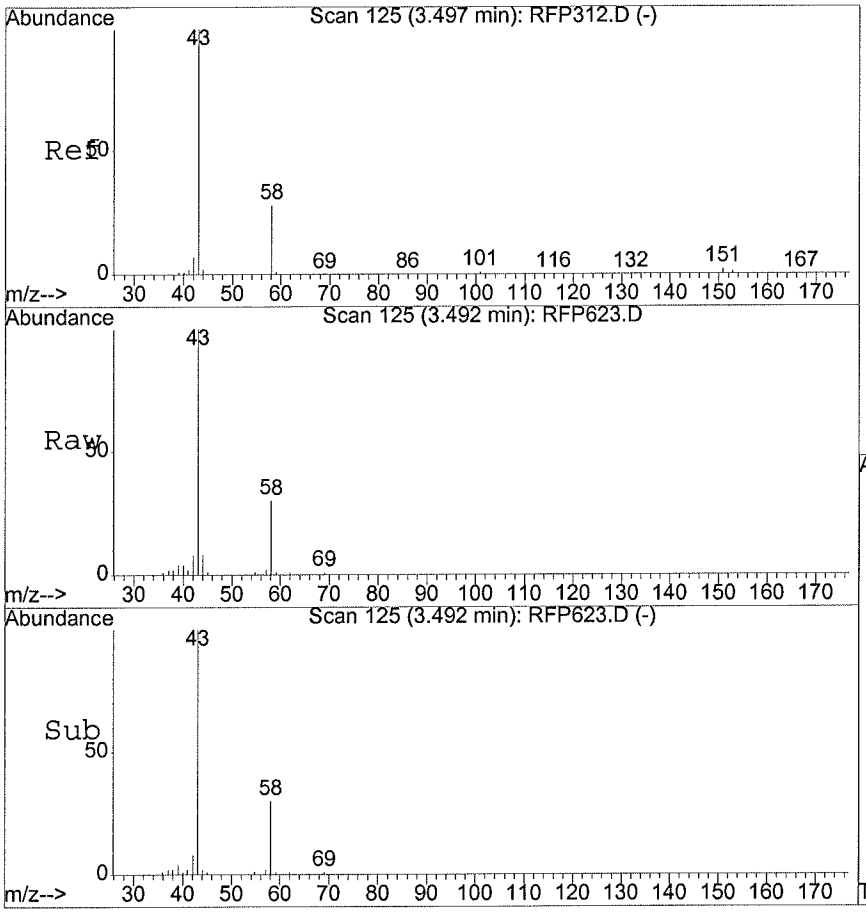
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP623.D
Acq On : 29 Jun 2018 3:35 pm
Sample : 18F187-10
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:28 2018

Vial: 15
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

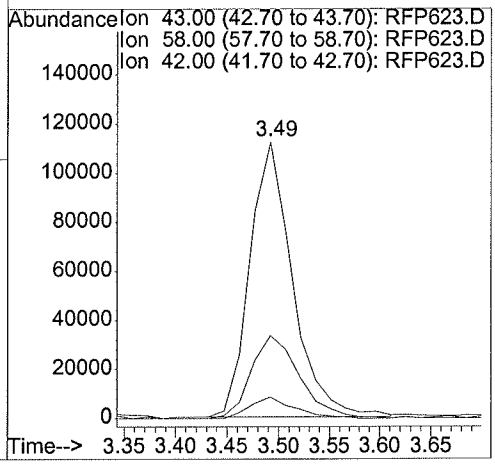


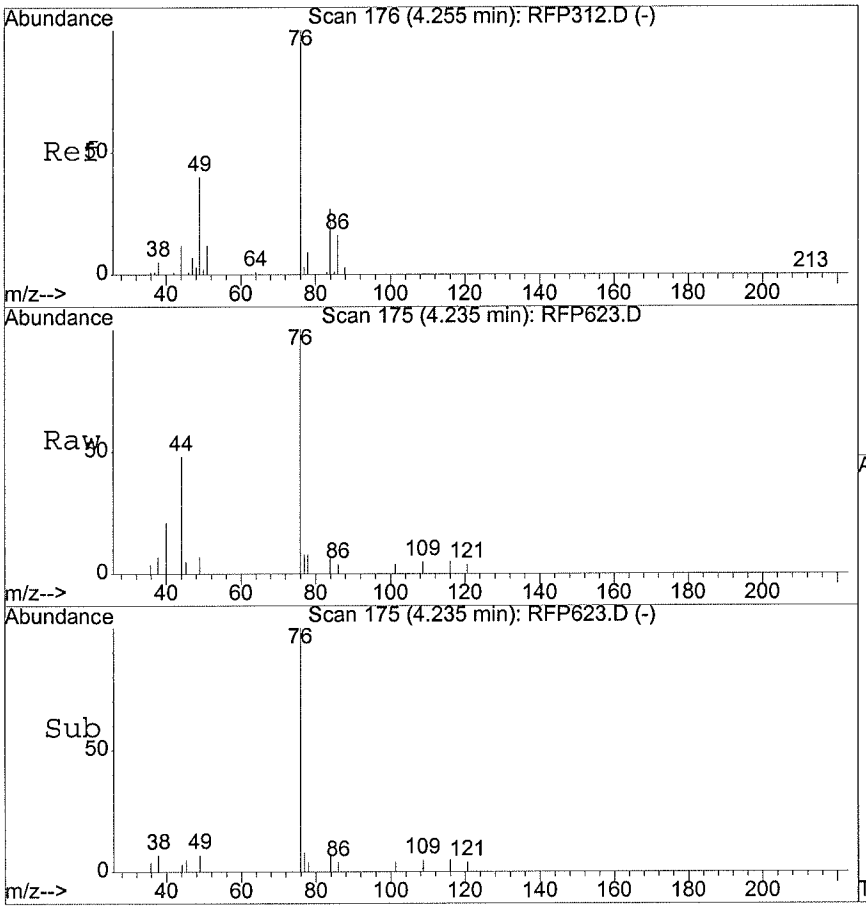


#11
Acetone
Concen: 40.91 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.01 min
Lab File: RFP623.D
Acq: 29 Jun 2018 3:35 pm

Tgt Ion: 43 Resp: 322532

Ion	Ratio	Lower	Upper
43	100		
58	34.3	0.0	58.3
42	8.2	0.0	36.9

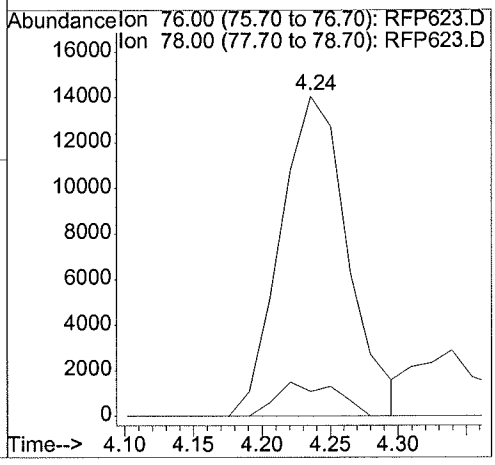


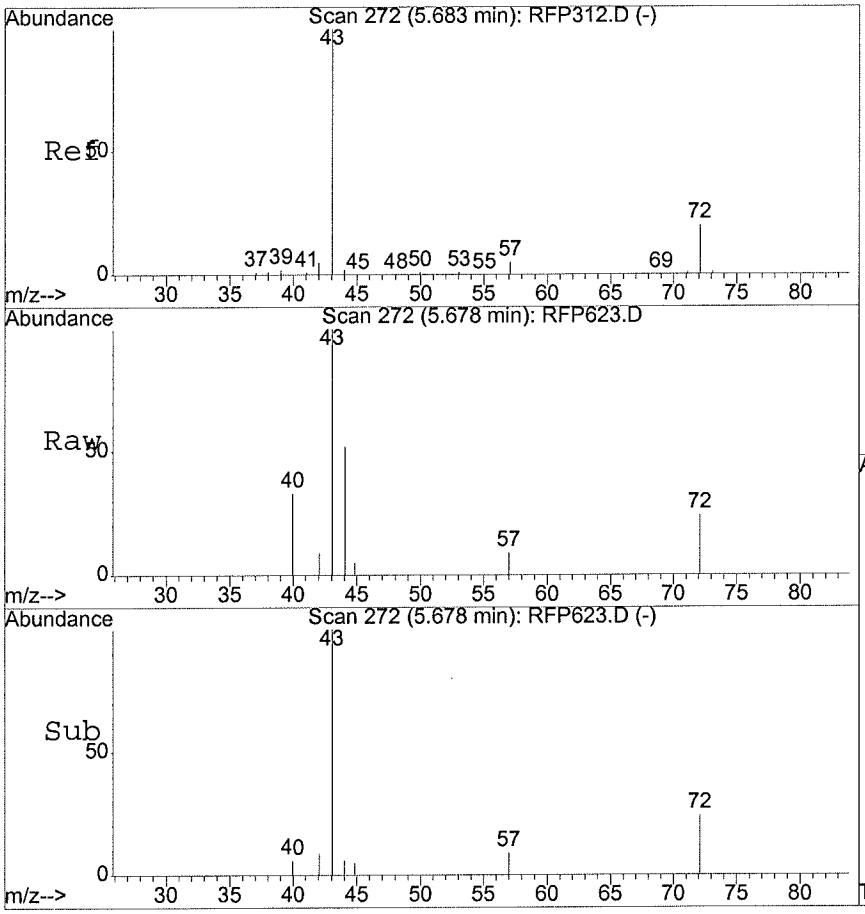


#19
Carbon disulfide
Concen: 0.93 ug/l
RT: 4.24 min Scan# 175
Delta R.T. -0.02 min
Lab File: RFP623.D
Acq: 29 Jun 2018 3:35 pm

Tgt Ion: 76 Resp: 48532

Ion	Ratio	Lower	Upper
76	100		
78	9.4	0.0	38.8

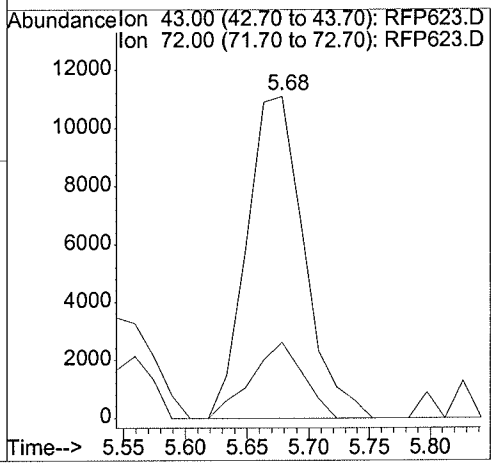


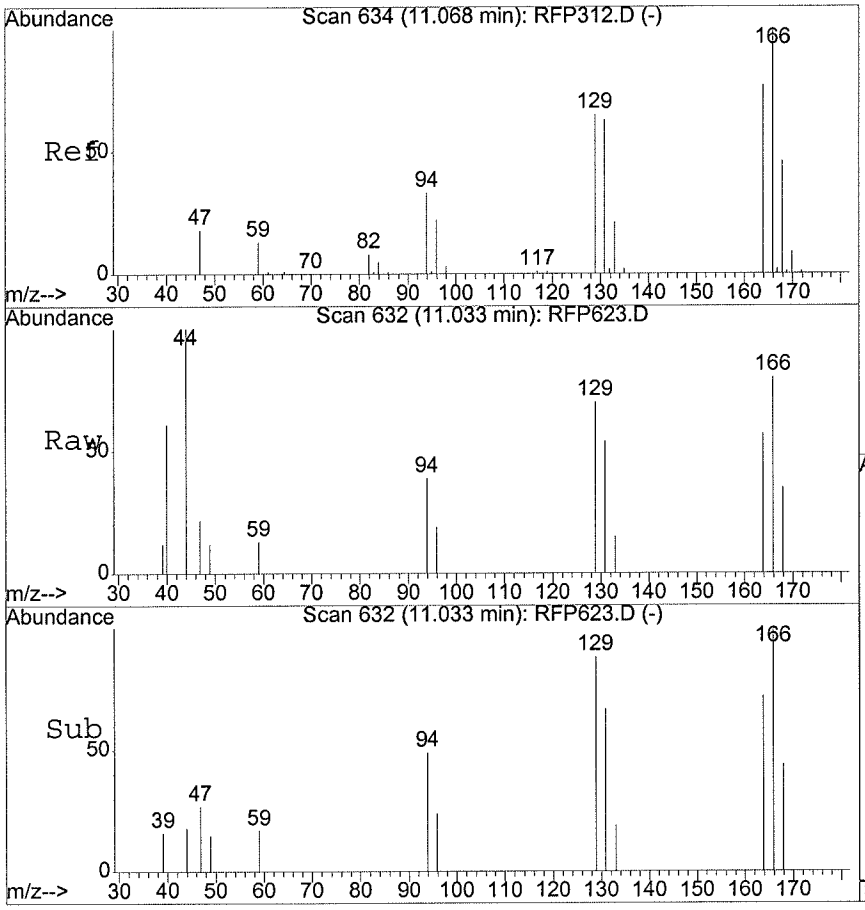


#28
2-Butanone
Concen: 2.22 ug/l
RT: 5.68 min Scan# 272
Delta R.T. -0.01 min
Lab File: RFP623.D
Acq: 29 Jun 2018 3:35 pm

Tgt Ion: 43 Resp: 35785

Ion	Ratio	Lower	Upper
43	100		
72	21.4	0.0	49.4

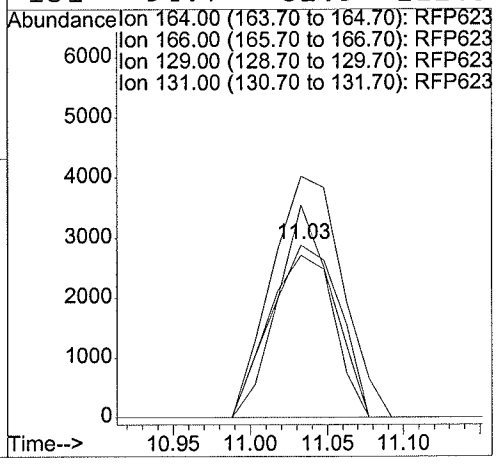




#64
Tetrachloroethene
Concen: 0.73 ug/l
RT: 11.03 min Scan# 632
Delta R.T. -0.03 min
Lab File: RFP623.D
Acq: 29 Jun 2018 3:35 pm

Tgt Ion:164 Resp: 8587

Ion	Ratio	Lower	Upper
164	100		
166	151.3	96.8	156.8
129	107.1	55.7	115.7
131	94.7	52.9	112.9



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP623.D
Acq On : 29 Jun 2018 3:35 pm
Sample : 18F187-10
Misc :
MS Integration Params: LSCINT.P

Vial: 15
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0

Filtering: 5
Min Area: 10 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

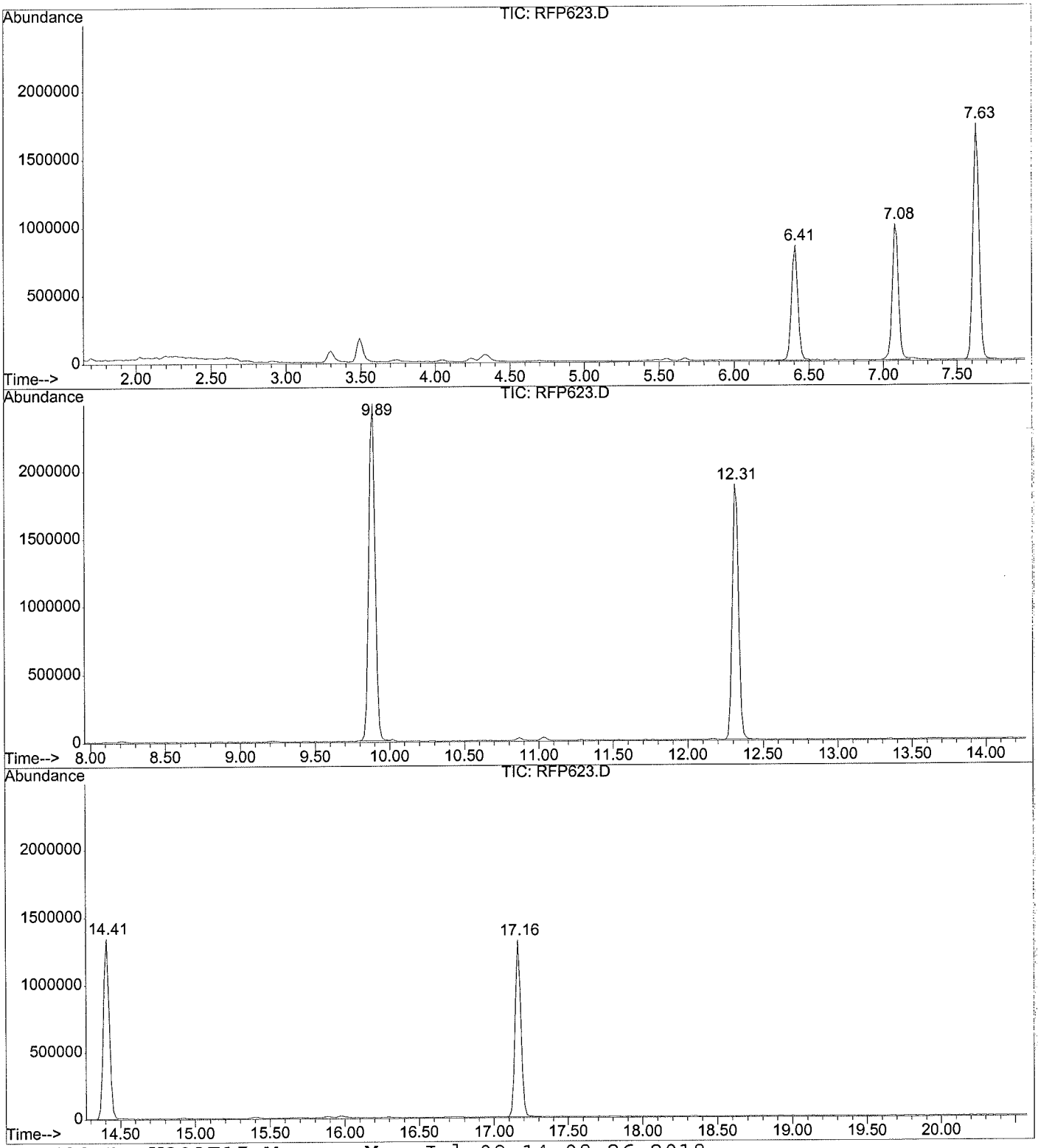
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.407	312	321	328	rBV	848785	2524997	34.41%	8.337%
2	7.076	360	366	373	rBV	1000993	2958491	40.31%	9.769%
3	7.627	398	403	411	rBV	1731886	4987089	67.96%	16.467%
4	9.887	549	555	563	rBV	2480765	7338653	100.00%	24.231%
5	12.312	714	718	727	rBV	1878834	5363894	73.09%	17.711%
6	14.409	854	859	864	rBV	1340277	3597717	49.02%	11.879%
7	17.161	1039	1044	1056	rVB	1314900	3515088	47.90%	11.606%

Sum of corrected areas: 30285929

RFP623.D VO02F15.M Mon Jul 09 14:08:26 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP623.D
Operator : ODinh
Acquired : 29 Jun 2018 3:35 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-10
Misc Info :
Vial Number: 15
Quant File :VO02F15.RES (RTE Integrator)



RFP623.D VO02F15.M Mon Jul 09 14:08:26 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 3:35 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP623.D
Name: 18F187-10
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RFP623.D VO02F15.M Mon Jul 09 14:08:26 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/22/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 17:36
Sample ID: 18Q2DP009-SB0702-SO-0	Date Analyzed: 06/29/18 17:36
Lab Samp ID: F187-11	Dilution Factor: 1.03
Lab File ID: RFP628	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : 4.7
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1,1-TRICHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1,2,2-TETRACHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1,2-TRICHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1-DICHLOROETHANE	ND	0.0054	0.00054	0.0011
1,1-DICHLOROETHENE	ND	0.0054	0.00054	0.0011
1,1-DICHLOROPROPENE	ND	0.0054	0.00054	0.0011
1,2,3-TRICHLOROBENZENE	ND	0.0054	0.0011	0.0022
1,2,3-TRICHLOROPROPANE	ND	0.0054	0.0011	0.0022
1,2,4-TRICHLOROBENZENE	ND	0.0054	0.0011	0.0022
1,2,4-TRIMETHYLBENZENE	ND	0.0054	0.00059	0.0022
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0054	0.0011	0.0022
1,2-DIBROMOETHANE	ND	0.0054	0.00054	0.0011
1,2-DICHLOROBENZENE	ND	0.0054	0.00054	0.0011
1,2-DICHLOROETHANE	0.0031J	0.0054	0.00054	0.0011
1,2-DICHLOROPROPANE	ND	0.0054	0.00054	0.0011
1,3,5-TRIMETHYLBENZENE	ND	0.0054	0.00064	0.0022
1,3-DICHLOROBENZENE	ND	0.0054	0.00056	0.0011
1,3-DICHLOROPROPANE	ND	0.0054	0.00054	0.0011
1,4-DICHLOROBENZENE	ND	0.0054	0.00054	0.0011
2,2-DICHLOROPROPANE	ND	0.0054	0.0011	0.0022
2-BUTANONE	ND	0.011	0.0027	0.0054
2-CHLOROTOLUENE	ND	0.0054	0.00089	0.0011
2-HEXANONE	ND	0.011	0.0031	0.0054
4-CHLOROTOLUENE	ND	0.0054	0.00072	0.0011
ACETONE	0.012	0.011	0.0034	0.0054
BENZENE	ND	0.0054	0.00054	0.0011
BROMOBENZENE	ND	0.0054	0.00054	0.0011
BROMOCHLOROMETHANE	ND	0.0054	0.00054	0.0011
BROMODICHLOROMETHANE	ND	0.0054	0.00054	0.0011
BROMOFORM	ND	0.0054	0.0011	0.0022
BROMOMETHANE	ND	0.011	0.0019	0.0022
CARBON DISULFIDE	ND	0.0054	0.00054	0.0011
CARBON TETRACHLORIDE	ND	0.0054	0.00058	0.0011
CHLOROBENZENE	ND	0.0054	0.00054	0.0011
CHLOROETHANE	ND	0.0054	0.0014	0.0022
CHLOROFORM	0.0023J	0.0054	0.00054	0.0011
CHLOROMETHANE	ND	0.0054	0.0011	0.0022
CIS-1,2-DICHLOROETHYLENE	ND	0.0054	0.00054	0.0011
CIS-1,3-DICHLOROPROPENE	ND	0.0054	0.00054	0.0011
CYCLOHEXANE	ND	0.0054	0.0013	0.0022
DIBROMOCHLOROMETHANE	ND	0.0054	0.00054	0.0011
DIBROMOMETHANE	ND	0.0054	0.00054	0.0011
DICHLORODIFLUOROMETHANE	ND	0.0054	0.0013	0.0022
ETHYLBENZENE	ND	0.0054	0.00054	0.0011
HEXACHLOROBUTADIENE	ND	0.0054	0.0011	0.0022
ISOPROPYLBENZENE	ND	0.0054	0.00069	0.0022
METHYLENE CHLORIDE	ND	0.011	0.0022	0.0054
M,P-XYLENE	ND	0.0054	0.0011	0.0022
4-METHYL-2-PENTANONE	ND	0.011	0.0030	0.0054
TERT-BUTYL METHYL ETHER	ND	0.0054	0.00054	0.0011
NAPHTHALENE	ND	0.0054	0.0011	0.0022
N-BUTYLBENZENE	ND	0.0054	0.00076	0.0011
N-PROPYLBENZENE	ND	0.0054	0.00070	0.0011
O-XYLENE	ND	0.0054	0.00054	0.0011
P-ISOPROPYLTOLUENE	ND	0.0054	0.00067	0.0011
SEC-BUTYLBENZENE	ND	0.0054	0.00072	0.0011
STYRENE	ND	0.0054	0.00054	0.0011
TERT-BUTYLBENZENE	ND	0.0054	0.00067	0.0011
TETRACHLOROETHENE	ND	0.0054	0.00054	0.0011
TOLUENE	ND	0.0054	0.00054	0.0011
TRANS-1,2-DCE	ND	0.0054	0.00054	0.0011
TRANS-1,3-DICHLOROPROPENE	ND	0.0054	0.00054	0.0011
TCE	ND	0.0054	0.00054	0.0011
TRICHLOROFLUOROMETHANE	ND	0.0054	0.0012	0.0022
TRICHLOROTRIFLUOROETHANE	ND	0.0054	0.0011	0.0022
VINYL CHLORIDE	ND	0.0054	0.0015	0.0022
VINYL ACETATE	ND	0.0054	0.0014	0.0022
XYLENES, TOTAL	ND	0.0054	0.00054	0.0011

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0551	0.05404	102	71-136
4-BROMOFLUOROBENZENE	0.0545	0.05404	101	79-119
TOLUENE-D8	0.0583	0.05404	108	85-116
DIBROMOFLUOROMETHANE	0.0574	0.05404	106	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 17:36
Sample ID	: 18Q2DP009-SB0702-SO-0	Date Analyzed:	06/29/18 17:36
Lab Samp ID	: F187-11	Dilution Factor:	1.03
Lab File ID	: RFP628	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: 4.7
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP628.D
Acq On : 29 Jun 2018 5:36 pm
Sample : 18F187-11
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:35 2018

Vial: 20
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2003971	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.31	117	1605130	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.16	152	579853	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	759175	53.13	ug/l	-0.02
Spiked Amount 50.000			Recovery =	106.26%		
43) 1,2-Dichloroethane-d4	7.08	65	903217	50.94	ug/l	-0.03
Spiked Amount 50.000			Recovery =	101.88%		
57) Toluene-d8	9.89	98	2554761	53.96	ug/l	-0.02
Spiked Amount 50.000			Recovery =	107.92%		
79) 4-Bromofluorobenzene	14.41	95	704652	50.44	ug/l	-0.02
Spiked Amount 50.000			Recovery =	100.88%		
Target Compounds						Qvalue
11) Acetone	3.49	43	79978	10.79	ug/l	95
13) tert-Butyl alcohol	3.74	59	14300	4.14	ug/l #	1
34) Chloroform	6.11	83	59148	2.13	ug/l	88
44) 1,2-Dichloroethane	7.21	62	60554	2.91	ug/l	95

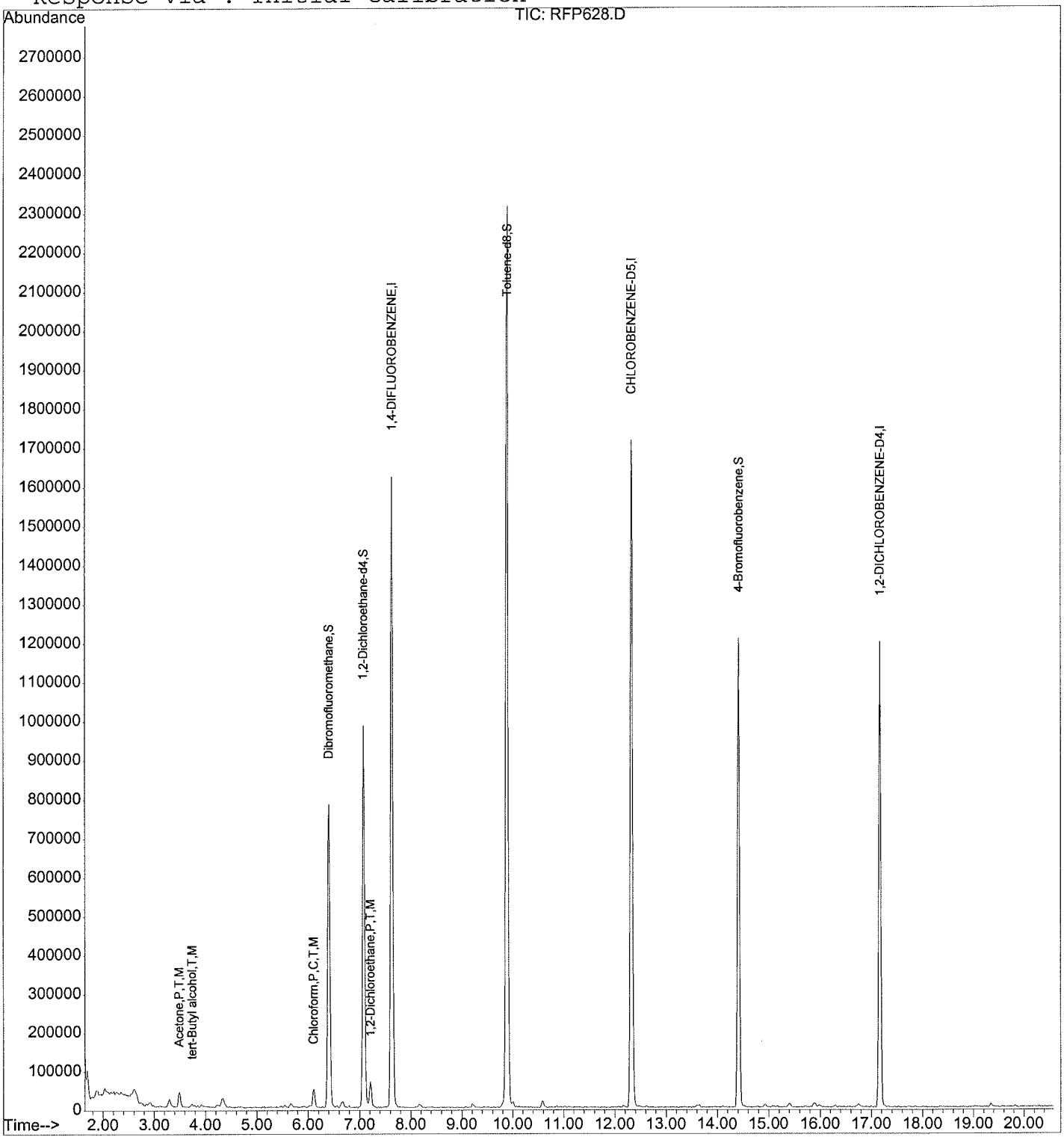
(#) = qualifier out of range (m) = manual integration

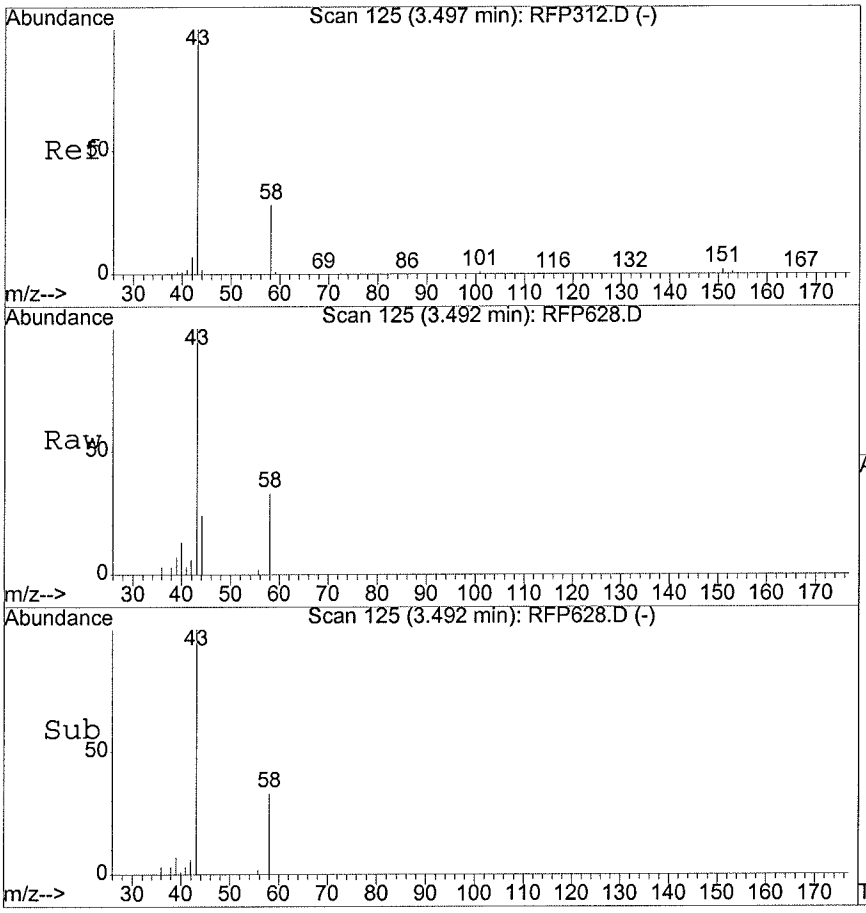
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP628.D
Acq On : 29 Jun 2018 5:36 pm
Sample : 18F187-11
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:35 2018

Vial: 20
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

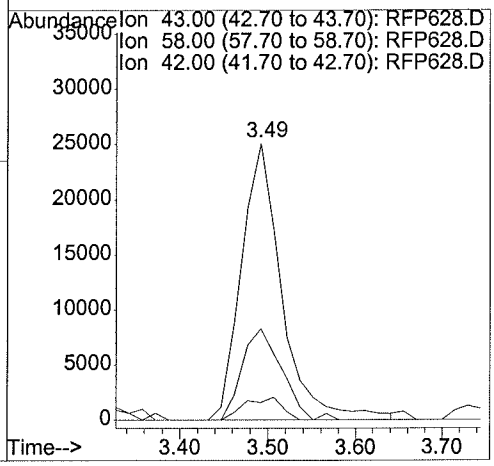


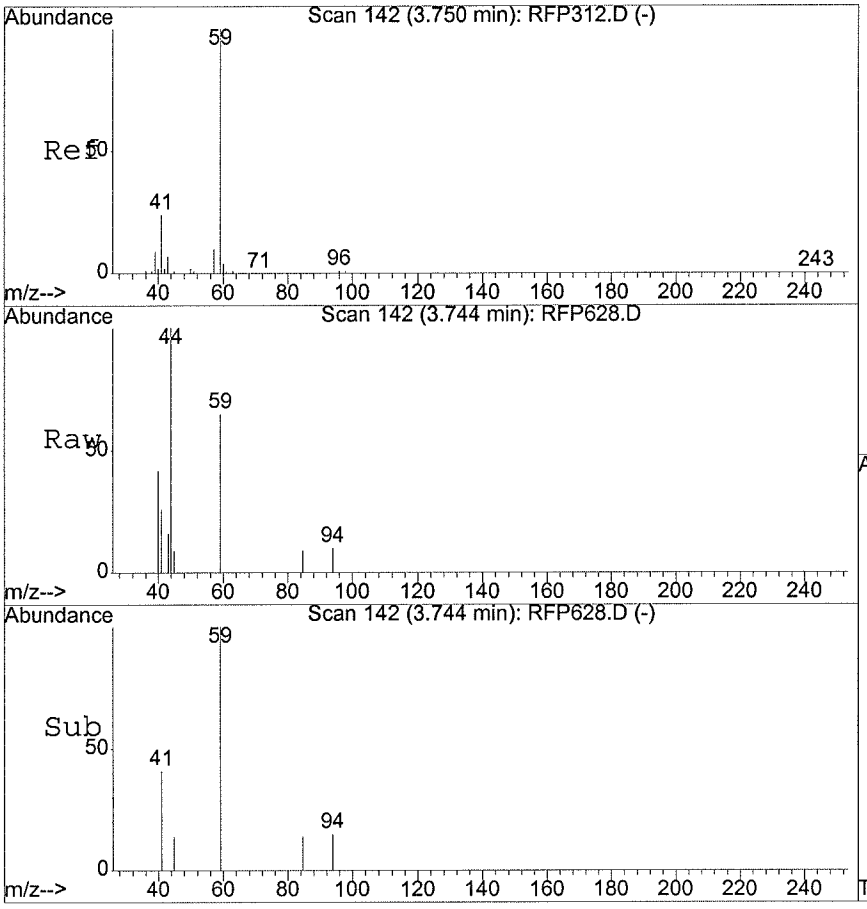


#11
Acetone
Concen: 10.79 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.01 min
Lab File: RFP628.D
Acq: 29 Jun 2018 5:36 pm

Tgt Ion: 43 Resp: 79978

Ion	Ratio	Lower	Upper
43	100		
58	31.6	0.0	58.3
42	7.7	0.0	36.9

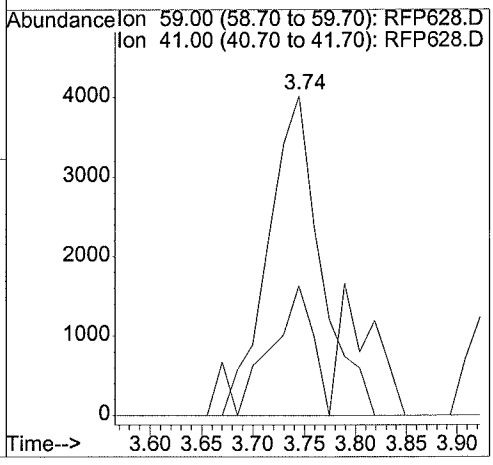


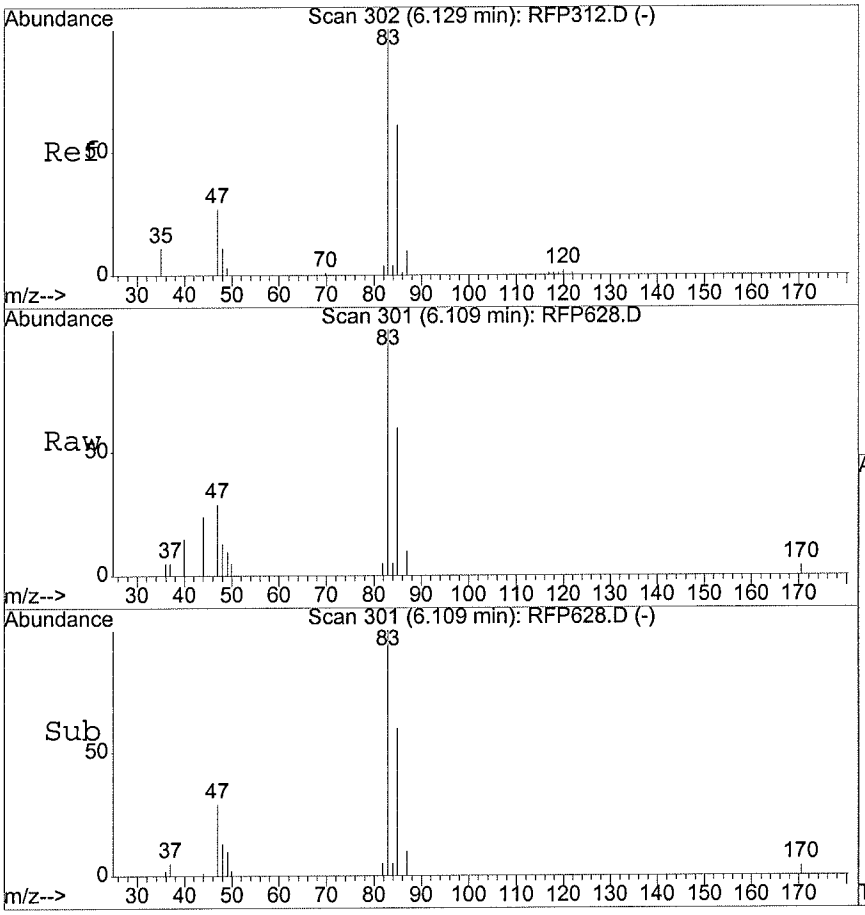


#13
tert-Butyl alcohol
Concen: 4.14 ug/l
RT: 3.74 min Scan# 142
Delta R.T. -0.01 min
Lab File: RFP628.D
Acq: 29 Jun 2018 5:36 pm

Tgt Ion: 59 Resp: 14300

Ion	Ratio	Lower	Upper
59	100		
41	35.9	171.3	231.3#

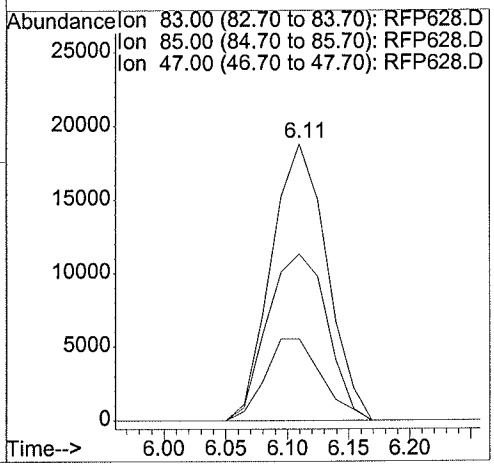


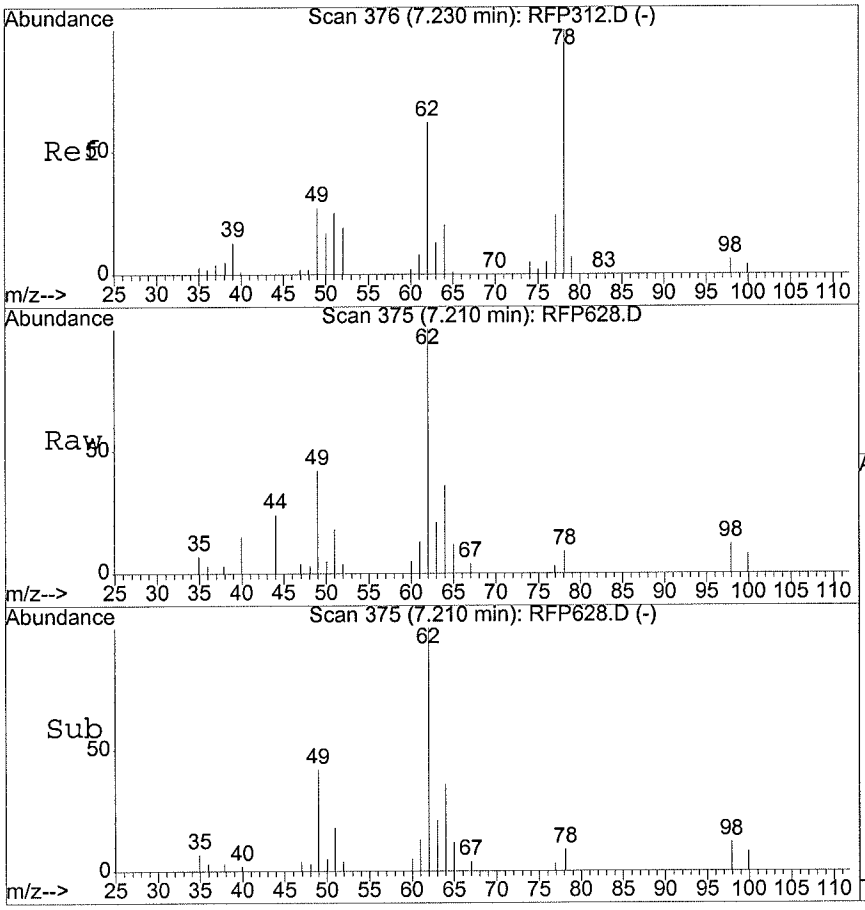


#34
Chloroform
Concen: 2.13 ug/l
RT: 6.11 min Scan# 301
Delta R.T. -0.02 min
Lab File: RFP628.D
Acq: 29 Jun 2018 5:36 pm

Tgt Ion: 83 Resp: 59148

Ion	Ratio	Lower	Upper
83	100		
85	64.6	46.2	106.2
47	30.1	0.0	56.0

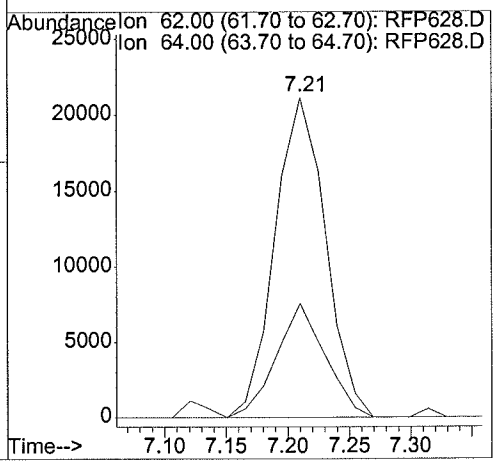




#44
1,2-Dichloroethane
Concen: 2.91 ug/l
RT: 7.21 min Scan# 375
Delta R.T. -0.02 min
Lab File: RFP628.D
Acq: 29 Jun 2018 5:36 pm

Tgt Ion: 62 Resp: 60554

Ion	Ratio	Lower	Upper
62	100		
64	34.6	1.7	61.7



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP628.D Vial: 20
Acq On : 29 Jun 2018 5:36 pm Operator: ODinh
Sample : 18F187-11 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

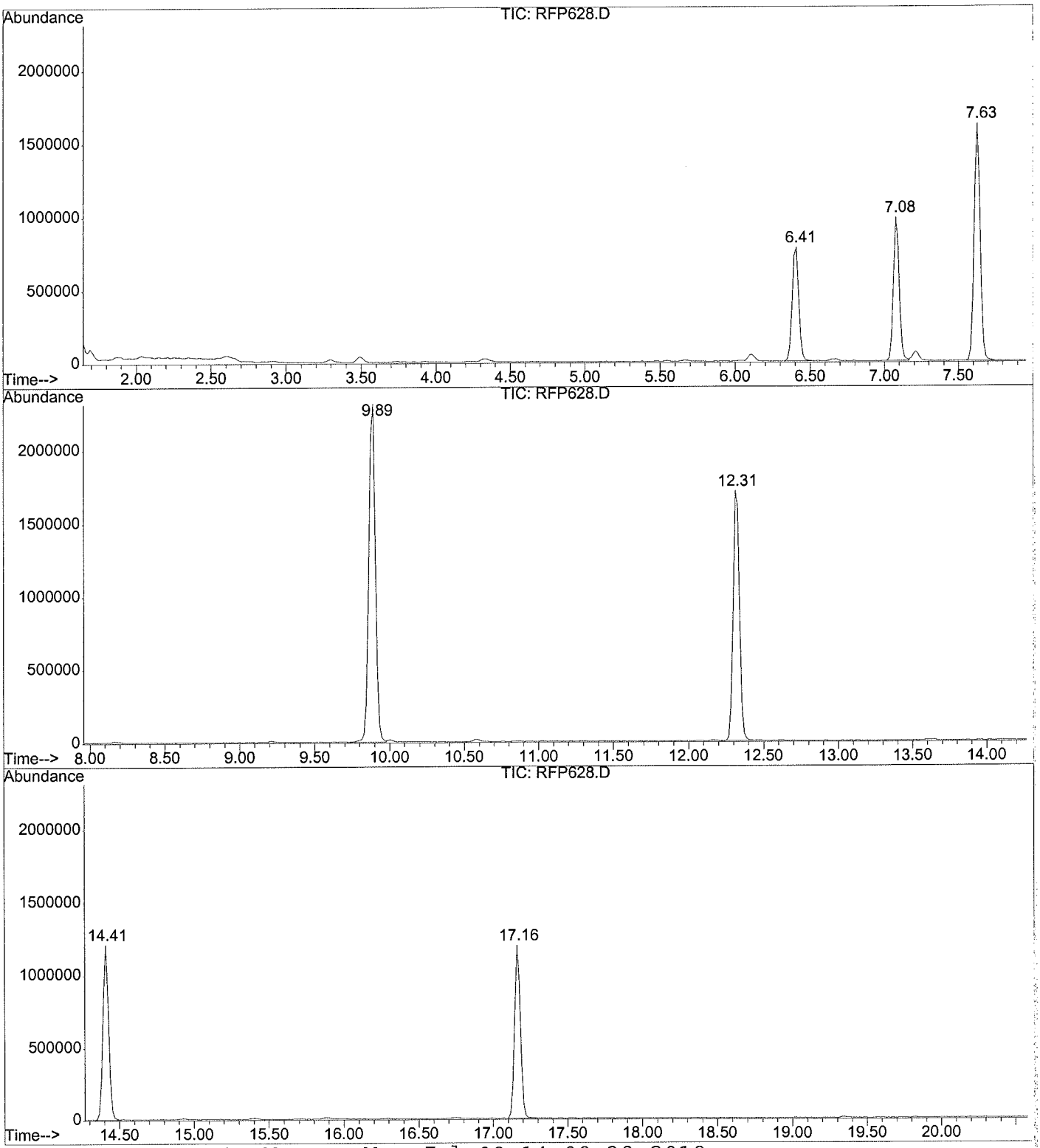
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.407	315	321	329	rBV	780200	2401366	34.12%	8.495%
2	7.076	361	366	372	rBV	979678	2707552	38.47%	9.578%
3	7.627	398	403	411	rVB	1619012	4667456	66.32%	16.511%
4	9.887	544	555	561	rBV	2311380	7037981	100.00%	24.897%
5	12.312	714	718	727	rBV	1711387	4978959	70.74%	17.613%
6	14.409	854	859	866	rBV	1205593	3200957	45.48%	11.323%
7	17.161	1039	1044	1053	rBV	1196235	3274104	46.52%	11.582%

Sum of corrected areas: 28268375

RFP628.D VO02F15.M Mon Jul 09 14:08:38 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP628.D
Operator : ODinh
Acquired : 29 Jun 2018 5:36 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-11
Misc Info :
Vial Number: 20
Quant File :VO02F15.RES (RTE Integrator)



RFP628.D VO02F15.M Mon Jul 09 14:08:38 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 5:36 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP628.D
Name: 18F187-11
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RFP628.D VO02F15.M Mon Jul 09 14:08:38 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/23/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 18:00
Sample ID: 18Q2DP009-SB0301-SO-0	Date Analyzed: 06/29/18 18:00
Lab Samp ID: F187-12	Dilution Factor: 1.1
Lab File ID: RFP629	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : 4.0
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1,1-TRICHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1,2,2-TETRACHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1,2-TRICHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1-DICHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1-DICHLOROETHENE	ND	0.0057	0.00057	0.0011
1,1-DICHLOROPROPENE	ND	0.0057	0.00057	0.0011
1,2,3-TRICHLOROBENZENE	ND	0.0057	0.0011	0.0023
1,2,3-TRICHLOROPROPANE	ND	0.0057	0.0011	0.0023
1,2,4-TRICHLOROBENZENE	ND	0.0057	0.0011	0.0023
1,2,4-TRIMETHYLBENZENE	ND	0.0057	0.00063	0.0023
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0057	0.0011	0.0023
1,2-DIBROMOETHANE	ND	0.0057	0.00057	0.0011
1,2-DICHLOROBENZENE	ND	0.0057	0.00057	0.0011
1,2-DICHLOROETHANE	ND	0.0057	0.00057	0.0011
1,2-DICHLOROPROPANE	ND	0.0057	0.00057	0.0011
1,3,5-TRIMETHYLBENZENE	ND	0.0057	0.00068	0.0023
1,3-DICHLOROBENZENE	ND	0.0057	0.00060	0.0011
1,3-DICHLOROPROPANE	ND	0.0057	0.00057	0.0011
1,4-DICHLOROBENZENE	ND	0.0057	0.00057	0.0011
2,2-DICHLOROPROPANE	ND	0.0057	0.0011	0.0023
2-BUTANONE	ND	0.011	0.0029	0.0057
2-CHLOROTOLUENE	ND	0.0057	0.00094	0.0011
2-HEXANONE	ND	0.011	0.0033	0.0057
4-CHLOROTOLUENE	ND	0.0057	0.00077	0.0011
ACETONE	0.019	0.011	0.0036	0.0057
BENZENE	0.0013J	0.0057	0.00057	0.0011
BROMOBENZENE	ND	0.0057	0.00057	0.0011
BROMOCHLOROMETHANE	ND	0.0057	0.00057	0.0011
BROMODICHLOROMETHANE	ND	0.0057	0.00057	0.0011
BROMOFORM	ND	0.0057	0.0011	0.0023
BROMOMETHANE	ND	0.011	0.0021	0.0023
CARBON DISULFIDE	ND	0.0057	0.00057	0.0011
CARBON TETRACHLORIDE	ND	0.0057	0.00062	0.0011
CHLOROBENZENE	ND	0.0057	0.00057	0.0011
CHLOROETHANE	ND	0.0057	0.0015	0.0023
CHLOROFORM	ND	0.0057	0.00057	0.0011
CHLOROMETHANE	ND	0.0057	0.0011	0.0023
CIS-1,2-DICHLOROETHYLENE	ND	0.0057	0.00057	0.0011
CIS-1,3-DICHLOROPROPENE	ND	0.0057	0.00057	0.0011
CYCLOHEXANE	ND	0.0057	0.0014	0.0023
DIBROMOCHLOROMETHANE	ND	0.0057	0.00057	0.0011
DIBROMOMETHANE	ND	0.0057	0.00057	0.0011
DICHLORODIFLUOROMETHANE	ND	0.0057	0.0014	0.0023
ETHYLBENZENE	ND	0.0057	0.00057	0.0011
HEXACHLOROBUTADIENE	ND	0.0057	0.0011	0.0023
ISOPROPYLBENZENE	ND	0.0057	0.00073	0.0023
METHYLENE CHLORIDE	ND	0.011	0.0023	0.0057
M,P-XYLENE	ND	0.0057	0.0011	0.0023
4-METHYL-2-PENTANONE	ND	0.011	0.0032	0.0057
TERT-BUTYL METHYL ETHER	ND	0.0057	0.00057	0.0011
NAPHTHALENE	ND	0.0057	0.0011	0.0023
N-BUTYLBENZENE	ND	0.0057	0.00080	0.0011
N-PROPYLBENZENE	ND	0.0057	0.00074	0.0011
O-XYLENE	ND	0.0057	0.00057	0.0011
P-ISOPROPYLTOLUENE	ND	0.0057	0.00071	0.0011
SEC-BUTYLBENZENE	ND	0.0057	0.00077	0.0011
STYRENE	ND	0.0057	0.00057	0.0011
TERT-BUTYLBENZENE	ND	0.0057	0.00071	0.0011
TETRACHLOROETHENE	ND	0.0057	0.00057	0.0011
TOLUENE	ND	0.0057	0.00057	0.0011
TRANS-1,2-DCE	ND	0.0057	0.00057	0.0011
TRANS-1,3-DICHLOROPROPENE	ND	0.0057	0.00057	0.0011
TCE	ND	0.0057	0.00057	0.0011
TRICHLOROFLUOROMETHANE	ND	0.0057	0.0013	0.0023
TRICHLOROTRIFLUOROETHANE	ND	0.0057	0.0011	0.0023
VINYL CHLORIDE	ND	0.0057	0.0016	0.0023
VINYL ACETATE	ND	0.0057	0.0015	0.0023
XYLENES, TOTAL	ND	0.0057	0.00057	0.0011

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0569	0.05729	99.4	71-136
4-BROMOFLUOROBENZENE	0.0575	0.05729	100	79-119
TOLUENE-D8	0.0590	0.05729	103	85-116
DIBROMOFLUOROMETHANE	0.0596	0.05729	104	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/23/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 18:00
Sample ID	: 18Q2DP009-SB0301-SO-0	Date Analyzed	: 06/29/18 18:00
Lab Samp ID	: F187-12	Dilution Factor	: 1.1
Lab File ID	: RFP629	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: 4.0
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP629.D
Acq On : 29 Jun 2018 6:00 pm
Sample : 18F187-12
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:35 2018

Vial: 21
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2092835	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.31	117	1752647	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.16	152	676122	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	776356	52.03	ug/l	-0.02
Spiked Amount 50.000			Recovery =	104.06%		
43) 1,2-Dichloroethane-d4	7.08	65	920280	49.70	ug/l	-0.03
Spiked Amount 50.000			Recovery =	99.40%		
57) Toluene-d8	9.89	98	2659772	51.45	ug/l	-0.02
Spiked Amount 50.000			Recovery =	102.90%		
79) 4-Bromofluorobenzene	14.41	95	816761	50.14	ug/l	-0.02
Spiked Amount 50.000			Recovery =	100.28%		
Target Compounds						Qvalue
11) Acetone	3.49	43	130078	16.81	ug/l	94
13) tert-Butyl alcohol	3.73	59	17916	4.97	ug/l #	1
45) Benzene	7.23	78	78715	1.16	ug/l	95
58) Toluene	10.01	91	27950	0.46	ug/l	100

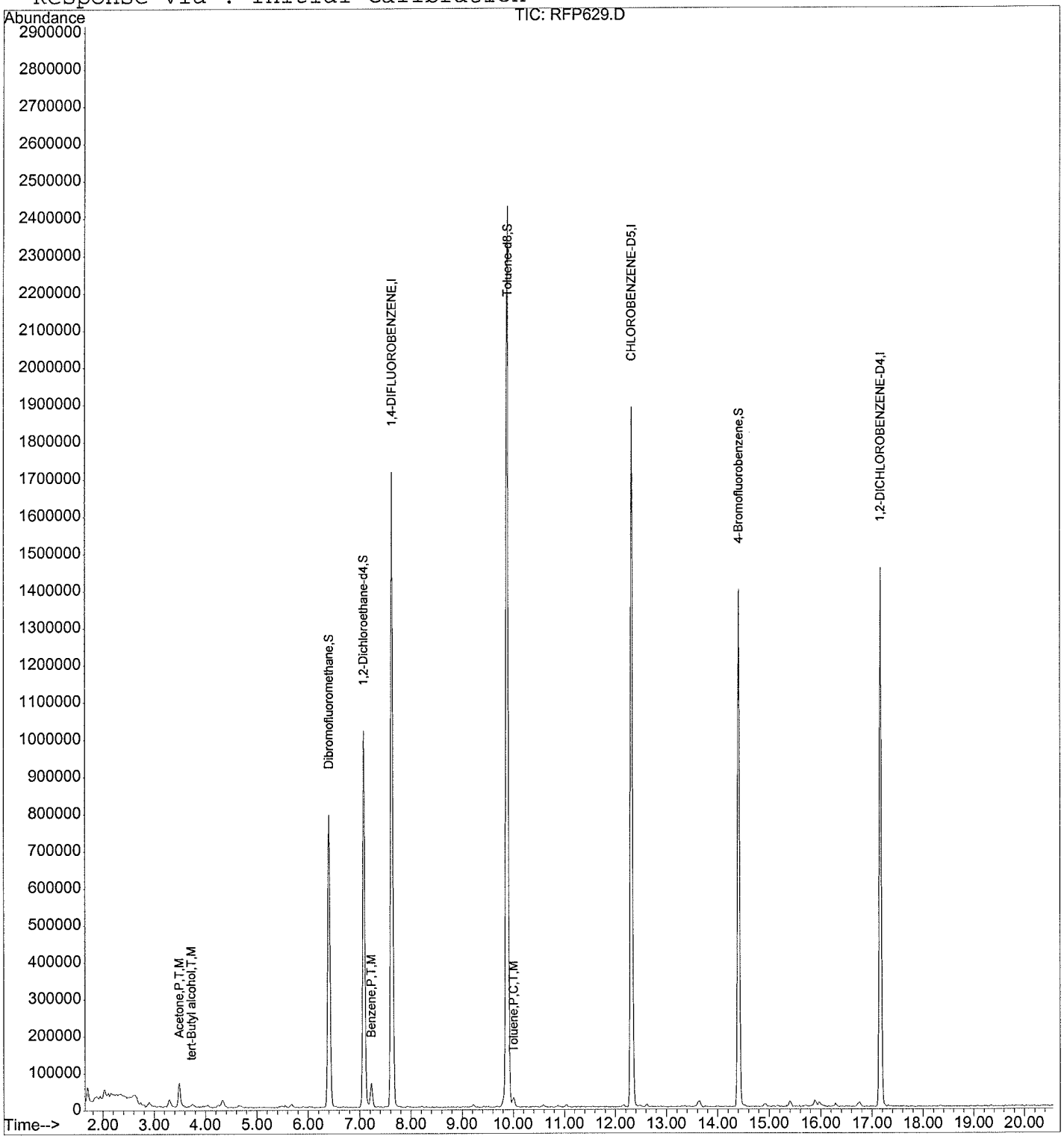
(#) = qualifier out of range (m) = manual integration

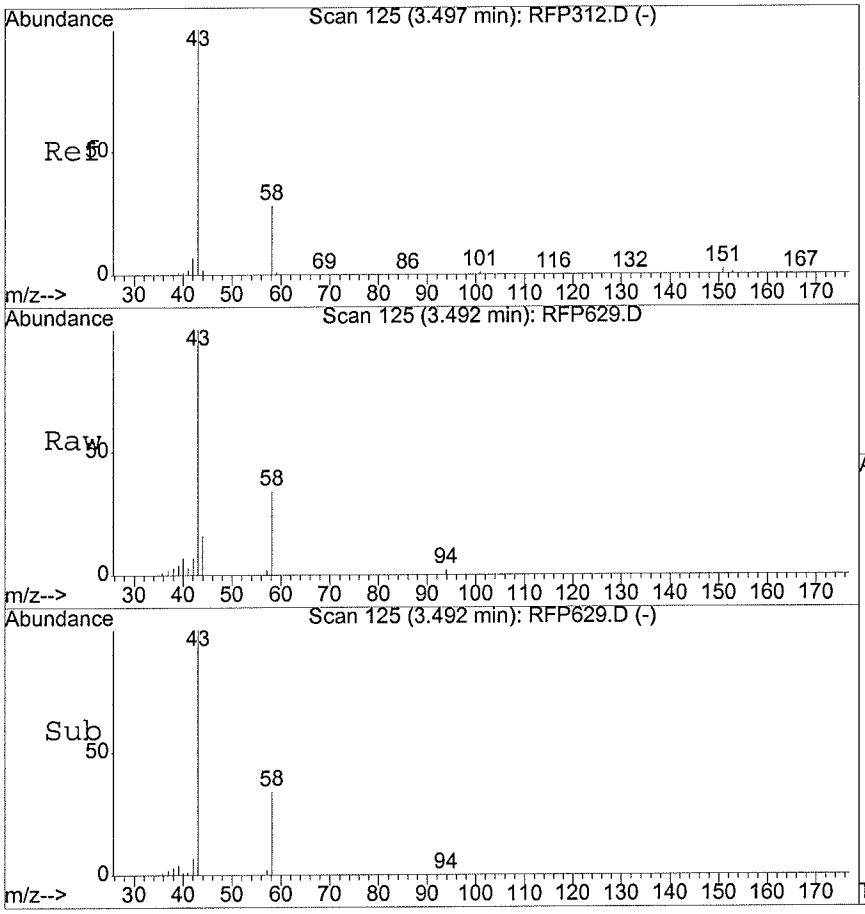
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP629.D
Acq On : 29 Jun 2018 6:00 pm
Sample : 18F187-12
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:35 2018

Vial: 21
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

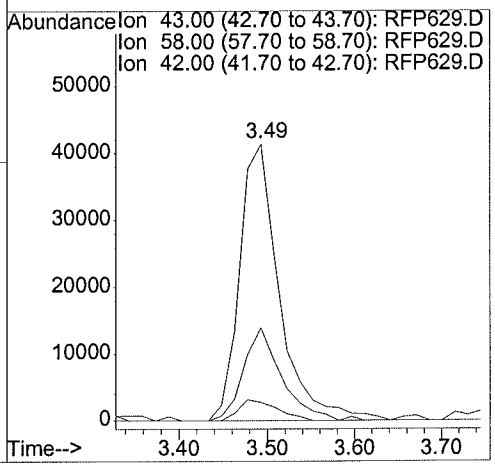


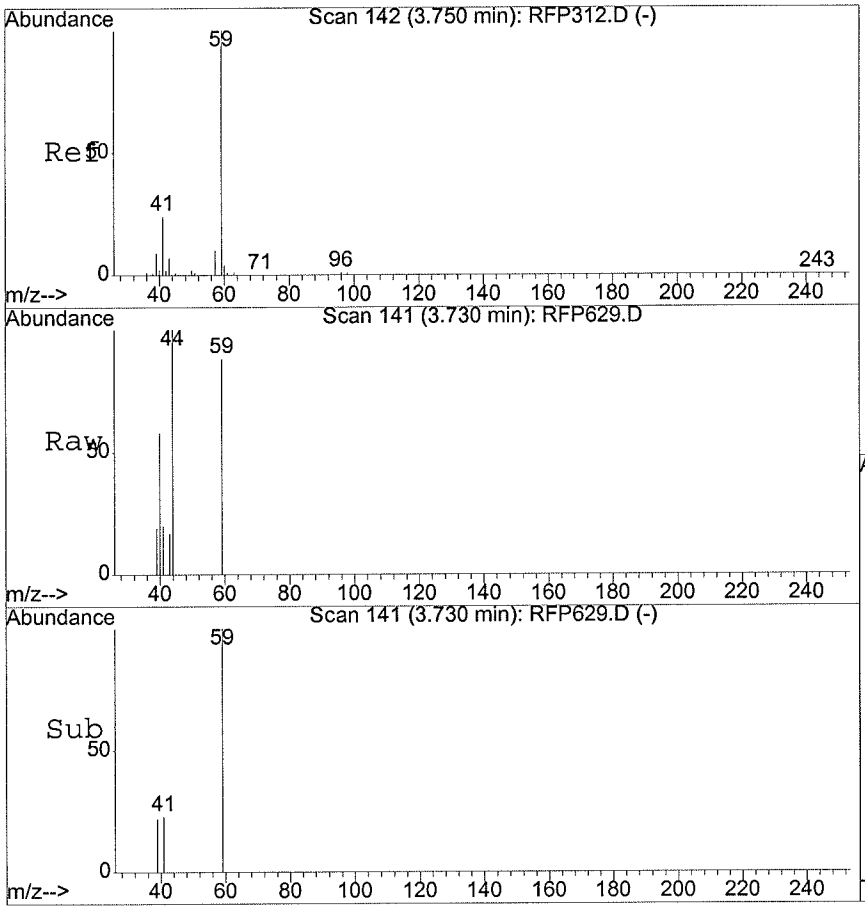


#11
Acetone
Concen: 16.81 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.00 min
Lab File: RFP629.D
Acq: 29 Jun 2018 6:00 pm

Tgt Ion: 43 Resp: 130078

Ion	Ratio	Lower	Upper
43	100		
58	32.0	0.0	58.3
42	7.3	0.0	36.9

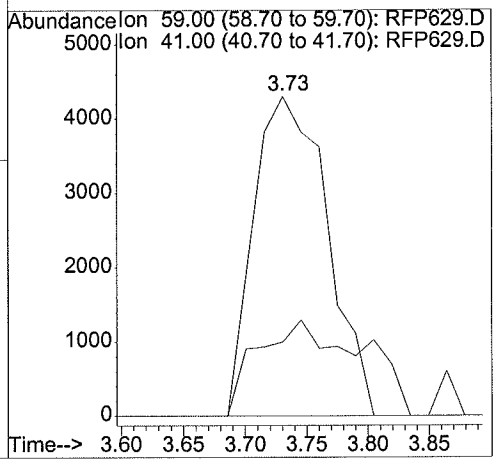


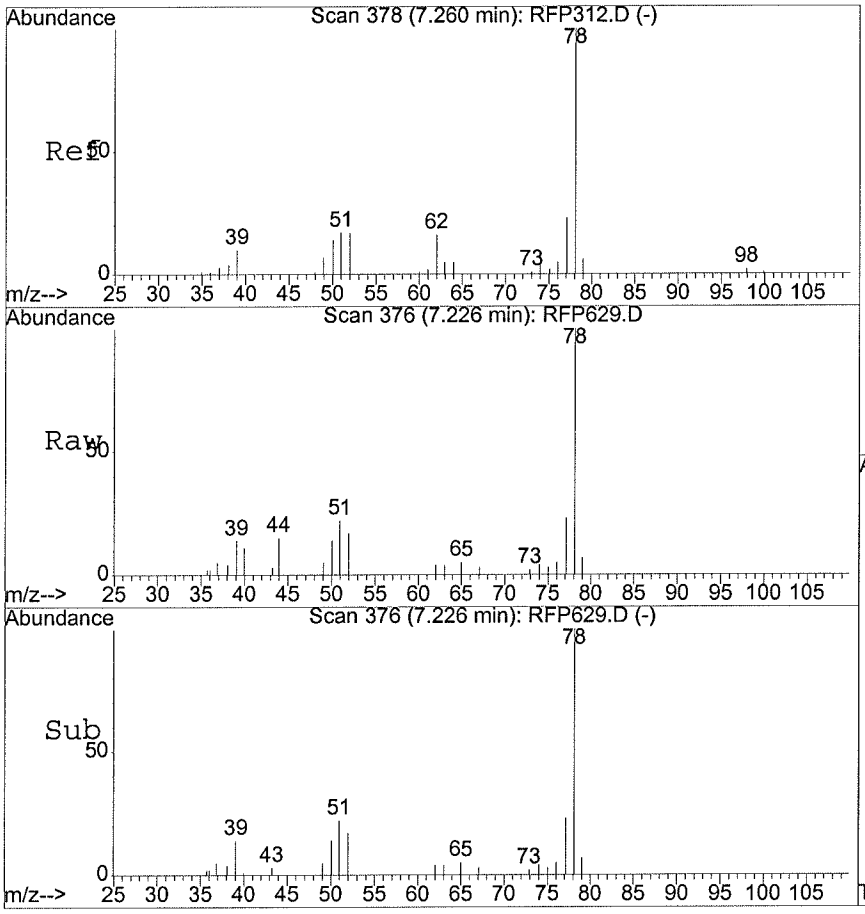


#13
tert-Butyl alcohol
Concen: 4.97 ug/l
RT: 3.73 min Scan# 141
Delta R.T. -0.02 min
Lab File: RFP629.D
Acq: 29 Jun 2018 6:00 pm

Tgt Ion: 59 Resp: 17916

Ion	Ratio	Lower	Upper
59	100		
41	42.3	171.3	231.3#

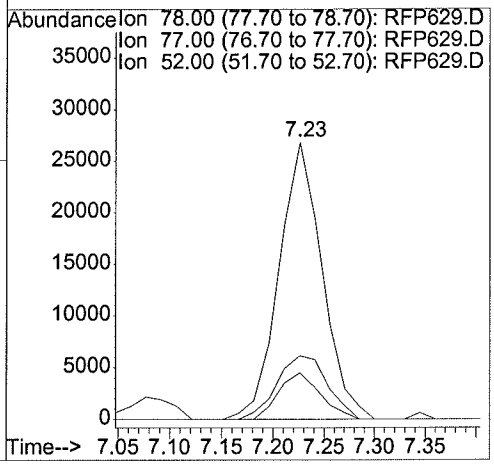


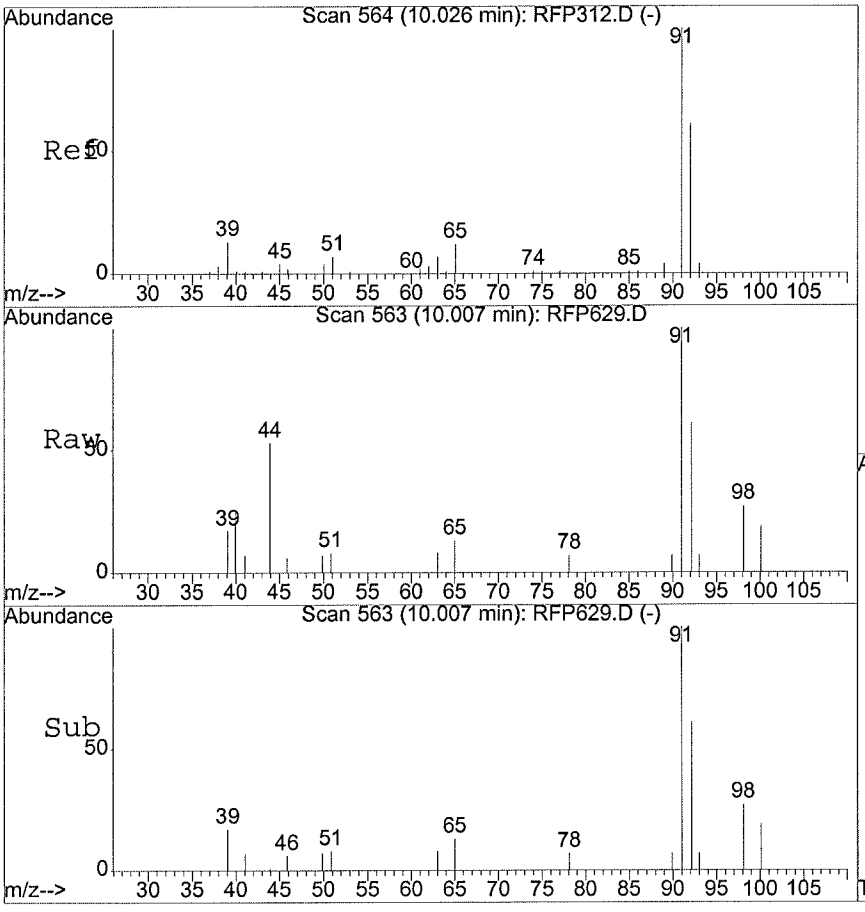


#45
Benzene
Concen: 1.16 ug/l
RT: 7.23 min Scan# 376
Delta R.T. -0.03 min
Lab File: RFP629.D
Acq: 29 Jun 2018 6:00 pm

Tgt Ion: 78 Resp: 78715

Ion	Ratio	Lower	Upper
78	100		
77	26.8	0.0	53.5
52	16.3	0.0	47.3

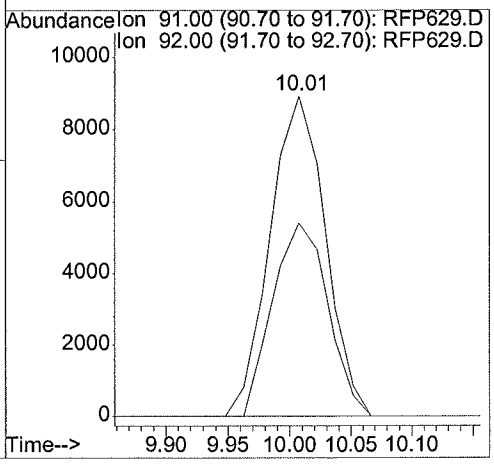




#58
Toluene
Concen: 0.46 ug/l
RT: 10.01 min Scan# 563
Delta R.T. -0.02 min
Lab File: RFP629.D
Acq: 29 Jun 2018 6:00 pm

Tgt Ion: 91 Resp: 27950

Ion	Ratio	Lower	Upper
91	100		
92	60.6	30.9	90.9



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP629.D Vial: 21
Acq On : 29 Jun 2018 6:00 pm Operator: ODinh
Sample : 18F187-12 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

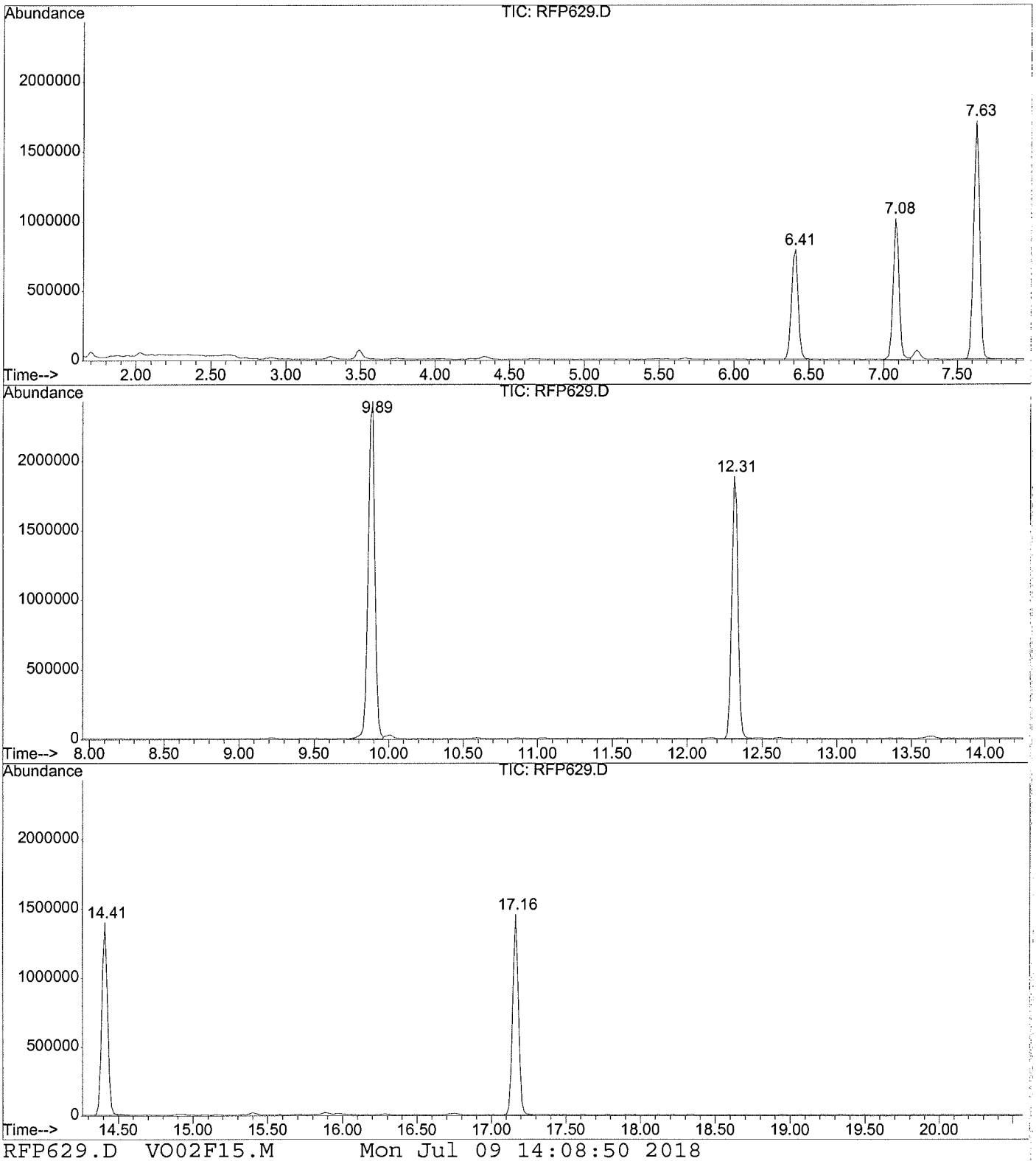
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.408	315	321	329	rBV	790612	2421302	32.76%	7.923%
2	7.077	360	366	373	rBV	1015793	2846204	38.50%	9.313%
3	7.627	398	403	412	rBV	1709733	4868498	65.86%	15.930%
4	9.888	545	555	560	rBV	2424172	7391853	100.00%	24.187%
5	12.313	714	718	726	rBV	1884787	5401804	73.08%	17.675%
6	14.410	854	859	874	rVB	1395926	3744568	50.66%	12.252%
7	17.162	1039	1044	1053	rVB	1451796	3887536	52.59%	12.720%

Sum of corrected areas: 30561765

RFP629.D VO02F15.M Mon Jul 09 14:08:50 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP629.D
Operator : ODinh
Acquired : 29 Jun 2018 6:00 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-12
Misc Info :
Vial Number: 21
Quant File :VO02F15.RES (RTE Integrator)



RFP629.D VO02F15.M Mon Jul 09 14:08:50 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 6:00 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP629.D
Name: 18F187-12
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISCon

RFP629.D VO02F15.M Mon Jul 09 14:08:50 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/23/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 18:25
Sample ID: 18Q2DP009-SB0302-SO-0	Date Analyzed: 06/29/18 18:25
Lab Samp ID: F187-13	Dilution Factor: 0.94
Lab File ID: RFP630	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : 6.5
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,1-TRICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,2,2-TETRACHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,2-TRICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROETHENE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
1,2,3-TRICHLOROBENZENE	ND	0.0050	0.0010	0.0020
1,2,3-TRICHLOROPROPANE	ND	0.0050	0.0010	0.0020
1,2,4-TRICHLOROBENZENE	ND	0.0050	0.0010	0.0020
1,2,4-TRIMETHYLBENZENE	ND	0.0050	0.00055	0.0020
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0050	0.0010	0.0020
1,2-DIBROMOETHANE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROBENZENE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROPROPANE	ND	0.0050	0.00050	0.0010
1,3,5-TRIMETHYLBENZENE	ND	0.0050	0.00059	0.0020
1,3-DICHLOROBENZENE	ND	0.0050	0.00052	0.0010
1,3-DICHLOROPROPANE	ND	0.0050	0.00050	0.0010
1,4-DICHLOROBENZENE	ND	0.0050	0.00050	0.0010
2,2-DICHLOROPROPANE	ND	0.0050	0.0010	0.0020
2-BUTANONE	0.017	0.010	0.0025	0.0050
2-CHLOROTOLUENE	ND	0.0050	0.00082	0.0010
2-HEXANONE	ND	0.010	0.0029	0.0050
4-CHLOROTOLUENE	ND	0.0050	0.00067	0.0010
ACETONE	0.25	0.010	0.0031	0.0050
BENZENE	ND	0.0050	0.00050	0.0010
BROMOBENZENE	ND	0.0050	0.00050	0.0010
BROMOCHLOROMETHANE	ND	0.0050	0.00050	0.0010
BROMODICHLOROMETHANE	ND	0.0050	0.00050	0.0010
BROMOFORM	ND	0.0050	0.0010	0.0020
BROMOMETHANE	ND	0.010	0.0018	0.0020
CARBON DISULFIDE	ND	0.0050	0.00050	0.0010
CARBON TETRACHLORIDE	ND	0.0050	0.00054	0.0010
CHLOROBENZENE	ND	0.0050	0.00050	0.0010
CHLOROETHANE	ND	0.0050	0.0013	0.0020
CHLOROFORM	ND	0.0050	0.00050	0.0010
CHLOROMETHANE	ND	0.0050	0.0010	0.0020
CIS-1,2-DICHLOROETHYLENE	ND	0.0050	0.00050	0.0010
CIS-1,3-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
CYCLOHEXANE	ND	0.0050	0.0012	0.0020
DIBROMOCHLOROMETHANE	ND	0.0050	0.00050	0.0010
DIBROMOMETHANE	ND	0.0050	0.00050	0.0010
DICHLORODIFLUOROMETHANE	ND	0.0050	0.0012	0.0020
ETHYLBENZENE	ND	0.0050	0.00050	0.0010
HEXACHLOROBUTADIENE	ND	0.0050	0.0010	0.0020
ISOPROPYLBENZENE	ND	0.0050	0.00064	0.0020
METHYLENE CHLORIDE	ND	0.010	0.0020	0.0050
M,P-XYLENE	ND	0.0050	0.0010	0.0020
4-METHYL-2-PENTANONE	ND	0.010	0.0028	0.0050
TERT-BUTYL METHYL ETHER	ND	0.0050	0.00050	0.0010
NAPHTHALENE	ND	0.0050	0.0010	0.0020
N-BUTYLBENZENE	ND	0.0050	0.00070	0.0010
N-PROPYLBENZENE	ND	0.0050	0.00065	0.0010
O-XYLENE	ND	0.0050	0.00050	0.0010
P-ISOPROPYLTOLUENE	ND	0.0050	0.00062	0.0010
SEC-BUTYLBENZENE	ND	0.0050	0.00067	0.0010
STYRENE	ND	0.0050	0.00050	0.0010
TERT-BUTYLBENZENE	ND	0.0050	0.00062	0.0010
TETRACHLOROETHENE	ND	0.0050	0.00050	0.0010
TOLUENE	ND	0.0050	0.00050	0.0010
TRANS-1,2-DCE	ND	0.0050	0.00050	0.0010
TRANS-1,3-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
TCE	ND	0.0050	0.00050	0.0010
TRICHLOROFLUOROMETHANE	ND	0.0050	0.0011	0.0020
TRICHLOROTRIFLUOROETHANE	ND	0.0050	0.0010	0.0020
VINYL CHLORIDE	ND	0.0050	0.0014	0.0020
VINYL ACETATE	ND	0.0050	0.0013	0.0020
XYLENES, TOTAL	ND	0.0050	0.00050	0.0010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0503	0.05027	100	71-136
4-BROMOFLUOROBENZENE	0.0522	0.05027	104	79-119
TOLUENE-D8	0.0521	0.05027	104	85-116
DIBROMOFLUOROMETHANE	0.0530	0.05027	105	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/23/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 18:25
Sample ID	: 18Q2DP009-SB0302-SO-0	Date Analyzed	: 06/29/18 18:25
Lab Samp ID	: F187-13	Dilution Factor	: 0.94
Lab File ID	: RFP630	Matrix	: SOIL
Ext Btch ID	: VSO2F26	% Moisture	: 6.5
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP630.D
Acq On : 29 Jun 2018 6:25 pm
Sample : 18F187-13
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:36 2018

Vial: 22
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

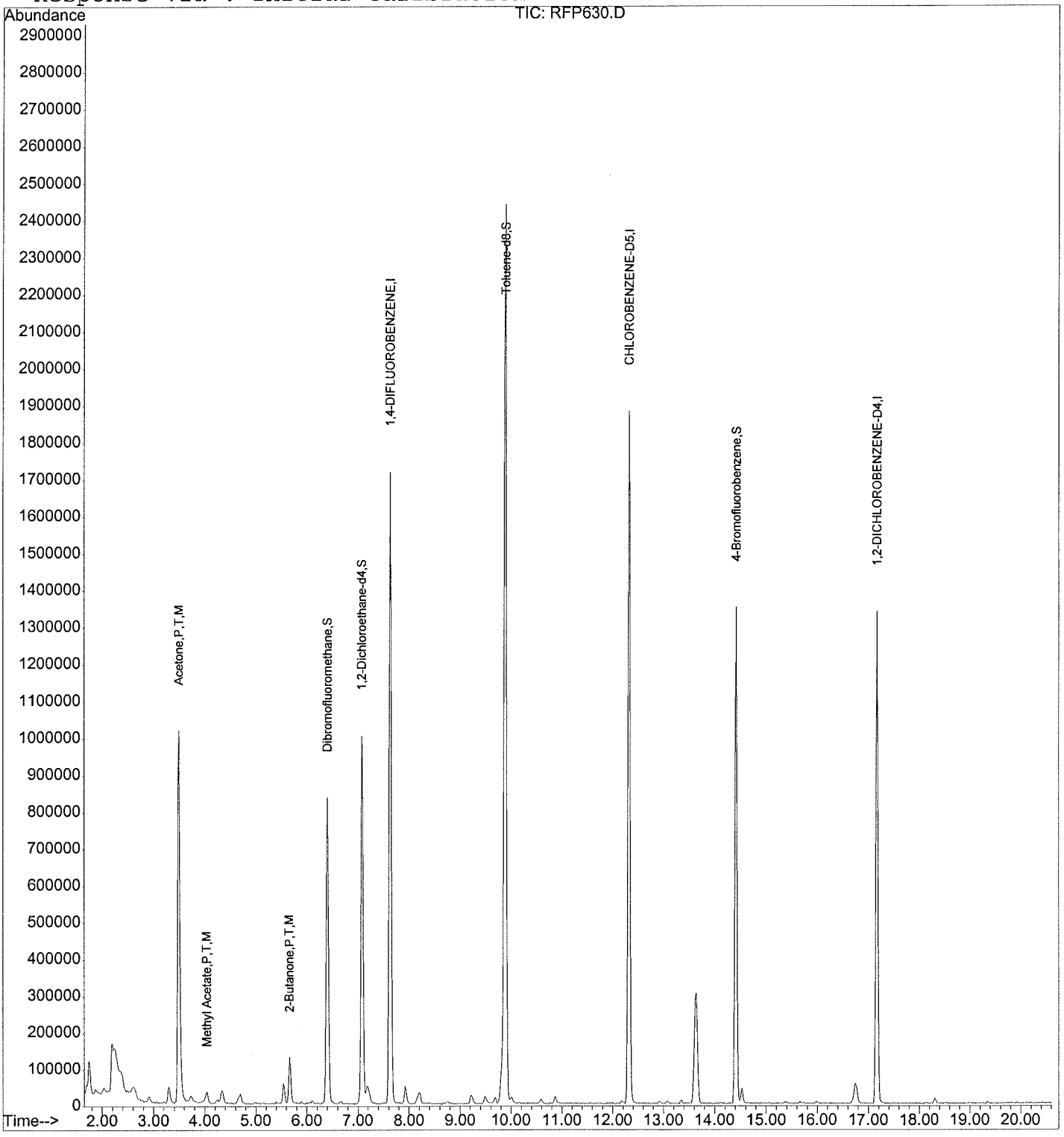
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2084414	50.00	ug/l	-0.04
56) CHLOROBENZENE-D5	12.31	117	1735242	50.00	ug/l	-0.04
76) 1,2-DICHLOROBENZENE-D4	17.16	152	630333	50.00	ug/l	-0.04
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	783537	52.72	ug/l	-0.02
Spiked Amount 50.000			Recovery =	105.44%		
43) 1,2-Dichloroethane-d4	7.08	65	922197	50.00	ug/l	-0.04
Spiked Amount 50.000			Recovery =	100.00%		
57) Toluene-d8	9.89	98	2652412	51.82	ug/l	-0.02
Spiked Amount 50.000			Recovery =	103.64%		
79) 4-Bromofluorobenzene	14.41	95	787960	51.89	ug/l	-0.02
Spiked Amount 50.000			Recovery =	103.78%		
Target Compounds						Qvalue
11) Acetone	3.49	43	1952527	253.32	ug/l	94
16) Methyl Acetate	4.04	43	72536	2.35	ug/l	80
28) 2-Butanone	5.66	43	260172	16.55	ug/l	99

(#) = qualifier out of range (m) = manual integration

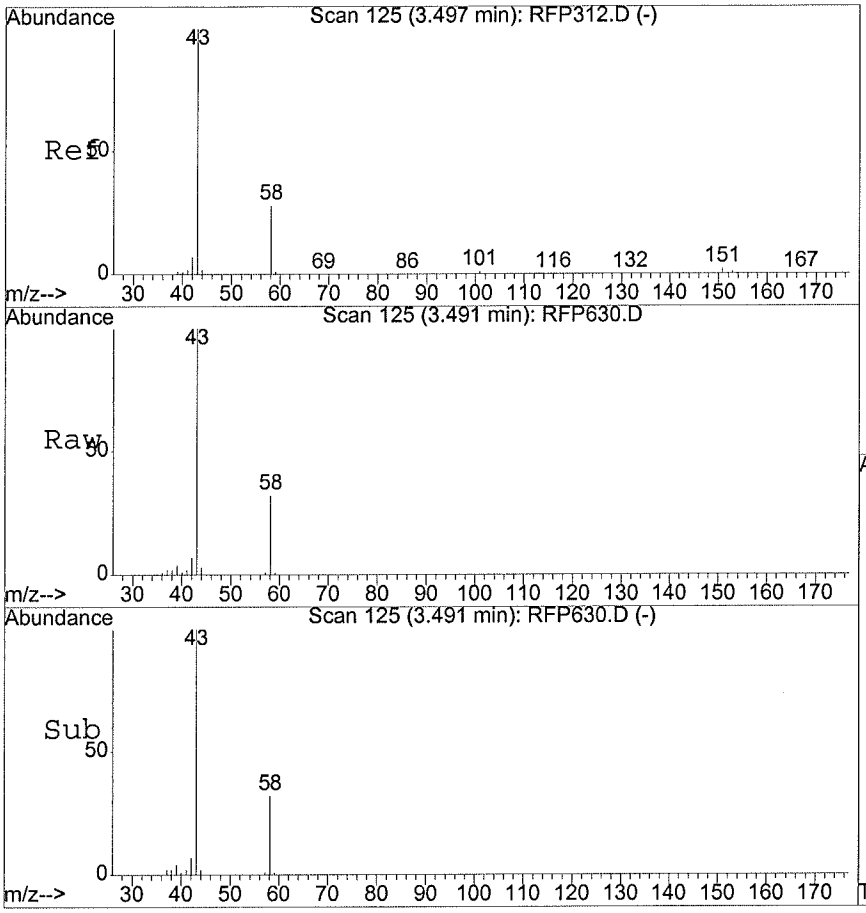
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP630.D Vial: 22
Acq On : 29 Jun 2018 6:25 pm Operator: ODinh
Sample : 18F187-13 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:36 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



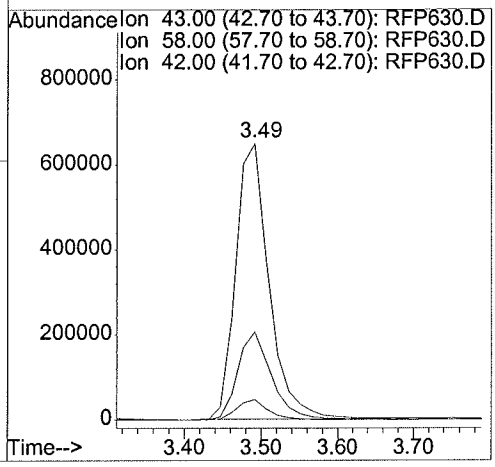
RFP630.D VO02F15.M Mon Jul 09 13:37:08 2018 Page 2

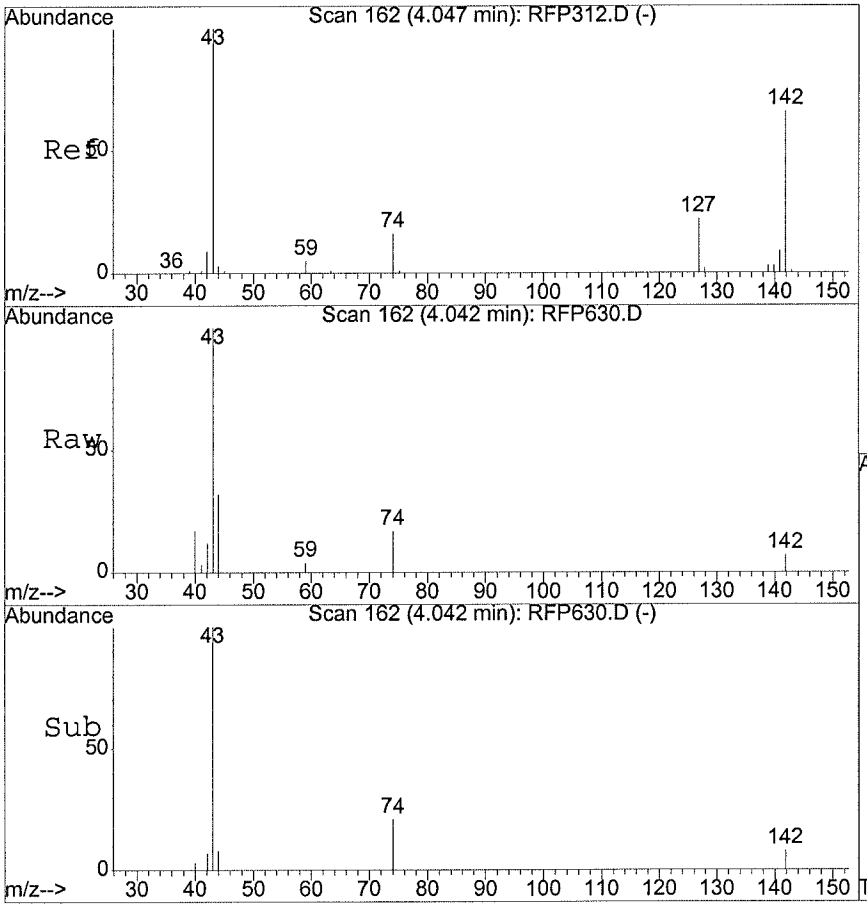


#11
Acetone
Concen: 253.32 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.01 min
Lab File: RFP630.D
Acq: 29 Jun 2018 6:25 pm

Tgt Ion: 43 Resp: 1952527

Ion	Ratio	Lower	Upper
43	100		
58	31.9	0.0	58.3
42	7.0	0.0	36.9

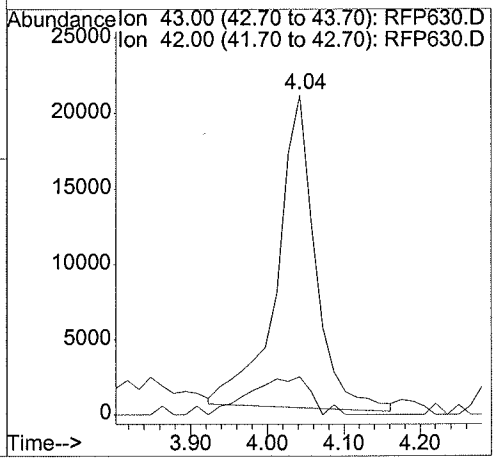


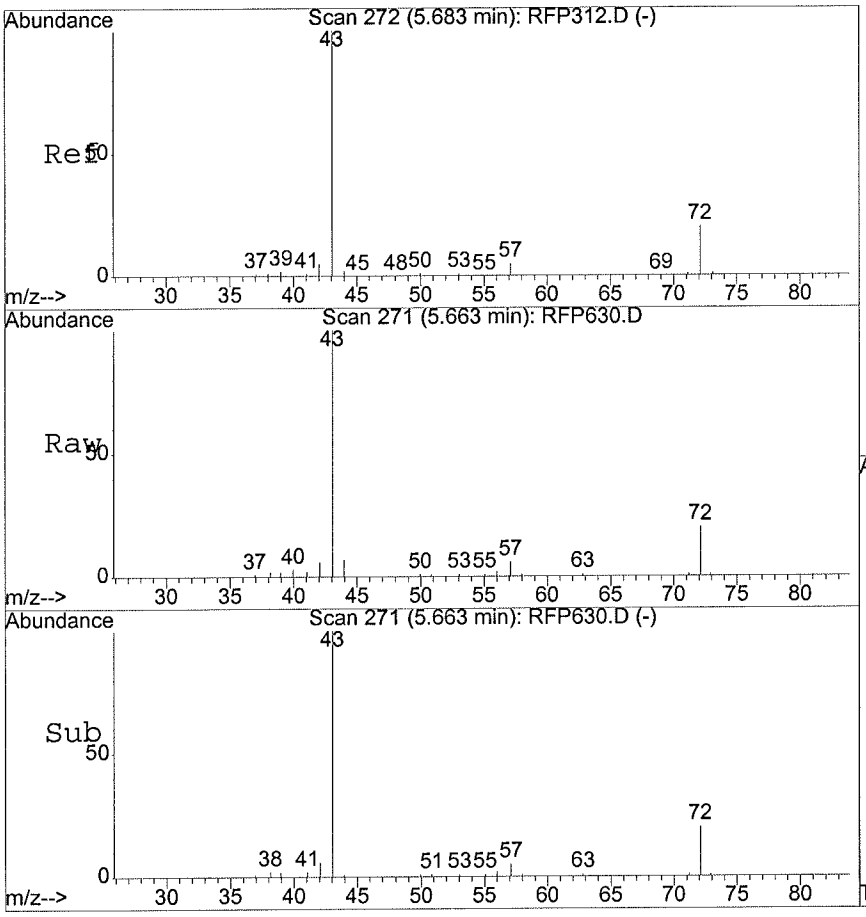


#16
Methyl Acetate
Concen: 2.35 ug/l
RT: 4.04 min Scan# 162
Delta R.T. -0.01 min
Lab File: RFP630.D
Acq: 29 Jun 2018 6:25 pm

Tgt Ion: 43 Resp: 72536

Ion	Ratio	Lower	Upper
43	100		
42	19.8	0.0	42.1

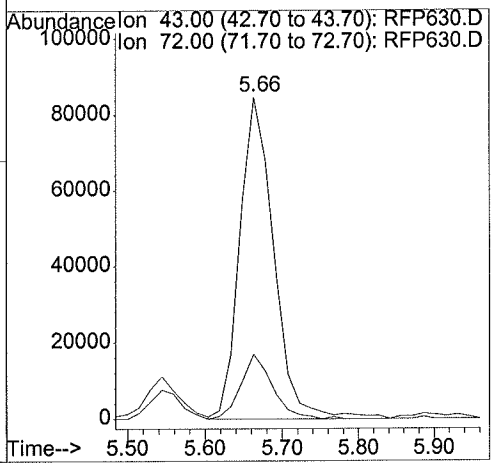




#28
2-Butanone
Concen: 16.55 ug/l
RT: 5.66 min Scan# 271
Delta R.T. -0.02 min
Lab File: RFP630.D
Acq: 29 Jun 2018 6:25 pm

Tgt Ion: 43 Resp: 260172

Ion	Ratio	Lower	Upper
43	100		
72	18.8	0.0	49.4



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP630.D Vial: 22
Acq On : 29 Jun 2018 6:25 pm Operator: ODinh
Sample : 18F187-13 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

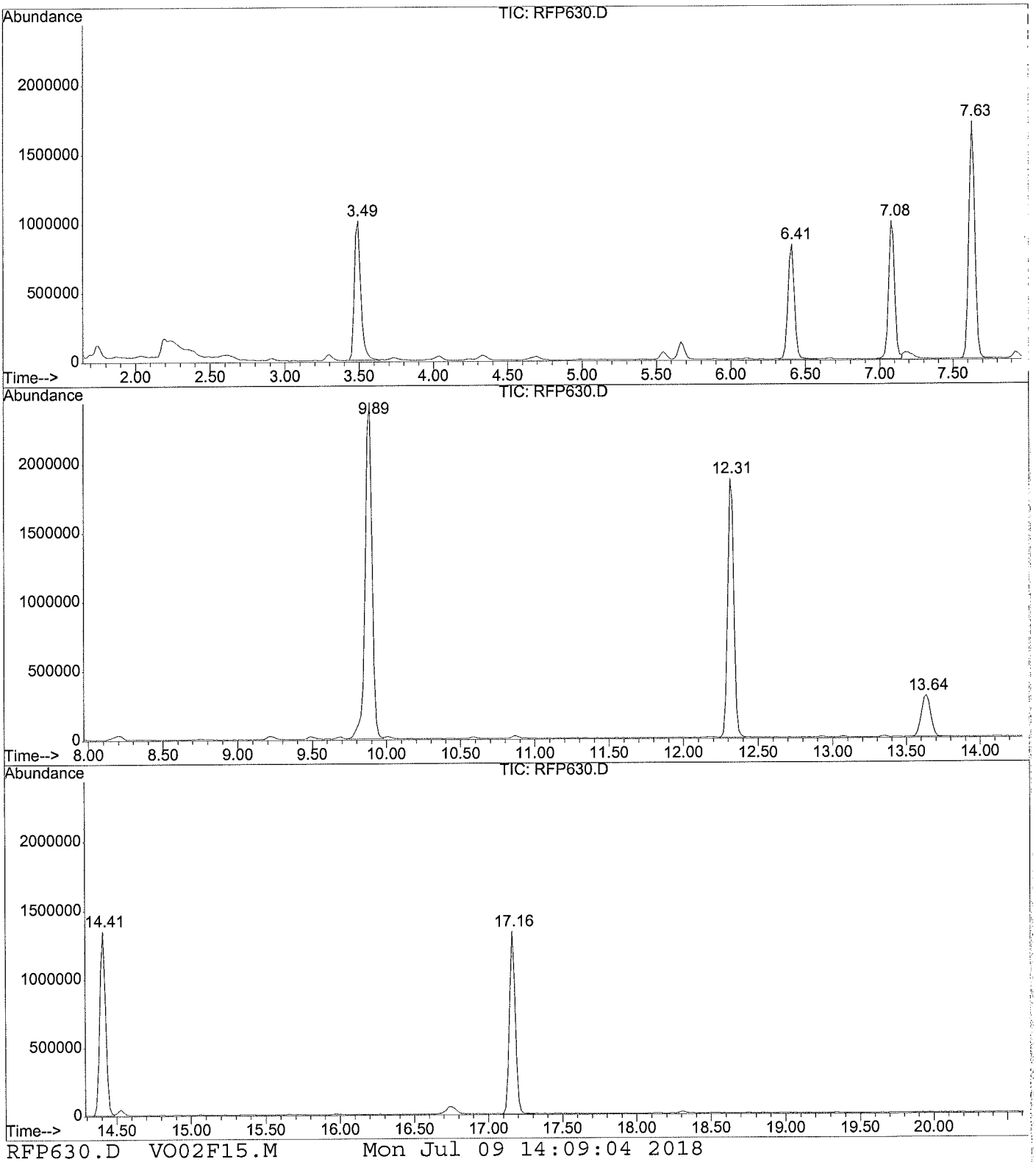
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.491	121	125	135	rBV	1009266	3042199	38.79%	8.674%
2	6.407	315	321	333	rVB	833840	2491974	31.78%	7.105%
3	7.076	359	366	371	rBV	1000917	2945556	37.56%	8.398%
4	7.626	398	403	412	rVB	1712721	4872772	62.14%	13.893%
5	9.887	544	555	561	rBV	2436340	7841889	100.00%	22.358%
6	12.312	713	718	725	rBV	1878555	5327774	67.94%	15.190%
7	13.636	801	807	814	rBV2	299779	1298720	16.56%	3.703%
8	14.409	854	859	864	rBV	1348273	3626211	46.24%	10.339%
9	17.161	1039	1044	1054	rBV	1337531	3627387	46.26%	10.342%

Sum of corrected areas: 35074482

RFP630.D VO02F15.M Mon Jul 09 14:09:03 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP630.D
Operator : ODinh
Acquired : 29 Jun 2018 6:25 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-13
Misc Info :
Vial Number: 22
Quant File :VO02F15.RES (RTE Integrator)



RFP630.D VO02F15.M Mon Jul 09 14:09:04 2018

Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP630.D Vial: 22
Acq On : 29 Jun 2018 6:25 pm Operator: ODinh
Sample : 18F187-13 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

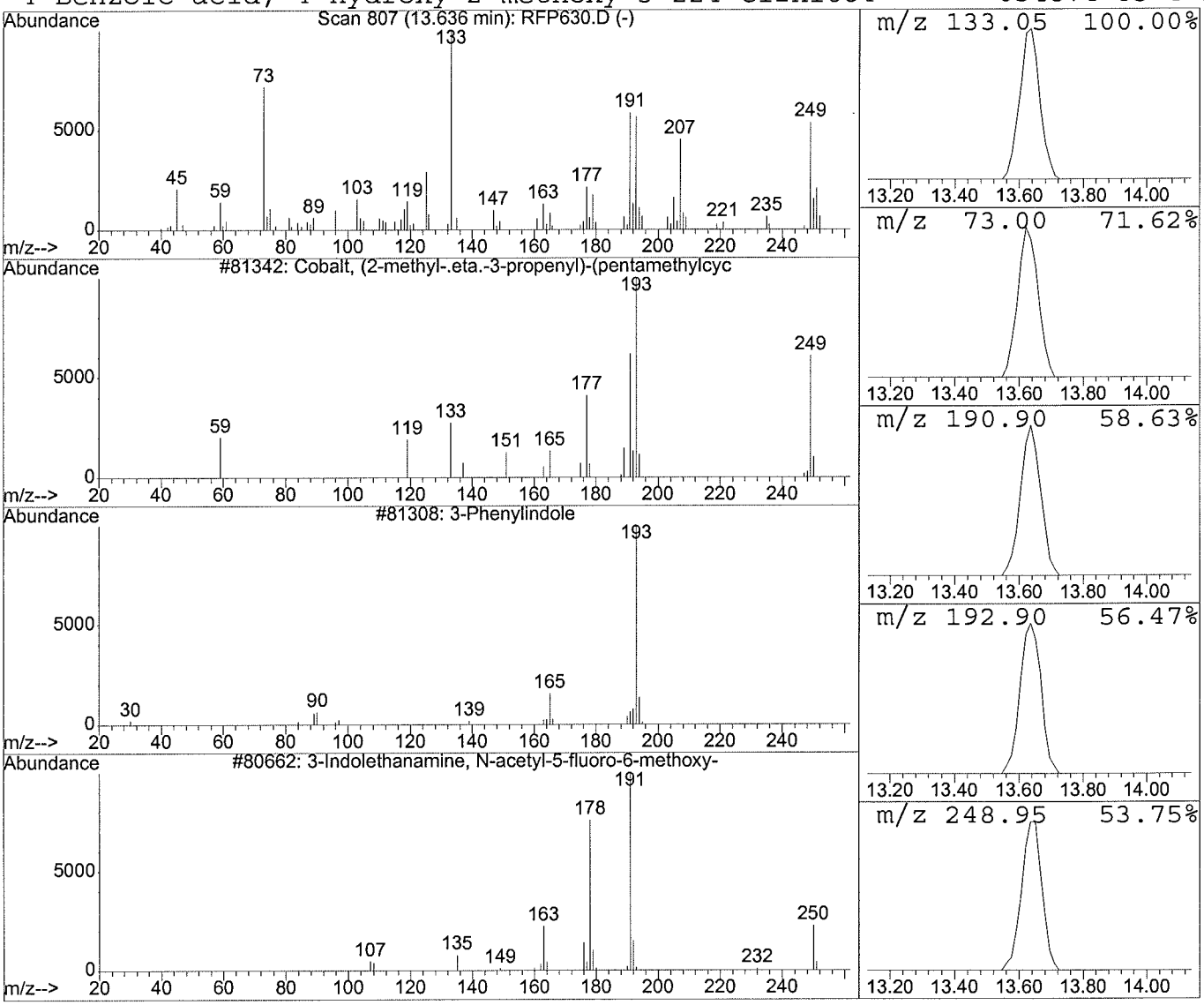
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 1 Cobalt, (2-methyl-.eta.-3-prop Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.64	12.19 ug/l	1298720	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cobalt, (2-methyl-.eta.-3-propenyl)	249	C14H22Co	1000157-04-3	16
2	3-Phenylindole	193	C14H11N	001504-16-1	11
3	3-Indolethanamine, N-acetyl-5-fluor	250	C13H15FN2O2	1000116-27-1	11
4	Benzoic acid, 4-hydroxy-2-methoxy-3	224	C12H16O4	034874-83-4	10



Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 6:25 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP630.D
Name: 18F187-13
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Cobalt, (2-methyl-.e	13.64	12.2	ug/l	1298720	ISTD02	12.31	5327770	50.0

RFP630.D VO02F15.M Mon Jul 09 14:09:05 2018

Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP630.D
Acq On : 29 Jun 2018 6:25 pm
Sample : 18F187-13
Misc :
MS Integration Params: LSCINT.P

Vial: 22
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 1 Cobalt, (2-methyl-.eta.-3-prop Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.64	12.19 ug/l	1298720	CHLOROBENZENE-D5	12.31

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cobalt, (2-methyl-.eta.-3-propenyl)	249	C14H22Co	1000157-04-3	16
2	3-Phenylindole	193	C14H11N	001504-16-1	11
3	3-Indolethanamine, N-acetyl-5-fluor	250	C13H15FN2O2	1000116-27-1	1
4	Benzoic acid, 4-hydroxy-2-methoxy-3	224	C12H16O4	034874-83-4	10
5	Benzene, 1,1'-(1-heptenylidene)bis-	250	C19H22	001530-20-7	10

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 6:25 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP630.D
Name: 18F187-13
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Cobalt, (2-methyl-.e	13.64	12.2	ug/l	1298720	ISTD02	12.31	5327770	50.0

RFP630.D VO02F15.M Mon Jul 09 13:37:15 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/23/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 18:49
Sample ID	: 18Q2DP009-SB0602-SO-0	Date Analyzed	: 06/29/18 18:49
Lab Samp ID	: F187-14	Dilution Factor	: 1.17
Lab File ID	: RFP631	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: 5.1
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0062	0.00062	0.0012
1,1,1-TRICHLOROETHANE	ND	0.0062	0.00062	0.0012
1,1,2,2-TETRACHLOROETHANE	ND	0.0062	0.00062	0.0012
1,1,2-TRICHLOROETHANE	ND	0.0062	0.00062	0.0012
1,1-DICHLOROETHANE	ND	0.0062	0.00062	0.0012
1,1-DICHLOROETHENE	ND	0.0062	0.00062	0.0012
1,1-DICHLOROPROPENE	ND	0.0062	0.00062	0.0012
1,2,3-TRICHLOROBENZENE	ND	0.0062	0.0012	0.0025
1,2,3-TRICHLOROPROPANE	ND	0.0062	0.0012	0.0025
1,2,4-TRICHLOROBENZENE	ND	0.0062	0.0012	0.0025
1,2,4-TRIMETHYLBENZENE	ND	0.0062	0.00068	0.0025
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0062	0.0012	0.0025
1,2-DIBROMOETHANE	ND	0.0062	0.00062	0.0012
1,2-DICHLOROBENZENE	ND	0.0062	0.00062	0.0012
1,2-DICHLOROETHANE	0.0018J	0.0062	0.00062	0.0012
1,2-DICHLOROPROPANE	ND	0.0062	0.00062	0.0012
1,3,5-TRIMETHYLBENZENE	ND	0.0062	0.00073	0.0025
1,3-DICHLOROBENZENE	ND	0.0062	0.00064	0.0012
1,3-DICHLOROPROPANE	ND	0.0062	0.00062	0.0012
1,4-DICHLOROBENZENE	ND	0.0062	0.00062	0.0012
2,2-DICHLOROPROPANE	ND	0.0062	0.0012	0.0025
2-BUTANONE	ND	0.012	0.0031	0.0062
2-CHLOROTOLUENE	ND	0.0062	0.0010	0.0012
2-HEXANONE	ND	0.012	0.0036	0.0062
4-CHLOROTOLUENE	ND	0.0062	0.00083	0.0012
ACETONE	0.020	0.012	0.0038	0.0062
BENZENE	0.00081J	0.0062	0.00062	0.0012
BROMOBENZENE	ND	0.0062	0.00062	0.0012
BROMOCHLOROMETHANE	ND	0.0062	0.00062	0.0012
BROMODICHLOROMETHANE	ND	0.0062	0.00062	0.0012
BROMOFORM	ND	0.0062	0.0012	0.0025
BROMOMETHANE	ND	0.012	0.0022	0.0025
CARBON DISULFIDE	ND	0.0062	0.00062	0.0012
CARBON TETRACHLORIDE	ND	0.0062	0.00067	0.0012
CHLOROBENZENE	ND	0.0062	0.00062	0.0012
CHLOROETHANE	ND	0.0062	0.0016	0.0025
CHLOROFORM	0.0015J	0.0062	0.00062	0.0012
CHLOROMETHANE	ND	0.0062	0.0012	0.0025
CIS-1,2-DICHLOROETHYLENE	ND	0.0062	0.00062	0.0012
CIS-1,3-DICHLOROPROPENE	ND	0.0062	0.00062	0.0012
CYCLOHEXANE	ND	0.0062	0.0015	0.0025
DIBROMOCHLOROMETHANE	ND	0.0062	0.00062	0.0012
DIBROMOMETHANE	ND	0.0062	0.00062	0.0012
DICHLORODIFLUOROMETHANE	ND	0.0062	0.0015	0.0025
ETHYLBENZENE	ND	0.0062	0.00062	0.0012
HEXACHLOROBUTADIENE	ND	0.0062	0.0012	0.0025
ISOPROPYLBENZENE	ND	0.0062	0.00079	0.0025
METHYLENE CHLORIDE	ND	0.012	0.0025	0.0062
M,P-XYLENE	ND	0.0062	0.0012	0.0025
4-METHYL-2-PENTANONE	ND	0.012	0.0035	0.0062
TERT-BUTYL METHYL ETHER	ND	0.0062	0.00062	0.0012
NAPHTHALENE	ND	0.0062	0.0012	0.0025
N-BUTYLBENZENE	ND	0.0062	0.00086	0.0012
N-PROPYLBENZENE	ND	0.0062	0.00080	0.0012
O-XYLENE	ND	0.0062	0.00062	0.0012
P-ISOPROPYLTOLUENE	ND	0.0062	0.00076	0.0012
SEC-BUTYLBENZENE	ND	0.0062	0.00083	0.0012
STYRENE	ND	0.0062	0.00062	0.0012
TERT-BUTYLBENZENE	ND	0.0062	0.00076	0.0012
TETRACHLOROETHENE	ND	0.0062	0.00062	0.0012
TOLUENE	ND	0.0062	0.00062	0.0012
TRANS-1,2-DCE	ND	0.0062	0.00062	0.0012
TRANS-1,3-DICHLOROPROPENE	ND	0.0062	0.00062	0.0012
TCE	ND	0.0062	0.00062	0.0012
TRICHLOROFLUOROMETHANE	ND	0.0062	0.0014	0.0025
TRICHLOROTRIFLUOROETHANE	ND	0.0062	0.0012	0.0025
VINYL CHLORIDE	ND	0.0062	0.0017	0.0025
VINYL ACETATE	ND	0.0062	0.0016	0.0025
XYLENES, TOTAL	ND	0.0062	0.00062	0.0012

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0638	0.06164	103	71-136
4-BROMOFLUOROBENZENE	0.0629	0.06164	102	79-119
TOLUENE-D8	0.0641	0.06164	104	85-116
DIBROMOFLUOROMETHANE	0.0658	0.06164	107	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18
Project	: JBER T0075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 18:49
Sample ID	: 18Q2DP009-SB0602-SO-0	Date Analyzed:	06/29/18 18:49
Lab Samp ID	: F187-14	Dilution Factor:	1.17
Lab File ID	: RFP631	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: 5.1
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP631.D Vial: 23
Acq On : 29 Jun 2018 6:49 pm Operator: ODinh
Sample : 18F187-14 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:37 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1995825	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.33	117	1692508	50.00	ug/l	-0.02
76) 1,2-DICHLOROBENZENE-D4	17.16	152	645476	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	760062	53.41	ug/l	-0.02
Spiked Amount 50.000			Recovery =	106.82%		
43) 1,2-Dichloroethane-d4	7.08	65	913376	51.72	ug/l	-0.03
Spiked Amount 50.000			Recovery =	103.44%		
57) Toluene-d8	9.89	98	2593725	51.95	ug/l	-0.02
Spiked Amount 50.000			Recovery =	103.90%		
79) 4-Bromofluorobenzene	14.41	95	792920	50.99	ug/l	-0.02
Spiked Amount 50.000			Recovery =	101.98%		
Target Compounds						Qvalue
11) Acetone	3.49	43	117315	15.90	ug/l	94
13) tert-Butyl alcohol	3.73	59	23998	6.98	ug/l #	1
16) Methyl Acetate	4.03	43	51658	1.75	ug/l	87
34) Chloroform	6.11	83	32588	1.18	ug/l	93
44) 1,2-Dichloroethane	7.21	62	30375	1.47	ug/l	99
45) Benzene	7.23	78	42404	0.65	ug/l	96

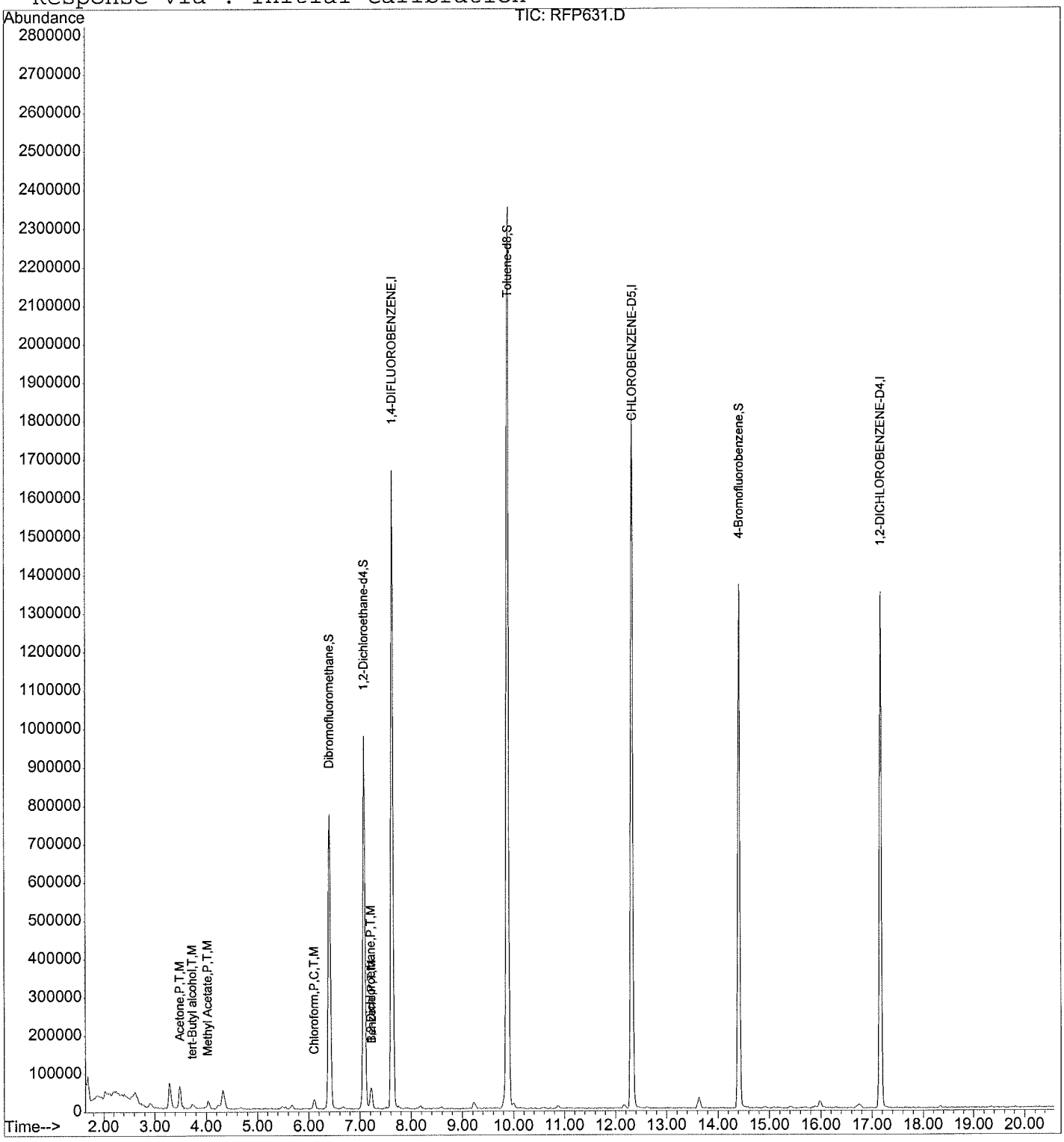
(#) = qualifier out of range (m) = manual integration

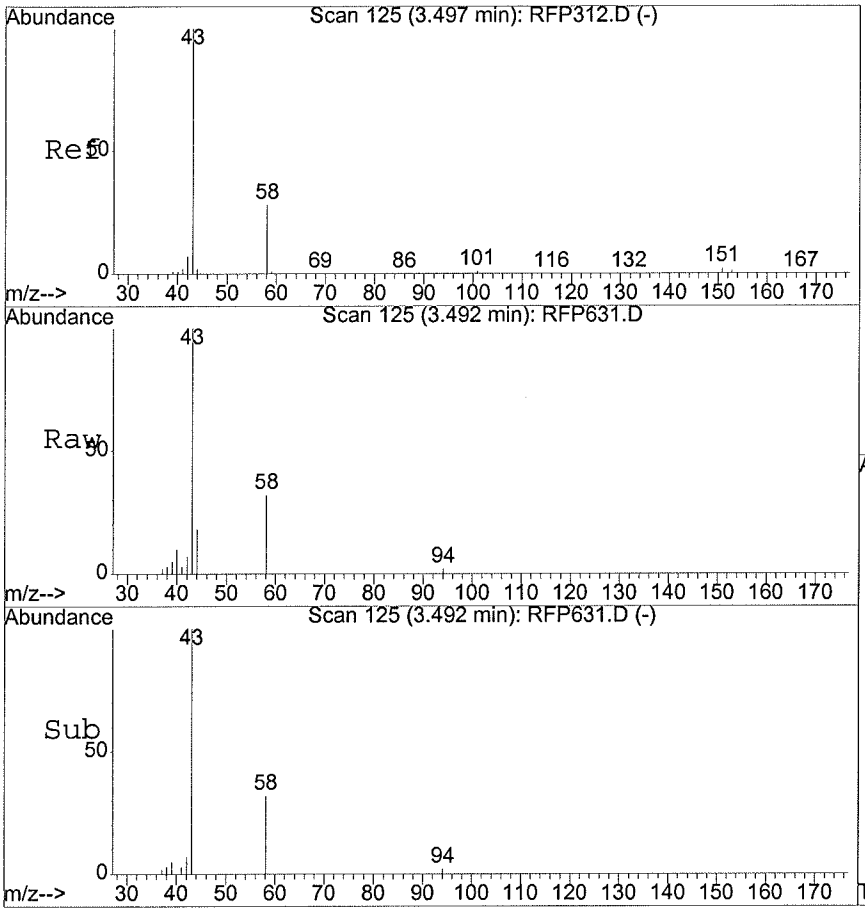
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP631.D
Acq On : 29 Jun 2018 6:49 pm
Sample : 18F187-14
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 9 13:37 2018

Vial: 23
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

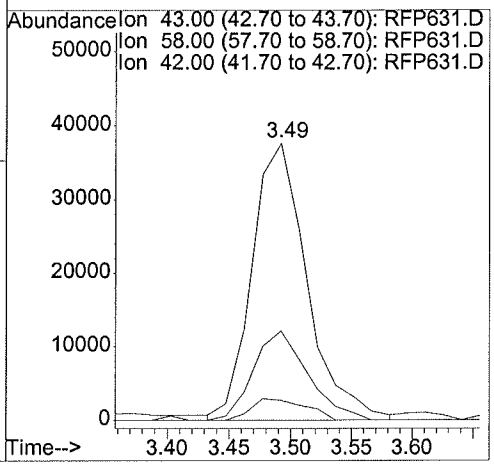


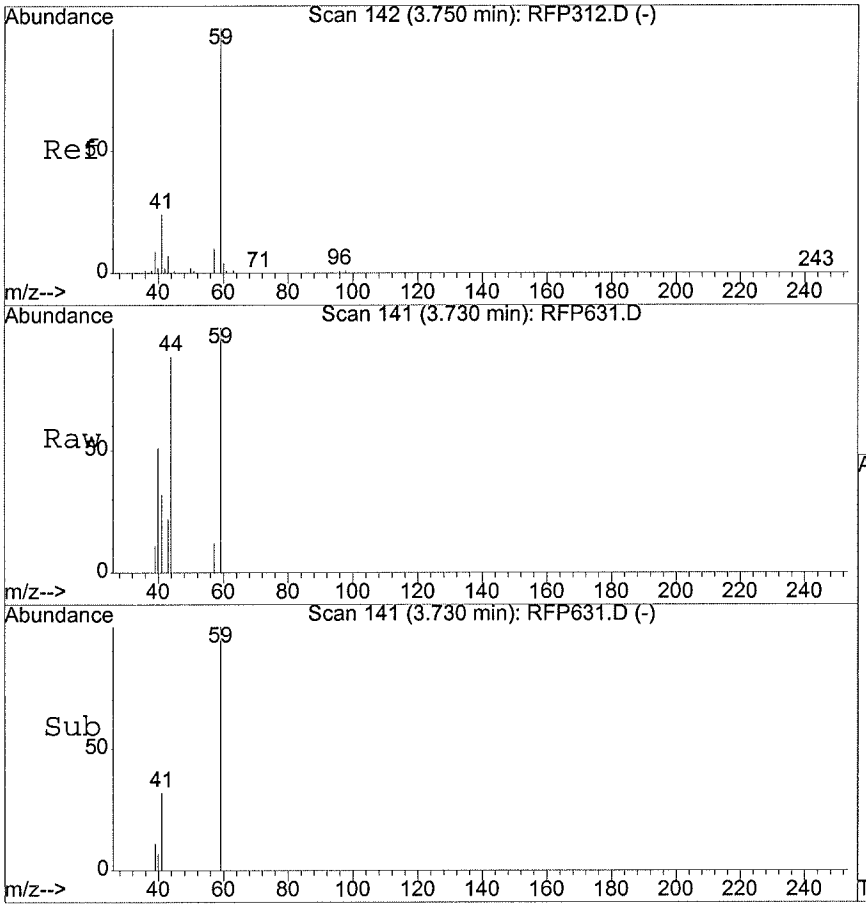


#11
Acetone
Concen: 15.90 ug/l
RT: 3.49 min Scan# 125
Delta R.T. -0.00 min
Lab File: RFP631.D
Acq: 29 Jun 2018 6:49 pm

Tgt Ion: 43 Resp: 117315

Ion	Ratio	Lower	Upper
43	100		
58	32.0	0.0	58.3
42	7.7	0.0	36.9

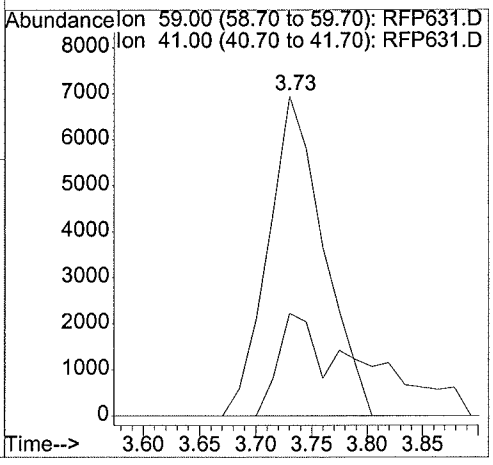


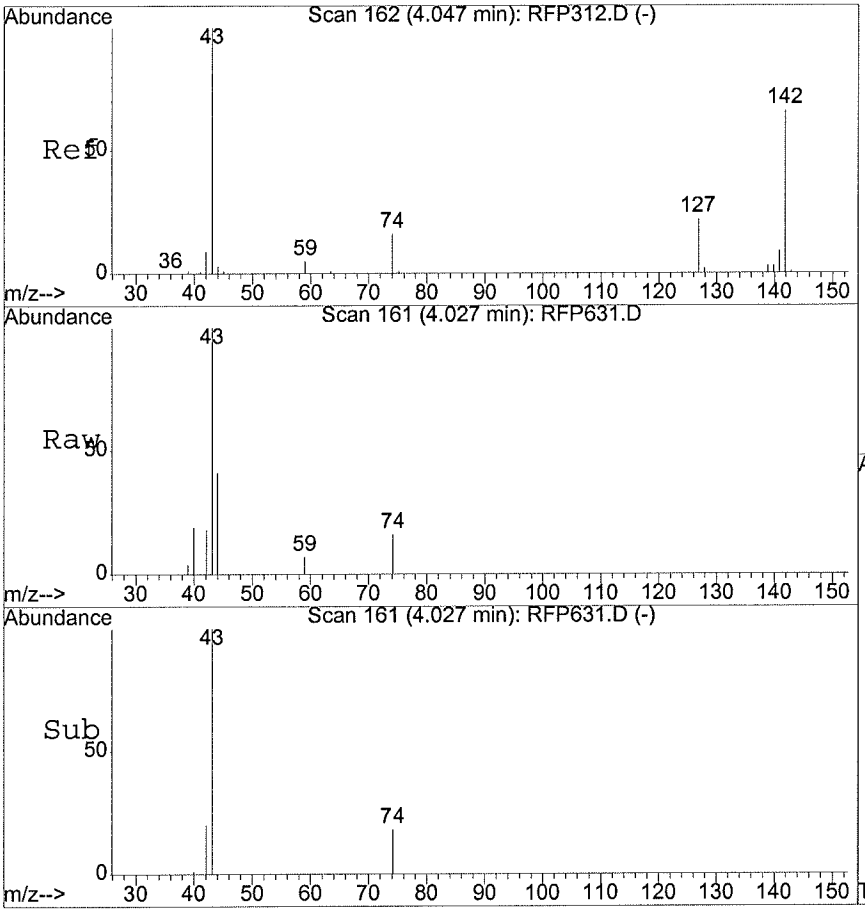


#13
tert-Butyl alcohol
Concen: 6.98 ug/l
RT: 3.73 min Scan# 141
Delta R.T. -0.02 min
Lab File: RFP631.D
Acq: 29 Jun 2018 6:49 pm

Tgt Ion: 59 Resp: 23998

Ion	Ratio	Lower	Upper
59	100		
41	49.3	171.3	231.3#

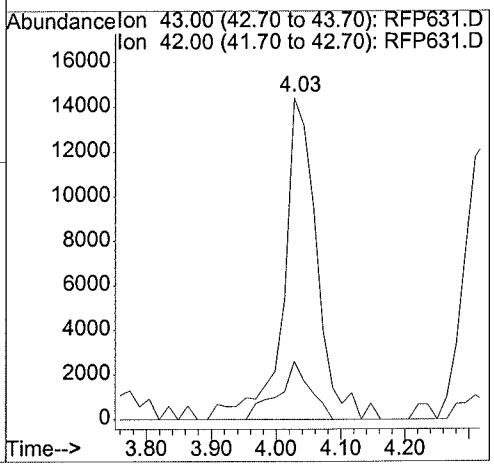


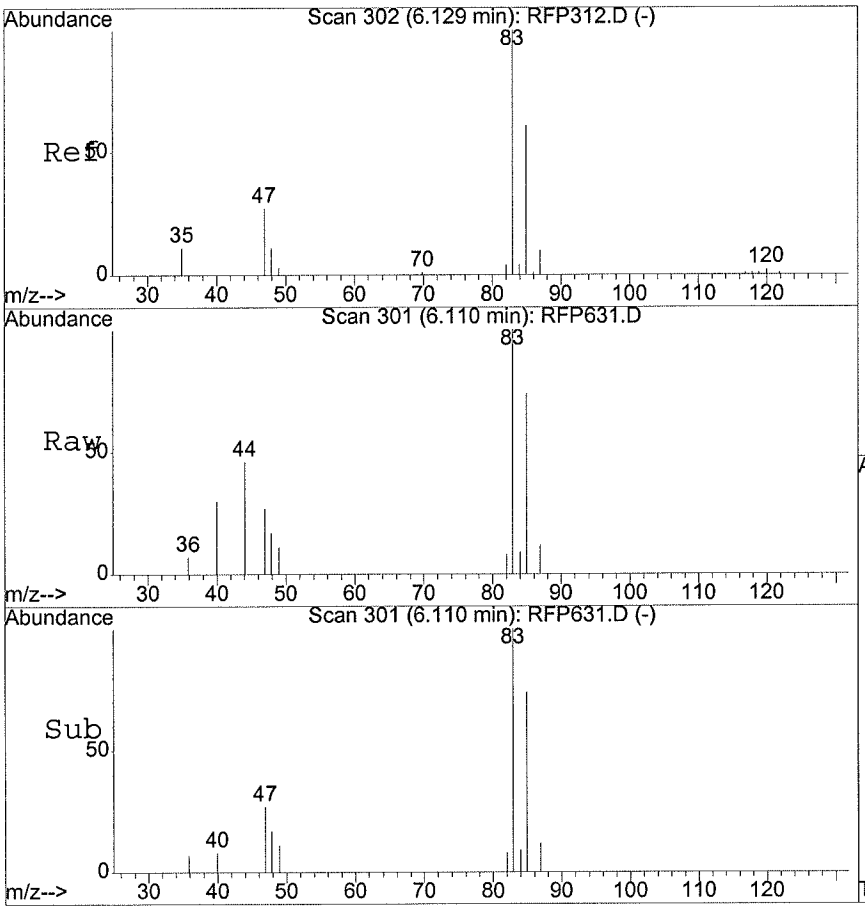


#16
Methyl Acetate
Concen: 1.75 ug/l
RT: 4.03 min Scan# 161
Delta R.T. -0.02 min
Lab File: RFP631.D
Acq: 29 Jun 2018 6:49 pm

Tgt Ion: 43 Resp: 51658

Ion	Ratio	Lower	Upper
43	100		
42	17.3	0.0	42.1

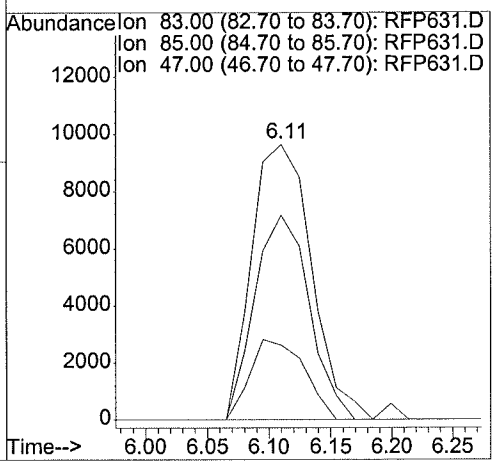


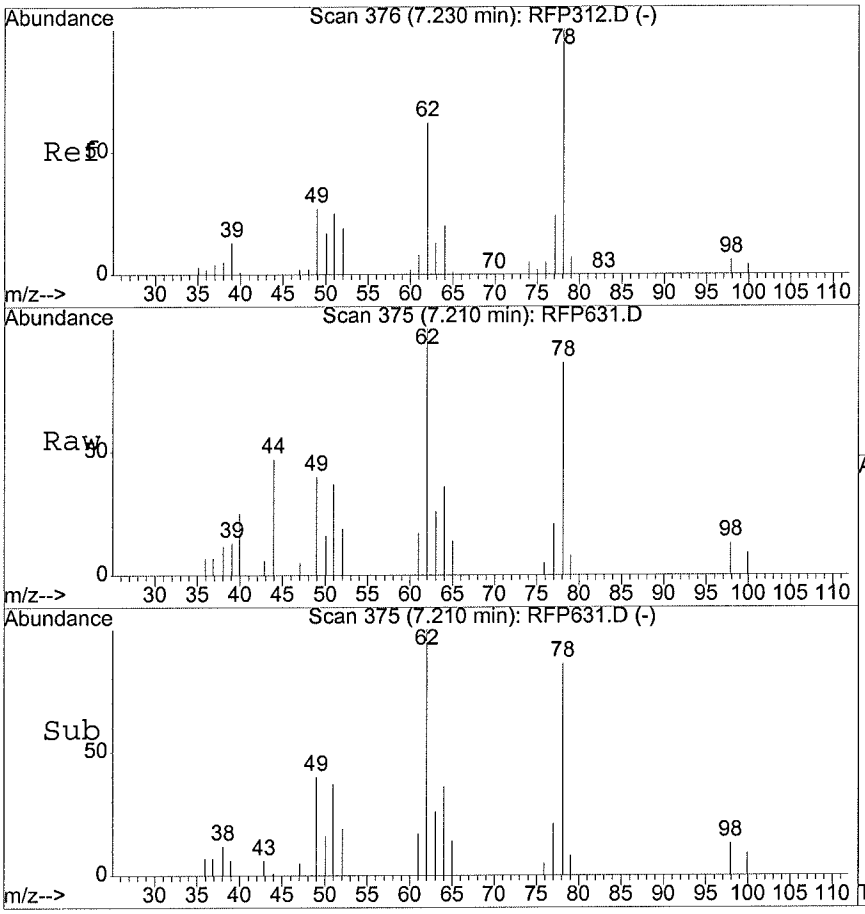


#34
Chloroform
Concen: 1.18 ug/l
RT: 6.11 min Scan# 301
Delta R.T. -0.02 min
Lab File: RFP631.D
Acq: 29 Jun 2018 6:49 pm

Tgt Ion: 83 Resp: 32588

Ion	Ratio	Lower	Upper
83	100		
85	67.9	46.2	106.2
47	26.3	0.0	56.0

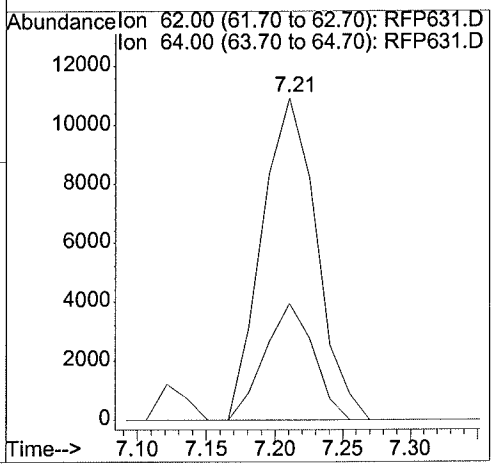


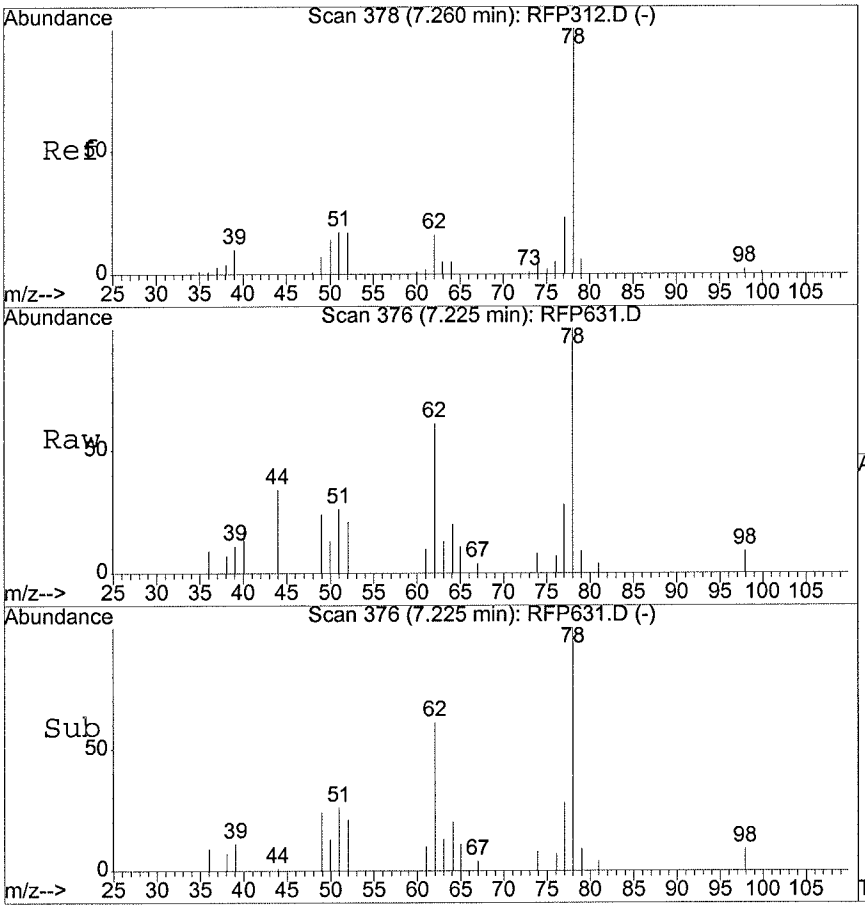


#44
1,2-Dichloroethane
Concen: 1.47 ug/l
RT: 7.21 min Scan# 375
Delta R.T. -0.02 min
Lab File: RFP631.D
Acq: 29 Jun 2018 6:49 pm

Tgt Ion: 62 Resp: 30375

Ion	Ratio	Lower	Upper
62	100		
64	32.3	1.7	61.7

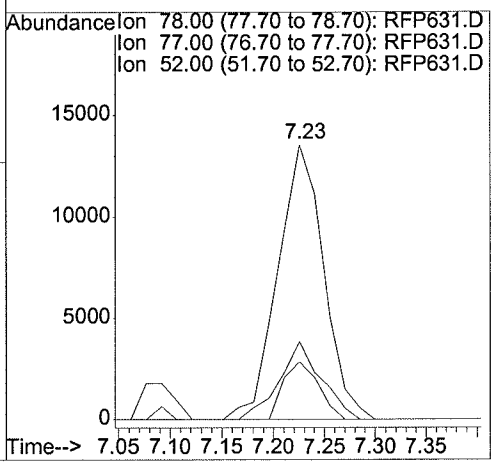




#45
Benzene
Concen: 0.65 ug/l
RT: 7.23 min Scan# 376
Delta R.T. -0.03 min
Lab File: RFP631.D
Acq: 29 Jun 2018 6:49 pm

Tgt Ion: 78 Resp: 42404

Ion	Ratio	Lower	Upper
78	100		
77	25.8	0.0	53.5
52	16.1	0.0	47.3



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP631.D Vial: 23
Acq On : 29 Jun 2018 6:49 pm Operator: ODinh
Sample : 18F187-14 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

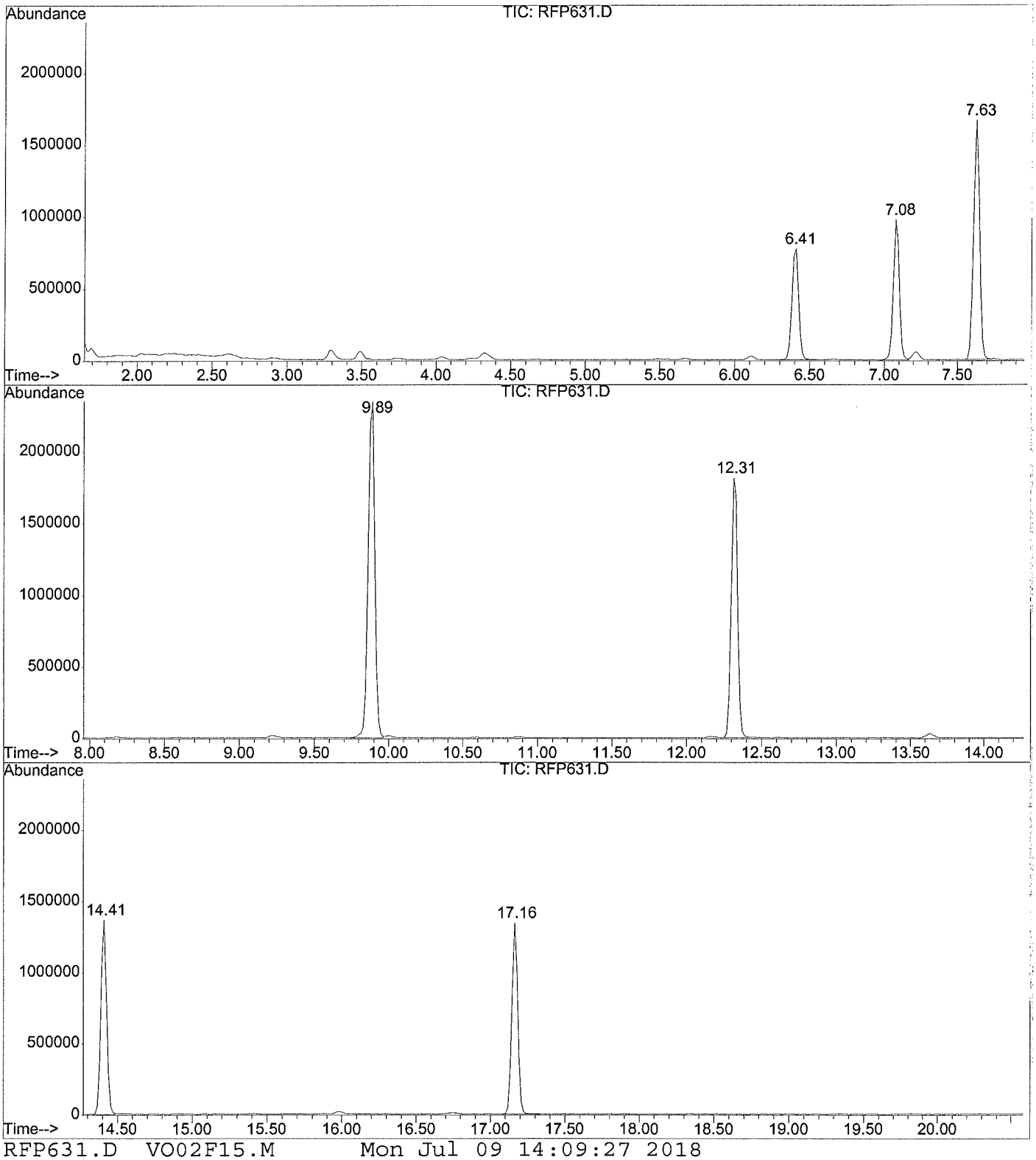
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.407	311	321	333	rBV	770966	2399549	33.18%	8.086%
2	7.077	357	366	372	rBV	974570	2792139	38.61%	9.409%
3	7.627	398	403	410	rBV	1662702	4696635	64.94%	15.827%
4	9.888	545	555	560	rBV	2348573	7232284	100.00%	24.371%
5	12.312	714	718	725	rVB	1809614	5254096	72.65%	17.705%
6	14.410	854	859	864	rBV	1367447	3613306	49.96%	12.176%
7	17.161	1039	1044	1056	rVB	1345879	3687211	50.98%	12.425%

Sum of corrected areas: 29675220

RFP631.D VO02F15.M Mon Jul 09 14:09:27 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP631.D
Operator : ODinh
Acquired : 29 Jun 2018 6:49 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-14
Misc Info :
Vial Number: 23
Quant File :VO02F15.RES (RTE Integrator)



RFP631.D VO02F15.M Mon Jul 09 14:09:27 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 6:49 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP631.D
Name: 18F187-14
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RFP631.D VO02F15.M Mon Jul 09 14:09:27 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/23/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 19:13
Sample ID: 18Q2DP009-SB0601-SO-0	Date Analyzed: 06/29/18 19:13
Lab Samp ID: F187-15	Dilution Factor: 1.17
Lab File ID: RFP632	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : 7.6
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0063	0.00063	0.0013
1,1,1-TRICHLOROETHANE	ND	0.0063	0.00063	0.0013
1,1,2,2-TETRACHLOROETHANE	ND	0.0063	0.00063	0.0013
1,1,2-TRICHLOROETHANE	ND	0.0063	0.00063	0.0013
1,1-DICHLOROETHANE	ND	0.0063	0.00063	0.0013
1,1-DICHLOROETHENE	ND	0.0063	0.00063	0.0013
1,1-DICHLOROPROPENE	ND	0.0063	0.00063	0.0013
1,2,3-TRICHLOROBENZENE	ND	0.0063	0.0013	0.0025
1,2,3-TRICHLOROPROPANE	ND	0.0063	0.0013	0.0025
1,2,4-TRICHLOROBENZENE	ND	0.0063	0.0013	0.0025
1,2,4-TRIMETHYLBENZENE	0.0010J	0.0063	0.00070	0.0025
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0063	0.0013	0.0025
1,2-DIBROMOETHANE	ND	0.0063	0.00063	0.0013
1,2-DICHLOROBENZENE	ND	0.0063	0.00063	0.0013
1,2-DICHLOROETHANE	0.00078J	0.0063	0.00063	0.0013
1,2-DICHLOROPROPANE	ND	0.0063	0.00063	0.0013
1,3,5-TRIMETHYLBENZENE	ND	0.0063	0.00075	0.0025
1,3-DICHLOROBENZENE	ND	0.0063	0.00066	0.0013
1,3-DICHLOROPROPANE	ND	0.0063	0.00063	0.0013
1,4-DICHLOROBENZENE	ND	0.0063	0.00063	0.0013
2,2-DICHLOROPROPANE	ND	0.0063	0.0013	0.0025
2-BUTANONE	0.0078J	0.013	0.0032	0.0063
2-CHLOROTOLUENE	ND	0.0063	0.0010	0.0013
2-HEXANONE	ND	0.013	0.0037	0.0063
4-CHLOROTOLUENE	ND	0.0063	0.00085	0.0013
ACETONE	0.054	0.013	0.0039	0.0063
BENZENE	0.014	0.0063	0.00063	0.0013
BROMOBENZENE	ND	0.0063	0.00063	0.0013
BROMOCHLOROMETHANE	ND	0.0063	0.00063	0.0013
BROMODICHLOROMETHANE	ND	0.0063	0.00063	0.0013
BROMOFORM	ND	0.0063	0.0013	0.0025
BROMOMETHANE	ND	0.013	0.0023	0.0025
CARBON DISULFIDE	ND	0.0063	0.00063	0.0013
CARBON TETRACHLORIDE	ND	0.0063	0.00068	0.0013
CHLOROBENZENE	ND	0.0063	0.00063	0.0013
CHLOROETHANE	ND	0.0063	0.0016	0.0025
CHLOROFORM	ND	0.0063	0.00063	0.0013
CHLOROMETHANE	ND	0.0063	0.0013	0.0025
CIS-1,2-DICHLOROETHYLENE	ND	0.0063	0.00063	0.0013
CIS-1,3-DICHLOROPROPENE	ND	0.0063	0.00063	0.0013
CYCLOHEXANE	ND	0.0063	0.0015	0.0025
DIBROMOCHLOROMETHANE	ND	0.0063	0.00063	0.0013
DIBROMOMETHANE	ND	0.0063	0.00063	0.0013
DICHLORODIFLUOROMETHANE	ND	0.0063	0.0015	0.0025
ETHYLBENZENE	0.00067J	0.0063	0.00063	0.0013
HEXACHLOROBUTADIENE	ND	0.0063	0.0013	0.0025
ISOPROPYLBENZENE	ND	0.0063	0.00081	0.0025
METHYLENE CHLORIDE	ND	0.013	0.0025	0.0063
M,P-XYLENE	0.0021J	0.0063	0.0013	0.0025
4-METHYL-2-PENTANONE	ND	0.013	0.0035	0.0063
TERT-BUTYL METHYL ETHER	ND	0.0063	0.00063	0.0013
NAPHTHALENE	ND	0.0063	0.0013	0.0025
N-BUTYLBENZENE	ND	0.0063	0.00089	0.0013
N-PROPYLBENZENE	ND	0.0063	0.00082	0.0013
O-XYLENE	0.00093J	0.0063	0.00063	0.0013
P-ISOPROPYLTOLUENE	ND	0.0063	0.00079	0.0013
SEC-BUTYLBENZENE	ND	0.0063	0.00085	0.0013
STYRENE	ND	0.0063	0.00063	0.0013
TERT-BUTYLBENZENE	ND	0.0063	0.00079	0.0013
TETRACHLOROETHENE	0.0014J	0.0063	0.00063	0.0013
TOLUENE	0.0066	0.0063	0.00063	0.0013
TRANS-1,2-DCE	ND	0.0063	0.00063	0.0013
TRANS-1,3-DICHLOROPROPENE	ND	0.0063	0.00063	0.0013
TCE	0.0012J	0.0063	0.00063	0.0013
TRICHLOROFLUOROMETHANE	ND	0.0063	0.0014	0.0025
TRICHLOROTRIFLUOROETHANE	ND	0.0063	0.0013	0.0025
VINYL CHLORIDE	ND	0.0063	0.0018	0.0025
VINYL ACETATE	ND	0.0063	0.0016	0.0025
XYLENES, TOTAL	0.0030J	0.0063	0.00063	0.0013

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0637	0.06331	101	71-136
4-BROMOFLUOROBENZENE	0.0676	0.06331	107	79-119
TOLUENE-D8	0.0675	0.06331	107	85-116
DIBROMOFLUOROMETHANE	0.0680	0.06331	107	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 19:13
Sample ID	: 18Q2DP009-SB0601-SO-0	Date Analyzed:	06/29/18 19:13
Lab Samp ID	: F187-15	Dilution Factor:	1.17
Lab File ID	: RFP632	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: 7.6
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 13 17:18 2018

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1875696	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.32	117	1498188	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.16	152	513406	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.40	111	718135	53.70	ug/l	-0.03
Spiked Amount 50.000			Recovery = 107.40%			
43) 1,2-Dichloroethane-d4	7.08	65	834991	50.31	ug/l	-0.03
Spiked Amount 50.000			Recovery = 100.62%			
57) Toluene-d8	9.88	98	2356064	53.31	ug/l	-0.03
Spiked Amount 50.000			Recovery = 106.62%			
79) 4-Bromofluorobenzene	14.40	95	660540	53.40	ug/l	-0.03
Spiked Amount 50.000			Recovery = 106.80%			
Target Compounds						Qvalue
11) Acetone	3.48	43	298464	43.03	ug/l	83
13) tert-Butyl alcohol	3.73	59	26490	8.20	ug/l #	1
16) Methyl Acetate	4.03	43	182709	6.58	ug/l	87
19) Carbon disulfide	4.24	76	22692	0.49	ug/l	98
28) 2-Butanone	5.67	43	87185	6.16	ug/l	97
44) 1,2-Dichloroethane	7.21	62	11929	0.61	ug/l	97
45) Benzene	7.23	78	682677	11.21	ug/l	99
46) Trichloroethene	8.09	130	14783	0.97	ug/l	91
47) Methylcyclohexane	8.18	83	53945	1.84	ug/l	79
58) Toluene	10.01	91	266145	5.18	ug/l	98
64) Tetrachloroethene	11.04	164	10882	1.09	ug/l	95
70) Ethylbenzene	12.48	91	28000	0.53	ug/l	88
71) m-Xylene & p-Xylene	12.61	91	65579	1.65	ug/l	99
72) o-Xylene	13.34	91	30283	0.73	ug/l	85
88) 1,2,4-Trimethylbenzene	15.66	105	23341	0.81	ug/l	82

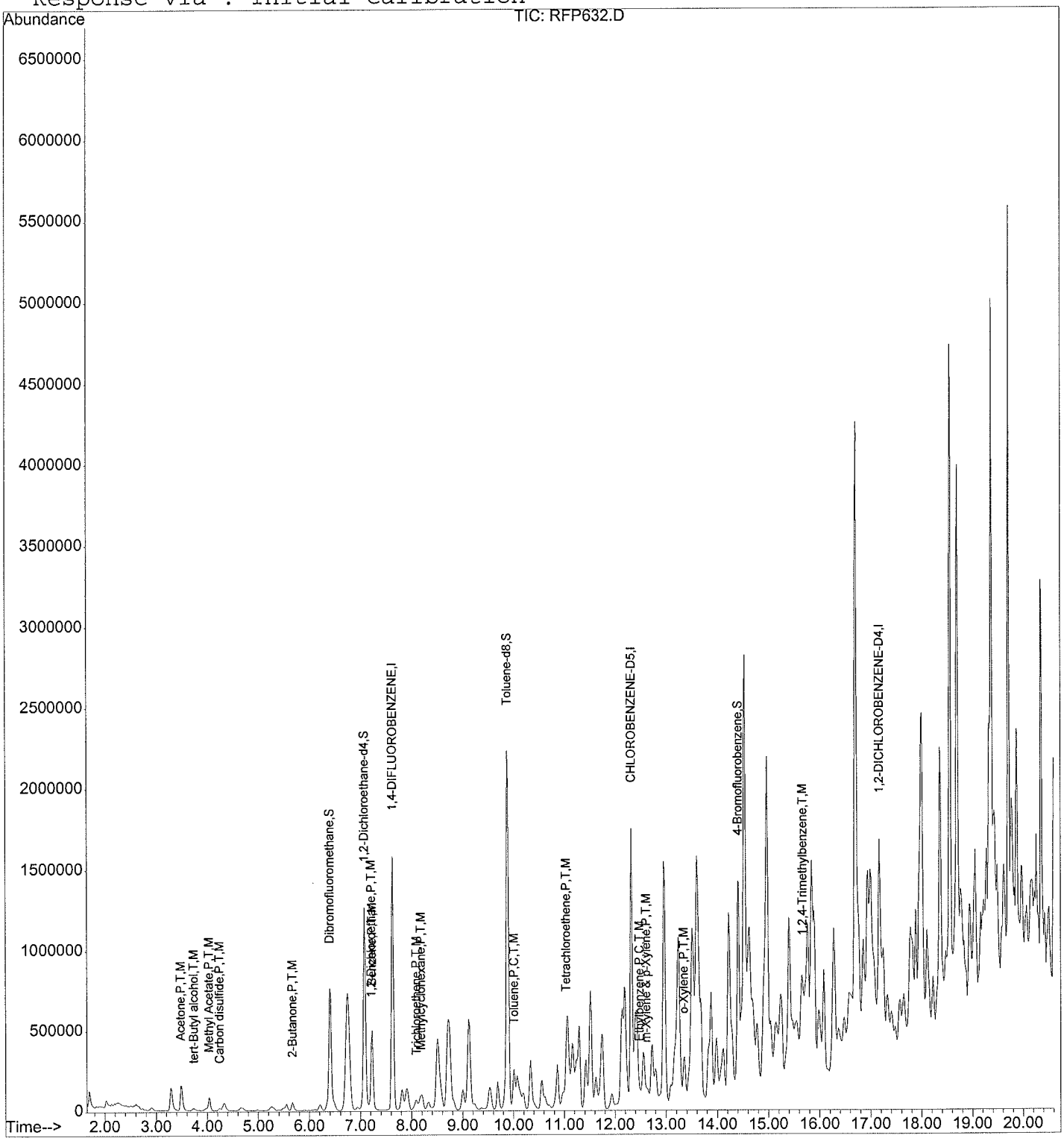
(#) = qualifier out of range (m) = manual integration

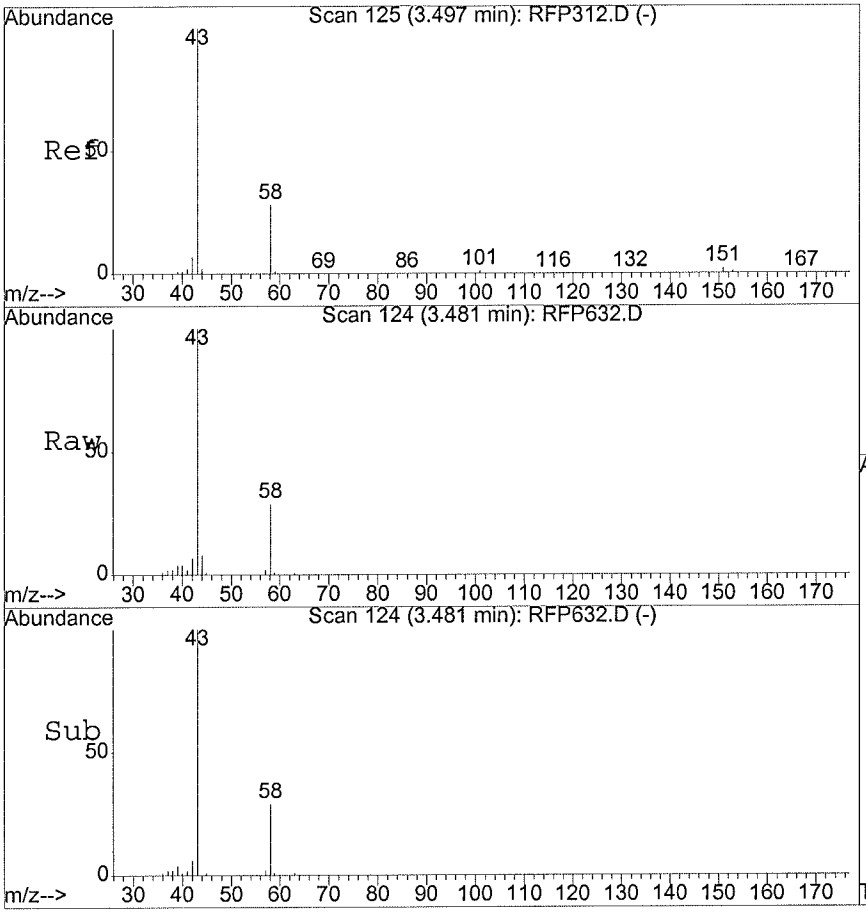
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 13 17:18 2018

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

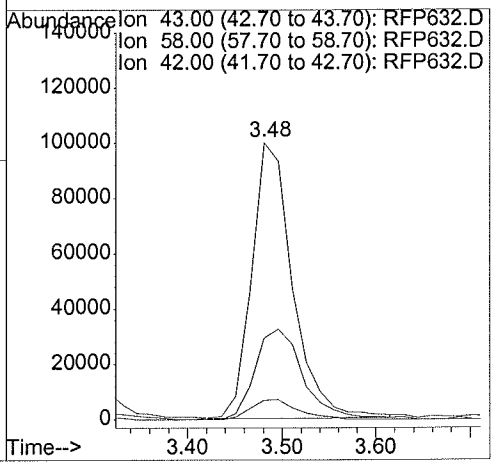


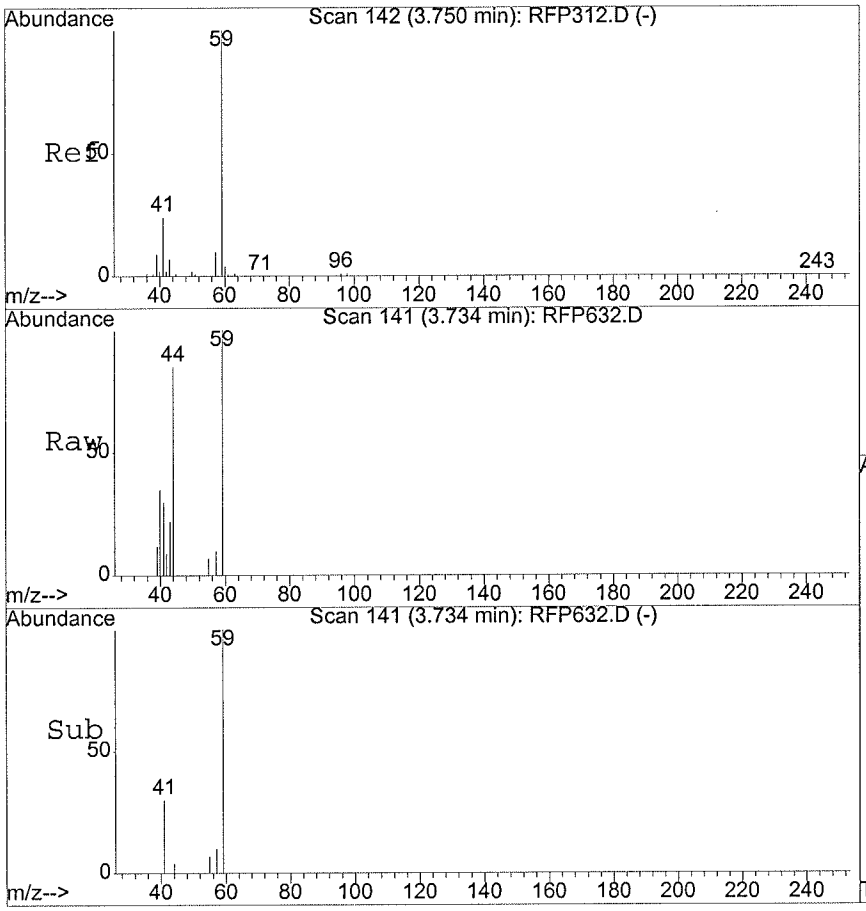


#11
Acetone
Concen: 43.03 ug/l
RT: 3.48 min Scan# 124
Delta R.T. -0.02 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 43 Resp: 298464

Ion	Ratio	Lower	Upper
43	100		
58	38.8	0.0	58.3
42	8.6	0.0	36.9

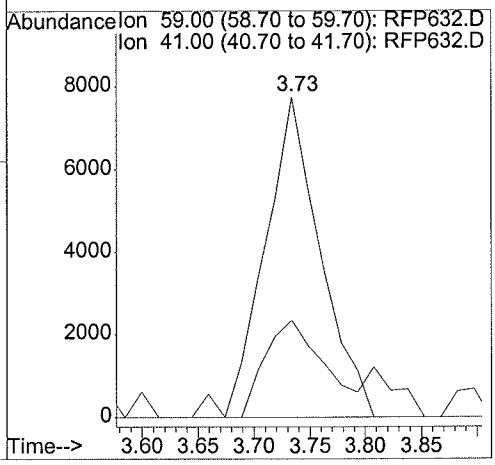


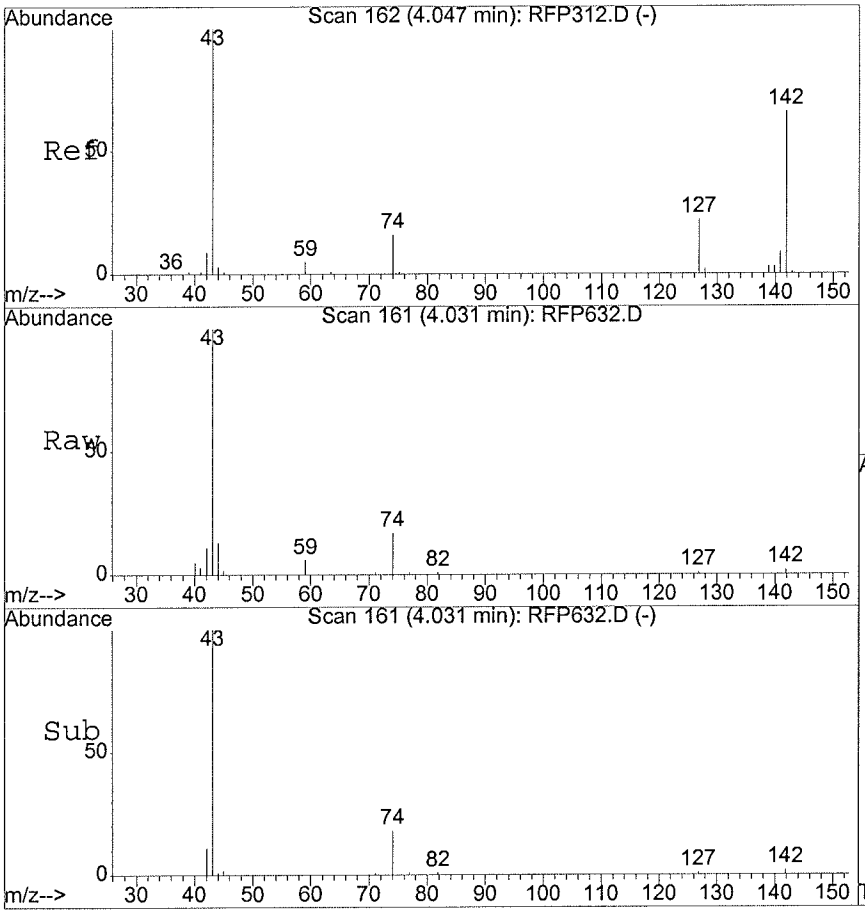


#13
tert-Butyl alcohol
Concen: 8.20 ug/l
RT: 3.73 min Scan# 141
Delta R.T. -0.02 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 59 Resp: 26490

Ion	Ratio	Lower	Upper
59	100		
41	33.1	171.3	231.3#

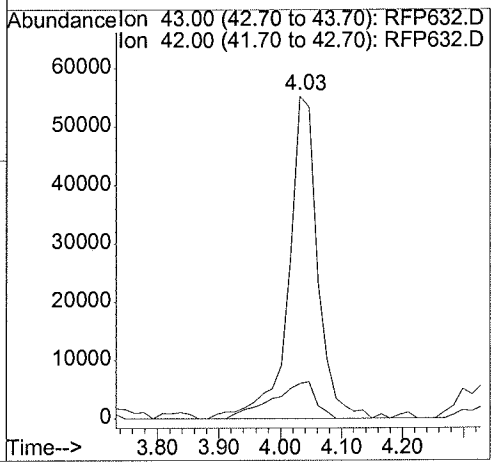


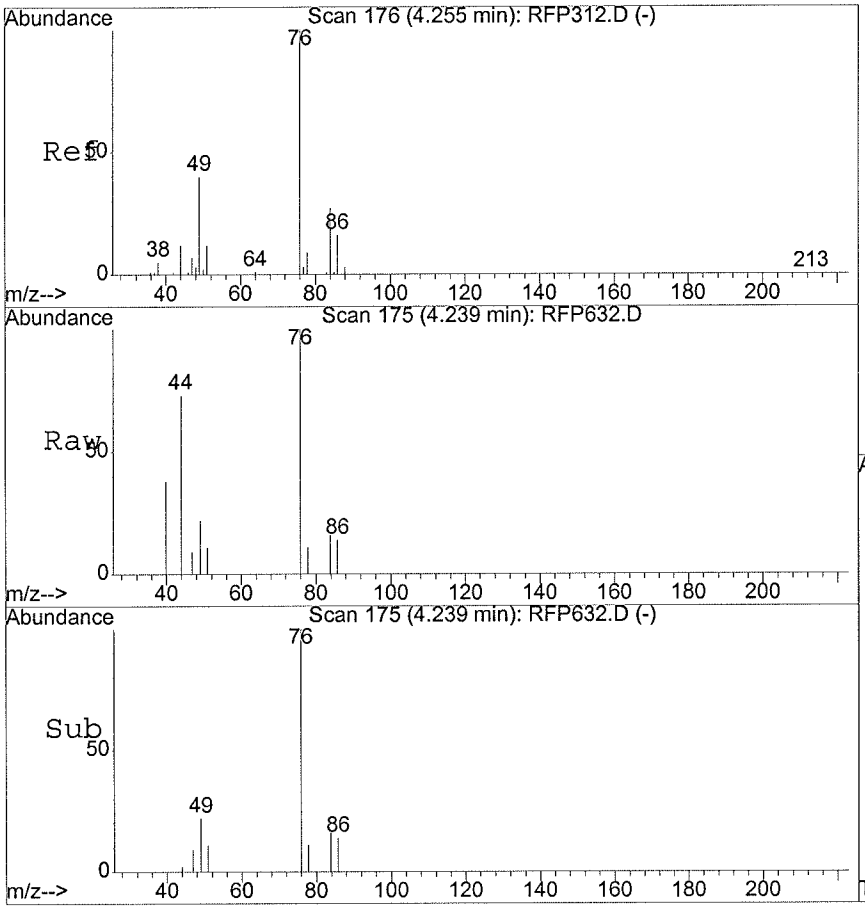


#16
Methyl Acetate
Concen: 6.58 ug/l
RT: 4.03 min Scan# 161
Delta R.T. -0.02 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 43 Resp: 182709

Ion	Ratio	Lower	Upper
43	100		
42	17.0	0.0	42.1

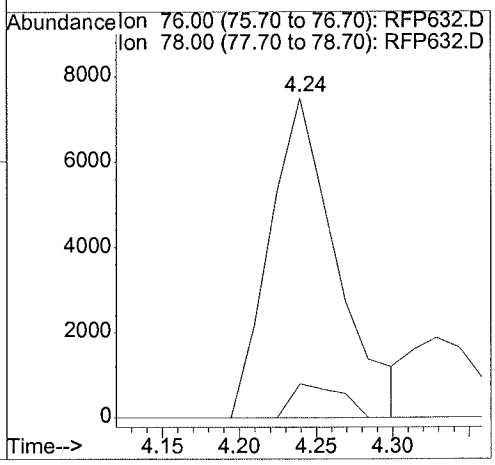


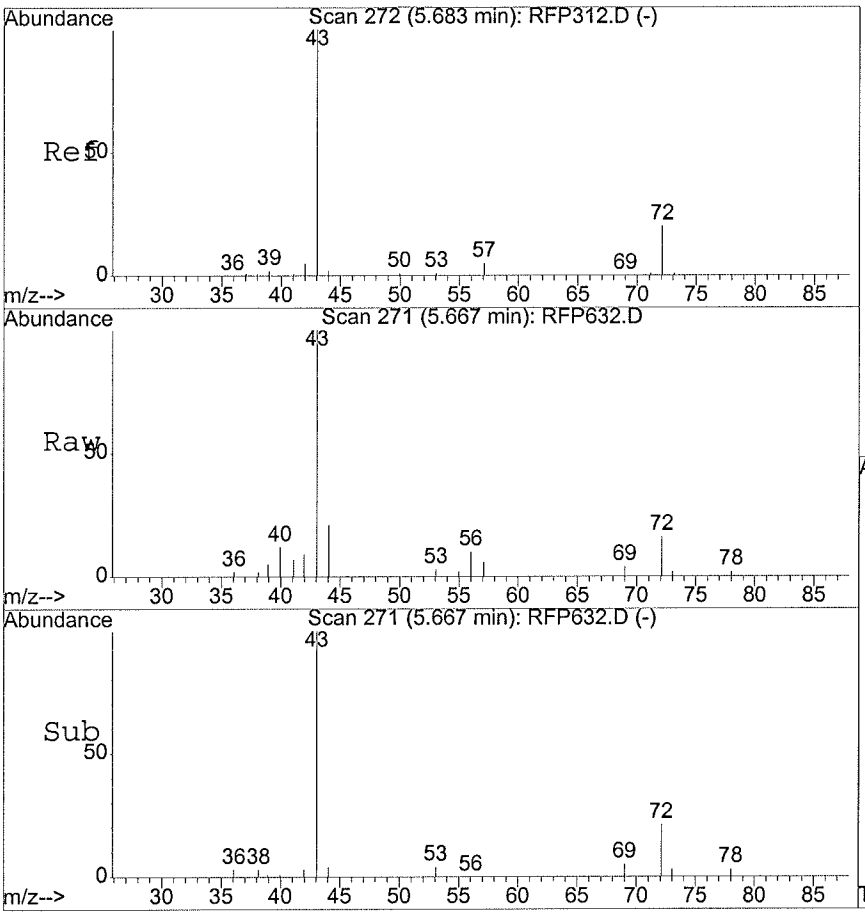


#19
Carbon disulfide
Concen: 0.49 ug/l
RT: 4.24 min Scan# 175
Delta R.T. -0.02 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 76 Resp: 22692

Ion	Ratio	Lower	Upper
76	100		
78	8.0	0.0	38.8

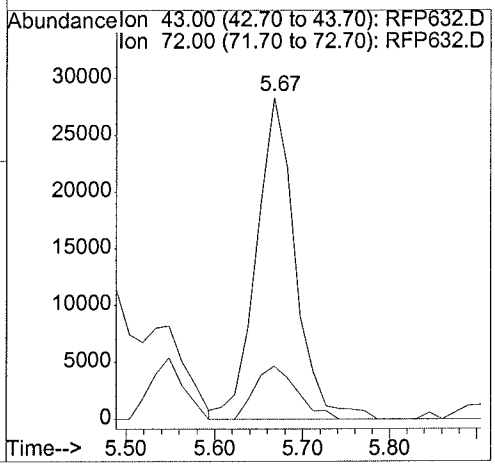


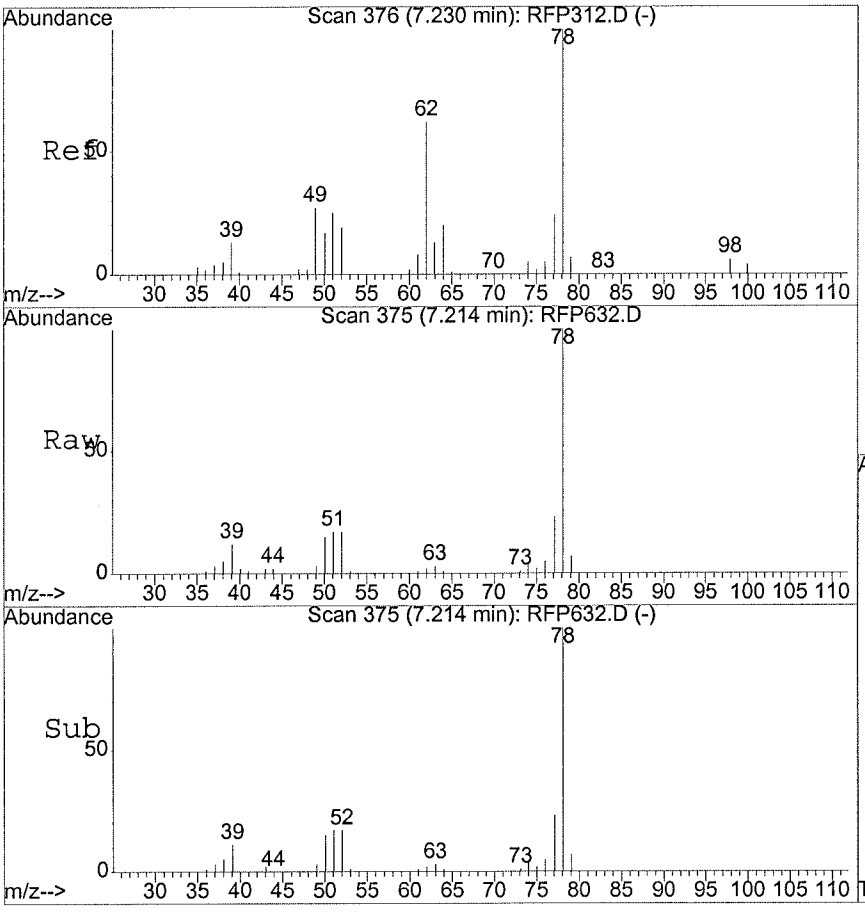


#28
2-Butanone
Concen: 6.16 ug/l
RT: 5.67 min Scan# 271
Delta R.T. -0.02 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 43 Resp: 87185

Ion	Ratio	Lower	Upper
43	100		
72	17.9	0.0	49.4

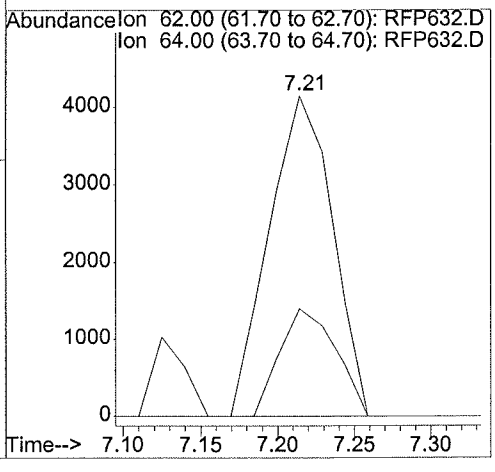


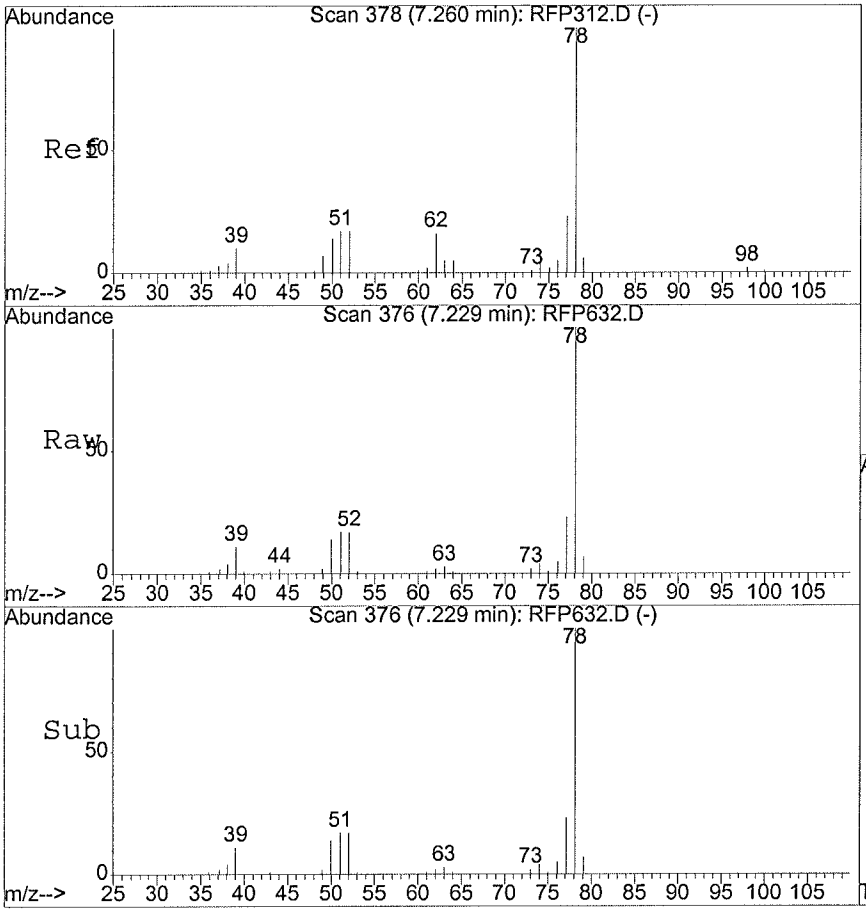


#44
1,2-Dichloroethane
Concen: 0.61 ug/l
RT: 7.21 min Scan# 375
Delta R.T. -0.02 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 62 Resp: 11929

Ion	Ratio	Lower	Upper
62	100		
64	29.9	1.7	61.7

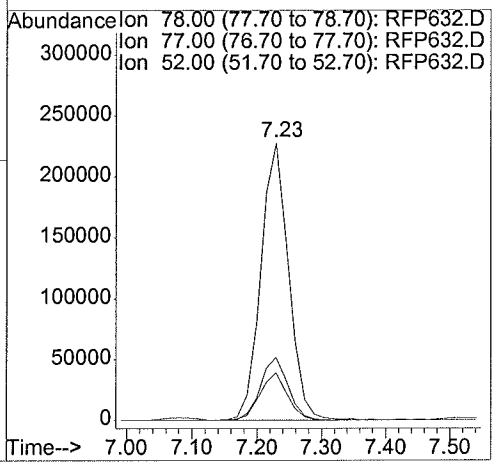


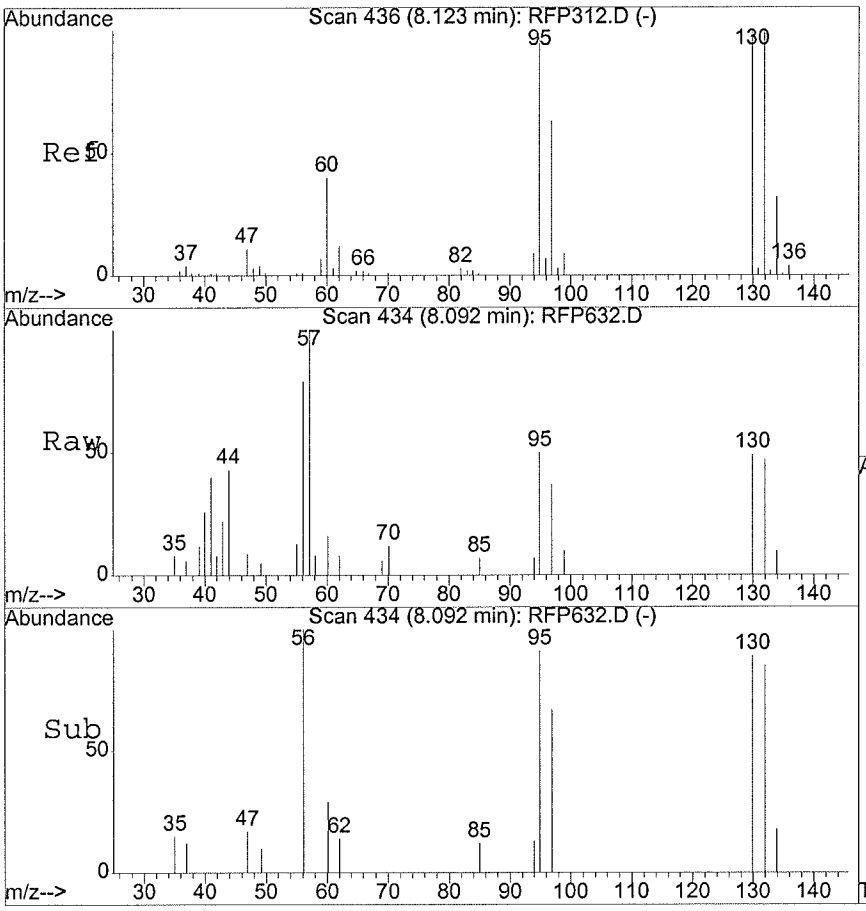


#45
Benzene
Concen: 11.21 ug/l
RT: 7.23 min Scan# 376
Delta R.T. -0.03 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 78 Resp: 682677

Ion	Ratio	Lower	Upper
78	100		
77	22.6	0.0	53.5
52	17.0	0.0	47.3

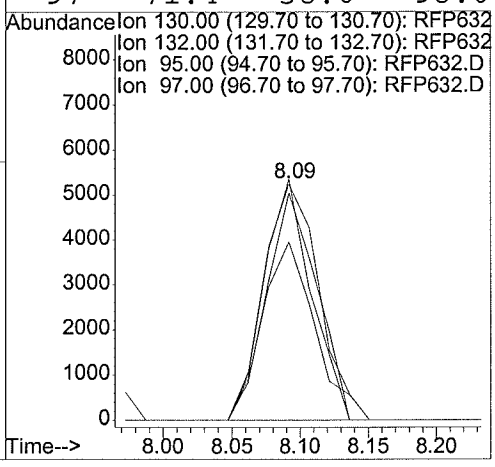


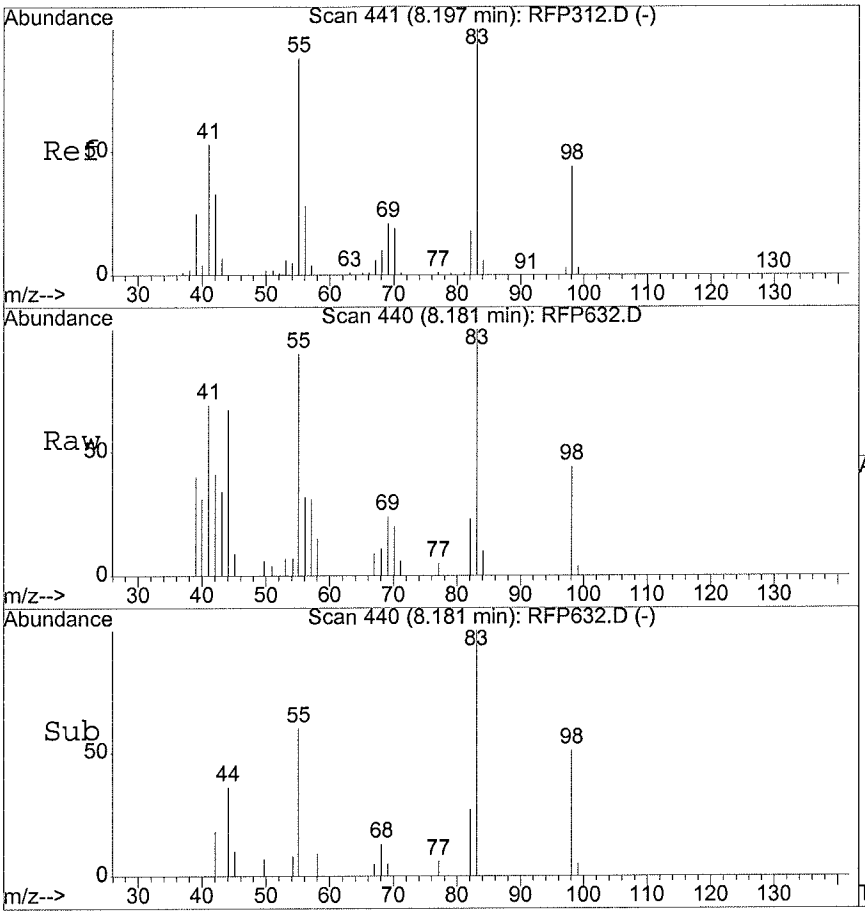


#46
Trichloroethene
Concen: 0.97 ug/l
RT: 8.09 min Scan# 434
Delta R.T. -0.03 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion:130 Resp: 14783

Ion	Ratio	Lower	Upper
130	100		
132	87.8	66.8	126.8
95	87.5	70.8	130.8
97	71.4	38.0	98.0

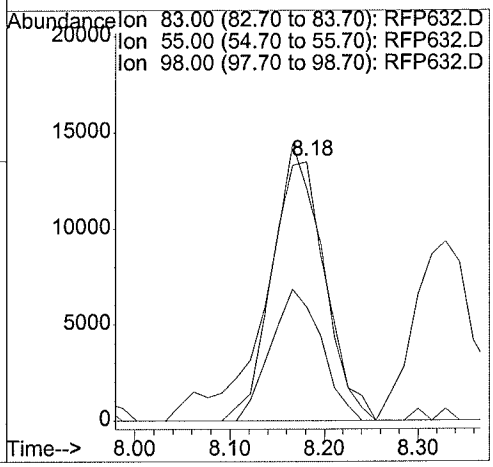


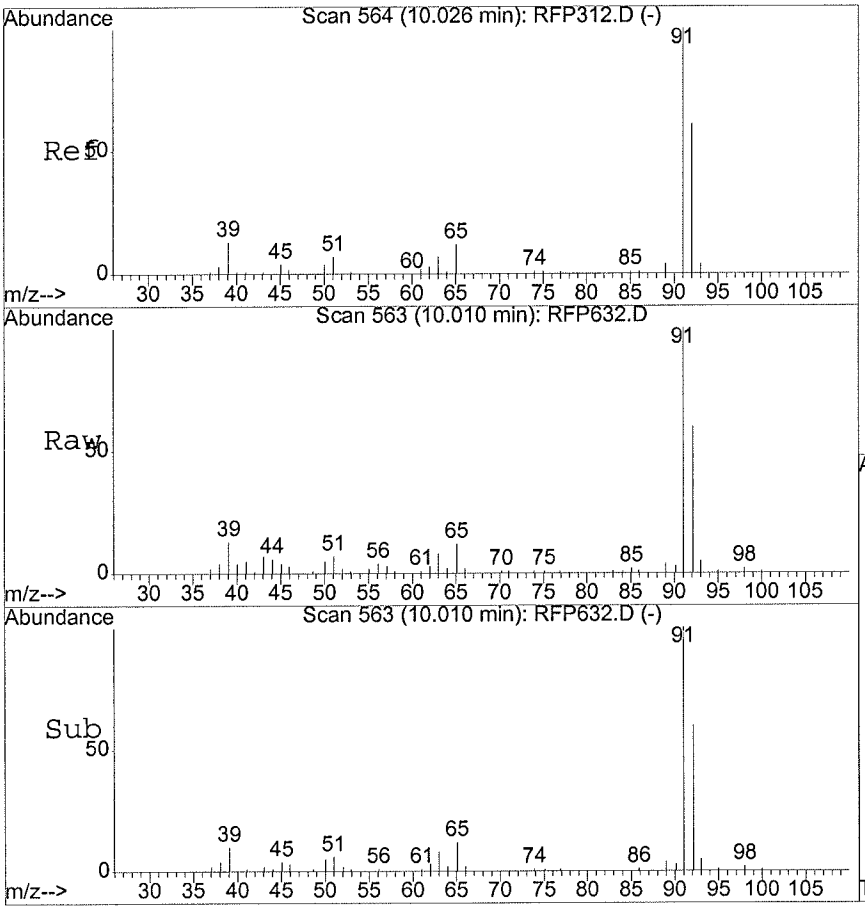


#47
Methylcyclohexane
Concen: 1.84 ug/l
RT: 8.18 min Scan# 440
Delta R.T. -0.02 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 83 Resp: 53945

Ion	Ratio	Lower	Upper
83	100		
55	114.3	56.7	116.7
98	47.6	14.4	74.4

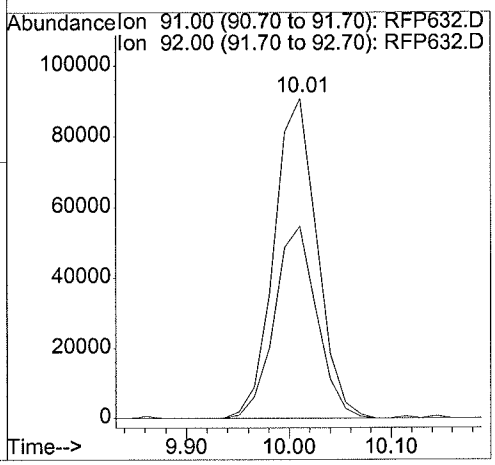


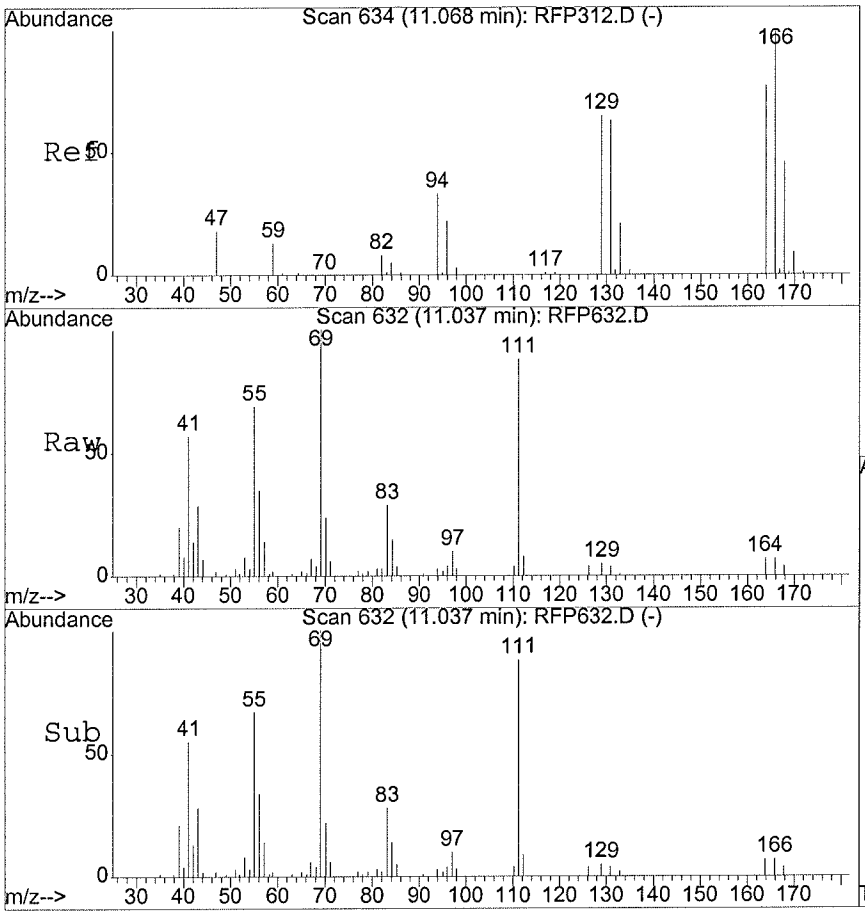


#58
Toluene
Concen: 5.18 ug/l
RT: 10.01 min Scan# 563
Delta R.T. -0.02 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 91 Resp: 266145

Ion	Ratio	Lower	Upper
91	100		
92	59.4	30.9	90.9

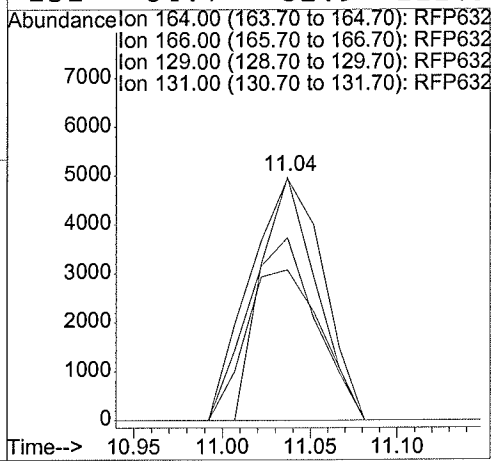


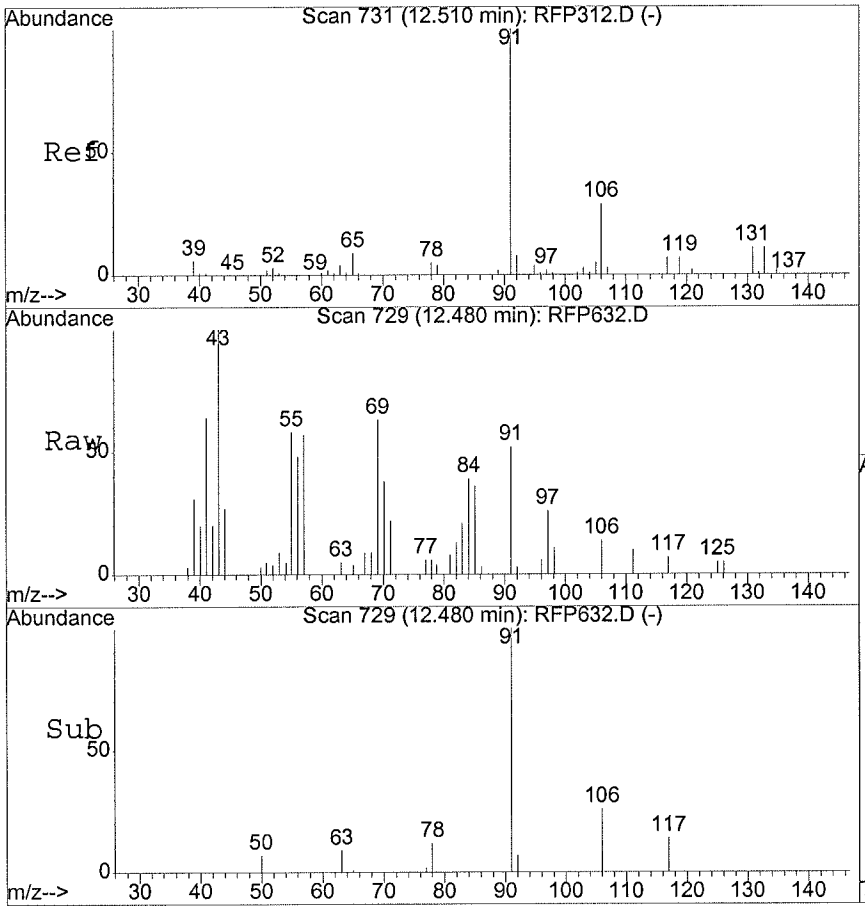


#64
Tetrachloroethene
Concen: 1.09 ug/l
RT: 11.04 min Scan# 632
Delta R.T. -0.03 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion:164 Resp: 10882

Ion	Ratio	Lower	Upper
164	100		
166	131.9	96.8	156.8
129	93.6	55.7	115.7
131	84.7	52.9	112.9

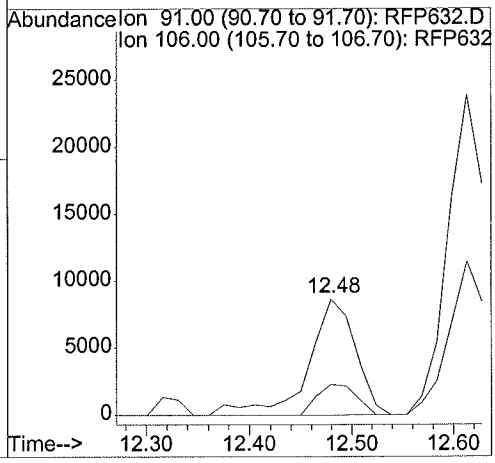


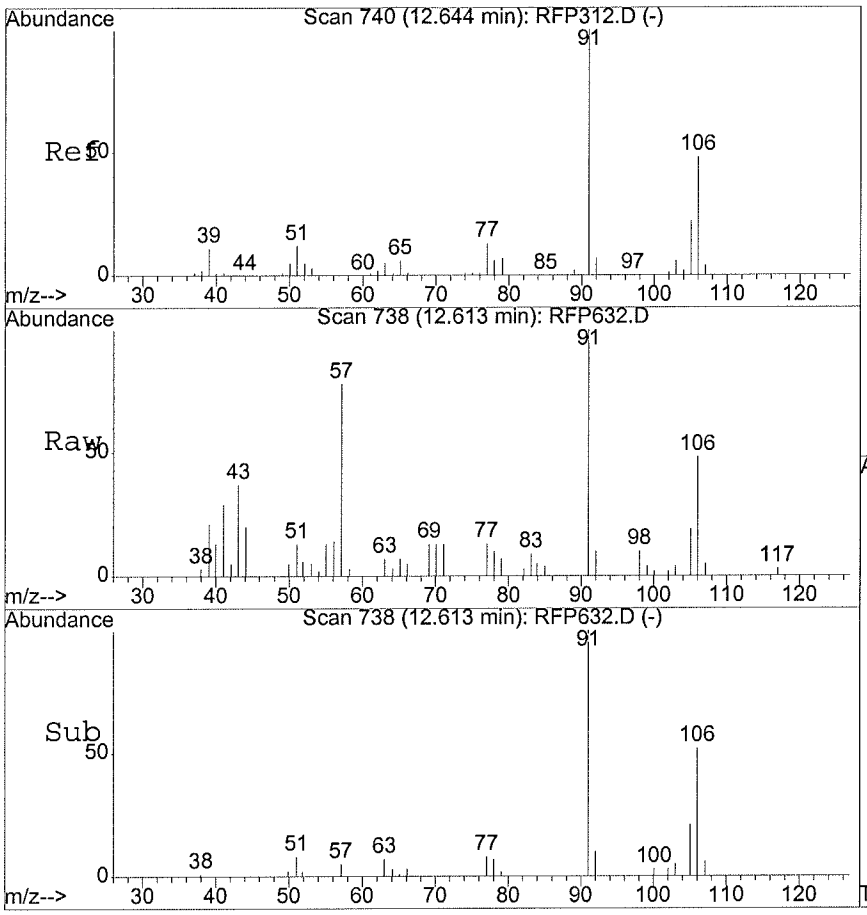


#70
Ethylbenzene
Concen: 0.53 ug/l
RT: 12.48 min Scan# 729
Delta R.T. -0.03 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 91 Resp: 28000

Ion	Ratio	Lower	Upper
91	100		
106	21.9	0.0	58.2

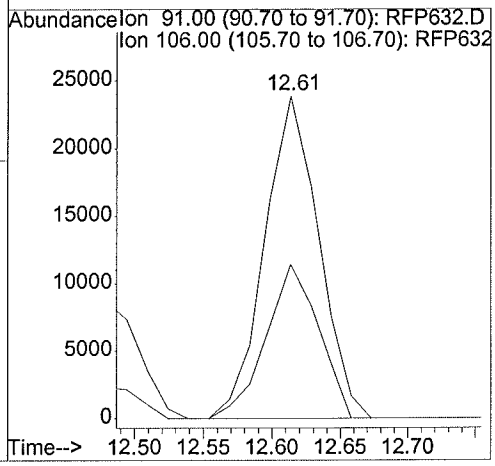


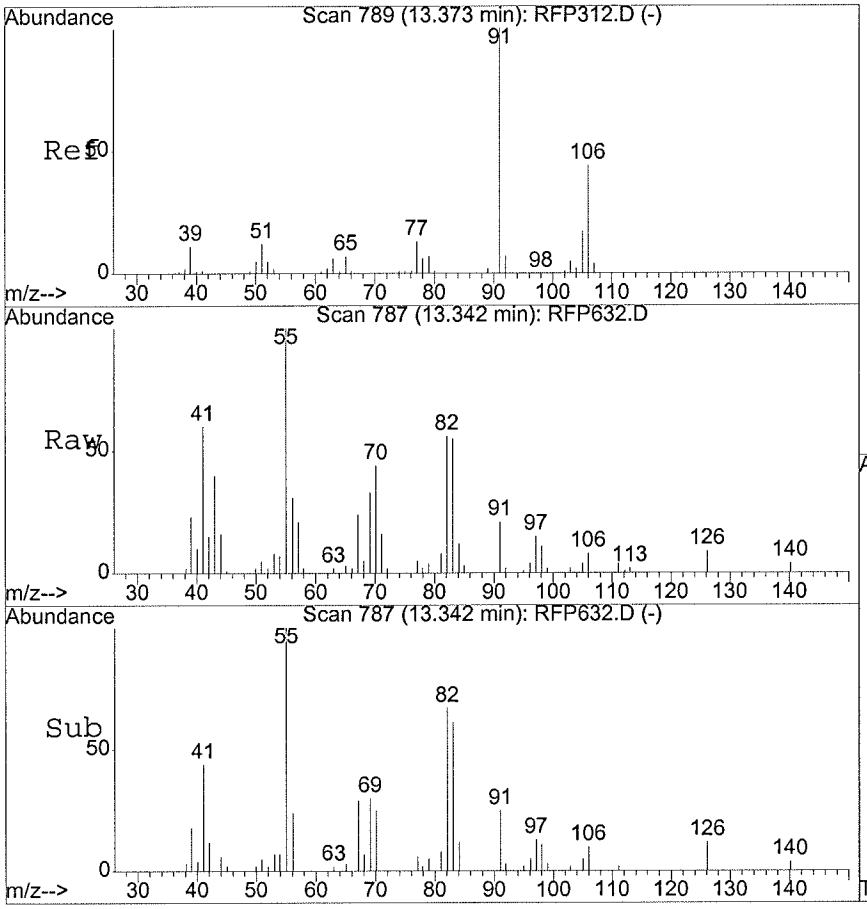


#71
m-Xylene & p-Xylene
Concen: 1.65 ug/l
RT: 12.61 min Scan# 738
Delta R.T. -0.03 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 91 Resp: 65579

Ion	Ratio	Lower	Upper
91	100		
106	46.6	17.2	77.2

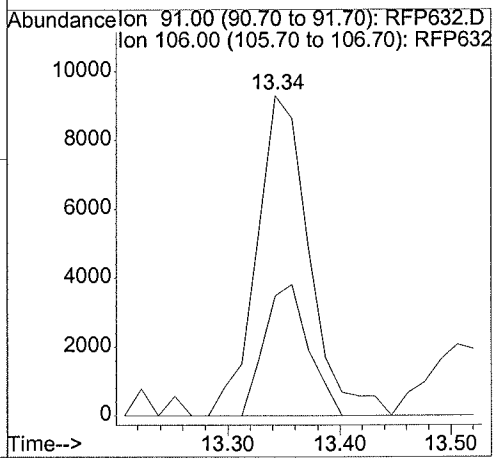


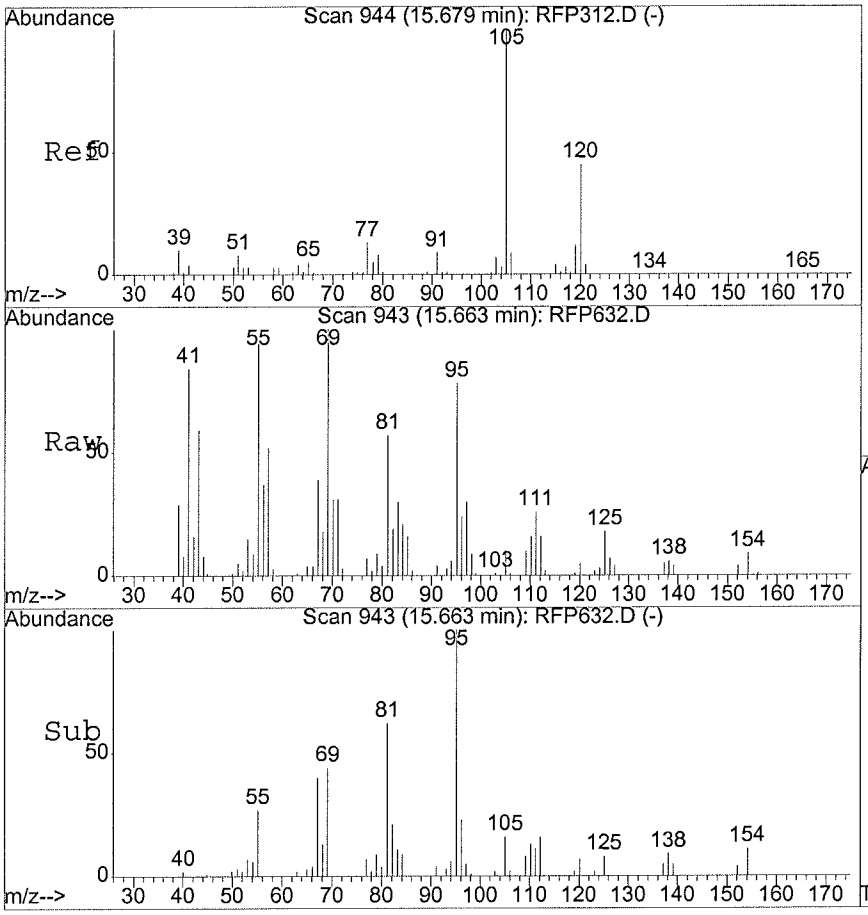


#72
o-Xylene
Concen: 0.73 ug/l
RT: 13.34 min Scan# 787
Delta R.T. -0.03 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion: 91 Resp: 30283

Ion	Ratio	Lower	Upper
91	100		
106	34.6	14.1	74.1

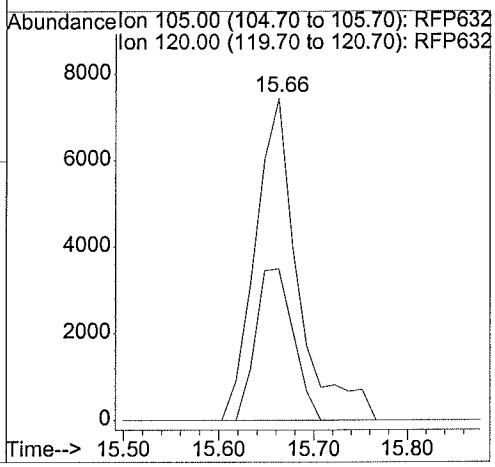




#88
1,2,4-Trimethylbenzene
Concen: 0.81 ug/l
RT: 15.66 min Scan# 943
Delta R.T. -0.02 min
Lab File: RFP632.D
Acq: 29 Jun 2018 7:13 pm

Tgt Ion:105 Resp: 23341

Ion	Ratio	Lower	Upper
105	100		
120	41.5	24.4	84.4



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0

Filtering: 5
Min Area: 10 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.396	312	320	332	rVB	758637	2711302	23.35%	1.268%
2	6.738	334	343	353	rBV	728517	4097354	35.28%	1.917%
3	7.080	359	366	371	rBV	1252437	3788460	32.62%	1.772%
4	7.229	371	376	383	rVB	492896	1554641	13.39%	0.727%
5	7.631	398	403	409	rVB	1572768	4424021	38.10%	2.070%
6	8.508	455	462	470	rBV	428183	2206746	19.00%	1.032%
7	8.716	470	476	488	rVB3	562691	3192140	27.49%	1.493%
8	9.118	498	503	509	rVB	529994	2068496	17.81%	0.968%
9	9.877	546	554	559	rBV	2216125	7149325	61.56%	3.345%
10	11.052	629	633	637	rBV	472804	1863384	16.05%	0.872%
11	11.290	646	649	653	rVB	507086	1602367	13.80%	0.750%
12	11.513	660	664	668	rVB	667896	2227154	19.18%	1.042%
13	11.736	674	679	686	rVB	461509	2000470	17.23%	0.936%
14	12.137	696	706	707	rBV2	599930	1987835	17.12%	0.930%
15	12.182	707	709	714	rVV	691912	2288841	19.71%	1.071%
16	12.316	714	718	721	rVV	1644641	4553589	39.21%	2.130%
17	12.405	721	724	731	rVB3	498330	2216526	19.09%	1.037%
18	12.955	756	761	767	rVB	1488181	4839161	41.67%	2.264%
19	13.238	771	780	785	rVB	932438	4278750	36.84%	2.002%
20	13.506	791	798	801	rBV4	1015540	4584332	39.48%	2.145%
21	13.595	801	804	808	rVB	919991	3052574	26.29%	1.428%
22	13.878	815	823	826	rBV2	656116	2850300	24.54%	1.333%
23	14.220	842	846	854	rBV2	1077589	4695345	40.43%	2.197%
24	14.398	854	858	861	rBV	1237042	3852507	33.17%	1.802%
25	14.532	861	867	870	rVV	2270860	6748228	58.11%	3.157%
26	14.621	870	873	876	rVB2	459813	1566701	13.49%	0.733%
27	14.963	888	896	900	rBV2	1983596	8528019	73.43%	3.990%
28	15.231	911	914	919	rVB4	467788	1910161	16.45%	0.894%
29	15.395	919	925	929	rBV	945549	3714298	31.98%	1.738%
30	15.648	938	942	945	rBV3	403136	1639950	14.12%	0.767%
31	15.752	946	949	952	rVB2	464916	1288108	11.09%	0.603%

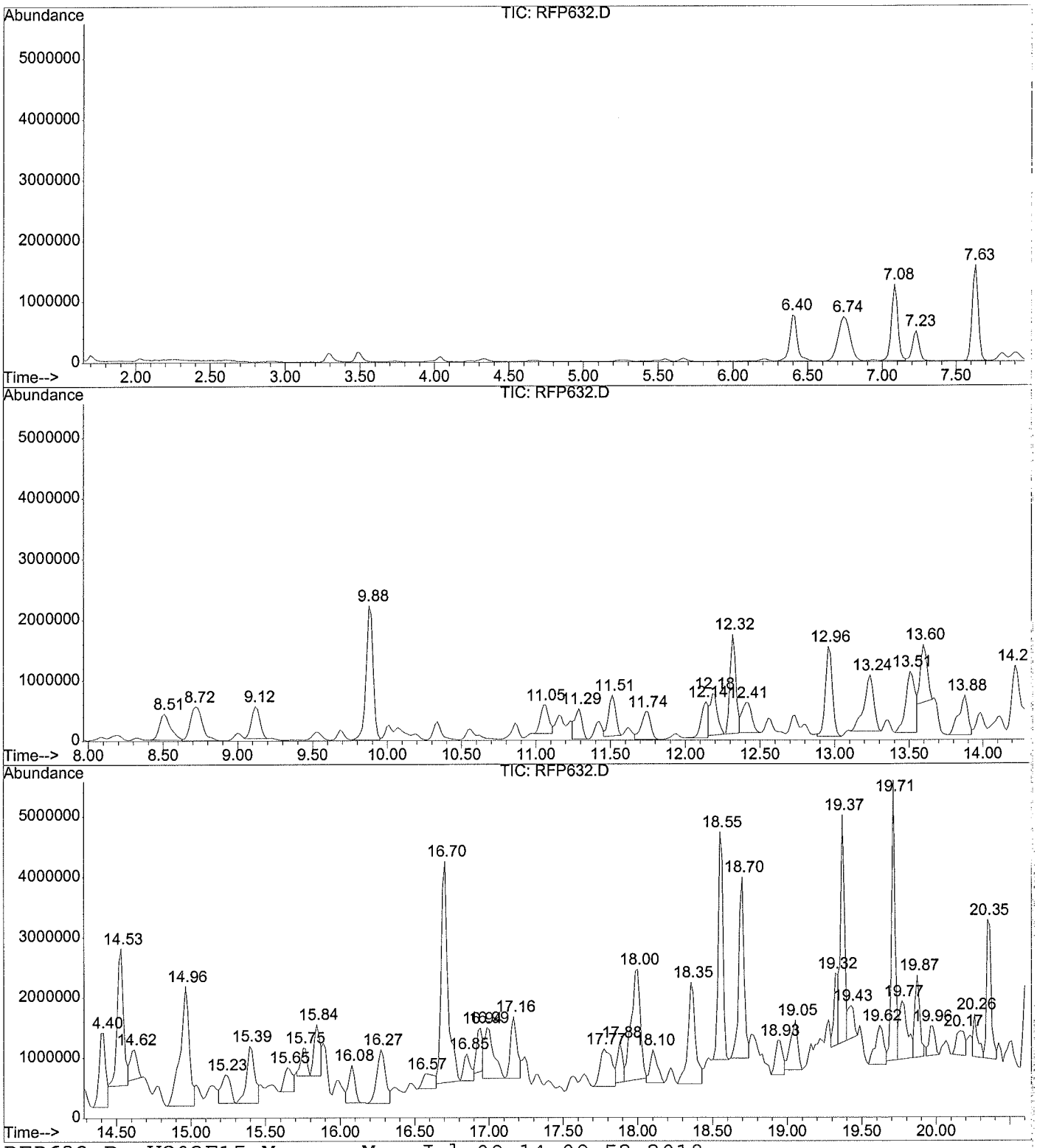
32	15.841	952	955	957	rBV2	852345	2493586	21.47%	1.167%
33	16.079	968	971	976	rVB	623008	1767779	15.22%	0.827%
34	16.272	978	984	988	rBV3	891985	3677276	31.66%	1.720%
35	16.570	1001	1004	1009	rBV5	243536	1413098	12.17%	0.661%
36	16.704	1009	1013	1020	rVB	3679894	11613077	100.00%	5.433%
37	16.852	1020	1023	1026	rBV2	448715	1480899	12.75%	0.693%
38	16.942	1026	1029	1030	rVV2	727781	2019719	17.39%	0.945%
39	16.986	1030	1032	1040	rVB3	841649	3613870	31.12%	1.691%
40	17.165	1040	1044	1047	rBV	1025349	3177989	27.37%	1.487%
41	17.775	1080	1085	1090	rVV4	624730	3470441	29.88%	1.624%
42	17.879	1090	1092	1094	rVV2	667290	1618948	13.94%	0.757%
43	17.998	1094	1100	1104	rVV4	1834139	7971286	68.64%	3.729%
44	18.102	1104	1107	1112	rVB2	548526	1790301	15.42%	0.838%
45	18.355	1118	1124	1129	rBV2	1686544	5983672	51.53%	2.799%
46	18.548	1134	1137	1141	rBV	3773567	8246241	71.01%	3.858%
47	18.697	1142	1147	1150	rBV	3006053	7458227	64.22%	3.489%
48	18.935	1160	1163	1166	rBV4	571635	1951713	16.81%	0.913%
49	19.054	1166	1171	1174	rVB4	829812	2785835	23.99%	1.303%
50	19.322	1187	1189	1190	rVV	1196595	2452796	21.12%	1.147%
51	19.366	1190	1192	1194	rVV	3749341	7044618	60.66%	3.296%
52	19.426	1194	1196	1199	rVB4	502919	1519760	13.09%	0.711%
53	19.619	1204	1209	1212	rBV5	645000	2600068	22.39%	1.216%
54	19.708	1212	1215	1217	rVV	4636258	7668159	66.03%	3.587%
55	19.768	1217	1219	1224	rVV4	948964	3785747	32.60%	1.771%
56	19.872	1224	1226	1229	rVV2	1354081	3178514	27.37%	1.487%
57	19.961	1230	1232	1236	rVB4	477312	1350936	11.63%	0.632%
58	20.169	1242	1246	1248	rBV4	390545	1667572	14.36%	0.780%
59	20.259	1251	1252	1256	rVV	710168	1383356	11.91%	0.647%
60	20.348	1256	1258	1262	rVV	2311393	5089506	43.83%	2.381%

Sum of corrected areas: 213756074

RFP632.D VO02F15.M Mon Jul 09 14:09:52 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Operator : ODinh
Acquired : 29 Jun 2018 7:13 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-15
Misc Info :
Vial Number: 24
Quant File :VO02F15.RES (RTE Integrator)



RFP632.D VO02F15.M Mon Jul 09 14:09:52 2018

Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

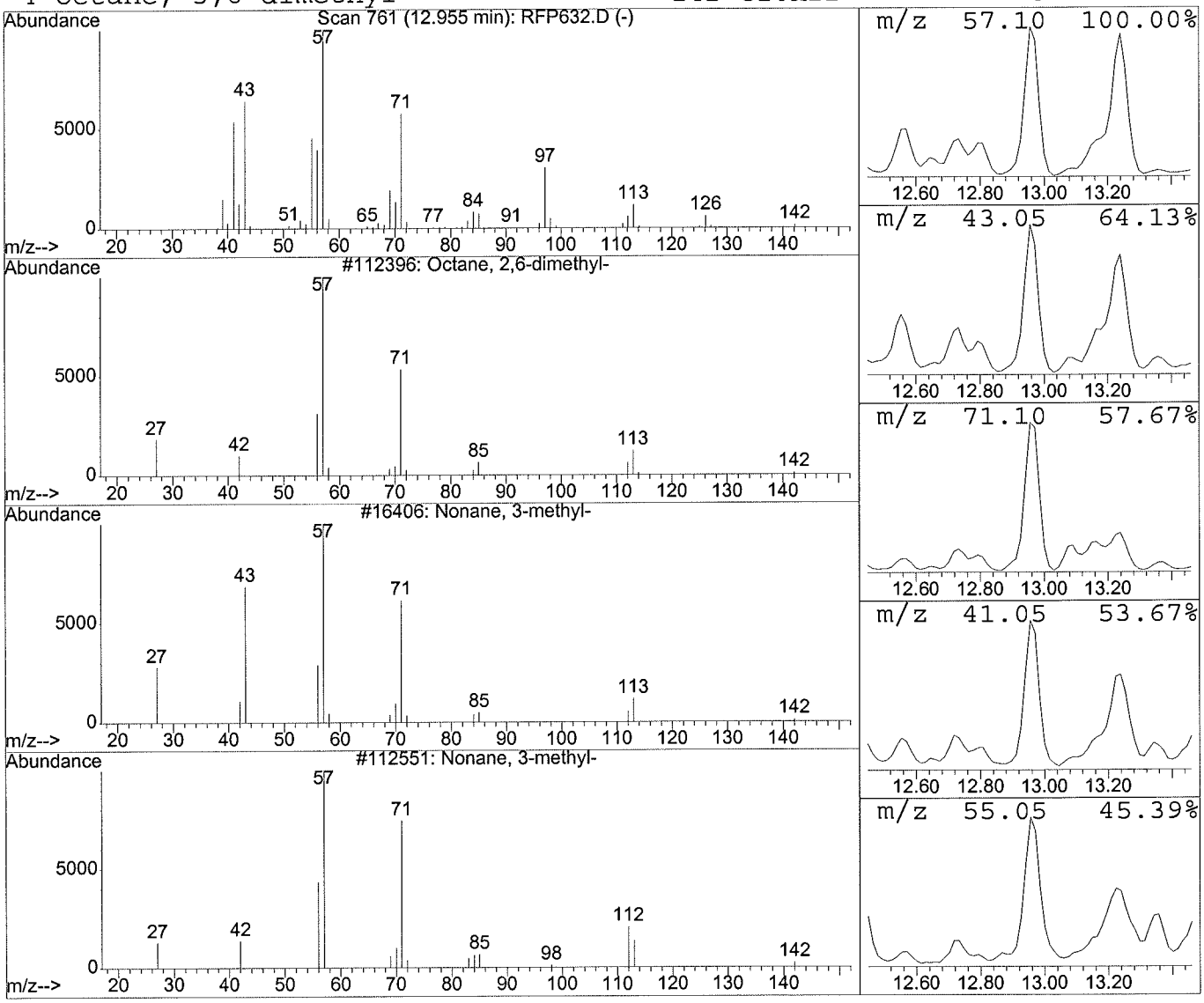
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 1 Octane, 2,6-dimethyl- Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.96	53.14 ug/l	4839160	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Octane, 2,6-dimethyl-	142	C10H22	002051-30-1	81
2	Nonane, 3-methyl-	142	C10H22	005911-04-6	76
3	Nonane, 3-methyl-	142	C10H22	005911-04-6	64
4	Octane, 3,6-dimethyl-	142	C10H22	015869-94-0	52



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

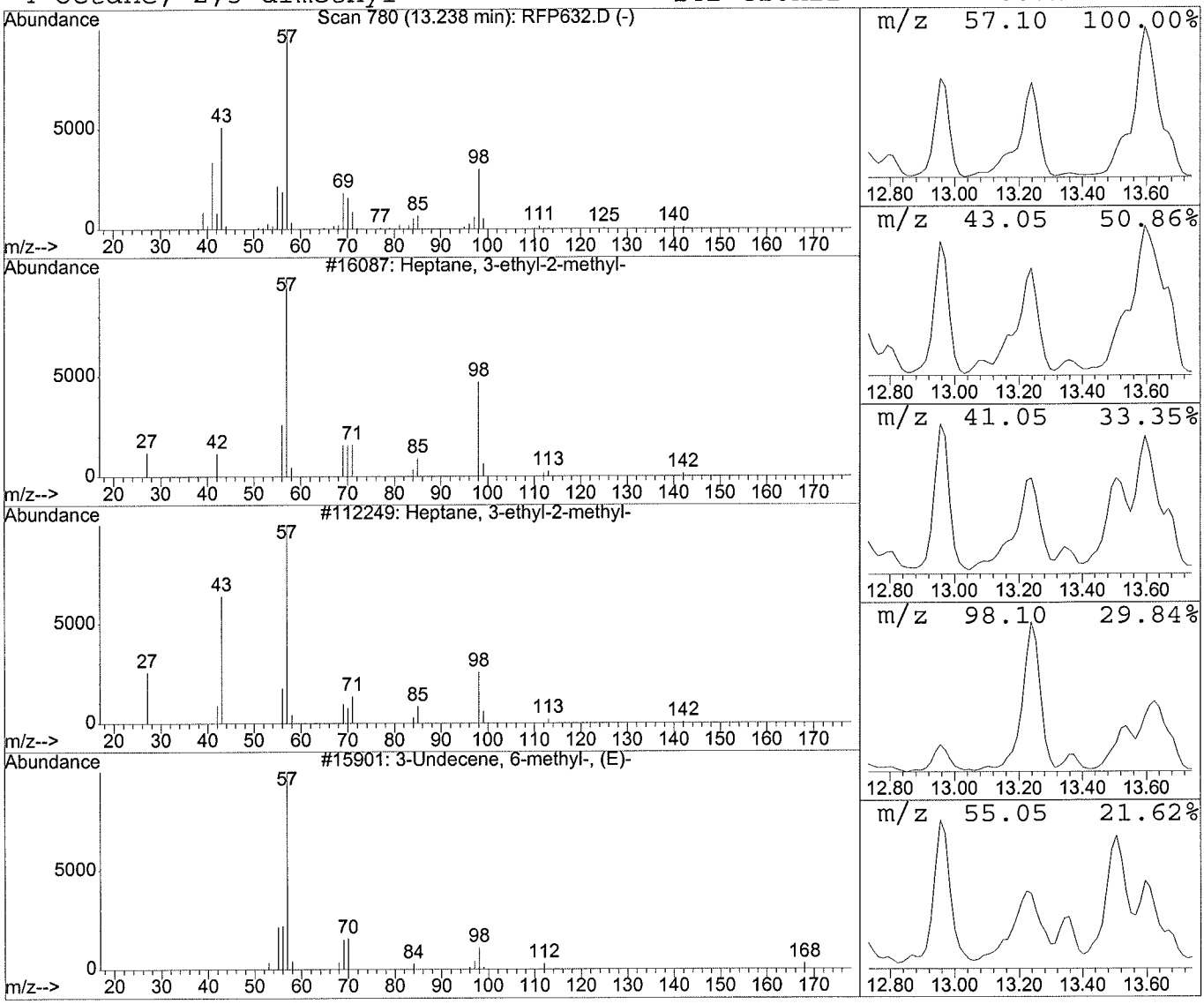
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 2 Heptane, 3-ethyl-2-methyl- Concentration Rank 20

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.24	46.98 ug/l	4278750	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptane, 3-ethyl-2-methyl-	142	C10H22	014676-29-0	68
2	Heptane, 3-ethyl-2-methyl-	142	C10H22	014676-29-0	64
3	3-Undecene, 6-methyl-, (E)-	168	C12H24	074630-52-7	59
4	Octane, 2,3-dimethyl-	142	C10H22	007146-60-3	53



Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

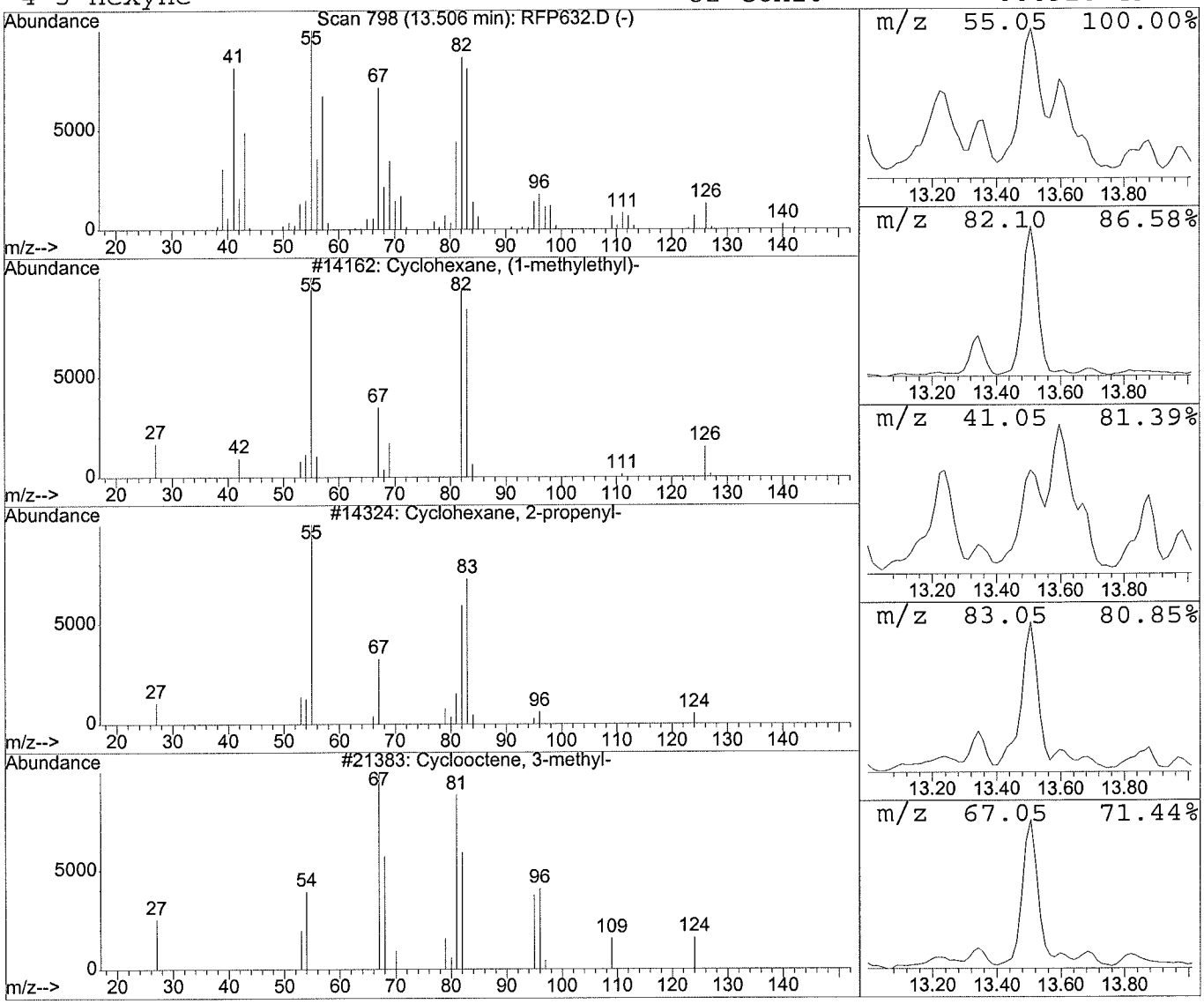
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 3 Cyclohexane, (1-methylethyl)- Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.51	50.34 ug/l	4584330	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	58
2	Cyclohexane, 2-propenyl-	124	C9H16	002114-42-3	46
3	Cyclooctene, 3-methyl-	124	C9H16	013152-05-1	35
4	3-Hexyne	82	C6H10	000928-49-4	30



Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

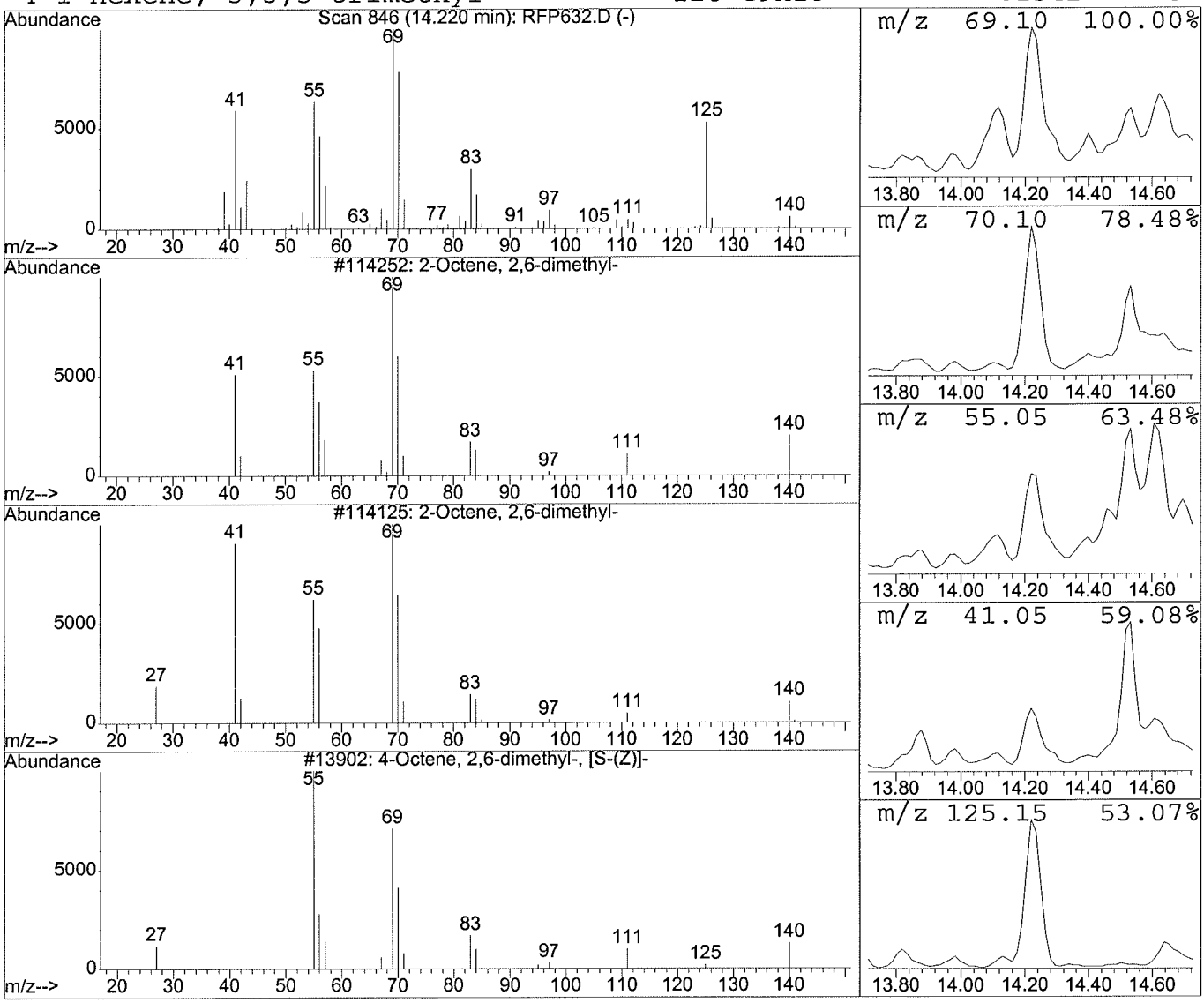
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 4 2-Octene, 2,6-dimethyl- Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.22	51.56 ug/l	4695350	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	2-Octene, 2,6-dimethyl-	140	C10H20	004057-42-5	76
2	2-Octene, 2,6-dimethyl-	140	C10H20	004057-42-5	76
3	4-Octene, 2,6-dimethyl-, [S-(Z)]-	140	C10H20	062960-77-4	49
4	1-Hexene, 3,3,5-trimethyl-	126	C9H18	013427-43-5	49



Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

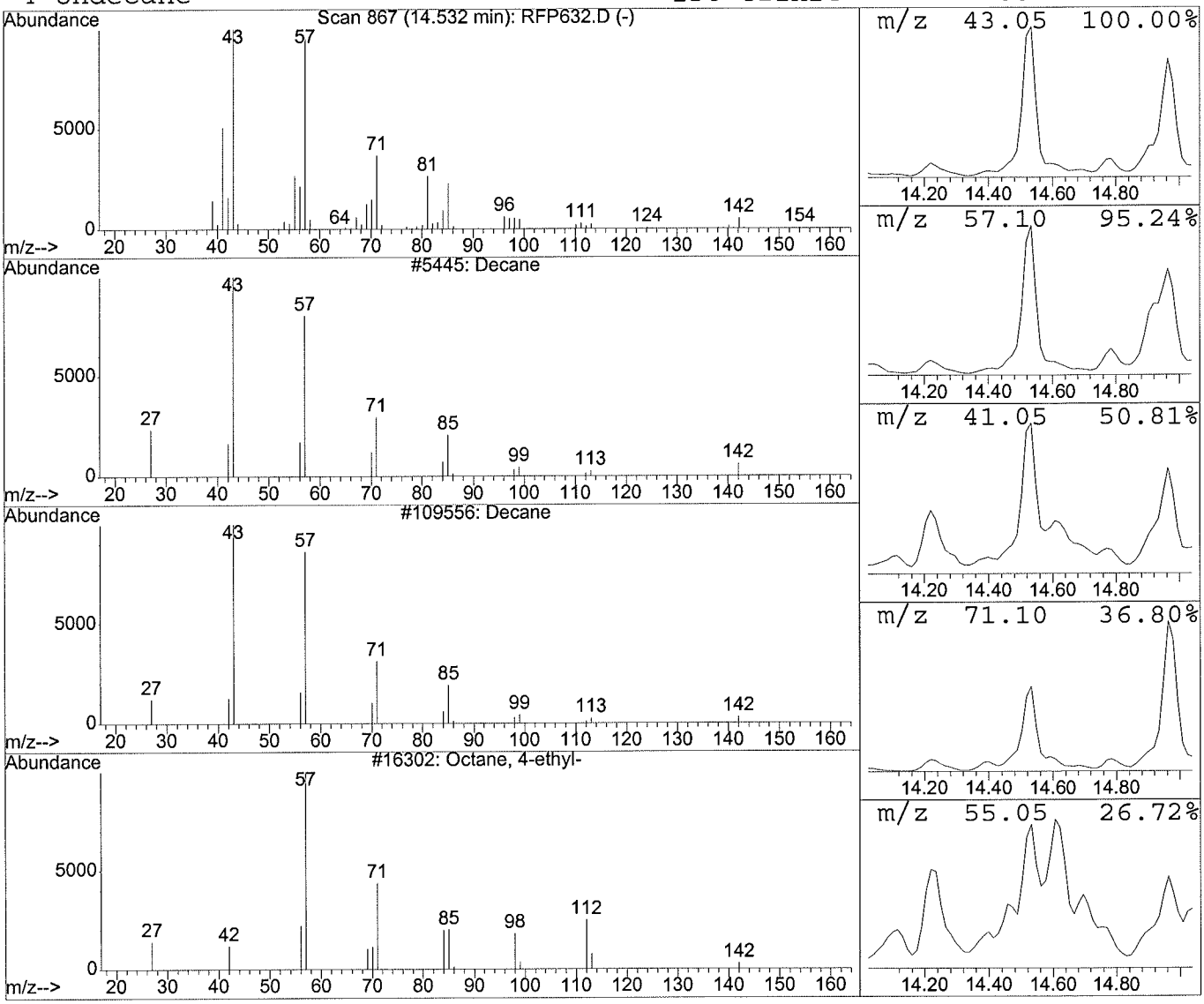
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 5 Decane — Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.53	74.10 ug/l	6748230	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane	142	C10H22	000124-18-5	95
2	Decane	142	C10H22	000124-18-5	93
3	Octane, 4-ethyl-	142	C10H22	015869-86-0	64
4	Undecane	156	C11H24	001120-21-4	59



Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

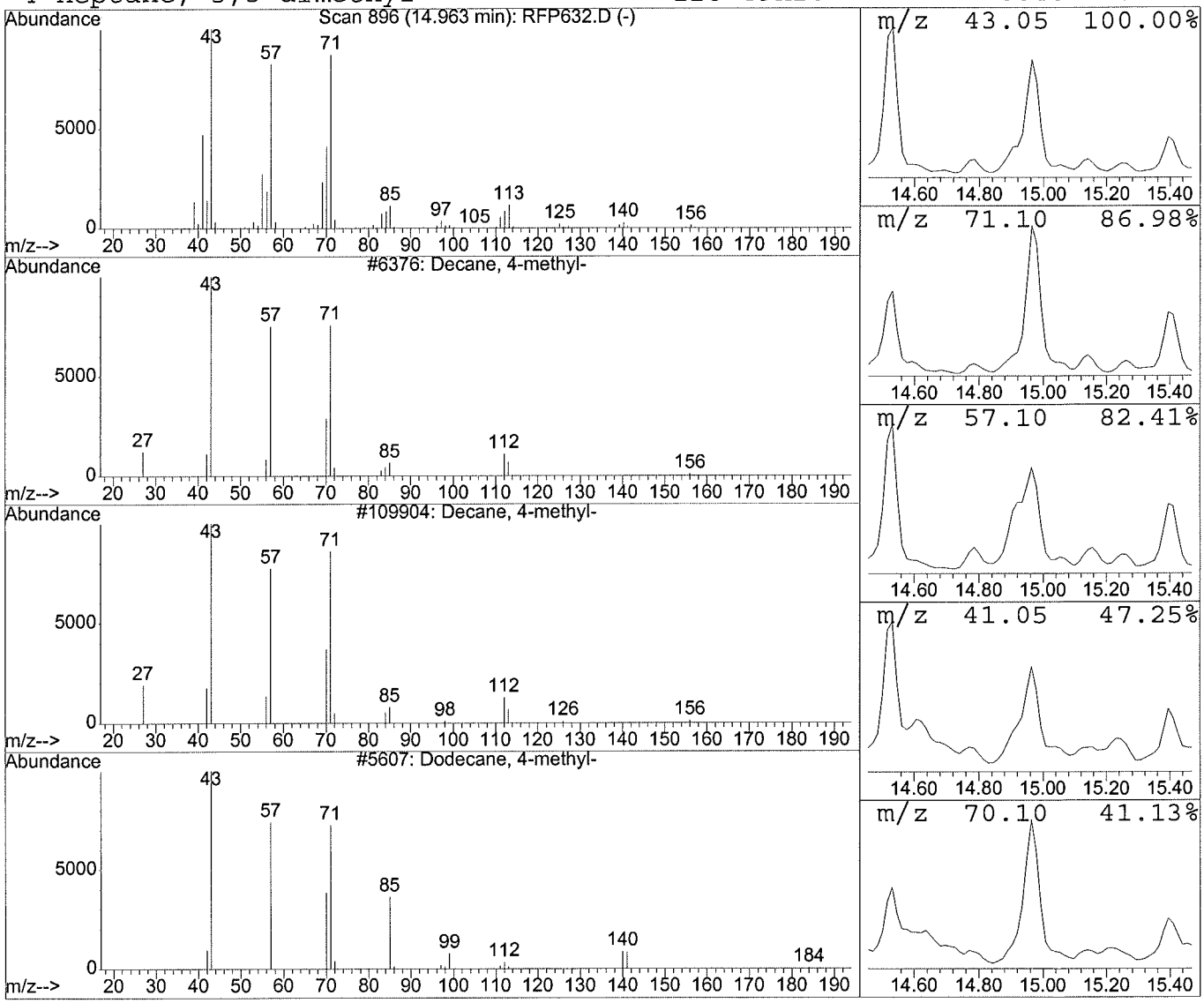
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 6 Decane, 4-methyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.96	134.17 ug/l	8528020	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane, 4-methyl-	156	C11H24	002847-72-5	90
2	Decane, 4-methyl-	156	C11H24	002847-72-5	87
3	Dodecane, 4-methyl-	184	C13H28	006117-97-1	64
4	Heptane, 3,3-dimethyl-	128	C9H20	004032-86-4	64



Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

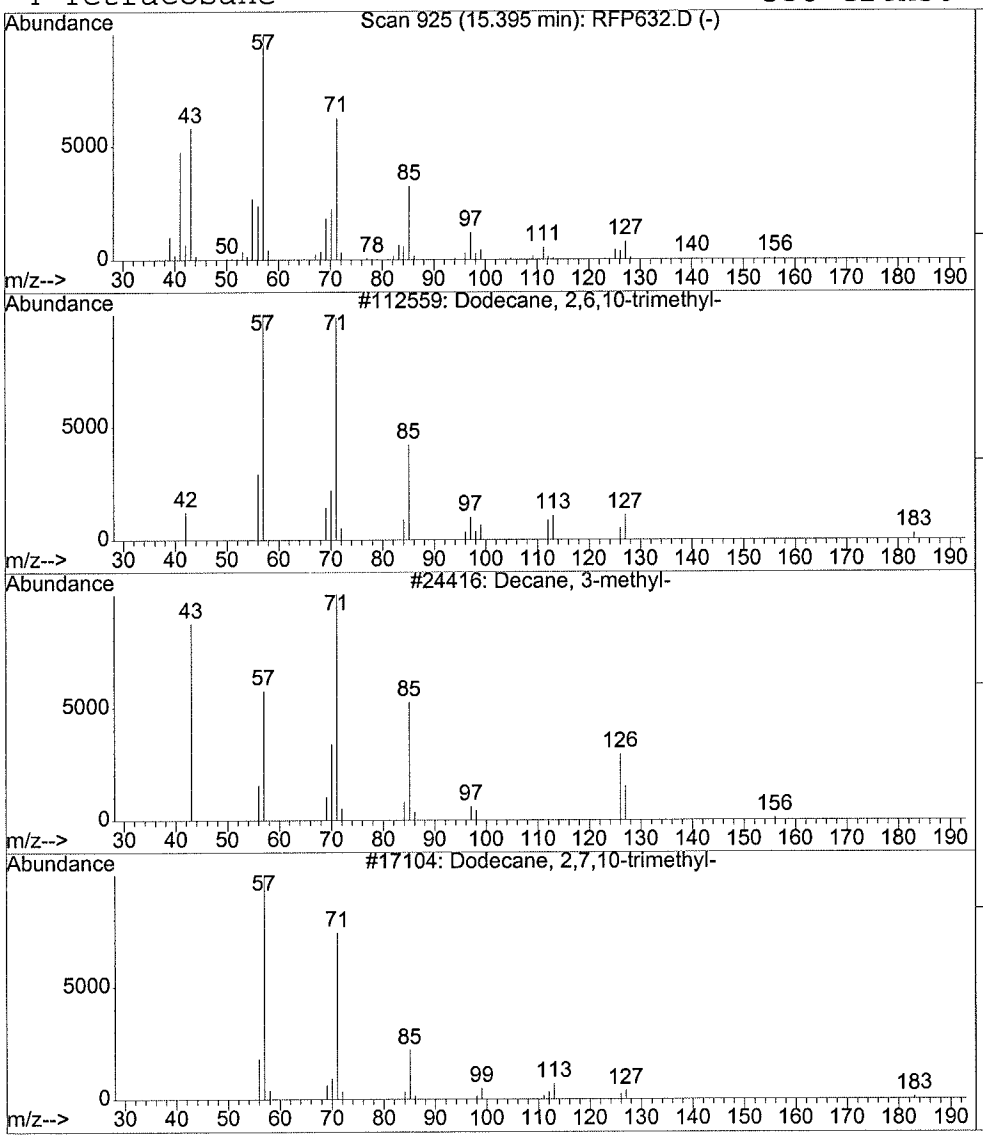
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 7 Dodecane, 2,6,10-trimethyl- Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.39	58.44 ug/l	3714300	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Dodecane, 2,6,10-trimethyl-	212	C15H32	003891-98-3	72
2	Decane, 3-methyl-	156	C11H24	013151-34-3	58
3	Dodecane, 2,7,10-trimethyl-	212	C15H32	074645-98-0	53
4	Tetracosane	338	C24H50	000646-31-1	53



Library Search Compound Report

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Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

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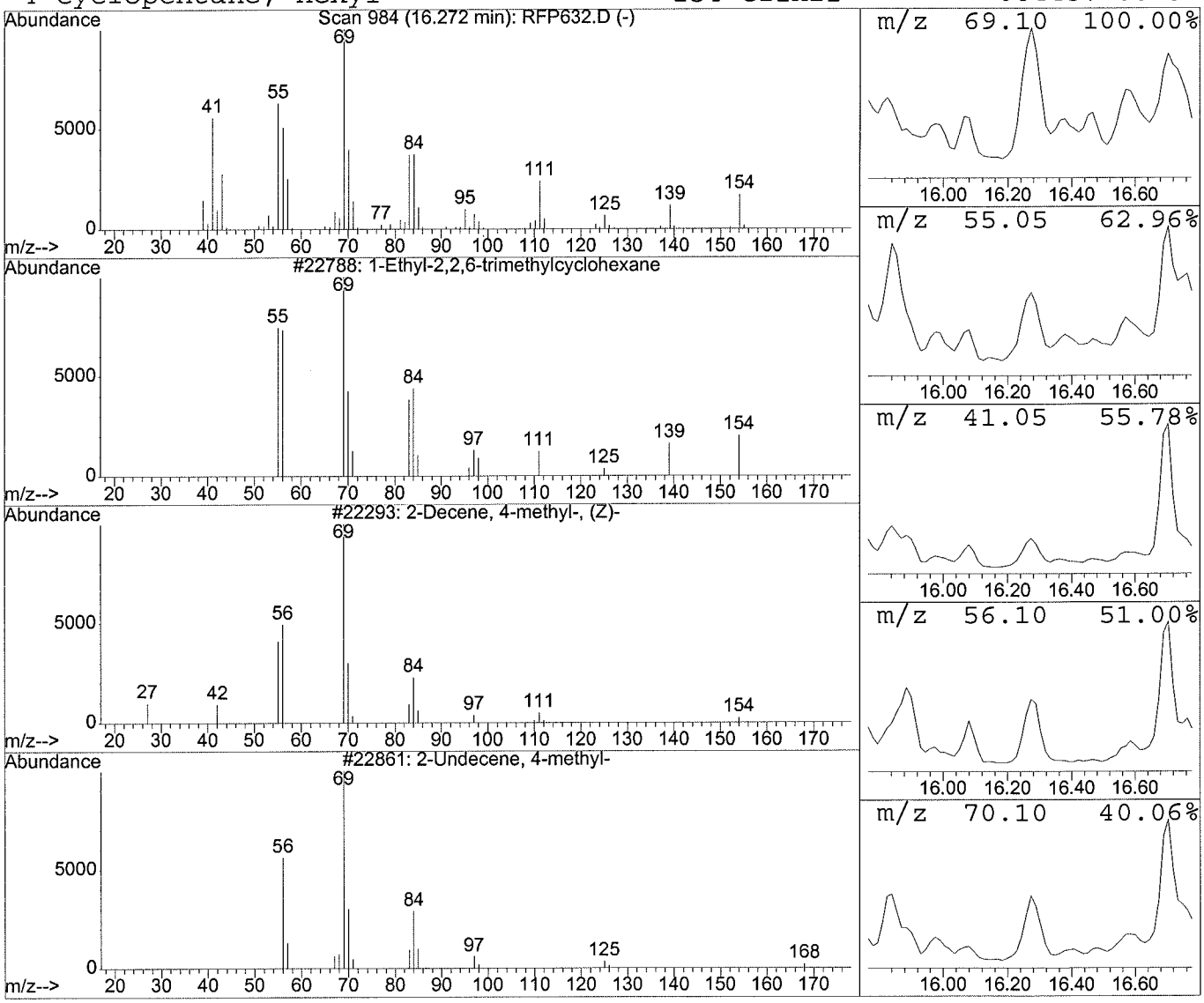
Peak Number 8 1-Ethyl-2,2,6-trimethylcyclohe Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.27	57.86 ug/l	3677280	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Ethyl-2,2,6-trimethylcyclohexane	154	C11H22	071186-27-1	93
2	2-Decene, 4-methyl-, (Z)-	154	C11H22	074630-30-1	83
3	2-Undecene, 4-methyl-	168	C12H24	1000061-82-8	5
4	Cyclopentane, hexyl-	154	C11H22	004457-00-5	58



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Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

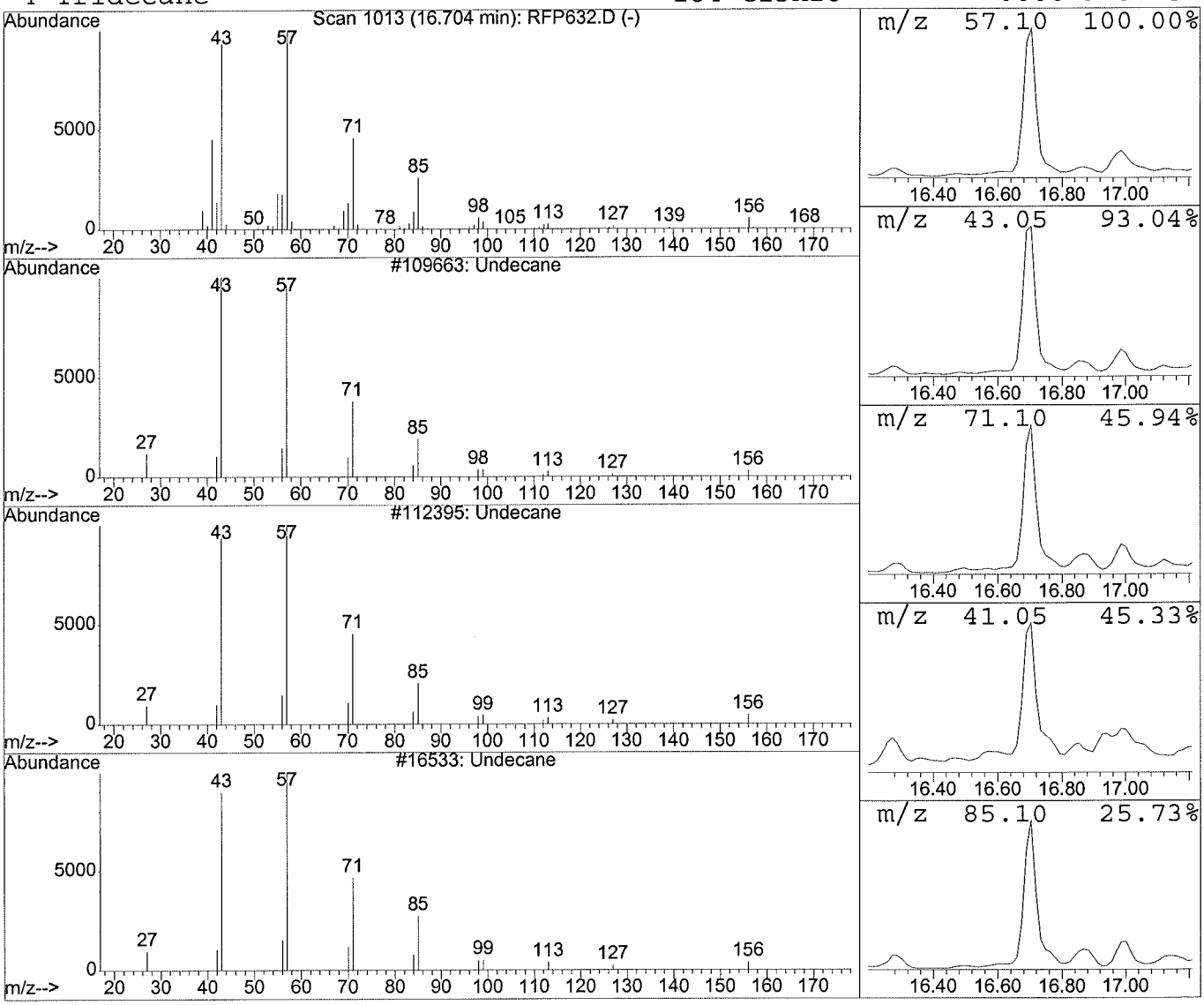
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 9 Undecane — Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.70	182.71 ug/l	11613100	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane	156	C11H24	001120-21-4	95
2	Undecane	156	C11H24	001120-21-4	87
3	Undecane	156	C11H24	001120-21-4	83
4	Tridecane	184	C13H28	000629-50-5	80



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

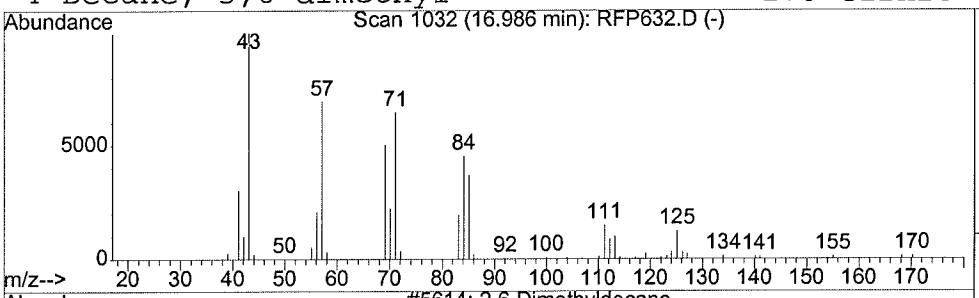
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

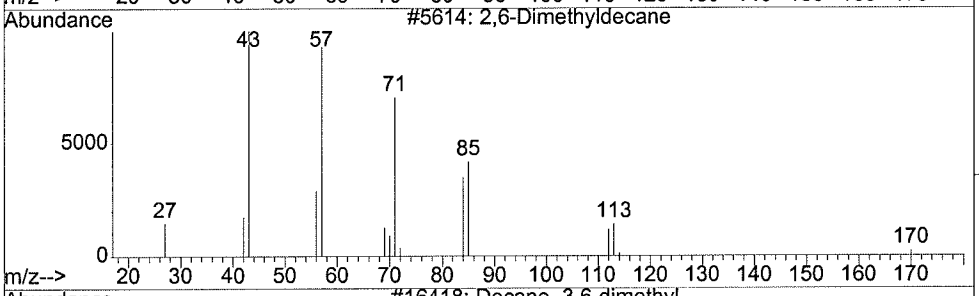
****

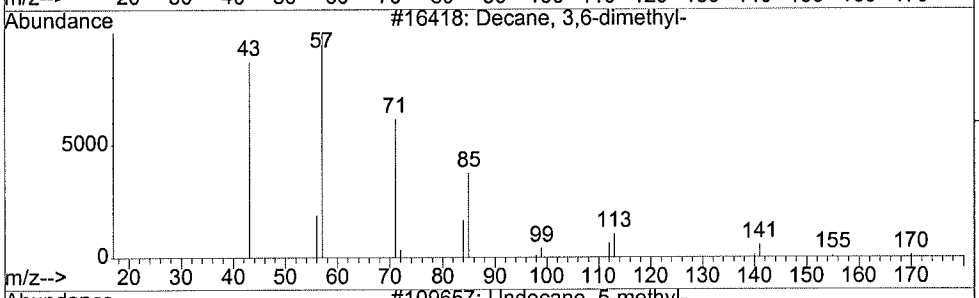
Peak Number 10 2,6-Dimethyldecane Concentration Rank 14

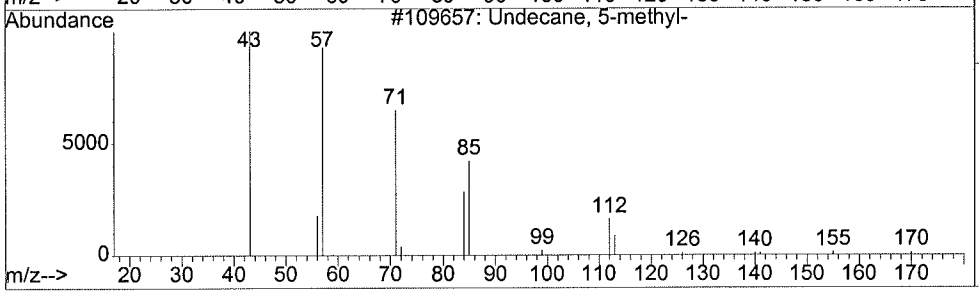
R.T.	EstConc	Area	Relative to ISTD	R.T.
16.99	56.86 ug/l	3613870	1,2-DICHLOROBENZENE-D4	17.16

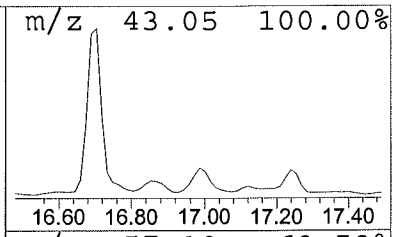
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Dimethyldecane	170	C12H26	013150-81-7	53
2	Decane, 3,6-dimethyl-	170	C12H26	017312-53-7	50
3	Undecane, 5-methyl-	170	C12H26	001632-70-8	49
4	Decane, 5,6-dimethyl-	170	C12H26	001636-43-7	49

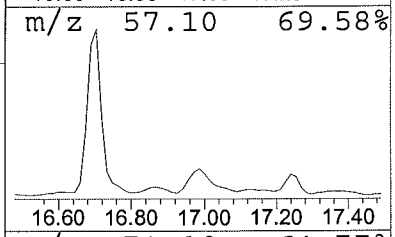


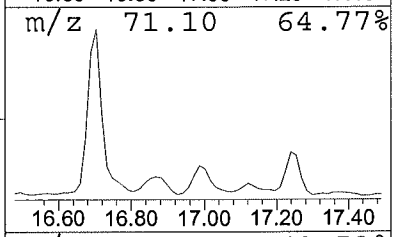


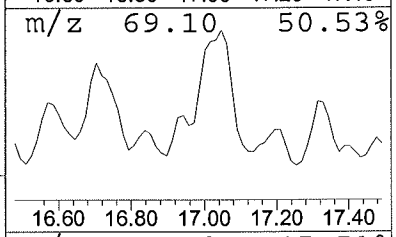


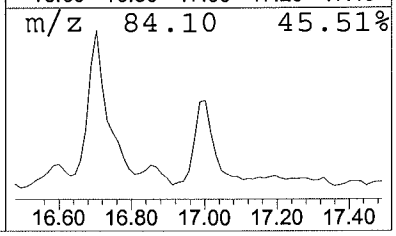












Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D Vial: 24
Acq On : 29 Jun 2018 7:13 pm Operator: ODinh
Sample : 18F187-15 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

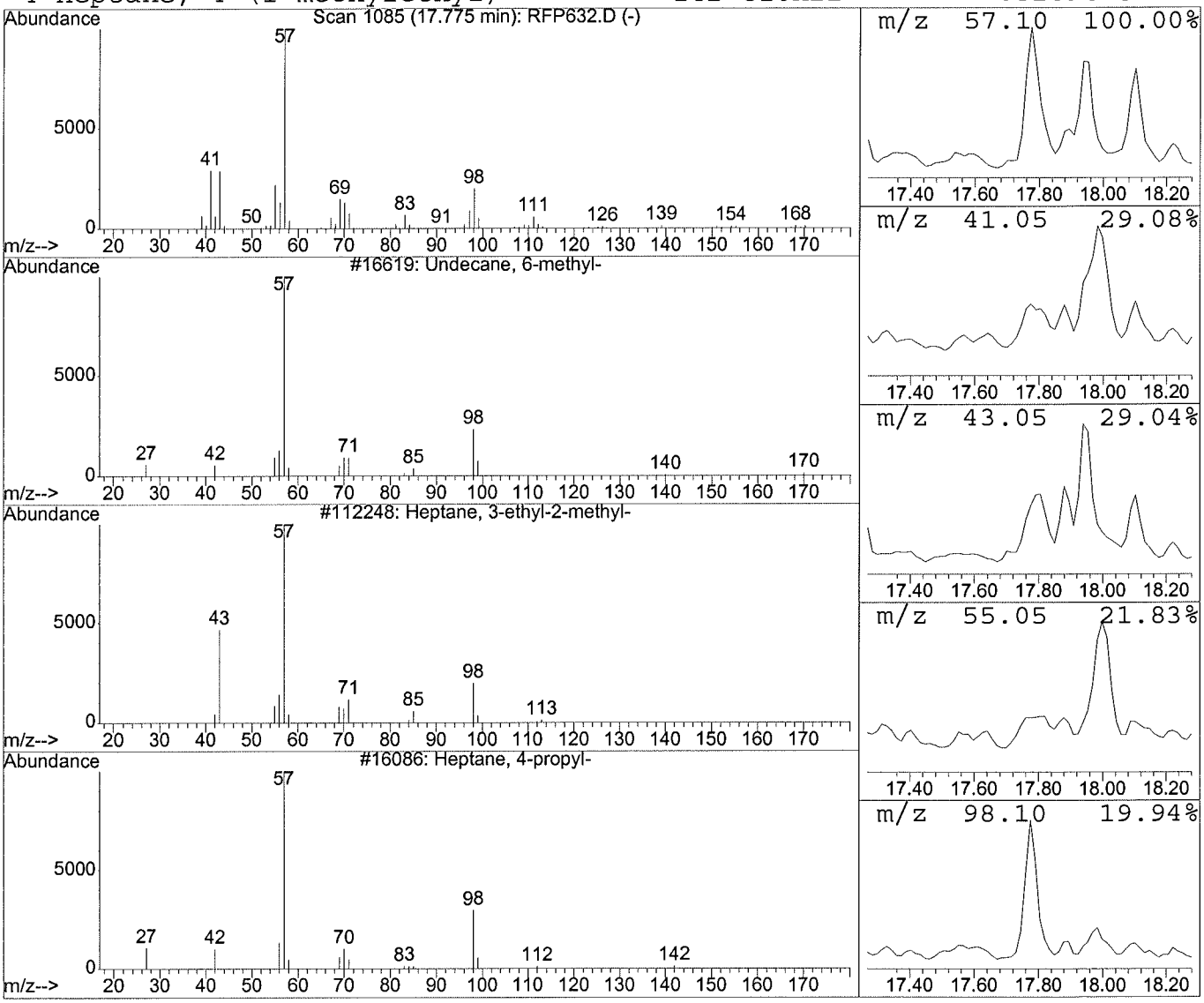
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 11 Undecane, 6-methyl- Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
17.77	54.60 ug/l	3470440	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Undecane, 6-methyl-	170	C12H26	017302-33-9	72
2	Heptane, 3-ethyl-2-methyl-	142	C10H22	014676-29-0	64
3	Heptane, 4-propyl-	142	C10H22	003178-29-8	59
4	Heptane, 4-(1-methylethyl)-	142	C10H22	052896-87-4	53



Library Search Compound Report

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Sample : 18F187-15 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

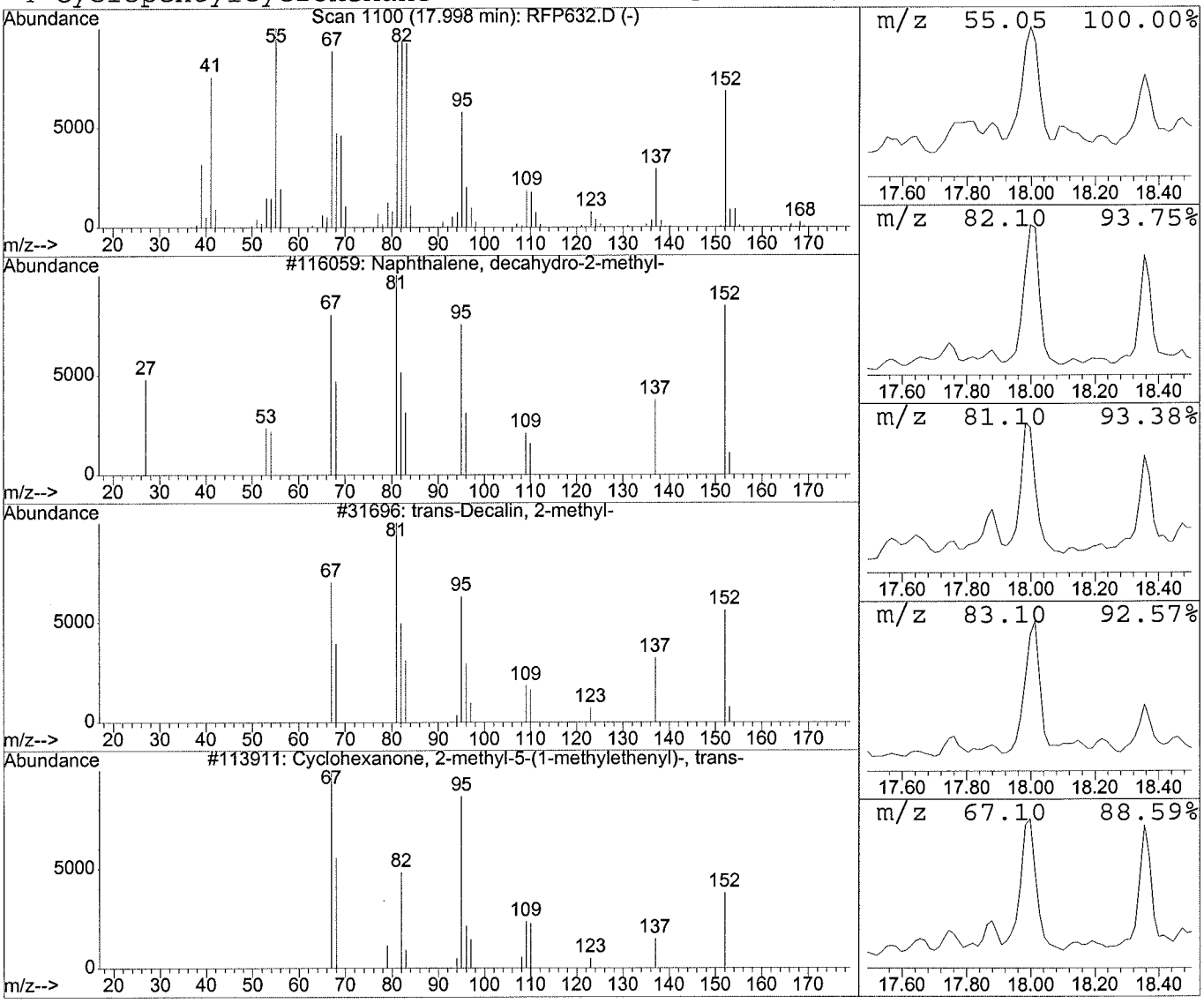
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 12 Naphthalene, decahydro-2-methy Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.00	125.41 ug/l	7971290	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	90
2	trans-Decalin, 2-methyl-	152	C11H20	1000152-47-3	8
3	Cyclohexanone, 2-methyl-5-(1-methyl	152	C10H16O	005948-04-9	64
4	Cyclopentylcyclohexane	152	C11H20	001606-08-2	53



Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D Vial: 24
Acq On : 29 Jun 2018 7:13 pm Operator: ODinh
Sample : 18F187-15 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

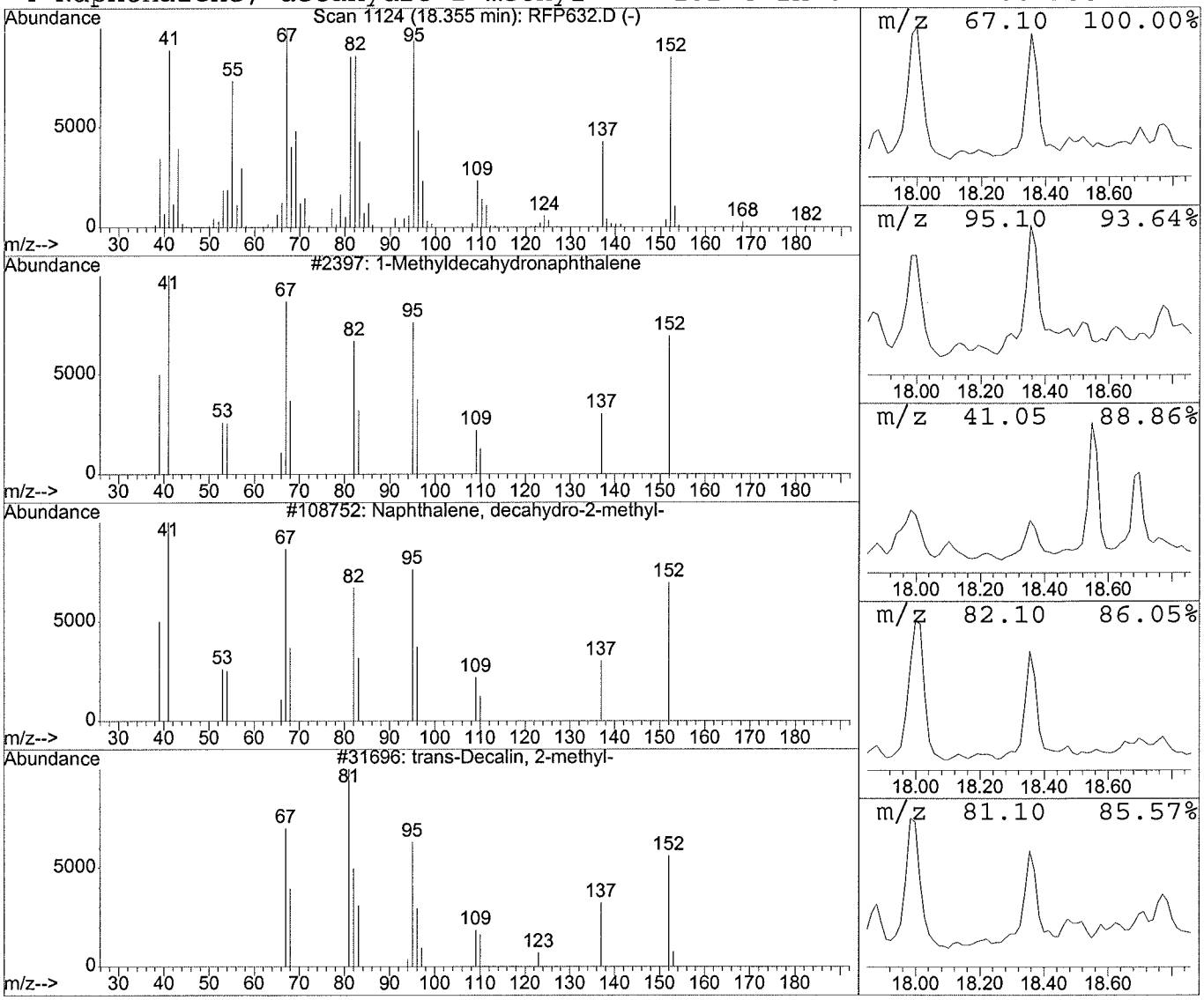
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 13 1-Methyldecahydronaphthalene Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.35	94.14 ug/l	5983670	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	1-Methyldecahydronaphthalene	152	C11H20	002958-75-0	96
2	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	96
3	trans-Decalin, 2-methyl-	152	C11H20	1000152-47-3	9
4	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	89



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

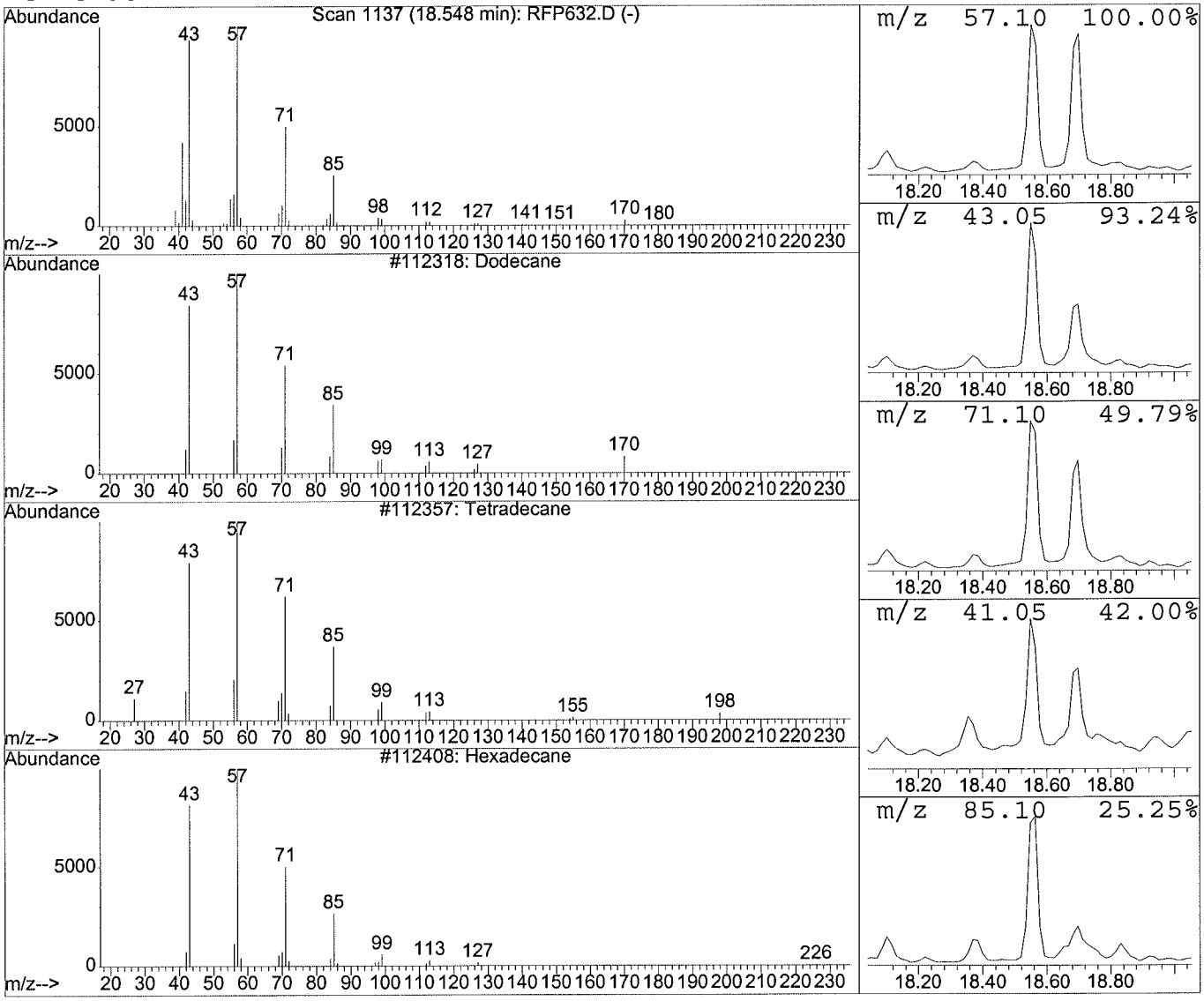
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 14 Dodecane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.55	129.74 ug/l	8246240	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Dodecane	170	C12H26	000112-40-3	91
2	Tetradecane	198	C14H30	000629-59-4	90
3	Hexadecane	226	C16H34	000544-76-3	90
4	Hexadecane	226	C16H34	000544-76-3	90



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D Vial: 24
Acq On : 29 Jun 2018 7:13 pm Operator: ODinh
Sample : 18F187-15 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

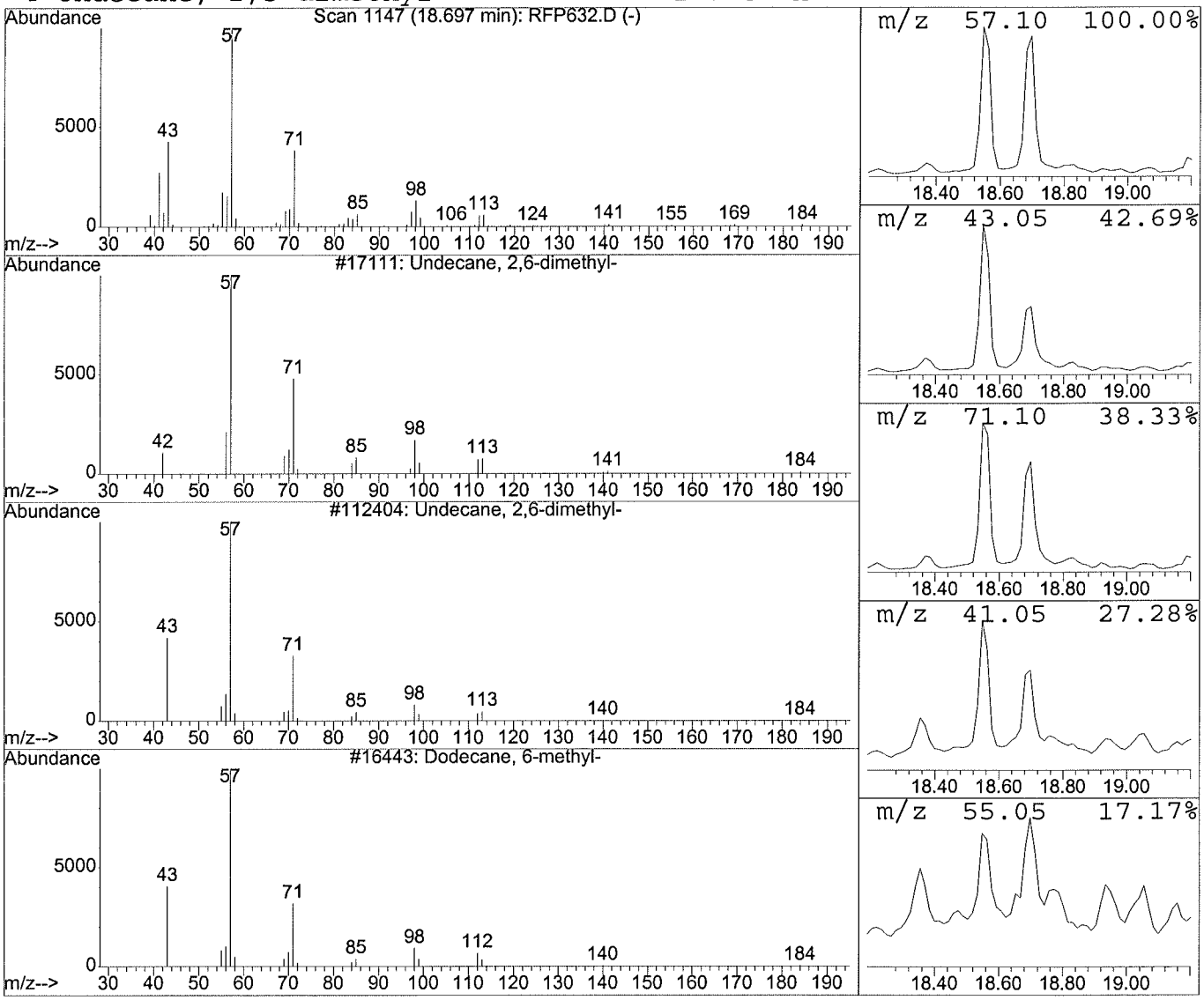
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 15 Undecane, 2,6-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.70	117.34 ug/l	7458230	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	95
2	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	90
3	Dodecane, 6-methyl-	184	C13H28	006044-71-9	87
4	Undecane, 2,5-dimethyl-	184	C13H28	017301-22-3	72



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

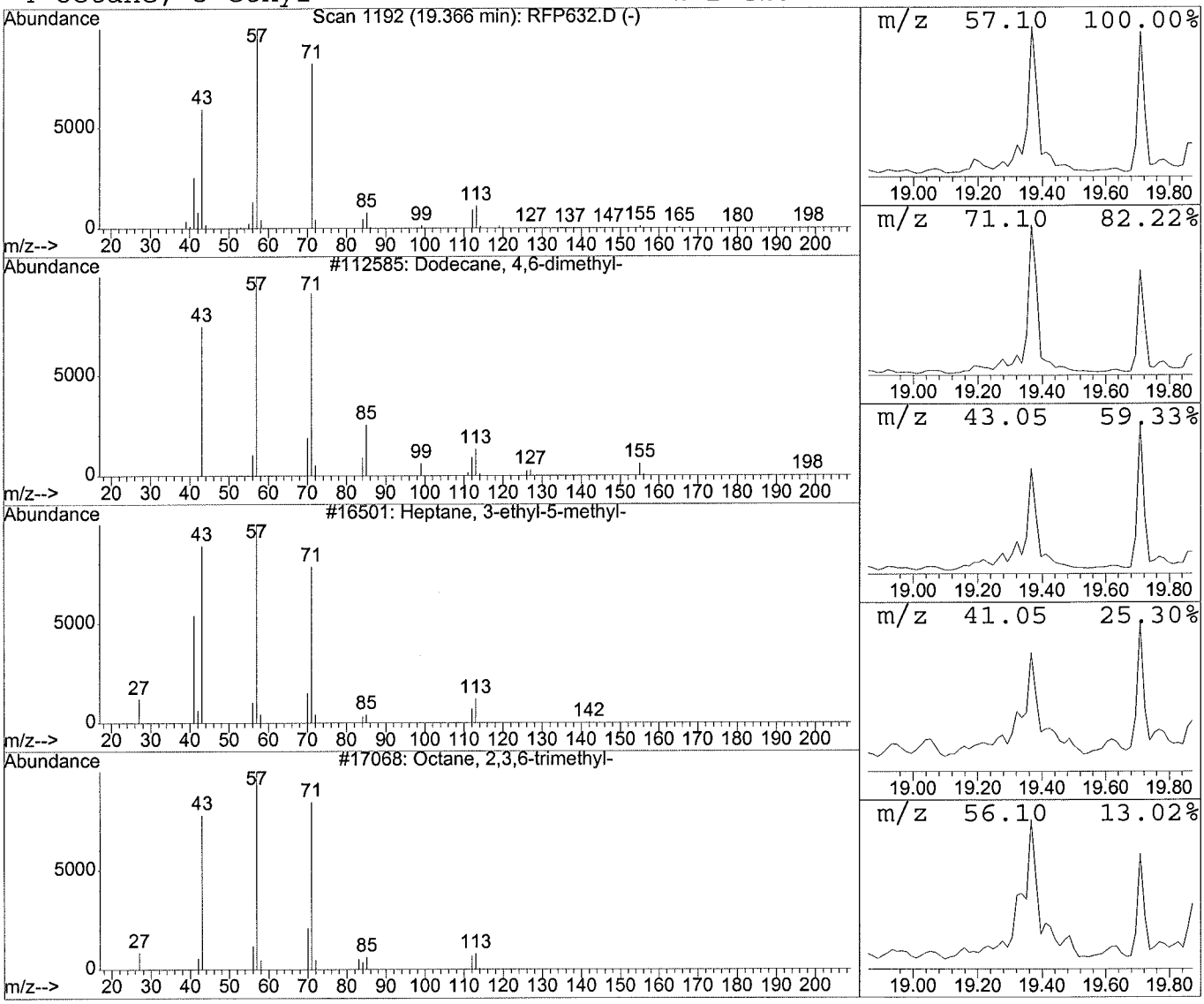
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 16 Dodecane, 4,6-dimethyl- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.37	110.83 ug/l	7044620	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Dodecane, 4,6-dimethyl-	198	C14H30	061141-72-8	87
2	Heptane, 3-ethyl-5-methyl-	142	C10H22	052896-90-9	83
3	Octane, 2,3,6-trimethyl-	156	C11H24	062016-33-5	83
4	Octane, 3-ethyl-	142	C10H22	005881-17-4	78



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D Vial: 24
Acq On : 29 Jun 2018 7:13 pm Operator: ODinh
Sample : 18F187-15 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

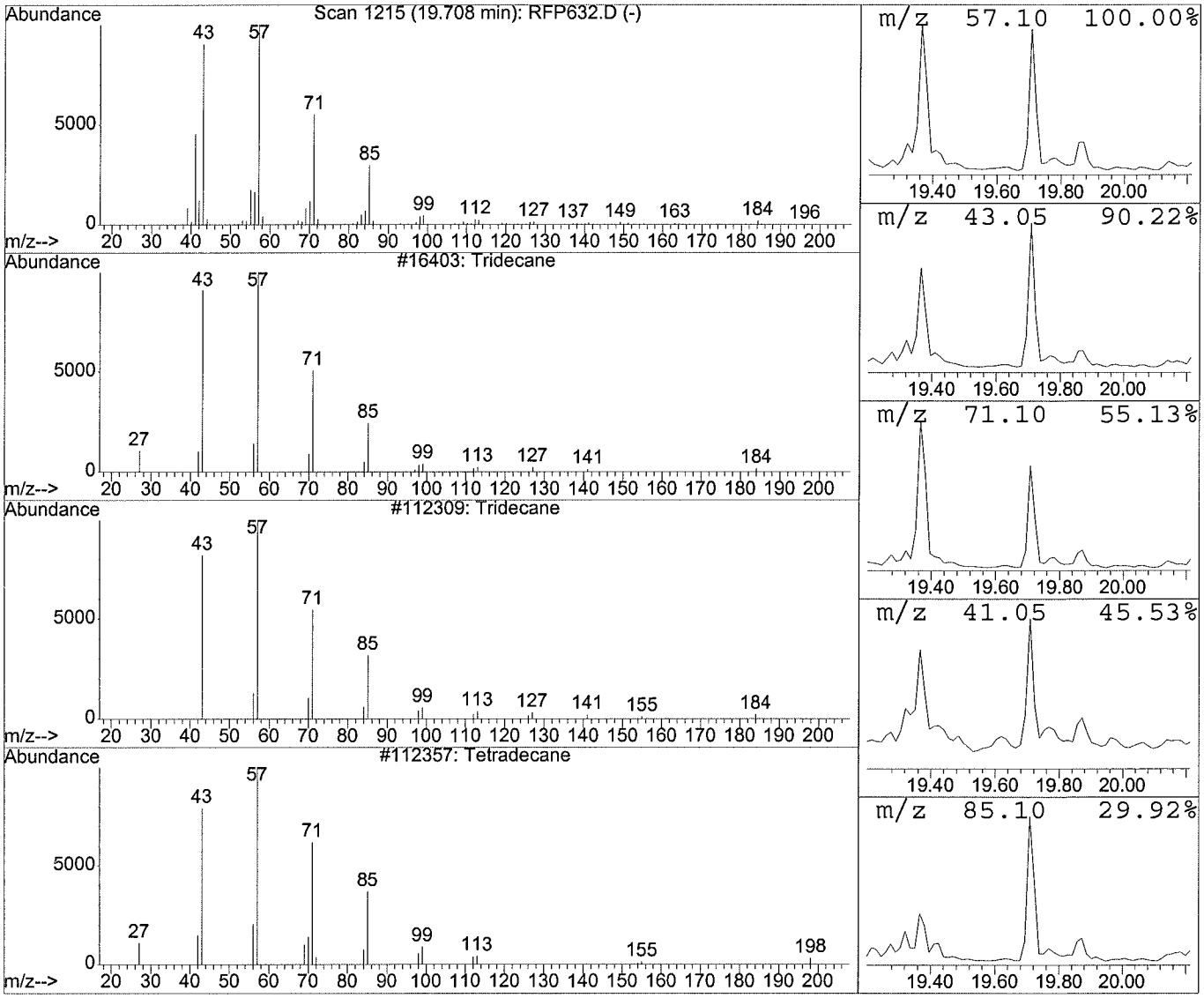
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 17 Tridecane Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.71	120.65 ug/l	7668160	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Tridecane	184	C13H28	000629-50-5	94
2	Tridecane	184	C13H28	000629-50-5	91
3	Tetradecane	198	C14H30	000629-59-4	90
4	Tetradecane	198	C14H30	000629-59-4	86



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

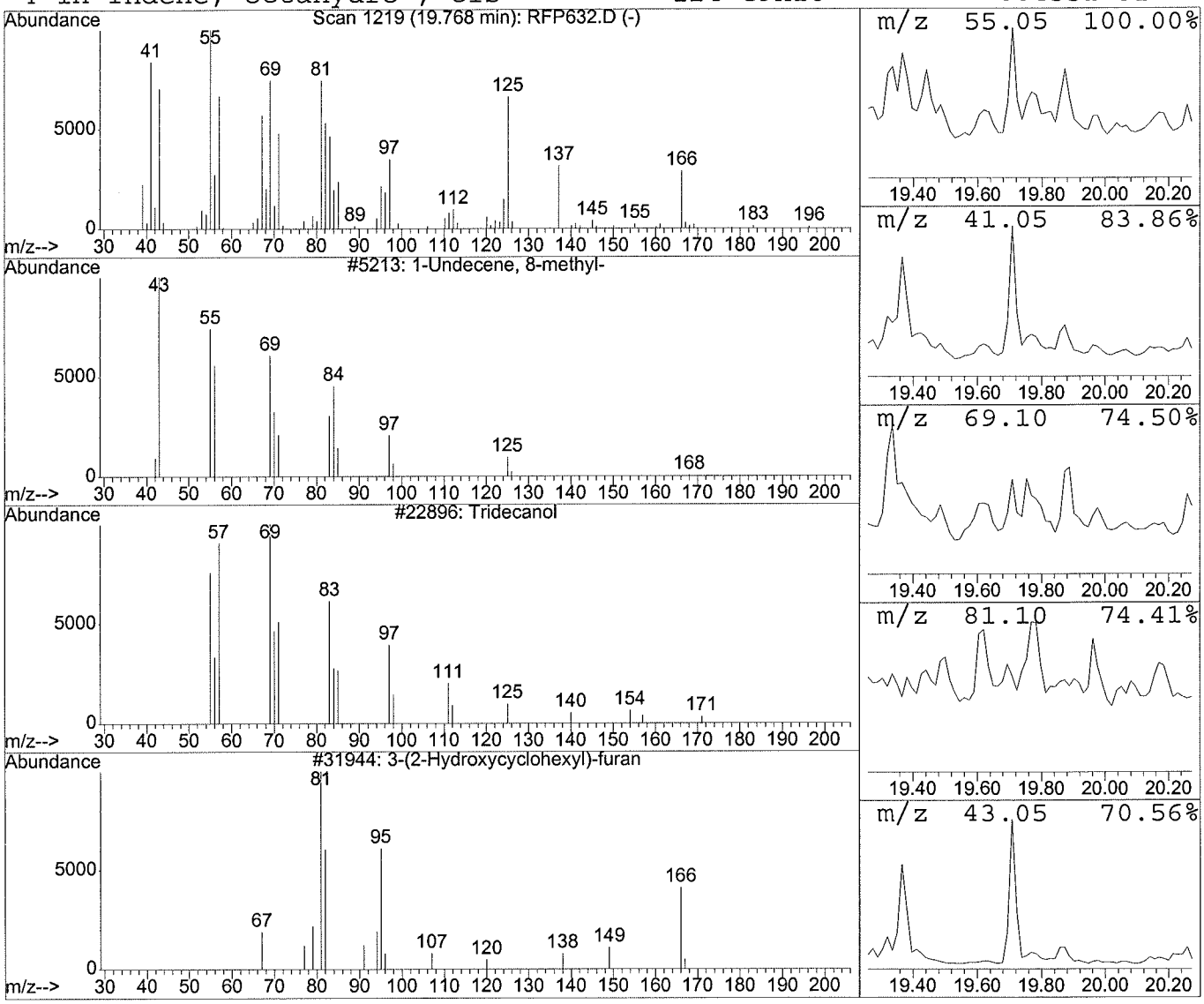
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 18 1-Undecene, 8-methyl- Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.77	59.56 ug/l	3785750	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Undecene, 8-methyl-	168	C12H24	074630-40-3	38
2	Tridecanol	200	C13H28O	026248-42-0	38
3	3-(2-Hydroxycyclohexyl)-furan	166	C10H14O2	1000144-53-3	1
4	1H-Indene, octahydro-, cis-	124	C9H16	004551-51-3	15



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

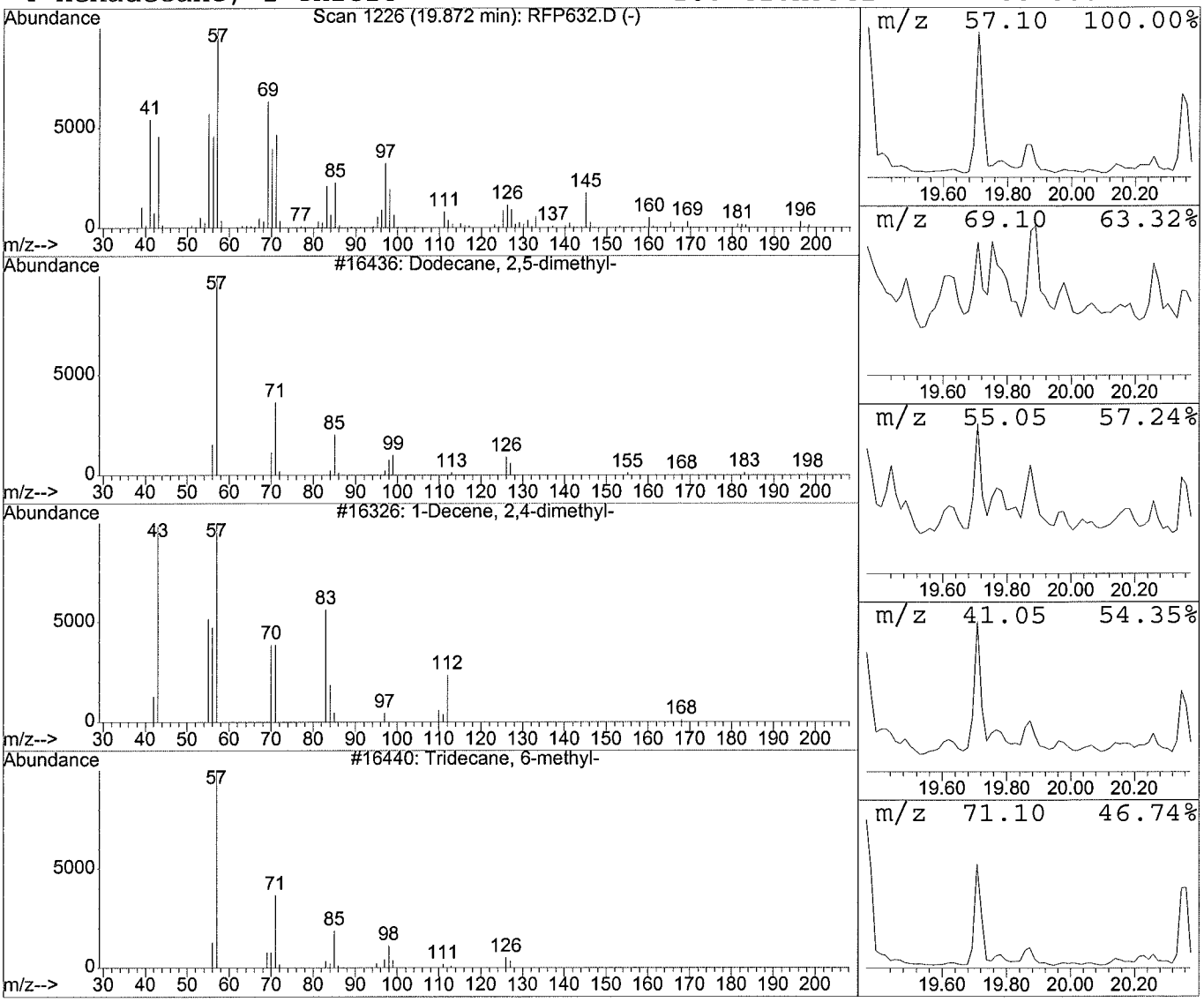
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 19 Dodecane, 2,5-dimethyl- Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.87	50.01 ug/l	3178510	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dodecane, 2,5-dimethyl-	198	C14H30	056292-65-0	46
2	1-Decene, 2,4-dimethyl-	168	C12H24	055170-80-4	43
3	Tridecane, 6-methyl-	198	C14H30	013287-21-3	38
4	Hexadecane, 1-chloro-	260	C16H33Cl	004860-03-1	38



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP632.D
Acq On : 29 Jun 2018 7:13 pm
Sample : 18F187-15
Misc :
MS Integration Params: LSCINT.P

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

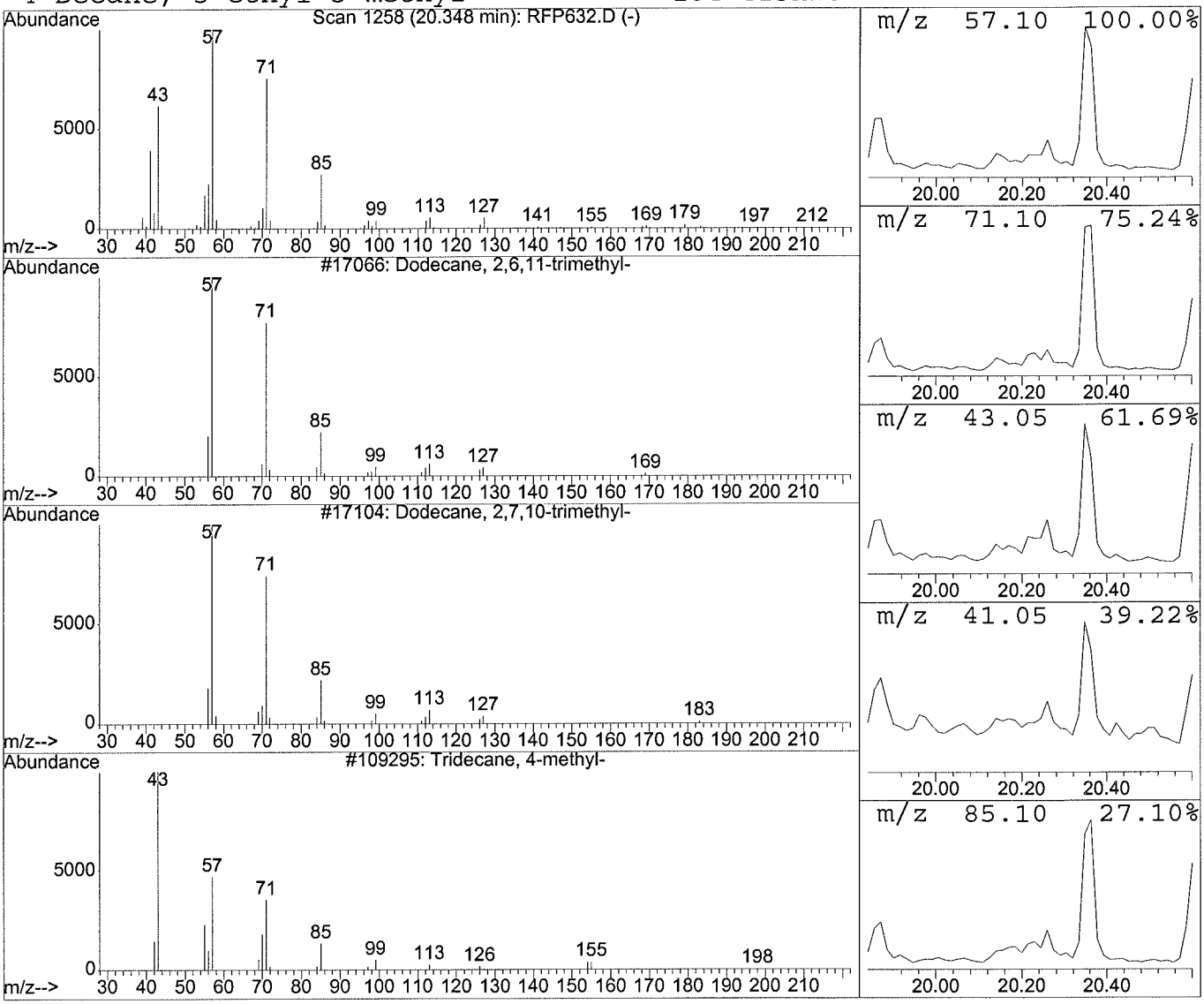
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 20 Dodecane, 2,6,11-trimethyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
20.35	80.07 ug/l	5089510	1,2-DICHLOROBENZENE-D4	17.16

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Dodecane, 2,6,11-trimethyl-	212	C15H32	031295-56-4	83
2	Dodecane, 2,7,10-trimethyl-	212	C15H32	074645-98-0	80
3	Tridecane, 4-methyl-	198	C14H30	026730-12-1	78
4	Decane, 5-ethyl-5-methyl-	184	C13H28	017312-74-2	72



Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 7:13 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP632.D
Name: 18F187-15
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISCon
Octane, 2,6-dimethyl	12.96	53.1	ug/l	4839160	ISTD02	12.32	4553590	50.0
Heptane, 3-ethyl-2-m	13.24	47.0	ug/l	4278750	ISTD02	12.32	4553590	50.0
Cyclohexane, (1-meth	13.51	50.3	ug/l	4584330	ISTD02	12.32	4553590	50.0
2-Octene, 2,6-dimeth	14.22	51.6	ug/l	4695350	ISTD02	12.32	4553590	50.0
Decane	14.53	74.1	ug/l	6748230	ISTD02	12.32	4553590	50.0
Decane, 4-methyl-	14.96	134.2	ug/l	8528020	ISTD03	17.16	3177990	50.0
Dodecane, 2,6,10-tri	15.39	58.4	ug/l	3714300	ISTD03	17.16	3177990	50.0
1-Ethyl-2,2,6-trimet	16.27	57.9	ug/l	3677280	ISTD03	17.16	3177990	50.0
Undecane	16.70	182.7	ug/l	11613100	ISTD03	17.16	3177990	50.0
2,6-Dimethyldecane	16.99	56.9	ug/l	3613870	ISTD03	17.16	3177990	50.0
Undecane, 6-methyl-	17.77	54.6	ug/l	3470440	ISTD03	17.16	3177990	50.0
Naphthalene, decahyd	18.00	125.4	ug/l	7971290	ISTD03	17.16	3177990	50.0
1-Methyldecahydronap	18.35	94.1	ug/l	5983670	ISTD03	17.16	3177990	50.0
Dodecane	18.55	129.7	ug/l	8246240	ISTD03	17.16	3177990	50.0
Undecane, 2,6-dimeth	18.70	117.3	ug/l	7458230	ISTD03	17.16	3177990	50.0
Dodecane, 4,6-dimeth	19.37	110.8	ug/l	7044620	ISTD03	17.16	3177990	50.0
Tridecane	19.71	120.6	ug/l	7668160	ISTD03	17.16	3177990	50.0
1-Undecene, 8-methyl	19.77	59.6	ug/l	3785750	ISTD03	17.16	3177990	50.0
Dodecane, 2,5-dimeth	19.87	50.0	ug/l	3178510	ISTD03	17.16	3177990	50.0
Dodecane, 2,6,11-tri	20.35	80.1	ug/l	5089510	ISTD03	17.16	3177990	50.0

RFP632.D VO02F15.M Mon Jul 09 14:09:59 2018

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/23/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/29/18 19:37
Sample ID: 18Q2DP009-SB0601-SO-1	Date Analyzed: 06/29/18 19:37
Lab Samp ID: F187-16	Dilution Factor: 1.07
Lab File ID: RFP633	Matrix : SOIL
Ext Btch ID: VSQ2F26	% Moisture : 6.9
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1,1-TRICHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1,2,2-TETRACHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1,2-TRICHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1-DICHLOROETHANE	ND	0.0057	0.00057	0.0011
1,1-DICHLOROETHENE	ND	0.0057	0.00057	0.0011
1,1-DICHLOROPROPENE	ND	0.0057	0.00057	0.0011
1,2,3-TRICHLOROBENZENE	ND	0.0057	0.0011	0.0023
1,2,3-TRICHLOROPROPANE	ND	0.0057	0.0011	0.0023
1,2,4-TRICHLOROBENZENE	ND	0.0057	0.0011	0.0023
1,2,4-TRIMETHYLBENZENE	0.012Q	0.0057	0.00063	0.0023
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0057	0.0011	0.0023
1,2-DIBROMOETHANE	ND	0.0057	0.00057	0.0011
1,2-DICHLOROBENZENE	0.0017Q	0.0057	0.00057	0.0011
1,2-DICHLOROETHANE	0.00095Q	0.0057	0.00057	0.0011
1,2-DICHLOROPROPANE	ND	0.0057	0.00057	0.0011
1,3,5-TRIMETHYLBENZENE	0.0073Q	0.0057	0.00068	0.0023
1,3-DICHLOROBENZENE	ND	0.0057	0.00060	0.0011
1,3-DICHLOROPROPANE	ND	0.0057	0.00057	0.0011
1,4-DICHLOROBENZENE	0.0012Q	0.0057	0.00057	0.0011
2,2-DICHLOROPROPANE	ND	0.0057	0.0011	0.0023
2-BUTANONE	0.014Q	0.011	0.0029	0.0057
2-CHLOROTOLUENE	ND	0.0057	0.00094	0.0011
2-HEXANONE	ND	0.011	0.0033	0.0057
4-CHLOROTOLUENE	ND	0.0057	0.00077	0.0011
ACETONE	0.082Q	0.011	0.0036	0.0057
BENZENE	0.026Q	0.0057	0.00057	0.0011
BROMOBENZENE	ND	0.0057	0.00057	0.0011
BROMOCHLOROMETHANE	ND	0.0057	0.00057	0.0011
BROMODICHLOROMETHANE	ND	0.0057	0.00057	0.0011
BROMOFORM	ND	0.0057	0.0011	0.0023
BROMOMETHANE	ND	0.011	0.0021	0.0023
CARBON DISULFIDE	0.0023Q	0.0057	0.00057	0.0011
CARBON TETRACHLORIDE	ND	0.0057	0.00062	0.0011
CHLOROBENZENE	ND	0.0057	0.00057	0.0011
CHLOROETHANE	ND	0.0057	0.0015	0.0023
CHLOROFORM	ND	0.0057	0.00057	0.0011
CHLOROMETHANE	ND	0.0057	0.0011	0.0023
CIS-1,2-DICHLOROETHYLENE	ND	0.0057	0.00057	0.0011
CIS-1,3-DICHLOROPROPENE	ND	0.0057	0.00057	0.0011
CYCLOHEXANE	ND	0.0057	0.0014	0.0023
DIBROMOCHLOROMETHANE	ND	0.0057	0.00057	0.0011
DIBROMOMETHANE	ND	0.0057	0.00057	0.0011
DICHLORODIFLUOROMETHANE	ND	0.0057	0.0014	0.0023
ETHYLBENZENE	0.0031Q	0.0057	0.00057	0.0011
HEXACHLOROBUTADIENE	ND	0.0057	0.0011	0.0023
ISOPROPYLBENZENE	0.00074Q	0.0057	0.00074	0.0023
METHYLENE CHLORIDE	ND	0.011	0.0023	0.0057
M,P-XYLENE	0.0098Q	0.0057	0.0011	0.0023
4-METHYL-2-PENTANONE	ND	0.011	0.0032	0.0057
TERT-BUTYL METHYL ETHER	ND	0.0057	0.00057	0.0011
NAPHTHALENE	0.0046Q	0.0057	0.0011	0.0023
N-BUTYLBENZENE	0.012Q	0.0057	0.00080	0.0011
N-PROPYLBENZENE	0.0018Q	0.0057	0.00075	0.0011
O-XYLENE	0.0038Q	0.0057	0.00057	0.0011
P-ISOPROPYLTOLUENE	0.0067Q	0.0057	0.00071	0.0011
SEC-BUTYLBENZENE	0.0040Q	0.0057	0.00077	0.0011
STYRENE	ND	0.0057	0.00057	0.0011
TERT-BUTYLBENZENE	ND	0.0057	0.00071	0.0011
TETRACHLOROETHENE	0.025Q	0.0057	0.00057	0.0011
TOLUENE	0.024Q	0.0057	0.00057	0.0011
TRANS-1,2-DCE	ND	0.0057	0.00057	0.0011
TRANS-1,3-DICHLOROPROPENE	ND	0.0057	0.00057	0.0011
TCE	0.0037Q	0.0057	0.00057	0.0011
TRICHLOROFLUOROMETHANE	ND	0.0057	0.0013	0.0023
TRICHLOROTRIFLUOROETHANE	ND	0.0057	0.0011	0.0023
VINYL CHLORIDE	ND	0.0057	0.0016	0.0023
VINYL ACETATE	ND	0.0057	0.0015	0.0023
XYLENES, TOTAL	0.014Q	0.0057	0.00057	0.0011

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0571	0.05747	99.3	71-136
4-BROMOFLUOROBENZENE	0.0651	0.05747	113	79-119
TOLUENE-D8	0.0599	0.05747	104	85-116
DIBROMOFLUOROMETHANE	0.0716	0.05747	125*	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 19:37
Sample ID	: 18Q2DP009-SB0601-SO-1	Date Analyzed:	06/29/18 19:37
Lab Samp ID	: F187-16	Dilution Factor:	1.07
Lab File ID	: RFP633	Matrix :	SOIL
Ext Btch ID	: VS02F26	% Moisture :	6.9
Calib. Ref.	: RFP312	Instrument ID :	T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: RTE.P
Quant Time: Jul 13 17:21 2018

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1519810	50.00	ug/l		-0.03
56) CHLOROBENZENE-D5	12.32	117	1214591	50.00	ug/l		-0.03
76) 1,2-DICHLOROBENZENE-D4	17.17	152	395447	50.00	ug/l		-0.03
System Monitoring Compounds							
37) Dibromofluoromethane	6.40	111	675371	62.32	ug/l		-0.03
Spiked Amount 50.000			Recovery =	124.64%			
43) 1,2-Dichloroethane-d4	7.08	65	667545	49.64	ug/l		-0.03
Spiked Amount 50.000			Recovery =	99.28%			
57) Toluene-d8	9.88	98	1867049	52.11	ug/l		-0.03
Spiked Amount 50.000			Recovery =	104.22%			
79) 4-Bromofluorobenzene	14.40	95	540002	56.68	ug/l		-0.03
Spiked Amount 50.000			Recovery =	113.36%			
Target Compounds							Qvalue
11) Acetone	3.48	43	402832	71.68	ug/l		85
13) tert-Butyl alcohol	3.73	59	45152	17.24	ug/l	#	1
16) Methyl Acetate	3.99	43	1132651	50.32	ug/l	#	1
18) Methylene chloride	4.24	49	10239	0.56	ug/l		92
19) Carbon disulfide	4.24	76	75815	2.04	ug/l		99
28) 2-Butanone	5.67	43	140219	12.23	ug/l		93
36) Tetrahydrofuran	6.37	42	482523	71.42	ug/l	#	1
44) 1,2-Dichloroethane	7.21	62	13092	0.83	ug/l		88
45) Benzene	7.23	78	1105655	22.42	ug/l		100
46) Trichloroethene	8.09	130	39921	3.25	ug/l	#	86
47) Methylcyclohexane	8.17	83	1974101	83.00	ug/l		92
58) Toluene	10.01	91	868346	20.84	ug/l		99
64) Tetrachloroethene	11.04	164	177955	21.96	ug/l		98
70) Ethylbenzene	12.48	91	116175	2.70	ug/l		89
71) m-Xylene & p-Xylene	12.61	91	274232	8.51	ug/l		99
72) o-Xylene	13.34	91	109314	3.27	ug/l		99
74) Isopropylbenzene	13.98	105	23506	0.65	ug/l		87
82) n-Propylbenzene	14.68	91	59512	1.56	ug/l	#	33
84) 1,3,5-Trimethylbenzene	14.96	105	140019	6.34	ug/l		93
88) 1,2,4-Trimethylbenzene	15.66	105	239606	10.80	ug/l		89
89) sec-Butylbenzene	15.98	105	102895	3.48	ug/l		98
90) p-Isopropyltoluene	16.23	119	137354	5.87	ug/l		96
92) 1,2,3-Trimethylbenzene	16.50	105	131505	6.09	ug/l		95
93) 1,4-Dichlorobenzene	16.56	146	14829	1.06	ug/l	#	1
94) n-Butylbenzene	16.97	91	237643	10.15	ug/l	#	48
95) 1,2-Dichlorobenzene	17.21	146	19744	1.51	ug/l	#	1
99) Naphthalene	19.81	128	89589	4.04	ug/l		91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D Vial: 25
Acq On : 29 Jun 2018 7:37 pm Operator: ODinh
Sample : 18F187-16 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 13 17:21 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

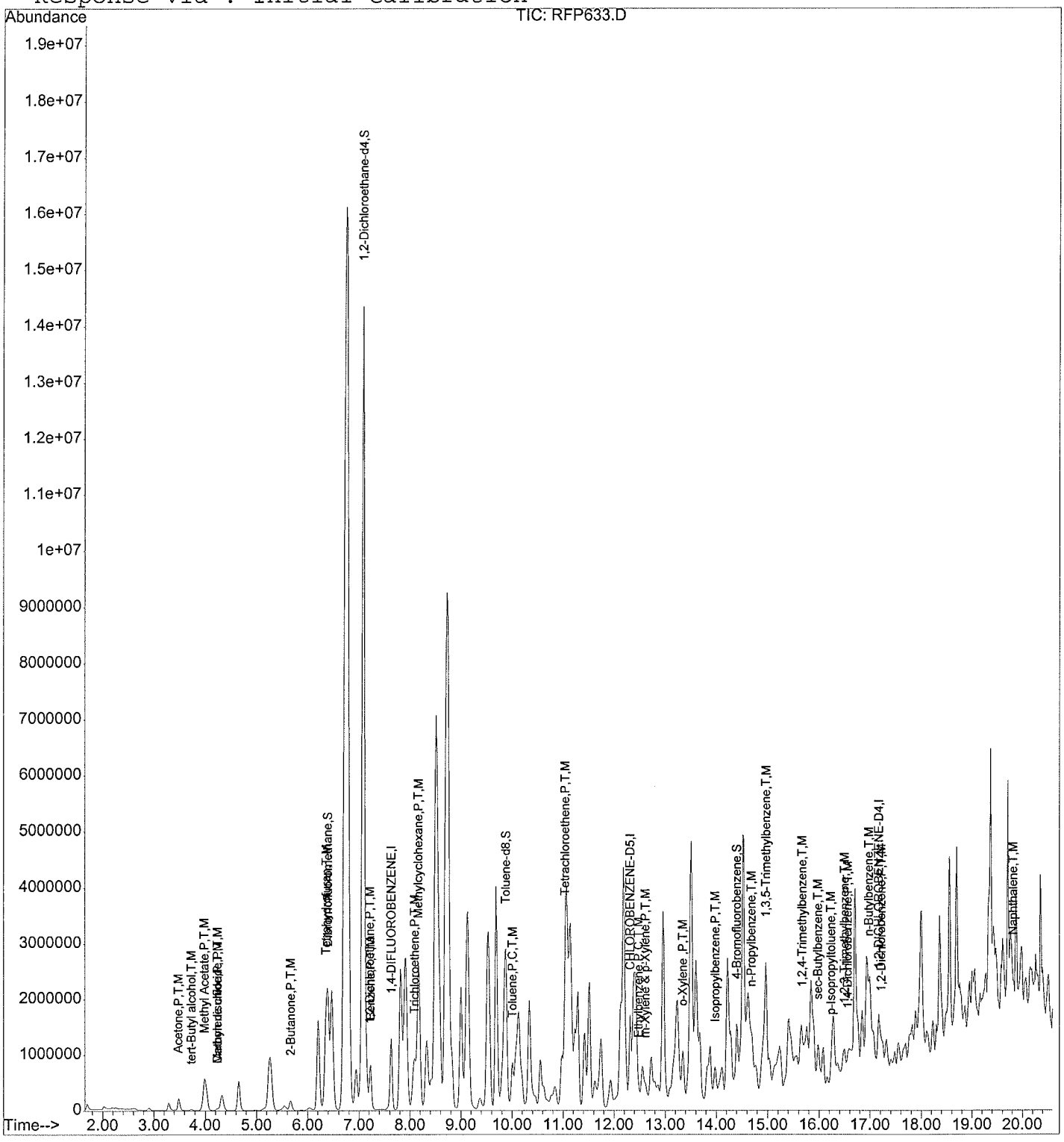
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue

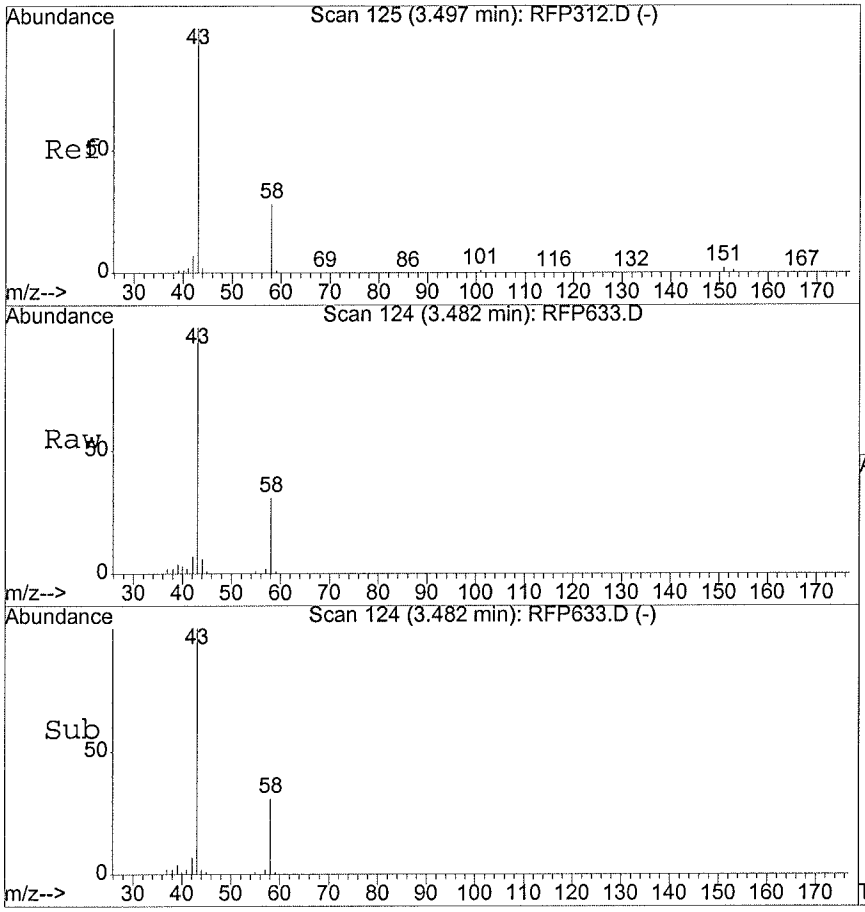
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D Vial: 25
Acq On : 29 Jun 2018 7:37 pm Operator: ODinh
Sample : 18F187-16 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 13 17:21 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

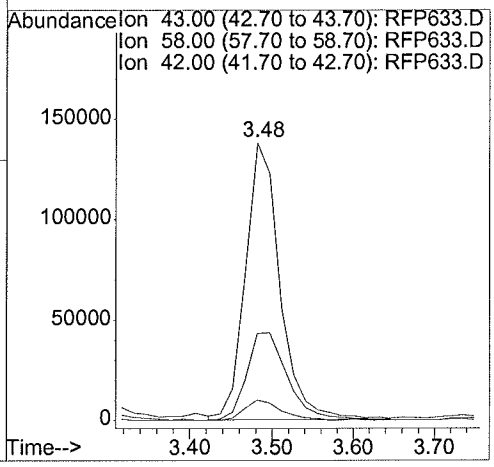


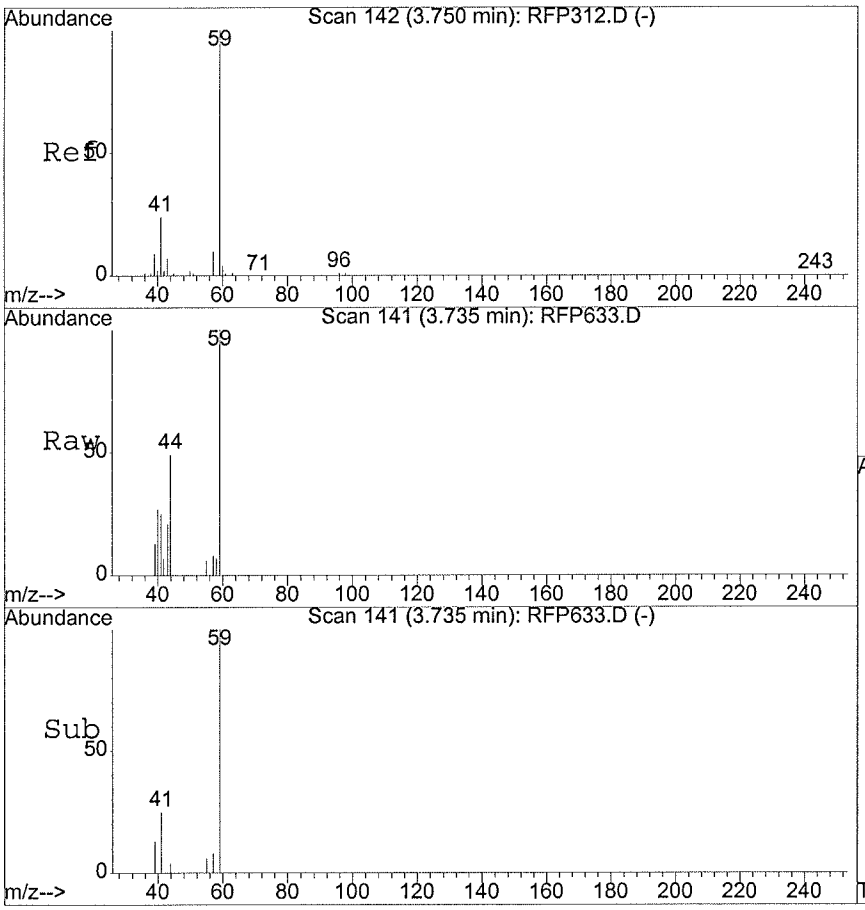


#11
Acetone
Concen: 71.68 ug/l
RT: 3.48 min Scan# 124
Delta R.T. -0.02 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 43 Resp: 402832

Ion	Ratio	Lower	Upper
43	100		
58	37.8	0.0	58.3
42	7.8	0.0	36.9

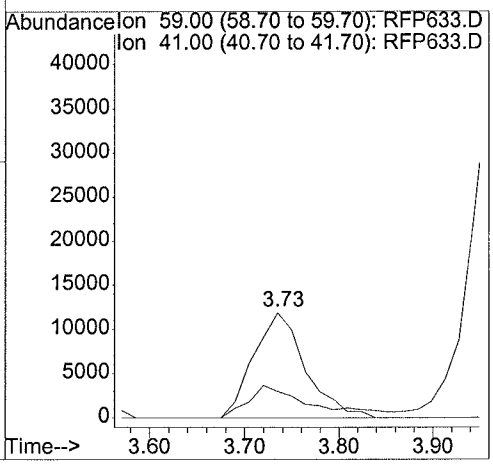


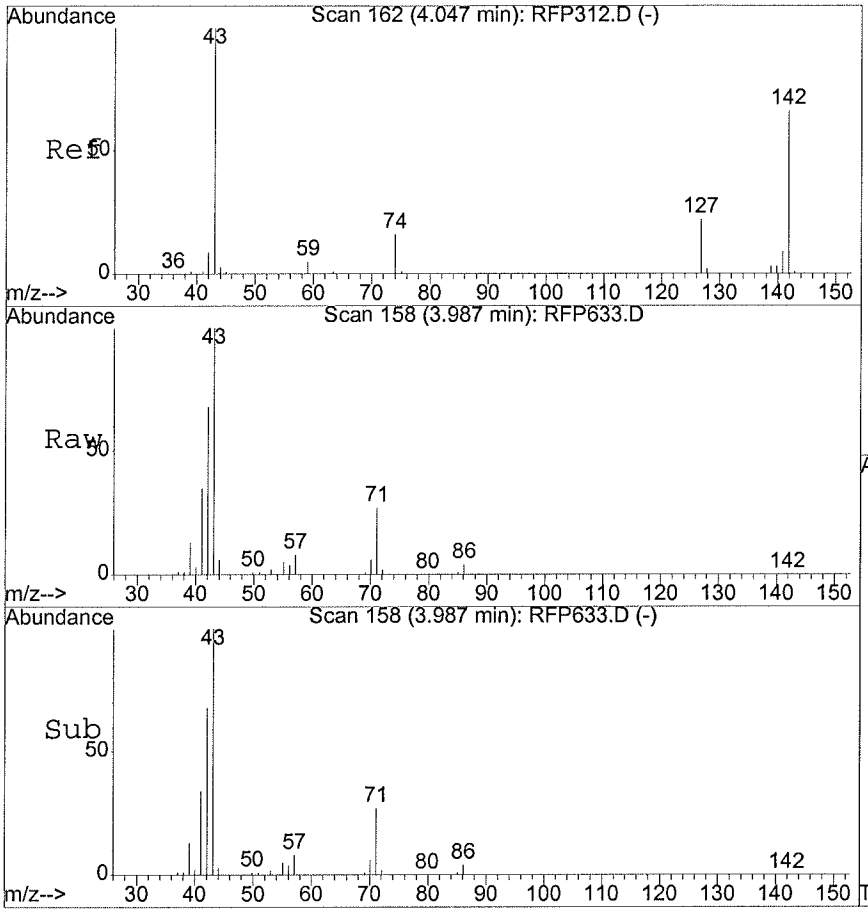


#13
tert-Butyl alcohol
Concen: 17.24 ug/l
RT: 3.73 min Scan# 141
Delta R.T. -0.02 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 59 Resp: 45152

Ion	Ratio	Lower	Upper
59	100		
41	38.1	171.3	231.3#

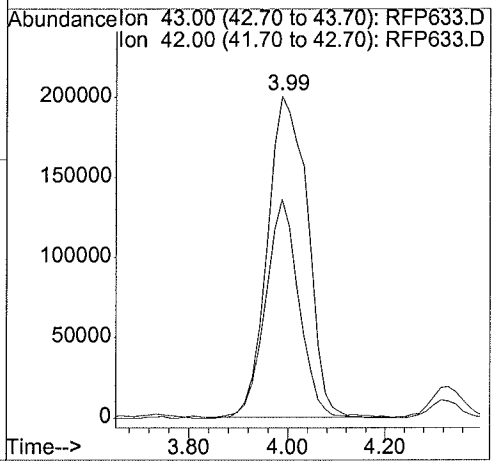


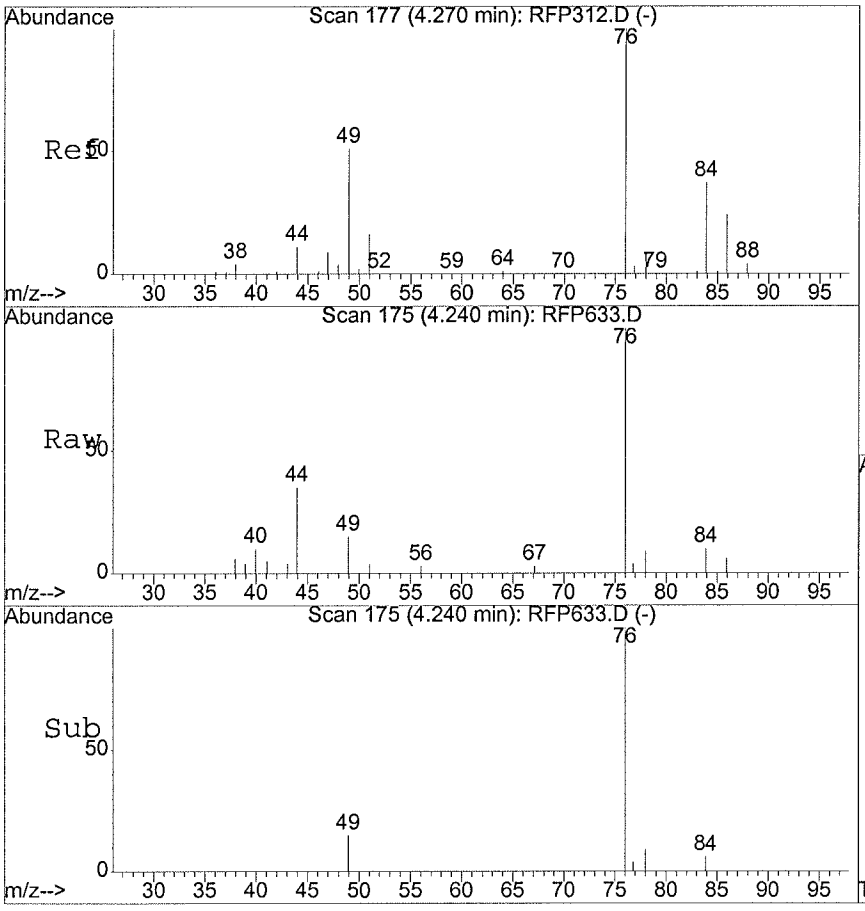


#16
Methyl Acetate
Concen: 50.32 ug/l
RT: 3.99 min Scan# 158
Delta R.T. -0.06 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 43 Resp: 1132651

Ion	Ratio	Lower	Upper
43	100		
42	57.1	0.0	42.1#

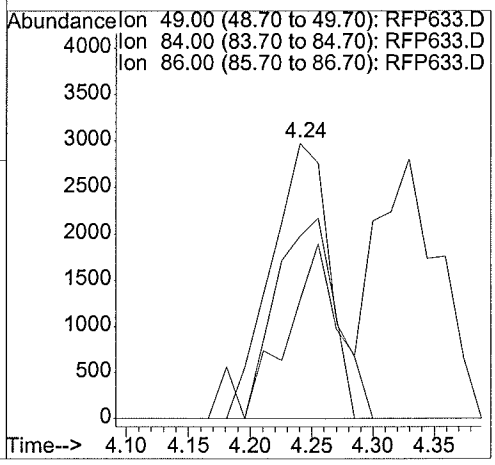


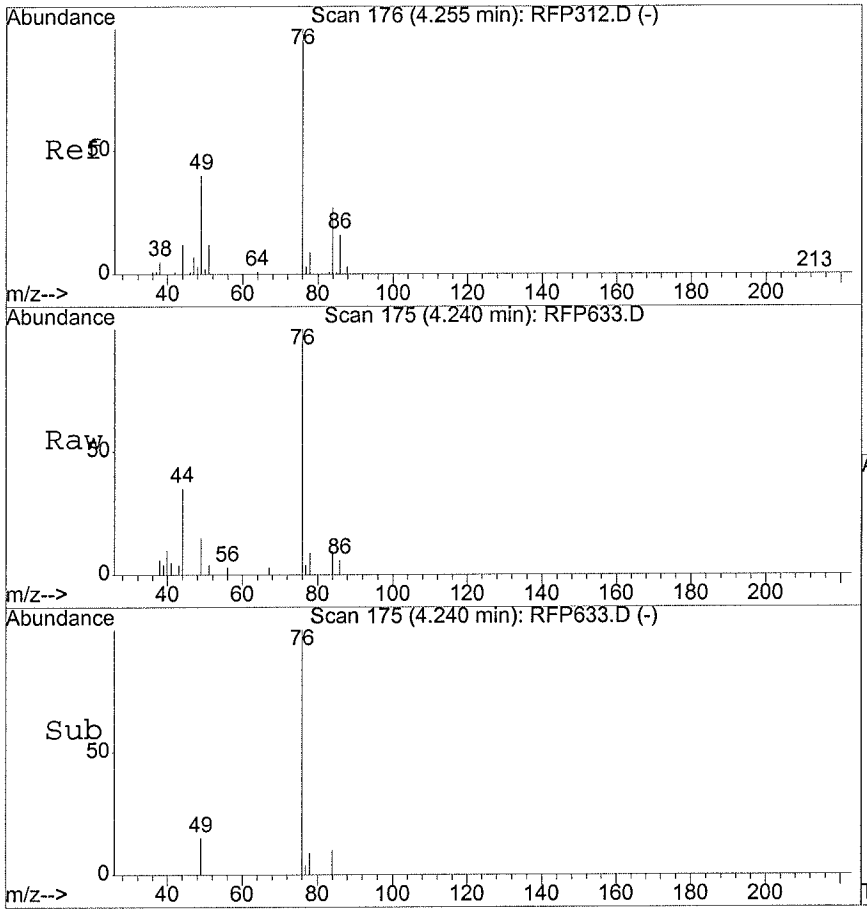


#18
Methylene chloride
Concen: 0.56 ug/l
RT: 4.24 min Scan# 175
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 49 Resp: 10239

Ion	Ratio	Lower	Upper
49	100		
84	73.2	40.2	100.2
86	54.2	14.6	74.6

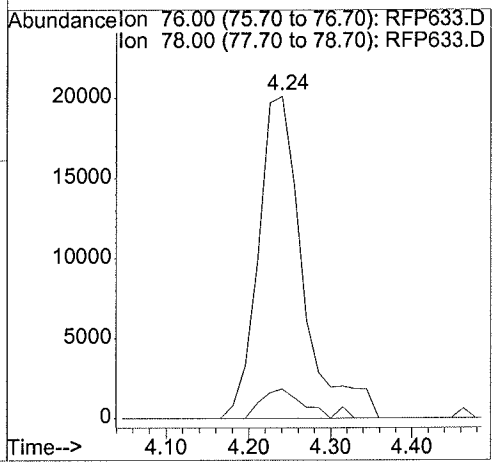


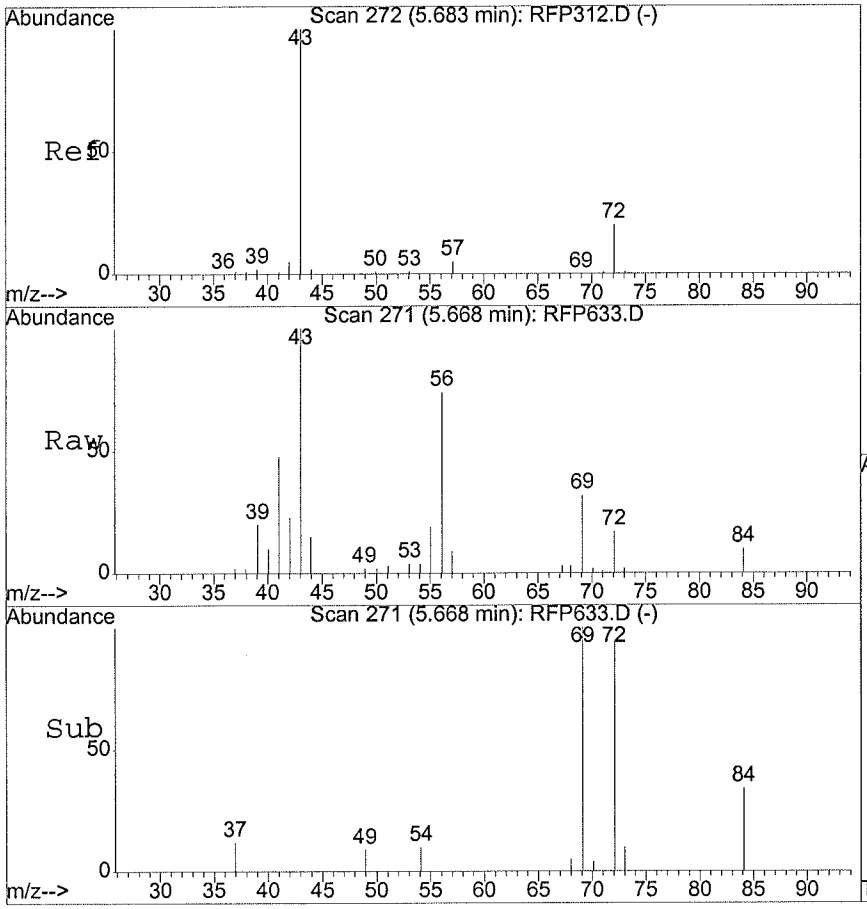


#19
Carbon disulfide
Concen: 2.04 ug/l
RT: 4.24 min Scan# 175
Delta R.T. -0.02 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 76 Resp: 75815

Ion	Ratio	Lower	Upper
76	100		
78	9.1	0.0	38.8

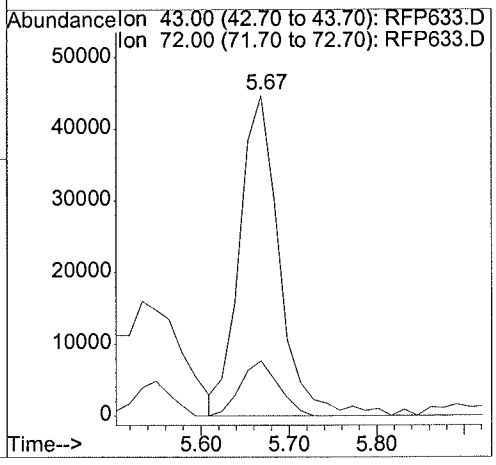


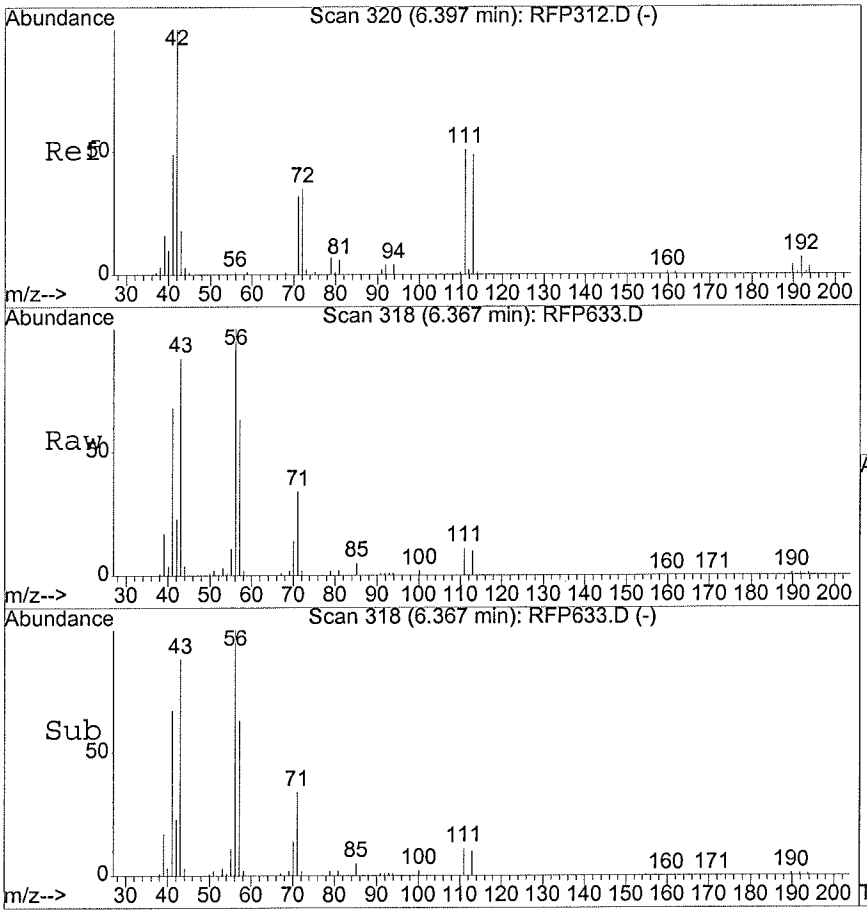


#28
2-Butanone
Concen: 12.23 ug/l
RT: 5.67 min Scan# 271
Delta R.T. -0.02 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 43 Resp: 140219

Ion	Ratio	Lower	Upper
43	100		
72	16.4	0.0	49.4

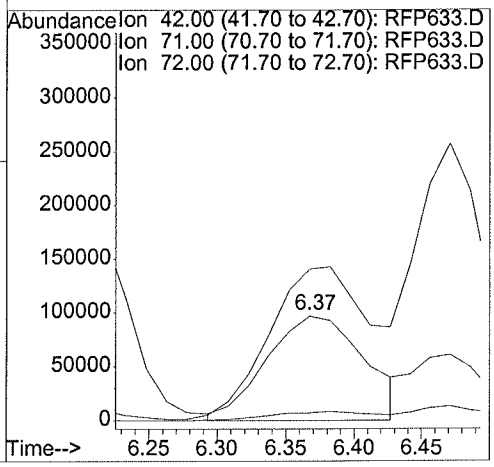


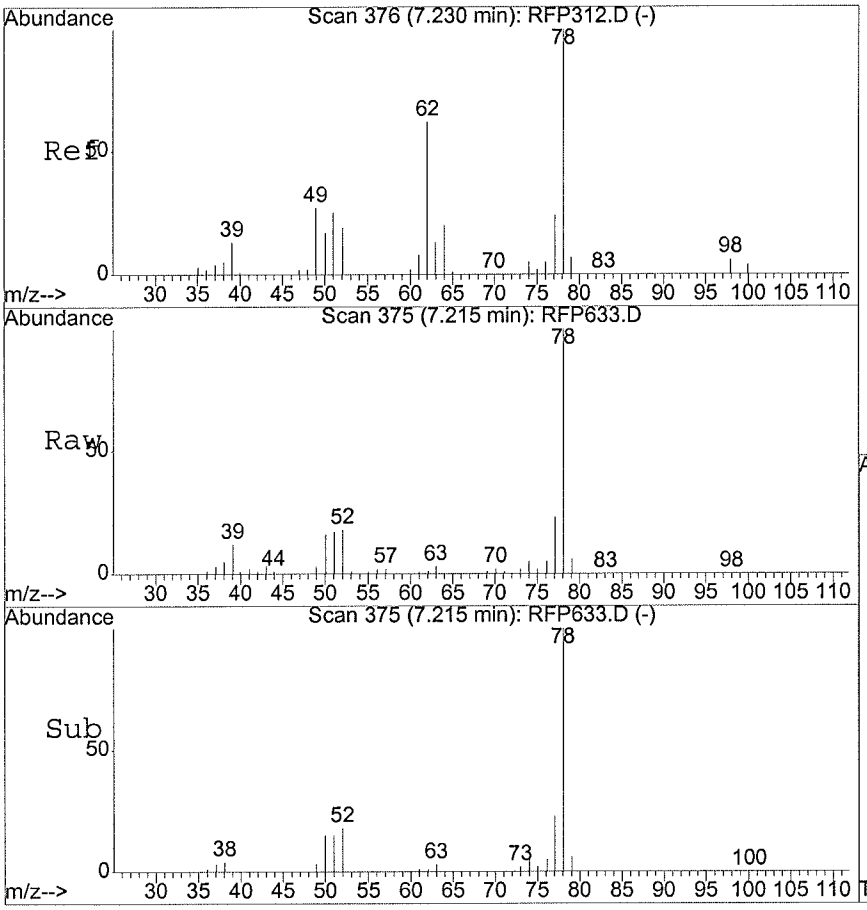


#36
Tetrahydrofuran
Concen: 71.42 ug/l
RT: 6.37 min Scan# 318
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 42 Resp: 482523

Ion	Ratio	Lower	Upper
42	100		
71	154.5	0.1	60.1#
72	9.2	3.2	63.2

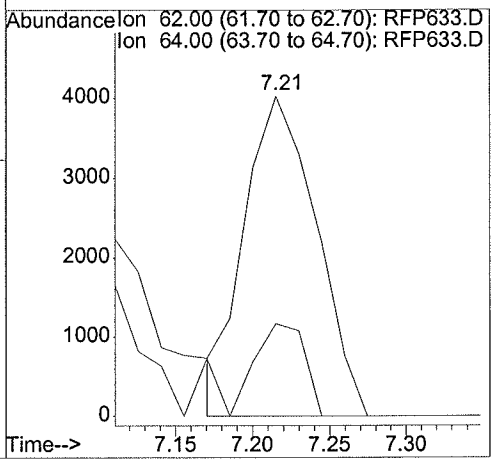


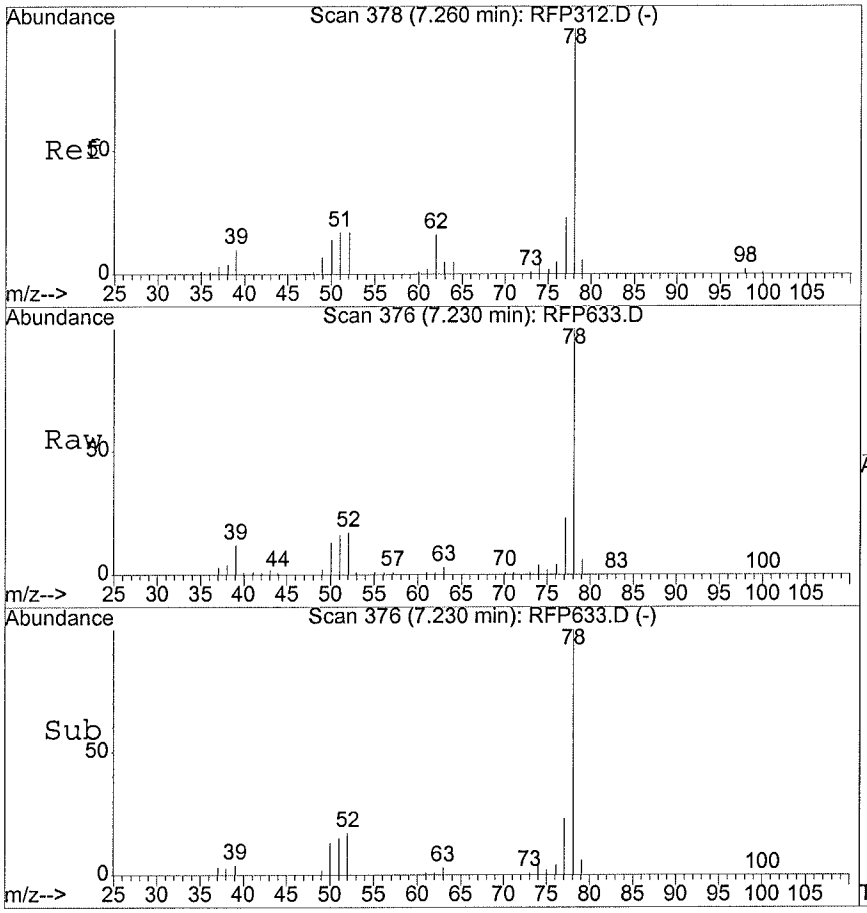


#44
1,2-Dichloroethane
Concen: 0.83 ug/l
RT: 7.21 min Scan# 375
Delta R.T. -0.02 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 62 Resp: 13092

Ion	Ratio	Lower	Upper
62	100		
64	25.0	1.7	61.7

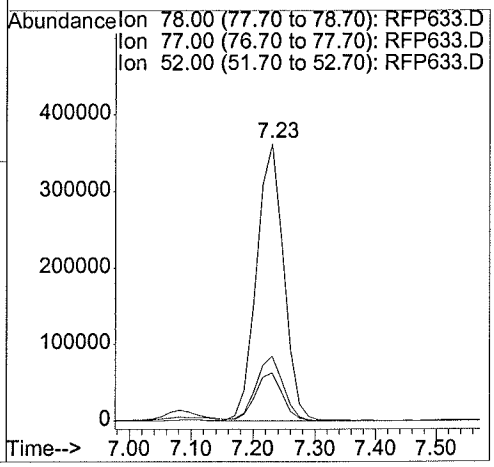


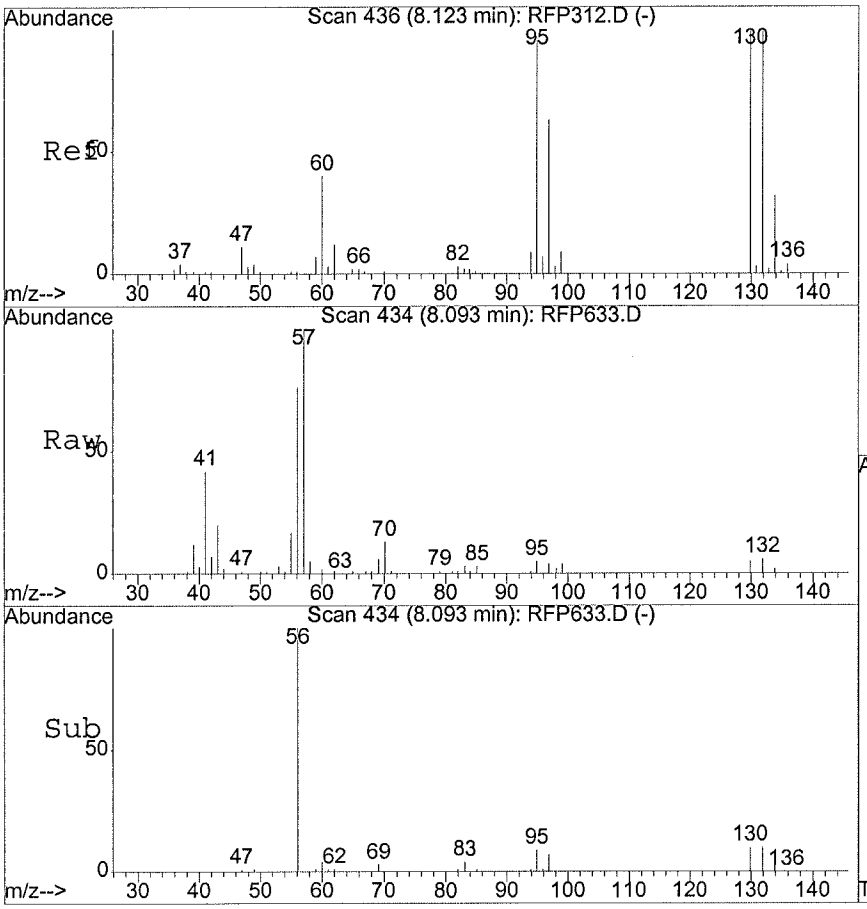


#45
Benzene
Concen: 22.42 ug/l
RT: 7.23 min Scan# 376
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 78 Resp: 1105655

Ion	Ratio	Lower	Upper
78	100		
77	23.4	0.0	53.5
52	17.3	0.0	47.3

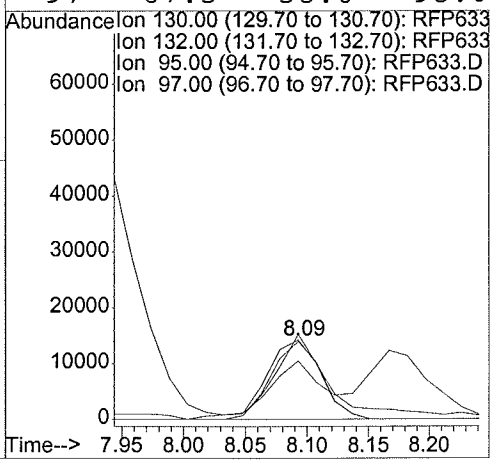


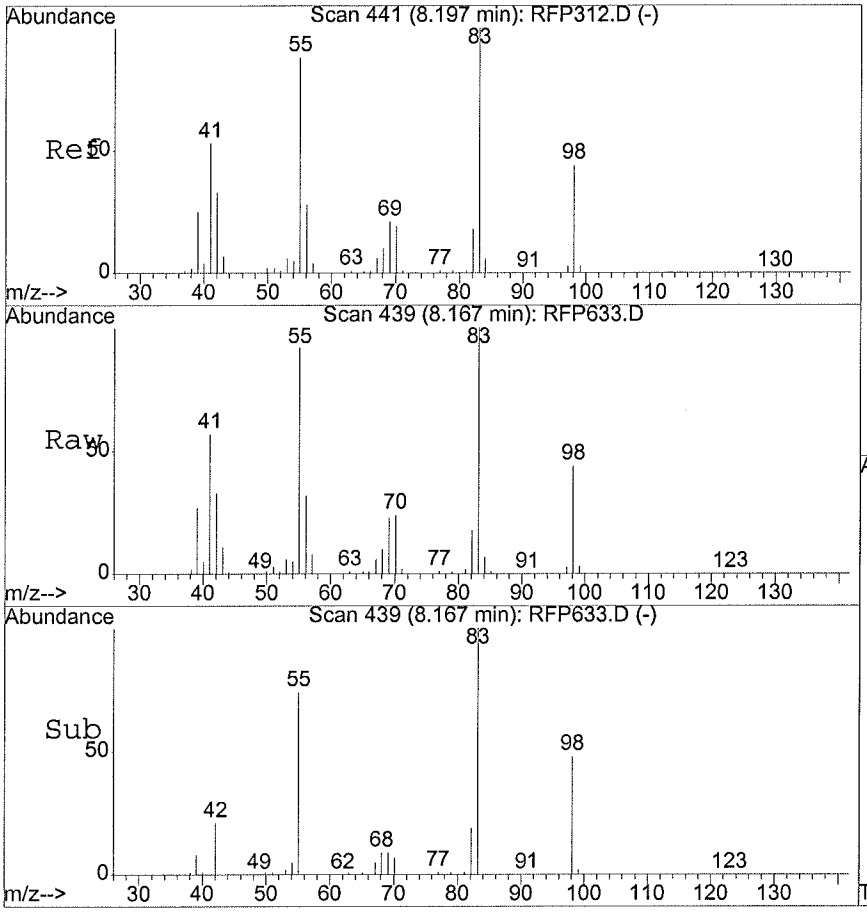


#46
Trichloroethene
Concen: 3.25 ug/l
RT: 8.09 min Scan# 434
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:130 Resp: 39921

Ion	Ratio	Lower	Upper
130	100		
132	97.8	66.8	126.8
95	135.9	70.8	130.8#
97	67.3	38.0	98.0

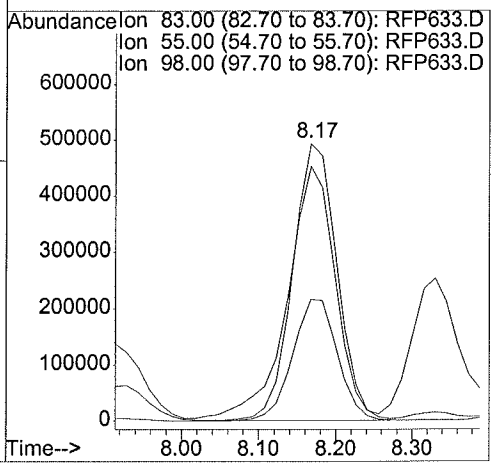


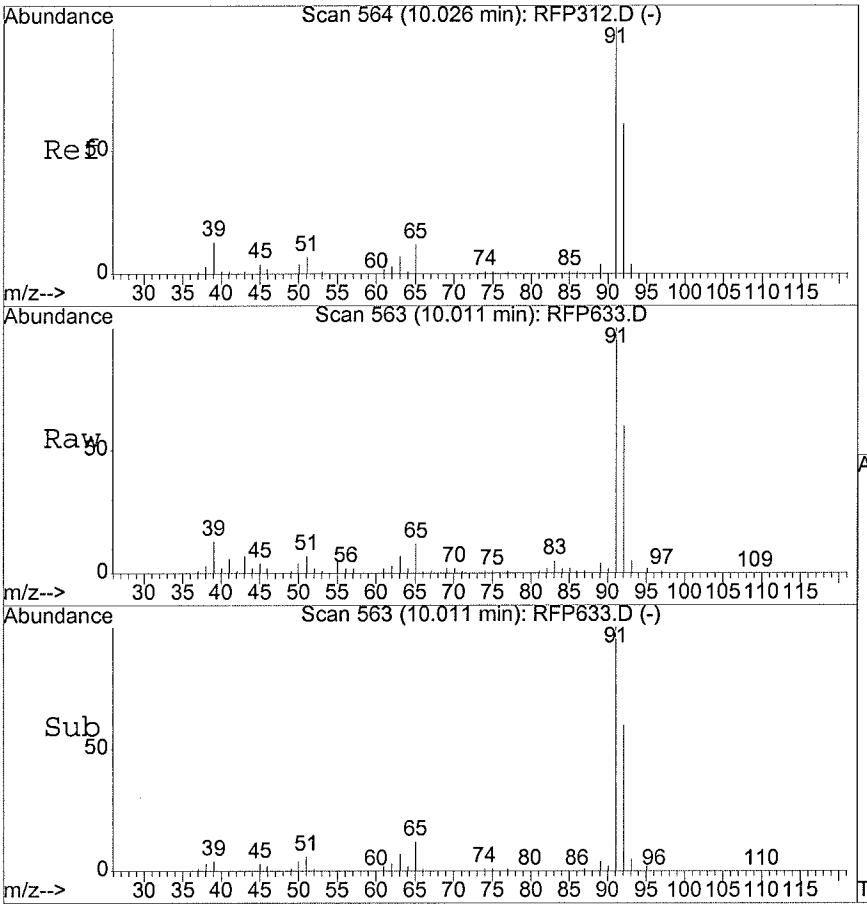


#47
Methylcyclohexane
Concen: 83.00 ug/l
RT: 8.17 min Scan# 439
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 83 Resp: 1974101

Ion	Ratio	Lower	Upper
83	100		
55	97.3	56.7	116.7
98	45.1	14.4	74.4

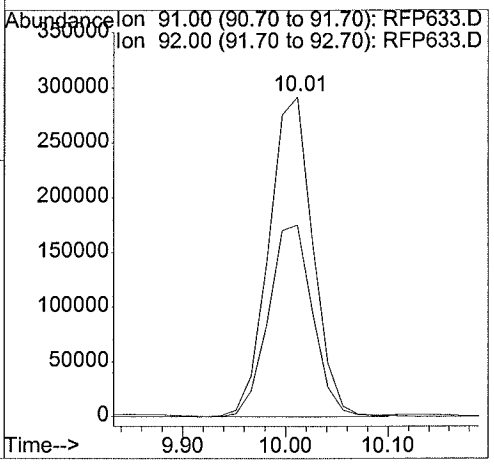


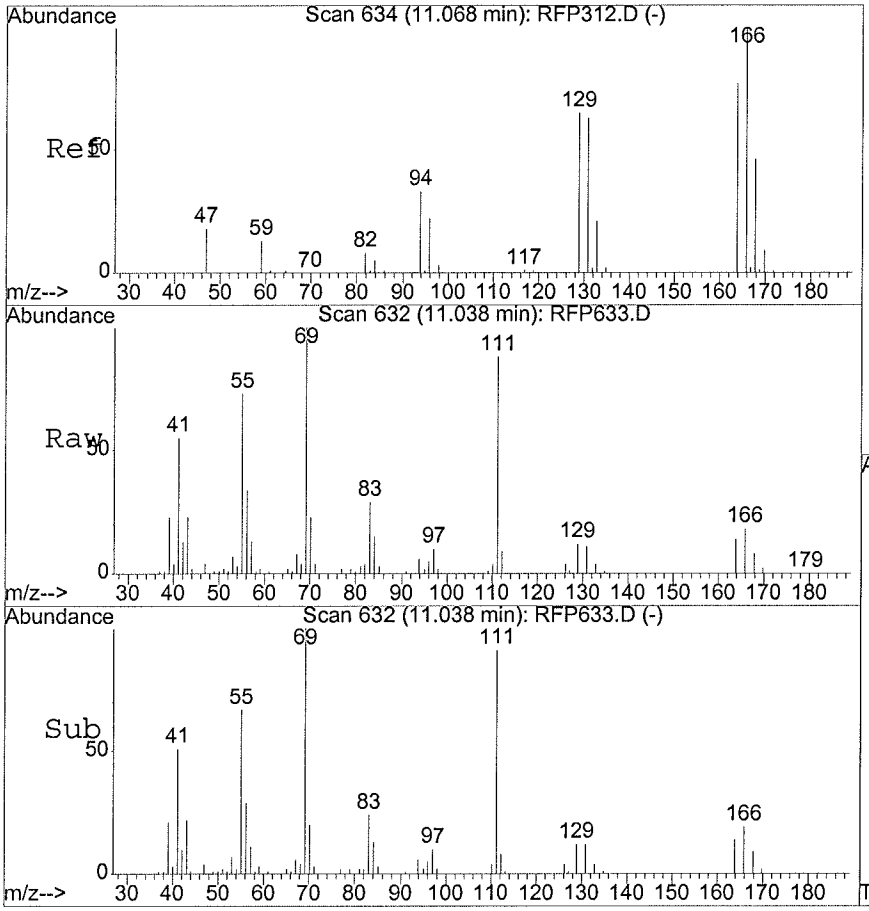


#58
Toluene
Concen: 20.84 ug/l
RT: 10.01 min Scan# 563
Delta R.T. -0.02 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 91 Resp: 868346

Ion	Ratio	Lower	Upper
91	100		
92	60.4	30.9	90.9

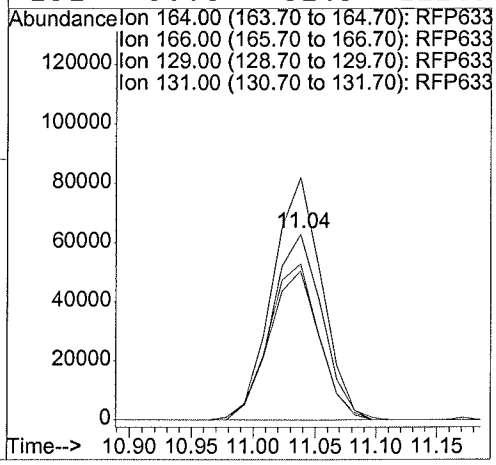


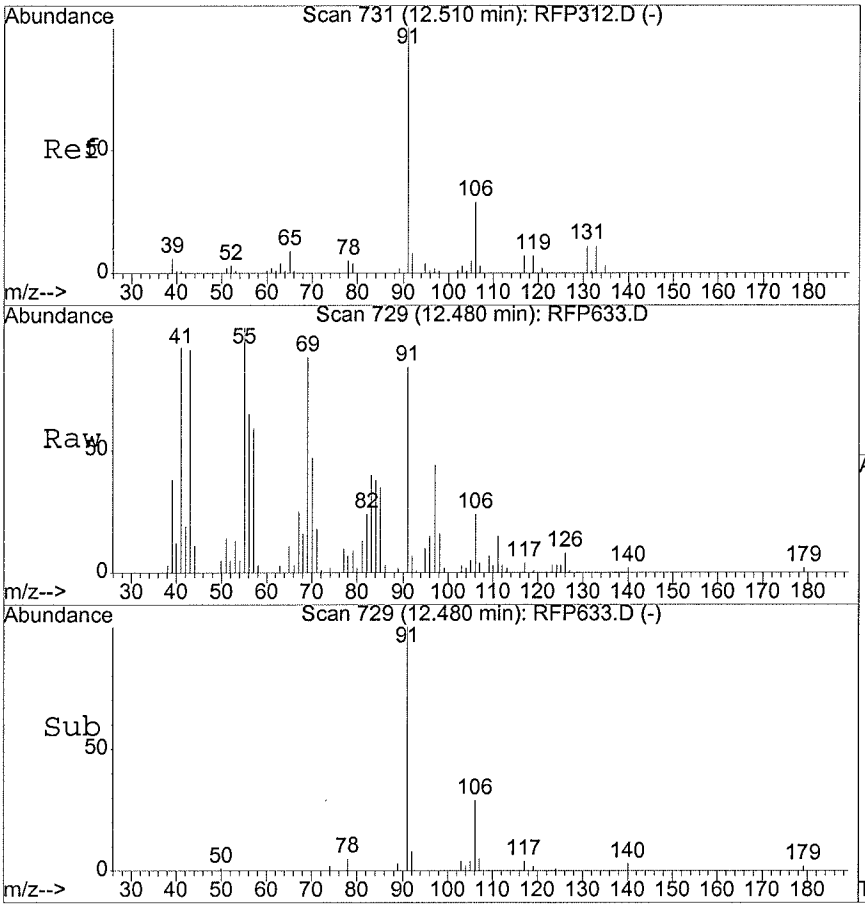


#64
Tetrachloroethene
Concen: 21.96 ug/l
RT: 11.04 min Scan# 632
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:164 Resp: 177955

Ion	Ratio	Lower	Upper
164	100		
166	128.2	96.8	156.8
129	84.8	55.7	115.7
131	80.6	52.9	112.9

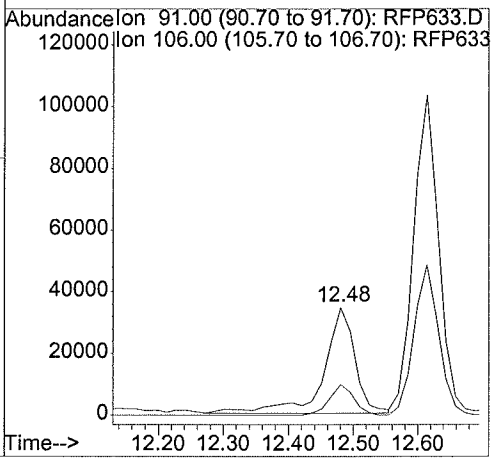


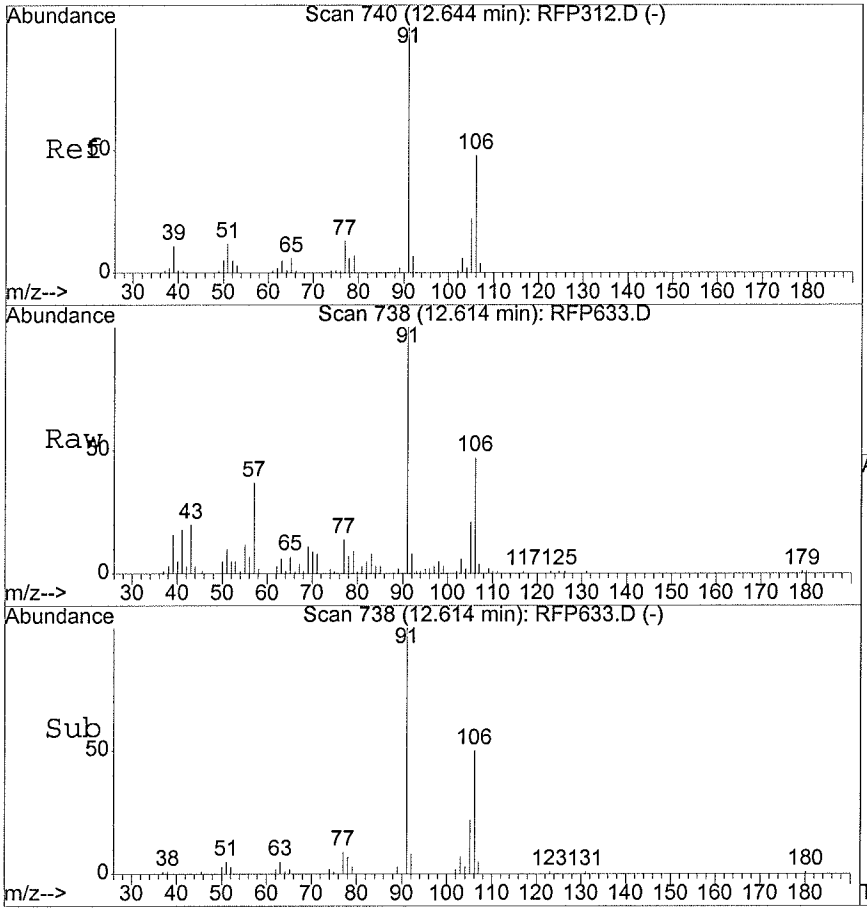


#70
Ethylbenzene
Concen: 2.70 ug/l
RT: 12.48 min Scan# 729
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 91 Resp: 116175

Ion	Ratio	Lower	Upper
91	100		
106	22.5	0.0	58.2

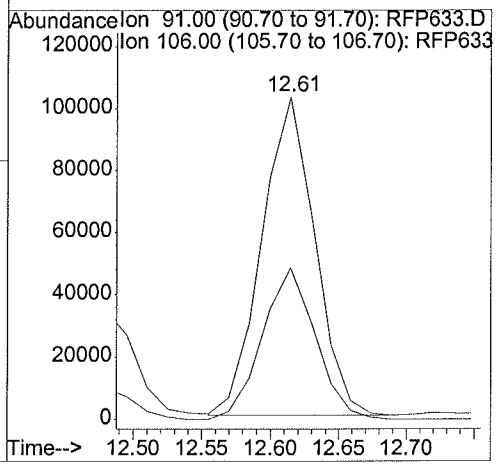


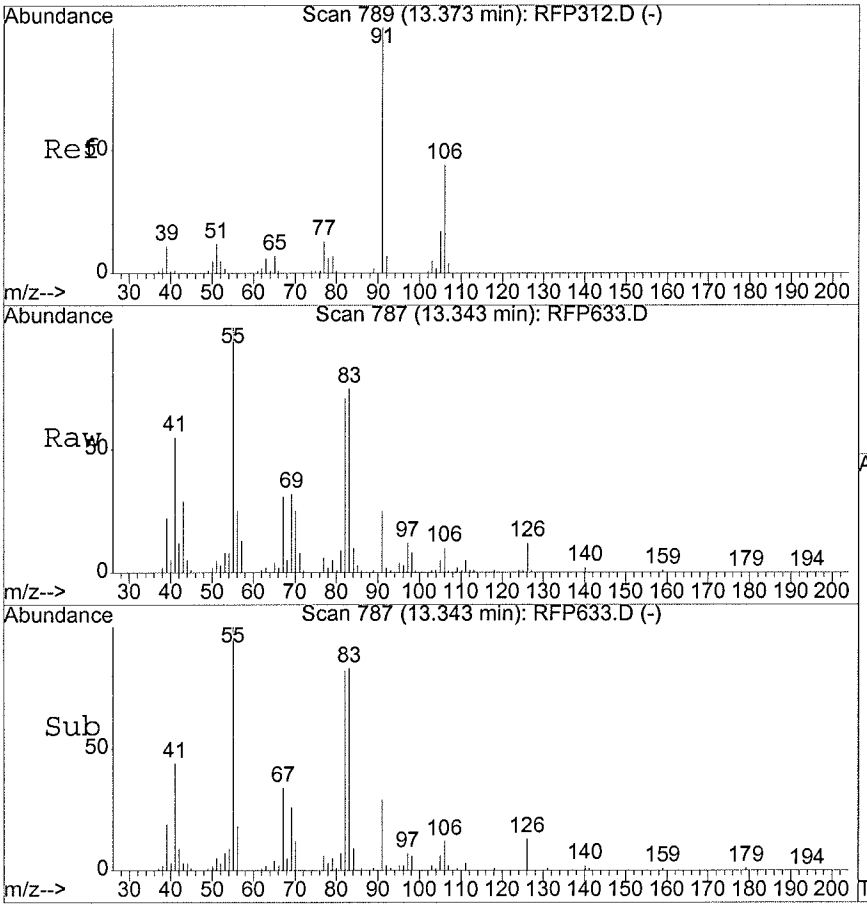


#71
m-Xylene & p-Xylene
Concen: 8.51 ug/l
RT: 12.61 min Scan# 738
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 91 Resp: 274232

Ion	Ratio	Lower	Upper
91	100		
106	47.7	17.2	77.2

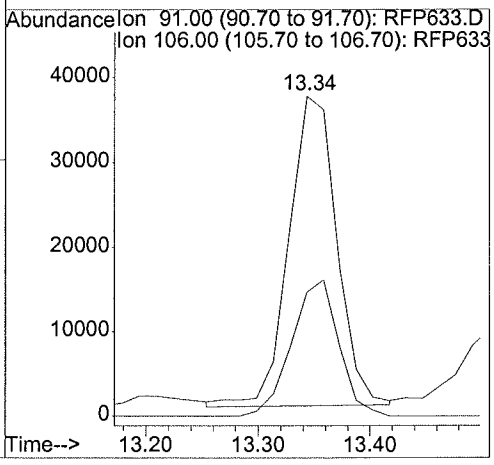


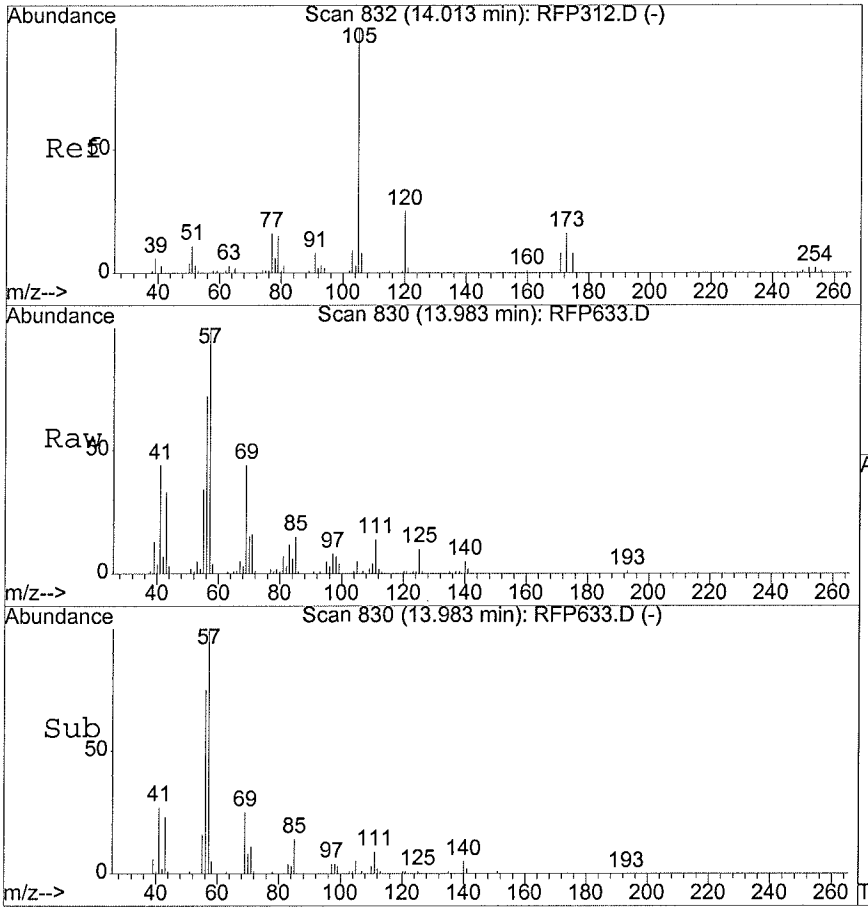


#72
o-Xylene
Concen: 3.27 ug/l
RT: 13.34 min Scan# 787
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 91 Resp: 109314

Ion	Ratio	Lower	Upper
91	100		
106	43.2	14.1	74.1

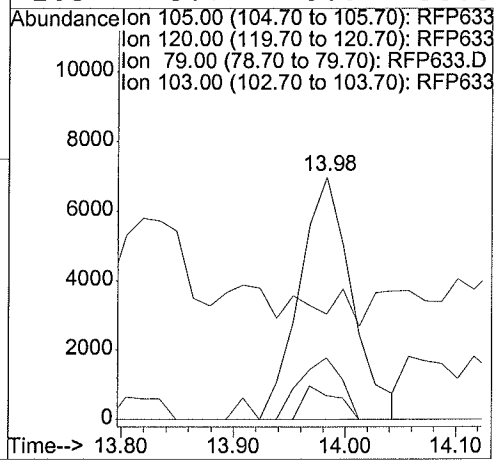


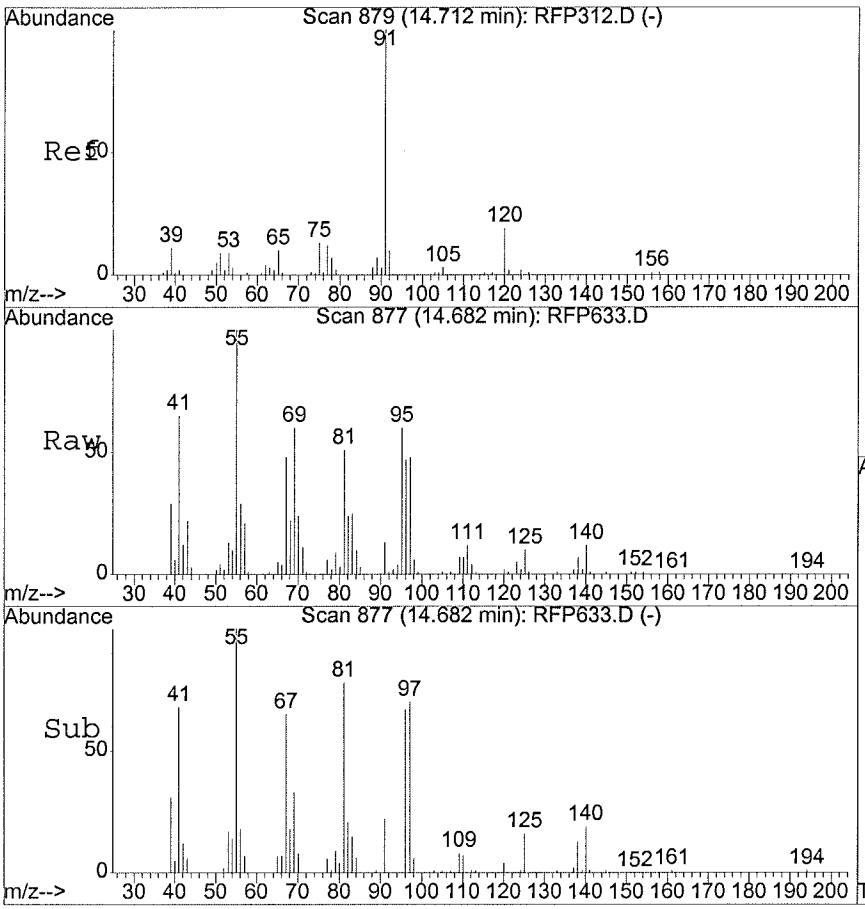


#74
Isopropylbenzene
Concen: 0.65 ug/l
RT: 13.98 min Scan# 830
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:105 Resp: 23506

Ion	Ratio	Lower	Upper
105	100		
120	20.0	0.0	54.9
79	6.7	0.0	46.8
103	8.7	0.0	38.8

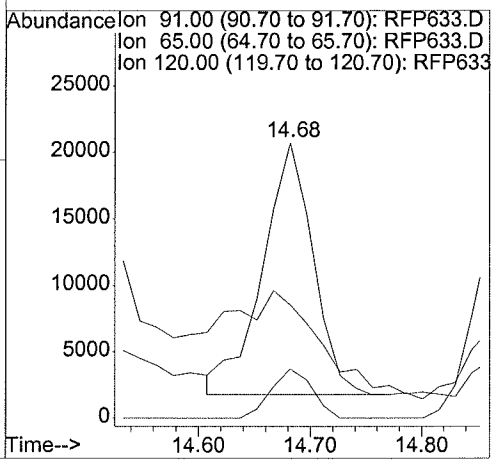


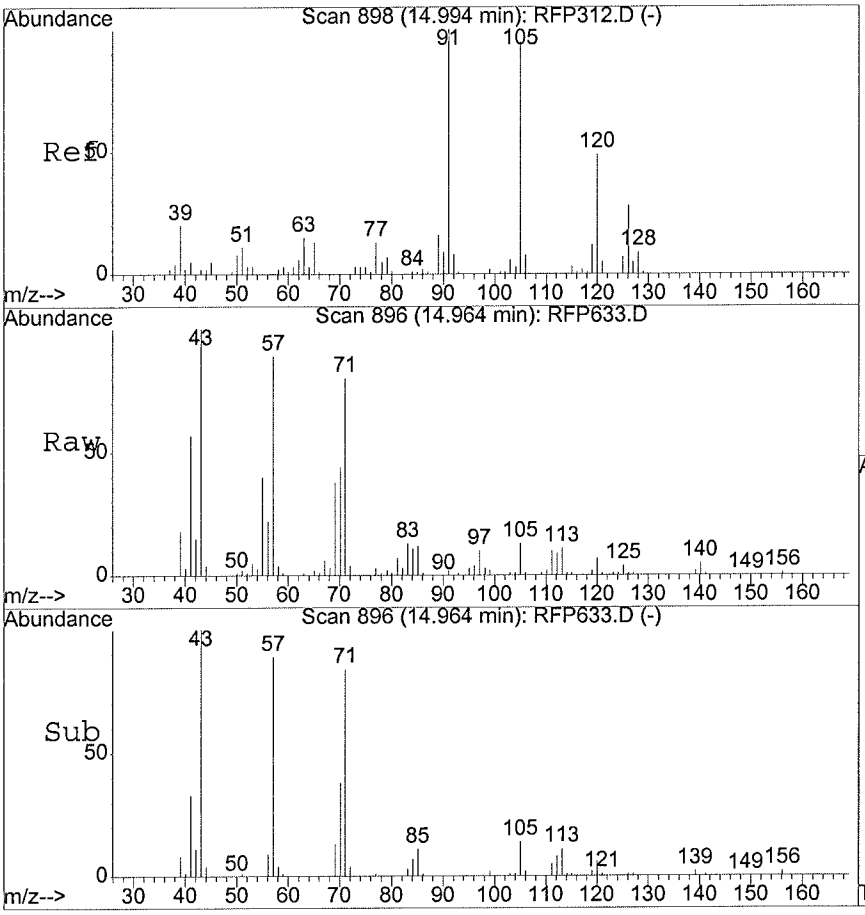


#82
n-Propylbenzene
Concen: 1.56 ug/l
RT: 14.68 min Scan# 877
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 91 Resp: 59512

Ion	Ratio	Lower	Upper
91	100		
65	76.9	0.0	40.0#
120	15.9	0.0	49.1

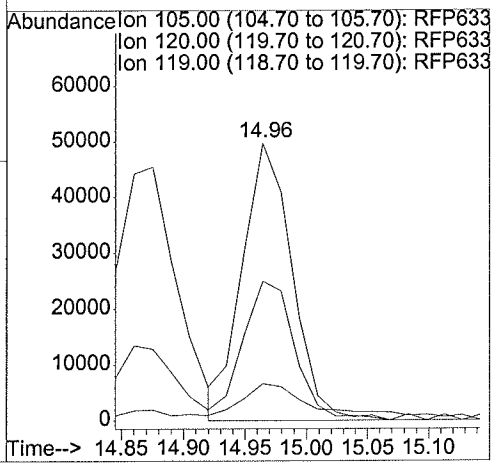


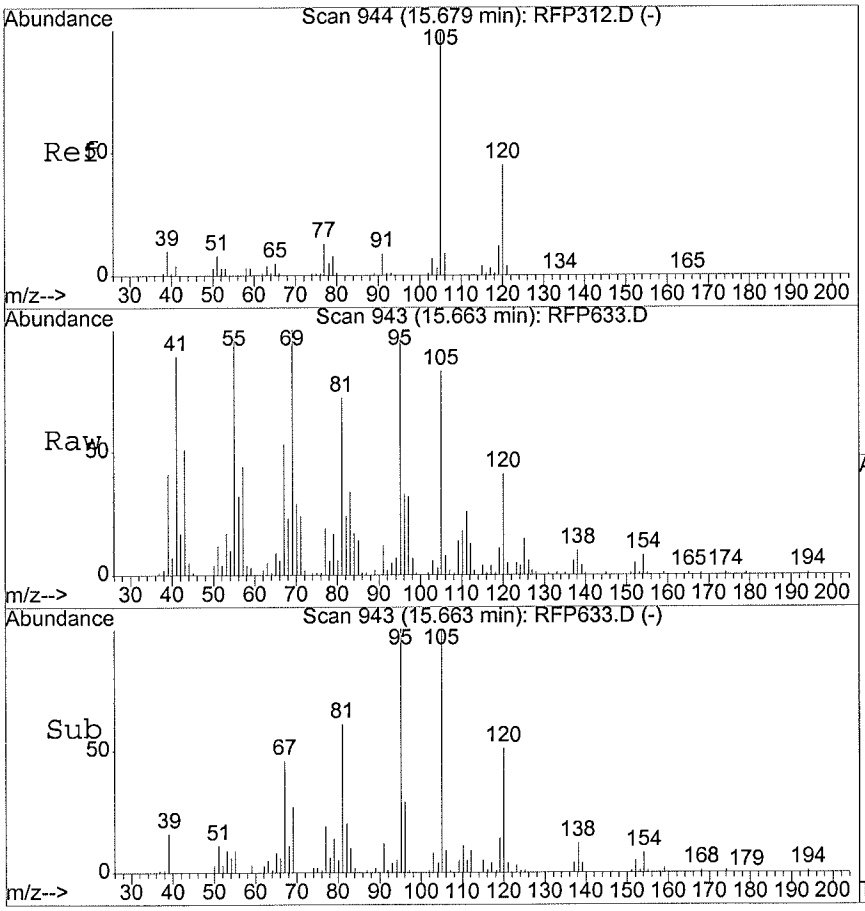


#84
1,3,5-Trimethylbenzene
Concen: 6.34 ug/l
RT: 14.96 min Scan# 896
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:105 Resp: 140019

Ion	Ratio	Lower	Upper
105	100		
120	52.8	20.7	80.7
119	21.9	0.0	42.0

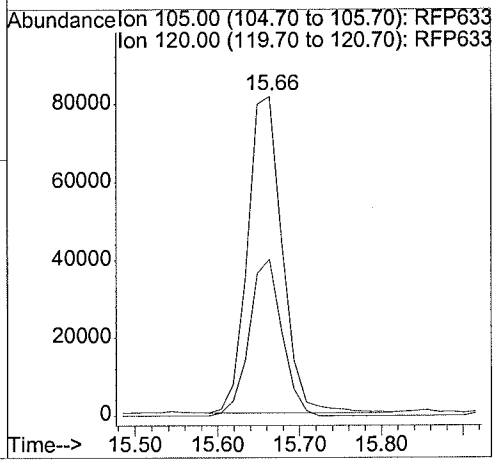


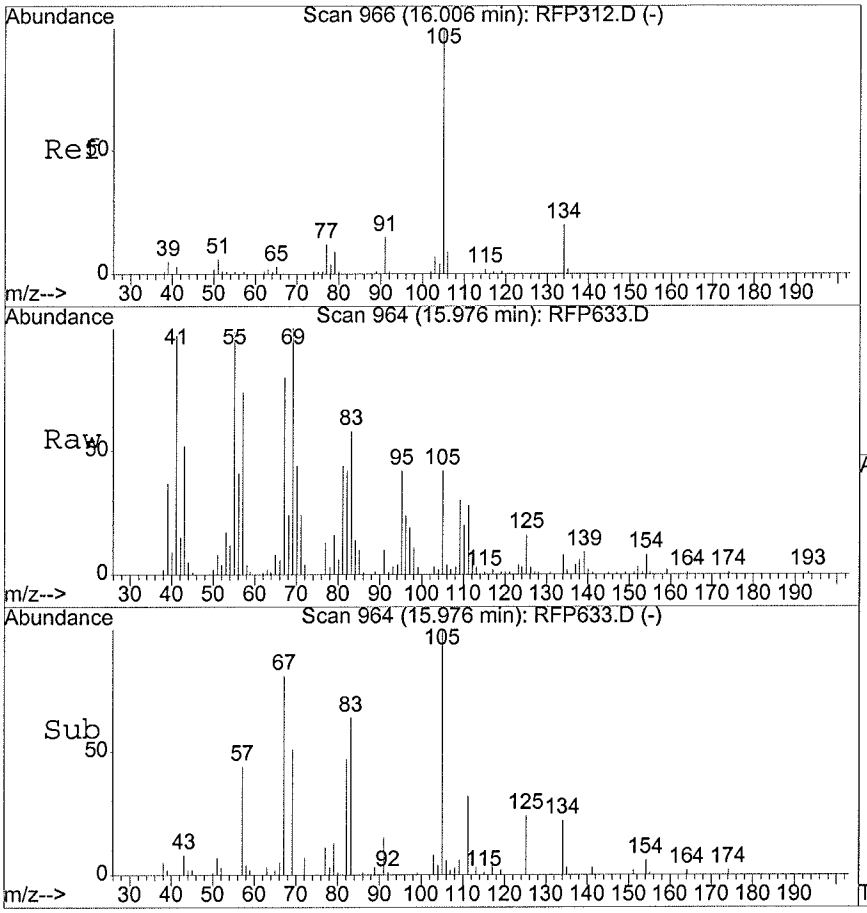


#88
1,2,4-Trimethylbenzene
Concen: 10.80 ug/l
RT: 15.66 min Scan# 943
Delta R.T. -0.02 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:105 Resp: 239606

Ion	Ratio	Lower	Upper
105	100		
120	46.7	24.4	84.4

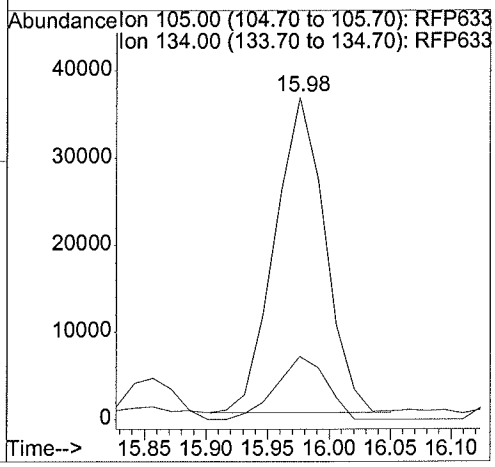


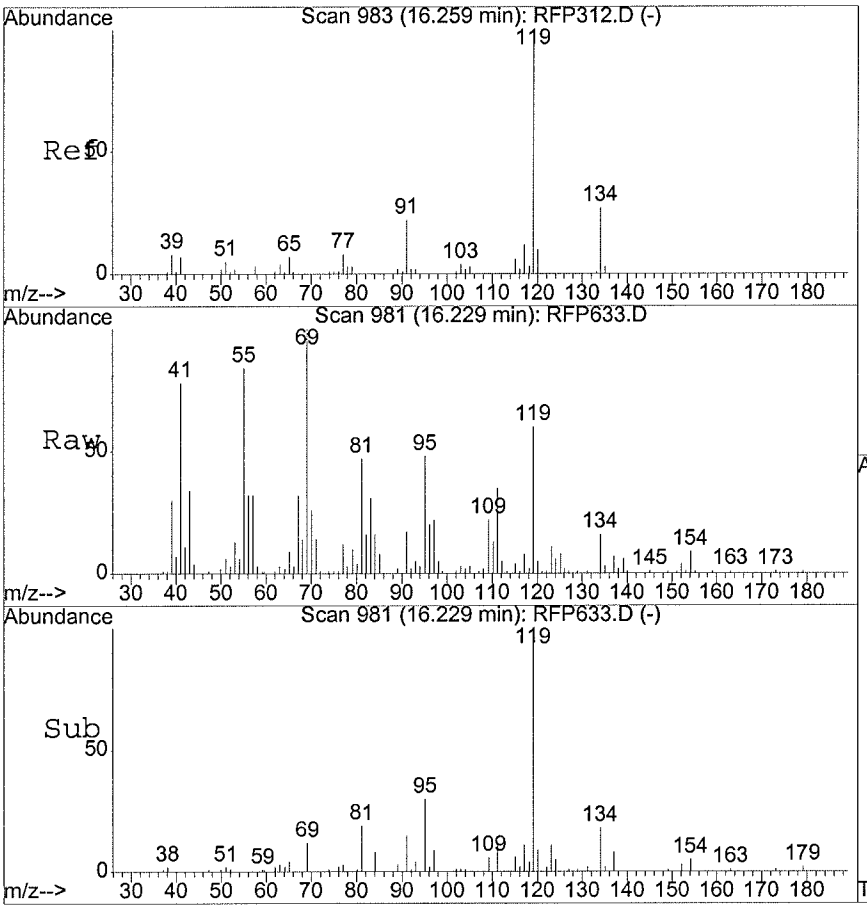


#89
sec-Butylbenzene
Concen: 3.48 ug/l
RT: 15.98 min Scan# 964
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:105 Resp: 102895

Ion	Ratio	Lower	Upper
105	100		
134	19.8	0.0	48.9

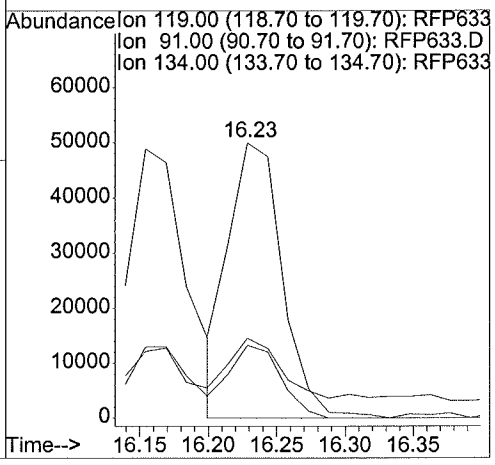


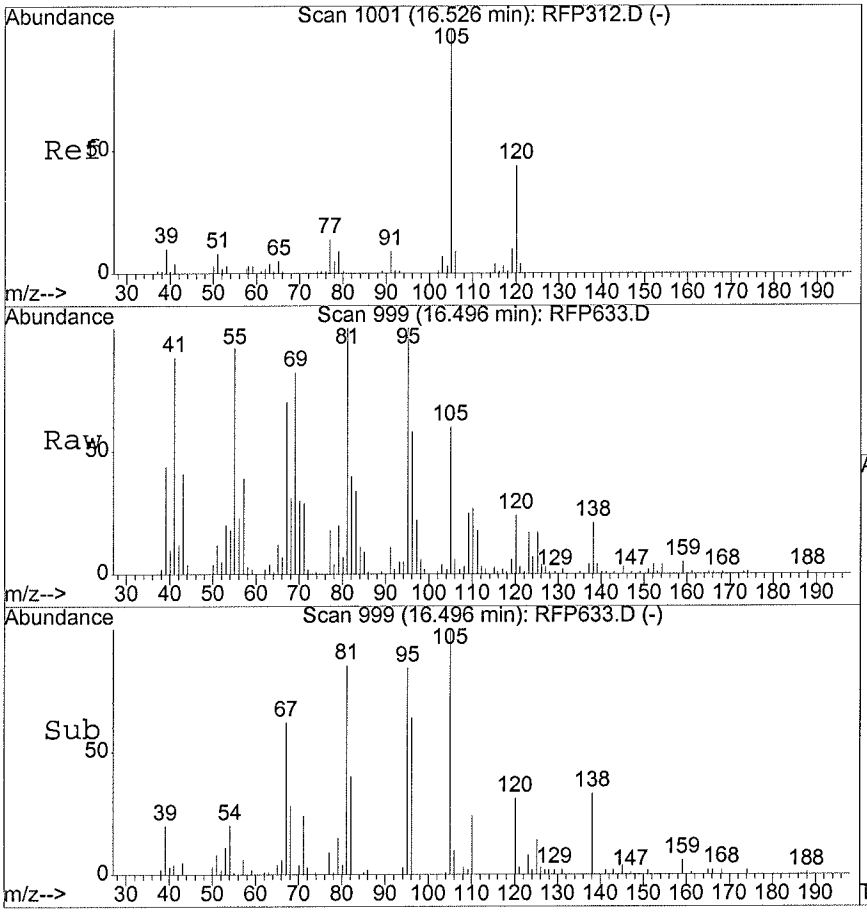


#90
p-Isopropyltoluene
Concen: 5.87 ug/l
RT: 16.23 min Scan# 981
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:119 Resp: 137354

Ion	Ratio	Lower	Upper
119	100		
91	25.7	0.0	52.4
134	25.6	0.0	56.2

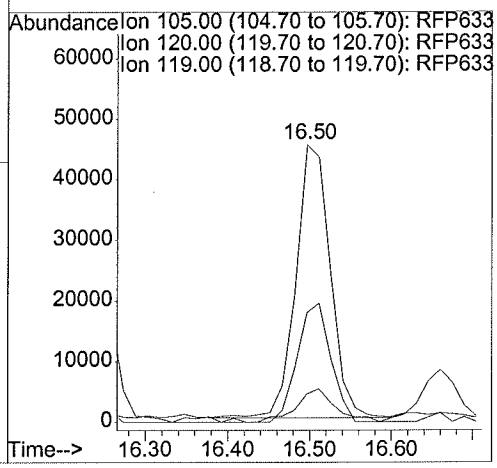


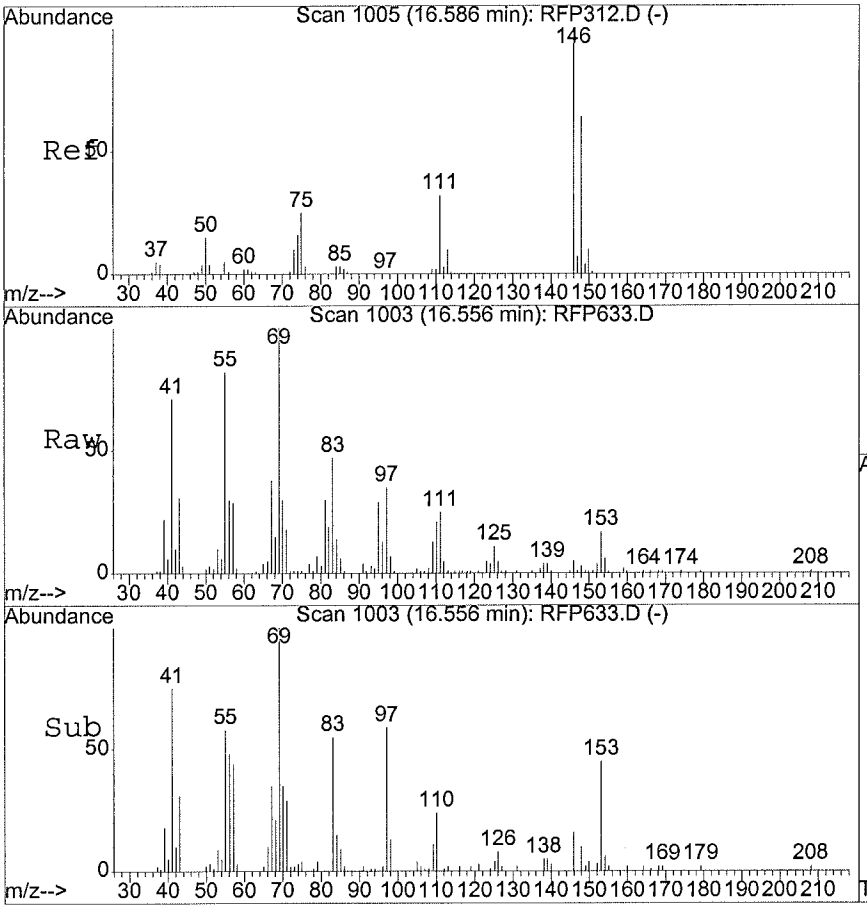


#92
1,2,3-Trimethylbenzene
Concen: 6.09 ug/l
RT: 16.50 min Scan# 999
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:105 Resp: 131505

Ion	Ratio	Lower	Upper
105	100		
120	42.3	14.4	74.4
119	13.7	0.0	39.8

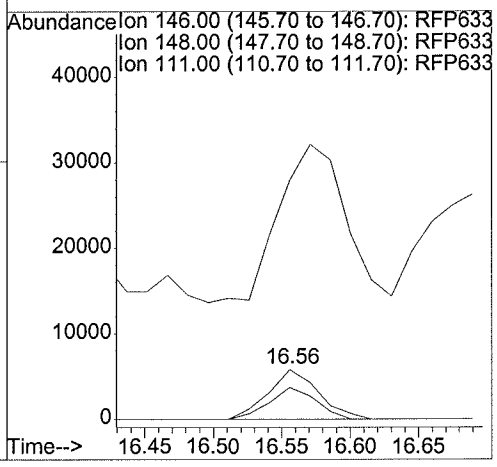


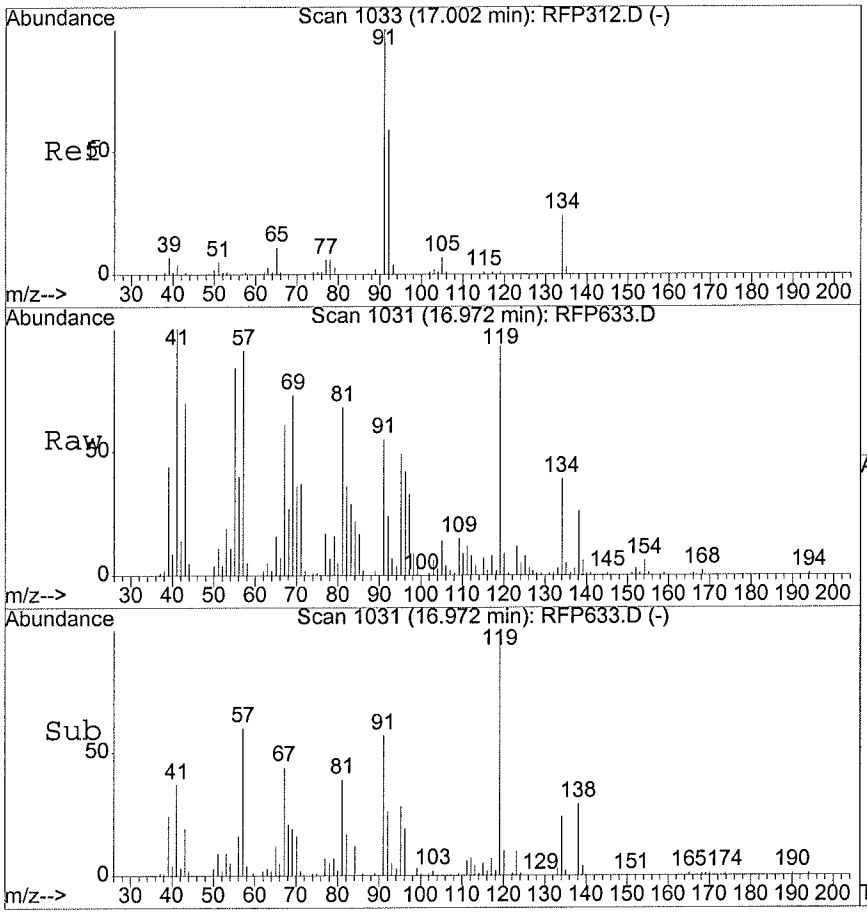


#93
1,4-Dichlorobenzene
Concen: 1.06 ug/l
RT: 16.56 min Scan# 1003
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:146 Resp: 14829

Ion	Ratio	Lower	Upper
146	100		
148	59.6	32.8	92.8
111	419.4	2.2	62.2#

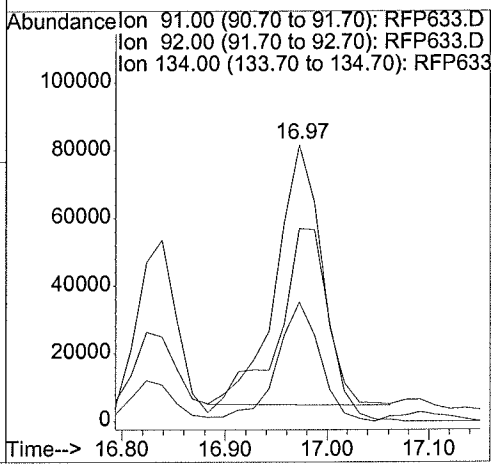


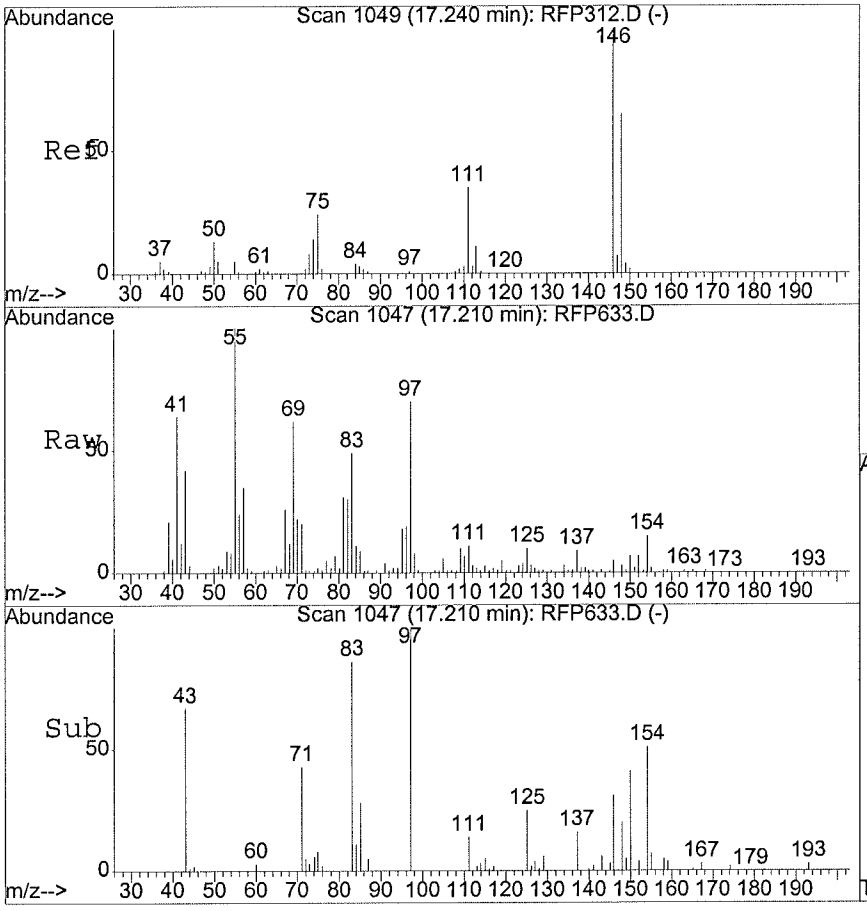


#94
n-Butylbenzene
Concen: 10.15 ug/l
RT: 16.97 min Scan# 1031
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion: 91 Resp: 237643

Ion	Ratio	Lower	Upper
91	100		
92	43.9	29.3	89.3
134	88.5	0.0	53.5#

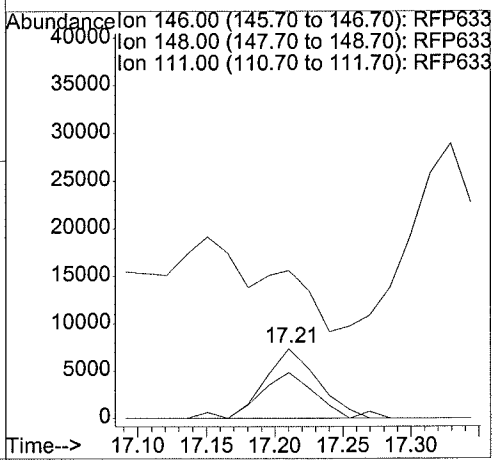


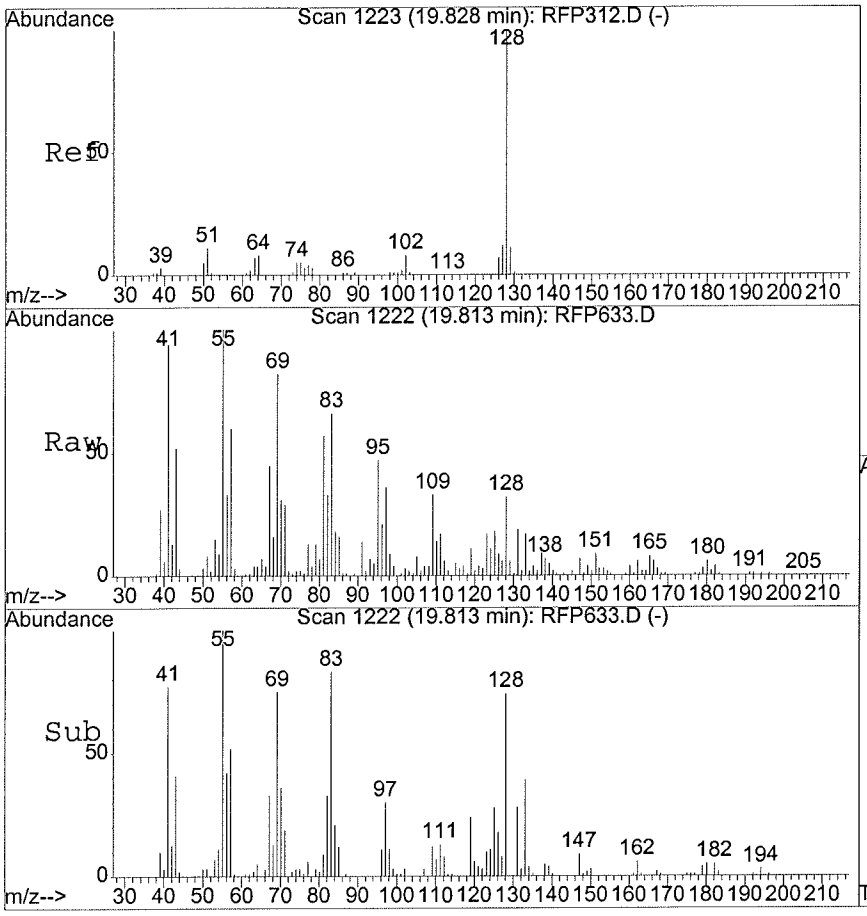


#95
1,2-Dichlorobenzene
Concen: 1.51 ug/l
RT: 17.21 min Scan# 1047
Delta R.T. -0.03 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:146 Resp: 19744

Ion	Ratio	Lower	Upper
146	100		
148	71.0	34.3	94.3
111	216.1	6.3	66.3#

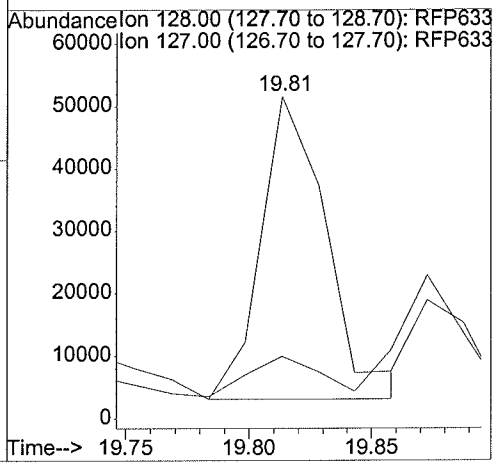




#99
Naphthalene
Concen: 4.04 ug/l
RT: 19.81 min Scan# 1222
Delta R.T. -0.02 min
Lab File: RFP633.D
Acq: 29 Jun 2018 7:37 pm

Tgt Ion:128 Resp: 89589

Ion	Ratio	Lower	Upper
128	100		
127	15.4	0.0	41.8



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D Vial: 25
Acq On : 29 Jun 2018 7:37 pm Operator: ODinh
Sample : 18F187-16 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

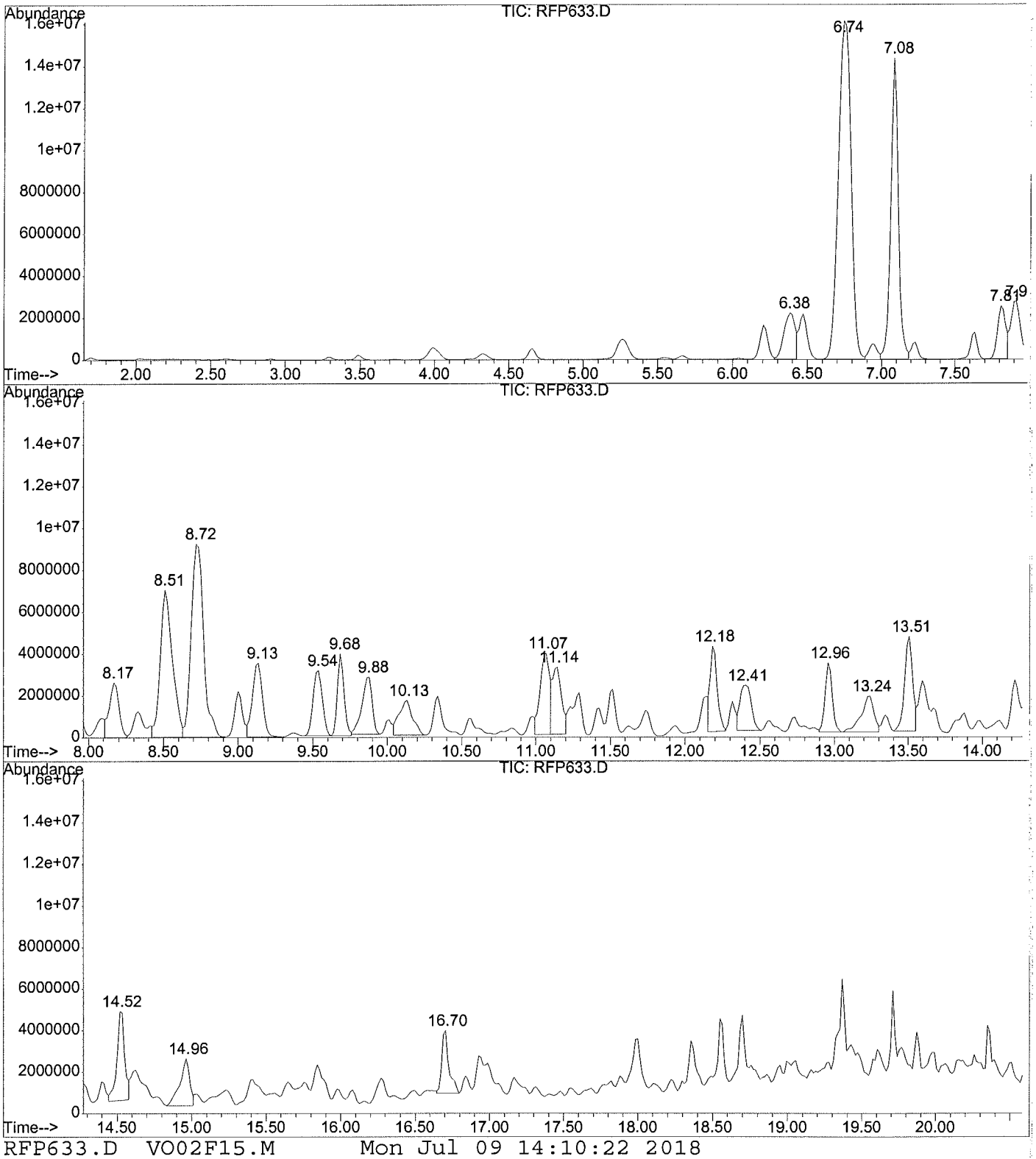
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.382	312	319	322	rVV2	2192355	11441212	11.96%	2.381%
2	6.739	333	343	353	rVV	16107785	95632731	100.00%	19.898%
3	7.081	360	366	373	rVV	14333982	51964081	54.34%	10.812%
4	7.810	409	415	418	rBV	2526309	10061219	10.52%	2.093%
5	7.914	418	422	428	rVV2	2727930	12405630	12.97%	2.581%
6	8.167	435	439	445	rVV	2616314	11230427	11.74%	2.337%
7	8.509	456	462	470	rVV	7048978	39772165	41.59%	8.275%
8	8.717	470	476	489	rVV2	9228627	52482415	54.88%	10.920%
9	9.134	499	504	515	rVB	3542293	16286345	17.03%	3.389%
10	9.535	524	531	537	rBV	3128138	13776887	14.41%	2.867%
11	9.684	537	541	546	rBV	3931151	12160554	12.72%	2.530%
12	9.877	546	554	559	rVB4	2744981	13135904	13.74%	2.733%
13	10.130	565	571	579	rVB2	1665071	10282125	10.75%	2.139%
14	11.067	629	634	636	rVV2	3903310	17150748	17.93%	3.569%
15	11.142	636	639	643	rVV2	3220378	13696452	14.32%	2.850%
16	12.183	707	709	715	rVV	4082454	13064184	13.66%	2.718%
17	12.406	720	724	731	rVB3	2164144	11220138	11.73%	2.335%
18	12.956	757	761	768	rVB	3323507	11086970	11.59%	2.307%
19	13.239	768	780	784	rBV2	1730072	10368991	10.84%	2.157%
20	13.507	791	798	801	rBV	4527710	17486045	18.28%	3.638%
21	14.518	861	866	870	rVV2	4280656	15489587	16.20%	3.223%
22	14.964	887	896	899	rBV3	2264738	10372158	10.85%	2.158%
23	16.705	1009	1013	1019	rVB	3027860	10044074	10.50%	2.090%

Sum of corrected areas: 480611042

RFP633.D VO02F15.M Mon Jul 09 14:10:21 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Operator : ODinh
Acquired : 29 Jun 2018 7:37 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: 18F187-16
Misc Info :
Vial Number: 25
Quant File :VO02F15.RES (RTE Integrator)



RFP633.D VO02F15.M Mon Jul 09 14:10:22 2018

Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

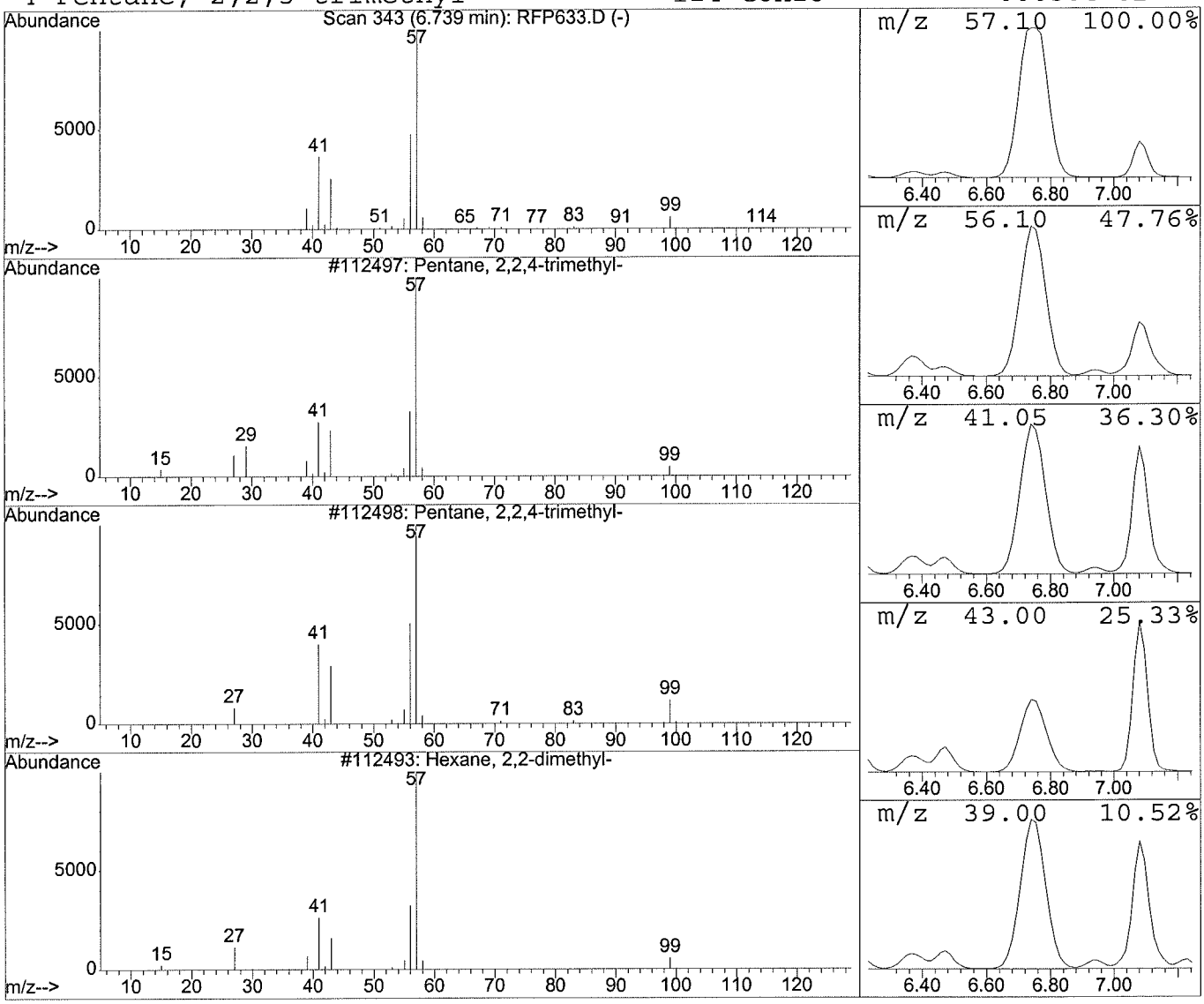
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 1 Pentane, 2,2,4-trimethyl- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.74	475.25 ug/l	95632700	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 2,2,4-trimethyl-	114	C8H18	000540-84-1	83
2	Pentane, 2,2,4-trimethyl-	114	C8H18	000540-84-1	83
3	Hexane, 2,2-dimethyl-	114	C8H18	000590-73-8	74
4	Pentane, 2,2,3-trimethyl-	114	C8H18	000564-02-3	72



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

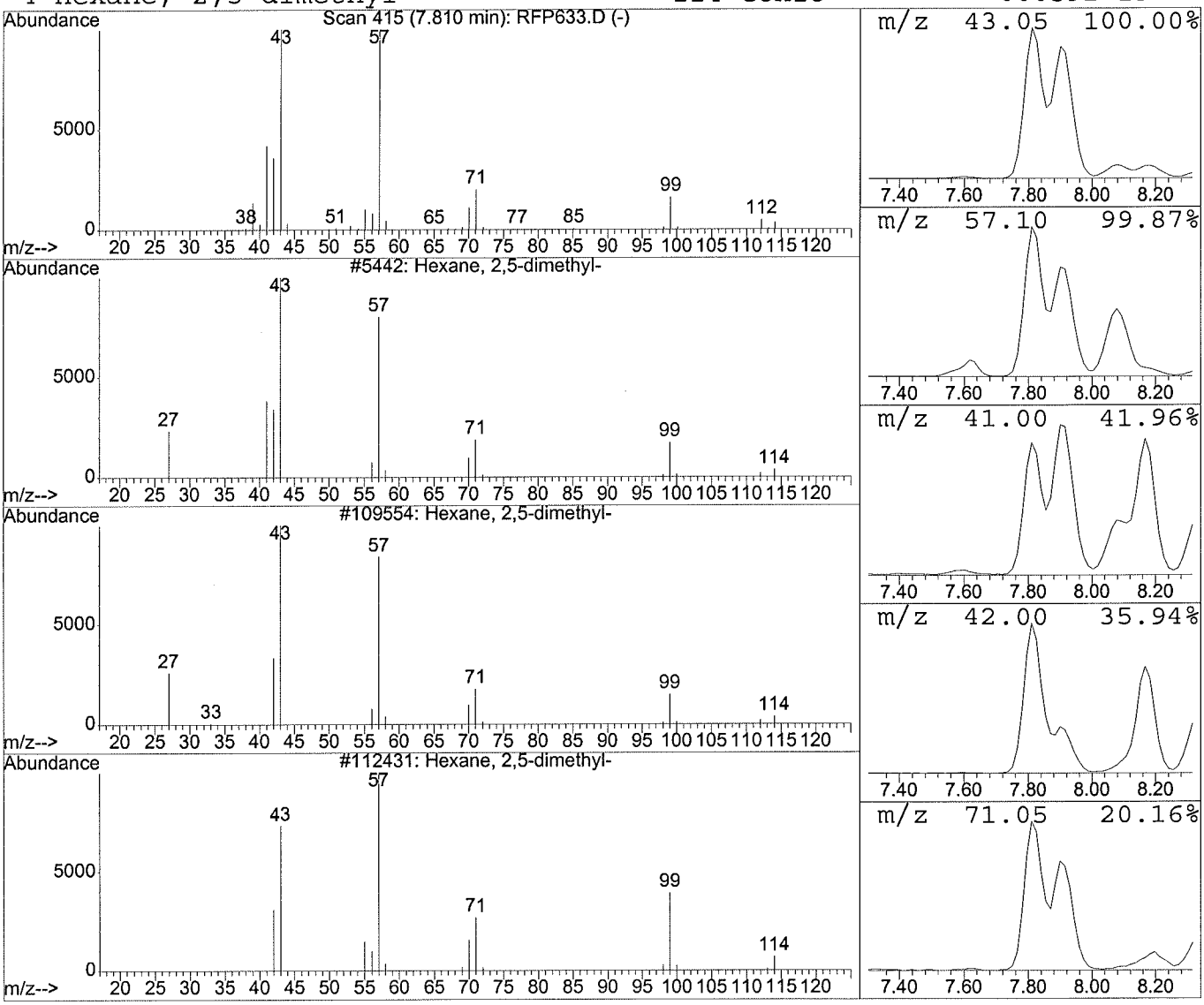
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 2 Hexane, 2,5-dimethyl- Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.81	50.00 ug/l	10061200	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Hexane, 2,5-dimethyl-	114	C8H18	000592-13-2	94
2	Hexane, 2,5-dimethyl-	114	C8H18	000592-13-2	91
3	Hexane, 2,5-dimethyl-	114	C8H18	000592-13-2	91
4	Hexane, 2,5-dimethyl-	114	C8H18	000592-13-2	91



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

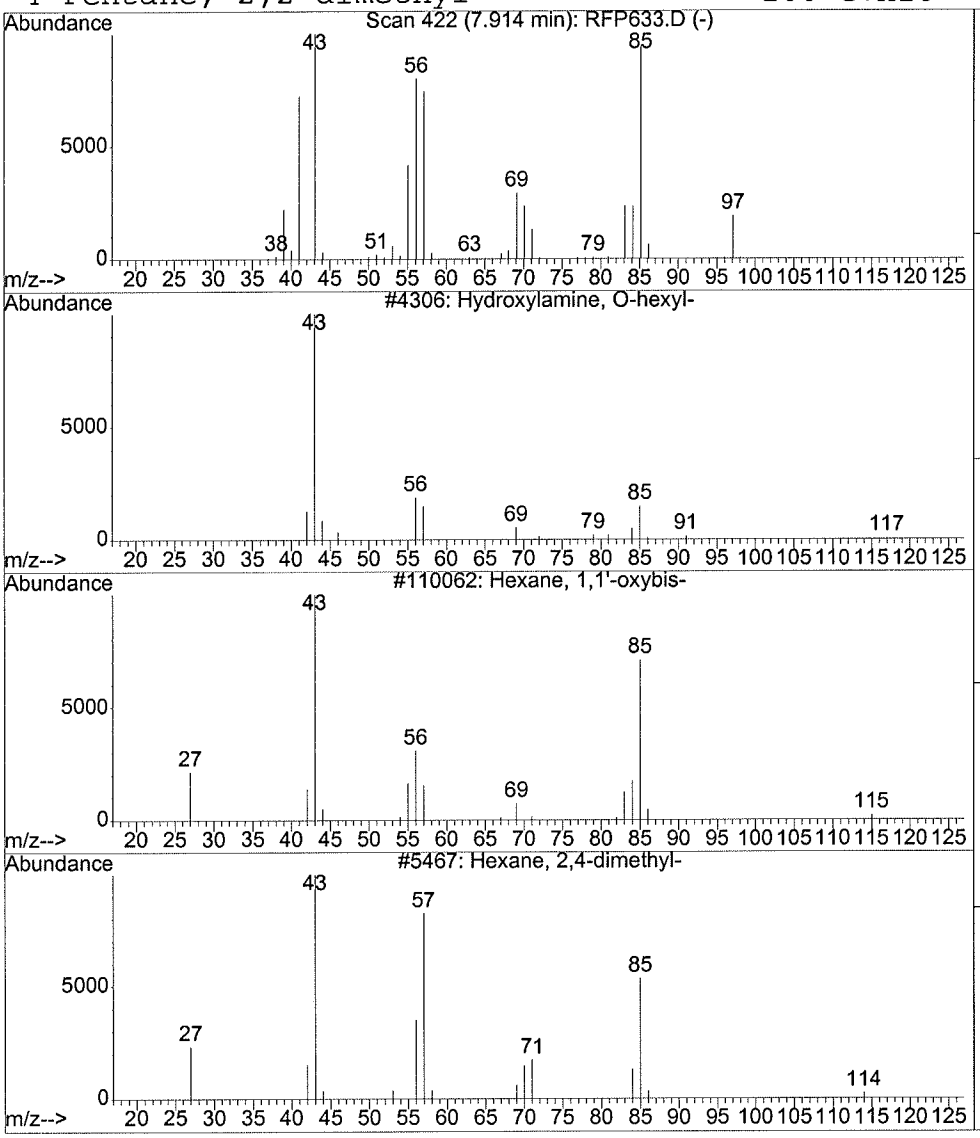
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

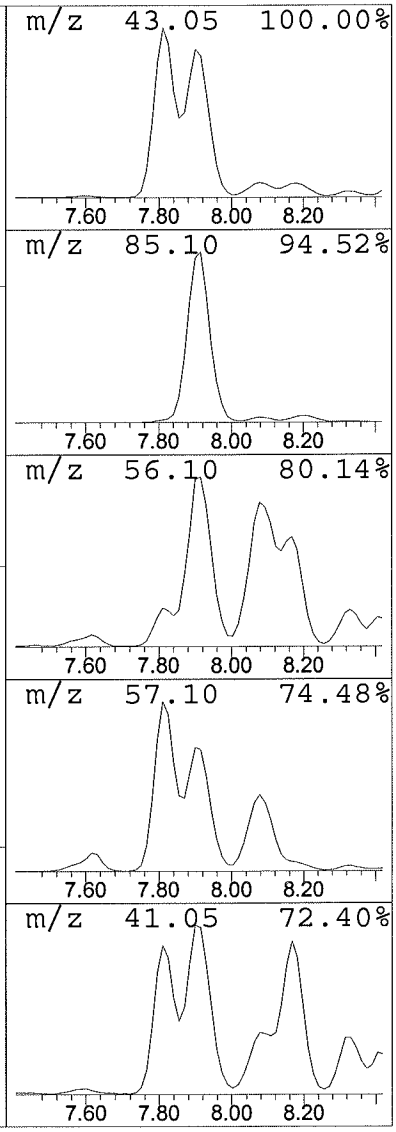
****

Peak Number 3 Hydroxylamine, O-hexyl- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.91	61.65 ug/l	12405600	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Hydroxylamine, O-hexyl-	117	C6H15NO	004665-68-3	50
2	Hexane, 1,1'-oxybis-	186	C12H26O	000112-58-3	50
3	Hexane, 2,4-dimethyl-	114	C8H18	000589-43-5	38
4	Pentane, 2,2-dimethyl-	100	C7H16	000590-35-2	38





Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

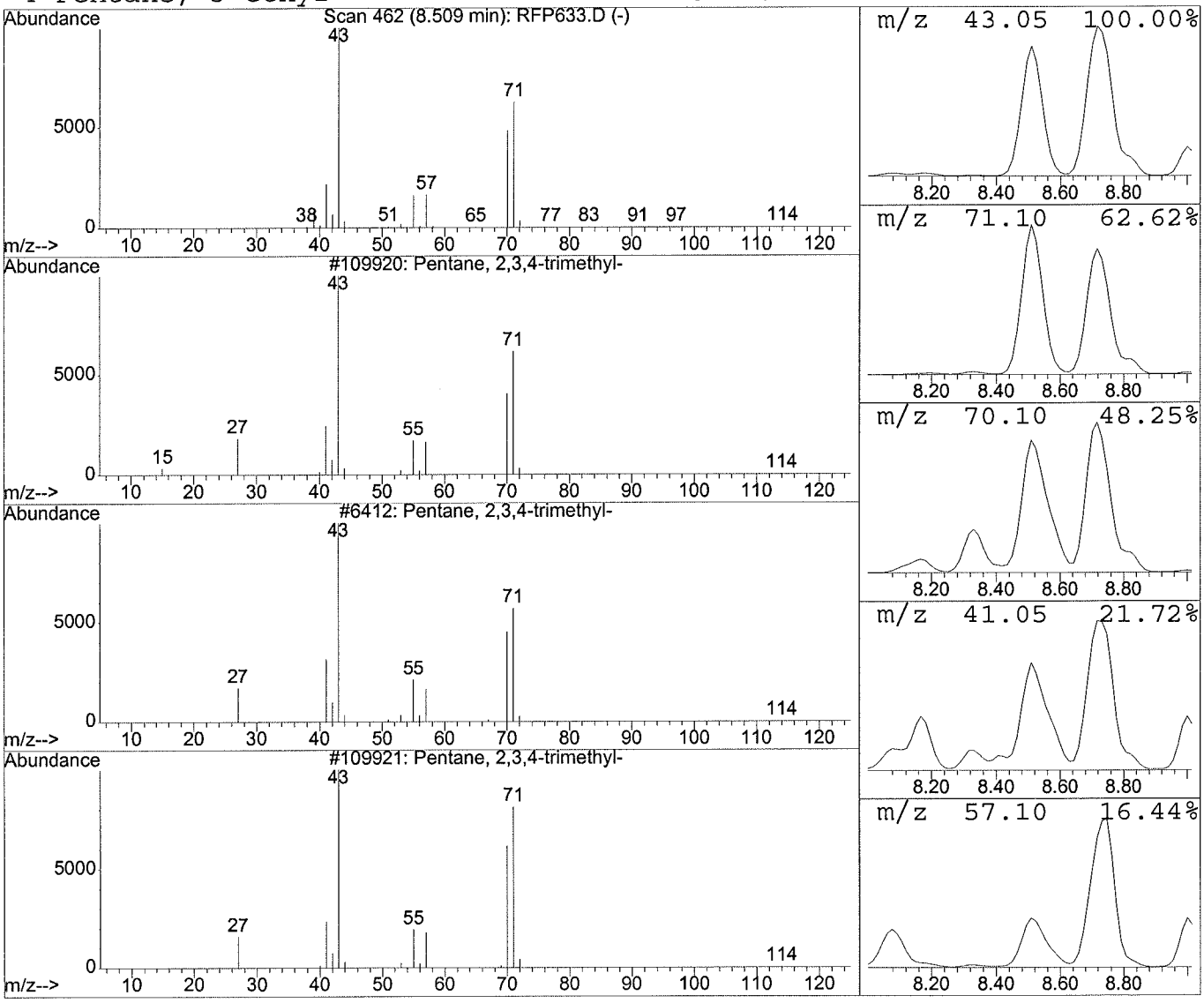
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 4 Pentane, 2,3,4-trimethyl- Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.51	197.65 ug/l	39772200	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
2	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	90
3	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	83
4	Pentane, 3-ethyl-	100	C7H16	000617-78-7	83



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D Vial: 25
Acq On : 29 Jun 2018 7:37 pm Operator: ODinh
Sample : 18F187-16 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

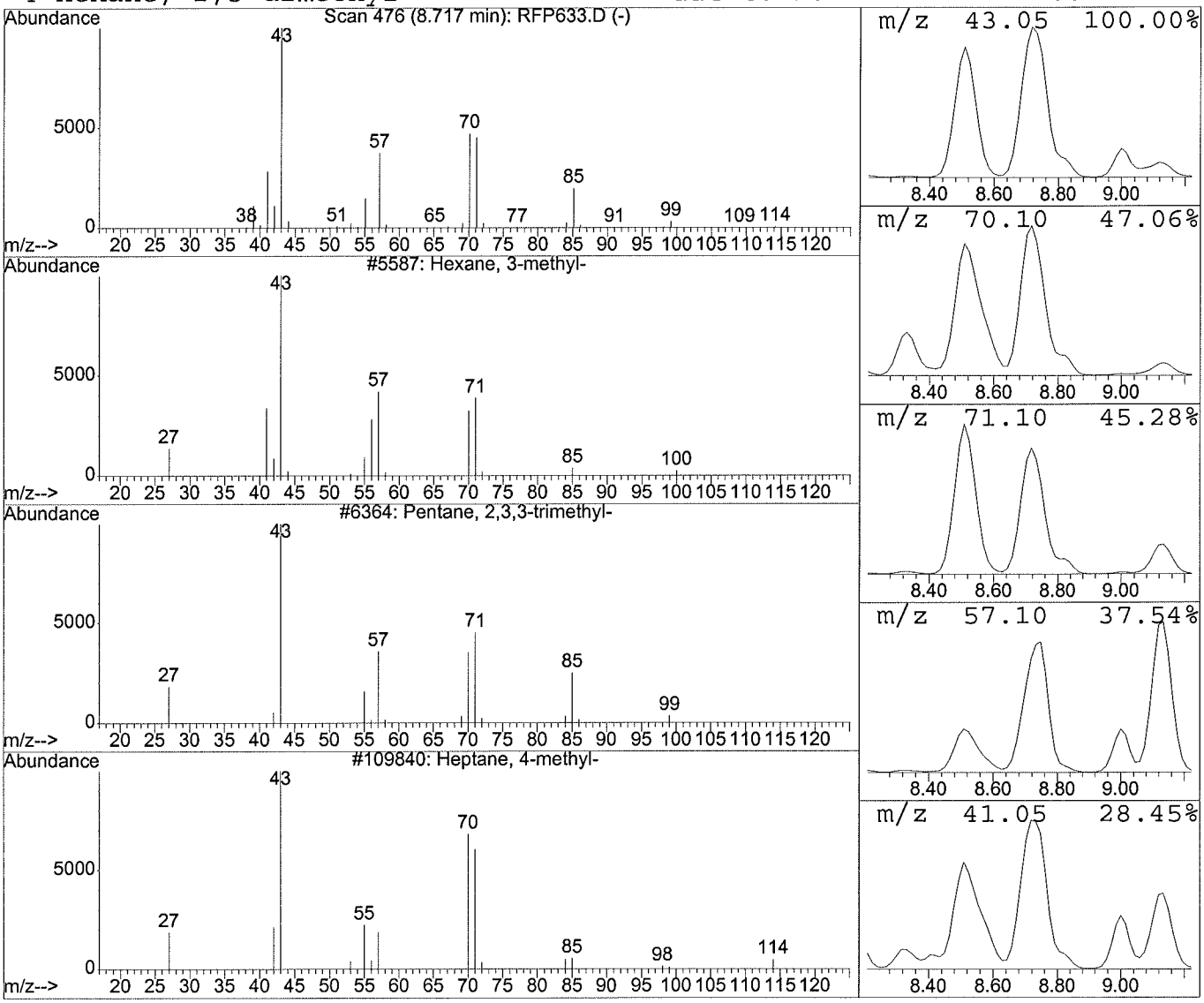
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 5 Hexane, 3-methyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.72	260.82 ug/l	52482400	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Hexane, 3-methyl-	100	C7H16	000589-34-4	64
2	Pentane, 2,3,3-trimethyl-	114	C8H18	000560-21-4	64
3	Heptane, 4-methyl-	114	C8H18	000589-53-7	59
4	Hexane, 2,3-dimethyl-	114	C8H18	000584-94-1	58



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D Vial: 25
Acq On : 29 Jun 2018 7:37 pm Operator: ODinh
Sample : 18F187-16 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

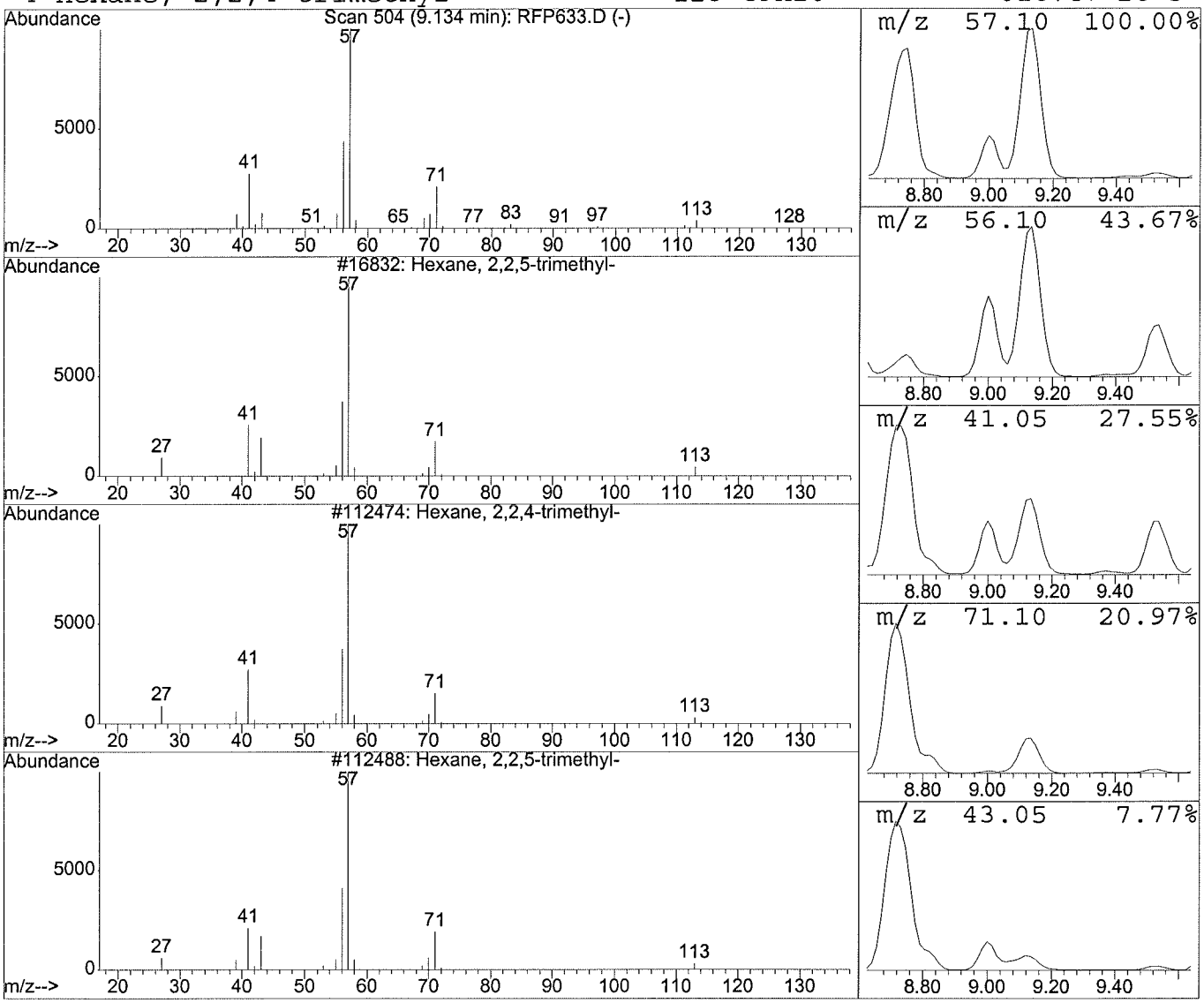
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 6 Hexane, 2,2,5-trimethyl- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.13	80.94 ug/l	16286300	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexane, 2,2,5-trimethyl-	128	C9H20	003522-94-9	83
2	Hexane, 2,2,4-trimethyl-	128	C9H20	016747-26-5	83
3	Hexane, 2,2,5-trimethyl-	128	C9H20	003522-94-9	83
4	Hexane, 2,2,4-trimethyl-	128	C9H20	016747-26-5	78



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

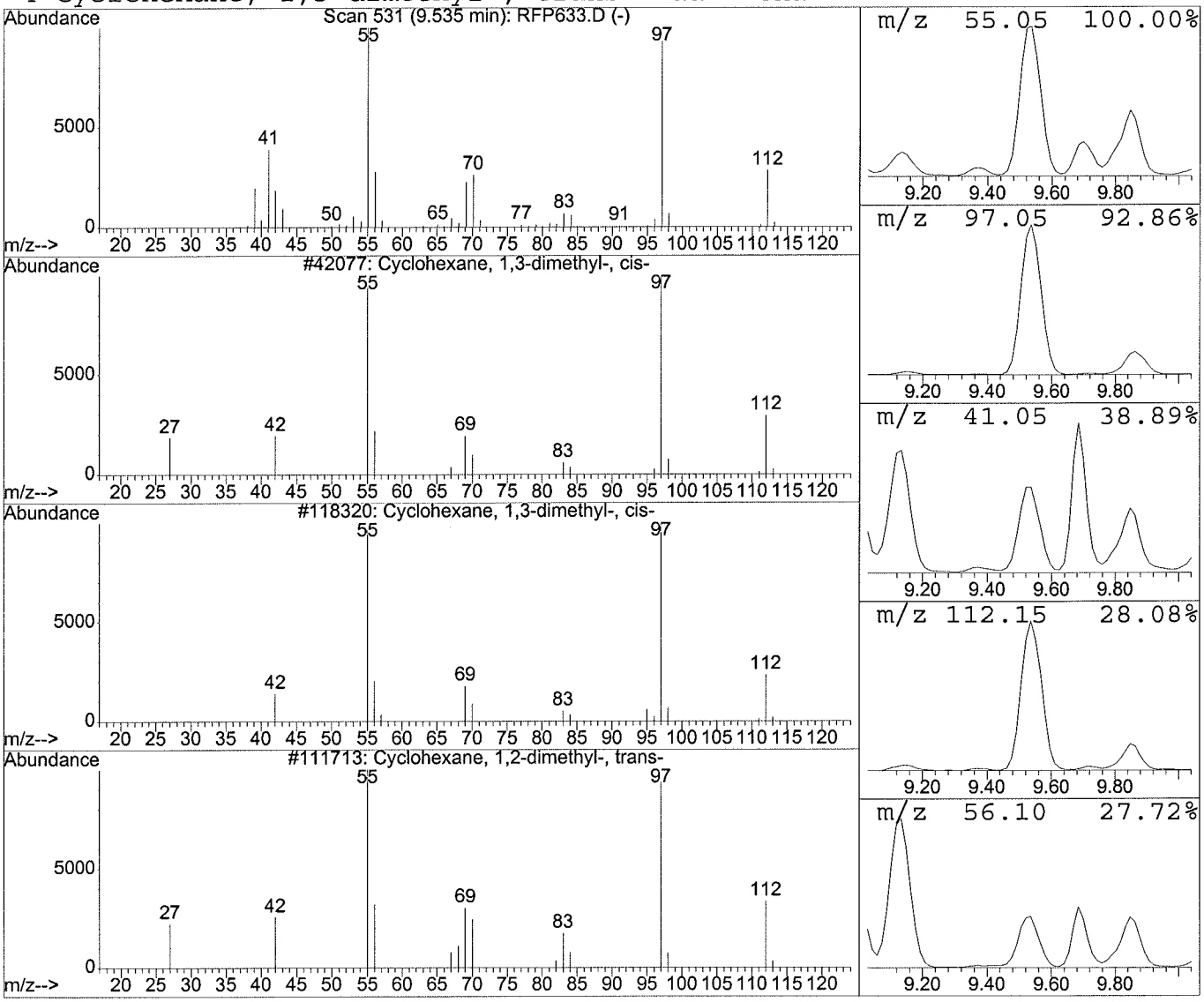
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 7 Cyclohexane, 1,3-dimethyl-, ci Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.54	68.47 ug/l	13776900	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,3-dimethyl-, cis-	112	C8H16	000638-04-0	94
2	Cyclohexane, 1,3-dimethyl-, cis-	112	C8H16	000638-04-0	93
3	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	91
4	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	90



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

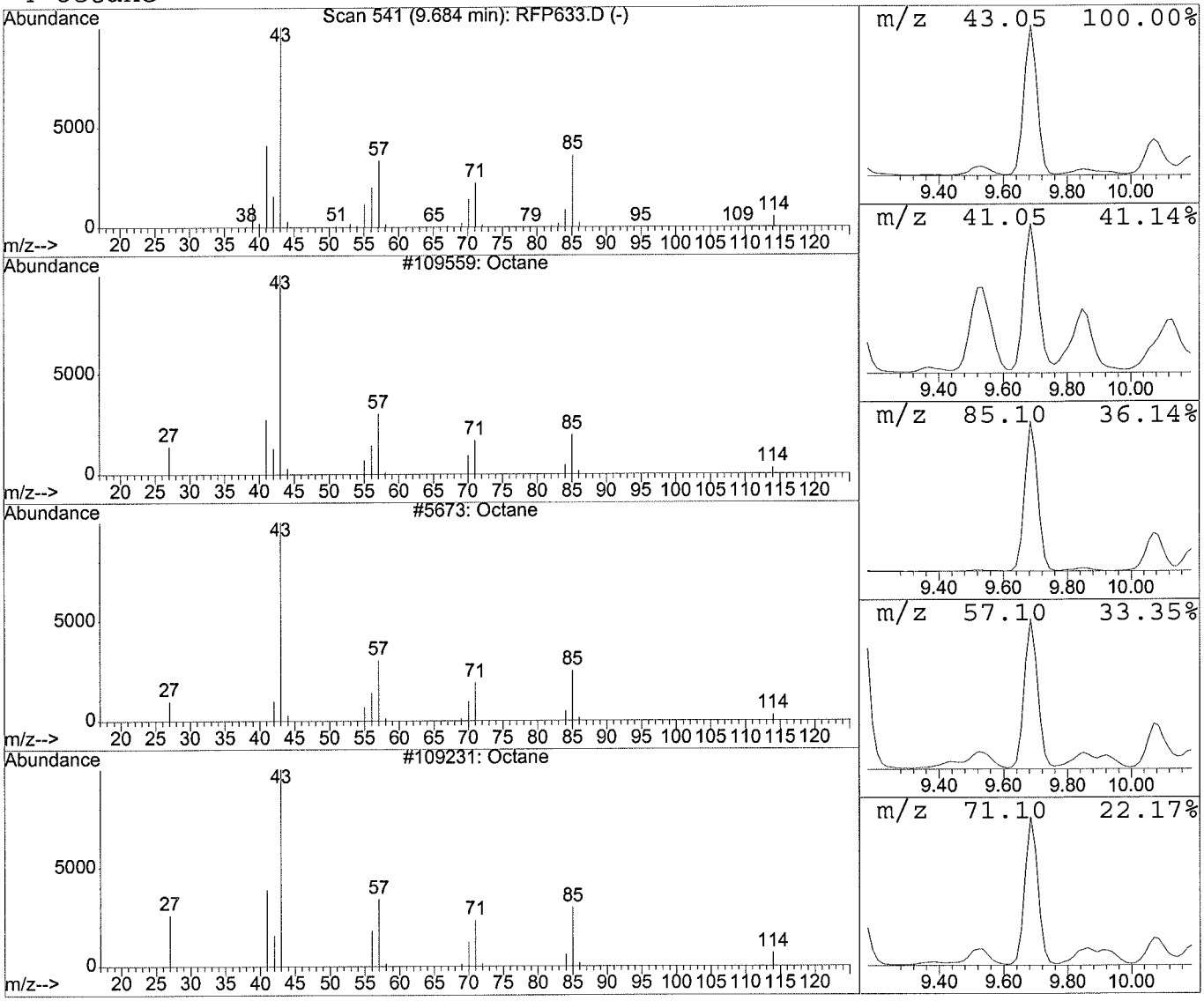
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 8 Octane — Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.68	60.43 ug/l	12160600	1,4-DIFLUOROBENZENE	7.63

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Octane	114	C8H18	000111-65-9	91
2	Octane	114	C8H18	000111-65-9	91
3	Octane	114	C8H18	000111-65-9	91
4	Octane	114	C8H18	000111-65-9	91



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

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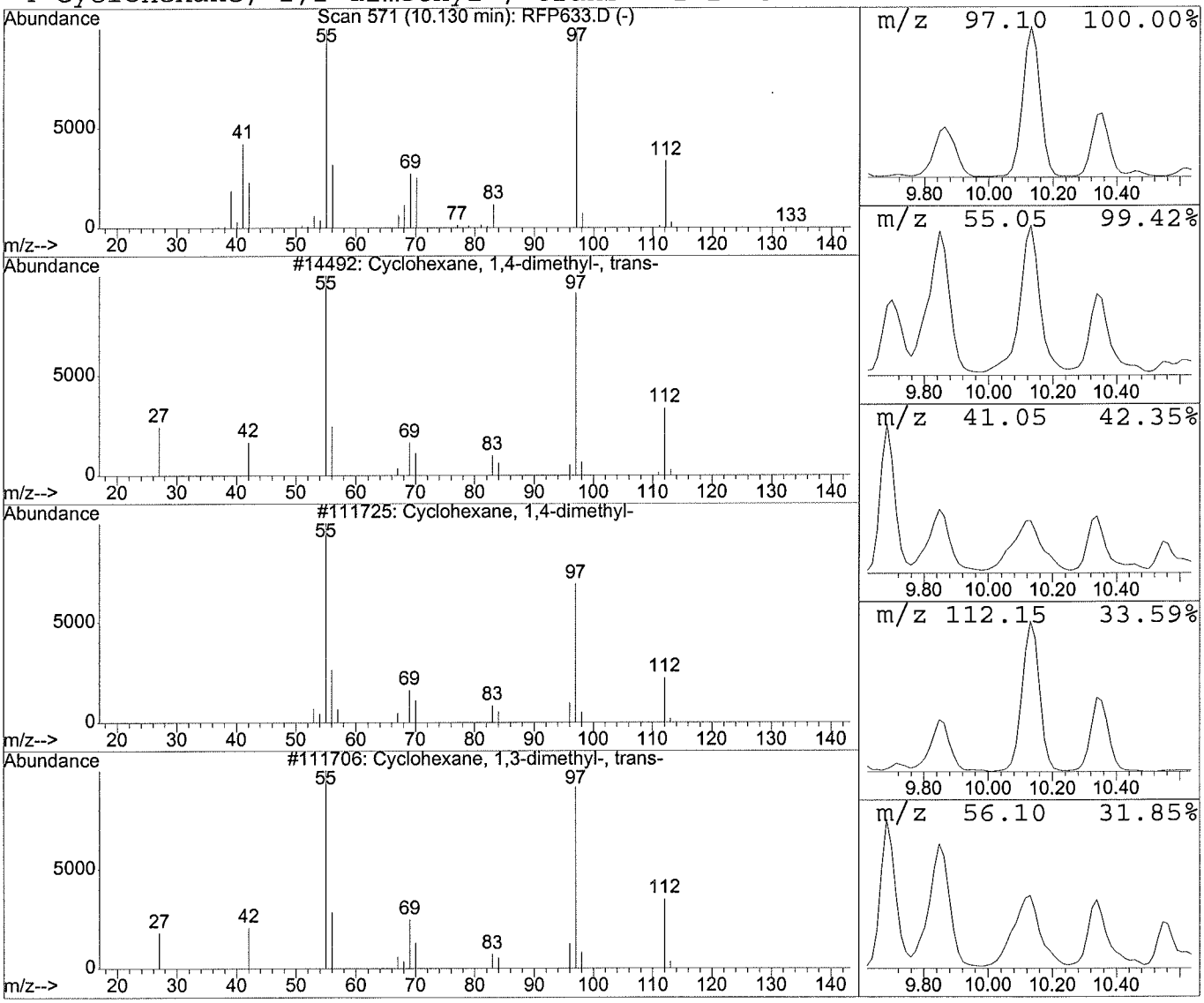
Peak Number 9 Cyclohexane, 1,4-dimethyl-, tr Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.13	45.82 ug/l	10282100	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Cyclohexane, 1,4-dimethyl-, trans-	112	C8H16	002207-04-7	90
2	Cyclohexane, 1,4-dimethyl-	112	C8H16	000589-90-2	90
3	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	90
4	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	90



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

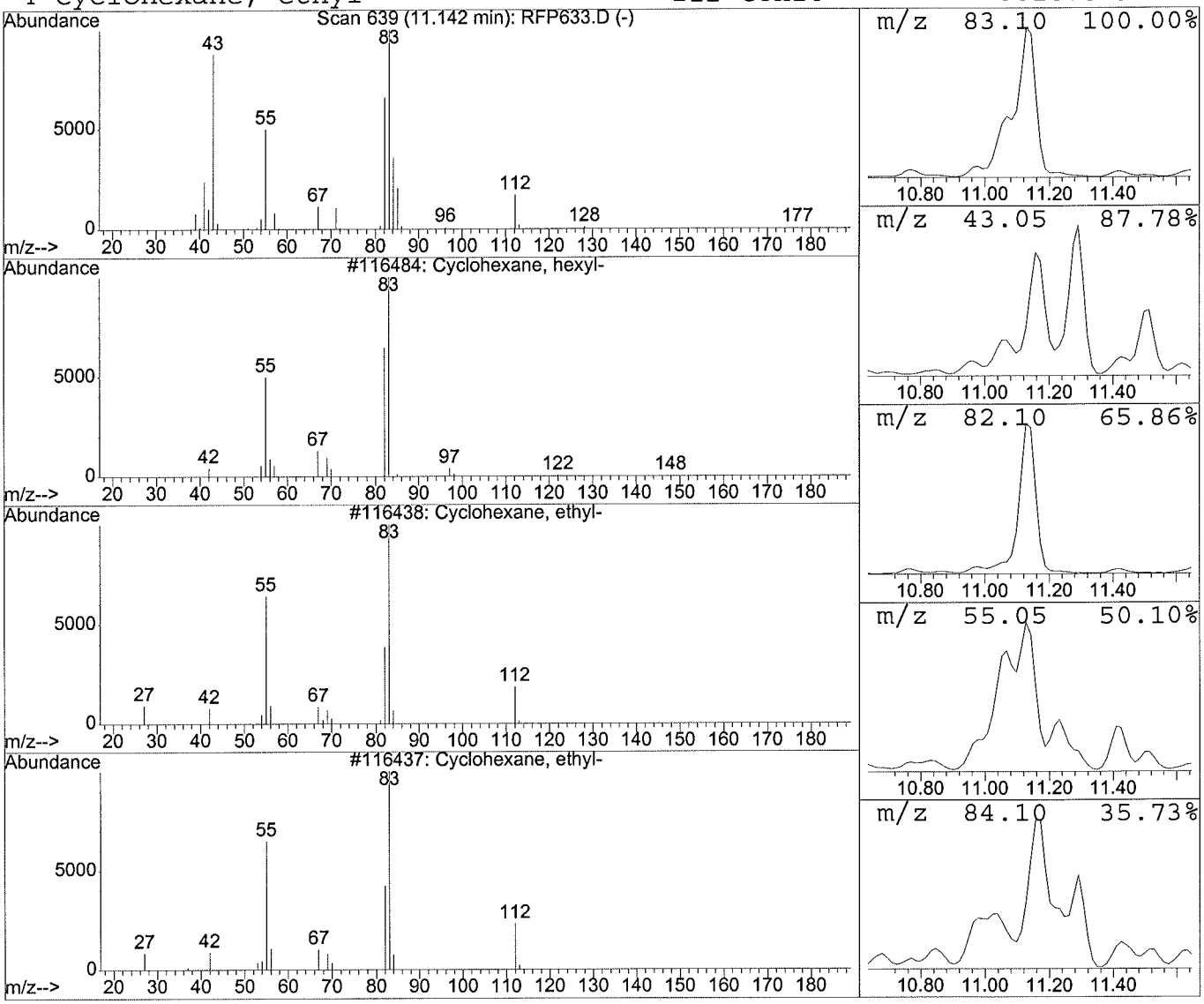
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 10 Cyclohexane, hexyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.14	61.04 ug/l	13696500	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Cyclohexane, hexyl-	168	C12H24	004292-75-5	50
2	Cyclohexane, ethyl-	112	C8H16	001678-91-7	49
3	Cyclohexane, ethyl-	112	C8H16	001678-91-7	49
4	Cyclohexane, ethyl-	112	C8H16	001678-91-7	49



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D Vial: 25
Acq On : 29 Jun 2018 7:37 pm Operator: ODinh
Sample : 18F187-16 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

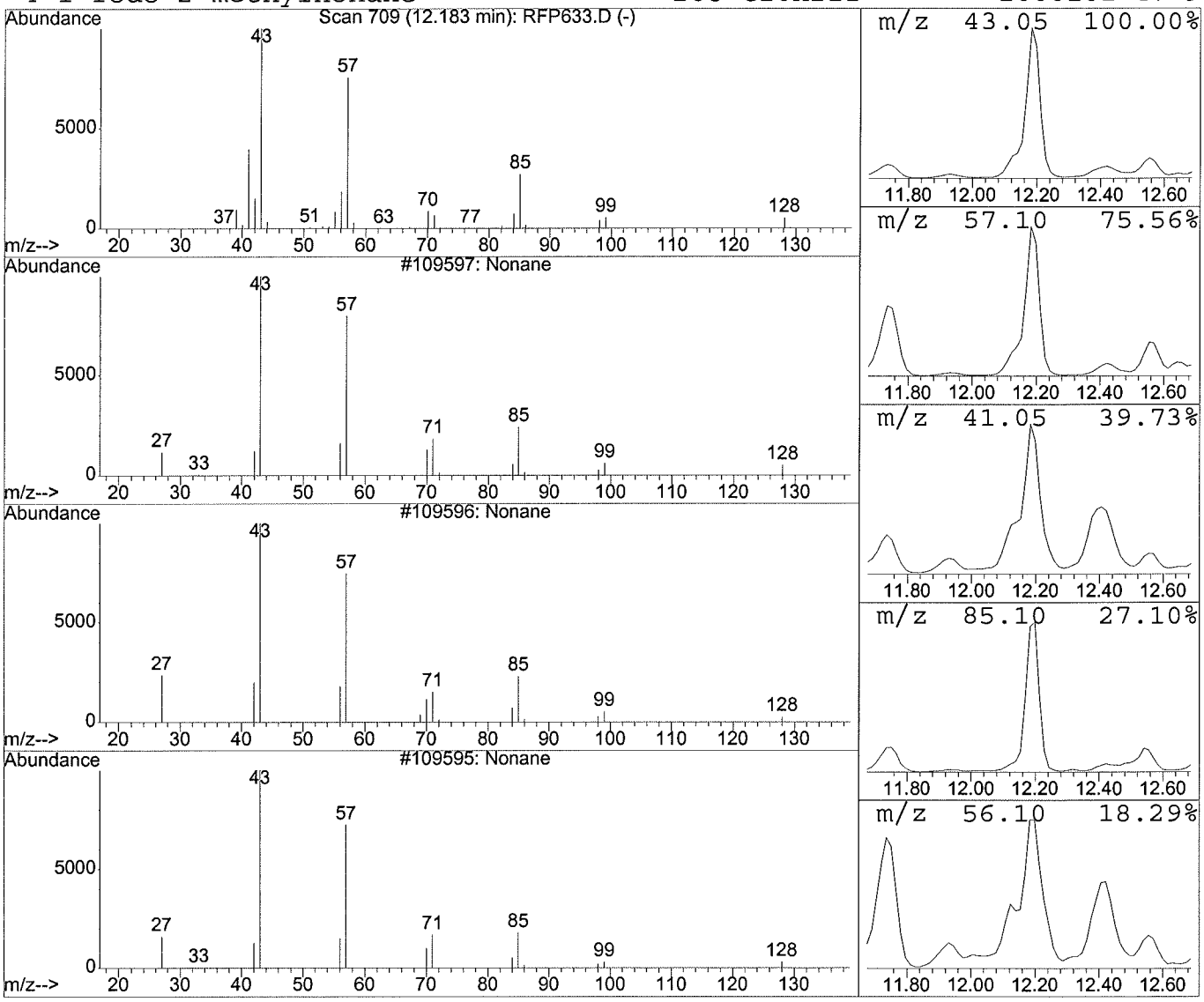
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 11 Nonane Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.18	58.22 ug/l	13064200	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Nonane	128	C9H20	000111-84-2	91
2	Nonane	128	C9H20	000111-84-2	86
3	Nonane	128	C9H20	000111-84-2	80
4	1-Iodo-2-methylnonane	268	C10H21I	1000101-47-9	73



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

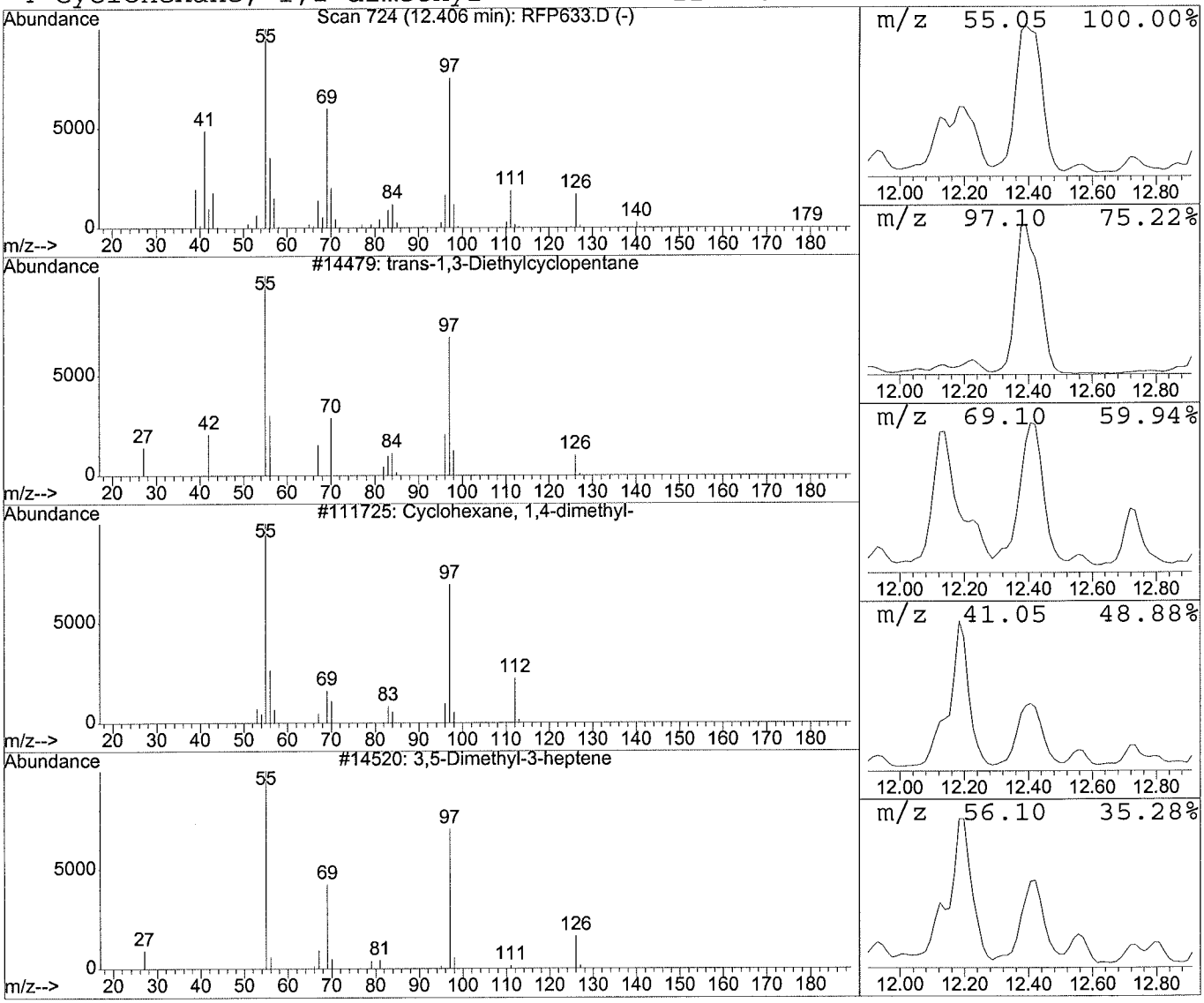
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 12 trans-1,3-Diethylcyclopentane Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.41	50.00 ug/l	11220100	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	trans-1,3-Diethylcyclopentane	126	C9H18	1000113-87-1	90
2	Cyclohexane, 1,4-dimethyl-	112	C8H16	000589-90-2	83
3	3,5-Dimethyl-3-heptene	126	C9H18	059643-68-4	52
4	Cyclohexane, 1,1-dimethyl-	112	C8H16	000590-66-9	50



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D Vial: 25
Acq On : 29 Jun 2018 7:37 pm Operator: ODinh
Sample : 18F187-16 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

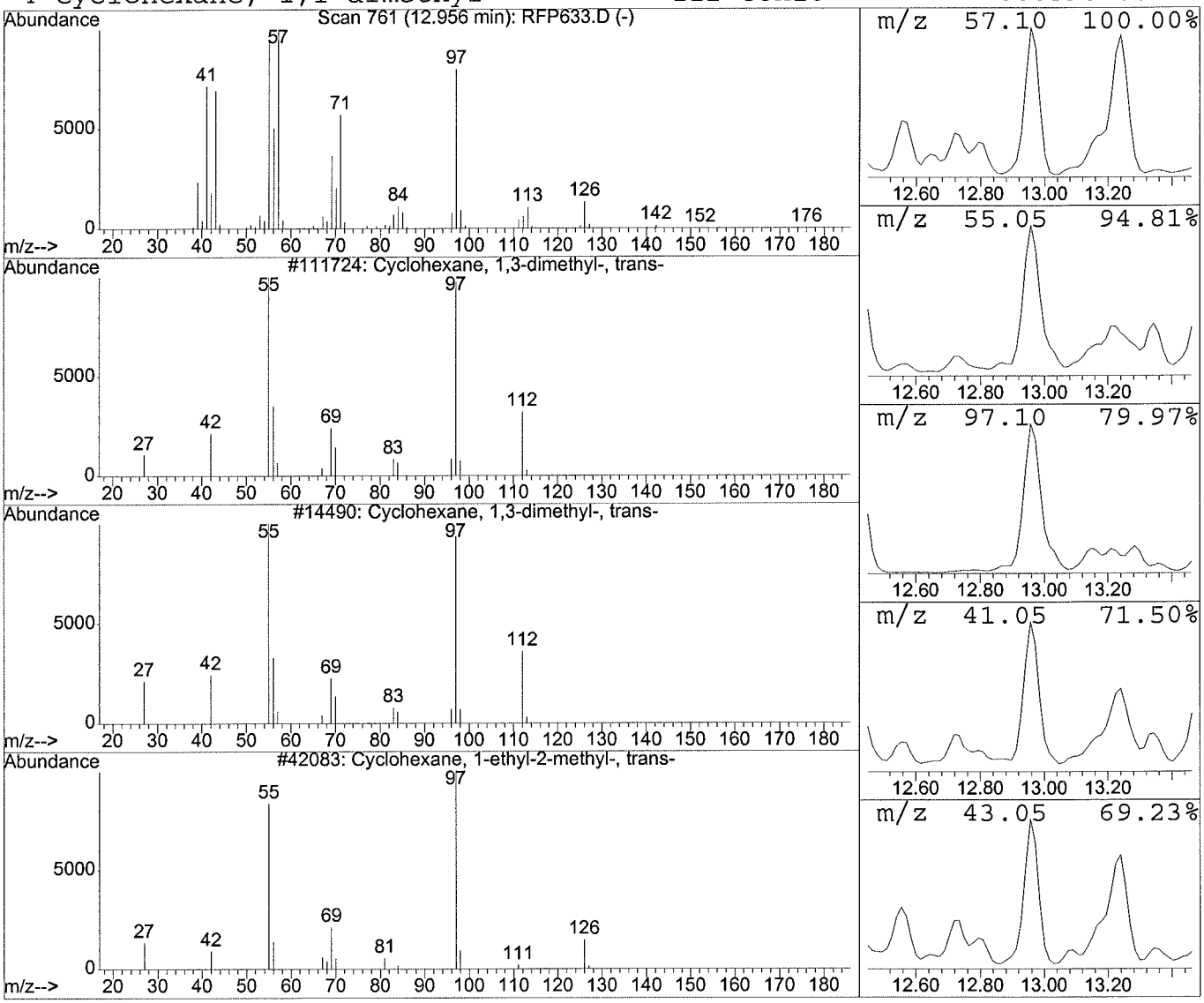
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 13 Cyclohexane, 1,3-dimethyl-, tr Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.96	49.41 ug/l	11087000	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	70
2	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	49
3	Cyclohexane, 1-ethyl-2-methyl-, tra	126	C9H18	004923-78-8	43
4	Cyclohexane, 1,1-dimethyl-	112	C8H16	000590-66-9	43



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

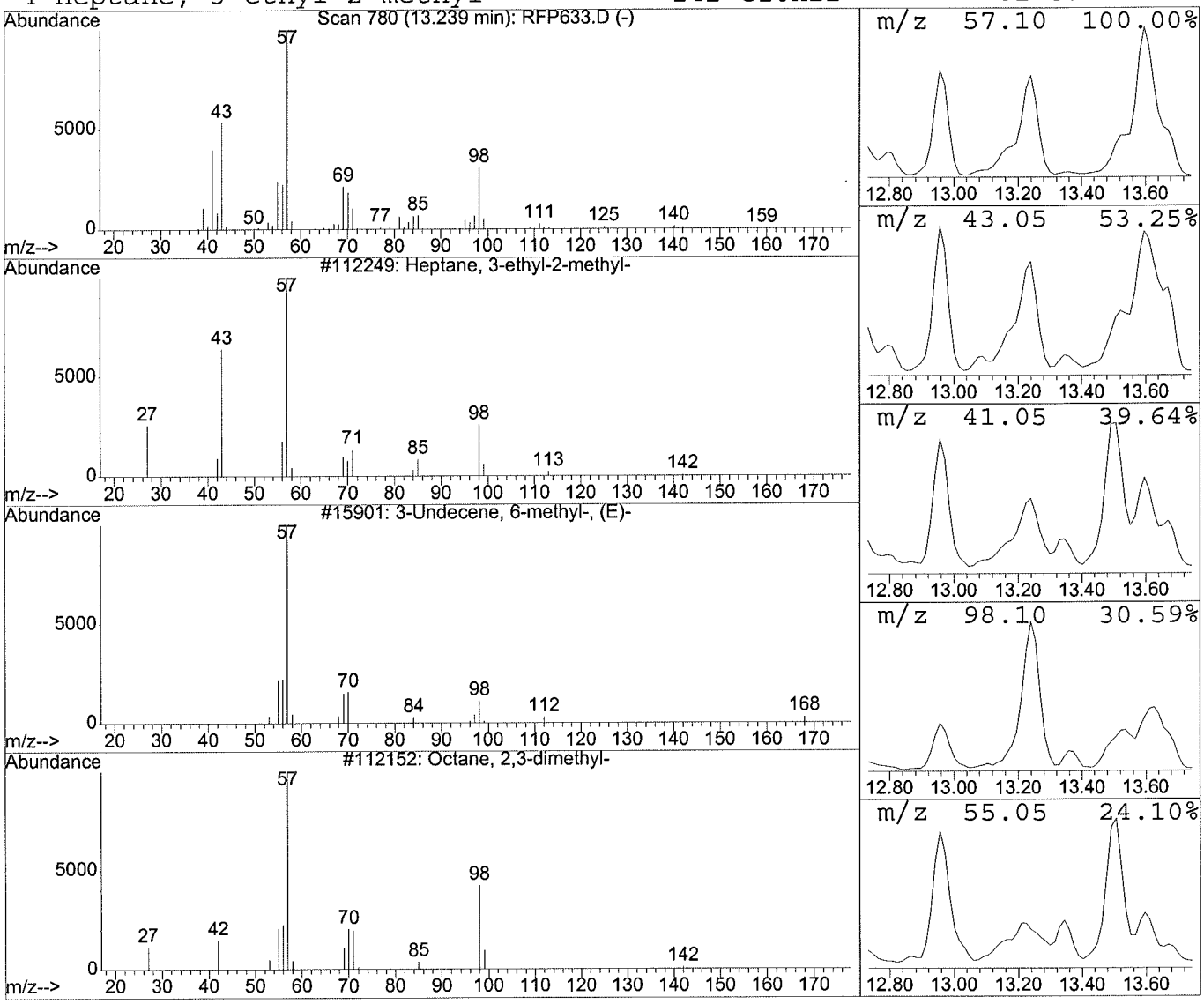
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 14 Heptane, 3-ethyl-2-methyl- Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.24	46.21 ug/l	10369000	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptane, 3-ethyl-2-methyl-	142	C10H22	014676-29-0	58
2	3-Undecene, 6-methyl-, (E)-	168	C12H24	074630-52-7	53
3	Octane, 2,3-dimethyl-	142	C10H22	007146-60-3	52
4	Heptane, 3-ethyl-2-methyl-	142	C10H22	014676-29-0	50



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D Vial: 25
Acq On : 29 Jun 2018 7:37 pm Operator: ODinh
Sample : 18F187-16 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

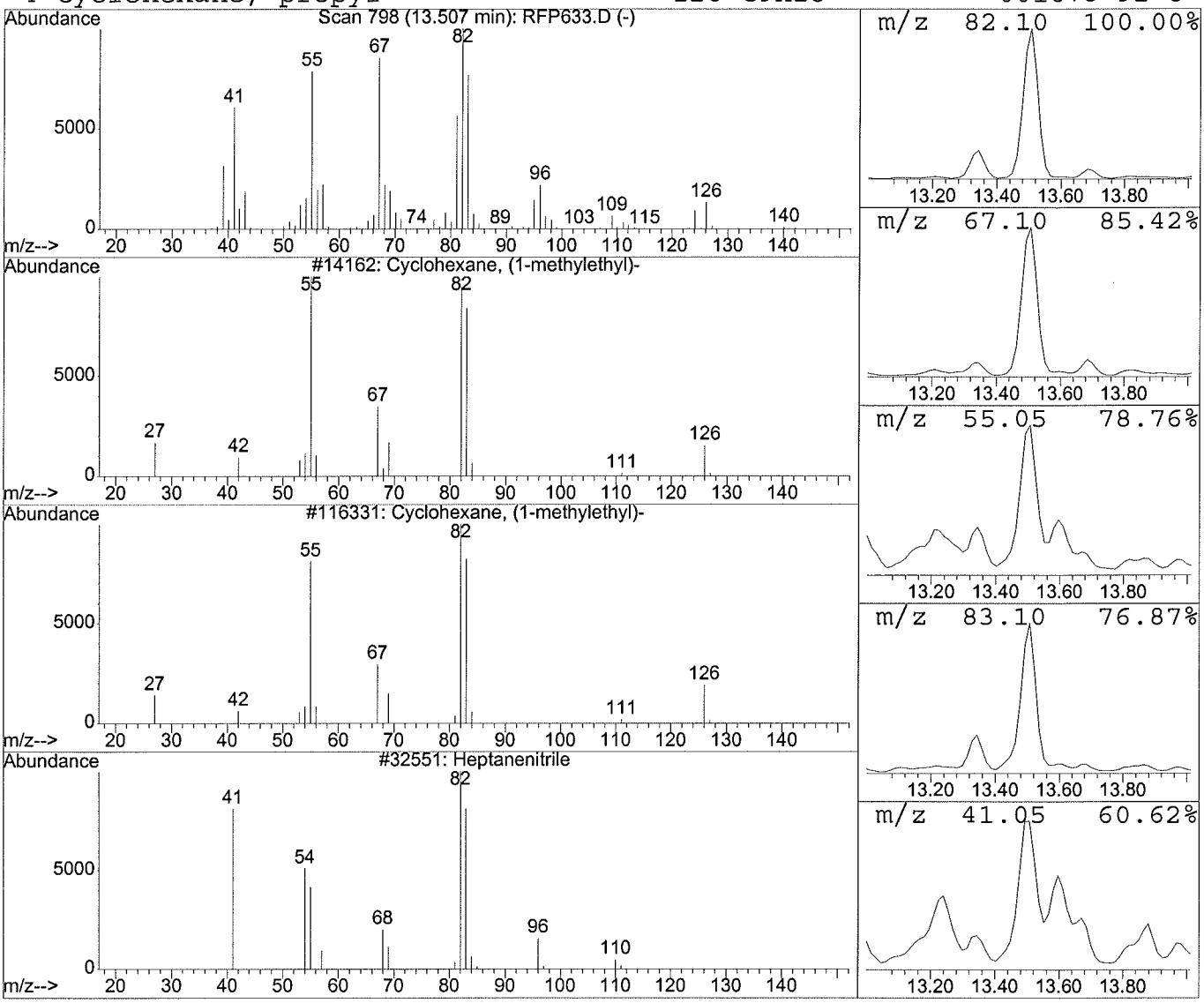
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 15 Cyclohexane, (1-methylethyl)- Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.51	77.92 ug/l	17486000	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qua
1	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	60
2	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	49
3	Heptanenitrile	111	C7H13N	000629-08-3	49
4	Cyclohexane, propyl-	126	C9H18	001678-92-8	43



Library Search Compound Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D
Acq On : 29 Jun 2018 7:37 pm
Sample : 18F187-16
Misc :
MS Integration Params: LSCINT.P

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

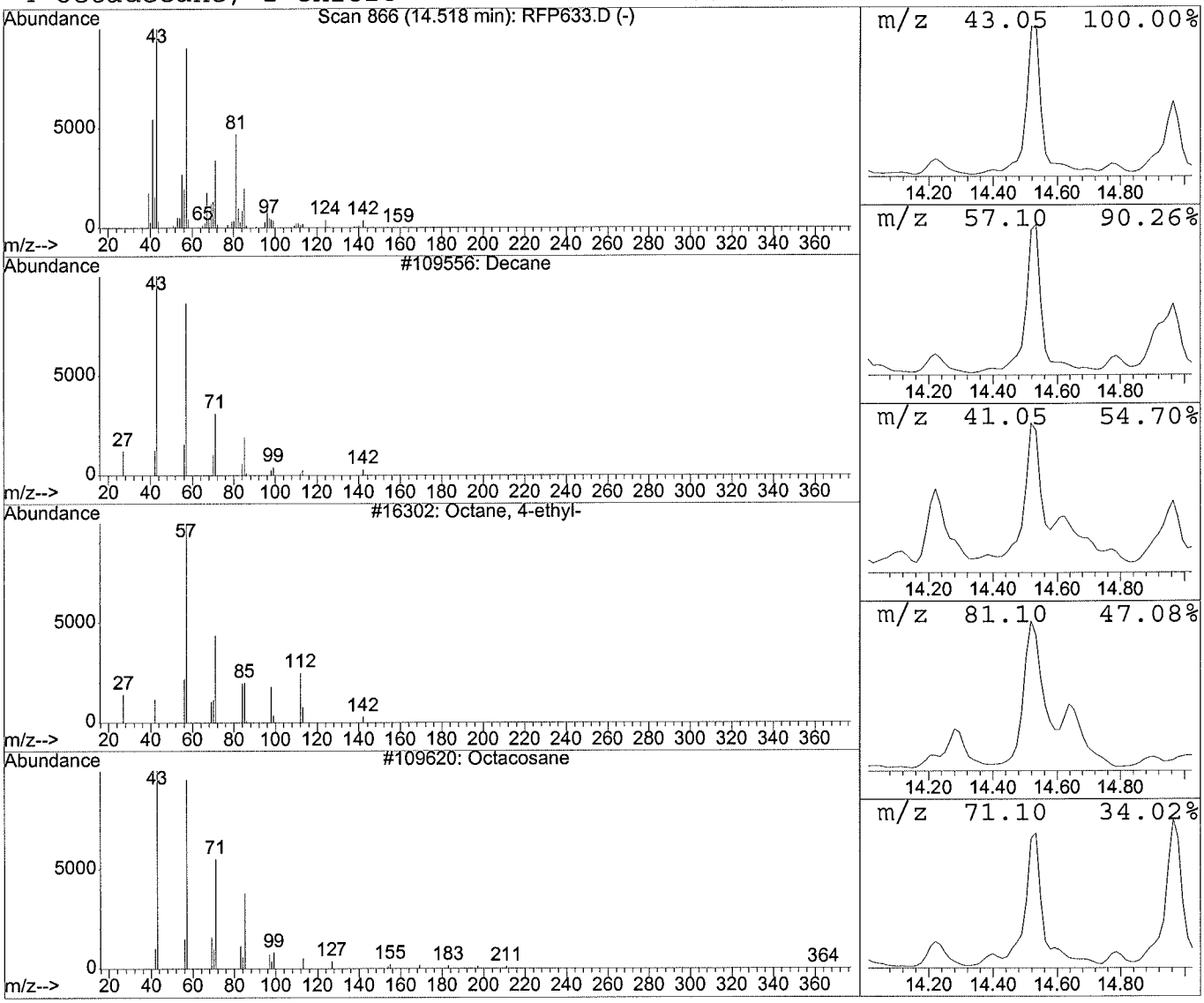
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

****

Peak Number 16 Decane — Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.52	69.03 ug/l	15489600	CHLOROBENZENE-D5	12.32

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane	142	C10H22	000124-18-5	76
2	Octane, 4-ethyl-	142	C10H22	015869-86-0	68
3	Octacosane	394	C28H58	000630-02-4	53
4	Octadecane, 1-chloro-	288	C18H37Cl	003386-33-2	53



Data File : D:\HPCHEM\1\DATA\18F29\RFP633.D Vial: 25
Acq On : 29 Jun 2018 7:37 pm Operator: ODinh
Sample : 18F187-16 Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: LSCINT.P

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Library : C:\DATABASE\NIST98.L

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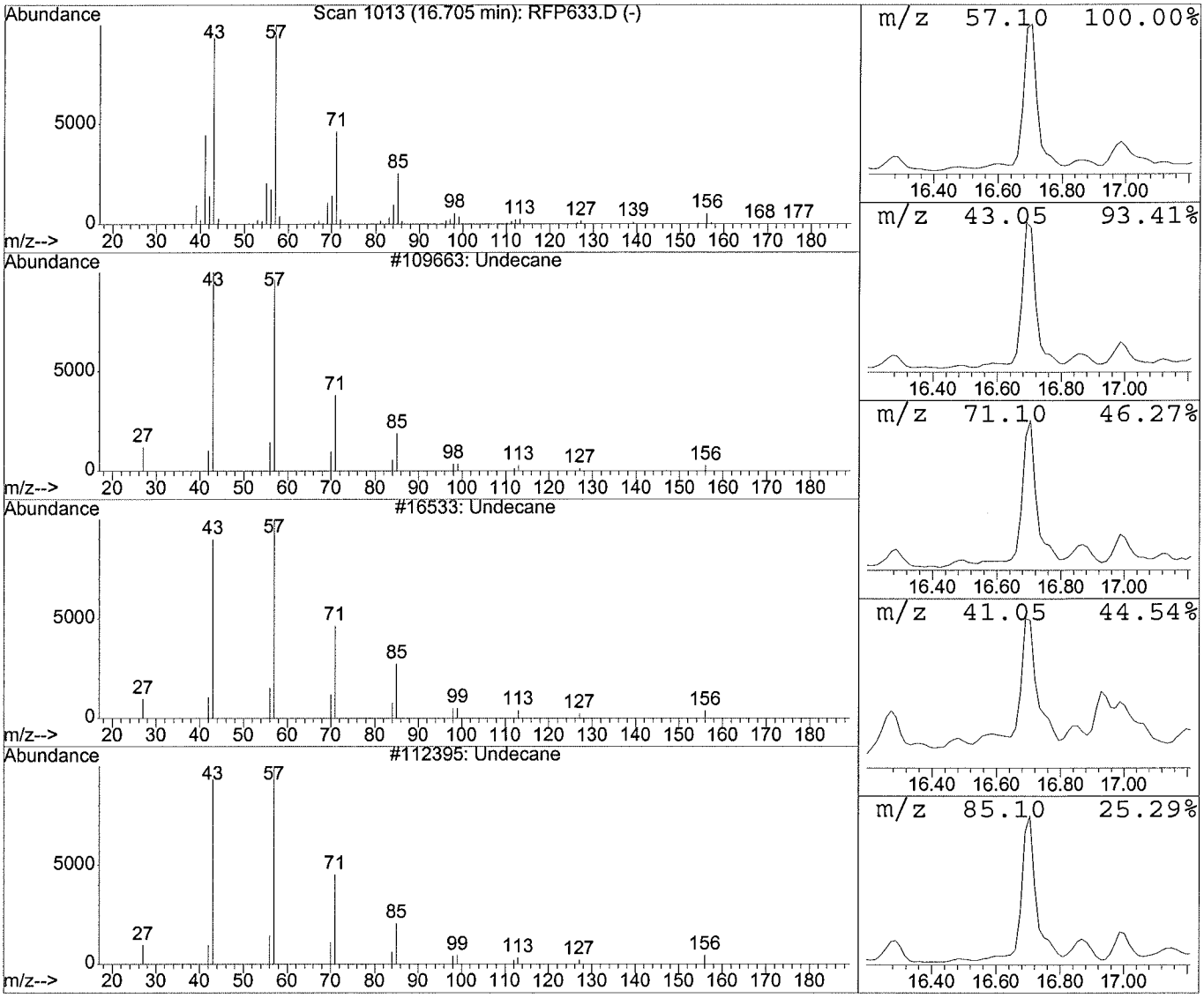
Peak Number 17 Undecane Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.70	50.00 ug/l	10044100	1,2-DICHLOROBENZENE-D4	17.17

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane	156	C11H24	001120-21-4	90
2	Undecane	156	C11H24	001120-21-4	87
3	Undecane	156	C11H24	001120-21-4	87
4	Undecane	156	C11H24	001120-21-4	80



Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 7:37 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP633.D
Name: 18F187-16
Misc:
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Pentane, 2,2,4-trime	6.74	475.3	ug/l	95632700	ISTD01	7.63	10061200	50.0
Hexane, 2,5-dimethyl	7.81	50.0	ug/l	10061200	ISTD01	7.63	10061200	50.0
Hydroxylamine, O-hex	7.91	61.7	ug/l	12405600	ISTD01	7.63	10061200	50.0
Pentane, 2,3,4-trime	8.51	197.7	ug/l	39772200	ISTD01	7.63	10061200	50.0
Hexane, 3-methyl-	8.72	260.8	ug/l	52482400	ISTD01	7.63	10061200	50.0
Hexane, 2,2,5-trimet	9.13	80.9	ug/l	16286300	ISTD01	7.63	10061200	50.0
Cyclohexane, 1,3-dim	9.54	68.5	ug/l	13776900	ISTD01	7.63	10061200	50.0
Octane	9.68	60.4	ug/l	12160600	ISTD01	7.63	10061200	50.0
Cyclohexane, 1,4-dim	10.13	45.8	ug/l	10282100	ISTD02	12.32	11220100	50.0
Cyclohexane, hexyl-	11.14	61.0	ug/l	13696500	ISTD02	12.32	11220100	50.0
Nonane	12.18	58.2	ug/l	13064200	ISTD02	12.32	11220100	50.0
trans-1,3-Diethylcyc	12.41	50.0	ug/l	11220100	ISTD02	12.32	11220100	50.0
Cyclohexane, 1,3-dim	12.96	49.4	ug/l	11087000	ISTD02	12.32	11220100	50.0
Heptane, 3-ethyl-2-m	13.24	46.2	ug/l	10369000	ISTD02	12.32	11220100	50.0
Cyclohexane, (1-meth	13.51	77.9	ug/l	17486000	ISTD02	12.32	11220100	50.0
Decane	14.52	69.0	ug/l	15489600	ISTD02	12.32	11220100	50.0
Undecane	16.70	50.0	ug/l	10044100	ISTD03	17.17	10044100	50.0

RFP633.D VO02F15.M Mon Jul 09 14:10:28 2018

QC SUMMARIES

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: NA
Project : JBER TO075	Date Received: 06/29/18
Batch No. : 18F187	Date Extracted: 06/29/18 12:16
Sample ID: MBLK1S	Date Analyzed: 06/29/18 12:16
Lab Samp ID: VS02F26B	Dilution Factor: 1
Lab File ID: RFP615	Matrix : SOIL
Ext Btch ID: VS02F26	% Moisture : NA
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,1-TRICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,2,2-TETRACHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,2-TRICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROETHENE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
1,2,3-TRICHLOROBENZENE	ND	0.0050	0.0010	0.0020
1,2,3-TRICHLOROPROPANE	ND	0.0050	0.0010	0.0020
1,2,4-TRICHLOROBENZENE	ND	0.0050	0.0010	0.0020
1,2,4-TRIMETHYLBENZENE	ND	0.0050	0.00055	0.0020
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0050	0.0010	0.0020
1,2-DIBROMOETHANE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROBENZENE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROPROPANE	ND	0.0050	0.00050	0.0010
1,3,5-TRIMETHYLBENZENE	ND	0.0050	0.00059	0.0020
1,3-DICHLOROBENZENE	ND	0.0050	0.00052	0.0010
1,3-DICHLOROPROPANE	ND	0.0050	0.00050	0.0010
1,4-DICHLOROBENZENE	ND	0.0050	0.00050	0.0010
2,2-DICHLOROPROPANE	ND	0.0050	0.0010	0.0020
2-BUTANONE	ND	0.010	0.0025	0.0050
2-CHLOROTOLUENE	ND	0.0050	0.00082	0.0010
2-HEXANONE	ND	0.010	0.0029	0.0050
4-CHLOROTOLUENE	ND	0.0050	0.00067	0.0010
ACETONE	ND	0.010	0.0031	0.0050
BENZENE	ND	0.0050	0.00050	0.0010
BROMOBENZENE	ND	0.0050	0.00050	0.0010
BROMOCHLOROMETHANE	ND	0.0050	0.00050	0.0010
BROMODICHLOROMETHANE	ND	0.0050	0.00050	0.0010
BROMOFORM	ND	0.0050	0.0010	0.0020
BROMOMETHANE	ND	0.010	0.0018	0.0020
CARBON DISULFIDE	ND	0.0050	0.00050	0.0010
CARBON TETRACHLORIDE	ND	0.0050	0.00054	0.0010
CHLOROBENZENE	ND	0.0050	0.00050	0.0010
CHLOROETHANE	ND	0.0050	0.0013	0.0020
CHLOROFORM	ND	0.0050	0.00050	0.0010
CHLOROMETHANE	ND	0.0050	0.0010	0.0020
CIS-1,2-DICHLOROETHYLENE	ND	0.0050	0.00050	0.0010
CIS-1,3-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
CYCLOHEXANE	ND	0.0050	0.0012	0.0020
DIBROMOCHLOROMETHANE	ND	0.0050	0.00050	0.0010
DIBROMOMETHANE	ND	0.0050	0.00050	0.0010
DICHLORODIFLUOROMETHANE	ND	0.0050	0.0012	0.0020
ETHYLBENZENE	ND	0.0050	0.00050	0.0010
HEXACHLOROBUTADIENE	ND	0.0050	0.0010	0.0020
ISOPROPYLBENZENE	ND	0.0050	0.00064	0.0020
METHYLENE CHLORIDE	ND	0.010	0.0020	0.0050
M,P-XYLENE	ND	0.0050	0.0010	0.0020
4-METHYL-2-PENTANONE	ND	0.010	0.0028	0.0050
TERT-BUTYL METHYL ETHER	ND	0.0050	0.00050	0.0010
NAPHTHALENE	ND	0.0050	0.0010	0.0020
N-BUTYLBENZENE	ND	0.0050	0.00070	0.0010
N-PROPYLBENZENE	ND	0.0050	0.00065	0.0010
O-XYLENE	ND	0.0050	0.00050	0.0010
P-ISOPROPYLTOLUENE	ND	0.0050	0.00062	0.0010
SEC-BUTYLBENZENE	ND	0.0050	0.00067	0.0010
STYRENE	ND	0.0050	0.00050	0.0010
TERT-BUTYLBENZENE	ND	0.0050	0.00062	0.0010
TETRACHLOROETHENE	ND	0.0050	0.00050	0.0010
TOLUENE	ND	0.0050	0.00050	0.0010
TRANS-1,2-DCE	ND	0.0050	0.00050	0.0010
TRANS-1,3-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
TCE	ND	0.0050	0.00050	0.0010
TRICHLOROFLUOROMETHANE	ND	0.0050	0.0011	0.0020
TRICHLOROTRIFLUOROETHANE	ND	0.0050	0.0010	0.0020
VINYL CHLORIDE	ND	0.0050	0.0014	0.0020
VINYL ACETATE	ND	0.0050	0.0013	0.0020
XYLENES, TOTAL	ND	0.0050	0.00050	0.0010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0494	0.05000	98.8	71-136
4-BROMOFLUOROBENZENE	0.0500	0.05000	100	79-119
TOLUENE-D8	0.0530	0.05000	106	85-116
DIBROMOFLUOROMETHANE	0.0533	0.05000	107	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: NA
Project	: JBER TO075	Date Received	: 06/29/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 12:16
Sample ID	: MBLK1S	Date Analyzed	: 06/29/18 12:16
Lab Samp ID	: VS02F26B	Dilution Factor	: 1
Lab File ID	: RFP615	Matrix	: SOIL
Ext Btch ID	: VS02F26	% Moisture	: NA
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: JBER T0075
BATCH NO.: 18F187
METHOD: SW5035A/8260B

MATRIX: SOIL % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1S
LAB SAMP ID: VS02F26B VS02F26X VS02F26C
LAB FILE ID: RFP615 RFP613 RFP612
DATE EXTRACTED: 06/29/1812:16 06/29/1811:26 06/29/1811:00 DATE COLLECTED: NA
DATE ANALYZED: 06/29/1812:16 06/29/1811:26 06/29/1811:00 DATE RECEIVED: 06/29/18
PREP. BATCH: VS02F26 VS02F26 VS02F26
CALIB. REF: RFP312 RFP312 RFP312

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1,2-Tetrachloroethane	ND	0.0500	0.0546	109	0.0500	0.0563	113	3	78-125	20
1,1,1-Trichloroethane	ND	0.0500	0.0542	108	0.0500	0.0585	117	8	73-130	20
1,1,2,2-Tetrachloroethane	ND	0.0500	0.0516	103	0.0500	0.0531	106	3	70-124	20
1,1,2-Trichloroethane	ND	0.0500	0.0524	105	0.0500	0.0538	108	3	78-121	20
1,1-Dichloroethane	ND	0.0500	0.0538	108	0.0500	0.0578	116	7	76-125	20
1,1-Dichloroethene	ND	0.0500	0.0492	98	0.0500	0.0532	106	8	70-131	20
1,1-Dichloropropene	ND	0.0500	0.0481	96	0.0500	0.0517	103	7	76-125	20
1,2,3-Trichlorobenzene	ND	0.0500	0.0487	97	0.0500	0.0448	90	8	66-130	20
1,2,3-Trichloropropane	ND	0.0500	0.0498	100	0.0500	0.0515	103	3	73-125	20
1,2,4-Trichlorobenzene	ND	0.0500	0.0502	100	0.0500	0.0481	96	4	67-129	20
1,2,4-Trimethylbenzene	ND	0.0500	0.0510	102	0.0500	0.0530	106	4	75-123	20
1,2-Dibromo-3-chloropropane	ND	0.0500	0.0439	88	0.0500	0.0445	89	1	61-132	20
1,2-Dibromoethane	ND	0.0500	0.0509	102	0.0500	0.0516	103	1	78-122	20
1,2-Dichlorobenzene	ND	0.0500	0.0516	103	0.0500	0.0531	106	3	78-121	20
1,2-Dichloroethane	ND	0.0500	0.0508	102	0.0500	0.0533	107	5	73-128	20
1,2-Dichloropropane	ND	0.0500	0.0519	104	0.0500	0.0559	112	8	76-123	20
1,3,5-Trimethylbenzene	ND	0.0500	0.0519	104	0.0500	0.0546	109	5	73-124	20
1,3-Dichlorobenzene	ND	0.0500	0.0513	103	0.0500	0.0530	106	3	77-121	20
1,3-Dichloropropane	ND	0.0500	0.0505	101	0.0500	0.0516	103	2	77-121	20
1,4-Dichlorobenzene	ND	0.0500	0.0524	105	0.0500	0.0536	107	2	75-120	20
2,2-Dichloropropane	ND	0.0500	0.0552	110	0.0500	0.0606	121	9	67-133	20
2-Butanone	ND	0.250	0.271	108	0.250	0.269	108	1	51-148	20
2-Chlorotoluene	ND	0.0500	0.0507	101	0.0500	0.0523	105	3	75-122	20
2-Hexanone	ND	0.250	0.277	111	0.250	0.268	107	3	53-145	20
4-Chlorotoluene	ND	0.0500	0.0499	100	0.0500	0.0535	107	7	72-124	20
Acetone	ND	0.250	0.285	114	0.250	0.273	109	4	36-164	20
Benzene	ND	0.0500	0.0502	100	0.0500	0.0537	107	7	77-121	20
Bromobenzene	ND	0.0500	0.0505	101	0.0500	0.0532	106	5	78-121	20
Bromochloromethane	ND	0.0500	0.0516	103	0.0500	0.0541	108	5	78-125	20
Bromodichloromethane	ND	0.0500	0.0523	105	0.0500	0.0552	110	5	75-127	20
Bromoform	ND	0.0500	0.0463	93	0.0500	0.0473	95	2	67-132	20
Bromomethane	ND	0.0500	0.0393	79	0.0500	0.0431	86	9	53-143	20
Carbon Disulfide	ND	0.0500	0.0456	91	0.0500	0.0511	102	11	63-132	20
Carbon Tetrachloride	ND	0.0500	0.0535	107	0.0500	0.0578	116	8	70-135	20
Chlorobenzene	ND	0.0500	0.0520	104	0.0500	0.0541	108	4	79-120	20
Chloroethane	ND	0.0500	0.0463	93	0.0500	0.0516	103	11	59-139	20
Chloroform	ND	0.0500	0.0531	106	0.0500	0.0569	114	7	78-123	20
Chloromethane	ND	0.0500	0.0421	84	0.0500	0.0449	90	6	50-136	20
cis-1,2-Dichloroethylene	ND	0.0500	0.0524	105	0.0500	0.0559	112	7	77-123	20
cis-1,3-Dichloropropene	ND	0.0500	0.0529	106	0.0500	0.0564	113	6	74-126	20
Cyclohexane	ND	0.0500	0.0418	84	0.0500	0.0440	88	5	67-131	20
Dibromochloromethane	ND	0.0500	0.0520	104	0.0500	0.0532	106	2	74-126	20
Dibromomethane	ND	0.0500	0.0529	106	0.0500	0.0539	108	2	78-125	20
Dichlorodifluoromethane	ND	0.0500	0.0437	87	0.0500	0.0477	95	9	29-149	20
Ethylbenzene	ND	0.0500	0.0519	104	0.0500	0.0543	109	5	76-122	20
Hexachlorobutadiene	ND	0.0500	0.0491	98	0.0500	0.0493	99	0	61-135	20
Isopropylbenzene	ND	0.0500	0.0538	108	0.0500	0.0558	112	4	68-134	20
Methylene Chloride	ND	0.0500	0.0480	96	0.0500	0.0495	99	3	70-128	20
m,p-Xylene	ND	0.100	0.0992	99	0.100	0.106	106	6	77-124	20
4-Methyl-2-Pentanone	ND	0.250	0.266	106	0.250	0.264	106	1	65-135	20
tert-butyl methyl ether	ND	0.0500	0.0568	114	0.0500	0.0574	115	1	73-125	20
Naphthalene	ND	0.0500	0.0484	97	0.0500	0.0458	92	6	62-129	20
n-Butylbenzene	ND	0.0500	0.0509	102	0.0500	0.0540	108	6	70-128	20
n-Propylbenzene	ND	0.0500	0.0507	101	0.0500	0.0545	109	7	73-125	20
o-Xylene	ND	0.0500	0.0520	104	0.0500	0.0532	106	2	77-123	20
p-Isopropyltoluene	ND	0.0500	0.0511	102	0.0500	0.0538	108	5	73-127	20
Sec-Butylbenzene	ND	0.0500	0.0520	104	0.0500	0.0549	110	5	73-126	20
Styrene	ND	0.0500	0.0532	106	0.0500	0.0554	111	4	76-124	20
Tert-Butylbenzene	ND	0.0500	0.0507	101	0.0500	0.0541	108	7	73-125	20
Tetrachloroethene	ND	0.0500	0.0479	96	0.0500	0.0515	103	7	73-128	20
Toluene	ND	0.0500	0.0495	99	0.0500	0.0520	104	5	77-121	20
Trans-1,2-DCE	ND	0.0500	0.0504	101	0.0500	0.0554	111	10	74-125	20
Trans-1,3-Dichloropropene	ND	0.0500	0.0537	107	0.0500	0.0551	110	2	71-130	20
TCE	ND	0.0500	0.0492	98	0.0500	0.0534	107	8	77-123	20
Trichlorofluoromethane	ND	0.0500	0.0500	100	0.0500	0.0547	109	9	62-140	20
Trichlorotrifluoroethane	ND	0.0500	0.0527	105	0.0500	0.0578	116	9	66-136	20
Vinyl Chloride	ND	0.0500	0.0460	92	0.0500	0.0520	104	12	56-135	20
Vinyl Acetate	ND	0.0500	0.0511	102	0.0500	0.0541	108	6	50-151	20
Xylenes, Total	ND	0.150	0.151	101	0.150	0.159	106	5	78-124	20

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	0.0500	0.0478	96	0.0500	0.0486	97	71-136
4-Bromofluorobenzene	0.0500	0.0497	99	0.0500	0.0501	100	79-119
Toluene-d8	0.0500	0.0497	99	0.0500	0.0491	98	85-116
Dibromofluoromethane	0.0500	0.0510	102	0.0500	0.0515	103	78-119

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: NA
Project : JBER TO075	Date Received: 07/05/18
Batch No. : 18F187	Date Extracted: 07/05/18 11:15
Sample ID: MBLK2S	Date Analyzed: 07/05/18 11:15
Lab Samp ID: VS02G03B	Dilution Factor: 1
Lab File ID: RGP046	Matrix : SOIL
Ext Btch ID: VS02G03	% Moisture : NA
Calib. Ref.: RFP312	Instrument ID : T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,1-TRICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,2,2-TETRACHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1,2-TRICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROETHENE	ND	0.0050	0.00050	0.0010
1,1-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
1,2,3-TRICHLOROBENZENE	ND	0.0050	0.0010	0.0020
1,2,3-TRICHLOROPROPANE	ND	0.0050	0.0010	0.0020
1,2,4-TRICHLOROBENZENE	ND	0.0050	0.0010	0.0020
1,2,4-TRIMETHYLBENZENE	ND	0.0050	0.00055	0.0020
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.0050	0.0010	0.0020
1,2-DIBROMOETHANE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROBENZENE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROETHANE	ND	0.0050	0.00050	0.0010
1,2-DICHLOROPROPANE	ND	0.0050	0.00050	0.0010
1,3,5-TRIMETHYLBENZENE	ND	0.0050	0.00059	0.0020
1,3-DICHLOROBENZENE	ND	0.0050	0.00052	0.0010
1,3-DICHLOROPROPANE	ND	0.0050	0.00050	0.0010
1,4-DICHLOROBENZENE	ND	0.0050	0.00050	0.0010
2,2-DICHLOROPROPANE	ND	0.0050	0.0010	0.0020
2-BUTANONE	ND	0.010	0.0025	0.0050
2-CHLOROTOLUENE	ND	0.0050	0.00082	0.0010
2-HEXANONE	ND	0.010	0.0029	0.0050
4-CHLOROTOLUENE	ND	0.0050	0.00067	0.0010
ACETONE	ND	0.010	0.0031	0.0050
BENZENE	ND	0.0050	0.00050	0.0010
BROMOBENZENE	ND	0.0050	0.00050	0.0010
BROMOCHLOROMETHANE	ND	0.0050	0.00050	0.0010
BROMODICHLOROMETHANE	ND	0.0050	0.00050	0.0010
BROMOFORM	ND	0.0050	0.0010	0.0020
BROMOMETHANE	ND	0.010	0.0018	0.0020
CARBON DISULFIDE	ND	0.0050	0.00050	0.0010
CARBON TETRACHLORIDE	ND	0.0050	0.00054	0.0010
CHLOROBENZENE	ND	0.0050	0.00050	0.0010
CHLOROETHANE	ND	0.0050	0.0013	0.0020
CHLOROFORM	ND	0.0050	0.00050	0.0010
CHLOROMETHANE	ND	0.0050	0.0010	0.0020
CIS-1,2-DICHLOROETHYLENE	ND	0.0050	0.00050	0.0010
CIS-1,3-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
CYCLOHEXANE	ND	0.0050	0.0012	0.0020
DIBROMOCHLOROMETHANE	ND	0.0050	0.00050	0.0010
DIBROMOMETHANE	ND	0.0050	0.00050	0.0010
DICHLORODIFLUOROMETHANE	ND	0.0050	0.0012	0.0020
ETHYLBENZENE	ND	0.0050	0.00050	0.0010
HEXACHLOROBUTADIENE	ND	0.0050	0.0010	0.0020
ISOPROPYLBENZENE	ND	0.0050	0.00064	0.0020
METHYLENE CHLORIDE	ND	0.010	0.0020	0.0050
M,P-XYLENE	ND	0.0050	0.0010	0.0020
4-METHYL-2-PENTANONE	ND	0.010	0.0028	0.0050
TERT-BUTYL METHYL ETHER	ND	0.0050	0.00050	0.0010
NAPHTHALENE	ND	0.0050	0.0010	0.0020
N-BUTYLBENZENE	ND	0.0050	0.00070	0.0010
N-PROPYLBENZENE	ND	0.0050	0.00065	0.0010
O-XYLENE	ND	0.0050	0.00050	0.0010
P-ISOPROPYLTOLUENE	ND	0.0050	0.00062	0.0010
SEC-BUTYLBENZENE	ND	0.0050	0.00067	0.0010
STYRENE	ND	0.0050	0.00050	0.0010
TERT-BUTYLBENZENE	ND	0.0050	0.00062	0.0010
TETRACHLOROETHENE	ND	0.0050	0.00050	0.0010
TOLUENE	ND	0.0050	0.00050	0.0010
TRANS-1,2-DCE	ND	0.0050	0.00050	0.0010
TRANS-1,3-DICHLOROPROPENE	ND	0.0050	0.00050	0.0010
TCE	ND	0.0050	0.00050	0.0010
TRICHLOROFLUOROMETHANE	ND	0.0050	0.0011	0.0020
TRICHLOROTRIFLUOROETHANE	ND	0.0050	0.0010	0.0020
VINYL CHLORIDE	ND	0.0050	0.0014	0.0020
VINYL ACETATE	ND	0.0050	0.0013	0.0020
XYLENES, TOTAL	ND	0.0050	0.00050	0.0010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.0477	0.05000	95.4	71-136
4-BROMOFLUOROBENZENE	0.0484	0.05000	96.9	79-119
TOLUENE-D8	0.0509	0.05000	102	85-116
DIBROMOFLUOROMETHANE	0.0509	0.05000	102	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: NA
Project	: JBER TO075	Date Received	: 07/05/18
Batch No.	: 18F187	Date Extracted	: 07/05/18 11:15
Sample ID	: MBLK2S	Date Analyzed	: 07/05/18 11:15
Lab Samp ID	: VS02G03B	Dilution Factor	: 1
Lab File ID	: RGP046	Matrix	: SOIL
Ext Btch ID	: VS02G03	% Moisture	: NA
Calib. Ref.	: RFP312	Instrument ID	: T-002

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: JBER TO075
BATCH NO.: 18F187
METHOD: SW5035A/8260B

MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2S				
LAB SAMP ID:	VS02G03B	VS02G03L	VS02G03C		
LAB FILE ID:	RGP046	RGP043	RGP044		
DATE EXTRACTED:	07/05/1811:15	07/05/1810:00	07/05/1810:25	DATE COLLECTED:	NA
DATE ANALYZED:	07/05/1811:15	07/05/1810:00	07/05/1810:25	DATE RECEIVED:	07/05/18
PREP. BATCH:	VS02G03	VS02G03	VS02G03		
CALIB. REF:	RFP312	RFP312	RFP312		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1,2-Tetrachloroethane	ND	0.0500	0.0499	100	0.0500	0.0528	106	6	78-125	20
1,1,1-Trichloroethane	ND	0.0500	0.0499	100	0.0500	0.0558	112	11	73-130	20
1,1,2,2-Tetrachloroethane	ND	0.0500	0.0485	97	0.0500	0.0510	102	5	70-124	20
1,1,2-Trichloroethane	ND	0.0500	0.0478	96	0.0500	0.0493	99	3	78-121	20
1,1-Dichloroethane	ND	0.0500	0.0497	99	0.0500	0.0542	108	9	76-125	20
1,1-Dichloroethene	ND	0.0500	0.0480	96	0.0500	0.0522	104	8	70-131	20
1,1-Dichloropropene	ND	0.0500	0.0458	92	0.0500	0.0512	102	11	76-125	20
1,2,3-Trichlorobenzene	ND	0.0500	0.0436	87	0.0500	0.0452	90	3	66-130	20
1,2,3-Trichloropropane	ND	0.0500	0.0467	93	0.0500	0.0490	98	5	73-125	20
1,2,4-Trichlorobenzene	ND	0.0500	0.0469	94	0.0500	0.0495	99	5	67-129	20
1,2,4-Trimethylbenzene	ND	0.0500	0.0498	100	0.0500	0.0537	107	8	75-123	20
1,2-Dibromo-3-chloropropane	ND	0.0500	0.0430	86	0.0500	0.0440	88	2	61-132	20
1,2-Dibromoethane	ND	0.0500	0.0489	98	0.0500	0.0502	100	3	78-122	20
1,2-Dichlorobenzene	ND	0.0500	0.0476	95	0.0500	0.0515	103	8	78-121	20
1,2-Dichloroethane	ND	0.0500	0.0467	93	0.0500	0.0495	99	6	73-128	20
1,2-Dichloropropane	ND	0.0500	0.0476	95	0.0500	0.0516	103	8	76-123	20
1,3,5-Trimethylbenzene	ND	0.0500	0.0505	101	0.0500	0.0546	109	8	73-124	20
1,3-Dichlorobenzene	ND	0.0500	0.0489	98	0.0500	0.0522	104	7	77-121	20
1,3-Dichloropropane	ND	0.0500	0.0467	93	0.0500	0.0487	97	4	77-121	20
1,4-Dichlorobenzene	ND	0.0500	0.0499	100	0.0500	0.0526	105	5	75-120	20
2,2-Dichloropropane	ND	0.0500	0.0507	101	0.0500	0.0556	111	9	67-133	20
2-Butanone	ND	0.250	0.278	111	0.250	0.278	111	0	51-148	20
2-Chlorotoluene	ND	0.0500	0.0476	95	0.0500	0.0519	104	9	75-122	20
2-Hexanone	ND	0.250	0.285	114	0.250	0.277	111	3	53-145	20
4-Chlorotoluene	ND	0.0500	0.0497	99	0.0500	0.0526	105	6	72-124	20
Acetone	ND	0.250	0.293	117	0.250	0.286	114	2	36-164	20
Benzene	ND	0.0500	0.0473	95	0.0500	0.0518	104	9	77-121	20
Bromobenzene	ND	0.0500	0.0489	98	0.0500	0.0516	103	5	78-121	20
Bromochloromethane	ND	0.0500	0.0482	96	0.0500	0.0510	102	6	78-125	20
Bromodichloromethane	ND	0.0500	0.0477	95	0.0500	0.0516	103	8	75-127	20
Bromoform	ND	0.0500	0.0446	89	0.0500	0.0471	94	5	67-132	20
Bromomethane	ND	0.0500	0.0434	87	0.0500	0.0433	87	0	53-143	20
Carbon Disulfide	ND	0.0500	0.0529	106	0.0500	0.0546	109	3	63-132	20
Carbon Tetrachloride	ND	0.0500	0.0501	100	0.0500	0.0554	111	10	70-135	20
Chlorobenzene	ND	0.0500	0.0486	97	0.0500	0.0515	103	6	79-120	20
Chloroethane	ND	0.0500	0.0501	100	0.0500	0.0508	102	1	59-139	20
Chloroform	ND	0.0500	0.0483	97	0.0500	0.0524	105	8	78-123	20
Chloromethane	ND	0.0500	0.0450	90	0.0500	0.0454	91	1	50-136	20
cis-1,2-Dichloroethylene	ND	0.0500	0.0488	98	0.0500	0.0533	107	9	77-123	20
cis-1,3-Dichloropropene	ND	0.0500	0.0494	99	0.0500	0.0537	107	8	74-126	20
Cyclohexane	ND	0.0500	0.0508	102	0.0500	0.0536	107	5	67-131	20
Dibromochloromethane	ND	0.0500	0.0481	96	0.0500	0.0500	100	4	74-126	20
Dibromomethane	ND	0.0500	0.0486	97	0.0500	0.0512	102	5	78-125	20
Dichlorodifluoromethane	ND	0.0500	0.0420	84	0.0500	0.0420	84	0	29-149	20
Ethylbenzene	ND	0.0500	0.0491	98	0.0500	0.0529	106	7	76-122	20
Hexachlorobutadiene	ND	0.0500	0.0468	94	0.0500	0.0495	99	6	61-135	20
Isopropylbenzene	ND	0.0500	0.0510	102	0.0500	0.0545	109	7	68-134	20
Methylene Chloride	ND	0.0500	0.0448	90	0.0500	0.0485	97	8	70-128	20
m,p-Xylene	ND	0.100	0.0972	97	0.100	0.102	102	5	77-124	20
4-Methyl-2-Pentanone	ND	0.250	0.270	108	0.250	0.269	108	0	65-135	20
tert-butyl methyl ether	ND	0.0500	0.0514	103	0.0500	0.0554	111	7	73-125	20
Naphthalene	ND	0.0500	0.0455	91	0.0500	0.0460	92	1	62-129	20
n-Butylbenzene	ND	0.0500	0.0505	101	0.0500	0.0542	108	7	70-128	20
n-Propylbenzene	ND	0.0500	0.0499	100	0.0500	0.0544	109	9	73-125	20
o-Xylene	ND	0.0500	0.0497	99	0.0500	0.0524	105	5	77-123	20
p-Isopropyltoluene	ND	0.0500	0.0505	101	0.0500	0.0535	107	6	73-127	20
Sec-Butylbenzene	ND	0.0500	0.0505	101	0.0500	0.0541	108	7	73-126	20
Styrene	ND	0.0500	0.0511	102	0.0500	0.0542	108	6	76-124	20
Tert-Butylbenzene	ND	0.0500	0.0478	96	0.0500	0.0529	106	10	73-125	20
Tetrachloroethene	ND	0.0500	0.0476	95	0.0500	0.0508	102	7	73-128	20
Toluene	ND	0.0500	0.0481	96	0.0500	0.0508	102	6	77-121	20
Trans-1,2-DCE	ND	0.0500	0.0492	98	0.0500	0.0540	108	9	74-125	20
Trans-1,3-Dichloropropene	ND	0.0500	0.0505	101	0.0500	0.0534	107	6	71-130	20
TCE	ND	0.0500	0.0469	94	0.0500	0.0516	103	10	77-123	20
Trichlorofluoromethane	ND	0.0500	0.0508	102	0.0500	0.0512	102	1	62-140	20
Trichlorotrifluoroethane	ND	0.0500	0.0483	97	0.0500	0.0530	106	9	66-136	20
Vinyl Chloride	ND	0.0500	0.0473	95	0.0500	0.0486	97	3	56-135	20
Vinyl Acetate	ND	0.0500	0.0524	105	0.0500	0.0510	102	3	50-151	20
Xylenes, Total	ND	0.150	0.147	98	0.150	0.155	103	5	78-124	20

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	0.0500	0.0466	93	0.0500	0.0473	95	71-136
4-Bromofluorobenzene	0.0500	0.0481	96	0.0500	0.0484	97	79-119
Toluene-d8	0.0500	0.0481	96	0.0500	0.0479	96	85-116
Dibromofluoromethane	0.0500	0.0498	100	0.0500	0.0505	101	78-119

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CH2M HILL
PROJECT: JBER TO075
BATCH NO.: 18F187
METHOD: SW5035A/8260B

MATRIX: SOIL % MOISTURE: 3.9

DILUTION FACTOR:	0.91	0.94	1.04
SAMPLE ID:	18Q2DP009-SB0501-SO-0		
LAB SAMP ID:	F187-07R	F187-07M	F187-07S
LAB FILE ID:	RGP049	RGP058	RGP059
DATE EXTRACTED:	07/05/1812:31	07/05/1816:16	07/05/1816:42
DATE ANALYZED:	07/05/1812:31	07/05/1816:16	07/05/1816:42
PREP. BATCH:	VS02G03	VS02G03	VS02G03
CALIB. REF:	RFP312	RFP312	RFP312

DATE COLLECTED: 06/22/18
DATE RECEIVED: 06/26/18

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1,2-Tetrachloroethane	ND	0.0489	0.0436	89	0.0541	0.0548	101	13	78-125	20
1,1,1-Trichloroethane	ND	0.0489	0.0447	91	0.0541	0.0593	110	19	73-130	20
1,1,2,2-Tetrachloroethane	ND	0.0489	0.0512	105	0.0541	0.0591	109	4	70-124	20
1,1,2-Trichloroethane	ND	0.0489	0.0451	92	0.0541	0.0551	102	10	78-121	20
1,1-Dichloroethane	ND	0.0489	0.0439	90	0.0541	0.0575	106	16	76-125	20
1,1-Dichloroethene	ND	0.0489	0.0418	85	0.0541	0.0554	102	18	70-131	20
1,1-Dichloropropene	ND	0.0489	0.0401	82	0.0541	0.0535	99	19	76-125	20
1,2,3-Trichlorobenzene	ND	0.0489	0.0366	75	0.0541	0.0440	81	8	66-130	20
1,2,3-Trichloropropane	ND	0.0489	0.0518	106	0.0541	0.0609	113	6	73-125	20
1,2,4-Trichlorobenzene	ND	0.0489	0.0362	74	0.0541	0.0457	84	13	67-129	20
1,2,4-Trimethylbenzene	ND	0.0489	0.0442	90	0.0541	0.0540	100	11	75-123	20
1,2-Dibromo-3-chloropropane	ND	0.0489	0.0499	102	0.0541	0.0606	112	9	61-132	20
1,2-Dibromoethane	ND	0.0489	0.0451	92	0.0541	0.0557	103	11	78-122	20
1,2-Dichlorobenzene	ND	0.0489	0.0427	87	0.0541	0.0524	97	11	78-121	20
1,2-Dichloroethane	ND	0.0489	0.0429	88	0.0541	0.0543	100	13	73-128	20
1,2-Dichloropropane	ND	0.0489	0.0419	86	0.0541	0.0547	101	16	76-123	20
1,3,5-Trimethylbenzene	ND	0.0489	0.0449	92	0.0541	0.0540	100	8	73-124	20
1,3-Dichlorobenzene	ND	0.0489	0.0425	87	0.0541	0.0526	97	11	77-121	20
1,3-Dichloropropane	ND	0.0489	0.0430	88	0.0541	0.0527	97	10	77-121	20
1,4-Dichlorobenzene	ND	0.0489	0.0428	87	0.0541	0.0530	98	12	75-120	20
2,2-Dichloropropane	ND	0.0489	0.0452	92	0.0541	0.0605	112	20	67-133	20
2-Butanone	ND	0.245	0.341	140	0.271	0.409	151*	8	51-148	20
2-Chlorotoluene	ND	0.0489	0.0432	88	0.0541	0.0521	96	9	75-122	20
2-Hexanone	ND	0.245	0.318	130	0.271	0.384	142	9	53-145	20
4-Chlorotoluene	ND	0.0489	0.0432	88	0.0541	0.0531	98	11	72-124	20
Acetone	0.0295	0.245	0.427	162	0.271	0.491	171*	5	36-164	20
Benzene	ND	0.0489	0.0416	85	0.0541	0.0549	102	18	77-121	20
Bromobenzene	ND	0.0489	0.0431	88	0.0541	0.0537	99	12	78-121	20
Bromochloromethane	ND	0.0489	0.0440	90	0.0541	0.0541	100	11	78-125	20
Bromodichloromethane	ND	0.0489	0.0410	84	0.0541	0.0538	99	16	75-127	20
Bromoform	ND	0.0489	0.0431	88	0.0541	0.0511	94	7	67-132	20
Bromomethane	ND	0.0489	0.0419	86	0.0541	0.0475	88	2	53-143	20
Carbon Disulfide	ND	0.0489	0.0461	94	0.0541	0.0552	102	8	63-132	20
Carbon Tetrachloride	ND	0.0489	0.0444	91	0.0541	0.0575	106	15	70-135	20
Chlorobenzene	ND	0.0489	0.0421	86	0.0541	0.0546	101	16	79-120	20
Chloroethane	ND	0.0489	0.0485	99	0.0541	0.0556	103	4	59-139	20
Chloroform	ND	0.0489	0.0428	88	0.0541	0.0555	102	15	78-123	20
Chloromethane	ND	0.0489	0.0461	94	0.0541	0.0515	95	1	50-136	20
cis-1,2-Dichloroethylene	ND	0.0489	0.0425	87	0.0541	0.0560	104	18	77-123	20
cis-1,3-Dichloropropene	ND	0.0489	0.0415	85	0.0541	0.0551	102	18	74-126	20
Cyclohexane	ND	0.0489	0.0500	102	0.0541	0.0578	107	5	67-131	20
Dibromochloromethane	ND	0.0489	0.0434	89	0.0541	0.0536	99	11	74-126	20
Dibromomethane	ND	0.0489	0.0444	91	0.0541	0.0567	105	14	78-125	20
Dichlorodifluoromethane	ND	0.0489	0.0417	85	0.0541	0.0481	89	5	29-149	20
Ethylbenzene	ND	0.0489	0.0436	89	0.0541	0.0548	101	13	76-122	20
Hexachlorobutadiene	ND	0.0489	0.0358	73	0.0541	0.0395	73	0	61-135	20
Isopropylbenzene	ND	0.0489	0.0438	90	0.0541	0.0565	104	14	68-134	20
Methylene Chloride	ND	0.0489	0.0406	83	0.0541	0.0502	93	11	70-128	20
m,p-Xylene	ND	0.0978	0.0842	86	0.108	0.107	99	14	77-124	20
4-Methyl-2-Pentanone	ND	0.245	0.294	120	0.271	0.353	131	9	65-135	20
tert-butyl methyl ether	ND	0.0489	0.0488	100	0.0541	0.0564	104	4	73-125	20
Naphthalene	ND	0.0489	0.0381	78	0.0541	0.0495	91	15	62-129	20
n-Butylbenzene	ND	0.0489	0.0415	85	0.0541	0.0482	89	5	70-128	20
n-Propylbenzene	ND	0.0489	0.0444	91	0.0541	0.0542	100	9	73-125	20
o-Xylene	ND	0.0489	0.0426	87	0.0541	0.0550	102	16	77-123	20
p-Isopropyltoluene	ND	0.0489	0.0420	86	0.0541	0.0502	93	8	73-127	20
Sec-Butylbenzene	ND	0.0489	0.0430	88	0.0541	0.0512	95	8	73-126	20
Styrene	ND	0.0489	0.0438	90	0.0541	0.0559	103	13	76-124	20
Tert-Butylbenzene	ND	0.0489	0.0426	87	0.0541	0.0520	96	10	73-125	20
Tetrachloroethene	ND	0.0489	0.0410	84	0.0541	0.0528	98	15	73-128	20
Toluene	ND	0.0489	0.0418	86	0.0541	0.0532	98	13	77-121	20
Trans-1,2-DCE	ND	0.0489	0.0424	87	0.0541	0.0564	104	18	74-125	20
Trans-1,3-Dichloropropene	ND	0.0489	0.0432	88	0.0541	0.0542	100	13	71-130	20
TCE	ND	0.0489	0.0400	82	0.0541	0.0535	99	19	77-123	20
Trichlorofluoromethane	ND	0.0489	0.0510	104	0.0541	0.0590	109	5	62-140	20
Trichlorotrifluoroethane	ND	0.0489	0.0438	90	0.0541	0.0568	105	15	66-136	20
Vinyl Chloride	ND	0.0489	0.0433	89	0.0541	0.0517	95	7	56-135	20
Vinyl Acetate	ND	0.0489	0.0542	111	0.0541	0.0627	116	4	50-151	20
Xylenes, Total	ND	0.147	0.127	86	0.162	0.162	100	15	78-124	20

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	0.0489	0.0462	95	0.0541	0.0518	96	71-136
4-Bromofluorobenzene	0.0489	0.0477	97	0.0541	0.0520	96	79-119
Toluene-d8	0.0489	0.0479	98	0.0541	0.0513	95	85-116
Dibromofluoromethane	0.0489	0.0486	99	0.0541	0.0531	98	78-119

QC DATA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP615.D Vial: 7
Acq On : 29 Jun 2018 12:16 pm Operator: ODinh
Sample : VS02F26B 5.0g Inst : 02
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 2 10:31 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2169259	50.00	ug/l	-0.04
56) CHLOROBENZENE-D5	12.31	117	1771210	50.00	ug/l	-0.04
76) 1,2-DICHLOROBENZENE-D4	17.16	152	690385	50.00	ug/l	-0.04
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	824537	53.31	ug/l	-0.02
Spiked Amount 50.000			Recovery =	106.62%		
43) 1,2-Dichloroethane-d4	7.08	65	947752	49.38	ug/l	-0.04
Spiked Amount 50.000			Recovery =	98.76%		
57) Toluene-d8	9.89	98	2768011	52.98	ug/l	-0.02
Spiked Amount 50.000			Recovery =	105.96%		
79) 4-Bromofluorobenzene	14.41	95	831235	49.98	ug/l	-0.02
Spiked Amount 50.000			Recovery =	99.96%		

Target Compounds Qvalue

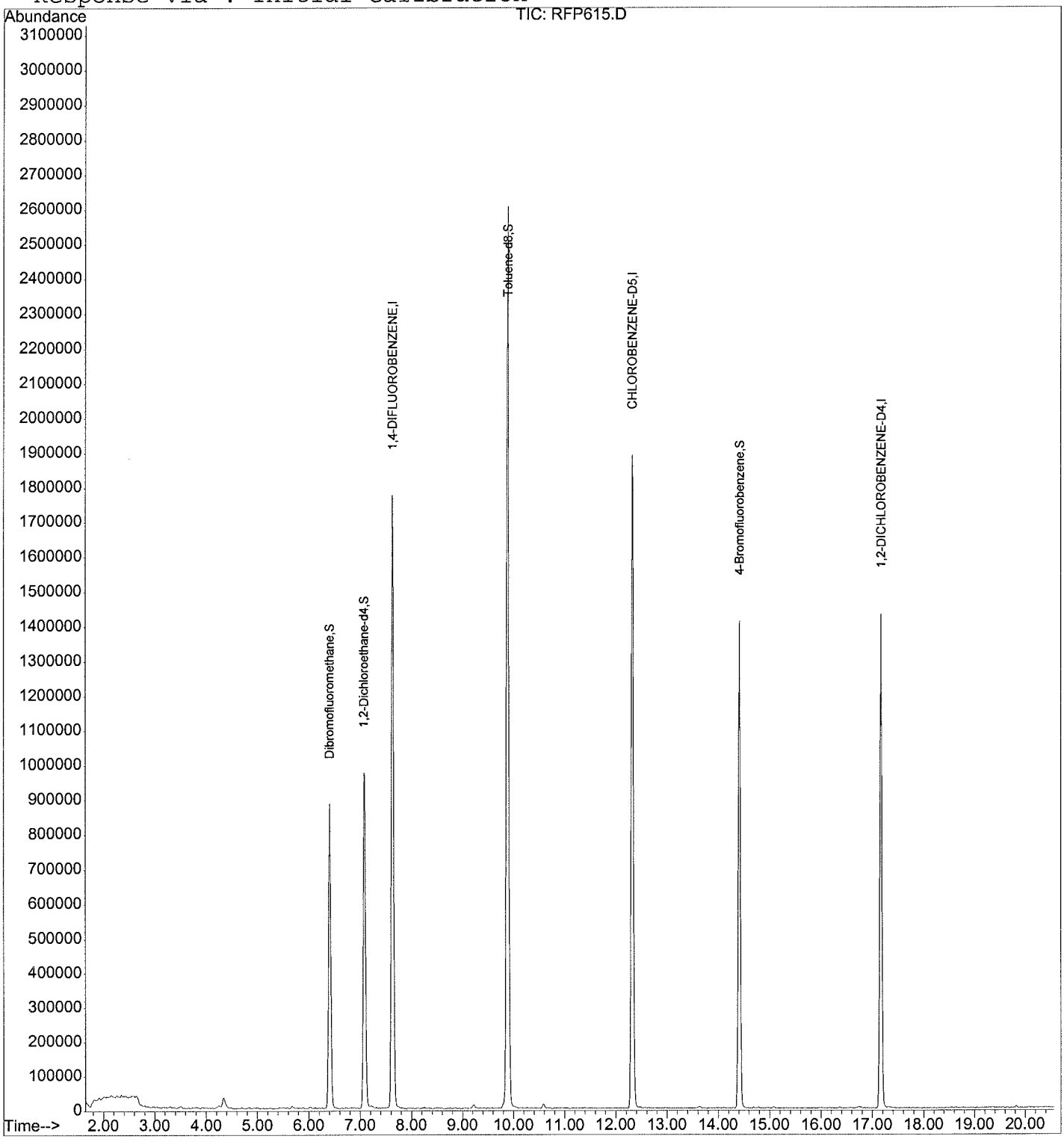
(#) = qualifier out of range (m) = manual integration
RFP615.D VO02F15.M Mon Jul 09 13:15:31 2018 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP615.D
Acq On : 29 Jun 2018 12:16 pm
Sample : VS02F26B 5.0g
Misc : BLANK
MS Integration Params: RTE.P
Quant Time: Jul 2 10:31 2018

Vial: 7
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP615.D Vial: 7
Acq On : 29 Jun 2018 12:16 pm Operator: ODinh
Sample : VS02F26B 5.0g Inst : 02
Misc : BLANK Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

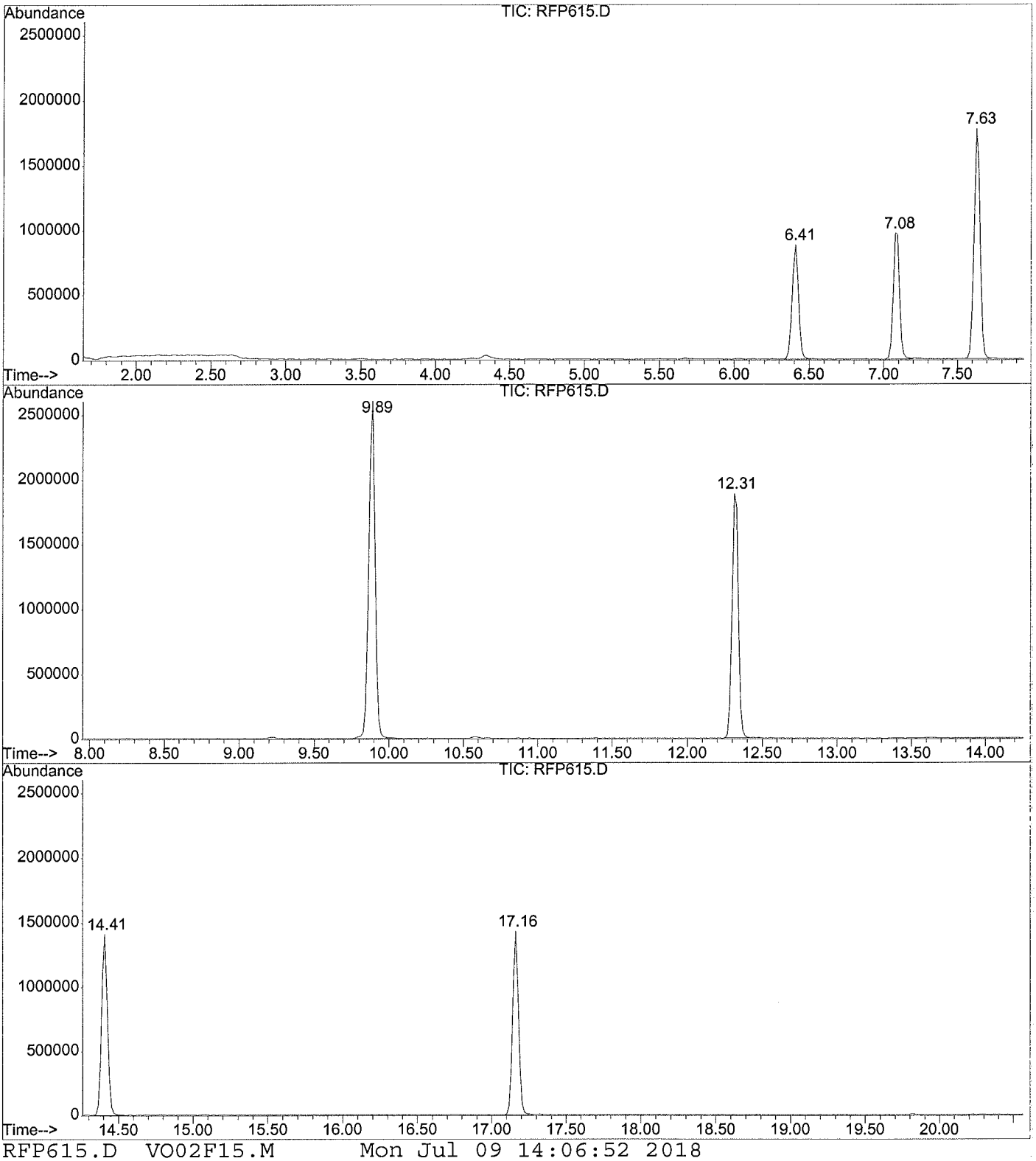
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.407	316	321	328	rBV	881463	2566255	33.58%	8.186%
2	7.076	361	366	374	rBV	972637	2910500	38.08%	9.284%
3	7.626	398	403	410	rBV	1769268	5041256	65.96%	16.081%
4	9.887	546	555	570	rVB	2602182	7642445	100.00%	24.378%
5	12.312	714	718	725	rBV	1884528	5470941	71.59%	17.452%
6	14.409	854	859	868	rVB	1409179	3815485	49.92%	12.171%
7	17.160	1039	1044	1052	rBV	1427749	3902360	51.06%	12.448%

Sum of corrected areas: 31349242

RFP615.D VO02F15.M Mon Jul 09 14:06:52 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18F29\RFP615.D
Operator : ODinh
Acquired : 29 Jun 2018 12:16 pm using AcqMethod VO02F15
Instrument : 02
Sample Name: VS02F26B 5.0g
Misc Info : BLANK
Vial Number: 7
Quant File :VO02F15.RES (RTE Integrator)



RFP615.D VO02F15.M Mon Jul 09 14:06:52 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 29 Jun 2018 12:16 pm
Data File: D:\HPCHEM\1\DATA\18F29\RFP615.D
Name: VS02F26B 5.0g
Misc: BLANK
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RFP615.D VO02F15.M Mon Jul 09 14:06:52 2018

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP612.D Vial: 4
Acq On : 29 Jun 2018 11:00 am Operator: ODinh
Sample : VS02F26C Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:15 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1721299	50.00	ug/l		-0.03
56) CHLOROBENZENE-D5	12.32	117	1613166	50.00	ug/l		-0.03
76) 1,2-DICHLOROBENZENE-D4	17.17	152	646035	50.00	ug/l		-0.03
System Monitoring Compounds							
37) Dibromofluoromethane	6.40	111	632652	51.55	ug/l		-0.03
Spiked Amount 50.000			Recovery = 103.10%				
43) 1,2-Dichloroethane-d4	7.08	65	739566	48.56	ug/l		-0.03
Spiked Amount 50.000			Recovery = 97.12%				
57) Toluene-d8	9.88	98	2334546	49.06	ug/l		-0.03
Spiked Amount 50.000			Recovery = 98.12%				
79) 4-Bromofluorobenzene	14.40	95	779197	50.06	ug/l		-0.03
Spiked Amount 50.000			Recovery = 100.12%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.73	85	597664	47.73	ug/l		100
3) Chloromethane	1.98	50	865713	44.87	ug/l		99
4) Vinyl chloride	2.10	62	709535	52.00	ug/l		98
5) Bromomethane	2.56	94	620562	43.08	ug/l		100
6) Chloroethane	2.67	64	548060	51.60	ug/l		99
7) Dichlorofluoromethane	2.70	67	1701282	58.27	ug/l		100
8) Trichlorofluoromethane	2.95	101	839614	54.71	ug/l		100
9) Acrolein	3.41	56	806893	272.93	ug/l		89
10) 1,1,2-Trichloro-1,2,2-trif	3.45	151	444609	57.77	ug/l		99
11) Acetone	3.48	43	1740466	273.44	ug/l		99
12) 1,1-Dichloroethene	3.65	61	1167498	53.18	ug/l		99
13) tert-Butyl alcohol	3.72	59	883255	297.85	ug/l	#	1
14) Acetonitrile	3.81	41	1408141	505.46	ug/l		90
15) Iodomethane	4.03	142	908274	52.77	ug/l		99
16) Methyl Acetate	4.03	43	1278385	50.14	ug/l		96
17) Allyl Chloride	4.08	76	433711	57.78	ug/l		97
18) Methylene chloride	4.24	49	1031912	49.50	ug/l		100
19) Carbon disulfide	4.24	76	2150349	51.11	ug/l		100
20) Acrylonitrile	4.38	53	2208268	276.09	ug/l		100
21) tert-Butyl methyl ether (M	4.41	73	2415977	57.38	ug/l		99
22) trans-1,2-Dichloroethene	4.58	61	1171823	55.45	ug/l		99
23) Isopropyl ether (DIPE)	4.97	45	3840892	57.21	ug/l		100
24) Vinyl acetate	5.12	43	2677610	54.10	ug/l		100
25) 1,1-Dichloroethane	5.12	63	1590223	57.85	ug/l		99
26) 2-Butanol	5.40	45	838817	277.78	ug/l		95
27) tert-Butyl ethyl ether (ET	5.51	59	2673635	54.98	ug/l		99
28) 2-Butanone	5.66	43	3499370	269.50	ug/l		100

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18F29\RFP612.D
Acq On : 29 Jun 2018 11:00 am
Sample : VS02F26C
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jul 9 13:15 2018

Vial: 4
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.76	54	1666354	549.77	ug/l	99
30)	2,2-Dichloropropane	5.85	77	558506	60.56	ug/l	98
31)	cis-1,2-Dichloroethene	5.91	96	915390	55.89	ug/l	98
32)	Isobutyl Alcohol	6.04	43	1676854	1112.58	ug/l	99
33)	Methylacrylonitrile	6.03	52	1666444	557.71	ug/l	98
34)	Chloroform	6.12	83	1358203	56.93	ug/l	100
35)	Bromochloromethane	6.32	49	846280	54.14	ug/l	99
36)	Tetrahydrofuran	6.37	42	397140	51.90	ug/l	99
38)	1,1,1-Trichloroethane	6.65	97	756205	58.48	ug/l	99
39)	Cyclohexane	6.67	84	1029608	44.01	ug/l	99
40)	1,1-Dichloropropene	6.86	110	311997	51.73	ug/l	100
41)	Carbon tetrachloride	6.99	119	604072	57.84	ug/l	98
42)	tert-Amyl methyl ether (TA	7.02	87	447592	54.87	ug/l	94
44)	1,2-Dichloroethane	7.22	62	951555	53.32	ug/l	99
45)	Benzene	7.23	78	2998328	53.67	ug/l	100
46)	Trichloroethene	8.09	130	743154	53.38	ug/l	100
47)	Methylcyclohexane	8.17	83	1201813	44.62	ug/l	99
48)	1,2-Dichloropropane	8.35	63	932711	55.94	ug/l	99
49)	Methyl Methacrylate	8.45	69	707058	54.71	ug/l	99
50)	Bromodichloromethane	8.69	83	1012405	55.18	ug/l	100
51)	1,4-Dioxane	8.73	88	189092	1015.19	ug/l	97
52)	Dibromomethane	8.76	93	538723	53.85	ug/l	99
54)	4-Methyl-2-pentanone	9.21	43	7163719	263.87	ug/l	100
55)	cis-1,3-Dichloropropene	9.52	75	1433405	56.37	ug/l	99
58)	Toluene	10.00	91	2877407	51.99	ug/l	100
59)	Ethyl methacrylate	10.31	69	1208546	53.73	ug/l	100
60)	trans-1,3-Dichloropropene	10.31	75	1213170	55.05	ug/l	99
61)	1,1,2-Trichloroethane	10.55	97	730444	53.80	ug/l	98
62)	2-Hexanone	10.56	43	5018404	267.79	ug/l	100
63)	1,3-Dichloropropane	10.95	76	1373758	51.56	ug/l	99
64)	Tetrachloroethene	11.04	164	553923	51.46	ug/l	97
65)	Dibromochloromethane	11.35	129	711188	53.17	ug/l	100
66)	1,2-Dibromoethane	11.68	107	715992	51.62	ug/l	100
67)	1-Chlorohexane	11.99	91	1070781	53.51	ug/l	99
68)	Chlorobenzene	12.38	112	1785943	54.06	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.45	131	638515	56.33	ug/l	99
70)	Ethylbenzene	12.48	91	3099790	54.30	ug/l	100
71)	m-Xylene & p-Xylene	12.62	91	4524094	105.69	ug/l	100
72)	o-Xylene	13.34	91	2365917	53.24	ug/l	100
73)	Styrene	13.42	104	1789891	55.39	ug/l	99
74)	Isopropylbenzene	13.98	105	2694566	55.82	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP612.D Vial: 4
Acq On : 29 Jun 2018 11:00 am Operator: ODinh
Sample : VS02F26C Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:15 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

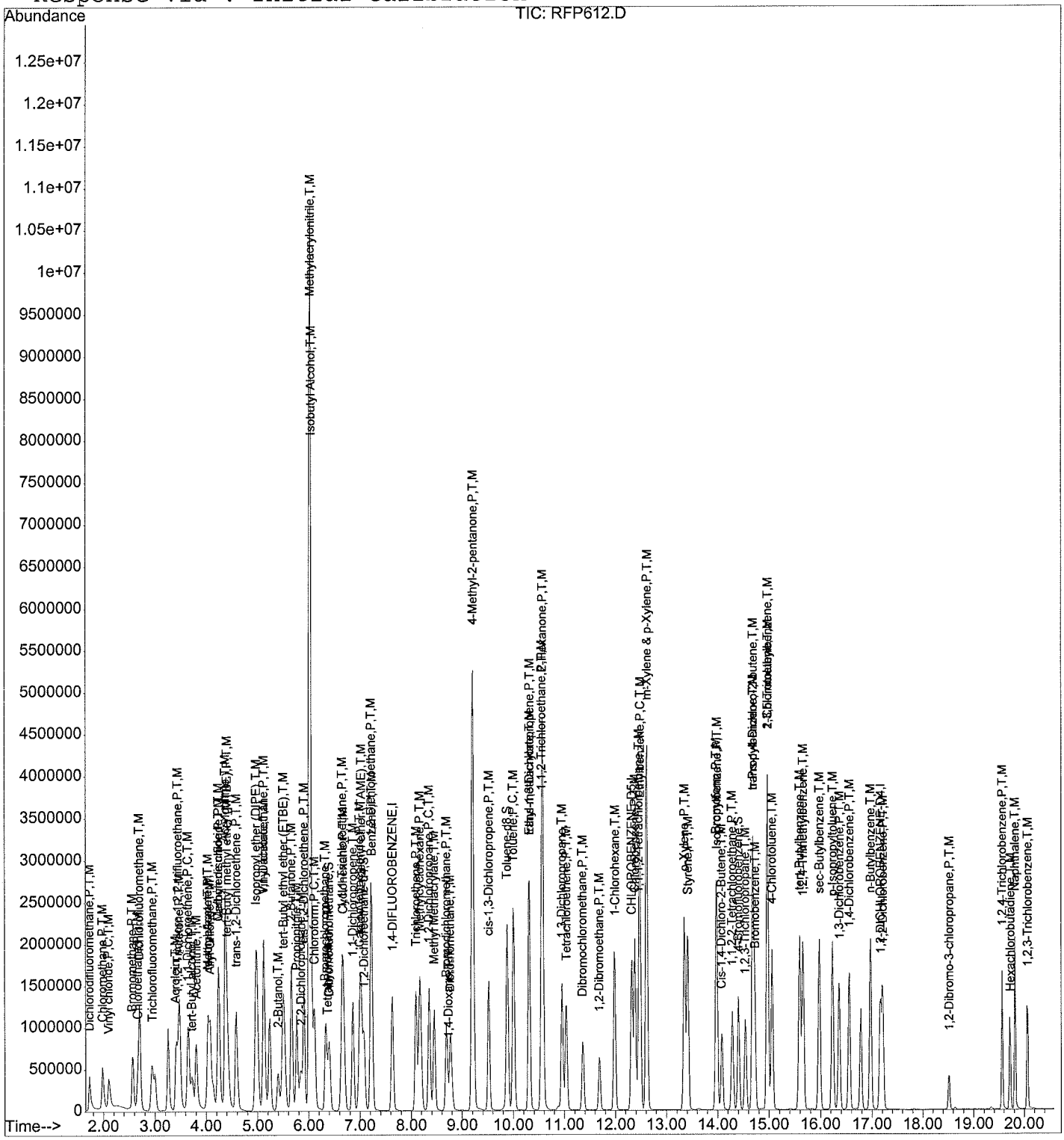
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.07	53	330032	52.66	ug/l	97
77)	Bromoform	13.97	173	478648	47.28	ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.28	83	1174470	53.12	ug/l	100
80)	1,2,3-Trichloropropane	14.53	110	256060	51.55	ug/l	99
81)	trans-1,4-Dichloro-2-buten	14.68	53	236146	49.67	ug/l	96
82)	n-Propylbenzene	14.68	91	3392652	54.50	ug/l	100
83)	Bromobenzene	14.73	156	690359	53.21	ug/l	99
84)	1,3,5-Trimethylbenzene	14.97	105	1967227	54.55	ug/l	100
85)	2-Chlorotoluene	14.97	91	2066511	52.27	ug/l	99
86)	4-Chlorotoluene	15.06	91	1850851	53.51	ug/l	99
87)	tert-Butylbenzene	15.59	134	449645	54.13	ug/l	99
88)	1,2,4-Trimethylbenzene	15.65	105	1919799	52.98	ug/l	98
89)	sec-Butylbenzene	15.98	105	2653418	54.89	ug/l	100
90)	p-Isopropyltoluene	16.23	119	2056523	53.76	ug/l	100
91)	1,3-Dichlorobenzene	16.36	146	1214853	53.04	ug/l	99
93)	1,4-Dichlorobenzene	16.56	146	1224353	53.56	ug/l	99
94)	n-Butylbenzene	16.97	91	2064426	53.98	ug/l	100
95)	1,2-Dichlorobenzene	17.21	146	1133730	53.07	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.52	157	169786	44.50	ug/l	100
97)	1,2,4-Trichlorobenzene	19.56	180	610952	48.07	ug/l	99
98)	Hexachlorobutadiene	19.73	225	279843	49.34	ug/l	98
99)	Naphthalene	19.82	128	1659706	45.78	ug/l	100
100)	1,2,3-Trichlorobenzene	20.07	180	522569	44.80	ug/l	99

(#) = qualifier out of range (m) = manual integration
RFP612.D VO02F15.M Mon Jul 09 13:15:53 2018 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP612.D Vial: 4
Acq On : 29 Jun 2018 11:00 am Operator: ODinh
Sample : VS02F26C Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:15 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP613.D Vial: 5
Acq On : 29 Jun 2018 11:26 am Operator: ODinh
Sample : VS02F26X Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:16 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1652963	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.31	117	1509114	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.16	152	623602	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	601463	51.03	ug/l	-0.02
Spiked Amount 50.000			Recovery =	102.06%		
43) 1,2-Dichloroethane-d4	7.08	65	699698	47.84	ug/l	-0.03
Spiked Amount 50.000			Recovery =	95.68%		
57) Toluene-d8	9.89	98	2214126	49.74	ug/l	-0.02
Spiked Amount 50.000			Recovery =	99.48%		
79) 4-Bromofluorobenzene	14.41	95	746907	49.71	ug/l	-0.02
Spiked Amount 50.000			Recovery =	99.42%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.72	85	525738	43.72	ug/l	100
3) Chloromethane	1.98	50	780813	42.14	ug/l	99
4) Vinyl chloride	2.09	62	603248	46.04	ug/l	98
5) Bromomethane	2.57	94	543994	39.32	ug/l	97
6) Chloroethane	2.66	64	472066	46.29	ug/l	98
7) Dichlorofluoromethane	2.69	67	1502962	53.60	ug/l	99
8) Trichlorofluoromethane	2.94	101	736255	49.96	ug/l	99
9) Acrolein	3.42	56	832667	293.29	ug/l	93
10) 1,1,2-Trichloro-1,2,2-trif	3.46	151	389803	52.74	ug/l	98
11) Acetone	3.48	43	1740574	284.77	ug/l	99
12) 1,1-Dichloroethene	3.66	61	1038023	49.23	ug/l	100
13) tert-Butyl alcohol	3.73	59	837074	293.94	ug/l	99
14) Acetonitrile	3.81	41	1697474	634.50	ug/l	97
15) Iodomethane	4.03	142	830178	50.23	ug/l	99
16) Methyl Acetate	4.03	43	1257766	51.38	ug/l	98
17) Allyl Chloride	4.07	76	382440	53.05	ug/l	97
18) Methylene chloride	4.24	49	960160	47.96	ug/l	99
19) Carbon disulfide	4.24	76	1844361	45.65	ug/l	100
20) Acrylonitrile	4.37	53	2147543	279.60	ug/l	100
21) tert-Butyl methyl ether (M	4.40	73	2296063	56.79	ug/l	98
22) trans-1,2-Dichloroethene	4.58	61	1022609	50.39	ug/l	99
23) Isopropyl ether (DIPE)	4.98	45	3583753	55.59	ug/l	99
24) Vinyl acetate	5.13	43	2428332	51.09	ug/l	99
25) 1,1-Dichloroethane	5.11	63	1420098	53.80	ug/l	100
26) 2-Butanol	5.40	45	793191	273.53	ug/l	99
27) tert-Butyl ethyl ether (ET	5.50	59	2500795	53.55	ug/l	100
28) 2-Butanone	5.66	43	3380453	271.10	ug/l	100

(#) = qualifier out of range (m) = manual integration
RFP613.D VO02F15.M Mon Jul 09 13:16:18 2018 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP613.D Vial: 5
Acq On : 29 Jun 2018 11:26 am Operator: ODinh
Sample : VS02F26X Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:16 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29) Propionitrile	5.75	54	1561249	536.39	ug/l	100
30) 2,2-Dichloropropane	5.84	77	488958	55.21	ug/l	99
31) cis-1,2-Dichloroethene	5.90	96	823470	52.35	ug/l	99
32) Isobutyl Alcohol	6.05	43	1580113	1091.73	ug/l	99
33) Methylacrylonitrile	6.02	52	1556729	542.53	ug/l	99
34) Chloroform	6.11	83	1215834	53.07	ug/l	100
35) Bromochloromethane	6.33	49	774249	51.58	ug/l	100
36) Tetrahydrofuran	6.38	42	363932	49.53	ug/l	99
38) 1,1,1-Trichloroethane	6.65	97	673542	54.24	ug/l	99
39) Cyclohexane	6.66	84	939649	41.83	ug/l	98
40) 1,1-Dichloropropene	6.85	110	278646	48.11	ug/l	99
41) Carbon tetrachloride	6.99	119	536630	53.51	ug/l	98
42) tert-Amyl methyl ether (TA	7.02	87	420392	53.66	ug/l	96
44) 1,2-Dichloroethane	7.21	62	870038	50.77	ug/l	99
45) Benzene	7.23	78	2695107	50.24	ug/l	100
46) Trichloroethene	8.09	130	657243	49.16	ug/l	100
47) Methylcyclohexane	8.16	83	1088324	42.07	ug/l	99
48) 1,2-Dichloropropane	8.34	63	830550	51.87	ug/l	98
49) Methyl Methacrylate	8.45	69	649526	52.34	ug/l	99
50) Bromodichloromethane	8.68	83	920579	52.25	ug/l	100
51) 1,4-Dioxane	8.73	88	200385	1120.30	ug/l	99
52) Dibromomethane	8.77	93	508360	52.92	ug/l	99
54) 4-Methyl-2-pentanone	9.20	43	6939880	266.19	ug/l	100
55) cis-1,3-Dichloropropene	9.52	75	1291115	52.87	ug/l	100
58) Toluene	10.01	91	2562548	49.50	ug/l	98
59) Ethyl methacrylate	10.31	69	1101057	52.32	ug/l	98
60) trans-1,3-Dichloropropene	10.31	75	1107086	53.70	ug/l	99
61) 1,1,2-Trichloroethane	10.54	97	665382	52.39	ug/l	99
62) 2-Hexanone	10.57	43	4849115	276.60	ug/l	100
63) 1,3-Dichloropropane	10.94	76	1257394	50.45	ug/l	98
64) Tetrachloroethene	11.03	164	481994	47.86	ug/l	99
65) Dibromochloromethane	11.36	129	651057	52.03	ug/l	100
66) 1,2-Dibromoethane	11.69	107	660469	50.90	ug/l	99
67) 1-Chlorohexane	11.99	91	949908	50.74	ug/l	99
68) Chlorobenzene	12.37	112	1607094	52.00	ug/l	98
69) 1,1,1,2-Tetrachloroethane	12.46	131	579361	54.64	ug/l	99
70) Ethylbenzene	12.48	91	2770291	51.87	ug/l	100
71) m-Xylene & p-Xylene	12.61	91	3970864	99.16	ug/l	99
72) o-Xylene	13.35	91	2161051	51.98	ug/l	99
73) Styrene	13.41	104	1608170	53.20	ug/l	99
74) Isopropylbenzene	13.98	105	2430270	53.82	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP613.D Vial: 5
Acq On : 29 Jun 2018 11:26 am Operator: ODinh
Sample : VS02F26X Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:16 2018 Quant Results File: VO02F15.RES

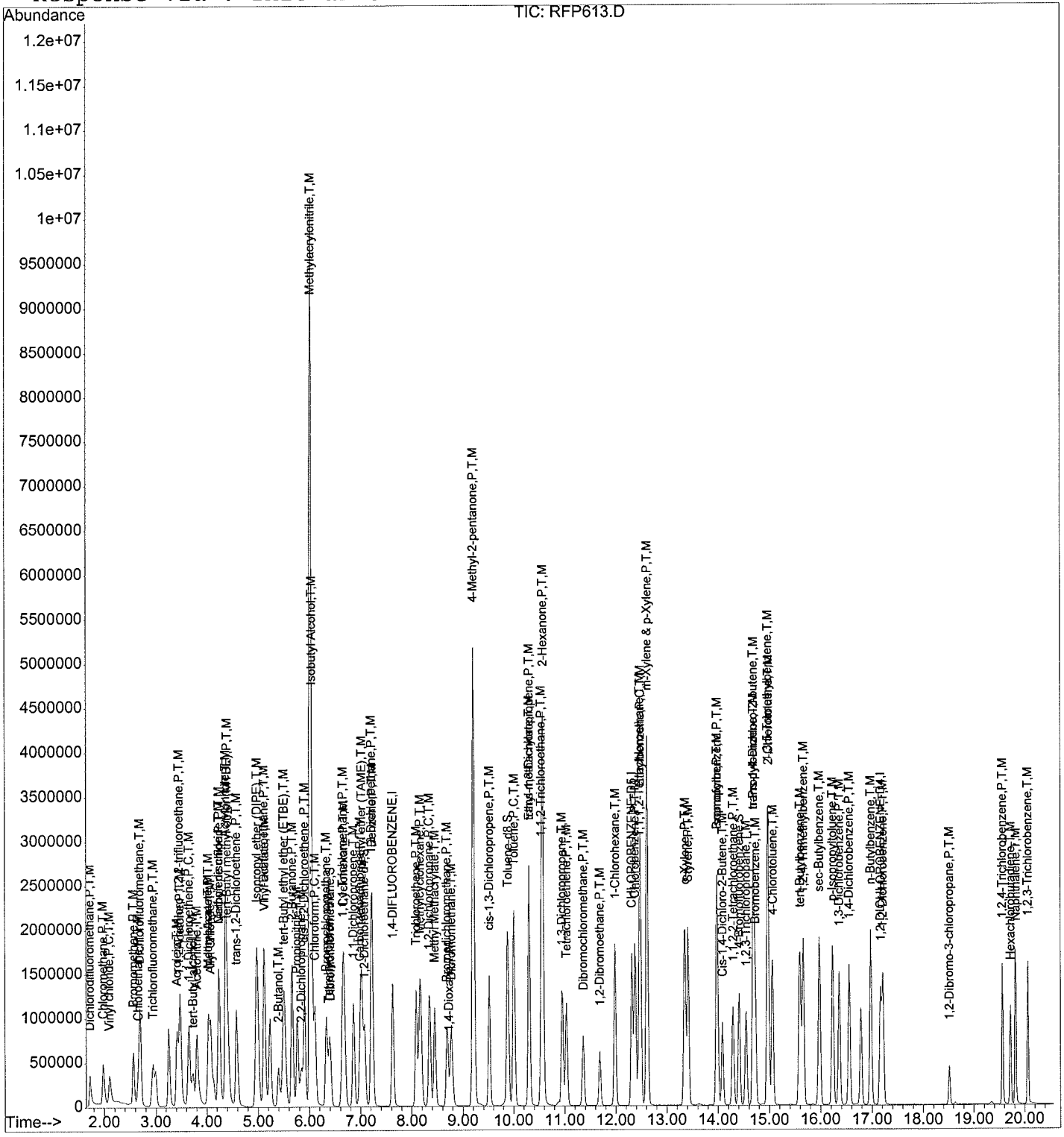
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.08	53	308052	52.54	ug/l	98
77)	Bromoform	13.98	173	451706	46.28	ug/l	98
78)	1,1,2,2-Tetrachloroethane	14.29	83	1100730	51.57	ug/l	100
80)	1,2,3-Trichloropropane	14.54	110	238839	49.81	ug/l	97
81)	trans-1,4-Dichloro-2-buten	14.68	53	223108	48.62	ug/l	98
82)	n-Propylbenzene	14.68	91	3047467	50.71	ug/l	100
83)	Bromobenzene	14.72	156	632486	50.50	ug/l	99
84)	1,3,5-Trimethylbenzene	14.96	105	1807034	51.91	ug/l	99
85)	2-Chlorotoluene	14.98	91	1936391	50.74	ug/l	100
86)	4-Chlorotoluene	15.06	91	1667104	49.93	ug/l	100
87)	tert-Butylbenzene	15.60	134	406426	50.69	ug/l	99
88)	1,2,4-Trimethylbenzene	15.66	105	1784420	51.02	ug/l	100
89)	sec-Butylbenzene	15.97	105	2425059	51.97	ug/l	100
90)	p-Isopropyltoluene	16.22	119	1887610	51.12	ug/l	99
91)	1,3-Dichlorobenzene	16.36	146	1134390	51.30	ug/l	100
93)	1,4-Dichlorobenzene	16.55	146	1155940	52.38	ug/l	100
94)	n-Butylbenzene	16.97	91	1877702	50.87	ug/l	99
95)	1,2-Dichlorobenzene	17.21	146	1063544	51.58	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.52	157	161424	43.87	ug/l	99
97)	1,2,4-Trichlorobenzene	19.56	180	615563	50.17	ug/l	99
98)	Hexachlorobutadiene	19.72	225	269029	49.14	ug/l	98
99)	Naphthalene	19.82	128	1694523	48.42	ug/l	99
100)	1,2,3-Trichlorobenzene	20.06	180	548686	48.73	ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18F29\RFP613.D Vial: 5
Acq On : 29 Jun 2018 11:26 am Operator: ODinh
Sample : VS02F26X Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:16 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP046.D Vial: 6
Acq On : 5 Jul 2018 11:15 am Operator: ODinh
Sample : VS02G03B 5.0g Inst : 02
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 9:42 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.62	114	2280992	50.00	ug/l	-0.04
56) CHLOROBENZENE-D5	12.30	117	1853970	50.00	ug/l	-0.04
76) 1,2-DICHLOROBENZENE-D4	17.15	152	708418	50.00	ug/l	-0.04
System Monitoring Compounds						
37) Dibromofluoromethane	6.40	111	828179	50.92	ug/l	-0.03
Spiked Amount 50.000			Recovery =	101.84%		
43) 1,2-Dichloroethane-d4	7.08	65	962781	47.70	ug/l	-0.03
Spiked Amount 50.000			Recovery =	95.40%		
57) Toluene-d8	9.88	98	2784035	50.91	ug/l	-0.03
Spiked Amount 50.000			Recovery =	101.82%		
79) 4-Bromofluorobenzene	14.40	95	826813	48.44	ug/l	-0.03
Spiked Amount 50.000			Recovery =	96.88%		
Target Compounds						Qvalue
18) Methylene chloride	4.24	49	14011	0.51	ug/l	86

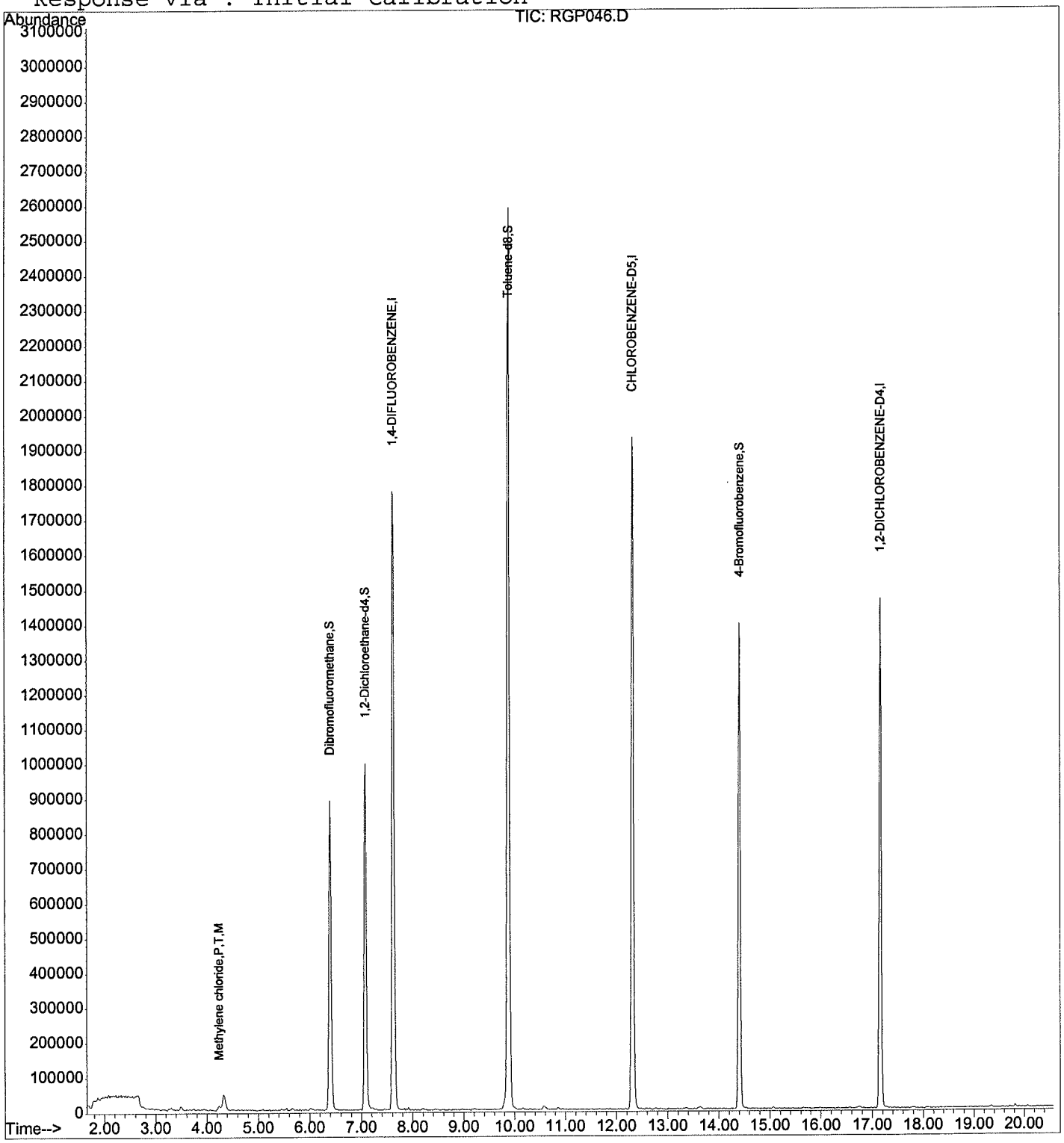
(#) = qualifier out of range (m) = manual integration
RGP046.D VO02F15.M Mon Jul 09 14:19:27 2018 Page 1

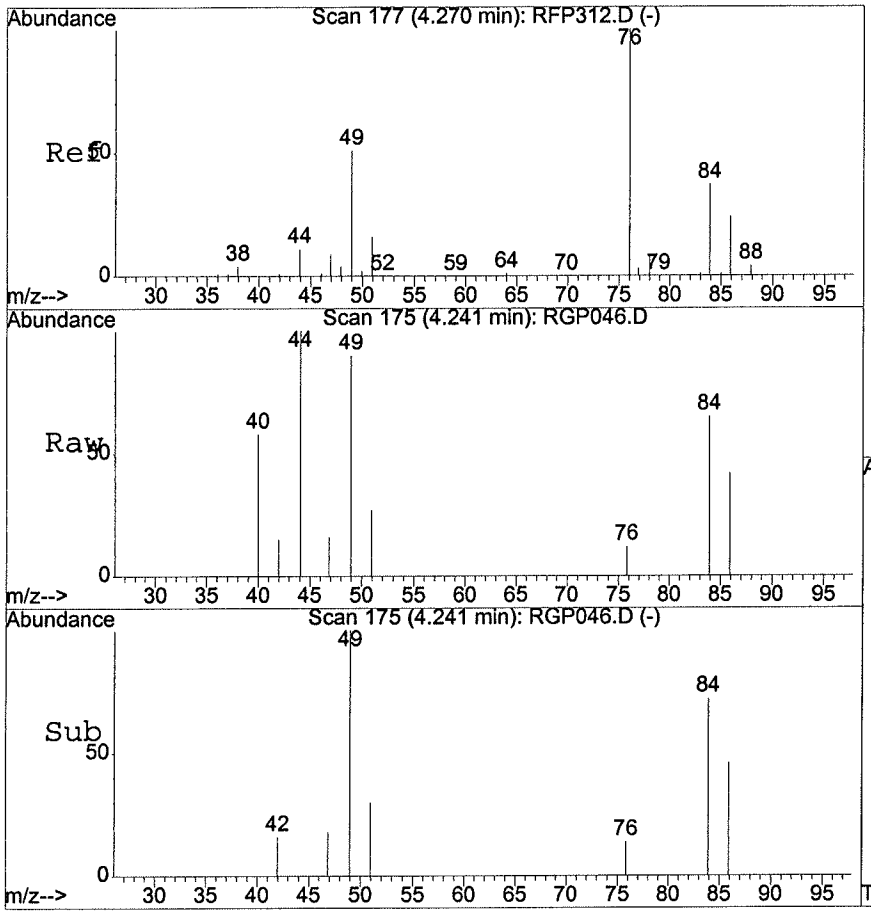
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP046.D
Acq On : 5 Jul 2018 11:15 am
Sample : VS02G03B 5.0g
Misc : BLANK
MS Integration Params: RTE.P
Quant Time: Jul 9 9:42 2018

Vial: 6
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration

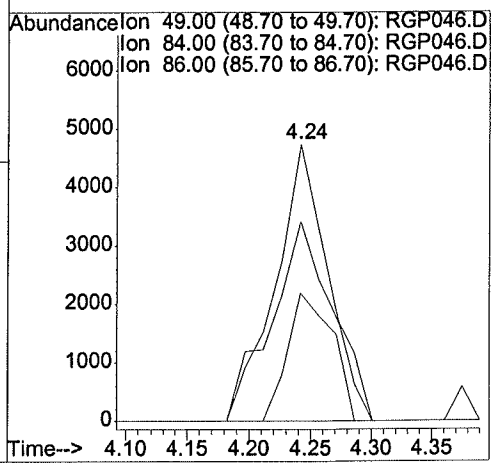




#18
Methylene chloride
Concen: 0.51 ug/l
RT: 4.24 min Scan# 175
Delta R.T. -0.03 min
Lab File: RGP046.D
Acq: 5 Jul 2018 11:15 am

Tgt Ion: 49 Resp: 14011

Ion	Ratio	Lower	Upper
49	100		
84	85.0	40.2	100.2
86	39.8	14.6	74.6



LSC Area Percent Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP046.D
Acq On : 5 Jul 2018 11:15 am
Sample : VS02G03B 5.0g
Misc : BLANK
MS Integration Params: LSCINT.P

Vial: 6
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0

Filtering: 5
Min Area: 10 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

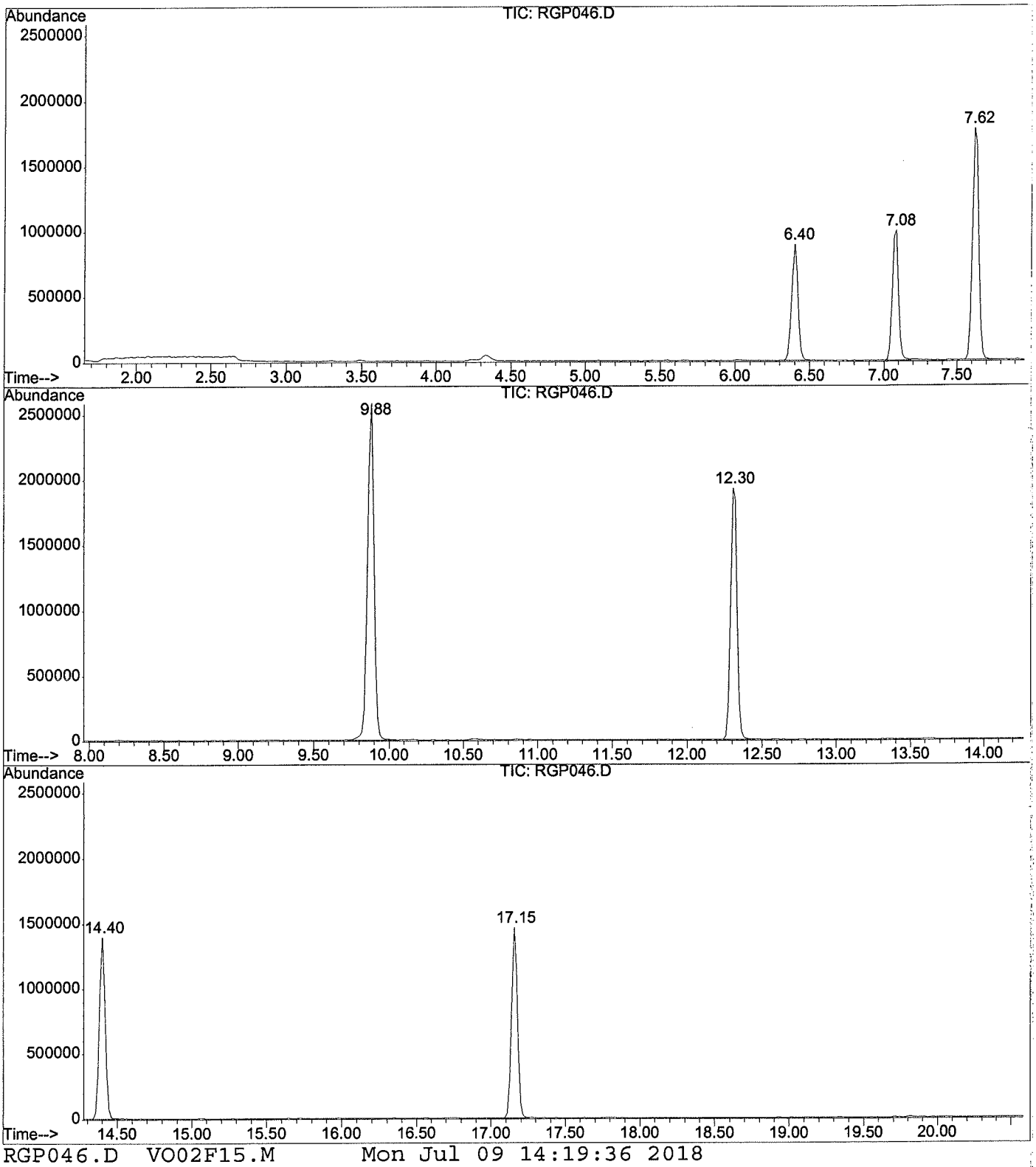
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.398	315	320	328	rBV	887516	2594512	33.33%	8.092%
2	7.082	361	366	373	rBV	995337	2933755	37.69%	9.150%
3	7.618	397	402	413	rVB	1774068	5318994	68.34%	16.590%
4	9.879	544	554	566	rVB	2586487	7783185	100.00%	24.276%
5	12.303	713	717	727	rVB	1926574	5664512	72.78%	17.668%
6	14.400	853	858	866	rBV	1394652	3754714	48.24%	11.711%
7	17.152	1038	1043	1050	rBV	1463318	4011887	51.55%	12.513%

Sum of corrected areas: 32061559

RGP046.D VO02F15.M Mon Jul 09 14:19:36 2018

LSC Report - Integrated Chromatogram

File : D:\HPCHEM\1\DATA\18G05\RGP046.D
Operator : ODinh
Acquired : 5 Jul 2018 11:15 am using AcqMethod VO02F15
Instrument : 02
Sample Name: VS02G03B 5.0g
Misc Info : BLANK
Vial Number: 6
Quant File :VO02F15.RES (RTE Integrator)



RGP046.D VO02F15.M Mon Jul 09 14:19:36 2018

Tentatively Identified Compound (LSC) summary

Operator ID: ODinh Date Acquired: 5 Jul 2018 11:15 am
Data File: D:\HPCHEM\1\DATA\18G05\RGP046.D
Name: VS02G03B 5.0g
Misc: BLANK
Method: D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title: METHOD 8260 5.0mL
Library Searched: C:\DATABASE\NIST98.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

RGP046.D VO02F15.M Mon Jul 09 14:19:36 2018

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP043.D
Acq On : 5 Jul 2018 10:00 am
Sample : VS02G03L
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jul 9 14:17 2018

Vial: 3
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1916556	50.00	ug/l		-0.04
56) CHLOROBENZENE-D5	12.31	117	1725918	50.00	ug/l		-0.04
76) 1,2-DICHLOROBENZENE-D4	17.16	152	689308	50.00	ug/l		-0.04
System Monitoring Compounds							
37) Dibromofluoromethane	6.41	111	680892	49.83	ug/l		-0.02
Spiked Amount 50.000			Recovery =	99.66%			
43) 1,2-Dichloroethane-d4	7.08	65	789908	46.58	ug/l		-0.04
Spiked Amount 50.000			Recovery =	93.16%			
57) Toluene-d8	9.87	98	2449973	48.12	ug/l		-0.04
Spiked Amount 50.000			Recovery =	96.24%			
79) 4-Bromofluorobenzene	14.39	95	798705	48.09	ug/l		-0.04
Spiked Amount 50.000			Recovery =	96.18%			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.72	85	585654	42.00	ug/l		97
3) Chloromethane	1.99	50	967122	45.01	ug/l		100
4) Vinyl chloride	2.11	62	718351	47.29	ug/l		99
5) Bromomethane	2.57	94	695554	43.36	ug/l		99
6) Chloroethane	2.67	64	592392	50.09	ug/l		100
7) Dichlorofluoromethane	2.70	67	1590091	48.91	ug/l		99
8) Trichlorofluoromethane	2.94	101	868547	50.83	ug/l		100
9) Acrolein	3.42	56	956864	290.68	ug/l		92
10) 1,1,2-Trichloro-1,2,2-trif	3.46	151	413735	48.28	ug/l		97
11) Acetone	3.49	43	2073546	292.58	ug/l		99
12) 1,1-Dichloroethene	3.65	61	1172341	47.96	ug/l		99
13) tert-Butyl alcohol	3.73	59	931275	282.05	ug/l	#	1
14) Acetonitrile	3.80	41	1533780	494.47	ug/l		88
15) Iodomethane	4.03	142	934953	48.79	ug/l		100
16) Methyl Acetate	4.04	43	1466204	51.65	ug/l		98
17) Allyl Chloride	4.09	76	421295	50.41	ug/l		99
18) Methylene chloride	4.25	49	1039291	44.78	ug/l		98
19) Carbon disulfide	4.23	76	2478451	52.91	ug/l		100
20) Acrylonitrile	4.37	53	2519462	282.91	ug/l		99
21) tert-Butyl methyl ether (M	4.40	73	2409820	51.41	ug/l		98
22) trans-1,2-Dichloroethene	4.58	61	1158173	49.22	ug/l		99
23) Isopropyl ether (DIPE)	4.98	45	3773504	50.48	ug/l		99
24) Vinyl acetate	5.13	43	2889108	52.43	ug/l		100
25) 1,1-Dichloroethane	5.11	63	1520657	49.68	ug/l		99
26) 2-Butanol	5.39	45	929406	276.42	ug/l		99
27) tert-Butyl ethyl ether (ET	5.50	59	2651752	48.97	ug/l		100
28) 2-Butanone	5.66	43	4014121	277.65	ug/l		100

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18G05\RGP043.D
Acq On : 5 Jul 2018 10:00 am
Sample : VS02G03L
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jul 9 14:17 2018

Vial: 3
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.77	54	1670885	495.11	ug/l	100
30)	2,2-Dichloropropane	5.84	77	521066	50.75	ug/l	99
31)	cis-1,2-Dichloroethene	5.90	96	890464	48.83	ug/l	99
32)	Isobutyl Alcohol	6.05	43	1709695	1018.80	ug/l	99
33)	Methylacrylonitrile	6.02	52	1647979	495.34	ug/l	99
34)	Chloroform	6.11	83	1283761	48.33	ug/l	100
35)	Bromochloromethane	6.33	49	839479	48.23	ug/l	99
36)	Tetrahydrofuran	6.36	42	399442	46.89	ug/l	98
38)	1,1,1-Trichloroethane	6.64	97	718694	49.91	ug/l	98
39)	Cyclohexane	6.66	84	1322019	50.75	ug/l	100
40)	1,1-Dichloropropene	6.85	110	307591	45.81	ug/l	97
41)	Carbon tetrachloride	6.99	119	582633	50.11	ug/l	99
42)	tert-Amyl methyl ether (TA	7.02	87	446818	49.19	ug/l	95
44)	1,2-Dichloroethane	7.21	62	928277	46.72	ug/l	99
45)	Benzene	7.22	78	2941254	47.29	ug/l	100
46)	Trichloroethene	8.09	130	726572	46.87	ug/l	98
47)	Methylcyclohexane	8.16	83	1526010	50.88	ug/l	99
48)	1,2-Dichloropropane	8.34	63	883638	47.60	ug/l	100
49)	Methyl Methacrylate	8.44	69	697921	48.51	ug/l	98
50)	Bromodichloromethane	8.68	83	974790	47.72	ug/l	100
51)	1,4-Dioxane	8.73	88	213043	1027.25	ug/l	99
52)	Dibromomethane	8.77	93	541401	48.61	ug/l	99
54)	4-Methyl-2-pentanone	9.20	43	8148197	269.55	ug/l	100
55)	cis-1,3-Dichloropropene	9.51	75	1400113	49.45	ug/l	99
58)	Toluene	10.01	91	2847304	48.09	ug/l	100
59)	Ethyl methacrylate	10.30	69	1210080	50.28	ug/l	99
60)	trans-1,3-Dichloropropene	10.30	75	1190805	50.51	ug/l	98
61)	1,1,2-Trichloroethane	10.54	97	694341	47.80	ug/l	96
62)	2-Hexanone	10.57	43	5721855	285.38	ug/l	100
63)	1,3-Dichloropropane	10.94	76	1331206	46.70	ug/l	100
64)	Tetrachloroethene	11.03	164	548128	47.59	ug/l	99
65)	Dibromochloromethane	11.36	129	688360	48.10	ug/l	99
66)	1,2-Dibromoethane	11.69	107	725308	48.88	ug/l	98
67)	1-Chlorohexane	11.98	91	1086220	50.73	ug/l	99
68)	Chlorobenzene	12.37	112	1718048	48.61	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.46	131	605736	49.95	ug/l	99
70)	Ethylbenzene	12.47	91	2998071	49.09	ug/l	100
71)	m-Xylene & p-Xylene	12.61	91	4452537	97.22	ug/l	100
72)	o-Xylene	13.34	91	2362161	49.68	ug/l	100
73)	Styrene	13.41	104	1766062	51.08	ug/l	99
74)	Isopropylbenzene	13.98	105	2635270	51.03	ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18G05\RGP043.D
Acq On : 5 Jul 2018 10:00 am
Sample : VS02G03L
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jul 9 14:17 2018

Vial: 3
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

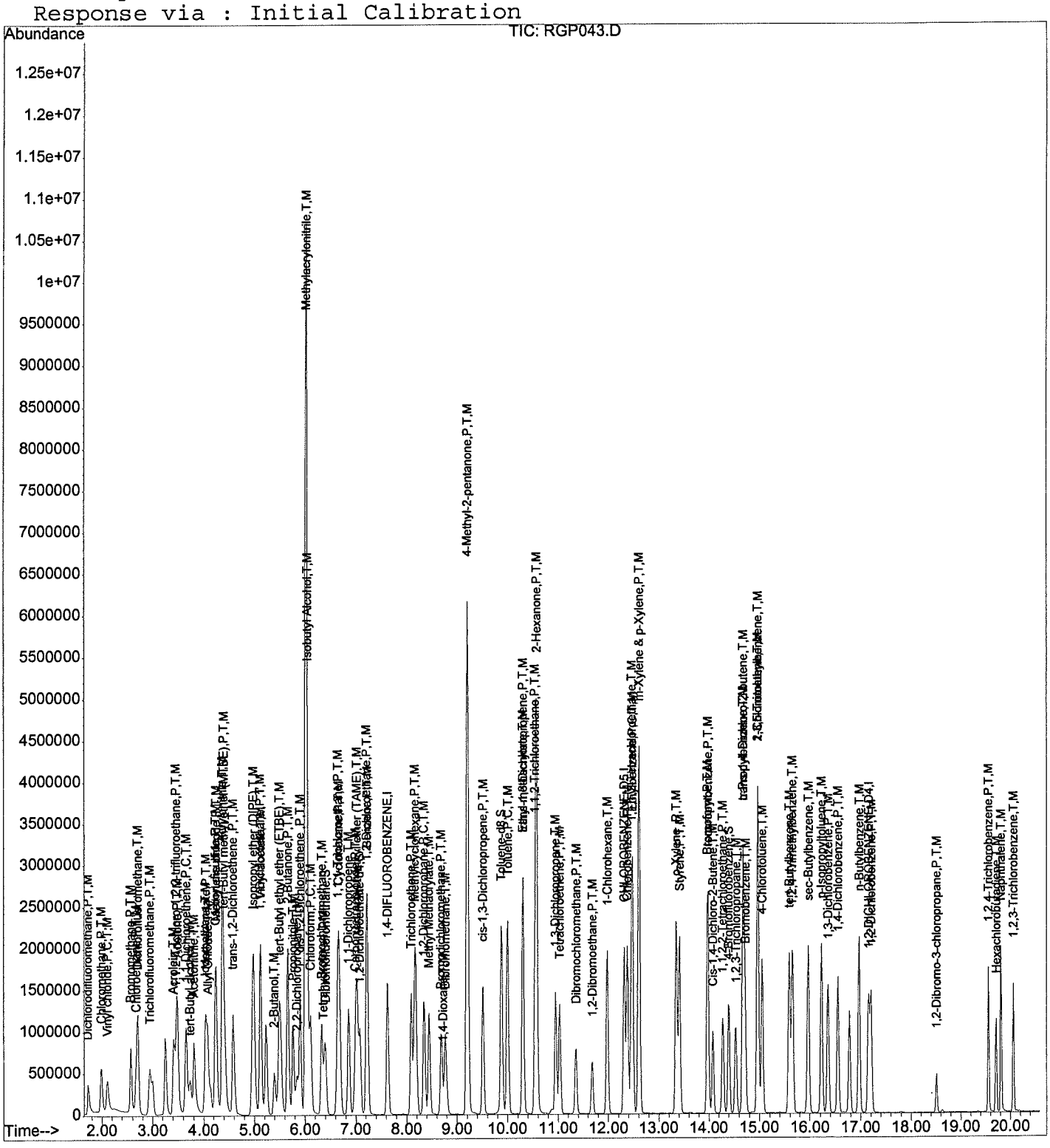
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.08	53	330554	49.30	ug/l	99
77)	Bromoform	13.96	173	479981	44.58	ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.27	83	1144639	48.52	ug/l	99
80)	1,2,3-Trichloropropane	14.54	110	247783	46.75	ug/l	99
81)	trans-1,4-Dichloro-2-buten	14.68	53	237356	46.79	ug/l	97
82)	n-Propylbenzene	14.68	91	3312322	49.87	ug/l	99
83)	Bromobenzene	14.72	156	676745	48.89	ug/l	100
84)	1,3,5-Trimethylbenzene	14.96	105	1941524	50.46	ug/l	100
85)	2-Chlorotoluene	14.96	91	2008264	47.61	ug/l	100
86)	4-Chlorotoluene	15.05	91	1833618	49.68	ug/l	100
87)	tert-Butylbenzene	15.58	134	423884	47.83	ug/l	99
88)	1,2,4-Trimethylbenzene	15.64	105	1923773	49.76	ug/l	99
89)	sec-Butylbenzene	15.97	105	2604866	50.51	ug/l	99
90)	p-Isopropyltoluene	16.22	119	2062738	50.54	ug/l	99
91)	1,3-Dichlorobenzene	16.36	146	1194612	48.88	ug/l	99
93)	1,4-Dichlorobenzene	16.55	146	1216270	49.86	ug/l	100
94)	n-Butylbenzene	16.97	91	2058787	50.46	ug/l	100
95)	1,2-Dichlorobenzene	17.20	146	1085459	47.62	ug/l	100
96)	1,2-Dibromo-3-chloropropan	18.51	157	174484	42.96	ug/l	99
97)	1,2,4-Trichlorobenzene	19.55	180	635620	46.87	ug/l	98
98)	Hexachlorobutadiene	19.72	225	283151	46.79	ug/l	100
99)	Naphthalene	19.81	128	1761657	45.54	ug/l	100
100)	1,2,3-Trichlorobenzene	20.06	180	543150	43.64	ug/l	98

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18G05\RGP043.D Vial: 3
Acq On : 5 Jul 2018 10:00 am Operator: ODinh
Sample : VS02G03L Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:17 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP044.D
Acq On : 5 Jul 2018 10:25 am
Sample : VS02G03C
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jul 9 14:17 2018

Vial: 4
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1856744	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.31	117	1727259	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.16	152	685937	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.39	111	668143	50.47	ug/l	-0.03
Spiked Amount 50.000			Recovery =	100.94%		
43) 1,2-Dichloroethane-d4	7.08	65	776733	47.28	ug/l	-0.03
Spiked Amount 50.000			Recovery =	94.56%		
57) Toluene-d8	9.87	98	2440921	47.91	ug/l	-0.03
Spiked Amount 50.000			Recovery =	95.82%		
79) 4-Bromofluorobenzene	14.40	95	800182	48.42	ug/l	-0.03
Spiked Amount 50.000			Recovery =	96.84%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.72	85	566802	41.96	ug/l	98
3) Chloromethane	1.98	50	944292	45.37	ug/l	100
4) Vinyl chloride	2.09	62	714651	48.56	ug/l	99
5) Bromomethane	2.57	94	672219	43.26	ug/l	99
6) Chloroethane	2.66	64	582179	50.82	ug/l	99
7) Dichlorofluoromethane	2.70	67	1707426	54.21	ug/l	99
8) Trichlorofluoromethane	2.94	101	847548	51.20	ug/l	100
9) Acrolein	3.42	56	931335	292.04	ug/l	93
10) 1,1,2-Trichloro-1,2,2-trif	3.45	151	440116	53.02	ug/l	96
11) Acetone	3.48	43	1963427	285.97	ug/l	100
12) 1,1-Dichloroethene	3.66	61	1235893	52.19	ug/l	99
13) tert-Butyl alcohol	3.73	59	936897	292.89	ug/l #	1
14) Acetonitrile	3.81	41	1540700	512.70	ug/l	90
15) Iodomethane	4.03	142	990648	53.36	ug/l	99
16) Methyl Acetate	4.03	43	1382791	50.28	ug/l	98
17) Allyl Chloride	4.07	76	441984	54.58	ug/l	99
18) Methylene chloride	4.25	49	1090548	48.50	ug/l	99
19) Carbon disulfide	4.24	76	2478133	54.60	ug/l	100
20) Acrylonitrile	4.37	53	2449519	283.91	ug/l	99
21) tert-Butyl methyl ether (M	4.40	73	2514017	55.36	ug/l	100
22) trans-1,2-Dichloroethene	4.58	61	1231211	54.01	ug/l	100
23) Isopropyl ether (DIPE)	4.98	45	3974719	54.89	ug/l	99
24) Vinyl acetate	5.11	43	2720503	50.96	ug/l	99
25) 1,1-Dichloroethane	5.11	63	1606386	54.17	ug/l	99
26) 2-Butanol	5.40	45	913450	280.43	ug/l	97
27) tert-Butyl ethyl ether (ET	5.50	59	2781406	53.02	ug/l	100
28) 2-Butanone	5.65	43	3888494	277.62	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP044.D
Acq On : 5 Jul 2018 10:25 am
Sample : VS02G03C
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jul 9 14:17 2018

Vial: 4
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.75	54	1719875	526.04	ug/l	100
30)	2,2-Dichloropropane	5.84	77	553426	55.64	ug/l	100
31)	cis-1,2-Dichloroethene	5.90	96	941027	53.26	ug/l	98
32)	Isobutyl Alcohol	6.04	43	1747654	1074.96	ug/l	99
33)	Methylacrylonitrile	6.02	52	1696446	526.33	ug/l	97
34)	Chloroform	6.11	83	1349501	52.44	ug/l	99
35)	Bromochloromethane	6.32	49	859278	50.96	ug/l	99
36)	Tetrahydrofuran	6.36	42	402502	48.77	ug/l	99
38)	1,1,1-Trichloroethane	6.65	97	778979	55.84	ug/l	97
39)	Cyclohexane	6.66	84	1353129	53.62	ug/l	100
40)	1,1-Dichloropropene	6.85	110	333037	51.20	ug/l	98
41)	Carbon tetrachloride	6.99	119	624055	55.40	ug/l	99
42)	tert-Amyl methyl ether (TA	7.02	87	461624	52.46	ug/l	95
44)	1,2-Dichloroethane	7.21	62	952071	49.46	ug/l	99
45)	Benzene	7.23	78	3122440	51.82	ug/l	100
46)	Trichloroethene	8.09	130	774953	51.60	ug/l	98
47)	Methylcyclohexane	8.16	83	1587234	54.63	ug/l	99
48)	1,2-Dichloropropane	8.34	63	928299	51.62	ug/l	98
49)	Methyl Methacrylate	8.45	69	719453	51.61	ug/l	99
50)	Bromodichloromethane	8.68	83	1020734	51.58	ug/l	99
51)	1,4-Dioxane	8.71	88	200552	998.18	ug/l	100
52)	Dibromomethane	8.76	93	552396	51.19	ug/l	99
54)	4-Methyl-2-pentanone	9.20	43	7880688	269.10	ug/l	100
55)	cis-1,3-Dichloropropene	9.52	75	1471738	53.65	ug/l	99
58)	Toluene	9.99	91	3012360	50.84	ug/l	99
59)	Ethyl methacrylate	10.30	69	1243113	51.61	ug/l	99
60)	trans-1,3-Dichloropropene	10.30	75	1261078	53.45	ug/l	97
61)	1,1,2-Trichloroethane	10.54	97	716562	49.29	ug/l	99
62)	2-Hexanone	10.57	43	5567068	277.45	ug/l	100
63)	1,3-Dichloropropane	10.94	76	1389218	48.70	ug/l	100
64)	Tetrachloroethene	11.03	164	585410	50.79	ug/l	99
65)	Dibromochloromethane	11.36	129	716059	49.99	ug/l	100
66)	1,2-Dibromoethane	11.67	107	744991	50.17	ug/l	100
67)	1-Chlorohexane	11.99	91	1185914	55.35	ug/l	99
68)	Chlorobenzene	12.37	112	1821512	51.50	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.46	131	640994	52.81	ug/l	99
70)	Ethylbenzene	12.48	91	3232640	52.89	ug/l	100
71)	m-Xylene & p-Xylene	12.61	91	4694576	102.43	ug/l	99
72)	o-Xylene	13.34	91	2492367	52.38	ug/l	99
73)	Styrene	13.41	104	1874537	54.18	ug/l	99
74)	Isopropylbenzene	13.98	105	2815831	54.48	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP044.D Vial: 4
Acq On : 5 Jul 2018 10:25 am Operator: ODinh
Sample : VS02G03C Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:17 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

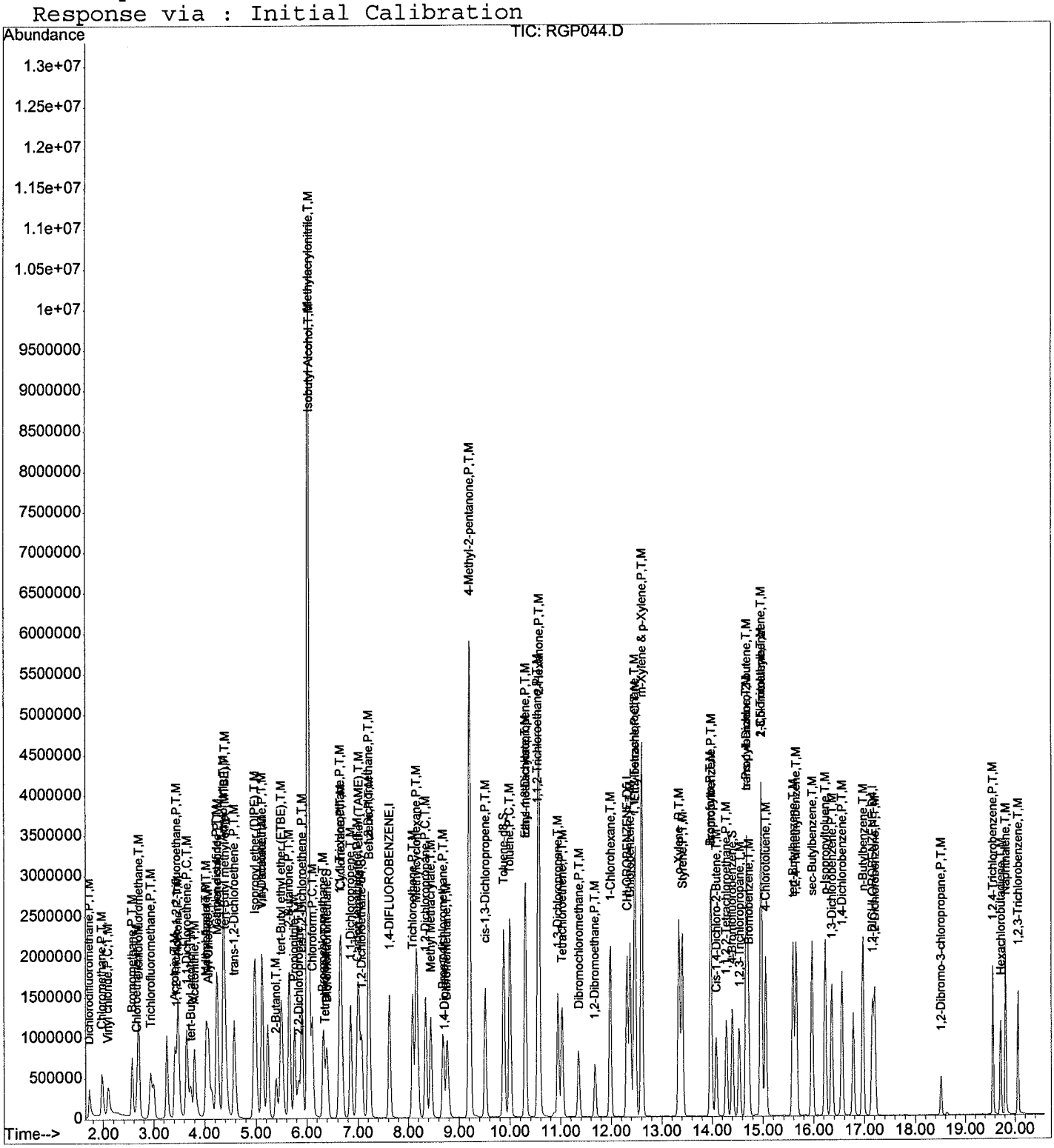
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.08	53	338818	50.49	ug/l	100
77)	Bromoform	13.96	173	505715	47.06	ug/l	98
78)	1,1,2,2-Tetrachloroethane	14.28	83	1196948	50.98	ug/l	100
80)	1,2,3-Trichloropropane	14.54	110	258444	49.00	ug/l	98
81)	trans-1,4-Dichloro-2-buten	14.68	53	257355	50.99	ug/l	100
82)	n-Propylbenzene	14.68	91	3594605	54.38	ug/l	100
83)	Bromobenzene	14.72	156	710593	51.59	ug/l	97
84)	1,3,5-Trimethylbenzene	14.96	105	2091022	54.61	ug/l	99
85)	2-Chlorotoluene	14.96	91	2180287	51.94	ug/l	100
86)	4-Chlorotoluene	15.05	91	1931496	52.59	ug/l	100
87)	tert-Butylbenzene	15.59	134	466524	52.90	ug/l	98
88)	1,2,4-Trimethylbenzene	15.64	105	2065473	53.68	ug/l	99
89)	sec-Butylbenzene	15.97	105	2775909	54.09	ug/l	100
90)	p-Isopropyltoluene	16.22	119	2172244	53.48	ug/l	100
91)	1,3-Dichlorobenzene	16.36	146	1268715	52.17	ug/l	99
93)	1,4-Dichlorobenzene	16.55	146	1277846	52.64	ug/l	99
94)	n-Butylbenzene	16.97	91	2199560	54.17	ug/l	99
95)	1,2-Dichlorobenzene	17.21	146	1168841	51.53	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.52	157	178021	43.98	ug/l	97
97)	1,2,4-Trichlorobenzene	19.56	180	668089	49.50	ug/l	98
98)	Hexachlorobutadiene	19.72	225	297917	49.48	ug/l	98
99)	Naphthalene	19.81	128	1772425	46.04	ug/l	100
100)	1,2,3-Trichlorobenzene	20.06	180	559724	45.20	ug/l	99

(#) = qualifier out of range (m) = manual integration
RGP044.D VO02F15.M Mon Jul 09 14:20:04 2018 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP044.D Vial: 4
Acq On : 5 Jul 2018 10:25 am Operator: ODinh
Sample : VS02G03C Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:17 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP058.D Vial: 18
Acq On : 5 Jul 2018 4:16 pm Operator: ODinh
Sample : 18F187-07M Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 5 16:37 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1899137	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.32	117	1677341	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.17	152	642244	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.41	111	672312	49.65	ug/l	-0.01
Spiked Amount 50.000			Recovery =	99.30%		
43) 1,2-Dichloroethane-d4	7.08	65	794058	47.25	ug/l	-0.03
Spiked Amount 50.000			Recovery =	94.50%		
57) Toluene-d8	9.88	98	2420626	48.92	ug/l	-0.03
Spiked Amount 50.000			Recovery =	97.84%		
79) 4-Bromofluorobenzene	14.40	95	754154	48.74	ug/l	-0.03
Spiked Amount 50.000			Recovery =	97.48%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.73	85	588933	42.63	ug/l	100
3) Chloromethane	1.98	50	1004359	47.18	ug/l	97
4) Vinyl chloride	2.10	62	666581	44.28	ug/l	99
5) Bromomethane	2.57	94	680989	42.84	ug/l	100
6) Chloroethane	2.66	64	580933	49.58	ug/l	98
7) Dichlorofluoromethane	2.69	67	1449635	45.00	ug/l	100
8) Trichlorofluoromethane	2.95	101	882803	52.13	ug/l	100
9) Acrolein	3.42	56	1148265	352.02	ug/l	93
10) 1,1,2-Trichloro-1,2,2-trif	3.45	151	380264	44.78	ug/l	96
11) Acetone	3.48	43	3063206	436.19	ug/l	98
12) 1,1-Dichloroethene	3.66	61	1034811	42.72	ug/l	99
13) tert-Butyl alcohol	3.74	59	1263905	386.30	ug/l	93
14) Acetonitrile	3.81	41	2402404	781.60	ug/l	97
15) Iodomethane	4.03	142	842801	44.38	ug/l	100
16) Methyl Acetate	4.03	43	1933379	68.74	ug/l	99
17) Allyl Chloride	4.08	76	366667	44.27	ug/l	99
18) Methylene chloride	4.26	49	955311	41.53	ug/l	100
19) Carbon disulfide	4.24	76	2188894	47.15	ug/l	100
20) Acrylonitrile	4.37	53	2997418	339.66	ug/l	100
21) tert-Butyl methyl ether (M	4.40	73	2318319	49.91	ug/l	98
22) trans-1,2-Dichloroethene	4.58	61	1011437	43.38	ug/l	99
23) Isopropyl ether (DIPE)	4.98	45	3424226	46.23	ug/l	100
24) Vinyl acetate	5.13	43	3026645	55.42	ug/l	100
25) 1,1-Dichloroethane	5.12	63	1361388	44.89	ug/l	99
26) 2-Butanol	5.40	45	1287071	386.31	ug/l	100
27) tert-Butyl ethyl ether (ET	5.51	59	2465229	45.94	ug/l	100
28) 2-Butanone	5.67	43	5001677	349.12	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP058.D Vial: 18
Acq On : 5 Jul 2018 4:16 pm Operator: ODinh
Sample : 18F187-07M Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 5 16:37 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.77	54	2230828	667.09	ug/l	100
30)	2,2-Dichloropropane	5.85	77	470229	46.22	ug/l	99
31)	cis-1,2-Dichloroethene	5.91	96	785123	43.45	ug/l	99
32)	Isobutyl Alcohol	6.06	43	2280114	1371.17	ug/l	96
33)	Methylacrylonitrile	6.03	52	1929980	585.42	ug/l	99
34)	Chloroform	6.11	83	1152436	43.78	ug/l	97
35)	Bromochloromethane	6.34	49	775550	44.97	ug/l	98
36)	Tetrahydrofuran	6.37	42	509592	60.36	ug/l	99
38)	1,1,1-Trichloroethane	6.65	97	652248	45.71	ug/l	99
39)	Cyclohexane	6.67	84	1319145	51.11	ug/l	99
40)	1,1-Dichloropropene	6.86	110	272794	41.00	ug/l	98
41)	Carbon tetrachloride	6.99	119	523560	45.44	ug/l	99
42)	tert-Amyl methyl ether (TA	7.02	87	422639	46.96	ug/l	98
44)	1,2-Dichloroethane	7.22	62	862857	43.82	ug/l	99
45)	Benzene	7.23	78	2623656	42.57	ug/l	100
46)	Trichloroethene	8.09	130	628001	40.88	ug/l	98
47)	Methylcyclohexane	8.17	83	1518296	51.09	ug/l	99
48)	1,2-Dichloropropane	8.35	63	788501	42.86	ug/l	98
49)	Methyl Methacrylate	8.45	69	741645	52.02	ug/l	96
50)	Bromodichloromethane	8.69	83	849122	41.95	ug/l	100
51)	1,4-Dioxane	8.73	88	298861	1454.27	ug/l	99
52)	Dibromomethane	8.78	93	500702	45.37	ug/l	98
54)	4-Methyl-2-pentanone	9.21	43	9007035	300.70	ug/l	100
55)	cis-1,3-Dichloropropene	9.52	75	1189779	42.41	ug/l	99
58)	Toluene	10.01	91	2459952	42.75	ug/l	99
59)	Ethyl methacrylate	10.31	69	1152596	49.28	ug/l	99
60)	trans-1,3-Dichloropropene	10.31	75	1011904	44.16	ug/l	96
61)	1,1,2-Trichloroethane	10.55	97	650323	46.07	ug/l	94
62)	2-Hexanone	10.58	43	6340733	325.41	ug/l	100
63)	1,3-Dichloropropane	10.95	76	1218613	43.99	ug/l	99
64)	Tetrachloroethene	11.04	164	469374	41.94	ug/l	98
65)	Dibromochloromethane	11.37	129	617200	44.37	ug/l	99
66)	1,2-Dibromoethane	11.69	107	664792	46.10	ug/l	99
67)	1-Chlorohexane	11.99	91	902041	43.35	ug/l	99
68)	Chlorobenzene	12.38	112	1479721	43.08	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.47	131	525610	44.60	ug/l	99
70)	Ethylbenzene	12.48	91	2644375	44.55	ug/l	99
71)	m-Xylene & p-Xylene	12.61	91	3833298	86.13	ug/l	99
72)	o-Xylene	13.34	91	2013319	43.57	ug/l	99
73)	Styrene	13.42	104	1505733	44.81	ug/l	100
74)	Isopropylbenzene	13.98	105	2247195	44.77	ug/l	99

(#) = qualifier out of range (m) = manual integration
RGP058.D VO02F15.M Mon Jul 09 14:42:36 2018 Page 2

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP058.D Vial: 18
Acq On : 5 Jul 2018 4:16 pm Operator: ODinh
Sample : 18F187-07M Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 5 16:37 2018 Quant Results File: VO02F15.RES

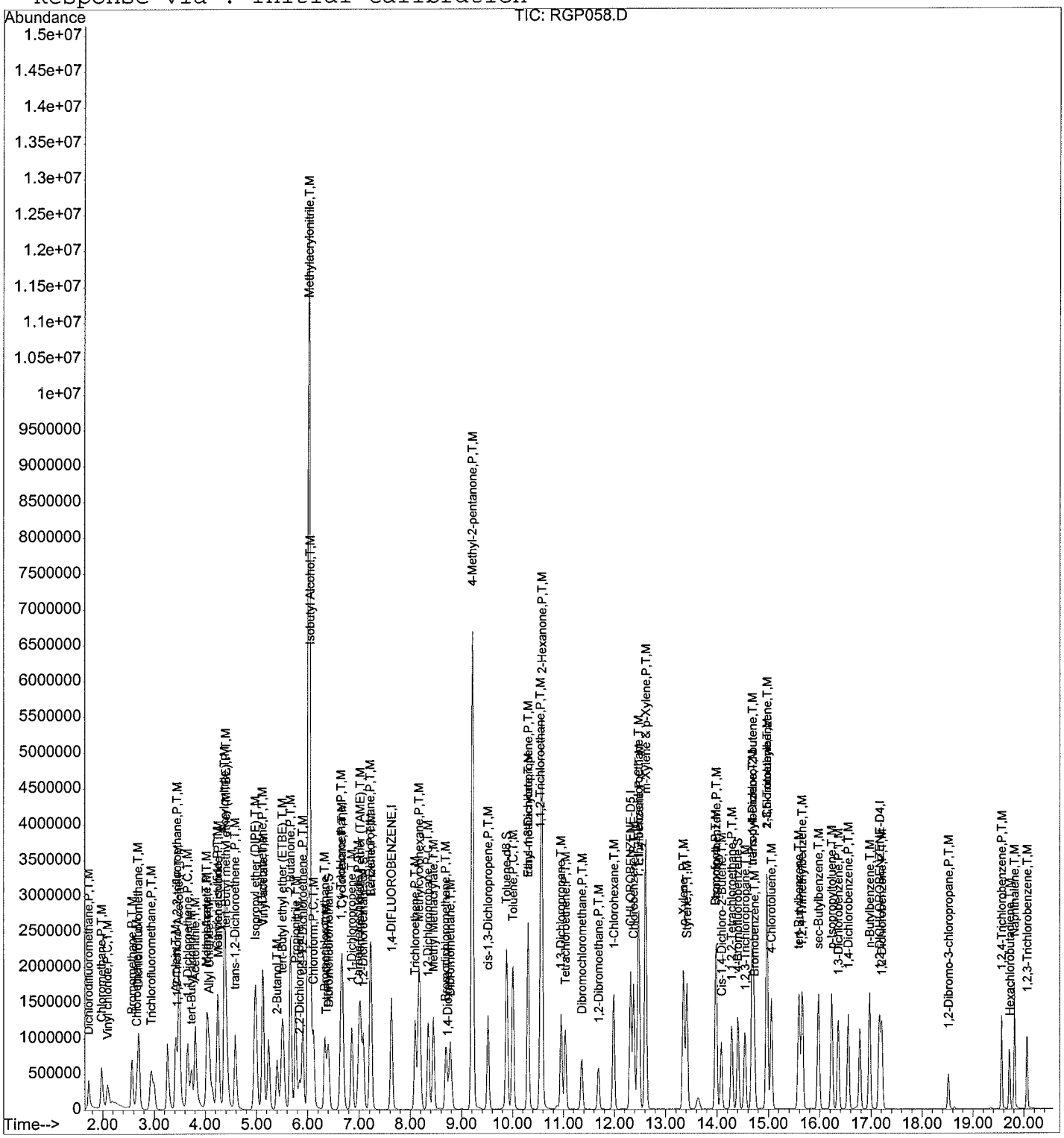
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.09	53	330053	50.65	ug/l	97
77)	Bromoform	13.97	173	442190	44.11	ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.28	83	1150353	52.33	ug/l	100
80)	1,2,3-Trichloropropane	14.55	110	261707	52.99	ug/l	95
81)	trans-1,4-Dichloro-2-buten	14.68	53	230716	48.82	ug/l	96
82)	n-Propylbenzene	14.68	91	2806940	45.35	ug/l	100
83)	Bromobenzene	14.73	156	568167	44.05	ug/l	99
84)	1,3,5-Trimethylbenzene	14.96	105	1644761	45.88	ug/l	100
85)	2-Chlorotoluene	14.96	91	1735451	44.16	ug/l	100
86)	4-Chlorotoluene	15.05	91	1519079	44.18	ug/l	99
87)	tert-Butylbenzene	15.59	134	359968	43.59	ug/l	99
88)	1,2,4-Trimethylbenzene	15.65	105	1626061	45.14	ug/l	99
89)	sec-Butylbenzene	15.98	105	2113206	43.98	ug/l	99
90)	p-Isopropyltoluene	16.23	119	1632167	42.92	ug/l	99
91)	1,3-Dichlorobenzene	16.36	146	990058	43.48	ug/l	99
93)	1,4-Dichlorobenzene	16.56	146	994294	43.75	ug/l	99
94)	n-Butylbenzene	16.97	91	1611481	42.39	ug/l	100
95)	1,2-Dichlorobenzene	17.21	146	926538	43.63	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.52	157	195031	51.03	ug/l	99
97)	1,2,4-Trichlorobenzene	19.56	180	468071	37.04	ug/l	100
98)	Hexachlorobutadiene	19.72	225	206589	36.64	ug/l	98
99)	Naphthalene	19.81	128	1404018	38.95	ug/l	100
100)	1,2,3-Trichlorobenzene	20.07	180	433959	37.43	ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18G05\RGP058.D Vial: 18
Acq On : 5 Jul 2018 4:16 pm Operator: ODinh
Sample : 18F187-07M Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 5 16:37 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP059.D Vial: 19
Acq On : 5 Jul 2018 4:42 pm Operator: ODinh
Sample : 18F187-07S Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 5 17:02 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1744022	50.00	ug/l	-0.04
56) CHLOROBENZENE-D5	12.31	117	1617729	50.00	ug/l	-0.04
76) 1,2-DICHLOROBENZENE-D4	17.16	152	652279	50.00	ug/l	-0.04
System Monitoring Compounds						
37) Dibromofluoromethane	6.39	111	609894	49.05	ug/l	-0.04
Spiked Amount 50.000			Recovery =	98.10%		
43) 1,2-Dichloroethane-d4	7.08	65	738281	47.84	ug/l	-0.04
Spiked Amount 50.000			Recovery =	95.68%		
57) Toluene-d8	9.87	98	2260454	47.37	ug/l	-0.04
Spiked Amount 50.000			Recovery =	94.74%		
79) 4-Bromofluorobenzene	14.39	95	754996	48.04	ug/l	-0.04
Spiked Amount 50.000			Recovery =	96.08%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.72	85	564397	44.48	ug/l	99
3) Chloromethane	1.97	50	930857	47.61	ug/l	99
4) Vinyl chloride	2.09	62	659949	47.74	ug/l	99
5) Bromomethane	2.57	94	640943	43.91	ug/l	99
6) Chloroethane	2.66	64	552604	51.35	ug/l	99
7) Dichlorofluoromethane	2.69	67	1580987	53.44	ug/l	99
8) Trichlorofluoromethane	2.94	101	847913	54.53	ug/l	100
9) Acrolein	3.42	56	1036067	345.88	ug/l	93
10) 1,1,2-Trichloro-1,2,2-trif	3.46	151	409291	52.49	ug/l	98
11) Acetone	3.48	43	2925375	453.61	ug/l	98
12) 1,1-Dichloroethene	3.65	61	1138808	51.19	ug/l	99
13) tert-Butyl alcohol	3.73	59	1297840	431.95	ug/l	87
14) Acetonitrile	3.80	41	2340270	829.10	ug/l	98
15) Iodomethane	4.03	142	909971	52.18	ug/l	99
16) Methyl Acetate	4.03	43	1832771	70.95	ug/l	99
17) Allyl Chloride	4.07	76	412042	54.18	ug/l	99
18) Methylene chloride	4.25	49	978859	46.34	ug/l	99
19) Carbon disulfide	4.23	76	2173234	50.98	ug/l	100
20) Acrylonitrile	4.37	53	2943359	363.20	ug/l	99
21) tert-Butyl methyl ether (M	4.40	73	2222181	52.09	ug/l	98
22) trans-1,2-Dichloroethene	4.58	61	1116265	52.13	ug/l	99
23) Isopropyl ether (DIPE)	4.98	45	3587856	52.75	ug/l	100
24) Vinyl acetate	5.11	43	2907504	57.98	ug/l	100
25) 1,1-Dichloroethane	5.11	63	1479255	53.11	ug/l	99
26) 2-Butanol	5.40	45	1243686	406.48	ug/l	97
27) tert-Butyl ethyl ether (ET	5.50	59	2538815	51.52	ug/l	99
28) 2-Butanone	5.65	43	4968465	377.65	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP059.D Vial: 19
Acq On : 5 Jul 2018 4:42 pm Operator: ODinh
Sample : 18F187-07S Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 5 17:02 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.75	54	2321469	755.93	ug/l	99
30)	2,2-Dichloropropane	5.84	77	522734	55.95	ug/l	98
31)	cis-1,2-Dichloroethene	5.90	96	858996	51.76	ug/l	98
32)	Isobutyl Alcohol	6.05	43	2372144	1553.39	ug/l	96
33)	Methylacrylonitrile	6.02	52	1939787	640.73	ug/l	99
34)	Chloroform	6.11	83	1238771	51.25	ug/l	98
35)	Bromochloromethane	6.32	49	791649	49.99	ug/l	98
36)	Tetrahydrofuran	6.36	42	527726	68.07	ug/l	98
38)	1,1,1-Trichloroethane	6.64	97	718299	54.82	ug/l	98
39)	Cyclohexane	6.66	84	1264953	53.37	ug/l	100
40)	1,1-Dichloropropene	6.85	110	302182	49.45	ug/l	99
41)	Carbon tetrachloride	6.99	119	562525	53.16	ug/l	97
42)	tert-Amyl methyl ether (TA	7.02	87	427113	51.67	ug/l	97
44)	1,2-Dichloroethane	7.21	62	907344	50.18	ug/l	98
45)	Benzene	7.22	78	2872915	50.76	ug/l	100
46)	Trichloroethene	8.09	130	697292	49.43	ug/l	99
47)	Methylcyclohexane	8.16	83	1462073	53.57	ug/l	100
48)	1,2-Dichloropropane	8.34	63	853404	50.52	ug/l	99
49)	Methyl Methacrylate	8.44	69	783468	59.84	ug/l	98
50)	Bromodichloromethane	8.68	83	924411	49.73	ug/l	100
51)	1,4-Dioxane	8.71	88	320231	1696.85	ug/l	99
52)	Dibromomethane	8.76	93	530768	52.37	ug/l	99
54)	4-Methyl-2-pentanone	9.20	43	8978506	326.40	ug/l	99
55)	cis-1,3-Dichloropropene	9.52	75	1312123	50.93	ug/l	99
58)	Toluene	9.99	91	2726161	49.12	ug/l	98
59)	Ethyl methacrylate	10.30	69	1215913	53.90	ug/l	99
60)	trans-1,3-Dichloropropene	10.30	75	1106146	50.06	ug/l	97
61)	1,1,2-Trichloroethane	10.54	97	693325	50.92	ug/l	93
62)	2-Hexanone	10.56	43	6669971	354.92	ug/l	99
63)	1,3-Dichloropropane	10.94	76	1300999	48.70	ug/l	100
64)	Tetrachloroethene	11.03	164	526657	48.79	ug/l	98
65)	Dibromochloromethane	11.34	129	663915	49.49	ug/l	100
66)	1,2-Dibromoethane	11.67	107	715437	51.44	ug/l	99
67)	1-Chlorohexane	11.98	91	1011486	50.40	ug/l	99
68)	Chlorobenzene	12.37	112	1670444	50.42	ug/l	98
69)	1,1,1,2-Tetrachloroethane	12.46	131	575976	50.67	ug/l	99
70)	Ethylbenzene	12.48	91	2899082	50.64	ug/l	100
71)	m-Xylene & p-Xylene	12.61	91	4248839	98.98	ug/l	99
72)	o-Xylene	13.34	91	2266974	50.87	ug/l	99
73)	Styrene	13.41	104	1672360	51.61	ug/l	99
74)	Isopropylbenzene	13.98	105	2526658	52.19	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP059.D Vial: 19
Acq On : 5 Jul 2018 4:42 pm Operator: ODinh
Sample : 18F187-07S Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 5 17:02 2018 Quant Results File: VO02F15.RES

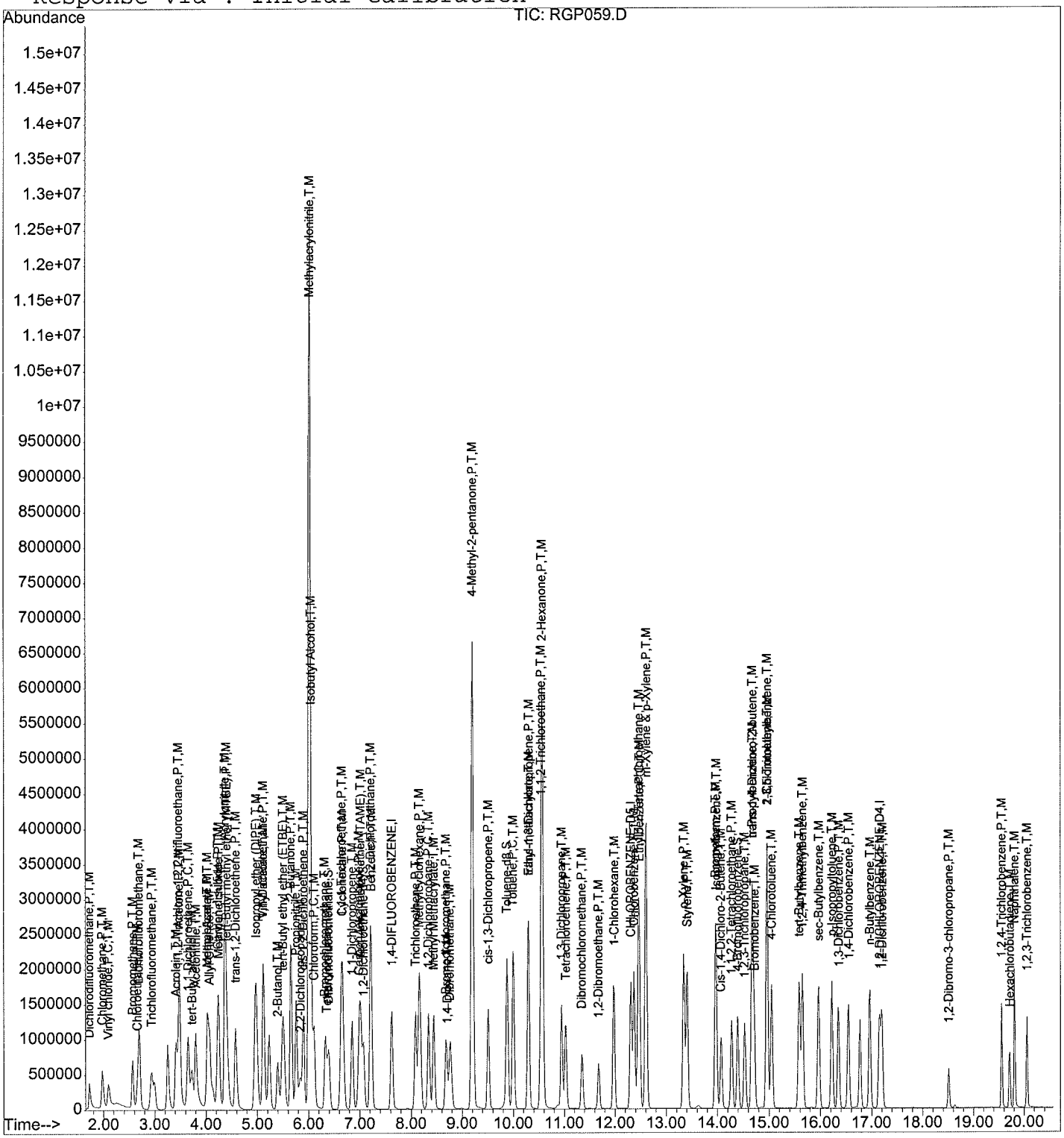
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.07	53	364812	58.05	ug/l	97
77)	Bromoform	13.96	173	482191	47.18	ug/l	100
78)	1,1,2,2-Tetrachloroethane	14.27	83	1219719	54.63	ug/l	100
80)	1,2,3-Trichloropropane	14.53	110	282424	56.31	ug/l	97
81)	trans-1,4-Dichloro-2-buten	14.68	53	266210	55.46	ug/l	99
82)	n-Propylbenzene	14.68	91	3148685	50.09	ug/l	100
83)	Bromobenzene	14.72	156	649988	49.62	ug/l	99
84)	1,3,5-Trimethylbenzene	14.96	105	1816828	49.90	ug/l	99
85)	2-Chlorotoluene	14.96	91	1920946	48.12	ug/l	99
86)	4-Chlorotoluene	15.05	91	1714998	49.11	ug/l	99
87)	tert-Butylbenzene	15.58	134	402642	48.01	ug/l	98
88)	1,2,4-Trimethylbenzene	15.64	105	1825615	49.90	ug/l	100
89)	sec-Butylbenzene	15.97	105	2307496	47.28	ug/l	99
90)	p-Isopropyltoluene	16.22	119	1789992	46.34	ug/l	100
91)	1,3-Dichlorobenzene	16.36	146	1125071	48.65	ug/l	100
93)	1,4-Dichlorobenzene	16.55	146	1131277	49.01	ug/l	99
94)	n-Butylbenzene	16.97	91	1720287	44.55	ug/l	100
95)	1,2-Dichlorobenzene	17.20	146	1044133	48.41	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.51	157	218292	55.98	ug/l	99
97)	1,2,4-Trichlorobenzene	19.56	180	542061	42.24	ug/l	100
98)	Hexachlorobutadiene	19.72	225	209162	36.53	ug/l	99
99)	Naphthalene	19.81	128	1674631	45.75	ug/l	100
100)	1,2,3-Trichlorobenzene	20.06	180	479016	40.68	ug/l	97

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18G05\RGP059.D Vial: 19
Acq On : 5 Jul 2018 4:42 pm Operator: ODinh
Sample : 18F187-07S Inst : 02
Misc : Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 5 17:02 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



INITIAL CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RFP306
Instrument ID: 02
GC Column:RTX502.2ID:0.25mm (mm)

Contract: JBER TO075
SAS No.: SDG No.: 18F187
BFB Injection Date : 06/15/18
BFB Injection Time : 14:29
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.17
75	30.0 - 60.0% of mass 95	43.03
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.87
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	75.72
175	5.0 - 9.0% of mass 174	5.93(7.8)1
176	95.0 - 101.0% of mass 174	73.19(96.7)1
177	5.0 - 9.0% of mass 176	5.17(7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD02	V002F151	RFP308	06/15/18	15:18
2	VSTD04	V002F152	RFP309	06/15/18	15:42
3	VSTD010	V002F153	RFP310	06/15/18	16:07
4	VSTD020	V002F154	RFP311	06/15/18	16:31
5	VSTD050	V002F155	RFP312	06/15/18	16:55
6	VSTD100	V002F156	RFP313	06/15/18	17:20
7	VSTD200	V002F157	RFP314	06/15/18	17:44
8	VSTD300	V002F158	RFP315	06/15/18	18:08
9	VSTD500	V002F159	RFP316	06/15/18	18:33

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :02
Beginning DateTime :06/15/18 15:18
Spike Units :PPB
IC File :RFP312

Column Spec :RTX502.2 ID :0.25MM
Ending DateTime :06/15/18 18:33
HPChem Method :V002F15

M	IDX	Parameters	2 15:18 RFP308	4 15:42 RFP309	10 16:07 RFP310	20 16:31 RFP311	50 16:55 RFP312	100 17:20 RFP313	200 17:44 RFP314	300 18:08 RFP315	500 18:33 RFP316	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	7.6536
	2	Dichlorodifluoromethane	0.307	0.310	0.321	0.356	0.360	0.395	0.424	0.404	0.396	0.364	11.99	1.7370
	3	Chloromethane	0.460	0.507	0.512	0.564	0.556	0.610	0.643	0.603	0.590	0.561	10.45	1.9899
	4	Vinyl chloride	0.355	0.380	0.389	0.427	0.415	0.430	0.378	------	------	0.396	7.07	2.1125
	5	Bromomethane	0.520	0.454	0.378	0.396	0.384	0.401	0.396	------	------	0.418	12.19	2.5800
	6	Chloroethane	0.251	0.277	0.301	0.335	0.331	0.342	0.345	0.312	0.283	0.309	10.69	2.6757
	7	Dichlorofluoromethane	0.686	0.795	0.764	0.927	0.906	0.963	0.936	0.878	0.778	0.848	11.23	2.7105
	8	Trichlorofluoromethane	0.359	0.425	0.427	0.463	0.465	0.497	0.499	0.458	0.419	0.446	9.83	2.9517
5	9	Acrolein	0.068	0.080	0.085	0.093	0.093	0.093	0.090	------	------	0.086	10.86	3.4342
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	0.195	0.221	0.213	0.226	0.234	0.242	0.239	0.233	0.208	0.224	7.08	3.4707
5	11	Acetone	0.176	0.188	0.183	0.205	0.200	0.201	0.191	0.168	0.153	0.185	9.23	3.5021
	12	1,1-Dichloroethene	0.528	0.594	0.586	0.694	0.689	0.711	0.695	0.659	0.586	0.638	10.26	3.6690
5	13	tert-Butyl alcohol	------	0.086	0.073	0.099	0.094	0.096	0.089	0.081	0.072	0.086	11.80	3.7480
10	14	Acetonitrile	0.065	0.070	0.083	0.100	0.095	0.080	0.075	0.080	------	0.081	14.69	3.8213
	15	Iodomethane	0.394	0.483	0.477	0.564	0.544	0.551	0.533	0.503	0.450	0.500	10.98	4.0474
	16	Methyl Acetate	0.714	0.751	0.680	0.794	0.779	0.761	0.704	------	------	0.741	5.68	4.0546
	17	Allyl Chloride	0.205	0.200	0.200	0.241	0.233	0.245	0.237	0.215	0.187	0.218	9.81	4.0971
	18	Methylene chloride	0.663	0.670	0.581	0.644	0.601	0.601	0.559	0.525	------	0.606	8.44	4.2657
	19	Carbon disulfide	1.134	1.154	1.179	1.345	1.293	1.328	1.302	1.196	1.068	1.222	8.01	4.2590
5	20	Acrylonitrile	0.182	0.221	0.235	0.265	0.255	0.256	0.236	0.209	------	0.232	12.05	4.3940
	21	tert-Butyl methyl ether (MTBE)	1.032	1.220	1.211	1.384	1.320	1.299	1.202	1.115	------	1.223	9.24	4.4256
	22	trans-1,2-Dichloroethene	0.537	0.622	0.605	0.695	0.669	0.664	0.632	0.586	0.516	0.614	9.77	4.6011
	23	Isopropyl ether (DIPE)	1.682	1.951	1.918	2.201	2.066	2.148	2.020	1.853	1.713	1.950	9.23	4.9978
	24	Vinyl acetate	------	1.349	1.427	1.571	1.536	1.544	1.428	1.208	------	1.438	8.95	5.1446
	25	1,1-Dichloroethane	0.678	0.830	0.773	0.905	0.852	0.871	0.819	0.770	0.689	0.798	9.79	5.1382
5	26	2-Butanol	------	0.079	0.080	0.096	0.095	0.097	0.092	0.083	0.080	0.088	9.06	5.4214
	27	tert-Butyl ethyl ether (ETBE)	1.238	1.483	1.422	1.625	1.477	1.455	1.388	1.393	1.233	1.413	8.67	5.5266
5	28	2-Butanone	0.319	0.383	0.397	0.440	0.411	0.408	0.381	0.338	0.318	0.377	11.45	5.6836
10	29	Propionitrile	------	0.085	0.080	0.103	0.095	0.096	0.087	0.081	0.076	0.088	10.49	5.7858
	30	2,2-Dichloropropane	0.260	0.262	0.269	0.291	0.284	0.281	0.258	0.237	------	0.268	6.49	5.8647
	31	cis-1,2-Dichloroethene	0.411	0.492	0.462	0.529	0.501	0.511	0.491	0.462	0.423	0.476	8.35	5.9298
20	32	Isobutyl Alcohol	0.037	0.046	0.042	0.052	0.049	0.047	0.041	0.036	------	0.044	13.05	6.0748
10	33	Methylacrylonitrile	0.071	0.088	0.086	0.104	0.096	0.093	0.082	0.075	------	0.087	12.57	6.0469
	34	Chloroform	0.612	0.760	0.716	0.796	0.735	0.732	0.673	0.639	0.573	0.693	10.60	6.1364
	35	Bromochloromethane	0.384	0.443	0.450	0.531	0.485	0.486	0.458	0.440	0.411	0.454	9.53	6.3496
	36	Tetrahydrofuran	0.207	0.232	0.210	0.267	0.238	0.230	0.217	0.203	0.196	0.222	9.91	6.3975
	37	Dibromofluoromethane	0.343	0.382	0.383	0.394	0.363	0.367	0.352	0.324	0.300	0.357	8.53	6.4240
	38	1,1,1-Trichloroethane	0.325	0.395	0.374	0.408	0.393	0.397	0.384	0.370	0.336	0.376	7.54	6.6686
	39	Cyclohexane	0.666	0.720	0.716	0.746	0.692	0.686	0.688	0.625	0.578	0.680	7.57	6.6884
	40	1,1-Dichloropropene	0.164	0.178	0.174	0.182	0.178	0.182	0.181	0.176	0.162	0.175	4.12	6.8851
	41	Carbon tetrachloride	0.254	0.299	0.293	0.310	0.320	0.325	0.325	0.316	0.288	0.303	7.60	7.0189
	42	tert-Amyl methyl ether (TAME)	0.222	0.245	0.233	0.254	0.250	0.251	0.245	0.229	0.204	0.237	6.99	7.0454
	43	1,2-Dichloroethane-d4	0.448	0.453	0.473	0.484	0.441	0.441	0.418	0.382	------	0.442	7.19	7.1085
	44	1,2-Dichloroethane	0.467	0.549	0.513	0.591	0.541	0.550	0.517	0.488	0.452	0.518	8.56	7.2355
	45	Benzene	1.493	1.788	1.636	1.814	1.683	1.695	1.612	1.514	1.367	1.623	8.92	7.2520
	46	Trichloroethene	0.329	0.403	0.384	0.405	0.412	0.429	0.440	0.430	0.408	0.404	8.20	8.1180
	47	Methylcyclohexane	0.787	0.770	0.819	0.849	0.803	0.796	0.806	0.735	0.677	0.782	6.48	8.1957
	48	1,2-Dichloropropane	0.414	0.475	0.458	0.522	0.502	0.523	0.513	0.495	0.458	0.484	7.48	8.3725
	49	Methyl Methacrylate	0.285	0.339	0.342	0.421	0.413	0.424	0.405	0.386	0.365	0.375	12.45	8.4766
	50	Bromodichloromethane	------	0.471	0.454	0.541	0.548	0.582	0.581	0.562	0.525	0.533	8.96	8.7141
20	51	1,4-Dioxane	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.005	0.005	0.005	12.95	8.7543
	52	Dibromomethane	0.229	0.270	0.279	0.315	0.308	0.320	0.311	0.300	0.281	0.291	9.94	8.7956
	53	2-Chloroethyl vinyl ether	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
5	54	4-Methyl-2-pentanone	0.644	0.763	0.792	0.893	0.828	0.837	0.763	------	------	0.789	9.96	9.2350
	55	cis-1,3-Dichloropropene	0.570	0.654	0.661	0.784	0.794	0.835	0.825	0.791	0.734	0.739	12.33	9.5442
	56	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	12.3438
	57	Toluene-d8	1.474	1.504	1.551	1.622	1.442	1.456	1.436	1.312	------	1.475	6.17	9.9085
	58	Toluene	1.615	1.898	1.813	1.828	1.758	1.741	1.697	1.613	1.475	1.715	7.61	10.0318

SC
6/19/18

59	Ethyl methacrylate	0.509	0.650	0.693	0.812	0.773	0.762	0.732	0.691	0.653	0.697	12.82	10.3342
60	trans-1,3-Dichloropropene	0.488	0.619	0.638	0.750	0.742	0.762	0.751	0.720	0.678	0.683	13.15	10.3309
61	1,1,2-Trichloroethane	0.378	0.447	0.422	0.462	0.443	0.433	0.422	0.402	0.378	0.421	7.06	10.5738
5 62	2-Hexanone	0.482	0.561	0.601	0.688	0.628	0.609	0.579	0.498	------	0.581	11.62	10.6002
63	1,3-Dichloropropane	0.733	0.872	0.823	0.921	0.871	0.852	0.827	0.784	0.748	0.826	7.46	10.9787
64	Tetrachloroethene	0.331	0.378	0.338	0.336	0.337	0.325	0.334	0.322	0.302	0.334	6.05	11.0647
65	Dibromochloromethane	------	0.347	0.368	0.422	0.429	0.445	0.448	0.438	0.420	0.415	8.97	11.3877
66	1,2-Dibromoethane	0.335	0.415	0.403	0.463	0.456	0.463	0.462	0.440	0.432	0.430	9.74	11.7125
67	1-Chlorohexane	0.541	0.647	0.615	0.583	0.640	0.629	0.665	0.657	0.605	0.620	6.34	12.0133
68	Chlorobenzene	0.897	1.081	0.995	1.066	1.065	1.058	1.073	1.029	0.950	1.024	6.26	12.4050
69	1,1,1,2-Tetrachloroethane	0.302	0.342	0.342	0.365	0.373	0.377	0.372	0.359	0.329	0.351	7.08	12.4909
70	Ethylbenzene	1.694	1.964	1.854	1.856	1.871	1.803	1.776	1.648	1.457	1.769	8.53	12.5074
2 71	m-Xylene & p-Xylene	1.295	1.471	1.406	1.375	1.383	1.302	1.240	1.142	------	1.327	7.83	12.6398
72	o-Xylene	1.242	1.469	1.404	1.444	1.430	1.418	1.412	1.348	1.230	1.377	6.28	13.3767
73	Styrene	0.837	0.982	0.999	1.073	1.091	1.074	1.058	1.000	0.900	1.002	8.60	13.4445
74	Isopropylbenzene	1.412	1.622	1.586	1.510	1.570	1.529	1.522	1.449	1.266	1.496	7.23	14.0081
75	Cis-1,4-Dichloro-2-Butene	------	0.157	0.167	0.215	0.207	0.216	0.212	0.196	0.184	0.194	11.75	14.1096
76	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	17.1911
77	Bromoform	------	0.522	0.525	0.682	0.716	0.796	0.818	0.837	------	0.699	18.90	13.9968
78	1,1,2,2-Tetrachloroethane	1.385	1.636	1.591	1.875	1.791	1.835	1.779	1.781	1.729	1.711	8.89	14.3138
79	4-Bromofluorobenzene	1.150	1.222	1.215	1.320	1.175	1.239	1.217	1.186	1.118	1.205	4.81	14.4328
80	1,2,3-Trichloropropane	0.308	0.395	0.343	0.415	0.400	0.410	0.397	0.401	0.391	0.384	9.15	14.5733
81	trans-1,4-Dichloro-2-butene	------	0.304	0.293	0.375	0.380	0.402	0.404	0.401	0.385	0.368	12.05	14.7083
82	n-Propylbenzene	4.426	5.048	4.985	4.775	4.986	4.926	4.891	4.903	4.425	4.818	4.88	14.7088
83	Bromobenzene	0.845	1.053	0.956	1.037	1.046	1.048	1.031	1.042	0.979	1.004	6.81	14.7534
84	1,3,5-Trimethylbenzene	2.540	3.010	2.879	2.754	2.927	2.845	2.800	2.803	2.561	2.791	5.59	14.9931
85	2-Chlorotoluene	2.898	3.458	3.172	3.044	3.108	3.083	3.025	2.957	2.793	3.060	6.15	14.9997
86	4-Chlorotoluene	2.579	2.924	2.703	2.742	2.820	2.619	2.598	2.698	2.410	2.677	5.56	15.0856
87	tert-Butylbenzene	0.630	0.637	0.645	0.592	0.647	0.645	0.662	0.678	0.650	0.643	3.68	15.6244
88	1,2,4-Trimethylbenzene	2.545	2.977	2.799	2.817	2.953	2.882	2.808	2.852	2.608	2.804	5.14	15.6839
89	sec-Butylbenzene	3.379	4.019	3.904	3.568	3.839	3.791	3.786	3.827	3.556	3.741	5.35	16.0028
90	p-Isopropyltoluene	2.667	3.025	3.034	2.877	3.066	3.048	3.030	3.065	2.835	2.961	4.67	16.2590
91	1,3-Dichlorobenzene	1.645	1.815	1.742	1.786	1.832	1.792	1.825	1.815	1.703	1.773	3.59	16.3895
92	1,2,3-Trimethylbenzene	2.084	2.801	2.826	3.126	2.848	2.886	2.778	2.691	2.527	2.730	10.61	16.5317
93	1,4-Dichlorobenzene	1.721	1.892	1.785	1.777	1.860	1.757	1.759	1.758	1.615	1.769	4.48	16.5829
94	n-Butylbenzene	2.553	3.118	3.068	2.904	3.091	2.980	3.041	3.072	2.811	2.960	6.14	16.9994
95	1,2-Dichlorobenzene	1.568	1.674	1.633	1.657	1.695	1.663	1.680	1.693	1.617	1.653	2.49	17.2374
96	1,2-Dibromo-3-chloropropane	------	0.199	0.191	0.253	0.272	0.297	0.322	------	------	0.255	20.58	18.5405
97	1,2,4-Trichlorobenzene	------	0.853	0.887	0.861	0.988	1.004	1.116	1.178	------	0.984	12.94	19.5809
98	Hexachlorobutadiene	------	0.422	0.388	0.386	0.413	0.436	0.465	0.492	0.509	0.439	10.47	19.7357
99	Naphthalene	------	2.353	2.414	2.667	2.842	2.874	3.081	3.173	3.044	2.806	10.87	19.8343
100	1,2,3-Trichlorobenzene	------	0.791	0.802	0.836	0.896	0.897	0.964	1.027	1.009	0.903	10.06	20.0778

Spike Amount = Nominal Amount * M
Ave_%RSD : 9 Max_%RSD : 20.6

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
77	Bromoform	-0.04055	0.82644	0.9992
96	1,2-Dibromo-3-chloropropane	-0.01590	0.31312	0.9978

SG
6/19/18

Compound List Report 02

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
Total Cpnds : 100

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	7.66	1.000	A	1	A	B
2	T	Dichlorodifluoromethane	85	1.74	0.227	A	1	A	B
3	T	Chloromethane	50	1.99	0.260	A	1	A	B
4	T	Vinyl chloride	62	2.11	0.276	A	1	A	B
5	T	Bromomethane	94	2.57	0.336	A	1	A	B
6	T	Chloroethane	64	2.68	0.350	A	2	A	B
7	T	Dichlorofluoromethane	67	2.71	0.354	A	1	A	B
8	T	Trichlorofluoromethane	101	2.95	0.385	A	1	A	B
9	T	Acrolein	56	3.44	0.449	A	1	A	B
10	T	1,1,2-Trichloro-1,2,2-trifluor	151	3.47	0.453	A	1	A	B
11	T	Acetone	43	3.50	0.456	A	2	A	B
12	T	1,1-Dichloroethene	61	3.68	0.480	A	2	A	B
13	T	tert-Butyl alcohol	59	3.75	0.489	A	1	A	B
14	T	Acetonitrile	41	3.82	0.499	A	2	A	B
15	T	Iodomethane	142	4.05	0.528	A	1	A	B
16	T	Methyl Acetate	43	4.05	0.528	A	1	A	B
17	T	Allyl Chloride	76	4.09	0.534	A	1	A	B
18	T	Methylene chloride	49	4.27	0.557	A	2	A	B
19	T	Carbon disulfide	76	4.26	0.555	A	1	A	B
20	T	Acrylonitrile	53	4.39	0.573	A	2	A	B
21	T	tert-Butyl methyl ether (MTBE)	73	4.42	0.577	A	1	A	B
22	T	trans-1,2-Dichloroethene	61	4.60	0.600	A	2	A	B
23	T	Isopropyl ether (DIPE)	45	5.00	0.652	A	1	A	B
24	T	Vinyl acetate	43	5.15	0.672	A	1	A	B
25	T	1,1-Dichloroethane	63	5.13	0.670	A	2	A	B
26	T	2-Butanol	45	5.42	0.707	A	1	A	B
27	T	tert-Butyl ethyl ether (ETBE)	59	5.52	0.720	A	1	A	B
28	T	2-Butanone	43	5.68	0.742	A	1	A	B
29	T	Propionitrile	54	5.79	0.755	A	1	A	B
30	T	2,2-Dichloropropane	77	5.86	0.765	A	2	A	B
31	T	cis-1,2-Dichloroethene	96	5.94	0.775	A	2	A	B
32	T	Isobutyl Alcohol	43	6.07	0.792	A	1	A	B
33	T	Methylacrylonitrile	52	6.04	0.788	A	2	A	B
34	T	Chloroform	83	6.13	0.800	A	2	A	B
35	T	Bromochloromethane	49	6.35	0.829	A	2	A	B
36	T	Tetrahydrofuran	42	6.40	0.835	A	2	A	B
37	S	Dibromofluoromethane	111	6.43	0.839	A	1	A	B
38	T	1,1,1-Trichloroethane	97	6.66	0.870	A	2	A	B
39	T	Cyclohexane	84	6.69	0.874	A	2	A	B
40	T	1,1-Dichloropropene	110	6.89	0.899	A	1	A	B
41	T	Carbon tetrachloride	119	7.02	0.917	A	1	A	B
42	T	tert-Amyl methyl ether (TAME)	87	7.04	0.918	A	2	A	B
43	S	1,2-Dichloroethane-d4	65	7.11	0.928	A	1	A	B
44	T	1,2-Dichloroethane	62	7.23	0.944	A	1	A	B
45	T	Benzene	78	7.26	0.948	A	2	A	B
46	T	Trichloroethene	130	8.12	1.060	A	3	A	B
47	T	Methylcyclohexane	83	8.20	1.070	A	2	A	B
48	T	1,2-Dichloropropane	63	8.38	1.093	A	2	A	B
49	T	Methyl Methacrylate	69	8.48	1.107	A	2	A	B
50	T	Bromodichloromethane	83	8.72	1.138	A	1	A	B
51	T	1,4-Dioxane	88	8.75	1.142	A	1	A	B
52	T	Dibromomethane	93	8.79	1.148	A	2	A	B
53	T	2-Chloroethyl vinyl ether	63	0.00	0.000	A	1	A	B

6/19/18 SG

54		T	4-Methyl-2-pentanone	43	9.24	1.206	A	3	A	B
55		T	cis-1,3-Dichloropropene	75	9.55	1.247	A	3	A	B
56	I		CHLOROBENZENE-D5	117	12.35	1.000	A	2	A	B
57		S	Toluene-d8	98	9.91	0.802	A	1	A	B
58		T	Toluene	91	10.03	0.812	A	1	A	B
59		T	Ethyl methacrylate	69	10.34	0.837	A	2	A	B
60		T	trans-1,3-Dichloropropene	75	10.34	0.837	A	2	A	B
61		T	1,1,2-Trichloroethane	97	10.58	0.857	A	3	A	B
62		T	2-Hexanone	43	10.59	0.858	A	2	A	B
63		T	1,3-Dichloropropane	76	10.98	0.889	A	1	A	B
64		T	Tetrachloroethene	164	11.07	0.896	A	3	A	B
65		T	Dibromochloromethane	129	11.39	0.923	A	1	A	B
66		T	1,2-Dibromoethane	107	11.71	0.948	A	1	A	B
67		T	1-Chlorohexane	91	12.02	0.973	A	3	A	B
68		T	Chlorobenzene	112	12.41	1.005	A	3	A	B
69		T	1,1,1,2-Tetrachloroethane	131	12.50	1.012	A	3	A	B
70		T	Ethylbenzene	91	12.51	1.013	A	1	A	B
71		T	m-Xylene & p-Xylene	91	12.64	1.024	A	1	A	B
72		T	o-Xylene	91	13.37	1.083	A	1	A	B
73		T	Styrene	104	13.45	1.089	A	2	A	B
74		T	Isopropylbenzene	105	14.01	1.135	A	3	A	B
75		T	Cis-1,4-Dichloro-2-Butene	53	14.12	1.143	A	2	A	B
76	I		1,2-DICHLOROBENZENE-D4	152	17.20	1.000	A	1	A	B
77		T	Bromoform	173	14.00	0.814	L	2	A	B
78		T	1,1,2,2-Tetrachloroethane	83	14.31	0.832	A	1	A	B
79		S	4-Bromofluorobenzene	95	14.43	0.839	A	2	A	B
80		T	1,2,3-Trichloropropane	110	14.58	0.848	A	1	A	B
81		T	trans-1,4-Dichloro-2-butene	53	14.71	0.856	A	1	A	B
82		T	n-Propylbenzene	91	14.71	0.856	A	2	A	B
83		T	Bromobenzene	156	14.76	0.858	A	2	A	B
84		T	1,3,5-Trimethylbenzene	105	14.99	0.872	A	2	A	B
85		T	2-Chlorotoluene	91	14.99	0.872	A	1	A	B
86		T	4-Chlorotoluene	91	15.08	0.877	A	1	A	B
87		T	tert-Butylbenzene	134	15.62	0.908	A	2	A	B
88		T	1,2,4-Trimethylbenzene	105	15.68	0.912	A	1	A	B
89		T	sec-Butylbenzene	105	16.01	0.931	A	1	A	B
90		T	p-Isopropyltoluene	119	16.26	0.946	A	2	A	B
91		T	1,3-Dichlorobenzene	146	16.39	0.953	A	2	A	B
92		T	1,2,3-Trimethylbenzene	105	16.53	0.961	A	2	A	B
93		T	1,4-Dichlorobenzene	146	16.59	0.965	A	2	A	B
94		T	n-Butylbenzene	91	17.00	0.989	A	2	A	B
95		T	1,2-Dichlorobenzene	146	17.24	1.003	A	2	A	B
96		T	1,2-Dibromo-3-chloropropane	157	18.53	1.078	L	2	A	B
97		T	1,2,4-Trichlorobenzene	180	19.58	1.138	A	2	A	B
98		T	Hexachlorobutadiene	225	19.74	1.148	A	2	A	B
99		T	Naphthalene	128	19.83	1.153	A	1	A	B
100		T	1,2,3-Trichlorobenzene	180	20.08	1.168	A	2	A	B

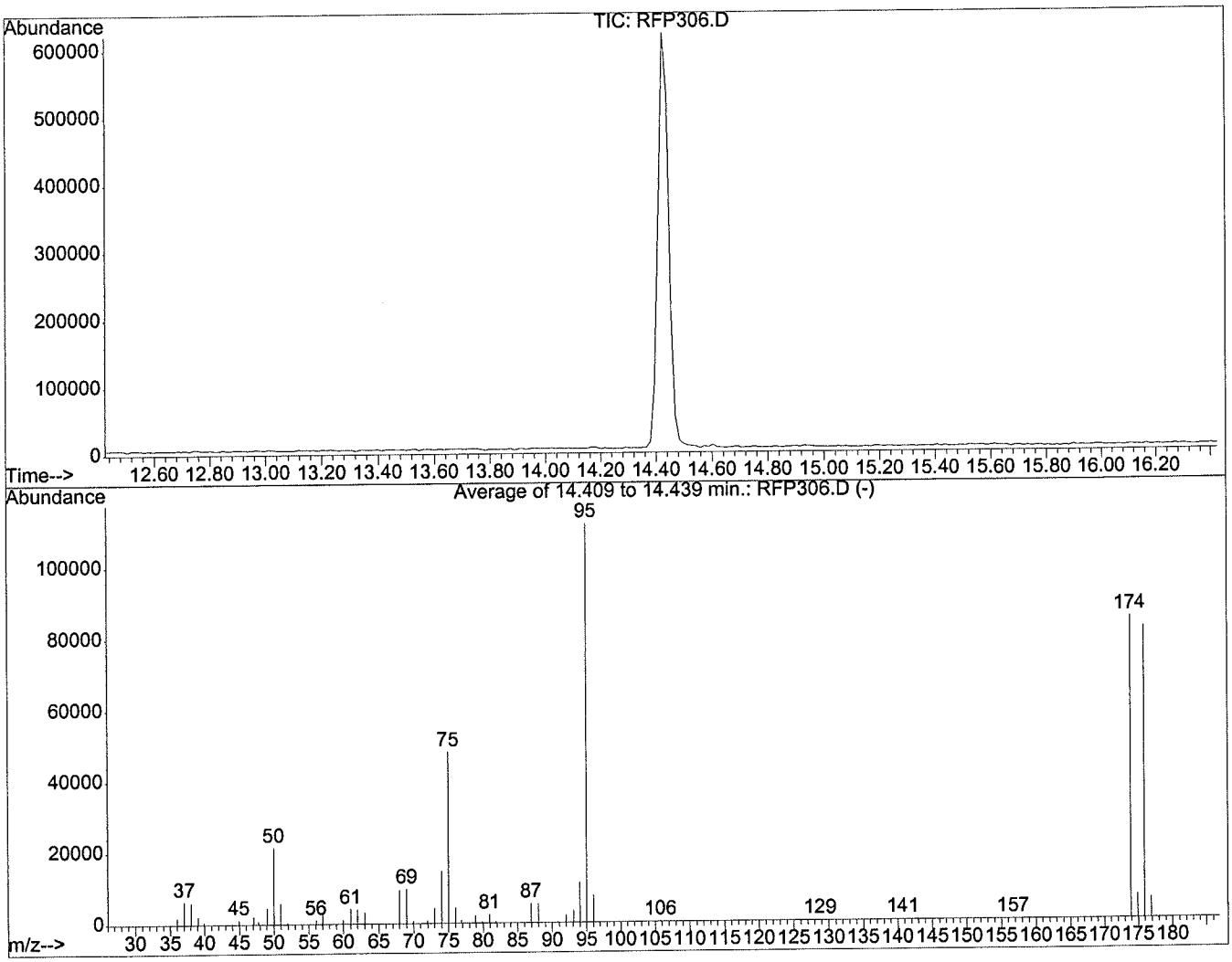
Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VO02F15.M Mon Jun 18 12:51:37 2018

SM 6/19/18

Data File : D:\HPCHEM\1\DATA\18F15\RFP306.D
Acq On : 15 Jun 2018 2:29 pm
Sample : BFB02F11
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL

Vial: 15
Operator: ODinh
Inst : 02
Multiplr: 1.00



AutoFind: Scans 859, 860, 861; Background Corrected with Scan 854

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.2	21480	PASS
75	95	30	60	43.0	48224	PASS
95	95	100	100	100.0	112080	PASS
96	95	5	9	6.9	7704	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.7	84864	PASS
175	174	5	9	7.8	6645	PASS
176	174	95	101	96.7	82032	PASS
177	176	5	9	7.1	5797	PASS

RFP306.D VO02F15.M Mon Jun 18 12:51:48 2018

SA 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP308.D
Acq On : 15 Jun 2018 3:18 pm
Sample : VO02F151
Misc : 2.0ppb 8260/10ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 17
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.65	114	1949763	50.00	ug/l		-0.01
56) CHLOROBENZENE-D5	12.35	117	1631102	50.00	ug/l		0.00
76) 1,2-DICHLOROBENZENE-D4	17.18	152	643440	50.00	ug/l		-0.01
System Monitoring Compounds							
37) Dibromofluoromethane	6.43	111	26784	1.93	ug/l		0.00
Spiked Amount 50.000			Recovery =	3.86%			
43) 1,2-Dichloroethane-d4	7.11	65	34913	2.02	ug/l		0.00
Spiked Amount 50.000			Recovery =	4.04%			
57) Toluene-d8	9.91	98	96174	2.00	ug/l		0.00
Spiked Amount 50.000			Recovery =	4.00%			
79) 4-Bromofluorobenzene	14.43	95	29592	1.91	ug/l		0.00
Spiked Amount 50.000			Recovery =	3.82%			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.74	85	23982	1.69	ug/l		92
3) Chloromethane	2.00	50	35860	1.64	ug/l		96
4) Vinyl chloride	2.11	62	27707	1.79	ug/l		97
5) Bromomethane	2.58	94	40521	2.48	ug/l	#	58
6) Chloroethane	2.68	64	19544	1.62	ug/l		84
7) Dichlorofluoromethane	2.71	67	53484	1.62	ug/l		96
8) Trichlorofluoromethane	2.95	101	27981	1.61	ug/l		93
9) Acrolein	3.44	56	26485	7.91	ug/l		88
10) 1,1,2-Trichloro-1,2,2-trif	3.47	151	15174	1.74	ug/l		97
11) Acetone	3.50	43	68746	9.54	ug/l		99
12) 1,1-Dichloroethene	3.68	61	41141	1.65	ug/l		95
13) tert-Butyl alcohol	3.77	59	23481	6.99	ug/l	#	1
14) Acetonitrile	3.82	41	50516	16.01	ug/l		80
15) Iodomethane	4.05	142	30740	1.58	ug/l		98
16) Methyl Acetate	4.06	43	55664	1.93	ug/l		79
17) Allyl Chloride	4.09	76	15958	1.88	ug/l		76
18) Methylene chloride	4.26	49	51690	2.19	ug/l		99
19) Carbon disulfide	4.26	76	88422	1.86	ug/l		100
20) Acrylonitrile	4.39	53	70793	7.81	ug/l		97
21) tert-Butyl methyl ether (M	4.43	73	80522	1.69	ug/l		94
22) trans-1,2-Dichloroethene	4.60	61	41874	1.75	ug/l		97
23) Isopropyl ether (DIPE)	5.00	45	131144	1.72	ug/l		97
24) Vinyl acetate	5.15	43	83176	1.48	ug/l		96
25) 1,1-Dichloroethane	5.13	63	52870	1.70	ug/l		97
26) 2-Butanol	5.43	45	24347	7.12	ug/l	#	60
27) tert-Butyl ethyl ether (ET	5.54	59	96571	1.75	ug/l		97
28) 2-Butanone	5.68	43	124439	8.46	ug/l		100

(#) = qualifier out of range (m) = manual integration

RFP308.D VO02F15.M Mon Jun 18 12:52:02 2018 SU 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP308.D
Acq On : 15 Jun 2018 3:18 pm
Sample : VO02F151
Misc : 2.0ppb 8260/10ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 17
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.79	54	48650	14.17	ug/l	94
30)	2,2-Dichloropropane	5.86	77	20289	1.94	ug/l	98
31)	cis-1,2-Dichloroethene	5.92	96	32024	1.73	ug/l	99
32)	Isobutyl Alcohol	6.07	43	57571	33.72	ug/l	95
33)	Methylacrylonitrile	6.04	52	55662	16.45	ug/l	94
34)	Chloroform	6.13	83	47735	1.77	ug/l	97
35)	Bromochloromethane	6.35	49	29924	1.69	ug/l	97
36)	Tetrahydrofuran	6.41	42	16168	1.87	ug/l	87
38)	1,1,1-Trichloroethane	6.67	97	25314	1.73	ug/l	94
39)	Cyclohexane	6.68	84	51975	1.96	ug/l	97
40)	1,1-Dichloropropene	6.89	110	12805	1.87	ug/l	97
41)	Carbon tetrachloride	7.02	119	19773	1.67	ug/l	97
42)	tert-Amyl methyl ether (TA	7.05	87	17275	1.87	ug/l	95
44)	1,2-Dichloroethane	7.23	62	36386	1.80	ug/l	100
45)	Benzene	7.25	78	116442	1.84	ug/l	99
46)	Trichloroethene	8.11	130	25631	1.63	ug/l	95
47)	Methylcyclohexane	8.20	83	61392	2.01	ug/l	99
48)	1,2-Dichloropropane	8.38	63	32323	1.71	ug/l	94
49)	Methyl Methacrylate	8.48	69	22259	1.52	ug/l	99
50)	Bromodichloromethane	8.72	83	29327	1.41	ug/l	95
51)	1,4-Dioxane	8.76	88	6433	30.49	ug/l	92
52)	Dibromomethane	8.79	93	17898	1.58	ug/l	99
54)	4-Methyl-2-pentanone	9.24	43	251228	8.17	ug/l	98
55)	cis-1,3-Dichloropropene	9.54	75	44435	1.54	ug/l	95
58)	Toluene	10.03	91	105384	1.88	ug/l	93
59)	Ethyl methacrylate	10.32	69	33235	1.46	ug/l	95
60)	trans-1,3-Dichloropropene	10.32	75	31829	1.43	ug/l	90
61)	1,1,2-Trichloroethane	10.58	97	24657	1.80	ug/l	94
62)	2-Hexanone	10.61	43	157240	8.30	ug/l	95
63)	1,3-Dichloropropane	10.98	76	47798	1.77	ug/l	98
64)	Tetrachloroethene	11.07	164	21596	1.98	ug/l	97
65)	Dibromochloromethane	11.38	129	18107	1.34	ug/l	97
66)	1,2-Dibromoethane	11.71	107	21857	1.56	ug/l	93
67)	1-Chlorohexane	12.01	91	35313	1.75	ug/l	93
68)	Chlorobenzene	12.41	112	58499	1.75	ug/l	80
69)	1,1,1,2-Tetrachloroethane	12.48	131	19695	1.72	ug/l	88
70)	Ethylbenzene	12.51	91	110555	1.92	ug/l	96
71)	m-Xylene & p-Xylene	12.63	91	169032	3.91	ug/l	98
72)	o-Xylene	13.37	91	81063	1.80	ug/l	94
73)	Styrene	13.45	104	54615	1.67	ug/l	98
74)	Isopropylbenzene	14.00	105	92100	1.89	ug/l	98

(#) = qualifier out of range (m) = manual integration
RFP308.D VO02F15.M Mon Jun 18 12:52:03 2018

SU 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP308.D
Acq On : 15 Jun 2018 3:18 pm
Sample : VO02F151
Misc : 2.0ppb 8260/10ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 17
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.10	53	6878	1.09	ug/l		97
77)	Bromoform	14.00	173	10531	3.44	ug/l		89
78)	1,1,2,2-Tetrachloroethane	14.31	83	35641	1.62	ug/l		99
80)	1,2,3-Trichloropropane	14.58	110	7929	1.60	ug/l		91
81)	trans-1,4-Dichloro-2-buten	14.71	53	6735	1.42	ug/l		70
82)	n-Propylbenzene	14.71	91	113917	1.84	ug/l		98
83)	Bromobenzene	14.76	156	21752	1.68	ug/l		97
84)	1,3,5-Trimethylbenzene	15.00	105	65363	1.82	ug/l		97
85)	2-Chlorotoluene	15.00	91	74579	1.89	ug/l		97
86)	4-Chlorotoluene	15.08	91	66371	1.93	ug/l		98
87)	tert-Butylbenzene	15.62	134	16215	1.96	ug/l	#	85
88)	1,2,4-Trimethylbenzene	15.68	105	65499	1.81	ug/l		98
89)	sec-Butylbenzene	16.01	105	86979	1.81	ug/l		99
90)	p-Isopropyltoluene	16.26	119	68643	1.80	ug/l		98
91)	1,3-Dichlorobenzene	16.39	146	42346	1.86	ug/l		96
92)	1,2,3-Trimethylbenzene	16.53	105	53648	1.53	ug/l		95
93)	1,4-Dichlorobenzene	16.59	146	44303	1.95	ug/l		96
94)	n-Butylbenzene	17.00	91	65703	1.73	ug/l		97
95)	1,2-Dichlorobenzene	17.24	146	40355	1.90	ug/l		86
96)	1,2-Dibromo-3-chloropropan	18.54	157	3791	3.48	ug/l		84
97)	1,2,4-Trichlorobenzene	19.58	180	18579	1.47	ug/l		96
98)	Hexachlorobutadiene	19.74	225	8791	1.56	ug/l		89
99)	Naphthalene	19.83	128	51872	1.44	ug/l		100
100)	1,2,3-Trichlorobenzene	20.08	180	17918	1.54	ug/l		96

(#) = qualifier out of range (m) = manual integration

SU 6/19/18

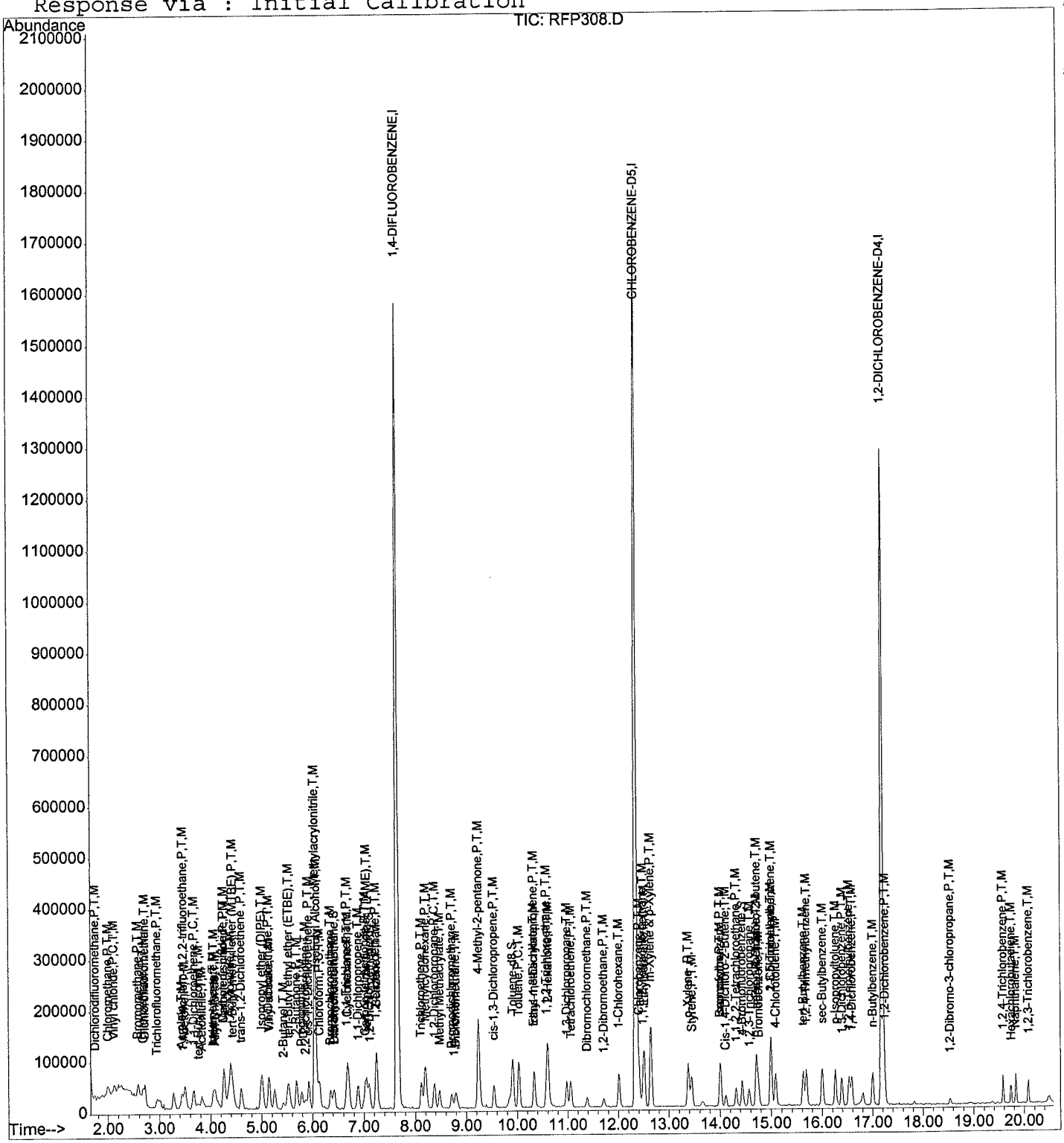
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F15\RFP308.D
Acq On : 15 Jun 2018 3:18 pm
Sample : VO02F151
Misc : 2.0ppb 8260/10ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 17
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



6/14/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP309.D
Acq On : 15 Jun 2018 3:42 pm
Sample : VO02F152
Misc : 4.0ppb 8260/20ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 18
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.66	114	1907465	50.00	ug/l		0.00
56) CHLOROBENZENE-D5	12.34	117	1618458	50.00	ug/l		0.00
76) 1,2-DICHLOROBENZENE-D4	17.19	152	633876	50.00	ug/l		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	6.42	111	58279	4.28	ug/l		0.00
Spiked Amount 50.000			Recovery =	8.56%			
43) 1,2-Dichloroethane-d4	7.11	65	69123	4.10	ug/l		0.00
Spiked Amount 50.000			Recovery =	8.20%			
57) Toluene-d8	9.92	98	194785	4.08	ug/l		0.00
Spiked Amount 50.000			Recovery =	8.16%			
79) 4-Bromofluorobenzene	14.44	95	61961	4.06	ug/l		0.00
Spiked Amount 50.000			Recovery =	8.12%			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.74	85	47375	3.41	ug/l		97
3) Chloromethane	1.99	50	77321	3.62	ug/l		94
4) Vinyl chloride	2.12	62	57984	3.84	ug/l		89
5) Bromomethane	2.58	94	69305	4.34	ug/l		72
6) Chloroethane	2.67	64	42279	3.59	ug/l		94
7) Dichlorofluoromethane	2.72	67	121368	3.75	ug/l		100
8) Trichlorofluoromethane	2.96	101	64873	3.81	ug/l		100
9) Acrolein	3.43	56	61082	18.64	ug/l		99
10) 1,1,2-Trichloro-1,2,2-trif	3.46	151	33790	3.96	ug/l		96
11) Acetone	3.51	43	143412	20.33	ug/l		100
12) 1,1-Dichloroethene	3.67	61	90662	3.73	ug/l		99
13) tert-Butyl alcohol	3.76	59	65434	19.91	ug/l	#	1
14) Acetonitrile	3.82	41	106204	34.40	ug/l		79
15) Iodomethane	4.06	142	73757	3.87	ug/l		97
16) Methyl Acetate	4.06	43	114666	4.06	ug/l		89
17) Allyl Chloride	4.10	76	30524	3.67	ug/l		98
18) Methylene chloride	4.26	49	102307	4.43	ug/l		99
19) Carbon disulfide	4.26	76	176051	3.78	ug/l		100
20) Acrylonitrile	4.40	53	168306	18.99	ug/l		98
21) tert-Butyl methyl ether (M	4.43	73	186243	3.99	ug/l		94
22) trans-1,2-Dichloroethene	4.61	61	94873	4.05	ug/l		99
23) Isopropyl ether (DIPE)	4.99	45	297714	4.00	ug/l		100
24) Vinyl acetate	5.14	43	205839	3.75	ug/l		98
25) 1,1-Dichloroethane	5.14	63	126660	4.16	ug/l		98
26) 2-Butanol	5.42	45	60589	18.11	ug/l	#	60
27) tert-Butyl ethyl ether (ET	5.53	59	226371	4.20	ug/l		94
28) 2-Butanone	5.69	43	291967	20.29	ug/l		99

(#) = qualifier out of range (m) = manual integration
RFP309.D VO02F15.M Mon Jun 18 12:52:17 2018

SU 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP309.D
Acq On : 15 Jun 2018 3:42 pm
Sample : VO02F152
Misc : 4.0ppb 8260/20ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 18
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.78	54	130052	38.72	ug/l	100
30)	2,2-Dichloropropane	5.86	77	40034	3.92	ug/l	95
31)	cis-1,2-Dichloroethene	5.93	96	75094	4.14	ug/l	97
32)	Isobutyl Alcohol	6.08	43	140152	83.91	ug/l	90
33)	Methylacrylonitrile	6.05	52	133623	40.36	ug/l	93
34)	Chloroform	6.14	83	116025	4.39	ug/l	98
35)	Bromochloromethane	6.35	49	67605	3.90	ug/l	97
36)	Tetrahydrofuran	6.41	42	35386	4.17	ug/l	96
38)	1,1,1-Trichloroethane	6.66	97	60314	4.21	ug/l	97
39)	Cyclohexane	6.69	84	109838	4.24	ug/l	98
40)	1,1-Dichloropropene	6.88	110	27162	4.06	ug/l	99
41)	Carbon tetrachloride	7.02	119	45635	3.94	ug/l	99
42)	tert-Amyl methyl ether (TA	7.05	87	37365	4.13	ug/l	92
44)	1,2-Dichloroethane	7.24	62	83703	4.23	ug/l	98
45)	Benzene	7.25	78	272894	4.41	ug/l	98
46)	Trichloroethene	8.12	130	61540	3.99	ug/l	97
47)	Methylcyclohexane	8.21	83	117539	3.94	ug/l	93
48)	1,2-Dichloropropane	8.37	63	72453	3.92	ug/l	93
49)	Methyl Methacrylate	8.47	69	51658	3.61	ug/l	96
50)	Bromodichloromethane	8.71	83	71860	3.53	ug/l	97
51)	1,4-Dioxane	8.76	88	15730	76.21	ug/l	92
52)	Dibromomethane	8.80	93	41244	3.72	ug/l	97
54)	4-Methyl-2-pentanone	9.23	43	582164	19.35	ug/l	98
55)	cis-1,3-Dichloropropene	9.54	75	99774	3.54	ug/l	99
58)	Toluene	10.04	91	245686	4.43	ug/l	100
59)	Ethyl methacrylate	10.33	69	84156	3.73	ug/l	95
60)	trans-1,3-Dichloropropene	10.33	75	80109	3.62	ug/l	97
61)	1,1,2-Trichloroethane	10.57	97	57914	4.25	ug/l	98
62)	2-Hexanone	10.60	43	363373	19.33	ug/l	97
63)	1,3-Dichloropropane	10.99	76	112916	4.22	ug/l	100
64)	Tetrachloroethene	11.06	164	49001	4.54	ug/l	98
65)	Dibromochloromethane	11.39	129	44903	3.35	ug/l	99
66)	1,2-Dibromoethane	11.72	107	53711	3.86	ug/l	99
67)	1-Chlorohexane	12.01	91	83755	4.17	ug/l	98
68)	Chlorobenzene	12.40	112	139990	4.22	ug/l	91
69)	1,1,1,2-Tetrachloroethane	12.49	131	44342	3.90	ug/l	94
70)	Ethylbenzene	12.50	91	254261	4.44	ug/l	98
71)	m-Xylene & p-Xylene	12.64	91	380900	8.87	ug/l	100
72)	o-Xylene	13.38	91	190154	4.26	ug/l	99
73)	Styrene	13.44	104	127172	3.92	ug/l	98
74)	Isopropylbenzene	14.01	105	210069	4.34	ug/l	98

(#) = qualifier out of range (m) = manual integration

SL 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP309.D Vial: 18
Acq On : 15 Jun 2018 3:42 pm Operator: ODinh
Sample : VO02F152 Inst : 02
Misc : 4.0ppb 8260/20ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.11	53	20284	3.23	ug/l	85
77)	Bromoform	13.99	173	26463	4.98	ug/l	98
78)	1,1,2,2-Tetrachloroethane	14.32	83	82949	3.82	ug/l	98
80)	1,2,3-Trichloropropane	14.57	110	20041	4.11	ug/l	93
81)	trans-1,4-Dichloro-2-buten	14.71	53	15415	3.30	ug/l	80
82)	n-Propylbenzene	14.71	91	255995	4.19	ug/l	99
83)	Bromobenzene	14.75	156	53377	4.19	ug/l	98
84)	1,3,5-Trimethylbenzene	14.99	105	152654	4.31	ug/l	99
85)	2-Chlorotoluene	15.00	91	175352	4.52	ug/l	100
86)	4-Chlorotoluene	15.08	91	148282	4.37	ug/l	99
87)	tert-Butylbenzene	15.63	134	32284	3.96	ug/l	93
88)	1,2,4-Trimethylbenzene	15.69	105	150972	4.25	ug/l	96
89)	sec-Butylbenzene	16.00	105	203812	4.30	ug/l	98
90)	p-Isopropyltoluene	16.25	119	153418	4.09	ug/l	99
91)	1,3-Dichlorobenzene	16.39	146	92060	4.10	ug/l	99
92)	1,2,3-Trimethylbenzene	16.54	105	142040	4.10	ug/l	99
93)	1,4-Dichlorobenzene	16.58	146	95932	4.28	ug/l	99
94)	n-Butylbenzene	17.00	91	158111	4.21	ug/l	97
95)	1,2-Dichlorobenzene	17.23	146	84898	4.05	ug/l	96
96)	1,2-Dibromo-3-chloropropan	18.54	157	10092	5.08	ug/l	97
97)	1,2,4-Trichlorobenzene	19.58	180	43254	3.47	ug/l	95
98)	Hexachlorobutadiene	19.73	225	21422	3.85	ug/l	96
99)	Naphthalene	19.84	128	119311	3.35	ug/l	100
100)	1,2,3-Trichlorobenzene	20.08	180	40102	3.50	ug/l	98

SV 6/19/18

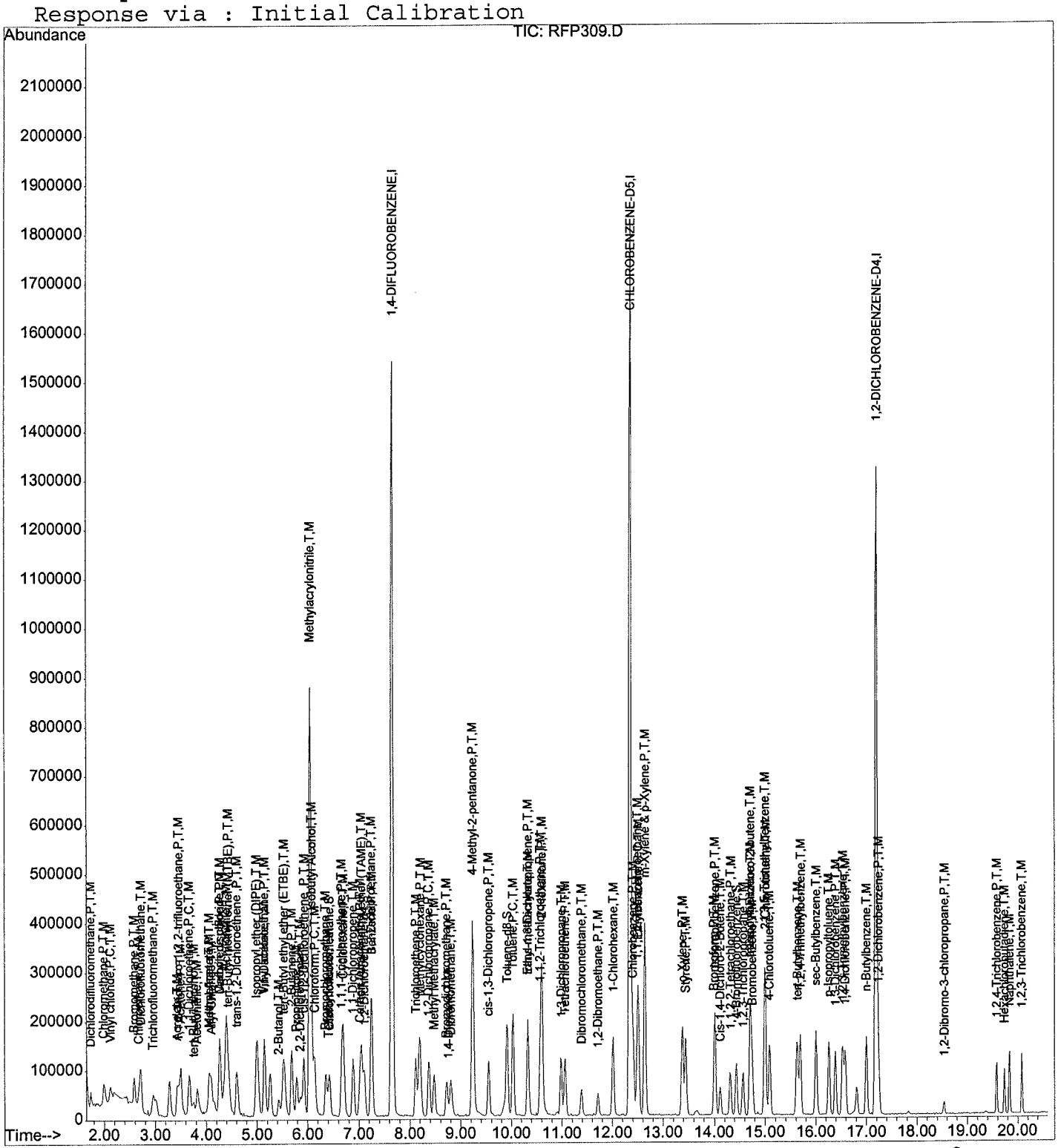
(#) = qualifier out of range (m) = manual integration
RFP309.D VO02F15.M Mon Jun 18 12:52:19 2018 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F15\RFP309.D
Acq On : 15 Jun 2018 3:42 pm
Sample : VO02F152
Misc : 4.0ppb 8260/20ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 18
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



RFP309.D VO02F15.M Mon Jun 18 12:52:21 2018 Page 4

SV 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP310.D
Acq On : 15 Jun 2018 4:07 pm
Sample : VO02F153
Misc : 10ppb 8260/50ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 19
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.66	114	1821189	50.00	ug/l		0.00
56) CHLOROBENZENE-D5	12.34	117	1549569	50.00	ug/l		0.00
76) 1,2-DICHLOROBENZENE-D4	17.19	152	631666	50.00	ug/l		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	6.42	111	139609	10.75	ug/l		0.00
Spiked Amount 50.000			Recovery =	21.50%			
43) 1,2-Dichloroethane-d4	7.11	65	172261	10.69	ug/l		0.00
Spiked Amount 50.000			Recovery =	21.38%			
57) Toluene-d8	9.92	98	480800	10.52	ug/l		0.00
Spiked Amount 50.000			Recovery =	21.04%			
79) 4-Bromofluorobenzene	14.44	95	153502	10.09	ug/l		0.00
Spiked Amount 50.000			Recovery =	20.18%			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.74	85	116763	8.81	ug/l		100
3) Chloromethane	1.99	50	186308	9.13	ug/l		98
4) Vinyl chloride	2.12	62	141845	9.83	ug/l		99
5) Bromomethane	2.58	94	137500	9.02	ug/l		91
6) Chloroethane	2.67	64	109645	9.76	ug/l		99
7) Dichlorofluoromethane	2.72	67	278179	9.00	ug/l		100
8) Trichlorofluoromethane	2.96	101	155466	9.57	ug/l		99
9) Acrolein	3.43	56	154127	49.27	ug/l		93
10) 1,1,2-Trichloro-1,2,2-trif	3.48	151	77655	9.54	ug/l		99
11) Acetone	3.51	43	333017	49.45	ug/l		99
12) 1,1-Dichloroethene	3.67	61	213379	9.19	ug/l		99
13) tert-Butyl alcohol	3.74	59	132413	42.20	ug/l		82
14) Acetonitrile	3.82	41	302612	102.67	ug/l		97
15) Iodomethane	4.04	142	173912	9.55	ug/l		98
16) Methyl Acetate	4.06	43	247600	9.18	ug/l		89
17) Allyl Chloride	4.10	76	72670	9.15	ug/l		97
18) Methylene chloride	4.26	49	211752	9.60	ug/l		100
19) Carbon disulfide	4.26	76	429467	9.65	ug/l		99
20) Acrylonitrile	4.40	53	428452	50.63	ug/l		97
21) tert-Butyl methyl ether (M	4.43	73	441043	9.90	ug/l		98
22) trans-1,2-Dichloroethene	4.61	61	220348	9.85	ug/l		97
23) Isopropyl ether (DIPE)	5.01	45	698632	9.84	ug/l		99
24) Vinyl acetate	5.14	43	519666	9.92	ug/l		100
25) 1,1-Dichloroethane	5.14	63	281460	9.68	ug/l		98
26) 2-Butanol	5.42	45	145410	45.51	ug/l	#	60
27) tert-Butyl ethyl ether (ET	5.53	59	517975	10.07	ug/l		95
28) 2-Butanone	5.69	43	722934	52.62	ug/l		97

(#) = qualifier out of range (m) = manual integration

SU 6/19/18

Data File : D:\HPCHEM\1\DATA\18F15\RFP310.D
Acq On : 15 Jun 2018 4:07 pm
Sample : VO02F153
Misc : 10ppb 8260/50ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 19
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.78	54	292094	91.08	ug/l	97
30)	2,2-Dichloropropane	5.87	77	98128	10.06	ug/l	99
31)	cis-1,2-Dichloroethene	5.93	96	168234	9.71	ug/l	98
32)	Isobutyl Alcohol	6.08	43	303726	190.47	ug/l	97
33)	Methylacrylonitrile	6.05	52	312410	98.82	ug/l	95
34)	Chloroform	6.14	83	260891	10.34	ug/l	99
35)	Bromochloromethane	6.35	49	163760	9.90	ug/l	99
36)	Tetrahydrofuran	6.39	42	76584	9.46	ug/l	98
38)	1,1,1-Trichloroethane	6.67	97	136103	9.95	ug/l	99
39)	Cyclohexane	6.69	84	260727	10.53	ug/l	99
40)	1,1-Dichloropropene	6.88	110	63496	9.95	ug/l	96
41)	Carbon tetrachloride	7.02	119	106837	9.67	ug/l	100
42)	tert-Amyl methyl ether (TA	7.05	87	84817	9.83	ug/l	97
44)	1,2-Dichloroethane	7.24	62	186715	9.89	ug/l	99
45)	Benzene	7.25	78	596023	10.08	ug/l	99
46)	Trichloroethene	8.12	130	139727	9.49	ug/l	99
47)	Methylcyclohexane	8.19	83	298149	10.46	ug/l	99
48)	1,2-Dichloropropane	8.37	63	166721	9.45	ug/l	96
49)	Methyl Methacrylate	8.47	69	124394	9.10	ug/l	97
50)	Bromodichloromethane	8.71	83	165454	8.52	ug/l	99
51)	1,4-Dioxane	8.76	88	35977	182.56	ug/l	100
52)	Dibromomethane	8.80	93	101564	9.60	ug/l	97
54)	4-Methyl-2-pentanone	9.23	43	1442577	50.22	ug/l	98
55)	cis-1,3-Dichloropropene	9.54	75	240851	8.95	ug/l	97
58)	Toluene	10.04	91	561745	10.57	ug/l	97
59)	Ethyl methacrylate	10.33	69	214677	9.94	ug/l	99
60)	trans-1,3-Dichloropropene	10.33	75	197605	9.34	ug/l	99
61)	1,1,2-Trichloroethane	10.57	97	130767	10.03	ug/l	100
62)	2-Hexanone	10.60	43	931781	51.76	ug/l	99
63)	1,3-Dichloropropane	10.97	76	255213	9.97	ug/l	99
64)	Tetrachloroethene	11.06	164	104681	10.12	ug/l	99
65)	Dibromochloromethane	11.39	129	114014	8.87	ug/l	100
66)	1,2-Dibromoethane	11.72	107	124766	9.36	ug/l	98
67)	1-Chlorohexane	12.01	91	190635	9.92	ug/l	98
68)	Chlorobenzene	12.42	112	308477	9.72	ug/l	95
69)	1,1,1,2-Tetrachloroethane	12.49	131	105889	9.72	ug/l	99
70)	Ethylbenzene	12.50	91	574721	10.48	ug/l	99
71)	m-Xylene & p-Xylene	12.64	91	871216	21.19	ug/l	99
72)	o-Xylene	13.38	91	434996	10.19	ug/l	100
73)	Styrene	13.44	104	309514	9.97	ug/l	98
74)	Isopropylbenzene	14.01	105	491424	10.60	ug/l	99

(#) = qualifier out of range (m) = manual integration

SV 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP310.D
Acq On : 15 Jun 2018 4:07 pm
Sample : VO02F153
Misc : 10ppb 8260/50ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 19
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.11	53	51720	8.59	ug/l	90
77)	Bromoform	14.01	173	66326	8.81	ug/l	97
78)	1,1,2,2-Tetrachloroethane	14.32	83	200946	9.29	ug/l	99
80)	1,2,3-Trichloropropane	14.57	110	43390	8.93	ug/l	99
81)	trans-1,4-Dichloro-2-buten	14.71	53	36992	7.96	ug/l	98
82)	n-Propylbenzene	14.71	91	629712	10.35	ug/l	100
83)	Bromobenzene	14.75	156	120828	9.53	ug/l	95
84)	1,3,5-Trimethylbenzene	14.99	105	363747	10.32	ug/l	99
85)	2-Chlorotoluene	15.00	91	400785	10.37	ug/l	98
86)	4-Chlorotoluene	15.09	91	341474	10.10	ug/l	99
87)	tert-Butylbenzene	15.63	134	81516	10.04	ug/l	99
88)	1,2,4-Trimethylbenzene	15.69	105	353602	9.98	ug/l	96
89)	sec-Butylbenzene	16.00	105	493168	10.43	ug/l	100
90)	p-Isopropyltoluene	16.25	119	383294	10.25	ug/l	99
91)	1,3-Dichlorobenzene	16.39	146	220090	9.83	ug/l	99
92)	1,2,3-Trimethylbenzene	16.54	105	357056	10.35	ug/l	99
93)	1,4-Dichlorobenzene	16.58	146	225476	10.09	ug/l	99
94)	n-Butylbenzene	17.00	91	387653	10.37	ug/l	99
95)	1,2-Dichlorobenzene	17.23	146	206362	9.88	ug/l	98
96)	1,2-Dibromo-3-chloropropan	18.54	157	24084	8.63	ug/l	95
97)	1,2,4-Trichlorobenzene	19.58	180	111997	9.01	ug/l	99
98)	Hexachlorobutadiene	19.73	225	49040	8.84	ug/l	99
99)	Naphthalene	19.84	128	305017	8.60	ug/l	100
100)	1,2,3-Trichlorobenzene	20.08	180	101321	8.88	ug/l	99

Su 6/19/18

(#) = qualifier out of range (m) = manual integration

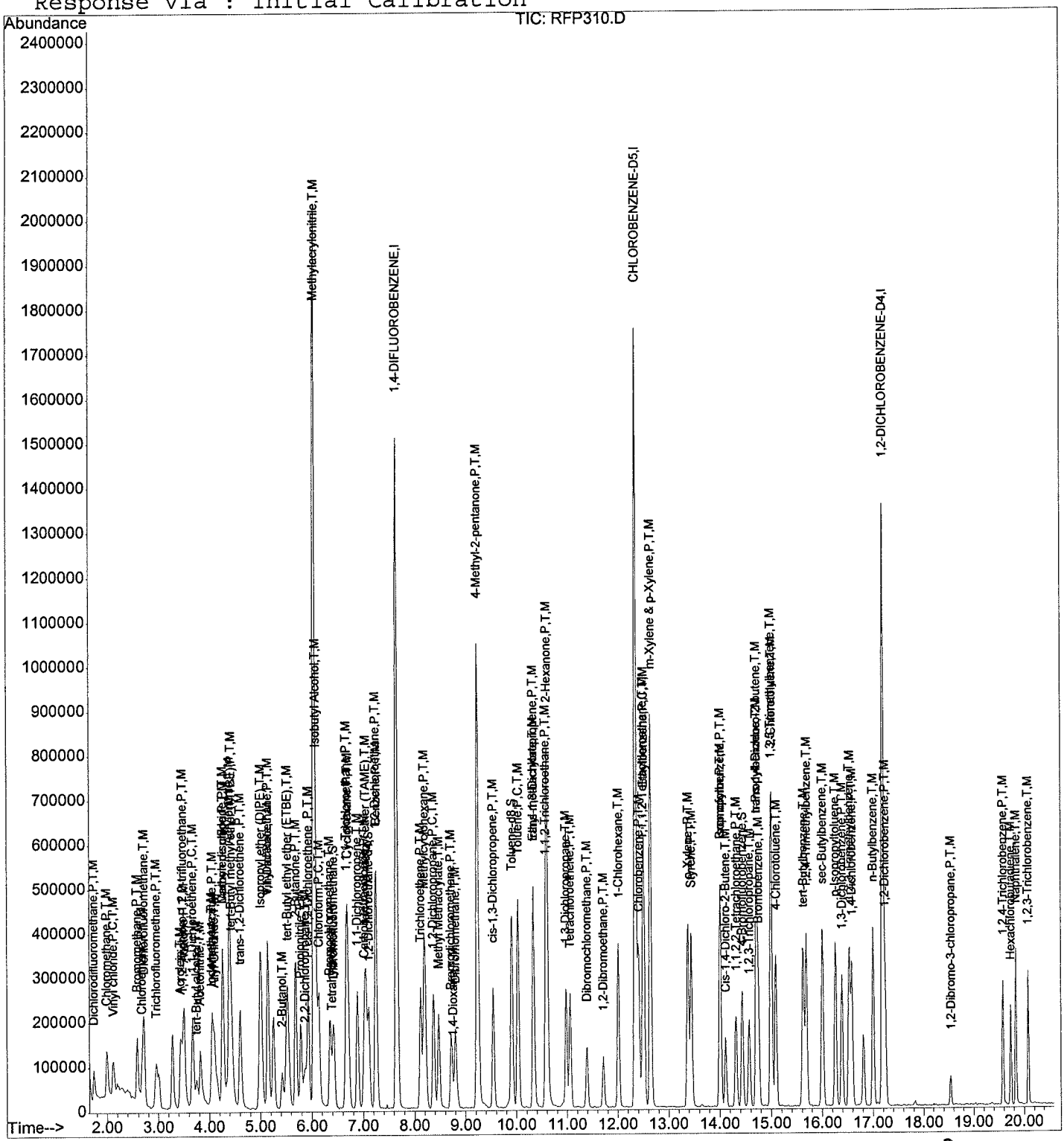
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F15\RFP310.D
Acq On : 15 Jun 2018 4:07 pm
Sample : VO02F153
Misc : 10ppb 8260/50ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:35 2018

Vial: 19
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



RFP310.D VO02F15.M Mon Jun 18 12:52:38 2018 Page 4

SU 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP311.D
Acq On : 15 Jun 2018 4:31 pm
Sample : VO02F154
Misc : 20ppb 8260/100ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:36 2018

Vial: 20
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.65	114	1693600	50.00	ug/l	-0.01
56) CHLOROBENZENE-D5	12.35	117	1490613	50.00	ug/l	0.00
76) 1,2-DICHLOROBENZENE-D4	17.20	152	607081	50.00	ug/l	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	6.43	111	266878	22.10	ug/l	0.00
Spiked Amount 50.000			Recovery = 44.20%			
43) 1,2-Dichloroethane-d4	7.11	65	327973	21.89	ug/l	0.00
Spiked Amount 50.000			Recovery = 43.78%			
57) Toluene-d8	9.91	98	967269	22.00	ug/l	0.00
Spiked Amount 50.000			Recovery = 44.00%			
79) 4-Bromofluorobenzene	14.43	95	320653	21.92	ug/l	0.00
Spiked Amount 50.000			Recovery = 43.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.74	85	241410	19.59	ug/l	100
3) Chloromethane	1.99	50	382267	20.13	ug/l	97
4) Vinyl chloride	2.11	62	288947	21.52	ug/l	98
5) Bromomethane	2.58	94	268412	18.94	ug/l	93
6) Chloroethane	2.68	64	226947	21.72	ug/l	98
7) Dichlorofluoromethane	2.71	67	628141	21.87	ug/l	98
8) Trichlorofluoromethane	2.96	101	313869	20.79	ug/l	99
9) Acrolein	3.44	56	313322	107.71	ug/l	96
10) 1,1,2-Trichloro-1,2,2-trif	3.48	151	152842	20.18	ug/l	98
11) Acetone	3.50	43	693309	110.71	ug/l	99
12) 1,1-Dichloroethene	3.68	61	470041	21.76	ug/l	99
13) tert-Butyl alcohol	3.75	59	335366	114.94	ug/l	97
14) Acetonitrile	3.82	41	678431	247.51	ug/l	98
15) Iodomethane	4.05	142	381874	22.55	ug/l	98
16) Methyl Acetate	4.05	43	537813	21.44	ug/l	96
17) Allyl Chloride	4.09	76	163515	22.14	ug/l	99
18) Methylene chloride	4.27	49	436176	21.27	ug/l	99
19) Carbon disulfide	4.26	76	911433	22.02	ug/l	99
20) Acrylonitrile	4.39	53	898782	114.21	ug/l	99
21) tert-Butyl methyl ether (M	4.42	73	937396	22.63	ug/l	98
22) trans-1,2-Dichloroethene	4.60	61	470929	22.65	ug/l	100
23) Isopropyl ether (DIPE)	5.00	45	1490853	22.57	ug/l	99
24) Vinyl acetate	5.15	43	1064000	21.85	ug/l	99
25) 1,1-Dichloroethane	5.13	63	613076	22.67	ug/l	100
26) 2-Butanol	5.42	45	325781	109.65	ug/l #	60
27) tert-Butyl ethyl ether (ET	5.52	59	1100884	23.01	ug/l	96
28) 2-Butanone	5.68	43	1489585	116.59	ug/l	100

(#) = qualifier out of range (m) = manual integration
RFP311.D VO02F15.M Mon Jun 18 12:52:51 2018 SU 6/19/18 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP311.D
Acq On : 15 Jun 2018 4:31 pm
Sample : VO02F154
Misc : 20ppb 8260/100ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:36 2018

Vial: 20
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
29)	Propionitrile	5.79	54	700833	235.00	ug/l		99
30)	2,2-Dichloropropane	5.86	77	196928	21.70	ug/l		98
31)	cis-1,2-Dichloroethene	5.92	96	358286	22.23	ug/l		99
32)	Isobutyl Alcohol	6.07	43	710749	479.29	ug/l		99
33)	Methylacrylonitrile	6.04	52	707628	240.69	ug/l		98
34)	Chloroform	6.13	83	538994	22.96	ug/l		99
35)	Bromochloromethane	6.35	49	359407	23.37	ug/l		98
36)	Tetrahydrofuran	6.40	42	180666	24.00	ug/l		98
38)	1,1,1-Trichloroethane	6.67	97	276206	21.71	ug/l		98
39)	Cyclohexane	6.68	84	505589	21.96	ug/l		100
40)	1,1-Dichloropropene	6.89	110	123017	20.73	ug/l		96
41)	Carbon tetrachloride	7.02	119	209843	20.42	ug/l		99
42)	tert-Amyl methyl ether (TA	7.05	87	172278	21.46	ug/l	#	89
44)	1,2-Dichloroethane	7.23	62	400241	22.79	ug/l		100
45)	Benzene	7.25	78	1229206	22.36	ug/l		99
46)	Trichloroethene	8.12	130	274308	20.02	ug/l		98
47)	Methylcyclohexane	8.20	83	575150	21.70	ug/l		99
48)	1,2-Dichloropropane	8.38	63	353288	21.54	ug/l		98
49)	Methyl Methacrylate	8.48	69	285073	22.42	ug/l		98
50)	Bromodichloromethane	8.72	83	366182	20.29	ug/l		97
51)	1,4-Dioxane	8.76	88	87770	478.93	ug/l		98
52)	Dibromomethane	8.79	93	213715	21.71	ug/l		99
54)	4-Methyl-2-pentanone	9.24	43	3024367	113.22	ug/l		99
55)	cis-1,3-Dichloropropene	9.54	75	531212	21.23	ug/l		100
58)	Toluene	10.03	91	1090118	21.32	ug/l		100
59)	Ethyl methacrylate	10.34	69	484198	23.30	ug/l		99
60)	trans-1,3-Dichloropropene	10.32	75	447292	21.97	ug/l		98
61)	1,1,2-Trichloroethane	10.58	97	275206	21.94	ug/l		98
62)	2-Hexanone	10.59	43	2051046	118.45	ug/l		99
63)	1,3-Dichloropropane	10.98	76	548869	22.30	ug/l		100
64)	Tetrachloroethene	11.07	164	200257	20.13	ug/l		97
65)	Dibromochloromethane	11.38	129	251338	20.33	ug/l		99
66)	1,2-Dibromoethane	11.71	107	276043	21.54	ug/l		99
67)	1-Chlorohexane	12.02	91	347719	18.80	ug/l		99
68)	Chlorobenzene	12.41	112	635839	20.83	ug/l		98
69)	1,1,1,2-Tetrachloroethane	12.50	131	217924	20.81	ug/l		99
70)	Ethylbenzene	12.51	91	1106400	20.97	ug/l		100
71)	m-Xylene & p-Xylene	12.64	91	1639315	41.45	ug/l		99
72)	o-Xylene	13.37	91	860895	20.96	ug/l		99
73)	Styrene	13.45	104	639598	21.42	ug/l		100
74)	Isopropylbenzene	14.01	105	900590	20.19	ug/l		100

(#) = qualifier out of range (m) = manual integration

SA 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP311.D
Acq On : 15 Jun 2018 4:31 pm
Sample : VO02F154
Misc : 20ppb 8260/100ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:36 2018

Vial: 20
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.10	53	128032	22.11 ug/l	93
77)	Bromoform	14.00	173	165564	18.95 ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.31	83	455384	21.92 ug/l	100
80)	1,2,3-Trichloropropane	14.58	110	100772	21.59 ug/l	98
81)	trans-1,4-Dichloro-2-buten	14.71	53	91009	20.37 ug/l	98
82)	n-Propylbenzene	14.71	91	1159563	19.82 ug/l	100
83)	Bromobenzene	14.76	156	251728	20.65 ug/l	98
84)	1,3,5-Trimethylbenzene	14.99	105	668675	19.73 ug/l	99
85)	2-Chlorotoluene	14.99	91	739166	19.90 ug/l	100
86)	4-Chlorotoluene	15.08	91	665728	20.48 ug/l	100
87)	tert-Butylbenzene	15.62	134	143790	18.42 ug/l	96
88)	1,2,4-Trimethylbenzene	15.68	105	683962	20.09 ug/l	100
89)	sec-Butylbenzene	16.01	105	866361	19.07 ug/l	100
90)	p-Isopropyltoluene	16.26	119	698545	19.43 ug/l	99
91)	1,3-Dichlorobenzene	16.39	146	433678	20.15 ug/l	99
92)	1,2,3-Trimethylbenzene	16.53	105	759168	22.91 ug/l	98
93)	1,4-Dichlorobenzene	16.59	146	431542	20.09 ug/l	99
94)	n-Butylbenzene	17.00	91	705291	19.63 ug/l	97
95)	1,2-Dichlorobenzene	17.24	146	402360	20.04 ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.53	157	61359	18.68 ug/l	98
97)	1,2,4-Trichlorobenzene	19.58	180	209067	17.50 ug/l	98
98)	Hexachlorobutadiene	19.74	225	93715	17.58 ug/l	97
99)	Naphthalene	19.83	128	647627	19.01 ug/l	100
100)	1,2,3-Trichlorobenzene	20.08	180	202902	18.51 ug/l	99

Su 6/19/18

(#) = qualifier out of range (m) = manual integration

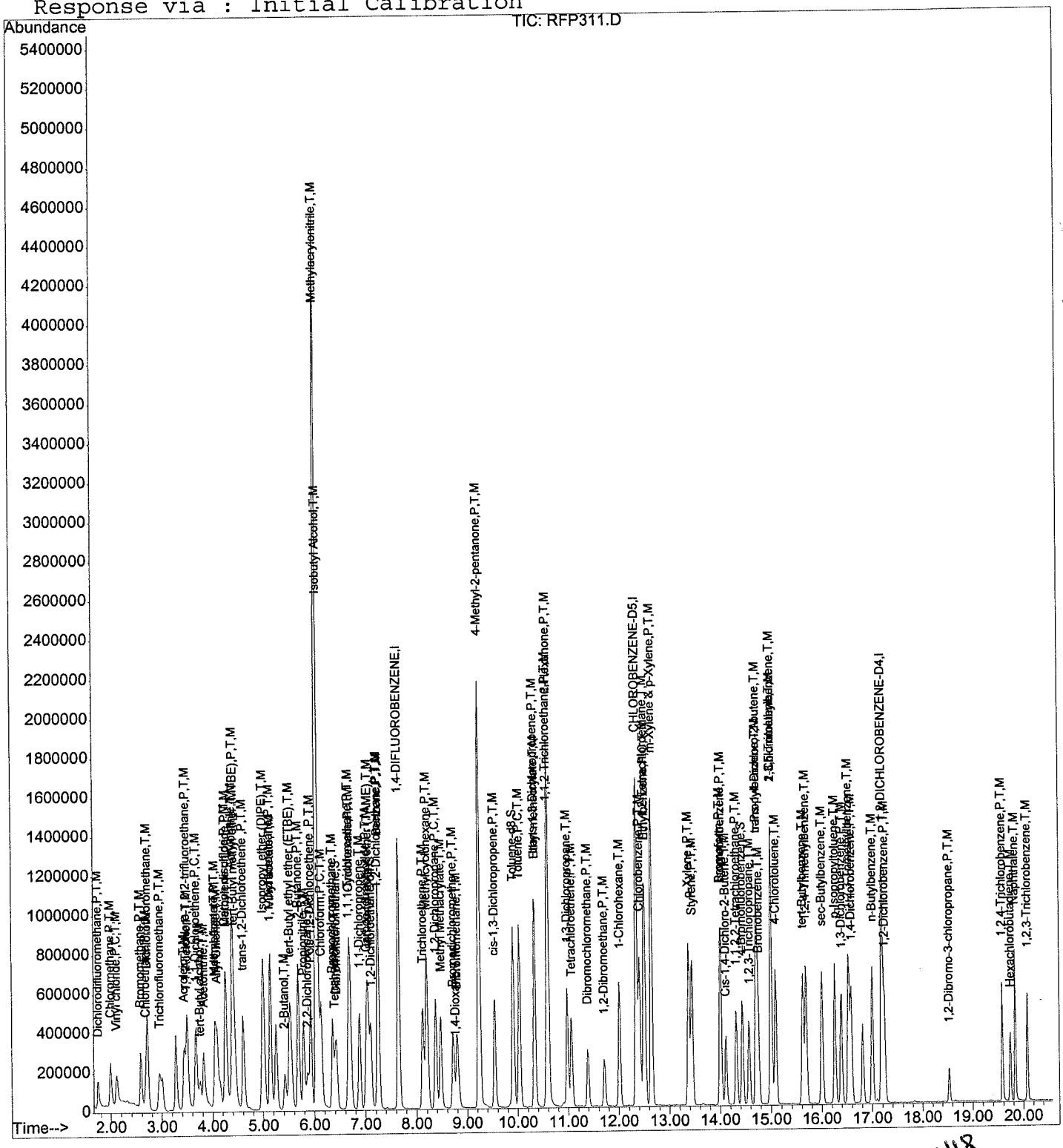
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F15\RFP311.D
Acq On : 15 Jun 2018 4:31 pm
Sample : VO02F154
Misc : 20ppb 8260/100ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:36 2018

Vial: 20
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



RFP311.D VO02F15.M Mon Jun 18 12:52:55 2018 Page 4

6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP312.D
Acq On : 15 Jun 2018 4:55 pm
Sample : VO02F155
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:36 2018

Vial: 21
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.66	114	1561415	50.00	ug/l	0.00
56) CHLOROBENZENE-D5	12.35	117	1411425	50.00	ug/l	0.00
76) 1,2-DICHLOROBENZENE-D4	17.20	152	573325	50.00	ug/l	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	6.43	111	567034	50.93	ug/l	0.00
Spiked Amount 50.000			Recovery =	101.86%		
43) 1,2-Dichloroethane-d4	7.11	65	688477	49.83	ug/l	0.00
Spiked Amount 50.000			Recovery =	99.66%		
57) Toluene-d8	9.91	98	2035460	48.89	ug/l	0.00
Spiked Amount 50.000			Recovery =	97.78%		
79) 4-Bromofluorobenzene	14.43	95	673724	48.78	ug/l	0.00
Spiked Amount 50.000			Recovery =	97.56%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.74	85	561570	49.44	ug/l	100
3) Chloromethane	1.99	50	867488	49.56	ug/l	100
4) Vinyl chloride	2.11	62	648593	52.40	ug/l	100
5) Bromomethane	2.57	94	600101	45.92	ug/l	100
6) Chloroethane	2.68	64	517038	53.67	ug/l	100
7) Dichlorofluoromethane	2.71	67	1415173	53.43	ug/l	100
8) Trichlorofluoromethane	2.95	101	725697	52.13	ug/l	100
9) Acrolein	3.44	56	726355	270.84	ug/l	100
10) 1,1,2-Trichloro-1,2,2-trif	3.47	151	366139	52.45	ug/l	100
11) Acetone	3.50	43	1561092	270.38	ug/l	100
12) 1,1-Dichloroethene	3.68	61	1075239	53.99	ug/l	100
13) tert-Butyl alcohol	3.75	59	731121	271.79	ug/l	100
14) Acetonitrile	3.82	41	1476078	584.10	ug/l	100
15) Iodomethane	4.05	142	848862	54.37	ug/l	100
16) Methyl Acetate	4.05	43	1216687	52.61	ug/l	100
17) Allyl Chloride	4.09	76	363128	53.33	ug/l	100
18) Methylene chloride	4.27	49	938707	49.64	ug/l	100
19) Carbon disulfide	4.26	76	2019304	52.91	ug/l	100
20) Acrylonitrile	4.39	53	1993616	274.78	ug/l	100
21) tert-Butyl methyl ether (M	4.42	73	2060329	53.95	ug/l	100
22) trans-1,2-Dichloroethene	4.60	61	1044338	54.48	ug/l	100
23) Isopropyl ether (DIPE)	5.00	45	3225617	52.97	ug/l	100
24) Vinyl acetate	5.15	43	2398886	53.43	ug/l	100
25) 1,1-Dichloroethane	5.13	63	1330433	53.35	ug/l	100
26) 2-Butanol	5.42	45	737862	269.37	ug/l	100
27) tert-Butyl ethyl ether (ET	5.52	59	2306838	52.29	ug/l	100
28) 2-Butanone	5.68	43	3211809	272.68	ug/l	100

(#) = qualifier out of range (m) = manual integration

SU 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP312.D
Acq On : 15 Jun 2018 4:55 pm
Sample : VO02F155
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:36 2018

Vial: 21
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.79	54	1486986	540.83	ug/l	100
30)	2,2-Dichloropropane	5.86	77	444049	53.08	ug/l	100
31)	cis-1,2-Dichloroethene	5.94	96	782431	52.66	ug/l	100
32)	Isobutyl Alcohol	6.07	43	1521610	1112.95	ug/l	100
33)	Methylacrylonitrile	6.04	52	1493716	551.09	ug/l	100
34)	Chloroform	6.13	83	1148419	53.07	ug/l	100
35)	Bromochloromethane	6.35	49	757027	53.39	ug/l	100
36)	Tetrahydrofuran	6.40	42	372125	53.61	ug/l	100
38)	1,1,1-Trichloroethane	6.66	97	613177	52.27	ug/l	100
39)	Cyclohexane	6.69	84	1079764	50.88	ug/l	100
40)	1,1-Dichloropropene	6.89	110	277341	50.70	ug/l	100
41)	Carbon tetrachloride	7.02	119	500062	52.79	ug/l	100
42)	tert-Amyl methyl ether (TA	7.04	87	390006	52.70	ug/l	100
44)	1,2-Dichloroethane	7.23	62	845087	52.20	ug/l	100
45)	Benzene	7.26	78	2628268	51.87	ug/l	100
46)	Trichloroethene	8.12	130	643438	50.95	ug/l	100
47)	Methylcyclohexane	8.20	83	1253601	51.30	ug/l	100
48)	1,2-Dichloropropane	8.38	63	783978	51.84	ug/l	100
49)	Methyl Methacrylate	8.48	69	644934	55.02	ug/l	100
50)	Bromodichloromethane	8.72	83	855346	51.39	ug/l	100
51)	1,4-Dioxane	8.75	88	186018	1100.95	ug/l	100
52)	Dibromomethane	8.79	93	481047	53.01	ug/l	100
54)	4-Methyl-2-pentanone	9.24	43	6465090	262.52	ug/l	100
55)	cis-1,3-Dichloropropene	9.55	75	1239603	53.74	ug/l	100
58)	Toluene	10.03	91	2481430	51.25	ug/l	100
59)	Ethyl methacrylate	10.34	69	1090581	55.41	ug/l	100
60)	trans-1,3-Dichloropropene	10.34	75	1046880	54.30	ug/l	100
61)	1,1,2-Trichloroethane	10.58	97	625915	52.69	ug/l	100
62)	2-Hexanone	10.59	43	4429440	270.15	ug/l	100
63)	1,3-Dichloropropane	10.98	76	1229442	52.74	ug/l	100
64)	Tetrachloroethene	11.07	164	474991	50.43	ug/l	100
65)	Dibromochloromethane	11.39	129	605860	51.77	ug/l	100
66)	1,2-Dibromoethane	11.71	107	644235	53.09	ug/l	100
67)	1-Chlorohexane	12.02	91	903507	51.60	ug/l	100
68)	Chlorobenzene	12.41	112	1503722	52.02	ug/l	100
69)	1,1,1,2-Tetrachloroethane	12.50	131	527004	53.14	ug/l	100
70)	Ethylbenzene	12.51	91	2640963	52.88	ug/l	100
71)	m-Xylene & p-Xylene	12.64	91	3903723	104.23	ug/l	100
72)	o-Xylene	13.37	91	2018670	51.92	ug/l	100
73)	Styrene	13.45	104	1540405	54.48	ug/l	100
74)	Isopropylbenzene	14.01	105	2215901	52.47	ug/l	100

(#) = qualifier out of range (m) = manual integration

Su 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP312.D
Acq On : 15 Jun 2018 4:55 pm
Sample : VO02F155
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:36 2018

Vial: 21
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.12	53	291687	53.20	ug/l	100
77)	Bromoform	14.00	173	410735	45.80	ug/l	100
78)	1,1,2,2-Tetrachloroethane	14.31	83	1027019	52.34	ug/l	100
80)	1,2,3-Trichloropropane	14.58	110	229093	51.97	ug/l	100
81)	trans-1,4-Dichloro-2-buten	14.71	53	217792	51.62	ug/l	100
82)	n-Propylbenzene	14.71	91	2858500	51.74	ug/l	100
83)	Bromobenzene	14.76	156	599983	52.11	ug/l	100
84)	1,3,5-Trimethylbenzene	14.99	105	1678101	52.43	ug/l	100
85)	2-Chlorotoluene	14.99	91	1782127	50.79	ug/l	100
86)	4-Chlorotoluene	15.08	91	1616746	52.67	ug/l	100
87)	tert-Butylbenzene	15.62	134	370887	50.31	ug/l	100
88)	1,2,4-Trimethylbenzene	15.68	105	1692855	52.64	ug/l	100
89)	sec-Butylbenzene	16.01	105	2201254	51.32	ug/l	100
90)	p-Isopropyltoluene	16.26	119	1758052	51.78	ug/l	100
91)	1,3-Dichlorobenzene	16.39	146	1050358	51.67	ug/l	100
92)	1,2,3-Trimethylbenzene	16.53	105	1632647	52.16	ug/l	100
93)	1,4-Dichlorobenzene	16.59	146	1066561	52.57	ug/l	100
94)	n-Butylbenzene	17.00	91	1771990	52.21	ug/l	100
95)	1,2-Dichlorobenzene	17.24	146	971524	51.25	ug/l	100
96)	1,2-Dibromo-3-chloropropan	18.53	157	155692	45.90	ug/l	100
97)	1,2,4-Trichlorobenzene	19.58	180	566199	50.19	ug/l	100
98)	Hexachlorobutadiene	19.74	225	236868	47.06	ug/l	100
99)	Naphthalene	19.83	128	1629480	50.64	ug/l	100
100)	1,2,3-Trichlorobenzene	20.08	180	513883	49.65	ug/l	100

SM 6/19/18

(#) = qualifier out of range (m) = manual integration

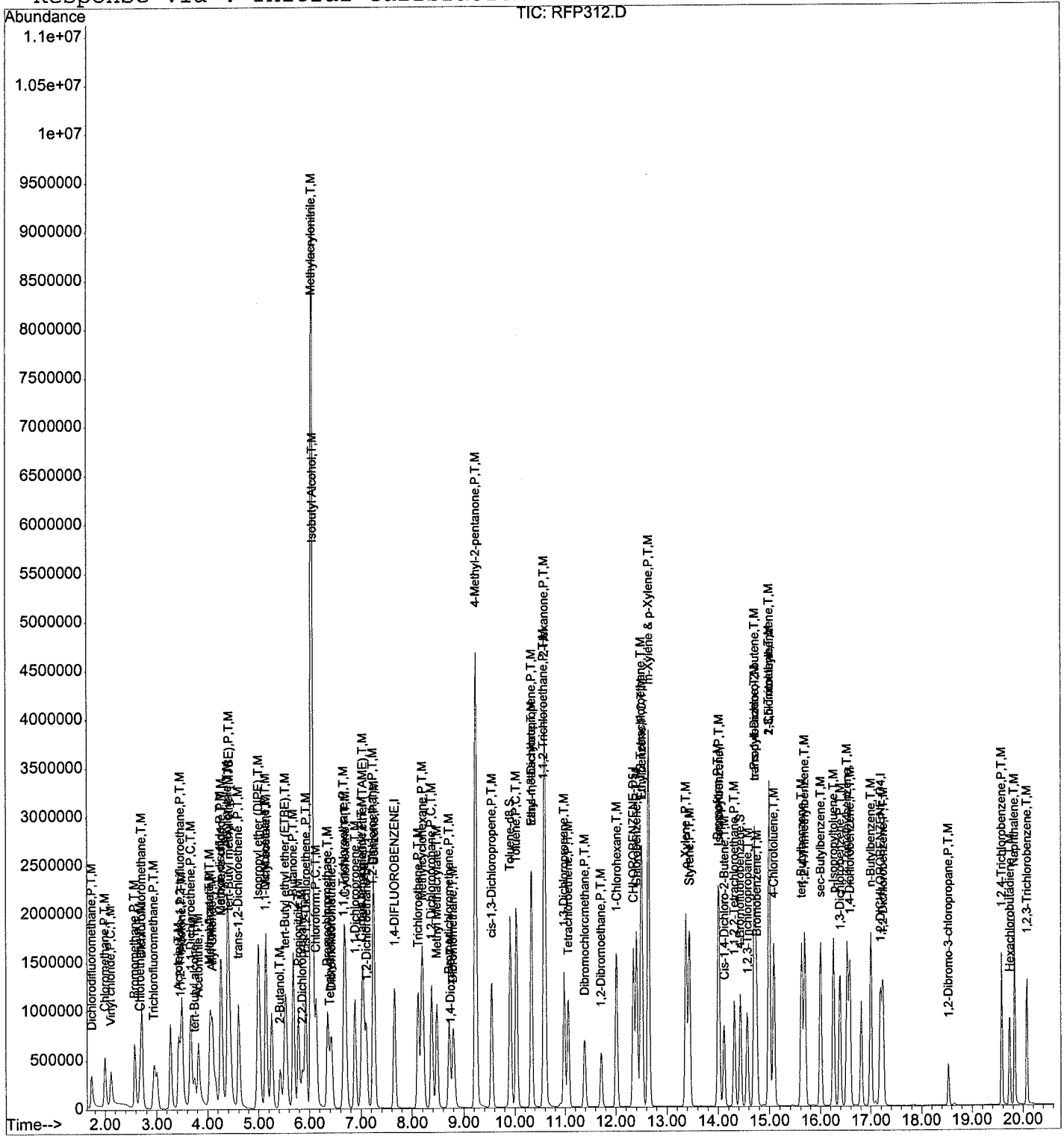
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F15\RFP312.D
Acq On : 15 Jun 2018 4:55 pm
Sample : VO02F155
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:36 2018

Vial: 21
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



RFP312.D VO02F15.M Mon Jun 18 12:53:11 2018 SU 6/19/18 Page 4

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP313.D
Acq On : 15 Jun 2018 5:20 pm
Sample : VO02F156
Misc : 100ppb 8260/500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 22
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.66	114	1453006	50.00	ug/l	0.00
56) CHLOROBENZENE-D5	12.34	117	1372415	50.00	ug/l	0.00
76) 1,2-DICHLOROBENZENE-D4	17.19	152	538946	50.00	ug/l	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	6.42	111	1067640	103.05	ug/l	0.00
Spiked Amount 50.000			Recovery =	206.10%		
43) 1,2-Dichloroethane-d4	7.11	65	1280933	99.63	ug/l	0.00
Spiked Amount 50.000			Recovery =	199.26%		
57) Toluene-d8	9.90	98	3997417	98.74	ug/l	0.00
Spiked Amount 50.000			Recovery =	197.48%		
79) 4-Bromofluorobenzene	14.42	95	1335270	102.84	ug/l	0.00
Spiked Amount 50.000			Recovery =	205.68%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.74	85	1148581	108.66	ug/l	99
3) Chloromethane	1.99	50	1772100	108.80	ug/l	99
4) Vinyl chloride	2.11	62	1248208	108.38	ug/l	98
5) Bromomethane	2.58	94	1166391	95.91	ug/l	98
6) Chloroethane	2.67	64	993543	110.82	ug/l	99
7) Dichlorofluoromethane	2.72	67	2798111	113.53	ug/l	100
8) Trichlorofluoromethane	2.96	101	1443739	111.44	ug/l	100
9) Acrolein	3.43	56	1352909	542.11	ug/l	98
10) 1,1,2-Trichloro-1,2,2-trif	3.48	151	703959	108.36	ug/l	98
11) Acetone	3.51	43	2918452	543.18	ug/l	100
12) 1,1-Dichloroethene	3.67	61	2065384	111.44	ug/l	99
13) tert-Butyl alcohol	3.74	59	1391164	555.74	ug/l #	1
14) Acetonitrile	3.82	41	2332367	991.80	ug/l	87
15) Iodomethane	4.06	142	1600214	110.14	ug/l	98
16) Methyl Acetate	4.06	43	2212749	102.82	ug/l	97
17) Allyl Chloride	4.10	76	712297	112.41	ug/l	99
18) Methylene chloride	4.26	49	1746711	99.26	ug/l	100
19) Carbon disulfide	4.26	76	3859674	108.68	ug/l	100
20) Acrylonitrile	4.40	53	3721616	551.21	ug/l	99
21) tert-Butyl methyl ether (M	4.43	73	3775381	106.23	ug/l	98
22) trans-1,2-Dichloroethene	4.59	61	1928373	108.09	ug/l	99
23) Isopropyl ether (DIPE)	4.99	45	6242878	110.16	ug/l	100
24) Vinyl acetate	5.14	43	4488117	107.42	ug/l	100
25) 1,1-Dichloroethane	5.14	63	2531823	109.11	ug/l	100
26) 2-Butanol	5.42	45	1406333	551.70	ug/l	94
27) tert-Butyl ethyl ether (ET	5.53	59	4227356	102.97	ug/l	98
28) 2-Butanone	5.68	43	5928583	540.88	ug/l	99

(#) = qualifier out of range (m) = manual integration

SU 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP313.D
Acq On : 15 Jun 2018 5:20 pm
Sample : VO02F156
Misc : 100ppb 8260/500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 22
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29) Propionitrile	5.78	54	2779699	1086.43	ug/l	100
30) 2,2-Dichloropropane	5.87	77	816210	104.85	ug/l	99
31) cis-1,2-Dichloroethene	5.93	96	1485633	107.45	ug/l	99
32) Isobutyl Alcohol	6.06	43	2732557	2147.79	ug/l	99
33) Methylacrylonitrile	6.05	52	2695206	1068.56	ug/l	98
34) Chloroform	6.14	83	2127026	105.62	ug/l	99
35) Bromochloromethane	6.35	49	1412389	107.04	ug/l	99
36) Tetrahydrofuran	6.39	42	669735	103.69	ug/l	98
38) 1,1,1-Trichloroethane	6.67	97	1152436	105.57	ug/l	100
39) Cyclohexane	6.69	84	1993481	100.95	ug/l	100
40) 1,1-Dichloropropene	6.88	110	528767	103.87	ug/l	98
41) Carbon tetrachloride	7.02	119	944952	107.19	ug/l	99
42) tert-Amyl methyl ether (TA	7.05	87	729342	105.91	ug/l	99
44) 1,2-Dichloroethane	7.24	62	1596883	106.00	ug/l	99
45) Benzene	7.25	78	4927051	104.48	ug/l	99
46) Trichloroethene	8.12	130	1246793	106.09	ug/l	99
47) Methylcyclohexane	8.19	83	2314214	101.78	ug/l	99
48) 1,2-Dichloropropane	8.37	63	1519753	107.98	ug/l	99
49) Methyl Methacrylate	8.47	69	1230880	112.84	ug/l	98
50) Bromodichloromethane	8.71	83	1690092	109.13	ug/l	99
51) 1,4-Dioxane	8.76	88	346392	2203.09	ug/l	98
52) Dibromomethane	8.80	93	930370	110.18	ug/l	99
54) 4-Methyl-2-pentanone	9.23	43	12166070	530.87	ug/l	99
55) cis-1,3-Dichloropropene	9.54	75	2425145	112.98	ug/l	100
58) Toluene	10.04	91	4778006	101.48	ug/l	99
59) Ethyl methacrylate	10.33	69	2092126	109.33	ug/l	99
60) trans-1,3-Dichloropropene	10.33	75	2092847	111.64	ug/l	99
61) 1,1,2-Trichloroethane	10.57	97	1188307	102.88	ug/l	99
62) 2-Hexanone	10.60	43	8362657	524.53	ug/l	99
63) 1,3-Dichloropropane	10.97	76	2339621	103.22	ug/l	100
64) Tetrachloroethene	11.06	164	893333	97.55	ug/l	99
65) Dibromochloromethane	11.39	129	1220616	107.26	ug/l	100
66) 1,2-Dibromoethane	11.72	107	1270153	107.64	ug/l	98
67) 1-Chlorohexane	12.01	91	1725896	101.38	ug/l	100
68) Chlorobenzene	12.40	112	2904258	103.34	ug/l	100
69) 1,1,1,2-Tetrachloroethane	12.49	131	1034830	107.31	ug/l	99
70) Ethylbenzene	12.50	91	4949783	101.92	ug/l	100
71) m-Xylene & p-Xylene	12.64	91	7145057	196.20	ug/l	99
72) o-Xylene	13.37	91	3893194	102.97	ug/l	98
73) Styrene	13.44	104	2947453	107.22	ug/l	99
74) Isopropylbenzene	14.01	105	4196308	102.18	ug/l	99

(#) = qualifier out of range (m) = manual integration

Su 6/19/18

Data File : D:\HPCHEM\1\DATA\18F15\RFP313.D Vial: 22
Acq On : 15 Jun 2018 5:20 pm Operator: ODinh
Sample : VO02F156 Inst : 02
Misc : 100ppb 8260/500ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.11	53	593743	111.36	ug/l	99
77)	Bromoform	13.99	173	858246	98.80	ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.30	83	1977490	107.20	ug/l	99
80)	1,2,3-Trichloropropane	14.57	110	441580	106.55	ug/l	99
81)	trans-1,4-Dichloro-2-buten	14.71	53	433607	109.33	ug/l	98
82)	n-Propylbenzene	14.71	91	5309389	102.23	ug/l	99
83)	Bromobenzene	14.75	156	1129564	104.36	ug/l	99
84)	1,3,5-Trimethylbenzene	14.99	105	3066830	101.94	ug/l	99
85)	2-Chlorotoluene	15.00	91	3322699	100.75	ug/l	100
86)	4-Chlorotoluene	15.08	91	2823239	97.84	ug/l	99
87)	tert-Butylbenzene	15.63	134	694965	100.29	ug/l	97
88)	1,2,4-Trimethylbenzene	15.69	105	3106897	102.78	ug/l	99
89)	sec-Butylbenzene	16.00	105	4086460	101.34	ug/l	99
90)	p-Isopropyltoluene	16.25	119	3284949	102.93	ug/l	99
91)	1,3-Dichlorobenzene	16.39	146	1931388	101.07	ug/l	99
92)	1,2,3-Trimethylbenzene	16.54	105	3110581	105.72	ug/l	100
93)	1,4-Dichlorobenzene	16.58	146	1893546	99.29	ug/l	98
94)	n-Butylbenzene	17.00	91	3211607	100.67	ug/l	99
95)	1,2-Dichlorobenzene	17.23	146	1792944	100.61	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.54	157	319888	97.32	ug/l	98
97)	1,2,4-Trichlorobenzene	19.58	180	1082476	102.09	ug/l	99
98)	Hexachlorobutadiene	19.73	225	469569	99.25	ug/l	99
99)	Naphthalene	19.84	128	3097606	102.41	ug/l	99
100)	1,2,3-Trichlorobenzene	20.08	180	966783	99.36	ug/l	99

(#) = qualifier out of range (m) = manual integration
RFP313.D VO02F15.M Mon Jun 18 12:53:25 2018 6/19/18 Page 3

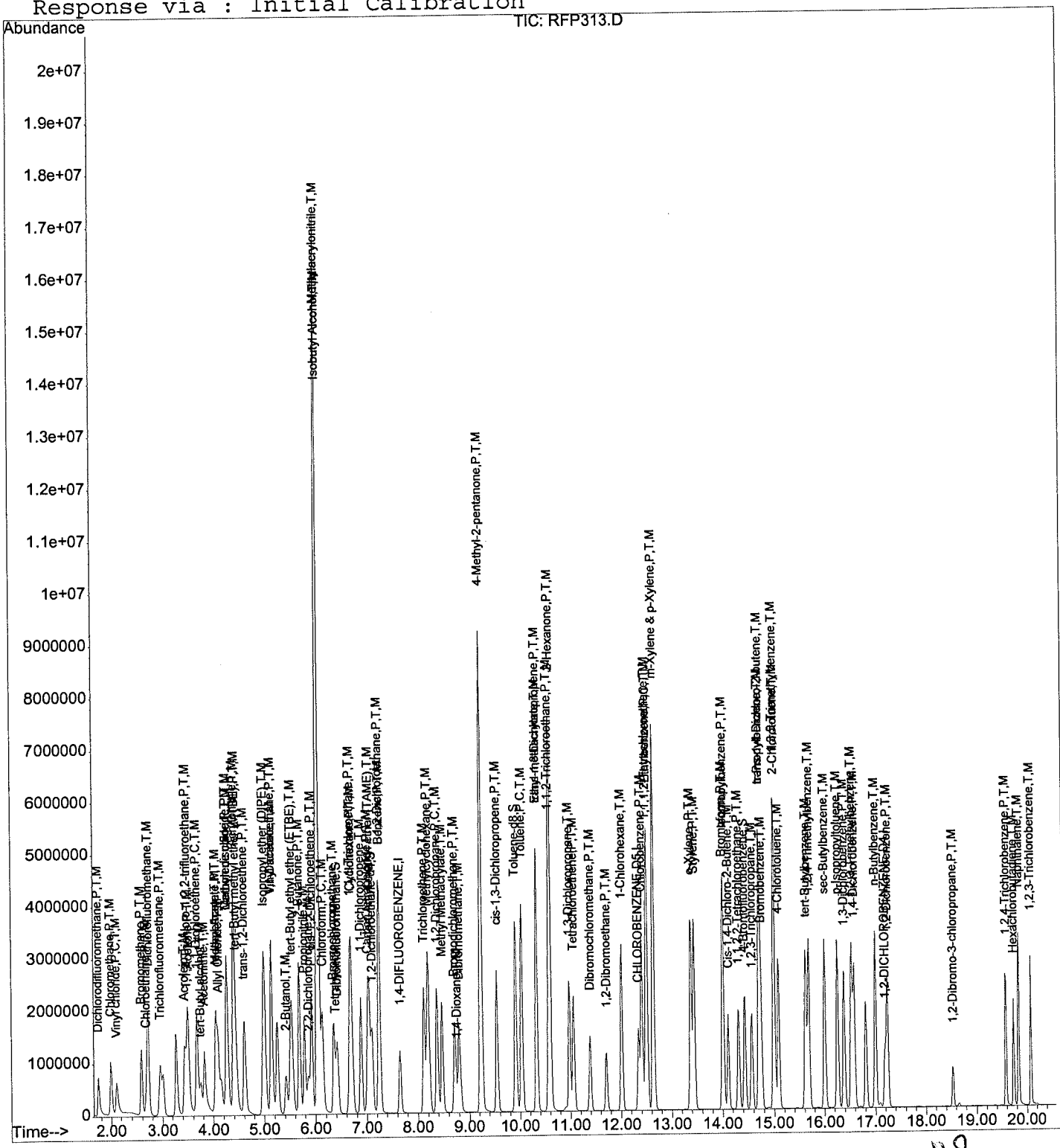
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F15\RFP313.D
Acq On : 15 Jun 2018 5:20 pm
Sample : VO02F156
Misc : 100ppb 8260/500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 22
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



RFP313.D VO02F15.M Mon Jun 18 12:53:28 2018 Page 4

6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP314.D
Acq On : 15 Jun 2018 5:44 pm
Sample : VO02F157
Misc : 200ppb 8260/1000ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 23
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.66	114	1390961	50.00	ug/l		0.00
56) CHLOROBENZENE-D5	12.34	117	1289307	50.00	ug/l		0.00
76) 1,2-DICHLOROBENZENE-D4	17.19	152	494115	50.00	ug/l		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	6.42	111	1957876	197.41	ug/l		0.00
Spiked Amount 50.000			Recovery =	394.82%			
43) 1,2-Dichloroethane-d4	7.11	65	2325591	188.96	ug/l		0.00
Spiked Amount 50.000			Recovery =	377.92%			
57) Toluene-d8	9.90	98	7407875	194.79	ug/l		0.00
Spiked Amount 50.000			Recovery =	389.58%			
79) 4-Bromofluorobenzene	14.44	95	2404705	202.00	ug/l		0.00
Spiked Amount 50.000			Recovery =	404.00%			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.74	85	2357136	232.93	ug/l		99
3) Chloromethane	1.99	50	3578885	229.52	ug/l		100
4) Vinyl chloride	2.09	62	2104186	190.85	ug/l		99
5) Bromomethane	2.58	94	2204012	189.32	ug/l		97
6) Chloroethane	2.67	64	1919367	223.64	ug/l		99
7) Dichlorofluoromethane	2.70	67	5207955	220.73	ug/l		99
8) Trichlorofluoromethane	2.96	101	2778823	224.06	ug/l		99
9) Acrolein	3.43	56	2500768	1046.75	ug/l		97
10) 1,1,2-Trichloro-1,2,2-trif	3.48	151	1331734	214.14	ug/l		97
11) Acetone	3.51	43	5312598	1032.88	ug/l		99
12) 1,1-Dichloroethene	3.67	61	3865775	217.89	ug/l		98
13) tert-Butyl alcohol	3.74	59	2481907	1035.70	ug/l	#	1
14) Acetonitrile	3.82	41	4148706	1842.86	ug/l		85
15) Iodomethane	4.04	142	2967884	213.38	ug/l		99
16) Methyl Acetate	4.06	43	3918793	190.22	ug/l		96
17) Allyl Chloride	4.10	76	1318460	217.35	ug/l		97
18) Methylene chloride	4.26	49	3109745	184.60	ug/l		99
19) Carbon disulfide	4.26	76	7245045	213.10	ug/l		99
20) Acrylonitrile	4.40	53	6558998	1014.80	ug/l		99
21) tert-Butyl methyl ether (M	4.43	73	6689139	196.61	ug/l		96
22) trans-1,2-Dichloroethene	4.61	61	3514319	205.78	ug/l		99
23) Isopropyl ether (DIPE)	4.99	45	11238450	207.15	ug/l		100
24) Vinyl acetate	5.14	43	7947762	198.71	ug/l		99
25) 1,1-Dichloroethane	5.14	63	4554816	205.05	ug/l		99
26) 2-Butanol	5.42	45	2571254	1053.70	ug/l		92
27) tert-Butyl ethyl ether (ET	5.53	59	7722066	196.49	ug/l		98
28) 2-Butanone	5.68	43	10598404	1010.06	ug/l		99

(#) = qualifier out of range (m) = manual integration

SV 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP314.D
Acq On : 15 Jun 2018 5:44 pm
Sample : VO02F157
Misc : 200ppb 8260/1000ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 23
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.78	54	4823311	1969.26	ug/l	99
30)	2,2-Dichloropropane	5.87	77	1438039	192.97	ug/l	100
31)	cis-1,2-Dichloroethene	5.93	96	2732556	206.45	ug/l	98
32)	Isobutyl Alcohol	6.08	43	4583195	3763.09	ug/l	99
33)	Methylacrylonitrile	6.05	52	4565599	1890.84	ug/l	96
34)	Chloroform	6.14	83	3746307	194.33	ug/l	99
35)	Bromochloromethane	6.35	49	2546880	201.64	ug/l	100
36)	Tetrahydrofuran	6.39	42	1208649	195.48	ug/l	99
38)	1,1,1-Trichloroethane	6.67	97	2136736	204.47	ug/l	99
39)	Cyclohexane	6.69	84	3825207	202.34	ug/l	99
40)	1,1-Dichloropropene	6.88	110	1005548	206.34	ug/l	99
41)	Carbon tetrachloride	7.02	119	1807943	214.24	ug/l	98
42)	tert-Amyl methyl ether (TA	7.05	87	1364514	206.99	ug/l	96
44)	1,2-Dichloroethane	7.24	62	2874064	199.29	ug/l	98
45)	Benzene	7.25	78	8971459	198.74	ug/l	98
46)	Trichloroethene	8.12	130	2448819	217.66	ug/l	98
47)	Methylcyclohexane	8.19	83	4487192	206.14	ug/l	99
48)	1,2-Dichloropropane	8.37	63	2854438	211.86	ug/l	99
49)	Methyl Methacrylate	8.47	69	2251793	215.63	ug/l	98
50)	Bromodichloromethane	8.71	83	3234499	218.16	ug/l	99
51)	1,4-Dioxane	8.74	88	630757	4190.63	ug/l	99
52)	Dibromomethane	8.80	93	1730913	214.13	ug/l	99
54)	4-Methyl-2-pentanone	9.23	43	21216710	967.09	ug/l	96
55)	cis-1,3-Dichloropropene	9.54	75	4592145	223.47	ug/l	99
58)	Toluene	10.04	91	8751683	197.87	ug/l	98
59)	Ethyl methacrylate	10.33	69	3775156	209.99	ug/l	98
60)	trans-1,3-Dichloropropene	10.33	75	3871945	219.85	ug/l	98
61)	1,1,2-Trichloroethane	10.57	97	2177499	200.67	ug/l	99
62)	2-Hexanone	10.60	43	14928024	996.68	ug/l	98
63)	1,3-Dichloropropane	10.97	76	4266593	200.38	ug/l	99
64)	Tetrachloroethene	11.06	164	1720027	199.93	ug/l	99
65)	Dibromochloromethane	11.39	129	2312165	216.27	ug/l	100
66)	1,2-Dibromoethane	11.72	107	2384425	215.10	ug/l	99
67)	1-Chlorohexane	12.01	91	3427492	214.30	ug/l	99
68)	Chlorobenzene	12.40	112	5534519	209.62	ug/l	100
69)	1,1,1,2-Tetrachloroethane	12.49	131	1919770	211.90	ug/l	99
70)	Ethylbenzene	12.50	91	9161770	200.81	ug/l	99
71)	m-Xylene & p-Xylene	12.64	91	12793886	373.97	ug/l	98
72)	o-Xylene	13.38	91	7282031	205.02	ug/l	98
73)	Styrene	13.44	104	5457732	211.32	ug/l	98
74)	Isopropylbenzene	14.01	105	7847570	203.40	ug/l	98

(#) = qualifier out of range (m) = manual integration

SU 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP314.D
Acq On : 15 Jun 2018 5:44 pm
Sample : VO02F157
Misc : 200ppb 8260/1000ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 23
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.11	53	1094483	218.51	ug/l	99
77)	Bromoform	13.99	173	1617406	200.49	ug/l	100
78)	1,1,2,2-Tetrachloroethane	14.32	83	3516601	207.94	ug/l	98
80)	1,2,3-Trichloropropane	14.57	110	785384	206.71	ug/l	99
81)	trans-1,4-Dichloro-2-buten	14.71	53	798088	219.49	ug/l	97
82)	n-Propylbenzene	14.71	91	9667509	203.03	ug/l	98
83)	Bromobenzene	14.75	156	2037284	205.31	ug/l	99
84)	1,3,5-Trimethylbenzene	14.99	105	5534435	200.65	ug/l	99
85)	2-Chlorotoluene	15.00	91	5978115	197.70	ug/l	99
86)	4-Chlorotoluene	15.09	91	5135771	194.13	ug/l	99
87)	tert-Butylbenzene	15.63	134	1307991	205.88	ug/l	94
88)	1,2,4-Trimethylbenzene	15.69	105	5549381	200.23	ug/l	96
89)	sec-Butylbenzene	16.00	105	7483811	202.43	ug/l	99
90)	p-Isopropyltoluene	16.27	119	5988618	204.67	ug/l	99
91)	1,3-Dichlorobenzene	16.39	146	3606724	205.87	ug/l	99
92)	1,2,3-Trimethylbenzene	16.54	105	5490962	203.55	ug/l	99
93)	1,4-Dichlorobenzene	16.58	146	3476857	198.85	ug/l	98
94)	n-Butylbenzene	17.00	91	6010587	205.50	ug/l	99
95)	1,2-Dichlorobenzene	17.23	146	3320643	203.23	ug/l	100
96)	1,2-Dibromo-3-chloropropan	18.54	157	637000	208.40	ug/l	98
97)	1,2,4-Trichlorobenzene	19.58	180	2205546	226.87	ug/l	99
98)	Hexachlorobutadiene	19.73	225	918490	211.75	ug/l	99
99)	Naphthalene	19.84	128	6088867	219.58	ug/l	98
100)	1,2,3-Trichlorobenzene	20.08	180	1905200	213.57	ug/l	99

SU 6/19/18

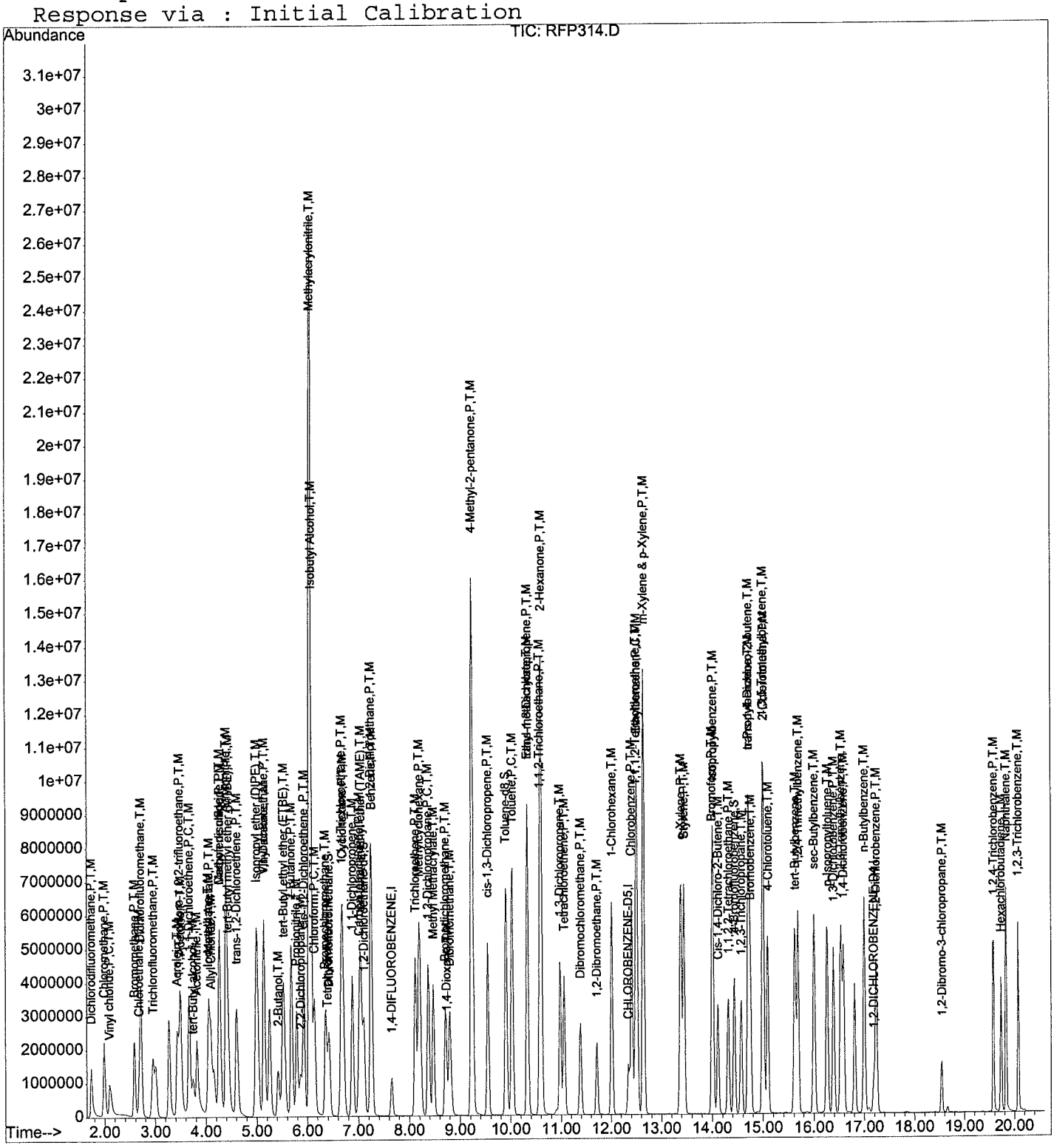
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F15\RFP314.D
Acq On : 15 Jun 2018 5:44 pm
Sample : VO02F157
Misc : 200ppb 8260/1000ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 23
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



Sa 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP315.D
Acq On : 15 Jun 2018 6:08 pm
Sample : VO02F158
Misc : 300ppb 8260/1500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:51 2018

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.65	114	1357128	50.00	ug/l	-0.01
56) CHLOROBENZENE-D5	12.35	117	1262754	50.00	ug/l	0.00
76) 1,2-DICHLOROBENZENE-D4	17.20	152	446762	50.00	ug/l	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	6.43	111	2635795	272.39	ug/l	0.00
Spiked Amount 50.000			Recovery =	544.78%		
43) 1,2-Dichloroethane-d4	7.11	65	3109237	258.93	ug/l	0.00
Spiked Amount 50.000			Recovery =	517.86%		
57) Toluene-d8	9.91	98	9939181	266.84	ug/l	0.00
Spiked Amount 50.000			Recovery =	533.68%		
79) 4-Bromofluorobenzene	14.43	95	3178028	295.26	ug/l	0.00
Spiked Amount 50.000			Recovery =	590.52%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.73	85	3291315	333.36	ug/l	98
3) Chloromethane	1.98	50	4911364	322.83	ug/l	100
4) Vinyl chloride	2.08	62	2650206	246.36	ug/l	100
5) Bromomethane	2.58	94	2979427	262.31	ug/l	97
6) Chloroethane	2.68	64	2537964	303.09	ug/l	98
7) Dichlorofluoromethane	2.71	67	7147417	310.48	ug/l	99
8) Trichlorofluoromethane	2.95	101	3729436	308.21	ug/l	100
9) Acrolein	3.42	56	2965373	1272.17	ug/l	95
10) 1,1,2-Trichloro-1,2,2-trif	3.47	151	1896932	312.62	ug/l	98
11) Acetone	3.50	43	6830674	1361.13	ug/l	99
12) 1,1-Dichloroethene	3.66	61	5363659	309.86	ug/l	98
13) tert-Butyl alcohol	3.75	59	3282605	1403.98	ug/l	99
14) Acetonitrile	3.82	41	6549388	2981.77	ug/l	97
15) Iodomethane	4.05	142	4095200	301.78	ug/l	98
16) Methyl Acetate	4.05	43	4810431	239.32	ug/l	95
17) Allyl Chloride	4.09	76	1752145	296.05	ug/l	98
18) Methylene chloride	4.27	49	4272935	259.97	ug/l	99
19) Carbon disulfide	4.26	76	9736809	293.53	ug/l	98
20) Acrylonitrile	4.39	53	8495833	1347.23	ug/l	99
21) tert-Butyl methyl ether (M	4.42	73	9081106	273.57	ug/l	95
22) trans-1,2-Dichloroethene	4.60	61	4770612	286.31	ug/l	99
23) Isopropyl ether (DIPE)	5.00	45	15090951	285.10	ug/l	98
24) Vinyl acetate	5.15	43	9840094	252.16	ug/l	99
25) 1,1-Dichloroethane	5.13	63	6266601	289.14	ug/l	99
26) 2-Butanol	5.42	45	3378584	1419.05	ug/l #	60
27) tert-Butyl ethyl ether (ET	5.52	59	11340533	295.76	ug/l	99
28) 2-Butanone	5.68	43	13767548	1344.80	ug/l	98

(#) = qualifier out of range (m) = manual integration

SU 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP315.D
Acq On : 15 Jun 2018 6:08 pm
Sample : VO02F158
Misc : 300ppb 8260/1500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:51 2018

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.79	54	6634820	2776.40	ug/l	99
30)	2,2-Dichloropropane	5.86	77	1927109	265.05	ug/l	98
31)	cis-1,2-Dichloroethene	5.94	96	3761499	291.27	ug/l	98
32)	Isobutyl Alcohol	6.09	43	5916800	4979.17	ug/l	98
33)	Methylacrylonitrile	6.06	52	6085289	2583.05	ug/l	95
34)	Chloroform	6.14	83	5199408	276.43	ug/l	99
35)	Bromochloromethane	6.35	49	3581657	290.63	ug/l	100
36)	Tetrahydrofuran	6.40	42	1649574	273.44	ug/l	99
38)	1,1,1-Trichloroethane	6.67	97	3013850	295.59	ug/l	99
39)	Cyclohexane	6.70	84	5090218	275.97	ug/l	99
40)	1,1-Dichloropropene	6.89	110	1431635	301.09	ug/l	100
41)	Carbon tetrachloride	7.02	119	2571802	312.35	ug/l	99
42)	tert-Amyl methyl ether (TA	7.04	87	1866376	290.18	ug/l	95
44)	1,2-Dichloroethane	7.23	62	3974062	282.44	ug/l	97
45)	Benzene	7.25	78	12329926	279.94	ug/l	98
46)	Trichloroethene	8.12	130	3503669	319.18	ug/l	98
47)	Methylcyclohexane	8.20	83	5982022	281.67	ug/l	99
48)	1,2-Dichloropropane	8.38	63	4026783	306.33	ug/l	98
49)	Methyl Methacrylate	8.48	69	3142187	308.40	ug/l	100
50)	Bromodichloromethane	8.72	83	4577567	316.45	ug/l	99
51)	1,4-Dioxane	8.75	88	883146	6013.73	ug/l	98
52)	Dibromomethane	8.79	93	2445034	310.01	ug/l	99
54)	4-Methyl-2-pentanone	9.24	43	25108201	1173.00	ug/l	91
55)	cis-1,3-Dichloropropene	9.55	75	6444013	321.41	ug/l	99
58)	Toluene	10.03	91	12218141	282.05	ug/l	98
59)	Ethyl methacrylate	10.34	69	5233892	297.25	ug/l	99
60)	trans-1,3-Dichloropropene	10.32	75	5451315	316.03	ug/l	97
61)	1,1,2-Trichloroethane	10.58	97	3048634	286.85	ug/l	98
62)	2-Hexanone	10.61	43	18875524	1286.73	ug/l	97
63)	1,3-Dichloropropane	10.98	76	5939494	284.81	ug/l	97
64)	Tetrachloroethene	11.07	164	2442826	289.92	ug/l	99
65)	Dibromochloromethane	11.38	129	3320496	317.11	ug/l	100
66)	1,2-Dibromoethane	11.71	107	3332473	306.95	ug/l	100
67)	1-Chlorohexane	12.01	91	4978724	317.84	ug/l	99
68)	Chlorobenzene	12.41	112	7794434	301.42	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.50	131	2718489	306.38	ug/l	99
70)	Ethylbenzene	12.51	91	12488973	279.49	ug/l	98
71)	m-Xylene & p-Xylene	12.64	91	17310515	516.63	ug/l	97
72)	o-Xylene	13.37	91	10209507	293.49	ug/l	97
73)	Styrene	13.45	104	7574111	299.44	ug/l	97
74)	Isopropylbenzene	14.01	105	10979775	290.57	ug/l	98

(#) = qualifier out of range (m) = manual integration

6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP315.D Vial: 24
Acq On : 15 Jun 2018 6:08 pm Operator: ODinh
Sample : VO02F158 Inst : 02
Misc : 300ppb 8260/1500ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 16 8:51 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.10	53	1485929	302.90	ug/l	98
77)	Bromoform	14.00	173	2242837	306.18	ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.31	83	4775128	312.28	ug/l	99
80)	1,2,3-Trichloropropane	14.56	110	1075111	312.96	ug/l	98
81)	trans-1,4-Dichloro-2-buten	14.71	53	1074185	326.74	ug/l	97
82)	n-Propylbenzene	14.71	91	13141585	305.25	ug/l	98
83)	Bromobenzene	14.76	156	2793384	311.34	ug/l	99
84)	1,3,5-Trimethylbenzene	14.99	105	7514500	301.32	ug/l	99
85)	2-Chlorotoluene	14.99	91	7926973	289.94	ug/l	98
86)	4-Chlorotoluene	15.08	91	7231822	302.34	ug/l	99
87)	tert-Butylbenzene	15.62	134	1817994	316.48	ug/l	95
88)	1,2,4-Trimethylbenzene	15.68	105	7645382	305.10	ug/l	97
89)	sec-Butylbenzene	16.01	105	10257499	306.86	ug/l	98
90)	p-Isopropyltoluene	16.26	119	8216839	310.59	ug/l	98
91)	1,3-Dichlorobenzene	16.39	146	4864525	307.09	ug/l	99
92)	1,2,3-Trimethylbenzene	16.53	105	7214084	295.77	ug/l	100
93)	1,4-Dichlorobenzene	16.59	146	4713130	298.12	ug/l	98
94)	n-Butylbenzene	17.00	91	8233483	311.33	ug/l	99
95)	1,2-Dichlorobenzene	17.24	146	4537433	307.14	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.53	157	882611	318.00	ug/l	98
97)	1,2,4-Trichlorobenzene	19.58	180	3157642	359.24	ug/l	100
98)	Hexachlorobutadiene	19.74	225	1318568	336.20	ug/l	99
99)	Naphthalene	19.83	128	8505164	339.22	ug/l	97
100)	1,2,3-Trichlorobenzene	20.08	180	2753708	341.40	ug/l	99

(#) = qualifier out of range (m) = manual integration
RFP315.D VO02F15.M Mon Jun 18 12:53:59 2018 SC 6/19/18 Page 3

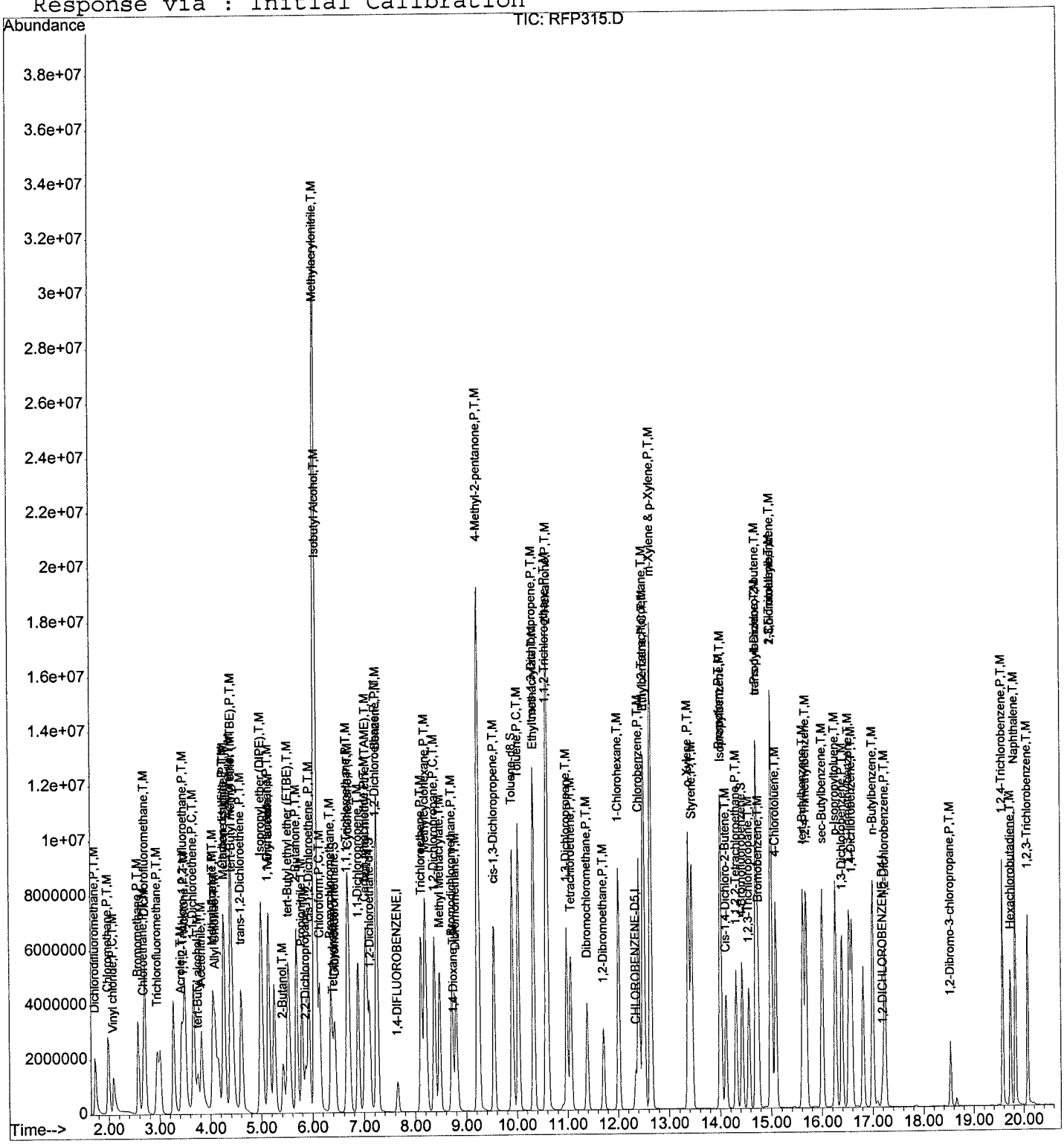
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F15\RFP315.D
Acq On : 15 Jun 2018 6:08 pm
Sample : VO02F158
Misc : 300ppb 8260/1500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:51 2018

Vial: 24
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP316.D
Acq On : 15 Jun 2018 6:33 pm
Sample : VO02F159
Misc : 500ppb 8260/2500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.66	114	1355339	50.00	ug/l	0.00
56) CHLOROBENZENE-D5	12.34	117	1219878	50.00	ug/l	0.00
76) 1,2-DICHLOROBENZENE-D4	17.19	152	404798	50.00	ug/l	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	6.42	111	4064749	420.61	ug/l	0.00
Spiked Amount 50.000			Recovery =	841.22%		
43) 1,2-Dichloroethane-d4	7.11	65	4802297	400.45	ug/l	0.00
Spiked Amount 50.000			Recovery =	800.90%		
57) Toluene-d8	9.90	98	14942789	415.27	ug/l	0.00
Spiked Amount 50.000			Recovery =	830.54%		
79) 4-Bromofluorobenzene	14.44	95	4526719	464.16	ug/l	0.00
Spiked Amount 50.000			Recovery =	928.32%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.74	85	5369067	544.52	ug/l	99
3) Chloromethane	1.99	50	8002903	526.73	ug/l	99
4) Vinyl chloride	2.09	62	3889166	362.01	ug/l	100
5) Bromomethane	2.57	94	4605407	406.00	ug/l	97
6) Chloroethane	2.67	64	3838275	458.98	ug/l	98
7) Dichlorofluoromethane	2.70	67	10546343	458.73	ug/l	98
8) Trichlorofluoromethane	2.94	101	5681741	470.17	ug/l	99
9) Acrolein	3.43	56	3476448	1493.39	ug/l	94
10) 1,1,2-Trichloro-1,2,2-trif	3.46	151	2820742	465.48	ug/l	98
11) Acetone	3.51	43	10344847	2064.11	ug/l	98
12) 1,1-Dichloroethene	3.65	61	7935789	459.06	ug/l	98
13) tert-Butyl alcohol	3.74	59	4907061	2101.54	ug/l	90
14) Acetonitrile	3.82	41	9159157	4175.44	ug/l	97
15) Iodomethane	4.04	142	6103903	450.39	ug/l	98
16) Methyl Acetate	4.06	43	6936888	345.57	ug/l	95
17) Allyl Chloride	4.10	76	2535822	429.03	ug/l	100
18) Methylene chloride	4.26	49	6278792	382.52	ug/l	99
19) Carbon disulfide	4.25	76	14474190	436.91	ug/l	98
20) Acrylonitrile	4.40	53	12152190	1929.58	ug/l	98
21) tert-Butyl methyl ether (M	4.43	73	12771544	385.26	ug/l	96
22) trans-1,2-Dichloroethene	4.61	61	6998303	420.56	ug/l	99
23) Isopropyl ether (DIPE)	4.99	45	23212602	439.12	ug/l	99
24) Vinyl acetate	5.14	43	14341190	367.99	ug/l	99
25) 1,1-Dichloroethane	5.14	63	9341946	431.60	ug/l	98
26) 2-Butanol	5.42	45	5393801	2268.46	ug/l #	60
27) tert-Butyl ethyl ether (ET	5.53	59	16705348	436.25	ug/l	97
28) 2-Butanone	5.68	43	21520951	2104.91	ug/l	96

(#) = qualifier out of range (m) = manual integration

SM 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP316.D
Acq On : 15 Jun 2018 6:33 pm
Sample : VO02F159
Misc : 500ppb 8260/2500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.80	54	10357120	4339.75	ug/l	98
30)	2,2-Dichloropropane	5.86	77	2664044	366.89	ug/l	98
31)	cis-1,2-Dichloroethene	5.93	96	5735484	444.72	ug/l	97
32)	Isobutyl Alcohol	6.09	43	8640731	7281.04	ug/l	97
33)	Methylacrylonitrile	6.06	52	9173538	3899.08	ug/l	90
34)	Chloroform	6.14	83	7769432	413.61	ug/l	99
35)	Bromochloromethane	6.35	49	5571273	452.67	ug/l	100
36)	Tetrahydrofuran	6.39	42	2650936	440.01	ug/l	99
38)	1,1,1-Trichloroethane	6.67	97	4555793	447.41	ug/l	99
39)	Cyclohexane	6.69	84	7827519	424.93	ug/l	99
40)	1,1-Dichloropropene	6.88	110	2200834	463.48	ug/l	100
41)	Carbon tetrachloride	7.02	119	3907352	475.18	ug/l	99
42)	tert-Amyl methyl ether (TA	7.05	87	2764373	430.36	ug/l	93
44)	1,2-Dichloroethane	7.24	62	6121988	435.67	ug/l	97
45)	Benzene	7.25	78	18524910	421.15	ug/l	97
46)	Trichloroethene	8.12	130	5527447	504.21	ug/l	99
47)	Methylcyclohexane	8.19	83	9172108	432.45	ug/l	99
48)	1,2-Dichloropropane	8.37	63	6202977	472.50	ug/l	99
49)	Methyl Methacrylate	8.47	69	4945840	486.07	ug/l	99
50)	Bromodichloromethane	8.71	83	7114481	492.48	ug/l	99
51)	1,4-Dioxane	8.76	88	1353065	9225.78	ug/l	99
52)	Dibromomethane	8.79	93	3815229	484.38	ug/l	99
54)	4-Methyl-2-pentanone	9.23	43	30346784	1419.61	ug/l	74
55)	cis-1,3-Dichloropropene	9.55	75	9945961	496.73	ug/l	99
58)	Toluene	10.04	91	17998653	430.09	ug/l	97
59)	Ethyl methacrylate	10.33	69	7963978	468.20	ug/l	99
60)	trans-1,3-Dichloropropene	10.33	75	8272513	496.45	ug/l	97
61)	1,1,2-Trichloroethane	10.57	97	4607423	448.76	ug/l	99
62)	2-Hexanone	10.60	43	23845991	1682.70	ug/l	83
63)	1,3-Dichloropropane	10.99	76	9128414	453.11	ug/l	97
64)	Tetrachloroethene	11.06	164	3680299	452.13	ug/l	99
65)	Dibromochloromethane	11.39	129	5125321	506.67	ug/l	100
66)	1,2-Dibromoethane	11.72	107	5272734	502.73	ug/l	100
67)	1-Chlorohexane	12.01	91	7381576	487.80	ug/l	99
68)	Chlorobenzene	12.40	112	11593291	464.08	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.49	131	4014433	468.33	ug/l	100
70)	Ethylbenzene	12.50	91	17769956	411.64	ug/l	96
71)	m-Xylene & p-Xylene	12.64	91	21910807	676.91	ug/l	89
72)	o-Xylene	13.38	91	15005028	446.50	ug/l	97
73)	Styrene	13.44	104	10980781	449.38	ug/l	97
74)	Isopropylbenzene	14.01	105	15443135	423.06	ug/l	97

(#) = qualifier out of range (m) = manual integration

6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F15\RFP316.D
Acq On : 15 Jun 2018 6:33 pm
Sample : VO02F159
Misc : 500ppb 8260/2500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.11	53	2248713	474.51 ug/l	97
77)	Bromoform	13.99	173	3479772	522.53 ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.32	83	6998574	505.14 ug/l	98
80)	1,2,3-Trichloropropane	14.57	110	1581971	508.24 ug/l	99
81)	trans-1,4-Dichloro-2-buten	14.71	53	1559323	523.48 ug/l	94
82)	n-Propylbenzene	14.71	91	17912936	459.20 ug/l	96
83)	Bromobenzene	14.75	156	3962687	487.46 ug/l	99
84)	1,3,5-Trimethylbenzene	15.00	105	10367600	458.82 ug/l	98
85)	2-Chlorotoluene	15.00	91	11306734	456.43 ug/l	98
86)	4-Chlorotoluene	15.09	91	9755630	450.13 ug/l	98
87)	tert-Butylbenzene	15.63	134	2632603	505.80 ug/l	92
88)	1,2,4-Trimethylbenzene	15.69	105	10556245	464.93 ug/l	95
89)	sec-Butylbenzene	16.00	105	14393608	475.23 ug/l	97
90)	p-Isopropyltoluene	16.27	119	11475208	478.72 ug/l	98
91)	1,3-Dichlorobenzene	16.39	146	6895003	480.39 ug/l	99
92)	1,2,3-Trimethylbenzene	16.54	105	10228783	462.84 ug/l	99
93)	1,4-Dichlorobenzene	16.58	146	6535632	456.26 ug/l	98
94)	n-Butylbenzene	17.00	91	11378396	474.86 ug/l	98
95)	1,2-Dichlorobenzene	17.23	146	6545475	489.00 ug/l	100
96)	1,2-Dibromo-3-chloropropan	18.54	157	1469035	582.03 ug/l	100
97)	1,2,4-Trichlorobenzene	19.59	180	4799100	602.58 ug/l	99
98)	Hexachlorobutadiene	19.73	225	2062366	580.37 ug/l	99
99)	Naphthalene	19.84	128	12323892	542.49 ug/l	96
100)	1,2,3-Trichlorobenzene	20.08	180	4083550	558.76 ug/l	99

Sa 6/19/18

(#) = qualifier out of range (m) = manual integration

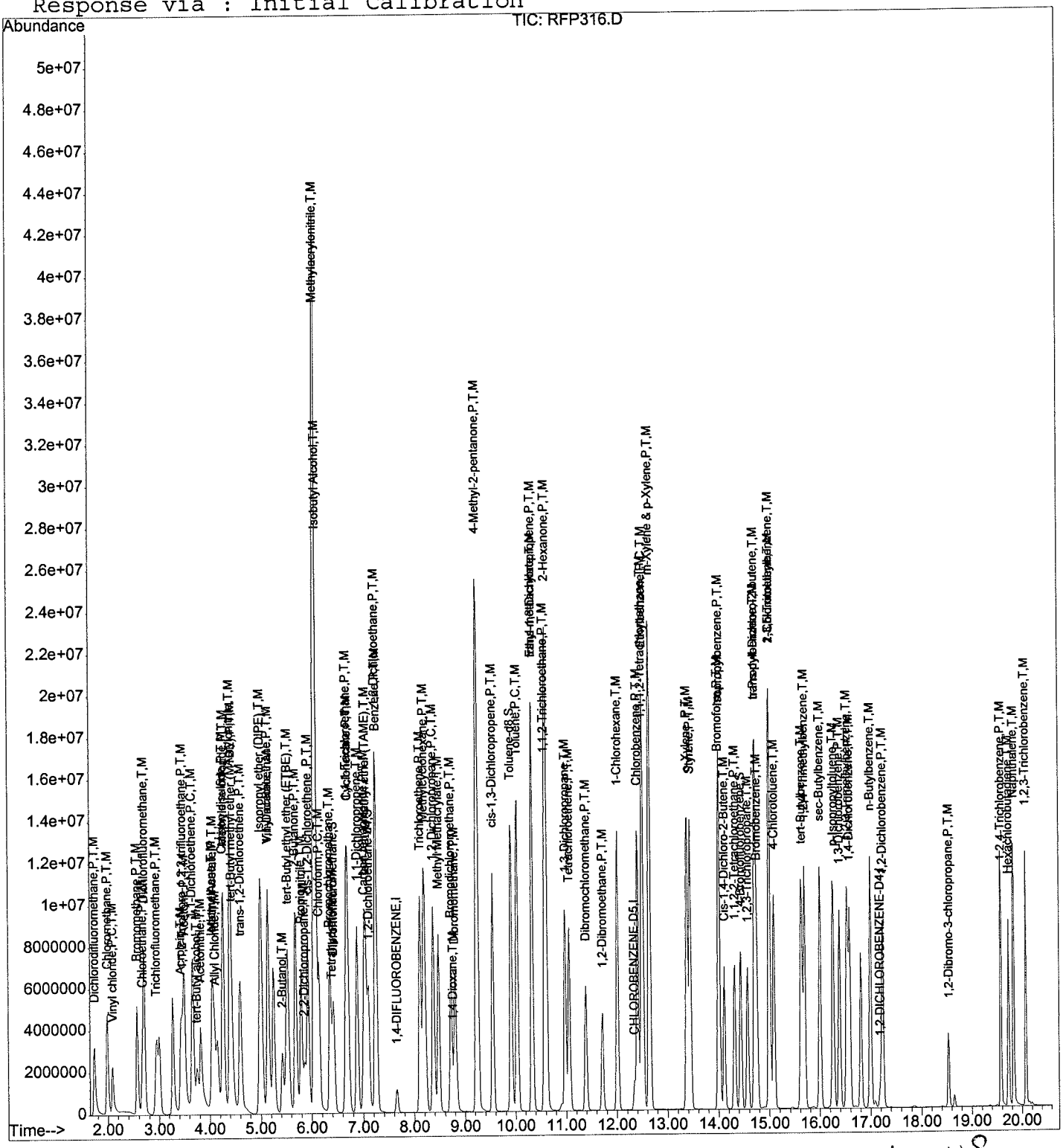
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F15\RFP316.D
Acq On : 15 Jun 2018 6:33 pm
Sample : VO02F159
Misc : 500ppb 8260/2500ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 8:37 2018

Vial: 25
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



RFP316.D VO02F15.M Mon Jun 18 12:54:19 2018 Page 4

6/19/18

SECOND SOURCE VERIFICATION

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RFP320
Instrument ID: 02
GC Column:RTX502.2ID:0.25mm (mm)

Contract: JBER TO075
SAS No.: SDG No.: 18F187
BFB Injection Date : 06/16/18
BFB Injection Time : 08:11
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.57
75	30.0 - 60.0% of mass 95	44.44
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.09
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	82.63
175	5.0 - 9.0% of mass 174	5.81(7.0)1
176	95.0 - 101.0% of mass 174	79.00(95.6)1
177	5.0 - 9.0% of mass 176	4.76(6.0)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	IV002F1502	RFP321	06/16/18	09:01

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :02
IC_Beginning DateTime :06/15/18 15:18
Spike Amount :50 PPB
CC/CV File :RFP321
IC File :RFP312

Column Spec :RTX502.2 ID :0.25MM
IC_Ending DateTime :06/15/18 18:33
HPChem Method :V002F15
Date_Time :06/16/18 09:01

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	50.000	0	1628230	1	1	7.655	7.654	0				
	2	Dichlorodifluoromethane	47.155	-5.7	558575	0.343	0.364	1.735	1.737	11.99				
	3	Chloromethane	47.701	-4.6	870666	0.535	0.561	1.988	1.990	10.45				
	4	Vinyl chloride	51.775	3.5	668220	0.410	0.396	2.107	2.112	7.07				
	5	Bromomethane	44.313	-11.4	603867	0.371	0.418	2.583	2.580	12.19				
	6	Chloroethane	50.528	1.1	507621	0.312	0.309	2.672	2.676	10.69				
	7	Dichlorofluoromethane	50.329	0.7	1390044	0.854	0.848	2.717	2.711	11.23				
	8	Trichlorofluoromethane	51.527	3.1	748046	0.459	0.446	2.955	2.952	9.83				
5	9	Acrolein	257.608	3.0	720427	0.088	0.086	3.431	3.434	10.86				
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	50.908	1.8	370603	0.228	0.224	3.476	3.471	7.08				
5	11	Acetone	256.375	2.5	1543596	0.190	0.185	3.505	3.502	9.23				
	12	1,1-Dichloroethene	50.533	1.1	1049459	0.645	0.638	3.669	3.669	10.26				
5	13	tert-Butyl alcohol	260.126	4.1	729686	0.090	0.086	3.743	3.748	11.80				
10	14	Acetonitrile	474.872	-5.0	1251404	0.077	0.081	3.818	3.821	14.69				
	15	Iodomethane	49.959	-0.1	813393	0.500	0.500	4.041	4.047	10.98				
	16	Methyl Acetate	49.386	-1.2	1190972	0.731	0.741	4.056	4.055	5.68				
	17	Allyl Chloride	52.378	4.8	371922	0.228	0.218	4.100	4.097	9.81				
	18	Methylene chloride	46.614	-6.8	919196	0.565	0.606	4.264	4.266	8.44				
	19	Carbon disulfide	52.817	5.6	2102031	1.291	1.222	4.249	4.259	8.01				
5	20	Acrylonitrile	261.527	4.6	1978677	0.243	0.232	4.383	4.394	12.05				
	21	tert-Butyl methyl ether (MTBE)	51.198	2.4	2038972	1.252	1.223	4.413	4.426	9.24				
	22	trans-1,2-Dichloroethene	52.341	4.7	1046350	0.643	0.614	4.591	4.601	9.77				
	23	Isopropyl ether (DIPE)	51.497	3.0	3270353	2.009	1.950	4.993	4.998	9.23				
	24	Vinyl acetate	53.207	6.4	2491064	1.530	1.438	5.141	5.145	8.95				
	25	1,1-Dichloroethane	51.604	3.2	1341834	0.824	0.798	5.141	5.138	9.79				
5	26	2-Butanol	264.082	5.6	754345	0.093	0.088	5.409	5.421	9.06				
	27	tert-Butyl ethyl ether (ETBE)	49.223	-1.6	2264446	1.391	1.413	5.528	5.527	8.67				
5	28	2-Butanone	257.104	2.8	3157936	0.388	0.377	5.677	5.684	11.45				
10	29	Propionitrile	513.461	2.7	1472142	0.090	0.088	5.781	5.786	10.49				
	30	2,2-Dichloropropane	52.964	5.9	462014	0.284	0.268	5.856	5.865	6.49				
	31	cis-1,2-Dichloroethene	50.674	1.3	785127	0.482	0.476	5.930	5.930	8.35				
20	32	Isobutyl Alcohol	1029.862	3.0	1468264	0.045	0.044	6.064	6.075	13.05				
10	33	Methylacrylonitrile	517.685	3.5	1463216	0.090	0.087	6.034	6.047	12.57				
	34	Chloroform	50.668	1.3	1143403	0.702	0.693	6.123	6.136	10.60				
	35	Bromochloromethane	50.060	0.1	740169	0.455	0.454	6.346	6.350	9.53				
	36	Tetrahydrofuran	48.831	-2.3	353428	0.217	0.222	6.391	6.398	9.91				
	37	Dibromofluoromethane	47.610	-4.8	552737	0.339	0.357	6.421	6.424	8.53				
	38	1,1,1-Trichloroethane	50.346	0.7	615863	0.378	0.376	6.659	6.669	7.54				
	39	Cyclohexane	47.670	-4.7	1054921	0.648	0.680	6.674	6.688	7.57				
	40	1,1-Dichloropropene	48.459	-3.1	276443	0.170	0.175	6.882	6.885	4.12				
	41	Carbon tetrachloride	49.835	-0.3	492294	0.302	0.303	7.016	7.019	7.60				
	42	tert-Amyl methyl ether (TAME)	50.497	1.0	389671	0.239	0.237	7.045	7.045	6.99				
	43	1,2-Dichloroethane-d4	44.910	-10.2	647015	0.397	0.442	7.105	7.109	7.19				
	44	1,2-Dichloroethane	49.236	-1.5	831159	0.510	0.518	7.224	7.235	8.56				
	45	Benzene	49.286	-1.4	2604424	1.600	1.623	7.254	7.252	8.92				
	46	Trichloroethene	48.074	-3.9	633134	0.389	0.404	8.116	8.118	8.20				
	47	Methylcyclohexane	47.585	-4.8	1212474	0.745	0.782	8.191	8.196	6.48				
	48	1,2-Dichloropropane	49.336	-1.3	778095	0.478	0.484	8.369	8.373	7.48				
	49	Methyl Methacrylate	51.131	2.3	625029	0.384	0.375	8.473	8.477	12.45				
	50	Bromodichloromethane	49.027	-1.9	850867	0.523	0.533	8.711	8.714	8.96				
20	51	1,4-Dioxane	1061.672	6.2	187057	0.006	0.005	8.741	8.754	12.95				
	52	Dibromomethane	50.068	0.1	473771	0.291	0.291	8.786	8.796	9.94				
	53	2-Chloroethyl vinyl ether												
5	54	4-Methyl-2-pentanone	250.889	0.4	6443075	0.791	0.789	9.232	9.235	9.96				
	55	cis-1,3-Dichloropropene	51.423	2.8	1236941	0.760	0.739	9.544	9.544	12.33				
	56	CHLOROBENZENE-D5	50.000	0	1463952	1	1	12.340	12.344	0				
	57	Toluene-d8	46.482	-7.0	2007214	1.371	1.475	9.901	9.908	6.17				
	58	Toluene	49.292	-1.4	2475508	1.691	1.715	10.020	10.032	7.61				
	59	Ethyl methacrylate	52.463	4.9	1070933	0.732	0.697	10.318	10.334	12.82				
	60	trans-1,3-Dichloropropene	52.787	5.6	1055598	0.721	0.683	10.318	10.331	13.15				
	61	1,1,2-Trichloroethane	50.417	0.8	621198	0.424	0.421	10.571	10.574	7.06				
5	62	2-Hexanone	265.402	6.2	4513592	0.617	0.581	10.585	10.600	11.62				
	63	1,3-Dichloropropane	49.148	-1.7	1188259	0.812	0.826	10.972	10.979	7.46				
	64	Tetrachloroethene	47.603	-4.8	465011	0.318	0.334	11.061	11.065	6.05	SU	6/19/18		
	65	Dibromochloromethane	49.285	-1.4	598302	0.409	0.415	11.374	11.388	8.97				
	66	1,2-Dibromoethane	50.111	0.2	630735	0.431	0.430	11.701	11.712	9.74				
	67	1-Chlorohexane	51.055	2.1	927157	0.633	0.620	11.998	12.013	6.34				
	68	Chlorobenzene	50.130	0.3	1502871	1.027	1.024	12.400	12.405	6.26				
	69	1,1,1,2-Tetrachloroethane	50.394	0.8	518397	0.354	0.351	12.489	12.491	7.08				
	70	Ethylbenzene	50.557	1.1	2619137	1.789	1.769	12.504	12.507	8.53				
2	71	m-Xylene & p-Xylene	100.546	0.5	3905709	1.334	1.327	12.638	12.640	7.83				
	72	o-Xylene	50.384	0.8	2031964	1.388	1.377	13.367	13.377	6.28				
	73	Styrene	52.596	5.2	1542363	1.054	1.002	13.441	13.444	8.60				
	74	Isopropylbenzene	51.794	3.6	2268932	1.550	1.496	14.006	14.008	7.23				
	75	Cis-1,4-Dichloro-2-Butene	51.981	4.0	295629	0.202	0.194	14.096	14.110	11.75				
	76	1,2-DICHLOROBENZENE-D4	50.000	0	591100	1	1	17.174	17.191	0				
	77	Bromoform	45.445	-9.1	420037	0.711	0.699	13.991	13.997	18.90	-0.0406	0.8264		0.9992
	78	1,1,2,2-Tetrachloroethane	50.305	0.6	1017722	1.722	1.711	14.304	14.314	8.89				
	79	4-Bromofluorobenzene	46.787	-6.4	666300	1.127	1.205	14.423	14.433	4.81				

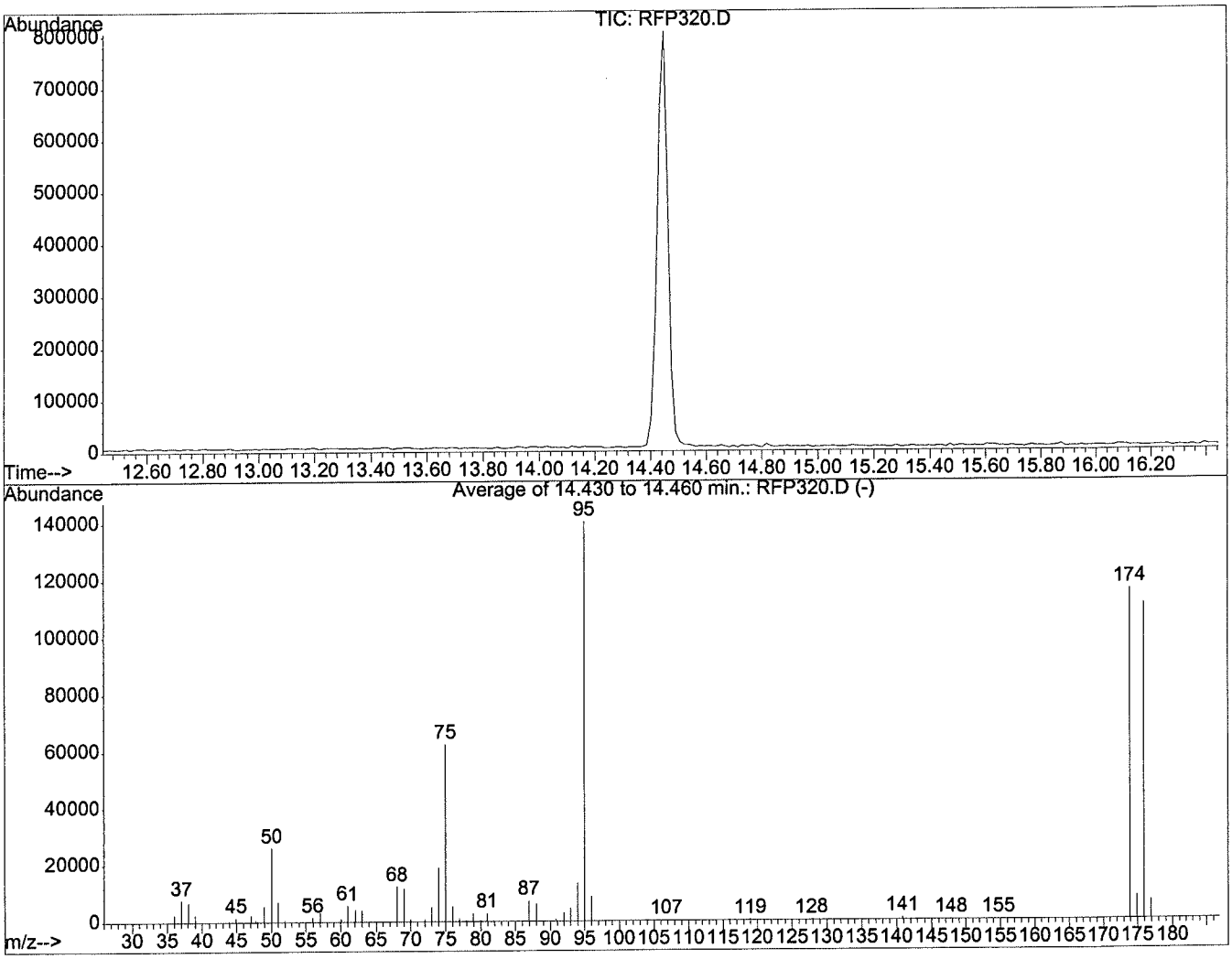
80	1,2,3-Trichloropropane	48.593	-2.8	220865	0.374	0.384	14.557	14.573	9.15					
81	trans-1,4-Dichloro-2-butene	49.500	-1.0	215308	0.364	0.368	14.705	14.708	12.05					
82	n-Propylbenzene	51.507	3.0	2933947	4.964	4.818	14.705	14.709	4.88					
83	Bromobenzene	50.242	0.5	596402	1.009	1.004	14.750	14.753	6.81					
84	1,3,5-Trimethylbenzene	51.624	3.2	1703394	2.882	2.791	14.988	14.993	5.59					
85	2-Chlorotoluene	49.507	-1.0	1790809	3.030	3.060	14.988	15.000	6.15					
86	4-Chlorotoluene	50.768	1.5	1606668	2.718	2.677	15.077	15.086	5.56					
87	tert-Butylbenzene	49.405	-1.2	375488	0.635	0.643	15.613	15.624	3.68					
88	1,2,4-Trimethylbenzene	50.948	1.9	1689167	2.858	2.804	15.672	15.684	5.14					
89	sec-Butylbenzene	50.997	2.0	2255425	3.816	3.741	16.000	16.003	5.35					
90	p-Isopropyltoluene	51.324	2.6	1796477	3.039	2.961	16.252	16.259	4.67					
91	1,3-Dichlorobenzene	50.069	0.1	1049367	1.775	1.773	16.386	16.389	3.59					
92	1,2,3-Trimethylbenzene	54.209	8.4	1749382	2.960	2.730	16.520	16.532	10.61					
93	1,4-Dichlorobenzene	49.621	-0.8	1037931	1.756	1.769	16.580	16.583	4.48					
94	n-Butylbenzene	51.086	2.2	1787494	3.024	2.960	16.996	16.999	6.14					
95	1,2-Dichlorobenzene	49.387	-1.2	965325	1.633	1.653	17.234	17.237	2.49					
96	1,2-Dibromo-3-chloropropane	43.814	-12.4	152792	0.258	0.255	18.528	18.541	20.58	-0.0159	0.3131		0.9978	
97	1,2,4-Trichlorobenzene	47.453	-5.1	551870	0.934	0.984	19.569	19.581	12.94					
98	Hexachlorobutadiene	45.619	-8.8	236720	0.400	0.439	19.733	19.736	10.47					
99	Naphthalene	46.447	-7.1	1540790	2.607	2.806	19.822	19.834	10.87					
100	1,2,3-Trichlorobenzene	46.137	-7.7	492361	0.833	0.903	20.075	20.078	10.06					

Spike Amount = Nominal Amount * M

SU 6/19/18

Data File : D:\HPCHEM\1\DATA\18F16\RFP320.D
Acq On : 16 Jun 2018 8:11 am
Sample : BFB02F12
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL

Vial: 1
Operator: ODinh
Inst : 02
Multiplr: 1.00



AutoFind: Scans 860, 861, 862; Background Corrected with Scan 854

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	26112	PASS
75	95	30	60	44.4	62475	PASS
95	95	100	100	100.0	140597	PASS
96	95	5	9	6.1	8568	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	82.6	116179	PASS
175	174	5	9	7.0	8172	PASS
176	174	95	101	95.6	111069	PASS
177	176	5	9	6.0	6687	PASS

RFP320.D VO02F15.M Mon Jun 18 12:54:33 2018

Su 6/19/18

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D
Acq On : 16 Jun 2018 9:01 am
Sample : IVO02F1502
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I 1,4-DIFLUOROBENZENE	50.000	50.000	0.0	104	0.00
2	P,T,M Dichlorodifluoromethane	50.000	47.155	5.7	99	0.00
3	P,T,M Chloromethane	50.000	47.701	4.6	100	0.00
4	P,C,T,M Vinyl chloride	50.000	51.775	-3.5	103	0.00
5	P,T,M Bromomethane	50.000	44.313	11.4	101	0.00
6	P,T,M Chloroethane	50.000	50.528	-1.1	98	0.00
7	T,M Dichlorofluoromethane	50.000	50.329	-0.7	98	0.00
8	P,T,M Trichlorofluoromethane	50.000	51.527	-3.1	103	0.00
9	T,M Acrolein	250.000	257.608	-3.0	99	0.00
10	P,T,M 1,1,2-Trichloro-1,2,2-trifl	50.000	50.908	-1.8	101	0.00
11	P,T,M Acetone	250.000	256.375	-2.5	99	0.00
12	P,C,T,M 1,1-Dichloroethene	50.000	50.533	-1.1	98	0.00
13	T,M tert-Butyl alcohol	250.000	260.126	-4.1	100	0.00
14	T,M Acetonitrile	500.000	474.872	5.0	85	0.00
15	T,M Iodomethane	50.000	49.959	0.1	96	0.00
16	P,T,M Methyl Acetate	50.000	49.386	1.2	98	0.00
17	T,M Allyl Chloride	50.000	52.378	-4.8	102	0.00
18	P,T,M Methylene chloride	50.000	46.614	6.8	98	0.00
19	P,T,M Carbon disulfide	50.000	52.817	-5.6	104	0.00
20	T,M Acrylonitrile	250.000	261.527	-4.6	99	0.00
21	P,T,M tert-Butyl methyl ether (MT	50.000	51.198	-2.4	99	0.00
22	P,T,M trans-1,2-Dichloroethene	50.000	52.341	-4.7	100	0.00
23	T,M Isopropyl ether (DIPE)	50.000	51.497	-3.0	101	0.00
24	T,M Vinyl acetate	50.000	53.207	-6.4	104	0.00
25	P,T,M 1,1-Dichloroethane	50.000	51.604	-3.2	101	0.00
26	T,M 2-Butanol	250.000	264.082	-5.6	102	0.00
27	T,M tert-Butyl ethyl ether (ETB	50.000	49.224	1.6	98	0.00
28	P,T,M 2-Butanone	250.000	257.104	-2.8	98	0.00
29	T,M Propionitrile	500.000	513.461	-2.7	99	0.00
30	T,M 2,2-Dichloropropane	50.000	52.964	-5.9	104	0.00
31	P,T,M cis-1,2-Dichloroethene	50.000	50.674	-1.3	100	0.00
32	T,M Isobutyl Alcohol	1000.000	1029.862	-3.0	96	0.00
33	T,M Methylacrylonitrile	500.000	517.685	-3.5	98	0.00
34	P,C,T,M Chloroform	50.000	50.668	-1.3	100	0.00
35	T,M Bromochloromethane	50.000	50.060	-0.1	98	0.00
36	T,M Tetrahydrofuran	50.000	48.831	2.3	95	0.00
37	S Dibromofluoromethane	50.000	47.610	4.8	97	0.00
38	P,T,M 1,1,1-Trichloroethane	50.000	50.346	-0.7	100	0.00
39	P,T,M Cyclohexane	50.000	47.670	4.7	98	-0.02
40	T,M 1,1-Dichloropropene	50.000	48.459	3.1	100	0.00
41	P,T,M Carbon tetrachloride	50.000	49.835	0.3	98	0.00

(#) = Out of Range

6/19/18

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D
Acq On : 16 Jun 2018 9:01 am
Sample : IVO02F1502
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M tert-Amyl methyl ether (TAM	50.000	50.497	-1.0	100	0.00
43	S 1,2-Dichloroethane-d4	50.000	44.910	10.2	94	0.00
44	P,T,M 1,2-Dichloroethane	50.000	49.236	1.5	98	0.00
45	P,T,M Benzene	50.000	49.286	1.4	99	0.00
46	P,T,M Trichloroethene	50.000	48.074	3.9	98	0.00
47	P,T,M Methylcyclohexane	50.000	47.585	4.8	97	0.00
48	P,C,T,M 1,2-Dichloropropane	50.000	49.336	1.3	99	0.00
49	T,M Methyl Methacrylate	50.000	51.131	-2.3	97	0.00
50	P,T,M Bromodichloromethane	50.000	49.027	1.9	99	0.00
51	T,M 1,4-Dioxane	1000.000	1061.672	-6.2	101	0.00
52	T,M Dibromomethane	50.000	50.068	-0.1	98	0.00
53	T,M 2-Chloroethyl vinyl ether	-1.000	0.000	0.0	0	0.00
54	P,T,M 4-Methyl-2-pentanone	250.000	250.889	-0.4	100	0.00
55	P,T,M cis-1,3-Dichloropropene	50.000	51.423	-2.8	100	0.00
56	I CHLOROBENZENE-D5	50.000	50.000	0.0	104	0.00
57	S Toluene-d8	50.000	46.482	7.0	99	0.00
58	P,C,T,M Toluene	50.000	49.292	1.4	100	0.00
59	T,M Ethyl methacrylate	50.000	52.463	-4.9	98	-0.02
60	P,T,M trans-1,3-Dichloropropene	50.000	52.787	-5.6	101	-0.02
61	P,T,M 1,1,2-Trichloroethane	50.000	50.417	-0.8	99	0.00
62	P,T,M 2-Hexanone	250.000	265.402	-6.2	102	0.00
63	T,M 1,3-Dichloropropane	50.000	49.148	1.7	97	0.00
64	P,T,M Tetrachloroethene	50.000	47.603	4.8	98	0.00
65	P,T,M Dibromochloromethane	50.000	49.285	1.4	99	-0.02
66	P,T,M 1,2-Dibromoethane	50.000	50.111	-0.2	98	0.00
67	T,M 1-Chlorohexane	50.000	51.055	-2.1	103	-0.02
68	P,T,M Chlorobenzene	50.000	50.130	-0.3	100	0.00
69	T,M 1,1,1,2-Tetrachloroethane	50.000	50.394	-0.8	98	0.00
70	P,C,T,M Ethylbenzene	50.000	50.557	-1.1	99	0.00
71	P,T,M m-Xylene & p-Xylene	100.000	100.545	-0.5	100	0.00
72	P,T,M o-Xylene	50.000	50.384	-0.8	101	0.00
73	P,T,M Styrene	50.000	52.596	-5.2	100	0.00
74	P,T,M Isopropylbenzene	50.000	51.794	-3.6	102	0.00
75	T,M Cis-1,4-Dichloro-2-Butene	50.000	51.981	-4.0	101	-0.02
76	I 1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	103	-0.02
77	P,T,M Bromoform	50.000	45.445	9.1	102	0.00
78	P,T,M 1,1,2,2-Tetrachloroethane	50.000	50.304	-0.6	99	0.00
79	S 4-Bromofluorobenzene	50.000	46.787	6.4	99	0.00
80	T,M 1,2,3-Trichloropropane	50.000	48.593	2.8	96	-0.02

(#) = Out of Range

6/19/18

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D
Acq On : 16 Jun 2018 9:01 am
Sample : IVO02F1502
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	50.000	49.499	1.0	99	0.00
82	T,M	n-Propylbenzene	50.000	51.507	-3.0	103	0.00
83	T,M	Bromobenzene	50.000	50.242	-0.5	99	0.00
84	T,M	1,3,5-Trimethylbenzene	50.000	51.624	-3.2	102	0.00
85	T,M	2-Chlorotoluene	50.000	49.507	1.0	100	0.00
86	T,M	4-Chlorotoluene	50.000	50.768	-1.5	99	0.00
87	T,M	tert-Butylbenzene	50.000	49.405	1.2	101	0.00
88	T,M	1,2,4-Trimethylbenzene	50.000	50.948	-1.9	100	0.00
89	T,M	sec-Butylbenzene	50.000	50.997	-2.0	102	0.00
90	T,M	p-Isopropyltoluene	50.000	51.324	-2.6	102	0.00
91	P,T,M	1,3-Dichlorobenzene	50.000	50.069	-0.1	100	0.00
92	T,M	1,2,3-Trimethylbenzene	50.000	54.209	-8.4	107	0.00
93	P,T,M	1,4-Dichlorobenzene	50.000	49.621	0.8	97	0.00
94	T,M	n-Butylbenzene	50.000	51.086	-2.2	101	0.00
95	P,T,M	1,2-Dichlorobenzene	50.000	49.387	1.2	99	0.00
96	P,T,M	1,2-Dibromo-3-chloropropane	50.000	43.814	12.4	98	0.00
97	P,T,M	1,2,4-Trichlorobenzene	50.000	47.453	5.1	97	0.00
98	T,M	Hexachlorobutadiene	50.000	45.620	8.8	100	0.00
99	T,M	Naphthalene	50.000	46.448	7.1	95	0.00
100	T,M	1,2,3-Trichlorobenzene	50.000	46.137	7.7	96	0.00

Sa 6/19/18

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D
Acq On : 16 Jun 2018 9:01 am
Sample : IVO02F1502
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I 1,4-DIFLUOROBENZENE	1.000	1.000	0.0	104	0.00
2	P,T,M Dichlorodifluoromethane	0.364	0.343	5.8	99	0.00
3	P,T,M Chloromethane	0.561	0.535	4.6	100	0.00
4	P,C,T,M Vinyl chloride	0.396	0.410	-3.5	103	0.00
5	P,T,M Bromomethane	0.418	0.371	11.2	101	0.00
6	P,T,M Chloroethane	0.309	0.312	-1.0	98	0.00
7	T,M Dichlorofluoromethane	0.848	0.854	-0.7	98	0.00
8	P,T,M Trichlorofluoromethane	0.446	0.459	-2.9	103	0.00
9	T,M Acrolein	0.086	0.088	-2.3	99	0.00
10	P,T,M 1,1,2-Trichloro-1,2,2-trifl	0.224	0.228	-1.8	101	0.00
11	P,T,M Acetone	0.185	0.190	-2.7	99	0.00
12	P,C,T,M 1,1-Dichloroethene	0.638	0.645	-1.1	98	0.00
13	T,M tert-Butyl alcohol	0.086	0.090	-4.7	100	0.00
14	T,M Acetonitrile	0.081	0.077	4.9	85	0.00
15	T,M Iodomethane	0.500	0.500	0.0	96	0.00
16	P,T,M Methyl Acetate	0.741	0.731	1.3	98	0.00
17	T,M Allyl Chloride	0.218	0.228	-4.6	102	0.00
18	P,T,M Methylene chloride	0.606	0.565	6.8	98	0.00
19	P,T,M Carbon disulfide	1.222	1.291	-5.6	104	0.00
20	T,M Acrylonitrile	0.232	0.243	-4.7	99	0.00
21	P,T,M tert-Butyl methyl ether (MT	1.223	1.252	-2.4	99	0.00
22	P,T,M trans-1,2-Dichloroethene	0.614	0.643	-4.7	100	0.00
23	T,M Isopropyl ether (DIPE)	1.950	2.009	-3.0	101	0.00
24	T,M Vinyl acetate	1.438	1.530	-6.4	104	0.00
25	P,T,M 1,1-Dichloroethane	0.798	0.824	-3.3	101	0.00
26	T,M 2-Butanol	0.088	0.093	-5.7	102	0.00
27	T,M tert-Butyl ethyl ether (ETB	1.413	1.391	1.6	98	0.00
28	P,T,M 2-Butanone	0.377	0.388	-2.9	98	0.00
29	T,M Propionitrile	0.088	0.090	-2.3	99	0.00
30	T,M 2,2-Dichloropropane	0.268	0.284	-6.0	104	0.00
31	P,T,M cis-1,2-Dichloroethene	0.476	0.482	-1.3	100	0.00
32	T,M Isobutyl Alcohol	0.044	0.045	-2.3	96	0.00
33	T,M Methylacrylonitrile	0.087	0.090	-3.4	98	0.00
34	P,C,T,M Chloroform	0.693	0.702	-1.3	100	0.00
35	T,M Bromochloromethane	0.454	0.455	-0.2	98	0.00
36	T,M Tetrahydrofuran	0.222	0.217	2.3	95	0.00
37	S Dibromofluoromethane	0.357	0.339	5.0	97	0.00
38	P,T,M 1,1,1-Trichloroethane	0.376	0.378	-0.5	100	0.00
39	P,T,M Cyclohexane	0.680	0.648	4.7	98	-0.02
40	T,M 1,1-Dichloropropene	0.175	0.170	2.9	100	0.00
41	P,T,M Carbon tetrachloride	0.303	0.302	0.3	98	0.00

(#) = Out of Range

SU 6/19/18

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D
Acq On : 16 Jun 2018 9:01 am
Sample : IVO02F1502
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M tert-Amyl methyl ether (TAM	0.237	0.239	-0.8	100	0.00
43	S 1,2-Dichloroethane-d4	0.442	0.397	10.2	94	0.00
44	P,T,M 1,2-Dichloroethane	0.518	0.510	1.5	98	0.00
45	P,T,M Benzene	1.623	1.600	1.4	99	0.00
46	P,T,M Trichloroethene	0.404	0.389	3.7	98	0.00
47	P,T,M Methylcyclohexane	0.782	0.745	4.7	97	0.00
48	P,C,T,M 1,2-Dichloropropane	0.484	0.478	1.2	99	0.00
49	T,M Methyl Methacrylate	0.375	0.384	-2.4	97	0.00
50	P,T,M Bromodichloromethane	0.533	0.523	1.9	99	0.00
51	T,M 1,4-Dioxane	0.005	0.006	-20.0	101	0.00
52	T,M Dibromomethane	0.291	0.291	0.0	98	0.00
53	T,M 2-Chloroethyl vinyl ether	0.000	0.000	0.0	0#	0.00
54	P,T,M 4-Methyl-2-pentanone	0.789	0.791	-0.3	100	0.00
55	P,T,M cis-1,3-Dichloropropene	0.739	0.760	-2.8	100	0.00
56	I CHLOROBENZENE-D5	1.000	1.000	0.0	104	0.00
57	S Toluene-d8	1.475	1.371	7.1	99	0.00
58	P,C,T,M Toluene	1.715	1.691	1.4	100	0.00
59	T,M Ethyl methacrylate	0.697	0.732	-5.0	98	-0.02
60	P,T,M trans-1,3-Dichloropropene	0.683	0.721	-5.6	101	-0.02
61	P,T,M 1,1,2-Trichloroethane	0.421	0.424	-0.7	99	0.00
62	P,T,M 2-Hexanone	0.581	0.617	-6.2	102	0.00
63	T,M 1,3-Dichloropropane	0.826	0.812	1.7	97	0.00
64	P,T,M Tetrachloroethene	0.334	0.318	4.8	98	0.00
65	P,T,M Dibromochloromethane	0.415	0.409	1.4	99	-0.02
66	P,T,M 1,2-Dibromoethane	0.430	0.431	-0.2	98	0.00
67	T,M 1-Chlorohexane	0.620	0.633	-2.1	103	-0.02
68	P,T,M Chlorobenzene	1.024	1.027	-0.3	100	0.00
69	T,M 1,1,1,2-Tetrachloroethane	0.351	0.354	-0.9	98	0.00
70	P,C,T,M Ethylbenzene	1.769	1.789	-1.1	99	0.00
71	P,T,M m-Xylene & p-Xylene	1.327	1.334	-0.5	100	0.00
72	P,T,M o-Xylene	1.377	1.388	-0.8	101	0.00
73	P,T,M Styrene	1.002	1.054	-5.2	100	0.00
74	P,T,M Isopropylbenzene	1.496	1.550	-3.6	102	0.00
75	T,M Cis-1,4-Dichloro-2-Butene	0.194	0.202	-4.1	101	-0.02
76	I 1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	103	-0.02
77	P,T,M Bromoform	0.699	0.711	-1.7	102	0.00
78	P,T,M 1,1,2,2-Tetrachloroethane	1.711	1.722	-0.6	99	0.00
79	S 4-Bromofluorobenzene	1.205	1.127	6.5	99	0.00
80	T,M 1,2,3-Trichloropropane	0.384	0.374	2.6	96	-0.02

(#) = Out of Range

Su 6/19/18

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D
Acq On : 16 Jun 2018 9:01 am
Sample : IVO02F1502
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	0.368	0.364	1.1	99	0.00
82	T,M	n-Propylbenzene	4.818	4.964	-3.0	103	0.00
83	T,M	Bromobenzene	1.004	1.009	-0.5	99	0.00
84	T,M	1,3,5-Trimethylbenzene	2.791	2.882	-3.3	102	0.00
85	T,M	2-Chlorotoluene	3.060	3.030	1.0	100	0.00
86	T,M	4-Chlorotoluene	2.677	2.718	-1.5	99	0.00
87	T,M	tert-Butylbenzene	0.643	0.635	1.2	101	0.00
88	T,M	1,2,4-Trimethylbenzene	2.804	2.858	-1.9	100	0.00
89	T,M	sec-Butylbenzene	3.741	3.816	-2.0	102	0.00
90	T,M	p-Isopropyltoluene	2.961	3.039	-2.6	102	0.00
91	P,T,M	1,3-Dichlorobenzene	1.773	1.775	-0.1	100	0.00
92	T,M	1,2,3-Trimethylbenzene	2.730	2.960	-8.4	107	0.00
93	P,T,M	1,4-Dichlorobenzene	1.769	1.756	0.7	97	0.00
94	T,M	n-Butylbenzene	2.960	3.024	-2.2	101	0.00
95	P,T,M	1,2-Dichlorobenzene	1.653	1.633	1.2	99	0.00
96	P,T,M	1,2-Dibromo-3-chloropropane	0.255	0.258	-1.2	98	0.00
97	P,T,M	1,2,4-Trichlorobenzene	0.984	0.934	5.1	97	0.00
98	T,M	Hexachlorobutadiene	0.439	0.400	8.9	100	0.00
99	T,M	Naphthalene	2.806	2.607	7.1	95	0.00
100	T,M	1,2,3-Trichlorobenzene	0.903	0.833	7.8	96	0.00

Su 6/19/18

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D Vial: 2
Acq On : 16 Jun 2018 9:01 am Operator: ODinh
Sample : IVO02F1502 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 16 9:22 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.66	114	1628230	50.00	ug/l		0.00
56) CHLOROBENZENE-D5	12.34	117	1463952	50.00	ug/l		0.00
76) 1,2-DICHLOROBENZENE-D4	17.17	152	591100	50.00	ug/l		-0.02
System Monitoring Compounds							
37) Dibromofluoromethane	6.42	111	552737	47.61	ug/l		0.00
Spiked Amount 50.000			Recovery = 95.22%				
43) 1,2-Dichloroethane-d4	7.10	65	647015	44.91	ug/l		0.00
Spiked Amount 50.000			Recovery = 89.82%				
57) Toluene-d8	9.90	98	2007214	46.48	ug/l		0.00
Spiked Amount 50.000			Recovery = 92.96%				
79) 4-Bromofluorobenzene	14.42	95	666300	46.79	ug/l		0.00
Spiked Amount 50.000			Recovery = 93.58%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.74	85	558575	47.16	ug/l		100
3) Chloromethane	1.99	50	870666	47.70	ug/l		100
4) Vinyl chloride	2.11	62	668220	51.77	ug/l		99
5) Bromomethane	2.58	94	603867	44.31	ug/l		99
6) Chloroethane	2.67	64	507621	50.53	ug/l		99
7) Dichlorofluoromethane	2.72	67	1390044	50.33	ug/l		100
8) Trichlorofluoromethane	2.96	101	748046	51.53	ug/l		99
9) Acrolein	3.43	56	720427	257.61	ug/l		95
10) 1,1,2-Trichloro-1,2,2-trif	3.48	151	370603	50.91	ug/l		98
11) Acetone	3.51	43	1543596	256.37	ug/l		100
12) 1,1-Dichloroethene	3.67	61	1049459	50.53	ug/l		99
13) tert-Butyl alcohol	3.74	59	729686	260.13	ug/l	#	1
14) Acetonitrile	3.82	41	1251404	474.87	ug/l		88
15) Iodomethane	4.04	142	813393	49.96	ug/l		100
16) Methyl Acetate	4.06	43	1190972	49.39	ug/l		99
17) Allyl Chloride	4.10	76	371922	52.38	ug/l		100
18) Methylene chloride	4.26	49	919196	46.61	ug/l		99
19) Carbon disulfide	4.25	76	2102031	52.82	ug/l		100
20) Acrylonitrile	4.38	53	1978677	261.53	ug/l		99
21) tert-Butyl methyl ether (M	4.41	73	2038972	51.20	ug/l		98
22) trans-1,2-Dichloroethene	4.59	61	1046350	52.34	ug/l		100
23) Isopropyl ether (DIPE)	4.99	45	3270353	51.50	ug/l		100
24) Vinyl acetate	5.14	43	2491064	53.21	ug/l		100
25) 1,1-Dichloroethane	5.14	63	1341834	51.60	ug/l		100
26) 2-Butanol	5.41	45	754345	264.08	ug/l		93
27) tert-Butyl ethyl ether (ET	5.53	59	2264446	49.22	ug/l		99
28) 2-Butanone	5.68	43	3157936	257.10	ug/l		100

(#) = qualifier out of range (m) = manual integration
RFP321.D VO02F15.M Mon Jun 18 12:54:58 2018 Page 1

SU 6/19/18

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D Vial: 2
Acq On : 16 Jun 2018 9:01 am Operator: ODinh
Sample : IVO02F1502 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 16 9:22 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) Propionitrile	5.78	54	1472142	513.46 ug/l	100
30) 2,2-Dichloropropane	5.86	77	462014	52.96 ug/l	99
31) cis-1,2-Dichloroethene	5.93	96	785127	50.67 ug/l	99
32) Isobutyl Alcohol	6.06	43	1468264	1029.86 ug/l	99
33) Methylacrylonitrile	6.03	52	1463216	517.68 ug/l	99
34) Chloroform	6.12	83	1143403	50.67 ug/l	100
35) Bromochloromethane	6.35	49	740169	50.06 ug/l	99
36) Tetrahydrofuran	6.39	42	353428	48.83 ug/l	99
38) 1,1,1-Trichloroethane	6.66	97	615863	50.35 ug/l	98
39) Cyclohexane	6.67	84	1054921	47.67 ug/l	99
40) 1,1-Dichloropropene	6.88	110	276443	48.46 ug/l	98
41) Carbon tetrachloride	7.02	119	492294	49.83 ug/l	97
42) tert-Amyl methyl ether (TA	7.05	87	389671	50.50 ug/l	96
44) 1,2-Dichloroethane	7.22	62	831159	49.24 ug/l	99
45) Benzene	7.25	78	2604424	49.29 ug/l	100
46) Trichloroethene	8.12	130	633134	48.07 ug/l	99
47) Methylcyclohexane	8.19	83	1212474	47.58 ug/l	98
48) 1,2-Dichloropropane	8.37	63	778095	49.34 ug/l	99
49) Methyl Methacrylate	8.47	69	625029	51.13 ug/l	99
50) Bromodichloromethane	8.71	83	850867	49.03 ug/l	99
51) 1,4-Dioxane	8.74	88	187057	1061.67 ug/l	98
52) Dibromomethane	8.79	93	473771	50.07 ug/l	99
54) 4-Methyl-2-pentanone	9.23	43	6443075	250.89 ug/l	100
55) cis-1,3-Dichloropropene	9.54	75	1236941	51.42 ug/l	100
58) Toluene	10.02	91	2475508	49.29 ug/l	100
59) Ethyl methacrylate	10.32	69	1070933	52.46 ug/l	99
60) trans-1,3-Dichloropropene	10.32	75	1055598	52.79 ug/l	99
61) 1,1,2-Trichloroethane	10.57	97	621198	50.42 ug/l	100
62) 2-Hexanone	10.59	43	4513592	265.40 ug/l	99
63) 1,3-Dichloropropane	10.97	76	1188259	49.15 ug/l	100
64) Tetrachloroethene	11.06	164	465011	47.60 ug/l	99
65) Dibromochloromethane	11.37	129	598302	49.29 ug/l	100
66) 1,2-Dibromoethane	11.70	107	630735	50.11 ug/l	99
67) 1-Chlorohexane	12.00	91	927157	51.05 ug/l	99
68) Chlorobenzene	12.40	112	1502871	50.13 ug/l	99
69) 1,1,1,2-Tetrachloroethane	12.49	131	518397	50.39 ug/l	99
70) Ethylbenzene	12.50	91	2619137	50.56 ug/l	99
71) m-Xylene & p-Xylene	12.64	91	3905709	100.55 ug/l	99
72) o-Xylene	13.37	91	2031964	50.38 ug/l	99
73) Styrene	13.44	104	1542363	52.60 ug/l	99
74) Isopropylbenzene	14.01	105	2268932	51.79 ug/l	100

(#) = qualifier out of range (m) = manual integration
RFP321.D VO02F15.M Mon Jun 18 12:54:59 2018 SC 6/19/18 Page 2

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D
Acq On : 16 Jun 2018 9:01 am
Sample : IVO02F1502
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 9:22 2018

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.10	53	295629	51.98	ug/l	97
77)	Bromoform	13.99	173	420037	45.45	ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.30	83	1017722	50.30	ug/l	99
80)	1,2,3-Trichloropropane	14.56	110	220865	48.59	ug/l	100
81)	trans-1,4-Dichloro-2-buten	14.71	53	215308	49.50	ug/l	100
82)	n-Propylbenzene	14.71	91	2933947	51.51	ug/l	99
83)	Bromobenzene	14.75	156	596402	50.24	ug/l	98
84)	1,3,5-Trimethylbenzene	14.99	105	1703394	51.62	ug/l	100
85)	2-Chlorotoluene	14.99	91	1790809	49.51	ug/l	99
86)	4-Chlorotoluene	15.08	91	1606668	50.77	ug/l	99
87)	tert-Butylbenzene	15.61	134	375488	49.40	ug/l	98
88)	1,2,4-Trimethylbenzene	15.67	105	1689167	50.95	ug/l	98
89)	sec-Butylbenzene	16.00	105	2255425	51.00	ug/l	100
90)	p-Isopropyltoluene	16.25	119	1796477	51.32	ug/l	100
91)	1,3-Dichlorobenzene	16.39	146	1049367	50.07	ug/l	99
92)	1,2,3-Trimethylbenzene	16.52	105	1749382	54.21	ug/l	99
93)	1,4-Dichlorobenzene	16.58	146	1037931	49.62	ug/l	99
94)	n-Butylbenzene	17.00	91	1787494	51.09	ug/l	100
95)	1,2-Dichlorobenzene	17.23	146	965325	49.39	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.53	157	152792	43.81	ug/l	99
97)	1,2,4-Trichlorobenzene	19.57	180	551870	47.45	ug/l	99
98)	Hexachlorobutadiene	19.73	225	236720	45.62	ug/l	99
99)	Naphthalene	19.82	128	1540790	46.45	ug/l	99
100)	1,2,3-Trichlorobenzene	20.07	180	492361	46.14	ug/l	99

Su 6/19/18

(#) = qualifier out of range (m) = manual integration

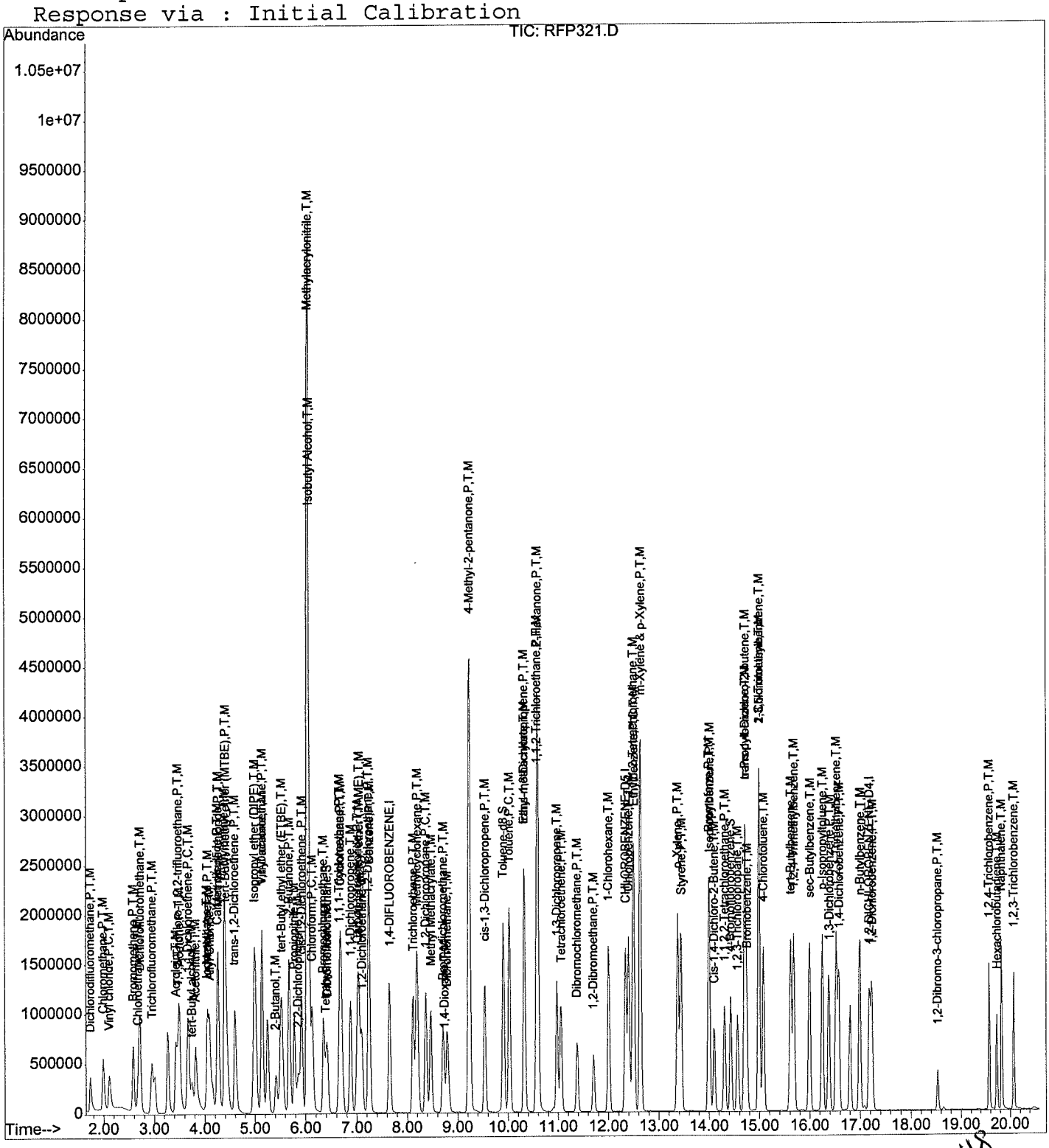
Quantitation Report

Data File : D:\HPCHEM\1\DATA\18F16\RFP321.D
Acq On : 16 Jun 2018 9:01 am
Sample : IVO02F1502
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jun 16 9:22 2018

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00

Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



Su 6/19/18

DAILY CALIBRATIONS

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RFP312
Instrument ID: 02
GC Column : RTX502.2ID:0.25mm (mm)

Project: JBER TO075
SDG No: 18F187
Date Analyzed: 06/15/2018
Time Analyzed: 16:55
Heated Purge (Y/N): Y

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	1561415	7.66	1411425	12.35	573325	17.20
	UPPER LIMIT	3122830	7.83	2822850	12.52	1146650	17.37
	LOWER LIMIT	780708	7.49	705713	12.18	286663	17.03
	SAMPLE ID						
1	VSTD050	1903001	7.64	1724668	12.33	676729	17.16
2	MBLK1S	2169259	7.63	1771210	12.31	690385	17.16
3	LCS1S	1652963	7.63	1509114	12.31	623602	17.16
4	LCD1S	1721299	7.63	1613166	12.32	646035	17.17
5	18Q2DP009-SOTB01L	2111858	7.63	1787949	12.32	702697	17.17
6	18Q2DP009-SB0401-SO-0	2129757	7.63	1718531	12.32	609032	17.17
7	18Q2DP009-SB0401-SO-1	2138749	7.63	1788047	12.33	675635	17.16
8	18Q2DP009-SB0402-SO-0	2001369	7.63	1664836	12.33	620152	17.16
9	18Q2DP009-SB0802-SO-0	2062976	7.63	1732386	12.31	658039	17.16
10	18Q2DP009-SB0502-SO-0	2077616	7.63	1731195	12.31	664419	17.16
11	18Q2DP009-SB0701-SO-0	2132032	7.63	1756194	12.31	622904	17.16
12	18Q2DP009-SB0702-SO-0	2003971	7.63	1605130	12.31	579853	17.16
13	18Q2DP009-SB0301-SO-0	2092835	7.63	1752647	12.31	676122	17.16
14	18Q2DP009-SB0302-SO-0	2084414	7.63	1735242	12.31	630333	17.16
15	18Q2DP009-SB0602-SO-0	1995825	7.63	1692508	12.33	645476	17.16
16	18Q2DP009-SB0601-SO-0	1875696	7.63	1498188	12.32	513406	17.16
17	18Q2DP009-SB0601-SO-1	1519810	7.63	1214591	12.32	395447	17.17
18	VSTD050	1629057	7.63	1487256	12.32	593425	17.17

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RFP609
Instrument ID: 02
GC Column:RTX502.2ID:0.25mm (mm)

Contract: JBER TO075
SAS No.: SDG No.: 18F187
BFB Injection Date : 06/29/18
BFB Injection Time : 09:44
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.02
75	30.0 - 60.0% of mass 95	44.27
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.54
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	82.61
175	5.0 - 9.0% of mass 174	6.17(7.5)1
176	95.0 - 101.0% of mass 174	81.16(98.2)1
177	5.0 - 9.0% of mass 176	4.92(6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	CV002F1506	RFP610	06/29/18	10:09
2	MBLK1S	VS02F26B	RFP615	06/29/18	12:16
3	LCS1S	VS02F26X	RFP613	06/29/18	11:26
4	LCD1S	VS02F26C	RFP612	06/29/18	11:00
5	18Q2DP009-SOTB01L	F187-06	RFP616	06/29/18	12:41
6	18Q2DP009-SB0401-SO-0	F187-01	RFP617	06/29/18	13:06
7	18Q2DP009-SB0401-SO-1	F187-02	RFP618	06/29/18	13:31
8	18Q2DP009-SB0402-SO-0	F187-03	RFP619	06/29/18	13:57
9	18Q2DP009-SB0802-SO-0	F187-05	RFP620	06/29/18	14:21
10	18Q2DP009-SB0502-SO-0	F187-08	RFP622	06/29/18	15:09
11	18Q2DP009-SB0701-SO-0	F187-10	RFP623	06/29/18	15:35
12	18Q2DP009-SB0702-SO-0	F187-11	RFP628	06/29/18	17:36
13	18Q2DP009-SB0301-SO-0	F187-12	RFP629	06/29/18	18:00
14	18Q2DP009-SB0302-SO-0	F187-13	RFP630	06/29/18	18:25
15	18Q2DP009-SB0602-SO-0	F187-14	RFP631	06/29/18	18:49
16	18Q2DP009-SB0601-SO-0	F187-15	RFP632	06/29/18	19:13
17	18Q2DP009-SB0601-SO-1	F187-16	RFP633	06/29/18	19:37
18	VSTD050	EV002F1506	RFP634	06/29/18	20:02

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :02
IC Beginning DateTime :06/15/18 15:18
Spike Amount :50 PPB
CC/CV File :RFP610
IC File :RFP312

Column Spec :RTX502.2 ID :0.25MM
IC Ending DateTime :06/15/18 18:33
HPChem Method :VO02F15
Date_Time :06/29/18 10:09

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AVRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	50.000	0	1903001	1	1	7.642	7.654	0				
	2	Dichlorodifluoromethane	45.813	-8.4	634263	0.333	0.364	1.722	1.737	11.99				
	3	Chloromethane	44.679	-10.6	953136	0.501	0.561	1.990	1.990	10.45				
	4	Vinyl chloride	50.896	1.8	767741	0.403	0.396	2.109	2.112	7.07				
	5	Bromomethane	41.844	-16.3	666450	0.350	0.418	2.570	2.580	12.19				
	6	Chloroethane	51.155	2.3	600660	0.316	0.309	2.674	2.676	10.69				
	7	Dichlorofluoromethane	57.439	14.9	1854147	0.974	0.848	2.704	2.711	11.23				
	8	Trichlorofluoromethane	53.462	6.9	907123	0.477	0.446	2.942	2.952	9.83				
5	9	Acrolein	274.290	9.7	896528	0.094	0.086	3.418	3.434	10.86				
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	56.307	12.6	479089	0.252	0.224	3.463	3.471	7.08				
5	11	Acetone	281.995	12.8	1984373	0.209	0.185	3.492	3.502	9.23				
	12	1,1-Dichloroethene	52.781	5.6	1281129	0.673	0.638	3.656	3.669	10.26				
5	13	tert-Butyl alcohol	273.115	9.2	895410	0.094	0.086	3.730	3.748	11.80				
10	14	Acetonitrile	500.775	0.2	1542365	0.081	0.081	3.805	3.821	14.69				
	15	Iodomethane	51.593	3.2	981750	0.516	0.500	4.043	4.047	10.98				
	16	Methyl Acetate	53.072	6.1	1495861	0.786	0.741	4.043	4.055	5.68				
	17	Allyl Chloride	55.602	11.2	461445	0.242	0.218	4.087	4.097	9.81				
	18	Methylene chloride	50.183	0.4	1156573	0.608	0.606	4.251	4.266	8.44				
	19	Carbon disulfide	59.932	19.9	2787711	1.465	1.222	4.251	4.259	8.01				
5	20	Acrylonitrile	283.709	13.5	2508744	0.264	0.232	4.385	4.394	12.05				
	21	tert-Butyl methyl ether (MTBE)	55.461	10.9	2581491	1.357	1.223	4.415	4.426	9.24				
	22	trans-1,2-Dichloroethene	55.208	10.4	1289939	0.678	0.614	4.578	4.601	9.77				
	23	Isopropyl ether (DIPE)	56.036	12.1	4159171	2.186	1.950	4.980	4.998	9.23				
	24	Vinyl acetate	51.772	3.5	2832951	1.489	1.438	5.128	5.145	8.95				
	25	1,1-Dichloroethane	56.906	13.8	1729418	0.909	0.798	5.128	5.138	9.79				
5	26	2-Butanol	277.815	11.1	927493	0.097	0.088	5.411	5.421	9.06				
	27	tert-Butyl ethyl ether (ETBE)	53.075	6.2	2853672	1.500	1.413	5.515	5.527	8.67				
5	28	2-Butanone	275.286	10.1	3951879	0.415	0.377	5.664	5.684	11.45				
10	29	Propionitrile	518.326	3.7	1736878	0.091	0.088	5.768	5.786	10.49				
	30	2,2-Dichloropropane	58.871	17.7	600205	0.315	0.268	5.842	5.865	6.49				
	31	cis-1,2-Dichloroethene	55.149	10.3	998663	0.525	0.476	5.917	5.930	8.35				
20	32	Isobutyl Alcohol	1058.94	5.9	1764507	0.046	0.044	6.051	6.075	13.05				
10	33	Methylacrylonitrile	543.280	8.7	1794695	0.094	0.087	6.021	6.047	12.57				
	34	Chloroform	56.503	13.0	1490287	0.783	0.693	6.125	6.136	10.60				
	35	Bromochloromethane	54.202	8.4	936657	0.492	0.454	6.333	6.350	9.53				
	36	Tetrahydrofuran	48.825	-2.3	413024	0.217	0.222	6.378	6.398	9.91				
	37	Dibromofluoromethane	52.132	4.3	707383	0.372	0.357	6.408	6.424	8.53				
	38	1,1,1-Trichloroethane	57.877	15.8	827473	0.435	0.376	6.661	6.669	7.54				
	39	Cyclohexane	46.563	-6.9	1204319	0.633	0.680	6.675	6.688	7.57				
	40	1,1-Dichloropropene	51.949	3.9	346365	0.182	0.175	6.869	6.885	4.12				
	41	Carbon tetrachloride	56.822	13.6	656050	0.345	0.303	7.003	7.019	7.60				
	42	tert-Amyl methyl ether (TAME)	53.795	7.6	485181	0.255	0.237	7.032	7.045	6.99				
	43	1,2-Dichloroethane-d4	48.379	-3.2	814618	0.428	0.442	7.095	7.109	7.19				
	44	1,2-Dichloroethane	52.916	5.8	1044047	0.549	0.518	7.211	7.225	8.56				
	45	Benzene	52.480	5.0	3241205	1.703	1.623	7.240	7.252	8.92				
	46	Trichloroethene	52.611	5.2	809824	0.426	0.404	8.103	8.118	8.20				
	47	Methylcyclohexane	46.252	-7.5	1377406	0.724	0.782	8.178	8.196	6.48				
	48	1,2-Dichloropropane	55.054	10.1	1014799	0.533	0.484	8.356	8.373	7.48				
	49	Methyl Methacrylate	52.342	4.7	747812	0.393	0.375	8.460	8.477	12.45				
	50	Bromodichloromethane	54.241	8.5	1100214	0.578	0.533	8.698	8.714	8.96				
20	51	1,4-Dioxane	967.959	-3.2	199326	0.005	0.005	8.728	8.754	12.95				
	52	Dibromomethane	53.111	6.2	587376	0.309	0.291	8.773	8.796	9.94				
	53	2-Chloroethyl vinyl ether												
5	54	4-Methyl-2-pentanone	269.553	7.8	8090595	0.850	0.789	9.219	9.235	9.96				
	55	cis-1,3-Dichloropropene	53.945	7.9	1516606	0.797	0.739	9.531	9.544	12.33				
	56	CHLOROBENZENE-D5	50.000	0	1724668	1	1	12.327	12.344	0				
	57	Toluene-d8	49.568	-0.9	2521665	1.462	1.475	9.888	9.908	6.17				
	58	Toluene	51.628	3.3	3054658	1.771	1.715	10.007	10.032	7.61				
	59	Ethyl methacrylate	53.398	6.8	1284157	0.745	0.697	10.305	10.334	12.82				
	60	trans-1,3-Dichloropropene	54.980	10.0	1295284	0.751	0.683	10.305	10.331	13.15				
	61	1,1,2-Trichloroethane	52.445	4.9	761276	0.441	0.421	10.557	10.574	7.06				
5	62	2-Hexanone	271.252	8.5	5434642	0.630	0.581	10.572	10.600	11.62				
	63	1,3-Dichloropropane	51.901	3.8	1478295	0.857	0.826	10.959	10.979	7.46				
	64	Tetrachloroethene	50.684	1.4	583289	0.338	0.334	11.033	11.065	6.05				
	65	Dibromochloromethane	53.315	6.6	762483	0.442	0.415	11.361	11.388	8.97				
	66	1,2-Dibromoethane	52.166	4.3	773546	0.449	0.430	11.688	11.712	9.74				
	67	1-Chlorohexane	53.593	7.2	1146580	0.665	0.620	11.985	12.013	6.34				
	68	Chlorobenzene	53.619	7.2	1893772	1.098	1.024	12.387	12.405	6.26				
	69	1,1,1,2-Tetrachloroethane	56.547	13.1	685282	0.397	0.351	12.461	12.491	7.08				
	70	Ethylbenzene	53.670	7.3	3275580	1.899	1.769	12.491	12.507	8.53				
2	71	m-Xylene & p-Xylene	103.265	3.3	4725737	1.370	1.327	12.610	12.640	7.83				
	72	o-Xylene	53.647	7.3	2548879	1.478	1.377	13.354	13.377	6.28				
	73	Styrene	51.828	3.7	1790504	1.038	1.002	13.413	13.444	8.60				
	74	Isopropylbenzene	55.449	10.9	2861661	1.659	1.496	13.978	14.008	7.63				
	75	Cis-1,4-Dichloro-2-Butene	52.811	5.6	353839	0.205	0.194	14.083	14.110	11.75				
	76	1,2-DICHLOROBENZENE-D4	50.000	0	676729	1	1	17.162	17.191	0				
	77	Bromoform	47.911	-4.2	508469	0.751	0.699	13.978	13.997	18.90	-0.0406	0.8264		0.9992
	78	1,1,2,2-Tetrachloroethane	53.203	6.4	1232311	1.821	1.711	14.291	14.314	8.89				
	79	4-Bromofluorobenzene	50.746	1.5	827372	1.223	1.205	14.410	14.433	4.81				
	80	1,2,3-Trichloropropane	51.583	3.2	268424	0.397	0.384	14.544	14.573	9.15				
	81	trans-1,4-Dichloro-2-butene	49.510	-1.0	246555	0.364	0.368	14.692	14.708	12.05				
	82	n-Propylbenzene	54.407	8.8	3548116	5.243	4.818	14.677	14.709	4.88				
	83	Bromobenzene	53.192	6.4	722898	1.068	1.004	14.722	14.753	6.81				
	84	1,3,5-Trimethylbenzene	54.902	9.8	2074014	3.065	2.791	14.972	14.993	5.59				
	85	2-Chlorotoluene	52.231	4.5	2163037	3.196	3.060	14.975	15.000	6.15				
	86	4-Chlorotoluene	53.806	7.6	1949507	2.881	2.677	15.064	15.086	5.56				
	87	tert-Butylbenzene	55.504	11.0	482959	0.714	0.643	15.600	15.624	3.68				
	88	1,2,4-Trimethylbenzene	53.203	6.4	2019464	2.984	2.804	15.659	15.684	5.14				
	89	sec-Butylbenzene	55.249	10.5	2797500	4.134	3.741	15.972	16.003	5.35				
	90	p-Isopropyltoluene	53.661	7.3	2150396	3.178	2.961	16.239	16.259	4.67				
	91	1,3-Dichlorobenzene	53.460	6.9	1282764	1.896	1.773	16.358	16.389	3.59				
	92	1,2,3-Trimethylbenzene												
	93	1,4-Dichlorobenzene	53.559	7.1	1282582	1.895	1.769	16.566	16.583	4.48				
	94	n-Butylbenzene	53.788	7.6	2154681	3.184	2.960	16.968	16.999	6.14				
	95	1,2-Dichlorobenzene	53.254	6.5	1191707	1.761	1.653	17.206	17.237	2.48				
	96	1,2-Dibromo-3-chloropropane	44.548	-10.9	178039	0.263	0.255	18.515	18.541	20.58	-0.0159	0.3131		0.9978
	97	1,2,4-Trichlorobenzene	49.543	-0.9	659649	0.975	0.984	19.571	19.581	12.94				
	98	Hexachlorobutadiene	51.525	3.1	306097	0.452	0.439	19.720	19.736	10.47				
	99	Naphthalene	45.489	-9.0	1727620	2.553	2.806	19.824	19.834	10.87				
	100	1,2,3-Trichlorobenzene	46.282	-7.4	565468	0.836	0.903	20.062	20.078	10.06				

Spike Amount = Nominal Amount * M

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :02
IC Beginning DateTime :06/15/18 15:18
Spike Amount :50 PPB
CC/CV File :RFP634
IC File :RFP312

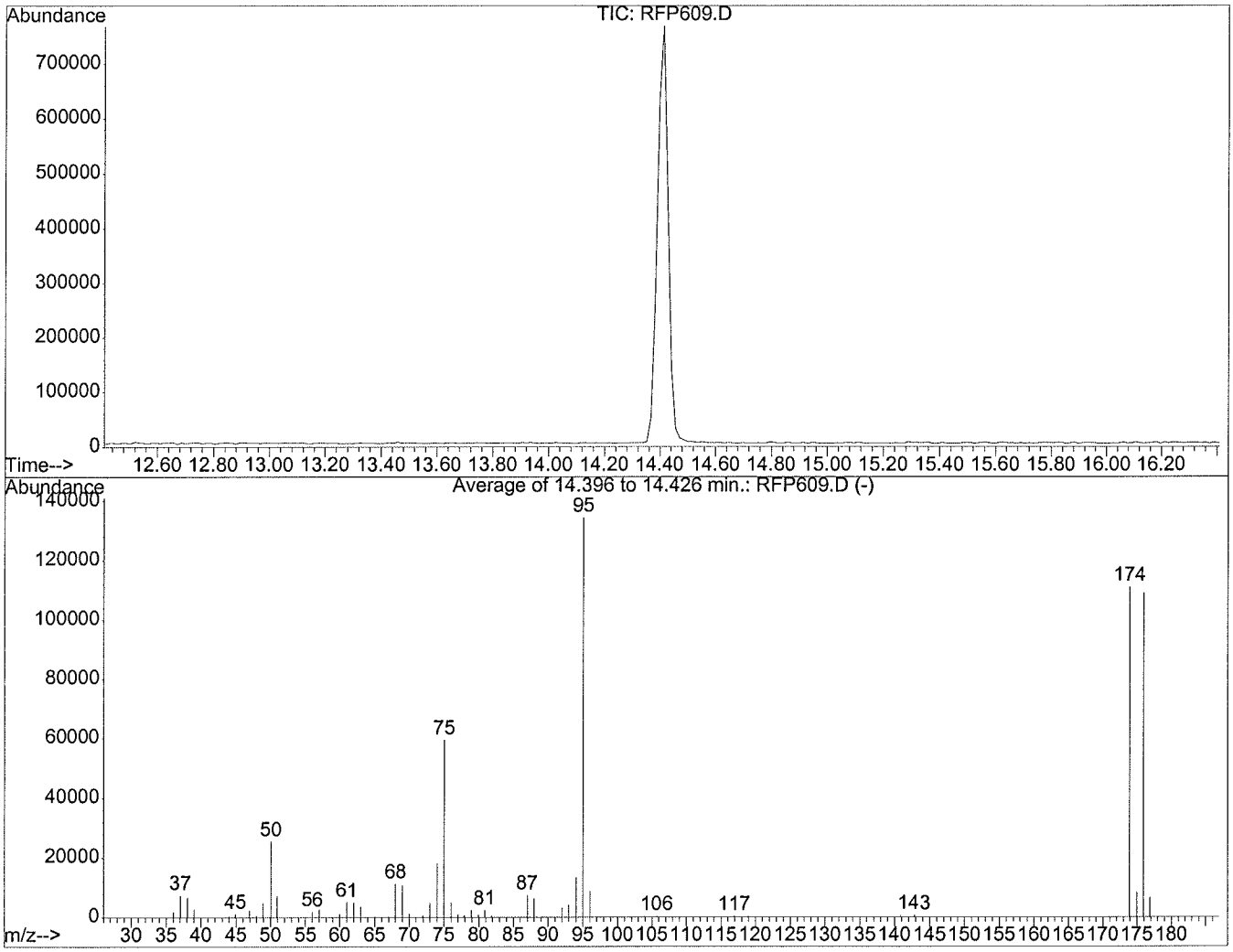
Column Spec :RTX502.2 ID :0.25MM
IC Ending DateTime :06/15/18 18:33
HPChem Method :V002F15
Date_Time :06/29/18 20:02

M	IDX	Parameters	CC Con	CC% D	CC Resp	CCRRF	AVRRF	CC Rtm	AVRtm	% RSD	Co X0	Co X1	Co X2	Co Cor
	1	1,4-DIFLUOROBENZENE	50.000	0	1629057	1	1	7.633	7.654	0				
	2	Dichlorodifluoromethane	33.318	-33.4	394876	0.242	0.364	1.728	1.737	11.99				
	3	Chloromethane	36.017	-28.0	657746	0.404	0.561	1.981	1.990	10.45				
	4	Vinyl chloride	38.935	-22.1	502766	0.309	0.396	2.100	2.112	7.07				
	5	Bromomethane	37.360	-25.3	509373	0.313	0.418	2.561	2.580	12.19				
	6	Chloroethane	40.205	-19.6	404124	0.248	0.309	2.665	2.676	10.69				
	7	Dichlorofluoromethane	46.413	-7.2	1282547	0.787	0.848	2.695	2.711	11.23				
	8	Trichlorofluoromethane	41.566	-16.9	603751	0.371	0.446	2.933	2.952	9.83				
5	9	Acrolein	229.745	-8.1	642833	0.079	0.086	3.409	3.434	10.86				
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	40.838	-18.3	297450	0.183	0.224	3.454	3.471	7.08				
5	11	Acetone	285.495	14.2	1719799	0.211	0.185	3.483	3.502	9.23				
	12	1,1-Dichloroethene	40.664	-18.7	844942	0.519	0.638	3.647	3.669	10.26				
5	13	tert-Butyl alcohol	281.813	12.7	790924	0.097	0.086	3.721	3.748	11.80				
10	14	Acetonitrile	544.645	8.9	1436002	0.088	0.081	3.796	3.821	14.69				
	15	Iodomethane	45.319	-9.4	738222	0.453	0.500	4.034	4.047	10.98				
	16	Methyl Acetate	44.383	-11.2	1070875	0.657	0.741	4.034	4.055	5.68				
	17	Allyl Chloride	45.066	-9.9	320168	0.197	0.218	4.078	4.097	9.81				
	18	Methylene chloride	45.991	-8.0	907389	0.557	0.606	4.242	4.266	8.44				
	19	Carbon disulfide	39.205	-21.6	1561122	0.958	1.222	4.242	4.259	8.01				
5	20	Acrylonitrile	286.352	14.5	2167606	0.266	0.232	4.376	4.394	12.05				
	21	tert-Butyl methyl ether (MTBE)	55.445	10.9	2209254	1.356	1.223	4.405	4.426	9.24				
	22	trans-1,2-Dichloroethene	44.271	-11.5	885483	0.544	0.614	4.584	4.601	9.77				
	23	Isopropyl ether (DIPE)	54.259	8.5	3447523	2.116	1.950	4.971	4.998	9.23				
	24	Vinyl acetate	43.142	-13.7	2020864	1.241	1.438	5.119	5.145	8.95				
	25	1,1-Dichloroethane	49.660	-0.7	1291958	0.793	0.798	5.119	5.138	9.79				
5	26	2-Butanol	277.832	11.1	794026	0.097	0.088	5.402	5.421	9.06				
	27	tert-Butyl ethyl ether (ETBE)	52.543	5.1	2418418	1.485	1.413	5.506	5.527	8.67				
5	28	2-Butanone	278.724	11.5	3425232	0.421	0.377	5.655	5.684	11.45				
10	29	Propionitrile	545.554	9.1	1564253	0.096	0.088	5.759	5.786	10.49				
	30	2,2-Dichloropropane	48.668	-2.7	424763	0.261	0.268	5.848	5.865	6.42				
	31	cis-1,2-Dichloroethene	48.267	-3.5	748226	0.459	0.476	5.908	5.930	8.35				
20	32	Isobutyl Alcohol	1084.07	8.4	1546344	0.047	0.044	6.042	6.075	13.05				
10	33	Methylacrylonitrile	536.000	7.2	1515755	0.093	0.087	6.027	6.047	12.57				
	34	Chloroform	50.060	0.1	1130271	0.694	0.693	6.116	6.136	10.60				
	35	Bromochloromethane	49.806	-0.4	736800	0.452	0.454	6.324	6.350	9.53				
	36	Tetrahydrofuran	49.233	-1.5	356522	0.219	0.222	6.369	6.398	9.91				
	37	Dibromofluoromethane	51.870	3.7	602513	0.370	0.357	6.399	6.424	8.53				
	38	1,1,1-Trichloroethane	47.167	-5.7	577274	0.354	0.376	6.637	6.669	7.54				
	39	Cyclohexane	34.663	-30.7	767488	0.471	0.680	6.666	6.688	7.57				
	40	1,1-Dichloropropene	39.675	-20.7	226451	0.139	0.175	6.860	6.885	4.12				
	41	Carbon tetrachloride	44.666	-10.7	441464	0.271	0.303	6.994	7.019	7.60				
	42	tert-Amyl methyl ether (TAME)	52.417	4.8	404698	0.248	0.237	7.023	7.045	6.99				
	43	1,2-Dichloroethane-d4	47.989	-4.0	691722	0.425	0.442	7.083	7.109	7.19				
	44	1,2-Dichloroethane	49.819	-0.4	841441	0.517	0.518	7.202	7.235	8.56				
	45	Benzene	45.888	-8.2	2426107	1.489	1.623	7.232	7.252	8.92				
	46	Trichloroethene	44.408	-11.2	585156	0.359	0.404	8.094	8.118	8.20				
	47	Methylcyclohexane	34.893	-30.2	889537	0.546	0.782	8.169	8.196	6.48				
	48	1,2-Dichloropropane	49.204	-1.6	776405	0.477	0.484	8.347	8.373	7.48				
	49	Methyl Methacrylate	52.811	5.6	645891	0.396	0.375	8.451	8.477	12.45				
	50	Bromodichloromethane	48.712	-2.6	845840	0.519	0.533	8.689	8.714	8.96				
20	51	1,4-Dioxane	1098.67	9.9	193674	0.006	0.005	8.719	8.754	12.95				
	52	Dibromomethane	50.527	1.1	478359	0.294	0.291	8.764	8.796	9.94				
	53	2-Chloroethyl vinyl ether												
5	54	4-Methyl-2-pentanone	268.881	7.6	6908644	0.848	0.789	9.210	9.235	9.96				
	55	cis-1,3-Dichloropropene	49.536	-0.9	1192173	0.732	0.739	9.522	9.544	12.33				
	56	CHLOROBENZENE-D5	50.000	0	1487256	1	1	12.318	12.344	0				
	57	Toluene-d8	49.126	-1.7	2155174	1.449	1.475	9.879	9.908	6.17				
	58	Toluene	44.088	-11.8	2249473	1.512	1.715	9.998	10.032	7.61				
	59	Ethyl methacrylate	52.337	4.7	1085377	0.730	0.697	10.310	10.334	12.82				
	60	trans-1,3-Dichloropropene	50.317	0.6	1022247	0.687	0.683	10.310	10.331	13.15				
	61	1,1,2-Trichloroethane	49.467	-1.1	619202	0.416	0.421	10.548	10.574	7.06				
5	62	2-Hexanone	271.200	8.5	4685625	0.630	0.581	10.578	10.600	11.62				
	63	1,3-Dichloropropane	48.187	-3.6	1183567	0.796	0.826	10.950	10.979	7.46				
	64	Tetrachloroethene	39.284	-21.4	389857	0.262	0.334	11.039	11.065	6.05				
	65	Dibromochloromethane	49.906	-0.2	615482	0.414	0.415	11.366	11.388	8.97				
	66	1,2-Dibromoethane	49.327	-1.3	630754	0.424	0.430	11.679	11.712	9.74				
	67	1-Chlorohexane	40.784	-18.4	752447	0.506	0.620	11.991	12.013	6.34				
	68	Chlorobenzene	46.445	-7.1	1414578	0.951	1.024	12.378	12.405	6.26				
	69	1,1,1,2-Tetrachloroethane	51.370	2.7	536852	0.361	0.351	12.467	12.491	7.08				
	70	Ethylbenzene	44.619	-10.8	2348300	1.579	1.769	12.482	12.507	8.53				
2	71	m-Xylene & p-Xylene	86.013	-14.0	3394410	1.141	1.327	12.616	12.640	7.83				
	72	o-Xylene	45.106	-9.8	1848091	1.243	1.377	13.345	13.377	6.28				
	73	Styrene	49.070	-1.9	1461885	0.983	1.002	13.419	13.444	8.60				
	74	Isopropylbenzene	45.325	-9.3	2017178	1.356	1.496	13.984	14.008	7.23				
	75	Cis-1,4-Dichloro-2-Butene	48.613	-2.8	280876	0.189	0.194	14.088	14.110	11.75				
	76	1,2-DICHLOROBENZENE-D4	50.000	0	593425	1	1	17.167	17.191	0				
	77	Bromoform	43.553	-12.9	403133	0.679	0.699	13.969	13.997	18.90	-0.0406	0.8264		0.9992
	78	1,1,2,2-Tetrachloroethane	50.632	1.3	1028381	1.733	1.711	14.282	14.314	8.89				
	79	4-Bromofluorobenzene	51.125	2.3	730942	1.232	1.205	14.401	14.433	4.81				
	80	1,2,3-Trichloropropane	49.801	-0.4	227248	0.383	0.384	14.550	14.573	9.15				
	81	trans-1,4-Dichloro-2-butene	47.144	-5.7	205871	0.347	0.368	14.683	14.708	12.05				
	82	n-Propylbenzene	42.918	-14.2	2454312	4.136	4.818	14.683	14.709	4.88				
	83	Bromobenzene	47.539	-4.9	566540	0.955	1.004	14.728	14.753	6.81				
	84	1,3,5-Trimethylbenzene	45.067	-9.9	1492883	2.516	2.791	14.966	14.993	5.59				
	85	2-Chlorotoluene	44.249	-11.5	1606925	2.708	3.060	14.966	15.000	6.15				
	86	4-Chlorotoluene	45.150	-9.7	1434521	2.417	2.677	15.055	15.086	5.56				
	87	tert-Butylbenzene	44.542	-10.9	339865	0.573	0.643	15.591	15.624	3.68				
	88	1,2,4-Trimethylbenzene	45.183	-9.6	1503943	2.534	2.804	15.665	15.684	5.14				
	89	sec-Butylbenzene	43.092	-13.8	1913329	3.224	3.741	15.977	16.003	5.35				
	90	p-Isopropyltoluene	43.360	-13.3	1523690	2.568	2.961	16.230	16.259	4.67				
	91	1,3-Dichlorobenzene	46.371	-7.3	975693	1.644	1.773	16.364	16.389	3.59				
	92	1,2,3-Trimethylbenzene												
	93	1,4-Dichlorobenzene	45.829	-8.3	962379	1.622	1.769	16.558	16.583	4.48				
	94	n-Butylbenzene	43.247	-15.5	1484047	2.501	2.960	16.974	16.999	6.14				
	95	1,2-Dichlorobenzene	47.438	-5.1	930871	1.569	1.653	17.212	17.237	2.49				
	96	1,2-Dibromo-3-chloropropane	44.691	-10.6	156654	0.264	0.255	18.521	18.541	20.58	-0.0159	0.3131		0.9978
	97	1,2,4-Trichlorobenzene	42.221	-15.6	492956	0.831	0.984	19.562	19.581	12.94				
	98	Hexachlorobutadiene	40.945	-18.1	213301	0.359	0.439	19.726	19.736	10.47				
	99	Naphthalene	44.426	-11.1	1479556	2.493	2.806	19.815	19.834	10.87				
	100	1,2,3-Trichlorobenzene	43.690	-12.6	468091	0.789	0.903	20.068	20.078	10.06				

Spike Amount = Nominal Amount * M

Data File : D:\HPCHEM\1\DATA\18F29\RFP609.D
Acq On : 29 Jun 2018 9:44 am
Sample : BFB02F26
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL

Vial: 1
Operator: ODinh
Inst : 02
Multiplr: 1.00



AutoFind: Scans 858, 859, 860; Background Corrected with Scan 852

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.0	25569	PASS
75	95	30	60	44.3	59520	PASS
95	95	100	100	100.0	134451	PASS
96	95	5	9	6.5	8789	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	82.6	111067	PASS
175	174	5	9	7.5	8290	PASS
176	174	95	101	98.2	109115	PASS
177	176	5	9	6.1	6613	PASS

RFP609.D VO02F15.M Mon Jul 09 13:13:27 2018

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D
Acq On : 29 Jun 2018 10:09 am
Sample : CVO02F1506
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	50.000	50.000	0.0	122	-0.02
2	P,T,M	Dichlorodifluoromethane	50.000	45.814	8.4	113	-0.02
3	P,T,M	Chloromethane	50.000	44.679	10.6	110	0.00
4	P,C,T,M	Vinyl chloride	50.000	50.897	-1.8	118	0.00
5	P,T,M	Bromomethane	50.000	41.844	16.3	111	0.00
6	P,T,M	Chloroethane	50.000	51.156	-2.3	116	0.00
7	T,M	Dichlorofluoromethane	50.000	57.439	-14.9	131	0.00
8	P,T,M	Trichlorofluoromethane	50.000	53.462	-6.9	125	0.00
9	T,M	Acrolein	250.000	274.290	-9.7	123	-0.02
10	P,T,M	1,1,2-Trichloro-1,2,2-trifl	50.000	56.307	-12.6	131	0.00
11	P,T,M	Acetone	250.000	281.995	-12.8	127	0.00
12	P,C,T,M	1,1-Dichloroethene	50.000	52.781	-5.6	119	-0.02
13	T,M	tert-Butyl alcohol	250.000	273.116	-9.2	122	-0.02
14	T,M	Acetonitrile	500.000	500.775	-0.2	104	-0.02
15	T,M	Iodomethane	50.000	51.593	-3.2	116	0.00
16	P,T,M	Methyl Acetate	50.000	53.073	-6.1	123	0.00
17	T,M	Allyl Chloride	50.000	55.603	-11.2	127	0.00
18	P,T,M	Methylene chloride	50.000	50.183	-0.4	123	-0.02
19	P,T,M	Carbon disulfide	50.000	59.932	-19.9	138	0.00
20	T,M	Acrylonitrile	250.000	283.710	-13.5	126	0.00
21	P,T,M	tert-Butyl methyl ether (MT	50.000	55.461	-10.9	125	0.00
22	P,T,M	trans-1,2-Dichloroethene	50.000	55.209	-10.4	124	-0.02
23	T,M	Isopropyl ether (DIPE)	50.000	56.037	-12.1	129	-0.02
24	T,M	Vinyl acetate	50.000	51.773	-3.5	118	-0.02
25	P,T,M	1,1-Dichloroethane	50.000	56.906	-13.8	130	0.00
26	T,M	2-Butanol	250.000	277.816	-11.1	126	0.00
27	T,M	tert-Butyl ethyl ether (ETB	50.000	53.075	-6.2	124	0.00
28	P,T,M	2-Butanone	250.000	275.287	-10.1	123	-0.02
29	T,M	Propionitrile	500.000	518.327	-3.7	117	-0.02
30	T,M	2,2-Dichloropropane	50.000	58.871	-17.7	135	-0.02
31	P,T,M	cis-1,2-Dichloroethene	50.000	55.149	-10.3	128	-0.02
32	T,M	Isobutyl Alcohol	1000.000	1058.949	-5.9	116	-0.02
33	T,M	Methylacrylonitrile	500.000	543.281	-8.7	120	-0.02
34	P,C,T,M	Chloroform	50.000	56.504	-13.0	130	0.00
35	T,M	Bromochloromethane	50.000	54.202	-8.4	124	-0.02
36	T,M	Tetrahydrofuran	50.000	48.825	2.3	111	-0.02
37	S	Dibromofluoromethane	50.000	52.133	-4.3	125	-0.02
38	P,T,M	1,1,1-Trichloroethane	50.000	57.877	-15.8	135	0.00
39	P,T,M	Cyclohexane	50.000	46.563	6.9	112	-0.02
40	T,M	1,1-Dichloropropene	50.000	51.950	-3.9	125	-0.02
41	P,T,M	Carbon tetrachloride	50.000	56.823	-13.6	131	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D Vial: 2
Acq On : 29 Jun 2018 10:09 am Operator: ODinh
Sample : CVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	tert-Amyl methyl ether (TAM	50.000	53.796	-7.6	124	0.00
43	S	1,2-Dichloroethane-d4	50.000	48.380	3.2	118	-0.02
44	P,T,M	1,2-Dichloroethane	50.000	52.917	-5.8	124	-0.02
45	P,T,M	Benzene	50.000	52.480	-5.0	123	-0.02
46	P,T,M	Trichloroethene	50.000	52.612	-5.2	126	-0.02
47	P,T,M	Methylcyclohexane	50.000	46.252	7.5	110	-0.02
48	P,C,T,M	1,2-Dichloropropane	50.000	55.054	-10.1	129	-0.02
49	T,M	Methyl Methacrylate	50.000	52.343	-4.7	116	-0.02
50	P,T,M	Bromodichloromethane	50.000	54.241	-8.5	129	-0.02
51	T,M	1,4-Dioxane	1000.000	967.960	3.2	107	-0.02
52	T,M	Dibromomethane	50.000	53.111	-6.2	122	-0.02
53	T,M	2-Chloroethyl vinyl ether	-1.000	0.000	0.0	0	0.00
54	P,T,M	4-Methyl-2-pentanone	250.000	269.554	-7.8	125	-0.02
55	P,T,M	cis-1,3-Dichloropropene	50.000	53.946	-7.9	122	-0.02
56	I	CHLOROBENZENE-D5	50.000	50.000	0.0	122	-0.02
57	S	Toluene-d8	50.000	49.568	0.9	124	-0.02
58	P,C,T,M	Toluene	50.000	51.629	-3.3	123	-0.02
59	T,M	Ethyl methacrylate	50.000	53.399	-6.8	118	-0.03
60	P,T,M	trans-1,3-Dichloropropene	50.000	54.981	-10.0	124	-0.03
61	P,T,M	1,1,2-Trichloroethane	50.000	52.445	-4.9	122	-0.02
62	P,T,M	2-Hexanone	250.000	271.252	-8.5	123	-0.02
63	T,M	1,3-Dichloropropane	50.000	51.901	-3.8	120	-0.02
64	P,T,M	Tetrachloroethene	50.000	50.685	-1.4	123	-0.03
65	P,T,M	Dibromochloromethane	50.000	53.315	-6.6	126	-0.03
66	P,T,M	1,2-Dibromoethane	50.000	52.167	-4.3	120	-0.02
67	T,M	1-Chlorohexane	50.000	53.593	-7.2	127	-0.03
68	P,T,M	Chlorobenzene	50.000	53.620	-7.2	126	-0.02
69	T,M	1,1,1,2-Tetrachloroethane	50.000	56.547	-13.1	130	-0.03
70	P,C,T,M	Ethylbenzene	50.000	53.670	-7.3	124	-0.02
71	P,T,M	m-Xylene & p-Xylene	100.000	103.265	-3.3	121	-0.03
72	P,T,M	o-Xylene	50.000	53.647	-7.3	126	-0.02
73	P,T,M	Styrene	50.000	51.828	-3.7	116	-0.03
74	P,T,M	Isopropylbenzene	50.000	55.449	-10.9	129	-0.03
75	T,M	Cis-1,4-Dichloro-2-Butene	50.000	52.811	-5.6	121	-0.03
76	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	118	-0.03
77	P,T,M	Bromoform	50.000	47.911	4.2	124	-0.02
78	P,T,M	1,1,2,2-Tetrachloroethane	50.000	53.204	-6.4	120	-0.02
79	S	4-Bromofluorobenzene	50.000	50.747	-1.5	123	-0.02
80	T,M	1,2,3-Trichloropropane	50.000	51.584	-3.2	117	-0.03

(#) = Out of Range

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D Vial: 2
Acq On : 29 Jun 2018 10:09 am Operator: ODinh
Sample : CVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	50.000	49.511	1.0	113	-0.02
82	T,M	n-Propylbenzene	50.000	54.408	-8.8	124	-0.03
83	T,M	Bromobenzene	50.000	53.192	-6.4	120	-0.03
84	T,M	1,3,5-Trimethylbenzene	50.000	54.903	-9.8	124	-0.02
85	T,M	2-Chlorotoluene	50.000	52.231	-4.5	121	-0.02
86	T,M	4-Chlorotoluene	50.000	53.806	-7.6	121	-0.02
87	T,M	tert-Butylbenzene	50.000	55.504	-11.0	130	-0.02
88	T,M	1,2,4-Trimethylbenzene	50.000	53.203	-6.4	119	-0.02
89	T,M	sec-Butylbenzene	50.000	55.250	-10.5	127	-0.03
90	T,M	p-Isopropyltoluene	50.000	53.662	-7.3	122	-0.02
91	P,T,M	1,3-Dichlorobenzene	50.000	53.461	-6.9	122	-0.03
92	T,M	1,2,3-Trimethylbenzene	50.000	0.000	100.0#	0	-16.53#
93	P,T,M	1,4-Dichlorobenzene	50.000	53.559	-7.1	120	-0.02
94	T,M	n-Butylbenzene	50.000	53.788	-7.6	122	-0.03
95	P,T,M	1,2-Dichlorobenzene	50.000	53.255	-6.5	123	-0.03
96	P,T,M	1,2-Dibromo-3-chloropropane	50.000	44.549	10.9	114	-0.02
97	P,T,M	1,2,4-Trichlorobenzene	50.000	49.544	0.9	117	0.00
98	T,M	Hexachlorobutadiene	50.000	51.525	-3.0	129	-0.02
99	T,M	Naphthalene	50.000	45.490	9.0	106	0.00
100	T,M	1,2,3-Trichlorobenzene	50.000	46.283	7.4	110	-0.02

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D Vial: 2
Acq On : 29 Jun 2018 10:09 am Operator: ODinh
Sample : CVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I 1,4-DIFLUOROBENZENE	1.000	1.000	0.0	122	-0.02
2	P,T,M Dichlorodifluoromethane	0.364	0.333	8.5	113	-0.02
3	P,T,M Chloromethane	0.561	0.501	10.7	110	0.00
4	P,C,T,M Vinyl chloride	0.396	0.403	-1.8	118	0.00
5	P,T,M Bromomethane	0.418	0.350	16.3	111	0.00
6	P,T,M Chloroethane	0.309	0.316	-2.3	116	0.00
7	T,M Dichlorofluoromethane	0.848	0.974	-14.9	131	0.00
8	P,T,M Trichlorofluoromethane	0.446	0.477	-7.0	125	0.00
9	T,M Acrolein	0.086	0.094	-9.3	123	-0.02
10	P,T,M 1,1,2-Trichloro-1,2,2-trifl	0.224	0.252	-12.5	131	0.00
11	P,T,M Acetone	0.185	0.209	-13.0	127	0.00
12	P,C,T,M 1,1-Dichloroethene	0.638	0.673	-5.5	119	-0.02
13	T,M tert-Butyl alcohol	0.086	0.094	-9.3	122	-0.02
14	T,M Acetonitrile	0.081	0.081	0.0	104	-0.02
15	T,M Iodomethane	0.500	0.516	-3.2	116	0.00
16	P,T,M Methyl Acetate	0.741	0.786	-6.1	123	0.00
17	T,M Allyl Chloride	0.218	0.242	-11.0	127	0.00
18	P,T,M Methylene chloride	0.606	0.608	-0.3	123	-0.02
19	P,T,M Carbon disulfide	1.222	1.465	-19.9	138	0.00
20	T,M Acrylonitrile	0.232	0.264	-13.8	126	0.00
21	P,T,M tert-Butyl methyl ether (MT	1.223	1.357	-11.0	125	0.00
22	P,T,M trans-1,2-Dichloroethene	0.614	0.678	-10.4	124	-0.02
23	T,M Isopropyl ether (DIPE)	1.950	2.186	-12.1	129	-0.02
24	T,M Vinyl acetate	1.438	1.489	-3.5	118	-0.02
25	P,T,M 1,1-Dichloroethane	0.798	0.909	-13.9	130	0.00
26	T,M 2-Butanol	0.088	0.097	-10.2	126	0.00
27	T,M tert-Butyl ethyl ether (ETB	1.413	1.500	-6.2	124	0.00
28	P,T,M 2-Butanone	0.377	0.415	-10.1	123	-0.02
29	T,M Propionitrile	0.088	0.091	-3.4	117	-0.02
30	T,M 2,2-Dichloropropane	0.268	0.315	-17.5	135	-0.02
31	P,T,M cis-1,2-Dichloroethene	0.476	0.525	-10.3	128	-0.02
32	T,M Isobutyl Alcohol	0.044	0.046	-4.5	116	-0.02
33	T,M Methylacrylonitrile	0.087	0.094	-8.0	120	-0.02
34	P,C,T,M Chloroform	0.693	0.783	-13.0	130	0.00
35	T,M Bromochloromethane	0.454	0.492	-8.4	124	-0.02
36	T,M Tetrahydrofuran	0.222	0.217	2.3	111	-0.02
37	S Dibromofluoromethane	0.357	0.372	-4.2	125	-0.02
38	P,T,M 1,1,1-Trichloroethane	0.376	0.435	-15.7	135	0.00
39	P,T,M Cyclohexane	0.680	0.633	6.9	112	-0.02
40	T,M 1,1-Dichloropropene	0.175	0.182	-4.0	125	-0.02
41	P,T,M Carbon tetrachloride	0.303	0.345	-13.9	131	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D Vial: 2
Acq On : 29 Jun 2018 10:09 am Operator: ODinh
Sample : CVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	tert-Amyl methyl ether (TAM	0.237	0.255	-7.6	124	0.00
43	S	1,2-Dichloroethane-d4	0.442	0.428	3.2	118	-0.02
44	P,T,M	1,2-Dichloroethane	0.518	0.549	-6.0	124	-0.02
45	P,T,M	Benzene	1.623	1.703	-4.9	123	-0.02
46	P,T,M	Trichloroethene	0.404	0.426	-5.4	126	-0.02
47	P,T,M	Methylcyclohexane	0.782	0.724	7.4	110	-0.02
48	P,C,T,M	1,2-Dichloropropane	0.484	0.533	-10.1	129	-0.02
49	T,M	Methyl Methacrylate	0.375	0.393	-4.8	116	-0.02
50	P,T,M	Bromodichloromethane	0.533	0.578	-8.4	129	-0.02
51	T,M	1,4-Dioxane	0.005	0.005	0.0	107	-0.02
52	T,M	Dibromomethane	0.291	0.309	-6.2	122	-0.02
53	T,M	2-Chloroethyl vinyl ether	0.000	0.000	0.0	0#	0.00
54	P,T,M	4-Methyl-2-pentanone	0.789	0.850	-7.7	125	-0.02
55	P,T,M	cis-1,3-Dichloropropene	0.739	0.797	-7.8	122	-0.02
56	I	CHLOROBENZENE-D5	1.000	1.000	0.0	122	-0.02
57	S	Toluene-d8	1.475	1.462	0.9	124	-0.02
58	P,C,T,M	Toluene	1.715	1.771	-3.3	123	-0.02
59	T,M	Ethyl methacrylate	0.697	0.745	-6.9	118	-0.03
60	P,T,M	trans-1,3-Dichloropropene	0.683	0.751	-10.0	124	-0.03
61	P,T,M	1,1,2-Trichloroethane	0.421	0.441	-4.8	122	-0.02
62	P,T,M	2-Hexanone	0.581	0.630	-8.4	123	-0.02
63	T,M	1,3-Dichloropropane	0.826	0.857	-3.8	120	-0.02
64	P,T,M	Tetrachloroethene	0.334	0.338	-1.2	123	-0.03
65	P,T,M	Dibromochloromethane	0.415	0.442	-6.5	126	-0.03
66	P,T,M	1,2-Dibromoethane	0.430	0.449	-4.4	120	-0.02
67	T,M	1-Chlorohexane	0.620	0.665	-7.3	127	-0.03
68	P,T,M	Chlorobenzene	1.024	1.098	-7.2	126	-0.02
69	T,M	1,1,1,2-Tetrachloroethane	0.351	0.397	-13.1	130	-0.03
70	P,C,T,M	Ethylbenzene	1.769	1.899	-7.3	124	-0.02
71	P,T,M	m-Xylene & p-Xylene	1.327	1.370	-3.2	121	-0.03
72	P,T,M	o-Xylene	1.377	1.478	-7.3	126	-0.02
73	P,T,M	Styrene	1.002	1.038	-3.6	116	-0.03
74	P,T,M	Isopropylbenzene	1.496	1.659	-10.9	129	-0.03
75	T,M	Cis-1,4-Dichloro-2-Butene	0.194	0.205	-5.7	121	-0.03
76	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	118	-0.03
77	P,T,M	Bromoform	0.699	0.751	-7.4	124	-0.02
78	P,T,M	1,1,2,2-Tetrachloroethane	1.711	1.821	-6.4	120	-0.02
79	S	4-Bromofluorobenzene	1.205	1.223	-1.5	123	-0.02
80	T,M	1,2,3-Trichloropropane	0.384	0.397	-3.4	117	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D Vial: 2
Acq On : 29 Jun 2018 10:09 am Operator: ODinh
Sample : CVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	0.368	0.364	1.1	113	-0.02
82	T,M	n-Propylbenzene	4.818	5.243	-8.8	124	-0.03
83	T,M	Bromobenzene	1.004	1.068	-6.4	120	-0.03
84	T,M	1,3,5-Trimethylbenzene	2.791	3.065	-9.8	124	-0.02
85	T,M	2-Chlorotoluene	3.060	3.196	-4.4	121	-0.02
86	T,M	4-Chlorotoluene	2.677	2.881	-7.6	121	-0.02
87	T,M	tert-Butylbenzene	0.643	0.714	-11.0	130	-0.02
88	T,M	1,2,4-Trimethylbenzene	2.804	2.984	-6.4	119	-0.02
89	T,M	sec-Butylbenzene	3.741	4.134	-10.5	127	-0.03
90	T,M	p-Isopropyltoluene	2.961	3.178	-7.3	122	-0.02
91	P,T,M	1,3-Dichlorobenzene	1.773	1.896	-6.9	122	-0.03
92	T,M	1,2,3-Trimethylbenzene	2.730	0.000	100.0#	0#	-16.53#
93	P,T,M	1,4-Dichlorobenzene	1.769	1.895	-7.1	120	-0.02
94	T,M	n-Butylbenzene	2.960	3.184	-7.6	122	-0.03
95	P,T,M	1,2-Dichlorobenzene	1.653	1.761	-6.5	123	-0.03
96	P,T,M	1,2-Dibromo-3-chloropropane	0.255	0.263	-3.1	114	-0.02
97	P,T,M	1,2,4-Trichlorobenzene	0.984	0.975	0.9	117	0.00
98	T,M	Hexachlorobutadiene	0.439	0.452	-3.0	129	-0.02
99	T,M	Naphthalene	2.806	2.553	9.0	106	0.00
100	T,M	1,2,3-Trichlorobenzene	0.903	0.836	7.4	110	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D Vial: 2
Acq On : 29 Jun 2018 10:09 am Operator: ODinh
Sample : CVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:13 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.64	114	1903001	50.00	ug/l		-0.02
56) CHLOROBENZENE-D5	12.33	117	1724668	50.00	ug/l		-0.02
76) 1,2-DICHLOROBENZENE-D4	17.16	152	676729	50.00	ug/l		-0.03
System Monitoring Compounds							
37) Dibromofluoromethane	6.41	111	707383	52.13	ug/l		-0.02
Spiked Amount 50.000			Recovery = 104.26%				
43) 1,2-Dichloroethane-d4	7.09	65	814618	48.38	ug/l		-0.02
Spiked Amount 50.000			Recovery = 96.76%				
57) Toluene-d8	9.89	98	2521665	49.57	ug/l		-0.02
Spiked Amount 50.000			Recovery = 99.14%				
79) 4-Bromofluorobenzene	14.41	95	827372	50.75	ug/l		-0.02
Spiked Amount 50.000			Recovery = 101.50%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.72	85	634263	45.81	ug/l		99
3) Chloromethane	1.99	50	953136	44.68	ug/l		100
4) Vinyl chloride	2.11	62	767741	50.90	ug/l		100
5) Bromomethane	2.57	94	666450	41.84	ug/l		100
6) Chloroethane	2.67	64	600660	51.16	ug/l		100
7) Dichlorofluoromethane	2.70	67	1854147	57.44	ug/l		100
8) Trichlorofluoromethane	2.94	101	907123	53.46	ug/l		99
9) Acrolein	3.42	56	896528	274.29	ug/l		86
10) 1,1,2-Trichloro-1,2,2-trif	3.46	151	479089	56.31	ug/l		98
11) Acetone	3.49	43	1984373	282.00	ug/l		99
12) 1,1-Dichloroethene	3.66	61	1281129	52.78	ug/l		99
13) tert-Butyl alcohol	3.73	59	895410	273.12	ug/l	#	1
14) Acetonitrile	3.80	41	1542365	500.78	ug/l		90
15) Iodomethane	4.04	142	981750	51.59	ug/l		100
16) Methyl Acetate	4.04	43	1495861	53.07	ug/l		97
17) Allyl Chloride	4.09	76	461445	55.60	ug/l		100
18) Methylene chloride	4.25	49	1156573	50.18	ug/l		99
19) Carbon disulfide	4.25	76	2787711	59.93	ug/l		100
20) Acrylonitrile	4.38	53	2508744	283.71	ug/l		99
21) tert-Butyl methyl ether (M	4.41	73	2581491	55.46	ug/l		100
22) trans-1,2-Dichloroethene	4.58	61	1289939	55.21	ug/l		99
23) Isopropyl ether (DIPE)	4.98	45	4159171	56.04	ug/l		100
24) Vinyl acetate	5.13	43	2832951	51.77	ug/l		99
25) 1,1-Dichloroethane	5.13	63	1729418	56.91	ug/l		100
26) 2-Butanol	5.41	45	927493	277.82	ug/l		93
27) tert-Butyl ethyl ether (ET	5.52	59	2853672	53.08	ug/l		99
28) 2-Butanone	5.66	43	3951879	275.29	ug/l		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D Vial: 2
Acq On : 29 Jun 2018 10:09 am Operator: ODinh
Sample : CVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:13 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.77	54	1736878	518.33	ug/l	99
30)	2,2-Dichloropropane	5.84	77	600205	58.87	ug/l	99
31)	cis-1,2-Dichloroethene	5.92	96	998663	55.15	ug/l	98
32)	Isobutyl Alcohol	6.05	43	1764507	1058.95	ug/l	99
33)	Methylacrylonitrile	6.02	52	1794695	543.28	ug/l	98
34)	Chloroform	6.12	83	1490287	56.50	ug/l	99
35)	Bromochloromethane	6.33	49	936657	54.20	ug/l	99
36)	Tetrahydrofuran	6.38	42	413024	48.83	ug/l	99
38)	1,1,1-Trichloroethane	6.66	97	827473	57.88	ug/l	98
39)	Cyclohexane	6.68	84	1204319	46.56	ug/l	99
40)	1,1-Dichloropropene	6.87	110	346365	51.95	ug/l	97
41)	Carbon tetrachloride	7.00	119	656050	56.82	ug/l	100
42)	tert-Amyl methyl ether (TA	7.03	87	485181	53.80	ug/l	96
44)	1,2-Dichloroethane	7.21	62	1044047	52.92	ug/l	100
45)	Benzene	7.24	78	3241205	52.48	ug/l	100
46)	Trichloroethene	8.10	130	809824	52.61	ug/l	99
47)	Methylcyclohexane	8.18	83	1377406	46.25	ug/l	99
48)	1,2-Dichloropropane	8.36	63	1014799	55.05	ug/l	99
49)	Methyl Methacrylate	8.46	69	747812	52.34	ug/l	98
50)	Bromodichloromethane	8.70	83	1100214	54.24	ug/l	100
51)	1,4-Dioxane	8.73	88	199326	967.96	ug/l	100
52)	Dibromomethane	8.77	93	587376	53.11	ug/l	99
54)	4-Methyl-2-pentanone	9.22	43	8090595	269.55	ug/l	100
55)	cis-1,3-Dichloropropene	9.53	75	1516606	53.95	ug/l	99
58)	Toluene	10.01	91	3054658	51.63	ug/l	99
59)	Ethyl methacrylate	10.30	69	1284157	53.40	ug/l	100
60)	trans-1,3-Dichloropropene	10.30	75	1295284	54.98	ug/l	100
61)	1,1,2-Trichloroethane	10.56	97	761276	52.45	ug/l	100
62)	2-Hexanone	10.57	43	5434642	271.25	ug/l	100
63)	1,3-Dichloropropane	10.96	76	1478295	51.90	ug/l	100
64)	Tetrachloroethene	11.03	164	583289	50.68	ug/l	99
65)	Dibromochloromethane	11.36	129	762483	53.31	ug/l	99
66)	1,2-Dibromoethane	11.69	107	773546	52.17	ug/l	99
67)	1-Chlorohexane	11.99	91	1146580	53.59	ug/l	99
68)	Chlorobenzene	12.39	112	1893772	53.62	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.46	131	685282	56.55	ug/l	99
70)	Ethylbenzene	12.49	91	3275580	53.67	ug/l	100
71)	m-Xylene & p-Xylene	12.61	91	4725737	103.27	ug/l	99
72)	o-Xylene	13.35	91	2548879	53.65	ug/l	100
73)	Styrene	13.41	104	1790504	51.83	ug/l	99
74)	Isopropylbenzene	13.98	105	2861661	55.45	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D Vial: 2
Acq On : 29 Jun 2018 10:09 am Operator: ODinh
Sample : CVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:13 2018 Quant Results File: VO02F15.RES

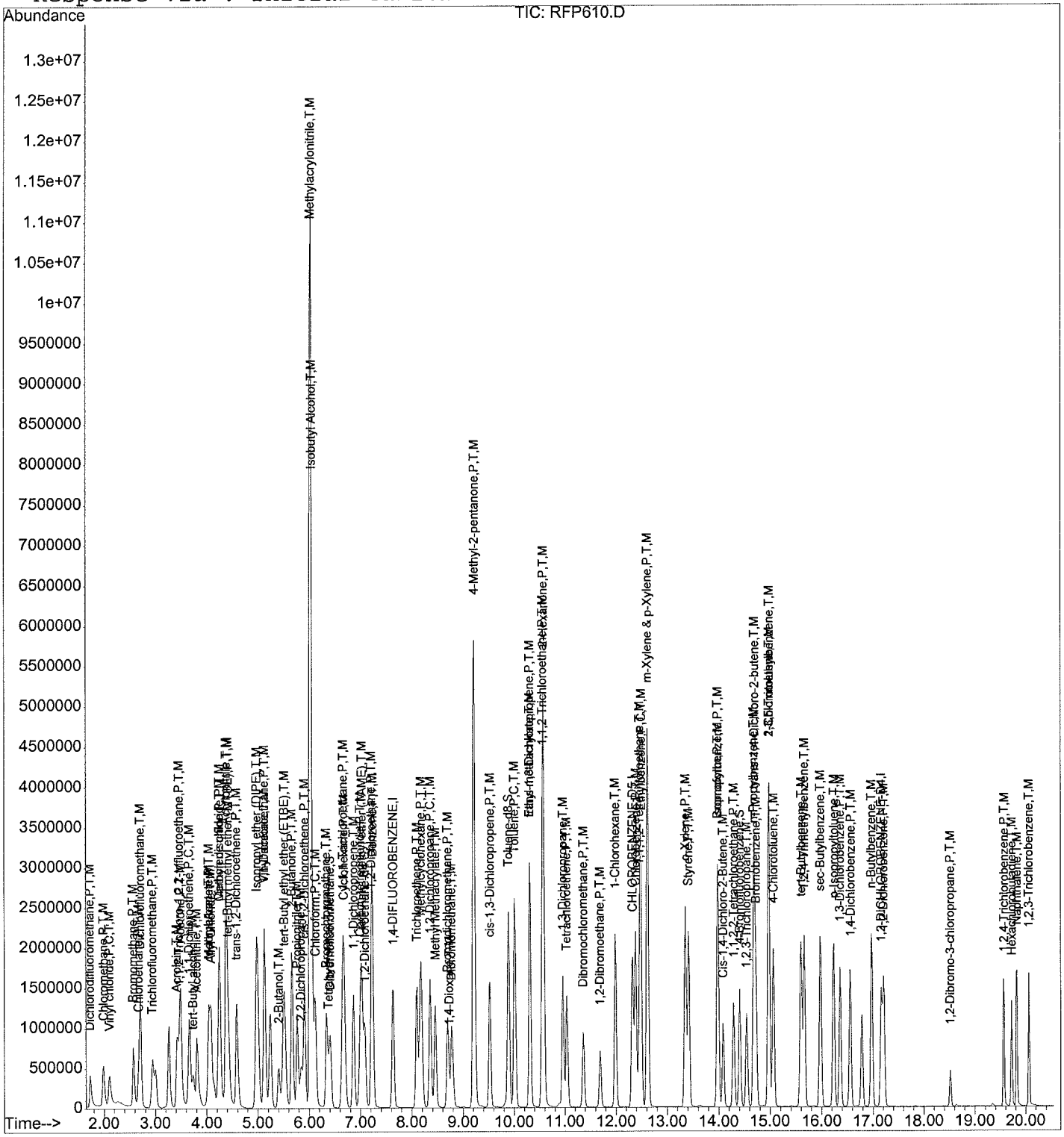
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.08	53	353839	52.81	ug/l	98
77)	Bromoform	13.98	173	508469	47.91	ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.29	83	1232311	53.20	ug/l	99
80)	1,2,3-Trichloropropane	14.54	110	268424	51.58	ug/l	97
81)	trans-1,4-Dichloro-2-buten	14.69	53	246555	49.51	ug/l	97
82)	n-Propylbenzene	14.68	91	3548116	54.41	ug/l	99
83)	Bromobenzene	14.72	156	722898	53.19	ug/l	98
84)	1,3,5-Trimethylbenzene	14.98	105	2074014	54.90	ug/l	99
85)	2-Chlorotoluene	14.98	91	2163037	52.23	ug/l	99
86)	4-Chlorotoluene	15.06	91	1949507	53.81	ug/l	100
87)	tert-Butylbenzene	15.60	134	482959	55.50	ug/l	95
88)	1,2,4-Trimethylbenzene	15.66	105	2019464	53.20	ug/l	99
89)	sec-Butylbenzene	15.97	105	2797500	55.25	ug/l	100
90)	p-Isopropyltoluene	16.24	119	2150396	53.66	ug/l	99
91)	1,3-Dichlorobenzene	16.36	146	1282764	53.46	ug/l	99
93)	1,4-Dichlorobenzene	16.57	146	1282582	53.56	ug/l	99
94)	n-Butylbenzene	16.97	91	2154681	53.79	ug/l	99
95)	1,2-Dichlorobenzene	17.21	146	1191707	53.25	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.52	157	178039	44.55	ug/l	96
97)	1,2,4-Trichlorobenzene	19.57	180	659649	49.54	ug/l	99
98)	Hexachlorobutadiene	19.72	225	306097	51.53	ug/l	99
99)	Naphthalene	19.82	128	1727620	45.49	ug/l	100
100)	1,2,3-Trichlorobenzene	20.06	180	565468	46.28	ug/l	98

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18F29\RFP610.D Vial: 2
Acq On : 29 Jun 2018 10:09 am Operator: ODinh
Sample : CVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:13 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D
Acq On : 29 Jun 2018 8:02 pm
Sample : EVO02F1506
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P

Vial: 26
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I 1,4-DIFLUOROBENZENE	50.000	50.000	0.0	104	-0.03
2	P,T,M Dichlorodifluoromethane	50.000	33.319	33.4#	70	-0.01
3	P,T,M Chloromethane	50.000	36.017	28.0#	76	-0.01
4	P,C,T,M Vinyl chloride	50.000	38.935	22.1#	78	-0.01
5	P,T,M Bromomethane	50.000	37.360	25.3#	85	-0.01
6	P,T,M Chloroethane	50.000	40.205	19.6	78	-0.01
7	T,M Dichlorofluoromethane	50.000	46.413	7.2	91	-0.01
8	P,T,M Trichlorofluoromethane	50.000	41.566	16.9	83	-0.01
9	T,M Acrolein	250.000	229.746	8.1	89	-0.03
10	P,T,M 1,1,2-Trichloro-1,2,2-trifl	50.000	40.838	18.3	81	-0.01
11	P,T,M Acetone	250.000	285.495	-14.2	110	-0.01
12	P,C,T,M 1,1-Dichloroethene	50.000	40.664	18.7	79	-0.03
13	T,M tert-Butyl alcohol	250.000	281.814	-12.7	108	-0.03
14	T,M Acetonitrile	500.000	544.645	-8.9	97	-0.03
15	T,M Iodomethane	50.000	45.319	9.4	87	-0.01
16	P,T,M Methyl Acetate	50.000	44.383	11.2	88	-0.01
17	T,M Allyl Chloride	50.000	45.067	9.9	88	-0.01
18	P,T,M Methylene chloride	50.000	45.992	8.0	97	-0.03
19	P,T,M Carbon disulfide	50.000	39.206	21.6#	77	-0.01
20	T,M Acrylonitrile	250.000	286.352	-14.5	109	-0.01
21	P,T,M tert-Butyl methyl ether (MT	50.000	55.445	-10.9	107	-0.01
22	P,T,M trans-1,2-Dichloroethene	50.000	44.271	11.5	85	-0.01
23	T,M Isopropyl ether (DIPE)	50.000	54.259	-8.5	107	-0.03
24	T,M Vinyl acetate	50.000	43.142	13.7	84	-0.03
25	P,T,M 1,1-Dichloroethane	50.000	49.660	0.7	97	-0.01
26	T,M 2-Butanol	250.000	277.833	-11.1	108	-0.01
27	T,M tert-Butyl ethyl ether (ETB	50.000	52.544	-5.1	105	-0.01
28	P,T,M 2-Butanone	250.000	278.724	-11.5	107	-0.03
29	T,M Propionitrile	500.000	545.555	-9.1	105	-0.03
30	T,M 2,2-Dichloropropane	50.000	48.669	2.7	96	-0.01
31	P,T,M cis-1,2-Dichloroethene	50.000	48.268	3.5	96	-0.03
32	T,M Isobutyl Alcohol	1000.000	1084.078	-8.4	102	-0.03
33	T,M Methylacrylonitrile	500.000	536.001	-7.2	101	-0.01
34	P,C,T,M Chloroform	50.000	50.060	-0.1	98	-0.01
35	T,M Bromochloromethane	50.000	49.807	0.4	97	-0.03
36	T,M Tetrahydrofuran	50.000	49.233	1.5	96	-0.03
37	S Dibromofluoromethane	50.000	51.871	-3.7	106	-0.03
38	P,T,M 1,1,1-Trichloroethane	50.000	47.167	5.7	94	-0.03
39	P,T,M Cyclohexane	50.000	34.664	30.7#	71	-0.03
40	T,M 1,1-Dichloropropene	50.000	39.676	20.6#	82	-0.03
41	P,T,M Carbon tetrachloride	50.000	44.666	10.7	88	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D Vial: 26
Acq On : 29 Jun 2018 8:02 pm Operator: ODinh
Sample : EVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M tert-Amyl methyl ether (TAM	50.000	52.418	-4.8	104	-0.01
43	S 1,2-Dichloroethane-d4	50.000	47.989	4.0	100	-0.03
44	P,T,M 1,2-Dichloroethane	50.000	49.819	0.4	100	-0.03
45	P,T,M Benzene	50.000	45.888	8.2	92	-0.03
46	P,T,M Trichloroethene	50.000	44.409	11.2	91	-0.03
47	P,T,M Methylcyclohexane	50.000	34.893	30.2#	71	-0.03
48	P,C,T,M 1,2-Dichloropropane	50.000	49.204	1.6	99	-0.03
49	T,M Methyl Methacrylate	50.000	52.811	-5.6	100	-0.03
50	P,T,M Bromodichloromethane	50.000	48.713	2.6	99	-0.03
51	T,M 1,4-Dioxane	1000.000	1098.670	-9.9	104	-0.03
52	T,M Dibromomethane	50.000	50.527	-1.1	99	-0.03
53	T,M 2-Chloroethyl vinyl ether	-1.000	0.000	0.0	0	0.00
54	P,T,M 4-Methyl-2-pentanone	250.000	268.881	-7.6	107	-0.03
55	P,T,M cis-1,3-Dichloropropene	50.000	49.537	0.9	96	-0.03
56	I CHLOROBENZENE-D5	50.000	50.000	0.0	105	-0.03
57	S Toluene-d8	50.000	49.127	1.7	106	-0.03
58	P,C,T,M Toluene	50.000	44.089	11.8	91	-0.03
59	T,M Ethyl methacrylate	50.000	52.338	-4.7	100	-0.03
60	P,T,M trans-1,3-Dichloropropene	50.000	50.318	-0.6	98	-0.03
61	P,T,M 1,1,2-Trichloroethane	50.000	49.467	1.1	99	-0.03
62	P,T,M 2-Hexanone	250.000	271.200	-8.5	106	-0.01
63	T,M 1,3-Dichloropropane	50.000	48.187	3.6	96	-0.03
64	P,T,M Tetrachloroethene	50.000	39.284	21.4#	82	-0.03
65	P,T,M Dibromochloromethane	50.000	49.906	0.2	102	-0.03
66	P,T,M 1,2-Dibromoethane	50.000	49.327	1.3	98	-0.03
67	T,M 1-Chlorohexane	50.000	40.785	18.4	83	-0.03
68	P,T,M Chlorobenzene	50.000	46.445	7.1	94	-0.03
69	T,M 1,1,1,2-Tetrachloroethane	50.000	51.371	-2.7	102	-0.03
70	P,C,T,M Ethylbenzene	50.000	44.619	10.8	89	-0.03
71	P,T,M m-Xylene & p-Xylene	100.000	86.014	14.0	87	-0.03
72	P,T,M o-Xylene	50.000	45.107	9.8	92	-0.03
73	P,T,M Styrene	50.000	49.071	1.9	95	-0.03
74	P,T,M Isopropylbenzene	50.000	45.325	9.3	91	-0.03
75	T,M Cis-1,4-Dichloro-2-Butene	50.000	48.613	2.8	96	-0.03
76	I 1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	104	-0.03
77	P,T,M Bromoform	50.000	43.553	12.9	98	-0.03
78	P,T,M 1,1,2,2-Tetrachloroethane	50.000	50.632	-1.3	100	-0.03
79	S 4-Bromofluorobenzene	50.000	51.126	-2.3	108	-0.03
80	T,M 1,2,3-Trichloropropane	50.000	49.801	0.4	99	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D Vial: 26
Acq On : 29 Jun 2018 8:02 pm Operator: ODinh
Sample : EVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	50.000	47.144	5.7	95	-0.03
82	T,M	n-Propylbenzene	50.000	42.918	14.2	86	-0.03
83	T,M	Bromobenzene	50.000	47.539	4.9	94	-0.03
84	T,M	1,3,5-Trimethylbenzene	50.000	45.067	9.9	89	-0.03
85	T,M	2-Chlorotoluene	50.000	44.250	11.5	90	-0.03
86	T,M	4-Chlorotoluene	50.000	45.151	9.7	89	-0.03
87	T,M	tert-Butylbenzene	50.000	44.542	10.9	92	-0.03
88	T,M	1,2,4-Trimethylbenzene	50.000	45.184	9.6	89	-0.01
89	T,M	sec-Butylbenzene	50.000	43.092	13.8	87	-0.03
90	T,M	p-Isopropyltoluene	50.000	43.360	13.3	87	-0.03
91	P,T,M	1,3-Dichlorobenzene	50.000	46.371	7.3	93	-0.03
92	T,M	1,2,3-Trimethylbenzene	50.000	0.000	100.0#	0	-16.53#
93	P,T,M	1,4-Dichlorobenzene	50.000	45.829	8.3	90	-0.03
94	T,M	n-Butylbenzene	50.000	42.248	15.5	84	-0.03
95	P,T,M	1,2-Dichlorobenzene	50.000	47.438	5.1	96	-0.03
96	P,T,M	1,2-Dibromo-3-chloropropane	50.000	44.692	10.6	101	-0.01
97	P,T,M	1,2,4-Trichlorobenzene	50.000	42.222	15.6	87	-0.01
98	T,M	Hexachlorobutadiene	50.000	40.945	18.1	90	-0.01
99	T,M	Naphthalene	50.000	44.427	11.1	91	-0.01
100	T,M	1,2,3-Trichlorobenzene	50.000	43.691	12.6	91	-0.01

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D Vial: 26
Acq On : 29 Jun 2018 8:02 pm Operator: ODinh
Sample : EVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I 1,4-DIFLUOROBENZENE	1.000	1.000	0.0	104	-0.03
2	P,T,M Dichlorodifluoromethane	0.364	0.242	33.5#	70	-0.01
3	P,T,M Chloromethane	0.561	0.404	28.0#	76	-0.01
4	P,C,T,M Vinyl chloride	0.396	0.309	22.0#	78	-0.01
5	P,T,M Bromomethane	0.418	0.313	25.1#	85	-0.01
6	P,T,M Chloroethane	0.309	0.248	19.7	78	-0.01
7	T,M Dichlorofluoromethane	0.848	0.787	7.2	91	-0.01
8	P,T,M Trichlorofluoromethane	0.446	0.371	16.8	83	-0.01
9	T,M Acrolein	0.086	0.079	8.1	89	-0.03
10	P,T,M 1,1,2-Trichloro-1,2,2-trifl	0.224	0.183	18.3	81	-0.01
11	P,T,M Acetone	0.185	0.211	-14.1	110	-0.01
12	P,C,T,M 1,1-Dichloroethene	0.638	0.519	18.7	79	-0.03
13	T,M tert-Butyl alcohol	0.086	0.097	-12.8	108	-0.03
14	T,M Acetonitrile	0.081	0.088	-8.6	97	-0.03
15	T,M Iodomethane	0.500	0.453	9.4	87	-0.01
16	P,T,M Methyl Acetate	0.741	0.657	11.3	88	-0.01
17	T,M Allyl Chloride	0.218	0.197	9.6	88	-0.01
18	P,T,M Methylene chloride	0.606	0.557	8.1	97	-0.03
19	P,T,M Carbon disulfide	1.222	0.958	21.6#	77	-0.01
20	T,M Acrylonitrile	0.232	0.266	-14.7	109	-0.01
21	P,T,M tert-Butyl methyl ether (MT	1.223	1.356	-10.9	107	-0.01
22	P,T,M trans-1,2-Dichloroethene	0.614	0.544	11.4	85	-0.01
23	T,M Isopropyl ether (DIPE)	1.950	2.116	-8.5	107	-0.03
24	T,M Vinyl acetate	1.438	1.241	13.7	84	-0.03
25	P,T,M 1,1-Dichloroethane	0.798	0.793	0.6	97	-0.01
26	T,M 2-Butanol	0.088	0.097	-10.2	108	-0.01
27	T,M tert-Butyl ethyl ether (ETB	1.413	1.485	-5.1	105	-0.01
28	P,T,M 2-Butanone	0.377	0.421	-11.7	107	-0.03
29	T,M Propionitrile	0.088	0.096	-9.1	105	-0.03
30	T,M 2,2-Dichloropropane	0.268	0.261	2.6	96	-0.01
31	P,T,M cis-1,2-Dichloroethene	0.476	0.459	3.6	96	-0.03
32	T,M Isobutyl Alcohol	0.044	0.047	-6.8	102	-0.03
33	T,M Methylacrylonitrile	0.087	0.093	-6.9	101	-0.01
34	P,C,T,M Chloroform	0.693	0.694	-0.1	98	-0.01
35	T,M Bromochloromethane	0.454	0.452	0.4	97	-0.03
36	T,M Tetrahydrofuran	0.222	0.219	1.4	96	-0.03
37	S Dibromofluoromethane	0.357	0.370	-3.6	106	-0.03
38	P,T,M 1,1,1-Trichloroethane	0.376	0.354	5.9	94	-0.03
39	P,T,M Cyclohexane	0.680	0.471	30.7#	71	-0.03
40	T,M 1,1-Dichloropropene	0.175	0.139	20.6#	82	-0.03
41	P,T,M Carbon tetrachloride	0.303	0.271	10.6	88	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D Vial: 26
Acq On : 29 Jun 2018 8:02 pm Operator: ODinh
Sample : EVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M tert-Amyl methyl ether (TAM	0.237	0.248	-4.6	104	-0.01
43	S 1,2-Dichloroethane-d4	0.442	0.425	3.8	100	-0.03
44	P,T,M 1,2-Dichloroethane	0.518	0.517	0.2	100	-0.03
45	P,T,M Benzene	1.623	1.489	8.3	92	-0.03
46	P,T,M Trichloroethene	0.404	0.359	11.1	91	-0.03
47	P,T,M Methylcyclohexane	0.782	0.546	30.2#	71	-0.03
48	P,C,T,M 1,2-Dichloropropane	0.484	0.477	1.4	99	-0.03
49	T,M Methyl Methacrylate	0.375	0.396	-5.6	100	-0.03
50	P,T,M Bromodichloromethane	0.533	0.519	2.6	99	-0.03
51	T,M 1,4-Dioxane	0.005	0.006	-20.0	104	-0.03
52	T,M Dibromomethane	0.291	0.294	-1.0	99	-0.03
53	T,M 2-Chloroethyl vinyl ether	0.000	0.000	0.0	0#	0.00
54	P,T,M 4-Methyl-2-pentanone	0.789	0.848	-7.5	107	-0.03
55	P,T,M cis-1,3-Dichloropropene	0.739	0.732	0.9	96	-0.03
56	I CHLOROBENZENE-D5	1.000	1.000	0.0	105	-0.03
57	S Toluene-d8	1.475	1.449	1.8	106	-0.03
58	P,C,T,M Toluene	1.715	1.512	11.8	91	-0.03
59	T,M Ethyl methacrylate	0.697	0.730	-4.7	100	-0.03
60	P,T,M trans-1,3-Dichloropropene	0.683	0.687	-0.6	98	-0.03
61	P,T,M 1,1,2-Trichloroethane	0.421	0.416	1.2	99	-0.03
62	P,T,M 2-Hexanone	0.581	0.630	-8.4	106	-0.01
63	T,M 1,3-Dichloropropane	0.826	0.796	3.6	96	-0.03
64	P,T,M Tetrachloroethene	0.334	0.262	21.6#	82	-0.03
65	P,T,M Dibromochloromethane	0.415	0.414	0.2	102	-0.03
66	P,T,M 1,2-Dibromoethane	0.430	0.424	1.4	98	-0.03
67	T,M 1-Chlorohexane	0.620	0.506	18.4	83	-0.03
68	P,T,M Chlorobenzene	1.024	0.951	7.1	94	-0.03
69	T,M 1,1,1,2-Tetrachloroethane	0.351	0.361	-2.8	102	-0.03
70	P,C,T,M Ethylbenzene	1.769	1.579	10.7	89	-0.03
71	P,T,M m-Xylene & p-Xylene	1.327	1.141	14.0	87	-0.03
72	P,T,M o-Xylene	1.377	1.243	9.7	92	-0.03
73	P,T,M Styrene	1.002	0.983	1.9	95	-0.03
74	P,T,M Isopropylbenzene	1.496	1.356	9.4	91	-0.03
75	T,M Cis-1,4-Dichloro-2-Butene	0.194	0.189	2.6	96	-0.03
76	I 1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	104	-0.03
77	P,T,M Bromoform	0.699	0.679	2.9	98	-0.03
78	P,T,M 1,1,2,2-Tetrachloroethane	1.711	1.733	-1.3	100	-0.03
79	S 4-Bromofluorobenzene	1.205	1.232	-2.2	108	-0.03
80	T,M 1,2,3-Trichloropropane	0.384	0.383	0.3	99	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D Vial: 26
Acq On : 29 Jun 2018 8:02 pm Operator: ODinh
Sample : EVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	0.368	0.347	5.7	95	-0.03
82	T,M	n-Propylbenzene	4.818	4.136	14.2	86	-0.03
83	T,M	Bromobenzene	1.004	0.955	4.9	94	-0.03
84	T,M	1,3,5-Trimethylbenzene	2.791	2.516	9.9	89	-0.03
85	T,M	2-Chlorotoluene	3.060	2.708	11.5	90	-0.03
86	T,M	4-Chlorotoluene	2.677	2.417	9.7	89	-0.03
87	T,M	tert-Butylbenzene	0.643	0.573	10.9	92	-0.03
88	T,M	1,2,4-Trimethylbenzene	2.804	2.534	9.6	89	-0.01
89	T,M	sec-Butylbenzene	3.741	3.224	13.8	87	-0.03
90	T,M	p-Isopropyltoluene	2.961	2.568	13.3	87	-0.03
91	P,T,M	1,3-Dichlorobenzene	1.773	1.644	7.3	93	-0.03
92	T,M	1,2,3-Trimethylbenzene	2.730	0.000	100.0#	0#	-16.53#
93	P,T,M	1,4-Dichlorobenzene	1.769	1.622	8.3	90	-0.03
94	T,M	n-Butylbenzene	2.960	2.501	15.5	84	-0.03
95	P,T,M	1,2-Dichlorobenzene	1.653	1.569	5.1	96	-0.03
96	P,T,M	1,2-Dibromo-3-chloropropane	0.255	0.264	-3.5	101	-0.01
97	P,T,M	1,2,4-Trichlorobenzene	0.984	0.831	15.5	87	-0.01
98	T,M	Hexachlorobutadiene	0.439	0.359	18.2	90	-0.01
99	T,M	Naphthalene	2.806	2.493	11.2	91	-0.01
100	T,M	1,2,3-Trichlorobenzene	0.903	0.789	12.6	91	-0.01

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D Vial: 26
Acq On : 29 Jun 2018 8:02 pm Operator: ODinh
Sample : EVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:14 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1629057	50.00	ug/l	-0.03
56) CHLOROBENZENE-D5	12.32	117	1487256	50.00	ug/l	-0.03
76) 1,2-DICHLOROBENZENE-D4	17.17	152	593425	50.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	6.40	111	602513	51.87	ug/l	-0.03
Spiked Amount 50.000			Recovery =	103.74%		
43) 1,2-Dichloroethane-d4	7.08	65	691722	47.99	ug/l	-0.03
Spiked Amount 50.000			Recovery =	95.98%		
57) Toluene-d8	9.88	98	2155174	49.13	ug/l	-0.03
Spiked Amount 50.000			Recovery =	98.26%		
79) 4-Bromofluorobenzene	14.40	95	730942	51.13	ug/l	-0.03
Spiked Amount 50.000			Recovery =	102.26%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.73	85	394876	33.32	ug/l	99
3) Chloromethane	1.98	50	657746	36.02	ug/l	100
4) Vinyl chloride	2.10	62	502766	38.94	ug/l	100
5) Bromomethane	2.56	94	509373	37.36	ug/l	99
6) Chloroethane	2.67	64	404124	40.21	ug/l	96
7) Dichlorofluoromethane	2.69	67	1282547	46.41	ug/l	100
8) Trichlorofluoromethane	2.93	101	603751	41.57	ug/l	99
9) Acrolein	3.41	56	642833	229.75	ug/l	90
10) 1,1,2-Trichloro-1,2,2-trif	3.45	151	297450	40.84	ug/l	96
11) Acetone	3.48	43	1719799	285.50	ug/l	99
12) 1,1-Dichloroethene	3.65	61	844942	40.66	ug/l	99
13) tert-Butyl alcohol	3.72	59	790924	281.81	ug/l #	1
14) Acetonitrile	3.80	41	1436002	544.65	ug/l	88
15) Iodomethane	4.03	142	738222	45.32	ug/l	100
16) Methyl Acetate	4.03	43	1070875	44.38	ug/l	97
17) Allyl Chloride	4.08	76	320168	45.07	ug/l	98
18) Methylene chloride	4.24	49	907389	45.99	ug/l	99
19) Carbon disulfide	4.24	76	1561122	39.21	ug/l	100
20) Acrylonitrile	4.38	53	2167606	286.35	ug/l	100
21) tert-Butyl methyl ether (M	4.41	73	2209254	55.45	ug/l	99
22) trans-1,2-Dichloroethene	4.58	61	885483	44.27	ug/l	99
23) Isopropyl ether (DIPE)	4.97	45	3447523	54.26	ug/l	100
24) Vinyl acetate	5.12	43	2020864	43.14	ug/l	100
25) 1,1-Dichloroethane	5.12	63	1291958	49.66	ug/l	99
26) 2-Butanol	5.40	45	794026	277.83	ug/l	93
27) tert-Butyl ethyl ether (ET	5.51	59	2418418	52.54	ug/l	100
28) 2-Butanone	5.65	43	3425232	278.72	ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D Vial: 26
Acq On : 29 Jun 2018 8:02 pm Operator: ODinh
Sample : EVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:14 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.76	54	1564953	545.55	ug/l	100
30)	2,2-Dichloropropane	5.85	77	424763	48.67	ug/l	99
31)	cis-1,2-Dichloroethene	5.91	96	748226	48.27	ug/l	99
32)	Isobutyl Alcohol	6.04	43	1546344	1084.08	ug/l	100
33)	Methylacrylonitrile	6.03	52	1515755	536.00	ug/l	99
34)	Chloroform	6.12	83	1130271	50.06	ug/l	99
35)	Bromochloromethane	6.32	49	736800	49.81	ug/l	99
36)	Tetrahydrofuran	6.37	42	356522	49.23	ug/l	99
38)	1,1,1-Trichloroethane	6.64	97	577274	47.17	ug/l	99
39)	Cyclohexane	6.67	84	767488	34.66	ug/l	98
40)	1,1-Dichloropropene	6.86	110	226451	39.68	ug/l	99
41)	Carbon tetrachloride	6.99	119	441464	44.67	ug/l	100
42)	tert-Amyl methyl ether (TA	7.02	87	404698	52.42	ug/l	97
44)	1,2-Dichloroethane	7.20	62	841441	49.82	ug/l	100
45)	Benzene	7.23	78	2426107	45.89	ug/l	99
46)	Trichloroethene	8.09	130	585156	44.41	ug/l	98
47)	Methylcyclohexane	8.17	83	889537	34.89	ug/l	98
48)	1,2-Dichloropropane	8.35	63	776405	49.20	ug/l	99
49)	Methyl Methacrylate	8.45	69	645891	52.81	ug/l	99
50)	Bromodichloromethane	8.69	83	845840	48.71	ug/l	100
51)	1,4-Dioxane	8.72	88	193674	1098.67	ug/l	98
52)	Dibromomethane	8.76	93	478359	50.53	ug/l	99
54)	4-Methyl-2-pentanone	9.21	43	6908644	268.88	ug/l	100
55)	cis-1,3-Dichloropropene	9.52	75	1192173	49.54	ug/l	99
58)	Toluene	10.00	91	2249473	44.09	ug/l	100
59)	Ethyl methacrylate	10.31	69	1085377	52.34	ug/l	99
60)	trans-1,3-Dichloropropene	10.31	75	1022247	50.32	ug/l	99
61)	1,1,2-Trichloroethane	10.55	97	619202	49.47	ug/l	97
62)	2-Hexanone	10.58	43	4685625	271.20	ug/l	99
63)	1,3-Dichloropropane	10.95	76	1183567	48.19	ug/l	98
64)	Tetrachloroethene	11.04	164	389857	39.28	ug/l	99
65)	Dibromochloromethane	11.37	129	615482	49.91	ug/l	98
66)	1,2-Dibromoethane	11.68	107	630754	49.33	ug/l	98
67)	1-Chlorohexane	11.99	91	752447	40.78	ug/l	100
68)	Chlorobenzene	12.38	112	1414578	46.45	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.47	131	536852	51.37	ug/l	98
70)	Ethylbenzene	12.48	91	2348300	44.62	ug/l	100
71)	m-Xylene & p-Xylene	12.62	91	3394410	86.01	ug/l	99
72)	o-Xylene	13.34	91	1848091	45.11	ug/l	98
73)	Styrene	13.42	104	1461885	49.07	ug/l	99
74)	Isopropylbenzene	13.98	105	2017178	45.33	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D Vial: 26
Acq On : 29 Jun 2018 8:02 pm Operator: ODinh
Sample : EVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:14 2018 Quant Results File: VO02F15.RES

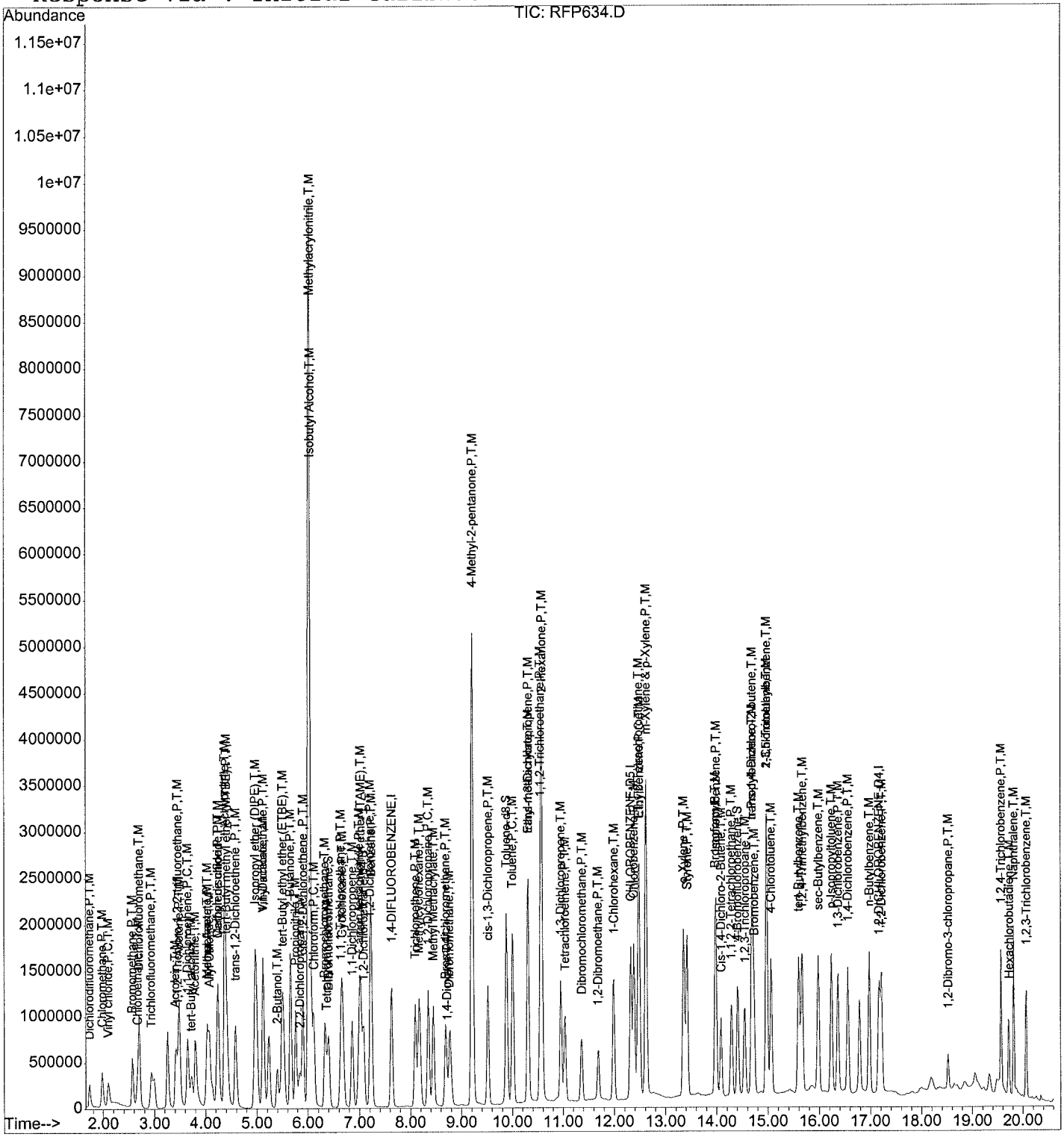
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.09	53	280876	48.61	ug/l	99
77)	Bromoform	13.97	173	403133	43.55	ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.28	83	1028381	50.63	ug/l	99
80)	1,2,3-Trichloropropane	14.55	110	227248	49.80	ug/l	98
81)	trans-1,4-Dichloro-2-buten	14.68	53	205871	47.14	ug/l	98
82)	n-Propylbenzene	14.68	91	2454312	42.92	ug/l	99
83)	Bromobenzene	14.73	156	566540	47.54	ug/l	98
84)	1,3,5-Trimethylbenzene	14.97	105	1492883	45.07	ug/l	98
85)	2-Chlorotoluene	14.97	91	1606925	44.25	ug/l	97
86)	4-Chlorotoluene	15.06	91	1434521	45.15	ug/l	98
87)	tert-Butylbenzene	15.59	134	339865	44.54	ug/l	97
88)	1,2,4-Trimethylbenzene	15.67	105	1503943	45.18	ug/l	98
89)	sec-Butylbenzene	15.98	105	1913329	43.09	ug/l	98
90)	p-Isopropyltoluene	16.23	119	1523690	43.36	ug/l	100
91)	1,3-Dichlorobenzene	16.36	146	975693	46.37	ug/l	100
93)	1,4-Dichlorobenzene	16.56	146	962379	45.83	ug/l	98
94)	n-Butylbenzene	16.97	91	1484047	42.25	ug/l	99
95)	1,2-Dichlorobenzene	17.21	146	930871	47.44	ug/l	100
96)	1,2-Dibromo-3-chloropropan	18.52	157	156654	44.69	ug/l	98
97)	1,2,4-Trichlorobenzene	19.56	180	492956	42.22	ug/l	98
98)	Hexachlorobutadiene	19.73	225	213301	40.95	ug/l	98
99)	Naphthalene	19.81	128	1479556	44.43	ug/l	97
100)	1,2,3-Trichlorobenzene	20.07	180	468091	43.69	ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18F29\RFP634.D Vial: 26
Acq On : 29 Jun 2018 8:02 pm Operator: ODinh
Sample : EVO02F1506 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 13:14 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RGP041
Instrument ID: 02
GC Column:RTX502.2ID:0.25mm (mm)

Contract: JBER TO075
SAS No.: SDG No.: 18F187
BFB Injection Date : 07/05/18
BFB Injection Time : 09:07
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.80
75	30.0 - 60.0% of mass 95	43.22
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.03
173	Less than 2.0% of mass 174	0.17(0.2)1
174	Greater than 50% of mass 95	80.08
175	5.0 - 9.0% of mass 174	5.91(7.4)1
176	95.0 - 101.0% of mass 174	78.67(98.2)1
177	5.0 - 9.0% of mass 176	4.89(6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	CV002F1507	RGP042	07/05/18	09:34
2	MBLK2S	VS02G03B	RGP046	07/05/18	11:15
3	LCS2S	VS02G03L	RGP043	07/05/18	10:00
4	LCD2S	VS02G03C	RGP044	07/05/18	10:25
5	18Q2DP009-SB0501-SO-0	F187-07R	RGP049	07/05/18	12:31
6	18Q2DP009-SB0801-SO-0	F187-04	RGP052	07/05/18	13:46
7	18Q2DP009-SB0501-SO-0MS	F187-07M	RGP058	07/05/18	16:16
8	18Q2DP009-SB0501-SO-0MSD	F187-07S	RGP059	07/05/18	16:42
9	VSTD050	EV002F1507	RGP060	07/05/18	17:07

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RFP312
Instrument ID: 02
GC Column : RTX502.2ID:0.25mm (mm)

Project: JBER TO075
SDG No: 18F187
Date Analyzed: 06/15/2018
Time Analyzed: 16:55
Heated Purge (Y/N): Y

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	1561415	7.66	1411425	12.35	573325	17.20
	UPPER LIMIT	3122830	7.83	2822850	12.52	1146650	17.37
	LOWER LIMIT	780708	7.49	705713	12.18	286663	17.03
	SAMPLE ID						
1	VSTD050	2252736	7.63	1992156	12.32	809111	17.16
2	MBLK2S	2280992	7.62	1853970	12.30	708418	17.15
3	LCS2S	1916556	7.63	1725918	12.31	689308	17.16
4	LCD2S	1856744	7.63	1727259	12.31	685937	17.16
5	18Q2DP009-SB0501-SO-0	2258925	7.63	1829354	12.31	675985	17.15
6	18Q2DP009-SB0801-SO-0	1842759	7.63	699860*	12.31	86753*	17.18
7	18Q2DP009-SB0501-SO-0MS	1899137	7.63	1677341	12.32	642244	17.17
8	18Q2DP009-SB0501-SO-0MSD	1744022	7.63	1617729	12.31	652279	17.16
9	VSTD050	1780888	7.63	1606136	12.31	637204	17.15

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT
* - Out of QC limit

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :02
IC Beginning DateTime :06/15/18 15:18
SpTke Amount :50 PPB
CC/CV File :RGP042
IC File :RFP312

Column Spec :RTX502.2 ID :0.25MM
IC Ending DateTime :06/15/18 18:33
HPChem Method :V002F15
Date_Time :07/05/18 09:34

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	50.000	0	2252736	1	1	7.630	7.654	0				
	2	Dichlorodifluoromethane	43.482	-13.0	712627	0.316	0.364	1.725	1.737	11.99				
	3	Chloromethane	47.068	-5.9	1188639	0.528	0.561	1.993	1.990	10.45				
	4	Vinyl chloride	50.497	1.0	901711	0.400	0.396	2.112	2.112	7.07				
	5	Bromomethane	45.969	-8.1	866705	0.385	0.418	2.573	2.580	12.19				
	6	Chloroethane	53.615	7.2	745236	0.331	0.309	2.677	2.676	10.69				
	7	Dichlorofluoromethane	51.155	2.3	1954785	0.868	0.848	2.707	2.711	11.23				
	8	Trichlorofluoromethane	52.978	6.0	1064120	0.472	0.446	2.945	2.952	9.83				
5	9	Acrolein	267.799	7.1	1036179	0.092	0.086	3.421	3.434	10.86				
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	50.546	1.1	509106	0.226	0.224	3.465	3.471	7.08				
5	11	Acetone	273.750	9.5	2280378	0.202	0.185	3.495	3.502	9.23				
	12	1,1-Dichloroethene	49.353	-1.3	1418099	0.630	0.638	3.659	3.669	10.26				
5	13	tert-Butyl alcohol	275.826	10.3	1070491	0.095	0.086	3.733	3.748	11.80				
10	14	Acetonitrile	485.835	-2.8	1771351	0.079	0.081	3.807	3.821	14.69				
	15	Iodomethane	51.026	2.1	1149413	0.510	0.500	4.030	4.047	10.98				
	16	Methyl Acetate	49.231	-1.5	1642593	0.729	0.741	4.045	4.055	5.68				
	17	Allyl Chloride	52.358	4.7	514379	0.228	0.218	4.090	4.097	9.81				
	18	Methylene chloride	46.005	-8.0	1255153	0.557	0.606	4.254	4.266	8.44				
	19	Carbon disulfide	55.053	10.1	3031427	1.346	1.225	4.524	4.539	8.01				
5	20	Acrylonitrile	269.392	7.8	2819935	0.250	0.232	4.373	4.394	12.05				
	21	tert-Butyl methyl ether (MTBE)	51.958	3.9	2862923	1.271	1.223	4.402	4.426	9.24				
	22	trans-1,2-Dichloroethene	52.080	4.2	1440492	0.639	0.614	4.581	4.601	9.77				
	23	Isopropyl ether (DIPE)	51.145	2.3	4493820	1.995	1.950	4.983	4.998	9.23				
	24	Vinyl acetate	52.783	5.6	3419089	1.518	1.438	5.131	5.145	8.95				
	25	1,1-Dichloroethane	51.663	3.3	1858662	0.825	0.798	5.131	5.138	9.79				
5	26	2-Butanol	278.712	11.5	1101494	0.098	0.088	5.399	5.421	9.06				
	27	tert-Butyl ethyl ether (ETBE)	49.916	-0.2	3177044	1.410	1.413	5.518	5.527	8.67				
5	28	2-Butanone	268.446	7.4	4561911	0.405	0.377	5.667	5.684	11.45				
10	29	Propionitrile	491.352	-1.7	1949081	0.087	0.088	5.771	5.786	10.49				
	30	2,2-Dichloropropane	54.784	9.6	661187	0.294	0.268	5.845	5.865	6.49				
	31	cis-1,2-Dichloroethene	50.999	2.0	1093234	0.485	0.476	5.905	5.930	8.35				
20	32	Isobutyl Alcohol	1014.83	1.5	2001782	0.044	0.044	6.053	6.075	13.05				
10	33	Methylacrylonitrile	490.047	-2.0	1916353	0.085	0.087	6.024	6.047	12.57				
	34	Chloroform	50.963	1.9	1591194	0.706	0.693	6.113	6.136	10.60				
	35	Bromochloromethane	49.939	-0.1	1021606	0.453	0.454	6.336	6.350	9.53				
	36	Tetrahydrofuran	46.718	-6.6	467835	0.208	0.222	6.381	6.398	9.91				
	37	Dibromofluoromethane	50.065	0.1	804179	0.357	0.357	6.410	6.424	8.53				
	38	1,1,1-Trichloroethane	53.896	7.8	912167	0.405	0.376	6.648	6.669	7.54				
	39	Cyclohexane	53.384	6.8	1634492	0.726	0.680	6.663	6.688	7.97				
	40	1,1-Dichloropropene	49.312	-1.4	389208	0.173	0.175	6.872	6.885	4.12				
	41	Carbon tetrachloride	53.898	7.8	736650	0.327	0.303	7.005	7.019	7.60				
	42	tert-Amyl methyl ether (TAME)	50.463	0.9	538775	0.239	0.237	7.020	7.045	6.99				
	43	1,2-Dichloroethane-d4	47.225	-5.6	941321	0.418	0.442	7.095	7.109	7.19				
	44	1,2-Dichloroethane	47.834	-4.3	1117224	0.496	0.518	7.214	7.235	8.56				
	45	Benzene	48.997	-2.0	3582221	1.590	1.623	7.228	7.252	8.92				
	46	Trichloroethene	49.858	-0.3	908480	0.403	0.404	8.091	8.118	8.20				
	47	Methylcyclohexane	52.695	5.4	1857678	0.825	0.782	8.180	8.196	6.48				
	48	1,2-Dichloropropane	49.188	-1.6	1073314	0.476	0.484	8.359	8.373	7.48				
	49	Methyl Methacrylate	48.595	-2.8	821872	0.365	0.375	8.463	8.477	12.45				
	50	Bromodichloromethane	48.639	-2.7	1167895	0.518	0.533	8.701	8.714	8.96				
20	51	1,4-Dioxane	1036.47	3.6	252659	0.006	0.005	8.731	8.754	12.95				
	52	Dibromomethane	47.906	-4.2	627178	0.278	0.291	8.775	8.796	9.94				
	53	2-Chloroethyl vinyl ether												
5	54	4-Methyl-2-pentanone	252.435	1.0	8969252	0.796	0.789	9.207	9.235	9.96				
	55	cis-1,3-Dichloropropene	50.425	0.8	1678164	0.745	0.739	9.519	9.544	12.33				
	56	CHLOROBENZENE-D5	50.000	0	1992156	1	1	12.315	12.344	0				
	57	Toluene-d8	47.086	-5.8	2766921	1.389	1.475	9.891	9.908	6.17				
	58	Toluene	49.808	-0.4	3403986	1.709	1.715	10.010	10.032	7.61				
	59	Ethyl methacrylate	49.814	-0.4	1383767	0.695	0.697	10.307	10.334	12.82				
	60	trans-1,3-Dichloropropene	51.575	3.2	1403520	0.705	0.683	10.307	10.331	13.15				
	61	1,1,2-Trichloroethane	47.812	-4.4	801669	0.402	0.421	10.545	10.574	7.06				
5	62	2-Hexanone	270.976	8.4	6271150	0.630	0.581	10.575	10.600	11.62				
	63	1,3-Dichloropropane	47.128	-5.7	1550528	0.778	0.826	10.962	10.979	7.46				
	64	Tetrachloroethene	49.504	-1.0	658061	0.330	0.334	11.036	11.065	6.05				
	65	Dibromochloromethane	48.648	-2.7	803660	0.403	0.415	11.363	11.388	8.27				
	66	1,2-Dibromoethane	49.199	-1.6	842686	0.423	0.430	11.691	11.712	9.74				
	67	Chlorohexane	53.311	6.6	1317443	0.661	0.620	11.988	12.013	6.34				
	68	Chlorobenzene	49.346	-1.3	2013156	1.011	1.024	12.390	12.405	6.26				
	69	1,1,1,2-Tetrachloroethane	50.141	0.3	701893	0.352	0.351	12.464	12.491	7.08				
	70	Ethylbenzene	50.562	1.1	3564513	1.789	1.769	12.479	12.507	8.53				
2	71	m-Xylene & p-Xylene	98.112	-1.9	5186316	1.302	1.327	12.613	12.640	7.83				
	72	o-Xylene	50.159	0.3	2752768	1.382	1.377	13.356	13.377	6.28				
	73	Styrene	51.720	3.4	2063905	1.036	1.002	13.416	13.444	8.60				
	74	Isopropylbenzene	51.712	3.4	3082732	1.547	1.496	13.981	14.008	7.23				
	75	Cis-1,4-Dichloro-2-Butene	47.208	-5.6	365356	0.183	0.194	14.085	14.110	11.75				
	76	1,2-DICHLOROBENZENE-D4	50.000	0	809111	1	1	17.164	17.191	0				
	77	Bromoform	43.706	-12.6	551701	0.682	0.699	13.981	13.997	18.90	-0.0406	0.8264		0.9992
	78	1,1,2,2-Tetrachloroethane	46.214	-7.6	1279809	1.582	1.711	14.294	14.314	8.89				
	79	4-Bromofluorobenzene	46.727	-6.5	910875	1.126	1.205	14.413	14.433	4.81				
	80	1,2,3-Trichloropropane	45.536	-8.9	283307	0.350	0.384	14.546	14.573	9.15				
	81	trans-1,4-Dichloro-2-butene	45.196	-9.6	269101	0.333	0.368	14.695	14.708	12.05				
	82	n-Propylbenzene	49.843	-0.3	3886340	4.803	4.818	14.680	14.709	4.88				
	83	Bromobenzene	46.803	-6.4	760498	0.940	1.004	14.725	14.753	6.81				
	84	1,3,5-Trimethylbenzene	42.957	-0.1	2256363	2.789	2.791	14.963	14.993	5.59				
	85	2-Chlorotoluene	47.508	-5.0	2352309	2.907	3.060	14.978	15.000	6.15				
	86	4-Chlorotoluene	47.096	-5.8	2040206	2.522	2.677	15.067	15.086	5.56				
	87	tert-Butylbenzene	47.521	-5.0	494390	0.611	0.643	15.602	15.624	3.68				
	88	1,2,4-Trimethylbenzene	49.332	-1.3	2238825	2.767	2.804	15.662	15.684	5.14				
	89	sec-Butylbenzene	49.364	-1.3	2688438	3.693	3.741	15.974	16.003	5.35				
	90	p-Isopropyltoluene	49.219	-1.6	2358198	2.915	2.961	16.227	16.259	4.67				
	91	1,3-Dichlorobenzene	47.714	-4.6	1368842	1.692	1.773	16.361	16.389	3.59				
	92	1,2,3-Trimethylbenzene												
	93	1,4-Dichlorobenzene	47.344	-5.3	1355560	1.675	1.769	16.554	16.583	4.48				
	94	n-Butylbenzene	49.515	-1.0	2371546	2.931	2.960	16.971	16.999	6.14				
	95	1,2-Dichlorobenzene	46.399	-7.2	1241422	1.534	1.623	17.209	17.237	2.19				
	96	1,2-Dibromo-3-chloropropane	40.447	-19.1	192087	0.237	0.255	18.518	18.541	20.58	-0.0159	0.3131		0.9978
	97	1,2,4-Trichlorobenzene	45.351	-9.3	721953	0.892	0.984	19.559	19.581	12.94				
	98	Hexachlorobutadiene	45.821	-8.4	325463	0.402	0.439	19.723	19.736	10.47				
	99	Naphthalene	43.342	-13.3	1968053	2.432	2.806	19.812	19.834	10.87				
	100	1,2,3-Trichlorobenzene	43.440	-13.1	634568	0.784	0.903	20.065	20.078	10.06				

Spike Amount = Nominal Amount * M

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :02
IC Beginning DateTime :06/15/18 15:18
SpTke Amount :50 PPB
CC/CV File :RGP060
IC File :RFP312

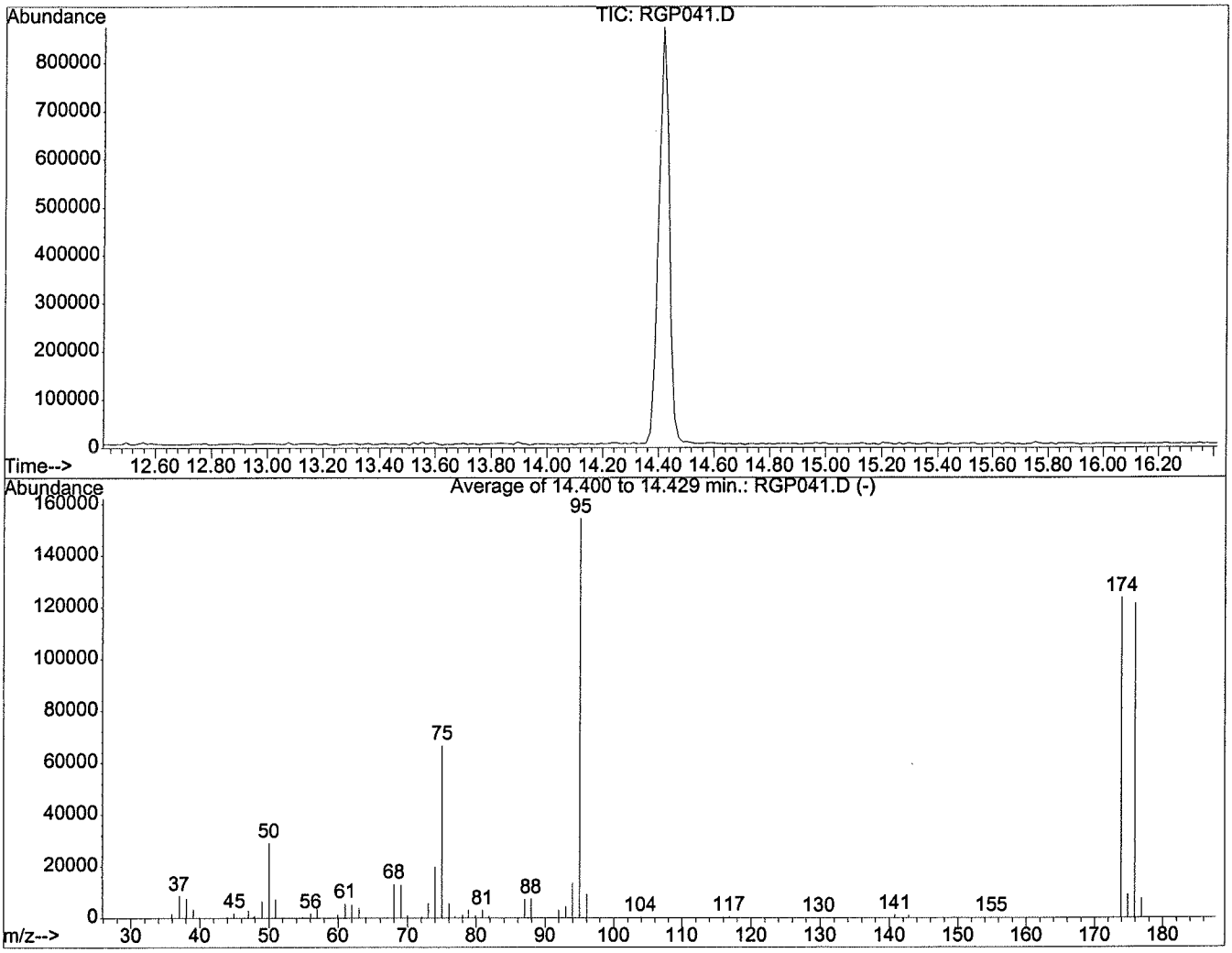
Column Spec :RTX502.2 ID :0.25MM
IC Ending DateTime :06/15/18 18:33
HPChem Method :V002F15
Date_Time :07/05/18 17:07

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	50.000	0	1780888	1	1	7.629	7.654	0				
	2	Dichlorodifluoromethane	42.546	-14.9	551238	0.310	0.364	1.724	1.737	11.99				
	3	Chloromethane	44.689	-10.6	892182	0.501	0.561	1.977	1.990	10.45				
	4	Vinyl chloride	50.459	0.9	712302	0.400	0.396	2.096	2.112	7.07				
	5	Bromomethane	44.396	-11.2	661721	0.372	0.418	2.572	2.580	12.19				
	6	Chloroethane	50.586	1.2	555860	0.312	0.309	2.661	2.676	10.69				
	7	Dichlorofluoromethane	53.124	6.2	1604823	0.901	0.848	2.691	2.711	11.23				
	8	Trichlorofluoromethane	51.820	3.6	822835	0.462	0.446	2.944	2.952	9.83				
5	9	Acrolein	250.368	0.1	765826	0.086	0.086	3.405	3.434	10.86				
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	53.752	7.5	428005	0.240	0.224	3.465	3.471	7.08				
5	11	Acetone	257.947	3.2	1698674	0.191	0.185	3.480	3.502	9.23				
	12	1,1-Dichloroethene	51.551	3.1	1170984	0.658	0.638	3.643	3.669	10.26				
5	13	tert-Butyl alcohol	261.419	4.6	802068	0.090	0.086	3.718	3.748	11.80				
10	14	Acetonitrile	439.647	-12.1	1267204	0.071	0.081	3.807	3.821	14.69				
	15	Iodomethane	53.045	6.1	944609	0.530	0.500	4.030	4.047	10.98				
	16	Methyl Acetate	48.127	-3.7	1269424	0.713	0.741	4.030	4.055	5.68				
	17	Allyl Chloride	55.436	10.9	430543	0.242	0.218	4.075	4.097	9.81				
	18	Methylene chloride	47.517	-5.0	1024866	0.575	0.606	4.238	4.266	8.44				
	19	Carbon disulfide	56.838	13.7	2474159	1.389	1.225	4.238	4.259	8.01				
5	20	Acrylonitrile	259.109	3.6	2144190	0.241	0.232	4.372	4.394	12.05				
	21	tert-Butyl methyl ether (MTBE)	53.889	7.8	2347384	1.318	1.223	4.402	4.426	9.24				
	22	trans-1,2-Dichloroethene	54.339	8.7	1188165	0.667	0.614	4.580	4.601	9.77				
	23	Isopropyl ether (DIPE)	54.167	8.3	3762429	2.113	1.950	4.967	4.998	9.23				
	24	Vinyl acetate	48.978	-2.0	2508104	1.408	1.438	5.116	5.145	8.95				
	25	1,1-Dichloroethane	53.944	7.9	1534220	0.861	0.798	5.116	5.138	9.79				
5	26	2-Butanol	249.468	-0.2	779413	0.088	0.088	5.398	5.421	9.06				
	27	tert-Butyl ethyl ether (ETBE)	51.477	3.0	2590181	1.454	1.413	5.502	5.527	8.67				
5	28	2-Butanone	249.740	-0.1	3355097	0.377	0.377	5.651	5.684	11.45				
10	29	Propionitrile	485.495	-2.9	1522471	0.085	0.088	5.755	5.786	10.49				
	30	2,2-Dichloropropane	55.782	11.6	532224	0.299	0.268	5.845	5.865	6.49				
	31	cis-1,2-Dichloroethene	52.719	5.4	893406	0.502	0.476	5.904	5.930	8.35				
20	32	Isobutyl Alcohol	966.141	-3.4	1506560	0.042	0.044	6.038	6.075	13.05				
10	33	Methylacrylonitrile	498.338	-0.3	1540595	0.087	0.087	6.023	6.047	12.57				
	34	Chloroform	52.378	4.8	1292831	0.726	0.693	6.112	6.136	10.60				
	35	Bromochloromethane	51.084	2.2	826142	0.464	0.454	6.320	6.350	9.53				
	36	Tetrahydrofuran	46.625	-6.8	369110	0.207	0.222	6.365	6.398	9.91				
	37	Dibromofluoromethane	50.452	0.9	640662	0.360	0.357	6.395	6.424	8.53				
	38	1,1,1-Trichloroethane	56.157	12.3	751365	0.422	0.376	6.648	6.669	7.54				
	39	Cyclohexane	53.235	6.5	1288520	0.724	0.680	6.663	6.688	7.57				
	40	1,1-Dichloropropene	51.424	2.8	320859	0.180	0.175	6.856	6.885	4.12				
	41	Carbon tetrachloride	55.668	11.3	601479	0.338	0.303	6.990	7.019	7.60				
	42	tert-Amyl methyl ether (TAME)	52.606	5.2	444013	0.249	0.237	7.020	7.045	6.99				
	43	1,2-Dichloroethane-d4	46.339	-7.3	730189	0.410	0.442	7.079	7.109	7.19				
	44	1,2-Dichloroethane	50.021	0.0	923594	0.519	0.518	7.198	7.235	8.56				
	45	Benzene	51.381	2.8	2969741	1.668	1.623	7.228	7.252	8.92				
	46	Trichloroethene	50.479	1.0	727145	0.408	0.404	8.090	8.118	8.20				
	47	Methylcyclohexane	54.559	9.1	1520539	0.854	0.782	8.165	8.196	6.48				
	48	1,2-Dichloropropane	51.088	2.2	881276	0.495	0.484	8.343	8.373	7.48				
	49	Methyl Methacrylate	49.861	-0.3	666647	0.374	0.375	8.448	8.477	12.45				
	50	Bromodichloromethane	50.265	0.5	954144	0.536	0.533	8.686	8.714	8.96				
20	51	1,4-Dioxane	899.517	-10.0	173346	0.005	0.005	8.715	8.754	12.95				
	52	Dibromomethane	50.693	1.4	524658	0.295	0.291	8.760	8.796	9.94				
	53	2-Chloroethyl vinyl ether												
5	54	4-Methyl-2-pentanone	246.615	-1.4	6927127	0.778	0.789	9.206	9.235	9.96				
	55	cis-1,3-Dichloropropene	52.614	5.2	1384254	0.777	0.739	9.518	9.544	12.33				
	56	CHLOROBENZENE-D5	50.000	0	1606136	1	1	12.315	12.344	0				
	57	Toluene-d8	48.278	-3.4	2287272	1.424	1.475	9.875	9.908	6.17				
	58	Toluene	52.085	4.2	2869867	1.787	1.715	9.994	10.032	7.61				
	59	Ethyl methacrylate	51.178	2.4	1146168	0.714	0.697	10.307	10.334	12.82				
	60	trans-1,3-Dichloropropene	52.788	5.6	1158165	0.721	0.683	10.292	10.331	13.15				
	61	1,1,2-Trichloroethane	50.064	0.1	676770	0.421	0.421	10.545	10.574	7.06				
5	62	2-Hexanone	259.087	3.6	4834149	0.602	0.581	10.560	10.600	11.62				
	63	1,3-Dichloropropane	49.429	-1.1	1311139	0.816	0.826	10.946	10.979	7.46				
	64	Tetrachloroethene	53.484	7.0	573205	0.357	0.334	11.036	11.065	6.05				
	65	Dibromochloromethane	50.722	1.4	675557	0.421	0.415	11.348	11.388	8.97				
	66	1,2-Dibromoethane	50.304	0.6	694667	0.433	0.430	11.675	11.712	9.74				
	67	1-Chlorohexane	56.484	13.0	1125383	0.701	0.620	11.973	12.013	6.34				
	68	Chlorobenzene	53.093	6.2	1746321	1.087	1.024	12.374	12.405	6.26				
	69	1,1,1,2-Tetrachloroethane	53.979	8.0	609208	0.379	0.351	12.449	12.481	7.08				
	70	Ethylbenzene	54.248	8.5	3083304	1.920	1.769	12.478	12.507	8.53				
2	71	m-Xylene & p-Xylene	105.405	5.4	4492177	1.398	1.327	12.597	12.640	7.83				
	72	o-Xylene	53.421	6.8	2363681	1.472	1.377	13.341	13.377	6.28				
	73	Styrene	54.487	9.0	1753330	1.092	1.002	13.415	13.444	8.60				
	74	Isopropylbenzene	55.172	10.3	2651670	1.651	1.496	13.981	14.008	7.23				
	75	Cis-1,4-Dichloro-2-Butene	49.381	-1.2	308117	0.192	0.194	14.070	14.110	11.75				
	76	1,2-DICHLOROBENZENE-D4	50.000	0	637204	1	1	17.149	17.191	0				
	77	Bromoform	44.772	-10.5	445718	0.699	0.699	13.966	13.997	18.90	-0.0406	0.8264		0.9992
	78	1,1,2,2-Tetrachloroethane	49.850	-0.3	1087192	1.706	1.711	14.278	14.314	8.89				
	79	4-Bromofluorobenzene	49.207	-1.6	755417	1.186	1.205	14.397	14.433	4.81				
	80	1,2,3-Trichloropropane	47.840	-4.3	234406	0.368	0.384	14.531	14.573	9.15				
	81	trans-1,4-Dichloro-2-butene	49.362	-1.3	231457	0.363	0.368	14.680	14.708	12.05				
	82	n-Propylbenzene	54.733	9.5	3360883	5.274	4.818	14.680	14.709	4.88				
	83	Bromobenzene	52.697	5.4	674340	1.058	1.004	14.724	14.753	6.81				
	84	1,3,5-Trimethylbenzene	55.080	10.2	1959209	3.075	2.791	14.962	14.993	5.59				
	85	2-Chlorotoluene	51.815	3.6	2020479	3.171	3.060	14.962	15.000	6.15				
	86	4-Chlorotoluene	53.075	6.2	1810705	2.842	2.677	15.052	15.086	5.56				
	87	tert-Butylbenzene	52.606	5.2	431011	0.676	0.643	15.587	15.624	3.68				
	88	1,2,4-Trimethylbenzene	54.369	8.7	1943177	3.050	2.804	15.646	15.684	5.14				
	89	sec-Butylbenzene	54.703	9.4	2608056	4.093	3.741	15.974	16.003	5.35				
	90	p-Isopropyltoluene	54.129	8.3	2042457	3.205	2.961	16.227	16.259	4.67				
	91	1,3-Dichlorobenzene	52.452	4.9	1185068	1.860	1.773	16.361	16.389	3.59				
	92	1,2,3-Trimethylbenzene												
	93	1,4-Dichlorobenzene	54.291	8.6	1224187	1.921	1.769	16.554	16.583	4.48				
	94	n-Butylbenzene	55.102	10.2	2078406	3.262	2.960	16.970	16.999	6.14				
	95	1,2-Dichlorobenzene	52.576	5.2	1107819	1.739	1.623	17.208	17.237	2.49				
	96	1,2-Dibromo-3-chloropropane	41.361	-17.3	154920	0.243	0.255	18.517	18.541	20.58	-0.0159	0.3131		0.9978
	97	1,2,4-Trichlorobenzene	47.774	-4.5	598944	0.940	0.984	19.558	19.581	12.94				
	98	Hexachlorobutadiene	51.453	2.9	287816	0.452	0.439	19.722	19.736	10.47				
	99	Naphthalene	43.847	-12.3	1567980	2.461	2.806	19.811	19.834	10.87				
	100	1,2,3-Trichlorobenzene	43.737	-12.5	503158	0.790	0.903	20.064	20.078	10.06				

Spike Amount = Nominal Amount * M

Data File : D:\HPCHEM\1\DATA\18G05\RGP041.D
Acq On : 5 Jul 2018 9:07 am
Sample : BFB02G03
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL

Vial: 1
Operator: ODinh
Inst : 02
Multiplr: 1.00



AutoFind: Scans 858, 859, 860; Background Corrected with Scan 852

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.8	29051	PASS
75	95	30	60	43.2	66784	PASS
95	95	100	100	100.0	154517	PASS
96	95	5	9	6.0	9323	PASS
173	174	0.00	2	0.2	267	PASS
174	95	50	100	80.1	123739	PASS
175	174	5	9	7.4	9132	PASS
176	174	95	101	98.2	121565	PASS
177	176	5	9	6.2	7557	PASS

RGP041.D VO02F15.M Mon Jul 09 14:15:11 2018

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D Vial: 2
Acq On : 5 Jul 2018 9:34 am Operator: ODinh
Sample : CVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I 1,4-DIFLUOROBENZENE	50.000	50.000	0.0	144	-0.03
2	P,T,M Dichlorodifluoromethane	50.000	43.483	13.0	127	-0.02
3	P,T,M Chloromethane	50.000	47.069	5.9	137	0.00
4	P,C,T,M Vinyl chloride	50.000	50.498	-1.0	139	0.00
5	P,T,M Bromomethane	50.000	45.969	8.1	144	0.00
6	P,T,M Chloroethane	50.000	53.615	-7.2	144	0.00
7	T,M Dichlorofluoromethane	50.000	51.156	-2.3	138	0.00
8	P,T,M Trichlorofluoromethane	50.000	52.979	-6.0	147	0.00
9	T,M Acrolein	250.000	267.800	-7.1	143	-0.02
10	P,T,M 1,1,2-Trichloro-1,2,2-trifl	50.000	50.546	-1.1	139	0.00
11	P,T,M Acetone	250.000	273.750	-9.5	146	0.00
12	P,C,T,M 1,1-Dichloroethene	50.000	49.354	1.3	132	-0.02
13	T,M tert-Butyl alcohol	250.000	275.827	-10.3	146	-0.02
14	T,M Acetonitrile	500.000	485.835	2.8	120	-0.02
15	T,M Iodomethane	50.000	51.027	-2.1	135	-0.02
16	P,T,M Methyl Acetate	50.000	49.231	1.5	135	0.00
17	T,M Allyl Chloride	50.000	52.358	-4.7	142	0.00
18	P,T,M Methylene chloride	50.000	46.006	8.0	134	-0.02
19	P,T,M Carbon disulfide	50.000	55.054	-10.1	150	0.00
20	T,M Acrylonitrile	250.000	269.393	-7.8	141	-0.02
21	P,T,M tert-Butyl methyl ether (MT	50.000	51.958	-3.9	139	-0.02
22	P,T,M trans-1,2-Dichloroethene	50.000	52.081	-4.2	138	-0.02
23	T,M Isopropyl ether (DIPE)	50.000	51.146	-2.3	139	-0.02
24	T,M Vinyl acetate	50.000	52.784	-5.6	143	-0.02
25	P,T,M 1,1-Dichloroethane	50.000	51.664	-3.3	140	0.00
26	T,M 2-Butanol	250.000	278.713	-11.5	149	-0.02
27	T,M tert-Butyl ethyl ether (ETB	50.000	49.916	0.2	138	0.00
28	P,T,M 2-Butanone	250.000	268.446	-7.4	142	-0.02
29	T,M Propionitrile	500.000	491.352	1.7	131	-0.02
30	T,M 2,2-Dichloropropane	50.000	54.784	-9.6	149	-0.02
31	P,T,M cis-1,2-Dichloroethene	50.000	50.999	-2.0	140	-0.03
32	T,M Isobutyl Alcohol	1000.000	1014.839	-1.5	132	-0.02
33	T,M Methylacrylonitrile	500.000	490.047	2.0	128	-0.02
34	P,C,T,M Chloroform	50.000	50.964	-1.9	139	-0.02
35	T,M Bromochloromethane	50.000	49.940	0.1	135	-0.02
36	T,M Tetrahydrofuran	50.000	46.719	6.6	126	-0.02
37	S Dibromofluoromethane	50.000	50.065	-0.1	142	-0.02
38	P,T,M 1,1,1-Trichloroethane	50.000	53.896	-7.8	149	-0.02
39	P,T,M Cyclohexane	50.000	53.384	-6.8	151	-0.03
40	T,M 1,1-Dichloropropene	50.000	49.313	1.4	140	-0.02
41	P,T,M Carbon tetrachloride	50.000	53.898	-7.8	147	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D Vial: 2
Acq On : 5 Jul 2018 9:34 am Operator: ODinh
Sample : CVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	tert-Amyl methyl ether (TAM	50.000	50.464	-0.9	138	-0.02
43	S	1,2-Dichloroethane-d4	50.000	47.226	5.5	137	-0.02
44	P,T,M	1,2-Dichloroethane	50.000	47.834	4.3	132	-0.02
45	P,T,M	Benzene	50.000	48.997	2.0	136	-0.03
46	P,T,M	Trichloroethene	50.000	49.858	0.3	141	-0.03
47	P,T,M	Methylcyclohexane	50.000	52.695	-5.4	148	-0.02
48	P,C,T,M	1,2-Dichloropropane	50.000	49.189	1.6	137	-0.02
49	T,M	Methyl Methacrylate	50.000	48.596	2.8	127	-0.02
50	P,T,M	Bromodichloromethane	50.000	48.639	2.7	137	-0.02
51	T,M	1,4-Dioxane	1000.000	1036.470	-3.6	136	-0.02
52	T,M	Dibromomethane	50.000	47.906	4.2	130	-0.02
53	T,M	2-Chloroethyl vinyl ether	-1.000	0.000	0.0	0	0.00
54	P,T,M	4-Methyl-2-pentanone	250.000	252.435	-1.0	139	-0.03
55	P,T,M	cis-1,3-Dichloropropene	50.000	50.425	-0.8	135	-0.03
56	I	CHLOROBENZENE-D5	50.000	50.000	0.0	141	-0.03
57	S	Toluene-d8	50.000	47.086	5.8	136	-0.02
58	P,C,T,M	Toluene	50.000	49.808	0.4	137	-0.02
59	T,M	Ethyl methacrylate	50.000	49.815	0.4	127	-0.03
60	P,T,M	trans-1,3-Dichloropropene	50.000	51.576	-3.2	134	-0.03
61	P,T,M	1,1,2-Trichloroethane	50.000	47.813	4.4	128	-0.03
62	P,T,M	2-Hexanone	250.000	270.977	-8.4	142	-0.02
63	T,M	1,3-Dichloropropane	50.000	47.128	5.7	126	-0.02
64	P,T,M	Tetrachloroethene	50.000	49.504	1.0	139	-0.03
65	P,T,M	Dibromochloromethane	50.000	48.649	2.7	133	-0.03
66	P,T,M	1,2-Dibromoethane	50.000	49.199	1.6	131	-0.02
67	T,M	1-Chlorohexane	50.000	53.311	-6.6	146	-0.03
68	P,T,M	Chlorobenzene	50.000	49.346	1.3	134	-0.02
69	T,M	1,1,1,2-Tetrachloroethane	50.000	50.141	-0.3	133	-0.03
70	P,C,T,M	Ethylbenzene	50.000	50.562	-1.1	135	-0.03
71	P,T,M	m-Xylene & p-Xylene	100.000	98.113	1.9	133	-0.03
72	P,T,M	o-Xylene	50.000	50.159	-0.3	136	-0.02
73	P,T,M	Styrene	50.000	51.720	-3.4	134	-0.03
74	P,T,M	Isopropylbenzene	50.000	51.712	-3.4	139	-0.03
75	T,M	Cis-1,4-Dichloro-2-Butene	50.000	47.208	5.6	125	-0.03
76	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	141	-0.03
77	P,T,M	Bromoform	50.000	43.706	12.6	134	-0.02
78	P,T,M	1,1,2,2-Tetrachloroethane	50.000	46.214	7.6	125	-0.02
79	S	4-Bromofluorobenzene	50.000	46.727	6.5	135	-0.02
80	T,M	1,2,3-Trichloropropane	50.000	45.536	8.9	124	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D
Acq On : 5 Jul 2018 9:34 am
Sample : CVO02F1507
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	50.000	45.197	9.6	124	-0.02
82	T,M	n-Propylbenzene	50.000	49.844	0.3	136	-0.03
83	T,M	Bromobenzene	50.000	46.803	6.4	127	-0.03
84	T,M	1,3,5-Trimethylbenzene	50.000	49.957	0.1	134	-0.03
85	T,M	2-Chlorotoluene	50.000	47.508	5.0	132	-0.02
86	T,M	4-Chlorotoluene	50.000	47.097	5.8	126	-0.02
87	T,M	tert-Butylbenzene	50.000	47.522	5.0	133	-0.02
88	T,M	1,2,4-Trimethylbenzene	50.000	49.332	1.3	132	-0.02
89	T,M	sec-Butylbenzene	50.000	49.364	1.3	136	-0.03
90	T,M	p-Isopropyltoluene	50.000	49.219	1.6	134	-0.03
91	P,T,M	1,3-Dichlorobenzene	50.000	47.714	4.6	130	-0.03
92	T,M	1,2,3-Trimethylbenzene	50.000	0.000	100.0#	0	-16.53#
93	P,T,M	1,4-Dichlorobenzene	50.000	47.345	5.3	127	-0.03
94	T,M	n-Butylbenzene	50.000	49.516	1.0	134	-0.03
95	P,T,M	1,2-Dichlorobenzene	50.000	46.400	7.2	128	-0.03
96	P,T,M	1,2-Dibromo-3-chloropropane	50.000	40.448	19.1	123	-0.02
97	P,T,M	1,2,4-Trichlorobenzene	50.000	45.352	9.3	128	-0.02
98	T,M	Hexachlorobutadiene	50.000	45.822	8.4	137	-0.02
99	T,M	Naphthalene	50.000	43.342	13.3	121	-0.02
100	T,M	1,2,3-Trichlorobenzene	50.000	43.440	13.1	123	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D Vial: 2
Acq On : 5 Jul 2018 9:34 am Operator: ODinh
Sample : CVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	144	-0.03
2	P,T,M	Dichlorodifluoromethane	0.364	0.316	13.2	127	-0.02
3	P,T,M	Chloromethane	0.561	0.528	5.9	137	0.00
4	P,C,T,M	Vinyl chloride	0.396	0.400	-1.0	139	0.00
5	P,T,M	Bromomethane	0.418	0.385	7.9	144	0.00
6	P,T,M	Chloroethane	0.309	0.331	-7.1	144	0.00
7	T,M	Dichlorofluoromethane	0.848	0.868	-2.4	138	0.00
8	P,T,M	Trichlorofluoromethane	0.446	0.472	-5.8	147	0.00
9	T,M	Acrolein	0.086	0.092	-7.0	143	-0.02
10	P,T,M	1,1,2-Trichloro-1,2,2-trifl	0.224	0.226	-0.9	139	0.00
11	P,T,M	Acetone	0.185	0.202	-9.2	146	0.00
12	P,C,T,M	1,1-Dichloroethene	0.638	0.630	1.3	132	-0.02
13	T,M	tert-Butyl alcohol	0.086	0.095	-10.5	146	-0.02
14	T,M	Acetonitrile	0.081	0.079	2.5	120	-0.02
15	T,M	Iodomethane	0.500	0.510	-2.0	135	-0.02
16	P,T,M	Methyl Acetate	0.741	0.729	1.6	135	0.00
17	T,M	Allyl Chloride	0.218	0.228	-4.6	142	0.00
18	P,T,M	Methylene chloride	0.606	0.557	8.1	134	-0.02
19	P,T,M	Carbon disulfide	1.222	1.346	-10.1	150	0.00
20	T,M	Acrylonitrile	0.232	0.250	-7.8	141	-0.02
21	P,T,M	tert-Butyl methyl ether (MT	1.223	1.271	-3.9	139	-0.02
22	P,T,M	trans-1,2-Dichloroethene	0.614	0.639	-4.1	138	-0.02
23	T,M	Isopropyl ether (DIPE)	1.950	1.995	-2.3	139	-0.02
24	T,M	Vinyl acetate	1.438	1.518	-5.6	143	-0.02
25	P,T,M	1,1-Dichloroethane	0.798	0.825	-3.4	140	0.00
26	T,M	2-Butanol	0.088	0.098	-11.4	149	-0.02
27	T,M	tert-Butyl ethyl ether (ETB	1.413	1.410	0.2	138	0.00
28	P,T,M	2-Butanone	0.377	0.405	-7.4	142	-0.02
29	T,M	Propionitrile	0.088	0.087	1.1	131	-0.02
30	T,M	2,2-Dichloropropane	0.268	0.294	-9.7	149	-0.02
31	P,T,M	cis-1,2-Dichloroethene	0.476	0.485	-1.9	140	-0.03
32	T,M	Isobutyl Alcohol	0.044	0.044	0.0	132	-0.02
33	T,M	Methylacrylonitrile	0.087	0.085	2.3	128	-0.02
34	P,C,T,M	Chloroform	0.693	0.706	-1.9	139	-0.02
35	T,M	Bromochloromethane	0.454	0.453	0.2	135	-0.02
36	T,M	Tetrahydrofuran	0.222	0.208	6.3	126	-0.02
37	S	Dibromofluoromethane	0.357	0.357	0.0	142	-0.02
38	P,T,M	1,1,1-Trichloroethane	0.376	0.405	-7.7	149	-0.02
39	P,T,M	Cyclohexane	0.680	0.726	-6.8	151	-0.03
40	T,M	1,1-Dichloropropene	0.175	0.173	1.1	140	-0.02
41	P,T,M	Carbon tetrachloride	0.303	0.327	-7.9	147	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D Vial: 2
Acq On : 5 Jul 2018 9:34 am Operator: ODinh
Sample : CVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	tert-Amyl methyl ether (TAM	0.237	0.239	-0.8	138	-0.02
43	S	1,2-Dichloroethane-d4	0.442	0.418	5.4	137	-0.02
44	P,T,M	1,2-Dichloroethane	0.518	0.496	4.2	132	-0.02
45	P,T,M	Benzene	1.623	1.590	2.0	136	-0.03
46	P,T,M	Trichloroethene	0.404	0.403	0.2	141	-0.03
47	P,T,M	Methylcyclohexane	0.782	0.825	-5.5	148	-0.02
48	P,C,T,M	1,2-Dichloropropane	0.484	0.476	1.7	137	-0.02
49	T,M	Methyl Methacrylate	0.375	0.365	2.7	127	-0.02
50	P,T,M	Bromodichloromethane	0.533	0.518	2.8	137	-0.02
51	T,M	1,4-Dioxane	0.005	0.006	-20.0	136	-0.02
52	T,M	Dibromomethane	0.291	0.278	4.5	130	-0.02
53	T,M	2-Chloroethyl vinyl ether	0.000	0.000	0.0	0#	0.00
54	P,T,M	4-Methyl-2-pentanone	0.789	0.796	-0.9	139	-0.03
55	P,T,M	cis-1,3-Dichloropropene	0.739	0.745	-0.8	135	-0.03
56	I	CHLOROBENZENE-D5	1.000	1.000	0.0	141	-0.03
57	S	Toluene-d8	1.475	1.389	5.8	136	-0.02
58	P,C,T,M	Toluene	1.715	1.709	0.3	137	-0.02
59	T,M	Ethyl methacrylate	0.697	0.695	0.3	127	-0.03
60	P,T,M	trans-1,3-Dichloropropene	0.683	0.705	-3.2	134	-0.03
61	P,T,M	1,1,2-Trichloroethane	0.421	0.402	4.5	128	-0.03
62	P,T,M	2-Hexanone	0.581	0.630	-8.4	142	-0.02
63	T,M	1,3-Dichloropropane	0.826	0.778	5.8	126	-0.02
64	P,T,M	Tetrachloroethene	0.334	0.330	1.2	139	-0.03
65	P,T,M	Dibromochloromethane	0.415	0.403	2.9	133	-0.03
66	P,T,M	1,2-Dibromoethane	0.430	0.423	1.6	131	-0.02
67	T,M	1-Chlorohexane	0.620	0.661	-6.6	146	-0.03
68	P,T,M	Chlorobenzene	1.024	1.011	1.3	134	-0.02
69	T,M	1,1,1,2-Tetrachloroethane	0.351	0.352	-0.3	133	-0.03
70	P,C,T,M	Ethylbenzene	1.769	1.789	-1.1	135	-0.03
71	P,T,M	m-Xylene & p-Xylene	1.327	1.302	1.9	133	-0.03
72	P,T,M	o-Xylene	1.377	1.382	-0.4	136	-0.02
73	P,T,M	Styrene	1.002	1.036	-3.4	134	-0.03
74	P,T,M	Isopropylbenzene	1.496	1.547	-3.4	139	-0.03
75	T,M	Cis-1,4-Dichloro-2-Butene	0.194	0.183	5.7	125	-0.03
76	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	141	-0.03
77	P,T,M	Bromoform	0.699	0.682	2.4	134	-0.02
78	P,T,M	1,1,2,2-Tetrachloroethane	1.711	1.582	7.5	125	-0.02
79	S	4-Bromofluorobenzene	1.205	1.126	6.6	135	-0.02
80	T,M	1,2,3-Trichloropropane	0.384	0.350	8.9	124	-0.03

(#) = Out of Range

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D Vial: 2
Acq On : 5 Jul 2018 9:34 am Operator: ODinh
Sample : CVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	0.368	0.333	9.5	124	-0.02
82	T,M	n-Propylbenzene	4.818	4.803	0.3	136	-0.03
83	T,M	Bromobenzene	1.004	0.940	6.4	127	-0.03
84	T,M	1,3,5-Trimethylbenzene	2.791	2.789	0.1	134	-0.03
85	T,M	2-Chlorotoluene	3.060	2.907	5.0	132	-0.02
86	T,M	4-Chlorotoluene	2.677	2.522	5.8	126	-0.02
87	T,M	tert-Butylbenzene	0.643	0.611	5.0	133	-0.02
88	T,M	1,2,4-Trimethylbenzene	2.804	2.767	1.3	132	-0.02
89	T,M	sec-Butylbenzene	3.741	3.693	1.3	136	-0.03
90	T,M	p-Isopropyltoluene	2.961	2.915	1.6	134	-0.03
91	P,T,M	1,3-Dichlorobenzene	1.773	1.692	4.6	130	-0.03
92	T,M	1,2,3-Trimethylbenzene	2.730	0.000	100.0#	0#	-16.53#
93	P,T,M	1,4-Dichlorobenzene	1.769	1.675	5.3	127	-0.03
94	T,M	n-Butylbenzene	2.960	2.931	1.0	134	-0.03
95	P,T,M	1,2-Dichlorobenzene	1.653	1.534	7.2	128	-0.03
96	P,T,M	1,2-Dibromo-3-chloropropane	0.255	0.237	7.1	123	-0.02
97	P,T,M	1,2,4-Trichlorobenzene	0.984	0.892	9.3	128	-0.02
98	T,M	Hexachlorobutadiene	0.439	0.402	8.4	137	-0.02
99	T,M	Naphthalene	2.806	2.432	13.3	121	-0.02
100	T,M	1,2,3-Trichlorobenzene	0.903	0.784	13.2	123	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D
Acq On : 5 Jul 2018 9:34 am
Sample : CVO02F1507
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jul 9 14:15 2018

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	2252736	50.00	ug/l		-0.03
56) CHLOROBENZENE-D5	12.32	117	1992156	50.00	ug/l		-0.03
76) 1,2-DICHLOROBENZENE-D4	17.16	152	809111	50.00	ug/l		-0.03
System Monitoring Compounds							
37) Dibromofluoromethane	6.41	111	804179	50.07	ug/l		-0.02
Spiked Amount 50.000			Recovery = 100.14%				
43) 1,2-Dichloroethane-d4	7.09	65	941321	47.23	ug/l		-0.02
Spiked Amount 50.000			Recovery = 94.46%				
57) Toluene-d8	9.89	98	2766921	47.09	ug/l		-0.02
Spiked Amount 50.000			Recovery = 94.18%				
79) 4-Bromofluorobenzene	14.41	95	910875	46.73	ug/l		-0.02
Spiked Amount 50.000			Recovery = 93.46%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.73	85	712627	43.48	ug/l		98
3) Chloromethane	1.99	50	1188639	47.07	ug/l		97
4) Vinyl chloride	2.11	62	901711	50.50	ug/l		99
5) Bromomethane	2.57	94	866705	45.97	ug/l		97
6) Chloroethane	2.68	64	745236	53.62	ug/l		99
7) Dichlorofluoromethane	2.71	67	1954785	51.16	ug/l		100
8) Trichlorofluoromethane	2.94	101	1064120	52.98	ug/l		99
9) Acrolein	3.42	56	1036179	267.80	ug/l		89
10) 1,1,2-Trichloro-1,2,2-trif	3.47	151	509106	50.55	ug/l		98
11) Acetone	3.50	43	2280378	273.75	ug/l		97
12) 1,1-Dichloroethene	3.66	61	1418099	49.35	ug/l		99
13) tert-Butyl alcohol	3.73	59	1070491	275.83	ug/l	#	1
14) Acetonitrile	3.81	41	1771351	485.84	ug/l		89
15) Iodomethane	4.03	142	1149413	51.03	ug/l		99
16) Methyl Acetate	4.05	43	1642593	49.23	ug/l		98
17) Allyl Chloride	4.09	76	514379	52.36	ug/l		100
18) Methylene chloride	4.25	49	1255153	46.01	ug/l		99
19) Carbon disulfide	4.25	76	3031427	55.05	ug/l		99
20) Acrylonitrile	4.37	53	2819935	269.39	ug/l		99
21) tert-Butyl methyl ether (M	4.40	73	2862923	51.96	ug/l		98
22) trans-1,2-Dichloroethene	4.58	61	1440492	52.08	ug/l		99
23) Isopropyl ether (DIPE)	4.98	45	4493820	51.15	ug/l		100
24) Vinyl acetate	5.13	43	3419089	52.78	ug/l		100
25) 1,1-Dichloroethane	5.13	63	1858662	51.66	ug/l		99
26) 2-Butanol	5.40	45	1101494	278.71	ug/l		98
27) tert-Butyl ethyl ether (ET	5.52	59	3177044	49.92	ug/l		100
28) 2-Butanone	5.67	43	4561911	268.45	ug/l		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D Vial: 2
Acq On : 5 Jul 2018 9:34 am Operator: ODinh
Sample : CVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:15 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.77	54	1949081	491.35	ug/l	99
30)	2,2-Dichloropropane	5.85	77	661187	54.78	ug/l	98
31)	cis-1,2-Dichloroethene	5.90	96	1093234	51.00	ug/l	99
32)	Isobutyl Alcohol	6.05	43	2001782	1014.84	ug/l	99
33)	Methylacrylonitrile	6.02	52	1916353	490.05	ug/l	100
34)	Chloroform	6.11	83	1591194	50.96	ug/l	99
35)	Bromochloromethane	6.34	49	1021606	49.94	ug/l	99
36)	Tetrahydrofuran	6.38	42	467835	46.72	ug/l	99
38)	1,1,1-Trichloroethane	6.65	97	912167	53.90	ug/l	98
39)	Cyclohexane	6.66	84	1634492	53.38	ug/l	99
40)	1,1-Dichloropropene	6.87	110	389208	49.31	ug/l	98
41)	Carbon tetrachloride	7.01	119	736650	53.90	ug/l	99
42)	tert-Amyl methyl ether (TA	7.02	87	538775	50.46	ug/l	96
44)	1,2-Dichloroethane	7.21	62	1117224	47.83	ug/l	99
45)	Benzene	7.23	78	3582221	49.00	ug/l	100
46)	Trichloroethene	8.09	130	908480	49.86	ug/l	100
47)	Methylcyclohexane	8.18	83	1857678	52.70	ug/l	99
48)	1,2-Dichloropropane	8.36	63	1073314	49.19	ug/l	98
49)	Methyl Methacrylate	8.46	69	821872	48.60	ug/l	99
50)	Bromodichloromethane	8.70	83	1167895	48.64	ug/l	100
51)	1,4-Dioxane	8.73	88	252659	1036.47	ug/l	97
52)	Dibromomethane	8.78	93	627178	47.91	ug/l	99
54)	4-Methyl-2-pentanone	9.21	43	8969252	252.43	ug/l	99
55)	cis-1,3-Dichloropropene	9.52	75	1678164	50.43	ug/l	99
58)	Toluene	10.01	91	3403986	49.81	ug/l	100
59)	Ethyl methacrylate	10.31	69	1383767	49.81	ug/l	99
60)	trans-1,3-Dichloropropene	10.31	75	1403520	51.58	ug/l	99
61)	1,1,2-Trichloroethane	10.55	97	801669	47.81	ug/l	98
62)	2-Hexanone	10.58	43	6271150	270.98	ug/l	100
63)	1,3-Dichloropropane	10.96	76	1550528	47.13	ug/l	100
64)	Tetrachloroethene	11.04	164	658061	49.50	ug/l	99
65)	Dibromochloromethane	11.36	129	803660	48.65	ug/l	100
66)	1,2-Dibromoethane	11.69	107	842686	49.20	ug/l	98
67)	1-Chlorohexane	11.99	91	1317443	53.31	ug/l	99
68)	Chlorobenzene	12.39	112	2013156	49.35	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.46	131	701893	50.14	ug/l	100
70)	Ethylbenzene	12.48	91	3564513	50.56	ug/l	99
71)	m-Xylene & p-Xylene	12.61	91	5186316	98.11	ug/l	99
72)	o-Xylene	13.36	91	2752768	50.16	ug/l	99
73)	Styrene	13.42	104	2063905	51.72	ug/l	99
74)	Isopropylbenzene	13.98	105	3082732	51.71	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D
Acq On : 5 Jul 2018 9:34 am
Sample : CVO02F1507
Misc : 50ppb 8260/250ppb KET-AA
MS Integration Params: RTE.P
Quant Time: Jul 9 14:15 2018

Vial: 2
Operator: ODinh
Inst : 02
Multiplr: 1.00
Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

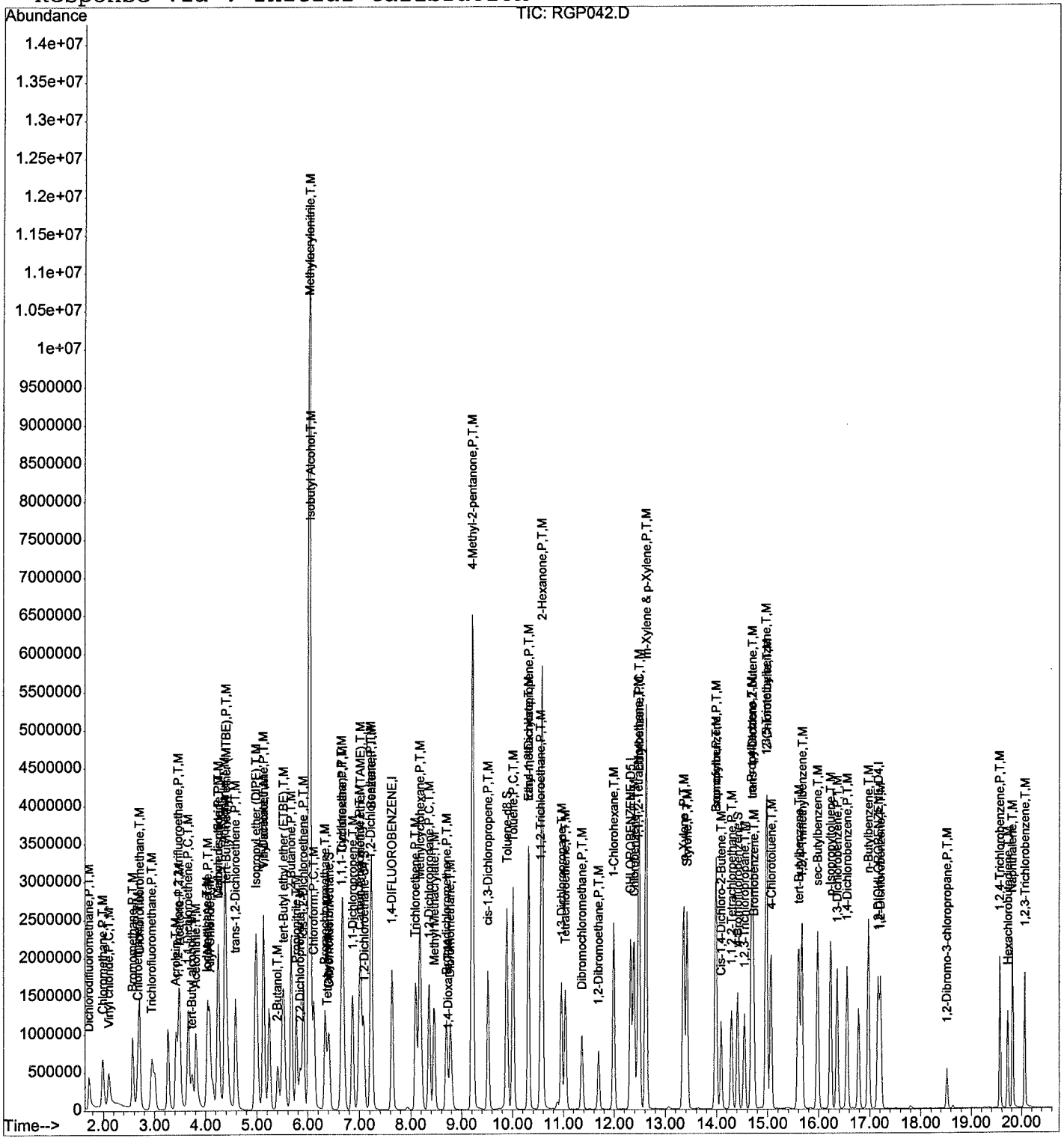
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.09	53	365356	47.21	ug/l	96
77)	Bromoform	13.98	173	551701	43.71	ug/l	98
78)	1,1,2,2-Tetrachloroethane	14.29	83	1279809	46.21	ug/l	99
80)	1,2,3-Trichloropropane	14.55	110	283307	45.54	ug/l	96
81)	trans-1,4-Dichloro-2-buten	14.70	53	269101	45.20	ug/l	96
82)	n-Propylbenzene	14.68	91	3886340	49.84	ug/l	99
83)	Bromobenzene	14.72	156	760498	46.80	ug/l	98
84)	1,3,5-Trimethylbenzene	14.96	105	2256363	49.96	ug/l	100
85)	2-Chlorotoluene	14.98	91	2352309	47.51	ug/l	99
86)	4-Chlorotoluene	15.07	91	2040206	47.10	ug/l	100
87)	tert-Butylbenzene	15.60	134	494390	47.52	ug/l	99
88)	1,2,4-Trimethylbenzene	15.66	105	2238825	49.33	ug/l	99
89)	sec-Butylbenzene	15.97	105	2988438	49.36	ug/l	99
90)	p-Isopropyltoluene	16.23	119	2358198	49.22	ug/l	100
91)	1,3-Dichlorobenzene	16.36	146	1368842	47.71	ug/l	99
93)	1,4-Dichlorobenzene	16.55	146	1355560	47.34	ug/l	100
94)	n-Butylbenzene	16.97	91	2371546	49.52	ug/l	100
95)	1,2-Dichlorobenzene	17.21	146	1241422	46.40	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.52	157	192087	40.45	ug/l	99
97)	1,2,4-Trichlorobenzene	19.56	180	721953	45.35	ug/l	99
98)	Hexachlorobutadiene	19.72	225	325463	45.82	ug/l	100
99)	Naphthalene	19.81	128	1968053	43.34	ug/l	100
100)	1,2,3-Trichlorobenzene	20.06	180	634568	43.44	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP042.D Vial: 2
Acq On : 5 Jul 2018 9:34 am Operator: ODinh
Sample : CVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:15 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	50.000	50.000	0.0	114	-0.03
2	P,T,M	Dichlorodifluoromethane	50.000	42.547	14.9	98	-0.02
3	P,T,M	Chloromethane	50.000	44.690	10.6	103	-0.02
4	P,C,T,M	Vinyl chloride	50.000	50.459	-0.9	110	-0.02
5	P,T,M	Bromomethane	50.000	44.396	11.2	110	0.00
6	P,T,M	Chloroethane	50.000	50.586	-1.2	108	-0.02
7	T,M	Dichlorofluoromethane	50.000	53.125	-6.3	113	-0.02
8	P,T,M	Trichlorofluoromethane	50.000	51.820	-3.6	113	0.00
9	T,M	Acrolein	250.000	250.368	-0.1	105	-0.03
10	P,T,M	1,1,2-Trichloro-1,2,2-trifl	50.000	53.753	-7.5	117	0.00
11	P,T,M	Acetone	250.000	257.947	-3.2	109	-0.02
12	P,C,T,M	1,1-Dichloroethene	50.000	51.551	-3.1	109	-0.03
13	T,M	tert-Butyl alcohol	250.000	261.420	-4.6	110	-0.03
14	T,M	Acetonitrile	500.000	439.648	12.1	86	-0.02
15	T,M	Iodomethane	50.000	53.045	-6.1	111	-0.02
16	P,T,M	Methyl Acetate	50.000	48.127	3.7	104	-0.02
17	T,M	Allyl Chloride	50.000	55.436	-10.9	119	-0.02
18	P,T,M	Methylene chloride	50.000	47.518	5.0	109	-0.03
19	P,T,M	Carbon disulfide	50.000	56.838	-13.7	123	-0.02
20	T,M	Acrylonitrile	250.000	259.110	-3.6	108	-0.02
21	P,T,M	tert-Butyl methyl ether (MT	50.000	53.889	-7.8	114	-0.02
22	P,T,M	trans-1,2-Dichloroethene	50.000	54.340	-8.7	114	-0.02
23	T,M	Isopropyl ether (DIPE)	50.000	54.167	-8.3	117	-0.03
24	T,M	Vinyl acetate	50.000	48.979	2.0	105	-0.03
25	P,T,M	1,1-Dichloroethane	50.000	53.945	-7.9	115	-0.02
26	T,M	2-Butanol	250.000	249.469	0.2	106	-0.02
27	T,M	tert-Butyl ethyl ether (ETB	50.000	51.478	-3.0	112	-0.02
28	P,T,M	2-Butanone	250.000	249.741	0.1	104	-0.03
29	T,M	Propionitrile	500.000	485.496	2.9	102	-0.03
30	T,M	2,2-Dichloropropane	50.000	55.783	-11.6	120	-0.02
31	P,T,M	cis-1,2-Dichloroethene	50.000	52.720	-5.4	114	-0.03
32	T,M	Isobutyl Alcohol	1000.000	966.141	3.4	99	-0.03
33	T,M	Methylacrylonitrile	500.000	498.339	0.3	103	-0.02
34	P,C,T,M	Chloroform	50.000	52.378	-4.8	113	-0.02
35	T,M	Bromochloromethane	50.000	51.085	-2.2	109	-0.03
36	T,M	Tetrahydrofuran	50.000	46.626	6.7	99	-0.03
37	S	Dibromofluoromethane	50.000	50.453	-0.9	113	-0.03
38	P,T,M	1,1,1-Trichloroethane	50.000	56.158	-12.3	123	-0.02
39	P,T,M	Cyclohexane	50.000	53.235	-6.5	119	-0.03
40	T,M	1,1-Dichloropropene	50.000	51.424	-2.8	116	-0.03
41	P,T,M	Carbon tetrachloride	50.000	55.668	-11.3	120	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	tert-Amyl methyl ether (TAM	50.000	52.607	-5.2	114	-0.02
43	S	1,2-Dichloroethane-d4	50.000	46.339	7.3	106	-0.03
44	P,T,M	1,2-Dichloroethane	50.000	50.021	-0.0	109	-0.03
45	P,T,M	Benzene	50.000	51.382	-2.8	113	-0.03
46	P,T,M	Trichloroethene	50.000	50.480	-1.0	113	-0.03
47	P,T,M	Methylcyclohexane	50.000	54.560	-9.1	121	-0.03
48	P,C,T,M	1,2-Dichloropropane	50.000	51.089	-2.2	112	-0.03
49	T,M	Methyl Methacrylate	50.000	49.861	0.3	103	-0.03
50	P,T,M	Bromodichloromethane	50.000	50.265	-0.5	112	-0.03
51	T,M	1,4-Dioxane	1000.000	899.517	10.0	93	-0.03
52	T,M	Dibromomethane	50.000	50.693	-1.4	109	-0.03
53	T,M	2-Chloroethyl vinyl ether	-1.000	0.000	0.0	0	0.00
54	P,T,M	4-Methyl-2-pentanone	250.000	246.615	1.4	107	-0.03
55	P,T,M	cis-1,3-Dichloropropene	50.000	52.614	-5.2	112	-0.03
56	I	CHLOROBENZENE-D5	50.000	50.000	0.0	114	-0.03
57	S	Toluene-d8	50.000	48.279	3.4	112	-0.03
58	P,C,T,M	Toluene	50.000	52.085	-4.2	116	-0.03
59	T,M	Ethyl methacrylate	50.000	51.178	-2.4	105	-0.03
60	P,T,M	trans-1,3-Dichloropropene	50.000	52.789	-5.6	111	-0.05
61	P,T,M	1,1,2-Trichloroethane	50.000	50.064	-0.1	108	-0.03
62	P,T,M	2-Hexanone	250.000	259.087	-3.6	109	-0.03
63	T,M	1,3-Dichloropropane	50.000	49.430	1.1	107	-0.03
64	P,T,M	Tetrachloroethene	50.000	53.484	-7.0	121	-0.03
65	P,T,M	Dibromochloromethane	50.000	50.723	-1.4	112	-0.05
66	P,T,M	1,2-Dibromoethane	50.000	50.305	-0.6	108	-0.03
67	T,M	1-Chlorohexane	50.000	56.484	-13.0	125	-0.05
68	P,T,M	Chlorobenzene	50.000	53.094	-6.2	116	-0.03
69	T,M	1,1,1,2-Tetrachloroethane	50.000	53.980	-8.0	116	-0.05
70	P,C,T,M	Ethylbenzene	50.000	54.248	-8.5	117	-0.03
71	P,T,M	m-Xylene & p-Xylene	100.000	105.406	-5.4	115	-0.05
72	P,T,M	o-Xylene	50.000	53.421	-6.8	117	-0.03
73	P,T,M	Styrene	50.000	54.497	-9.0	114	-0.03
74	P,T,M	Isopropylbenzene	50.000	55.172	-10.3	120	-0.03
75	T,M	Cis-1,4-Dichloro-2-Butene	50.000	49.381	1.2	106	-0.05
76	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	111	-0.05
77	P,T,M	Bromoform	50.000	44.773	10.5	109	-0.03
78	P,T,M	1,1,2,2-Tetrachloroethane	50.000	49.850	0.3	106	-0.03
79	S	4-Bromofluorobenzene	50.000	49.207	1.6	112	-0.03
80	T,M	1,2,3-Trichloropropane	50.000	47.841	4.3	102	-0.05

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	50.000	49.362	1.3	106	-0.03
82	T,M	n-Propylbenzene	50.000	54.733	-9.5	118	-0.03
83	T,M	Bromobenzene	50.000	52.697	-5.4	112	-0.03
84	T,M	1,3,5-Trimethylbenzene	50.000	55.081	-10.2	117	-0.03
85	T,M	2-Chlorotoluene	50.000	51.815	-3.6	113	-0.03
86	T,M	4-Chlorotoluene	50.000	53.075	-6.2	112	-0.03
87	T,M	tert-Butylbenzene	50.000	52.607	-5.2	116	-0.03
88	T,M	1,2,4-Trimethylbenzene	50.000	54.369	-8.7	115	-0.03
89	T,M	sec-Butylbenzene	50.000	54.703	-9.4	118	-0.03
90	T,M	p-Isopropyltoluene	50.000	54.130	-8.3	116	-0.03
91	P,T,M	1,3-Dichlorobenzene	50.000	52.452	-4.9	113	-0.03
92	T,M	1,2,3-Trimethylbenzene	50.000	0.000	100.0#	0	-16.53#
93	P,T,M	1,4-Dichlorobenzene	50.000	54.291	-8.6	115	-0.03
94	T,M	n-Butylbenzene	50.000	55.103	-10.2	117	-0.03
95	P,T,M	1,2-Dichlorobenzene	50.000	52.577	-5.2	114	-0.03
96	P,T,M	1,2-Dibromo-3-chloropropane	50.000	41.361	17.3	100	-0.02
97	P,T,M	1,2,4-Trichlorobenzene	50.000	47.775	4.5	106	-0.02
98	T,M	Hexachlorobutadiene	50.000	51.453	-2.9	122	-0.02
99	T,M	Naphthalene	50.000	43.847	12.3	96	-0.02
100	T,M	1,2,3-Trichlorobenzene	50.000	43.737	12.5	98	-0.02

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	114	-0.03
2	P,T,M	Dichlorodifluoromethane	0.364	0.310	14.8	98	-0.02
3	P,T,M	Chloromethane	0.561	0.501	10.7	103	-0.02
4	P,C,T,M	Vinyl chloride	0.396	0.400	-1.0	110	-0.02
5	P,T,M	Bromomethane	0.418	0.372	11.0	110	0.00
6	P,T,M	Chloroethane	0.309	0.312	-1.0	108	-0.02
7	T,M	Dichlorofluoromethane	0.848	0.901	-6.3	113	-0.02
8	P,T,M	Trichlorofluoromethane	0.446	0.462	-3.6	113	0.00
9	T,M	Acrolein	0.086	0.086	0.0	105	-0.03
10	P,T,M	1,1,2-Trichloro-1,2,2-trifl	0.224	0.240	-7.1	117	0.00
11	P,T,M	Acetone	0.185	0.191	-3.2	109	-0.02
12	P,C,T,M	1,1-Dichloroethene	0.638	0.658	-3.1	109	-0.03
13	T,M	tert-Butyl alcohol	0.086	0.090	-4.7	110	-0.03
14	T,M	Acetonitrile	0.081	0.071	12.3	86	-0.02
15	T,M	Iodomethane	0.500	0.530	-6.0	111	-0.02
16	P,T,M	Methyl Acetate	0.741	0.713	3.8	104	-0.02
17	T,M	Allyl Chloride	0.218	0.242	-11.0	119	-0.02
18	P,T,M	Methylene chloride	0.606	0.575	5.1	109	-0.03
19	P,T,M	Carbon disulfide	1.222	1.389	-13.7	123	-0.02
20	T,M	Acrylonitrile	0.232	0.241	-3.9	108	-0.02
21	P,T,M	tert-Butyl methyl ether (MT	1.223	1.318	-7.8	114	-0.02
22	P,T,M	trans-1,2-Dichloroethene	0.614	0.667	-8.6	114	-0.02
23	T,M	Isopropyl ether (DIPE)	1.950	2.113	-8.4	117	-0.03
24	T,M	Vinyl acetate	1.438	1.408	2.1	105	-0.03
25	P,T,M	1,1-Dichloroethane	0.798	0.861	-7.9	115	-0.02
26	T,M	2-Butanol	0.088	0.088	0.0	106	-0.02
27	T,M	tert-Butyl ethyl ether (ETB	1.413	1.454	-2.9	112	-0.02
28	P,T,M	2-Butanone	0.377	0.377	0.0	104	-0.03
29	T,M	Propionitrile	0.088	0.085	3.4	102	-0.03
30	T,M	2,2-Dichloropropane	0.268	0.299	-11.6	120	-0.02
31	P,T,M	cis-1,2-Dichloroethene	0.476	0.502	-5.5	114	-0.03
32	T,M	Isobutyl Alcohol	0.044	0.042	4.5	99	-0.03
33	T,M	Methylacrylonitrile	0.087	0.087	0.0	103	-0.02
34	P,C,T,M	Chloroform	0.693	0.726	-4.8	113	-0.02
35	T,M	Bromochloromethane	0.454	0.464	-2.2	109	-0.03
36	T,M	Tetrahydrofuran	0.222	0.207	6.8	99	-0.03
37	S	Dibromofluoromethane	0.357	0.360	-0.8	113	-0.03
38	P,T,M	1,1,1-Trichloroethane	0.376	0.422	-12.2	123	-0.02
39	P,T,M	Cyclohexane	0.680	0.724	-6.5	119	-0.03
40	T,M	1,1-Dichloropropene	0.175	0.180	-2.9	116	-0.03
41	P,T,M	Carbon tetrachloride	0.303	0.338	-11.6	120	-0.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	tert-Amyl methyl ether (TAM	0.237	0.249	-5.1	114	-0.02
43	S	1,2-Dichloroethane-d4	0.442	0.410	7.2	106	-0.03
44	P,T,M	1,2-Dichloroethane	0.518	0.519	-0.2	109	-0.03
45	P,T,M	Benzene	1.623	1.668	-2.8	113	-0.03
46	P,T,M	Trichloroethene	0.404	0.408	-1.0	113	-0.03
47	P,T,M	Methylcyclohexane	0.782	0.854	-9.2	121	-0.03
48	P,C,T,M	1,2-Dichloropropane	0.484	0.495	-2.3	112	-0.03
49	T,M	Methyl Methacrylate	0.375	0.374	0.3	103	-0.03
50	P,T,M	Bromodichloromethane	0.533	0.536	-0.6	112	-0.03
51	T,M	1,4-Dioxane	0.005	0.005	0.0	93	-0.03
52	T,M	Dibromomethane	0.291	0.295	-1.4	109	-0.03
53	T,M	2-Chloroethyl vinyl ether	0.000	0.000	0.0	0#	0.00
54	P,T,M	4-Methyl-2-pentanone	0.789	0.778	1.4	107	-0.03
55	P,T,M	cis-1,3-Dichloropropene	0.739	0.777	-5.1	112	-0.03
56	I	CHLOROBENZENE-D5	1.000	1.000	0.0	114	-0.03
57	S	Toluene-d8	1.475	1.424	3.5	112	-0.03
58	P,C,T,M	Toluene	1.715	1.787	-4.2	116	-0.03
59	T,M	Ethyl methacrylate	0.697	0.714	-2.4	105	-0.03
60	P,T,M	trans-1,3-Dichloropropene	0.683	0.721	-5.6	111	-0.05
61	P,T,M	1,1,2-Trichloroethane	0.421	0.421	0.0	108	-0.03
62	P,T,M	2-Hexanone	0.581	0.602	-3.6	109	-0.03
63	T,M	1,3-Dichloropropane	0.826	0.816	1.2	107	-0.03
64	P,T,M	Tetrachloroethene	0.334	0.357	-6.9	121	-0.03
65	P,T,M	Dibromochloromethane	0.415	0.421	-1.4	112	-0.05
66	P,T,M	1,2-Dibromoethane	0.430	0.433	-0.7	108	-0.03
67	T,M	1-Chlorohexane	0.620	0.701	-13.1	125	-0.05
68	P,T,M	Chlorobenzene	1.024	1.087	-6.2	116	-0.03
69	T,M	1,1,1,2-Tetrachloroethane	0.351	0.379	-8.0	116	-0.05
70	P,C,T,M	Ethylbenzene	1.769	1.920	-8.5	117	-0.03
71	P,T,M	m-Xylene & p-Xylene	1.327	1.398	-5.4	115	-0.05
72	P,T,M	o-Xylene	1.377	1.472	-6.9	117	-0.03
73	P,T,M	Styrene	1.002	1.092	-9.0	114	-0.03
74	P,T,M	Isopropylbenzene	1.496	1.651	-10.4	120	-0.03
75	T,M	Cis-1,4-Dichloro-2-Butene	0.194	0.192	1.0	106	-0.05
76	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	111	-0.05
77	P,T,M	Bromoform	0.699	0.699	0.0	109	-0.03
78	P,T,M	1,1,2,2-Tetrachloroethane	1.711	1.706	0.3	106	-0.03
79	S	4-Bromofluorobenzene	1.205	1.186	1.6	112	-0.03
80	T,M	1,2,3-Trichloropropane	0.384	0.368	4.2	102	-0.05

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	trans-1,4-Dichloro-2-butene	0.368	0.363	1.4	106	-0.03
82	T,M	n-Propylbenzene	4.818	5.274	-9.5	118	-0.03
83	T,M	Bromobenzene	1.004	1.058	-5.4	112	-0.03
84	T,M	1,3,5-Trimethylbenzene	2.791	3.075	-10.2	117	-0.03
85	T,M	2-Chlorotoluene	3.060	3.171	-3.6	113	-0.03
86	T,M	4-Chlorotoluene	2.677	2.842	-6.2	112	-0.03
87	T,M	tert-Butylbenzene	0.643	0.676	-5.1	116	-0.03
88	T,M	1,2,4-Trimethylbenzene	2.804	3.050	-8.8	115	-0.03
89	T,M	sec-Butylbenzene	3.741	4.093	-9.4	118	-0.03
90	T,M	p-Isopropyltoluene	2.961	3.205	-8.2	116	-0.03
91	P,T,M	1,3-Dichlorobenzene	1.773	1.860	-4.9	113	-0.03
92	T,M	1,2,3-Trimethylbenzene	2.730	0.000	100.0#	0#	-16.53#
93	P,T,M	1,4-Dichlorobenzene	1.769	1.921	-8.6	115	-0.03
94	T,M	n-Butylbenzene	2.960	3.262	-10.2	117	-0.03
95	P,T,M	1,2-Dichlorobenzene	1.653	1.739	-5.2	114	-0.03
96	P,T,M	1,2-Dibromo-3-chloropropane	0.255	0.243	4.7	100	-0.02
97	P,T,M	1,2,4-Trichlorobenzene	0.984	0.940	4.5	106	-0.02
98	T,M	Hexachlorobutadiene	0.439	0.452	-3.0	122	-0.02
99	T,M	Naphthalene	2.806	2.461	12.3	96	-0.02
100	T,M	1,2,3-Trichlorobenzene	0.903	0.790	12.5	98	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:16 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	7.63	114	1780888	50.00	ug/l		-0.03
56) CHLOROBENZENE-D5	12.31	117	1606136	50.00	ug/l		-0.03
76) 1,2-DICHLOROBENZENE-D4	17.15	152	637204	50.00	ug/l		-0.05
System Monitoring Compounds							
37) Dibromofluoromethane	6.39	111	640662	50.45	ug/l		-0.03
Spiked Amount 50.000			Recovery =	100.90%			
43) 1,2-Dichloroethane-d4	7.08	65	730189	46.34	ug/l		-0.03
Spiked Amount 50.000			Recovery =	92.68%			
57) Toluene-d8	9.88	98	2287272	48.28	ug/l		-0.03
Spiked Amount 50.000			Recovery =	96.56%			
79) 4-Bromofluorobenzene	14.40	95	755417	49.21	ug/l		-0.03
Spiked Amount 50.000			Recovery =	98.42%			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.72	85	551238	42.55	ug/l		100
3) Chloromethane	1.98	50	892182	44.69	ug/l		100
4) Vinyl chloride	2.10	62	712302	50.46	ug/l		99
5) Bromomethane	2.57	94	661721	44.40	ug/l		97
6) Chloroethane	2.66	64	555860	50.59	ug/l		99
7) Dichlorofluoromethane	2.69	67	1604823	53.12	ug/l		99
8) Trichlorofluoromethane	2.94	101	822835	51.82	ug/l		99
9) Acrolein	3.41	56	765826	250.37	ug/l		87
10) 1,1,2-Trichloro-1,2,2-trif	3.46	151	428005	53.75	ug/l		96
11) Acetone	3.48	43	1698674	257.95	ug/l		99
12) 1,1-Dichloroethene	3.64	61	1170984	51.55	ug/l		98
13) tert-Butyl alcohol	3.72	59	802068	261.42	ug/l	#	1
14) Acetonitrile	3.81	41	1267204	439.65	ug/l		87
15) Iodomethane	4.03	142	944609	53.05	ug/l		99
16) Methyl Acetate	4.03	43	1269424	48.13	ug/l		97
17) Allyl Chloride	4.07	76	430543	55.44	ug/l		99
18) Methylene chloride	4.24	49	1024866	47.52	ug/l		99
19) Carbon disulfide	4.24	76	2474159	56.84	ug/l		100
20) Acrylonitrile	4.37	53	2144190	259.11	ug/l		99
21) tert-Butyl methyl ether (M	4.40	73	2347384	53.89	ug/l		100
22) trans-1,2-Dichloroethene	4.58	61	1188165	54.34	ug/l		99
23) Isopropyl ether (DIPE)	4.97	45	3762429	54.17	ug/l		99
24) Vinyl acetate	5.12	43	2508104	48.98	ug/l		99
25) 1,1-Dichloroethane	5.12	63	1534220	53.94	ug/l		100
26) 2-Butanol	5.40	45	779413	249.47	ug/l		96
27) tert-Butyl ethyl ether (ET	5.50	59	2590181	51.48	ug/l		99
28) 2-Butanone	5.65	43	3355097	249.74	ug/l		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:16 2018 Quant Results File: VO02F15.RES

Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	Propionitrile	5.76	54	1522471	485.50	ug/l	100
30)	2,2-Dichloropropane	5.84	77	532224	55.78	ug/l	99
31)	cis-1,2-Dichloroethene	5.90	96	893406	52.72	ug/l	99
32)	Isobutyl Alcohol	6.04	43	1506560	966.14	ug/l	100
33)	Methylacrylonitrile	6.02	52	1540595	498.34	ug/l	98
34)	Chloroform	6.11	83	1292831	52.38	ug/l	99
35)	Bromochloromethane	6.32	49	826142	51.08	ug/l	99
36)	Tetrahydrofuran	6.37	42	369110	46.63	ug/l	99
38)	1,1,1-Trichloroethane	6.65	97	751365	56.16	ug/l	99
39)	Cyclohexane	6.66	84	1288520	53.23	ug/l	98
40)	1,1-Dichloropropene	6.86	110	320859	51.42	ug/l	99
41)	Carbon tetrachloride	6.99	119	601479	55.67	ug/l	100
42)	tert-Amyl methyl ether (TA	7.02	87	444013	52.61	ug/l	98
44)	1,2-Dichloroethane	7.20	62	923594	50.02	ug/l	99
45)	Benzene	7.23	78	2969741	51.38	ug/l	99
46)	Trichloroethene	8.09	130	727145	50.48	ug/l	98
47)	Methylcyclohexane	8.16	83	1520539	54.56	ug/l	99
48)	1,2-Dichloropropane	8.34	63	881276	51.09	ug/l	100
49)	Methyl Methacrylate	8.45	69	666647	49.86	ug/l	99
50)	Bromodichloromethane	8.69	83	954144	50.27	ug/l	100
51)	1,4-Dioxane	8.72	88	173346	899.52	ug/l	97
52)	Dibromomethane	8.76	93	524658	50.69	ug/l	100
54)	4-Methyl-2-pentanone	9.21	43	6927127	246.62	ug/l	100
55)	cis-1,3-Dichloropropene	9.52	75	1384254	52.61	ug/l	99
58)	Toluene	9.99	91	2869867	52.09	ug/l	99
59)	Ethyl methacrylate	10.31	69	1146168	51.18	ug/l	99
60)	trans-1,3-Dichloropropene	10.29	75	1158165	52.79	ug/l	100
61)	1,1,2-Trichloroethane	10.54	97	676770	50.06	ug/l	99
62)	2-Hexanone	10.56	43	4834149	259.09	ug/l	100
63)	1,3-Dichloropropane	10.95	76	1311139	49.43	ug/l	99
64)	Tetrachloroethene	11.04	164	573205	53.48	ug/l	98
65)	Dibromochloromethane	11.35	129	675557	50.72	ug/l	100
66)	1,2-Dibromoethane	11.68	107	694667	50.30	ug/l	99
67)	1-Chlorohexane	11.97	91	1125383	56.48	ug/l	99
68)	Chlorobenzene	12.37	112	1746321	53.09	ug/l	99
69)	1,1,1,2-Tetrachloroethane	12.45	131	609208	53.98	ug/l	99
70)	Ethylbenzene	12.48	91	3083304	54.25	ug/l	99
71)	m-Xylene & p-Xylene	12.60	91	4492177	105.41	ug/l	100
72)	o-Xylene	13.34	91	2363681	53.42	ug/l	98
73)	Styrene	13.42	104	1753330	54.50	ug/l	99
74)	Isopropylbenzene	13.98	105	2651670	55.17	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:16 2018 Quant Results File: VO02F15.RES

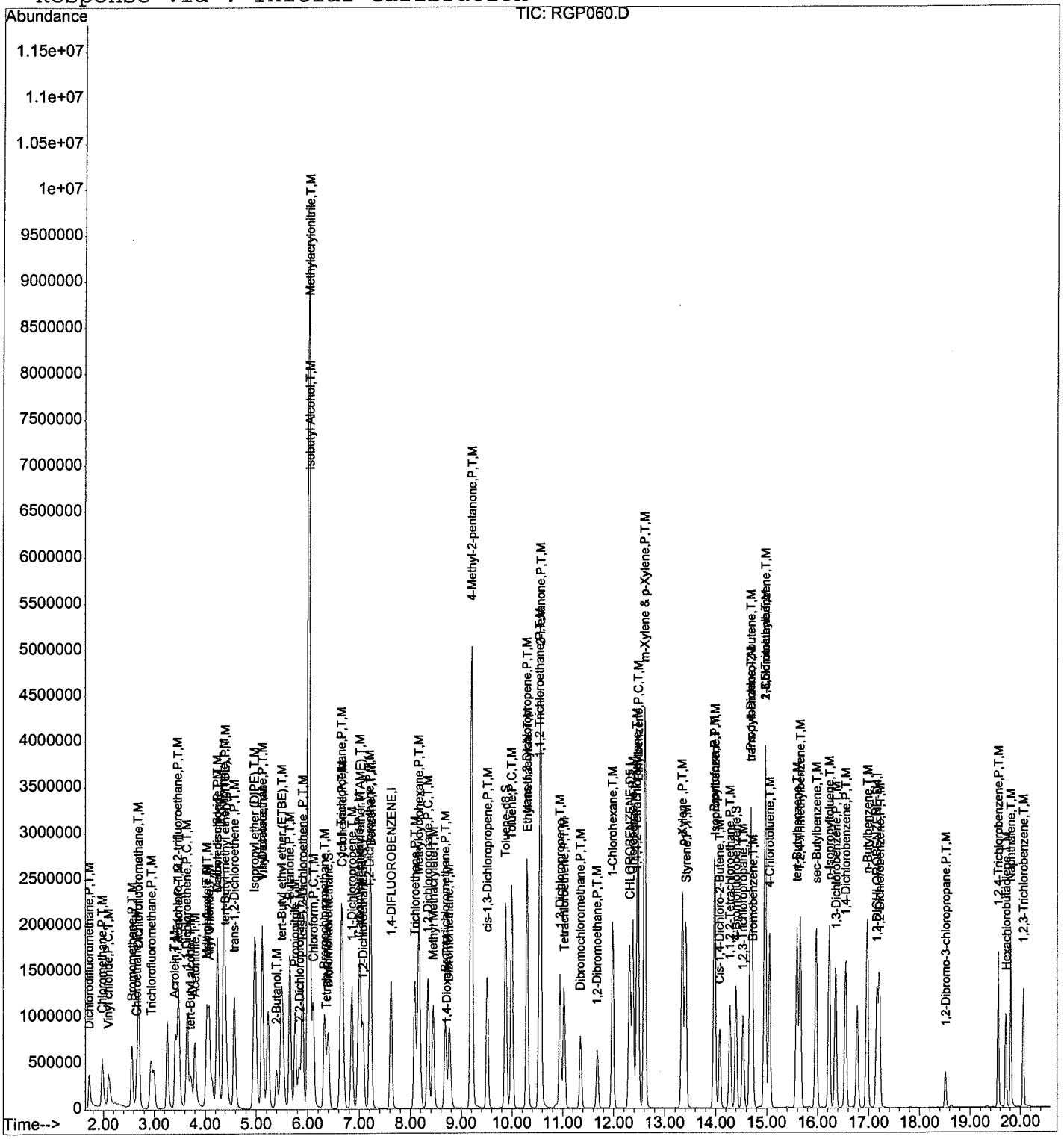
Quant Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration
DataAcq Meth : VO02F15

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
75)	Cis-1,4-Dichloro-2-Butene	14.07	53	308117	49.38	ug/l	99
77)	Bromoform	13.97	173	445718	44.77	ug/l	99
78)	1,1,2,2-Tetrachloroethane	14.28	83	1087192	49.85	ug/l	99
80)	1,2,3-Trichloropropane	14.53	110	234406	47.84	ug/l	99
81)	trans-1,4-Dichloro-2-buten	14.68	53	231457	49.36	ug/l	98
82)	n-Propylbenzene	14.68	91	3360883	54.73	ug/l	100
83)	Bromobenzene	14.72	156	674340	52.70	ug/l	99
84)	1,3,5-Trimethylbenzene	14.96	105	1959209	55.08	ug/l	100
85)	2-Chlorotoluene	14.96	91	2020479	51.82	ug/l	99
86)	4-Chlorotoluene	15.05	91	1810705	53.08	ug/l	99
87)	tert-Butylbenzene	15.59	134	431011	52.61	ug/l	99
88)	1,2,4-Trimethylbenzene	15.65	105	1943177	54.37	ug/l	99
89)	sec-Butylbenzene	15.97	105	2608056	54.70	ug/l	100
90)	p-Isopropyltoluene	16.23	119	2042457	54.13	ug/l	100
91)	1,3-Dichlorobenzene	16.36	146	1185068	52.45	ug/l	99
93)	1,4-Dichlorobenzene	16.55	146	1224187	54.29	ug/l	100
94)	n-Butylbenzene	16.97	91	2078406	55.10	ug/l	100
95)	1,2-Dichlorobenzene	17.21	146	1107819	52.58	ug/l	99
96)	1,2-Dibromo-3-chloropropan	18.52	157	154920	41.36	ug/l	99
97)	1,2,4-Trichlorobenzene	19.56	180	598944	47.77	ug/l	98
98)	Hexachlorobutadiene	19.72	225	287816	51.45	ug/l	97
99)	Naphthalene	19.81	128	1567980	43.85	ug/l	99
100)	1,2,3-Trichlorobenzene	20.06	180	503158	43.74	ug/l	98

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\18G05\RGP060.D Vial: 20
Acq On : 5 Jul 2018 5:07 pm Operator: ODinh
Sample : EVO02F1507 Inst : 02
Misc : 50ppb 8260/250ppb KET-AA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 9 14:16 2018 Quant Results File: VO02F15.RES

Method : D:\HPCHEM\1\METHODS\VO02F15.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Sat Jun 16 08:34:45 2018
Response via : Initial Calibration



ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 06/15/18 ☑ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge **Book #:** A02-047

BATCH V002F155

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount (µL)	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01	RFP 306	BFB02F11			NA	NA	NA		14:29
02	07	1.0/5.0ppb							
03	08	V002F151		A B C .04 .1 .2					8260 KET-AA 2.0 10ppb
04	09	2		.08 .2 .4					4.0 20
05	10	3		.2 .5 1					10 50
06	11	4		.4 1 2					20 100
07	12	5		1 2.5 5					60 280
08	13	6		2 5 10					100 500
09	14	7		4 10 20					200 1000
10	15	8		6 15 30					300 1500
11	16	9		10 25 50					500 2500
12	17	RINSE							
13	18	↓							
14	✓ 19	DV002F1501			↓	↓	↓		Bias high 50 250 19:58
15									
16									
17									A: 65; CS_2; Gas; Headd
18									
19									B: KET-AA
20									
21									C: 8260
22									
23									
24									
25									
26									
27									
28									
29									
30									06/16/18 OD

Instrument No. 02

INITIAL CALIBRATION REFERENCE

DATE 06/15/18

ICAL ID V002F15

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	84 - 29 -64-01 -79-03	1	
DCC	-78-01 -80-01		
DCC	-78-02		
DCC	-40-01	↓	
BFB	-42-02	1	50/250
IS/SURR.	-75-01 -75-02	1	500
ICV/LCS	-70-02 -72-01	1	
ICV/LCS	-46-02 -68-03	5	
ICV/LCS	-72-02 -72-03	5	
ICV/LCS	-40-02	1	
Data File Folder	18F15		

	LOT #	Syringe Lot #
pH strip		MSV-01-03-05-02
Chlorine strip		-03-09-3
Methanol		-01-17
$NaHSO_4$	SWA-005-03-22	-01-23
Reagent Water	RWS-17-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO02	

Comments:

☐ Refer to sample weight log

Analyzed By: OD

Date Disposed: 06/16/18 Disposed By: OD

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 06/16/18 ☑ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge Book #: A02-047

BATCH IV002F1502

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RFP 320	BFB02F12						08:11
02		↓ 21	IV002F1502						09:01
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									06/16/1850

Instrument No.	02
INITIAL CALIBRATION REFERENCE	
DATE	06/15/18
ICAL ID	V0021=15

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC			
DCC			
DCC			
DCC			
BFB	SM-29-42-02	1	
IS/SURR.	-75-01	1	50/25
IS/SURR.	-75-02	1	
ICV/LCS	-70-02	5	
ICV/LCS	-72-01	5	
ICV/LCS	-46-02	5	
ICV/LCS	-68-03	5	
ICV/LCS	-72-02	5	
ICV/LCS	~~-72-03~~		
ICV/LCS	-40-02	1	

Data File Folder	18F16	
	LOT #	Syringe Lot #
pH strip		MSV-01-03-05-02
Chlorine strip		-03-09-3
Methanol		-01-17
$NaHSO_4$	SWA-005-03-22	-01-23
Reagent Water	RWS-17-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO02	

Comments:

☐ Refer to sample weight log

Analyzed By: OD

Date Disposed: 06/16/18 Disposed By: OD

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 06/29/18 ☑ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge Book #: A02-048

BATCH CV02F1506

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH<2	Matrix W Cl_2<5ppm	Matrix S	Notes
01		RFP 609	BFB02F26						09:44
02		10	CV02F1506						
03		11	V802F261	5.0g					Bad purge
04		12	↓ C	↓					
05		13	↓ X	↓					
06		14	RINSE						
07		15	V802F26B	5.0g					
08		16	18F187-06	*	*			✓	
09		17	-01	↓	↓			✓	
10		18	-02					✓	
11		19	-03					✓	
12		20	-05					✓	
13		21	-07					✓	
14		22	-08					✓	
15		23	-10					✓	
16		24	-07M					✓	3VOA; RPDT; RR
17		25	-07S	↓	↓			✓	
18		26	RINSE						
19		27	↓						
20		28	18F187-11	*	*			✓	
21		29	-12	↓	↓			✓	
22		30	-13					✓	
23		31	-14					✓	
24		32	-15					✓	
25		33	↓ -16	↓	↓			✓	SST (Matrix)
26		34	EV02F1506						20:02
27		35	↓ A						
28	↓	36	↓ B						
29									
30									07/02/18 09

Instrument No.	02	
INITIAL CALIBRATION REFERENCE		
DATE	06/15/18	
ICAL ID	V02F15	
STANDARDS		
NAME	ID	Amount (ul) / Conc. (mg/L)
DCC	84-29-64-01 -71-03	1
DCC	-72-01	5
DCC	-80-01	2.5
DCC	-88-02	1
BFB	-92-02	1
IS/SURR.	-81-01	1 / 50/25
ICV/LCS	-70-02 -82-01	1 / 500
ICV/LCS	-66-02 -68-03	5
ICV/LCS	-72-02	5
ICV/LCS	↓ 72-03	5
Data File Folder	18F29	
	LOT #	Syringe Lot #
pH strip		M8V-01-03-05-02
Chlorine strip		-03-09-3
Methanol		-01-17
$NaHSO_4$	SWA-095-03-22	-01-23
Reagent Water	RWS-17-001	
Sand		
Electronic Data Archival Location		Date
HPCHEM_VOA/TO02		

Comments:

☐ Refer to sample weight log

Analyzed By: 07/02/18

Date Disposed: 07 Disposed By: 09

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 27/05/18 ☑ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge

Book #: A02-048

BATCH CL002F1507

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH<2	Matrix W Cl_2<5ppm	Matrix S	Notes
01	RGP041		BFB02G03						09:07
02	42		CL002F1507						
03	43		VS02G03L	5.0g					
04	44		↓ C	↓					
05	45		RINSE						
06	46		VS02G03B	5.0g					
07	47		18G012-04	*	*			✓	
08	48		18G013-03					✓	
09	49		18F187-07R					✓	
10	50		18F230-01R					✓	
11	51		↓ -02R					✓	
12	52		18F187-04	↓	↓			✓	ISL (Matrix)
13	53		RINSE						
14	54		↓						
15	55		18G012-01	*	*			✓	
16	56		↓ -02					✓	
17	57		18G013-01					✓	
18	58		18F187-07M					✓	
19	59		↓ -07S	↓	↓			✓	70R0T
20	✓ 60		CL002F1507						17:07
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									07/06/18 OD

Instrument No.	02
INITIAL CALIBRATION REFERENCE	
DATE	06/15/18
ICAL ID	CL002F15

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SM-29-85-02 -86-02	1 1	50/25
DCC	-90-01	5	
DCC	-82-02	5	
DCC	-83-02	1	
BFB	-42-02	1	
IS/SURR.	-81-01	1	
ICV/LCS	-88-02 -84-01	1 1	
ICV/LCS	-84-02 -83-01	5 5	
ICV/LCS	-73-01	5	
ICV/LCS	↓ -72-02	5	
Data File Folder	18G05		

	LOT #	Syringe Lot #
pH strip		MSV-01-03-05-02
Chlorine strip		-03-09-3
Methanol		-01-17
$NaHSO_4$	SWIA-005-03-22	-01-23
Reagent Water	RWS-17-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO02	

Comments:

~~☐~~ Refer to sample weight log

Analyzed By: OD

Date Disposed: 07/06/18 Disposed By: OD

EXTRACTION LOGS

EMAX LABORATORIES, INC.

PRESERVATION LOG FOR VOLATILES

18VPF041

PrepBatchID	Lab Sample ID	W1 (g)	DateTime	Wf (g)	DateTime	ExpWs(g)	Ws(g)	Prep□Factor	Comments
18VPF04101	18F187-01	31.34	6/26/18 17:13	36.05	6/26/18 17:13	5	4.714	1.06	
18VPF04102	18F187-02	30.97	6/26/18 17:14	34.63	6/26/18 17:14	5	3.66	1.37	
18VPF04103	18F187-03	30.65	6/26/18 17:14	35.22	6/26/18 17:14	5	4.57	1.09	
18VPF04104	18F187-04	31.45	6/26/18 17:14	35.56	6/26/18 17:14	5	4.108	1.22	
18VPF04105	18F187-05	30.92	6/26/18 17:14	35.81	6/26/18 17:14	5	4.895	1.02	
18VPF04106	18F187-06	31.36	6/26/18 17:14	31.30	6/26/18 17:14	5	~~0.064~~ 4.548	1	TRIP BLANK
18VPF04107	18F187-07	31.06	6/26/18 17:15	35.61	6/26/18 17:15	5	4.548	1.1	
18VPF04108	18F187-07M	30.66	6/26/18 17:15	35.75	6/26/18 17:15	5	5.09	0.98	
18VPF04109	18F187-07S	31.39	6/26/18 17:15	36.70	6/26/18 17:15	5	5.311	0.94	
18VPF04110	18F187-08	31.46	6/26/18 17:15	36.84	6/26/18 17:15	5	5.382	0.93	
18VPF04111	18F187-10	30.57	6/26/18 17:16	35.68	6/26/18 17:16	5	5.107	0.98	
18VPF04112	18F187-11	31.43	6/26/18 17:16	36.28	6/26/18 17:16	5	4.853	1.03	
18VPF04113	18F187-12	30.80	6/26/18 17:17	35.34	6/26/18 17:17	5	4.545	1.1	
18VPF04114	18F187-13	31.77	6/26/18 17:18	37.10	6/26/18 17:18	5	5.332	0.94	
18VPF04115	18F187-14	30.91	6/26/18 17:18	35.18	6/26/18 17:18	5	4.275	1.17	
18VPF04116	18F187-15	31.37	6/26/18 17:18	35.65	6/26/18 17:18	5	4.278	1.17	
18VPF04117	18F187-16	31.25	6/26/18 17:18	35.94	6/26/18 17:18	5	4.691	1.07	

☑ EMAX-5035 Rev. 3 ☑ Balance Calibration Check performed prior to use Surrogate ID: Prepared By: RTorra

☐ Encore+$NaHSO_4 \cdot H_2O$ ☑ BalanceID 25451062 ☐ BalanceID 25650797 BlankSoil Lot#: Standard Added By: N/A

☐ Frozen Sample ☐ Pre-weighed vial w/ H2O NaHSO4H2O: LOT # 172104 Witnessed By: ODinh

☑ Pre-weighed vial w/ NaHSO4•H2O soln LOT # 0222901B Expected Ws(g): 5 Extract Rcvd By: NA

☐ Volumetric dispenser was checked with 5-ml volumetric flask Sample Location: VW01 Checked By: ODinh

W1=Weight of Vial + Stirrer+NaHSO4•H2O+Solvent Wf=W1 + Sample

EMAX LABORATORIES, INC.

PRESERVATION LOG FOR VOLATILES

18VPF042

PrepBatchID	Lab Sample ID	W1 (g)	DateTime	Wf (g)	DateTime	ExpWs(g)	Ws(g)	Prep□Factor	Comments
18VPF04201	18F187-01R	30.84	6/26/18 17:21	34.68	6/26/18 17:21	5	3.845	1.3	
18VPF04202	18F187-02R	31.14	6/26/18 17:22	34.40	6/26/18 17:22	5	3.256	1.54	
18VPF04203	18F187-03R	31.12	6/26/18 17:22	35.55	6/26/18 17:22	5	4.435	1.13	
18VPF04204	18F187-04R	31.16	6/26/18 17:22	36.17	6/26/18 17:22	5	5.009	1	
18VPF04205	18F187-05R	30.83	6/26/18 17:22	34.46	6/26/18 17:22	5	3.635	1.38	
18VPF04206	18F187-06R	31.48	6/26/18 17:22	31.30	6/26/18 17:22	5	Sca ~~0.175~~	1	TRIP BLANK
18VPF04207	18F187-07R	30.97	6/26/18 17:23	36.44	6/26/18 17:23	5	7/13/18 5.475	0.91	
18VPF04208	18F187-07M	31.53	6/26/18 17:23	36.87	6/26/18 17:23	5	5.337	0.94	
18VPF04209	18F187-07S	31.82	6/26/18 17:23	36.62	6/26/18 17:23	5	4.803	1.04	
18VPF04210	18F187-08R	31.22	6/26/18 17:23	35.37	6/26/18 17:23	5	4.147	1.21	
18VPF04211	18F187-10R	31.22	6/26/18 17:23	35.73	6/26/18 17:24	5	4.506	1.11	
18VPF04212	18F187-11R	31.01	6/26/18 17:24	36.73	6/26/18 17:24	5	5.719	0.87	
18VPF04213	18F187-12R	30.88	6/26/18 17:24	35.06	6/26/18 17:24	5	4.182	1.2	
18VPF04214	18F187-13R	31.70	6/26/18 17:24	36.75	6/26/18 17:24	5	5.051	0.99	
18VPF04215	18F187-14R	30.52	6/26/18 17:24	35.19	6/26/18 17:24	5	4.668	1.07	
18VPF04216	18F187-15R	30.96	6/26/18 17:24	35.65	6/26/18 17:24	5	4.686	1.07	
18VPF04217	18F187-16R	30.99	6/26/18 17:25	35.11	6/26/18 17:25	5	4.119	1.21	

☑ EMAX-5035 Rev. 3 ☑ Balance Calibration Check performed prior to use Surrogate ID: Prepared By: RTorra

☐ Encore+$NaHSO_4$•H_2O ☐ BalanceID 25451062 ☐ BalanceID 25650797 BlankSoil Lot#: Standard Added By: N/A

☐ Frozen Sample ☐ Pre-weighed vial w/ H2O NaHSO4H2O: LOT # 172104 Witnessed By: ODinh

☑ Pre-weighed vial w/ NaHSO4•H2O soln LOT # 0222901B Expected Ws(g): 5 Extract Rcvd By: NA

☐ Volumetric dispenser was checked with 5-ml volumetric flask Sample Location: VW01 Checked By: ODinh

W1=Weight of Vial + Stirrer+NaHSO4•H2O+Solvent Wf=W1 + Sample

LABORATORY REPORT FOR

CH2M HILL

JBER TO078

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS + TICs
(HIGH LEVEL)

SDG#: 18F187

CASE NARRATIVE

Client : CH2M HILL

Project: JBER TO075

SDG : 18F187

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS + TICs
(HIGH LEVEL)

A total of sixteen (16) soil samples were received on 06/26/18 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5035A/8260B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were four (4) CCVs (Data file ID: RFY637, RFY663, RFY702 and RFY726) associated with this SDG. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed. VMF5F26B and VMF5F28B were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two (2) sets of LCS/LCD were analyzed. VMF5F26L/VMF5F26C and VMF5F28L/VMF5F28C were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed. F187-07M/F187-07S - all analytes were within MS QC limits. Refer to Matrix QC summary form for details.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Instrument ID : F5

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	VMF5F26B	50	NA	06/27/1811:41	06/27/1811:41	RFY641	RDY199	VMF5F26	Method Blank
LCS1S	VMF5F26L	50	NA	06/27/1810:28	06/27/1810:28	RFY638	RDY199	VMF5F26	Lab Control Sample (LCS)
LCD1S	VMF5F26C	50	NA	06/27/1810:53	06/27/1810:53	RFY639	RDY199	VMF5F26	LCS Duplicate
18Q2DP009-SB0401-SO-0	F187-01I	64	4.8	06/27/1816:36	06/27/1816:36	RFY653	RDY199	VMF5F26	Diluted Sample
18Q2DP009-SB0401-SO-1	F187-02I	63	4.6	06/27/1817:00	06/27/1817:00	RFY654	RDY199	VMF5F26	Diluted Sample
18Q2DP009-SB0402-SO-0	F187-03I	60	5.3	06/27/1817:25	06/27/1817:25	RFY655	RDY199	VMF5F26	Diluted Sample
18Q2DP009-SB0801-SO-0	F187-04I	56	8.6	06/27/1817:50	06/27/1817:50	RFY656	RDY199	VMF5F26	Diluted Sample
18Q2DP009-SB0802-SO-0	F187-05I	56.5	4.9	06/27/1818:39	06/27/1818:39	RFY658	RDY199	VMF5F26	Diluted Sample
18Q2DP009-SB0502-SO-0	F187-08I	54	3.5	06/27/1819:03	06/27/1819:03	RFY659	RDY199	VMF5F26	Diluted Sample
18Q2DP009-SB0701-SO-0	F187-10I	59.5	5.8	06/27/1819:28	06/27/1819:28	RFY660	RDY199	VMF5F26	Diluted Sample
MBLK2S	VMF5F28B	50	NA	06/29/1819:20	06/29/1819:20	RFY706	RDY199	VMF5F28	Method Blank
LCS2S	VMF5F28L	50	NA	06/29/1818:07	06/29/1818:07	RFY703	RDY199	VMF5F28	Lab Control Sample (LCS)
LCD2S	VMF5F28C	50	NA	06/29/1818:31	06/29/1818:31	RFY704	RDY199	VMF5F28	LCS Duplicate
18Q2DP009-SB0501-SO-0	F187-07I	60.5	3.9	06/29/1820:10	06/29/1820:10	RFY708	RDY199	VMF5F28	Diluted Sample
18Q2DP009-SB0501-SO-0MS	F187-07M	57	3.9	06/29/1820:34	06/29/1820:34	RFY709	RDY199	VMF5F28	Matrix Spike Sample (MS)
18Q2DP009-SB0501-SO-0MSD	F187-07S	54.5	3.9	06/29/1820:59	06/29/1820:59	RFY710	RDY199	VMF5F28	MS Duplicate (MSD)
18Q2DP009-SOTB01M	F187-09I	50	NA	06/29/1821:48	06/29/1821:48	RFY712	RDY199	VMF5F28	Diluted Sample
18Q2DP009-SB0702-SO-0	F187-11I	49.9	4.7	06/29/1822:13	06/29/1822:13	RFY713	RDY199	VMF5F28	Diluted Sample
18Q2DP009-SB0301-SO-0	F187-12I	50.5	4.0	06/29/1822:37	06/29/1822:37	RFY714	RDY199	VMF5F28	Diluted Sample
18Q2DP009-SB0302-SO-0	F187-13I	56	6.5	06/29/1823:02	06/29/1823:02	RFY715	RDY199	VMF5F28	Diluted Sample
18Q2DP009-SB0602-SO-0	F187-14I	52	5.1	06/29/1823:27	06/29/1823:27	RFY716	RDY199	VMF5F28	Diluted Sample
18Q2DP009-SB0601-SO-0	F187-15I	53	7.6	06/29/1823:52	06/29/1823:52	RFY717	RDY199	VMF5F28	Diluted Sample
18Q2DP009-SB0601-SO-1	F187-16I	49.7	6.9	06/30/1800:16	06/30/1800:16	RFY718	RDY199	VMF5F28	Diluted Sample
18Q2DP009-IDW-SO01	F187-17I	66	8.1	06/30/1800:41	06/30/1800:41	RFY719	RDY199	VMF5F28	Diluted Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/27/18 16:36
Sample ID	: 18Q2DP009-SB0401-SO-0	Date Analyzed:	06/27/18 16:36
Lab Samp ID	: F187-01I	Dilution Factor:	64
Lab File ID	: RFY653	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: 4.8
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.34	0.034	0.067
1,1,1-TRICHLOROETHANE	ND	0.34	0.034	0.067
1,1,2,2-TETRACHLOROETHANE	ND	0.34	0.034	0.067
1,1,2-TRICHLOROETHANE	ND	0.34	0.034	0.067
1,1-DICHLOROETHANE	ND	0.34	0.034	0.067
1,1-DICHLOROETHENE	ND	0.34	0.034	0.067
1,1-DICHLOROPROPENE	ND	0.34	0.034	0.067
1,2,3-TRICHLOROBENZENE	ND	0.34	0.067	0.13
1,2,3-TRICHLOROPROPANE	ND	0.34	0.067	0.13
1,2,4-TRICHLOROBENZENE	ND	0.34	0.067	0.13
1,2,4-TRIMETHYLBENZENE	ND	0.34	0.037	0.13
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.34	0.067	0.13
1,2-DIBROMOETHANE	ND	0.34	0.034	0.067
1,2-DICHLOROBENZENE	ND	0.34	0.034	0.067
1,2-DICHLOROETHANE	ND	0.34	0.034	0.067
1,2-DICHLOROPROPANE	ND	0.34	0.034	0.067
1,3,5-TRIMETHYLBENZENE	ND	0.34	0.040	0.13
1,3-DICHLOROBENZENE	ND	0.34	0.035	0.067
1,3-DICHLOROPROPANE	ND	0.34	0.034	0.067
1,4-DICHLOROBENZENE	ND	0.34	0.034	0.067
2,2-DICHLOROPROPANE	ND	0.34	0.067	0.13
2-BUTANONE	ND	0.67	0.17	0.34
2-CHLOROTOLUENE	ND	0.34	0.055	0.067
2-HEXANONE	ND	0.67	0.19	0.34
4-CHLOROTOLUENE	ND	0.34	0.045	0.067
ACETONE	ND	0.67	0.21	0.34
BENZENE	ND	0.34	0.034	0.067
BROMOBENZENE	ND	0.34	0.034	0.067
BROMOCHLOROMETHANE	ND	0.34	0.034	0.067
BROMODICHLOROMETHANE	ND	0.34	0.034	0.067
BROMOFORM	ND	0.34	0.067	0.13
BROMOMETHANE	ND	0.67	0.12	0.13
CARBON DISULFIDE	ND	0.34	0.034	0.067
CARBON TETRACHLORIDE	ND	0.34	0.036	0.067
CHLOROBENZENE	ND	0.34	0.034	0.067
CHLOROETHANE	ND	0.34	0.087	0.13
CHLOROFORM	ND	0.34	0.034	0.067
CHLOROMETHANE	ND	0.34	0.067	0.13
CIS-1,2-DICHLOROETHYLENE	ND	0.34	0.034	0.067
CIS-1,3-DICHLOROPROPENE	ND	0.34	0.034	0.067
CYCLOHEXANE	ND	0.34	0.081	0.13
DIBROMOCHLOROMETHANE	ND	0.34	0.034	0.067
DIBROMOMETHANE	ND	0.34	0.034	0.067
DICHLORODIFLUOROMETHANE	ND	0.34	0.081	0.13
ETHYLBENZENE	ND	0.34	0.034	0.067
HEXACHLOROBUTADIENE	ND	0.34	0.067	0.13
ISOPROPYLBENZENE	ND	0.34	0.043	0.13
METHYLENE CHLORIDE	ND	0.67	0.13	0.34
M,P-XYLENE	ND	0.34	0.067	0.13
4-METHYL-2-PENTANONE	ND	0.67	0.19	0.34
TERT-BUTYL METHYL ETHER	ND	0.34	0.034	0.067
NAPHTHALENE	ND	0.34	0.067	0.13
N-BUTYLBENZENE	ND	0.34	0.047	0.067
N-PROPYLBENZENE	ND	0.34	0.044	0.067
O-XYLENE	ND	0.34	0.034	0.067
P-ISOPROPYLTOLUENE	ND	0.34	0.042	0.067
SEC-BUTYLBENZENE	ND	0.34	0.045	0.067
STYRENE	ND	0.34	0.034	0.067
TERT-BUTYLBENZENE	ND	0.34	0.042	0.067
TETRACHLOROETHENE	ND	0.34	0.034	0.067
TOLUENE	ND	0.34	0.034	0.067
TRANS-1,2-DCE	ND	0.34	0.034	0.067
TRANS-1,3-DICHLOROPROPENE	ND	0.34	0.034	0.067
TCE	ND	0.34	0.034	0.067
TRICHLOROFLUOROMETHANE	ND	0.34	0.074	0.13
TRICHLOROTRIFLUOROETHANE	ND	0.34	0.067	0.13
VINYL CHLORIDE	ND	0.34	0.094	0.13
VINYL ACETATE	ND	0.34	0.087	0.13
XYLENES, TOTAL	ND	0.34	0.034	0.067

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.33	3.361	99.1	71-136
4-BROMOFLUOROBENZENE	6.50	6.050	107	79-119
TOLUENE-D8	3.59	3.361	107	85-116
DIBROMOFLUOROMETHANE	3.37	3.361	100	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/21/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/27/18 16:36
Sample ID	: 18Q2DP009-SB0401-SO-0	Date Analyzed	: 06/27/18 16:36
Lab Samp ID	: F187-01I	Dilution Factor	: 64
Lab File ID	: RFY653	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: 4.8
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY653.D
Acq On : 27 Jun 2018 4:36 pm
Operator : DNguye
Sample : 18F187-01I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 02 17:42:34 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.857	114	1299493	50.00	ug/l	-0.01
58) CHLOROBENZENE-D5	12.513	117	1086169	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	470978	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.463	111	345918	50.10	ug/l	-0.01
Spiked Amount 50.000			Recovery =	100.20%		
45) 1,2-Dichloroethane-d4	8.264	65	357178	49.54	ug/l	-0.01
Spiked Amount 50.000			Recovery =	99.08%		
59) Toluene-d8	10.800	98	1319921	53.36	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.72%		
81) 4-Bromofluorobenzene	13.809	95	878133	96.65	ug/l	0.00
Spiked Amount 50.000			Recovery =	193.30%		

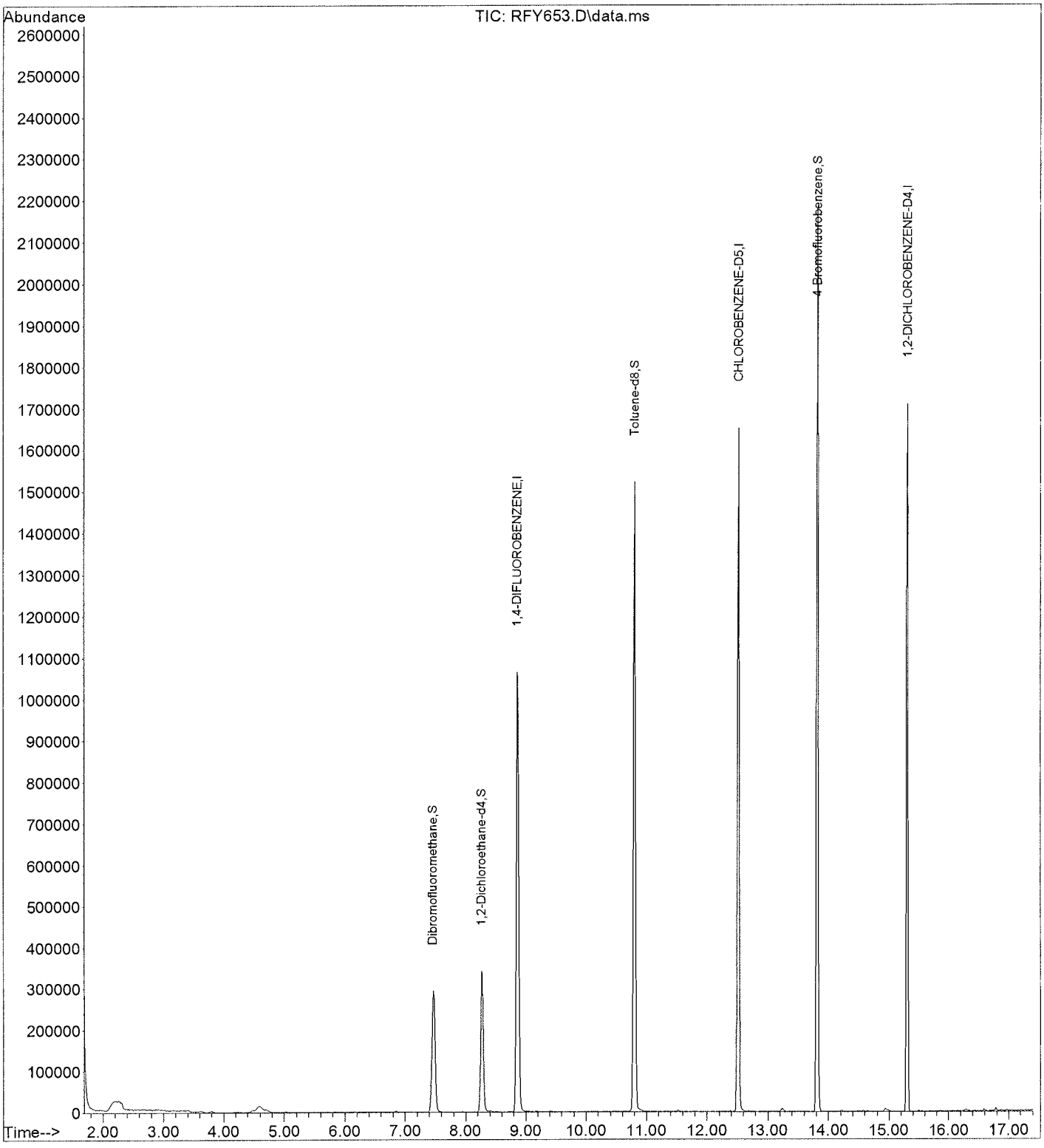
90 MD 7.3.18 107.4%

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY653.D
Acq On : 27 Jun 2018 4:36 pm
Operator : DNguye
Sample : 18F187-01I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 02 17:42:34 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY653.D
Acq On : 27 Jun 2018 4:36 pm
Operator : DNguye
Sample : 18F187-01I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY653.D\data.ms

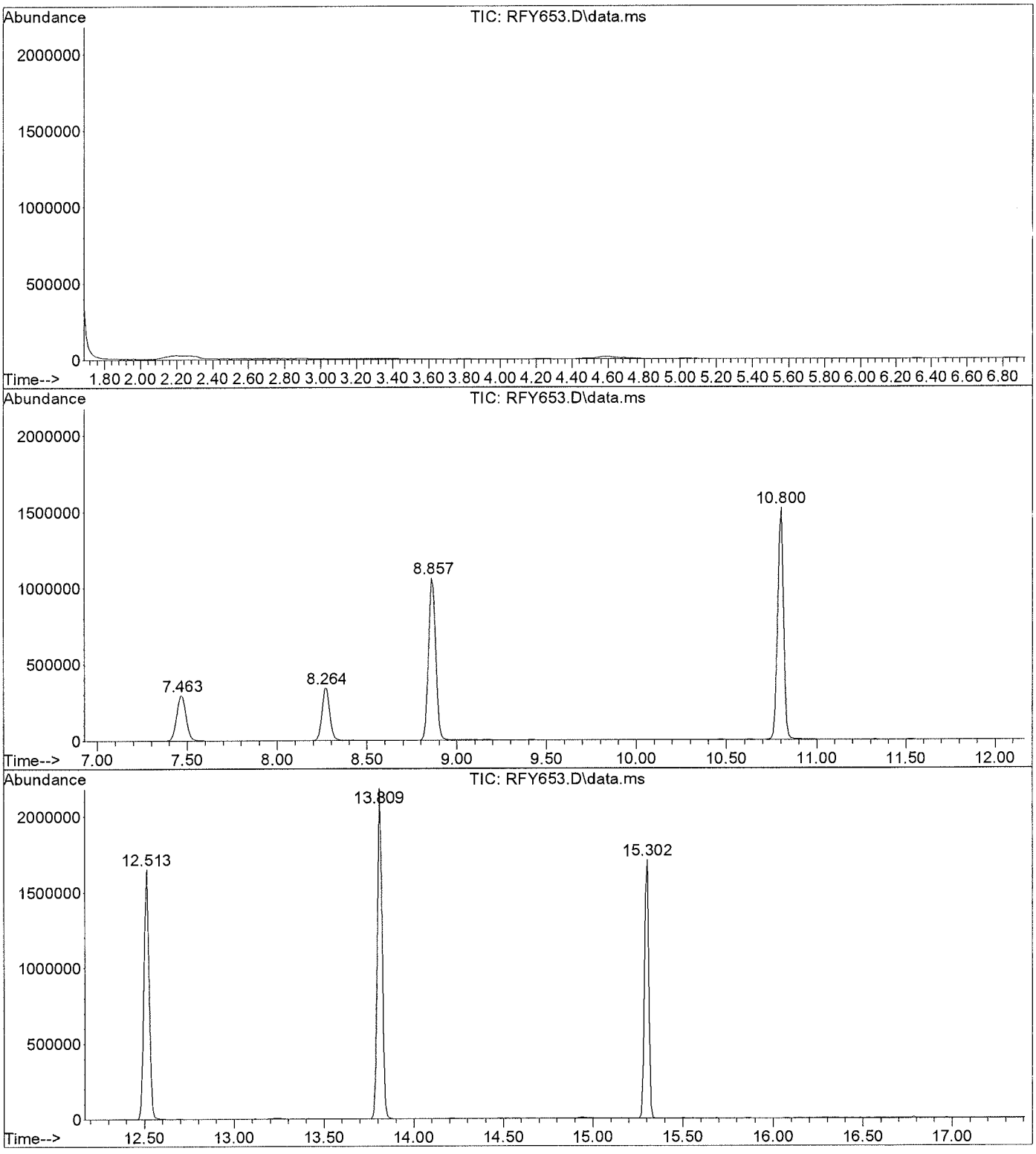
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.463	517	527	542	rVB	295000	1063482	27.17%	5.754%
2	8.264	591	600	610	rBV	341836	1012256	25.86%	5.477%
3	8.857	645	654	670	rBV	1064211	2930678	74.88%	15.857%
4	10.800	822	831	855	rVB	1521213	3490037	89.17%	18.883%
5	12.513	979	987	999	rVB	1651765	3218854	82.24%	17.416%
6	13.809	1096	1105	1116	rBV	2183067	3913892	100.00%	21.176%
7	15.302	1233	1241	1249	rVB	1708809	2853154	72.90%	15.437%

Sum of corrected areas: 18482353

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY653.D
Acq On : 27 Jun 2018 4:36 pm
Operator : DNguye
Sample : 18F187-01I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY653.D
Acq On : 27 Jun 2018 4:36 pm
Operator : DNguye
Sample : 18F187-01I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY653.D
Acq On : 27 Jun 2018 4:36 pm
Operator : DNguye
Sample : 18F187-01I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/21/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/27/18 17:00
Sample ID: 18Q2DP009-SB0401-SO-1	Date Analyzed: 06/27/18 17:00
Lab Samp ID: F187-021	Dilution Factor: 63
Lab File ID: RFY654	Matrix : SOIL
Ext Btch ID: VMF5F26	% Moisture : 4.6
Calib. Ref.: RDY199	Instrument ID : TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.33	0.033	0.066
1,1,1-TRICHLOROETHANE	ND	0.33	0.033	0.066
1,1,2,2-TETRACHLOROETHANE	ND	0.33	0.033	0.066
1,1,2-TRICHLOROETHANE	ND	0.33	0.033	0.066
1,1-DICHLOROETHANE	ND	0.33	0.033	0.066
1,1-DICHLOROETHENE	ND	0.33	0.033	0.066
1,1-DICHLOROPROPENE	ND	0.33	0.033	0.066
1,2,3-TRICHLOROBENZENE	ND	0.33	0.066	0.13
1,2,3-TRICHLOROPROPANE	ND	0.33	0.066	0.13
1,2,4-TRICHLOROBENZENE	ND	0.33	0.066	0.13
1,2,4-TRIMETHYLBENZENE	ND	0.33	0.036	0.13
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.33	0.066	0.13
1,2-DIBROMOETHANE	ND	0.33	0.033	0.066
1,2-DICHLOROBENZENE	ND	0.33	0.033	0.066
1,2-DICHLOROETHANE	ND	0.33	0.033	0.066
1,2-DICHLOROPROPANE	ND	0.33	0.033	0.066
1,3,5-TRIMETHYLBENZENE	ND	0.33	0.039	0.13
1,3-DICHLOROBENZENE	ND	0.33	0.034	0.066
1,3-DICHLOROPROPANE	ND	0.33	0.033	0.066
1,4-DICHLOROBENZENE	ND	0.33	0.033	0.066
2,2-DICHLOROPROPANE	ND	0.33	0.066	0.13
2-BUTANONE	ND	0.66	0.17	0.33
2-CHLOROTOLUENE	ND	0.33	0.054	0.066
2-HEXANONE	ND	0.66	0.19	0.33
4-CHLOROTOLUENE	ND	0.33	0.044	0.066
ACETONE	ND	0.66	0.20	0.33
BENZENE	ND	0.33	0.033	0.066
BROMOBENZENE	ND	0.33	0.033	0.066
BROMOCHLOROMETHANE	ND	0.33	0.033	0.066
BROMODICHLOROMETHANE	ND	0.33	0.033	0.066
BROMOFORM	ND	0.33	0.066	0.13
BROMOMETHANE	ND	0.66	0.12	0.13
CARBON DISULFIDE	ND	0.33	0.033	0.066
CARBON TETRACHLORIDE	ND	0.33	0.036	0.066
CHLOROBENZENE	ND	0.33	0.033	0.066
CHLOROETHANE	ND	0.33	0.086	0.13
CHLOROFORM	ND	0.33	0.033	0.066
CHLOROMETHANE	ND	0.33	0.066	0.13
CIS-1,2-DICHLOROETHYLENE	ND	0.33	0.033	0.066
CIS-1,3-DICHLOROPROPENE	ND	0.33	0.033	0.066
CYCLOHEXANE	ND	0.33	0.079	0.13
DIBROMOCHLOROMETHANE	ND	0.33	0.033	0.066
DIBROMOMETHANE	ND	0.33	0.033	0.066
DICHLORODIFLUOROMETHANE	ND	0.33	0.079	0.13
ETHYLBENZENE	ND	0.33	0.033	0.066
HEXACHLOROBUTADIENE	ND	0.33	0.066	0.13
ISOPROPYLBENZENE	ND	0.33	0.042	0.13
METHYLENE CHLORIDE	ND	0.66	0.13	0.33
M,P-XYLENE	ND	0.33	0.066	0.13
4-METHYL-2-PENTANONE	ND	0.66	0.18	0.33
TERT-BUTYL METHYL ETHER	ND	0.33	0.033	0.066
NAPHTHALENE	ND	0.33	0.066	0.13
N-BUTYLBENZENE	ND	0.33	0.046	0.066
N-PROPYLBENZENE	ND	0.33	0.043	0.066
O-XYLENE	ND	0.33	0.033	0.066
P-ISOPROPYLTOLUENE	ND	0.33	0.041	0.066
SEC-BUTYLBENZENE	ND	0.33	0.044	0.066
STYRENE	ND	0.33	0.033	0.066
TERT-BUTYLBENZENE	ND	0.33	0.041	0.066
TETRACHLOROETHENE	ND	0.33	0.033	0.066
TOLUENE	ND	0.33	0.033	0.066
TRANS-1,2-DCE	ND	0.33	0.033	0.066
TRANS-1,3-DICHLOROPROPENE	ND	0.33	0.033	0.066
TCE	ND	0.33	0.033	0.066
TRICHLOROFLUOROMETHANE	ND	0.33	0.073	0.13
TRICHLOROTRIFLUOROETHANE	ND	0.33	0.066	0.13
VINYL CHLORIDE	ND	0.33	0.092	0.13
VINYL ACETATE	ND	0.33	0.086	0.13
XYLENES, TOTAL	ND	0.33	0.033	0.066

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.38	3.302	102	71-136
4-BROMOFLUOROBENZENE	6.33	5.943	106	79-119
TOLUENE-D8	3.52	3.302	107	85-116
DIBROMOFLUOROMETHANE	3.38	3.302	102	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/21/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/27/18 17:00
Sample ID	: 18Q2DP009-SB0401-SO-1	Date Analyzed	: 06/27/18 17:00
Lab Samp ID	: F187-02I	Dilution Factor	: 63
Lab File ID	: RFY654	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: 4.6
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY654.D
Acq On : 27 Jun 2018 5:00 pm
Operator : DNguye
Sample : 18F187-02I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 02 17:42:57 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.857	114	1300112	50.00	ug/l	-0.01
58) CHLOROBENZENE-D5	12.513	117	1089319	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	479173	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.463	111	353643	51.19	ug/l	-0.01
Spiked Amount 50.000			Recovery =	102.38%		
45) 1,2-Dichloroethane-d4	8.264	65	369613	51.24	ug/l	-0.01
Spiked Amount 50.000			Recovery =	102.48%		
59) Toluene-d8	10.800	98	1322677	53.31	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.62%		
81) 4-Bromofluorobenzene	13.809	95	885824	95.83	ug/l	0.00
Spiked Amount ~~50.000~~ 90			Recovery =	~~191.66%~~ 106.5%		
Target Compounds						Qvalue

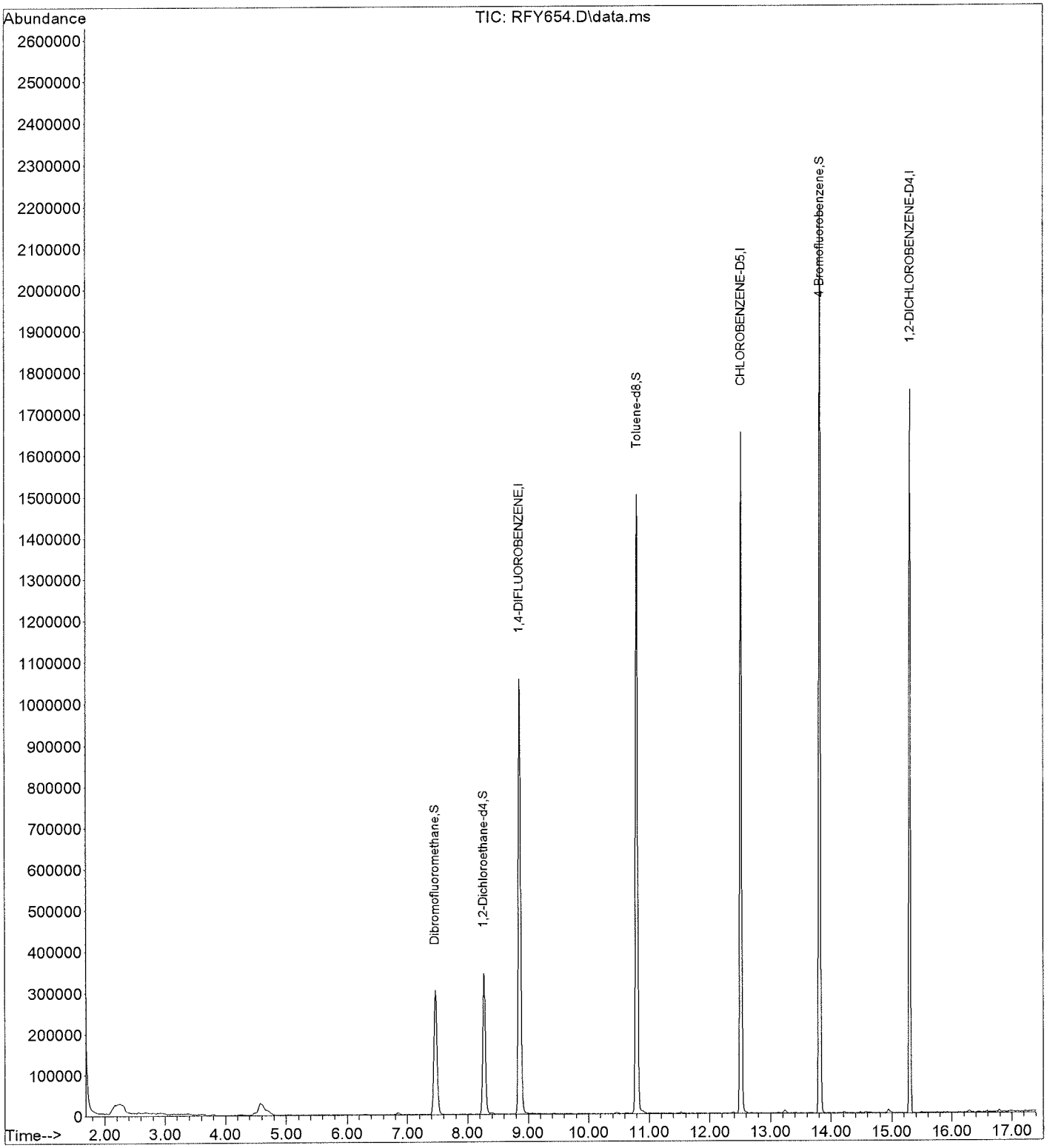
MD 7.3.18

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY654.D
Acq On : 27 Jun 2018 5:00 pm
Operator : DNguye
Sample : 18F187-02I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 02 17:42:57 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY654.D
Acq On : 27 Jun 2018 5:00 pm
Operator : DNguye
Sample : 18F187-02I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY654.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.463	519	527	548	rVB	303285	1079219	27.12%	5.754%
2	8.264	592	600	610	rBV	344577	1039169	26.12%	5.541%
3	8.857	647	654	670	rBV	1056583	2940622	73.90%	15.680%
4	10.800	820	831	847	rBV	1501382	3521439	88.50%	18.777%
5	12.513	981	987	999	rVB	1651605	3260051	81.93%	17.383%
6	13.809	1099	1105	1115	rBV	2192991	3978926	100.00%	21.216%
7	15.302	1233	1241	1248	rBV	1753249	2934998	73.76%	15.650%

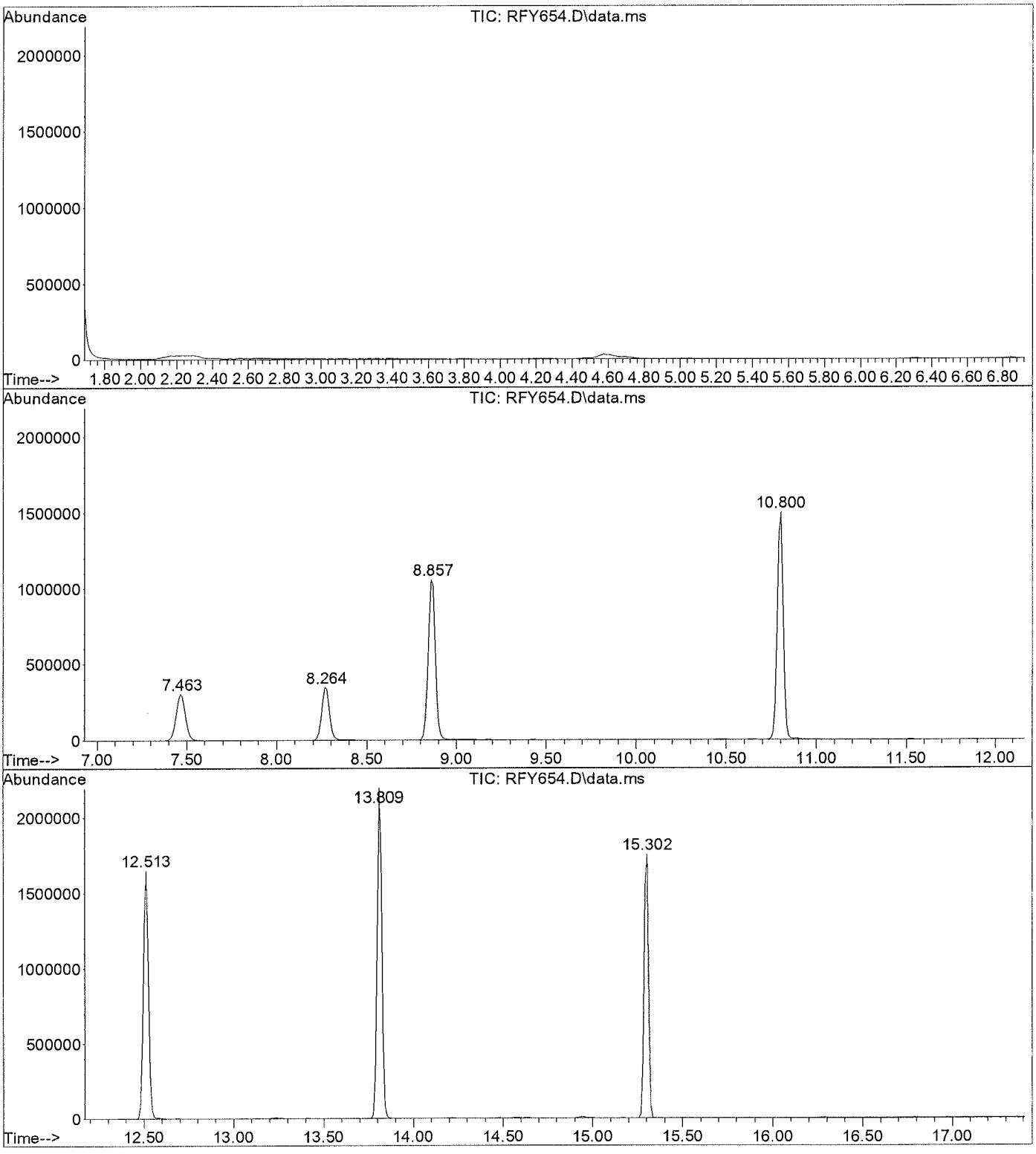
Sum of corrected areas: 18754424

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY654.D
Acq On : 27 Jun 2018 5:00 pm
Operator : DNguye
Sample : 18F187-02I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY654.D
Acq On : 27 Jun 2018 5:00 pm
Operator : DNguye
Sample : 18F187-02I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY654.D
Acq On : 27 Jun 2018 5:00 pm
Operator : DNguye
Sample : 18F187-02I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/21/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/27/18 17:25
Sample ID: 18Q2DP009-SB0402-SO-0	Date Analyzed: 06/27/18 17:25
Lab Samp ID: F187-031	Dilution Factor: 60
Lab File ID: RFY655	Matrix : SOIL
Ext Btch ID: VMF5F26	% Moisture : 5.3
Calib. Ref.: RDY199	Instrument ID : TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.32	0.032	0.063
1,1,1-TRICHLOROETHANE	ND	0.32	0.032	0.063
1,1,2,2-TETRACHLOROETHANE	ND	0.32	0.032	0.063
1,1,2-TRICHLOROETHANE	ND	0.32	0.032	0.063
1,1-DICHLOROETHANE	ND	0.32	0.032	0.063
1,1-DICHLOROETHENE	ND	0.32	0.032	0.063
1,1-DICHLOROPROPENE	ND	0.32	0.032	0.063
1,2,3-TRICHLOROBENZENE	ND	0.32	0.063	0.13
1,2,3-TRICHLOROPROPANE	ND	0.32	0.063	0.13
1,2,4-TRICHLOROBENZENE	ND	0.32	0.063	0.13
1,2,4-TRIMETHYLBENZENE	ND	0.32	0.035	0.13
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.32	0.063	0.13
1,2-DIBROMOETHANE	ND	0.32	0.032	0.063
1,2-DICHLOROBENZENE	ND	0.32	0.032	0.063
1,2-DICHLOROETHANE	ND	0.32	0.032	0.063
1,2-DICHLOROPROPANE	ND	0.32	0.032	0.063
1,3,5-TRIMETHYLBENZENE	ND	0.32	0.037	0.13
1,3-DICHLOROBENZENE	ND	0.32	0.033	0.063
1,3-DICHLOROPROPANE	ND	0.32	0.032	0.063
1,4-DICHLOROBENZENE	ND	0.32	0.032	0.063
2,2-DICHLOROPROPANE	ND	0.32	0.063	0.13
2-BUTANONE	ND	0.63	0.16	0.32
2-CHLOROTOLUENE	ND	0.32	0.052	0.063
2-HEXANONE	ND	0.63	0.18	0.32
4-CHLOROTOLUENE	ND	0.32	0.042	0.063
ACETONE	ND	0.63	0.20	0.32
BENZENE	ND	0.32	0.032	0.063
BROMOBENZENE	ND	0.32	0.032	0.063
BROMOCHLOROMETHANE	ND	0.32	0.032	0.063
BROMODICHLOROMETHANE	ND	0.32	0.032	0.063
BROMOFORM	ND	0.32	0.063	0.13
BROMOMETHANE	ND	0.63	0.11	0.13
CARBON DISULFIDE	ND	0.32	0.032	0.063
CARBON TETRACHLORIDE	ND	0.32	0.034	0.063
CHLOROBENZENE	ND	0.32	0.032	0.063
CHLOROETHANE	ND	0.32	0.082	0.13
CHLOROFORM	ND	0.32	0.032	0.063
CHLOROMETHANE	ND	0.32	0.063	0.13
CIS-1,2-DICHLOROETHYLENE	ND	0.32	0.032	0.063
CIS-1,3-DICHLOROPROPENE	ND	0.32	0.032	0.063
CYCLOHEXANE	ND	0.32	0.076	0.13
DIBROMOCHLOROMETHANE	ND	0.32	0.032	0.063
DIBROMOMETHANE	ND	0.32	0.032	0.063
DICHLORODIFLUOROMETHANE	ND	0.32	0.076	0.13
ETHYLBENZENE	ND	0.32	0.032	0.063
HEXACHLOROBUTADIENE	ND	0.32	0.063	0.13
ISOPROPYLBENZENE	ND	0.32	0.041	0.13
METHYLENE CHLORIDE	ND	0.63	0.13	0.32
M,P-XYLENE	ND	0.32	0.063	0.13
4-METHYL-2-PENTANONE	ND	0.63	0.18	0.32
TERT-BUTYL METHYL ETHER	ND	0.32	0.032	0.063
NAPHTHALENE	ND	0.32	0.063	0.13
N-BUTYLBENZENE	ND	0.32	0.044	0.063
N-PROPYLBENZENE	ND	0.32	0.041	0.063
O-XYLENE	ND	0.32	0.032	0.063
P-ISOPROPYLTOLUENE	ND	0.32	0.039	0.063
SEC-BUTYLBENZENE	ND	0.32	0.042	0.063
STYRENE	ND	0.32	0.032	0.063
TERT-BUTYLBENZENE	ND	0.32	0.039	0.063
TETRACHLOROETHENE	ND	0.32	0.032	0.063
TOLUENE	ND	0.32	0.032	0.063
TRANS-1,2-DCE	ND	0.32	0.032	0.063
TRANS-1,3-DICHLOROPROPENE	ND	0.32	0.032	0.063
TCE	ND	0.32	0.032	0.063
TRICHLOROFLUOROMETHANE	ND	0.32	0.070	0.13
TRICHLOROTRIFLUOROETHANE	ND	0.32	0.063	0.13
VINYL CHLORIDE	ND	0.32	0.089	0.13
VINYL ACETATE	ND	0.32	0.082	0.13
XYLENES, TOTAL	ND	0.32	0.032	0.063

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.18	3.168	100	71-136
4-BROMOFLUOROBENZENE	6.05	5.702	106	79-119
TOLUENE-D8	3.39	3.168	107	85-116
DIBROMOFLUOROMETHANE	3.17	3.168	100	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/21/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/27/18 17:25
Sample ID	: 18Q2DP009-SB0402-SO-0	Date Analyzed	: 06/27/18 17:25
Lab Samp ID	: F187-03I	Dilution Factor	: 60
Lab File ID	: RFY655	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: 5.3
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY655.D
Acq On : 27 Jun 2018 5:25 pm
Operator : DNguye
Sample : 18F187-03I 100uL
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 02 17:43:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.857	114	1306974	50.00	ug/l	-0.01
58) CHLOROBENZENE-D5	12.513	117	1085754	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	475165	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.462	111	347451	50.03	ug/l	-0.01
Spiked Amount 50.000			Recovery =	100.06%		
45) 1,2-Dichloroethane-d4	8.264	65	364050	50.20	ug/l	-0.01
Spiked Amount 50.000			Recovery =	100.40%		
59) Toluene-d8	10.800	98	1322173	53.47	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.94%		
81) 4-Bromofluorobenzene	13.809	95	875679	95.53	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~101.06%~~ 106.1%		
Target Compounds						Qvalue

90

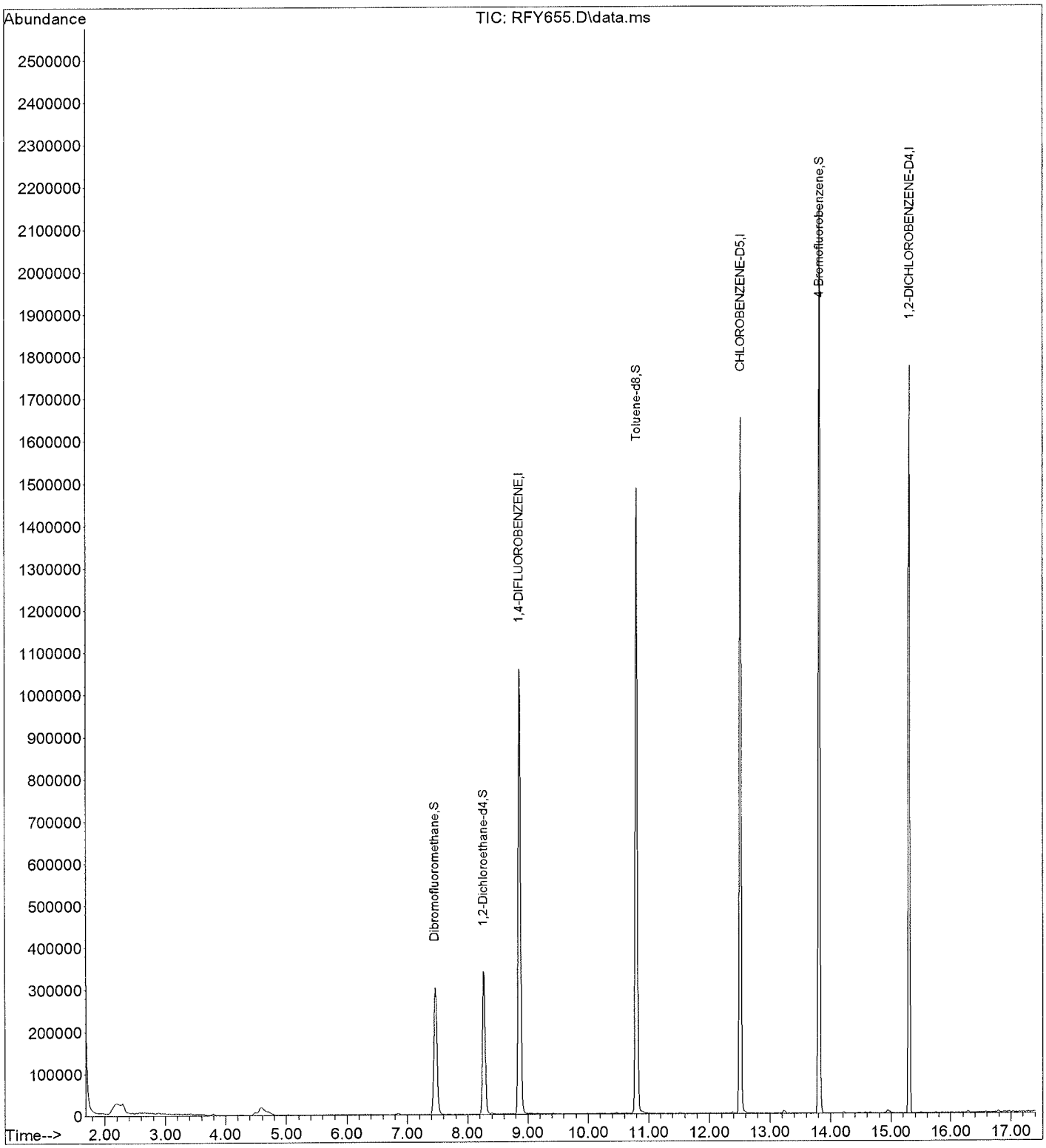
MD 7.3.18

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY655.D
Acq On : 27 Jun 2018 5:25 pm
Operator : DNguye
Sample : 18F187-03I 100uL
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 02 17:43:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY655.D
Acq On : 27 Jun 2018 5:25 pm
Operator : DNguye
Sample : 18F187-03I 100uL
Misc :
ALS Vial : 20 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY655.D\data.ms

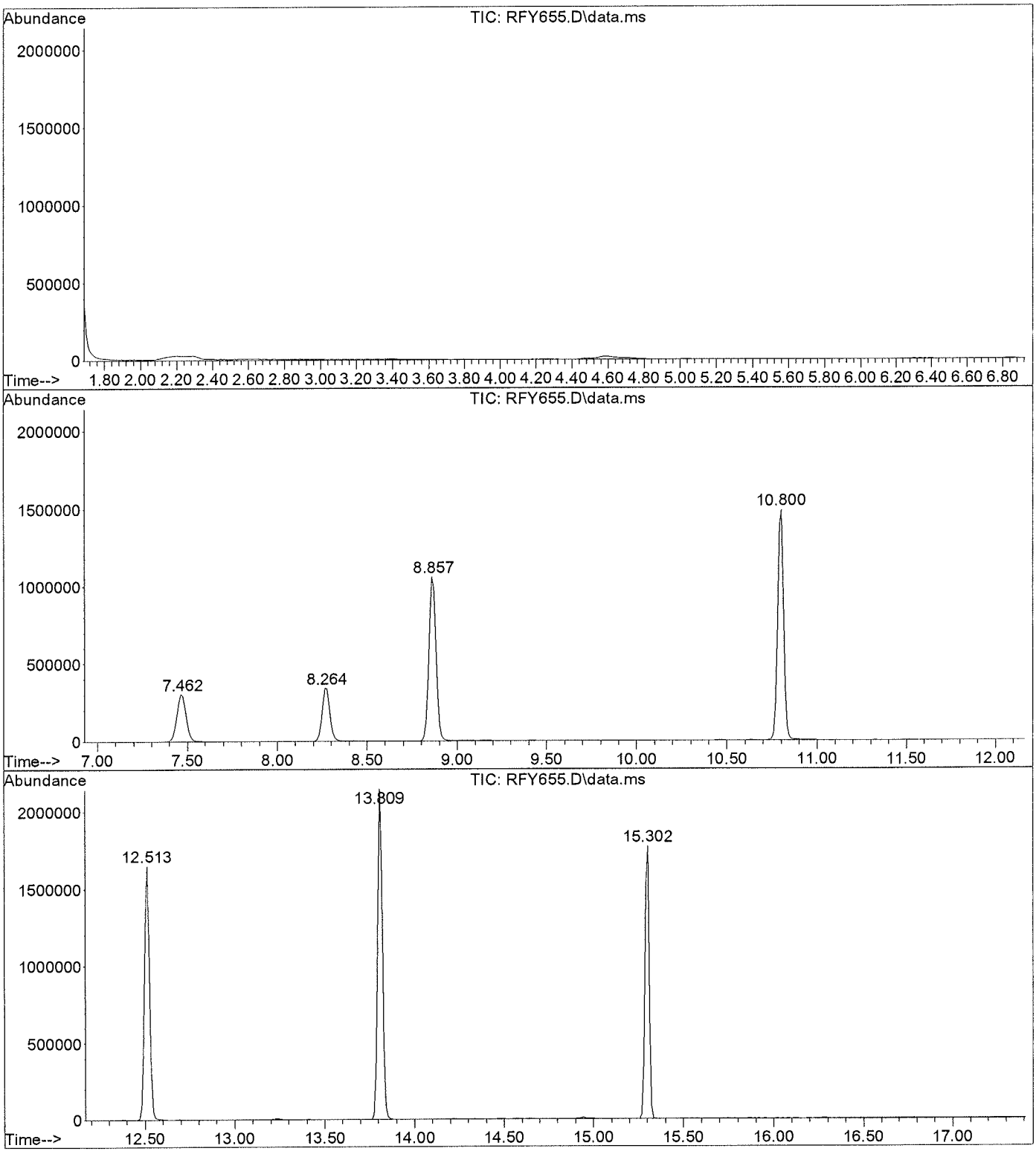
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.462	516	527	543	rVB	303414	1076683	27.31%	5.781%
2	8.264	591	600	611	rBV	339922	1023143	25.95%	5.493%
3	8.857	645	654	679	rBV	1058574	2941998	74.62%	15.796%
4	10.800	820	831	857	rVB	1486450	3495864	88.66%	18.770%
5	12.513	980	987	999	rBV	1650939	3243667	82.27%	17.416%
6	13.809	1098	1105	1116	rBV	2147255	3942884	100.00%	21.170%
7	15.302	1236	1241	1253	rBV	1773464	2900762	73.57%	15.575%

Sum of corrected areas: 18625001

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY655.D
Acq On : 27 Jun 2018 5:25 pm
Operator : DNguye
Sample : 18F187-03I 100uL
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY655.D
Acq On : 27 Jun 2018 5:25 pm
Operator : DNguye
Sample : 18F187-03I 100uL
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY655.D
Acq On : 27 Jun 2018 5:25 pm
Operator : DNguye
Sample : 18F187-03I 100uL
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/21/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/27/18 17:50
Sample ID	: 18Q2DP009-SB0801-SO-0	Date Analyzed	: 06/27/18 17:50
Lab Samp ID	: F187-04I	Dilution Factor	: 56
Lab File ID	: RFY656	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: 8.6
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.31	0.031	0.061
1,1,1-TRICHLOROETHANE	ND	0.31	0.031	0.061
1,1,2,2-TETRACHLOROETHANE	ND	0.31	0.031	0.061
1,1,2-TRICHLOROETHANE	ND	0.31	0.031	0.061
1,1-DICHLOROETHANE	ND	0.31	0.031	0.061
1,1-DICHLOROETHENE	ND	0.31	0.031	0.061
1,1-DICHLOROPROPENE	ND	0.31	0.031	0.061
1,2,3-TRICHLOROBENZENE	ND	0.31	0.061	0.12
1,2,3-TRICHLOROPROPANE	ND	0.31	0.061	0.12
1,2,4-TRICHLOROBENZENE	ND	0.31	0.061	0.12
1,2,4-TRIMETHYLBENZENE	ND	0.31	0.034	0.12
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.31	0.061	0.12
1,2-DIBROMOETHANE	ND	0.31	0.031	0.061
1,2-DICHLOROBENZENE	ND	0.31	0.031	0.061
1,2-DICHLOROETHANE	ND	0.31	0.031	0.061
1,2-DICHLOROPROPANE	ND	0.31	0.031	0.061
1,3,5-TRIMETHYLBENZENE	ND	0.31	0.036	0.12
1,3-DICHLOROBENZENE	ND	0.31	0.032	0.061
1,3-DICHLOROPROPANE	ND	0.31	0.031	0.061
1,4-DICHLOROBENZENE	ND	0.31	0.031	0.061
2,2-DICHLOROPROPANE	ND	0.31	0.061	0.12
2-BUTANONE	ND	0.61	0.15	0.31
2-CHLOROTOLUENE	ND	0.31	0.050	0.061
2-HEXANONE	ND	0.61	0.18	0.31
4-CHLOROTOLUENE	ND	0.31	0.041	0.061
ACETONE	ND	0.61	0.19	0.31
BENZENE	0.038J	0.31	0.031	0.061
BROMOBENZENE	ND	0.31	0.031	0.061
BROMOCHLOROMETHANE	ND	0.31	0.031	0.061
BROMODICHLOROMETHANE	ND	0.31	0.031	0.061
BROMOFORM	ND	0.31	0.061	0.12
BROMOMETHANE	ND	0.61	0.11	0.12
CARBON DISULFIDE	ND	0.31	0.031	0.061
CARBON TETRACHLORIDE	ND	0.31	0.033	0.061
CHLOROBENZENE	ND	0.31	0.031	0.061
CHLOROETHANE	ND	0.31	0.080	0.12
CHLOROFORM	ND	0.31	0.031	0.061
CHLOROMETHANE	ND	0.31	0.061	0.12
CIS-1,2-DICHLOROETHYLENE	ND	0.31	0.031	0.061
CIS-1,3-DICHLOROPROPENE	ND	0.31	0.031	0.061
CYCLOHEXANE	ND	0.31	0.074	0.12
DIBROMOCHLOROMETHANE	ND	0.31	0.031	0.061
DIBROMOMETHANE	ND	0.31	0.031	0.061
DICHLORODIFLUOROMETHANE	ND	0.31	0.074	0.12
ETHYLBENZENE	ND	0.31	0.031	0.061
HEXACHLOROBUTADIENE	ND	0.31	0.061	0.12
ISOPROPYLBENZENE	ND	0.31	0.039	0.12
METHYLENE CHLORIDE	ND	0.61	0.12	0.31
M,P-XYLENE	ND	0.31	0.061	0.12
4-METHYL-2-PENTANONE	ND	0.61	0.17	0.31
TERT-BUTYL METHYL ETHER	ND	0.31	0.031	0.061
NAPHTHALENE	0.18J	0.31	0.061	0.12
N-BUTYLBENZENE	ND	0.31	0.043	0.061
N-PROPYLBENZENE	ND	0.31	0.040	0.061
O-XYLENE	ND	0.31	0.031	0.061
P-ISOPROPYLTOLUENE	0.070J	0.31	0.038	0.061
SEC-BUTYLBENZENE	ND	0.31	0.041	0.061
STYRENE	ND	0.31	0.031	0.061
TERT-BUTYLBENZENE	ND	0.31	0.038	0.061
TETRACHLOROETHENE	0.033J	0.31	0.031	0.061
TOLUENE	ND	0.31	0.031	0.061
TRANS-1,2-DCE	ND	0.31	0.031	0.061
TRANS-1,3-DICHLOROPROPENE	ND	0.31	0.031	0.061
TCE	ND	0.31	0.031	0.061
TRICHLOROFLUOROMETHANE	ND	0.31	0.067	0.12
TRICHLOROTRIFLUOROETHANE	ND	0.31	0.061	0.12
VINYL CHLORIDE	ND	0.31	0.086	0.12
VINYL ACETATE	ND	0.31	0.080	0.12
XYLENES, TOTAL	ND	0.31	0.031	0.061

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.04	3.063	99.3	71-136
4-BROMOFLUOROBENZENE	6.05	5.514	110	79-119
TOLUENE-D8	3.28	3.063	107	85-116
DIBROMOFLUOROMETHANE	3.07	3.063	100	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/27/18 17:50
Sample ID	: 18Q2DP009-SB0801-SO-0	Date Analyzed:	06/27/18 17:50
Lab Samp ID	: F187-04I	Dilution Factor:	56
Lab File ID	: RFY656	Matrix :	SOIL
Ext Btch ID	: VMF5F26	% Moisture :	8.6
Calib. Ref.	: RDY199	Instrument ID :	TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 02 17:44:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

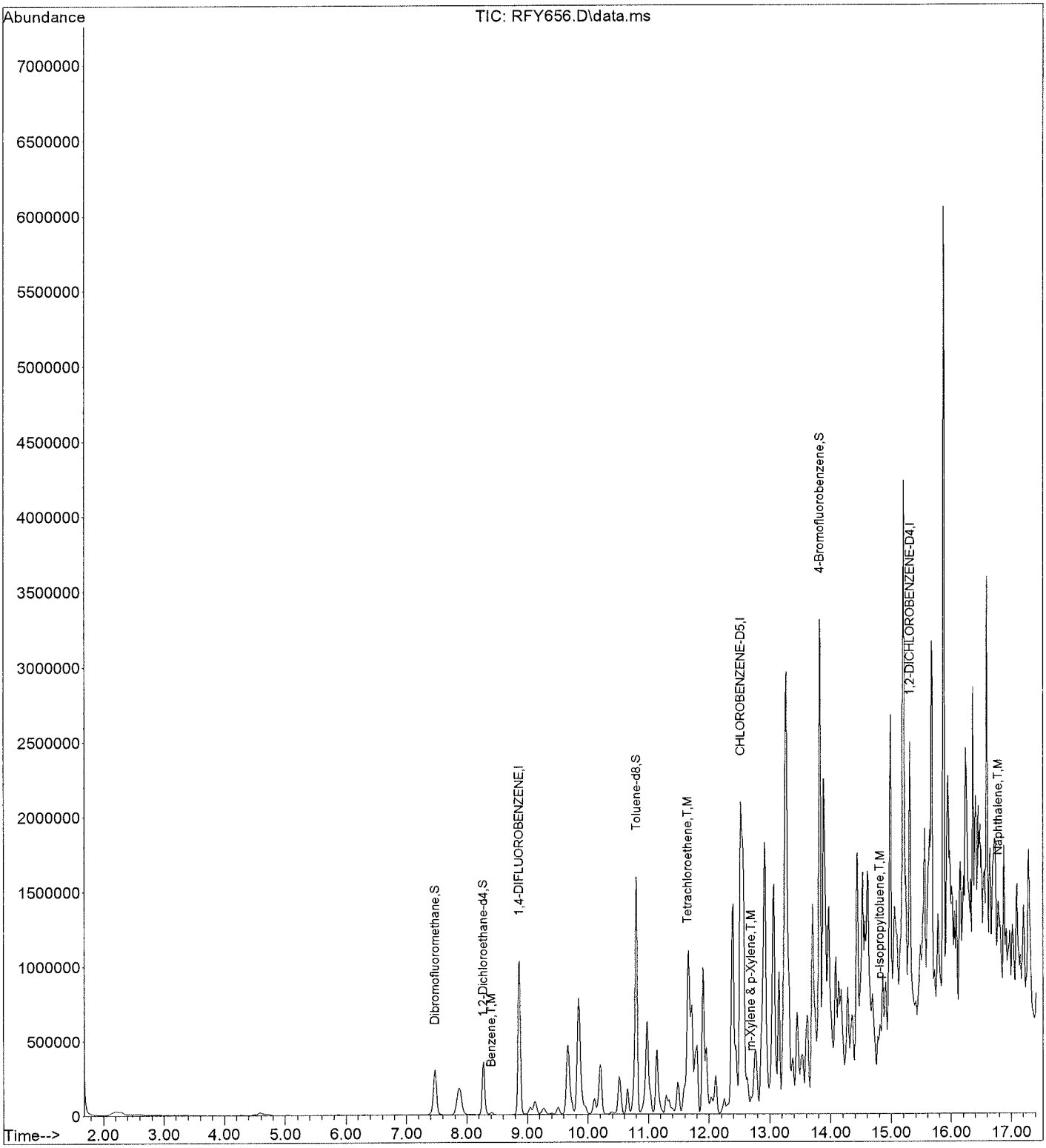
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	1298803	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	1085376	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	487608	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.473	111	345879	50.12	ug/l	0.00
Spiked Amount 50.000			Recovery =	100.24%		
45) 1,2-Dichloroethane-d4	8.275	65	357861	49.66	ug/l	0.00
Spiked Amount 50.000			Recovery =	99.32%		
59) Toluene-d8	10.800	98	1325332	53.62	ug/l	0.00
Spiked Amount 50.000			Recovery =	107.24%		
81) 4-Bromofluorobenzene	13.809	95	928858	98.75	ug/l	0.00
Spiked Amount ~~50~~.000 90			Recovery =	~~197.50%~~ 109.7% MD 7.3.18		
Target Compounds						Qvalue
47) Benzene	8.407	78	16895	0.62	ug/L	95
66) Tetrachloroethene	11.646	164	2957	0.54	ug/l	90
73) m-Xylene & p-Xylene	12.689	91	19153	0.71	ug/l	92
92) p-Isopropyltoluene	14.808	119	37109	1.14	ug/l	77
100) Naphthalene	16.784	128	63493	2.95	ug/l	60

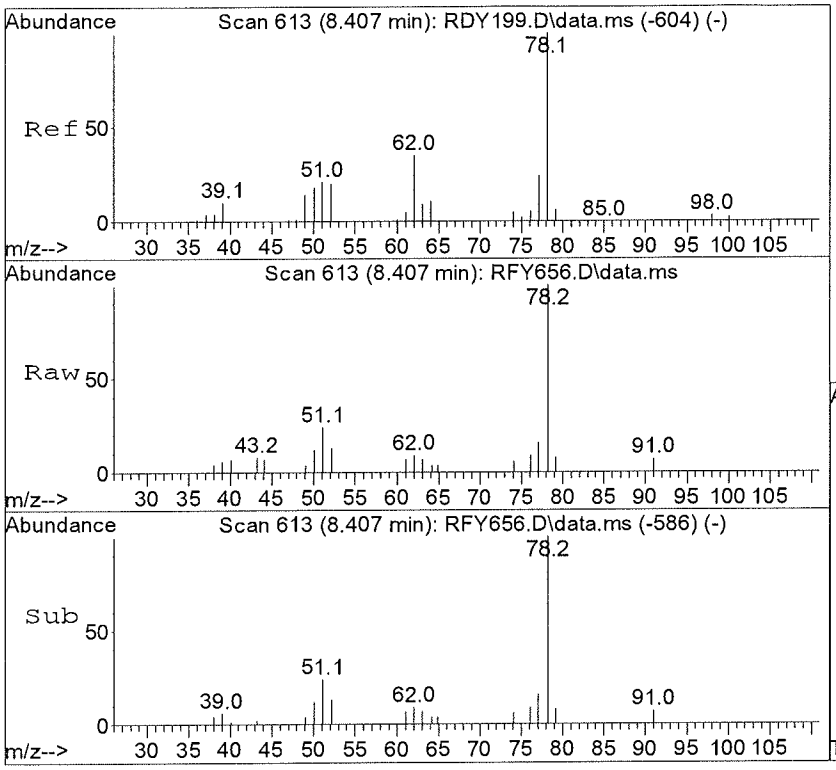
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 02 17:44:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

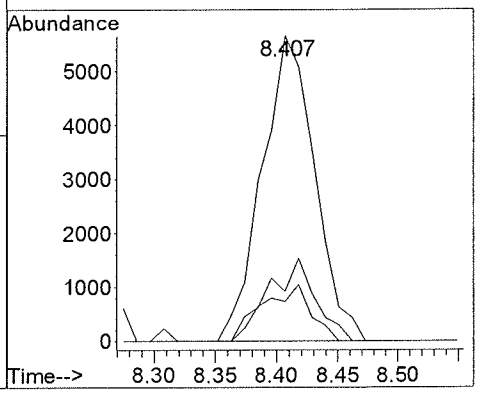


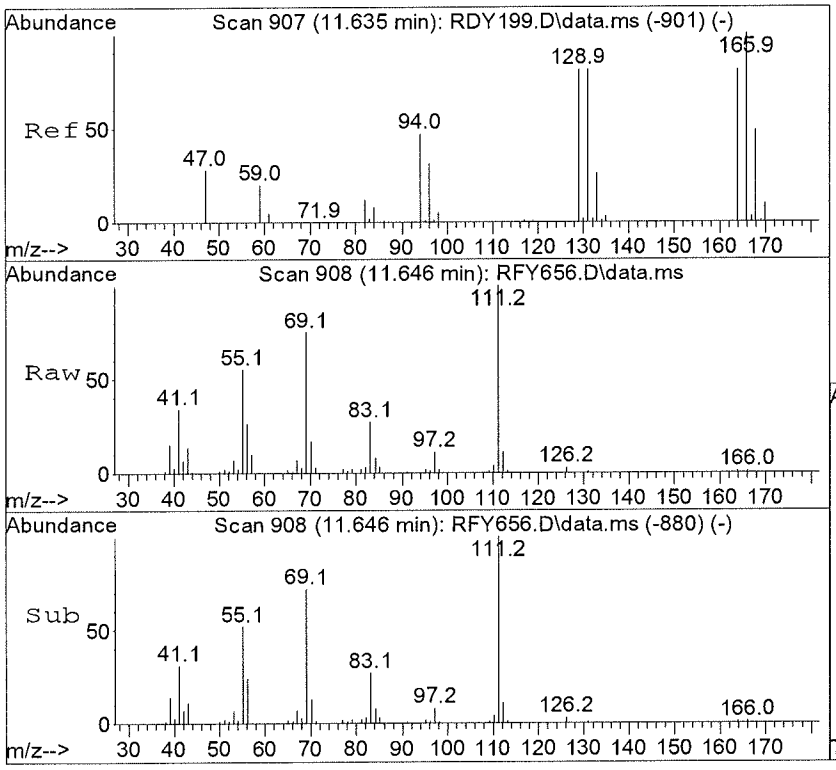


#47
Benzene
Concen: 0.62 ug/L
RT: 8.407 min Scan# 613
Delta R.T. -0.000 min
Lab File: RFY656.D
Acq: 27 Jun 2018 5:50 pm

Tgt Ion: 78 Resp: 16895

Ion	Ratio	Lower	Upper
78	100		
77	24.7	0.0	53.7
52	16.3	0.0	49.8

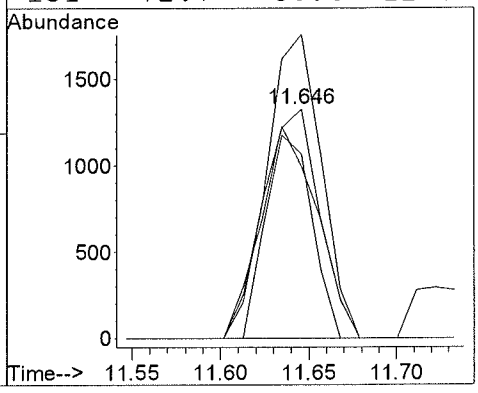


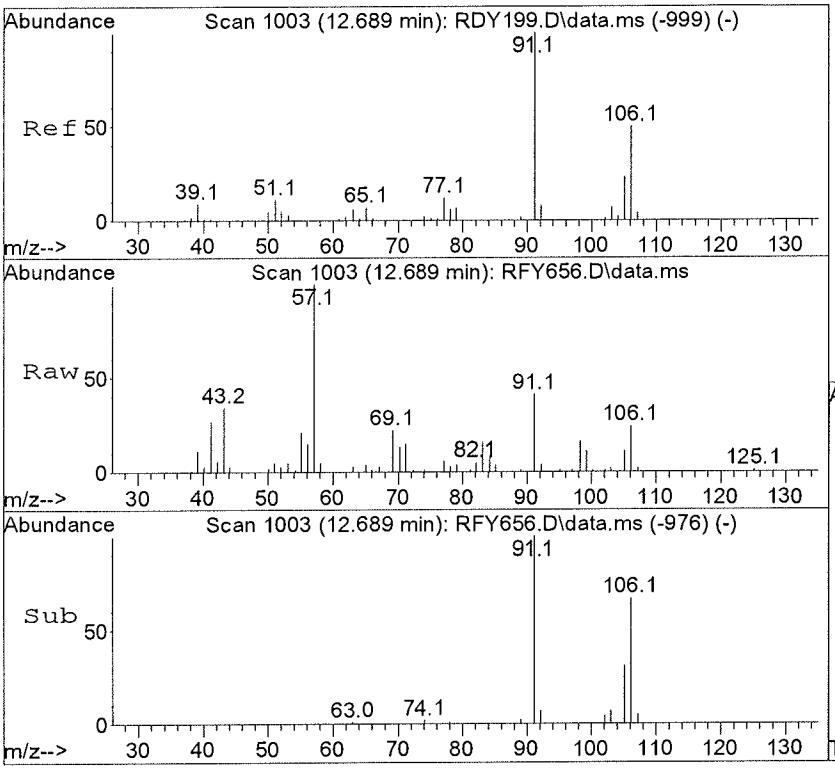


#66
Tetrachloroethene
Concen: 0.54 ug/l
RT: 11.646 min Scan# 908
Delta R.T. 0.011 min
Lab File: RFY656.D
Acq: 27 Jun 2018 5:50 pm

Tgt Ion:164 Resp: 2957

Ion	Ratio	Lower	Upper
164	100		
166	127.2	96.0	156.0
129	91.8	67.4	127.4
131	72.7	66.6	126.6

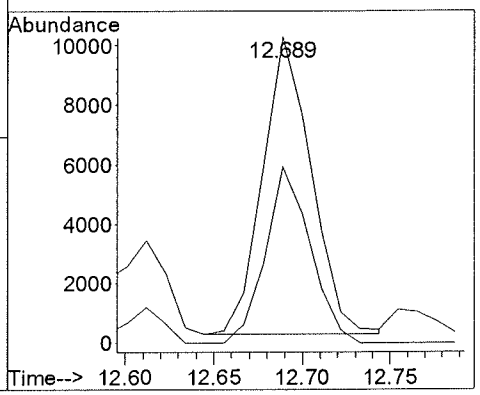


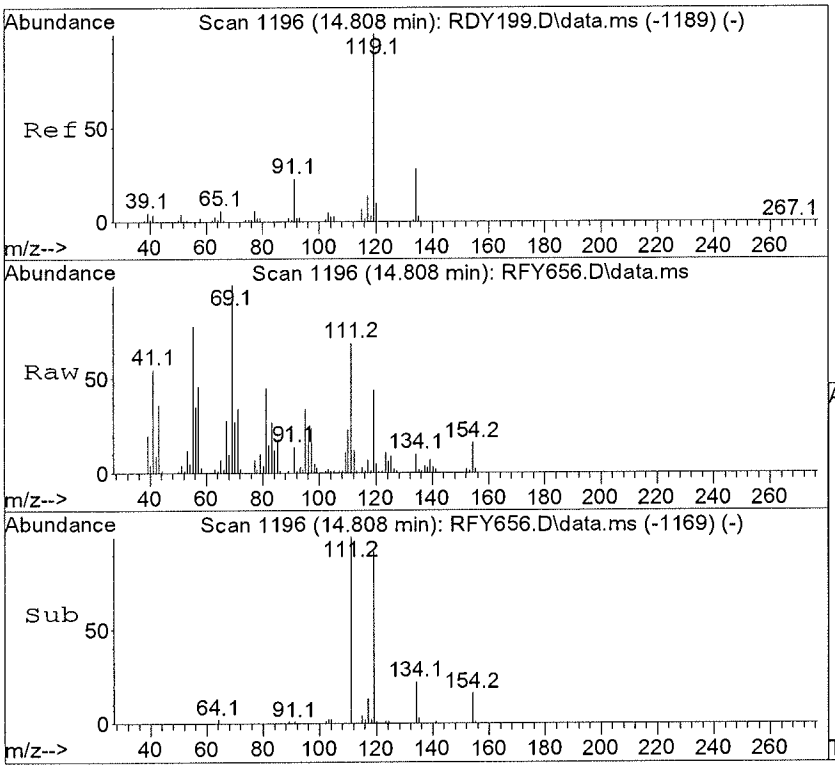


#73
m-Xylene & p-Xylene
Concen: 0.71 ug/l
RT: 12.689 min Scan# 1003
Delta R.T. -0.000 min
Lab File: RFY656.D
Acq: 27 Jun 2018 5:50 pm

Tgt Ion: 91 Resp: 19153

Ion	Ratio	Lower	Upper
91	100		
106	54.6	19.0	79.0

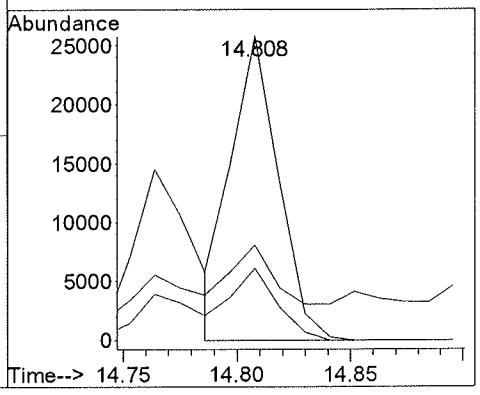


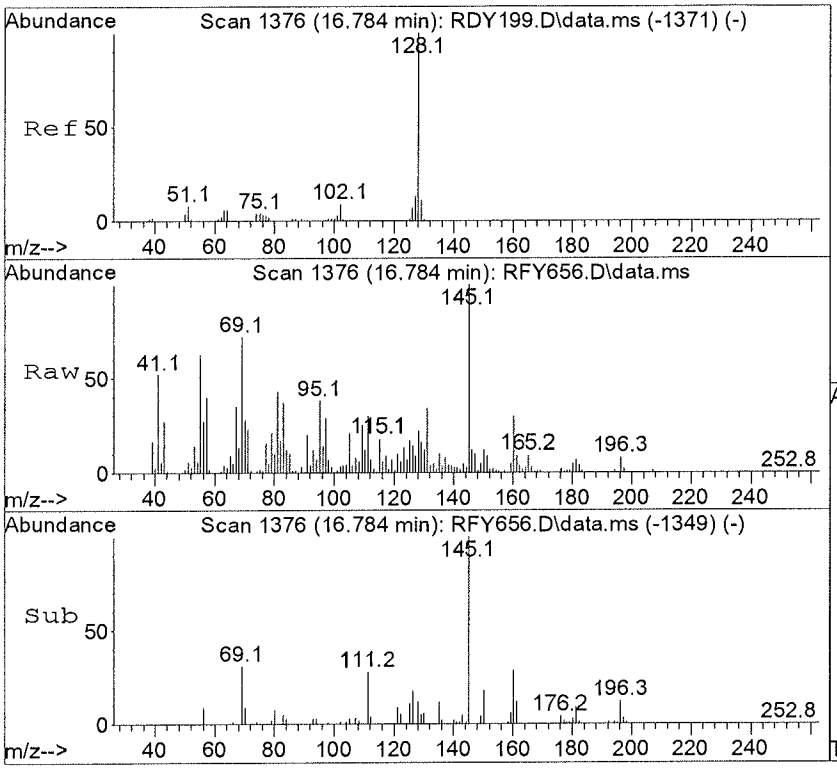


#92
p-Isopropyltoluene
Concen: 1.14 ug/l
RT: 14.808 min Scan# 1196
Delta R.T. -0.000 min
Lab File: RFY656.D
Acq: 27 Jun 2018 5:50 pm

Tgt Ion:119 Resp: 37109

Ion	Ratio	Lower	Upper
119	100		
91	16.9	0.0	54.0
134	42.8	0.0	57.0

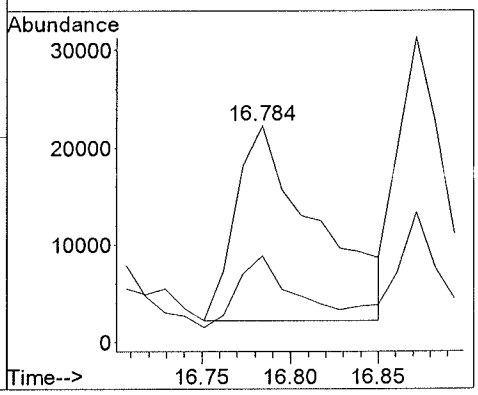




#100
Naphthalene
Concen: 2.95 ug/l
RT: 16.784 min Scan# 1376
Delta R.T. 0.000 min
Lab File: RFY656.D
Acq: 27 Jun 2018 5:50 pm

Tgt Ion:128 Resp: 63493

Ion	Ratio	Lower	Upper
128	100		
127	28.7	0.0	42.9



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY656.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	8.868	641	655	665	rBV	1032328	2916154	24.08%	1.198%
2	9.669	719	728	737	rBV	469066	1934497	15.97%	0.795%
3	9.845	737	744	761	rVB	774268	3213010	26.53%	1.320%
4	10.800	822	831	837	rVB	1579264	4271811	35.27%	1.755%
5	10.976	837	847	856	rVV	613005	2366712	19.54%	0.973%
6	11.141	856	862	872	rVB2	423589	1320489	10.90%	0.543%
7	11.657	898	909	917	rBV3	1078629	5812368	47.99%	2.388%
8	11.799	917	922	926	rVB4	446442	1659395	13.70%	0.682%
9	11.898	926	931	941	rBV3	971031	3496748	28.87%	1.437%
10	12.392	966	976	983	rBV2	1360018	5010872	41.37%	2.059%
11	12.513	983	987	1001	rVB4	2017800	9875369	81.53%	4.058%
12	12.766	1001	1010	1015	rBV5	360848	1324425	10.93%	0.544%
13	12.908	1015	1023	1030	rBV3	1736473	6668844	55.06%	2.740%
14	13.062	1030	1037	1042	rBV3	1371121	4233690	34.95%	1.740%
15	13.150	1042	1045	1048	rVB	790978	1529752	12.63%	0.629%
16	13.260	1048	1055	1063	rBV4	2794333	10450836	86.29%	4.295%
17	13.446	1068	1072	1076	rBV3	495090	1306247	10.78%	0.537%
18	13.611	1083	1087	1091	rVB	490244	1411324	11.65%	0.580%
19	13.699	1091	1095	1101	rBV3	1231651	4139484	34.18%	1.701%
20	13.809	1101	1105	1108	rVV2	3051637	6685127	55.19%	2.747%
21	13.875	1108	1111	1116	rVV3	1961141	6268954	51.76%	2.576%
22	13.962	1116	1119	1126	rVV3	1072344	3393773	28.02%	1.395%
23	14.083	1126	1130	1132	rVV3	696810	1662091	13.72%	0.683%
24	14.127	1132	1134	1143	rVB3	568177	2452059	20.25%	1.008%
25	14.281	1143	1148	1151	rBV2	526489	1285404	10.61%	0.528%
26	14.435	1158	1162	1165	rBV	1392023	3510356	28.98%	1.443%
27	14.522	1165	1170	1175	rVV3	1088970	4378044	36.15%	1.799%
28	14.599	1175	1177	1183	rVV2	1058054	2915385	24.07%	1.198%
29	14.687	1183	1185	1191	rVB5	476486	1239123	10.23%	0.509%
30	14.852	1191	1200	1202	rBV7	595179	2124096	17.54%	0.873%
31	14.983	1207	1212	1215	rVV2	2306906	5668063	46.80%	2.329%
32	15.049	1215	1218	1224	rVV4	1017570	4681903	38.66%	1.924%
33	15.192	1224	1231	1237	rVV2	3838854	12111885	100.00%	4.977%
34	15.302	1237	1241	1252	rVV3	2078377	6623213	54.68%	2.722%
35	15.478	1252	1257	1259	rVV2	701460	2424647	20.02%	0.996%
36	15.554	1259	1264	1266	rVV3	1468664	4351636	35.93%	1.788%
37	15.664	1266	1274	1281	rVV6	2698936	11144373	92.01%	4.580%
38	15.774	1281	1284	1289	rVV5	862480	2969672	24.52%	1.220%

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

39	15.862	1289	1292	1295	rVV2	5563310	9723617	80.28%	3.996%
40	15.939	1295	1299	1311	rVV5	1757252	10956640	90.46%	4.502%
41	16.081	1311	1312	1315	rVV2	912179	1494693	12.34%	0.614%
42	16.147	1315	1318	1320	rVV4	1163787	2918113	24.09%	1.199%
43	16.235	1320	1326	1335	rVV9	1908830	10998288	90.81%	4.520%
44	16.356	1335	1337	1340	rVV2	2300058	4882316	40.31%	2.006%
45	16.400	1340	1341	1344	rVV5	1570655	3269670	27.00%	1.344%
46	16.444	1344	1345	1352	rVV3	1491883	6086890	50.26%	2.501%
47	16.586	1352	1358	1361	rVV2	3001211	7870280	64.98%	3.234%
48	16.641	1361	1363	1365	rVV	1182221	2409229	19.89%	0.990%
49	16.718	1365	1370	1374	rVV10	1237093	5673478	46.84%	2.331%
50	16.784	1374	1376	1382	rVV5	806042	3098051	25.58%	1.273%
51	16.872	1382	1384	1390	rVV3	1166936	3469665	28.65%	1.426%
52	16.971	1390	1393	1395	rVV3	589045	1543376	12.74%	0.634%
53	17.015	1395	1397	1401	rVV7	623168	1798507	14.85%	0.739%
54	17.092	1401	1404	1411	rVV3	880221	3217705	26.57%	1.322%
55	17.201	1411	1414	1418	rVV3	726413	1990191	16.43%	0.818%
56	17.289	1418	1422	1428	rVB4	1087197	3117679	25.74%	1.281%

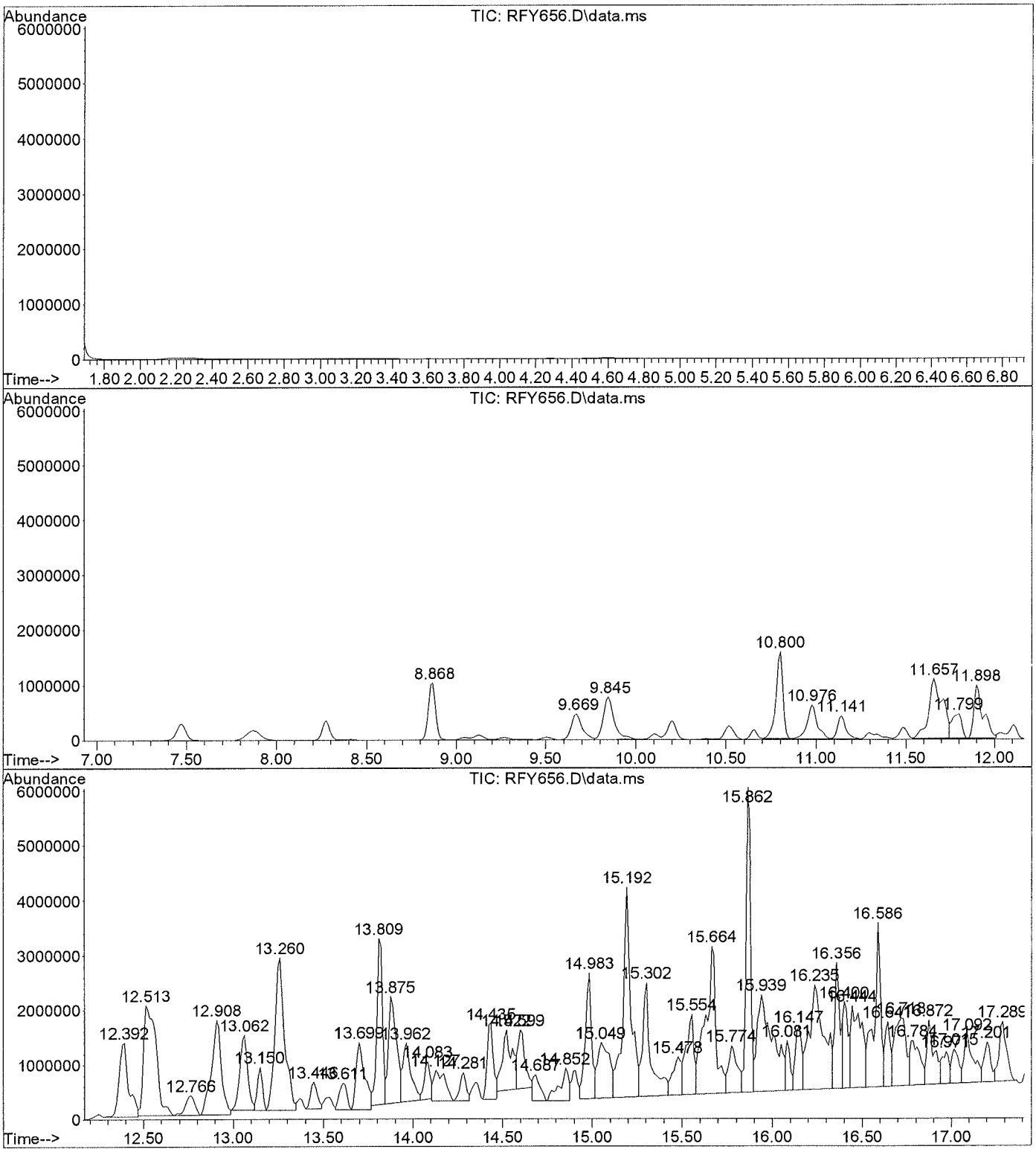
Sum of corrected areas: 243350219

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

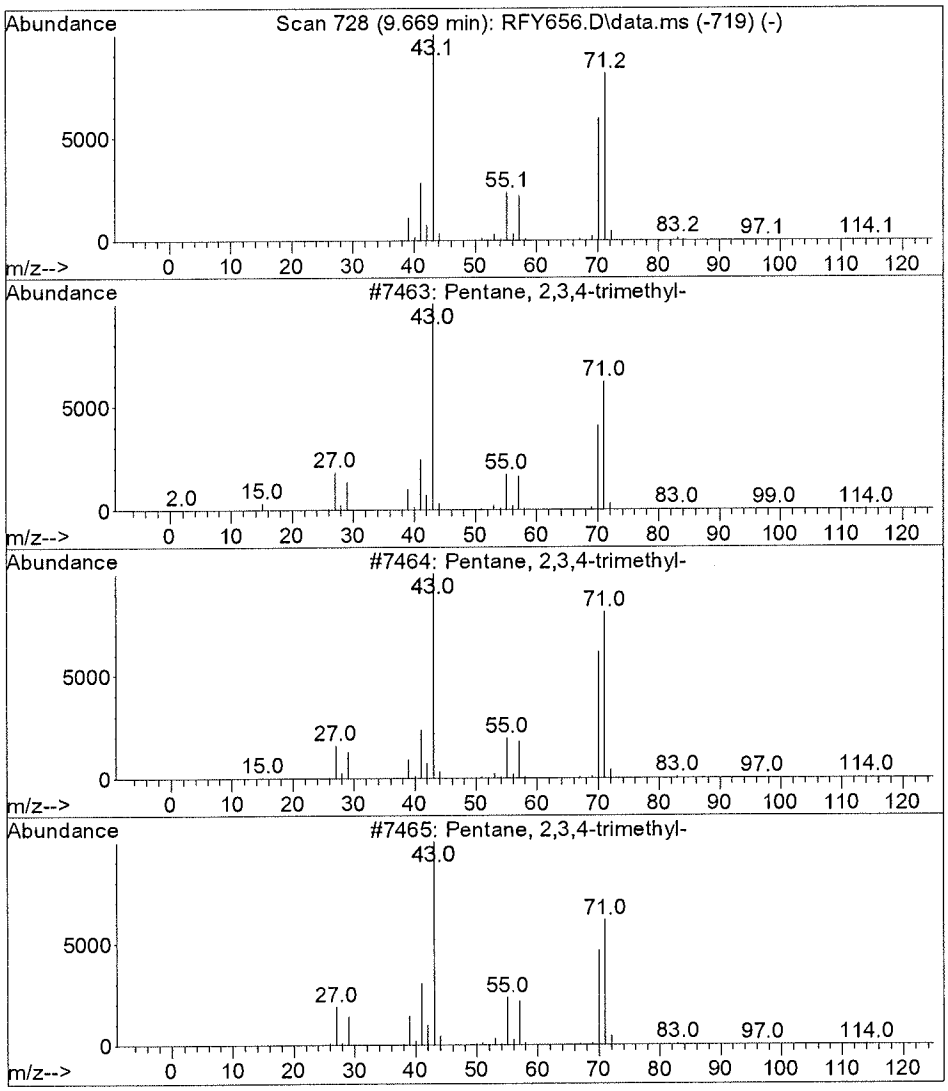
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

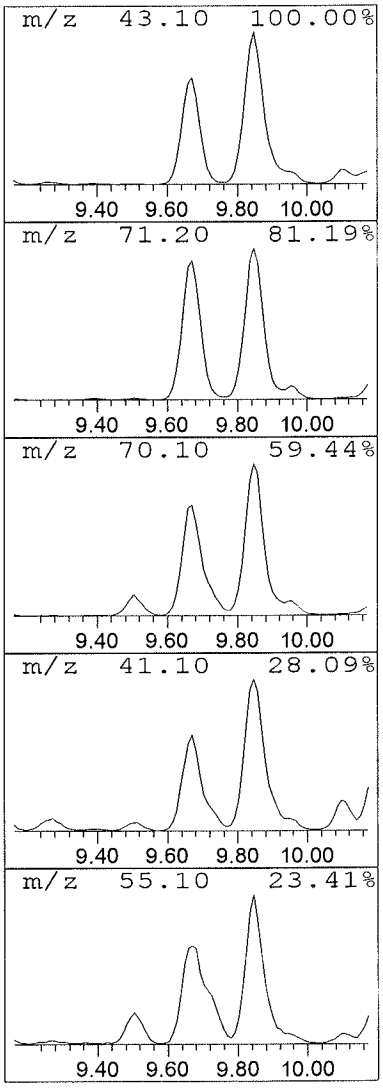
****

Peak Number 1 Pentane, 2,3,4-trimethyl- Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.669	33.17 ug/l	1934500	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
2	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
3	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
4	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	90
5	Pentane, 3-ethyl-	100	C7H16	000617-78-7	83





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

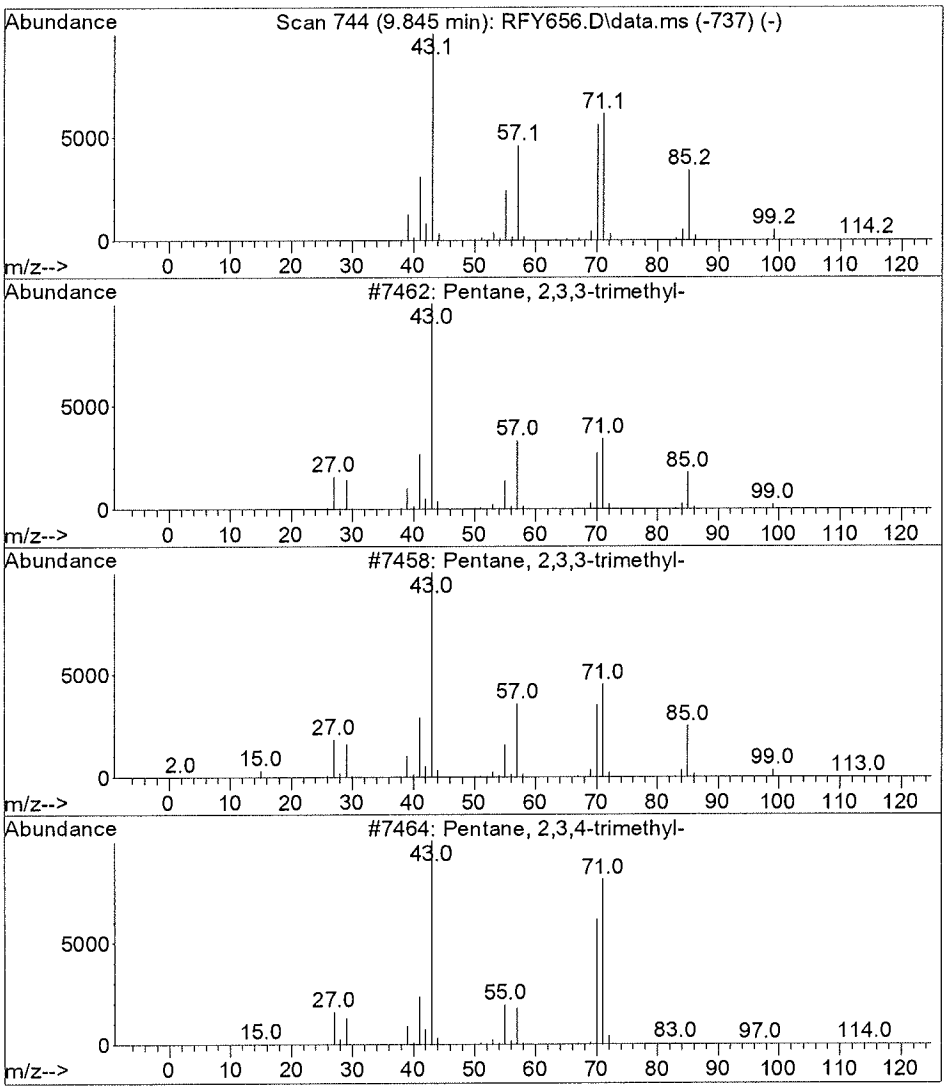
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

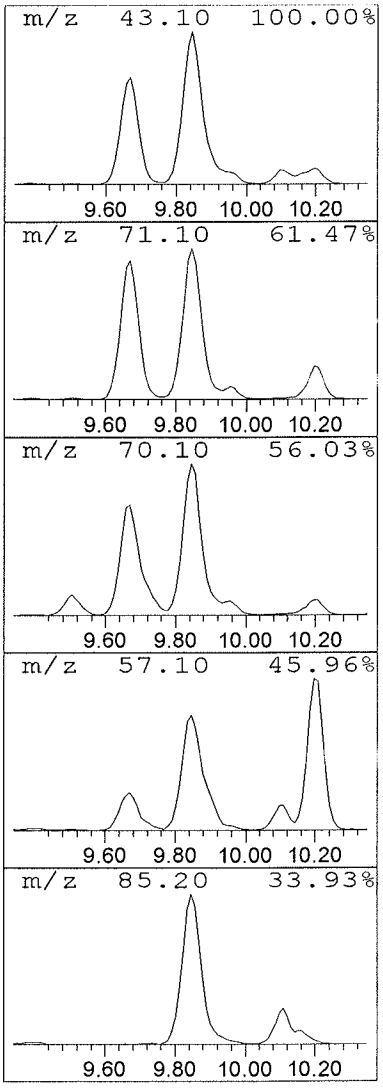
****

Peak Number 2 Pentane, 2,3,3-trimethyl- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.845	55.09 ug/l	3213010	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 2,3,3-trimethyl-	114	C8H18	000560-21-4	83
2	Pentane, 2,3,3-trimethyl-	114	C8H18	000560-21-4	72
3	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	64
4	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	64
5	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	64





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Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

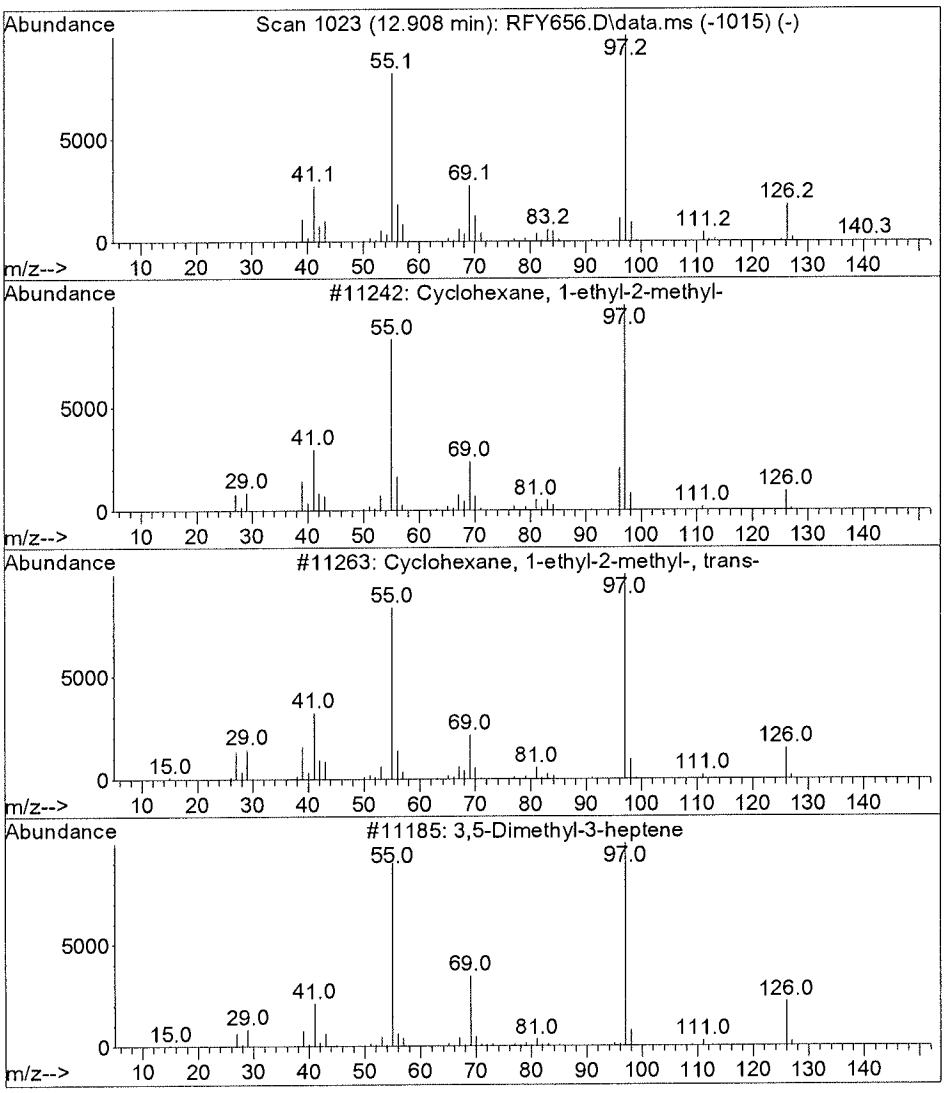
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

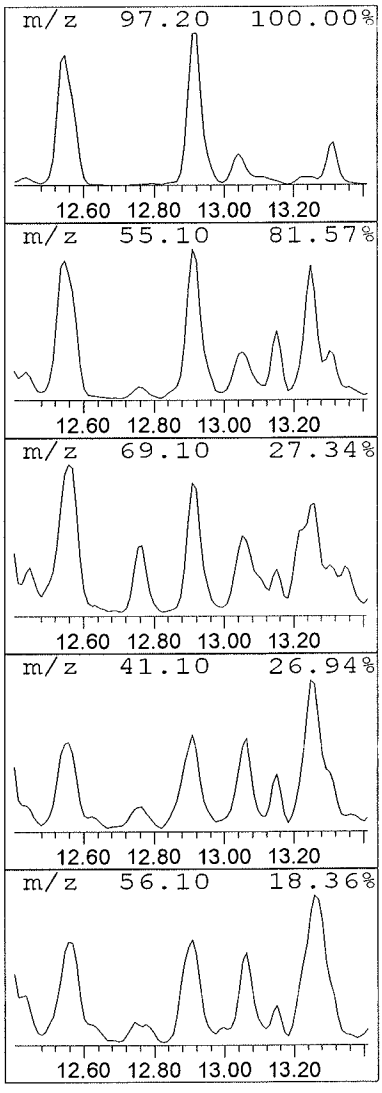
****

Peak Number 3 Cyclohexane, 1-ethyl-2-methyl- Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.908	33.77 ug/l	6668840	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1-ethyl-2-methyl-	126	C9H18	003728-54-9	83
2	Cyclohexane, 1-ethyl-2-methyl-, ...	126	C9H18	004923-78-8	83
3	3,5-Dimethyl-3-heptene	126	C9H18	059643-68-4	80
4	cis-1-Ethyl-3-methyl-cyclohexane	126	C9H18	019489-10-2	74
5	1-Ethyl-3-methylcyclohexane (c,t)	126	C9H18	003728-55-0	74





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Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

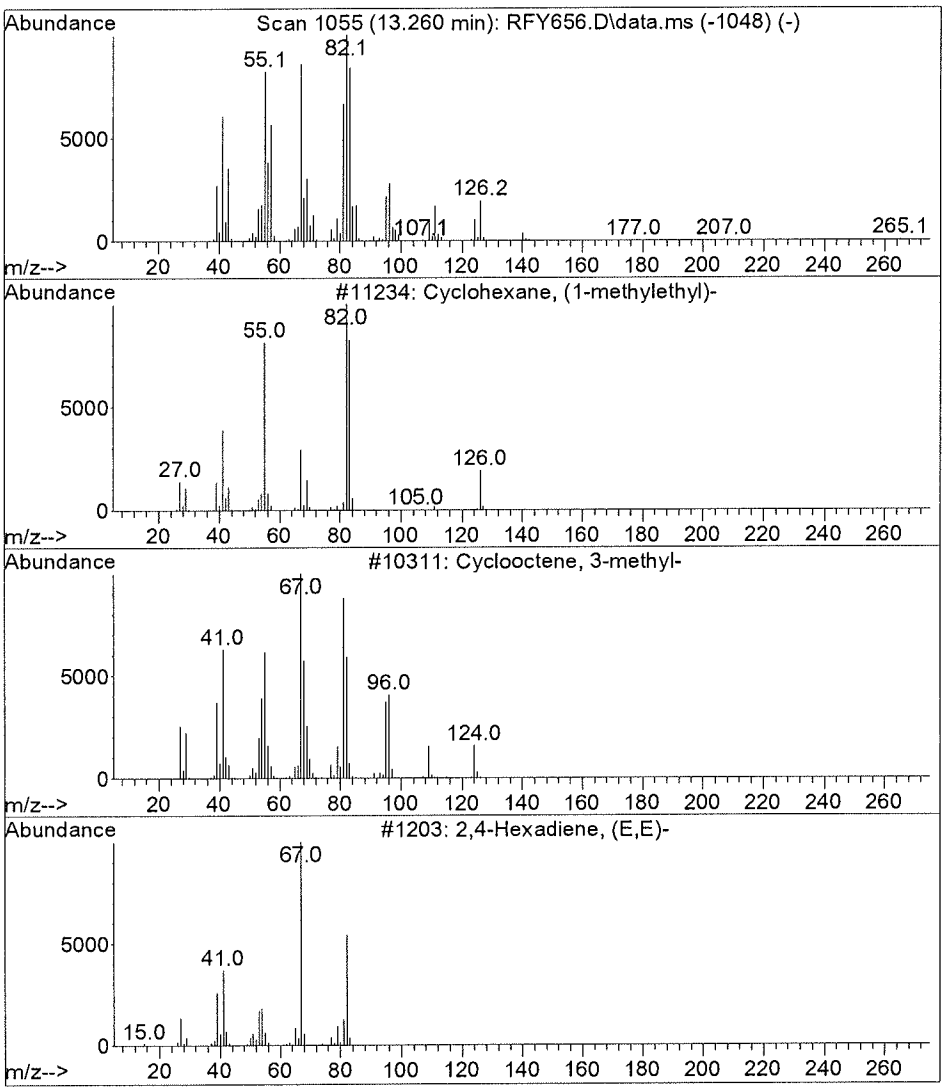
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

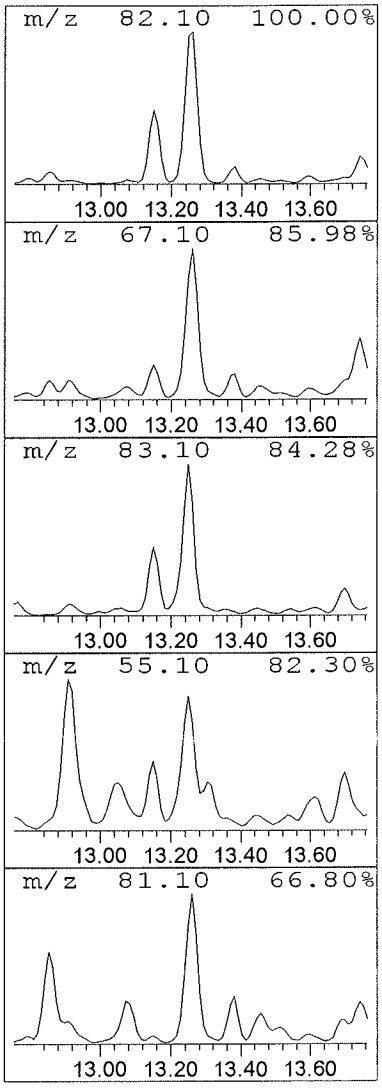
****

Peak Number 4 Cyclohexane, (1-methylethyl)- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.260	52.91 ug/l	10450800	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	46
2	Cyclooctene, 3-methyl-	124	C9H16	013152-05-1	38
3	2,4-Hexadiene, (E,E)-	82	C6H10	005194-51-4	35
4	2-Methylbicyclo[3.2.1]octane	124	C9H16	1000215-28-0	25
5	Cyclohexane, 1-propenyl-	124	C9H16	005364-83-0	25





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Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

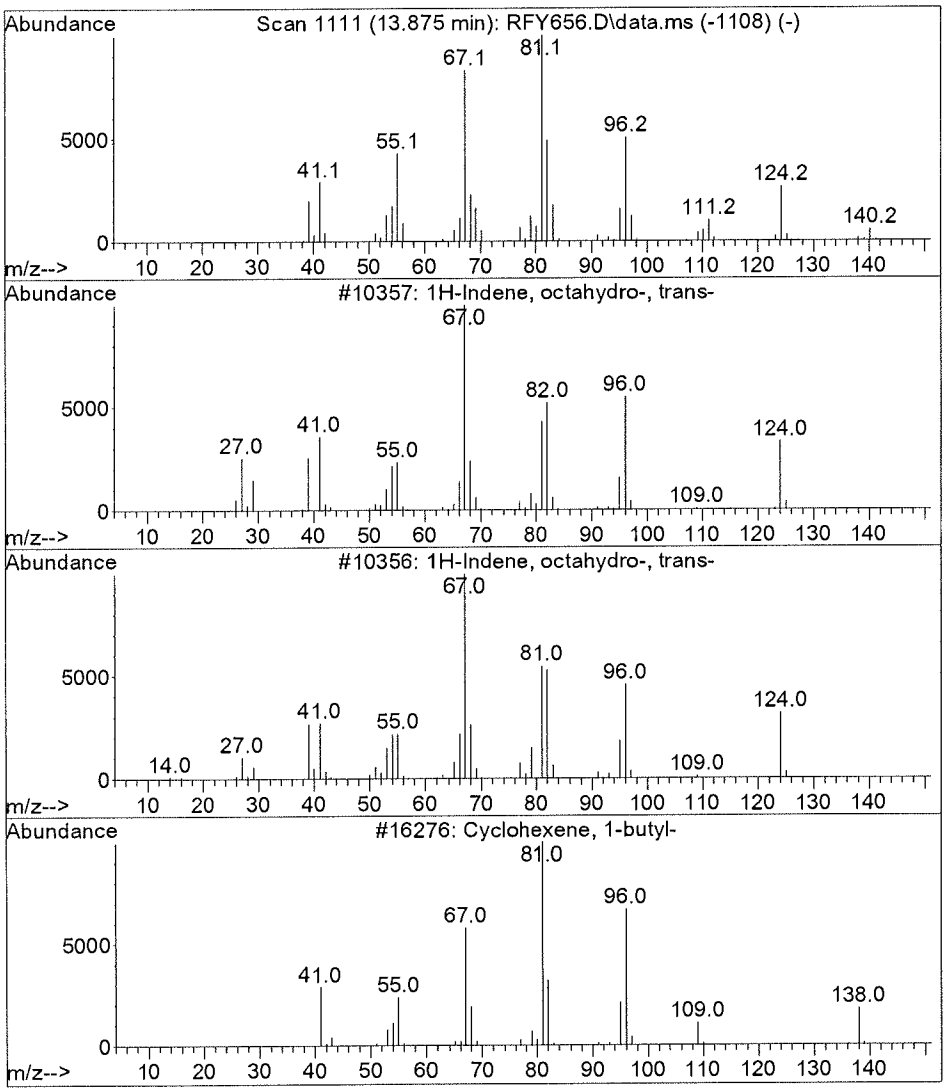
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

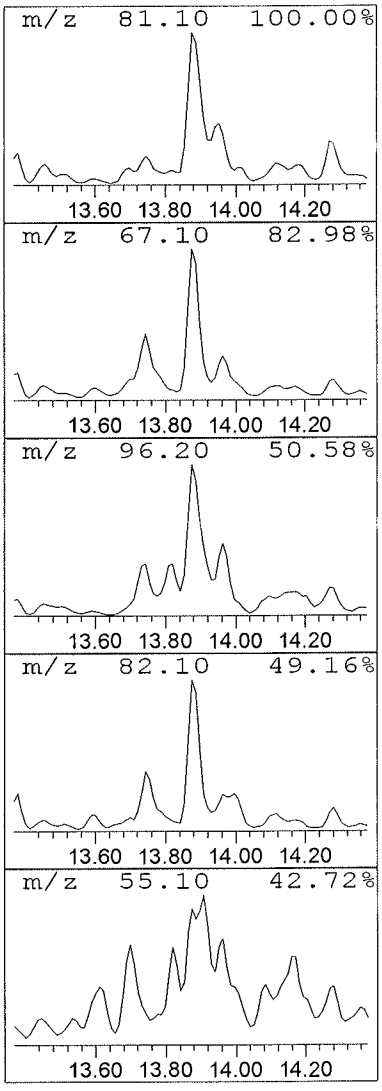
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 5 1H-Indene, octahydro-, trans- Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.874	31.74 ug/l	6268950	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1H-Indene, octahydro-, trans-	124	C9H16	003296-50-2	92
2	1H-Indene, octahydro-, trans-	124	C9H16	003296-50-2	86
3	Cyclohexene, 1-butyl-	138	C10H18	003282-53-9	81
4	Cyclohexane, ethenyl-	110	C8H14	000695-12-5	68
5	Bicyclo[3.3.1]nonane	124	C9H16	000280-65-9	64





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Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

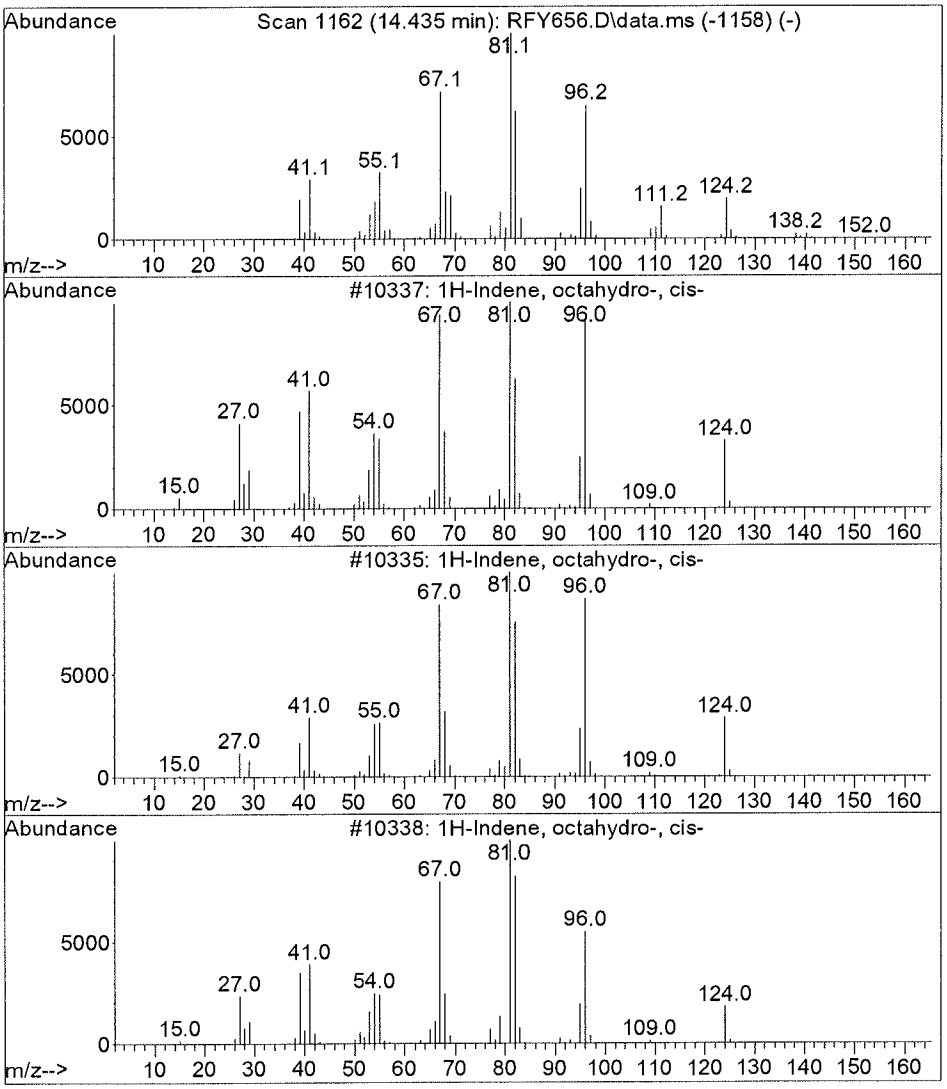
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

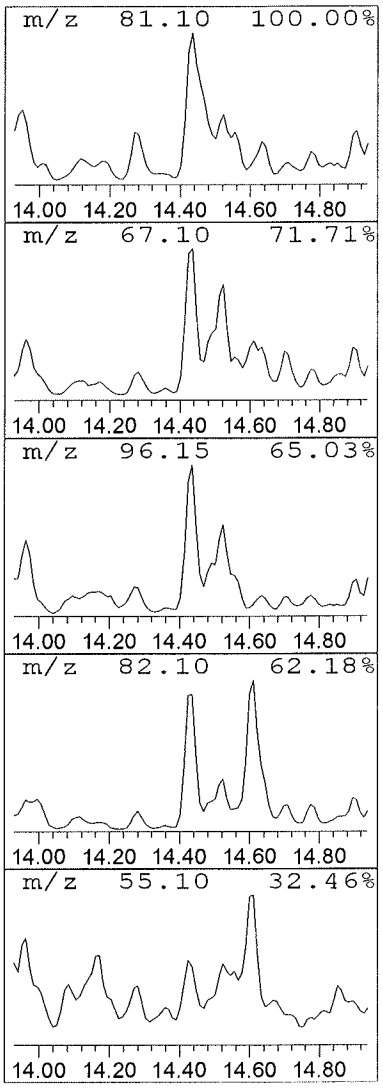
****

Peak Number 6 1H-Indene, octahydro-, cis- Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.435	26.50 ug/l	3510360	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1H-Indene, octahydro-, cis-	124	C9H16	004551-51-3	95
2	1H-Indene, octahydro-, cis-	124	C9H16	004551-51-3	94
3	1H-Indene, octahydro-, cis-	124	C9H16	004551-51-3	90
4	Pentalene, octahydro-2-methyl-	124	C9H16	003868-64-2	83
5	Cyclohexene,1-propyl-	124	C9H16	002539-75-5	58





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

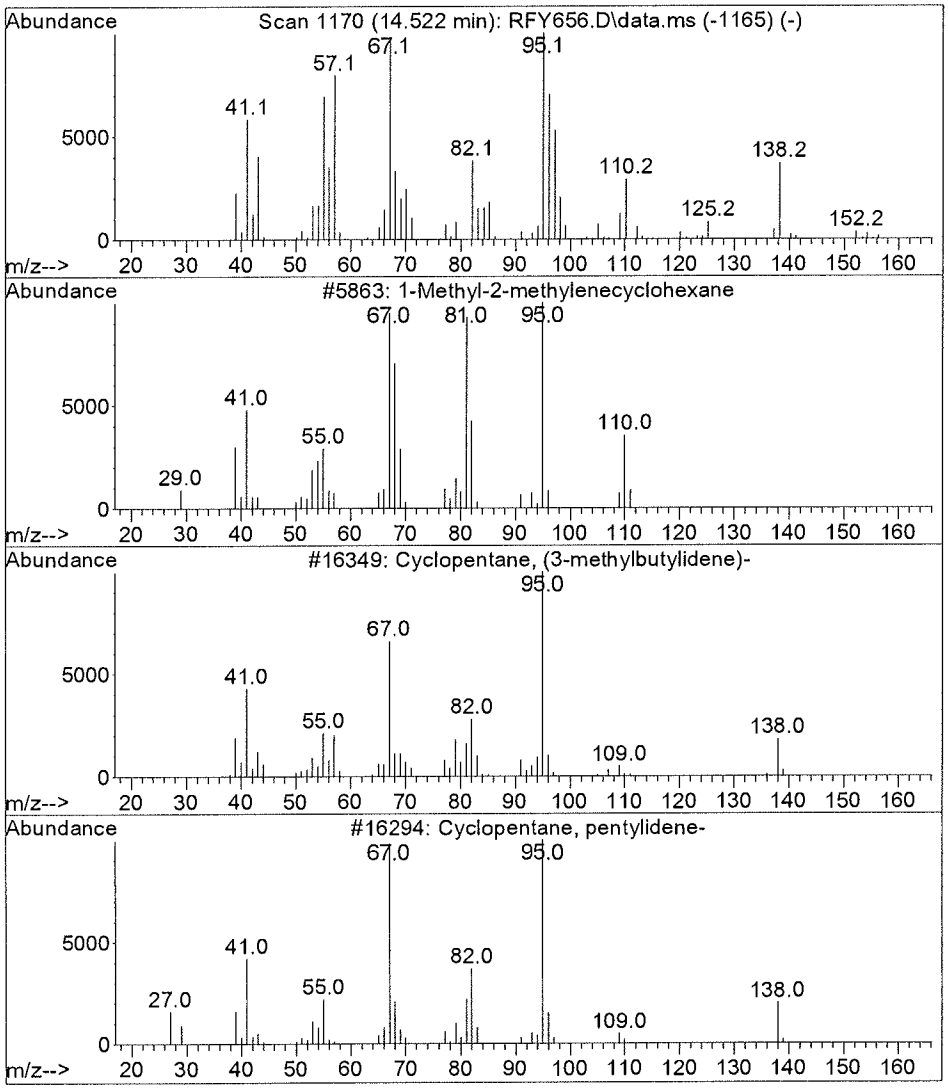
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

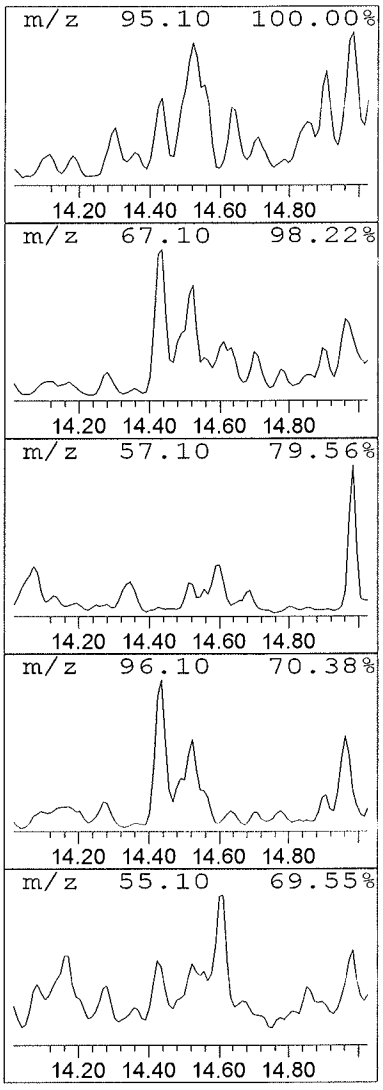
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 7 1-Methyl-2-methylenecyclohe... Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.522	33.05 ug/l	4378040	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Methyl-2-methylenecyclohexane	110	C8H14	002808-75-5	53
2	Cyclopentane, (3-methylbutylidene)-	138	C10H18	053366-51-1	50
3	Cyclopentane, pentylidene-	138	C10H18	053366-55-5	50
4	Cyclooctene, 1,2-dimethyl-	138	C10H18	054299-96-6	49
5	E-1,6-Undecadiene	152	C11H20	1000245-71-2	46





Data Path : C:\msdchem\1\DATA\18F27\
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Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

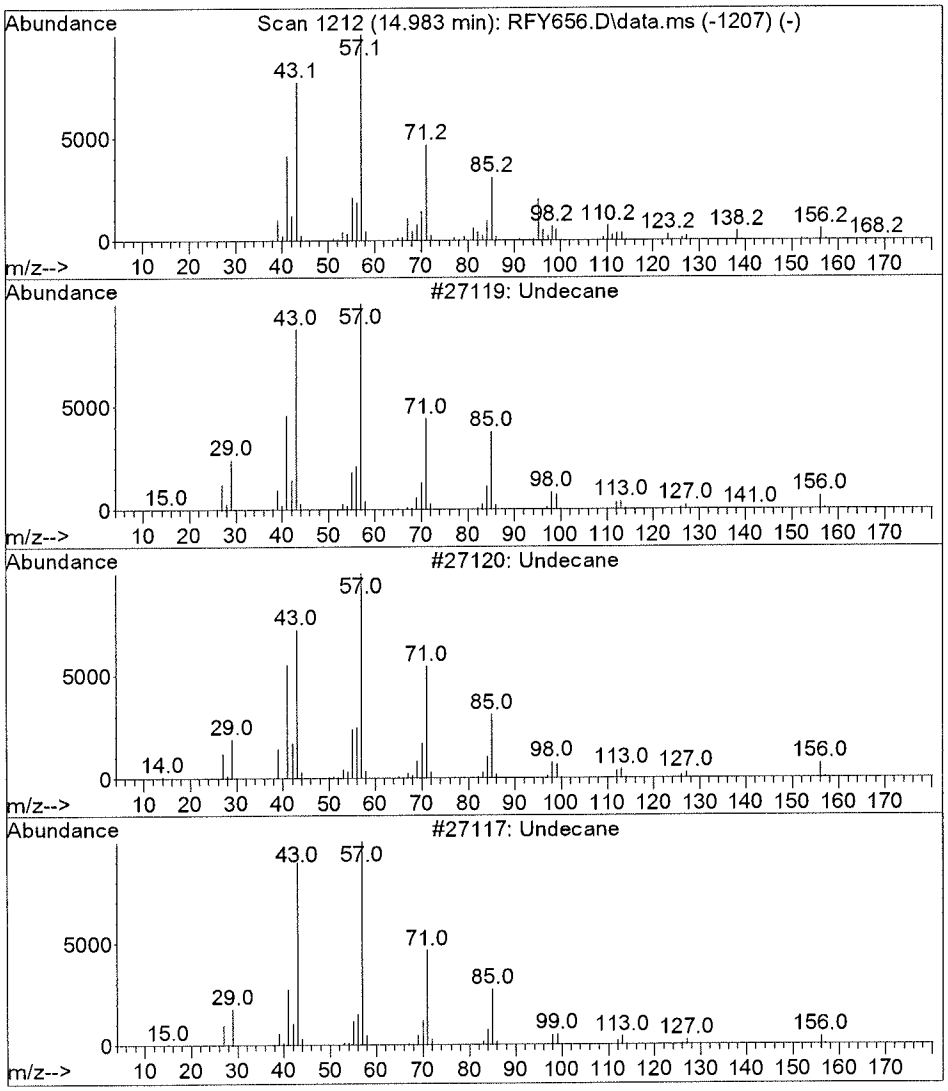
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

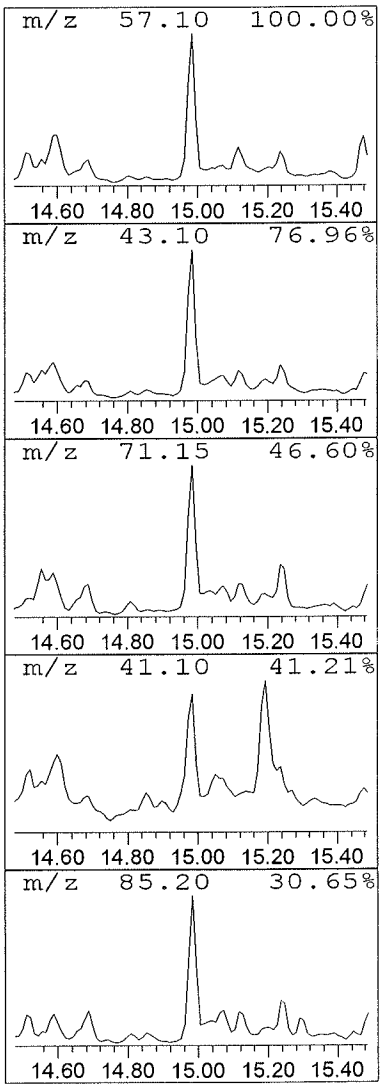
****

Peak Number 8 Undecane Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.983	42.79 ug/l	5668060	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane	156	C11H24	001120-21-4	96
2	Undecane	156	C11H24	001120-21-4	96
3	Undecane	156	C11H24	001120-21-4	95
4	Undecane	156	C11H24	001120-21-4	89
5	Undecane	156	C11H24	001120-21-4	76





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

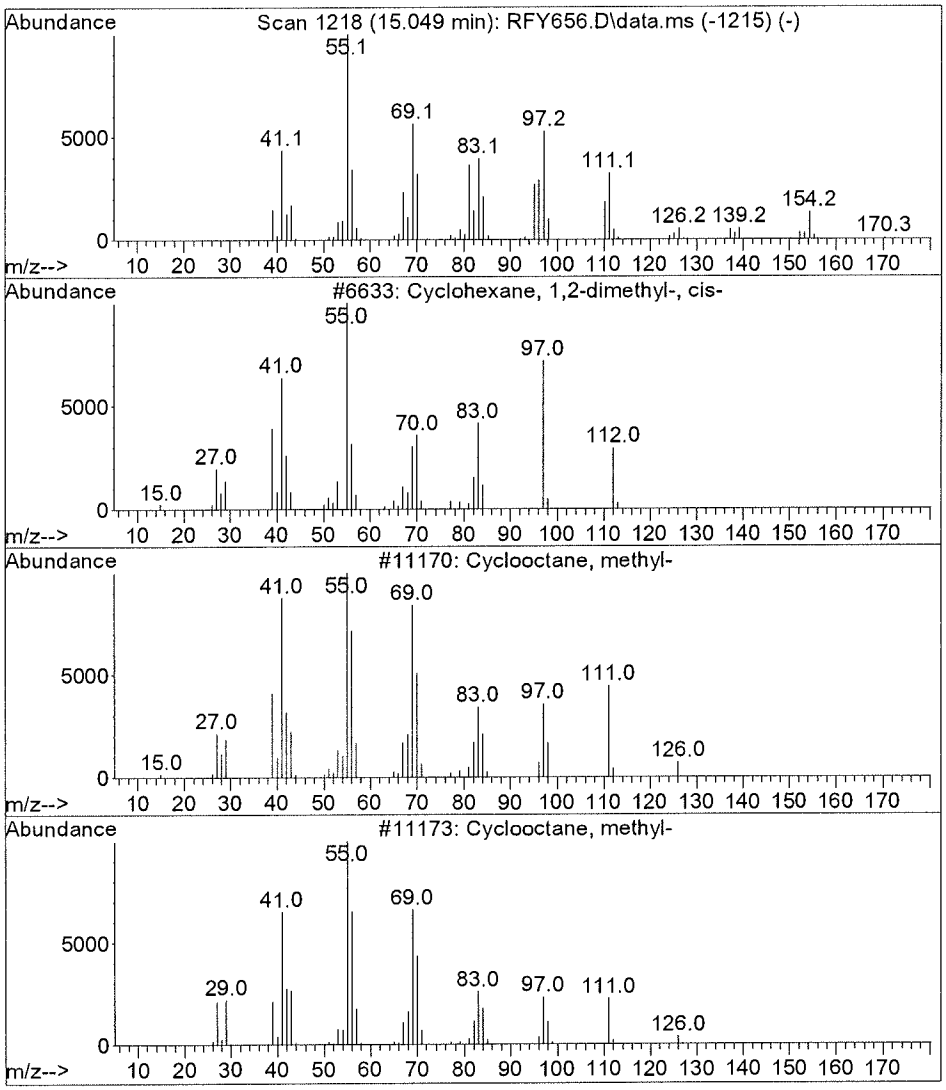
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

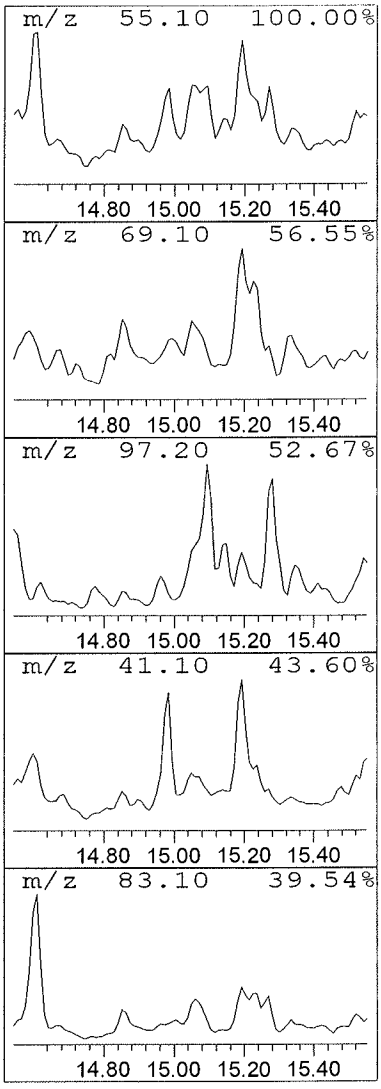
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 9 Cyclohexane, 1,2-dimethyl-,... Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.049	35.34 ug/l	4681900	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,2-dimethyl-, cis-	112	C8H16	002207-01-4	43
2	Cyclooctane, methyl-	126	C9H18	001502-38-1	38
3	Cyclooctane, methyl-	126	C9H18	001502-38-1	35
4	Cyclopropane, 1-butyl-1-methyl-2...	154	C11H22	041977-34-8	30
5	5-Undecene, (E)-	154	C11H22	000764-97-6	27





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

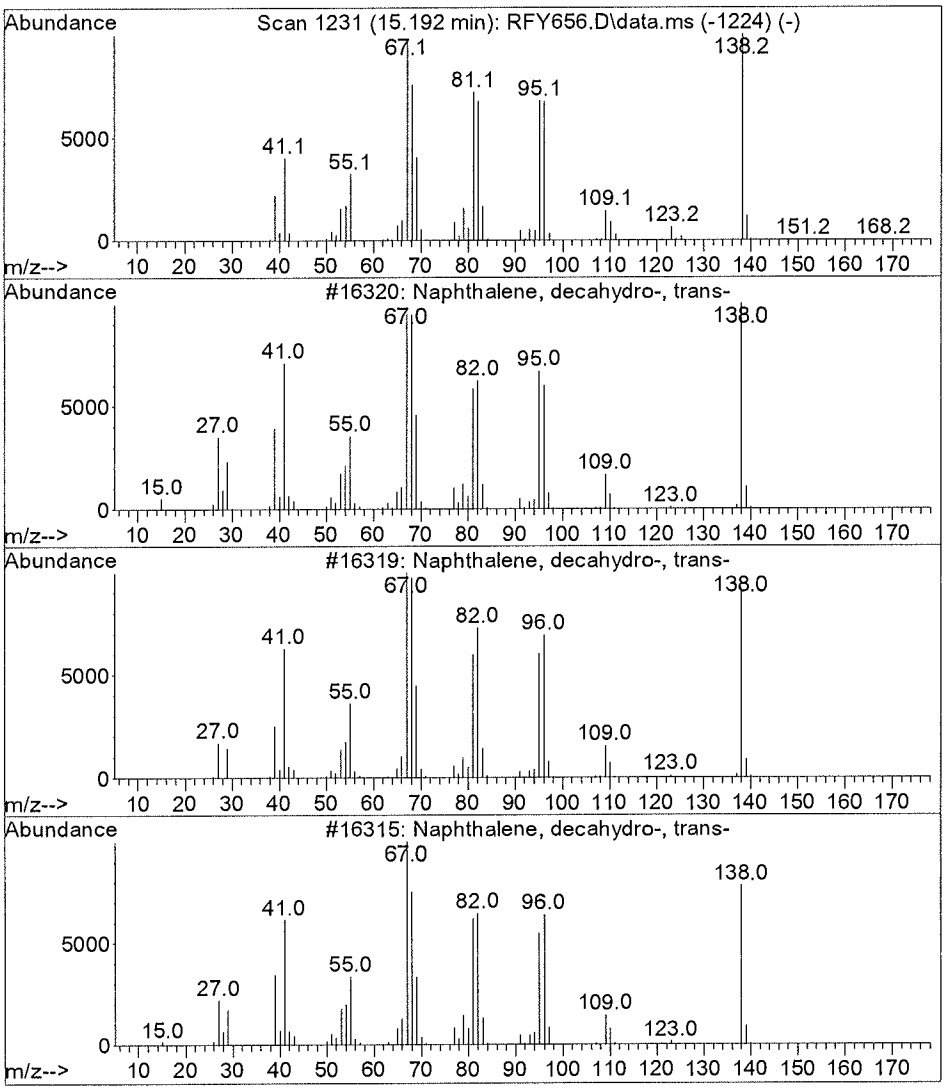
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

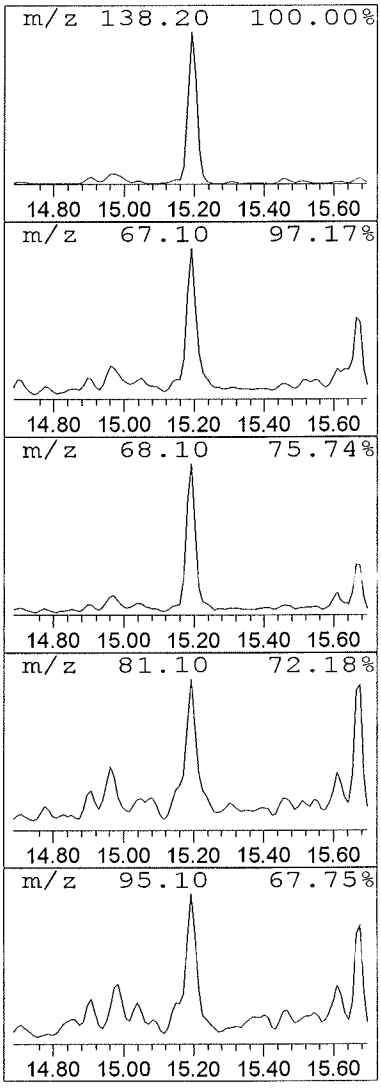
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 10 Naphthalene, decahydro-, tr... Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.192	91.44 ug/l	12111900	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Naphthalene, decahydro-, trans-	138	C10H18	000493-02-7	95
2	Naphthalene, decahydro-, trans-	138	C10H18	000493-02-7	94
3	Naphthalene, decahydro-, trans-	138	C10H18	000493-02-7	94
4	Naphthalene, decahydro-	138	C10H18	000091-17-8	94
5	Naphthalene, decahydro-	138	C10H18	000091-17-8	91





Data Path : C:\msdchem\1\DATA\18F27\
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Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

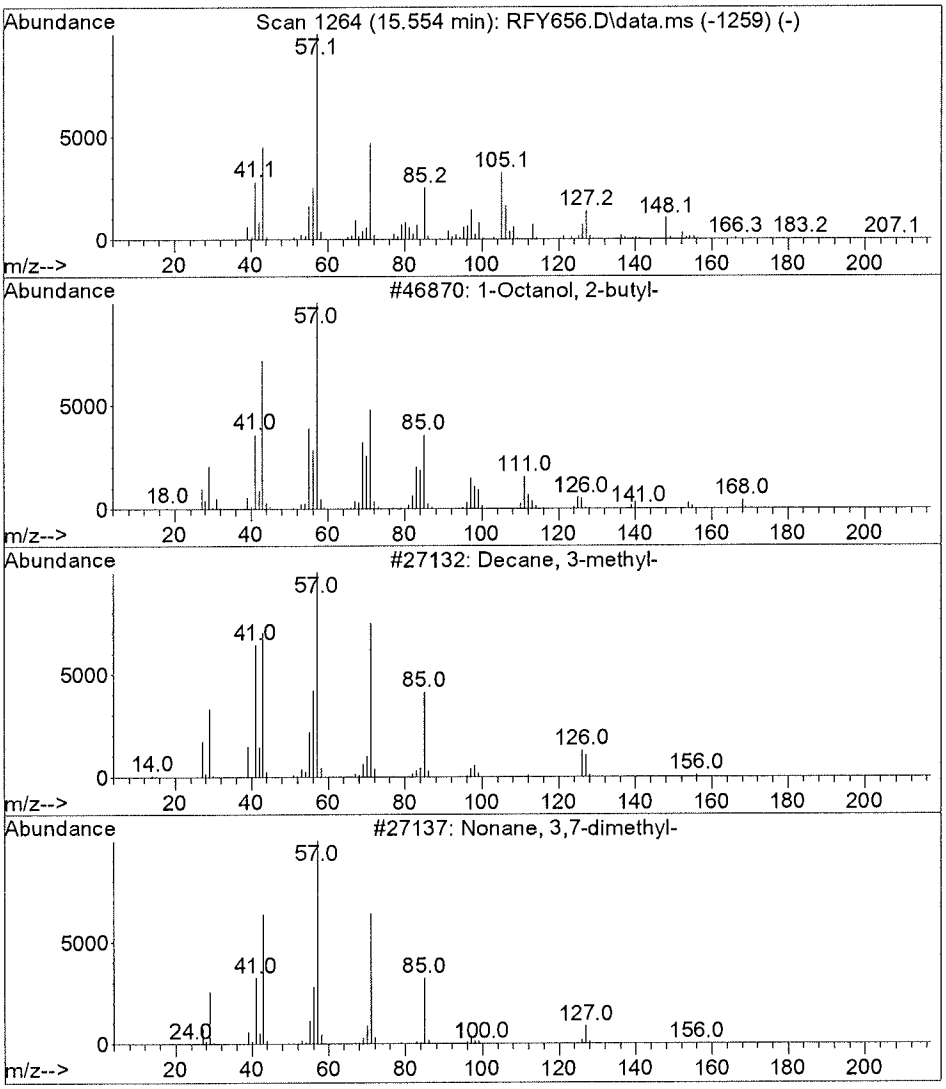
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

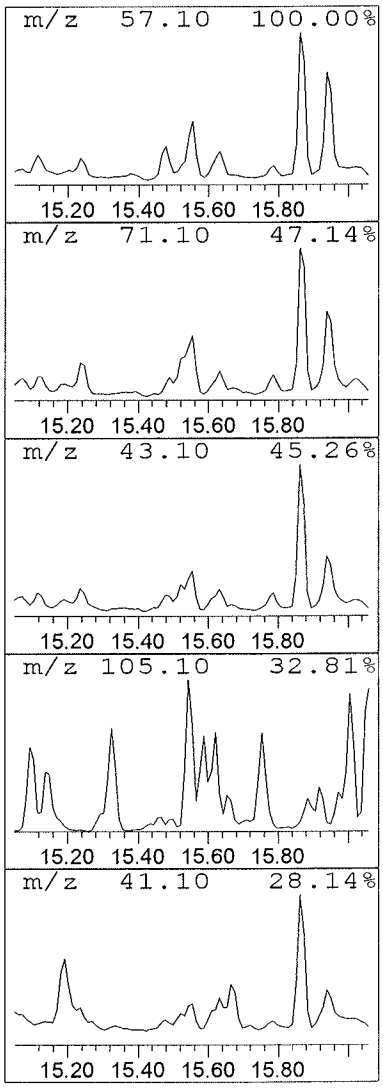
****

Peak Number 11 1-Octanol, 2-butyl- Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.554	32.85 ug/l	4351640	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Octanol, 2-butyl-	186	C12H26O	003913-02-8	53
2	Decane, 3-methyl-	156	C11H24	013151-34-3	49
3	Nonane, 3,7-dimethyl-	156	C11H24	017302-32-8	49
4	Tridecane, 3-methyl-	198	C14H30	006418-41-3	47
5	Dodecane, 2,7,10-trimethyl-	212	C15H32	074645-98-0	43





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

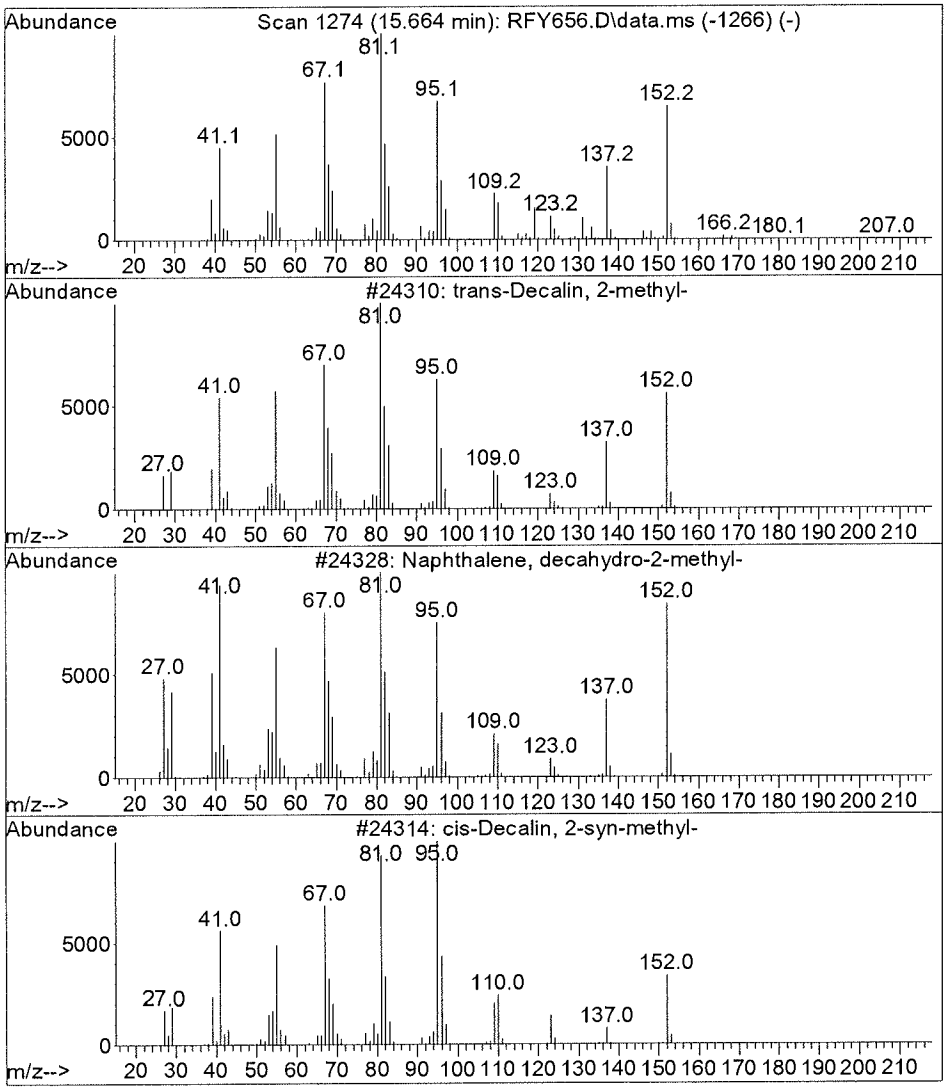
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

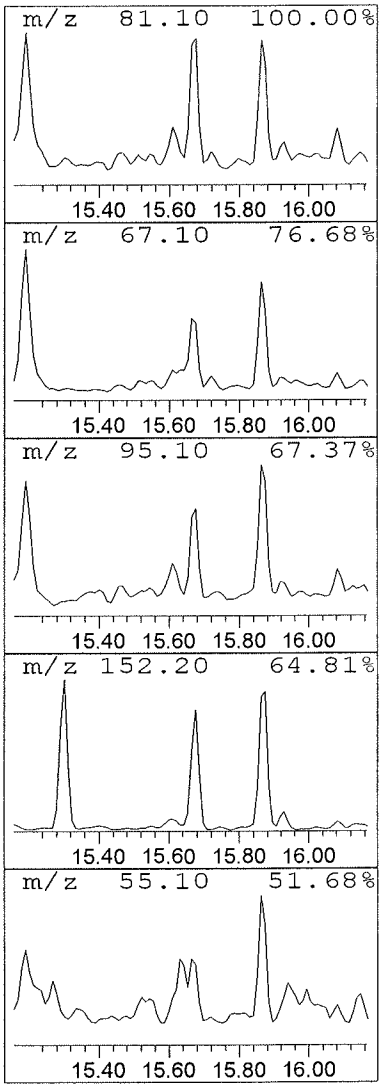
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 12 trans-Decalin, 2-methyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.664	84.13 ug/l	11144400	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	trans-Decalin, 2-methyl-	152	C11H20	1000152-47-3	98
2	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	97
3	cis-Decalin, 2-syn-methyl-	152	C11H20	1000155-85-6	91
4	trans-4a-Methyl-decahydronaphtha...	152	C11H20	002547-27-5	83
5	Cyclohexanone, 5-methyl-2-(1-met...	152	C10H16O	015932-80-6	81





Data Path : C:\msdchem\1\DATA\18F27\
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Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

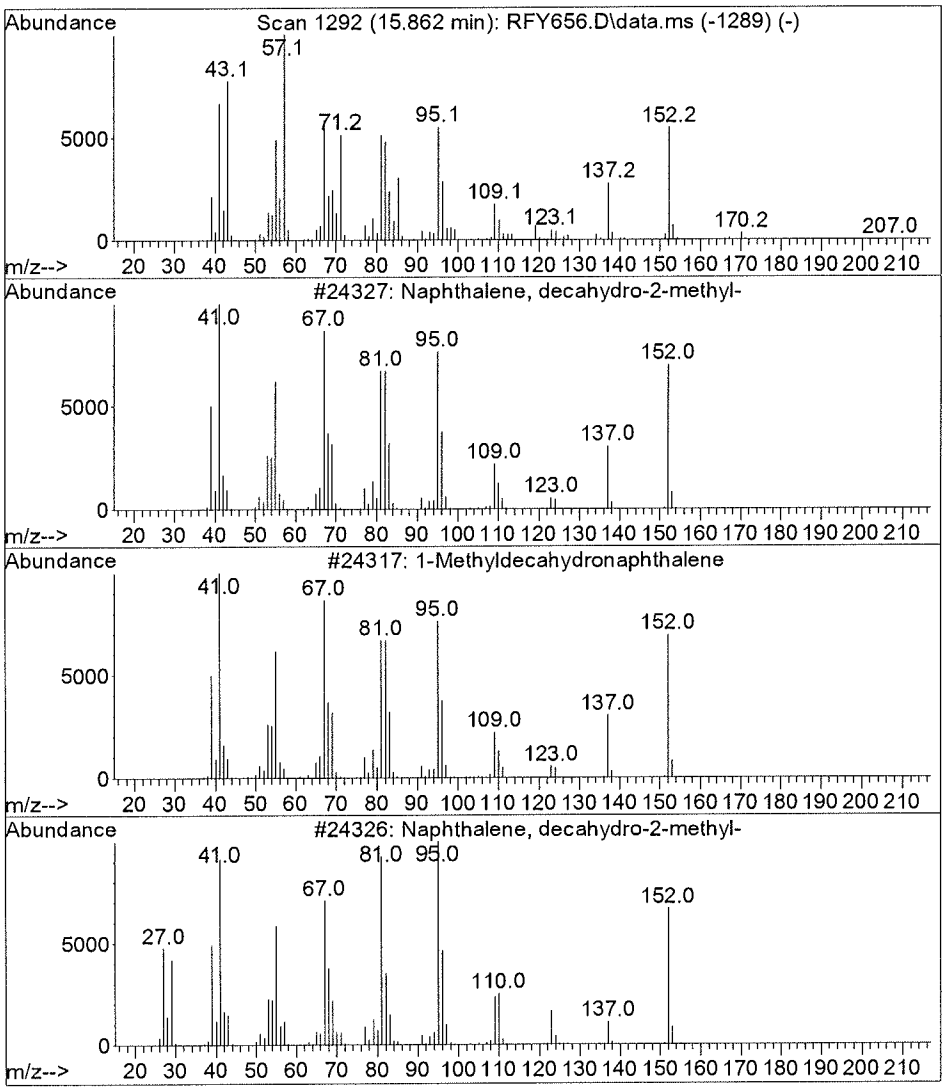
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

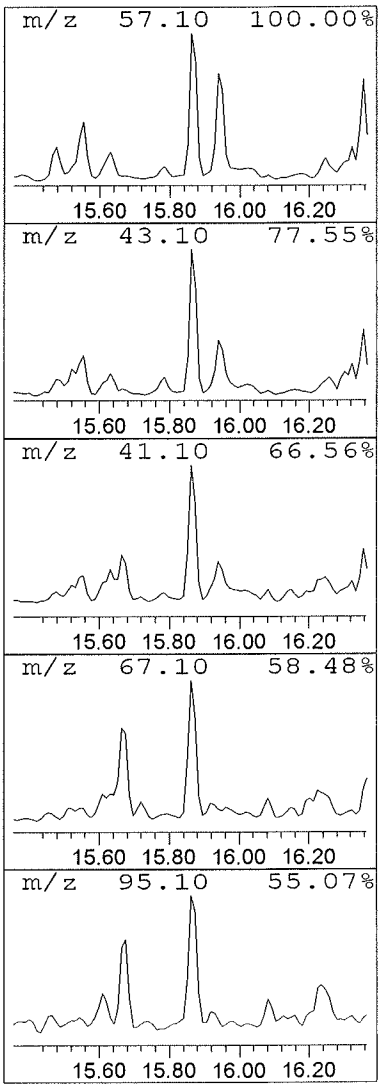
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 13 Naphthalene, decahydro-2-me... Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.862	73.41 ug/l	9723620	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	92
2	1-Methyldecahydronaphthalene	152	C11H20	002958-75-0	92
3	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	78
4	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	70
5	Dodecane	170	C12H26	000112-40-3	58





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Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

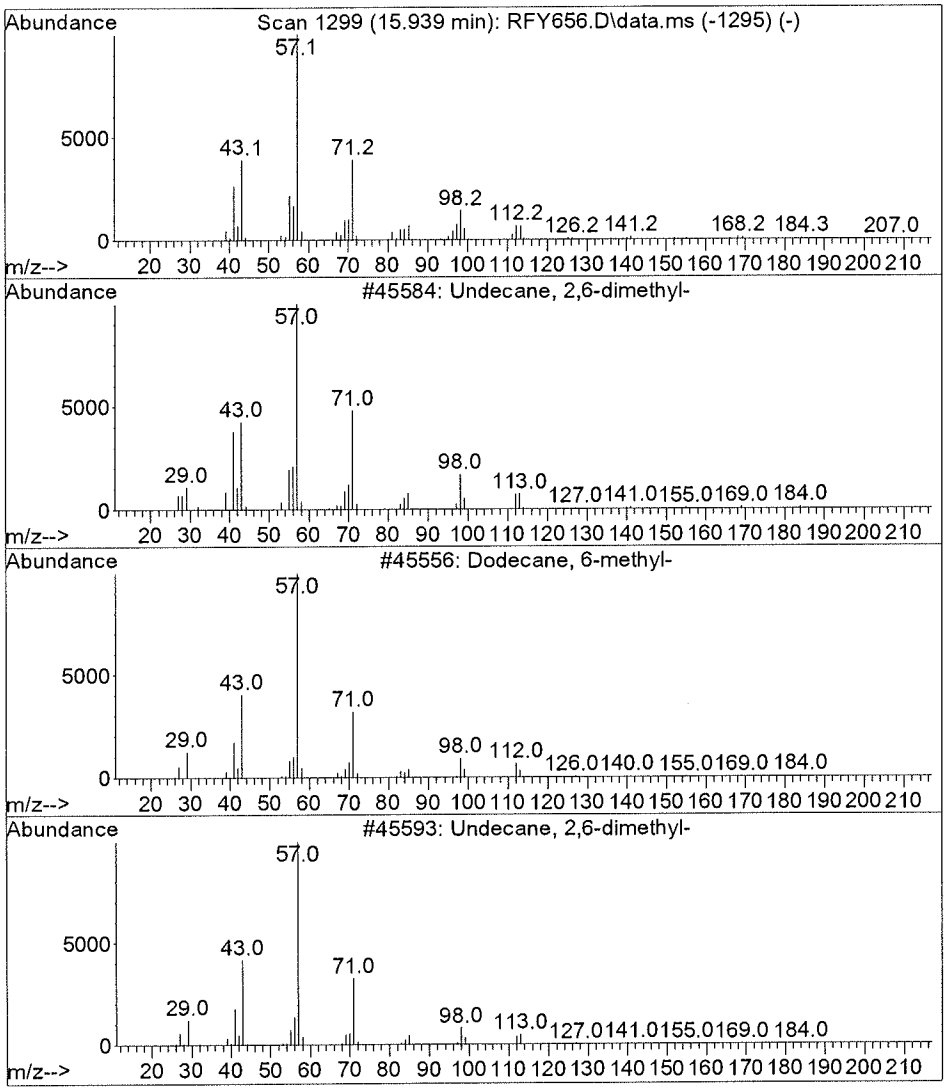
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

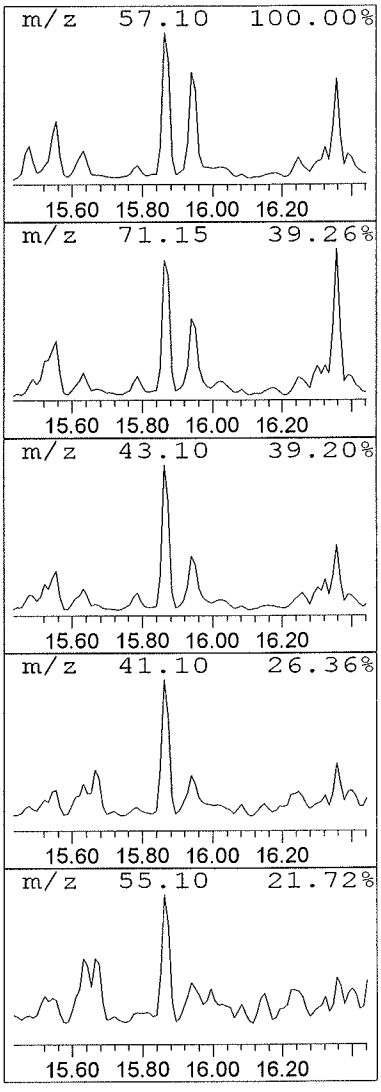
****

Peak Number 14 Undecane, 2,6-dimethyl- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.939	82.71 ug/l	10956600	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	95
2	Dodecane, 6-methyl-	184	C13H28	006044-71-9	87
3	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	87
4	Undecane, 3,6-dimethyl-	184	C13H28	017301-28-9	81
5	Undecane, 4,6-dimethyl-	184	C13H28	017312-82-2	58





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

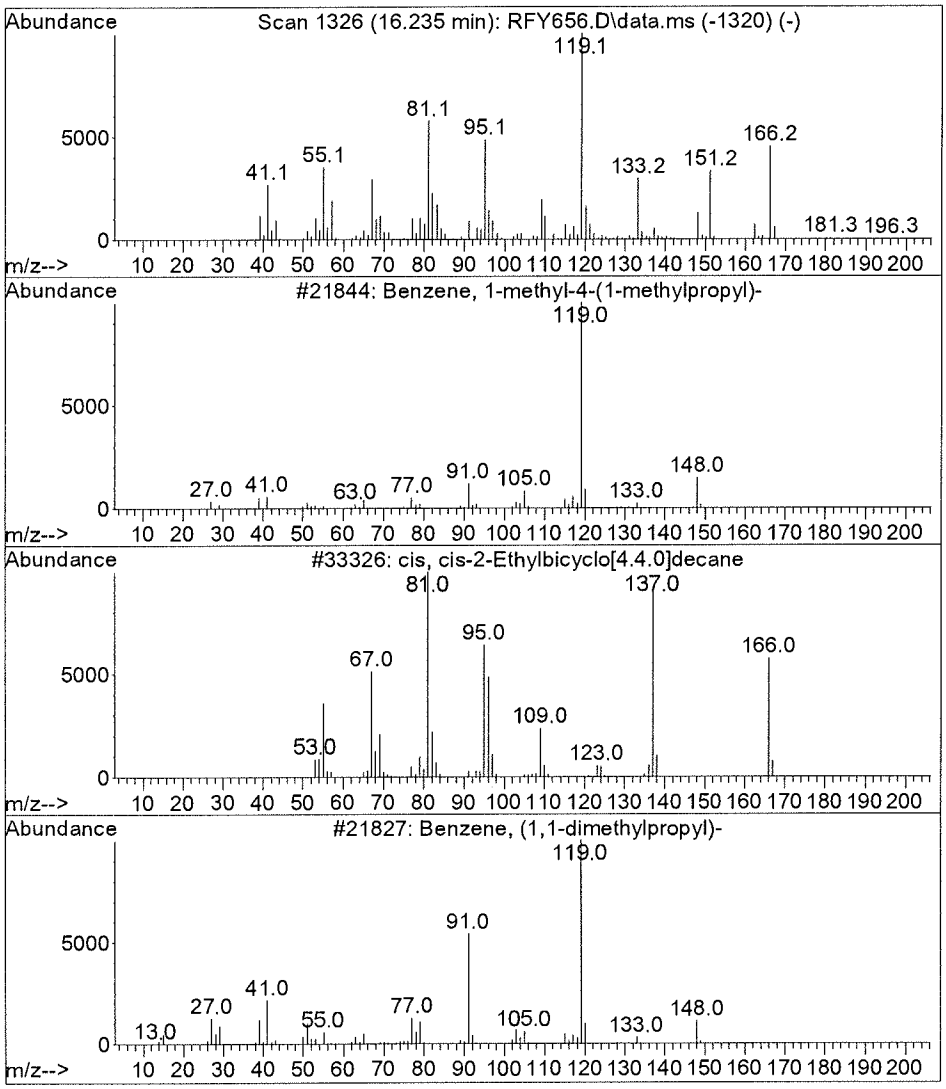
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

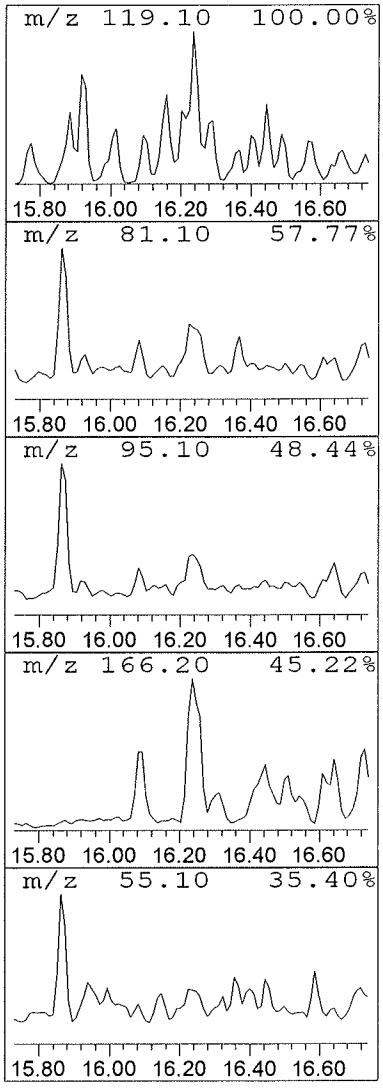
****

Peak Number 15 Benzene, 1-methyl-4-(1-meth... Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.235	83.03 ug/l	10998300	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, 1-methyl-4-(1-methylpro...	148	C11H16	001595-16-0	38
2	cis, cis-2-Ethylbicyclo[4.4.0]de...	166	C12H22	066660-40-0	30
3	Benzene, (1,1-dimethylpropyl)-	148	C11H16	002049-95-8	30
4	trans, cis-3-Ethylbicyclo[4.4.0]...	166	C12H22	066660-43-3	30
5	Benzene, (1,1-dimethylpropyl)-	148	C11H16	002049-95-8	27





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

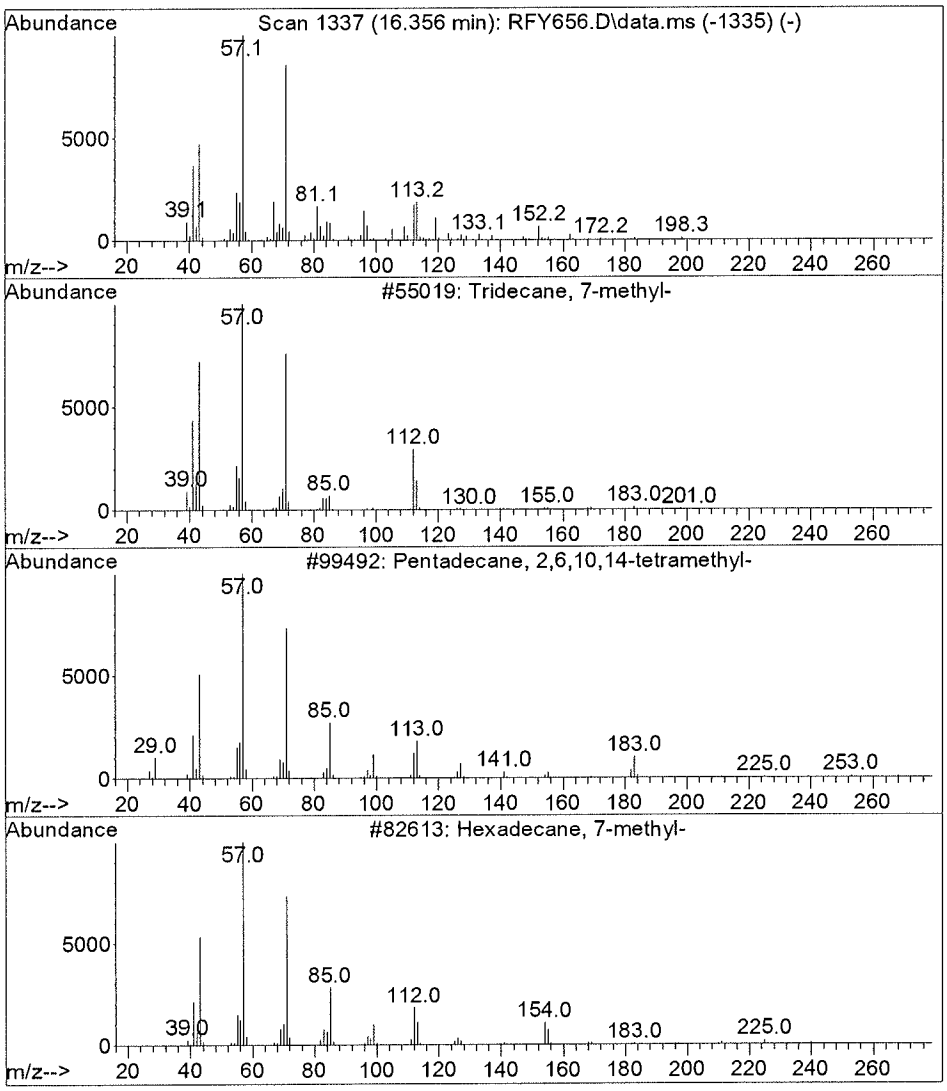
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

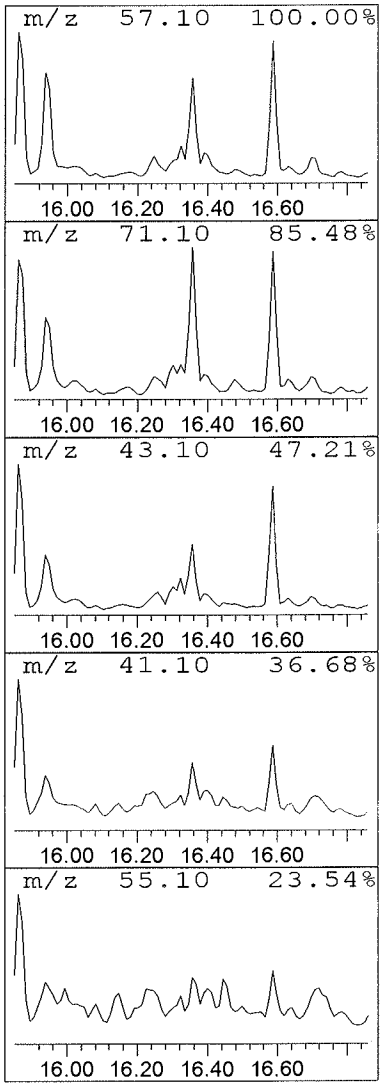
****

Peak Number 16 Tridecane, 7-methyl- Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.356	36.86 ug/l	4882320	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tridecane, 7-methyl-	198	C14H30	026730-14-3	62
2	Pentadecane, 2,6,10,14-tetramethyl-	268	C19H40	001921-70-6	53
3	Hexadecane, 7-methyl-	240	C17H36	026730-20-1	53
4	2-Ethylhexyl mercaptoacetate	204	C10H20O2S	007659-86-1	53
5	Octane, 3,6-dimethyl-	142	C10H22	015869-94-0	50





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

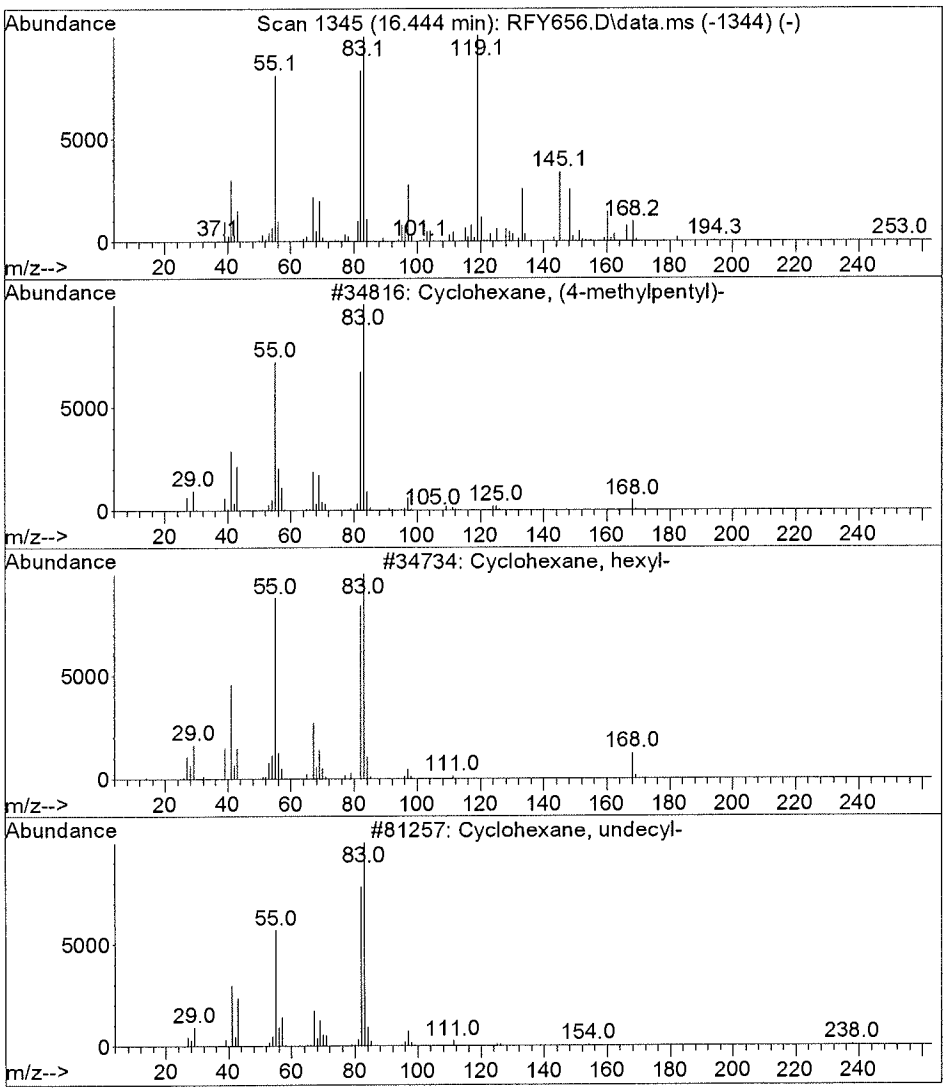
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

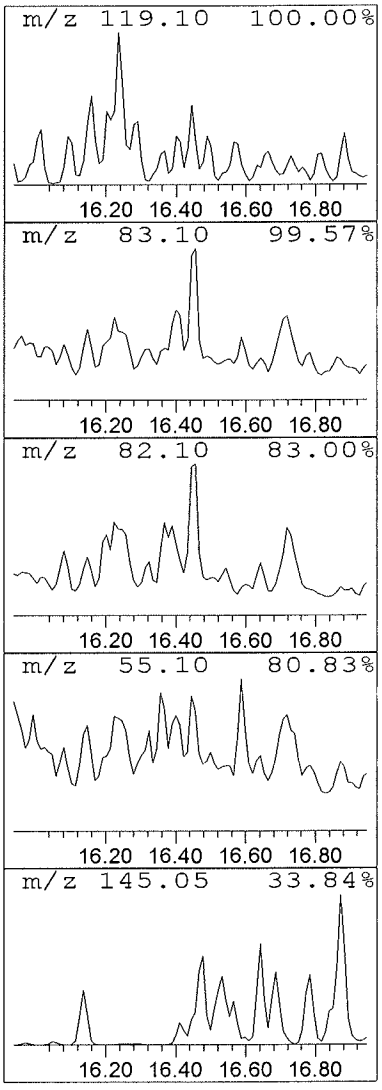
****

Peak Number 17 Cyclohexane, (4-methylpentyl)- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.444	45.95 ug/l	6086890	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, (4-methylpentyl)-	168	C12H24	061142-20-9	43
2	Cyclohexane, hexyl-	168	C12H24	004292-75-5	43
3	Cyclohexane, undecyl-	238	C17H34	054105-66-7	35
4	Cyclohexane, butyl-	140	C10H20	001678-93-9	35
5	Cyclohexane, butyl-	140	C10H20	001678-93-9	35





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

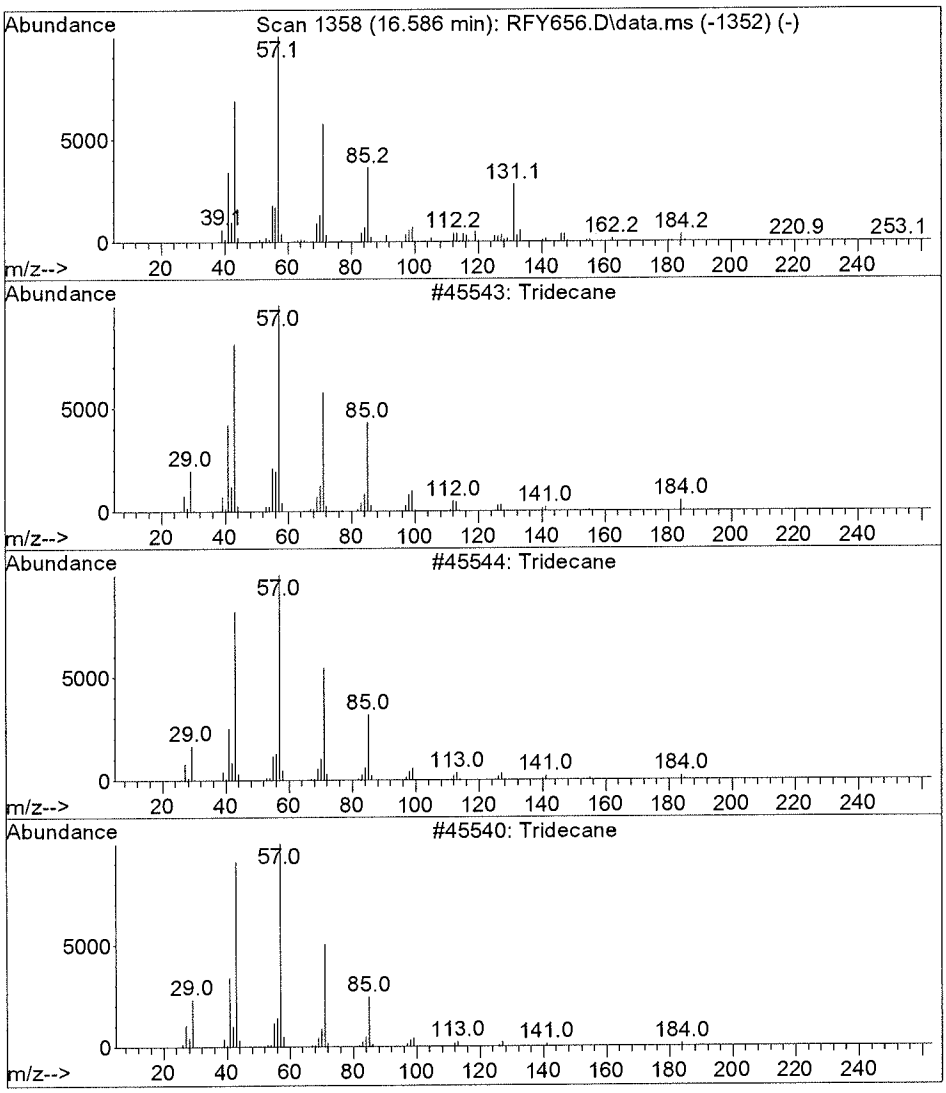
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

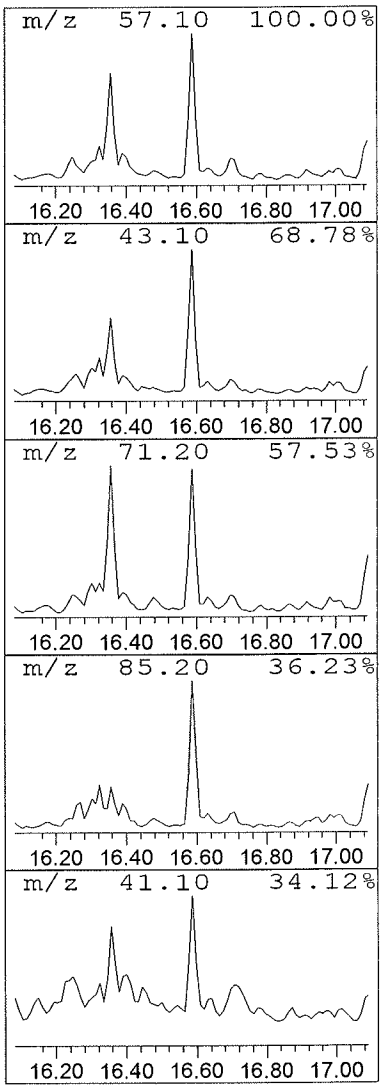
****

Peak Number 18 Tridecane Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.587	59.41 ug/l	7870280	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tridecane	184	C13H28	000629-50-5	98
2	Tridecane	184	C13H28	000629-50-5	95
3	Tridecane	184	C13H28	000629-50-5	70
4	Hexadecane	226	C16H34	000544-76-3	52
5	Tetradecane, 1-iodo-	324	C14H29I	019218-94-1	52





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

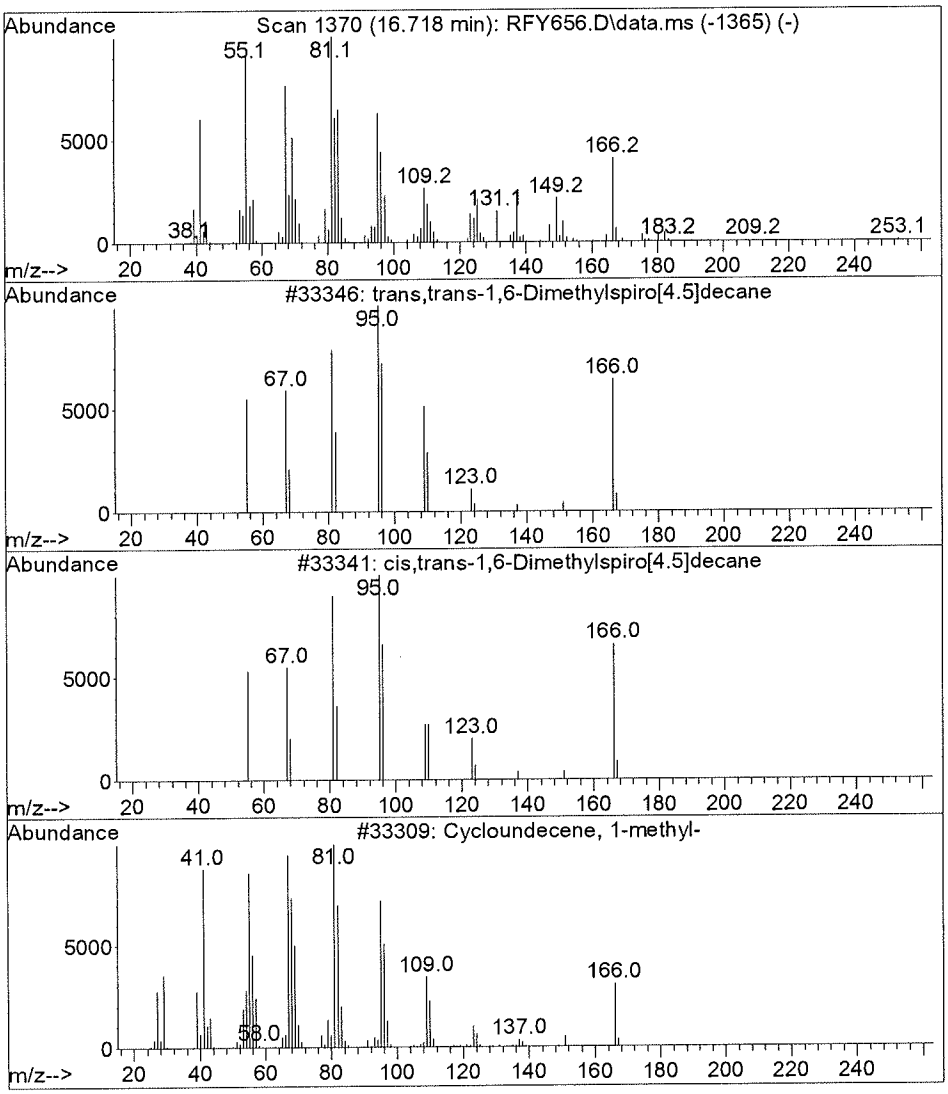
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

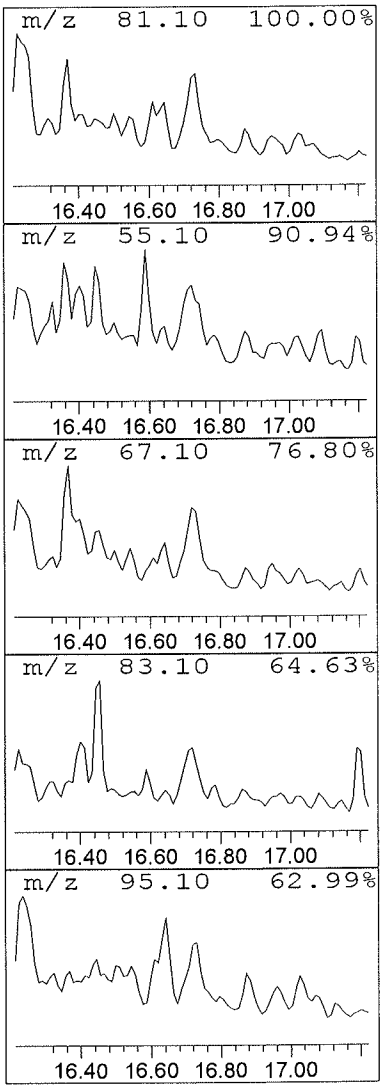
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 19 trans,trans-1,6-Dimethylspi... Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.718	42.83 ug/l	5673480	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	trans,trans-1,6-Dimethylspiro[4....	166	C12H22	1000111-72-1	81
2	cis,trans-1,6-Dimethylspiro[4.5]...	166	C12H22	1000111-72-3	76
3	Cycloundecene, 1-methyl-	166	C12H22	088828-82-4	64
4	cis,cis-1,6-Dimethylspiro[4.5]de...	166	C12H22	1000111-72-4	60
5	trans,cis-1,7-Dimethylspiro[4.5]...	166	C12H22	1000111-72-7	52





Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

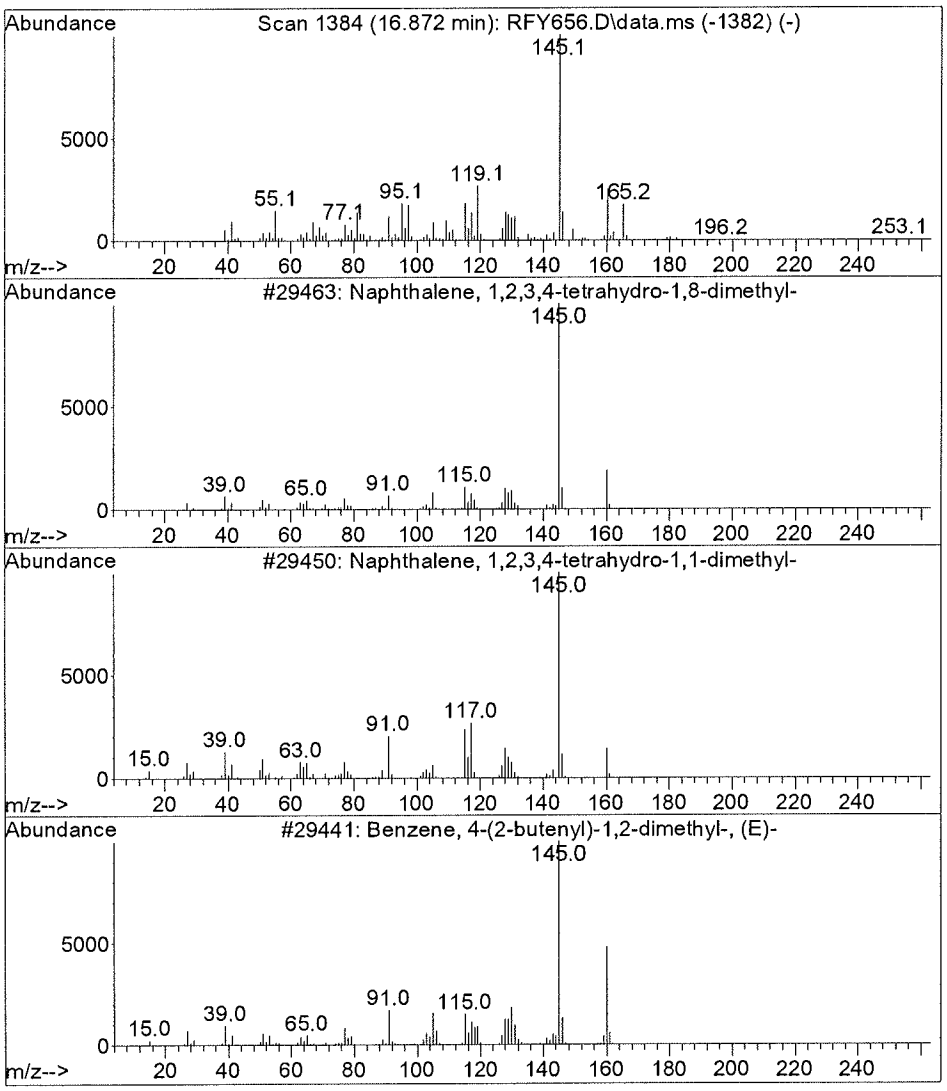
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

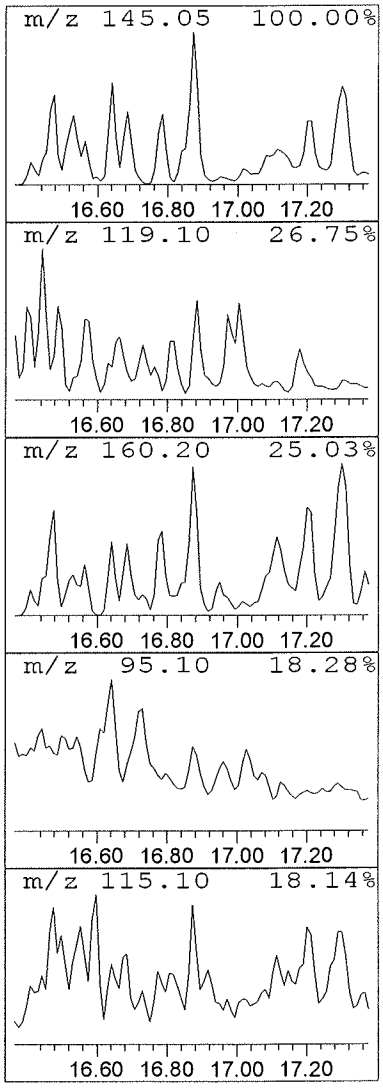
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 20 Naphthalene, 1,2,3,4-tetrah... Concentration Rank 20

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.872	26.19 ug/l	3469670	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Naphthalene, 1,2,3,4-tetrahydro-...	160	C12H16	025419-33-4	93
2	Naphthalene, 1,2,3,4-tetrahydro-...	160	C12H16	001985-59-7	89
3	Benzene, 4-(2-butenyl)-1,2-dimet...	160	C12H16	054340-86-2	81
4	Benzene, 1-(2-butenyl)-2,3-dimet...	160	C12H16	054340-85-1	81
5	1H-Indene, 2,3-dihydro-1,1,3-tri...	160	C12H16	002613-76-5	81





Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY656.D
Acq On : 27 Jun 2018 5:50 pm
Operator : DNguye
Sample : 18F187-04I 100uL
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc
Pentane, 2,3,4-...	9.669	33.2	ug/l	1934500	1	8.868	2916150	50.0
Pentane, 2,3,3-...	9.845	55.1	ug/l	3213010	1	8.868	2916150	50.0
Cyclohexane, 1-...	12.908	33.8	ug/l	6668840	2	12.513	9875370	50.0
Cyclohexane, (1...	13.260	52.9	ug/l	10450800	2	12.513	9875370	50.0
1H-Indene, octa...	13.874	31.7	ug/l	6268950	2	12.513	9875370	50.0
1H-Indene, octa...	14.435	26.5	ug/l	3510360	3	15.302	6623210	50.0
1-Methyl-2-meth...	14.522	33.1	ug/l	4378040	3	15.302	6623210	50.0
Undecane	14.983	42.8	ug/l	5668060	3	15.302	6623210	50.0
Cyclohexane, 1,...	15.049	35.3	ug/l	4681900	3	15.302	6623210	50.0
Naphthalene, de...	15.192	91.4	ug/l	12111900	3	15.302	6623210	50.0
1-Octanol, 2-bu...	15.554	32.9	ug/l	4351640	3	15.302	6623210	50.0
trans-Decalin, ...	15.664	84.1	ug/l	11144400	3	15.302	6623210	50.0
Naphthalene, de...	15.862	73.4	ug/l	9723620	3	15.302	6623210	50.0
Undecane, 2,6-d...	15.939	82.7	ug/l	10956600	3	15.302	6623210	50.0
Benzene, 1-meth...	16.235	83.0	ug/l	10998300	3	15.302	6623210	50.0
Tridecane, 7-me...	16.356	36.9	ug/l	4882320	3	15.302	6623210	50.0
Cyclohexane, (4...	16.444	46.0	ug/l	6086890	3	15.302	6623210	50.0
Tridecane	16.587	59.4	ug/l	7870280	3	15.302	6623210	50.0
trans,trans-1,6...	16.718	42.8	ug/l	5673480	3	15.302	6623210	50.0
Naphthalene, 1,...	16.872	26.2	ug/l	3469670	3	15.302	6623210	50.0

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/27/18 18:39
Sample ID	: 18Q2DP009-SB0802-SO-0	Date Analyzed:	06/27/18 18:39
Lab Samp ID	: F187-05I	Dilution Factor:	56.5
Lab File ID	: RFY658	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: 4.9
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.30	0.030	0.059
1,1,1-TRICHLOROETHANE	ND	0.30	0.030	0.059
1,1,2,2-TETRACHLOROETHANE	ND	0.30	0.030	0.059
1,1,2-TRICHLOROETHANE	ND	0.30	0.030	0.059
1,1-DICHLOROETHANE	ND	0.30	0.030	0.059
1,1-DICHLOROETHENE	ND	0.30	0.030	0.059
1,1-DICHLOROPROPENE	ND	0.30	0.030	0.059
1,2,3-TRICHLOROBENZENE	ND	0.30	0.059	0.12
1,2,3-TRICHLOROPROPANE	ND	0.30	0.059	0.12
1,2,4-TRICHLOROBENZENE	ND	0.30	0.059	0.12
1,2,4-TRIMETHYLBENZENE	ND	0.30	0.033	0.12
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.30	0.059	0.12
1,2-DIBROMOETHANE	ND	0.30	0.030	0.059
1,2-DICHLOROBENZENE	ND	0.30	0.030	0.059
1,2-DICHLOROETHANE	ND	0.30	0.030	0.059
1,2-DICHLOROPROPANE	ND	0.30	0.030	0.059
1,3,5-TRIMETHYLBENZENE	ND	0.30	0.035	0.12
1,3-DICHLOROBENZENE	ND	0.30	0.031	0.059
1,3-DICHLOROPROPANE	ND	0.30	0.030	0.059
1,4-DICHLOROBENZENE	ND	0.30	0.030	0.059
2,2-DICHLOROPROPANE	ND	0.30	0.059	0.12
2-BUTANONE	ND	0.59	0.15	0.30
2-CHLOROTOLUENE	ND	0.30	0.049	0.059
2-HEXANONE	ND	0.59	0.17	0.30
4-CHLOROTOLUENE	ND	0.30	0.040	0.059
ACETONE	ND	0.59	0.18	0.30
BENZENE	ND	0.30	0.030	0.059
BROMOBENZENE	ND	0.30	0.030	0.059
BROMOCHLOROMETHANE	ND	0.30	0.030	0.059
BROMODICHLOROMETHANE	ND	0.30	0.030	0.059
BROMOFORM	ND	0.30	0.059	0.12
BROMOMETHANE	ND	0.59	0.11	0.12
CARBON DISULFIDE	ND	0.30	0.030	0.059
CARBON TETRACHLORIDE	ND	0.30	0.032	0.059
CHLOROBENZENE	ND	0.30	0.030	0.059
CHLOROETHANE	ND	0.30	0.077	0.12
CHLOROFORM	ND	0.30	0.030	0.059
CHLOROMETHANE	ND	0.30	0.059	0.12
CIS-1,2-DICHLOROETHYLENE	ND	0.30	0.030	0.059
CIS-1,3-DICHLOROPROPENE	ND	0.30	0.030	0.059
CYCLOHEXANE	ND	0.30	0.071	0.12
DIBROMOCHLOROMETHANE	ND	0.30	0.030	0.059
DIBROMOMETHANE	ND	0.30	0.030	0.059
DICHLORODIFLUOROMETHANE	ND	0.30	0.071	0.12
ETHYLBENZENE	ND	0.30	0.030	0.059
HEXACHLOROBUTADIENE	ND	0.30	0.059	0.12
ISOPROPYLBENZENE	ND	0.30	0.038	0.12
METHYLENE CHLORIDE	ND	0.59	0.12	0.30
M,P-XYLENE	ND	0.30	0.059	0.12
4-METHYL-2-PENTANONE	ND	0.59	0.17	0.30
TERT-BUTYL METHYL ETHER	ND	0.30	0.030	0.059
NAPHTHALENE	ND	0.30	0.059	0.12
N-BUTYLBENZENE	ND	0.30	0.042	0.059
N-PROPYLBENZENE	ND	0.30	0.039	0.059
O-XYLENE	ND	0.30	0.030	0.059
P-ISOPROPYLTOLUENE	ND	0.30	0.037	0.059
SEC-BUTYLBENZENE	ND	0.30	0.040	0.059
STYRENE	ND	0.30	0.030	0.059
TERT-BUTYLBENZENE	ND	0.30	0.037	0.059
TETRACHLOROETHENE	ND	0.30	0.030	0.059
TOLUENE	ND	0.30	0.030	0.059
TRANS-1,2-DCE	ND	0.30	0.030	0.059
TRANS-1,3-DICHLOROPROPENE	ND	0.30	0.030	0.059
TCE	ND	0.30	0.030	0.059
TRICHLOROFLUOROMETHANE	ND	0.30	0.065	0.12
TRICHLOROTRIFLUOROETHANE	ND	0.30	0.059	0.12
VINYL CHLORIDE	ND	0.30	0.083	0.12
VINYL ACETATE	ND	0.30	0.077	0.12
XYLENES, TOTAL	ND	0.30	0.030	0.059

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	2.99	2.971	101	71-136
4-BROMOFLUOROBENZENE	5.61	5.347	105	79-119
TOLUENE-D8	3.16	2.971	106	85-116
DIBROMOFLUOROMETHANE	3.03	2.971	102	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/27/18 18:39
Sample ID	: 18Q2DP009-SB0802-SO-0	Date Analyzed:	06/27/18 18:39
Lab Samp ID	: F187-05I	Dilution Factor:	56.5
Lab File ID	: RFY658	Matrix :	SOIL
Ext Btch ID	: VMF5F26	% Moisture :	4.9
Calib. Ref.	: RDY199	Instrument ID :	TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY658.D
Acq On : 27 Jun 2018 6:39 pm
Operator : DNguye
Sample : 18F187-05I 100uL
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jul 02 17:45:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.857	114	1307808	50.00	ug/l	-0.01
58) CHLOROBENZENE-D5	12.513	117	1101832	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	490351	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.463	111	353971	50.94	ug/l	-0.01
Spiked Amount 50.000			Recovery =	101.88%		
45) 1,2-Dichloroethane-d4	8.264	65	365738	50.41	ug/l	-0.01
Spiked Amount 50.000			Recovery =	100.82%		
59) Toluene-d8	10.800	98	1333160	53.13	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.26%		
81) 4-Bromofluorobenzene	13.809	95	893531	94.46	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~188.92%~~ 105.0%		
Target Compounds						Qvalue

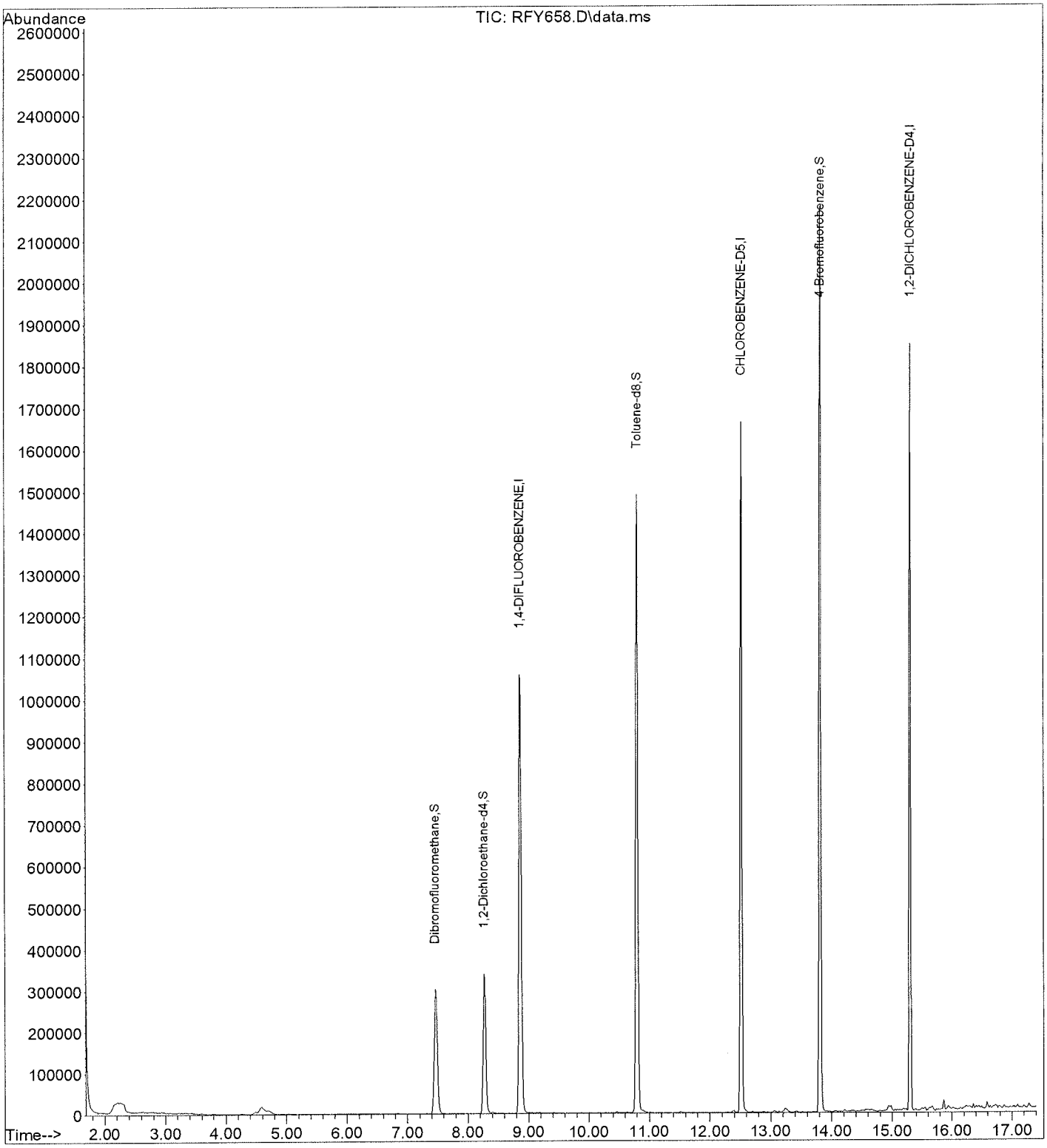
90

MD 7.3.18

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY658.D
Acq On : 27 Jun 2018 6:39 pm
Operator : DNguye
Sample : 18F187-05I 100uL
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jul 02 17:45:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

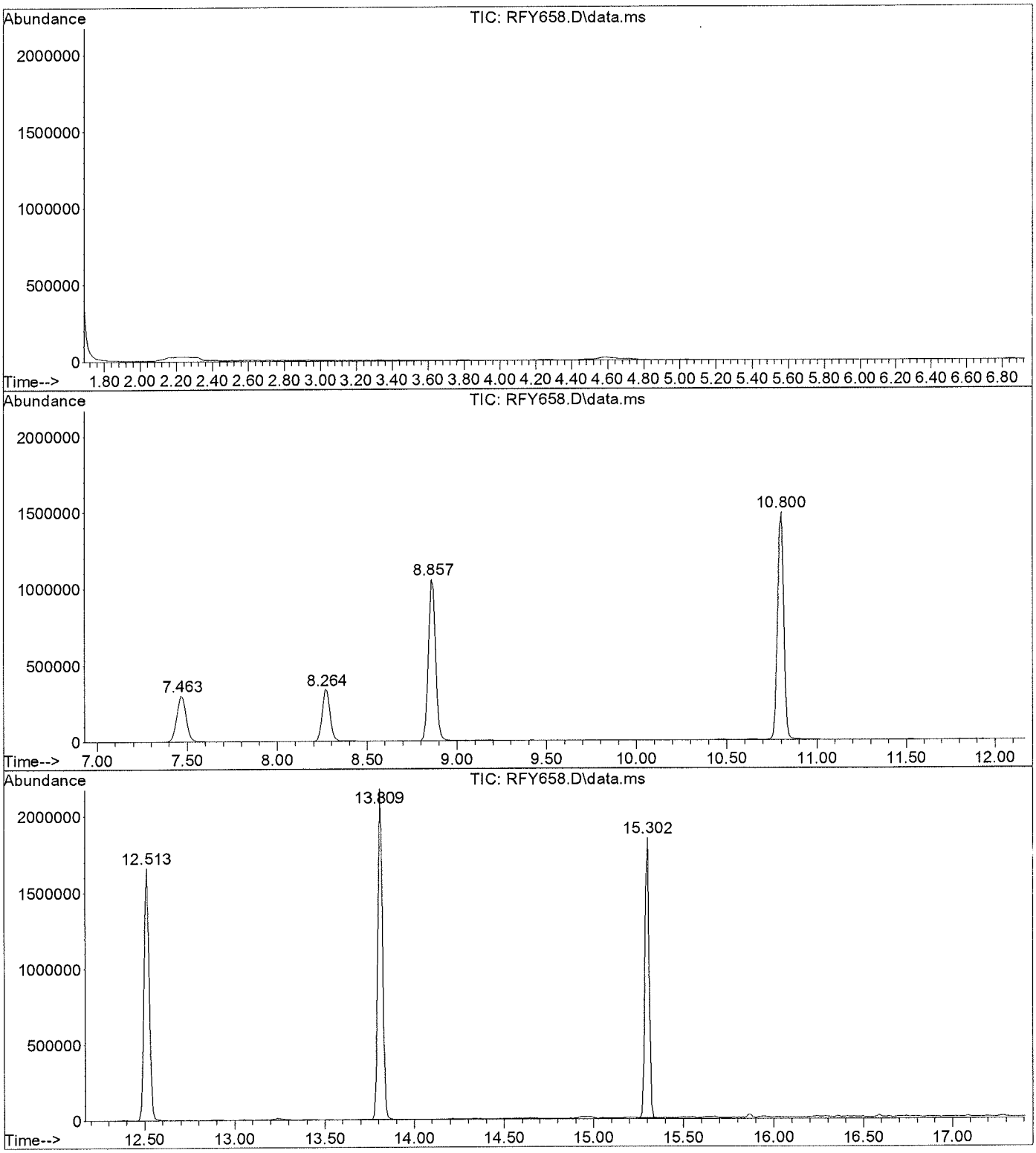


LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY658.D
Acq On : 27 Jun 2018 6:39 pm
Operator : DNguye
Sample : 18F187-05I 100uL
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY658.D
Acq On : 27 Jun 2018 6:39 pm
Operator : DNguye
Sample : 18F187-05I 100uL
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

No Library Search Compounds Detected
****

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY658.D
Acq On : 27 Jun 2018 6:39 pm
Operator : DNguye
Sample : 18F187-05I 100uL
Misc :
ALS Vial : 23 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY658.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.463	519	527	545	rVB	302538	1082585	26.99%	5.727%
2	8.264	592	600	611	rBV	339361	1032264	25.73%	5.461%
3	8.857	645	654	670	rBV	1058602	2953983	73.64%	15.628%
4	10.800	821	831	858	rVB	1490218	3541701	88.29%	18.737%
5	12.513	981	987	1000	rVB	1663091	3296107	82.17%	17.438%
6	13.809	1100	1105	1117	rBV	2174779	4011399	100.00%	21.222%
7	15.302	1236	1241	1246	rVB	1843641	2983865	74.38%	15.786%

Sum of corrected areas: 18901904

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY658.D
Acq On : 27 Jun 2018 6:39 pm
Operator : DNguye
Sample : 18F187-05I 100uL
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 20:10
Sample ID	: 18Q2DP009-SB0501-SO-0	Date Analyzed:	06/29/18 20:10
Lab Samp ID	: F187-07I	Dilution Factor:	60.5
Lab File ID	: RFY708	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: 3.9
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.31	0.031	0.063
1,1,1-TRICHLOROETHANE	ND	0.31	0.031	0.063
1,1,2,2-TETRACHLOROETHANE	ND	0.31	0.031	0.063
1,1,2-TRICHLOROETHANE	ND	0.31	0.031	0.063
1,1-DICHLOROETHANE	ND	0.31	0.031	0.063
1,1-DICHLOROETHENE	ND	0.31	0.031	0.063
1,1-DICHLOROPROPENE	ND	0.31	0.031	0.063
1,2,3-TRICHLOROBENZENE	ND	0.31	0.063	0.13
1,2,3-TRICHLOROPROPANE	ND	0.31	0.063	0.13
1,2,4-TRICHLOROBENZENE	ND	0.31	0.063	0.13
1,2,4-TRIMETHYLBENZENE	ND	0.31	0.035	0.13
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.31	0.063	0.13
1,2-DIBROMOETHANE	ND	0.31	0.031	0.063
1,2-DICHLOROBENZENE	ND	0.31	0.031	0.063
1,2-DICHLOROETHANE	ND	0.31	0.031	0.063
1,2-DICHLOROPROPANE	ND	0.31	0.031	0.063
1,3,5-TRIMETHYLBENZENE	ND	0.31	0.037	0.13
1,3-DICHLOROBENZENE	ND	0.31	0.033	0.063
1,3-DICHLOROPROPANE	ND	0.31	0.031	0.063
1,4-DICHLOROBENZENE	ND	0.31	0.031	0.063
2,2-DICHLOROPROPANE	ND	0.31	0.063	0.13
2-BUTANONE	ND	0.63	0.16	0.31
2-CHLOROTOLUENE	ND	0.31	0.052	0.063
2-HEXANONE	ND	0.63	0.18	0.31
4-CHLOROTOLUENE	ND	0.31	0.042	0.063
ACETONE	ND	0.63	0.20	0.31
BENZENE	ND	0.31	0.031	0.063
BROMOBENZENE	ND	0.31	0.031	0.063
BROMOCHLOROMETHANE	ND	0.31	0.031	0.063
BROMODICHLOROMETHANE	ND	0.31	0.031	0.063
BROMOFORM	ND	0.31	0.063	0.13
BROMOMETHANE	ND	0.63	0.11	0.13
CARBON DISULFIDE	ND	0.31	0.031	0.063
CARBON TETRACHLORIDE	ND	0.31	0.034	0.063
CHLOROBENZENE	ND	0.31	0.031	0.063
CHLOROETHANE	ND	0.31	0.082	0.13
CHLOROFORM	ND	0.31	0.031	0.063
CHLOROMETHANE	ND	0.31	0.063	0.13
CIS-1,2-DICHLOROETHYLENE	ND	0.31	0.031	0.063
CIS-1,3-DICHLOROPROPENE	ND	0.31	0.031	0.063
CYCLOHEXANE	ND	0.31	0.076	0.13
DIBROMOCHLOROMETHANE	ND	0.31	0.031	0.063
DIBROMOMETHANE	ND	0.31	0.031	0.063
DICHLORODIFLUOROMETHANE	ND	0.31	0.076	0.13
ETHYLBENZENE	ND	0.31	0.031	0.063
HEXACHLOROBUTADIENE	ND	0.31	0.063	0.13
ISOPROPYLBENZENE	ND	0.31	0.040	0.13
METHYLENE CHLORIDE	ND	0.63	0.13	0.31
M,P-XYLENE	ND	0.31	0.063	0.13
4-METHYL-2-PENTANONE	ND	0.63	0.18	0.31
TERT-BUTYL METHYL ETHER	ND	0.31	0.031	0.063
NAPHTHALENE	ND	0.31	0.063	0.13
N-BUTYLBENZENE	ND	0.31	0.044	0.063
N-PROPYLBENZENE	ND	0.31	0.041	0.063
O-XYLENE	ND	0.31	0.031	0.063
P-ISOPROPYLTOLUENE	ND	0.31	0.039	0.063
SEC-BUTYLBENZENE	ND	0.31	0.042	0.063
STYRENE	ND	0.31	0.031	0.063
TERT-BUTYLBENZENE	ND	0.31	0.039	0.063
TETRACHLOROETHENE	ND	0.31	0.031	0.063
TOLUENE	ND	0.31	0.031	0.063
TRANS-1,2-DCE	ND	0.31	0.031	0.063
TRANS-1,3-DICHLOROPROPENE	ND	0.31	0.031	0.063
TCE	ND	0.31	0.031	0.063
TRICHLOROFLUOROMETHANE	ND	0.31	0.069	0.13
TRICHLOROTRIFLUOROETHANE	ND	0.31	0.063	0.13
VINYL CHLORIDE	ND	0.31	0.088	0.13
VINYL ACETATE	ND	0.31	0.082	0.13
XYLENES, TOTAL	ND	0.31	0.031	0.063

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.46	3.148	110	71-136
4-BROMOFLUOROBENZENE	6.06	5.666	107	79-119
TOLUENE-D8	3.31	3.148	105	85-116
DIBROMOFLUOROMETHANE	3.31	3.148	105	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/22/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 20:10
Sample ID	: 18Q2DP009-SB0501-SO-0	Date Analyzed	: 06/29/18 20:10
Lab Samp ID	: F187-07I	Dilution Factor	: 60.5
Lab File ID	: RFY708	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: 3.9
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY708.D
Acq On : 29 Jun 2018 8:10 pm
Operator : DNguye
Sample : 18F187-07I 100uL
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 03 15:25:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	1013787	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	840862	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	376296	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.463	111	282954	52.53	ug/l	-0.01
Spiked Amount 50.000			Recovery =	105.06%		
45) 1,2-Dichloroethane-d4	8.275	65	308935	54.93	ug/l	0.00
Spiked Amount 50.000			Recovery =	109.86%		
59) Toluene-d8	10.800	98	1008317	52.65	ug/l	0.00
Spiked Amount 50.000			Recovery =	105.30%		
81) 4-Bromofluorobenzene	13.809	95	698857	96.28	ug/l	0.00
Spiked Amount ~~50~~ 90.000			Recovery =	~~192.56%~~ 107.0%		
Target Compounds						Qvalue

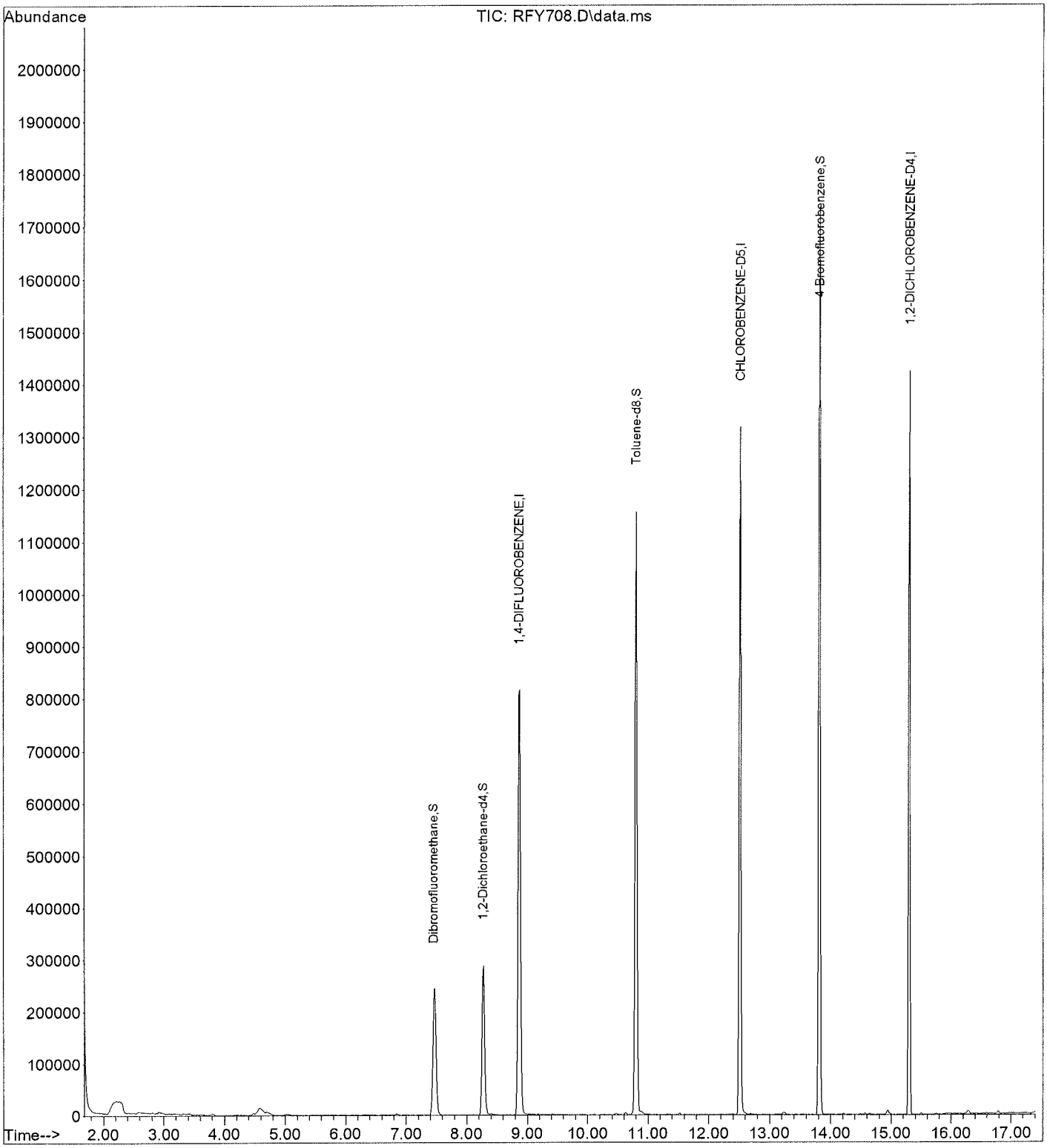
MD 7.3.18

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY708.D
Acq On : 29 Jun 2018 8:10 pm
Operator : DNguye
Sample : 18F187-07I 100uL
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 03 15:25:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY708.D
Acq On : 29 Jun 2018 8:10 pm
Operator : DNguye
Sample : 18F187-07I 100uL
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY708.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.473	520	528	541	rBV	244494	876672	27.59%	5.918%
2	8.275	594	601	610	rBV	288524	856812	26.97%	5.784%
3	8.868	645	655	677	rBV	815367	2325525	73.20%	15.699%
4	10.800	820	831	856	rVB	1156448	2702426	85.06%	18.244%
5	12.513	980	987	1000	rBV	1316556	2547449	80.18%	17.198%
6	13.809	1099	1105	1116	rBV	1736428	3177135	100.00%	21.449%
7	15.302	1234	1241	1249	rBV	1423389	2326736	73.23%	15.708%

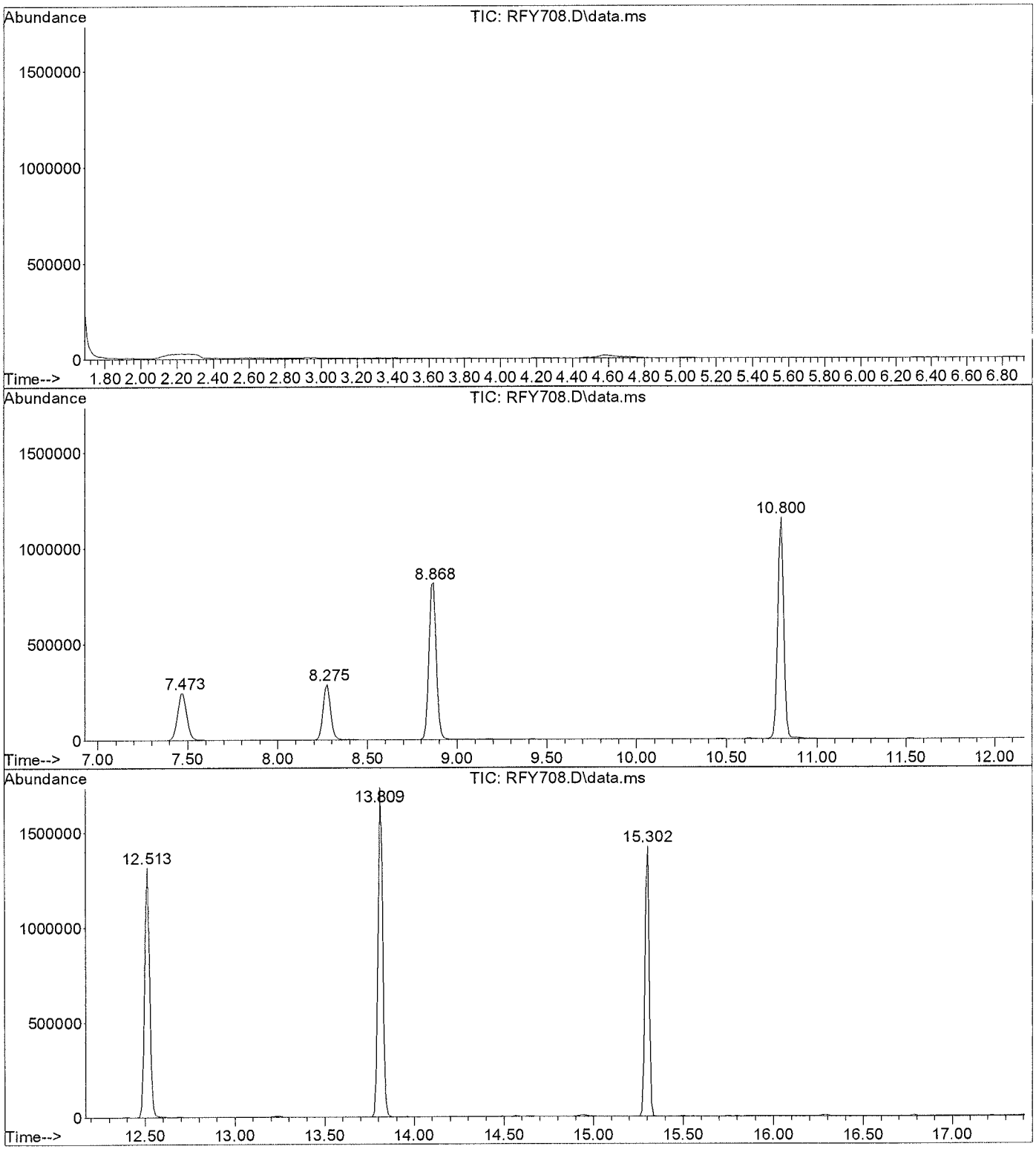
Sum of corrected areas: 14812755

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY708.D
Acq On : 29 Jun 2018 8:10 pm
Operator : DNguye
Sample : 18F187-07I 100uL
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY708.D
Acq On : 29 Jun 2018 8:10 pm
Operator : DNguye
Sample : 18F187-07I 100uL
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY708.D
Acq On : 29 Jun 2018 8:10 pm
Operator : DNguye
Sample : 18F187-07I 100uL
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/27/18 19:03
Sample ID	: 18Q2DP009-SB0502-SO-0	Date Analyzed:	06/27/18 19:03
Lab Samp ID	: F187-08I	Dilution Factor:	54
Lab File ID	: RFY659	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: 3.5
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.28	0.028	0.056
1,1,1-TRICHLOROETHANE	ND	0.28	0.028	0.056
1,1,2,2-TETRACHLOROETHANE	ND	0.28	0.028	0.056
1,1,2-TRICHLOROETHANE	ND	0.28	0.028	0.056
1,1-DICHLOROETHANE	ND	0.28	0.028	0.056
1,1-DICHLOROETHENE	ND	0.28	0.028	0.056
1,1-DICHLOROPROPENE	ND	0.28	0.028	0.056
1,2,3-TRICHLOROBENZENE	ND	0.28	0.056	0.11
1,2,3-TRICHLOROPROPANE	ND	0.28	0.056	0.11
1,2,4-TRICHLOROBENZENE	ND	0.28	0.056	0.11
1,2,4-TRIMETHYLBENZENE	ND	0.28	0.031	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.28	0.056	0.11
1,2-DIBROMOETHANE	ND	0.28	0.028	0.056
1,2-DICHLOROBENZENE	ND	0.28	0.028	0.056
1,2-DICHLOROETHANE	ND	0.28	0.028	0.056
1,2-DICHLOROPROPANE	ND	0.28	0.028	0.056
1,3,5-TRIMETHYLBENZENE	ND	0.28	0.033	0.11
1,3-DICHLOROBENZENE	ND	0.28	0.029	0.056
1,3-DICHLOROPROPANE	ND	0.28	0.028	0.056
1,4-DICHLOROBENZENE	ND	0.28	0.028	0.056
2,2-DICHLOROPROPANE	ND	0.28	0.056	0.11
2-BUTANONE	ND	0.56	0.14	0.28
2-CHLOROTOLUENE	ND	0.28	0.046	0.056
2-HEXANONE	ND	0.56	0.16	0.28
4-CHLOROTOLUENE	ND	0.28	0.037	0.056
ACETONE	ND	0.56	0.17	0.28
BENZENE	ND	0.28	0.028	0.056
BROMOBENZENE	ND	0.28	0.028	0.056
BROMOCHLOROMETHANE	ND	0.28	0.028	0.056
BROMODICHLOROMETHANE	ND	0.28	0.028	0.056
BROMOFORM	ND	0.28	0.056	0.11
BROMOMETHANE	ND	0.56	0.10	0.11
CARBON DISULFIDE	ND	0.28	0.028	0.056
CARBON TETRACHLORIDE	ND	0.28	0.030	0.056
CHLOROBENZENE	ND	0.28	0.028	0.056
CHLOROETHANE	ND	0.28	0.073	0.11
CHLOROFORM	ND	0.28	0.028	0.056
CHLOROMETHANE	ND	0.28	0.056	0.11
CIS-1,2-DICHLOROETHYLENE	ND	0.28	0.028	0.056
CIS-1,3-DICHLOROPROPENE	ND	0.28	0.028	0.056
CYCLOHEXANE	ND	0.28	0.067	0.11
DIBROMOCHLOROMETHANE	ND	0.28	0.028	0.056
DIBROMOMETHANE	ND	0.28	0.028	0.056
DICHLORODIFLUOROMETHANE	ND	0.28	0.067	0.11
ETHYLBENZENE	ND	0.28	0.028	0.056
HEXACHLOROBUTADIENE	ND	0.28	0.056	0.11
ISOPROPYLBENZENE	ND	0.28	0.036	0.11
METHYLENE CHLORIDE	ND	0.56	0.11	0.28
M,P-XYLENE	ND	0.28	0.056	0.11
4-METHYL-2-PENTANONE	ND	0.56	0.16	0.28
TERT-BUTYL METHYL ETHER	ND	0.28	0.028	0.056
NAPHTHALENE	ND	0.28	0.056	0.11
N-BUTYLBENZENE	ND	0.28	0.039	0.056
N-PROPYLBENZENE	ND	0.28	0.036	0.056
O-XYLENE	ND	0.28	0.028	0.056
P-ISOPROPYLTOLUENE	ND	0.28	0.035	0.056
SEC-BUTYLBENZENE	ND	0.28	0.037	0.056
STYRENE	ND	0.28	0.028	0.056
TERT-BUTYLBENZENE	ND	0.28	0.035	0.056
TETRACHLOROETHENE	ND	0.28	0.028	0.056
TOLUENE	ND	0.28	0.028	0.056
TRANS-1,2-DCE	ND	0.28	0.028	0.056
TRANS-1,3-DICHLOROPROPENE	ND	0.28	0.028	0.056
TCE	ND	0.28	0.028	0.056
TRICHLOROFLUOROMETHANE	ND	0.28	0.062	0.11
TRICHLOROTRIFLUOROETHANE	ND	0.28	0.056	0.11
VINYL CHLORIDE	ND	0.28	0.078	0.11
VINYL ACETATE	ND	0.28	0.073	0.11
XYLENES, TOTAL	ND	0.28	0.028	0.056

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	2.84	2.798	101	71-136
4-BROMOFLUOROBENZENE	5.28	5.036	105	79-119
TOLUENE-D8	2.96	2.798	106	85-116
DIBROMOFLUOROMETHANE	2.86	2.798	102	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/27/18 19:03
Sample ID	: 18Q2DP009-SB0502-SO-0	Date Analyzed:	06/27/18 19:03
Lab Samp ID	: F187-08I	Dilution Factor:	54
Lab File ID	: RFY659	Matrix :	SOIL
Ext Btch ID	: VMF5F26	% Moisture :	3.5
Calib. Ref.	: RDY199	Instrument ID :	TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY659.D
Acq On : 27 Jun 2018 7:03 pm
Operator : DNguye
Sample : 18F187-08I 100uL
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 02 17:46:02 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	1290186	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	1087682	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	486838	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.474	111	350362	51.11	ug/l	0.00
Spiked Amount 50.000			Recovery =	102.22%		
45) 1,2-Dichloroethane-d4	8.275	65	362723	50.67	ug/l	0.00
Spiked Amount 50.000			Recovery =	101.34%		
59) Toluene-d8	10.800	98	1310909	52.92	ug/l	0.00
Spiked Amount 50.000			Recovery =	105.84%		
81) 4-Bromofluorobenzene	13.809	95	885671	94.31	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~188.62%~~ 104.8%		
Target Compounds						Qvalue

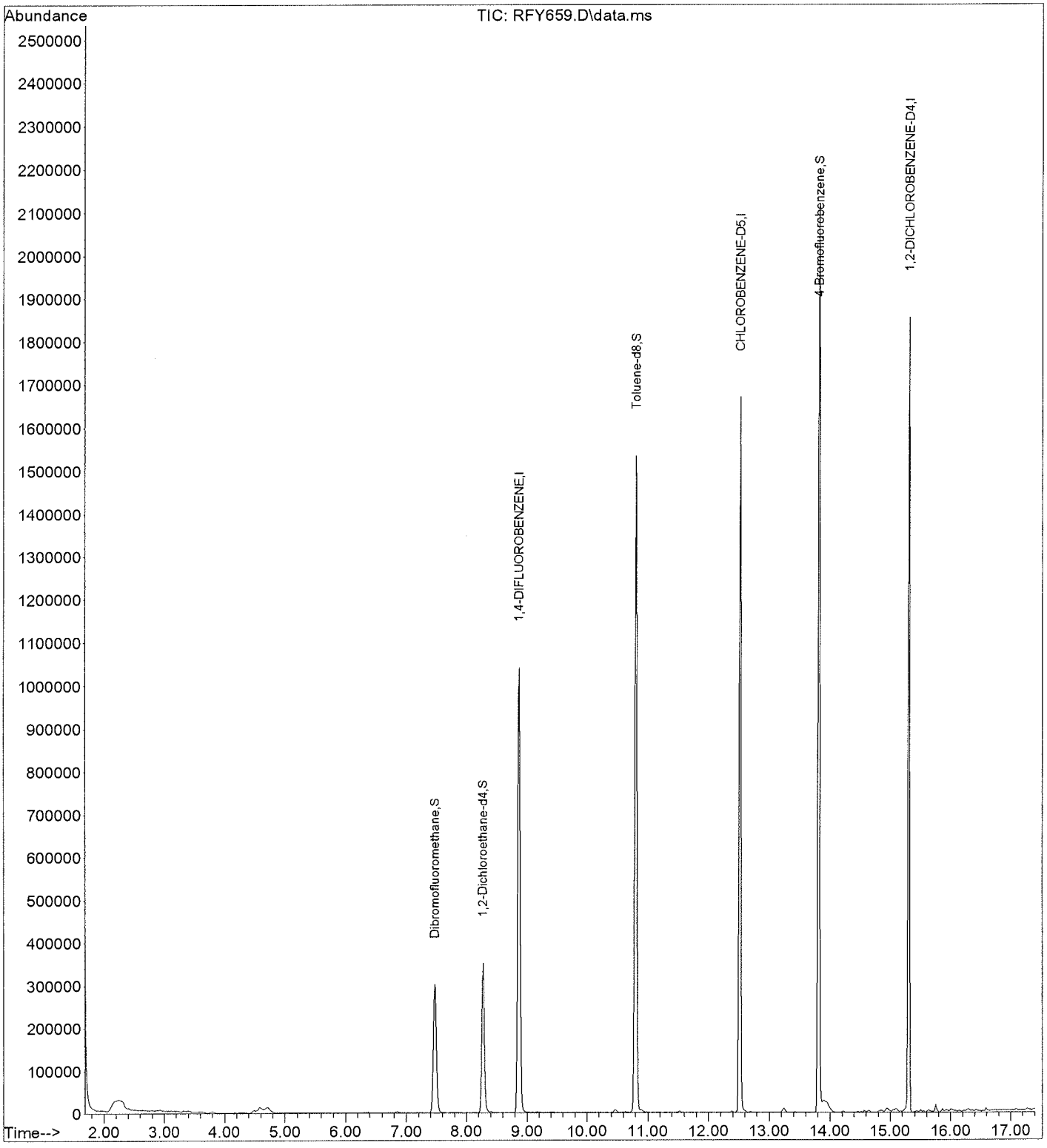
90

MD 7.3.18

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY659.D
Acq On : 27 Jun 2018 7:03 pm
Operator : DNguye
Sample : 18F187-08I 100uL
Misc :
ALS Vial : 24 Sample Multiplier: 1

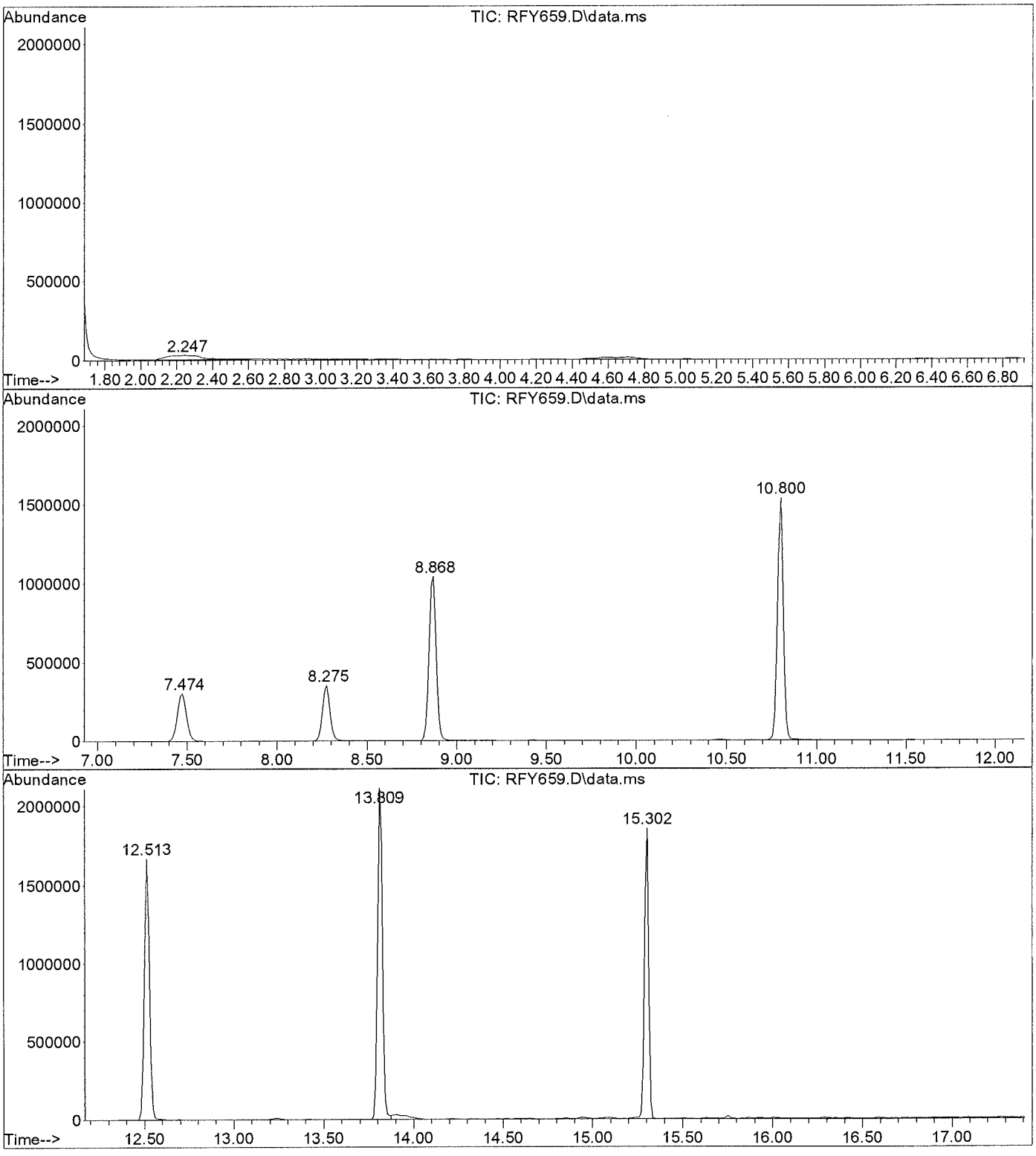
Quant Time: Jul 02 17:46:02 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY659.D
Acq On : 27 Jun 2018 7:03 pm
Operator : DNguye
Sample : 18F187-08I 100uL
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY659.D
Acq On : 27 Jun 2018 7:03 pm
Operator : DNguye
Sample : 18F187-08I 100uL
Misc :
ALS Vial : 24 Sample Multiplier: 1

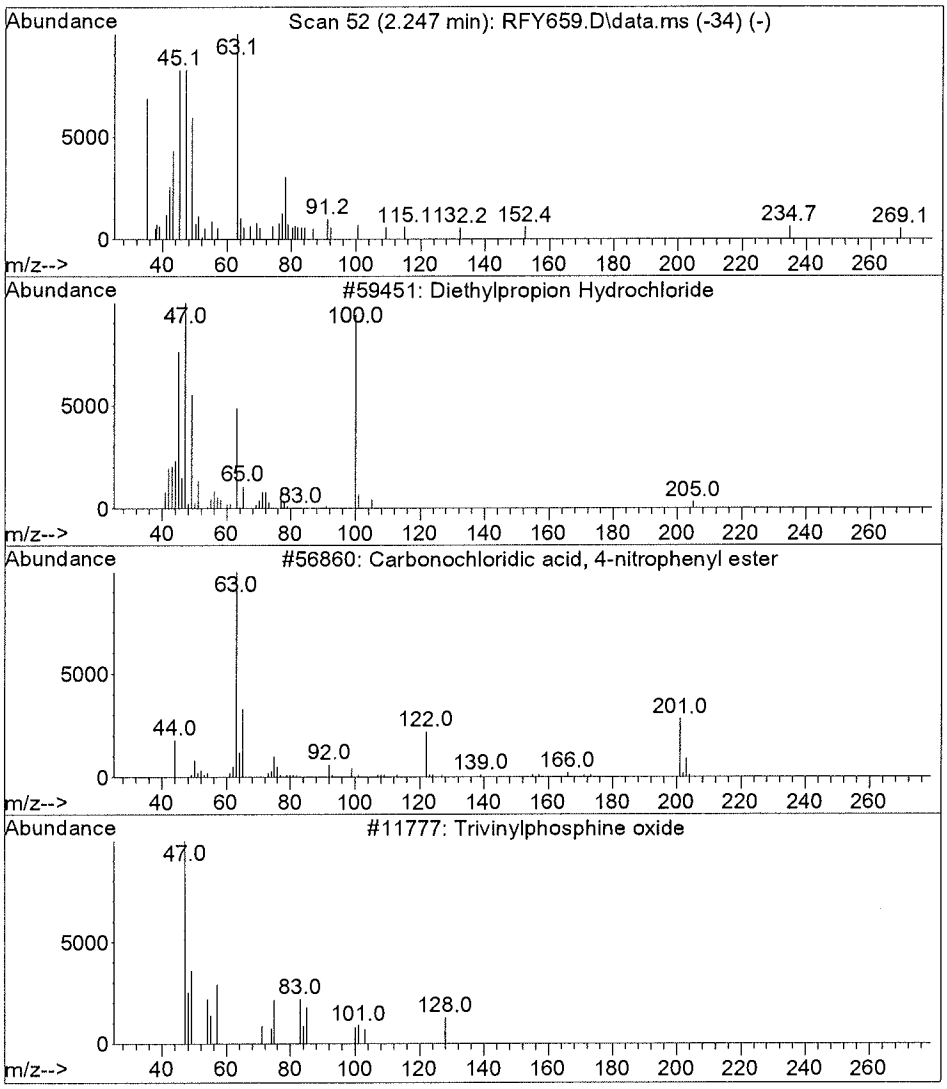
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

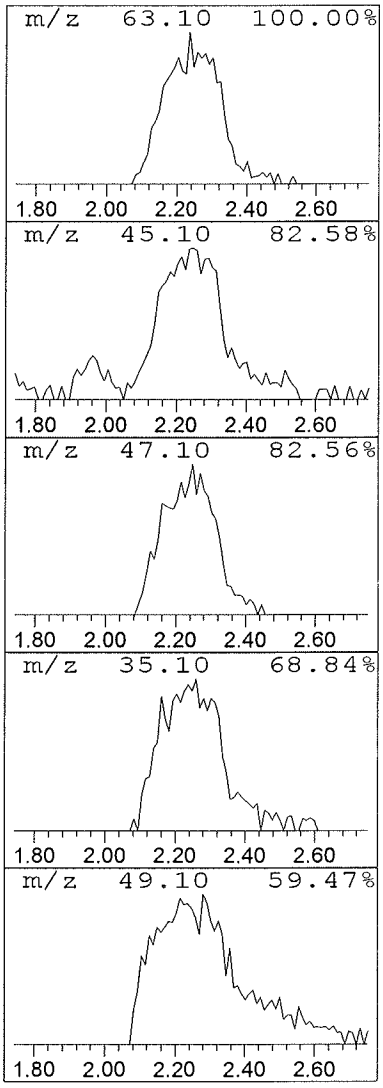
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 1 Diethylpropion Hydrochloride Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
2.247	7.01 ug/l	408339	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diethylpropion Hydrochloride	205	C13H19NO	000134-80-5	53
2	Carbonochloridic acid, 4-nitroph...	201	C7H4ClNO4	007693-46-1	17
3	Trivinylphosphine oxide	128	C6H9OP	013699-67-7	9
4	Carbonochloridic acid, 4-nitroph...	201	C7H4ClNO4	007693-46-1	9
5	Carbonochloridic acid, 4-nitroph...	201	C7H4ClNO4	007693-46-1	9





LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY659.D
Acq On : 27 Jun 2018 7:03 pm
Operator : DNguye
Sample : 18F187-08I 100uL
Misc :
ALS Vial : 24 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY659.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	2.247	34	52	85	rBV5	27737	408339	10.20%	2.127%
2	7.474	518	528	547	rVB	303314	1079736	26.96%	5.626%
3	8.275	592	601	611	rBV	352792	1023940	25.57%	5.335%
4	8.868	647	655	673	rBV	1040690	2910535	72.68%	15.164%
5	10.800	820	831	854	rVB	1535067	3513101	87.72%	18.304%
6	12.513	979	987	999	rBV	1670250	3249099	81.13%	16.928%
7	13.809	1097	1105	1111	rBV	2112814	4004697	100.00%	20.865%
8	15.302	1232	1241	1246	rVB	1855798	3004139	75.02%	15.652%

Sum of corrected areas: 19193586

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY659.D
Acq On : 27 Jun 2018 7:03 pm
Operator : DNguye
Sample : 18F187-08I 100uL
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Diethylpropion ...	2.247	7.0	ug/l	408339	1	8.868	2910540	50.0

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER IO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 21:48
Sample ID	: 18Q2DP009-SOTB01M	Date Analyzed:	06/29/18 21:48
Lab Samp ID	: F187-09I	Dilution Factor:	50
Lab File ID	: RFY712	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: NA
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.25	0.025	0.050
1,1,1-TRICHLOROETHANE	ND	0.25	0.025	0.050
1,1,2,2-TETRACHLOROETHANE	ND	0.25	0.025	0.050
1,1,2-TRICHLOROETHANE	ND	0.25	0.025	0.050
1,1-DICHLOROETHANE	ND	0.25	0.025	0.050
1,1-DICHLOROETHENE	ND	0.25	0.025	0.050
1,1-DICHLOROPROPENE	ND	0.25	0.025	0.050
1,2,3-TRICHLOROBENZENE	ND	0.25	0.050	0.10
1,2,3-TRICHLOROPROPANE	ND	0.25	0.050	0.10
1,2,4-TRICHLOROBENZENE	ND	0.25	0.050	0.10
1,2,4-TRIMETHYLBENZENE	ND	0.25	0.028	0.10
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.25	0.050	0.10
1,2-DIBROMOETHANE	ND	0.25	0.025	0.050
1,2-DICHLOROBENZENE	ND	0.25	0.025	0.050
1,2-DICHLOROETHANE	ND	0.25	0.025	0.050
1,2-DICHLOROPROPANE	ND	0.25	0.025	0.050
1,3,5-TRIMETHYLBENZENE	ND	0.25	0.030	0.10
1,3-DICHLOROBENZENE	ND	0.25	0.026	0.050
1,3-DICHLOROPROPANE	ND	0.25	0.025	0.050
1,4-DICHLOROBENZENE	ND	0.25	0.025	0.050
2,2-DICHLOROPROPANE	ND	0.25	0.050	0.10
2-BUTANONE	ND	0.50	0.12	0.25
2-CHLOROTOLUENE	ND	0.25	0.041	0.050
2-HEXANONE	ND	0.50	0.15	0.25
4-CHLOROTOLUENE	ND	0.25	0.033	0.050
ACETONE	ND	0.50	0.15	0.25
BENZENE	ND	0.25	0.025	0.050
BROMOBENZENE	ND	0.25	0.025	0.050
BROMOCHLOROMETHANE	ND	0.25	0.025	0.050
BROMODICHLOROMETHANE	ND	0.25	0.025	0.050
BROMOFORM	ND	0.25	0.050	0.10
BROMOMETHANE	ND	0.50	0.090	0.10
CARBON DISULFIDE	ND	0.25	0.025	0.050
CARBON TETRACHLORIDE	ND	0.25	0.027	0.050
CHLOROBENZENE	ND	0.25	0.025	0.050
CHLOROETHANE	ND	0.25	0.065	0.10
CHLOROFORM	ND	0.25	0.025	0.050
CHLOROMETHANE	ND	0.25	0.050	0.10
CIS-1,2-DICHLOROETHYLENE	ND	0.25	0.025	0.050
CIS-1,3-DICHLOROPROPENE	ND	0.25	0.025	0.050
CYCLOHEXANE	ND	0.25	0.060	0.10
DIBROMOCHLOROMETHANE	ND	0.25	0.025	0.050
DIBROMOMETHANE	ND	0.25	0.025	0.050
DICHLORODIFLUOROMETHANE	ND	0.25	0.060	0.10
ETHYLBENZENE	ND	0.25	0.025	0.050
HEXACHLOROBUTADIENE	ND	0.25	0.050	0.10
ISOPROPYLBENZENE	ND	0.25	0.032	0.10
METHYLENE CHLORIDE	ND	0.50	0.10	0.25
M,P-XYLENE	ND	0.25	0.050	0.10
4-METHYL-2-PENTANONE	ND	0.50	0.14	0.25
TERT-BUTYL METHYL ETHER	ND	0.25	0.025	0.050
NAPHTHALENE	ND	0.25	0.050	0.10
N-BUTYLBENZENE	ND	0.25	0.035	0.050
N-PROPYLBENZENE	ND	0.25	0.033	0.050
O-XYLENE	ND	0.25	0.025	0.050
P-ISOPROPYLTOLUENE	ND	0.25	0.031	0.050
SEC-BUTYLBENZENE	ND	0.25	0.033	0.050
STYRENE	ND	0.25	0.025	0.050
TERT-BUTYLBENZENE	ND	0.25	0.031	0.050
TETRACHLOROETHENE	ND	0.25	0.025	0.050
TOLUENE	ND	0.25	0.025	0.050
TRANS-1,2-DCE	ND	0.25	0.025	0.050
TRANS-1,3-DICHLOROPROPENE	ND	0.25	0.025	0.050
TCE	ND	0.25	0.025	0.050
TRICHLOROFLUOROMETHANE	ND	0.25	0.055	0.10
TRICHLOROTRIFLUOROETHANE	ND	0.25	0.050	0.10
VINYL CHLORIDE	ND	0.25	0.070	0.10
VINYL ACETATE	ND	0.25	0.065	0.10
XYLENES, TOTAL	ND	0.25	0.025	0.050

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	2.98	2.500	119	71-136
4-BROMOFLUOROBENZENE	4.86	4.500	108	79-119
TOLUENE-D8	2.60	2.500	104	85-116
DIBROMOFLUOROMETHANE	2.80	2.500	112	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 21:48
Sample ID:	18Q2DP009-SOTB01M	Date Analyzed:	06/29/18 21:48
Lab Samp ID:	F187-09I	Dilution Factor:	50
Lab File ID:	RFY712	Matrix :	SOIL
Ext Btch ID:	VMF5F28	% Moisture :	NA
Calib. Ref.:	RDY199	Instrument ID :	TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY712.D
Acq On : 29 Jun 2018 9:48 pm
Operator : DNguye
Sample : 18F187-09I 100uL
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 03 15:26:57 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	886351	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	758772	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	339094	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.474	111	263861	56.02	ug/l	0.00
Spiked Amount 50.000			Recovery =	112.04%		
45) 1,2-Dichloroethane-d4	8.275	65	292982	59.58	ug/l	0.00
Spiked Amount 50.000			Recovery =	119.16%		
59) Toluene-d8	10.800	98	898194	51.98	ug/l	0.00
Spiked Amount 50.000			Recovery =	103.96%		
81) 4-Bromofluorobenzene	13.809	95	635727	97.19	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~194.38%~~ 108.0%		
Target Compounds						Qvalue

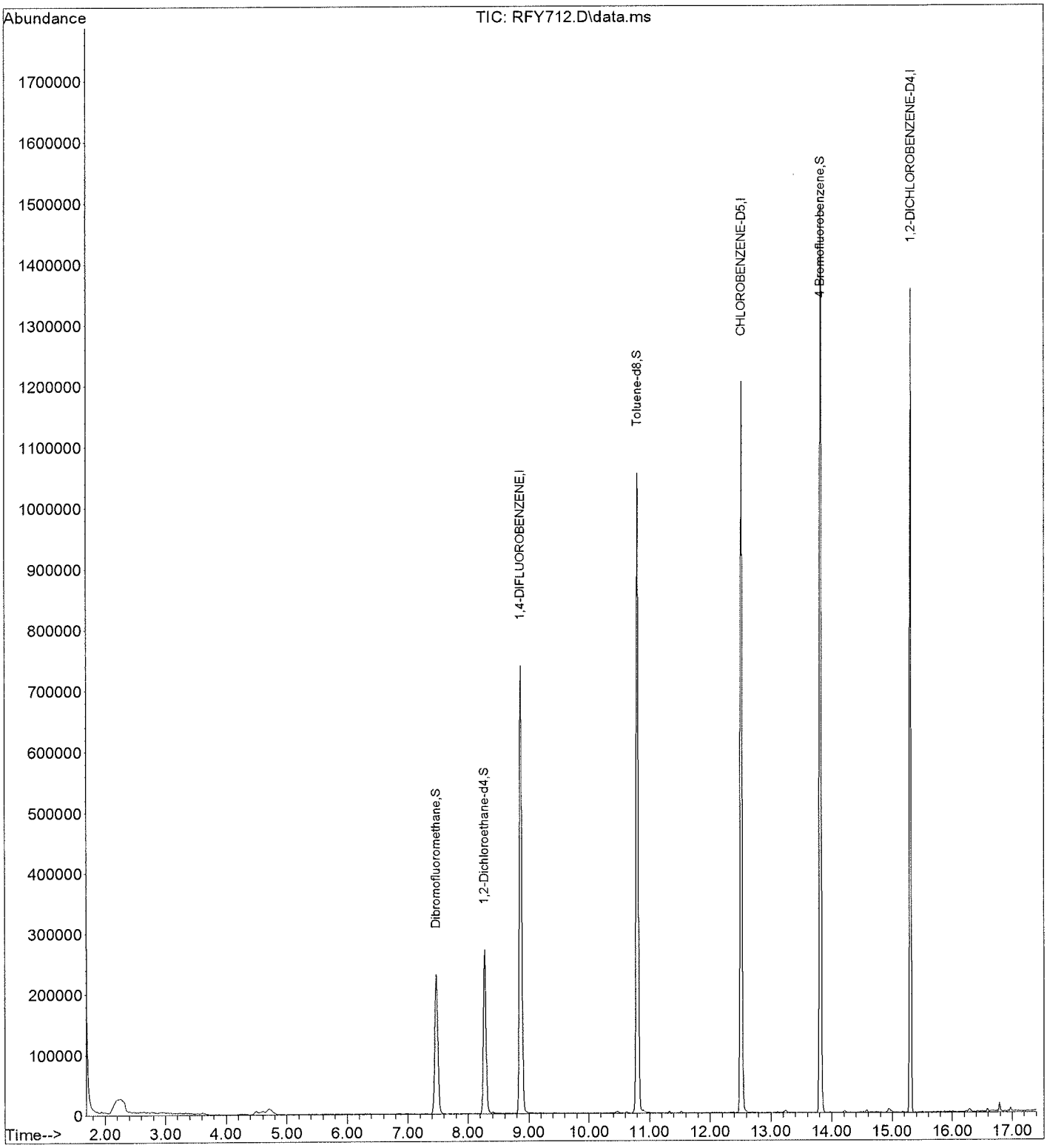
~~90~~ MD 7.3.18

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY712.D
Acq On : 29 Jun 2018 9:48 pm
Operator : DNguye
Sample : 18F187-09I 100uL
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 03 15:26:57 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY712.D
Acq On : 29 Jun 2018 9:48 pm
Operator : DNguye
Sample : 18F187-09I 100uL
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY712.D\data.ms

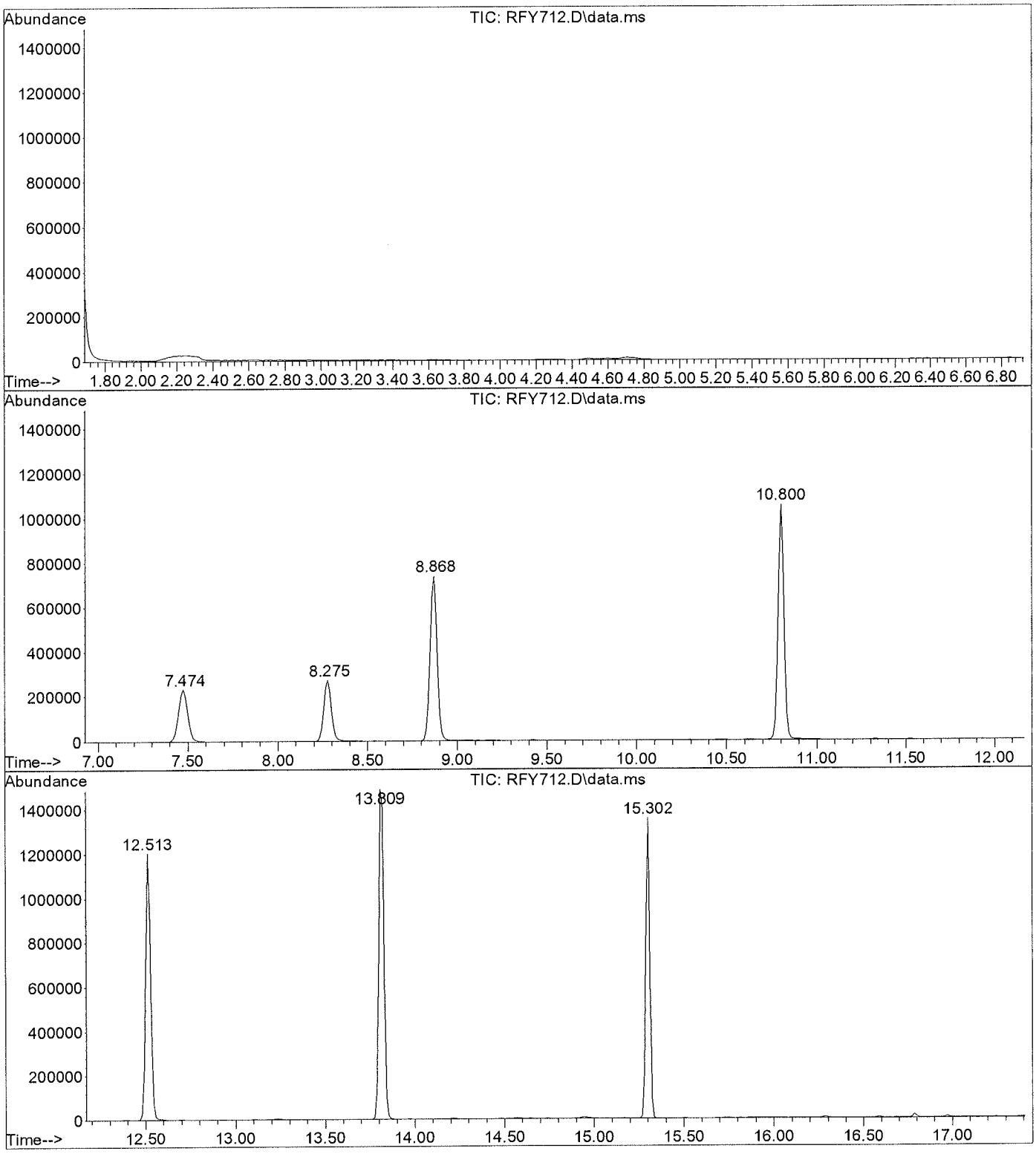
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.474	518	528	544	rVB	232175	813804	28.15%	6.087%
2	8.275	592	601	611	rBV	271888	795478	27.51%	5.950%
3	8.868	645	655	676	rBV	738935	2018513	69.82%	15.097%
4	10.800	823	831	855	rVB	1055248	2425826	83.90%	18.144%
5	12.513	980	987	998	rVB	1204312	2314913	80.07%	17.314%
6	13.809	1096	1105	1113	rVB	1490332	2891168	100.00%	21.624%
7	15.302	1235	1241	1246	rBV	1357384	2110405	72.99%	15.785%

Sum of corrected areas: 13370107

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY712.D
Acq On : 29 Jun 2018 9:48 pm
Operator : DNguye
Sample : 18F187-09I 100uL
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY712.D
Acq On : 29 Jun 2018 9:48 pm
Operator : DNguye
Sample : 18F187-09I 100uL
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY712.D
Acq On : 29 Jun 2018 9:48 pm
Operator : DNguye
Sample : 18F187-09I 100uL
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/27/18 19:28
Sample ID	: 18Q2DP009-SB0701-SO-0	Date Analyzed:	06/27/18 19:28
Lab Samp ID	: F187-10I	Dilution Factor:	59.5
Lab File ID	: RFY660	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: 5.8
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.32	0.032	0.063
1,1,1-TRICHLOROETHANE	ND	0.32	0.032	0.063
1,1,2,2-TETRACHLOROETHANE	ND	0.32	0.032	0.063
1,1,2-TRICHLOROETHANE	ND	0.32	0.032	0.063
1,1-DICHLOROETHANE	ND	0.32	0.032	0.063
1,1-DICHLOROETHENE	ND	0.32	0.032	0.063
1,1-DICHLOROPROPENE	ND	0.32	0.032	0.063
1,2,3-TRICHLOROBENZENE	ND	0.32	0.063	0.13
1,2,3-TRICHLOROPROPANE	ND	0.32	0.063	0.13
1,2,4-TRICHLOROBENZENE	ND	0.32	0.063	0.13
1,2,4-TRIMETHYLBENZENE	ND	0.32	0.035	0.13
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.32	0.063	0.13
1,2-DIBROMOETHANE	ND	0.32	0.032	0.063
1,2-DICHLOROBENZENE	ND	0.32	0.032	0.063
1,2-DICHLOROETHANE	ND	0.32	0.032	0.063
1,2-DICHLOROPROPANE	ND	0.32	0.032	0.063
1,3,5-TRIMETHYLBENZENE	ND	0.32	0.037	0.13
1,3-DICHLOROBENZENE	ND	0.32	0.033	0.063
1,3-DICHLOROPROPANE	ND	0.32	0.032	0.063
1,4-DICHLOROBENZENE	ND	0.32	0.032	0.063
2,2-DICHLOROPROPANE	ND	0.32	0.063	0.13
2-BUTANONE	ND	0.63	0.16	0.32
2-CHLOROTOLUENE	ND	0.32	0.052	0.063
2-HEXANONE	ND	0.63	0.18	0.32
4-CHLOROTOLUENE	ND	0.32	0.042	0.063
ACETONE	ND	0.63	0.20	0.32
BENZENE	ND	0.32	0.032	0.063
BROMOBENZENE	ND	0.32	0.032	0.063
BROMOCHLOROMETHANE	ND	0.32	0.032	0.063
BROMODICHLOROMETHANE	ND	0.32	0.032	0.063
BROMOFORM	ND	0.32	0.063	0.13
BROMOMETHANE	ND	0.63	0.11	0.13
CARBON DISULFIDE	ND	0.32	0.032	0.063
CARBON TETRACHLORIDE	ND	0.32	0.034	0.063
CHLOROBENZENE	ND	0.32	0.032	0.063
CHLOROETHANE	ND	0.32	0.082	0.13
CHLOROFORM	ND	0.32	0.032	0.063
CHLOROMETHANE	ND	0.32	0.063	0.13
CIS-1,2-DICHLOROETHYLENE	ND	0.32	0.032	0.063
CIS-1,3-DICHLOROPROPENE	ND	0.32	0.032	0.063
CYCLOHEXANE	ND	0.32	0.076	0.13
DIBROMOCHLOROMETHANE	ND	0.32	0.032	0.063
DIBROMOMETHANE	ND	0.32	0.032	0.063
DICHLORODIFLUOROMETHANE	ND	0.32	0.076	0.13
ETHYLBENZENE	ND	0.32	0.032	0.063
HEXACHLOROBUTADIENE	ND	0.32	0.063	0.13
ISOPROPYLBENZENE	ND	0.32	0.040	0.13
METHYLENE CHLORIDE	ND	0.63	0.13	0.32
M,P-XYLENE	ND	0.32	0.063	0.13
4-METHYL-2-PENTANONE	ND	0.63	0.18	0.32
TERT-BUTYL METHYL ETHER	ND	0.32	0.032	0.063
NAPHTHALENE	ND	0.32	0.063	0.13
N-BUTYLBENZENE	ND	0.32	0.044	0.063
N-PROPYLBENZENE	ND	0.32	0.041	0.063
O-XYLENE	ND	0.32	0.032	0.063
P-ISOPROPYLTOLUENE	ND	0.32	0.039	0.063
SEC-BUTYLBENZENE	ND	0.32	0.042	0.063
STYRENE	ND	0.32	0.032	0.063
TERT-BUTYLBENZENE	ND	0.32	0.039	0.063
TETRACHLOROETHENE	ND	0.32	0.032	0.063
TOLUENE	ND	0.32	0.032	0.063
TRANS-1,2-DCE	ND	0.32	0.032	0.063
TRANS-1,3-DICHLOROPROPENE	ND	0.32	0.032	0.063
TCE	ND	0.32	0.032	0.063
TRICHLOROFLUOROMETHANE	ND	0.32	0.069	0.13
TRICHLOROTRIFLUOROETHANE	ND	0.32	0.063	0.13
VINYL CHLORIDE	ND	0.32	0.088	0.13
VINYL ACETATE	ND	0.32	0.082	0.13
XYLENES, TOTAL	ND	0.32	0.032	0.063

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.20	3.158	101	71-136
4-BROMOFLUOROBENZENE	5.89	5.685	104	79-119
TOLUENE-D8	3.42	3.158	108	85-116
DIBROMOFLUOROMETHANE	3.18	3.158	101	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/27/18 19:28
Sample ID	: 18Q2DP009-SB0701-SO-0	Date Analyzed:	06/27/18 19:28
Lab Samp ID	: F187-10I	Dilution Factor:	59.5
Lab File ID	: RFY660	Matrix :	SOIL
Ext Btch ID	: VMF5F26	% Moisture :	5.8
Calib. Ref.	: RDY199	Instrument ID :	TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY660.D
Acq On : 27 Jun 2018 7:28 pm
Operator : DNguye
Sample : 18F187-10I 100uL
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 02 17:46:19 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	1310637	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	1083502	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	482957	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.463	111	350227	50.29	ug/l	-0.01
Spiked Amount 50.000			Recovery =	100.58%		
45) 1,2-Dichloroethane-d4	8.275	65	368363	50.66	ug/l	0.00
Spiked Amount 50.000			Recovery =	101.32%		
59) Toluene-d8	10.800	98	1335037	54.10	ug/l	0.00
Spiked Amount 50.000			Recovery =	108.20%		
81) 4-Bromofluorobenzene	13.809	95	869091	93.29	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~186.58%~~ 103.7%		
Target Compounds						Qvalue

90

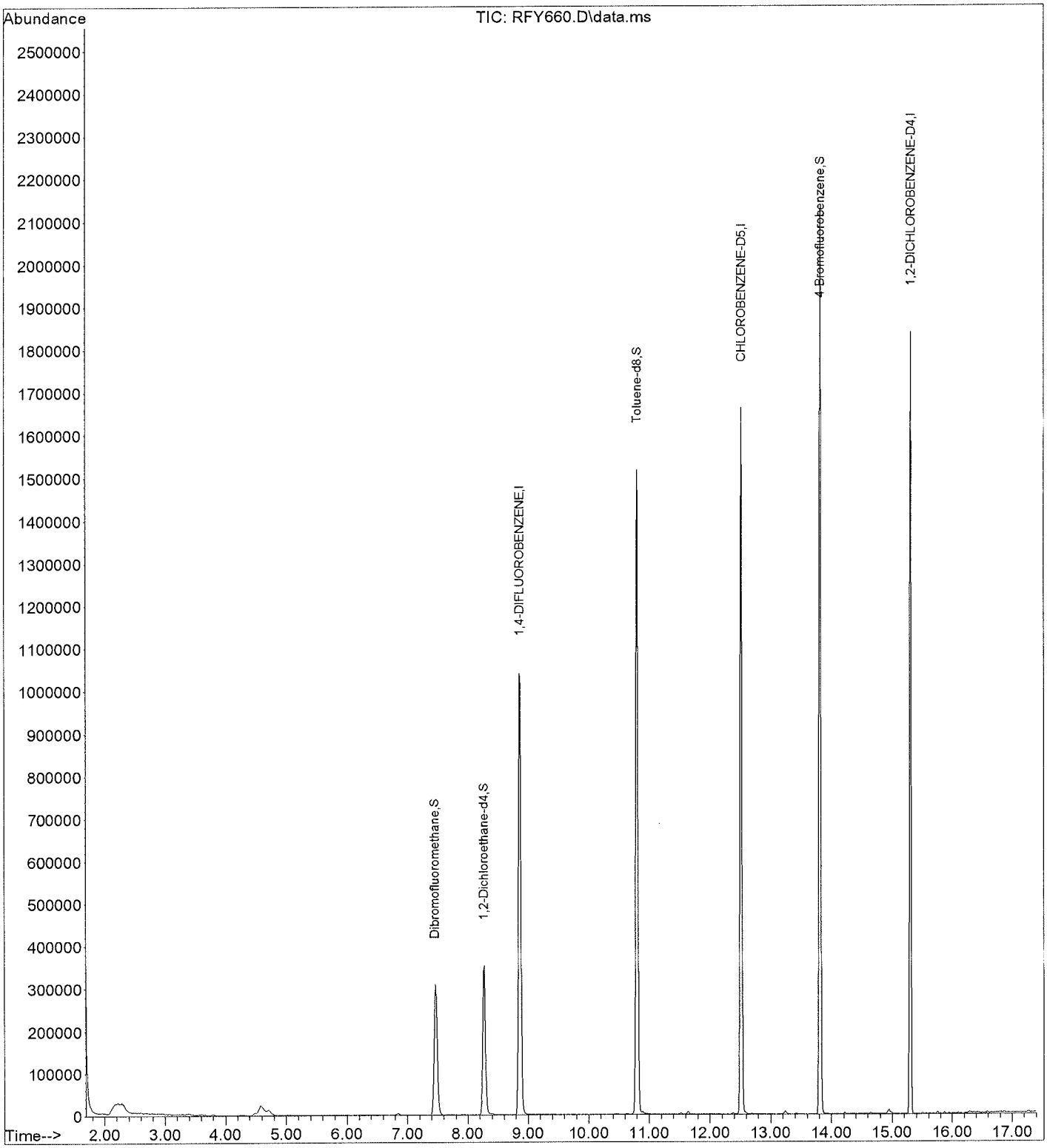
MD 7.3.18

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY660.D
Acq On : 27 Jun 2018 7:28 pm
Operator : DNguye
Sample : 18F187-10I 100uL
Misc :
ALS Vial : 25 Sample Multiplier: 1

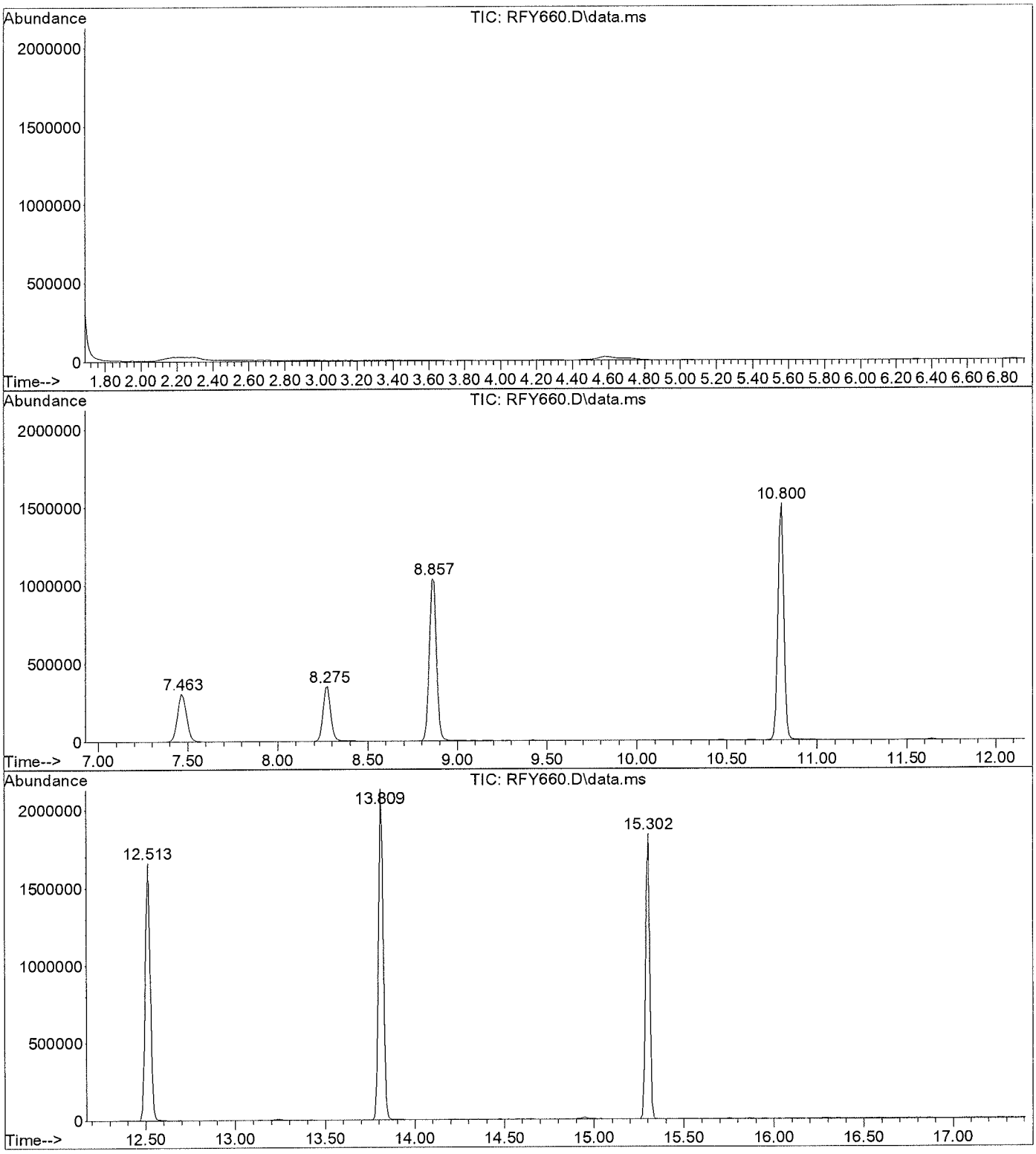
Quant Time: Jul 02 17:46:19 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY660.D
Acq On : 27 Jun 2018 7:28 pm
Operator : DNguye
Sample : 18F187-10I 100uL
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY660.D
Acq On : 27 Jun 2018 7:28 pm
Operator : DNguye
Sample : 18F187-10I 100uL
Misc :
ALS Vial : 25 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY660.D\data.ms

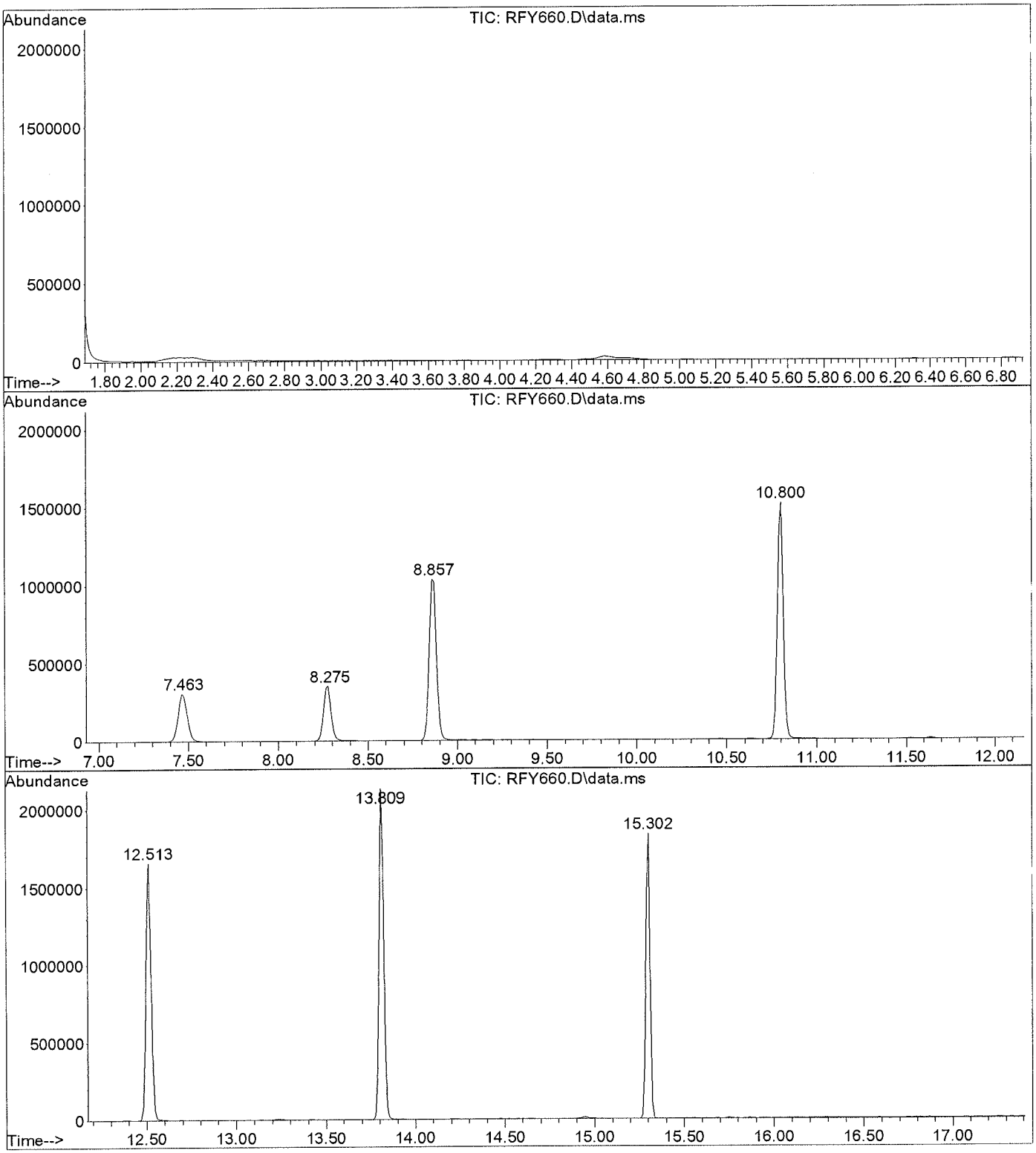
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.463	514	527	545	rBV	309136	1090634	27.88%	5.822%
2	8.275	590	601	611	rBV	352814	1058530	27.06%	5.651%
3	8.857	644	654	673	rBV	1039957	2944979	75.28%	15.721%
4	10.800	820	831	856	rBV	1516990	3528801	90.20%	18.838%
5	12.513	980	987	999	rVB	1661699	3238726	82.79%	17.289%
6	13.809	1098	1105	1123	rBV	2130165	3912185	100.00%	20.885%
7	15.302	1233	1241	1247	rBV	1838406	2958540	75.62%	15.794%

Sum of corrected areas: 18732395

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY660.D
Acq On : 27 Jun 2018 7:28 pm
Operator : DNguye
Sample : 18F187-10I 100uL
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY660.D
Acq On : 27 Jun 2018 7:28 pm
Operator : DNguye
Sample : 18F187-10I 100uL
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY660.D
Acq On : 27 Jun 2018 7:28 pm
Operator : DNguye
Sample : 18F187-10I 100uL
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/22/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 22:13
Sample ID	: 18Q2DP009-SB0702-SO-0	Date Analyzed	: 06/29/18 22:13
Lab Samp ID	: F187-11I	Dilution Factor	: 49.9
Lab File ID	: RFY713	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: 4.7
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.26	0.026	0.052
1,1,1-TRICHLOROETHANE	ND	0.26	0.026	0.052
1,1,2,2-TETRACHLOROETHANE	ND	0.26	0.026	0.052
1,1,2-TRICHLOROETHANE	ND	0.26	0.026	0.052
1,1-DICHLOROETHANE	ND	0.26	0.026	0.052
1,1-DICHLOROETHENE	ND	0.26	0.026	0.052
1,1-DICHLOROPROPENE	ND	0.26	0.026	0.052
1,2,3-TRICHLOROBENZENE	ND	0.26	0.052	0.10
1,2,3-TRICHLOROPROPANE	ND	0.26	0.052	0.10
1,2,4-TRICHLOROBENZENE	ND	0.26	0.052	0.10
1,2,4-TRIMETHYLBENZENE	ND	0.26	0.029	0.10
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.26	0.052	0.10
1,2-DIBROMOETHANE	ND	0.26	0.026	0.052
1,2-DICHLOROBENZENE	ND	0.26	0.026	0.052
1,2-DICHLOROETHANE	0.037J	0.26	0.026	0.052
1,2-DICHLOROPROPANE	ND	0.26	0.026	0.052
1,3,5-TRIMETHYLBENZENE	ND	0.26	0.031	0.10
1,3-DICHLOROBENZENE	ND	0.26	0.027	0.052
1,3-DICHLOROPROPANE	ND	0.26	0.026	0.052
1,4-DICHLOROBENZENE	ND	0.26	0.026	0.052
2,2-DICHLOROPROPANE	ND	0.26	0.052	0.10
2-BUTANONE	ND	0.52	0.13	0.26
2-CHLOROTOLUENE	ND	0.26	0.043	0.052
2-HEXANONE	ND	0.52	0.15	0.26
4-CHLOROTOLUENE	ND	0.26	0.035	0.052
ACETONE	ND	0.52	0.16	0.26
BENZENE	ND	0.26	0.026	0.052
BROMOBENZENE	ND	0.26	0.026	0.052
BROMOCHLOROMETHANE	ND	0.26	0.026	0.052
BROMODICHLOROMETHANE	ND	0.26	0.026	0.052
BROMOFORM	ND	0.26	0.052	0.10
BROMOMETHANE	ND	0.52	0.094	0.10
CARBON DISULFIDE	ND	0.26	0.026	0.052
CARBON TETRACHLORIDE	ND	0.26	0.028	0.052
CHLOROBENZENE	ND	0.26	0.026	0.052
CHLOROETHANE	ND	0.26	0.068	0.10
CHLOROFORM	ND	0.26	0.026	0.052
CHLOROMETHANE	ND	0.26	0.052	0.10
CIS-1,2-DICHLOROETHYLENE	ND	0.26	0.026	0.052
CIS-1,3-DICHLOROPROPENE	ND	0.26	0.026	0.052
CYCLOHEXANE	ND	0.26	0.063	0.10
DIBROMOCHLOROMETHANE	ND	0.26	0.026	0.052
DIBROMOMETHANE	ND	0.26	0.026	0.052
DICHLORODIFLUOROMETHANE	ND	0.26	0.063	0.10
ETHYLBENZENE	ND	0.26	0.026	0.052
HEXACHLOROBUTADIENE	ND	0.26	0.052	0.10
ISOPROPYLBENZENE	ND	0.26	0.034	0.10
METHYLENE CHLORIDE	ND	0.52	0.10	0.26
M,P-XYLENE	ND	0.26	0.052	0.10
4-METHYL-2-PENTANONE	ND	0.52	0.15	0.26
TERT-BUTYL METHYL ETHER	ND	0.26	0.026	0.052
NAPHTHALENE	ND	0.26	0.052	0.10
N-BUTYLBENZENE	ND	0.26	0.037	0.052
N-PROPYLBENZENE	ND	0.26	0.034	0.052
O-XYLENE	ND	0.26	0.026	0.052
P-ISOPROPYLTOLUENE	ND	0.26	0.032	0.052
SEC-BUTYLBENZENE	ND	0.26	0.035	0.052
STYRENE	ND	0.26	0.026	0.052
TERT-BUTYLBENZENE	ND	0.26	0.032	0.052
TETRACHLOROETHENE	ND	0.26	0.026	0.052
TOLUENE	ND	0.26	0.026	0.052
TRANS-1,2-DCE	ND	0.26	0.026	0.052
TRANS-1,3-DICHLOROPROPENE	ND	0.26	0.026	0.052
TCE	ND	0.26	0.026	0.052
TRICHLOROFLUOROMETHANE	ND	0.26	0.058	0.10
TRICHLOROTRIFLUOROETHANE	ND	0.26	0.052	0.10
VINYL CHLORIDE	ND	0.26	0.073	0.10
VINYL ACETATE	ND	0.26	0.068	0.10
XYLENES, TOTAL	ND	0.26	0.026	0.052

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.15	2.618	120	71-136
4-BROMOFLUOROBENZENE	4.97	4.712	106	79-119
TOLUENE-D8	2.72	2.618	104	85-116
DIBROMOFLUOROMETHANE	2.83	2.618	108	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 22:13
Sample ID	: 18Q2DP009-SB0702-SO-0	Date Analyzed:	06/29/18 22:13
Lab Samp ID	: F187-11I	Dilution Factor:	49.9
Lab File ID	: RFY713	Matrix :	SOIL
Ext Btch ID	: VMF5F28	% Moisture :	4.7
Calib. Ref.	: RDY199	Instrument ID :	TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY713.D
Acq On : 29 Jun 2018 10:13 pm
Operator : DNguye
Sample : 18F187-11I 100uL
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 03 15:27:32 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	940621	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	808652	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	361472	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.474	111	270308	54.08	ug/l	0.00
Spiked Amount 50.000			Recovery =	108.16%		
45) 1,2-Dichloroethane-d4	8.275	65	314182	60.20	ug/l	0.00
Spiked Amount 50.000			Recovery =	120.40%		
59) Toluene-d8	10.800	98	956606	51.94	ug/l	0.00
Spiked Amount 50.000			Recovery =	103.88%		
81) 4-Bromofluorobenzene	13.809	95	662470	95.01	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~190.02%~~ 105.6%		
Target Compounds						Qvalue
46) 1,2-Dichloroethane	8.407	62	4450	0.70	ug/L	100

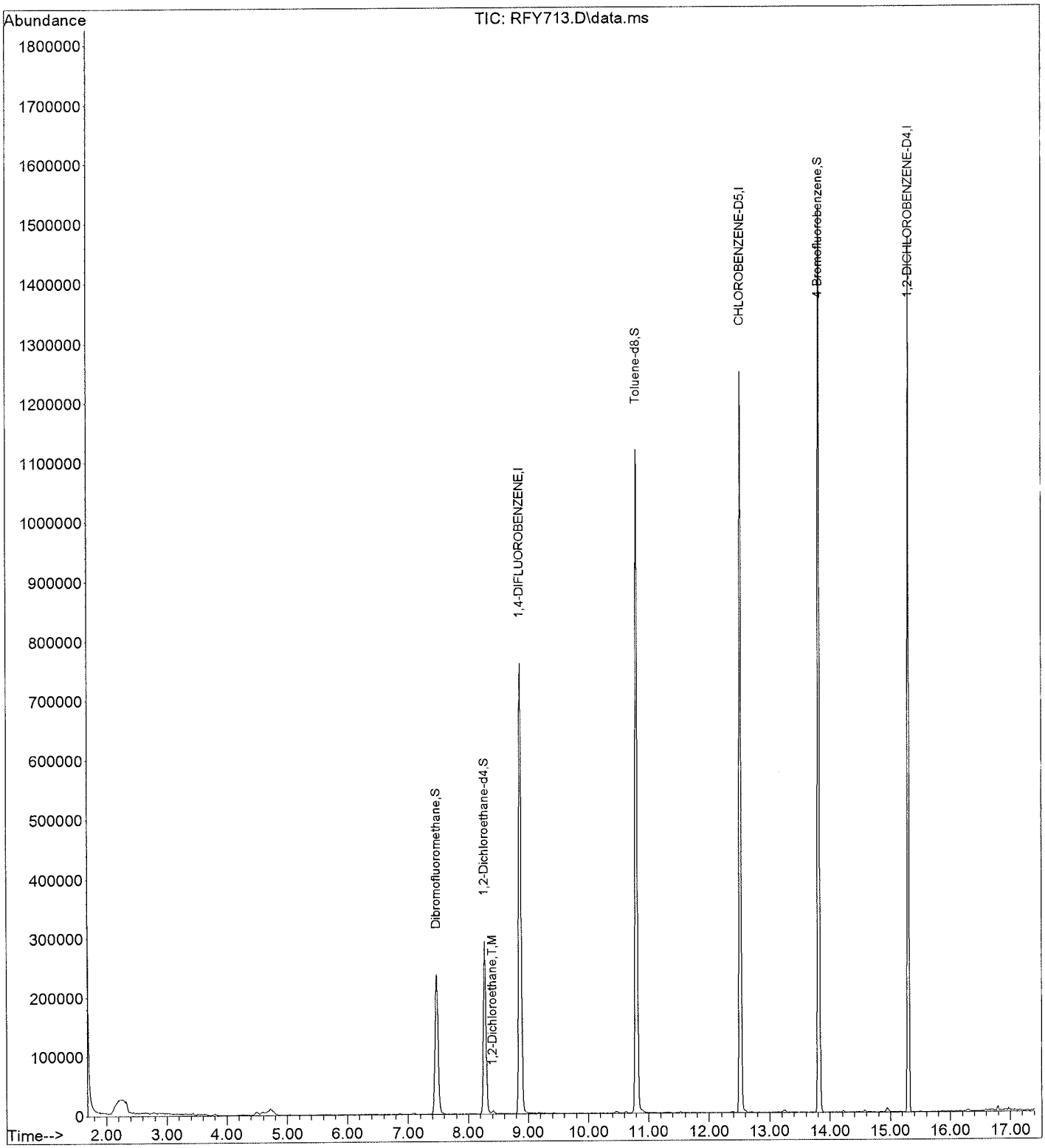
90 MD 7.3.18

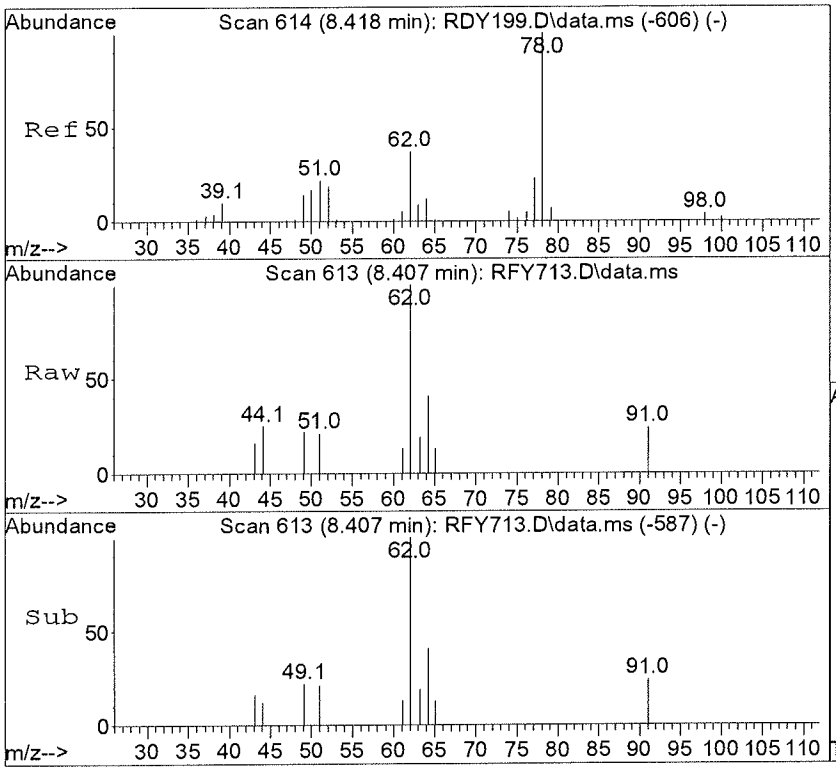
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY713.D
Acq On : 29 Jun 2018 10:13 pm
Operator : DNguye
Sample : 18F187-11I 100uL
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 03 15:27:32 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

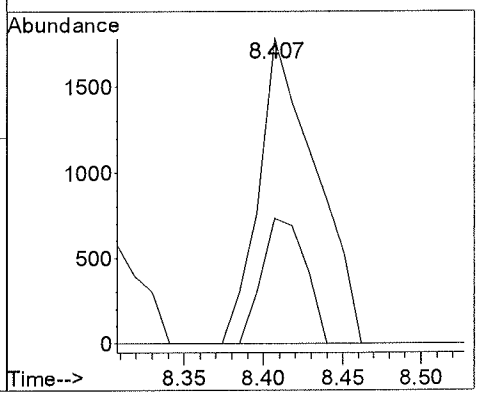




#46
1,2-Dichloroethane
Concen: 0.70 ug/L
RT: 8.407 min Scan# 613
Delta R.T. -0.011 min
Lab File: RFY713.D
Acq: 29 Jun 2018 10:13 pm

Tgt Ion: 62 Resp: 4450

Ion	Ratio	Lower	Upper
62	100		
64	31.6	1.3	61.3



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY713.D
Acq On : 29 Jun 2018 10:13 pm
Operator : DNguye
Sample : 18F187-11I 100uL
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY713.D\data.ms

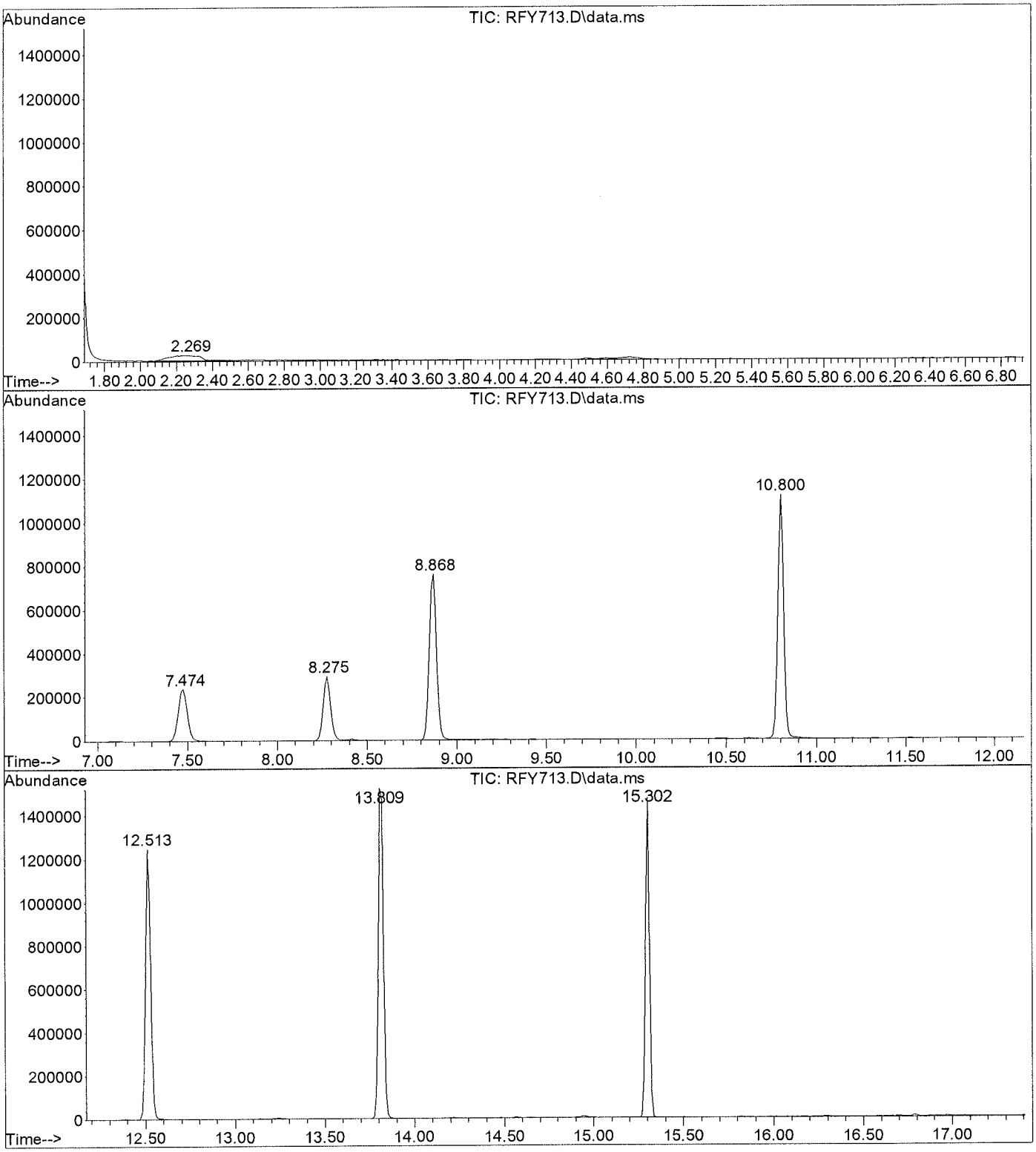
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	2.269	33	54	80	rBV6	24964	308957	10.30%	2.147%
2	7.474	516	528	543	rVB	237359	852081	28.40%	5.921%
3	8.275	592	601	610	rBV	292576	849066	28.30%	5.900%
4	8.868	647	655	679	rBV	759711	2137680	71.24%	14.855%
5	10.800	821	831	849	rVB	1117567	2548126	84.92%	17.707%
6	12.513	980	987	999	rBV	1248382	2450521	81.67%	17.029%
7	13.809	1098	1105	1114	rVB	1522239	3000471	100.00%	20.851%
8	15.302	1236	1241	1246	rBV	1474407	2243212	74.76%	15.589%

Sum of corrected areas: 14390114

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY713.D
Acq On : 29 Jun 2018 10:13 pm
Operator : DNguye
Sample : 18F187-11I 100uL
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY713.D
Acq On : 29 Jun 2018 10:13 pm
Operator : DNguye
Sample : 18F187-11I 100uL
Misc :
ALS Vial : 13 Sample Multiplier: 1

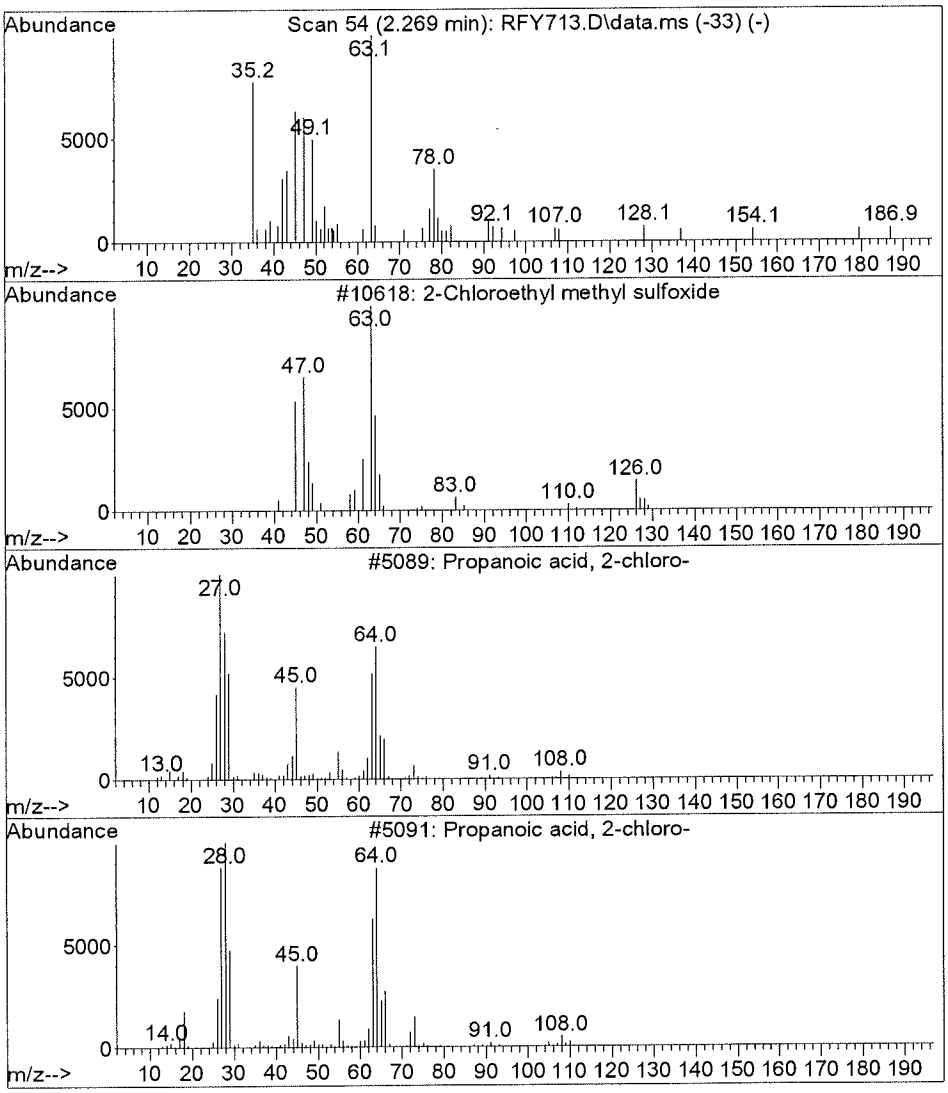
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

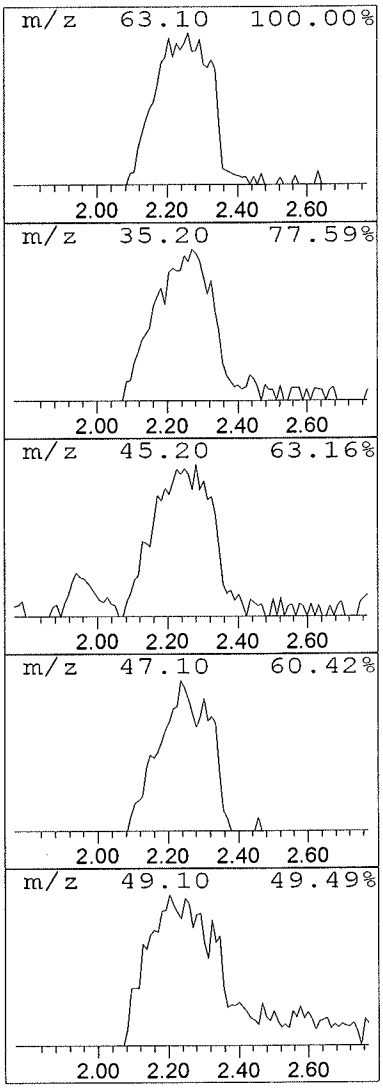
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 1 2-Chloroethyl methyl sulfoxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
2.269	7.23 ug/l	308957	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2-Chloroethyl methyl sulfoxide	126	C3H7ClOS	005331-57-7	30
2	Propanoic acid, 2-chloro-	108	C3H5ClO2	000598-78-7	12
3	Propanoic acid, 2-chloro-	108	C3H5ClO2	000598-78-7	12
4	Trivinylphosphine oxide	128	C6H9OP	013699-67-7	9
5	1,4-Bis[2-[2-(2-chloroethoxy)eth...	410	C18H28Cl2O6	199984-37-7	9





Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY713.D
Acq On : 29 Jun 2018 10:13 pm
Operator : DNguye
Sample : 18F187-11I 100uL
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
2-Chloroethyl m...	2.269	7.2	ug/l	308957	1	8.868	2137680	50.0

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 22:37
Sample ID:	18Q2DP009-SB0301-SO-0	Date Analyzed:	06/29/18 22:37
Lab Samp ID:	F187-12I	Dilution Factor:	50.5
Lab File ID:	RFY714	Matrix	: SOIL
Ext Btch ID:	VMF5F28	% Moisture	: 4.0
Calib. Ref.:	RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.26	0.026	0.053
1,1,1-TRICHLOROETHANE	ND	0.26	0.026	0.053
1,1,2,2-TETRACHLOROETHANE	ND	0.26	0.026	0.053
1,1,2-TRICHLOROETHANE	ND	0.26	0.026	0.053
1,1-DICHLOROETHANE	ND	0.26	0.026	0.053
1,1-DICHLOROETHENE	ND	0.26	0.026	0.053
1,1-DICHLOROPROPENE	ND	0.26	0.026	0.053
1,2,3-TRICHLOROBENZENE	ND	0.26	0.053	0.11
1,2,3-TRICHLOROPROPANE	ND	0.26	0.053	0.11
1,2,4-TRICHLOROBENZENE	ND	0.26	0.053	0.11
1,2,4-TRIMETHYLBENZENE	ND	0.26	0.029	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.26	0.053	0.11
1,2-DIBROMOETHANE	ND	0.26	0.026	0.053
1,2-DICHLOROBENZENE	ND	0.26	0.026	0.053
1,2-DICHLOROETHANE	ND	0.26	0.026	0.053
1,2-DICHLOROPROPANE	ND	0.26	0.026	0.053
1,3,5-TRIMETHYLBENZENE	ND	0.26	0.031	0.11
1,3-DICHLOROBENZENE	ND	0.26	0.027	0.053
1,3-DICHLOROPROPANE	ND	0.26	0.026	0.053
1,4-DICHLOROBENZENE	ND	0.26	0.026	0.053
2,2-DICHLOROPROPANE	ND	0.26	0.053	0.11
2-BUTANONE	ND	0.53	0.13	0.26
2-CHLOROTOLUENE	ND	0.26	0.043	0.053
2-HEXANONE	ND	0.53	0.15	0.26
4-CHLOROTOLUENE	ND	0.26	0.035	0.053
ACETONE	ND	0.53	0.16	0.26
BENZENE	0.036J	0.26	0.026	0.053
BROMOBENZENE	ND	0.26	0.026	0.053
BROMOCHLOROMETHANE	ND	0.26	0.026	0.053
BROMODICHLOROMETHANE	ND	0.26	0.026	0.053
BROMOFORM	ND	0.26	0.053	0.11
BROMOMETHANE	ND	0.53	0.095	0.11
CARBON DISULFIDE	ND	0.26	0.026	0.053
CARBON TETRACHLORIDE	ND	0.26	0.028	0.053
CHLOROBENZENE	ND	0.26	0.026	0.053
CHLOROETHANE	ND	0.26	0.068	0.11
CHLOROFORM	ND	0.26	0.026	0.053
CHLOROMETHANE	ND	0.26	0.053	0.11
CIS-1,2-DICHLOROETHYLENE	ND	0.26	0.026	0.053
CIS-1,3-DICHLOROPROPENE	ND	0.26	0.026	0.053
CYCLOHEXANE	ND	0.26	0.063	0.11
DIBROMOCHLOROMETHANE	ND	0.26	0.026	0.053
DIBROMOMETHANE	ND	0.26	0.026	0.053
DICHLORODIFLUOROMETHANE	ND	0.26	0.063	0.11
ETHYLBENZENE	ND	0.26	0.026	0.053
HEXACHLOROBUTADIENE	ND	0.26	0.053	0.11
ISOPROPYLBENZENE	ND	0.26	0.034	0.11
METHYLENE CHLORIDE	ND	0.53	0.11	0.26
M,P-XYLENE	ND	0.26	0.053	0.11
4-METHYL-2-PENTANONE	ND	0.53	0.15	0.26
TERT-BUTYL METHYL ETHER	ND	0.26	0.026	0.053
NAPHTHALENE	ND	0.26	0.053	0.11
N-BUTYLBENZENE	ND	0.26	0.037	0.053
N-PROPYLBENZENE	ND	0.26	0.034	0.053
O-XYLENE	ND	0.26	0.026	0.053
P-ISOPROPYLTOLUENE	ND	0.26	0.033	0.053
SEC-BUTYLBENZENE	ND	0.26	0.035	0.053
STYRENE	ND	0.26	0.026	0.053
TERT-BUTYLBENZENE	ND	0.26	0.033	0.053
TETRACHLOROETHENE	ND	0.26	0.026	0.053
TOLUENE	0.031J	0.26	0.026	0.053
TRANS-1,2-DCE	ND	0.26	0.026	0.053
TRANS-1,3-DICHLOROPROPENE	ND	0.26	0.026	0.053
TCE	ND	0.26	0.026	0.053
TRICHLOROFLUOROMETHANE	ND	0.26	0.058	0.11
TRICHLOROTRIFLUOROETHANE	ND	0.26	0.053	0.11
VINYL CHLORIDE	ND	0.26	0.074	0.11
VINYL ACETATE	ND	0.26	0.068	0.11
XYLENES, TOTAL	ND	0.26	0.026	0.053

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.09	2.630	117	71-136
4-BROMOFLUOROBENZENE	4.91	4.734	104	79-119
TOLUENE-D8	2.74	2.630	104	85-116
DIBROMOFLUOROMETHANE	2.87	2.630	109	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 22:37
Sample ID	: 18Q2DP009-SB0301-SO-0	Date Analyzed:	06/29/18 22:37
Lab Samp ID	: F187-12I	Dilution Factor:	50.5
Lab File ID	: RFY714	Matrix :	SOIL
Ext Btch ID	: VMF5F28	% Moisture :	4.0
Calib. Ref.	: RDY199	Instrument ID :	TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY714.D
Acq On : 29 Jun 2018 10:37 pm
Operator : DNguye
Sample : 18F187-12I 100uL
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 03 15:28:07 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	942913	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	815394	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	368113	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.474	111	273150	54.52	ug/l	0.00
Spiked Amount 50.000			Recovery =	109.04%		
45) 1,2-Dichloroethane-d4	8.275	65	307148	58.71	ug/l	0.00
Spiked Amount 50.000			Recovery =	117.42%		
59) Toluene-d8	10.800	98	968566	52.16	ug/l	0.00
Spiked Amount 50.000			Recovery =	104.32%		
81) 4-Bromofluorobenzene	13.809	95	662138	93.25	ug/l	0.00
Spiked Amount ~~50~~ 90.000			Recovery =	~~186.50~~ 103.6%		
Target Compounds						Qvalue
47) Benzene	8.407	78	13622	0.69	ug/L	94
61) Toluene	10.899	91	13220	0.58	ug/l	97

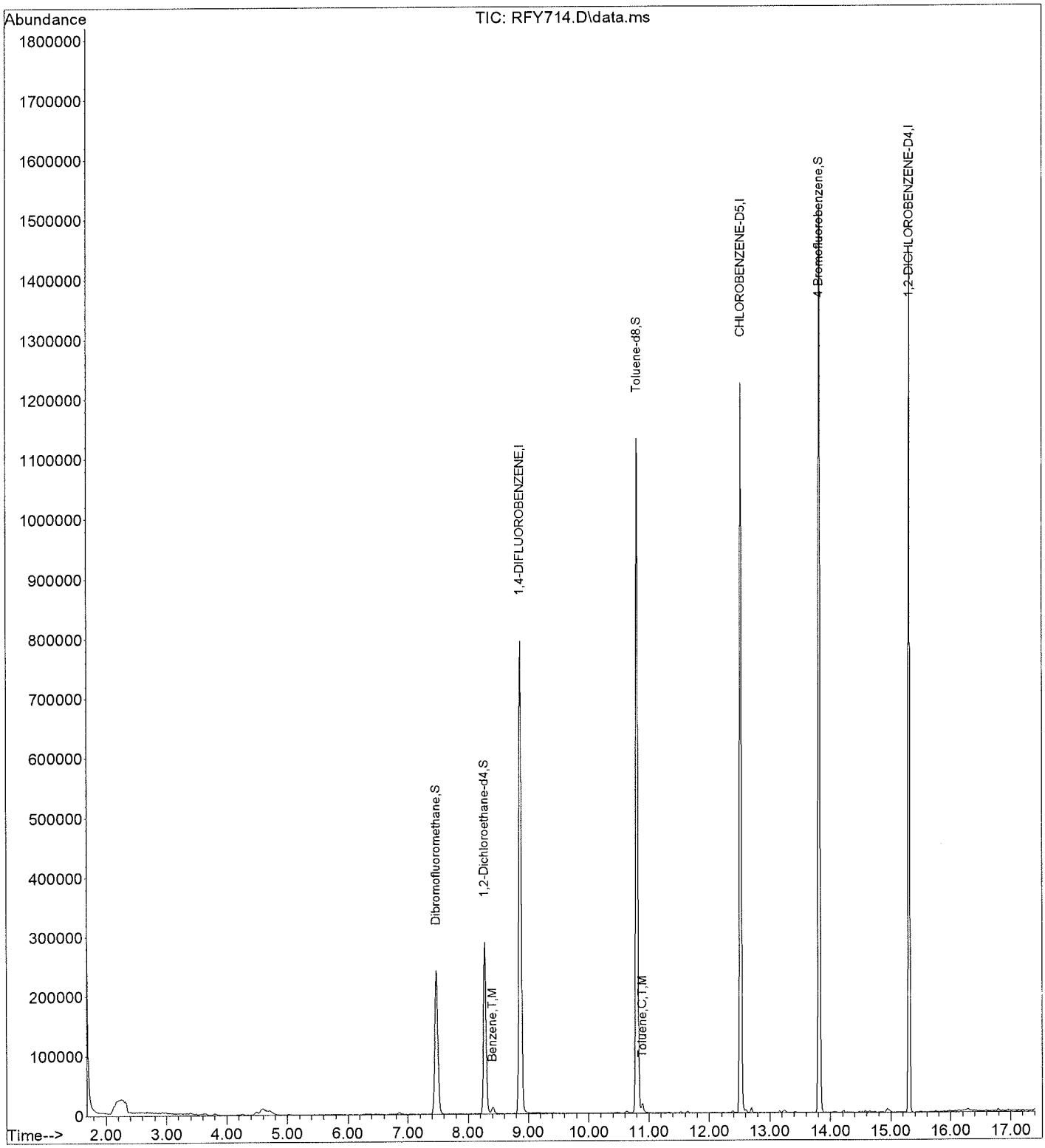
MD 7.3.18

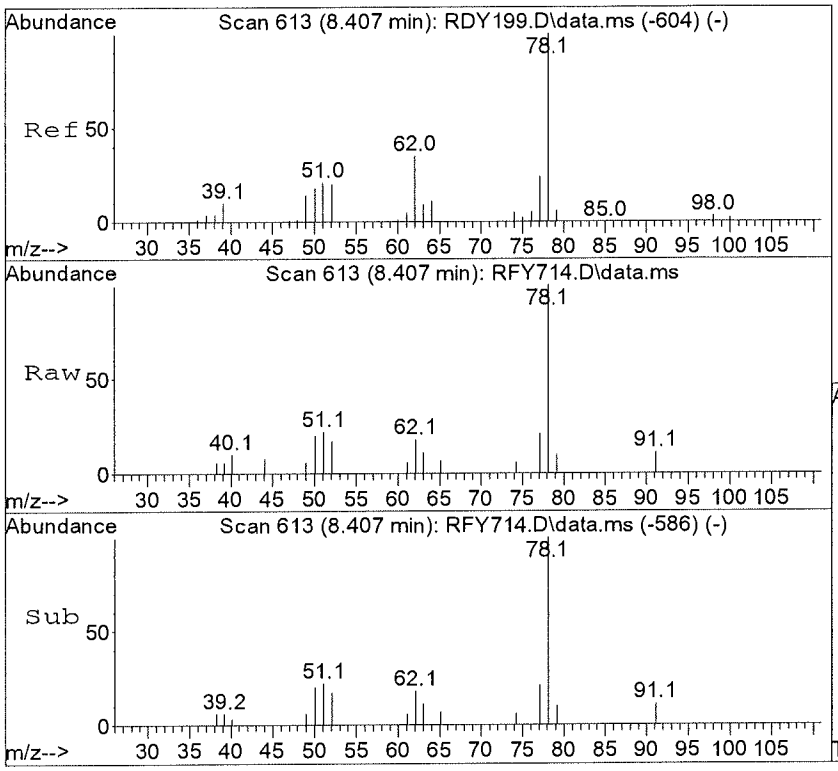
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY714.D
Acq On : 29 Jun 2018 10:37 pm
Operator : DNguye
Sample : 18F187-12I 100uL
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 03 15:28:07 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

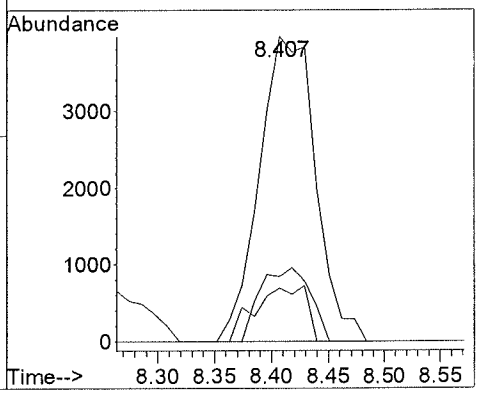


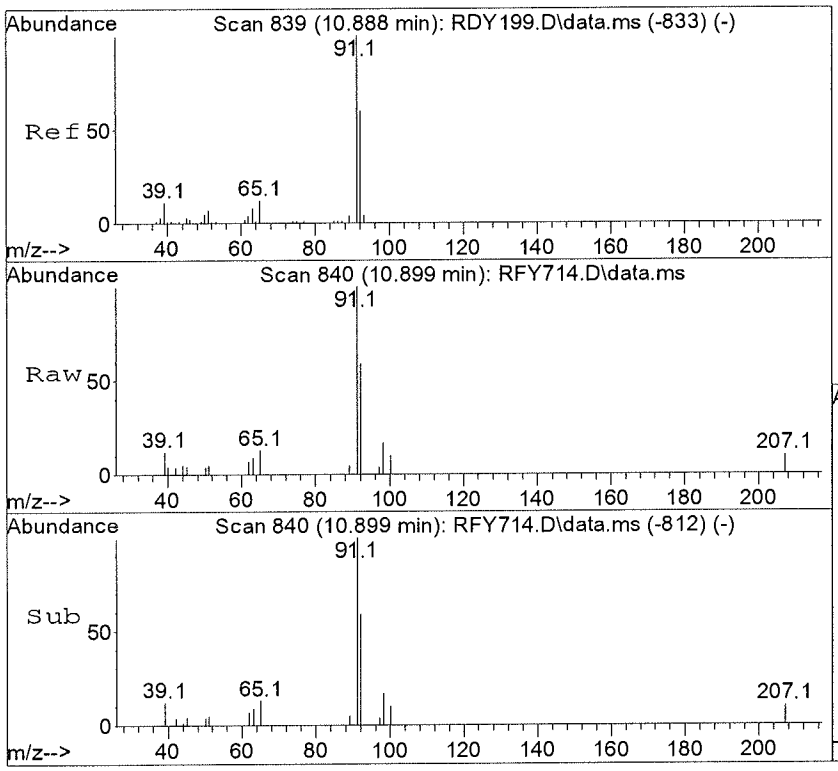


#47
Benzene
Concen: 0.69 ug/L
RT: 8.407 min Scan# 613
Delta R.T. -0.000 min
Lab File: RFY714.D
Acq: 29 Jun 2018 10:37 pm

Tgt Ion: 78 Resp: 13622

Ion	Ratio	Lower	Upper
78	100		
77	21.4	0.0	53.7
52	16.3	0.0	49.8

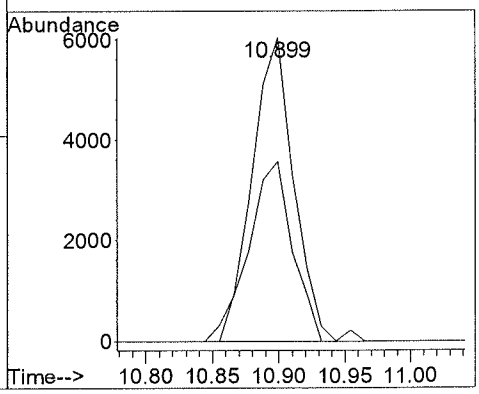




#61
Toluene
Concen: 0.58 ug/l
RT: 10.899 min Scan# 840
Delta R.T. 0.011 min
Lab File: RFY714.D
Acq: 29 Jun 2018 10:37 pm

Tgt Ion: 91 Resp: 13220

Ion	Ratio	Lower	Upper
91	100		
92	62.0	29.6	89.6



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY714.D
Acq On : 29 Jun 2018 10:37 pm
Operator : DNguye
Sample : 18F187-12I 100uL
Misc :
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY714.D\data.ms

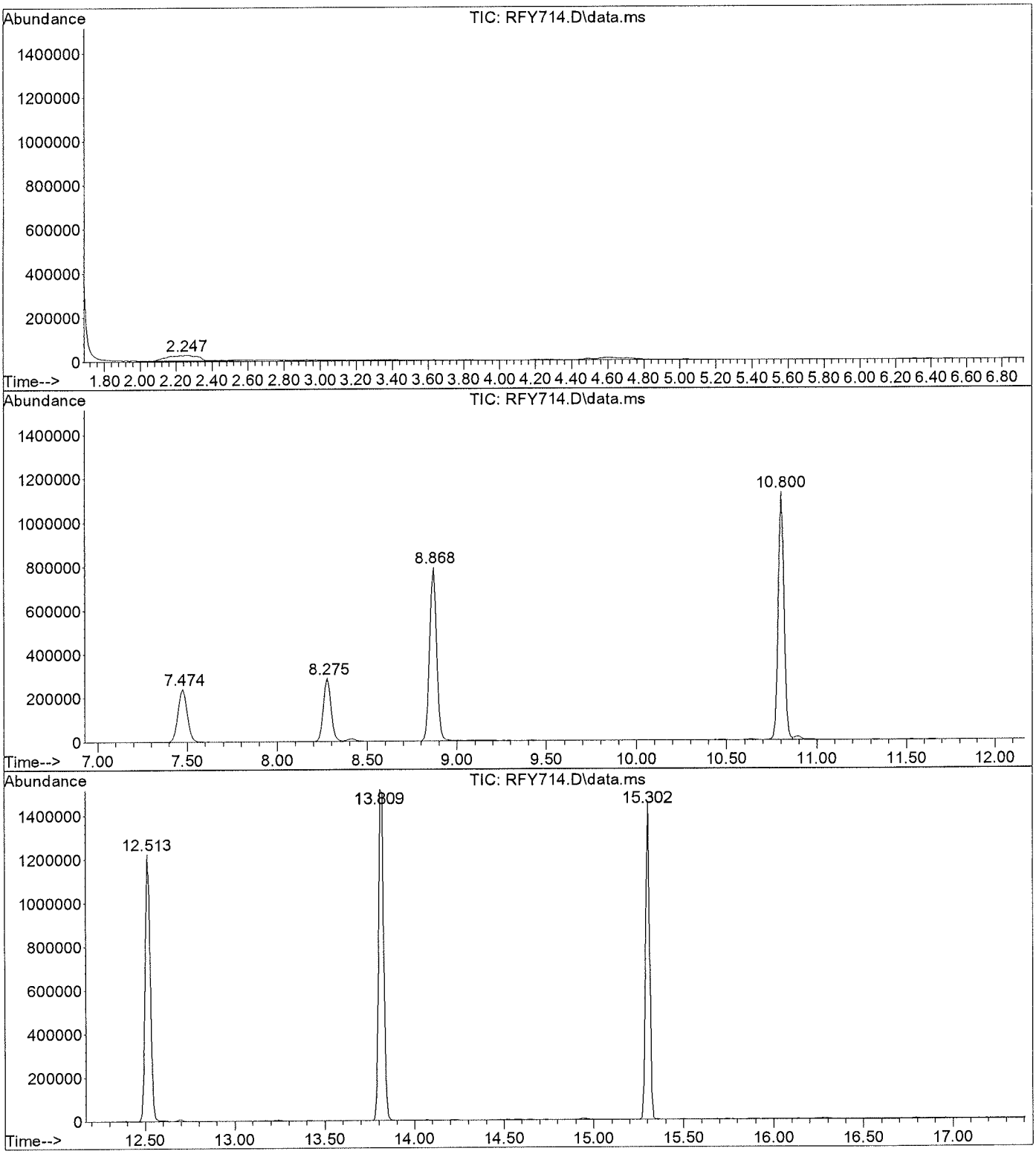
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	2.247	34	52	77	rBV6	24172	303787	10.04%	2.099%
2	7.474	519	528	540	rVB	241609	849267	28.06%	5.867%
3	8.275	592	601	609	rBV	288433	846315	27.96%	5.846%
4	8.868	647	655	671	rBV	794009	2163776	71.50%	14.947%
5	10.800	821	831	837	rBV	1131263	2549231	84.23%	17.610%
6	12.513	980	987	1000	rBV	1224350	2472172	81.69%	17.078%
7	13.809	1099	1105	1116	rBV	1517005	3026399	100.00%	20.906%
8	15.302	1236	1241	1249	rVB	1449194	2265064	74.84%	15.647%

Sum of corrected areas: 14476011

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY714.D
Acq On : 29 Jun 2018 10:37 pm
Operator : DNguye
Sample : 18F187-12I 100uL
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY714.D
Acq On : 29 Jun 2018 10:37 pm
Operator : DNguye
Sample : 18F187-12I 100uL
Misc :
ALS Vial : 14 Sample Multiplier: 1

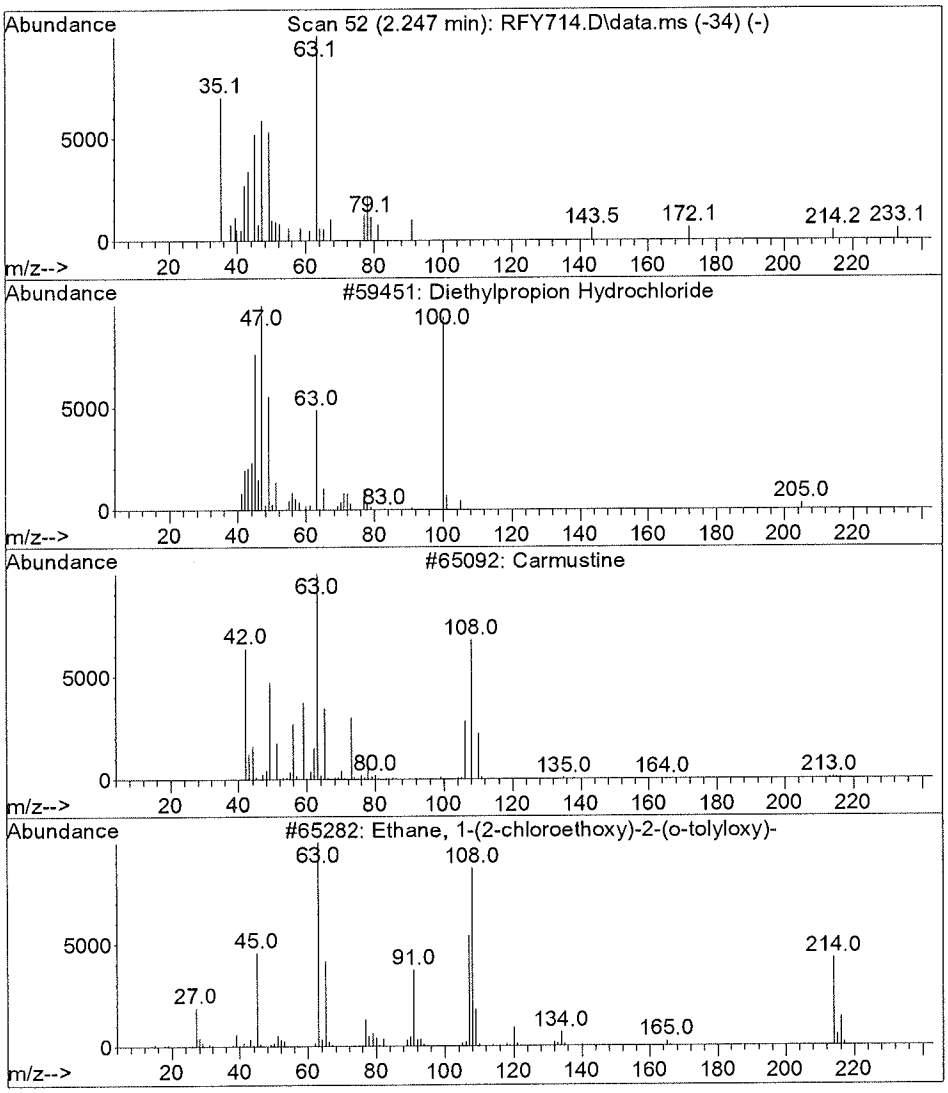
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

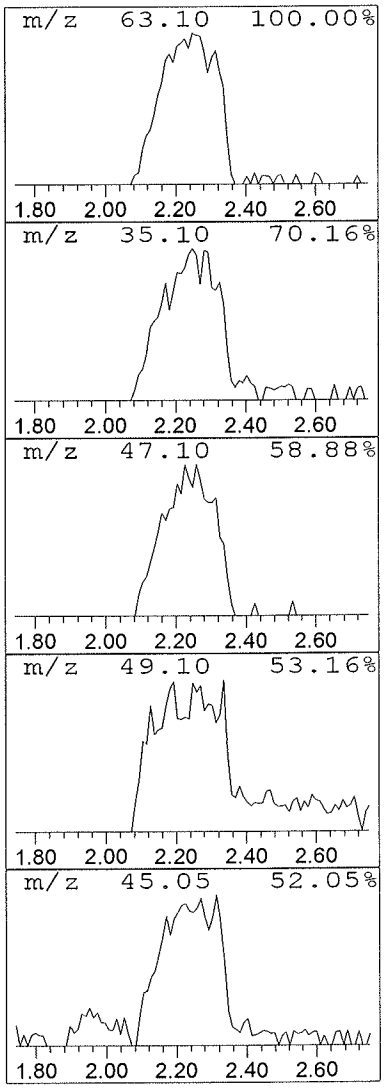
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 1 Diethylpropion Hydrochloride Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
2.247	7.02 ug/l	303787	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diethylpropion Hydrochloride	205	C13H19NO	000134-80-5	10
2	Carmustine	213	C5H9Cl2N3O2	000154-93-8	9
3	Ethane, 1-(2-chloroethoxy)-2-(o-...	214	C11H15ClO2	021120-80-9	9
4	1H-Benzotriazole, 4-nitro-	164	C6H4N4O2	006299-39-4	4
5	1,4-Bis[2-[2-(2-chloroethoxy)eth...	410	C18H28Cl2O6	199984-37-7	4





Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY714.D
Acq On : 29 Jun 2018 10:37 pm
Operator : DNguye
Sample : 18F187-12I 100uL
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Diethylpropion ...	2.247	7.0	ug/l	303787	1	8.868	2163780	50.0

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/23/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 23:02
Sample ID	: 18Q2DP009-SB0302-SO-0	Date Analyzed	: 06/29/18 23:02
Lab Samp ID	: F187-13I	Dilution Factor	: 56
Lab File ID	: RFY715	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: 6.5
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.30	0.030	0.060
1,1,1-TRICHLOROETHANE	ND	0.30	0.030	0.060
1,1,2,2-TETRACHLOROETHANE	ND	0.30	0.030	0.060
1,1,2-TRICHLOROETHANE	ND	0.30	0.030	0.060
1,1-DICHLOROETHANE	ND	0.30	0.030	0.060
1,1-DICHLOROETHENE	ND	0.30	0.030	0.060
1,1-DICHLOROPROPENE	ND	0.30	0.030	0.060
1,2,3-TRICHLOROBENZENE	ND	0.30	0.060	0.12
1,2,3-TRICHLOROPROPANE	ND	0.30	0.060	0.12
1,2,4-TRICHLOROBENZENE	ND	0.30	0.060	0.12
1,2,4-TRIMETHYLBENZENE	ND	0.30	0.033	0.12
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.30	0.060	0.12
1,2-DIBROMOETHANE	ND	0.30	0.030	0.060
1,2-DICHLOROBENZENE	ND	0.30	0.030	0.060
1,2-DICHLOROETHANE	ND	0.30	0.030	0.060
1,2-DICHLOROPROPANE	ND	0.30	0.030	0.060
1,3,5-TRIMETHYLBENZENE	ND	0.30	0.035	0.12
1,3-DICHLOROBENZENE	ND	0.30	0.031	0.060
1,3-DICHLOROPROPANE	ND	0.30	0.030	0.060
1,4-DICHLOROBENZENE	ND	0.30	0.030	0.060
2,2-DICHLOROPROPANE	ND	0.30	0.060	0.12
2-BUTANONE	ND	0.60	0.15	0.30
2-CHLOROTOLUENE	ND	0.30	0.049	0.060
2-HEXANONE	ND	0.60	0.17	0.30
4-CHLOROTOLUENE	ND	0.30	0.040	0.060
ACETONE	ND	0.60	0.19	0.30
BENZENE	ND	0.30	0.030	0.060
BROMOBENZENE	ND	0.30	0.030	0.060
BROMOCHLOROMETHANE	ND	0.30	0.030	0.060
BROMODICHLOROMETHANE	ND	0.30	0.030	0.060
BROMOFORM	ND	0.30	0.060	0.12
BROMOMETHANE	ND	0.60	0.11	0.12
CARBON DISULFIDE	ND	0.30	0.030	0.060
CARBON TETRACHLORIDE	ND	0.30	0.032	0.060
CHLOROBENZENE	ND	0.30	0.030	0.060
CHLOROETHANE	ND	0.30	0.078	0.12
CHLOROFORM	ND	0.30	0.030	0.060
CHLOROMETHANE	ND	0.30	0.060	0.12
CIS-1,2-DICHLOROETHYLENE	ND	0.30	0.030	0.060
CIS-1,3-DICHLOROPROPENE	ND	0.30	0.030	0.060
CYCLOHEXANE	ND	0.30	0.072	0.12
DIBROMOCHLOROMETHANE	ND	0.30	0.030	0.060
DIBROMOMETHANE	ND	0.30	0.030	0.060
DICHLORODIFLUOROMETHANE	ND	0.30	0.072	0.12
ETHYLBENZENE	ND	0.30	0.030	0.060
HEXACHLOROBUTADIENE	ND	0.30	0.060	0.12
ISOPROPYLBENZENE	ND	0.30	0.038	0.12
METHYLENE CHLORIDE	ND	0.60	0.12	0.30
M,P-XYLENE	ND	0.30	0.060	0.12
4-METHYL-2-PENTANONE	ND	0.60	0.17	0.30
TERT-BUTYL METHYL ETHER	ND	0.30	0.030	0.060
NAPHTHALENE	ND	0.30	0.060	0.12
N-BUTYLBENZENE	ND	0.30	0.042	0.060
N-PROPYLBENZENE	ND	0.30	0.039	0.060
O-XYLENE	ND	0.30	0.030	0.060
P-ISOPROPYLTOLUENE	ND	0.30	0.037	0.060
SEC-BUTYLBENZENE	ND	0.30	0.040	0.060
STYRENE	ND	0.30	0.030	0.060
TERT-BUTYLBENZENE	ND	0.30	0.037	0.060
TETRACHLOROETHENE	ND	0.30	0.030	0.060
TOLUENE	ND	0.30	0.030	0.060
TRANS-1,2-DCE	ND	0.30	0.030	0.060
TRANS-1,3-DICHLOROPROPENE	ND	0.30	0.030	0.060
TCE	ND	0.30	0.030	0.060
TRICHLOROFLUOROMETHANE	ND	0.30	0.066	0.12
TRICHLOROTRIFLUOROETHANE	ND	0.30	0.060	0.12
VINYL CHLORIDE	ND	0.30	0.084	0.12
VINYL ACETATE	ND	0.30	0.078	0.12
XYLENES, TOTAL	ND	0.30	0.030	0.060

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.57	2.995	119	71-136
4-BROMOFLUOROBENZENE	5.64	5.390	105	79-119
TOLUENE-D8	3.12	2.995	104	85-116
DIBROMOFLUOROMETHANE	3.26	2.995	109	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 23:02
Sample ID	: 18Q2DP009-SB0302-SO-0	Date Analyzed:	06/29/18 23:02
Lab Samp ID	: F187-13I	Dilution Factor:	56
Lab File ID	: RFY715	Matrix :	SOIL
Ext Btch ID	: VMF5F28	% Moisture :	6.5
Calib. Ref.	: RDY199	Instrument ID :	TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY715.D
Acq On : 29 Jun 2018 11:02 pm
Operator : DNguye
Sample : 18F187-13I 100uL
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 03 15:28:44 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	948121	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	815720	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	364630	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.485	111	274103	54.41	ug/l	0.01
Spiked Amount 50.000			Recovery =	108.82%		
45) 1,2-Dichloroethane-d4	8.275	65	313738	59.64	ug/l	0.00
Spiked Amount 50.000			Recovery =	119.28%		
59) Toluene-d8	10.800	98	966908	52.05	ug/l	0.00
Spiked Amount 50.000			Recovery =	104.10%		
81) 4-Bromofluorobenzene	13.809	95	662711	94.22	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~188.44%~~ 104.7%		
Target Compounds						Qvalue

~~50~~ 90

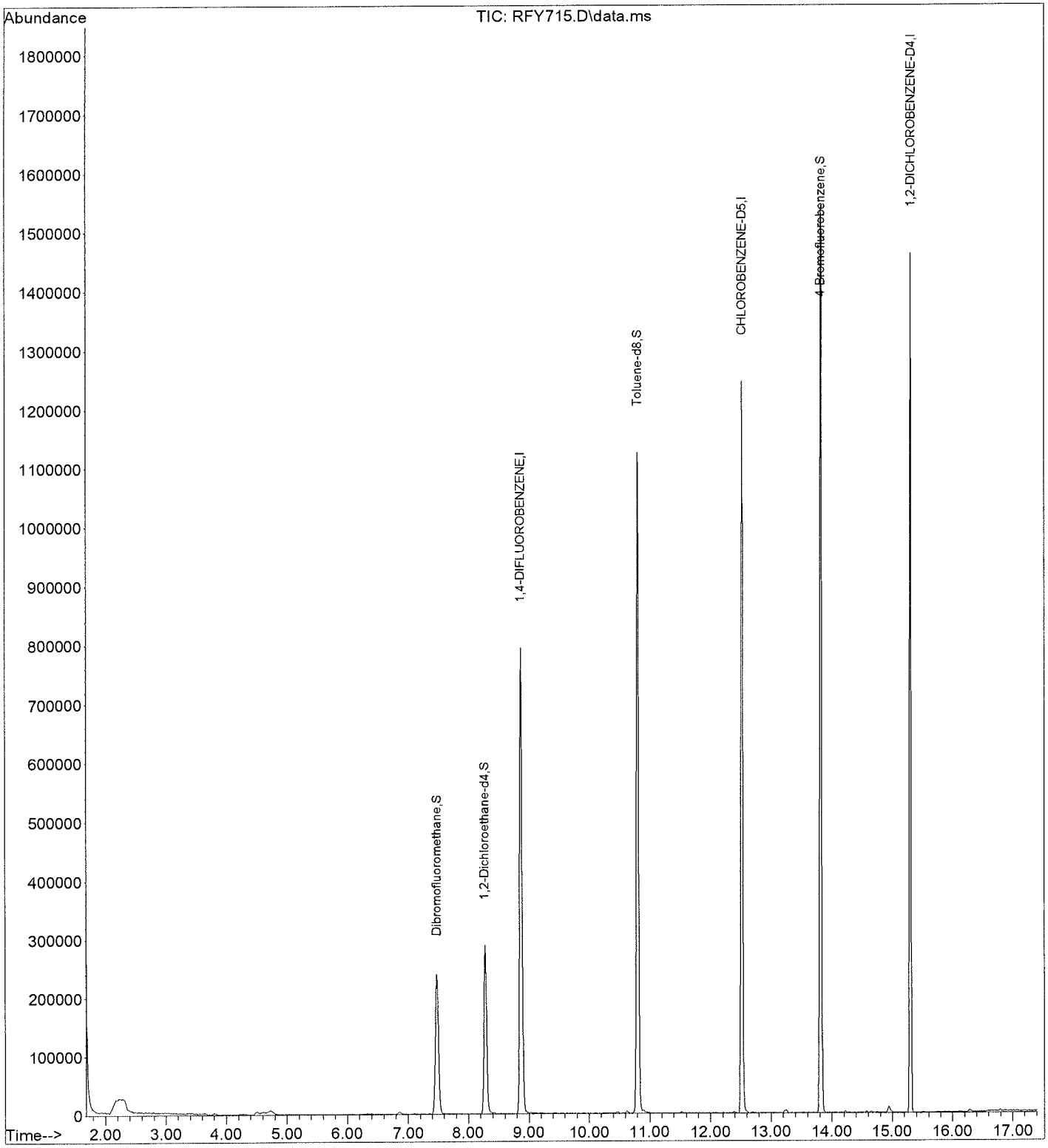
MD 7.3.18

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY715.D
Acq On : 29 Jun 2018 11:02 pm
Operator : DNguye
Sample : 18F187-13I 100uL
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 03 15:28:44 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY715.D
Acq On : 29 Jun 2018 11:02 pm
Operator : DNguye
Sample : 18F187-13I 100uL
Misc :
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY715.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	2.247	36	52	72	rBV5	25914	345533	11.40%	2.370%
2	7.474	520	528	543	rBV	239621	854614	28.19%	5.861%
3	8.275	594	601	612	rBV	288811	848050	27.97%	5.816%
4	8.868	647	655	667	rBV	793773	2175795	71.77%	14.922%
5	10.800	821	831	854	rBV	1125353	2597217	85.67%	17.812%
6	12.513	981	987	999	rBV	1245791	2484458	81.96%	17.039%
7	13.809	1097	1105	1114	rBV	1540895	3031486	100.00%	20.791%
8	15.302	1236	1241	1249	rBV	1461701	2243899	74.02%	15.389%

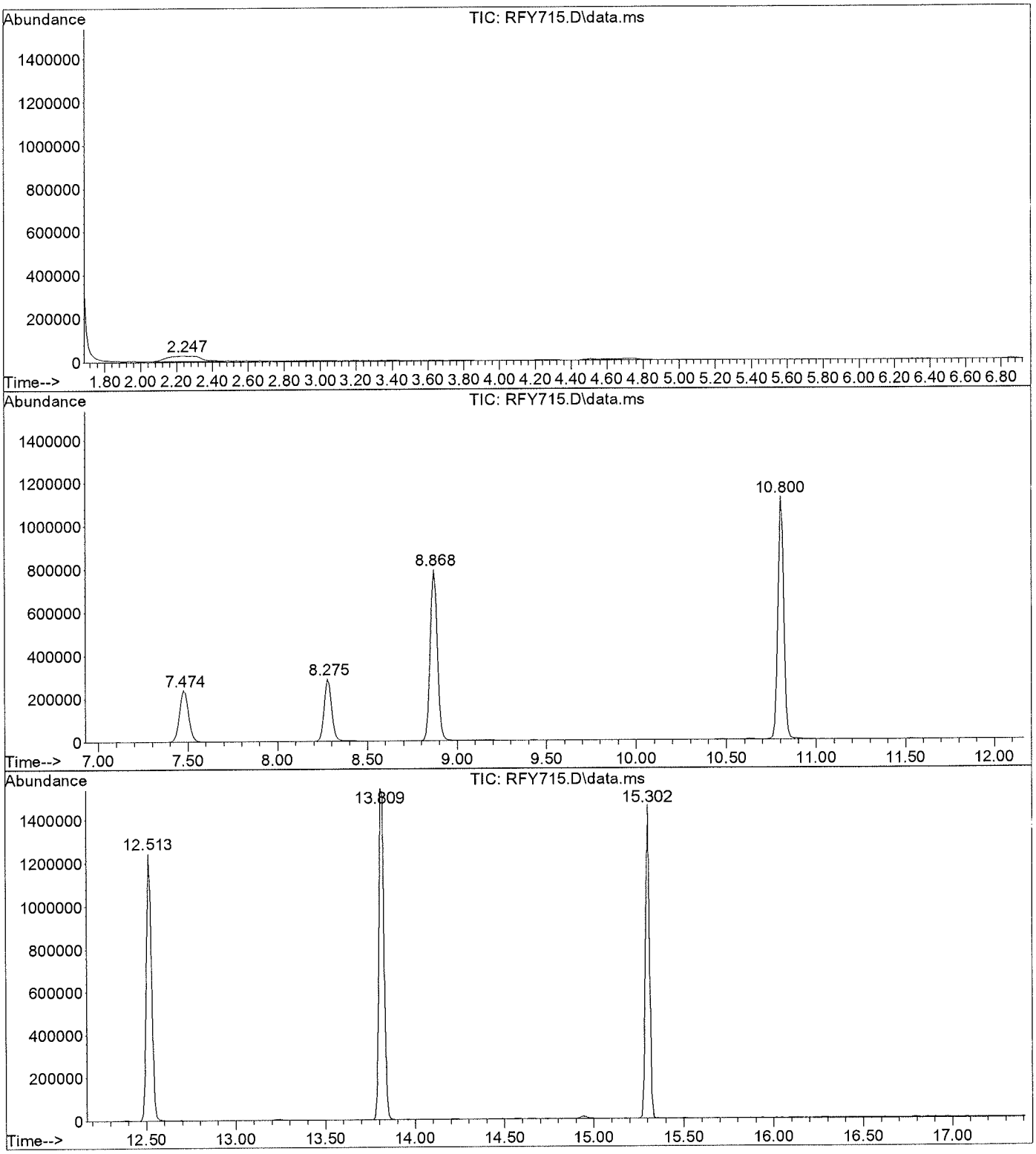
Sum of corrected areas: 14581052

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY715.D
Acq On : 29 Jun 2018 11:02 pm
Operator : DNguye
Sample : 18F187-13I 100uL
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY715.D
Acq On : 29 Jun 2018 11:02 pm
Operator : DNguye
Sample : 18F187-13I 100uL
Misc :
ALS Vial : 15 Sample Multiplier: 1

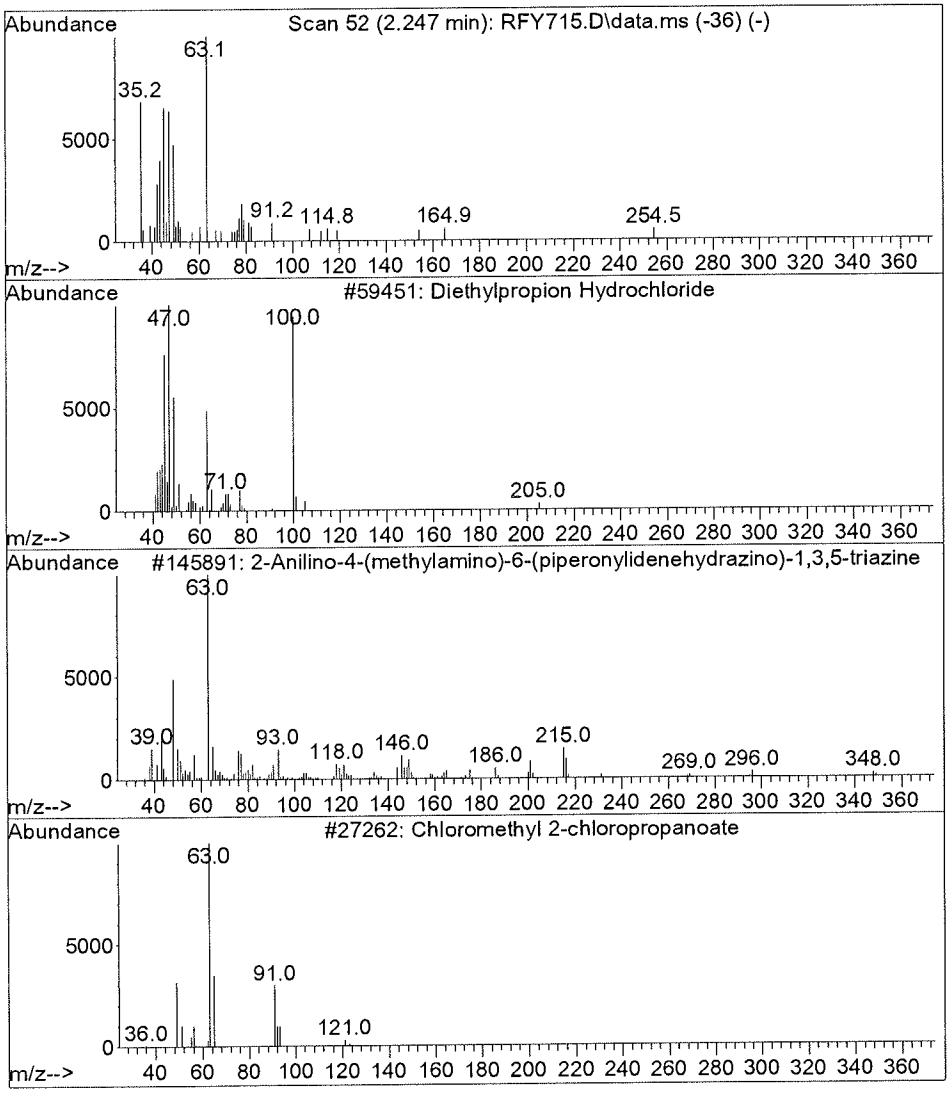
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

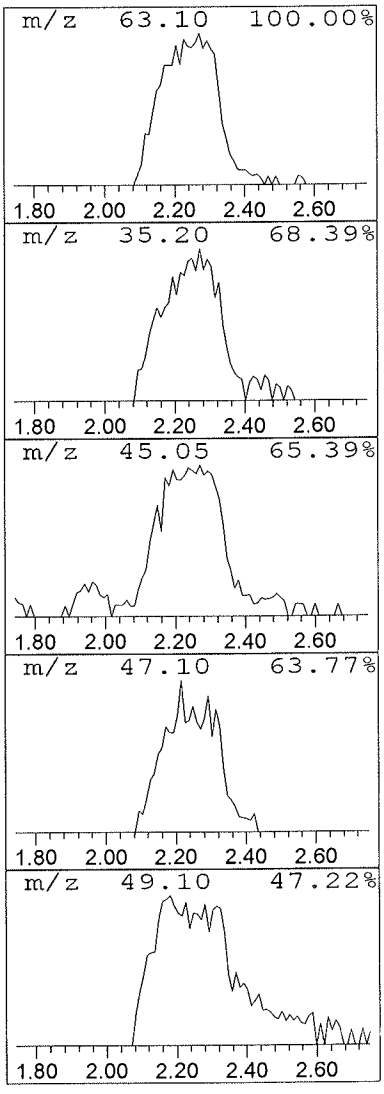
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 1 Diethylpropion Hydrochloride Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
2.247	7.94 ug/l	345533	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diethylpropion Hydrochloride	205	C13H19NO	000134-80-5	35
2	2-Anilino-4-(methylamino)-6-(pip...	363	C18H17N7O2	1000225-97-3	9
3	Chloromethyl 2-chloropropanoate	156	C4H6Cl2O2	013398-02-2	9
4	Methan-d3-ol	35	CHD3O	001849-29-2	4
5	1H-Benzotriazole, 4-nitro-	164	C6H4N4O2	006299-39-4	4





Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY715.D
Acq On : 29 Jun 2018 11:02 pm
Operator : DNguye
Sample : 18F187-13I 100uL
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Diethylpropion ...	2.247	7.9	ug/l	345533	1	8.868	2175800	50.0

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/23/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 23:27
Sample ID	: 18Q2DP009-SB0602-SO-0	Date Analyzed	: 06/29/18 23:27
Lab Samp ID	: F187-14I	Dilution Factor	: 52
Lab File ID	: RFY716	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: 5.1
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.27	0.027	0.055
1,1,1-TRICHLOROETHANE	ND	0.27	0.027	0.055
1,1,2,2-TETRACHLOROETHANE	ND	0.27	0.027	0.055
1,1,2-TRICHLOROETHANE	ND	0.27	0.027	0.055
1,1-DICHLOROETHANE	ND	0.27	0.027	0.055
1,1-DICHLOROETHENE	ND	0.27	0.027	0.055
1,1-DICHLOROPROPENE	ND	0.27	0.027	0.055
1,2,3-TRICHLOROBENZENE	ND	0.27	0.055	0.11
1,2,3-TRICHLOROPROPANE	ND	0.27	0.055	0.11
1,2,4-TRICHLOROBENZENE	ND	0.27	0.055	0.11
1,2,4-TRIMETHYLBENZENE	ND	0.27	0.030	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.27	0.055	0.11
1,2-DIBROMOETHANE	ND	0.27	0.027	0.055
1,2-DICHLOROBENZENE	ND	0.27	0.027	0.055
1,2-DICHLOROETHANE	0.034J	0.27	0.027	0.055
1,2-DICHLOROPROPANE	ND	0.27	0.027	0.055
1,3,5-TRIMETHYLBENZENE	ND	0.27	0.032	0.11
1,3-DICHLOROBENZENE	ND	0.27	0.028	0.055
1,3-DICHLOROPROPANE	ND	0.27	0.027	0.055
1,4-DICHLOROBENZENE	ND	0.27	0.027	0.055
2,2-DICHLOROPROPANE	ND	0.27	0.055	0.11
2-BUTANONE	ND	0.55	0.14	0.27
2-CHLOROTOLUENE	ND	0.27	0.045	0.055
2-HEXANONE	ND	0.55	0.16	0.27
4-CHLOROTOLUENE	ND	0.27	0.037	0.055
ACETONE	ND	0.55	0.17	0.27
BENZENE	ND	0.27	0.027	0.055
BROMOBENZENE	ND	0.27	0.027	0.055
BROMOCHLOROMETHANE	ND	0.27	0.027	0.055
BROMODICHLOROMETHANE	ND	0.27	0.027	0.055
BROMOFORM	ND	0.27	0.055	0.11
BROMOMETHANE	ND	0.55	0.099	0.11
CARBON DISULFIDE	ND	0.27	0.027	0.055
CARBON TETRACHLORIDE	ND	0.27	0.030	0.055
CHLOROBENZENE	ND	0.27	0.027	0.055
CHLOROETHANE	ND	0.27	0.071	0.11
CHLOROFORM	ND	0.27	0.027	0.055
CHLOROMETHANE	ND	0.27	0.055	0.11
CIS-1,2-DICHLOROETHYLENE	ND	0.27	0.027	0.055
CIS-1,3-DICHLOROPROPENE	ND	0.27	0.027	0.055
CYCLOHEXANE	ND	0.27	0.066	0.11
DIBROMOCHLOROMETHANE	ND	0.27	0.027	0.055
DIBROMOMETHANE	ND	0.27	0.027	0.055
DICHLORODIFLUOROMETHANE	ND	0.27	0.066	0.11
ETHYLBENZENE	ND	0.27	0.027	0.055
HEXACHLOROBUTADIENE	ND	0.27	0.055	0.11
ISOPROPYLBENZENE	ND	0.27	0.035	0.11
METHYLENE CHLORIDE	ND	0.55	0.11	0.27
M,P-XYLENE	ND	0.27	0.055	0.11
4-METHYL-2-PENTANONE	ND	0.55	0.15	0.27
TERT-BUTYL METHYL ETHER	ND	0.27	0.027	0.055
NAPHTHALENE	ND	0.27	0.055	0.11
N-BUTYLBENZENE	ND	0.27	0.038	0.055
N-PROPYLBENZENE	ND	0.27	0.036	0.055
O-XYLENE	ND	0.27	0.027	0.055
P-ISOPROPYLTOLUENE	ND	0.27	0.034	0.055
SEC-BUTYLBENZENE	ND	0.27	0.037	0.055
STYRENE	ND	0.27	0.027	0.055
TERT-BUTYLBENZENE	ND	0.27	0.034	0.055
TETRACHLOROETHENE	ND	0.27	0.027	0.055
TOLUENE	ND	0.27	0.027	0.055
TRANS-1,2-DCE	ND	0.27	0.027	0.055
TRANS-1,3-DICHLOROPROPENE	ND	0.27	0.027	0.055
TCE	ND	0.27	0.027	0.055
TRICHLOROFLUOROMETHANE	ND	0.27	0.060	0.11
TRICHLOROTRIFLUOROETHANE	ND	0.27	0.055	0.11
VINYL CHLORIDE	ND	0.27	0.077	0.11
VINYL ACETATE	ND	0.27	0.071	0.11
XYLENES, TOTAL	ND	0.27	0.027	0.055

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.12	2.740	114	71-136
4-BROMOFLUOROBENZENE	5.18	4.932	105	79-119
TOLUENE-D8	2.91	2.740	106	85-116
DIBROMOFLUOROMETHANE	2.94	2.740	107	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/23/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 23:27
Sample ID	: 18Q2DP009-SB0602-SO-0	Date Analyzed	: 06/29/18 23:27
Lab Samp ID	: F187-14I	Dilution Factor	: 52
Lab File ID	: RFY716	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: 5.1
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY716.D
Acq On : 29 Jun 2018 11:27 pm
Operator : DNguye
Sample : 18F187-14I 100uL
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 03 15:29:11 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

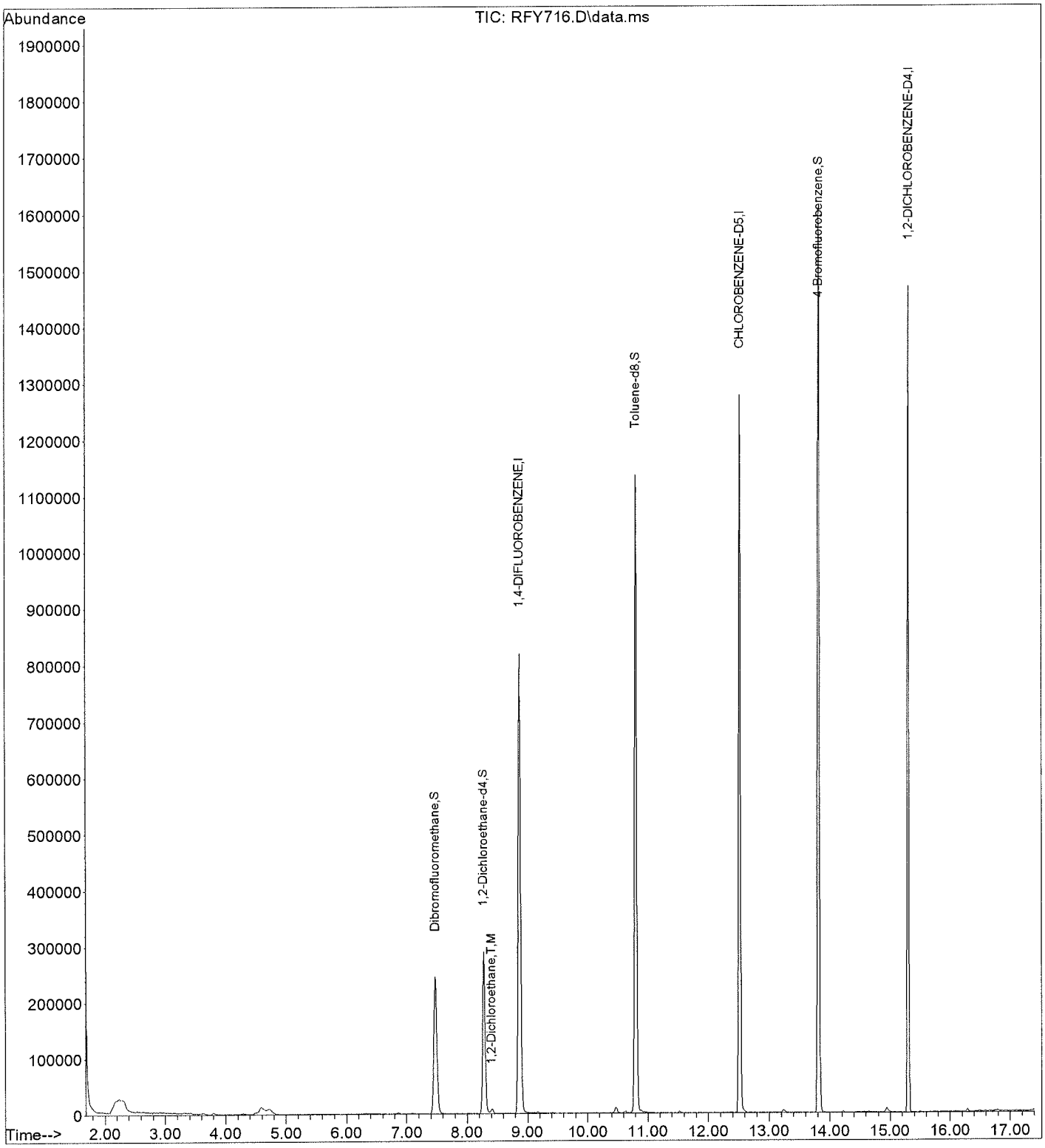
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	975269	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	812784	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	368277	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.473	111	278254	53.69	ug/l	0.00
Spiked Amount 50.000			Recovery =	107.38%		
45) 1,2-Dichloroethane-d4	8.275	65	307767	56.88	ug/l	0.00
Spiked Amount 50.000			Recovery =	113.76%		
59) Toluene-d8	10.800	98	983342	53.12	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.24%		
81) 4-Bromofluorobenzene	13.809	95	671400	94.51	ug/l	0.00
Spiked Amount ~~50.000~~ 90		MD 7.3.18	Recovery =	~~189.02%~~ 105.0%		
Target Compounds						Qvalue
46) 1,2-Dichloroethane	8.407	62	4100	0.62	ug/L	90

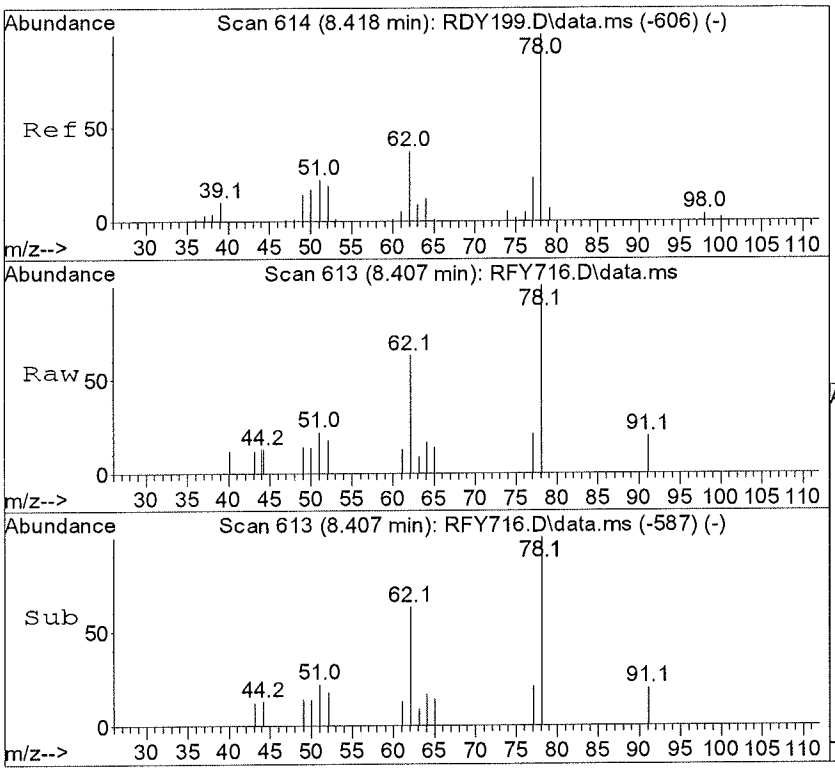
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY716.D
Acq On : 29 Jun 2018 11:27 pm
Operator : DNguye
Sample : 18F187-14I 100uL
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 03 15:29:11 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

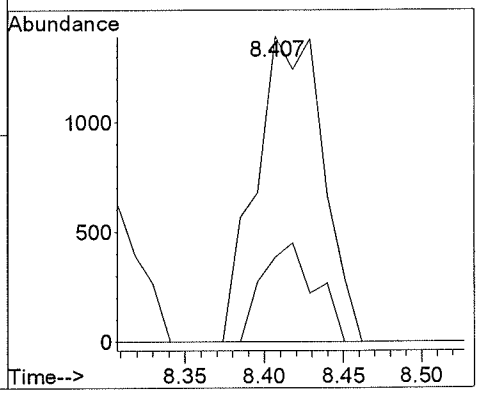




#46
1,2-Dichloroethane
Concen: 0.62 ug/L
RT: 8.407 min Scan# 613
Delta R.T. -0.011 min
Lab File: RFY716.D
Acq: 29 Jun 2018 11:27 pm

Tgt Ion: 62 Resp: 4100

Ion	Ratio	Lower	Upper
62	100		
64	25.7	1.3	61.3



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY716.D
Acq On : 29 Jun 2018 11:27 pm
Operator : DNguye
Sample : 18F187-14I 100uL
Misc :
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY716.D\data.ms

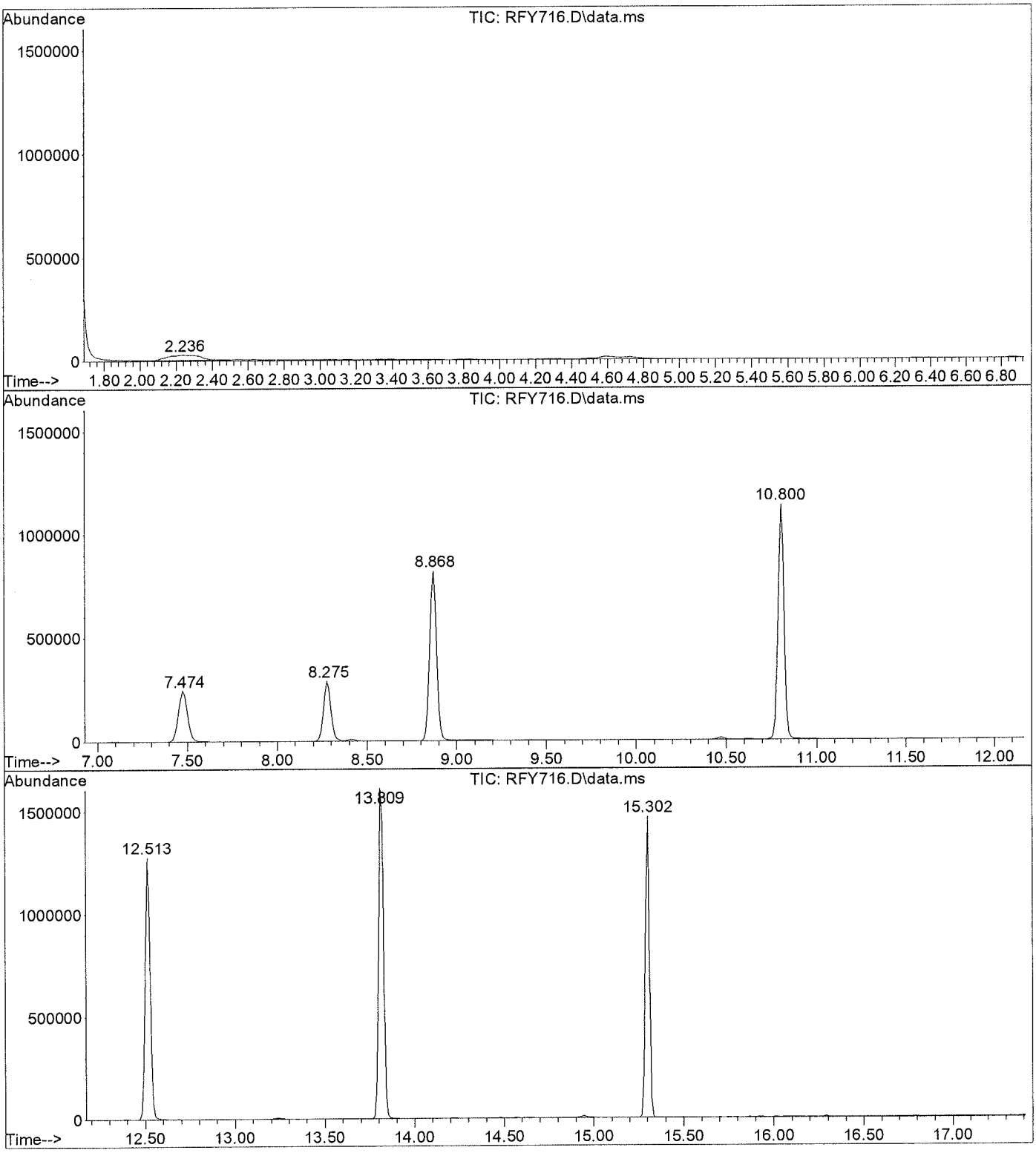
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	2.236	35	51	76	rBV4	25212	322076	10.47%	2.184%
2	7.474	519	528	543	rBV2	245983	862596	28.04%	5.850%
3	8.275	594	601	610	rBV	290502	833279	27.08%	5.652%
4	8.868	645	655	672	rBV	819865	2247367	73.04%	15.242%
5	10.800	822	831	852	rBV	1137049	2635443	85.66%	17.875%
6	12.513	979	987	999	rBV	1278457	2489055	80.90%	16.882%
7	13.809	1099	1105	1123	rVB	1609912	3076745	100.00%	20.868%
8	15.302	1236	1241	1247	rBV	1470179	2277557	74.02%	15.447%

Sum of corrected areas: 14744118

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY716.D
Acq On : 29 Jun 2018 11:27 pm
Operator : DNguye
Sample : 18F187-14I 100uL
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY716.D
Acq On : 29 Jun 2018 11:27 pm
Operator : DNguye
Sample : 18F187-14I 100uL
Misc :
ALS Vial : 16 Sample Multiplier: 1

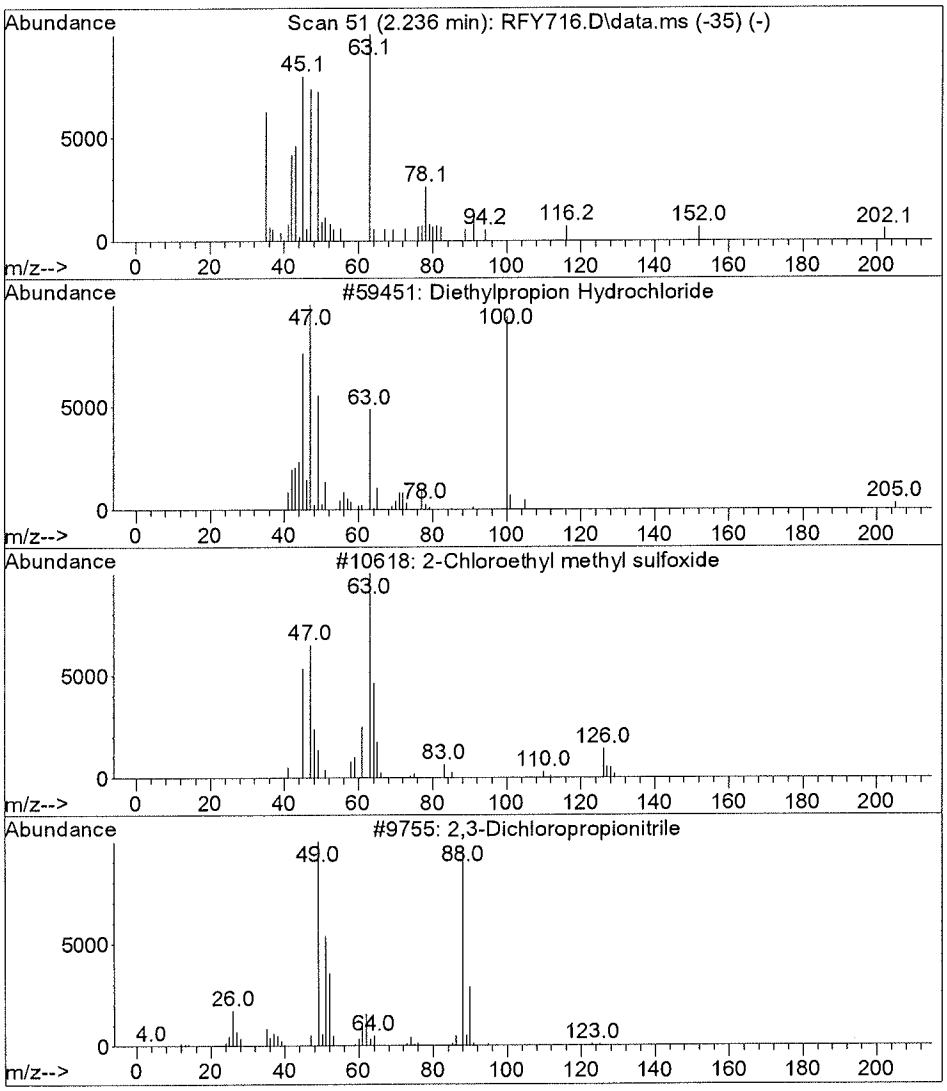
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

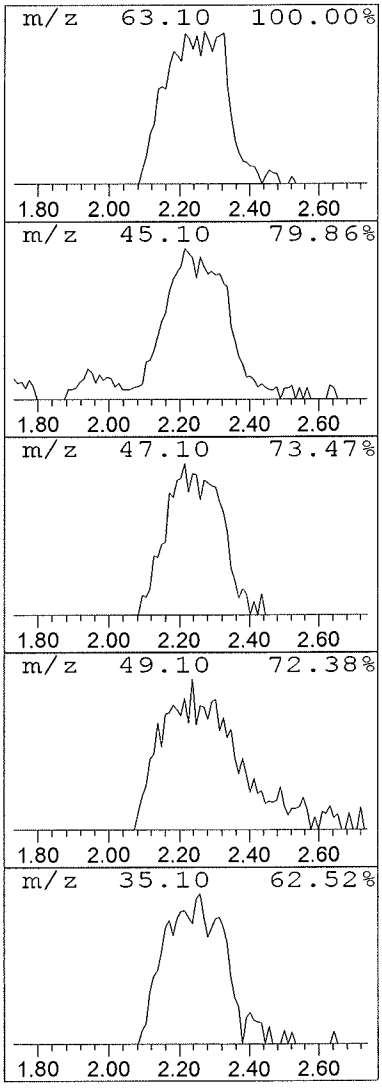
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 1 Diethylpropion Hydrochloride Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
2.236	7.17 ug/l	322076	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diethylpropion Hydrochloride	205	C13H19NO	000134-80-5	17
2	2-Chloroethyl methyl sulfoxide	126	C3H7ClOS	005331-57-7	9
3	2,3-Dichloropropionitrile	123	C3H3Cl2N	002601-89-0	9
4	Phosgene	98	CCl2O	000075-44-5	9
5	1,4-Bis[2-[2-(2-chloroethoxy)eth...	410	C18H28Cl2O6	199984-37-7	4





Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY716.D
Acq On : 29 Jun 2018 11:27 pm
Operator : DNguye
Sample : 18F187-14I 100uL
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Diethylpropion ...	2.236	7.2	ug/l	322076	1	8.868	2247370	50.0

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/29/18 23:52
Sample ID:	18Q2DP009-SB0601-SO-0	Date Analyzed:	06/29/18 23:52
Lab Samp ID:	F187-15I	Dilution Factor:	53
Lab File ID:	RFY717	Matrix	: SOIL
Ext Btch ID:	VMF5F28	% Moisture	: 7.6
Calib. Ref.:	RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.29	0.029	0.057
1,1,1-TRICHLOROETHANE	ND	0.29	0.029	0.057
1,1,2,2-TETRACHLOROETHANE	ND	0.29	0.029	0.057
1,1,2-TRICHLOROETHANE	ND	0.29	0.029	0.057
1,1-DICHLOROETHANE	ND	0.29	0.029	0.057
1,1-DICHLOROETHENE	ND	0.29	0.029	0.057
1,1-DICHLOROPROPENE	ND	0.29	0.029	0.057
1,2,3-TRICHLOROBENZENE	ND	0.29	0.057	0.11
1,2,3-TRICHLOROPROPANE	ND	0.29	0.057	0.11
1,2,4-TRICHLOROBENZENE	ND	0.29	0.057	0.11
1,2,4-TRIMETHYLBENZENE	ND	0.29	0.032	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.29	0.057	0.11
1,2-DIBROMOETHANE	ND	0.29	0.029	0.057
1,2-DICHLOROBENZENE	ND	0.29	0.029	0.057
1,2-DICHLOROETHANE	ND	0.29	0.029	0.057
1,2-DICHLOROPROPANE	ND	0.29	0.029	0.057
1,3,5-TRIMETHYLBENZENE	ND	0.29	0.034	0.11
1,3-DICHLOROBENZENE	ND	0.29	0.030	0.057
1,3-DICHLOROPROPANE	ND	0.29	0.029	0.057
1,4-DICHLOROBENZENE	ND	0.29	0.029	0.057
2,2-DICHLOROPROPANE	ND	0.29	0.057	0.11
2-BUTANONE	ND	0.57	0.14	0.29
2-CHLOROTOLUENE	ND	0.29	0.047	0.057
2-HEXANONE	ND	0.57	0.17	0.29
4-CHLOROTOLUENE	ND	0.29	0.038	0.057
ACETONE	ND	0.57	0.18	0.29
BENZENE	0.13J	0.29	0.029	0.057
BROMOBENZENE	ND	0.29	0.029	0.057
BROMOCHLOROMETHANE	ND	0.29	0.029	0.057
BROMODICHLOROMETHANE	ND	0.29	0.029	0.057
BROMOFORM	ND	0.29	0.057	0.11
BROMOMETHANE	ND	0.57	0.10	0.11
CARBON DISULFIDE	ND	0.29	0.029	0.057
CARBON TETRACHLORIDE	ND	0.29	0.031	0.057
CHLOROBENZENE	ND	0.29	0.029	0.057
CHLOROETHANE	ND	0.29	0.075	0.11
CHLOROFORM	ND	0.29	0.029	0.057
CHLOROMETHANE	ND	0.29	0.057	0.11
CIS-1,2-DICHLOROETHYLENE	ND	0.29	0.029	0.057
CIS-1,3-DICHLOROPROPENE	ND	0.29	0.029	0.057
CYCLOHEXANE	ND	0.29	0.069	0.11
DIBROMOCHLOROMETHANE	ND	0.29	0.029	0.057
DIBROMOMETHANE	ND	0.29	0.029	0.057
DICHLORODIFLUOROMETHANE	ND	0.29	0.069	0.11
ETHYLBENZENE	ND	0.29	0.029	0.057
HEXACHLOROBUTADIENE	ND	0.29	0.057	0.11
ISOPROPYLBENZENE	ND	0.29	0.037	0.11
METHYLENE CHLORIDE	ND	0.57	0.11	0.29
M,P-XYLENE	ND	0.29	0.057	0.11
4-METHYL-2-PENTANONE	ND	0.57	0.16	0.29
TERT-BUTYL METHYL ETHER	ND	0.29	0.029	0.057
NAPHTHALENE	ND	0.29	0.057	0.11
N-BUTYLBENZENE	ND	0.29	0.040	0.057
N-PROPYLBENZENE	ND	0.29	0.037	0.057
O-XYLENE	ND	0.29	0.029	0.057
P-ISOPROPYLTOLUENE	ND	0.29	0.036	0.057
SEC-BUTYLBENZENE	ND	0.29	0.038	0.057
STYRENE	ND	0.29	0.029	0.057
TERT-BUTYLBENZENE	ND	0.29	0.036	0.057
TETRACHLOROETHENE	ND	0.29	0.029	0.057
TOLUENE	0.13J	0.29	0.029	0.057
TRANS-1,2-DCE	ND	0.29	0.029	0.057
TRANS-1,3-DICHLOROPROPENE	ND	0.29	0.029	0.057
TCE	ND	0.29	0.029	0.057
TRICHLOROFLUOROMETHANE	ND	0.29	0.063	0.11
TRICHLOROTRIFLUOROETHANE	ND	0.29	0.057	0.11
VINYL CHLORIDE	ND	0.29	0.080	0.11
VINYL ACETATE	ND	0.29	0.075	0.11
XYLENES, TOTAL	ND	0.29	0.029	0.057

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	3.25	2.868	113	71-136
4-BROMOFLUOROBENZENE	5.36	5.162	104	79-119
TOLUENE-D8	2.98	2.868	104	85-116
DIBROMOFLUOROMETHANE	3.03	2.868	106	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/23/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 23:52
Sample ID	: 18Q2DP009-SB0601-SO-0	Date Analyzed	: 06/29/18 23:52
Lab Samp ID	: F187-15I	Dilution Factor	: 53
Lab File ID	: RFY717	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: 7.6
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 03 15:31:11 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	961560	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	809796	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	362421	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.474	111	269696	52.78	ug/l	0.00
Spiked Amount 50.000			Recovery =	105.56%		
45) 1,2-Dichloroethane-d4	8.275	65	302178	56.64	ug/l	0.00
Spiked Amount 50.000			Recovery =	113.28%		
59) Toluene-d8	10.800	98	959339	52.02	ug/l	0.00
Spiked Amount 50.000			Recovery =	104.04%		
81) 4-Bromofluorobenzene	13.809	95	653853	93.52	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~187.04%~~ 103.9%		
Target Compounds						Qvalue
47) Benzene	8.407	78	44984	2.22	ug/L	99
49) Methylcyclohexane	9.351	83	9472	0.77	ug/L	95
61) Toluene	10.899	91	49399	2.18	ug/l	100
73) m-Xylene & p-Xylene	12.689	91	18720	0.93	ug/l	98

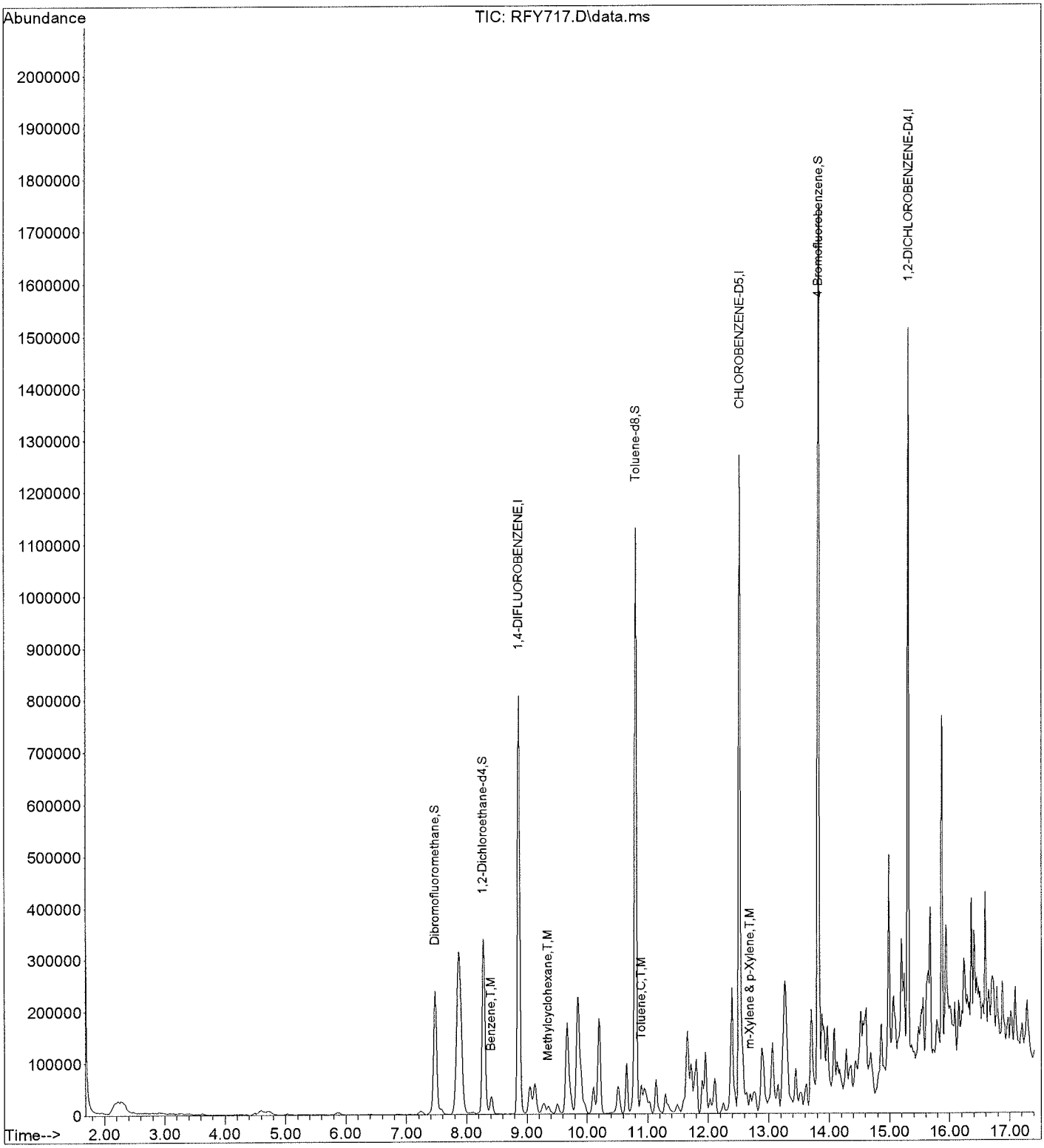
~~90~~ MD 7.3.18

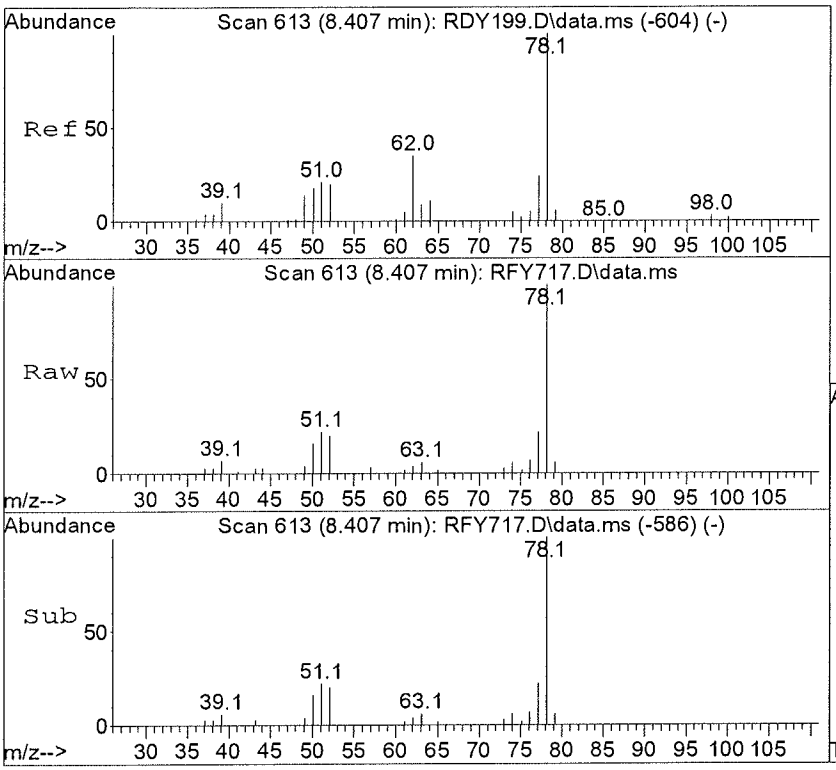
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 03 15:31:11 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

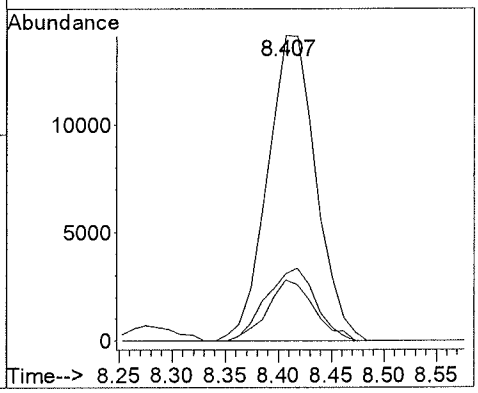


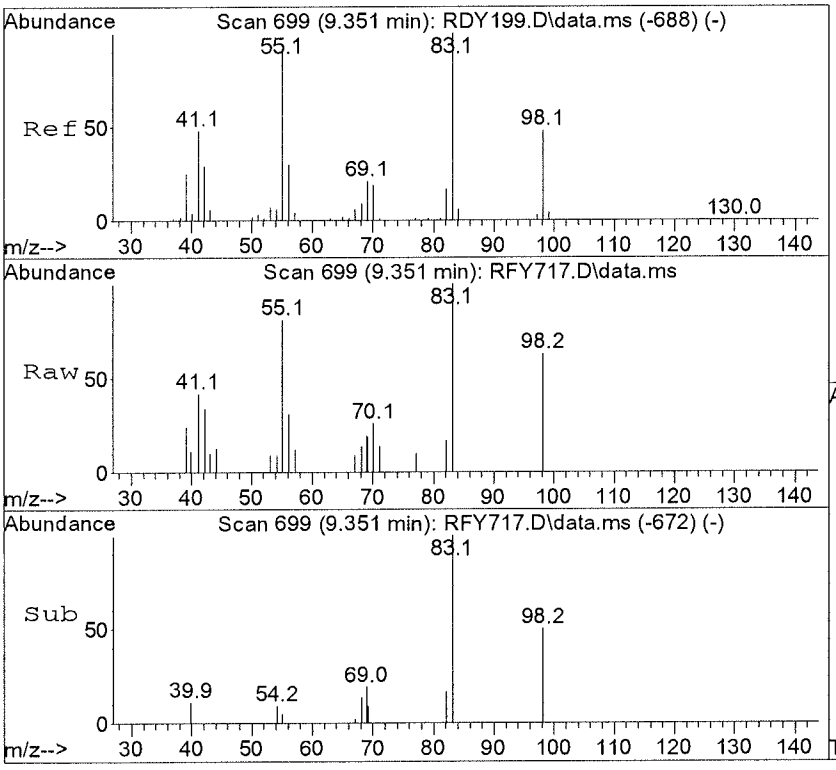


#47
Benzene
Concen: 2.22 ug/L
RT: 8.407 min Scan# 613
Delta R.T. -0.000 min
Lab File: RFY717.D
Acq: 29 Jun 2018 11:52 pm

Tgt Ion: 78 Resp: 44984

Ion	Ratio	Lower	Upper
78	100		
77	24.0	0.0	53.7
52	19.0	0.0	49.8

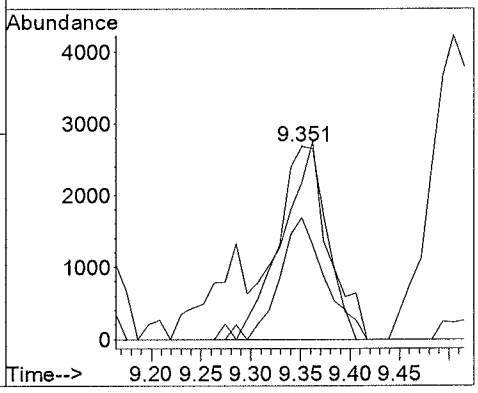


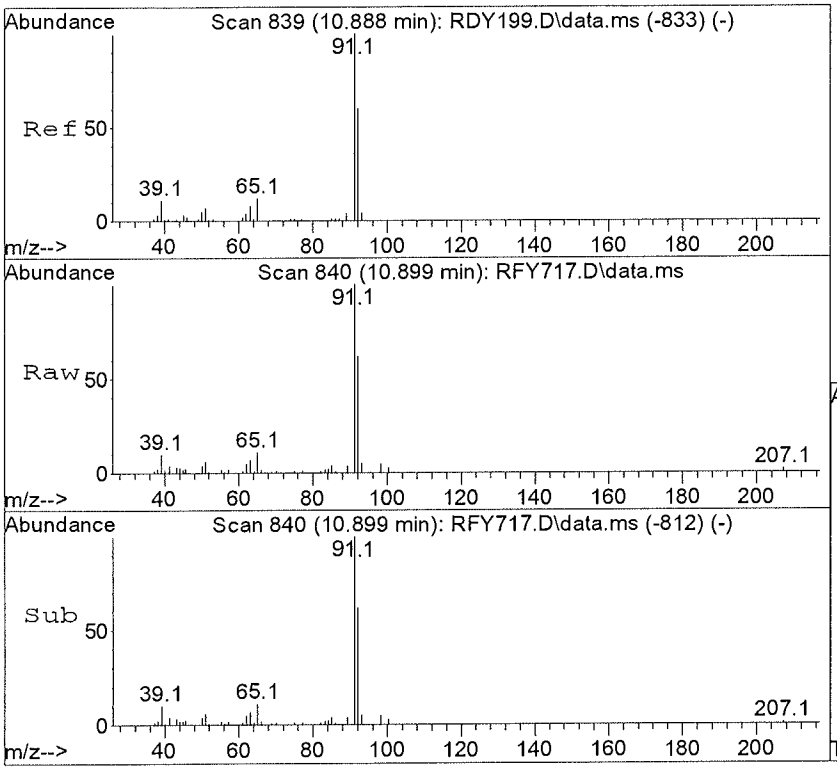


#49
Methylcyclohexane
Concen: 0.77 ug/L
RT: 9.351 min Scan# 699
Delta R.T. 0.000 min
Lab File: RFY717.D
Acq: 29 Jun 2018 11:52 pm

Tgt Ion: 83 Resp: 9472

Ion	Ratio	Lower	Upper
83	100		
98	55.2	19.2	79.2
55	87.4	60.4	120.4

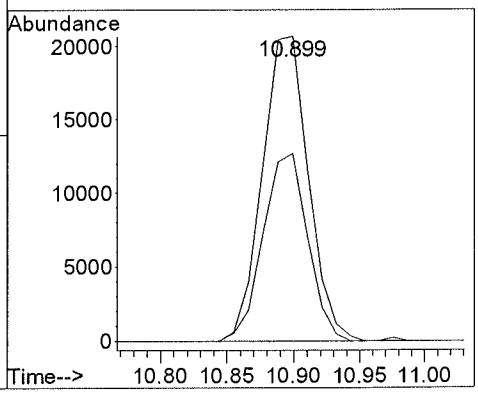


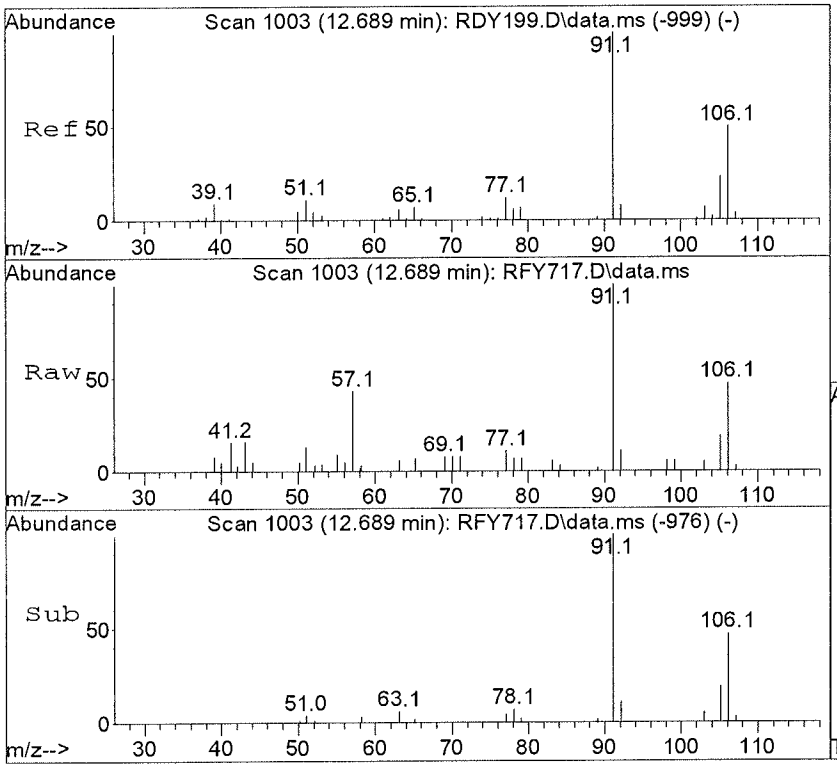


#61
Toluene
Concen: 2.18 ug/l
RT: 10.899 min Scan# 840
Delta R.T. 0.011 min
Lab File: RFY717.D
Acq: 29 Jun 2018 11:52 pm

Tgt Ion: 91 Resp: 49399

Ion	Ratio	Lower	Upper
91	100		
92	59.5	29.6	89.6

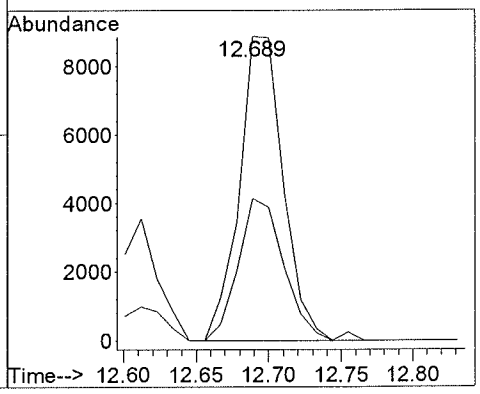




#73
m-Xylene & p-Xylene
Concen: 0.93 ug/l
RT: 12.689 min Scan# 1003
Delta R.T. -0.000 min
Lab File: RFY717.D
Acq: 29 Jun 2018 11:52 pm

Tgt Ion: 91 Resp: 18720

Ion	Ratio	Lower	Upper
91	100		
106	47.9	19.0	79.0

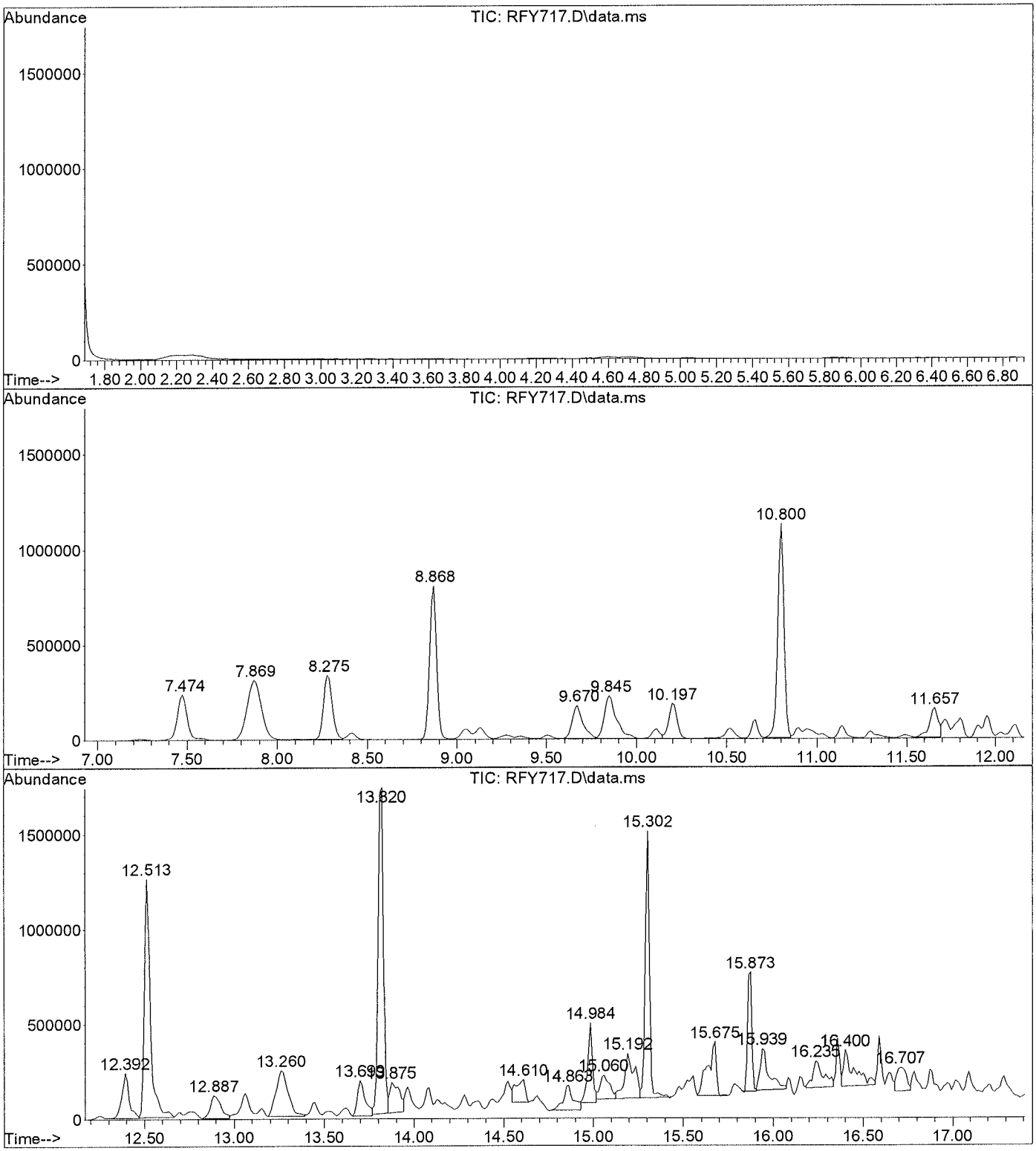


LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

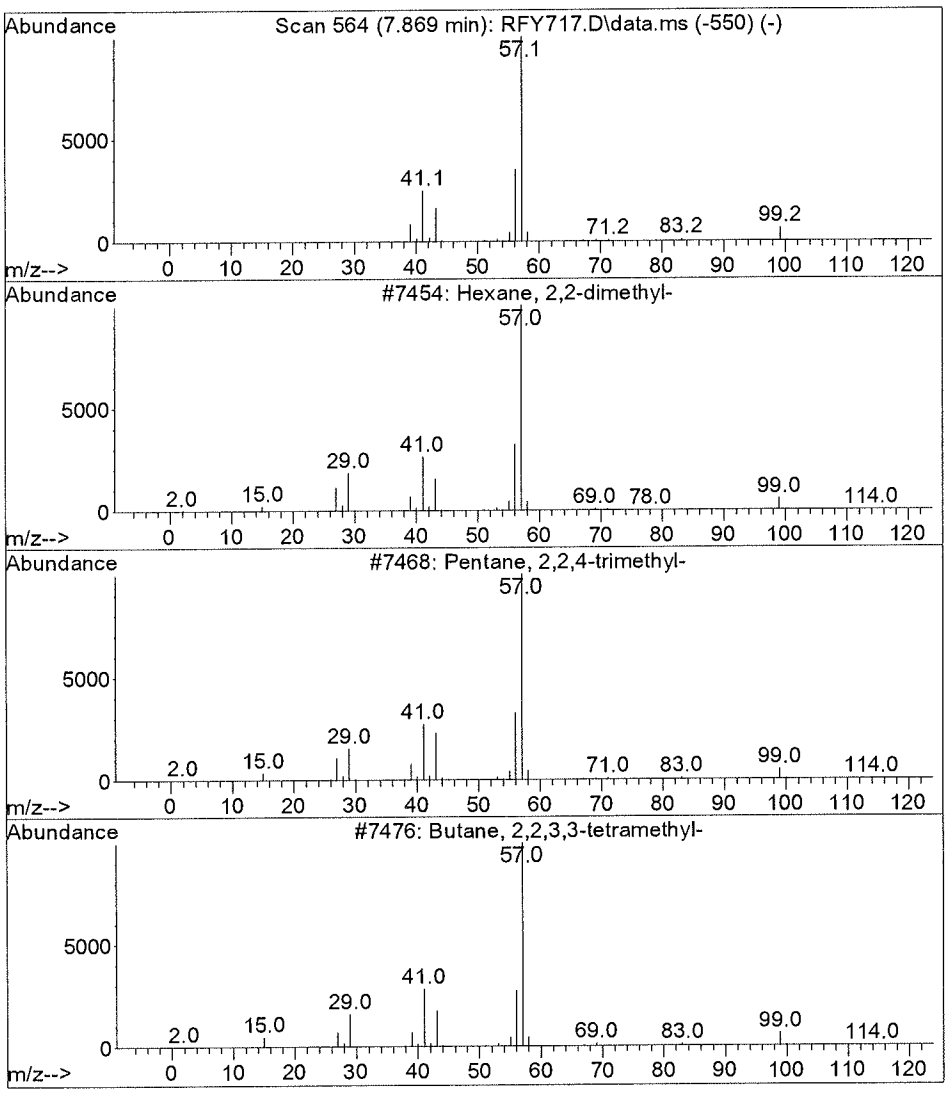
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

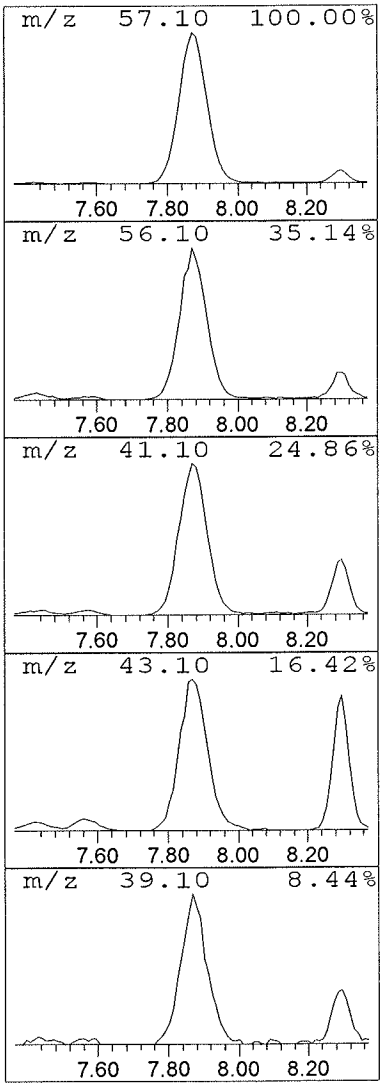
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 1 Hexane, 2,2-dimethyl- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.869	39.80 ug/l	1748320	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexane, 2,2-dimethyl-	114	C8H18	000590-73-8	83
2	Pentane, 2,2,4-trimethyl-	114	C8H18	000540-84-1	83
3	Butane, 2,2,3,3-tetramethyl-	114	C8H18	000594-82-1	83
4	Hexane, 2,2-dimethyl-	114	C8H18	000590-73-8	78
5	Pentane, 2,2,4-trimethyl-	114	C8H18	000540-84-1	78





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

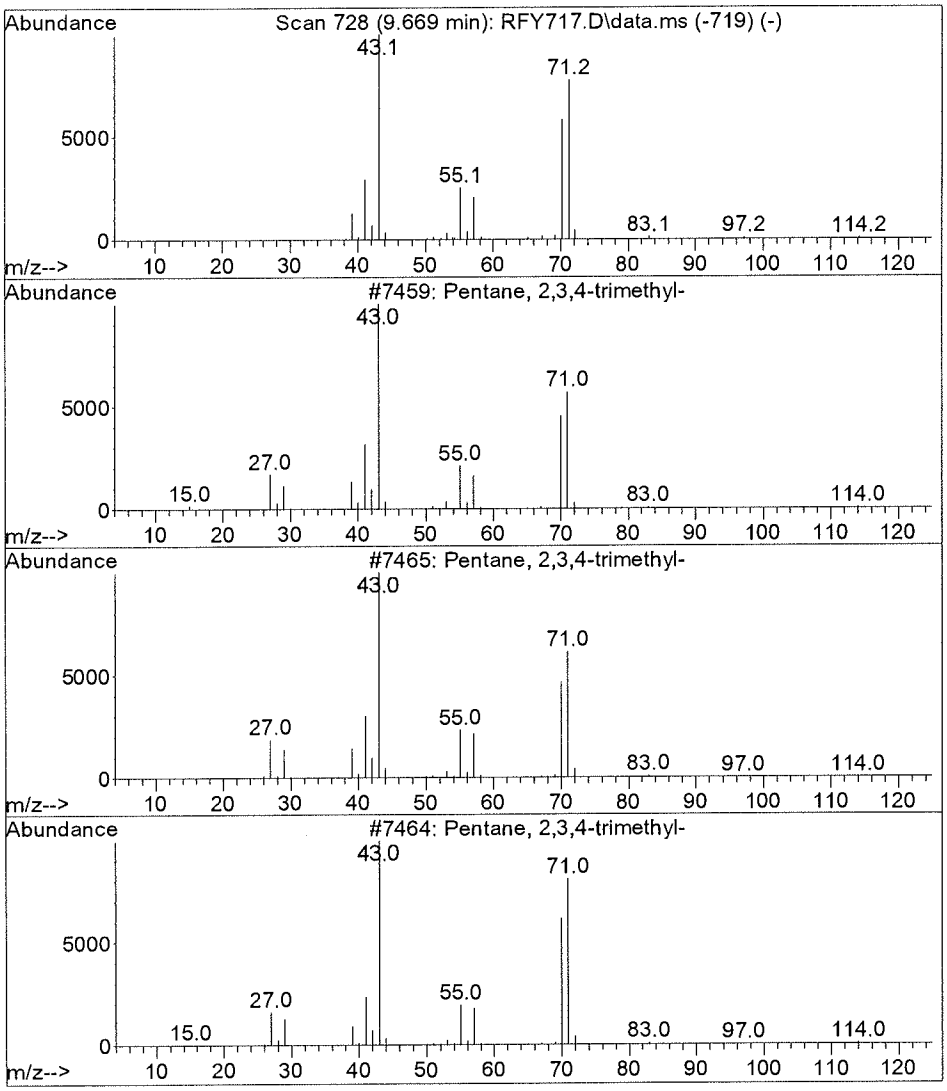
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

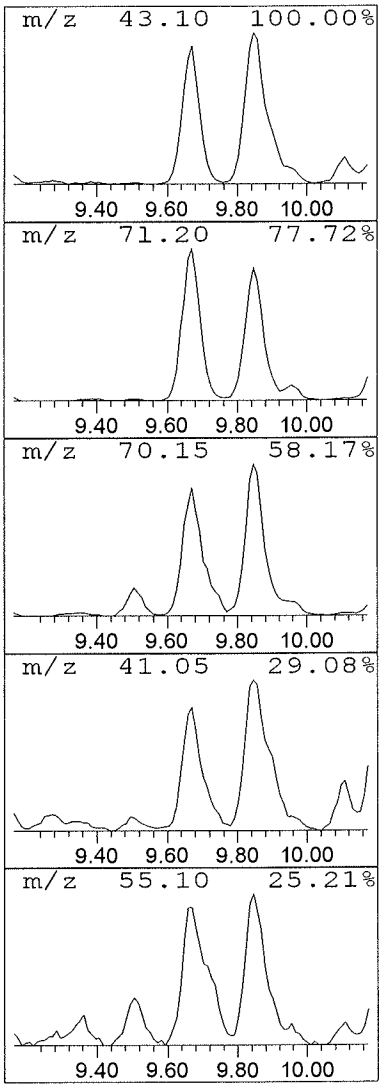
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 2 Pentane, 2,3,4-trimethyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.669	16.07 ug/l	706105	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
2	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
3	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
4	Pentane, 3-ethyl-	100	C7H16	000617-78-7	83
5	Heptane, 4-methyl-	114	C8H18	000589-53-7	83





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

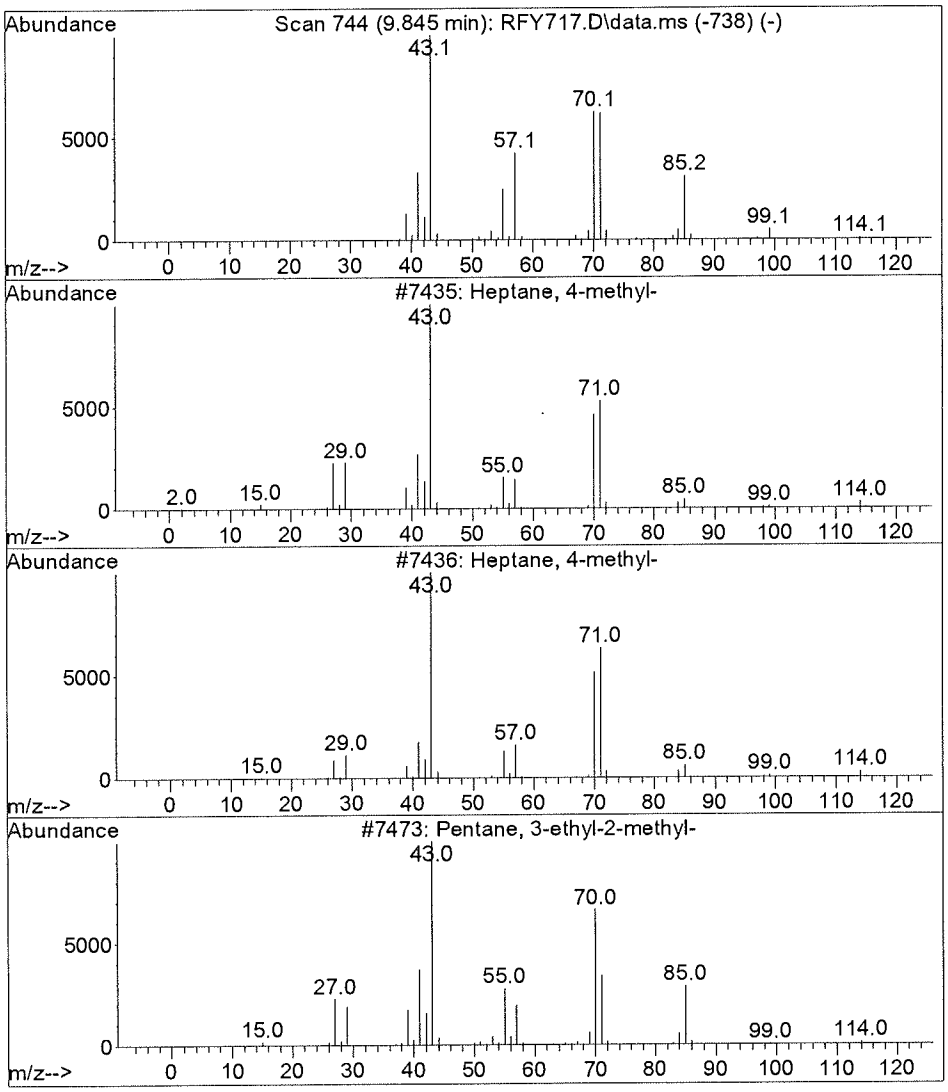
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

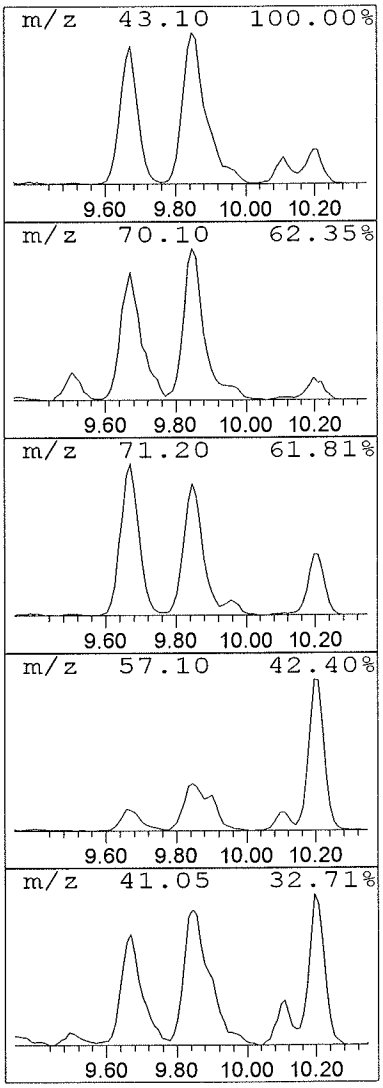
****

Peak Number 3 Heptane, 4-methyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.845	23.65 ug/l	1039180	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptane, 4-methyl-	114	C8H18	000589-53-7	72
2	Heptane, 4-methyl-	114	C8H18	000589-53-7	72
3	Pentane, 3-ethyl-2-methyl-	114	C8H18	000609-26-7	72
4	Pentane, 2,3,3-trimethyl-	114	C8H18	000560-21-4	72
5	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	64





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

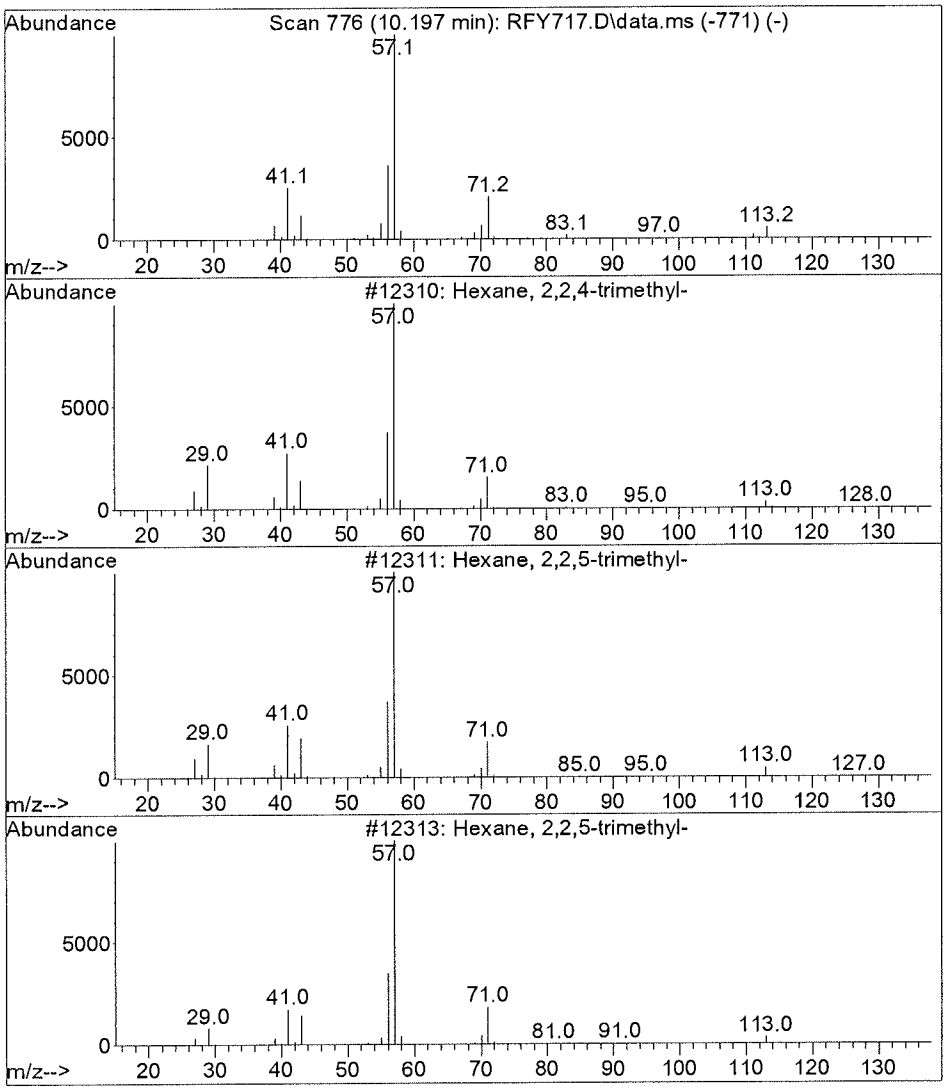
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

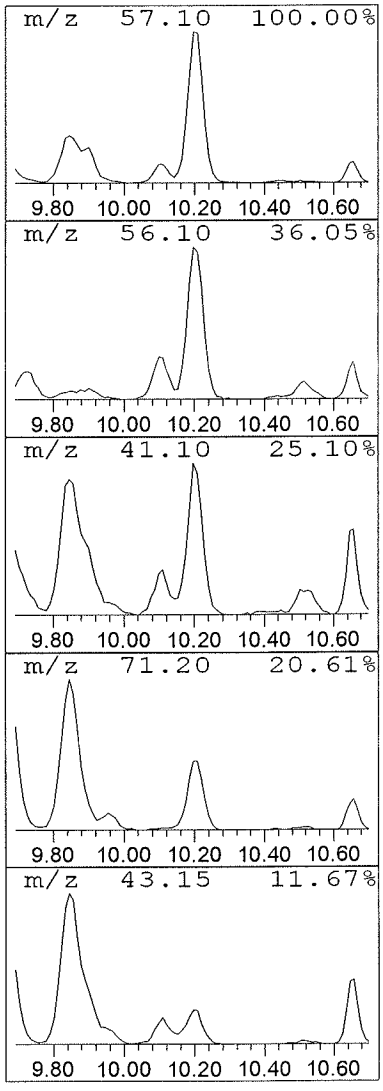
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 4 Hexane, 2,2,4-trimethyl- Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.197	13.45 ug/l	590827	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexane, 2,2,4-trimethyl-	128	C9H20	016747-26-5	83
2	Hexane, 2,2,5-trimethyl-	128	C9H20	003522-94-9	83
3	Hexane, 2,2,5-trimethyl-	128	C9H20	003522-94-9	78
4	Hexane, 2,2,5-trimethyl-	128	C9H20	003522-94-9	78
5	Hexane, 2,2,4-trimethyl-	128	C9H20	016747-26-5	72





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Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

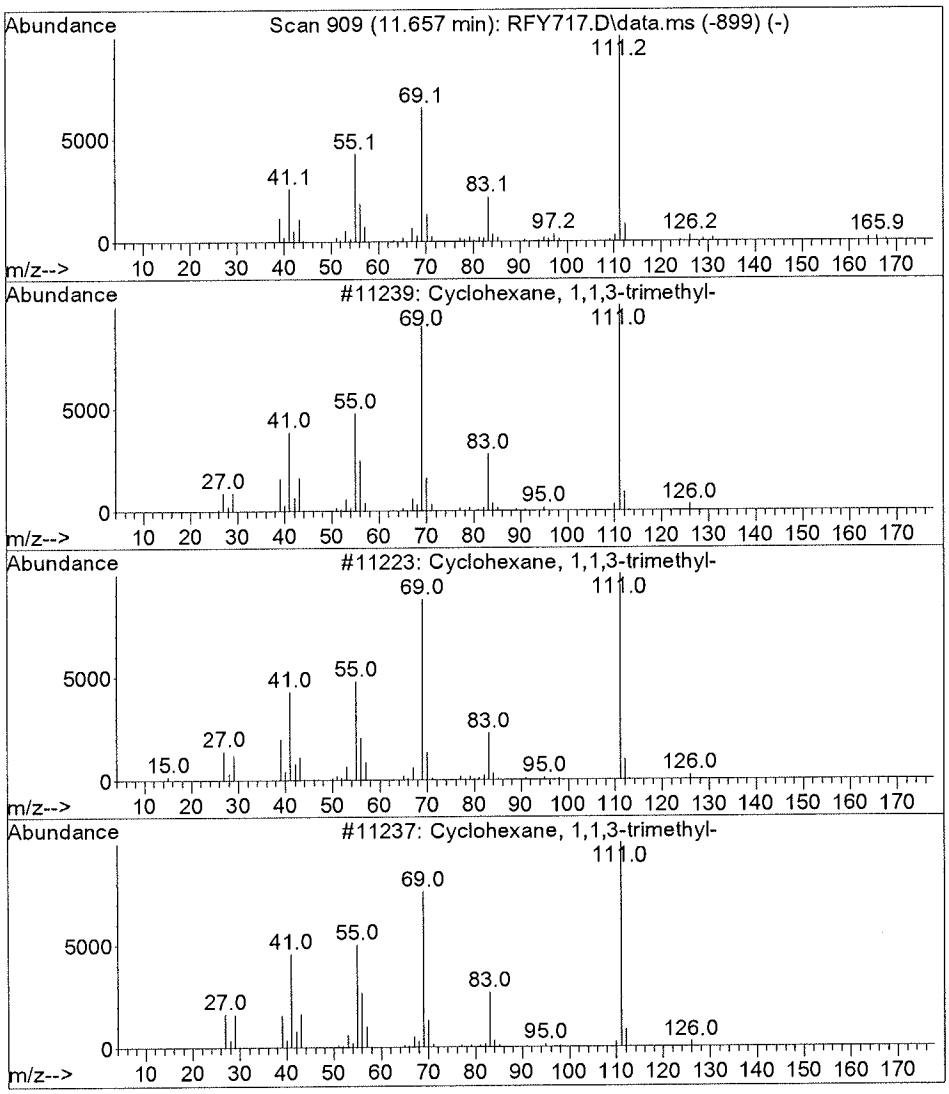
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

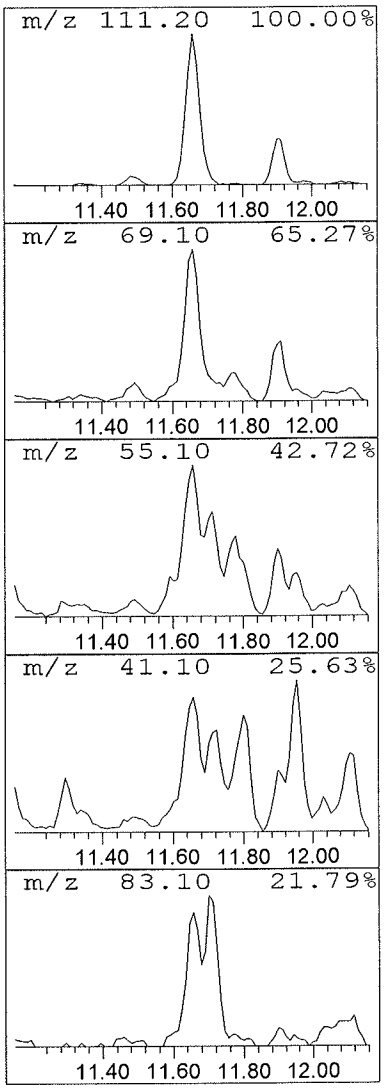
****

Peak Number 5 Cyclohexane, 1,1,3-trimethyl- Concentration Rank 20

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.657	9.19 ug/l	536320	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,1,3-trimethyl-	126	C9H18	003073-66-3	97
2	Cyclohexane, 1,1,3-trimethyl-	126	C9H18	003073-66-3	95
3	Cyclohexane, 1,1,3-trimethyl-	126	C9H18	003073-66-3	95
4	Cyclohexane, 1,1,3-trimethyl-	126	C9H18	003073-66-3	92
5	Cyclohexane, 1-ethyl-2,4-dimethyl-	140	C10H20	061142-69-6	72





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Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

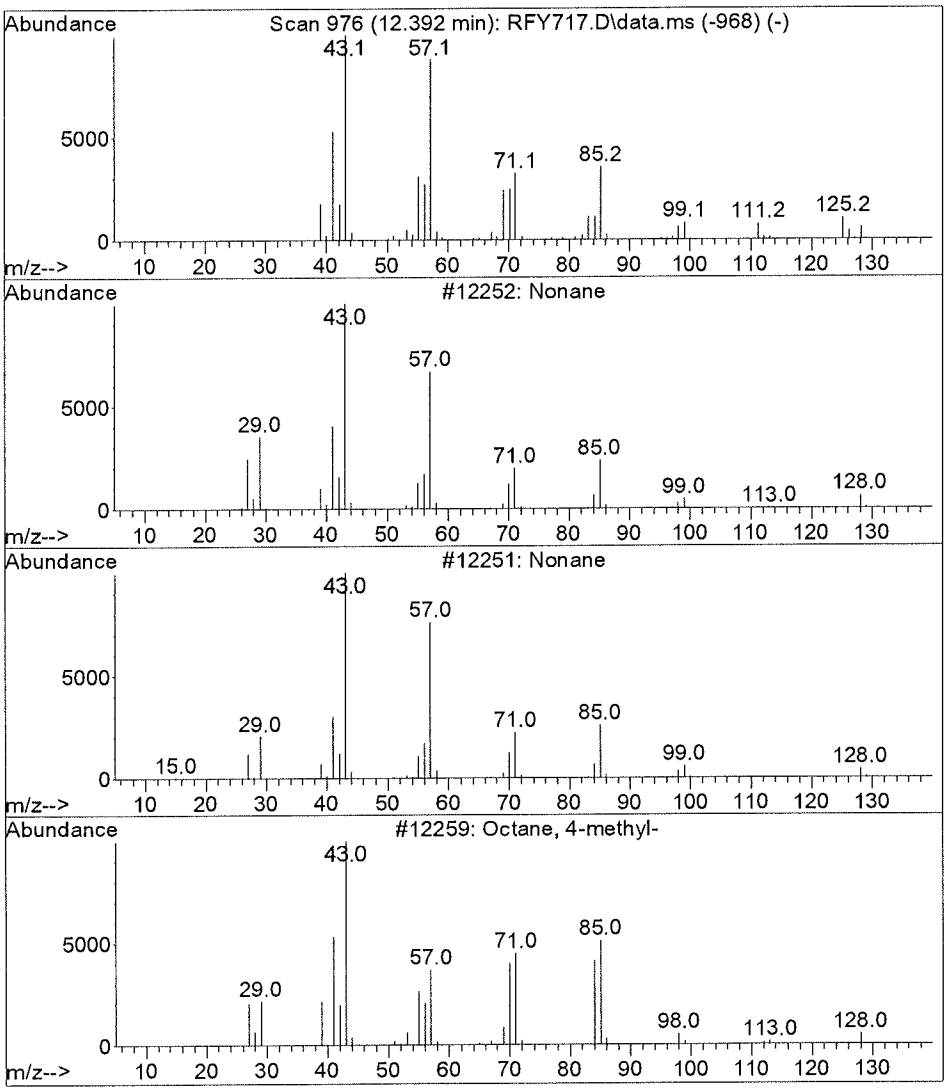
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

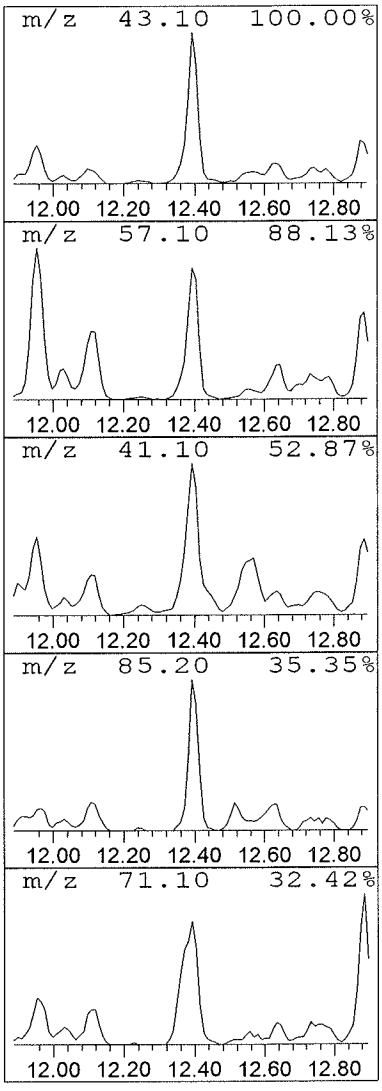
****

Peak Number 6 Nonane Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.392	11.66 ug/l	679930	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Nonane	128	C9H20	000111-84-2	91
2	Nonane	128	C9H20	000111-84-2	70
3	Octane, 4-methyl-	128	C9H20	002216-34-4	49
4	Nonane	128	C9H20	000111-84-2	49
5	Octane, 2,4,6-trimethyl-	156	C11H24	062016-37-9	49





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

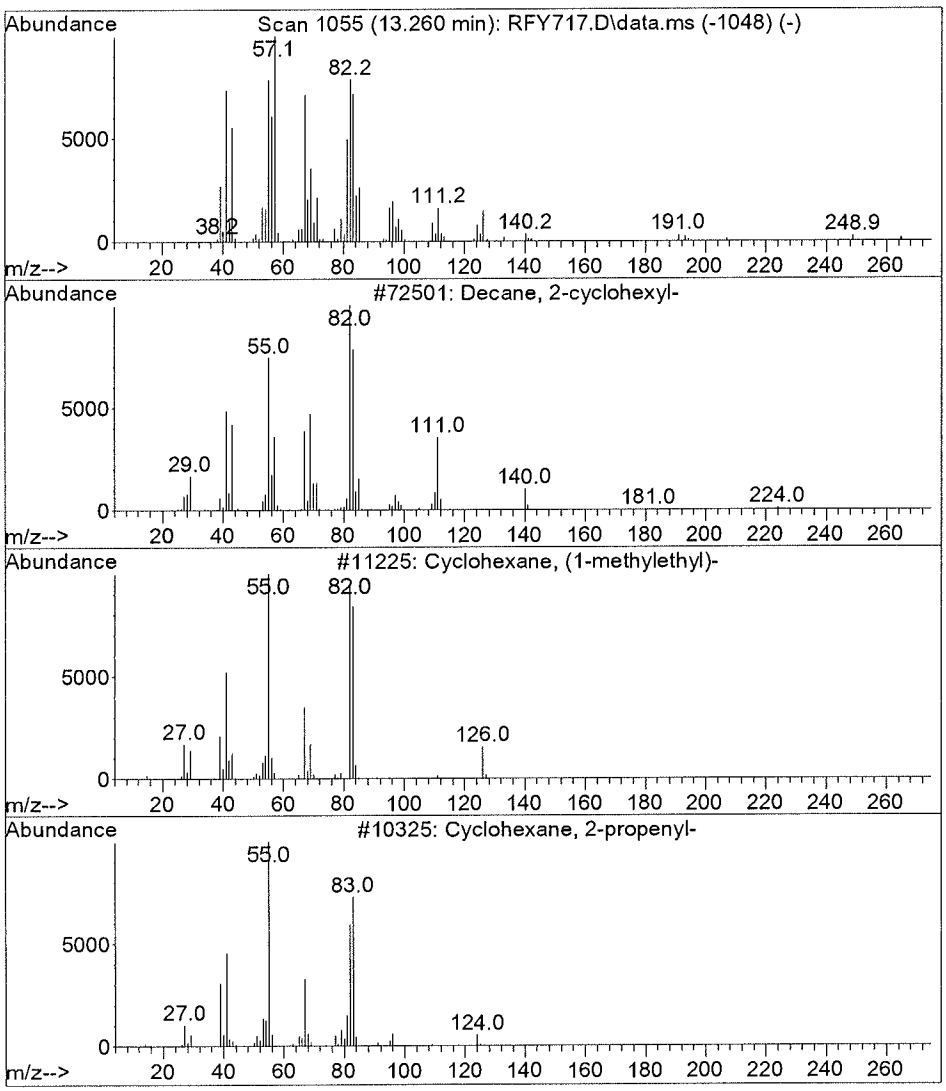
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

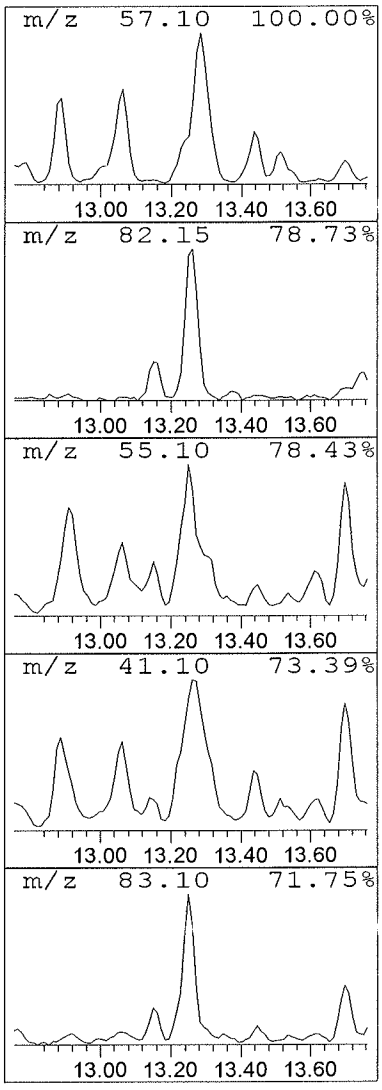
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 7 Decane, 2-cyclohexyl- Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.260	19.75 ug/l	1151880	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane, 2-cyclohexyl-	224	C16H32	013151-73-0	47
2	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	46
3	Cyclohexane, 2-propenyl-	124	C9H16	002114-42-3	43
4	2-Butyl-.delta.1-pyrroline	125	C8H15N	064319-86-4	38
5	1-Cyclobutanone,2-(2-methyl-1-pr...	124	C8H12O	091531-45-2	30





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

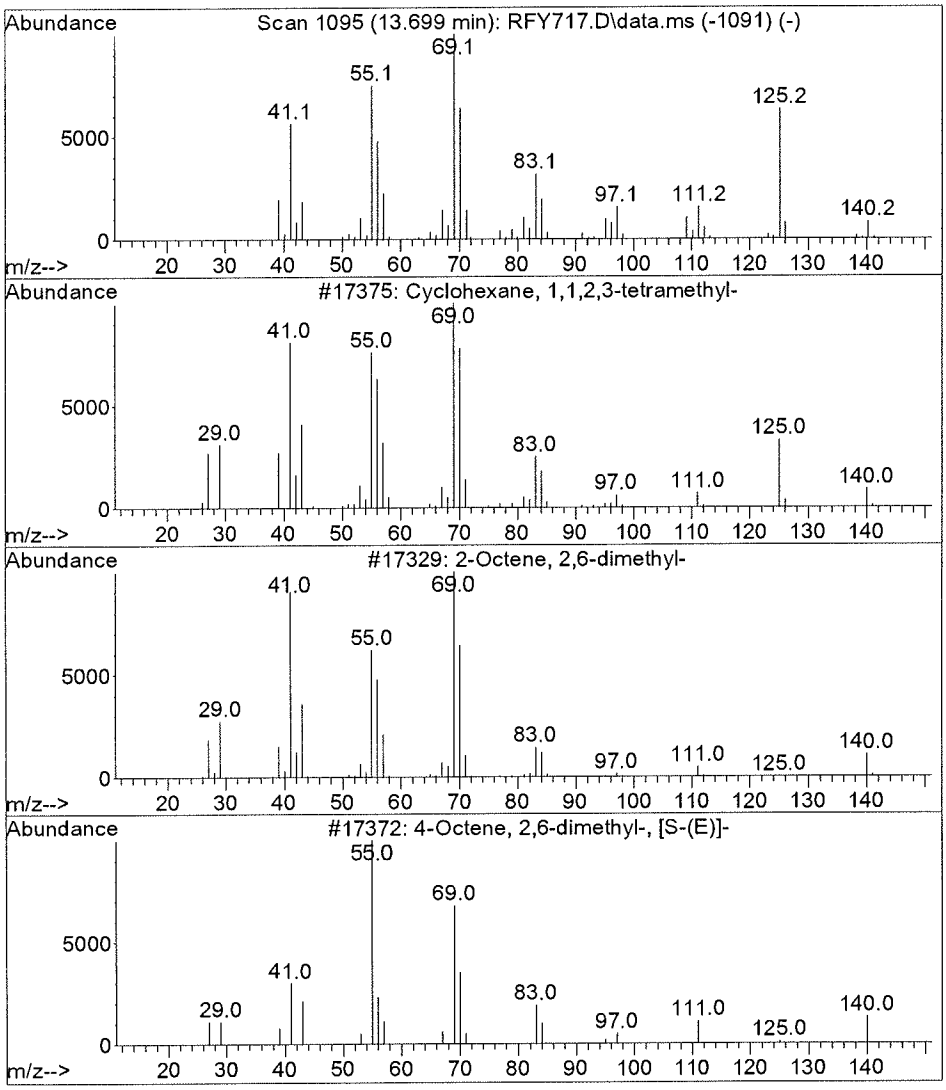
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

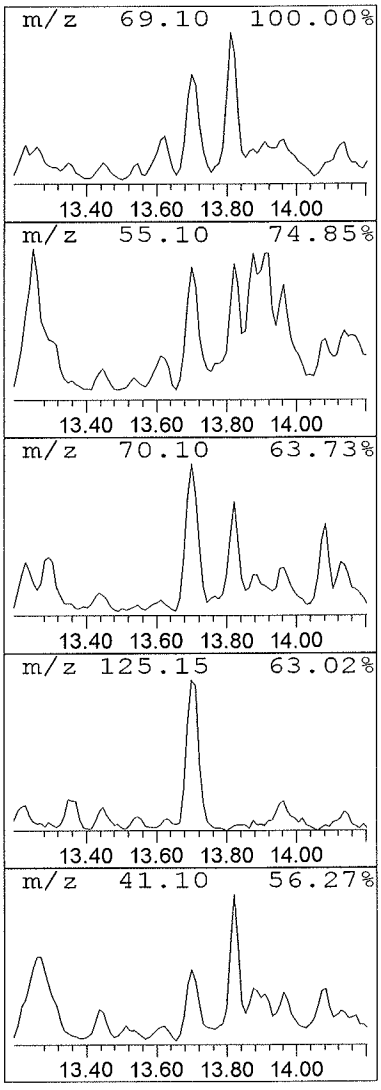
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 8 Cyclohexane, 1,1,2,3-tetram... Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.699	9.84 ug/l	573891	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,1,2,3-tetramethyl-	140	C10H20	006783-92-2	76
2	2-Octene, 2,6-dimethyl-	140	C10H20	004057-42-5	50
3	4-Octene, 2,6-dimethyl-, [S-(E)]-	140	C10H20	062960-76-3	50
4	4-Decene	140	C10H20	019689-18-0	50
5	2-Octene, 2,6-dimethyl-	140	C10H20	004057-42-5	50





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

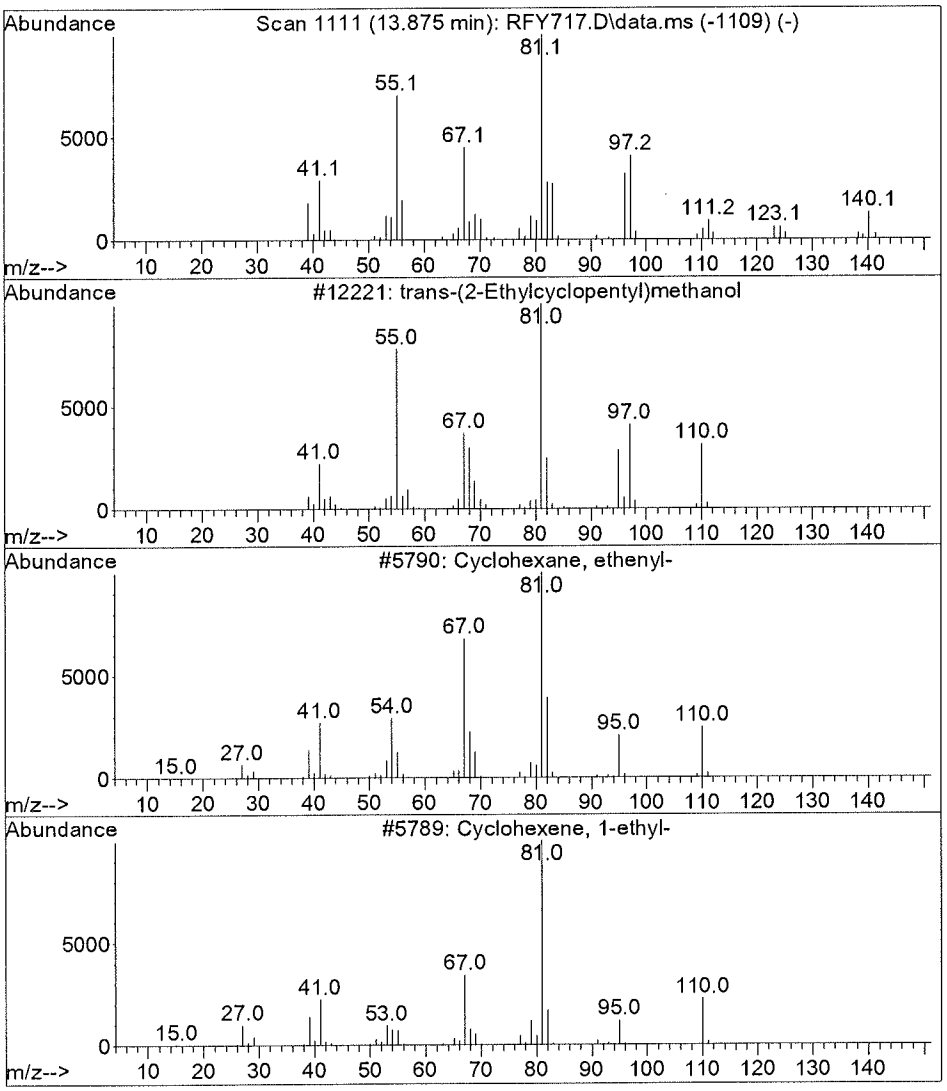
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

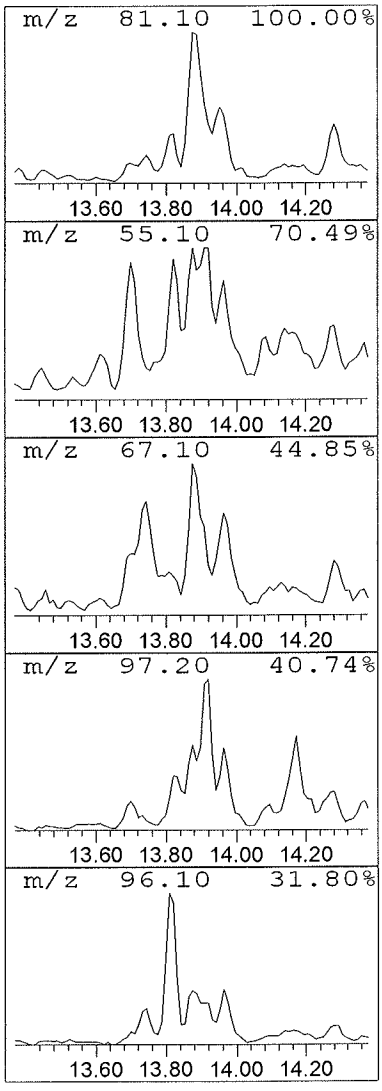
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 9 trans-(2-Ethylcyclopentyl)m... Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.875	10.49 ug/l	611947	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	trans-(2-Ethylcyclopentyl)methanol	128	C8H16O	036258-08-9	53
2	Cyclohexane, ethenyl-	110	C8H14	000695-12-5	43
3	Cyclohexene, 1-ethyl-	110	C8H14	001453-24-3	38
4	Cyclohexene, 1-methyl-	96	C7H12	000591-49-1	38
5	Cyclohexene, 1-ethyl-	110	C8H14	001453-24-3	38





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

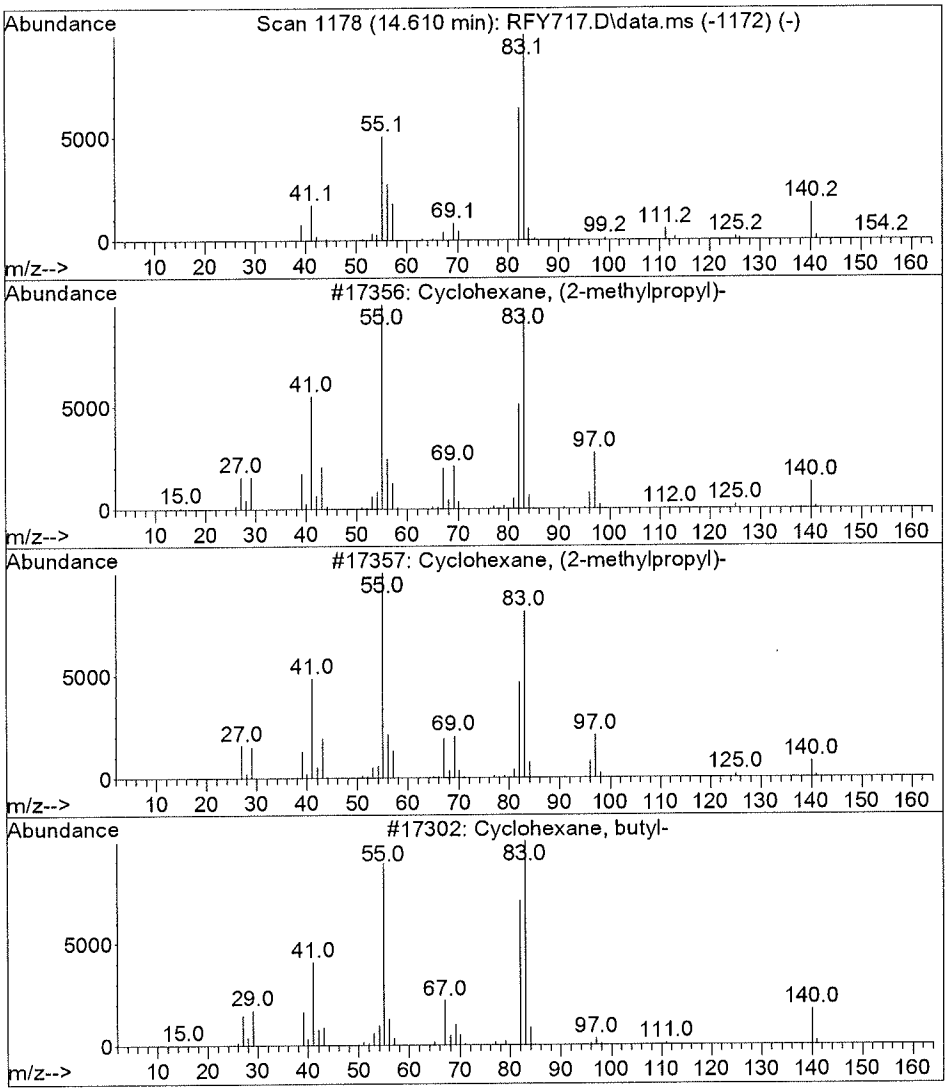
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

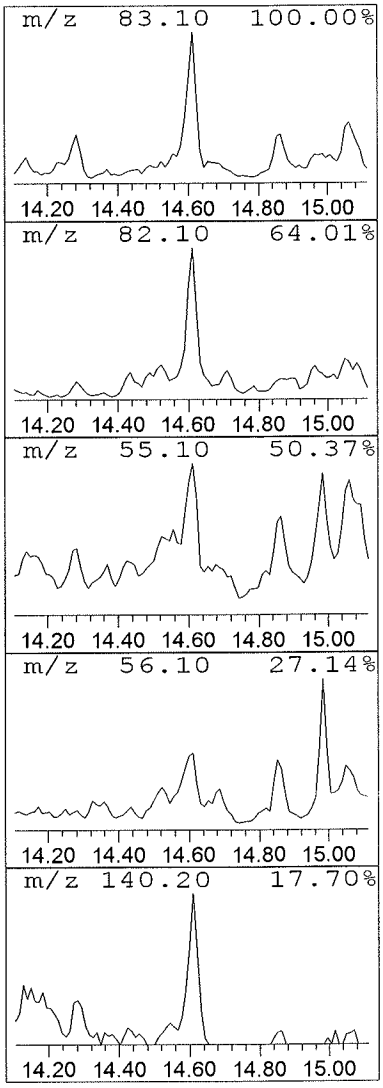
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 10 Cyclohexane, (2-methylpropyl)- Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.610	9.56 ug/l	439283	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, (2-methylpropyl)-	140	C10H20	001678-98-4	72
2	Cyclohexane, (2-methylpropyl)-	140	C10H20	001678-98-4	72
3	Cyclohexane, butyl-	140	C10H20	001678-93-9	64
4	Cyclohexane, butyl-	140	C10H20	001678-93-9	64
5	Cyclohexane, propyl-	126	C9H18	001678-92-8	59





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

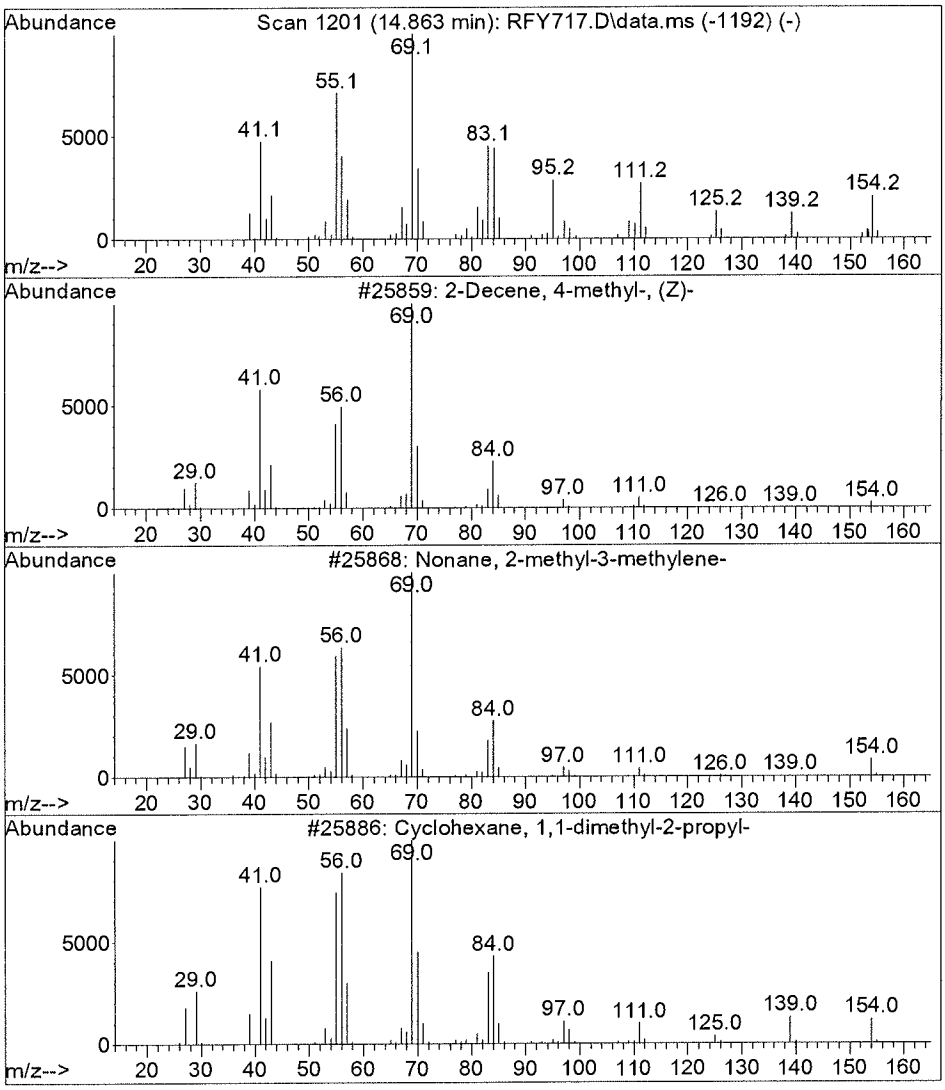
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

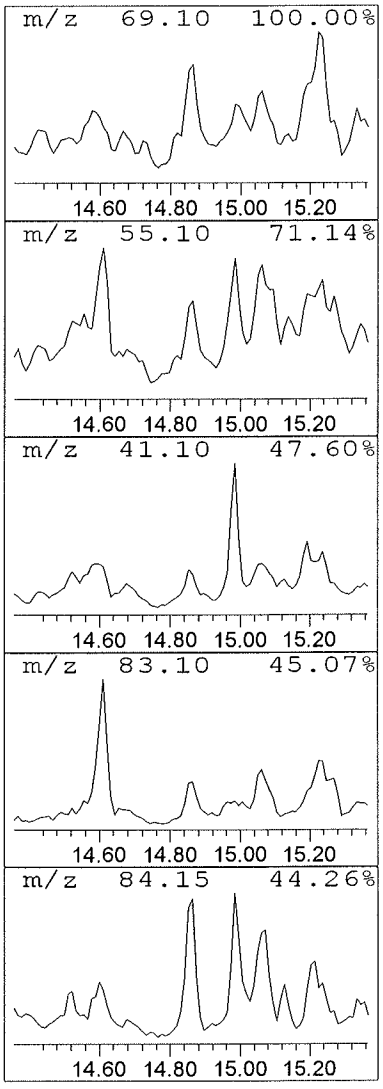
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 11 2-Decene, 4-methyl-, (Z)- Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.863	11.31 ug/l	520028	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2-Decene, 4-methyl-, (Z)-	154	C11H22	074630-30-1	70
2	Nonane, 2-methyl-3-methylene-	154	C11H22	055499-08-6	47
3	Cyclohexane, 1,1-dimethyl-2-propyl-	154	C11H22	081983-71-3	47
4	Cyclopentane, hexyl-	154	C11H22	004457-00-5	47
5	Ketone, 2,2-dimethylcyclohexyl m...	154	C10H18O	017983-26-5	43





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

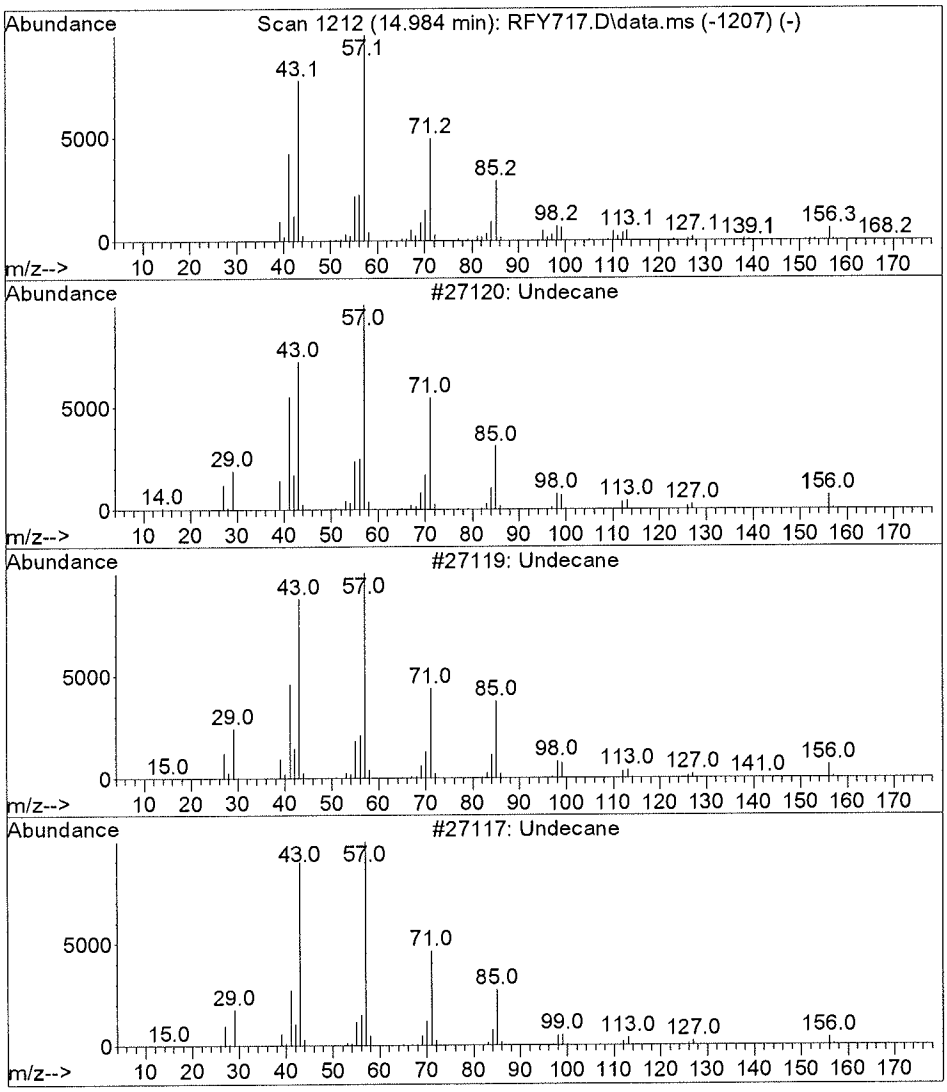
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

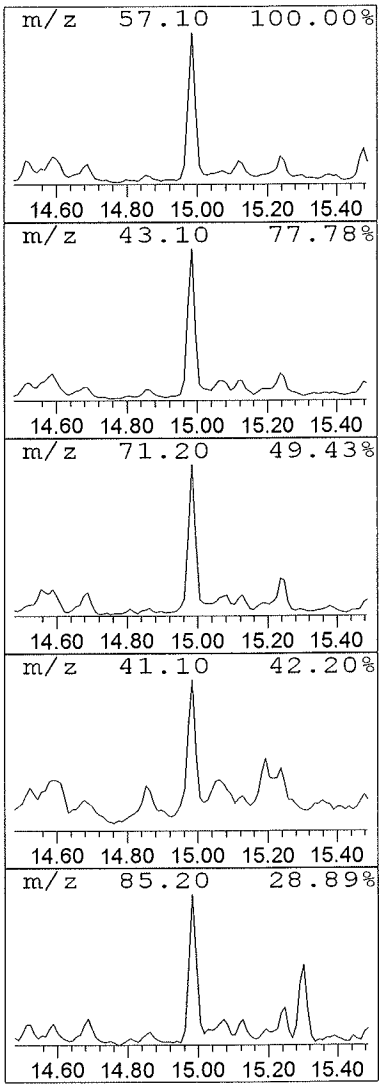
****

Peak Number 12 Undecane Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.984	16.98 ug/l	780418	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane	156	C11H24	001120-21-4	96
2	Undecane	156	C11H24	001120-21-4	94
3	Undecane	156	C11H24	001120-21-4	93
4	Undecane	156	C11H24	001120-21-4	91
5	Undecane	156	C11H24	001120-21-4	87





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

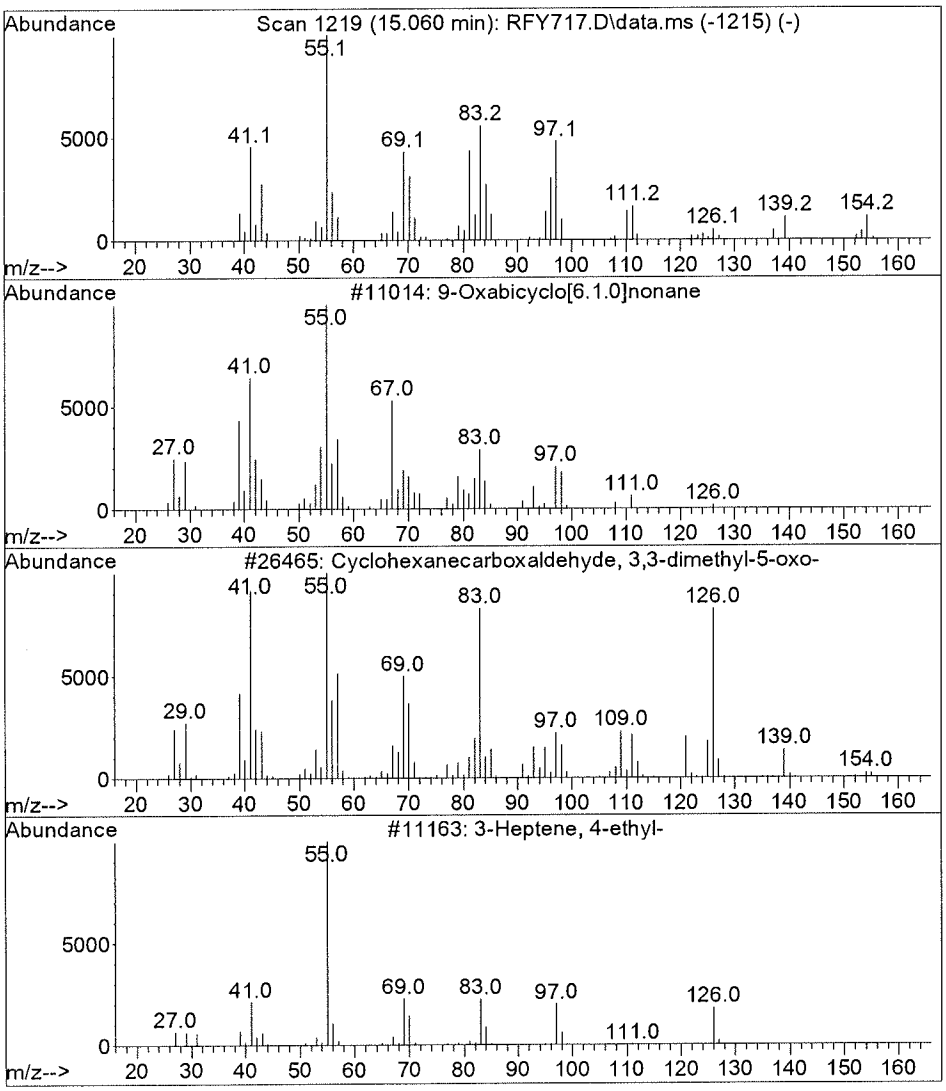
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

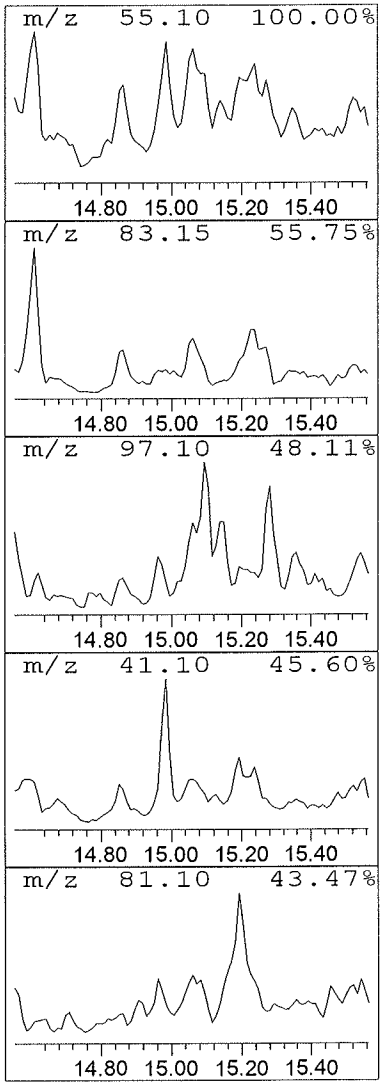
****

Peak Number 13 9-Oxabicyclo[6.1.0]nonane Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.060	10.25 ug/l	471174	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	9-Oxabicyclo[6.1.0]nonane	126	C8H14O	000286-62-4	47
2	Cyclohexanecarboxaldehyde, 3,3-d...	154	C9H14O2	065080-66-2	43
3	3-Heptene, 4-ethyl-	126	C9H18	033933-74-3	43
4	7-Oxabicyclo[4.1.0]heptan-2-one,...	154	C9H14O2	010276-21-8	35
5	2-Octene, 2,3,7-trimethyl-	154	C11H22	033933-75-4	27





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

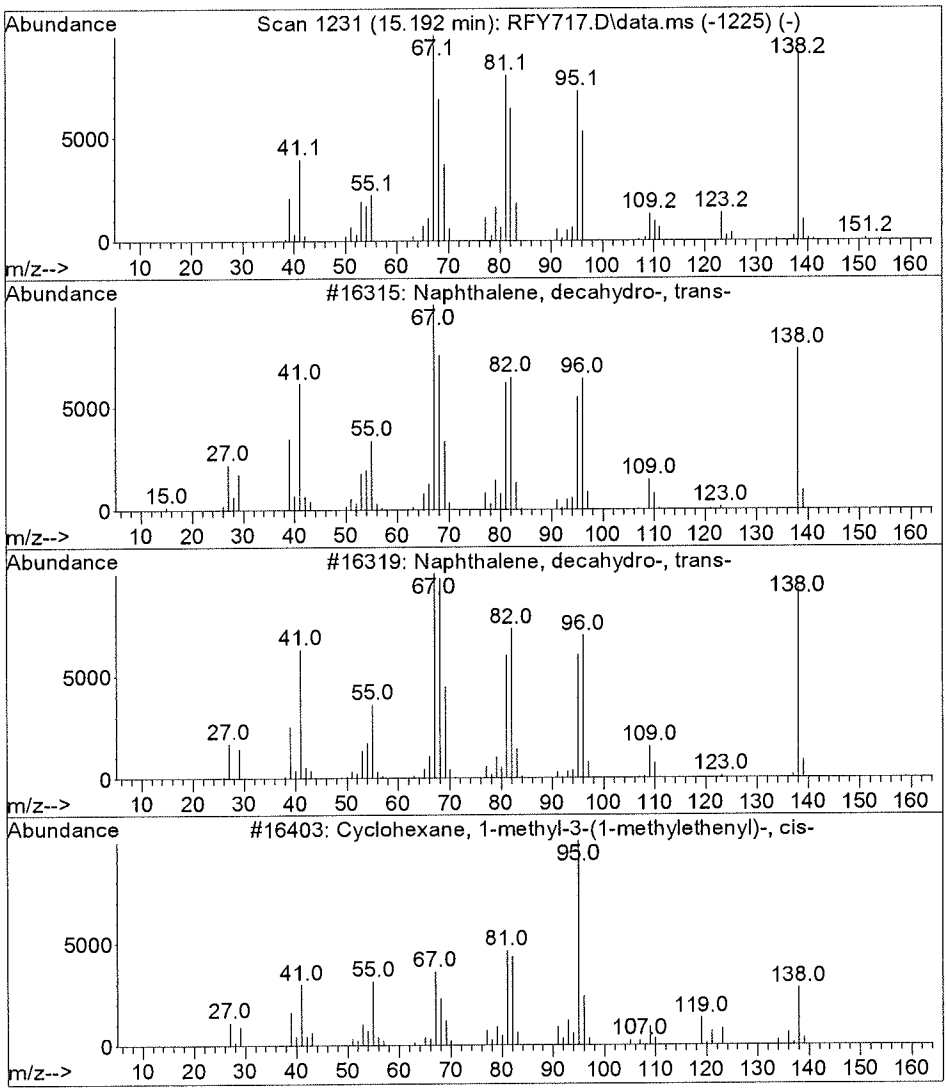
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

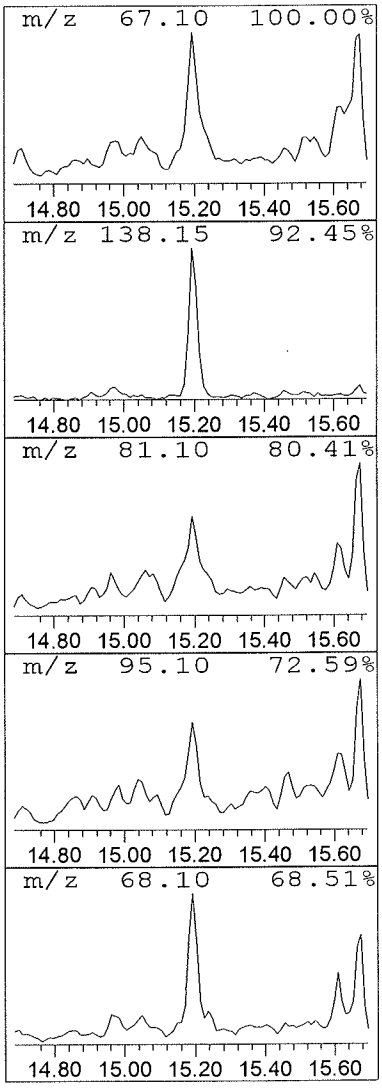
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 14 Naphthalene, decahydro-, tr... Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.192	19.52 ug/l	897308	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Naphthalene, decahydro-, trans-	138	C10H18	000493-02-7	95
2	Naphthalene, decahydro-, trans-	138	C10H18	000493-02-7	93
3	Cyclohexane, 1-methyl-3-(1-methy...	138	C10H18	024399-15-3	93
4	Naphthalene, decahydro-	138	C10H18	000091-17-8	91
5	Naphthalene, decahydro-	138	C10H18	000091-17-8	87





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Operator : DNguye
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Misc :
ALS Vial : 17 Sample Multiplier: 1

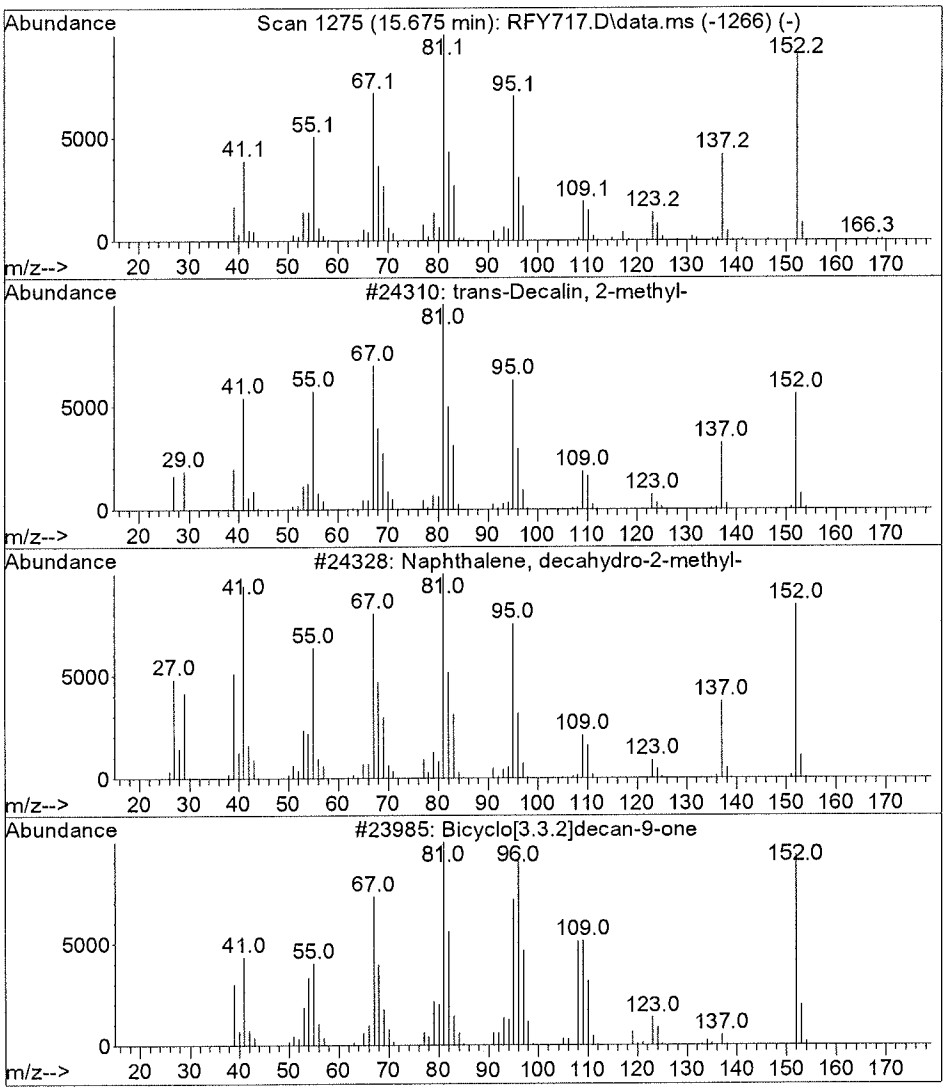
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

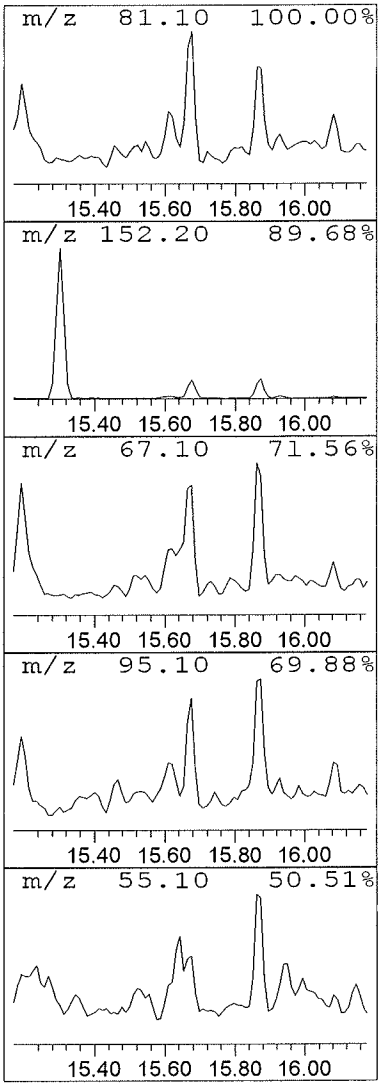
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 15 trans-Decalin, 2-methyl- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.675	20.97 ug/l	964071	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	trans-Decalin, 2-methyl-	152	C11H20	1000152-47-3	97
2	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	96
3	Bicyclo[3.3.2]decan-9-one	152	C10H16O	028054-91-3	76
4	Pulegone	152	C10H16O	000089-82-7	74
5	Cyclohexanone, 5-methyl-2-(1-met...	152	C10H16O	015932-80-6	68





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

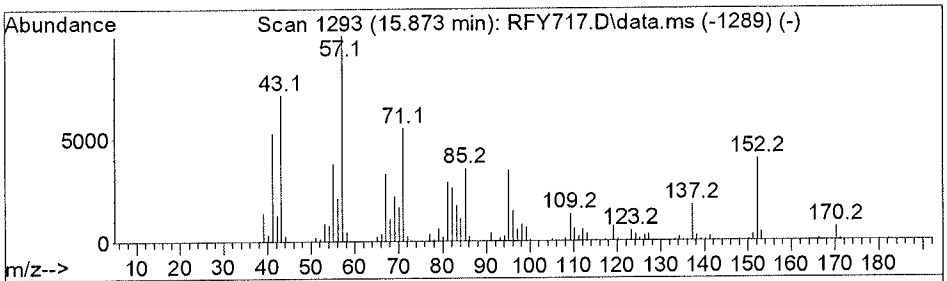
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

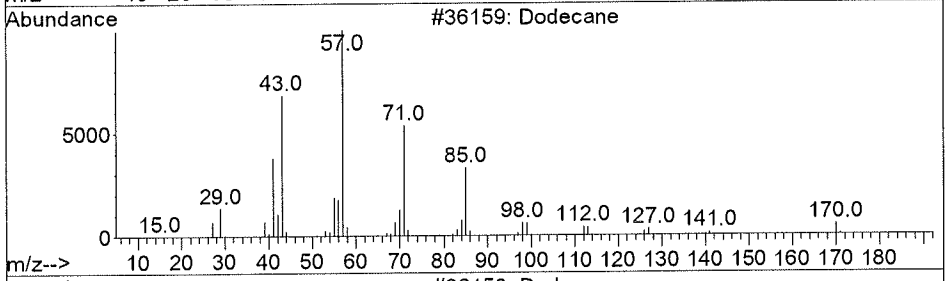
****

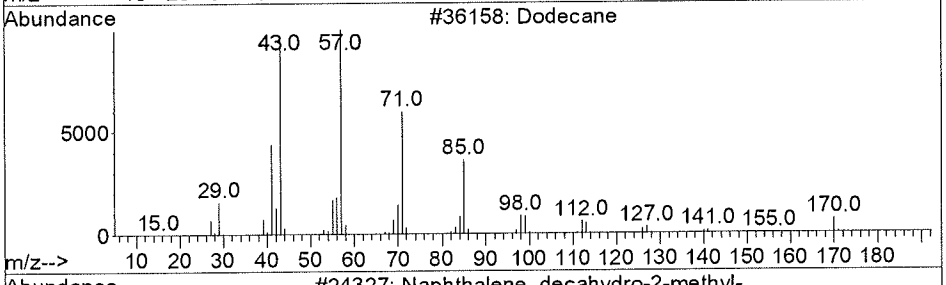
Peak Number 16 Dodecane Concentration Rank 3

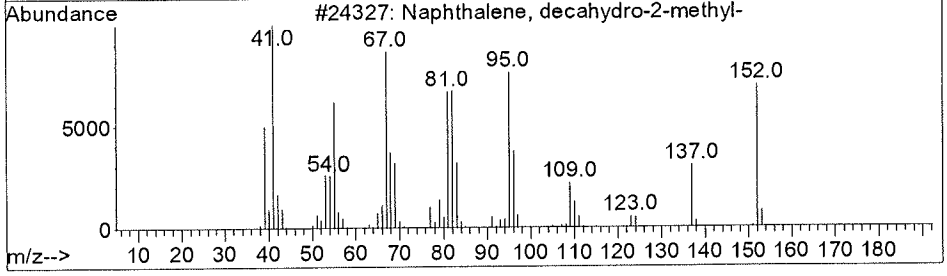
R.T.	EstConc	Area	Relative to ISTD	R.T.
15.873	22.63 ug/l	1040540	1,2-DICHLOROBENZENE-D4	15.302

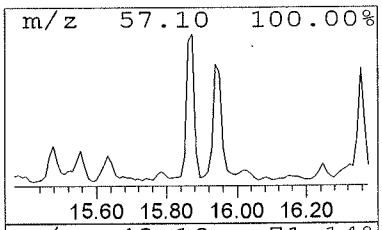
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dodecane	170	C12H26	000112-40-3	86
2	Dodecane	170	C12H26	000112-40-3	80
3	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	38
4	Decalin, syn-1-methyl-, cis-	152	C11H20	1000158-89-1	38
5	Dodecane	170	C12H26	000112-40-3	38

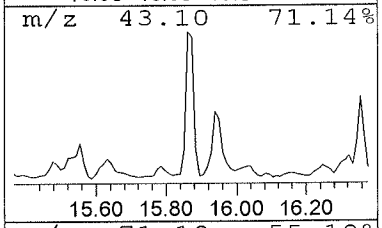


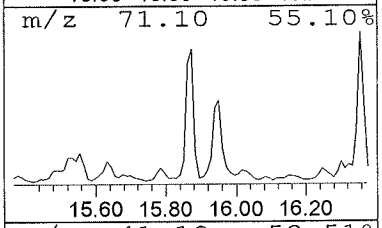


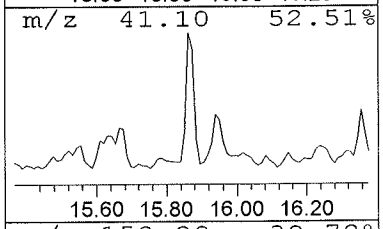


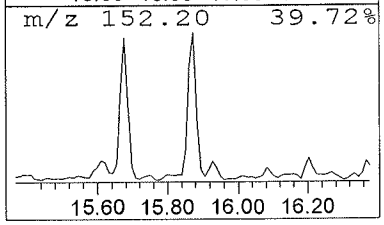












Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

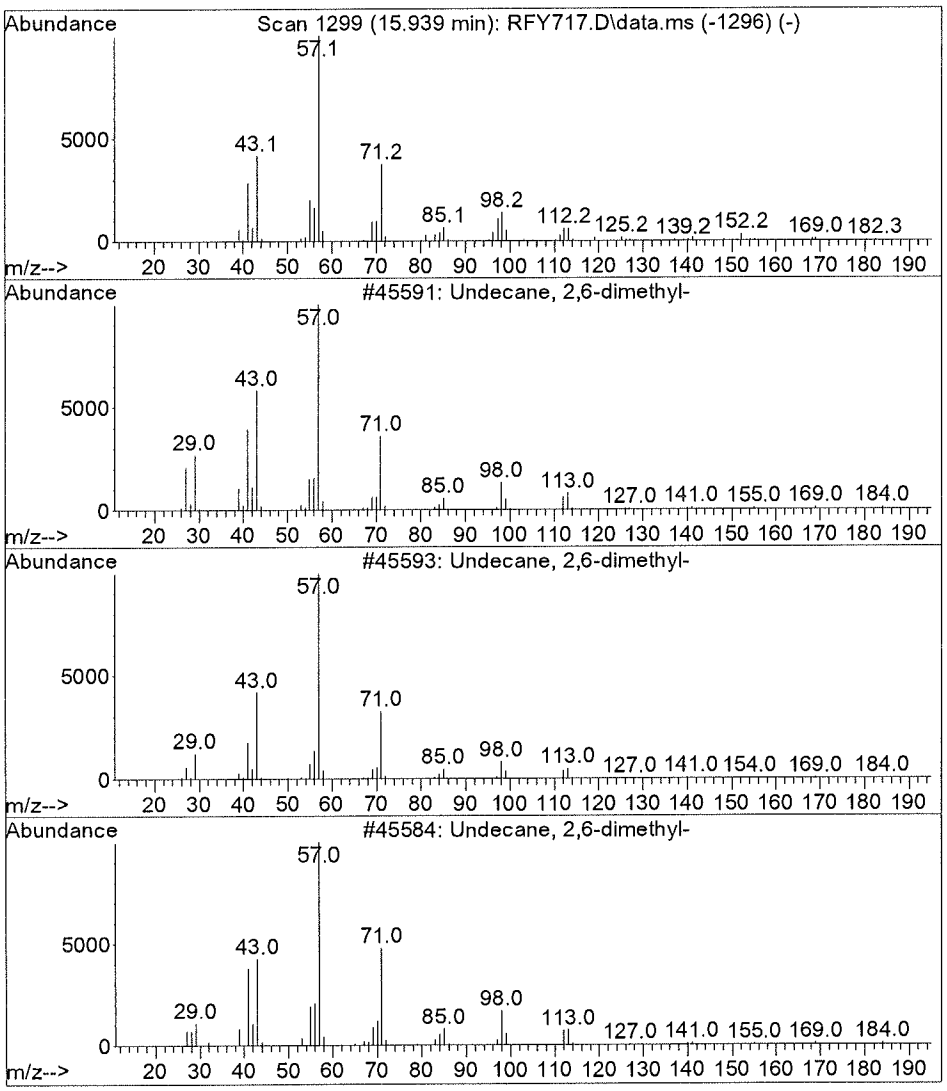
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

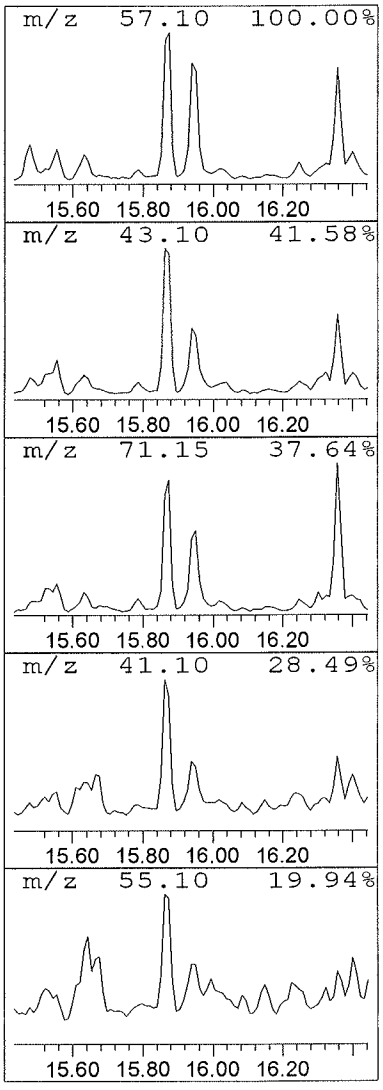
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 17 Undecane, 2,6-dimethyl- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.939	15.88 ug/l	730018	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	72
2	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	72
3	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	64
4	Undecane, 2,5-dimethyl-	184	C13H28	017301-22-3	53
5	Tetradecane, 6,9-dimethyl-	226	C16H34	055045-13-1	53





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

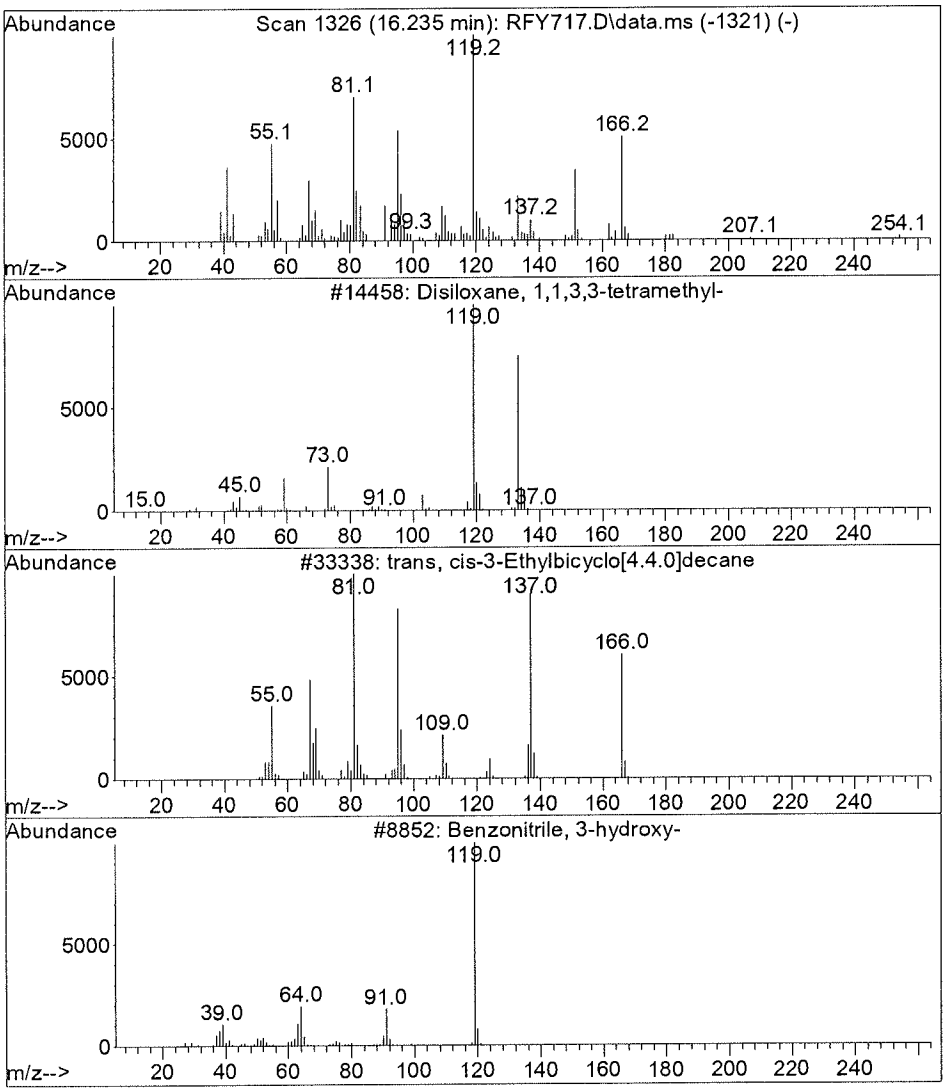
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

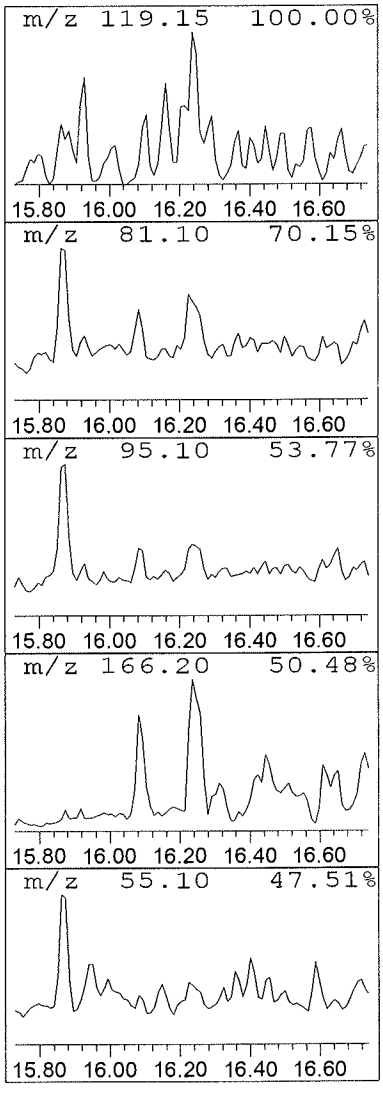
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 18 Disiloxane, 1,1,3,3-tetrame... Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.235	12.81 ug/l	588814	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Disiloxane, 1,1,3,3-tetramethyl-	134	C4H14OSi2	003277-26-7	35
2	trans, cis-3-Ethylbicyclo[4.4.0]...	166	C12H22	066660-43-3	30
3	Benzonitrile, 3-hydroxy-	119	C7H5NO	000873-62-1	22
4	Benzene, (1,1,2-trimethylpropyl)-	162	C12H18	026356-11-6	22
5	Benzene, 1-methyl-4-(1-methyleth...	134	C10H14	000099-87-6	22





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

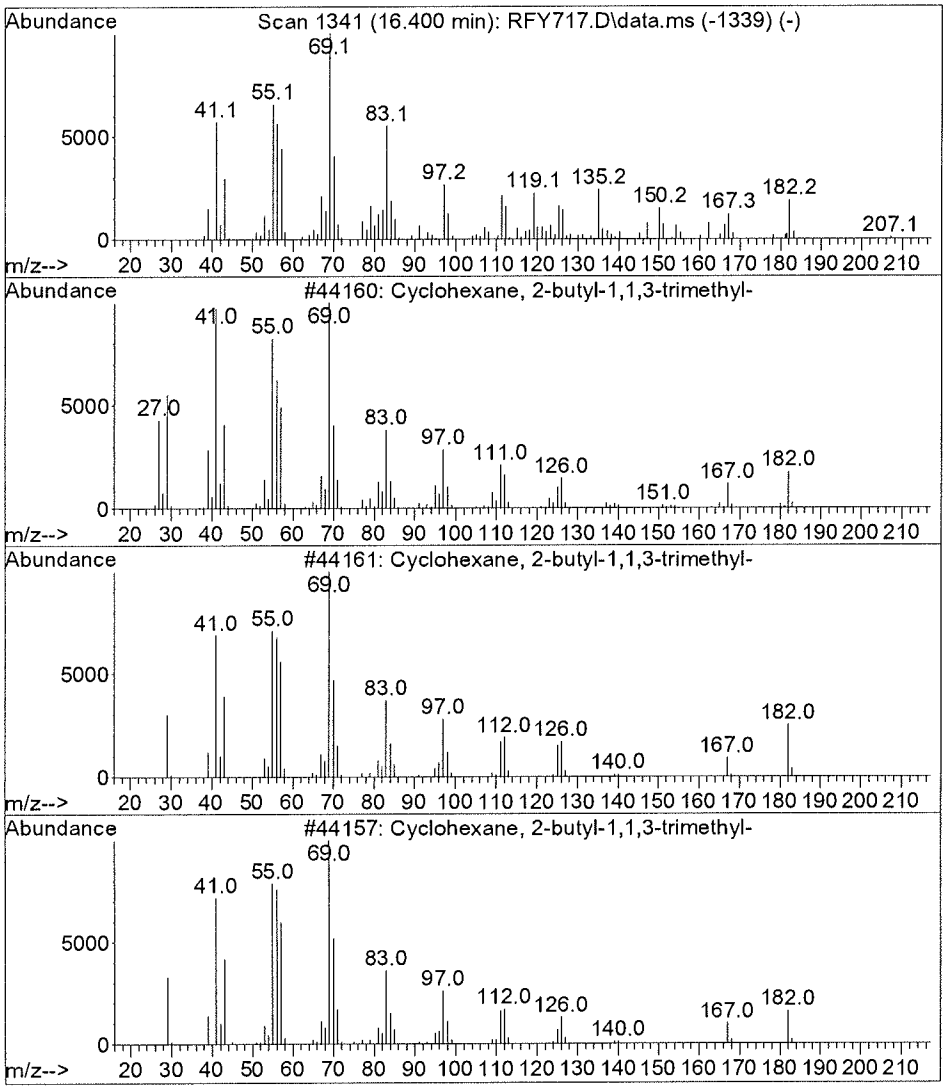
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

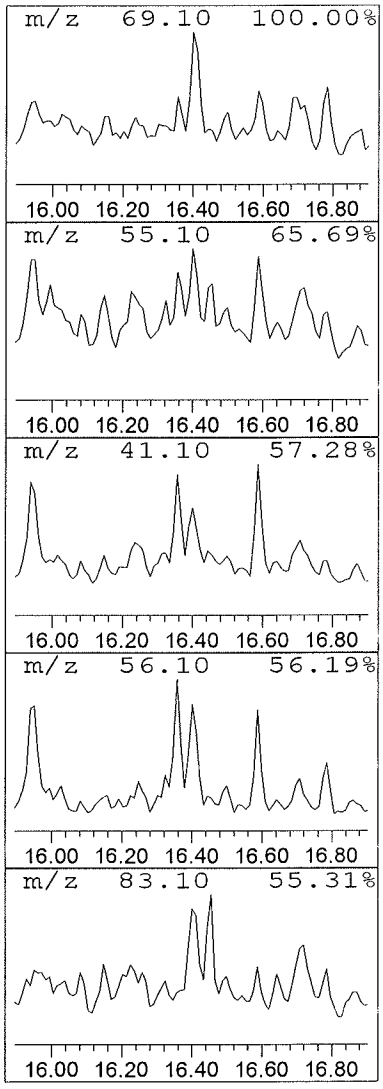
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 19 Cyclohexane, 2-butyl-1,1,3-... Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.400	16.95 ug/l	779447	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 2-butyl-1,1,3-trime...	182	C13H26	054676-39-0	97
2	Cyclohexane, 2-butyl-1,1,3-trime...	182	C13H26	054676-39-0	93
3	Cyclohexane, 2-butyl-1,1,3-trime...	182	C13H26	054676-39-0	90
4	Cyclopentane, nonyl-	196	C14H28	002882-98-6	58
5	Cyclopentane, hexyl-	154	C11H22	004457-00-5	58





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

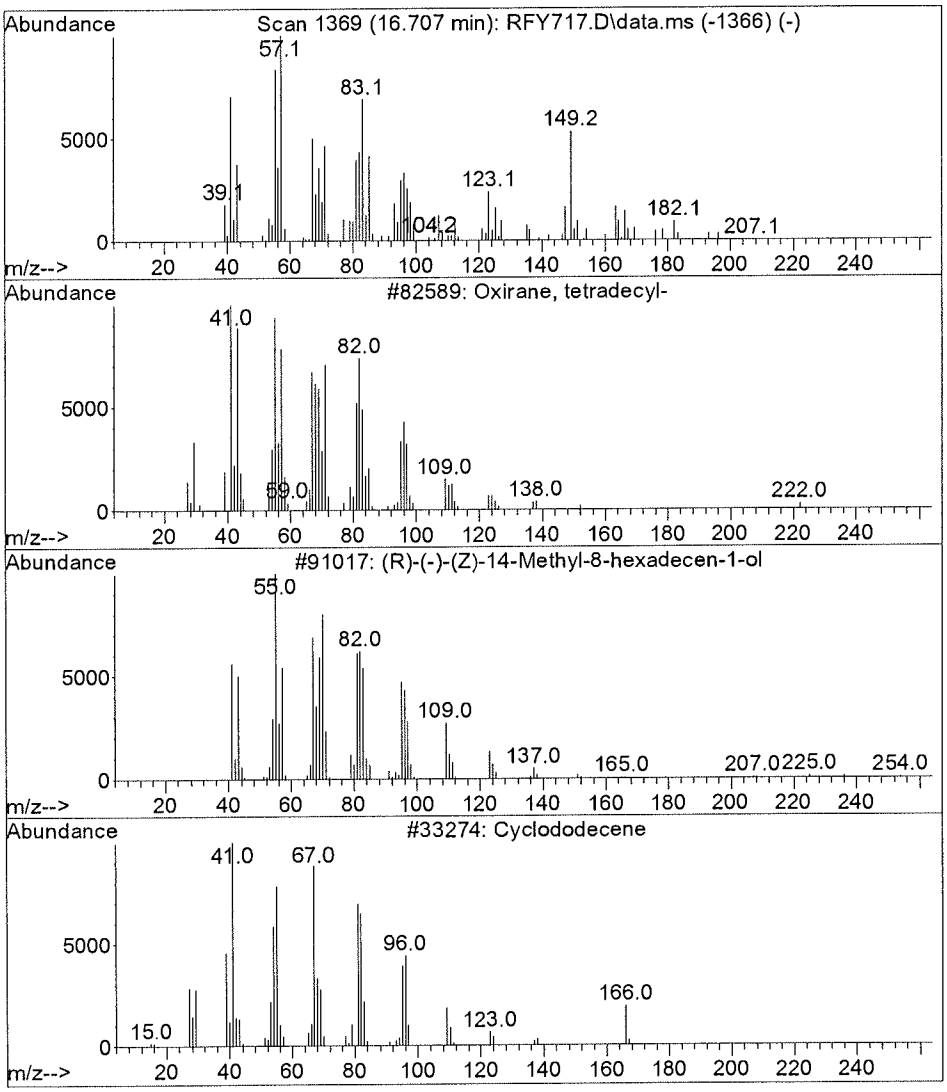
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

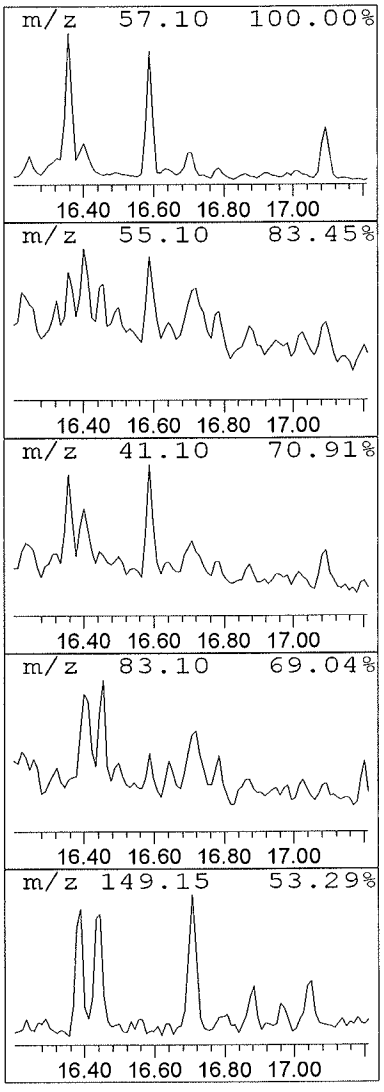
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 20 Oxirane, tetradecyl- Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.707	9.93 ug/l	456737	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Oxirane, tetradecyl-	240	C16H32O	007320-37-8	50
2	(R)-(-)-(Z)-14-Methyl-8-hexadece...	254	C17H34O	030689-78-2	43
3	Cyclododecene	166	C12H22	001501-82-2	30
4	13-Oxabicyclo[10.1.0]tridecane	182	C12H22O	000286-99-7	27
5	Cyclopentane, 1-methyl-3-(1-meth...	126	C9H18	053771-88-3	25





LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY717.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.474	514	528	550	rVB	238905	919522	25.42%	2.910%
2	7.869	550	564	579	rBV	314439	1748319	48.34%	5.532%
3	8.275	590	601	609	rBV4	337196	1150063	31.80%	3.639%
4	8.868	644	655	665	rBV	806923	2196611	60.74%	6.951%
5	9.670	719	728	738	rBV	174010	706105	19.52%	2.234%
6	9.845	738	744	761	rVB	224800	1039179	28.73%	3.288%
7	10.197	771	776	788	rVB	183613	590827	16.34%	1.870%
8	10.800	822	831	836	rBV	1124937	2706548	74.84%	8.564%
9	11.657	899	909	912	rBV	155872	536320	14.83%	1.697%
10	12.392	968	976	983	rBV	236459	679930	18.80%	2.151%
11	12.513	983	987	1001	rVV	1256865	2916722	80.65%	9.229%
12	12.887	1015	1021	1029	rBV3	121033	492461	13.62%	1.558%
13	13.260	1048	1055	1067	rBV5	241851	1151876	31.85%	3.645%
14	13.699	1091	1095	1101	rBV3	186077	573891	15.87%	1.816%
15	13.820	1101	1106	1109	rVV2	1719712	3616644	100.00%	11.444%
16	13.875	1109	1111	1117	rVV5	159687	611947	16.92%	1.936%
17	14.610	1172	1178	1181	rVB4	119607	439283	12.15%	1.390%
18	14.863	1192	1201	1207	rBV3	131123	520028	14.38%	1.645%
19	14.984	1207	1212	1215	rBV	417336	780418	21.58%	2.469%
20	15.060	1215	1219	1225	rVV4	125052	471174	13.03%	1.491%
21	15.192	1225	1231	1237	rVV6	232802	897308	24.81%	2.839%
22	15.302	1237	1241	1253	rVB	1403256	2298671	63.56%	7.273%
23	15.675	1266	1275	1282	rVB5	282862	964071	26.66%	3.051%
24	15.873	1289	1293	1296	rBV	627824	1040535	28.77%	3.292%
25	15.939	1296	1299	1311	rVV3	213620	730018	20.18%	2.310%
26	16.235	1321	1326	1335	rVV7	137068	588814	16.28%	1.863%
27	16.400	1339	1341	1356	rVV10	181581	779447	21.55%	2.466%
28	16.707	1366	1369	1374	rVV9	122014	456737	12.63%	1.445%

Sum of corrected areas: 31603469

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY717.D
Acq On : 29 Jun 2018 11:52 pm
Operator : DNguye
Sample : 18F187-15I 100uL
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc
Hexane, 2,2-dim...	7.869	39.8	ug/l	1748320	1	8.868	2196610	50.0
Pentane, 2,3,4-...	9.669	16.1	ug/l	706105	1	8.868	2196610	50.0
Heptane, 4-methyl-	9.845	23.7	ug/l	1039180	1	8.868	2196610	50.0
Hexane, 2,2,4-t...	10.197	13.4	ug/l	590827	1	8.868	2196610	50.0
Cyclohexane, 1,...	11.657	9.2	ug/l	536320	2	12.513	2916720	50.0
Nonane	12.392	11.7	ug/l	679930	2	12.513	2916720	50.0
Decane, 2-cyclo...	13.260	19.7	ug/l	1151880	2	12.513	2916720	50.0
Cyclohexane, 1,...	13.699	9.8	ug/l	573891	2	12.513	2916720	50.0
trans-(2-Ethylc...	13.875	10.5	ug/l	611947	2	12.513	2916720	50.0
Cyclohexane, (2...	14.610	9.6	ug/l	439283	3	15.302	2298670	50.0
2-Decene, 4-met...	14.863	11.3	ug/l	520028	3	15.302	2298670	50.0
Undecane	14.984	17.0	ug/l	780418	3	15.302	2298670	50.0
9-Oxabicyclo[6....	15.060	10.2	ug/l	471174	3	15.302	2298670	50.0
Naphthalene, de...	15.192	19.5	ug/l	897308	3	15.302	2298670	50.0
trans-Decalin, ...	15.675	21.0	ug/l	964071	3	15.302	2298670	50.0
Dodecane	15.873	22.6	ug/l	1040540	3	15.302	2298670	50.0
Undecane, 2,6-d...	15.939	15.9	ug/l	730018	3	15.302	2298670	50.0
Disiloxane, 1,1...	16.235	12.8	ug/l	588814	3	15.302	2298670	50.0
Cyclohexane, 2-...	16.400	17.0	ug/l	779447	3	15.302	2298670	50.0
Oxirane, tetrad...	16.707	9.9	ug/l	456737	3	15.302	2298670	50.0

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/30/18 00:16
Sample ID:	18Q2DP009-SB0601-SO-1	Date Analyzed:	06/30/18 00:16
Lab Samp ID:	F187-16I	Dilution Factor:	49.7
Lab File ID:	RFY718	Matrix	: SOIL
Ext Btch ID:	VMF5F28	% Moisture	: 6.9
Calib. Ref.:	RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.27	0.027	0.053
1,1,1-TRICHLOROETHANE	ND	0.27	0.027	0.053
1,1,2,2-TETRACHLOROETHANE	ND	0.27	0.027	0.053
1,1,2-TRICHLOROETHANE	ND	0.27	0.027	0.053
1,1-DICHLOROETHANE	ND	0.27	0.027	0.053
1,1-DICHLOROETHENE	ND	0.27	0.027	0.053
1,1-DICHLOROPROPENE	ND	0.27	0.027	0.053
1,2,3-TRICHLOROBENZENE	ND	0.27	0.053	0.11
1,2,3-TRICHLOROPROPANE	ND	0.27	0.053	0.11
1,2,4-TRICHLOROBENZENE	ND	0.27	0.053	0.11
1,2,4-TRIMETHYLBENZENE	ND	0.27	0.029	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.27	0.053	0.11
1,2-DIBROMOETHANE	ND	0.27	0.027	0.053
1,2-DICHLOROBENZENE	ND	0.27	0.027	0.053
1,2-DICHLOROETHANE	ND	0.27	0.027	0.053
1,2-DICHLOROPROPANE	ND	0.27	0.027	0.053
1,3,5-TRIMETHYLBENZENE	ND	0.27	0.031	0.11
1,3-DICHLOROBENZENE	ND	0.27	0.028	0.053
1,3-DICHLOROPROPANE	ND	0.27	0.027	0.053
1,4-DICHLOROBENZENE	ND	0.27	0.027	0.053
2,2-DICHLOROPROPANE	ND	0.27	0.053	0.11
2-BUTANONE	ND	0.53	0.13	0.27
2-CHLOROTOLUENE	ND	0.27	0.044	0.053
2-HEXANONE	ND	0.53	0.15	0.27
4-CHLOROTOLUENE	ND	0.27	0.036	0.053
ACETONE	ND	0.53	0.17	0.27
BENZENE	0.17J	0.27	0.027	0.053
BROMOBENZENE	ND	0.27	0.027	0.053
BROMOCHLOROMETHANE	ND	0.27	0.027	0.053
BROMODICHLOROMETHANE	ND	0.27	0.027	0.053
BROMOFORM	ND	0.27	0.053	0.11
BROMOMETHANE	ND	0.53	0.096	0.11
CARBON DISULFIDE	ND	0.27	0.027	0.053
CARBON TETRACHLORIDE	ND	0.27	0.029	0.053
CHLOROBENZENE	ND	0.27	0.027	0.053
CHLOROETHANE	ND	0.27	0.069	0.11
CHLOROFORM	ND	0.27	0.027	0.053
CHLOROMETHANE	ND	0.27	0.053	0.11
CIS-1,2-DICHLOROETHYLENE	ND	0.27	0.027	0.053
CIS-1,3-DICHLOROPROPENE	ND	0.27	0.027	0.053
CYCLOHEXANE	ND	0.27	0.064	0.11
DIBROMOCHLOROMETHANE	ND	0.27	0.027	0.053
DIBROMOMETHANE	ND	0.27	0.027	0.053
DICHLORODIFLUOROMETHANE	ND	0.27	0.064	0.11
ETHYLBENZENE	ND	0.27	0.027	0.053
HEXACHLOROBUTADIENE	ND	0.27	0.053	0.11
ISOPROPYLBENZENE	ND	0.27	0.034	0.11
METHYLENE CHLORIDE	ND	0.53	0.11	0.27
M,P-XYLENE	0.057J	0.27	0.053	0.11
4-METHYL-2-PENTANONE	ND	0.53	0.15	0.27
TERT-BUTYL METHYL ETHER	ND	0.27	0.027	0.053
NAPHTHALENE	ND	0.27	0.053	0.11
N-BUTYLBENZENE	ND	0.27	0.037	0.053
N-PROPYLBENZENE	ND	0.27	0.035	0.053
O-XYLENE	ND	0.27	0.027	0.053
P-ISOPROPYLTOLUENE	ND	0.27	0.033	0.053
SEC-BUTYLBENZENE	ND	0.27	0.036	0.053
STYRENE	ND	0.27	0.027	0.053
TERT-BUTYLBENZENE	ND	0.27	0.033	0.053
TETRACHLOROETHENE	0.039J	0.27	0.027	0.053
TOLUENE	0.12J	0.27	0.027	0.053
TRANS-1,2-DCE	ND	0.27	0.027	0.053
TRANS-1,3-DICHLOROPROPENE	ND	0.27	0.027	0.053
TCE	0.029J	0.27	0.027	0.053
TRICHLOROFLUOROMETHANE	ND	0.27	0.059	0.11
TRICHLOROTRIFLUOROETHANE	ND	0.27	0.053	0.11
VINYL CHLORIDE	ND	0.27	0.075	0.11
VINYL ACETATE	ND	0.27	0.069	0.11
XYLENES, TOTAL	0.057J	0.27	0.027	0.053

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	2.95	2.669	111	71-136
4-BROMOFLUOROBENZENE	4.95	4.805	103	79-119
TOLUENE-D8	2.85	2.669	107	85-116
DIBROMOFLUOROMETHANE	2.78	2.669	104	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: 06/23/18
Project	: JBER TO075	Date Received	: 06/26/18
Batch No.	: 18F187	Date Extracted	: 06/30/18 00:16
Sample ID	: 18Q2DP009-SB0601-SO-1	Date Analyzed	: 06/30/18 00:16
Lab Samp ID	: F187-16I	Dilution Factor	: 49.7
Lab File ID	: RFY718	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: 6.9
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 03 16:23:03 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	968584	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	801708	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	366001	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.474	111	268066	52.08	ug/l	0.00
Spiked Amount 50.000			Recovery =	104.16%		
45) 1,2-Dichloroethane-d4	8.275	65	297206	55.31	ug/l	0.00
Spiked Amount 50.000			Recovery =	110.62%		
59) Toluene-d8	10.800	98	973694	53.33	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.66%		
81) 4-Bromofluorobenzene	13.809	95	654869	92.75	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~185.50%~~ 103.1%		
Target Compounds						Qvalue
47) Benzene	8.407	78	66761	3.28	ug/L	97
48) Trichloroethene	9.285	130	3027	0.54	ug/L	91
49) Methylcyclohexane	9.340	83	11346	0.92	ug/L #	70
61) Toluene	10.899	91	51215	2.29	ug/l	99
66) Tetrachloroethene	11.646	164	2980	0.73	ug/l	95
73) m-Xylene & p-Xylene	12.700	91	21356	1.07	ug/l	99

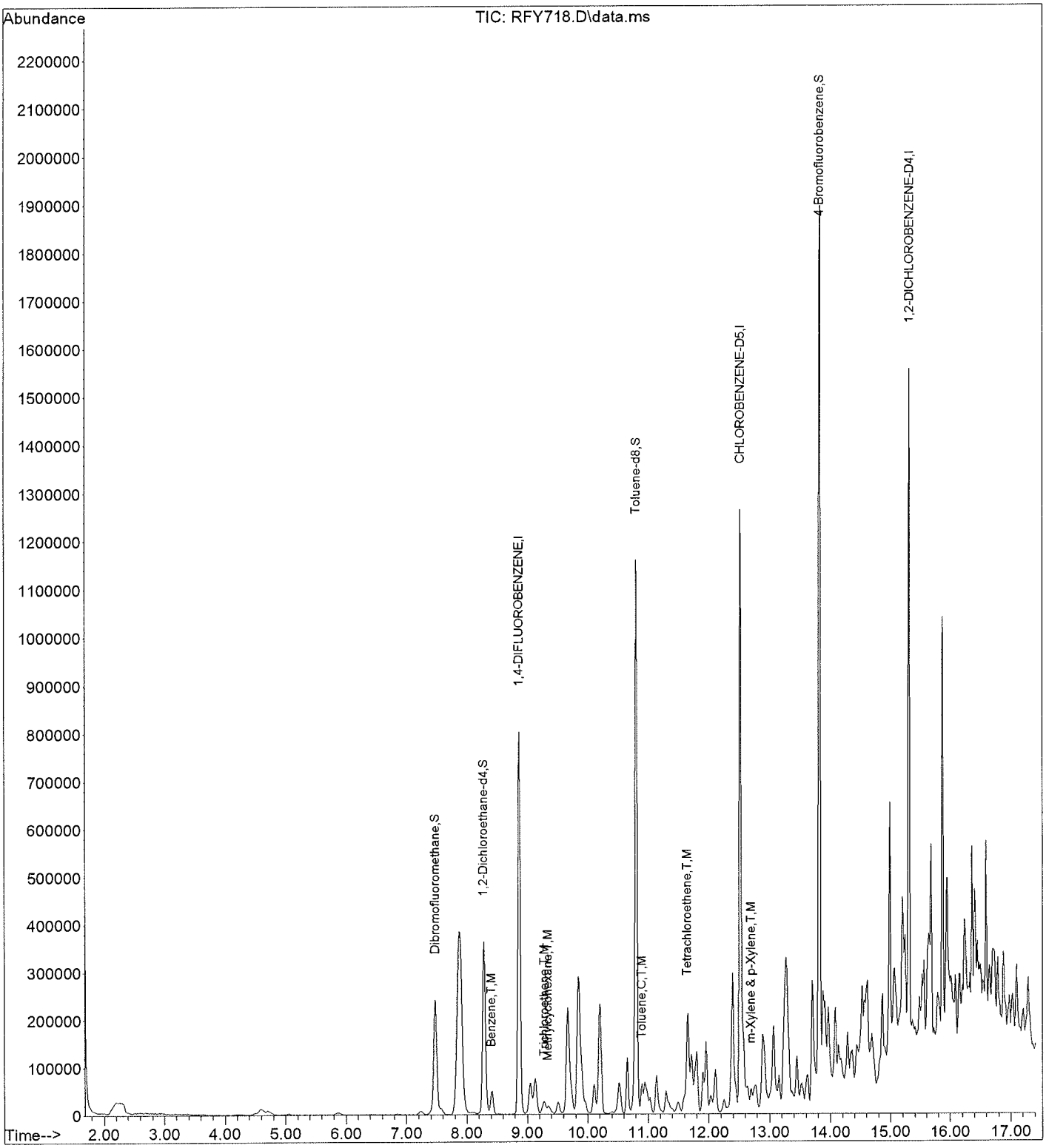
90 MD 7.3.18

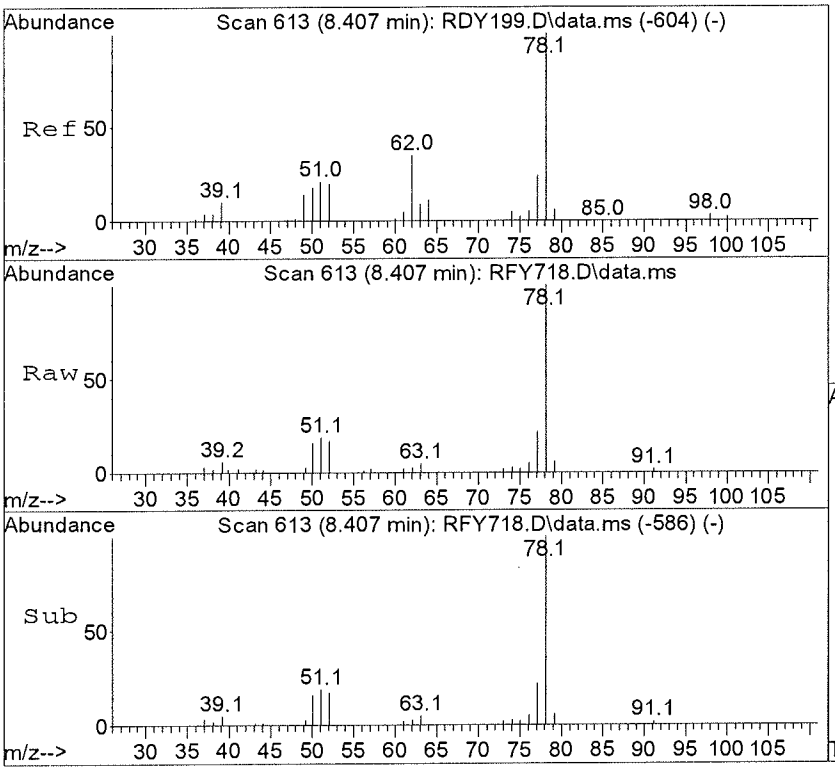
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 03 16:23:03 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

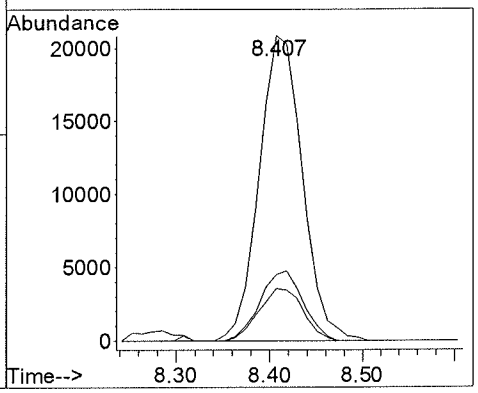


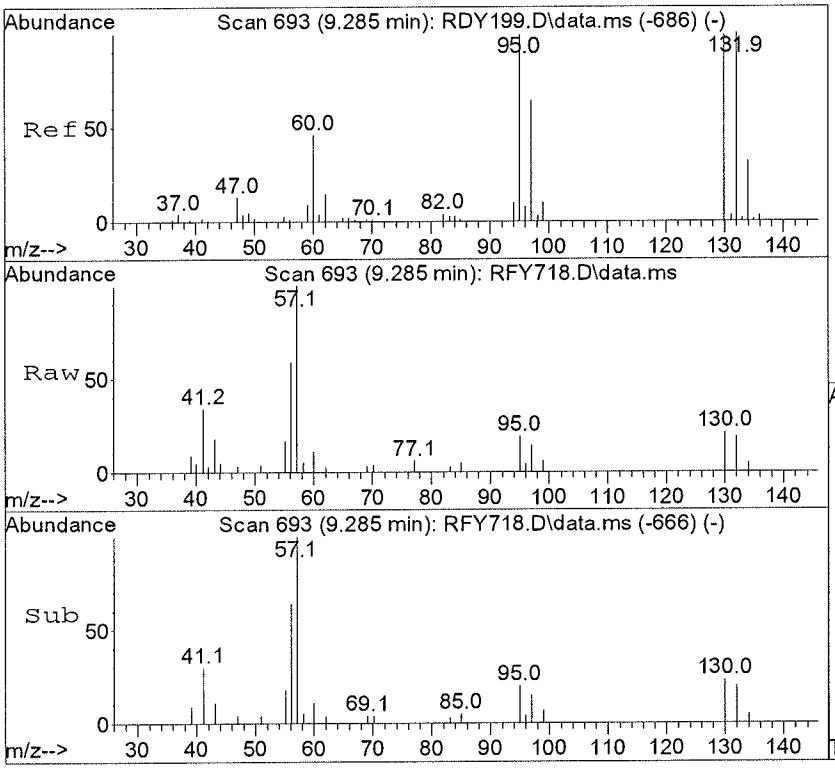


#47
Benzene
Concen: 3.28 ug/L
RT: 8.407 min Scan# 613
Delta R.T. -0.000 min
Lab File: RFY718.D
Acq: 30 Jun 2018 12:16 am

Tgt Ion: 78 Resp: 66761

Ion	Ratio	Lower	Upper
78	100		
77	22.8	0.0	53.7
52	17.5	0.0	49.8

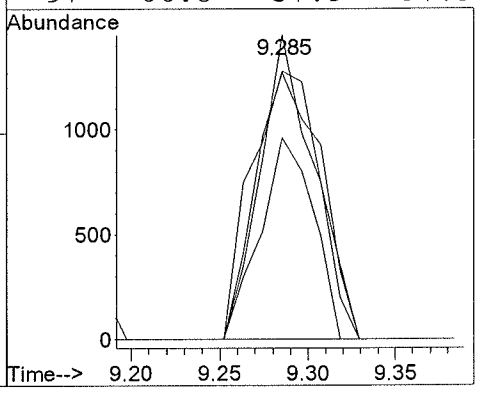


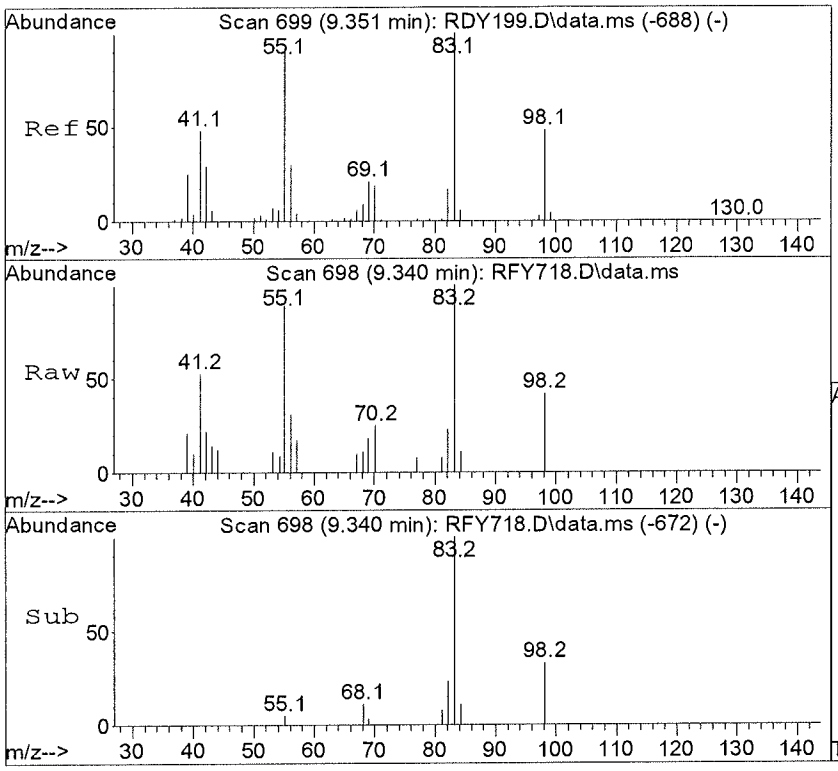


#48
Trichloroethene
Concen: 0.54 ug/L
RT: 9.285 min Scan# 693
Delta R.T. 0.000 min
Lab File: RFY718.D
Acq: 30 Jun 2018 12:16 am

Tgt Ion:130 Resp: 3027

Ion	Ratio	Lower	Upper
130	100		
132	107.8	69.8	129.8
95	115.2	70.2	130.2
97	66.8	37.9	97.9

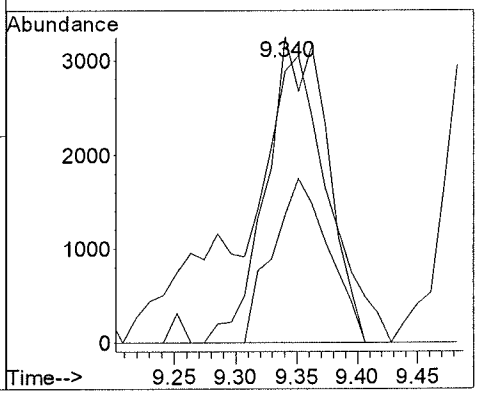


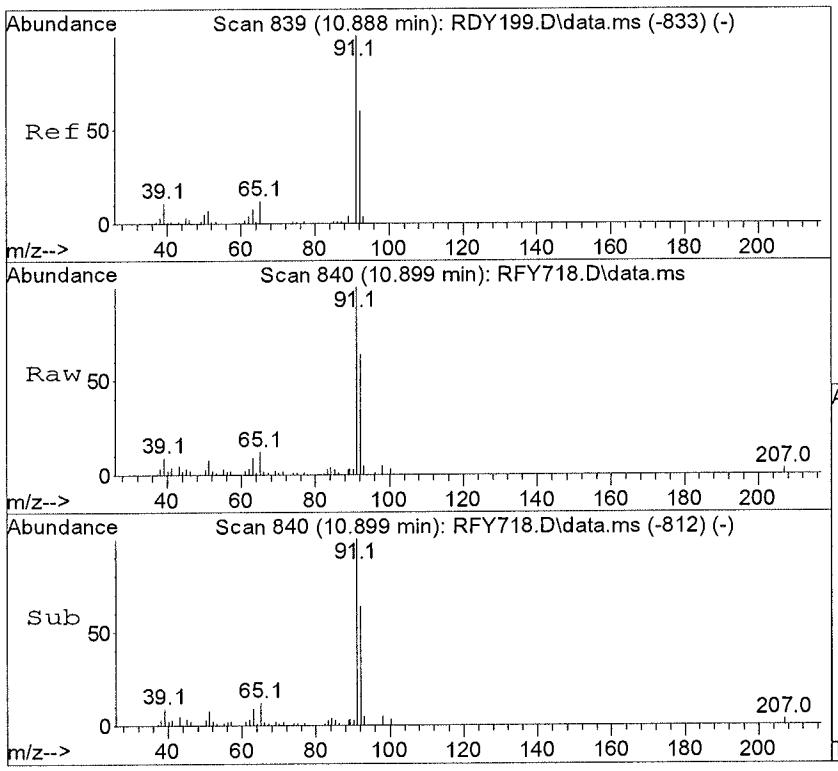


#49
Methylcyclohexane
Concen: 0.92 ug/L
RT: 9.340 min Scan# 698
Delta R.T. -0.011 min
Lab File: RFY718.D
Acq: 30 Jun 2018 12:16 am

Tgt Ion: 83 Resp: 11346

Ion	Ratio	Lower	Upper
83	100		
98	49.5	19.2	79.2
55	134.2	60.4	120.4#

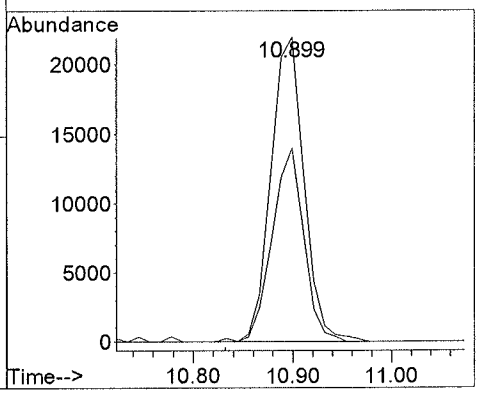


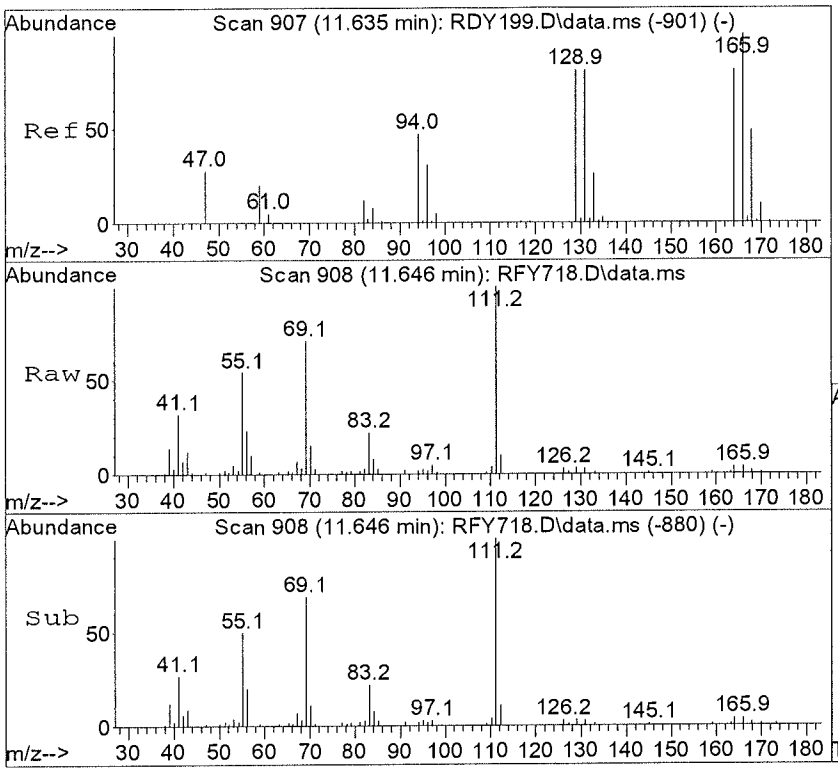


#61
Toluene
Concen: 2.29 ug/l
RT: 10.899 min Scan# 840
Delta R.T. 0.011 min
Lab File: RFY718.D
Acq: 30 Jun 2018 12:16 am

Tgt Ion: 91 Resp: 51215

Ion	Ratio	Lower	Upper
91	100		
92	60.5	29.6	89.6

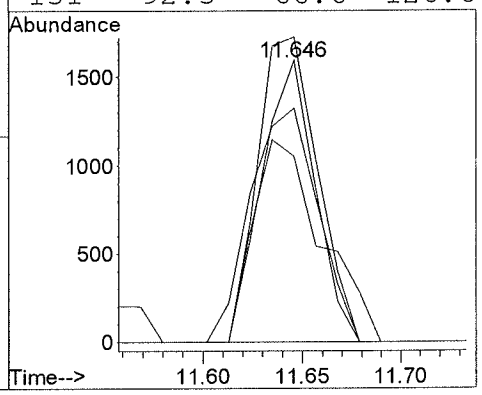


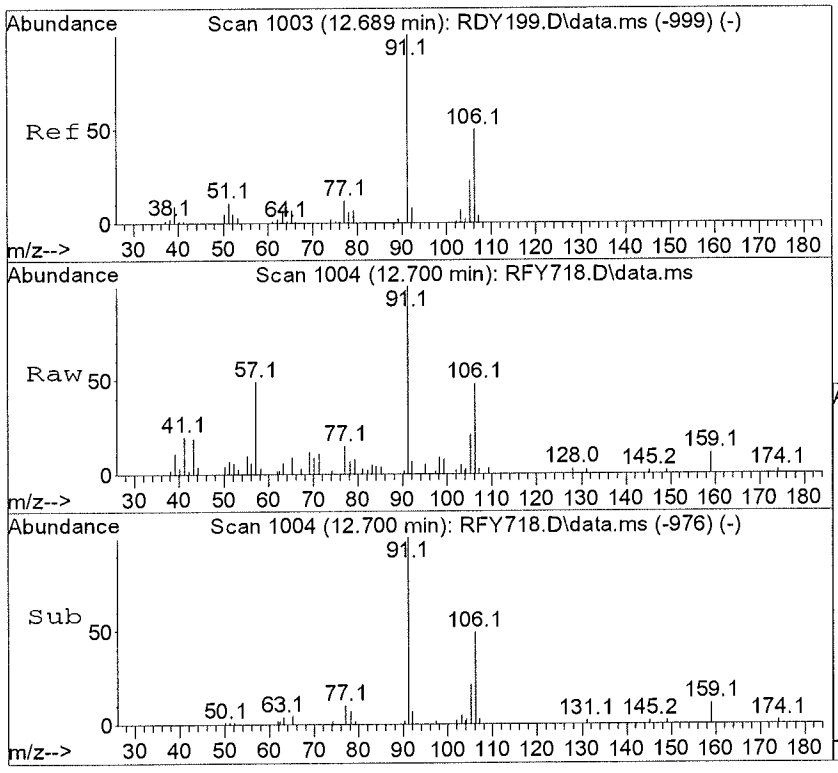


#66
Tetrachloroethene
Concen: 0.73 ug/l
RT: 11.646 min Scan# 908
Delta R.T. 0.011 min
Lab File: RFY718.D
Acq: 30 Jun 2018 12:16 am

Tgt Ion:164 Resp: 2980

Ion	Ratio	Lower	Upper
164	100		
166	122.0	96.0	156.0
129	105.1	67.4	127.4
131	92.3	66.6	126.6

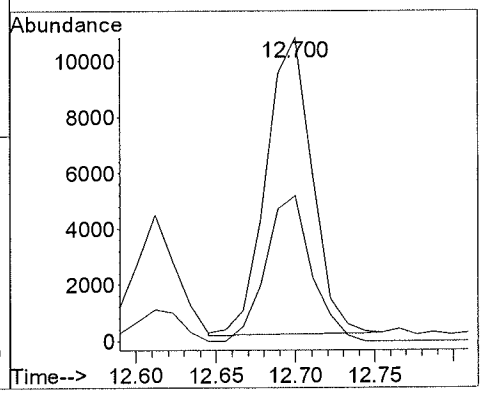




#73
m-Xylene & p-Xylene
Concen: 1.07 ug/l
RT: 12.700 min Scan# 1004
Delta R.T. 0.011 min
Lab File: RFY718.D
Acq: 30 Jun 2018 12:16 am

Tgt Ion: 91 Resp: 21356

Ion	Ratio	Lower	Upper
91	100		
106	48.6	19.0	79.0



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY718.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.474	515	528	545	rVB	242395	937233	24.50%	2.299%
2	7.869	548	564	581	rBV	384193	2207812	57.71%	5.417%
3	8.275	592	601	609	rBV2	361202	1215644	31.77%	2.982%
4	8.868	642	655	664	rBV	801404	2208465	57.72%	5.418%
5	9.669	719	728	738	rBV	221842	925635	24.19%	2.271%
6	9.845	738	744	761	rVV	287266	1334340	34.88%	3.274%
7	10.197	771	776	788	rVB	231374	761562	19.91%	1.868%
8	10.800	823	831	836	rBV	1151395	2768996	72.38%	6.793%
9	11.657	899	909	912	rBV	206254	718558	18.78%	1.763%
10	11.800	917	922	927	rVB4	125694	440374	11.51%	1.080%
11	12.392	968	976	983	rBV3	283766	849978	22.22%	2.085%
12	12.513	983	987	1001	rVV	1242010	3047733	79.66%	7.477%
13	12.887	1015	1021	1029	rBV5	153689	624906	16.33%	1.533%
14	13.062	1029	1037	1043	rVV	152762	472276	12.34%	1.159%
15	13.260	1048	1055	1067	rVV4	299672	1434512	37.49%	3.519%
16	13.699	1091	1095	1101	rBV4	252524	773997	20.23%	1.899%
17	13.820	1101	1106	1109	rVV2	1850987	3825876	100.00%	9.386%
18	13.875	1109	1111	1117	rVV3	208211	814346	21.29%	1.998%
19	13.963	1117	1119	1125	rVV4	164416	423070	11.06%	1.038%
20	14.522	1165	1170	1172	rVV2	185822	539393	14.10%	1.323%
21	14.610	1172	1178	1182	rVV5	189580	801206	20.94%	1.966%
22	14.863	1192	1201	1207	rBV4	187684	737909	19.29%	1.810%
23	14.984	1207	1212	1215	rVV	530917	999235	26.12%	2.452%
24	15.060	1215	1219	1225	rVV6	169579	700749	18.32%	1.719%
25	15.192	1225	1231	1237	rVV7	307158	1272165	33.25%	3.121%
26	15.302	1237	1241	1253	rVB	1390995	2382647	62.28%	5.846%
27	15.675	1266	1275	1281	rVB7	399203	1331841	34.81%	3.268%
28	15.873	1290	1293	1296	rBV	845847	1402914	36.67%	3.442%
29	15.950	1296	1300	1310	rVV2	293112	1045778	27.33%	2.566%
30	16.235	1321	1326	1335	rVV8	190722	747886	19.55%	1.835%
31	16.356	1335	1337	1339	rVV	338733	486862	12.73%	1.194%
32	16.400	1339	1341	1356	rVV	241442	1047228	27.37%	2.569%
33	16.587	1356	1358	1361	rVB2	337969	452763	11.83%	1.111%
34	16.707	1366	1369	1374	rVV2	150406	576013	15.06%	1.413%
35	17.289	1417	1422	1428	rVB8	142605	449998	11.76%	1.104%

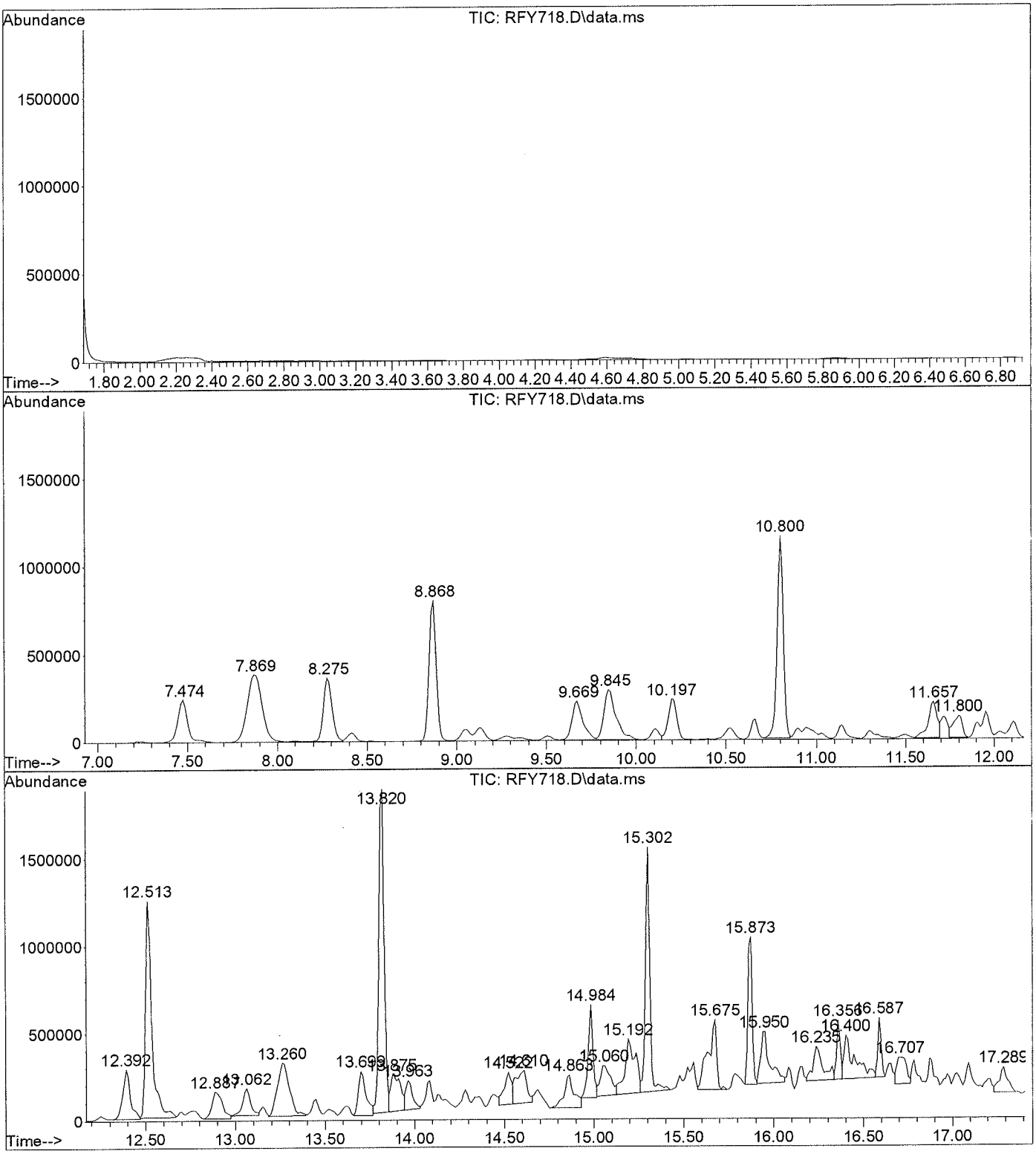
Sum of corrected areas: 40759900

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

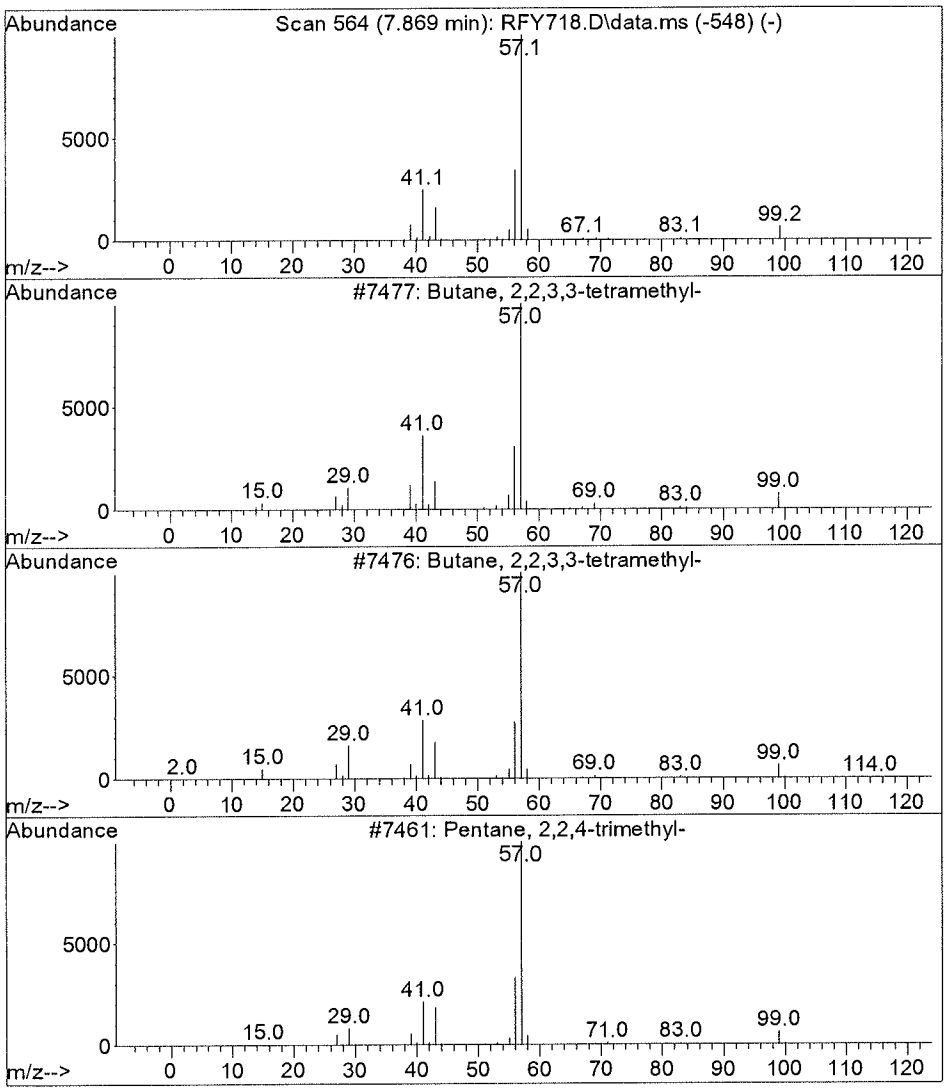
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

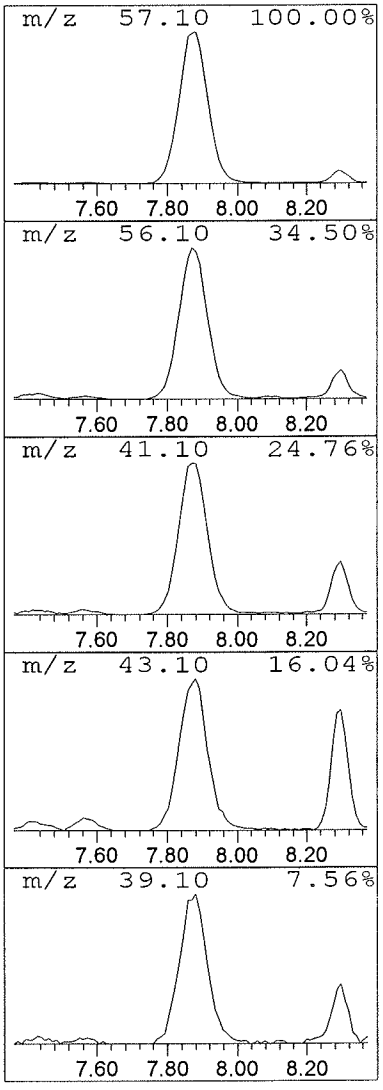
****

Peak Number 1 Butane, 2,2,3,3-tetramethyl- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.869	49.99 ug/l	2207810	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2,2,3,3-tetramethyl-	114	C8H18	000594-82-1	83
2	Butane, 2,2,3,3-tetramethyl-	114	C8H18	000594-82-1	78
3	Pentane, 2,2,4-trimethyl-	114	C8H18	000540-84-1	78
4	Pentane, 2,2,4-trimethyl-	114	C8H18	000540-84-1	78
5	Hexane, 2,2-dimethyl-	114	C8H18	000590-73-8	78





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

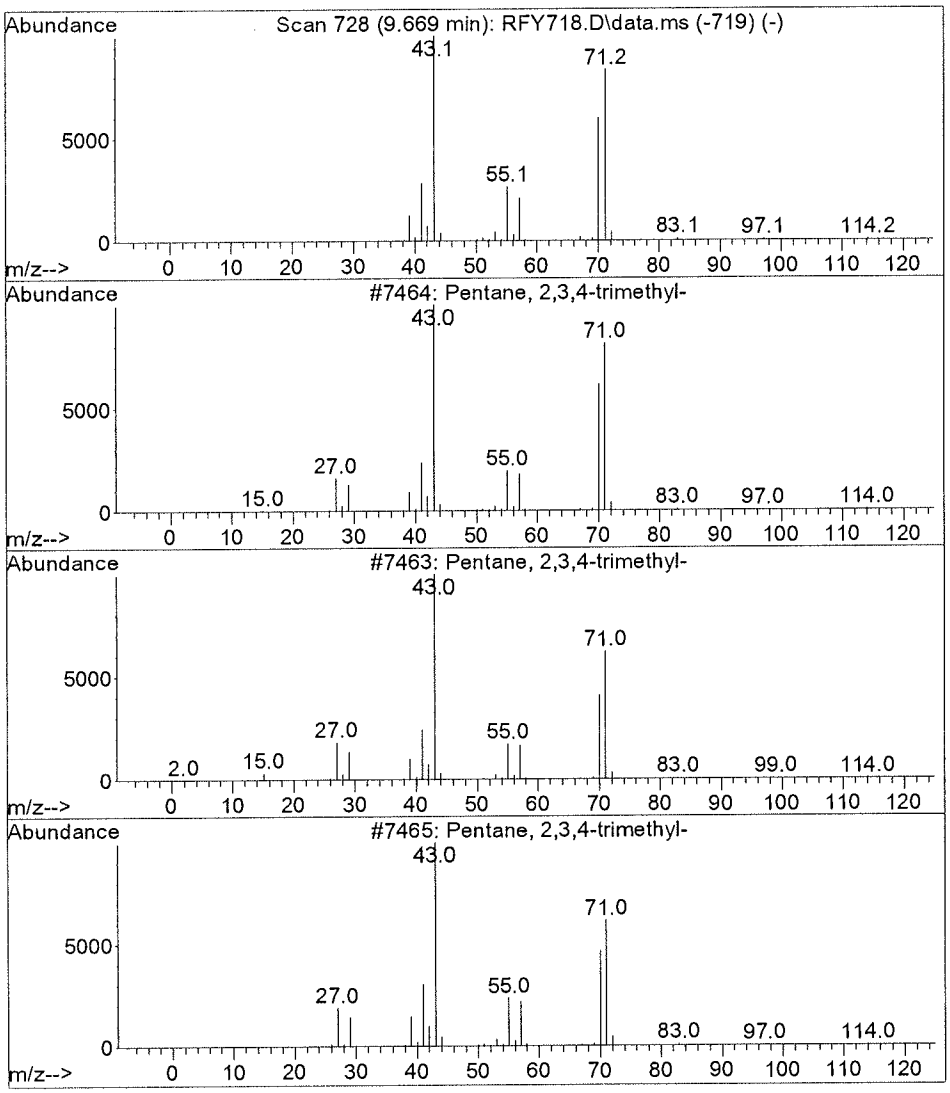
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

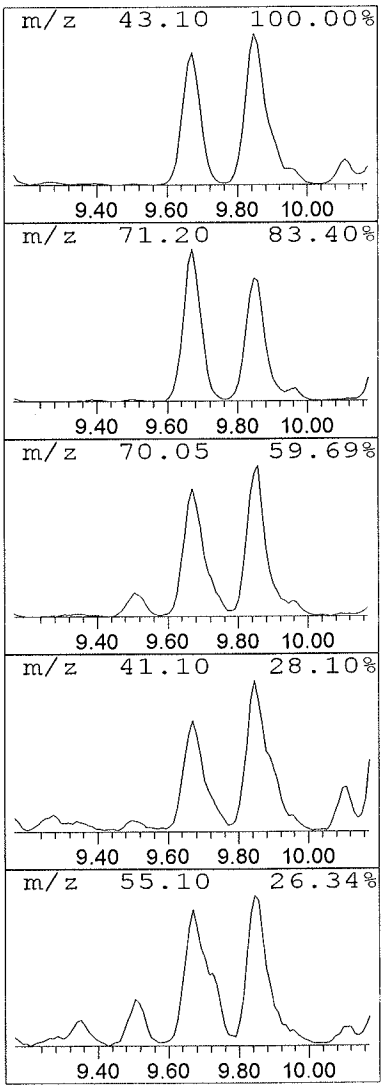
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 2 Pentane, 2,3,4-trimethyl- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.669	20.96 ug/l	925635	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
2	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
3	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
4	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	91
5	Pentane, 3-ethyl-	100	C7H16	000617-78-7	83





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

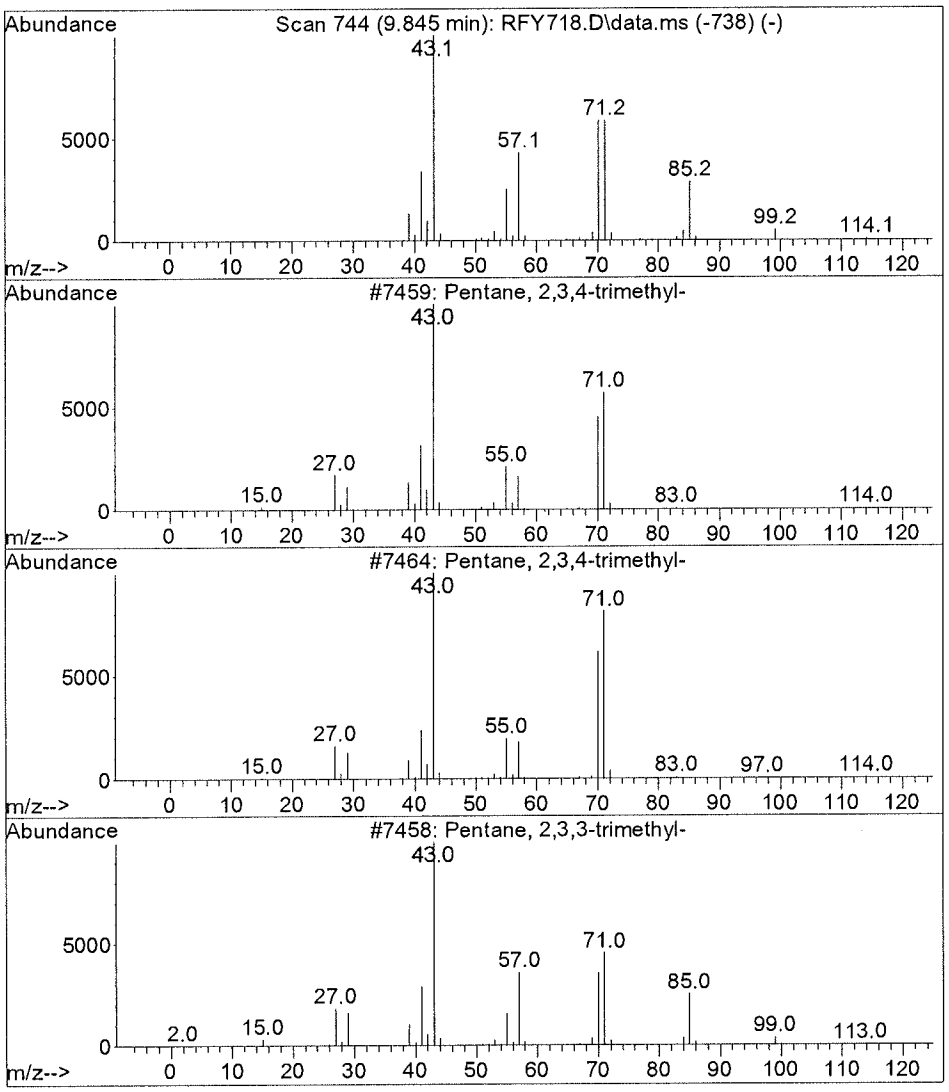
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

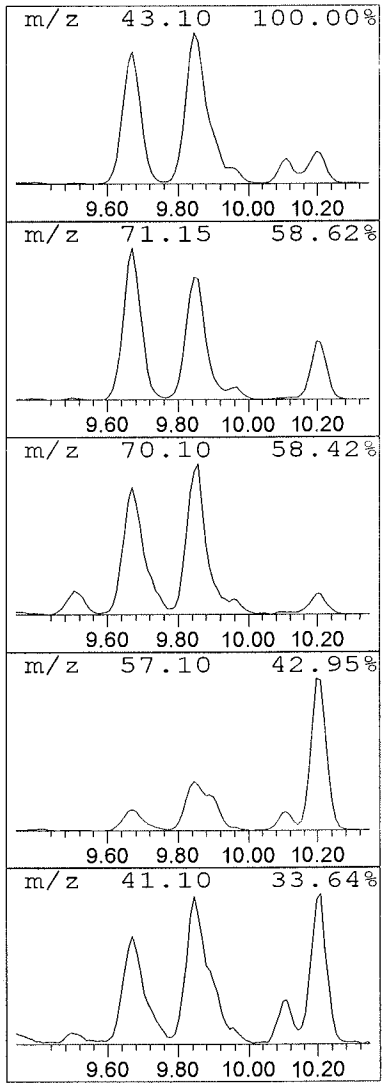
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 3 Pentane, 2,3,4-trimethyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.845	30.21 ug/l	1334340	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	74
2	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	72
3	Pentane, 2,3,3-trimethyl-	114	C8H18	000560-21-4	72
4	Hexane, 3-methyl-	100	C7H16	000589-34-4	64
5	Heptane, 3,3,4-trimethyl-	142	C10H22	020278-87-9	64





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Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

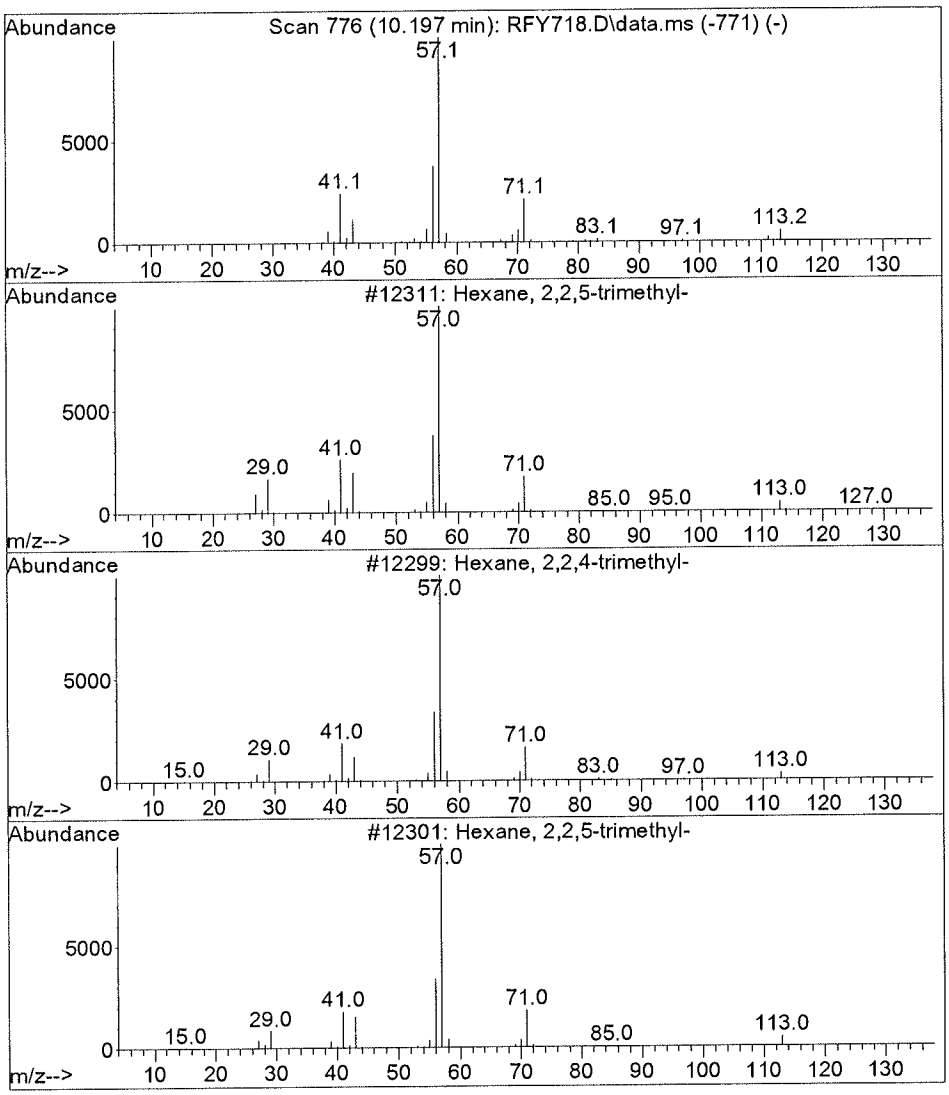
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

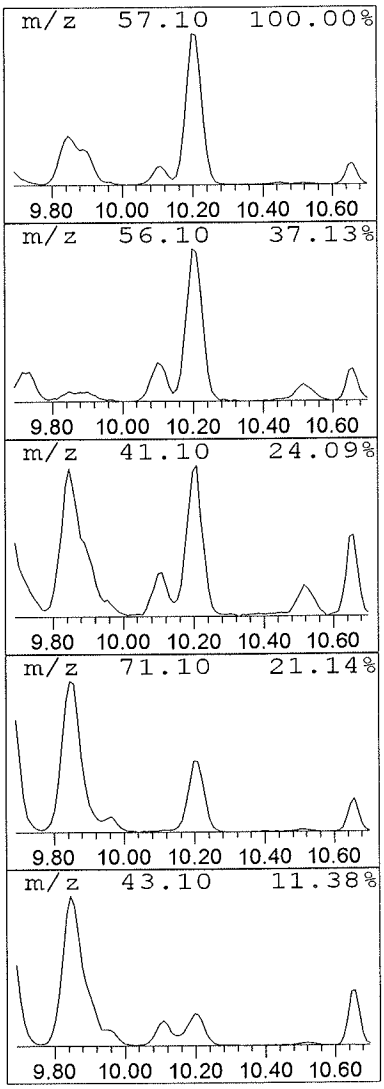
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 4 Hexane, 2,2,5-trimethyl- Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.197	17.24 ug/l	761562	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexane, 2,2,5-trimethyl-	128	C9H20	003522-94-9	83
2	Hexane, 2,2,4-trimethyl-	128	C9H20	016747-26-5	83
3	Hexane, 2,2,5-trimethyl-	128	C9H20	003522-94-9	78
4	Heptane, 2,2-dimethyl-	128	C9H20	001071-26-7	72
5	Hexane, 2,2,5-trimethyl-	128	C9H20	003522-94-9	72





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Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

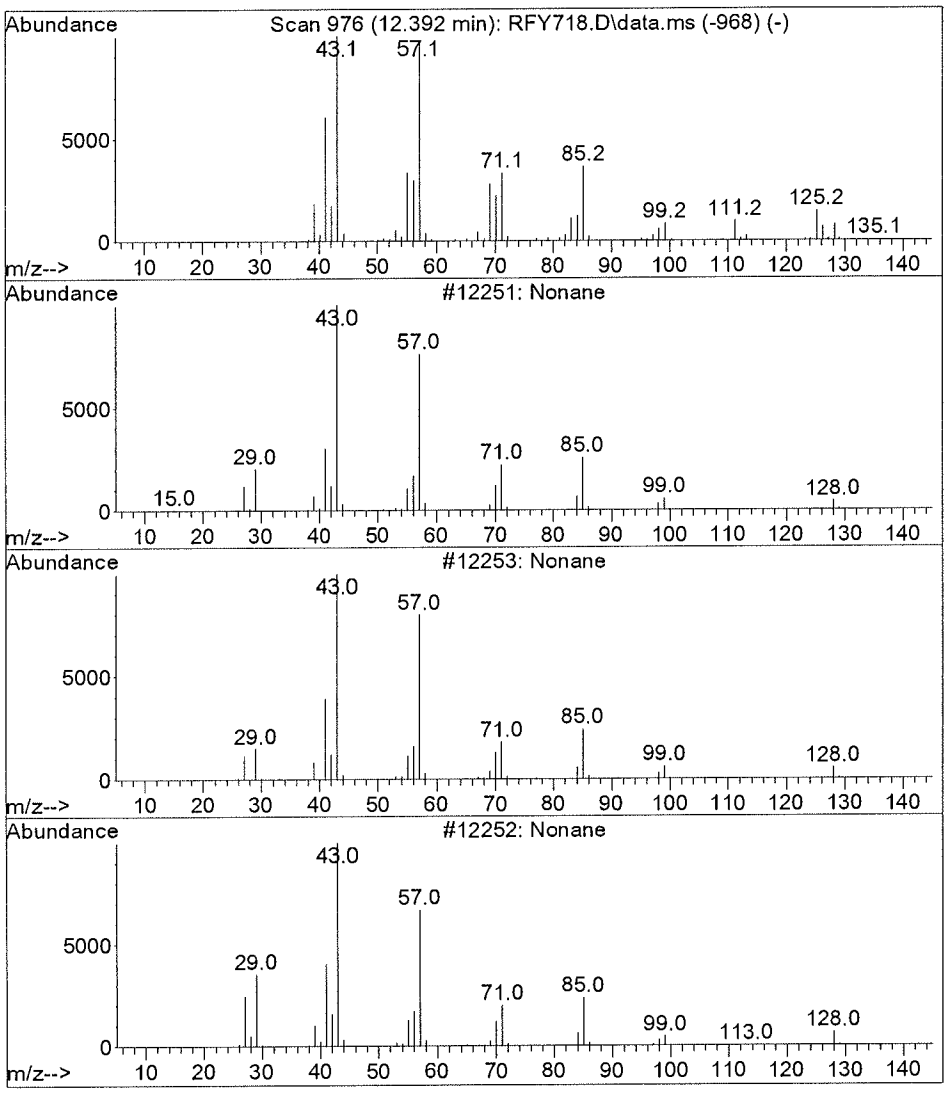
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

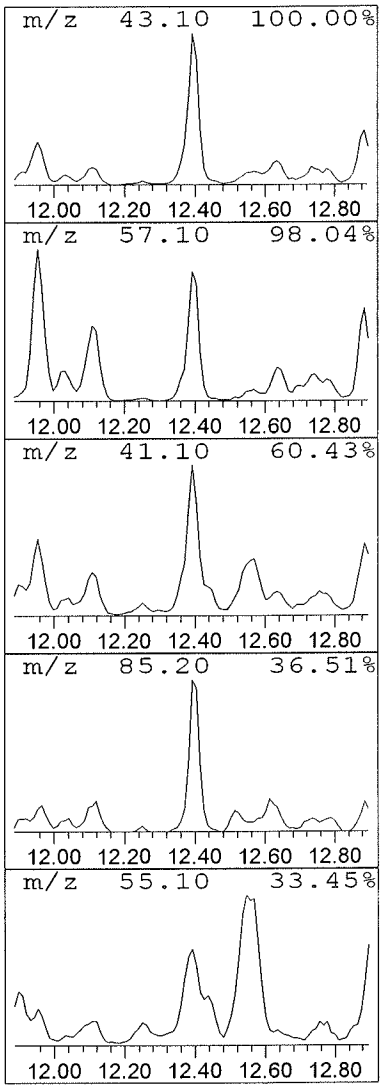
****

Peak Number 5 Nonane Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.392	13.94 ug/l	849978	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Nonane	128	C9H20	000111-84-2	81
2	Nonane	128	C9H20	000111-84-2	81
3	Nonane	128	C9H20	000111-84-2	68
4	Octane	114	C8H18	000111-65-9	58
5	Octane	114	C8H18	000111-65-9	53





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

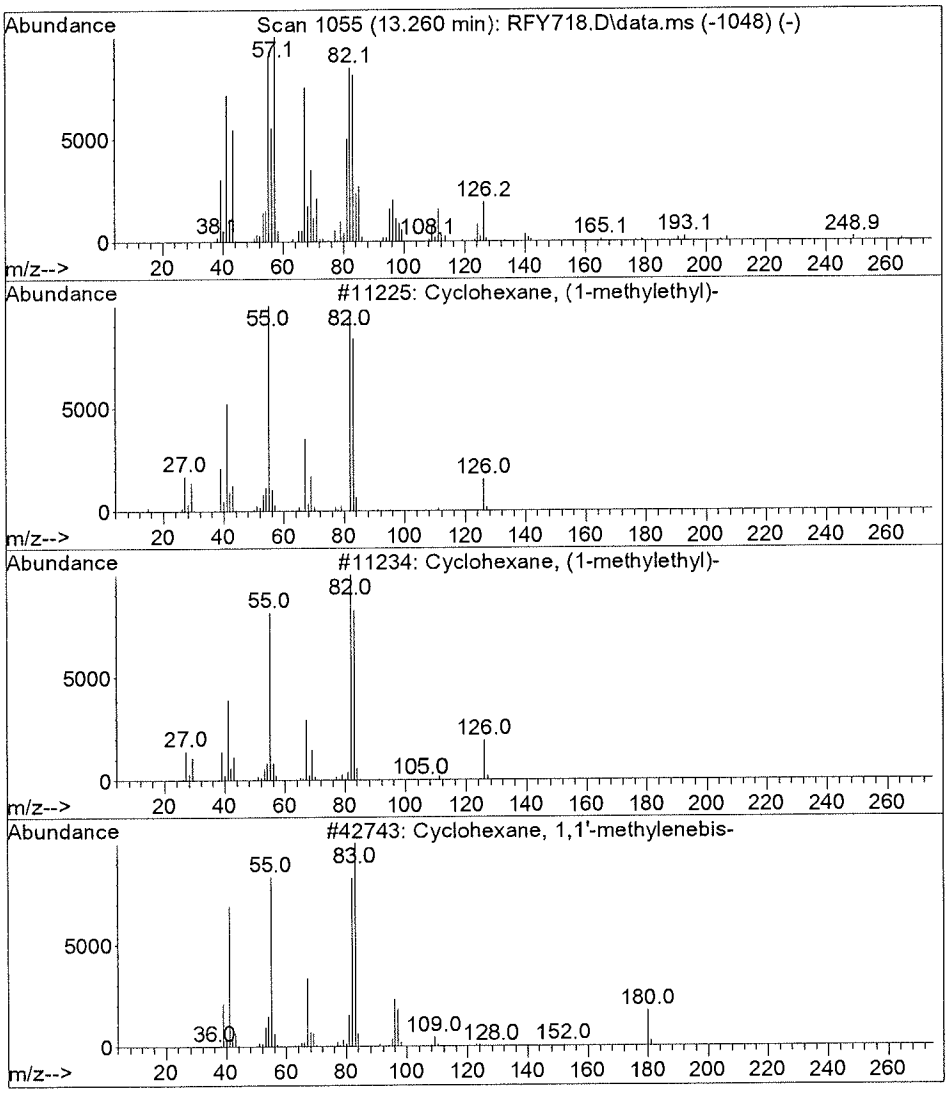
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

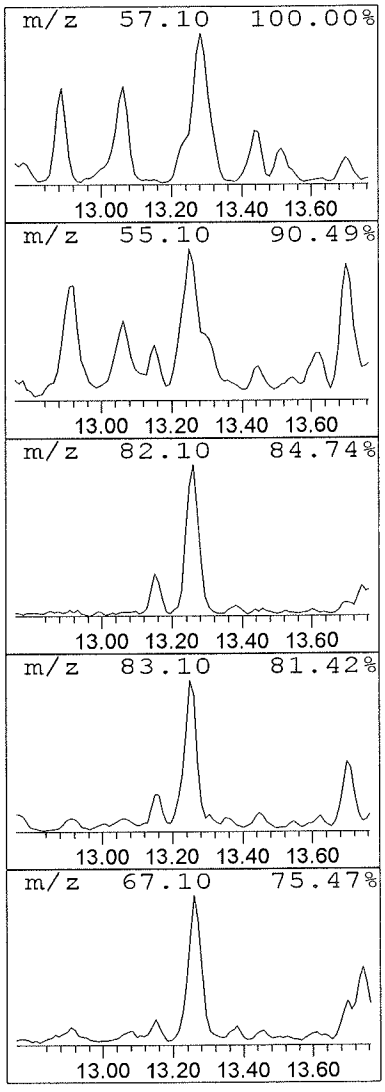
****

Peak Number 6 Cyclohexane, (1-methylethyl)- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.260	23.53 ug/l	1434510	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	46
2	Cyclohexane, (1-methylethyl)-	126	C9H18	000696-29-7	46
3	Cyclohexane, 1,1'-methylenebis-	180	C13H24	003178-23-2	43
4	Ethanone, 1-cyclohexyl-	126	C8H14O	000823-76-7	41
5	Cyclohexane, propyl-	126	C9H18	001678-92-8	35





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

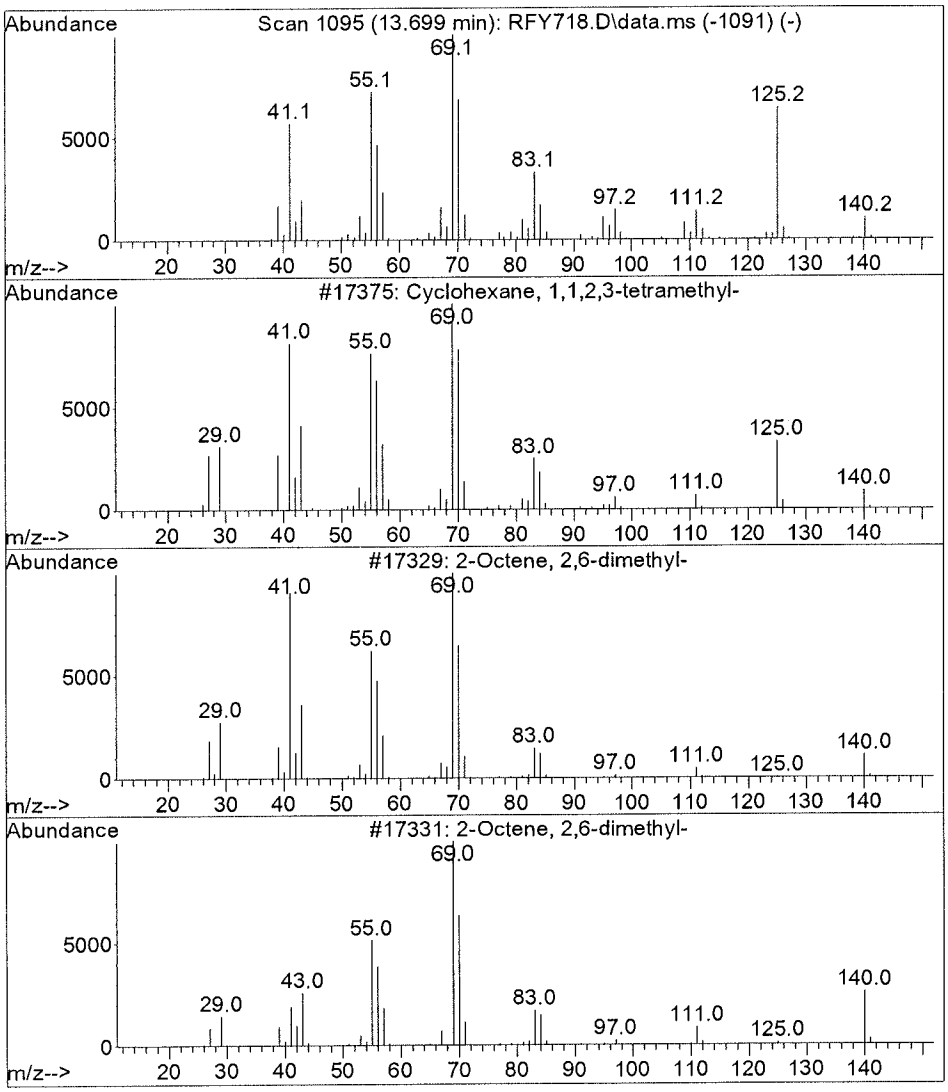
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

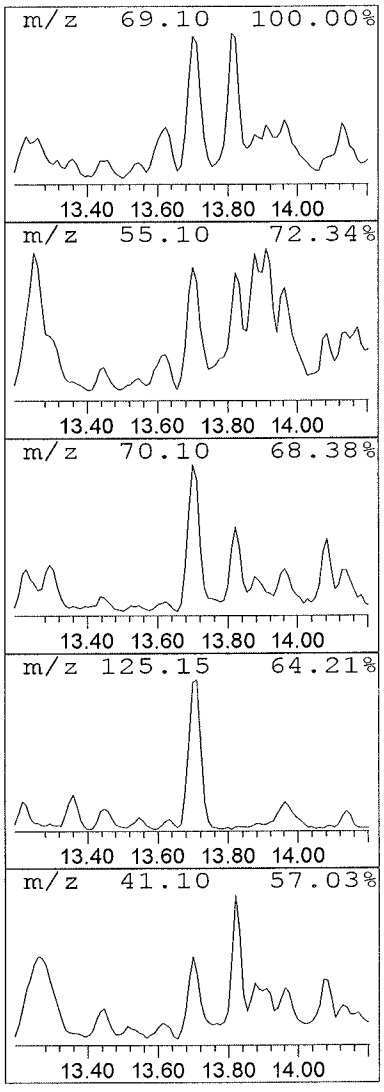
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 7 Cyclohexane, 1,1,2,3-tetram... Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.699	12.70 ug/l	773997	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,1,2,3-tetramethyl-	140	C10H20	006783-92-2	81
2	2-Octene, 2,6-dimethyl-	140	C10H20	004057-42-5	62
3	2-Octene, 2,6-dimethyl-	140	C10H20	004057-42-5	58
4	3-Octene, 2,6-dimethyl-	140	C10H20	006874-28-8	58
5	2-Octene, 2,6-dimethyl-	140	C10H20	004057-42-5	53





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

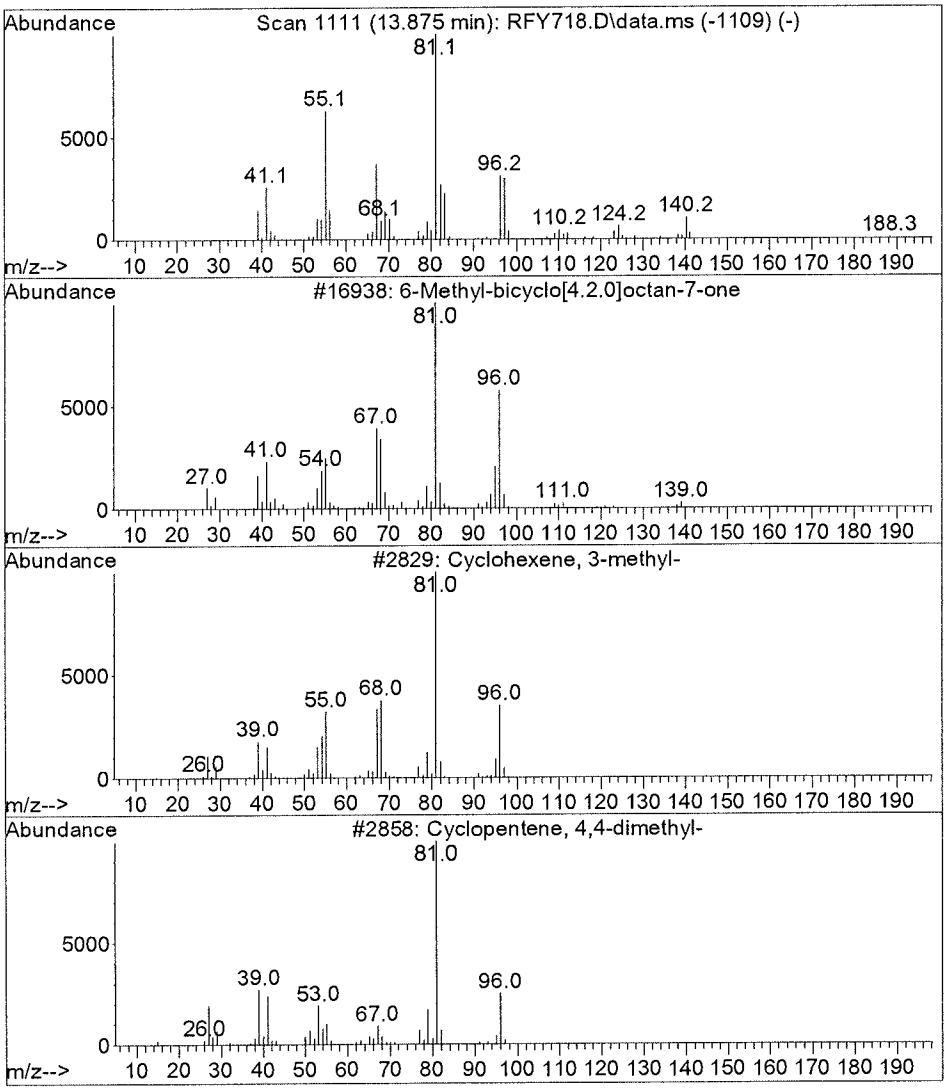
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

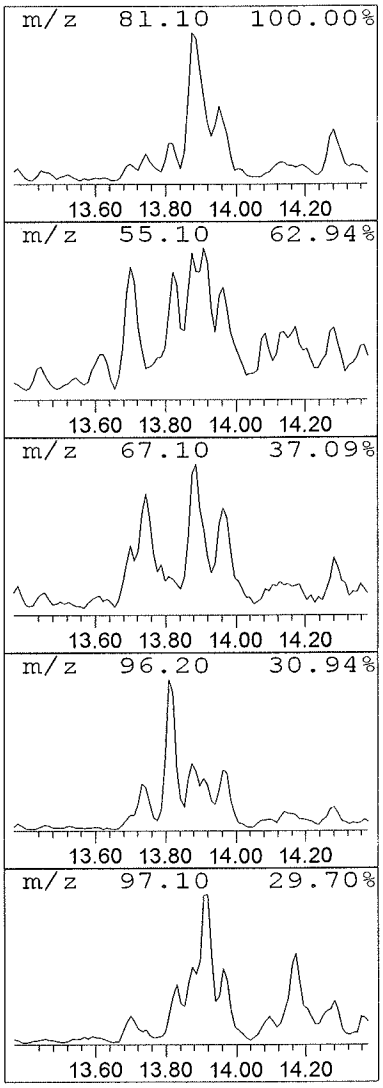
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 8 6-Methyl-bicyclo[4.2.0]octa... Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.875	13.36 ug/l	814346	CHLOROBENZENE-D5	12.513

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	6-Methyl-bicyclo[4.2.0]octan-7-one	138	C9H14O	1000193-87-2	47
2	Cyclohexene, 3-methyl-	96	C7H12	000591-48-0	47
3	Cyclopentene, 4,4-dimethyl-	96	C7H12	019037-72-0	43
4	2,4-Hexadiene, 2-methyl-	96	C7H12	028823-41-8	43
5	Cyclohexene, 1-ethyl-	110	C8H14	001453-24-3	43





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

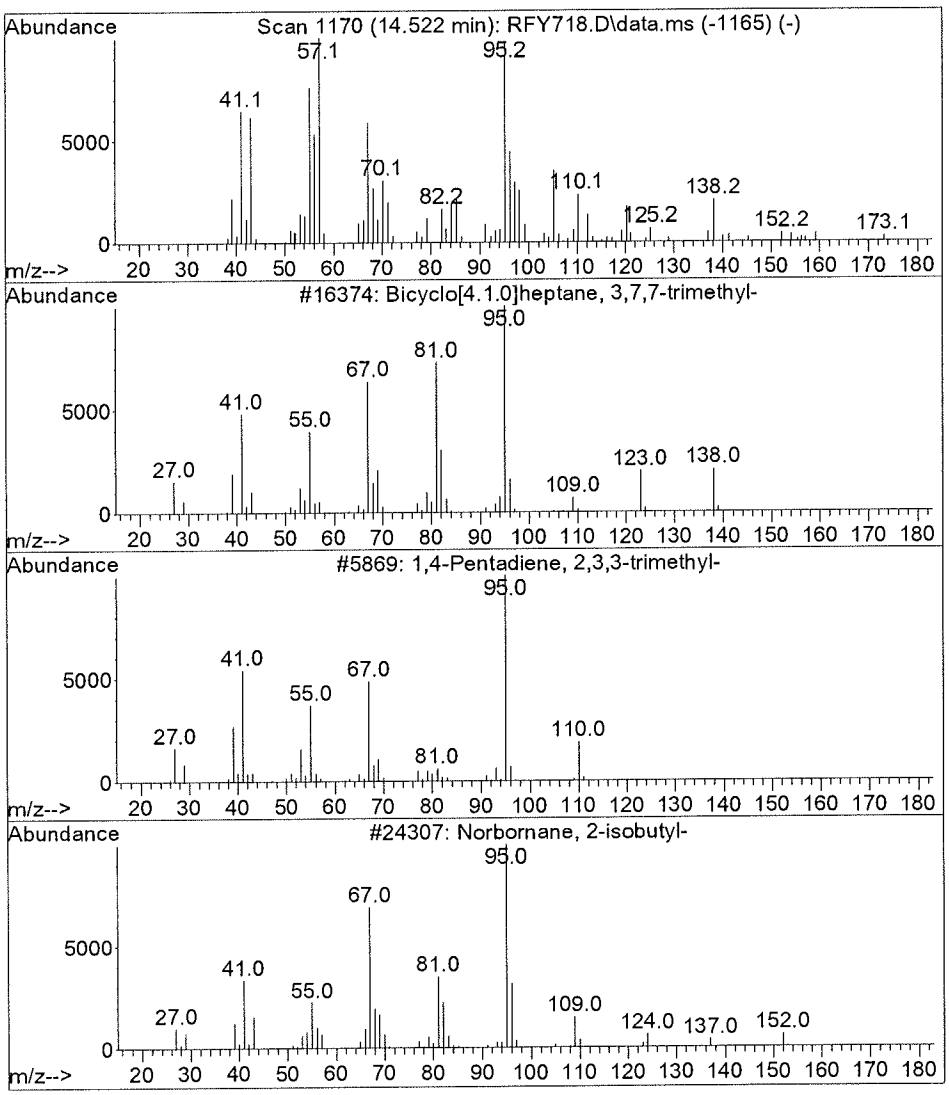
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

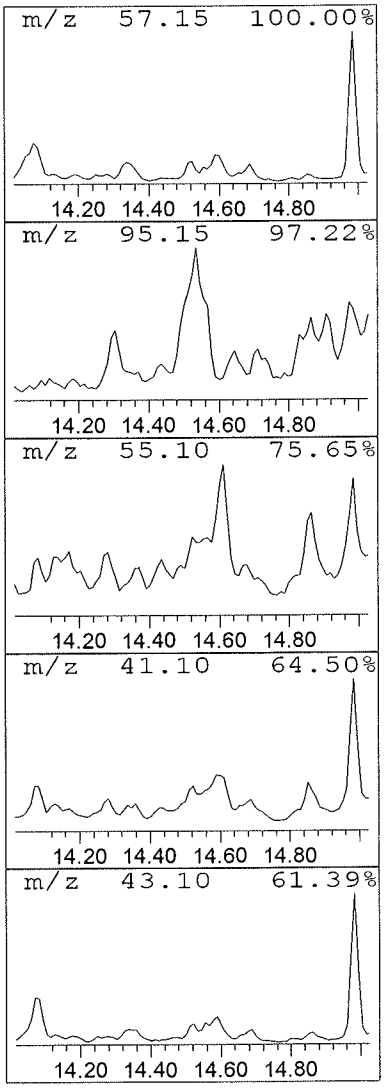
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 9 Bicyclo[4.1.0]heptane, 3,7,... Concentration Rank 20

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.523	11.32 ug/l	539393	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Bicyclo[4.1.0]heptane, 3,7,7-tri...	138	C10H18	000554-59-6	38
2	1,4-Pentadiene, 2,3,3-trimethyl-	110	C8H14	000756-02-5	38
3	Norbornane, 2-isobutyl-	152	C11H20	018127-14-5	38
4	trans-3,5-Dimethylcyclohexene	110	C8H14	056021-63-7	38
5	Cyclohexene, 3,5-dimethyl-	110	C8H14	000823-17-6	38





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

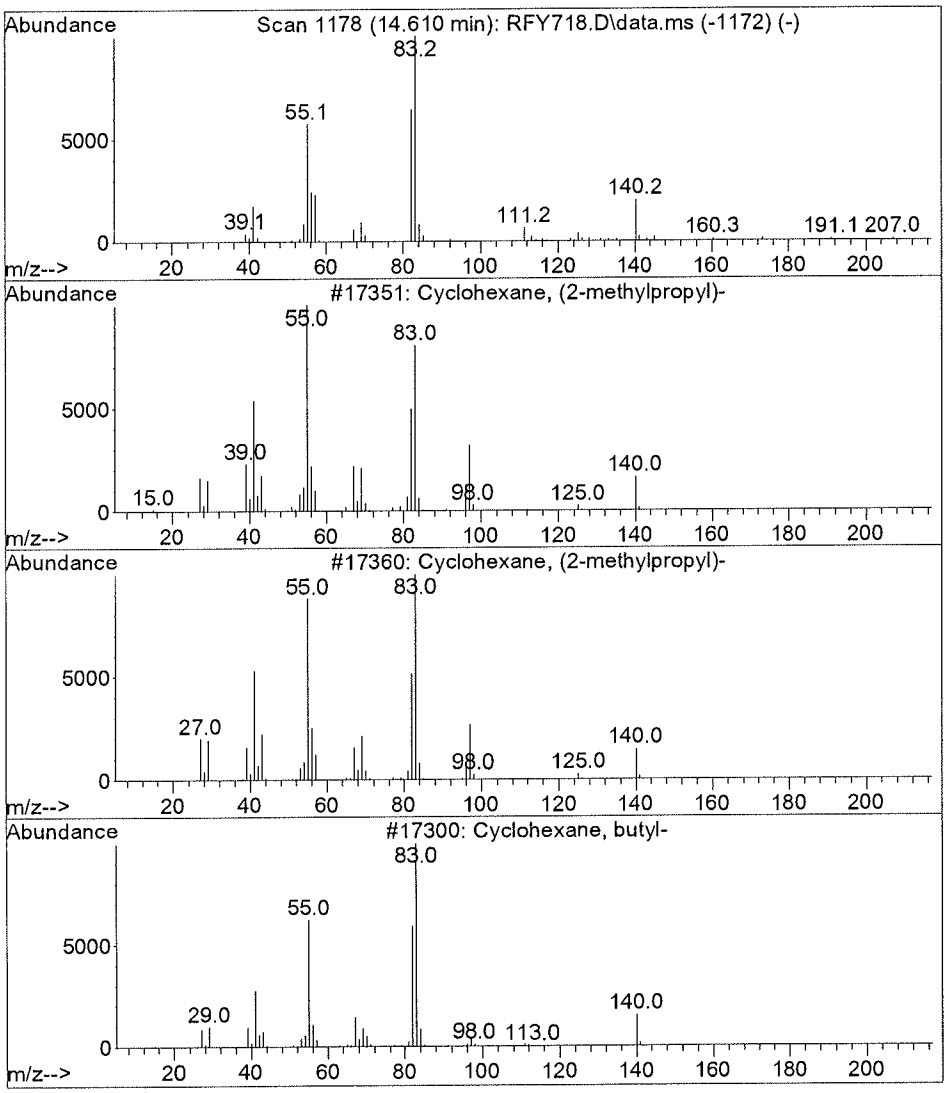
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

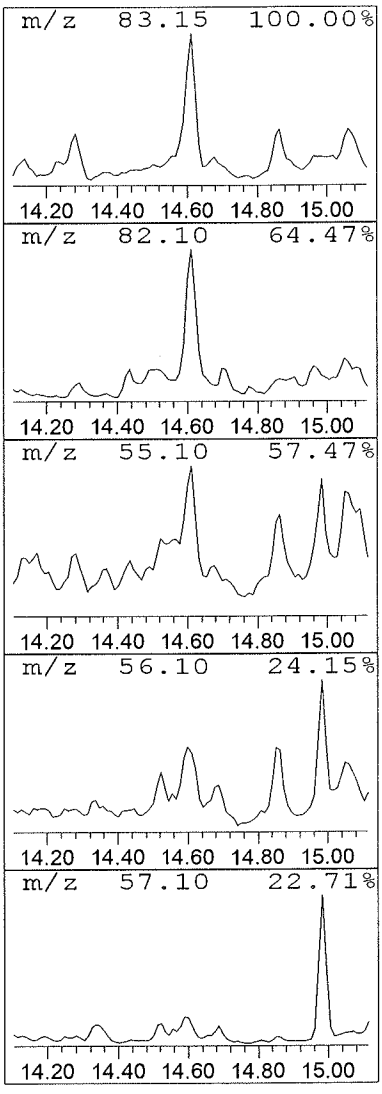
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 10 Cyclohexane, (2-methylpropyl)- Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.610	16.81 ug/l	801206	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, (2-methylpropyl)-	140	C10H20	001678-98-4	80
2	Cyclohexane, (2-methylpropyl)-	140	C10H20	001678-98-4	80
3	Cyclohexane, butyl-	140	C10H20	001678-93-9	72
4	Cyclohexane, butyl-	140	C10H20	001678-93-9	64
5	N-Carboxy-1-[4-chlorophenyl]-2-[...	295	C15H18ClNO3	058158-38-6	59





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

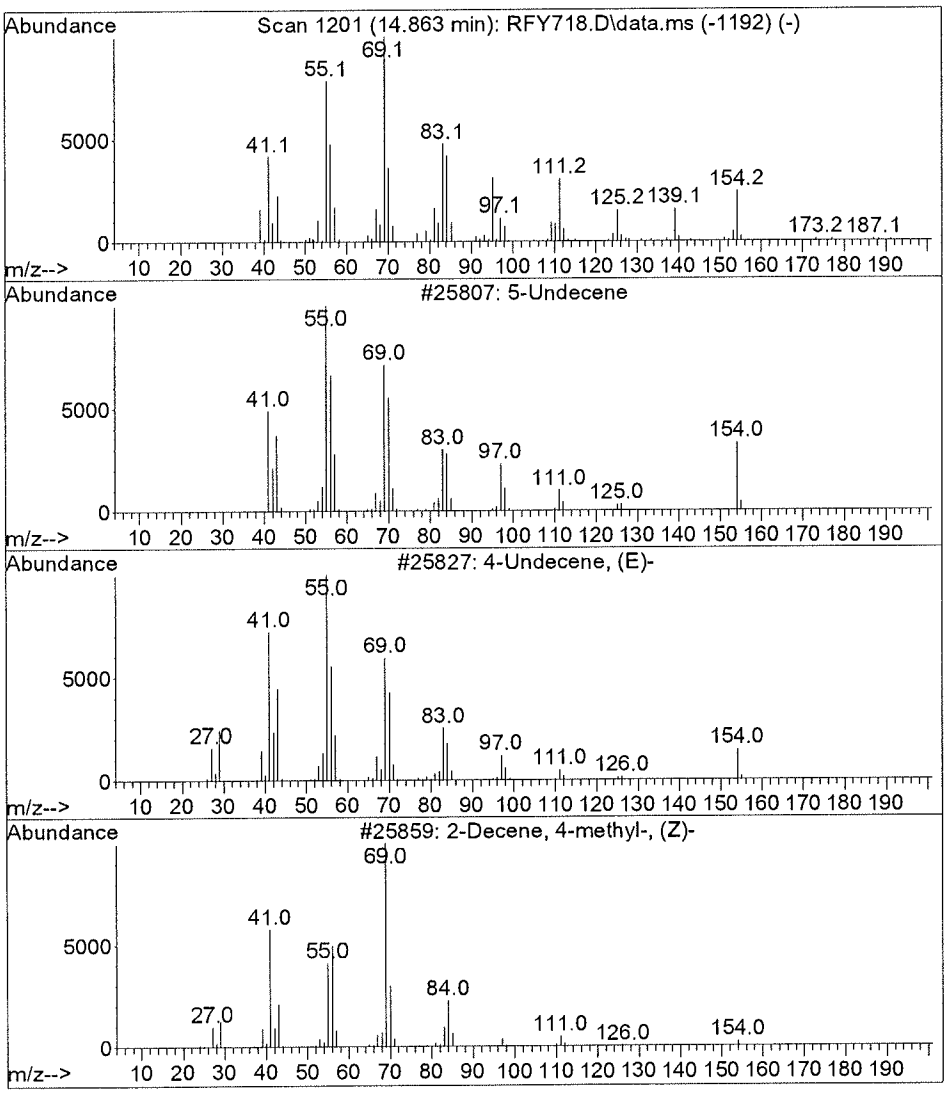
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

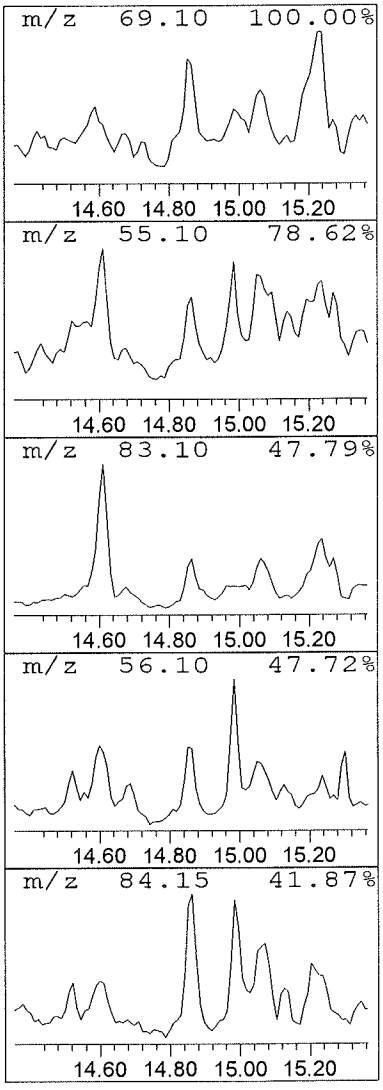
****

Peak Number 11 5-Undecene Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.863	15.49 ug/l	737909	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	5-Undecene	154	C11H22	004941-53-1	72
2	4-Undecene, (E)-	154	C11H22	000693-62-9	64
3	2-Decene, 4-methyl-, (Z)-	154	C11H22	074630-30-1	58
4	Nonane, 2-methyl-3-methylene-	154	C11H22	055499-08-6	50
5	Cyclopentane, (2-methylpropyl)-	126	C9H18	003788-32-7	49





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

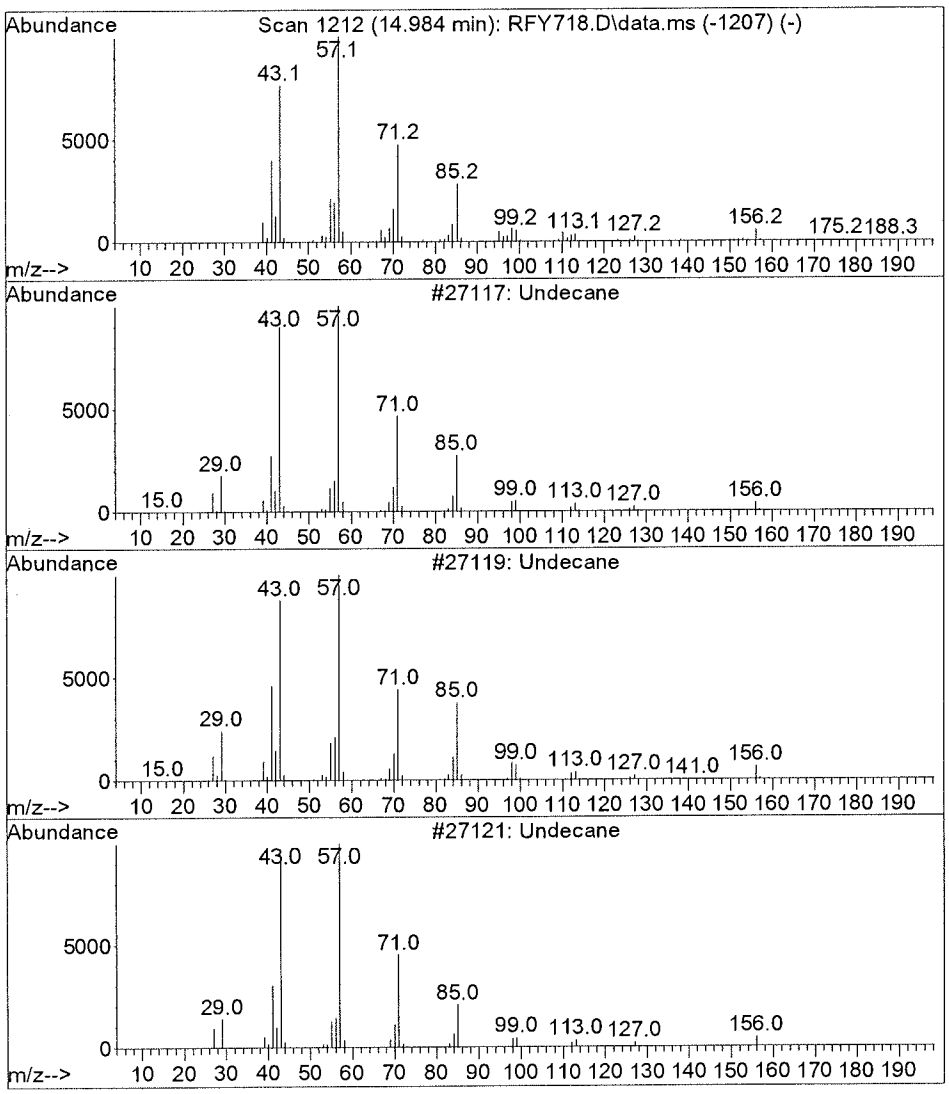
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

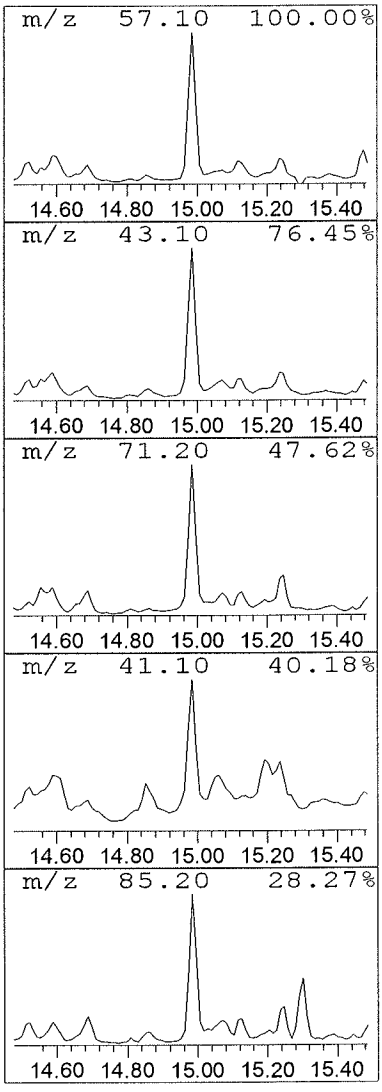
****

Peak Number 12 Undecane Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.984	20.97 ug/l	999235	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane	156	C11H24	001120-21-4	94
2	Undecane	156	C11H24	001120-21-4	93
3	Undecane	156	C11H24	001120-21-4	90
4	Decane	142	C10H22	000124-18-5	80
5	Tetradecane	198	C14H30	000629-59-4	80





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Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

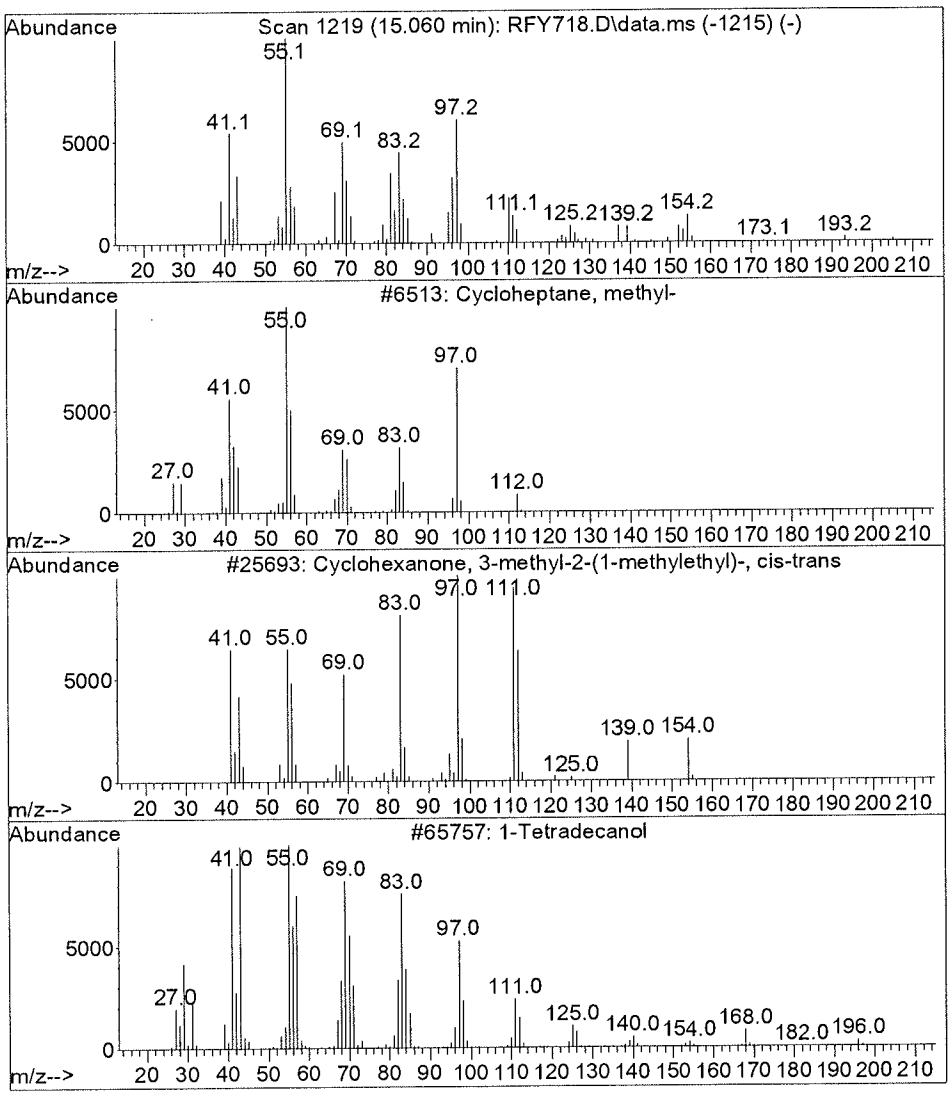
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

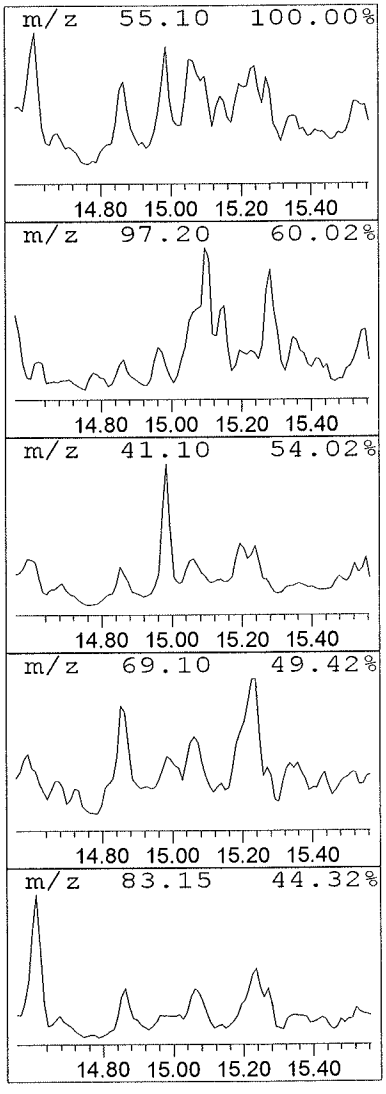
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 13 Cycloheptane, methyl- Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.060	14.71 ug/l	700749	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cycloheptane, methyl-	112	C8H16	004126-78-7	53
2	Cyclohexanone, 3-methyl-2-(1-met...	154	C10H18O	028357-23-5	49
3	1-Tetradecanol	214	C14H30O	000112-72-1	49
4	1-Tridecene	182	C13H26	002437-56-1	49
5	Hexadecen-1-ol, trans-9-	240	C16H32O	064437-47-4	46





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

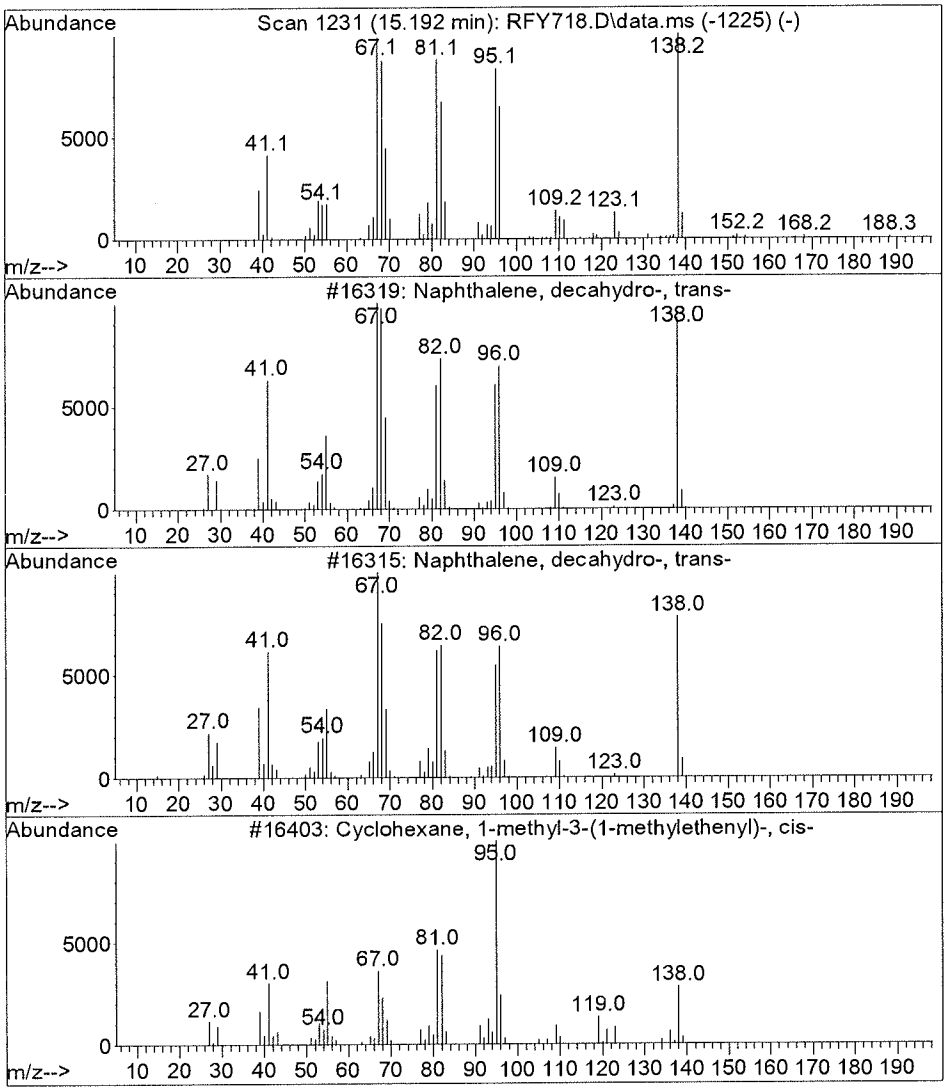
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

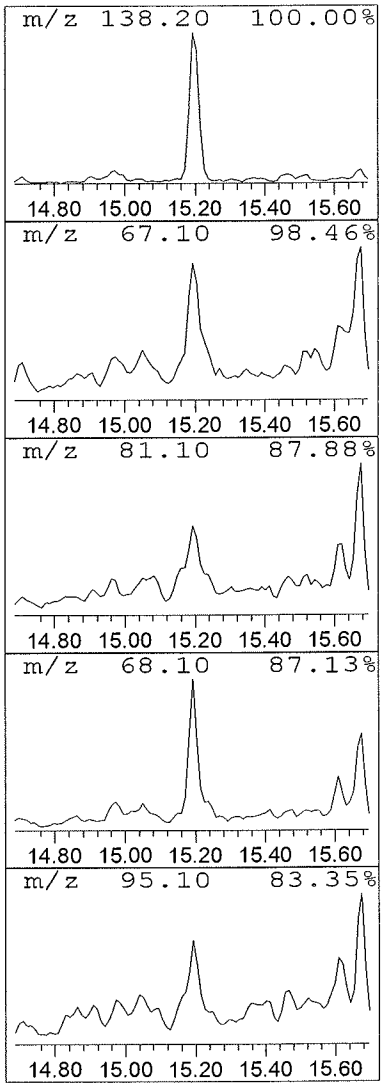
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 14 Naphthalene, decahydro-, tr... Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.192	26.70 ug/l	1272170	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Naphthalene, decahydro-, trans-	138	C10H18	000493-02-7	96
2	Naphthalene, decahydro-, trans-	138	C10H18	000493-02-7	95
3	Cyclohexane, 1-methyl-3-(1-methy...	138	C10H18	024399-15-3	91
4	Naphthalene, decahydro-, trans-	138	C10H18	000493-02-7	90
5	Bicyclo[4.1.0]heptane, 3,7,7-tri...	138	C10H18	018968-23-5	86





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

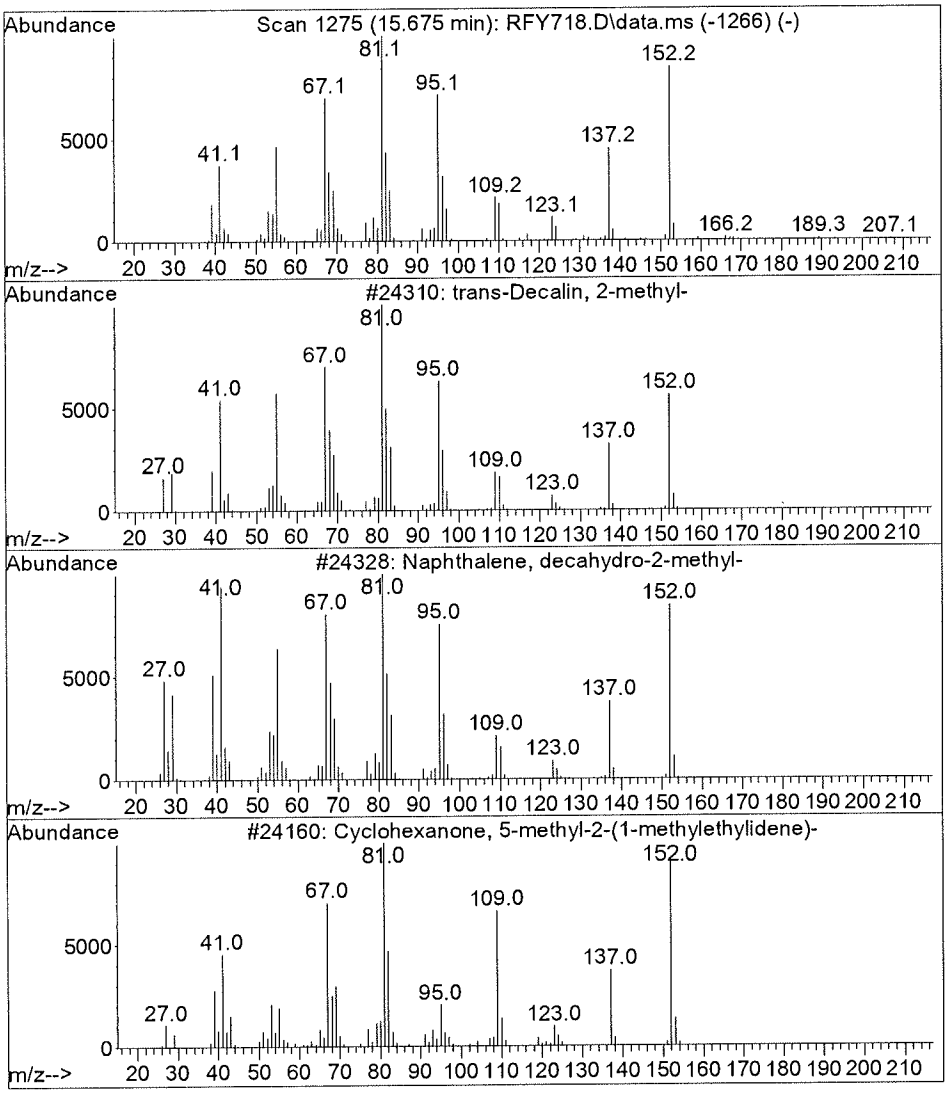
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

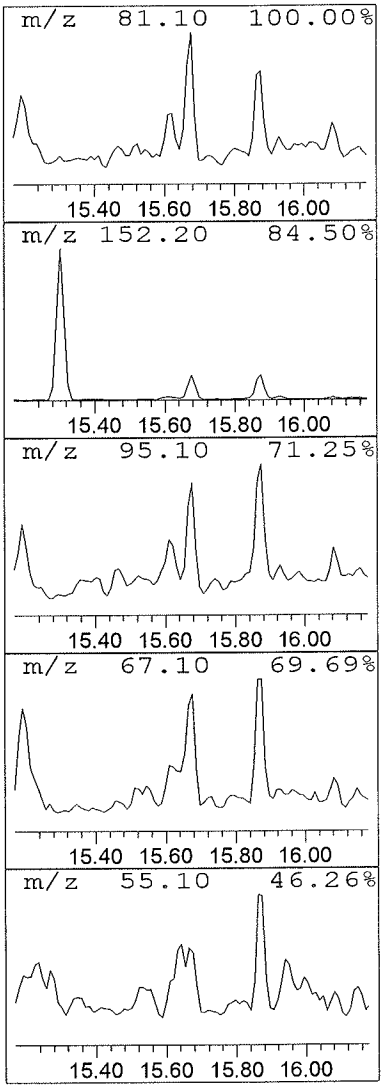
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 15 trans-Decalin, 2-methyl- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.675	27.95 ug/l	1331840	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	trans-Decalin, 2-methyl-	152	C11H20	1000152-47-3	97
2	Naphthalene, decahydro-2-methyl-	152	C11H20	002958-76-1	95
3	Cyclohexanone, 5-methyl-2-(1-met...	152	C10H16O	015932-80-6	81
4	Cyclohexanone, 5-methyl-2-(1-met...	152	C10H16O	015932-80-6	76
5	Cyclohexane, 1-methyl-4-(1-methy...	138	C10H18	001124-25-0	60





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

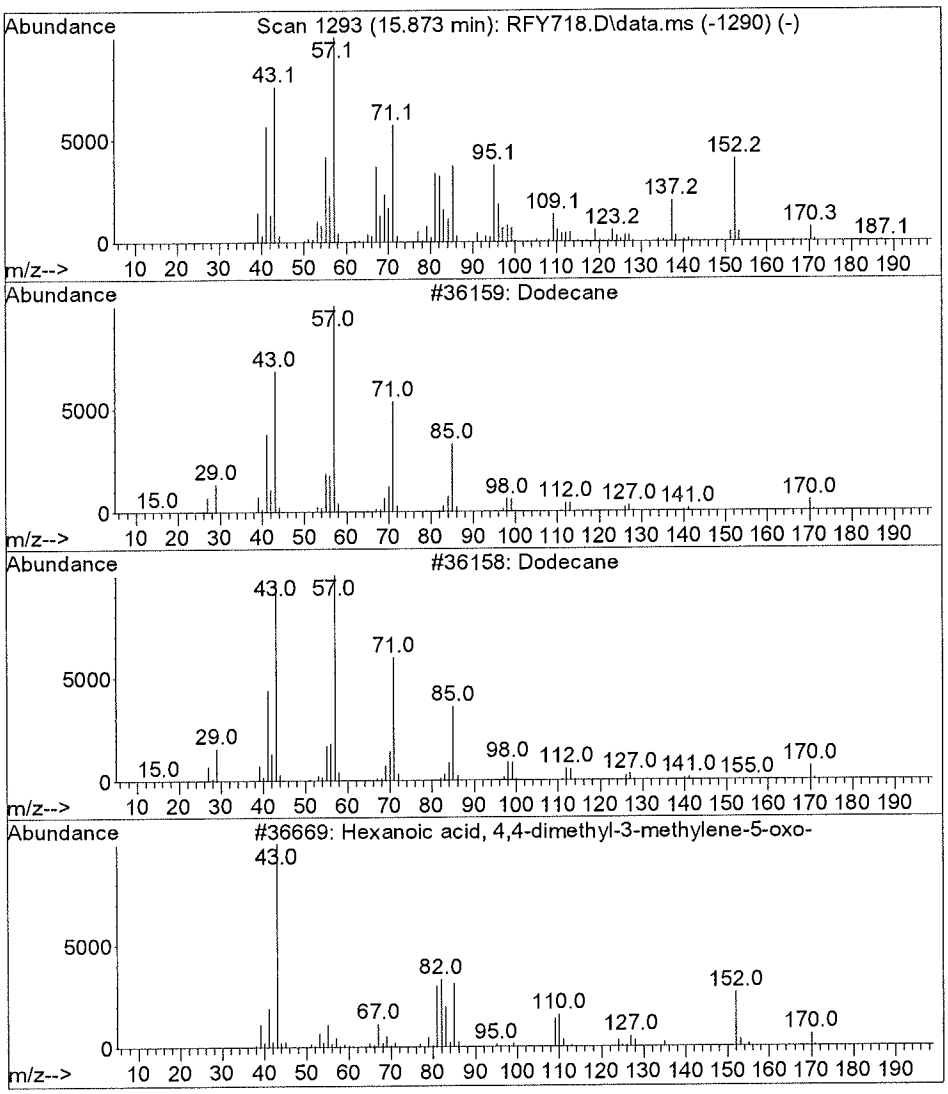
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

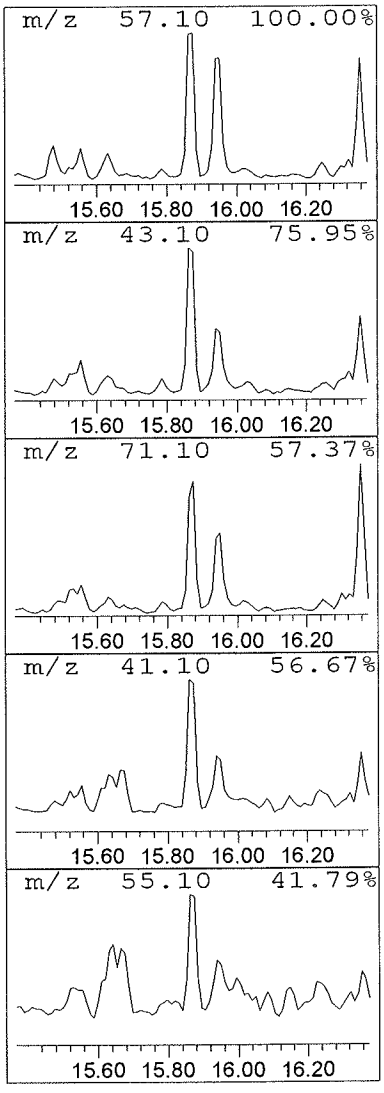
****

Peak Number 16 Dodecane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.873	29.44 ug/l	1402910	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dodecane	170	C12H26	000112-40-3	92
2	Dodecane	170	C12H26	000112-40-3	74
3	Hexanoic acid, 4,4-dimethyl-3-me...	170	C9H14O3	006994-96-3	41
4	Dodecane	170	C12H26	000112-40-3	38
5	Dodecane	170	C12H26	000112-40-3	38





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

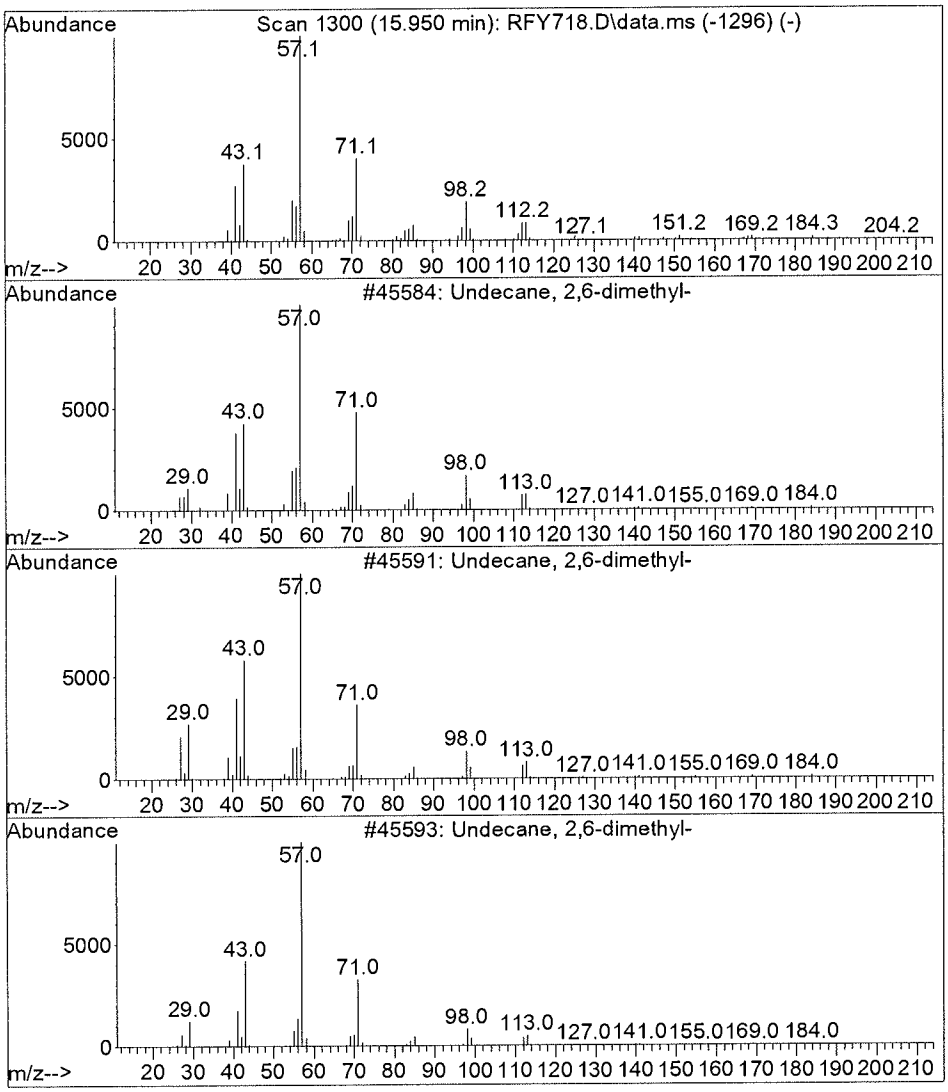
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

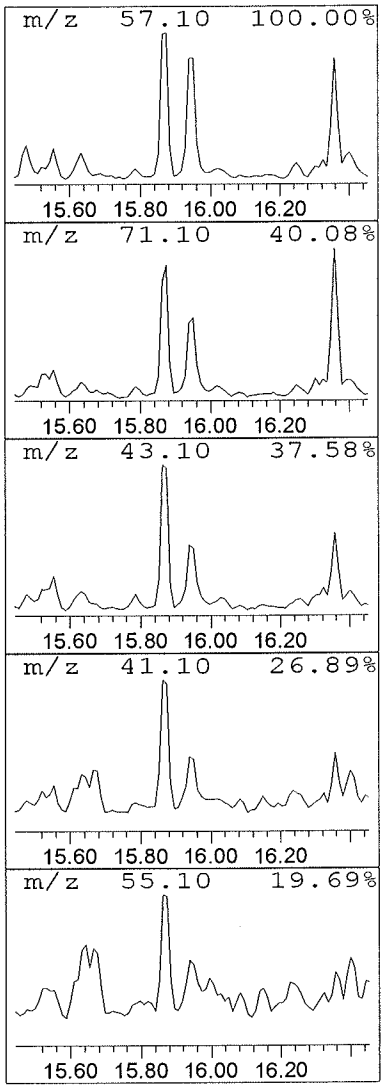
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 17 Undecane, 2,6-dimethyl- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.950	21.95 ug/l	1045780	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	96
2	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	91
3	Undecane, 2,6-dimethyl-	184	C13H28	017301-23-4	87
4	Dodecane, 6-methyl-	184	C13H28	006044-71-9	83
5	Undecane, 2,5-dimethyl-	184	C13H28	017301-22-3	81





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

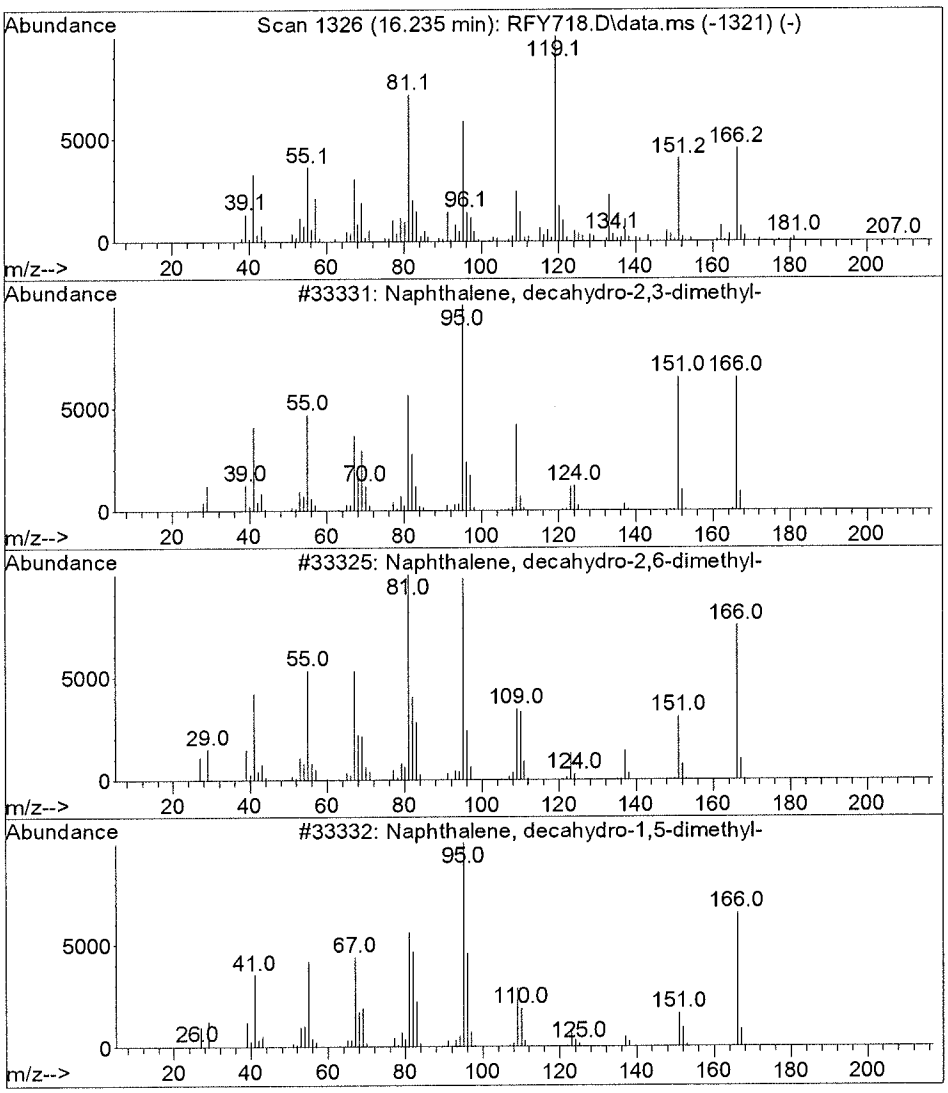
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

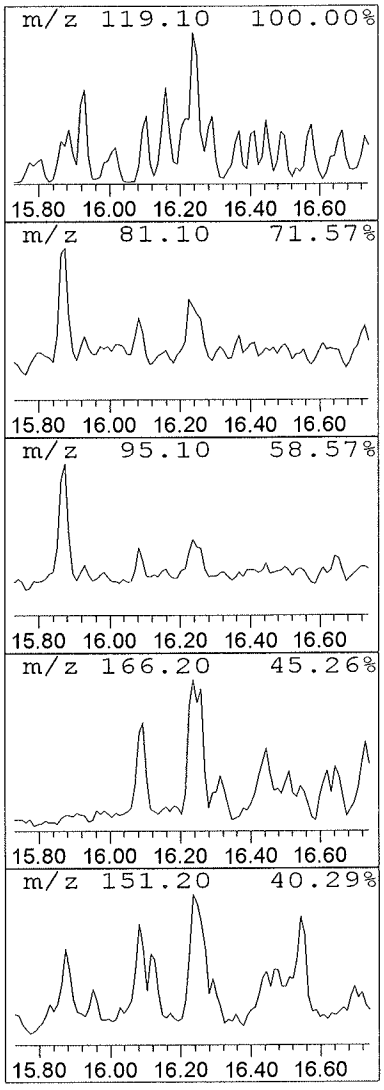
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 18 Naphthalene, decahydro-2,3-... Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.235	15.69 ug/l	747886	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Naphthalene, decahydro-2,3-dimet...	166	C12H22	001008-80-6	50
2	Naphthalene, decahydro-2,6-dimet...	166	C12H22	001618-22-0	42
3	Naphthalene, decahydro-1,5-dimet...	166	C12H22	066552-62-3	30
4	Tricyclo[4.3.1.1(3,8)]undecan-3-ol	166	C11H18O	014504-80-4	30
5	Disiloxane, 1,1,3,3-tetramethyl-	134	C4H14OSi2	003277-26-7	30





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

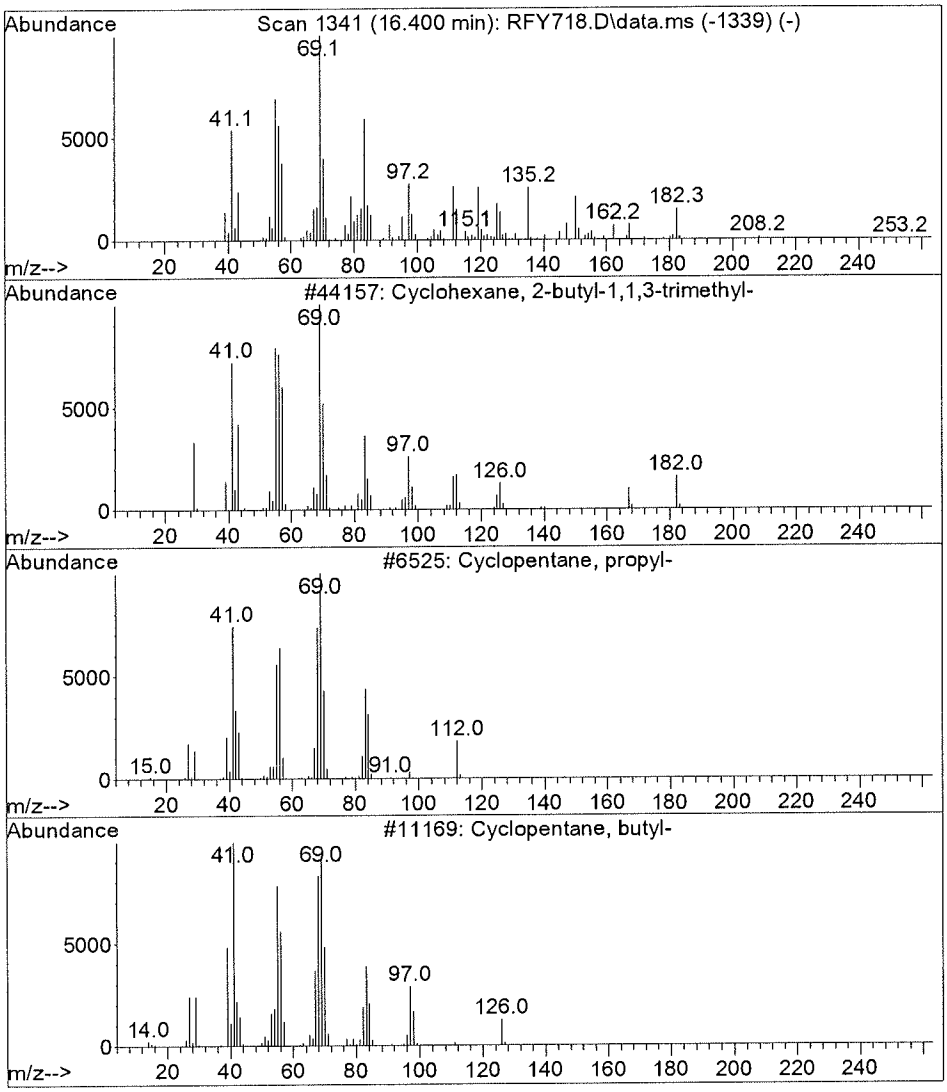
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

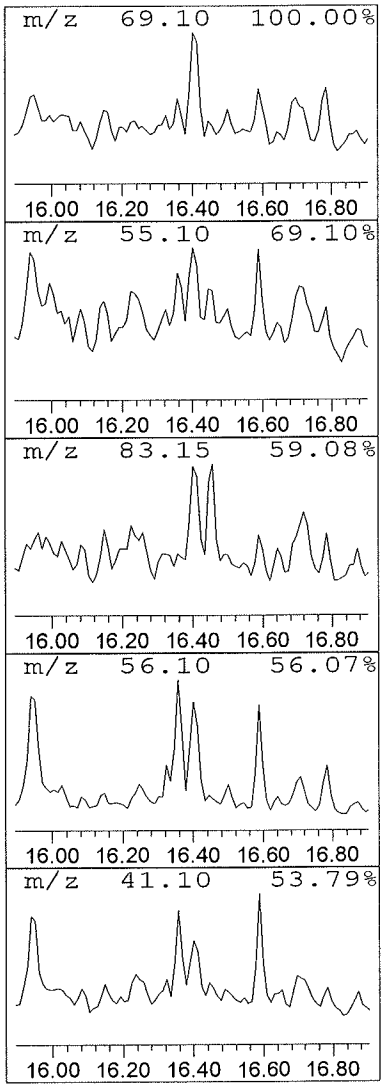
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 19 Cyclohexane, 2-butyl-1,1,3-... Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.400	21.98 ug/l	1047230	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 2-butyl-1,1,3-trime...	182	C13H26	054676-39-0	92
2	Cyclopentane, propyl-	112	C8H16	002040-96-2	58
3	Cyclopentane, butyl-	126	C9H18	002040-95-1	58
4	Cyclohexane, 2-butyl-1,1,3-trime...	182	C13H26	054676-39-0	46
5	Cyclopentane, propyl-	112	C8H16	002040-96-2	46





Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

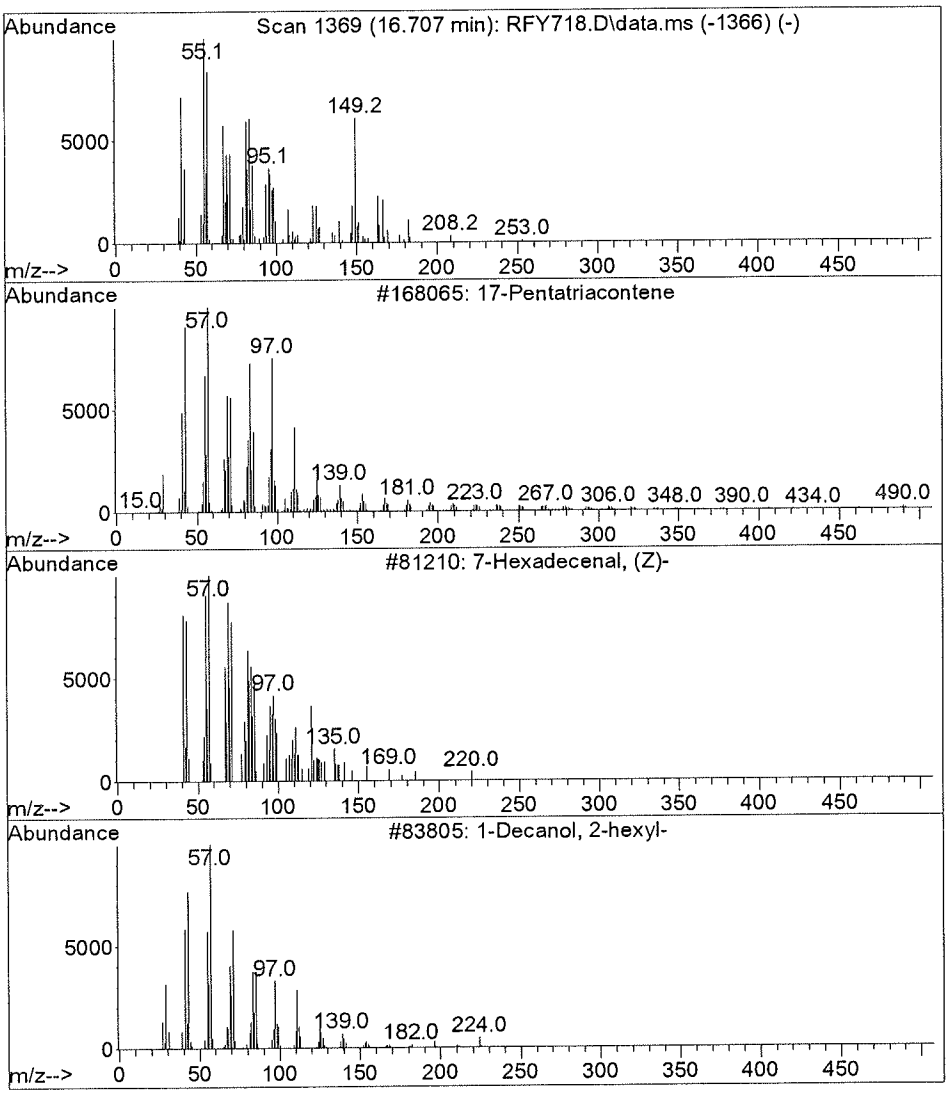
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

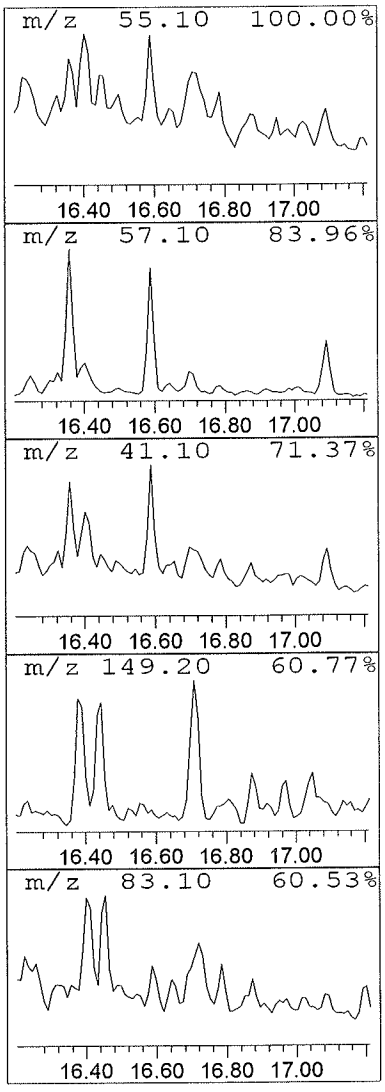
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 20 17-Pentatriacontene Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.707	12.09 ug/l	576013	1,2-DICHLOROBENZENE-D4	15.302

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	17-Pentatriacontene	491	C35H70	006971-40-0	45
2	7-Hexadecenal, (Z)-	238	C16H30O	056797-40-1	38
3	1-Decanol, 2-hexyl-	242	C16H34O	002425-77-6	35
4	1-Hentetracontanol	593	C41H84O	040710-42-7	35
5	Undecane, 5-cyclohexyl-	238	C17H34	013151-80-9	35





Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY718.D
Acq On : 30 Jun 2018 12:16 am
Operator : DNguye
Sample : 18F187-16I 100uL
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc
Butane, 2,2,3,3...	7.869	50.0	ug/l	2207810	1	8.868	2208470	50.0
Pentane, 2,3,4-...	9.669	21.0	ug/l	925635	1	8.868	2208470	50.0
Pentane, 2,3,4-...	9.845	30.2	ug/l	1334340	1	8.868	2208470	50.0
Hexane, 2,2,5-t...	10.197	17.2	ug/l	761562	1	8.868	2208470	50.0
Nonane	12.392	13.9	ug/l	849978	2	12.513	3047730	50.0
Cyclohexane, (1...	13.260	23.5	ug/l	1434510	2	12.513	3047730	50.0
Cyclohexane, 1,...	13.699	12.7	ug/l	773997	2	12.513	3047730	50.0
6-Methyl-bicycl...	13.875	13.4	ug/l	814346	2	12.513	3047730	50.0
Bicyclo[4.1.0]h...	14.523	11.3	ug/l	539393	3	15.302	2382650	50.0
Cyclohexane, (2...	14.610	16.8	ug/l	801206	3	15.302	2382650	50.0
5-Undecene	14.863	15.5	ug/l	737909	3	15.302	2382650	50.0
Undecane	14.984	21.0	ug/l	999235	3	15.302	2382650	50.0
Cycloheptane, m...	15.060	14.7	ug/l	700749	3	15.302	2382650	50.0
Naphthalene, de...	15.192	26.7	ug/l	1272170	3	15.302	2382650	50.0
trans-Decalin, ...	15.675	27.9	ug/l	1331840	3	15.302	2382650	50.0
Dodecane	15.873	29.4	ug/l	1402910	3	15.302	2382650	50.0
Undecane, 2,6-d...	15.950	21.9	ug/l	1045780	3	15.302	2382650	50.0
Naphthalene, de...	16.235	15.7	ug/l	747886	3	15.302	2382650	50.0
Cyclohexane, 2-...	16.400	22.0	ug/l	1047230	3	15.302	2382650	50.0
17-Pentatriacon...	16.707	12.1	ug/l	576013	3	15.302	2382650	50.0

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL	Date Collected: 06/23/18
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/30/18 00:41
Sample ID: 18Q2DP009-IDW-S001	Date Analyzed: 06/30/18 00:41
Lab Samp ID: F187-17I	Dilution Factor: 66
Lab File ID: RFY719	Matrix : SOIL
Ext Btch ID: VMF5F28	% Moisture : 8.1
Calib. Ref.: RDY199	Instrument ID : TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.36	0.036	0.072
1,1,1-TRICHLOROETHANE	ND	0.36	0.036	0.072
1,1,2,2-TETRACHLOROETHANE	ND	0.36	0.036	0.072
1,1,2-TRICHLOROETHANE	ND	0.36	0.036	0.072
1,1-DICHLOROETHANE	ND	0.36	0.036	0.072
1,1-DICHLOROETHENE	ND	0.36	0.036	0.072
1,1-DICHLOROPROPENE	ND	0.36	0.036	0.072
1,2,3-TRICHLOROBENZENE	ND	0.36	0.072	0.14
1,2,3-TRICHLOROPROPANE	ND	0.36	0.072	0.14
1,2,4-TRICHLOROBENZENE	ND	0.36	0.072	0.14
1,2,4-TRIMETHYLBENZENE	ND	0.36	0.039	0.14
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.36	0.072	0.14
1,2-DIBROMOETHANE	ND	0.36	0.036	0.072
1,2-DICHLOROBENZENE	ND	0.36	0.036	0.072
1,2-DICHLOROETHANE	ND	0.36	0.036	0.072
1,2-DICHLOROPROPANE	ND	0.36	0.036	0.072
1,3,5-TRIMETHYLBENZENE	ND	0.36	0.042	0.14
1,3-DICHLOROBENZENE	ND	0.36	0.037	0.072
1,3-DICHLOROPROPANE	ND	0.36	0.036	0.072
1,4-DICHLOROBENZENE	ND	0.36	0.036	0.072
2,2-DICHLOROPROPANE	ND	0.36	0.072	0.14
2-BUTANONE	ND	0.72	0.18	0.36
2-CHLOROTOLUENE	ND	0.36	0.059	0.072
2-HEXANONE	ND	0.72	0.21	0.36
4-CHLOROTOLUENE	ND	0.36	0.048	0.072
ACETONE	ND	0.72	0.22	0.36
BENZENE	0.091J	0.36	0.036	0.072
BROMOBENZENE	ND	0.36	0.036	0.072
BROMOCHLOROMETHANE	ND	0.36	0.036	0.072
BROMODICHLOROMETHANE	ND	0.36	0.036	0.072
BROMOFORM	ND	0.36	0.072	0.14
BROMOMETHANE	ND	0.72	0.13	0.14
CARBON DISULFIDE	ND	0.36	0.036	0.072
CARBON TETRACHLORIDE	ND	0.36	0.039	0.072
CHLOROBENZENE	ND	0.36	0.036	0.072
CHLOROETHANE	ND	0.36	0.093	0.14
CHLOROFORM	ND	0.36	0.036	0.072
CHLOROMETHANE	ND	0.36	0.072	0.14
CIS-1,2-DICHLOROETHYLENE	ND	0.36	0.036	0.072
CIS-1,3-DICHLOROPROPENE	ND	0.36	0.036	0.072
CYCLOHEXANE	ND	0.36	0.086	0.14
DIBROMOCHLOROMETHANE	ND	0.36	0.036	0.072
DIBROMOMETHANE	ND	0.36	0.036	0.072
DICHLORODIFLUOROMETHANE	ND	0.36	0.086	0.14
ETHYLBENZENE	ND	0.36	0.036	0.072
HEXACHLOROBUTADIENE	ND	0.36	0.072	0.14
ISOPROPYLBENZENE	ND	0.36	0.046	0.14
METHYLENE CHLORIDE	ND	0.72	0.14	0.36
M,P-XYLENE	ND	0.36	0.072	0.14
4-METHYL-2-PENTANONE	ND	0.72	0.20	0.36
TERT-BUTYL METHYL ETHER	ND	0.36	0.036	0.072
NAPHTHALENE	ND	0.36	0.072	0.14
N-BUTYLBENZENE	ND	0.36	0.050	0.072
N-PROPYLBENZENE	ND	0.36	0.047	0.072
O-XYLENE	ND	0.36	0.036	0.072
P-ISOPROPYLTOLUENE	ND	0.36	0.045	0.072
SEC-BUTYLBENZENE	ND	0.36	0.048	0.072
STYRENE	ND	0.36	0.036	0.072
TERT-BUTYLBENZENE	ND	0.36	0.045	0.072
TETRACHLOROETHENE	ND	0.36	0.036	0.072
TOLUENE	0.062J	0.36	0.036	0.072
TRANS-1,2-DCE	ND	0.36	0.036	0.072
TRANS-1,3-DICHLOROPROPENE	ND	0.36	0.036	0.072
TCE	ND	0.36	0.036	0.072
TRICHLOROFLUOROMETHANE	ND	0.36	0.079	0.14
TRICHLOROTRIFLUOROETHANE	ND	0.36	0.072	0.14
VINYL CHLORIDE	ND	0.36	0.10	0.14
VINYL ACETATE	ND	0.36	0.093	0.14
XYLENES, TOTAL	ND	0.36	0.036	0.072

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	4.00	3.591	111	71-136
4-BROMOFLUOROBENZENE	6.56	6.464	102	79-119
TOLUENE-D8	3.76	3.591	105	85-116
DIBROMOFLUOROMETHANE	3.80	3.591	106	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/30/18 00:41
Sample ID:	18Q2DP009-IDW-S001	Date Analyzed:	06/30/18 00:41
Lab Samp ID:	F187-17I	Dilution Factor:	66
Lab File ID:	RFY719	Matrix :	SOIL
Ext Btch ID:	VMF5F28	% Moisture :	8.1
Calib. Ref.:	RDY199	Instrument ID :	TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY719.D
Acq On : 30 Jun 2018 12:41 am
Operator : DNguye
Sample : 18F187-17I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 03 16:24:39 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

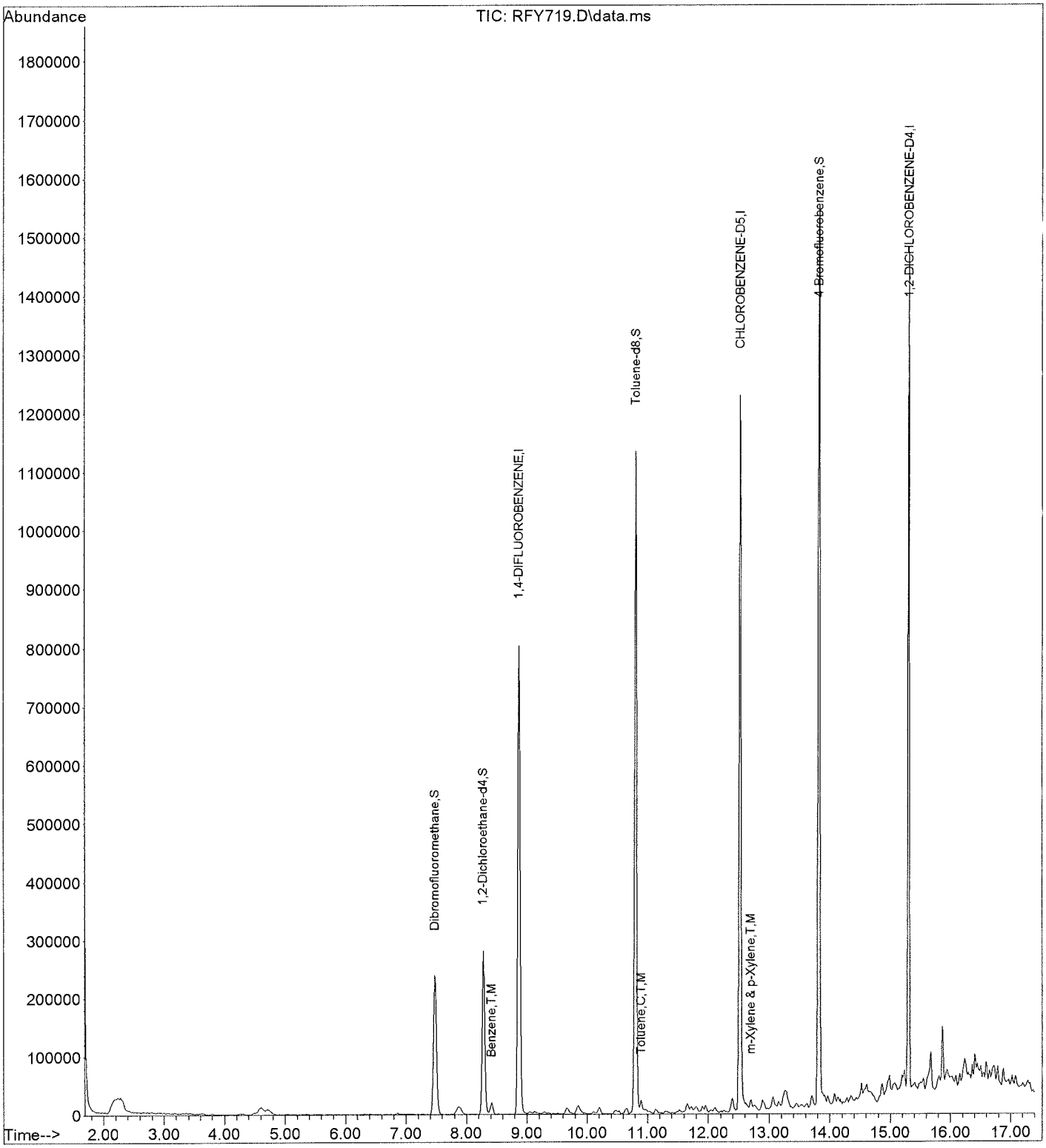
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	958122	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	811472	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	369614	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.473	111	269534	52.94	ug/l	0.00
Spiked Amount 50.000			Recovery =	105.88%		
45) 1,2-Dichloroethane-d4	8.275	65	295871	55.66	ug/l	0.00
Spiked Amount 50.000			Recovery =	111.32%		
59) Toluene-d8	10.800	98	967733	52.36	ug/l	0.00
Spiked Amount 50.000			Recovery =	104.72%		
81) 4-Bromofluorobenzene	13.809	95	651365	91.36	ug/l	0.00
Spiked Amount ~~50~~.000 90			Recovery =	~~182.72%~~ 101.5% MD 7.3.18		
Target Compounds						Qvalue
47) Benzene	8.418	78	25440	1.26	ug/L	95
61) Toluene	10.899	91	19553	0.86	ug/l	90
73) m-Xylene & p-Xylene	12.700	91	12642	0.62	ug/l	86

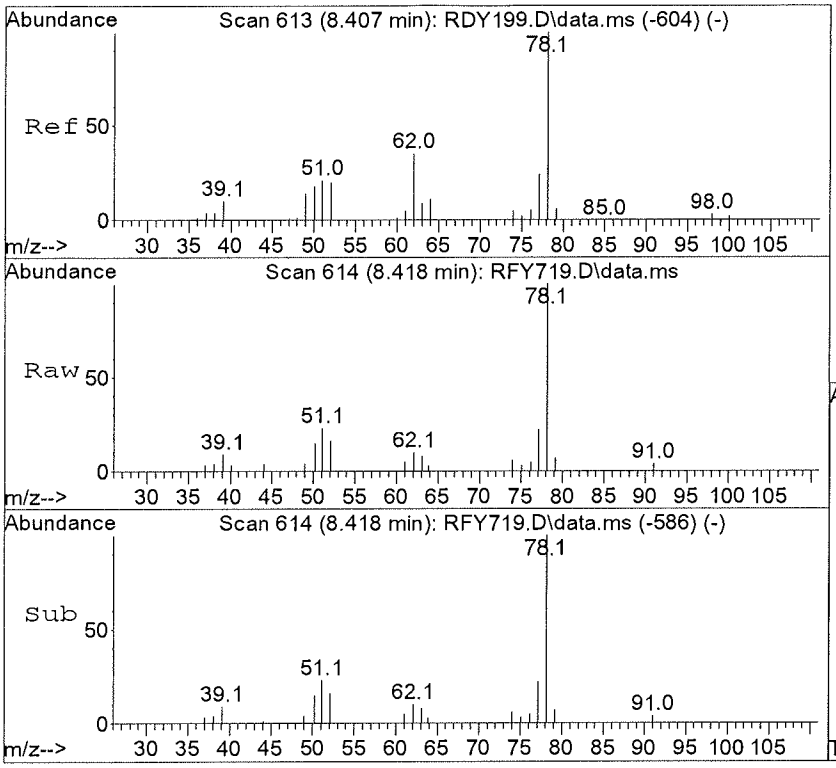
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY719.D
Acq On : 30 Jun 2018 12:41 am
Operator : DNguye
Sample : 18F187-17I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 03 16:24:39 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

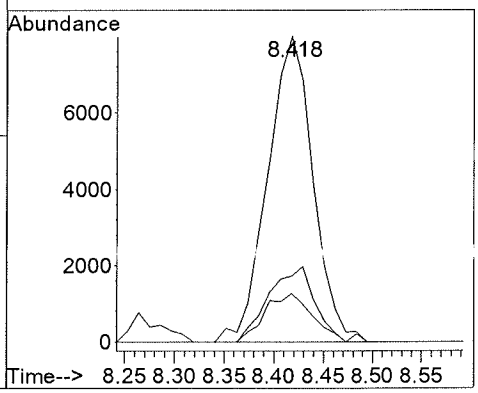


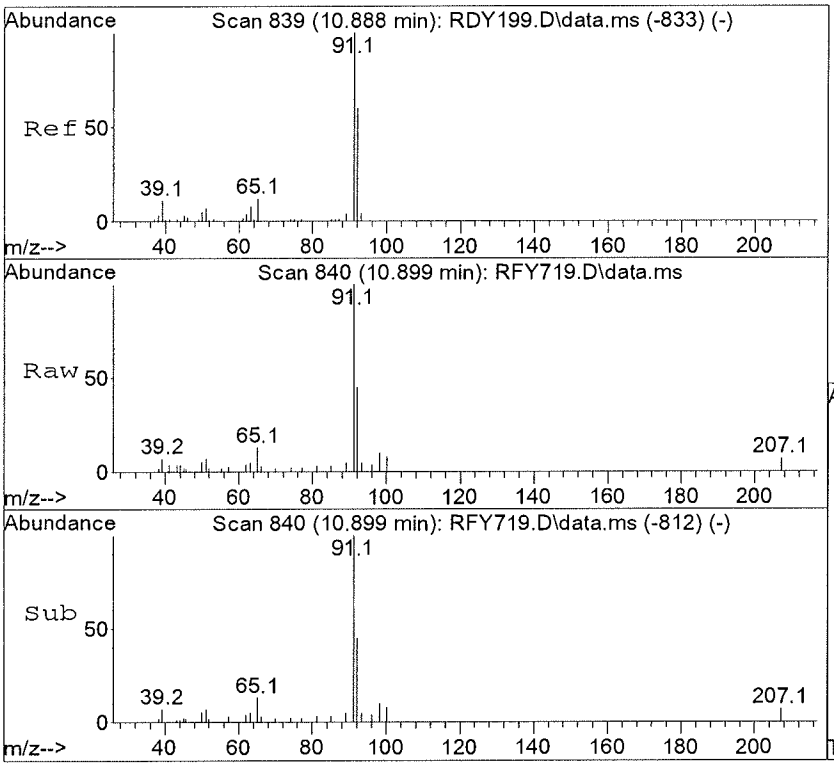


#47
Benzene
Concen: 1.26 ug/L
RT: 8.418 min Scan# 614
Delta R.T. 0.011 min
Lab File: RFY719.D
Acq: 30 Jun 2018 12:41 am

Tgt Ion: 78 Resp: 25440

Ion	Ratio	Lower	Upper
78	100		
77	25.4	0.0	53.7
52	16.4	0.0	49.8

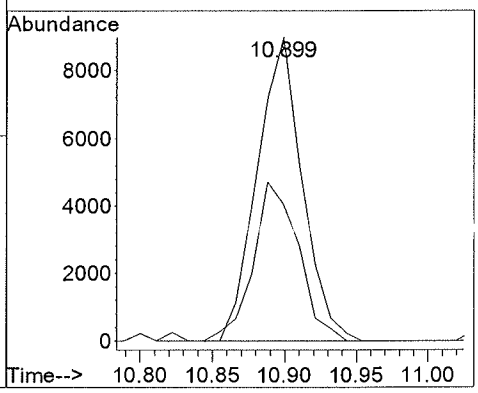


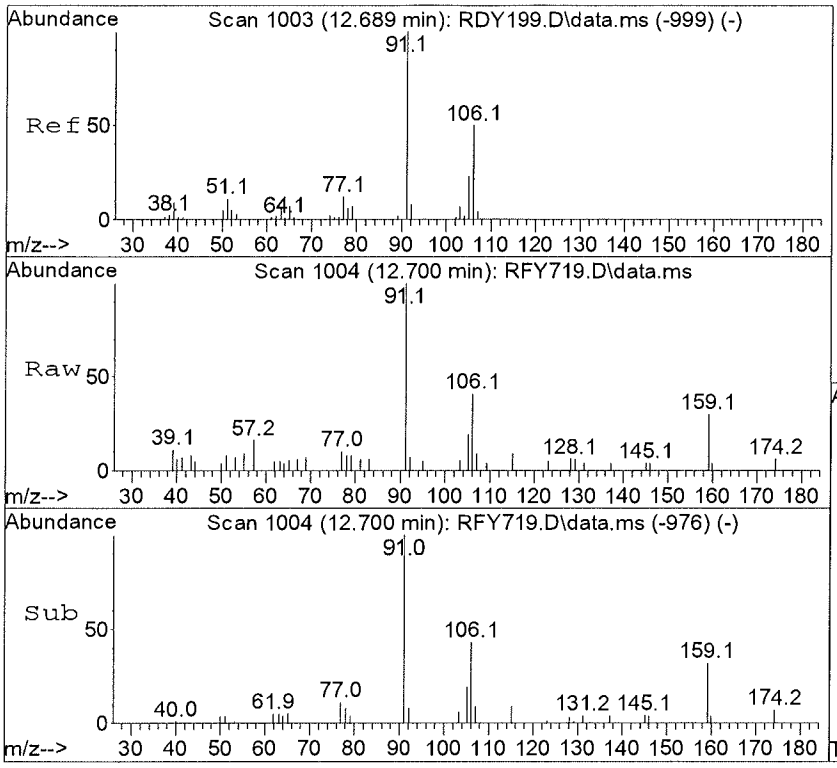


#61
Toluene
Concen: 0.86 ug/l
RT: 10.899 min Scan# 840
Delta R.T. 0.011 min
Lab File: RFY719.D
Acq: 30 Jun 2018 12:41 am

Tgt Ion: 91 Resp: 19553

Ion	Ratio	Lower	Upper
91	100		
92	52.3	29.6	89.6

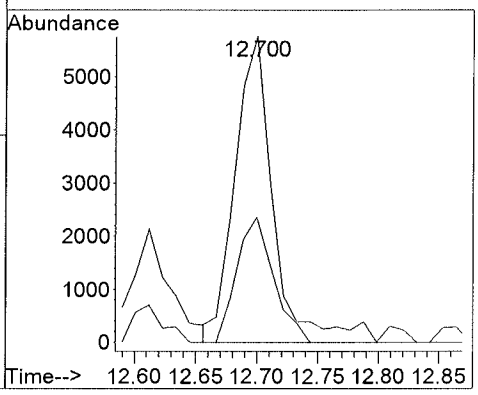




#73
m-Xylene & p-Xylene
Concen: 0.62 ug/l
RT: 12.700 min Scan# 1004
Delta R.T. 0.011 min
Lab File: RFY719.D
Acq: 30 Jun 2018 12:41 am

Tgt Ion: 91 Resp: 12642

Ion	Ratio	Lower	Upper
91	100		
106	39.3	19.0	79.0

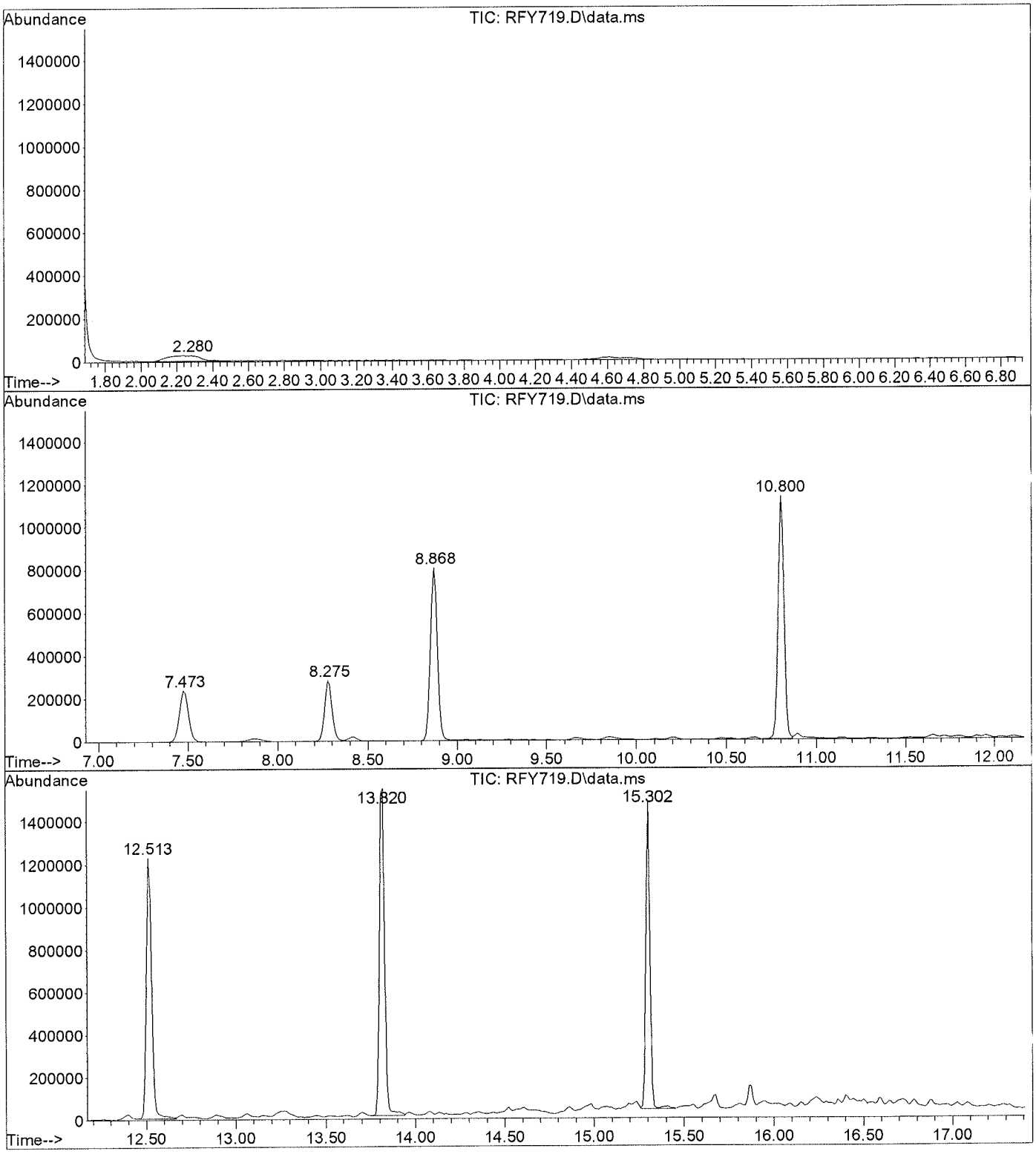


LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY719.D
Acq On : 30 Jun 2018 12:41 am
Operator : DNguye
Sample : 18F187-17I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY719.D
Acq On : 30 Jun 2018 12:41 am
Operator : DNguye
Sample : 18F187-17I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

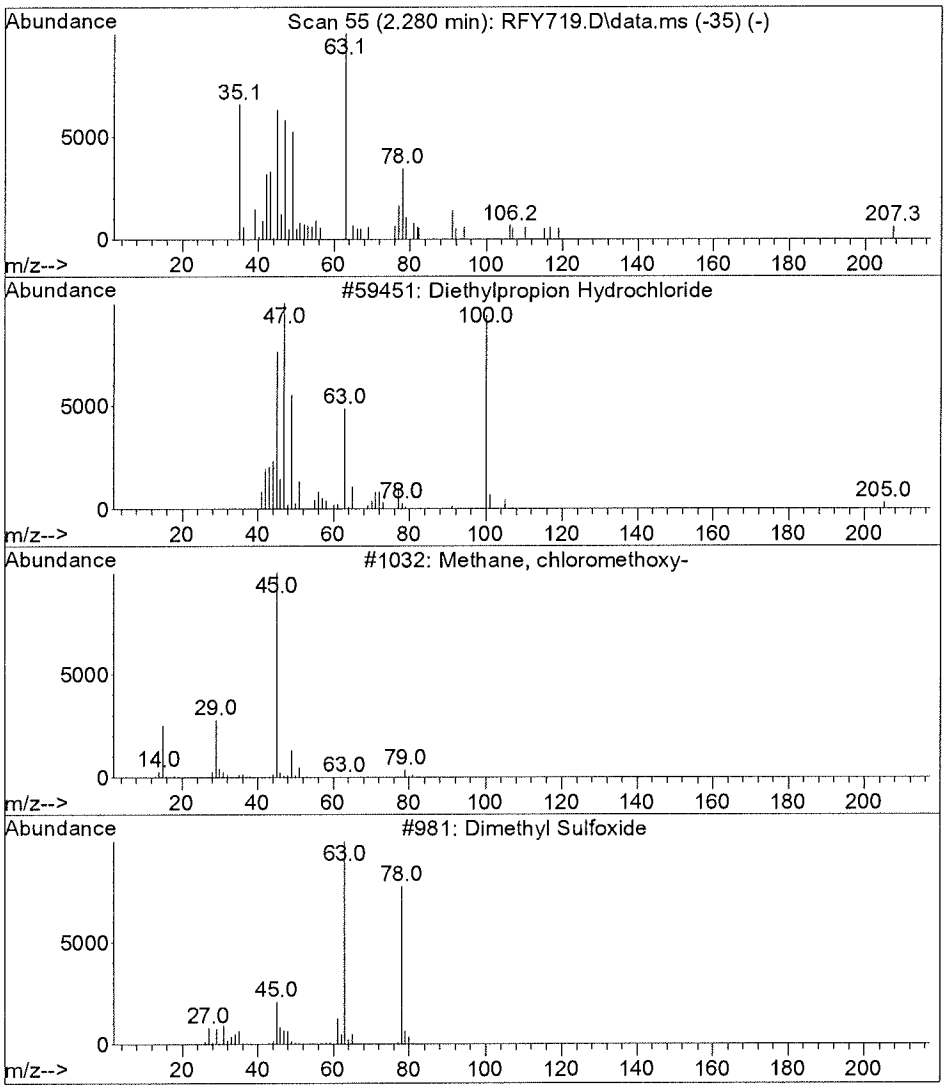
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

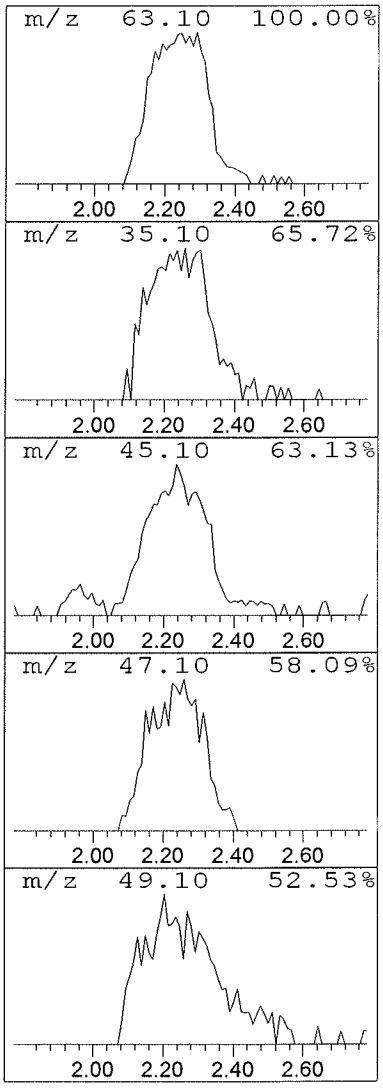
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

****
Peak Number 1 Diethylpropion Hydrochloride Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
2.280	7.98 ug/l	351503	1,4-DIFLUOROBENZENE	8.868

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diethylpropion Hydrochloride	205	C13H19NO	000134-80-5	10
2	Methane, chloromethoxy-	80	C2H5ClO	000107-30-2	9
3	Dimethyl Sulfoxide	78	C2H6OS	000067-68-5	9
4	Methane, chloromethoxy-	80	C2H5ClO	000107-30-2	9
5	Methane, bromochloro-	128	CH2BrCl	000074-97-5	9





LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY719.D
Acq On : 30 Jun 2018 12:41 am
Operator : DNguye
Sample : 18F187-17I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY719.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	2.280	35	55	75	rBV7	26735	351503	11.10%	2.376%
2	7.473	519	528	544	rBV	239007	842217	26.59%	5.693%
3	8.275	593	601	610	rBV	282210	834772	26.36%	5.642%
4	8.868	645	655	668	rBV	803951	2203380	69.57%	14.893%
5	10.800	822	831	837	rBV	1133984	2601727	82.15%	17.585%
6	12.513	981	987	1001	rBV	1224026	2542471	80.28%	17.184%
7	13.820	1100	1106	1117	rBV	1535874	3166941	100.00%	21.405%
8	15.302	1237	1241	1255	rVB	1438881	2252157	71.11%	15.222%

Sum of corrected areas: 14795168

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY719.D
Acq On : 30 Jun 2018 12:41 am
Operator : DNguye
Sample : 18F187-17I 100uL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Diethylpropion ...	2.280	8.0	ug/l	351503	1	8.868	2203380	50.0

QC SUMMARIES

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected	: NA
Project	: JBER TO075	Date Received	: 06/27/18
Batch No.	: 18F187	Date Extracted	: 06/27/18 11:41
Sample ID	: MBLK1S	Date Analyzed	: 06/27/18 11:41
Lab Samp ID	: VMF5F26B	Dilution Factor	: 50
Lab File ID	: RFY641	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: NA
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.25	0.025	0.050
1,1,1-TRICHLOROETHANE	ND	0.25	0.025	0.050
1,1,2,2-TETRACHLOROETHANE	ND	0.25	0.025	0.050
1,1,2-TRICHLOROETHANE	ND	0.25	0.025	0.050
1,1-DICHLOROETHANE	ND	0.25	0.025	0.050
1,1-DICHLOROETHENE	ND	0.25	0.025	0.050
1,1-DICHLOROPROPENE	ND	0.25	0.025	0.050
1,2,3-TRICHLOROBENZENE	ND	0.25	0.050	0.10
1,2,3-TRICHLOROPROPANE	ND	0.25	0.050	0.10
1,2,4-TRICHLOROBENZENE	ND	0.25	0.050	0.10
1,2,4-TRIMETHYLBENZENE	ND	0.25	0.028	0.10
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.25	0.050	0.10
1,2-DIBROMOETHANE	ND	0.25	0.025	0.050
1,2-DICHLOROBENZENE	ND	0.25	0.025	0.050
1,2-DICHLOROETHANE	ND	0.25	0.025	0.050
1,2-DICHLOROPROPANE	ND	0.25	0.025	0.050
1,3,5-TRIMETHYLBENZENE	ND	0.25	0.030	0.10
1,3-DICHLOROBENZENE	ND	0.25	0.026	0.050
1,3-DICHLOROPROPANE	ND	0.25	0.025	0.050
1,4-DICHLOROBENZENE	ND	0.25	0.025	0.050
2,2-DICHLOROPROPANE	ND	0.25	0.050	0.10
2-BUTANONE	ND	0.50	0.12	0.25
2-CHLOROTOLUENE	ND	0.25	0.041	0.050
2-HEXANONE	ND	0.50	0.15	0.25
4-CHLOROTOLUENE	ND	0.25	0.033	0.050
ACETONE	ND	0.50	0.15	0.25
BENZENE	ND	0.25	0.025	0.050
BROMOBENZENE	ND	0.25	0.025	0.050
BROMOCHLOROMETHANE	ND	0.25	0.025	0.050
BROMODICHLOROMETHANE	ND	0.25	0.025	0.050
BROMOFORM	ND	0.25	0.050	0.10
BROMOMETHANE	ND	0.50	0.090	0.10
CARBON DISULFIDE	ND	0.25	0.025	0.050
CARBON TETRACHLORIDE	ND	0.25	0.027	0.050
CHLOROBENZENE	ND	0.25	0.025	0.050
CHLOROETHANE	ND	0.25	0.065	0.10
CHLOROFORM	ND	0.25	0.025	0.050
CHLOROMETHANE	ND	0.25	0.050	0.10
CIS-1,2-DICHLOROETHYLENE	ND	0.25	0.025	0.050
CIS-1,3-DICHLOROPROPENE	ND	0.25	0.025	0.050
CYCLOHEXANE	ND	0.25	0.060	0.10
DIBROMOCHLOROMETHANE	ND	0.25	0.025	0.050
DIBROMOMETHANE	ND	0.25	0.025	0.050
DICHLORODIFLUOROMETHANE	ND	0.25	0.060	0.10
ETHYLBENZENE	ND	0.25	0.025	0.050
HEXACHLOROBUTADIENE	ND	0.25	0.050	0.10
ISOPROPYLBENZENE	ND	0.25	0.032	0.10
METHYLENE CHLORIDE	ND	0.50	0.10	0.25
M,P-XYLENE	ND	0.25	0.050	0.10
4-METHYL-2-PENTANONE	ND	0.50	0.14	0.25
TERT-BUTYL METHYL ETHER	ND	0.25	0.025	0.050
NAPHTHALENE	ND	0.25	0.050	0.10
N-BUTYLBENZENE	ND	0.25	0.035	0.050
N-PROPYLBENZENE	ND	0.25	0.033	0.050
O-XYLENE	ND	0.25	0.025	0.050
P-ISOPROPYLTOLUENE	ND	0.25	0.031	0.050
SEC-BUTYLBENZENE	ND	0.25	0.033	0.050
STYRENE	ND	0.25	0.025	0.050
TERT-BUTYLBENZENE	ND	0.25	0.031	0.050
TETRACHLOROETHENE	ND	0.25	0.025	0.050
TOLUENE	ND	0.25	0.025	0.050
TRANS-1,2-DCE	ND	0.25	0.025	0.050
TRANS-1,3-DICHLOROPROPENE	ND	0.25	0.025	0.050
TCE	ND	0.25	0.025	0.050
TRICHLOROFLUOROMETHANE	ND	0.25	0.055	0.10
TRICHLOROTRIFLUOROETHANE	ND	0.25	0.050	0.10
VINYL CHLORIDE	ND	0.25	0.070	0.10
VINYL ACETATE	ND	0.25	0.065	0.10
XYLENES, TOTAL	ND	0.25	0.025	0.050

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	2.53	2.500	101	71-136
4-BROMOFLUOROBENZENE	2.58	2.500	103	79-119
TOLUENE-D8	2.68	2.500	107	85-116
DIBROMOFLUOROMETHANE	2.51	2.500	100	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: NA
Project	: JBER TO075	Date Received	: 06/27/18
Batch No.	: 18F187	Date Extracted	: 06/27/18 11:41
Sample ID	: MBLK1S	Date Analyzed	: 06/27/18 11:41
Lab Samp ID	: VMF5F26B	Dilution Factor	: 50
Lab File ID	: RFY641	Matrix	: SOIL
Ext Btch ID	: VMF5F26	% Moisture	: NA
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: JBER TO075
BATCH NO.: 18F187
METHOD: SW5035A/8260B

MATRIX: SOIL % MOISTURE: NA

DILUTION FACTOR:	50	50	50
SAMPLE ID:	MBLK1S		
LAB SAMP ID:	VMF5F26B	VMF5F26L	VMF5F26C
LAB FILE ID:	RFY641	RFY638	RFY639
DATE EXTRACTED:	06/27/1811:41	06/27/1810:28	06/27/1810:53
DATE ANALYZED:	06/27/1811:41	06/27/1810:28	06/27/1810:53
PREP. BATCH:	VMF5F26	VMF5F26	VMF5F26
CALIB. REF:	RDY199	RDY199	RDY199

DATE COLLECTED: NA
DATE RECEIVED: 06/27/18

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1,2-Tetrachloroethane	ND	2.50	2.40	96	2.50	2.39	96	0	78-125	20
1,1,1-Trichloroethane	ND	2.50	2.16	86	2.50	2.08	83	4	73-130	20
1,1,2,2-Tetrachloroethane	ND	2.50	2.56	103	2.50	2.57	103	0	70-124	20
1,1,2-Trichloroethane	ND	2.50	2.52	101	2.50	2.52	101	0	78-121	20
1,1-Dichloroethane	ND	2.50	2.28	91	2.50	2.23	89	2	76-125	20
1,1-Dichloroethene	ND	2.50	2.30	92	2.50	2.27	91	1	70-131	20
1,1-Dichloropropene	ND	2.50	2.32	93	2.50	2.30	92	1	76-125	20
1,2,3-Trichlorobenzene	ND	2.50	2.39	96	2.50	2.34	94	2	66-130	20
1,2,3-Trichloropropane	ND	2.50	2.68	107	2.50	2.69	108	0	73-125	20
1,2,4-Trichlorobenzene	ND	2.50	2.47	99	2.50	2.44	98	1	67-129	20
1,2,4-Trimethylbenzene	ND	2.50	2.40	96	2.50	2.33	93	3	75-123	20
1,2-Dibromo-3-chloropropane	ND	2.50	2.54	102	2.50	2.57	103	1	61-132	20
1,2-Dibromoethane	ND	2.50	2.54	102	2.50	2.54	102	0	78-122	20
1,2-Dichlorobenzene	ND	2.50	2.39	95	2.50	2.28	91	4	78-121	20
1,2-Dichloroethane	ND	2.50	2.20	88	2.50	2.15	86	2	73-128	20
1,2-Dichloropropane	ND	2.50	2.24	89	2.50	2.24	90	0	76-123	20
1,3,5-Trimethylbenzene	ND	2.50	2.38	95	2.50	2.33	93	2	73-124	20
1,3-Dichlorobenzene	ND	2.50	2.37	95	2.50	2.32	93	2	77-121	20
1,3-Dichloropropane	ND	2.50	2.54	102	2.50	2.51	100	1	77-121	20
1,4-Dichlorobenzene	ND	2.50	2.38	95	2.50	2.34	94	2	75-120	20
2,2-Dichloropropane	ND	2.50	2.47	99	2.50	2.41	96	2	67-133	20
2-Butanone	ND	12.5	11.1	89	12.5	11.9	95	6	51-148	20
2-Chlorotoluene	ND	2.50	2.43	97	2.50	2.40	96	1	75-122	20
2-Hexanone	ND	12.5	11.1	89	12.5	12.0	96	8	53-145	20
4-Chlorotoluene	ND	2.50	2.33	93	2.50	2.25	90	3	72-124	20
Acetone	ND	12.5	12.3	98	12.5	13.0	104	6	36-164	20
Benzene	ND	2.50	2.33	93	2.50	2.29	92	2	77-121	20
Bromobenzene	ND	2.50	2.50	100	2.50	2.39	96	4	78-121	20
Bromochloromethane	ND	2.50	1.99	80	2.50	1.94	78	2	78-125	20
Bromodichloromethane	ND	2.50	2.27	91	2.50	2.26	90	1	75-127	20
Bromoform	ND	2.50	2.77	111	2.50	2.73	109	1	67-132	20
Bromomethane	ND	2.50	2.03	81	2.50	1.86	74	9	53-143	20
Carbon Disulfide	ND	2.50	2.41	96	2.50	2.42	97	1	63-132	20
Carbon Tetrachloride	ND	2.50	2.27	91	2.50	2.23	89	2	70-135	20
Chlorobenzene	ND	2.50	2.35	94	2.50	2.31	92	2	79-120	20
Chloroethane	ND	2.50	2.03	81	2.50	1.87	75	8	59-139	20
Chloroform	ND	2.50	2.31	92	2.50	2.26	90	2	78-123	20
Chloromethane	ND	2.50	1.87	75	2.50	1.78	71	5	50-136	20
cis-1,2-Dichloroethylene	ND	2.50	2.33	93	2.50	2.28	91	2	77-123	20
cis-1,3-Dichloropropene	ND	2.50	2.36	95	2.50	2.28	91	4	74-126	20
Cyclohexane	ND	2.50	2.31	92	2.50	2.48	99	7	67-131	20
Dibromochloromethane	ND	2.50	2.41	96	2.50	2.38	95	1	74-126	20
Dibromomethane	ND	2.50	2.36	95	2.50	2.38	95	1	78-125	20
Dichlorodifluoromethane	ND	2.50	1.99	80	2.50	1.74	70	13	29-149	20
Ethylbenzene	ND	2.50	2.34	94	2.50	2.29	92	2	76-122	20
Hexachlorobutadiene	ND	2.50	2.75	110	2.50	2.63	105	5	61-135	20
Isopropylbenzene	ND	2.50	2.35	94	2.50	2.28	91	3	68-134	20
Methylene Chloride	ND	2.50	2.29	92	2.50	2.27	91	1	70-128	20
m,p-Xylene	ND	5.00	4.68	94	5.00	4.57	91	2	77-124	20
4-Methyl-2-Pentanone	ND	12.5	10.1	81	12.5	10.9	87	7	65-135	20
tert-butyl methyl ether	ND	2.50	2.54	102	2.50	2.49	100	2	73-125	20
Naphthalene	ND	2.50	2.17	87	2.50	2.21	89	2	62-129	20
n-Butylbenzene	ND	2.50	2.32	93	2.50	2.22	89	4	70-128	20
n-Propylbenzene	ND	2.50	2.38	95	2.50	2.33	93	2	73-125	20
o-Xylene	ND	2.50	2.32	93	2.50	2.27	91	2	77-123	20
p-Isopropyltoluene	ND	2.50	2.39	96	2.50	2.30	92	4	73-127	20
Sec-Butylbenzene	ND	2.50	2.40	96	2.50	2.33	93	3	73-126	20
Styrene	ND	2.50	2.29	92	2.50	2.24	90	2	76-124	20
Tert-Butylbenzene	ND	2.50	2.29	92	2.50	2.30	92	0	73-125	20
Tetrachloroethene	ND	2.50	2.47	99	2.50	2.41	96	2	73-128	20
Toluene	ND	2.50	2.33	93	2.50	2.28	91	2	77-121	20
Trans-1,2-DCE	ND	2.50	2.20	88	2.50	2.13	85	3	74-125	20
Trans-1,3-Dichloropropene	ND	2.50	2.48	99	2.50	2.47	99	0	71-130	20
TCE	ND	2.50	2.35	94	2.50	2.28	91	3	77-123	20
Trichlorofluoromethane	ND	2.50	1.95	78	2.50	1.74	70	11	62-140	20
Trichlorotrifluoroethane	ND	2.50	2.73	109	2.50	2.58	103	6	66-136	20
Vinyl Chloride	ND	2.50	1.89	76	2.50	1.86	74	2	56-135	20
Vinyl Acetate	ND	2.50	2.36	94	2.50	2.50	100	6	50-151	20
Xylenes, Total	ND	7.50	7.00	93	7.50	6.84	91	2	78-124	20

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	2.50	2.47	99	2.50	2.46	98	71-136
4-Bromofluorobenzene	2.50	2.63	105	2.50	2.64	105	79-119
Toluene-d8	2.50	2.67	107	2.50	2.67	107	85-116
Dibromofluoromethane	2.50	2.50	100	2.50	2.52	101	78-119

METHOD SW5035A/8260B
VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected	: NA
Project	: JBER TO075	Date Received	: 06/29/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 19:20
Sample ID	: MBLK2S	Date Analyzed	: 06/29/18 19:20
Lab Samp ID	: VMF5F28B	Dilution Factor	: 50
Lab File ID	: RFY706	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: NA
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,1,1,2-TETRACHLOROETHANE	ND	0.25	0.025	0.050
1,1,1-TRICHLOROETHANE	ND	0.25	0.025	0.050
1,1,2,2-TETRACHLOROETHANE	ND	0.25	0.025	0.050
1,1,2-TRICHLOROETHANE	ND	0.25	0.025	0.050
1,1-DICHLOROETHANE	ND	0.25	0.025	0.050
1,1-DICHLOROETHENE	ND	0.25	0.025	0.050
1,1-DICHLOROPROPENE	ND	0.25	0.025	0.050
1,2,3-TRICHLOROBENZENE	ND	0.25	0.050	0.10
1,2,3-TRICHLOROPROPANE	ND	0.25	0.050	0.10
1,2,4-TRICHLOROBENZENE	ND	0.25	0.050	0.10
1,2,4-TRIMETHYLBENZENE	ND	0.25	0.028	0.10
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.25	0.050	0.10
1,2-DIBROMOETHANE	ND	0.25	0.025	0.050
1,2-DICHLOROBENZENE	ND	0.25	0.025	0.050
1,2-DICHLOROETHANE	ND	0.25	0.025	0.050
1,2-DICHLOROPROPANE	ND	0.25	0.025	0.050
1,3,5-TRIMETHYLBENZENE	ND	0.25	0.030	0.10
1,3-DICHLOROBENZENE	ND	0.25	0.026	0.050
1,3-DICHLOROPROPANE	ND	0.25	0.025	0.050
1,4-DICHLOROBENZENE	ND	0.25	0.025	0.050
2,2-DICHLOROPROPANE	ND	0.25	0.050	0.10
2-BUTANONE	ND	0.50	0.12	0.25
2-CHLOROTOLUENE	ND	0.25	0.041	0.050
2-HEXANONE	ND	0.50	0.15	0.25
4-CHLOROTOLUENE	ND	0.25	0.033	0.050
ACETONE	ND	0.50	0.15	0.25
BENZENE	ND	0.25	0.025	0.050
BROMOBENZENE	ND	0.25	0.025	0.050
BROMOCHLOROMETHANE	ND	0.25	0.025	0.050
BROMODICHLOROMETHANE	ND	0.25	0.025	0.050
BROMOFORM	ND	0.25	0.050	0.10
BROMOMETHANE	ND	0.50	0.090	0.10
CARBON DISULFIDE	ND	0.25	0.025	0.050
CARBON TETRACHLORIDE	ND	0.25	0.027	0.050
CHLOROBENZENE	ND	0.25	0.025	0.050
CHLOROETHANE	ND	0.25	0.065	0.10
CHLOROFORM	ND	0.25	0.025	0.050
CHLOROMETHANE	ND	0.25	0.050	0.10
CIS-1,2-DICHLOROETHYLENE	ND	0.25	0.025	0.050
CIS-1,3-DICHLOROPROPENE	ND	0.25	0.025	0.050
CYCLOHEXANE	ND	0.25	0.060	0.10
DIBROMOCHLOROMETHANE	ND	0.25	0.025	0.050
DIBROMOMETHANE	ND	0.25	0.025	0.050
DICHLORODIFLUOROMETHANE	ND	0.25	0.060	0.10
ETHYLBENZENE	ND	0.25	0.025	0.050
HEXACHLOROBUTADIENE	ND	0.25	0.050	0.10
ISOPROPYLBENZENE	ND	0.25	0.032	0.10
METHYLENE CHLORIDE	ND	0.50	0.10	0.25
M,P-XYLENE	ND	0.25	0.050	0.10
4-METHYL-2-PENTANONE	ND	0.50	0.14	0.25
TERT-BUTYL METHYL ETHER	ND	0.25	0.025	0.050
NAPHTHALENE	ND	0.25	0.050	0.10
N-BUTYLBENZENE	ND	0.25	0.035	0.050
N-PROPYLBENZENE	ND	0.25	0.033	0.050
O-XYLENE	ND	0.25	0.025	0.050
P-ISOPROPYLTOLUENE	ND	0.25	0.031	0.050
SEC-BUTYLBENZENE	ND	0.25	0.033	0.050
STYRENE	ND	0.25	0.025	0.050
TERT-BUTYLBENZENE	ND	0.25	0.031	0.050
TETRACHLOROETHENE	ND	0.25	0.025	0.050
TOLUENE	ND	0.25	0.025	0.050
TRANS-1,2-DCE	ND	0.25	0.025	0.050
TRANS-1,3-DICHLOROPROPENE	ND	0.25	0.025	0.050
TCE	ND	0.25	0.025	0.050
TRICHLOROFLUOROMETHANE	ND	0.25	0.055	0.10
TRICHLOROTRIFLUOROETHANE	ND	0.25	0.050	0.10
VINYL CHLORIDE	ND	0.25	0.070	0.10
VINYL ACETATE	ND	0.25	0.065	0.10
XYLENES, TOTAL	ND	0.25	0.025	0.050

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	2.63	2.500	105	71-136
4-BROMOFLUOROBENZENE	2.65	2.500	106	79-119
TOLUENE-D8	2.66	2.500	106	85-116
DIBROMOFLUOROMETHANE	2.55	2.500	102	78-119

METHOD SW5035A/8260B
TICs BY GC/MS

Client	: CH2M HILL	Date Collected	: NA
Project	: JBER TO075	Date Received	: 06/29/18
Batch No.	: 18F187	Date Extracted	: 06/29/18 19:20
Sample ID	: MBLK2S	Date Analyzed	: 06/29/18 19:20
Lab Samp ID	: VMF5F28B	Dilution Factor	: 50
Lab File ID	: RFY706	Matrix	: SOIL
Ext Btch ID	: VMF5F28	% Moisture	: NA
Calib. Ref.	: RDY199	Instrument ID	: TOF5

PARAMETERS	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,3-BUTADIENE	ND	NA	NA	NA
N-HEXANE	ND	NA	NA	NA

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CH2M HILL
PROJECT: JBER TO075
BATCH NO.: 18F187
METHOD: SW5035A/8260B

MATRIX: SOIL % MOISTURE: NA

DILUTION FACTOR:	50	50	50
SAMPLE ID:	MBLK2S		
LAB SAMP ID:	VMF5F28B	VMF5F28L	VMF5F28C
LAB FILE ID:	RFY706	RFY703	RFY704
DATE EXTRACTED:	06/29/1819:20	06/29/1818:07	06/29/1818:31
DATE ANALYZED:	06/29/1819:20	06/29/1818:07	06/29/1818:31
PREP. BATCH:	VMF5F28	VMF5F28	VMF5F28
CALIB. REF:	RDY199	RDY199	RDY199

DATE COLLECTED: NA
DATE RECEIVED: 06/29/18

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1,2-Tetrachloroethane	ND	2.50	2.65	106	2.50	2.59	104	2	78-125	20
1,1,1-Trichloroethane	ND	2.50	2.48	99	2.50	2.32	93	7	73-130	20
1,1,2,2-Tetrachloroethane	ND	2.50	2.58	103	2.50	2.59	104	1	70-124	20
1,1,2-Trichloroethane	ND	2.50	2.60	104	2.50	2.63	105	1	78-121	20
1,1-Dichloroethane	ND	2.50	2.45	98	2.50	2.35	94	4	76-125	20
1,1-Dichloroethene	ND	2.50	2.54	102	2.50	2.41	97	5	70-131	20
1,1-Dichloropropene	ND	2.50	2.55	102	2.50	2.42	97	5	76-125	20
1,2,3-Trichlorobenzene	ND	2.50	2.45	98	2.50	2.44	97	0	66-130	20
1,2,3-Trichloropropane	ND	2.50	2.85	114	2.50	2.93	117	3	73-125	20
1,2,4-Trichlorobenzene	ND	2.50	2.61	104	2.50	2.49	100	5	67-129	20
1,2,4-Trimethylbenzene	ND	2.50	2.57	103	2.50	2.38	95	8	75-123	20
1,2-Dibromo-3-chloropropane	ND	2.50	2.65	106	2.50	2.72	109	3	61-132	20
1,2-Dibromoethane	ND	2.50	2.67	107	2.50	2.68	107	1	78-122	20
1,2-Dichlorobenzene	ND	2.50	2.52	101	2.50	2.38	95	6	78-121	20
1,2-Dichloroethane	ND	2.50	2.55	102	2.50	2.47	99	3	73-128	20
1,2-Dichloropropane	ND	2.50	2.36	94	2.50	2.26	90	4	76-123	20
1,3,5-Trimethylbenzene	ND	2.50	2.56	103	2.50	2.36	94	8	73-124	20
1,3-Dichlorobenzene	ND	2.50	2.53	101	2.50	2.38	95	6	77-121	20
1,3-Dichloropropane	ND	2.50	2.69	107	2.50	2.66	106	1	77-121	20
1,4-Dichlorobenzene	ND	2.50	2.54	101	2.50	2.36	94	7	75-120	20
2,2-Dichloropropane	ND	2.50	2.90	116	2.50	2.69	108	7	67-133	20
2-Butanone	ND	12.5	11.0	88	12.5	12.1	97	9	51-148	20
2-Chlorotoluene	ND	2.50	2.53	101	2.50	2.31	93	9	75-122	20
2-Hexanone	ND	12.5	11.0	88	12.5	12.4	99	12	53-145	20
4-Chlorotoluene	ND	2.50	2.61	104	2.50	2.42	97	8	72-124	20
Acetone	ND	12.5	13.0	104	12.5	14.2	113	9	36-164	20
Benzene	ND	2.50	2.46	98	2.50	2.36	94	4	77-121	20
Bromobenzene	ND	2.50	2.67	107	2.50	2.51	101	6	78-121	20
Bromochloromethane	ND	2.50	2.09	84	2.50	2.03	81	3	78-125	20
Bromodichloromethane	ND	2.50	2.52	101	2.50	2.45	98	3	75-127	20
Bromoform	ND	2.50	3.03	121	2.50	3.03	121	0	67-132	20
Bromomethane	ND	2.50	2.39	96	2.50	2.31	92	4	53-143	20
Carbon Disulfide	ND	2.50	2.18	87	2.50	2.27	91	4	63-132	20
Carbon Tetrachloride	ND	2.50	2.68	107	2.50	2.54	101	5	70-135	20
Chlorobenzene	ND	2.50	2.50	100	2.50	2.45	98	2	79-120	20
Chloroethane	ND	2.50	2.41	96	2.50	2.29	91	5	59-139	20
Chloroform	ND	2.50	2.58	103	2.50	2.48	99	4	78-123	20
Chloromethane	ND	2.50	2.05	82	2.50	2.02	81	1	50-136	20
cis-1,2-Dichloroethylene	ND	2.50	2.50	100	2.50	2.37	95	5	77-123	20
cis-1,3-Dichloropropene	ND	2.50	2.49	100	2.50	2.41	97	3	74-126	20
Cyclohexane	ND	2.50	2.59	103	2.50	2.65	106	2	67-131	20
Dibromochloromethane	ND	2.50	2.67	107	2.50	2.65	106	1	74-126	20
Dibromomethane	ND	2.50	2.56	102	2.50	2.52	101	1	78-125	20
Dichlorodifluoromethane	ND	2.50	2.40	96	2.50	2.23	89	7	29-149	20
Ethylbenzene	ND	2.50	2.48	99	2.50	2.39	96	4	76-122	20
Hexachlorobutadiene	ND	2.50	2.99	120	2.50	2.80	112	6	61-135	20
Isopropylbenzene	ND	2.50	2.52	101	2.50	2.42	97	4	68-134	20
Methylene Chloride	ND	2.50	2.42	97	2.50	2.37	95	2	70-128	20
m,p-Xylene	ND	5.00	5.02	100	5.00	4.85	97	4	77-124	20
4-Methyl-2-Pentanone	ND	12.5	10.5	84	12.5	11.4	92	9	65-135	20
tert-butyl methyl ether	ND	2.50	2.65	106	2.50	2.69	108	2	73-125	20
Naphthalene	ND	2.50	2.15	86	2.50	2.25	90	4	62-129	20
n-Butylbenzene	ND	2.50	2.40	96	2.50	2.23	89	7	70-128	20
n-Propylbenzene	ND	2.50	2.54	102	2.50	2.33	93	9	73-125	20
o-Xylene	ND	2.50	2.49	99	2.50	2.38	95	4	77-123	20
p-Isopropyltoluene	ND	2.50	2.54	102	2.50	2.35	94	8	73-127	20
Sec-Butylbenzene	ND	2.50	2.54	102	2.50	2.32	93	9	73-126	20
Styrene	ND	2.50	2.40	96	2.50	2.29	92	5	76-124	20
Tert-Butylbenzene	ND	2.50	2.49	99	2.50	2.28	91	9	73-125	20
Tetrachloroethene	ND	2.50	2.68	107	2.50	2.57	103	4	73-128	20
Toluene	ND	2.50	2.48	99	2.50	2.36	94	5	77-121	20
Trans-1,2-DCE	ND	2.50	2.37	95	2.50	2.23	89	6	74-125	20
Trans-1,3-Dichloropropene	ND	2.50	2.71	108	2.50	2.68	107	1	71-130	20
TCE	ND	2.50	2.55	102	2.50	2.43	97	5	77-123	20
Trichlorofluoromethane	ND	2.50	2.47	99	2.50	2.33	93	6	62-140	20
Trichlorotrifluoroethane	ND	2.50	3.11	124	2.50	2.95	118	5	66-136	20
Vinyl Chloride	ND	2.50	2.53	101	2.50	2.40	96	6	56-135	20
Vinyl Acetate	ND	2.50	2.43	97	2.50	2.50	100	3	50-151	20
Xylenes, Total	ND	7.50	7.51	100	7.50	7.23	96	4	78-124	20

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	2.50	2.61	104	2.50	2.66	107	71-136
4-Bromofluorobenzene	2.50	2.68	107	2.50	2.61	105	79-119
Toluene-d8	2.50	2.64	106	2.50	2.65	106	85-116
Dibromofluoromethane	2.50	2.58	103	2.50	2.60	104	78-119

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CH2M HILL
PROJECT: JBER T0075
BATCH NO.: 18F187
METHOD: SW5035A/8260B

MATRIX: SOIL % MOISTURE: 3.9
DILUTION FACTOR: 60.5 57 54.5
SAMPLE ID: 18Q2DP009-SB0501-SO-0
LAB SAMP ID: F187-07I F187-07M F187-07S
LAB FILE ID: RFY708 RFY709 RFY710
DATE EXTRACTED: 06/29/1820:10 06/29/1820:34 06/29/1820:59 DATE COLLECTED: 06/22/18
DATE ANALYZED: 06/29/1820:10 06/29/1820:34 06/29/1820:59 DATE RECEIVED: 06/26/18
PREP. BATCH: VMF5F28 VMF5F28 VMF5F28
CALIB. REF: RDY199 RDY199 RDY199

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1,2-Tetrachloroethane	ND	2.97	3.19	108	2.84	2.94	104	4	78-125	20
1,1,1-Trichloroethane	ND	2.97	2.88	97	2.84	2.68	94	3	73-130	20
1,1,2,2-Tetrachloroethane	ND	2.97	3.20	108	2.84	2.96	105	3	70-124	20
1,1,2-Trichloroethane	ND	2.97	3.19	107	2.84	2.98	105	2	78-121	20
1,1-Dichloroethane	ND	2.97	2.90	98	2.84	2.64	93	5	76-125	20
1,1-Dichloroethene	ND	2.97	2.95	99	2.84	2.73	96	3	70-131	20
1,1-Dichloropropene	ND	2.97	2.89	98	2.84	2.68	94	4	76-125	20
1,2,3-Trichlorobenzene	ND	2.97	2.88	97	2.84	2.75	97	0	66-130	20
1,2,3-Trichloropropane	ND	2.97	3.62	122	2.84	3.35	118	3	73-125	20
1,2,4-Trichlorobenzene	ND	2.97	3.02	102	2.84	2.84	100	2	67-129	20
1,2,4-Trimethylbenzene	ND	2.97	2.99	101	2.84	2.77	98	3	75-123	20
1,2-Dibromo-3-chloropropane	ND	2.97	3.39	114	2.84	3.20	113	1	61-132	20
1,2-Dibromoethane	ND	2.97	3.25	110	2.84	3.05	108	2	78-122	20
1,2-Dichlorobenzene	ND	2.97	2.97	100	2.84	2.78	98	2	78-121	20
1,2-Dichloroethane	ND	2.97	3.03	102	2.84	2.83	100	2	73-128	20
1,2-Dichloropropane	ND	2.97	2.75	93	2.84	2.55	90	3	76-123	20
1,3,5-Trimethylbenzene	ND	2.97	2.95	99	2.84	2.79	98	1	73-124	20
1,3-Dichlorobenzene	ND	2.97	2.93	99	2.84	2.75	97	2	77-121	20
1,3-Dichloropropane	ND	2.97	3.19	108	2.84	3.02	106	2	77-121	20
1,4-Dichlorobenzene	ND	2.97	2.92	99	2.84	2.68	95	4	75-120	20
2,2-Dichloropropane	ND	2.97	3.30	111	2.84	3.02	107	4	67-133	20
2-Butanone	ND	14.8	13.5	91	14.2	13.6	96	5	51-148	20
2-Chlorotoluene	ND	2.97	3.21	108	2.84	2.97	105	3	75-122	20
2-Hexanone	ND	14.8	13.7	92	14.2	14.0	99	7	53-145	20
4-Chlorotoluene	ND	2.97	2.72	92	2.84	2.57	91	1	72-124	20
Acetone	ND	14.8	16.1	109	14.2	16.1	113	4	36-164	20
Benzene	ND	2.97	2.86	97	2.84	2.68	95	2	77-121	20
Bromobenzene	ND	2.97	3.12	105	2.84	2.93	103	2	78-121	20
Bromochloromethane	ND	2.97	2.43	82	2.84	2.29	81	1	78-125	20
Bromodichloromethane	ND	2.97	2.98	100	2.84	2.78	98	2	75-127	20
Bromoform	ND	2.97	3.69	125	2.84	3.50	123	2	67-132	20
Bromomethane	ND	2.97	2.72	92	2.84	2.46	87	6	53-143	20
Carbon Disulfide	ND	2.97	2.58	87	2.84	2.62	93	7	63-132	20
Carbon Tetrachloride	ND	2.97	3.18	107	2.84	2.94	104	3	70-135	20
Chlorobenzene	ND	2.97	2.96	100	2.84	2.72	96	4	79-120	20
Chloroethane	ND	2.97	2.72	92	2.84	2.43	86	7	59-139	20
Chloroform	ND	2.97	3.04	103	2.84	2.85	100	3	78-123	20
Chloromethane	ND	2.97	2.39	81	2.84	2.21	78	4	50-136	20
cis-1,2-Dichloroethylene	ND	2.97	2.93	99	2.84	2.72	96	3	77-123	20
cis-1,3-Dichloropropene	ND	2.97	2.96	100	2.84	2.71	96	4	74-126	20
Cyclohexane	ND	2.97	2.90	98	2.84	2.62	92	6	67-131	20
Dibromochloromethane	ND	2.97	3.28	110	2.84	3.02	106	4	74-126	20
Dibromomethane	ND	2.97	3.11	105	2.84	2.86	101	4	78-125	20
Dichlorodifluoromethane	ND	2.97	2.88	97	2.84	2.54	89	9	29-149	20
Ethylbenzene	ND	2.97	2.98	100	2.84	2.78	98	2	76-122	20
Hexachlorobutadiene	ND	2.97	3.50	118	2.84	3.26	115	3	61-135	20
Isopropylbenzene	ND	2.97	2.97	100	2.84	2.76	97	3	68-134	20
Methylene Chloride	ND	2.97	2.74	92	2.84	2.63	93	1	70-128	20
m,p-Xylene	ND	5.93	5.91	100	5.67	5.45	96	4	77-124	20
4-Methyl-2-Pentanone	ND	14.8	12.8	86	14.2	13.0	92	7	65-135	20
tert-butyl methyl ether	ND	2.97	3.25	110	2.84	3.00	106	4	73-125	20
Naphthalene	ND	2.97	2.66	90	2.84	2.54	90	0	62-129	20
n-Butylbenzene	ND	2.97	2.79	94	2.84	2.59	91	3	70-128	20
n-Propylbenzene	ND	2.97	2.95	100	2.84	2.73	96	4	73-125	20
o-Xylene	ND	2.97	2.94	99	2.84	2.73	96	3	77-123	20
p-Isopropyltoluene	ND	2.97	2.96	100	2.84	2.74	97	3	73-127	20
Sec-Butylbenzene	ND	2.97	2.94	99	2.84	2.75	97	2	73-126	20
Styrene	ND	2.97	2.82	95	2.84	2.59	91	4	76-124	20
Tert-Butylbenzene	ND	2.97	2.91	98	2.84	2.68	94	4	73-125	20
Tetrachloroethene	ND	2.97	3.17	107	2.84	2.91	103	4	73-128	20
Toluene	ND	2.97	2.92	99	2.84	2.70	95	4	77-121	20
Trans-1,2-DCE	ND	2.97	2.76	93	2.84	2.55	90	3	74-125	20
Trans-1,3-Dichloropropene	ND	2.97	3.25	109	2.84	3.03	107	2	71-130	20
TCE	ND	2.97	2.98	101	2.84	2.76	97	4	77-123	20
Trichlorofluoromethane	ND	2.97	2.83	95	2.84	2.50	88	8	62-140	20
Trichlorotrifluoroethane	ND	2.97	3.60	122	2.84	3.38	119	2	66-136	20
Vinyl Chloride	ND	2.97	2.95	100	2.84	2.68	94	6	56-135	20
Vinyl Acetate	ND	2.97	2.72	92	2.84	2.53	89	3	50-151	20
Xylenes, Total	ND	8.90	8.84	99	8.51	8.18	96	3	78-124	20

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	2.97	3.22	109	2.84	3.05	108	71-136
4-Bromofluorobenzene	5.34	5.80	109	5.10	5.52	108	79-119
Toluene-d8	2.97	3.13	106	2.84	2.99	105	85-116
Dibromofluoromethane	2.97	3.11	105	2.84	2.91	103	78-119

QC DATA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

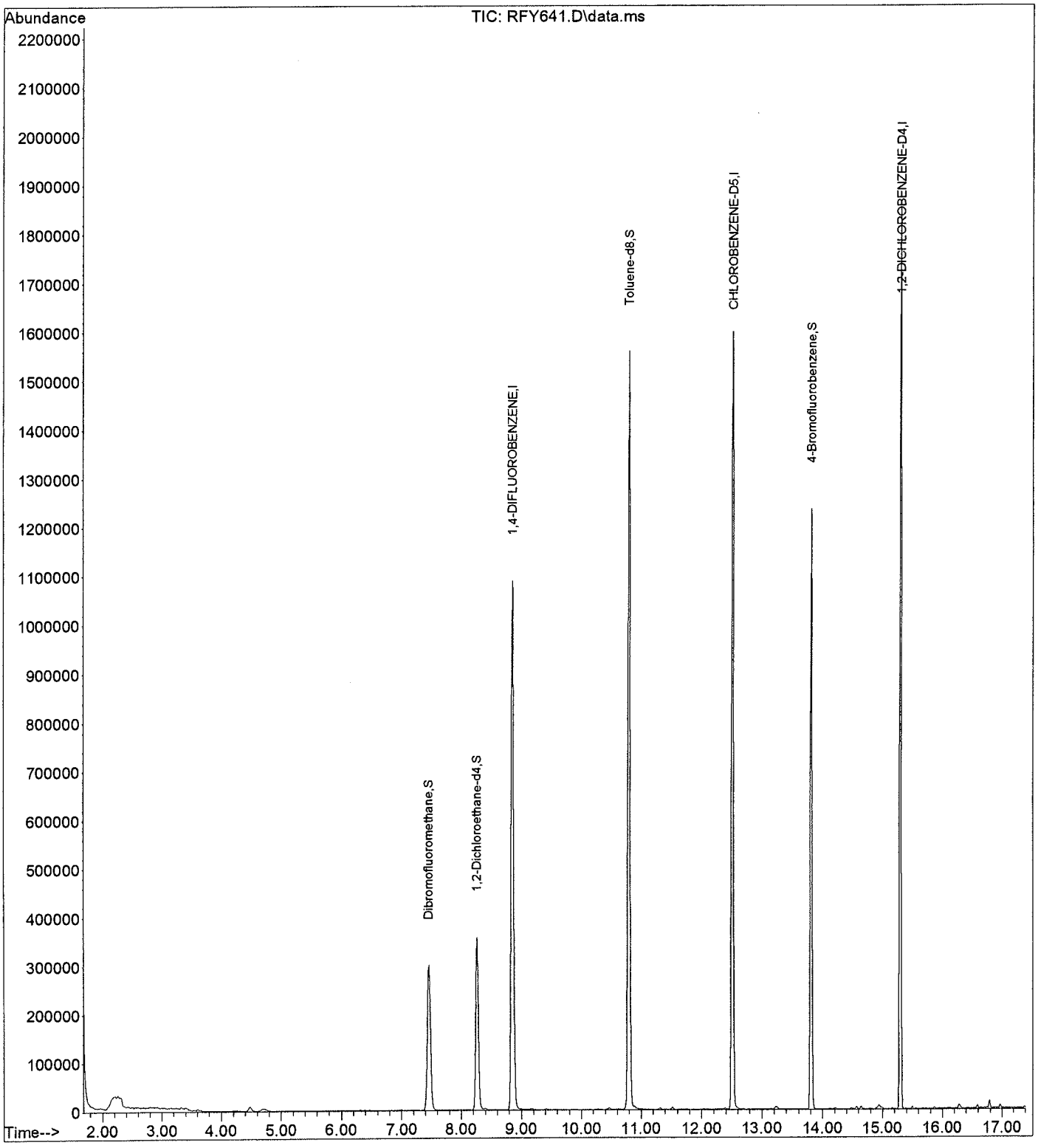
Quant Time: Jun 29 12:51:56 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.857	114	1334049	50.00	ug/l	-0.01
58) CHLOROBENZENE-D5	12.513	117	1117402	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	500543	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.462	111	355396	50.14	ug/l	-0.01
Spiked Amount 50.000			Recovery =	100.28%		
45) 1,2-Dichloroethane-d4	8.264	65	374075	50.54	ug/l	-0.01
Spiked Amount 50.000			Recovery =	101.08%		
59) Toluene-d8	10.789	98	1361702	53.51	ug/l	-0.01
Spiked Amount 50.000			Recovery =	107.02%		
81) 4-Bromofluorobenzene	13.809	95	498008	51.58	ug/l	0.00
Spiked Amount 50.000			Recovery =	103.16%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 29 12:51:56 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY641.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.462	517	527	546	rBV	300337	1097539	30.29%	6.289%
2	8.264	591	600	609	rBV	357293	1065786	29.42%	6.107%
3	8.857	644	654	674	rBV	1089225	3015431	83.23%	17.278%
4	10.789	820	830	849	rBV	1558009	3623157	100.00%	20.761%
5	12.502	981	986	998	rBV	1598911	3340069	92.19%	19.139%
6	13.809	1099	1105	1115	rBV	1235646	2260267	62.38%	12.951%
7	15.291	1235	1240	1247	rBV	1853606	3049810	84.18%	17.475%

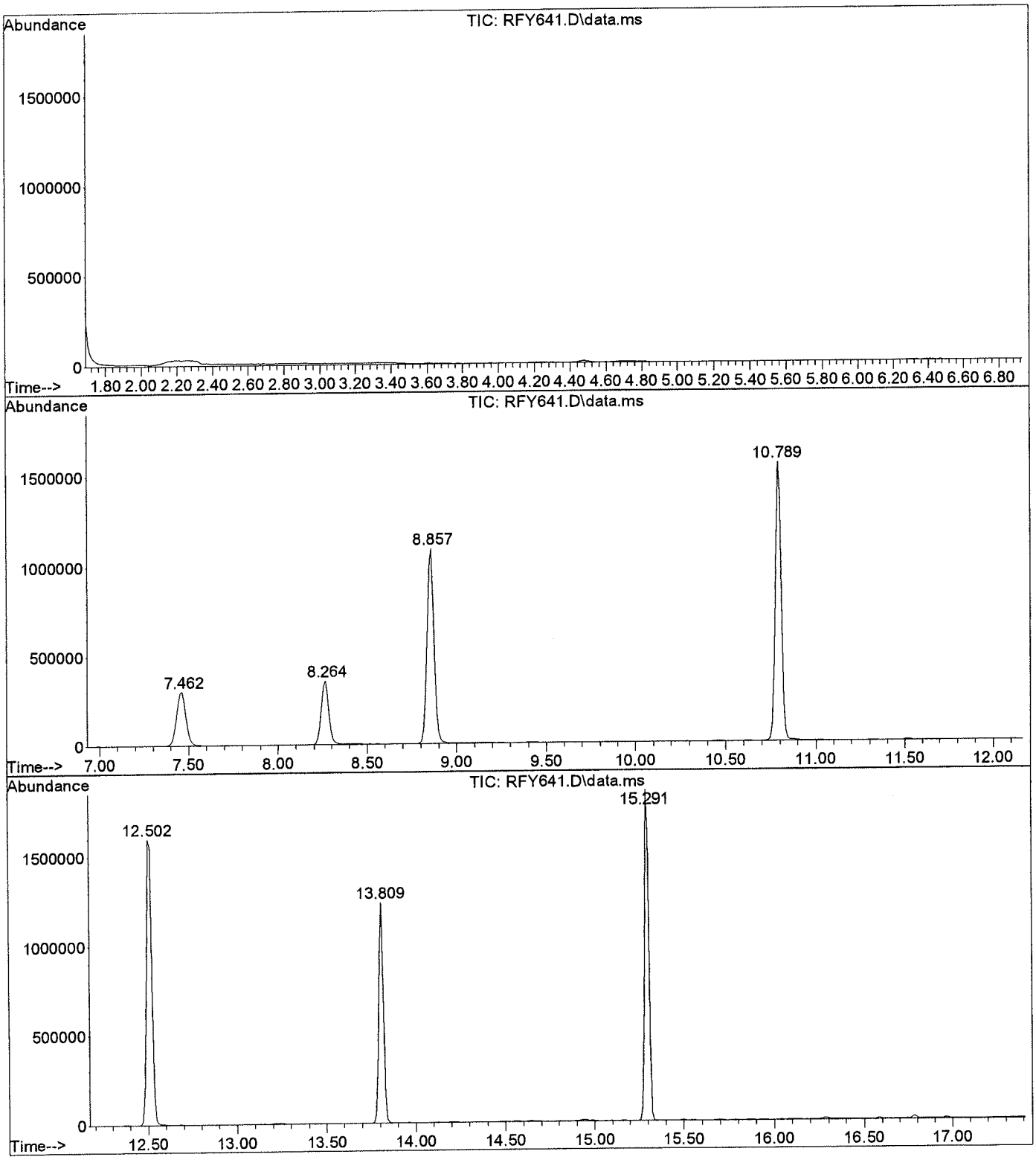
Sum of corrected areas: 17452059

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY641.D\data.ms

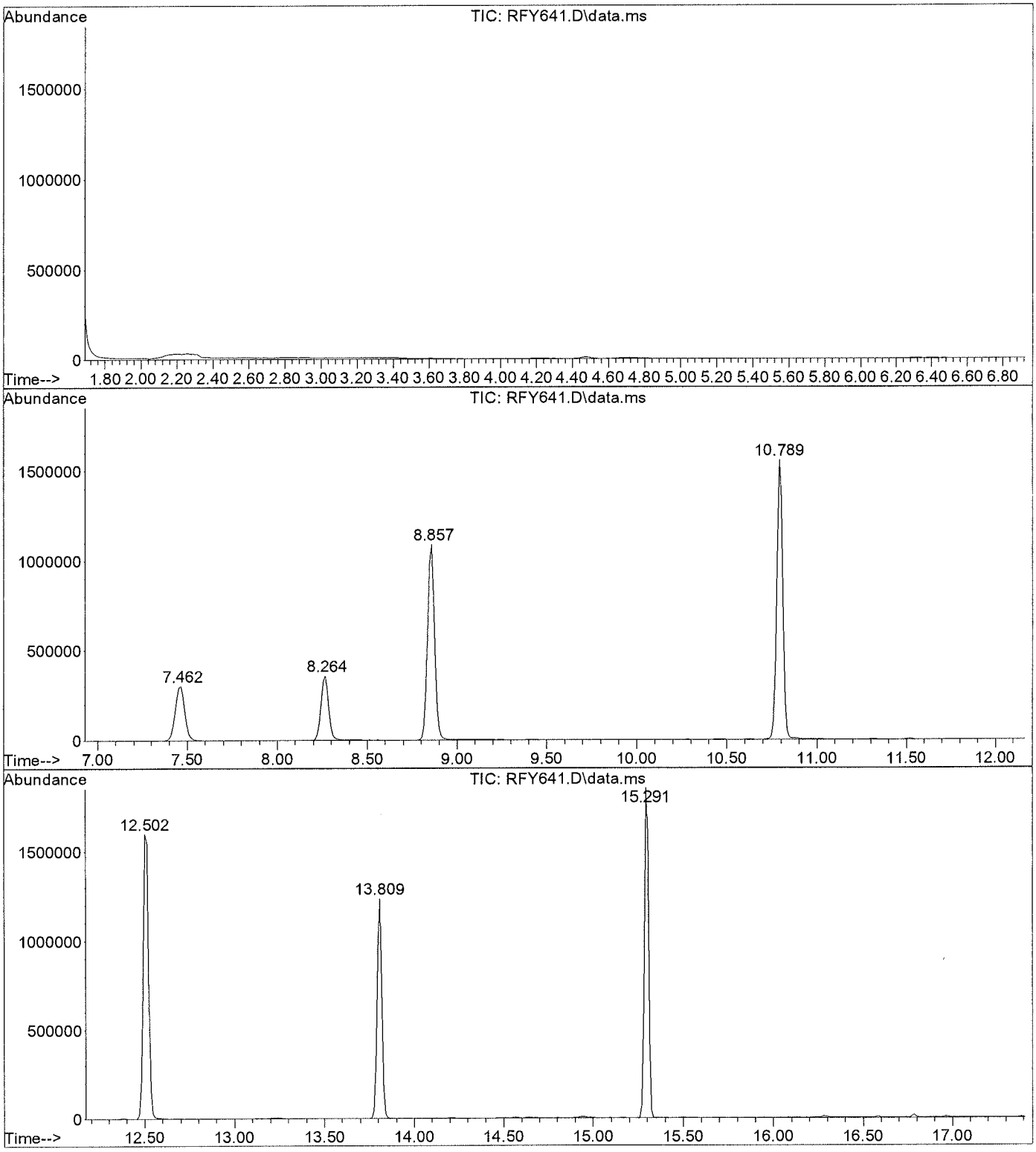
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.462	517	527	546	rBV	300337	1097539	30.29%	6.289%
2	8.264	591	600	609	rBV	357293	1065786	29.42%	6.107%
3	8.857	644	654	674	rBV	1089225	3015431	83.23%	17.278%
4	10.789	820	830	849	rBV	1558009	3623157	100.00%	20.761%
5	12.502	981	986	998	rBV	1598911	3340069	92.19%	19.139%
6	13.809	1099	1105	1115	rBV	1235646	2260267	62.38%	12.951%
7	15.291	1235	1240	1247	rBV	1853606	3049810	84.18%	17.475%

Sum of corrected areas: 17452059

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

No Library Search Compounds Detected
****

Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY641.D
Acq On : 27 Jun 2018 11:41 am
Operator : DNguye
Sample : VMF5F26B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY638.D
Acq On : 27 Jun 2018 10:28 am
Operator : DNguye
Sample : VMF5F26L
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 29 12:52:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.857	114	1413079	50.00	ug/l		-0.01
58) CHLOROBENZENE-D5	12.502	117	1184450	50.00	ug/l		-0.01
78) 1,2-DICHLOROBENZENE-D4	15.291	152	530244	50.00	ug/l		-0.01
System Monitoring Compounds							
39) Dibromofluoromethane	7.452	111	375306	49.98	ug/l		-0.02
Spiked Amount 50.000			Recovery =	99.96%			
45) 1,2-Dichloroethane-d4	8.264	65	386701	49.32	ug/l		-0.01
Spiked Amount 50.000			Recovery =	98.64%			
59) Toluene-d8	10.789	98	1438284	53.32	ug/l		-0.01
Spiked Amount 50.000			Recovery =	106.64%			
81) 4-Bromofluorobenzene	13.809	95	538067	52.60	ug/l		0.00
Spiked Amount 50.000			Recovery =	105.20%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.819	85	408330	39.82	ug/l		100
4) Chloromethane	2.028	50	432095	37.36	ug/l		99
5) Vinyl chloride	2.138	62	280335	37.80	ug/l		99
7) Bromomethane	2.588	94	267083	40.65	ug/l		97
8) Dichlorofluoromethane	2.752	67	768924	52.22	ug/L		100
9) Chloroethane	2.643	64	247755	40.59	ug/l		88
10) Trichlorofluoromethane	3.016	101	507452	39.00	ug/l		99
11) Acrolein	3.510	55	151203	264.74	ug/L		78
12) 1,1,2-Trichloro-1,2,2-...	3.554	151	302933	54.59	ug/l		98
13) Acetone	3.609	43	436867	245.44	ug/l		94
14) tert-Butyl alcohol	3.916	59	194260	303.97	ug/L	#	1
15) Acetonitrile	3.982	41	349545	509.79	ug/L		83
16) Methyl acetate	4.257	43	258111	46.80	ug/L		90
17) 1,1-Dichloroethene	3.784	61	591393	45.94	ug/l		95
18) Iodomethane	4.202	142	515872	45.97	ug/l		98
19) Allyl Chloride	4.290	76	195341	46.93	ug/L		98
20) Methylene chloride	4.476	49	553633	45.85	ug/l		86
21) Carbon disulfide	4.498	76	1202468	48.17	ug/L		99
22) Acrylonitrile	4.685	53	497616	212.18	ug/l		99
23) tert-Butyl methyl ethe...	4.729	73	962105	50.76	ug/L		95
24) trans-1,2-Dichloroethene	4.926	61	518674	43.93	ug/l		94
25) Isopropyl ether (DIPE)	5.508	45	1157271	39.22	ug/l		90
26) Vinyl acetate	5.706	43	726875	47.17	ug/l		94
27) 1,1-Dichloroethane	5.651	63	635665	45.64	ug/l		99
28) 2-Butanol	6.112	45	156638	256.44	ug/L	#	60
29) tert-Butyl ethyl ether...	6.255	59	1110566	45.73	ug/l		99
30) 2-Butanone	6.463	43	617763	222.63	ug/l		91
31) Propionitrile	6.617	54	406371	465.58	ug/L		99
32) 2,2-Dichloropropane	6.694	77	526763	49.34	ug/l		98
33) cis-1,2-Dichloroethene	6.782	96	397028	46.70	ug/l		93
34) Methacrylonitrile	6.990	52	465817	450.62	ug/L		84
35) Isobutyl Alcohol	7.056	43	293731	852.96	ug/L		97
36) Chloroform	7.067	83	615096	46.16	ug/l		97
37) Bromochloromethane	7.353	49	270283	39.76	ug/l		82
38) Tetrahydrofuran	7.430	42	74916	38.61	ug/L		88
40) 1,1,1-Trichloroethane	7.748	97	545701	43.20	ug/l		96
41) Cyclohexane	7.737	84	725094	46.16	ug/L		91
42) 1,1-Dichloropropene	8.001	110	177708	46.36	ug/L		98
43) Carbon tetrachloride	8.132	119	461954	45.49	ug/L		100

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY638.D
Acq On : 27 Jun 2018 10:28 am
Operator : DNguye
Sample : VMF5F26L
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 29 12:52:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) tert-Amyl methyl ether...	8.220	87	228772	45.73	ug/l	94
46) 1,2-Dichloroethane	8.407	62	421239	44.02	ug/L	99
47) Benzene	8.396	78	1387262	46.68	ug/L	97
48) Trichloroethene	9.274	130	383870	46.92	ug/L	98
49) Methylcyclohexane	9.340	83	779153	43.07	ug/L	92
50) 1,2-Dichloropropane	9.516	63	354647	44.72	ug/L	89
51) Methyl Methacrylate	9.637	69	197913	46.10	ug/L	78
52) Bromodichloromethane	9.823	83	443644	45.49	ug/L	97
53) 1,4-Dioxane	9.867	88	69189	1021.24	ug/L	92
54) Dibromomethane	9.878	93	194258	47.28	ug/L	95
55) 2-Chloroethyl vinyl ether	10.251	63	110591	48.56	ug/L	97
56) 4-Methyl-2-pentanone	10.273	43	1344737	202.62	ug/L	91
57) cis-1,3-Dichloropropene	10.515	75	573944	47.28	ug/L	89
60) Ethyl methacrylate	11.119	69	369341	47.86	ug/L	86
61) Toluene	10.888	91	1541394	46.60	ug/l	99
62) trans-1,3-Dichloropropene	11.119	75	491477	49.66	ug/l	81
63) 2-Hexanone	11.305	43	917221	221.75	ug/l	91
64) 1,1,2-Trichloroethane	11.294	97	276160	50.49	ug/l	99
65) 1,3-Dichloropropane	11.580	76	479968	50.82	ug/l	98
66) Tetrachloroethene	11.635	164	296122	49.31	ug/l	96
67) Dibromochloromethane	11.865	129	322841	48.16	ug/l	99
68) 1,2-Dibromoethane	12.085	107	277388	50.87	ug/l	100
69) 1-Chlorohexane	12.272	91	536096	46.64	ug/l	93
70) Chlorobenzene	12.546	112	988919	47.07	ug/l	97
71) 1,1,1,2-Tetrachloroethane	12.601	131	354711	47.93	ug/l	98
72) Ethylbenzene	12.601	91	1794445	46.78	ug/l	100
73) m-Xylene & p-Xylene	12.689	91	2766469	93.55	ug/l	99
74) o-Xylene	13.150	91	1414847	46.48	ug/l	99
75) Styrene	13.194	104	1073941	45.79	ug/l	100
76) Isopropylbenzene	13.534	105	1821872	47.01	ug/L	99
77) cis-1,4-Dichloro-2-butene	13.589	53	113062	41.30	ug/L	81
79) Bromoform	13.567	173	207302	55.35	ug/l	99
80) 1,1,2,2-Tetrachloroethane	13.721	83	345972	51.27	ug/l	99
82) 1,2,3-Trichloropropane	13.875	110	108330	53.55	ug/l	94
83) trans-1,4-Dichloro-2-b...	13.941	53	90438	42.78	ug/L	90
84) n-Propylbenzene	13.952	91	2092962	47.53	ug/l	99
85) Bromobenzene	14.017	156	381995	50.01	ug/l	97
86) 1,3,5-Trimethylbenzene	14.116	105	1525804	47.59	ug/l	100
87) 2-Chlorotoluene	14.149	91	1446949	48.68	ug/l	99
88) 4-Chlorotoluene	14.193	91	1212807	46.50	ug/l	99
89) tert-Butylbenzene	14.479	134	335791	45.88	ug/l	96
90) 1,2,4-Trimethylbenzene	14.512	105	1531539	48.03	ug/l	100
91) sec-Butylbenzene	14.676	105	2011799	48.01	ug/l	98
92) p-Isopropyltoluene	14.797	119	1691531	47.88	ug/l	97
93) 1,3-Dichlorobenzene	14.896	146	766366	47.44	ug/l	99
94) 1,4-Dichlorobenzene	14.995	146	767327	47.64	ug/l	99
95) n-Butylbenzene	15.159	91	1546442	46.35	ug/l	99
96) 1,2-Dichlorobenzene	15.324	146	712982	47.72	ug/l	98
97) 1,2-Dibromo-3-chloropr...	15.950	157	69236	50.84	ug/l	95
98) 1,2,4-Trichlorobenzene	16.587	180	475498	49.37	ug/l	97
99) Hexachlorobutadiene	16.674	225	289148	55.02	ug/l	99
100) Naphthalene	16.784	128	1015371	43.45	ug/l	100
101) 1,2,3-Trichlorobenzene	16.971	180	415425	47.83	ug/l	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY638.D
Acq On : 27 Jun 2018 10:28 am
Operator : DNguye
Sample : VMF5F26L
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

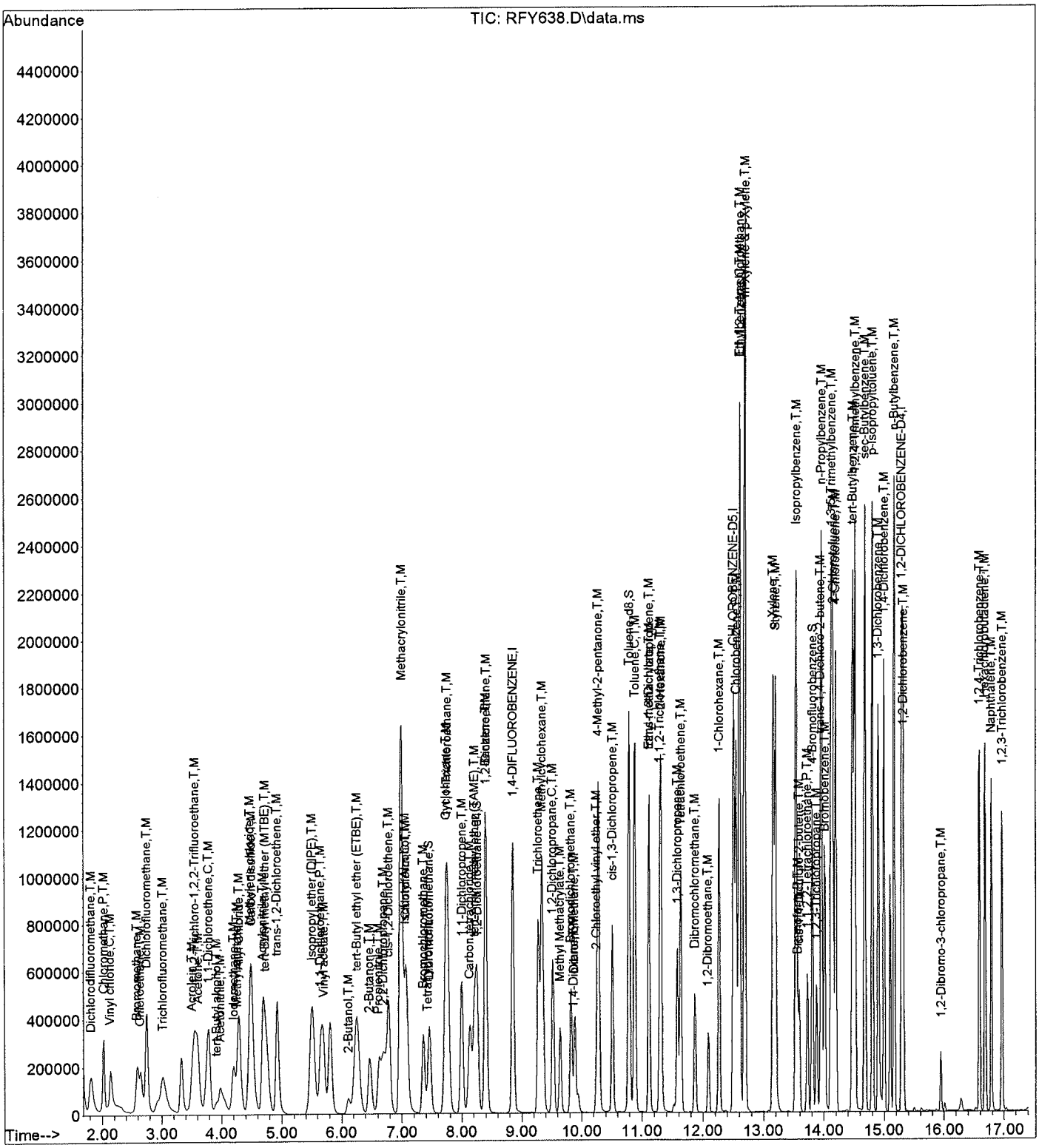
Quant Time: Jun 29 12:52:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY638.D
Acq On : 27 Jun 2018 10:28 am
Operator : DNguye
Sample : VMF5F26L
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

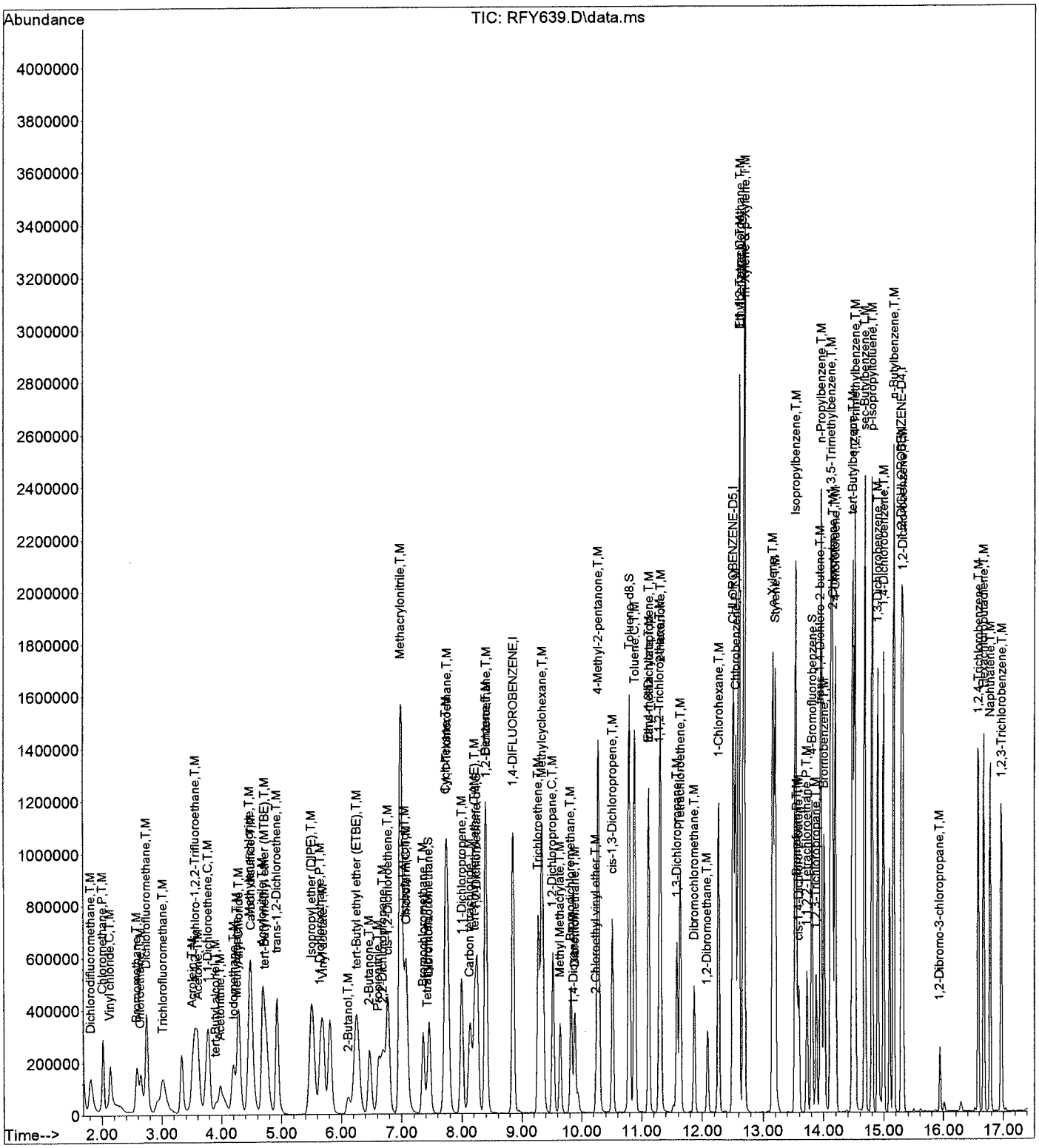
Quant Time: Jun 29 12:52:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY639.D
Acq On : 27 Jun 2018 10:53 am
Operator : DNguye
Sample : VMF5F26C
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 29 12:52:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY639.D
Acq On : 27 Jun 2018 10:53 am
Operator : DNguye
Sample : VMF5F26C
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 29 12:52:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.857	114	1355470	50.00	ug/l		-0.01
58) CHLOROBENZENE-D5	12.502	117	1129227	50.00	ug/l		-0.01
78) 1,2-DICHLOROBENZENE-D4	15.291	152	505471	50.00	ug/l		-0.01
System Monitoring Compounds							
39) Dibromofluoromethane	7.451	111	362596	50.34	ug/l		-0.02
Spiked Amount 50.000			Recovery =	100.68%			
45) 1,2-Dichloroethane-d4	8.253	65	370313	49.24	ug/l		-0.02
Spiked Amount 50.000			Recovery =	98.48%			
59) Toluene-d8	10.789	98	1375060	53.47	ug/l		-0.01
Spiked Amount 50.000			Recovery =	106.94%			
81) 4-Bromofluorobenzene	13.809	95	514201	52.73	ug/l		0.00
Spiked Amount 50.000			Recovery =	105.46%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.819	85	342650	34.83	ug/l		100
4) Chloromethane	2.017	50	394160	35.53	ug/l		99
5) Vinyl chloride	2.137	62	264087	37.13	ug/l		100
7) Bromomethane	2.577	94	234710	37.24	ug/l		99
8) Dichlorofluoromethane	2.741	67	718030	50.84	ug/L		100
9) Chloroethane	2.642	64	218715	37.35	ug/l		96
10) Trichlorofluoromethane	3.016	101	434138	34.79	ug/l		100
11) Acrolein	3.510	55	149235	272.40	ug/L		82
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	274613	51.59	ug/l		100
13) Acetone	3.609	43	443721	259.88	ug/l		95
14) tert-Butyl alcohol	3.905	59	188349	307.25	ug/L	#	1
15) Acetonitrile	3.982	41	325380	495.20	ug/L		79
16) Methyl acetate	4.256	43	264908	50.08	ug/L		92
17) 1,1-Dichloroethene	3.773	61	560106	45.36	ug/l		94
18) Iodomethane	4.202	142	490087	45.53	ug/l		97
19) Allyl Chloride	4.289	76	186056	46.60	ug/L		98
20) Methylene chloride	4.476	49	525034	45.33	ug/l		86
21) Carbon disulfide	4.498	76	1159684	48.43	ug/L		100
22) Acrylonitrile	4.685	53	516306	229.51	ug/l		99
23) tert-Butyl methyl ethe...	4.729	73	906716	49.87	ug/L		96
24) trans-1,2-Dichloroethene	4.926	61	482782	42.63	ug/l		93
25) Isopropyl ether (DIPE)	5.508	45	1082346	38.24	ug/l		91
26) Vinyl acetate	5.695	43	740509	50.09	ug/l		94
27) 1,1-Dichloroethane	5.651	63	595540	44.58	ug/l		100
28) 2-Butanol	6.112	45	168302	287.25	ug/L	#	60
29) tert-Butyl ethyl ether...	6.255	59	1045965	44.90	ug/l		99
30) 2-Butanone	6.463	43	632017	237.45	ug/l		92
31) Propionitrile	6.617	54	392513	468.82	ug/L		99
32) 2,2-Dichloropropane	6.694	77	494002	48.24	ug/l		99
33) cis-1,2-Dichloroethene	6.782	96	372288	45.65	ug/l		94
34) Methacrylonitrile	6.979	52	444333	448.11	ug/L		84
35) Isobutyl Alcohol	7.056	43	286489	867.28	ug/L		97
36) Chloroform	7.078	83	578113	45.23	ug/l		96
37) Bromochloromethane	7.353	49	253158	38.82	ug/l		84
38) Tetrahydrofuran	7.429	42	72157	38.77	ug/L		88
40) 1,1,1-Trichloroethane	7.748	97	505098	41.68	ug/l		96
41) Cyclohexane	7.737	84	747696	49.62	ug/L		90
42) 1,1-Dichloropropene	8.000	110	169366	46.06	ug/L		97
43) Carbon tetrachloride	8.132	119	433952	44.54	ug/L		100

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY639.D
Acq On : 27 Jun 2018 10:53 am
Operator : DNguye
Sample : VMF5F26C
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 29 12:52:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) tert-Amyl methyl ether...	8.220	87	218879	45.61	ug/l	93
46) 1,2-Dichloroethane	8.407	62	395471	43.08	ug/L	98
47) Benzene	8.396	78	1307425	45.86	ug/L	97
48) Trichloroethene	9.274	130	357894	45.60	ug/L	97
49) Methylcyclohexane	9.340	83	807177	46.52	ug/L	93
50) 1,2-Dichloropropane	9.516	63	340668	44.78	ug/L	89
51) Methyl Methacrylate	9.636	69	186634	45.32	ug/L	80
52) Bromodichloromethane	9.823	83	423151	45.23	ug/L	99
53) 1,4-Dioxane	9.867	88	68008	1046.47	ug/L	91
54) Dibromomethane	9.889	93	187507	47.58	ug/L	97
55) 2-Chloroethyl vinyl ether	10.240	63	115389	52.82	ug/L	99
56) 4-Methyl-2-pentanone	10.273	43	1390027	218.35	ug/L	92
57) cis-1,3-Dichloropropene	10.515	75	530229	45.54	ug/L	89
60) Ethyl methacrylate	11.119	69	352910	47.97	ug/L	85
61) Toluene	10.877	91	1436792	45.56	ug/l	99
62) trans-1,3-Dichloropropene	11.119	75	466874	49.48	ug/l	82
63) 2-Hexanone	11.305	43	948143	240.43	ug/l	93
64) 1,1,2-Trichloroethane	11.294	97	263092	50.45	ug/l	96
65) 1,3-Dichloropropane	11.580	76	451904	50.19	ug/l	99
66) Tetrachloroethene	11.635	164	276225	48.25	ug/l	96
67) Dibromochloromethane	11.865	129	304472	47.65	ug/l	100
68) 1,2-Dibromoethane	12.085	107	263962	50.78	ug/l	99
69) 1-Chlorohexane	12.271	91	503753	45.97	ug/l	91
70) Chlorobenzene	12.546	112	924607	46.16	ug/l	97
71) 1,1,1,2-Tetrachloroethane	12.601	131	337296	47.81	ug/l	99
72) Ethylbenzene	12.601	91	1676560	45.85	ug/l	99
73) m-Xylene & p-Xylene	12.689	91	2578881	91.47	ug/l	98
74) o-Xylene	13.150	91	1315604	45.33	ug/l	99
75) Styrene	13.194	104	1001295	44.78	ug/l	99
76) Isopropylbenzene	13.534	105	1686345	45.64	ug/L	99
77) cis-1,4-Dichloro-2-butene	13.589	53	107338	41.13	ug/L	80
79) Bromoform	13.556	173	194722	54.54	ug/l	99
80) 1,1,2,2-Tetrachloroethane	13.721	83	330313	51.35	ug/l	99
82) 1,2,3-Trichloropropane	13.874	110	103649	53.75	ug/l	93
83) trans-1,4-Dichloro-2-b...	13.940	53	88326	43.82	ug/L	91
84) n-Propylbenzene	13.951	91	1954344	46.56	ug/l	99
85) Bromobenzene	14.006	156	348174	47.82	ug/l	97
86) 1,3,5-Trimethylbenzene	14.116	105	1421819	46.52	ug/l	100
87) 2-Chlorotoluene	14.149	91	1361200	48.04	ug/l	99
88) 4-Chlorotoluene	14.193	91	1116602	44.91	ug/l	100
89) tert-Butylbenzene	14.478	134	321312	46.05	ug/l	98
90) 1,2,4-Trimethylbenzene	14.511	105	1414565	46.54	ug/l	100
91) sec-Butylbenzene	14.676	105	1861587	46.60	ug/l	98
92) p-Isopropyltoluene	14.797	119	1550834	46.05	ug/l	98
93) 1,3-Dichlorobenzene	14.896	146	715541	46.46	ug/l	99
94) 1,4-Dichlorobenzene	14.994	146	718662	46.80	ug/l	99
95) n-Butylbenzene	15.159	91	1411728	44.39	ug/l	99
96) 1,2-Dichlorobenzene	15.313	146	650899	45.70	ug/l	99
97) 1,2-Dibromo-3-chloropr...	15.939	157	66742	51.41	ug/l	95
98) 1,2,4-Trichlorobenzene	16.586	180	448921	48.90	ug/l	98
99) Hexachlorobutadiene	16.674	225	263404	52.58	ug/l	99
100) Naphthalene	16.784	128	985912	44.26	ug/l	100
101) 1,2,3-Trichlorobenzene	16.971	180	387739	46.83	ug/l	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY639.D
Acq On : 27 Jun 2018 10:53 am
Operator : DNguye
Sample : VMF5F26C
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 29 12:52:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY706.D
Acq On : 29 Jun 2018 7:20 pm
Operator : DNguye
Sample : VMF5F28B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 02 09:53:24 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.857	114	1018757	50.00	ug/l	-0.01
58) CHLOROBENZENE-D5	12.513	117	844900	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	370992	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.463	111	276575	51.09	ug/l	-0.01
Spiked Amount 50.000			Recovery =	102.18%		
45) 1,2-Dichloroethane-d4	8.264	65	297724	52.67	ug/l	-0.01
Spiked Amount 50.000			Recovery =	105.34%		
59) Toluene-d8	10.800	98	1022747	53.15	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.30%		
81) 4-Bromofluorobenzene	13.809	95	379956	53.09	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.18%		

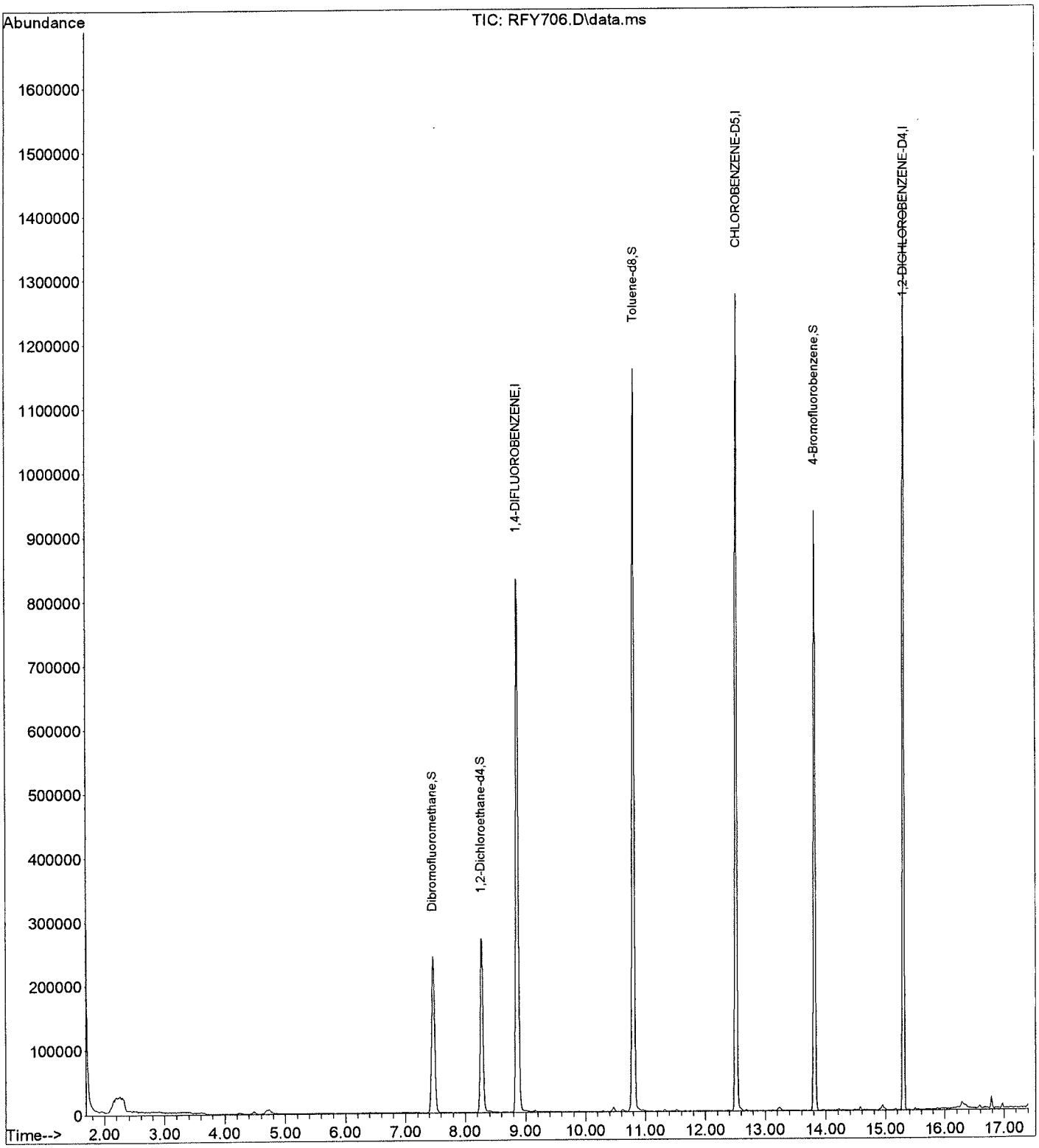
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY706.D
Acq On : 29 Jun 2018 7:20 pm
Operator : DNguye
Sample : VMF5F28B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 02 09:53:24 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY706.D
Acq On : 29 Jun 2018 7:20 pm
Operator : DNguye
Sample : VMF5F28B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: rte.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 10 % of largest Peak
Start Thrs: 0.05 Max Peaks: 100
Stop Thrs : 0.1 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL

Signal : TIC: RFY706.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	2.258	33	53	70	rBV5	25502	299888	10.97%	2.206%
2	7.463	518	527	540	rBV	243531	866709	31.72%	6.377%
3	8.264	593	600	611	rBV	271183	821593	30.07%	6.045%
4	8.857	646	654	676	rBV	832422	2332176	85.35%	17.159%
5	10.800	822	831	844	rBV	1159317	2732511	100.00%	20.105%
6	12.513	981	987	1000	rBV	1274593	2549102	93.29%	18.755%
7	13.809	1100	1105	1112	rVB	935810	1720780	62.97%	12.661%
8	15.302	1236	1241	1248	rBV	1407155	2268541	83.02%	16.691%

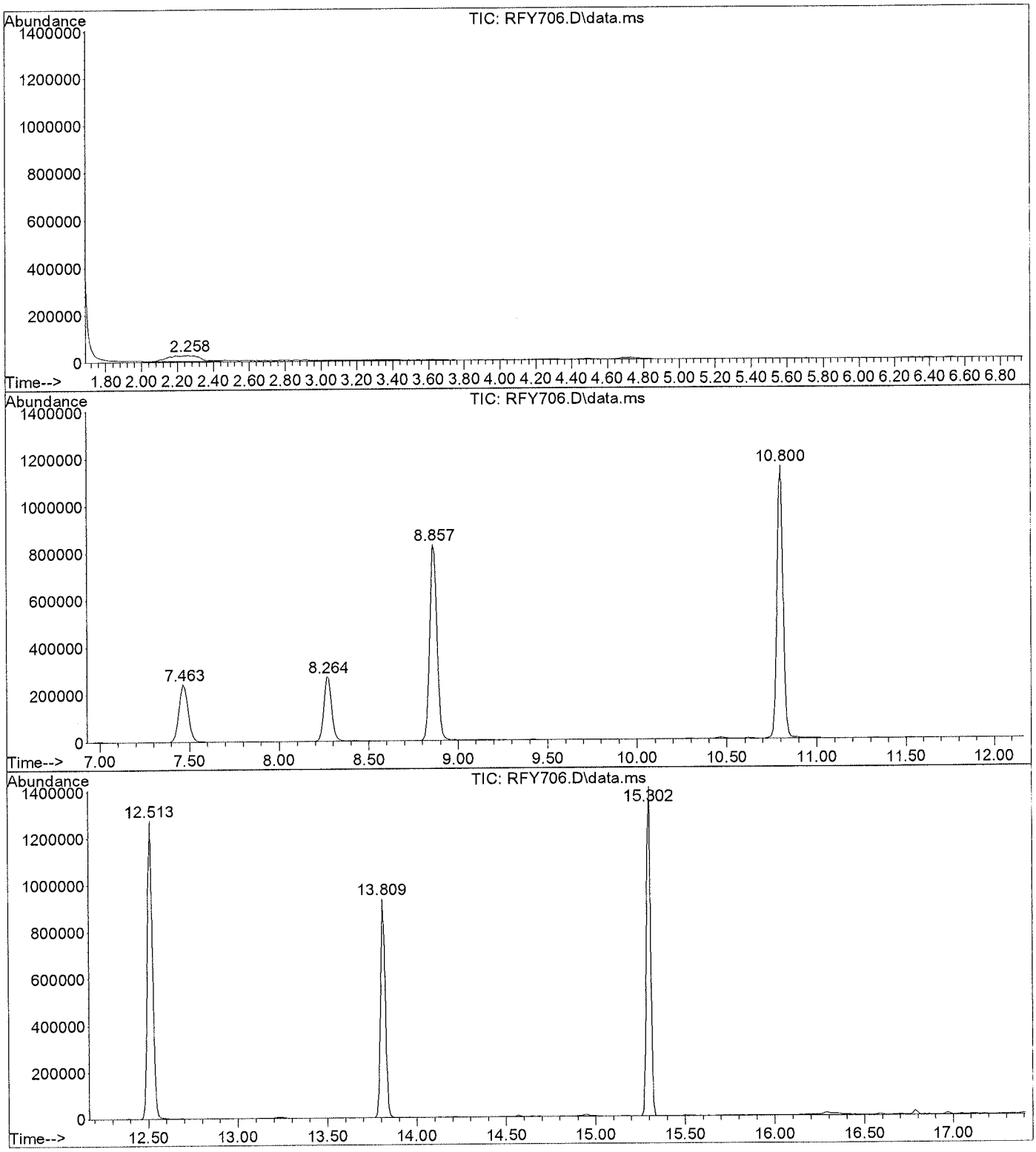
Sum of corrected areas: 13591300

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY706.D
Acq On : 29 Jun 2018 7:20 pm
Operator : DNguye
Sample : VMF5F28B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY706.D
Acq On : 29 Jun 2018 7:20 pm
Operator : DNguye
Sample : VMF5F28B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

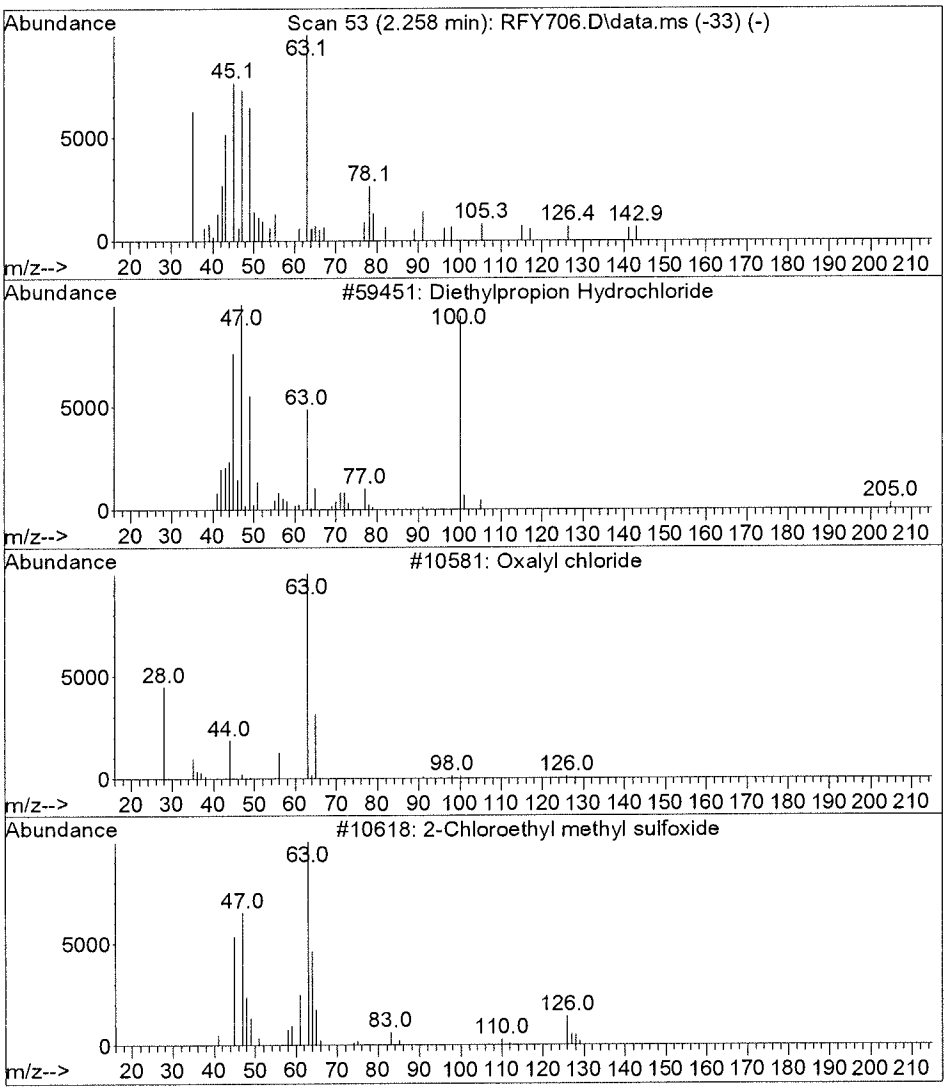
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

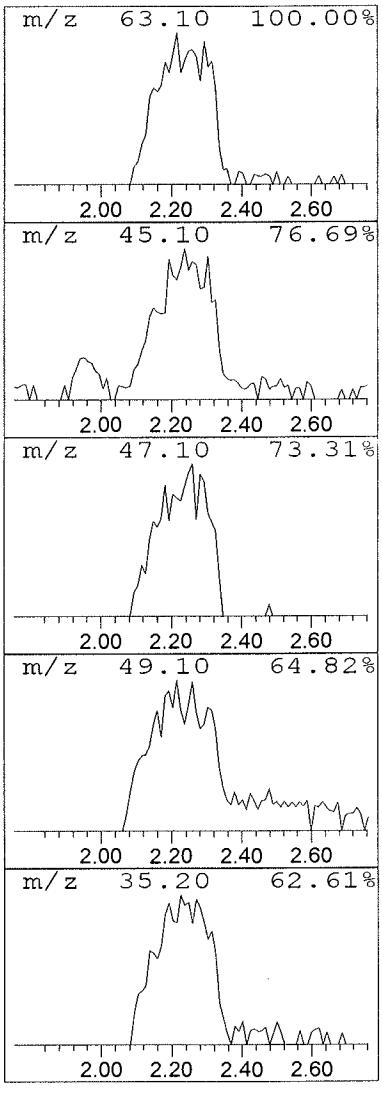
****

Peak Number 1 Diethylpropion Hydrochloride Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
2.258	6.43 ug/l	299888	1,4-DIFLUOROBENZENE	8.857

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diethylpropion Hydrochloride	205	C13H19NO	000134-80-5	25
2	Oxalyl chloride	126	C2Cl2O2	000079-37-8	9
3	2-Chloroethyl methyl sulfoxide	126	C3H7ClOS	005331-57-7	9
4	Propane, 2,2',2''-[methylidynetr...	190	C10H22O3	004447-60-3	9
5	Ethene, (2-chloroethoxy)-	106	C4H7ClO	000110-75-8	9





Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY706.D
Acq On : 29 Jun 2018 7:20 pm
Operator : DNguye
Sample : VMF5F28B 100uL
Misc : DF=50
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: TICINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Diethylpropion ...	2.258	6.4	ug/l	299888	1	8.857	2332180	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY703.D
Acq On : 29 Jun 2018 6:07 pm
Operator : DNguye
Sample : VMF5F28L
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 02 09:53:36 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.857	114	1031650	50.00	ug/l	-0.01
58) CHLOROBENZENE-D5	12.513	117	863851	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	386339	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.463	111	282735	51.58	ug/l	-0.01
Spiked Amount 50.000			Recovery =	103.16%		
45) 1,2-Dichloroethane-d4	8.275	65	299047	52.25	ug/l	0.00
Spiked Amount 50.000			Recovery =	104.50%		
59) Toluene-d8	10.800	98	1039562	52.84	ug/l	0.00
Spiked Amount 50.000			Recovery =	105.68%		
81) 4-Bromofluorobenzene	13.809	95	399592	53.62	ug/l	0.00
Spiked Amount 50.000			Recovery =	107.24%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.819	85	359236	47.98	ug/l	99
4) Chloromethane	2.017	50	346614	41.05	ug/l	100
5) Vinyl chloride	2.138	62	274457	50.69	ug/l	99
7) Bromomethane	2.577	94	229513	47.85	ug/l	99
8) Dichlorofluoromethane	2.752	67	633578	58.94	ug/L	100
9) Chloroethane	2.654	64	214644	48.17	ug/l	95
10) Trichlorofluoromethane	3.016	101	470133	49.49	ug/l	100
11) Acrolein	3.521	55	136149	326.52	ug/L	78
12) 1,1,2-Trichloro-1,2,2-...	3.554	151	252051	62.22	ug/l	100
13) Acetone	3.609	43	336816	259.19	ug/l	96
14) tert-Butyl alcohol	3.927	59	148051	317.32	ug/L #	1
15) Acetonitrile	3.993	41	252655	504.89	ug/L	76
16) Methyl acetate	4.268	43	205873	51.13	ug/L	89
17) 1,1-Dichloroethene	3.773	61	477844	50.85	ug/l	98
18) Iodomethane	4.213	142	410335	50.09	ug/l	100
19) Allyl Chloride	4.300	76	149233	49.11	ug/L	98
20) Methylene chloride	4.487	49	425832	48.30	ug/l	86
21) Carbon disulfide	4.498	76	795406	43.64	ug/L	99
22) Acrylonitrile	4.696	53	380799	222.40	ug/l	98
23) tert-Butyl methyl ethe...	4.751	73	732698	52.95	ug/L	96
24) trans-1,2-Dichloroethene	4.937	61	407908	47.33	ug/l	94
25) Isopropyl ether (DIPE)	5.519	45	877387	40.72	ug/l	92
26) Vinyl acetate	5.706	43	547355	48.65	ug/l	93
27) 1,1-Dichloroethane	5.662	63	498808	49.06	ug/l	100
28) 2-Butanol	6.123	45	124044	278.16	ug/L	95
29) tert-Butyl ethyl ether...	6.255	59	850186	47.96	ug/l	97
30) 2-Butanone	6.474	43	445319	219.82	ug/l	91
31) Propionitrile	6.628	54	296266	464.93	ug/L	99
32) 2,2-Dichloropropane	6.705	77	451978	57.99	ug/l	97
33) cis-1,2-Dichloroethene	6.793	96	310297	49.99	ug/l	95
34) Methacrylonitrile	6.990	52	350417	464.32	ug/L	86
35) Isobutyl Alcohol	7.067	43	208583	829.64	ug/L	98
36) Chloroform	7.078	83	501489	51.55	ug/l	97
37) Bromochloromethane	7.364	49	207619	41.83	ug/l	81
38) Tetrahydrofuran	7.441	42	53000	37.41	ug/L	86
40) 1,1,1-Trichloroethane	7.759	97	457891	49.65	ug/l	96
41) Cyclohexane	7.759	84	593034	51.71	ug/L	90
42) 1,1-Dichloropropene	8.001	110	142843	51.04	ug/L	97
43) Carbon tetrachloride	8.143	119	397080	53.55	ug/L	99

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY703.D
Acq On : 29 Jun 2018 6:07 pm
Operator : DNguye
Sample : VMF5F28L
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 02 09:53:36 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44) tert-Amyl methyl ether...	8.231	87	179762	49.22	ug/l		91
46) 1,2-Dichloroethane	8.407	62	356257	50.99	ug/L		99
47) Benzene	8.407	78	1065924	49.12	ug/L		97
48) Trichloroethene	9.285	130	305024	51.06	ug/L		97
49) Methylcyclohexane	9.340	83	628118	47.56	ug/L		93
50) 1,2-Dichloropropane	9.527	63	273381	47.22	ug/L		89
51) Methyl Methacrylate	9.648	69	147038	46.91	ug/L	#	79
52) Bromodichloromethane	9.834	83	358619	50.37	ug/L		97
53) 1,4-Dioxane	9.878	88	49048	991.62	ug/L		94
54) Dibromomethane	9.889	93	153634	51.22	ug/L		96
55) 2-Chloroethyl vinyl ether	10.251	63	83176	50.03	ug/L		98
56) 4-Methyl-2-pentanone	10.284	43	1012999	209.07	ug/L		92
57) cis-1,3-Dichloropropene	10.515	75	441458	49.81	ug/L		91
60) Ethyl methacrylate	11.119	69	271223	48.19	ug/L		86
61) Toluene	10.888	91	1197378	49.63	ug/l		100
62) trans-1,3-Dichloropropene	11.119	75	390819	54.15	ug/l		82
63) 2-Hexanone	11.316	43	663470	219.93	ug/l		92
64) 1,1,2-Trichloroethane	11.294	97	207454	52.00	ug/l		98
65) 1,3-Dichloropropane	11.580	76	370086	53.73	ug/l		99
66) Tetrachloroethene	11.635	164	234810	53.61	ug/l		96
67) Dibromochloromethane	11.876	129	261082	53.41	ug/l		100
68) 1,2-Dibromoethane	12.096	107	211963	53.30	ug/l		100
69) 1-Chlorohexane	12.272	91	406786	48.52	ug/l		93
70) Chlorobenzene	12.557	112	767566	50.09	ug/l		98
71) 1,1,1,2-Tetrachloroethane	12.601	131	286457	53.07	ug/l		99
72) Ethylbenzene	12.612	91	1389127	49.65	ug/l		99
73) m-Xylene & p-Xylene	12.689	91	2167444	100.49	ug/l		99
74) o-Xylene	13.161	91	1103959	49.73	ug/l		99
75) Styrene	13.205	104	821561	48.03	ug/l		98
76) Isopropylbenzene	13.534	105	1424902	50.41	ug/L		99
77) cis-1,4-Dichloro-2-butene	13.600	53	85590	42.87	ug/L		78
79) Bromoform	13.567	173	165596	60.69	ug/l		97
80) 1,1,2,2-Tetrachloroethane	13.732	83	253586	51.58	ug/l		97
82) 1,2,3-Trichloropropane	13.886	110	84155	57.10	ug/l		93
83) trans-1,4-Dichloro-2-b...	13.952	53	68870	44.71	ug/L		84
84) n-Propylbenzene	13.963	91	1631714	50.86	ug/l		99
85) Bromobenzene	14.017	156	297666	53.49	ug/l		96
86) 1,3,5-Trimethylbenzene	14.127	105	1197799	51.28	ug/l		99
87) 2-Chlorotoluene	14.149	91	1093775	50.51	ug/l		93
88) 4-Chlorotoluene	14.204	91	991490	52.17	ug/l		93
89) tert-Butylbenzene	14.479	134	265154	49.72	ug/l		95
90) 1,2,4-Trimethylbenzene	14.522	105	1194274	51.41	ug/l		99
91) sec-Butylbenzene	14.687	105	1552166	50.84	ug/l		98
92) p-Isopropyltoluene	14.808	119	1307461	50.79	ug/l		98
93) 1,3-Dichlorobenzene	14.907	146	596560	50.68	ug/l		99
94) 1,4-Dichlorobenzene	14.995	146	595083	50.71	ug/l		99
95) n-Butylbenzene	15.170	91	1167513	48.03	ug/l		100
96) 1,2-Dichlorobenzene	15.324	146	549502	50.48	ug/l		99
97) 1,2-Dibromo-3-chloropr...	15.950	157	52541	52.95	ug/l		98
98) 1,2,4-Trichlorobenzene	16.587	180	366495	52.23	ug/l		98
99) Hexachlorobutadiene	16.674	225	228814	59.75	ug/l		99
100) Naphthalene	16.784	128	732143	43.00	ug/l		100
101) 1,2,3-Trichlorobenzene	16.971	180	309647	48.93	ug/l		98

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY703.D
Acq On : 29 Jun 2018 6:07 pm
Operator : DNguye
Sample : VMF5F28L
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 02 09:53:36 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

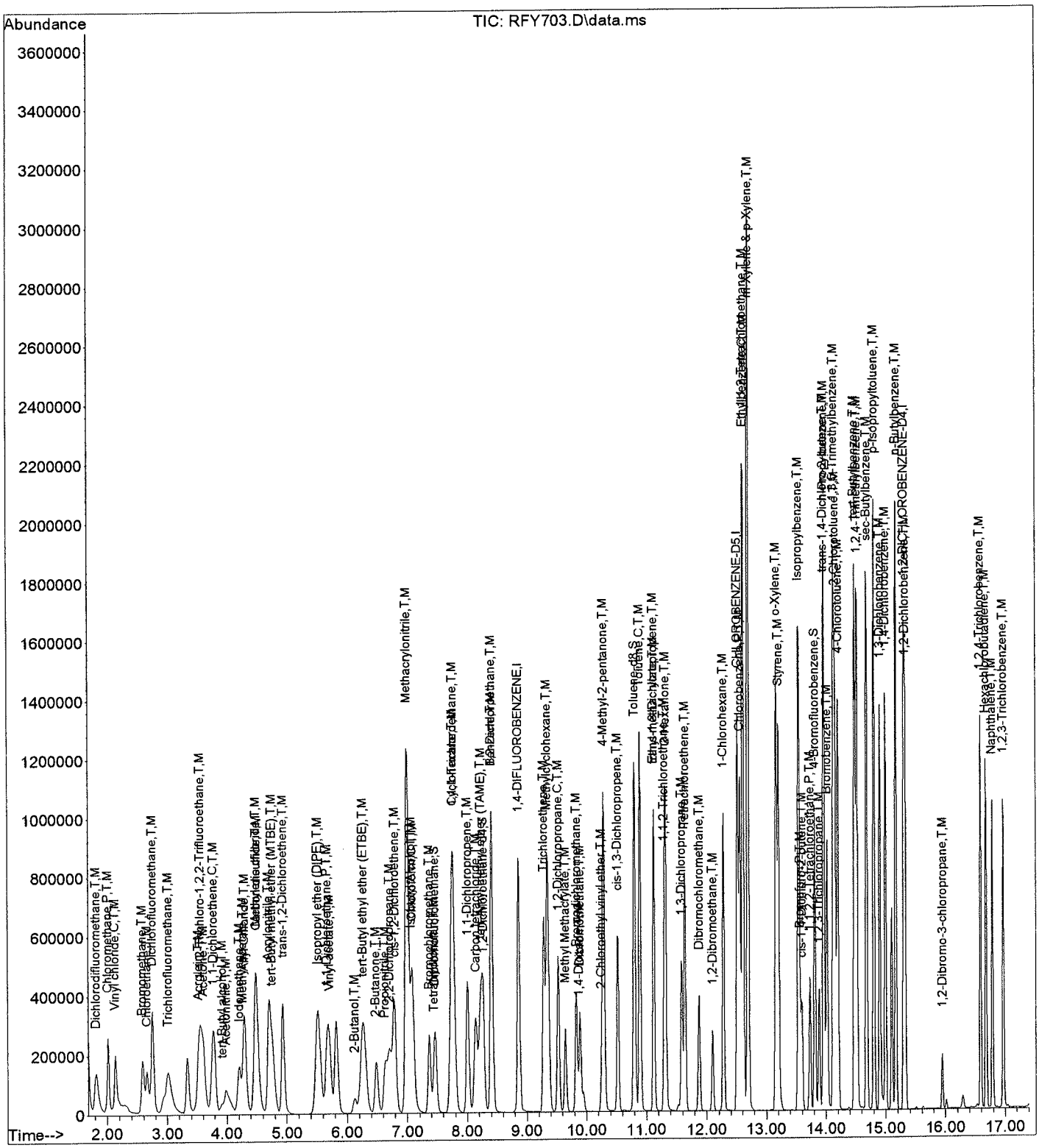
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY703.D
Acq On : 29 Jun 2018 6:07 pm
Operator : DNguye
Sample : VMF5F28L
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 02 09:53:36 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY704.D
Acq On : 29 Jun 2018 6:31 pm
Operator : DNguye
Sample : VMF5F28C
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 02 09:53:49 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.857	114	1062611	50.00	ug/l		-0.01
58) CHLOROBENZENE-D5	12.513	117	889760	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	413779	50.00	ug/l		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.463	111	293144	51.92	ug/l		-0.01
Spiked Amount 50.000			Recovery =	103.84%			
45) 1,2-Dichloroethane-d4	8.264	65	314095	53.28	ug/l		-0.01
Spiked Amount 50.000			Recovery =	106.56%			
59) Toluene-d8	10.800	98	1073491	52.98	ug/l		0.00
Spiked Amount 50.000			Recovery =	105.96%			
81) 4-Bromofluorobenzene	13.809	95	417071	52.25	ug/l		0.00
Spiked Amount 50.000			Recovery =	104.50%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.819	85	344361	44.66	ug/l		100
4) Chloromethane	2.017	50	351794	40.45	ug/l		98
5) Vinyl chloride	2.137	62	267191	47.91	ug/l		99
7) Bromomethane	2.577	94	228012	46.15	ug/l		99
8) Dichlorofluoromethane	2.752	67	618735	55.88	ug/L		100
9) Chloroethane	2.653	64	209902	45.73	ug/l		99
10) Trichlorofluoromethane	3.016	101	456193	46.63	ug/l		100
11) Acrolein	3.510	55	132718	309.02	ug/L		90
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	246222	59.01	ug/l		99
13) Acetone	3.609	43	379301	283.38	ug/l		98
14) tert-Butyl alcohol	3.927	59	173933	361.93	ug/L	#	1
15) Acetonitrile	3.993	41	281029	543.91	ug/L		84
16) Methyl acetate	4.267	43	235938	56.89	ug/L		92
17) 1,1-Dichloroethene	3.784	61	467518	48.30	ug/l		97
18) Iodomethane	4.202	142	402810	47.74	ug/l		100
19) Allyl Chloride	4.300	76	147029	46.97	ug/L		96
20) Methylene chloride	4.487	49	430549	47.41	ug/l		86
21) Carbon disulfide	4.498	76	851536	45.36	ug/L		100
22) Acrylonitrile	4.696	53	418252	237.16	ug/l		98
23) tert-Butyl methyl ethe...	4.740	73	767619	53.86	ug/L		95
24) trans-1,2-Dichloroethene	4.937	61	396485	44.66	ug/l		93
25) Isopropyl ether (DIPE)	5.519	45	872116	39.30	ug/l		91
26) Vinyl acetate	5.706	43	578541	49.92	ug/l		95
27) 1,1-Dichloroethane	5.662	63	491849	46.96	ug/l		100
28) 2-Butanol	6.123	45	150933	328.60	ug/L		96
29) tert-Butyl ethyl ether...	6.266	59	859827	47.09	ug/l		97
30) 2-Butanone	6.474	43	504424	241.74	ug/l		90
31) Propionitrile	6.628	54	329694	502.31	ug/L		99
32) 2,2-Dichloropropane	6.705	77	432671	53.89	ug/l		98
33) cis-1,2-Dichloroethene	6.793	96	302683	47.34	ug/l		96
34) Methacrylonitrile	6.990	52	384067	494.08	ug/L		87
35) Isobutyl Alcohol	7.078	43	238188	919.79	ug/L		99
36) Chloroform	7.089	83	497891	49.69	ug/l		96
37) Bromochloromethane	7.364	49	207865	40.66	ug/l		81
38) Tetrahydrofuran	7.430	42	60501	41.46	ug/L		88
40) 1,1,1-Trichloroethane	7.759	97	440106	46.33	ug/l		96
41) Cyclohexane	7.759	84	625008	52.91	ug/L		91
42) 1,1-Dichloropropene	8.001	110	139522	48.40	ug/L		94
43) Carbon tetrachloride	8.143	119	387381	50.72	ug/L		99

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY704.D
Acq On : 29 Jun 2018 6:31 pm
Operator : DNguye
Sample : VMF5F28C
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 02 09:53:49 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) tert-Amyl methyl ether...	8.231	87	183510	48.78	ug/l	92
46) 1,2-Dichloroethane	8.407	62	356060	49.48	ug/L	99
47) Benzene	8.407	78	1054143	47.17	ug/L	97
48) Trichloroethene	9.285	130	299316	48.65	ug/L	97
49) Methylcyclohexane	9.351	83	703598	51.72	ug/L	93
50) 1,2-Dichloropropane	9.527	63	269754	45.24	ug/L	88
51) Methyl Methacrylate	9.647	69	155868	48.28	ug/L	81
52) Bromodichloromethane	9.823	83	360027	49.09	ug/L	95
53) 1,4-Dioxane	9.878	88	52890	1038.14	ug/L	95
54) Dibromomethane	9.889	93	155928	50.47	ug/L	94
55) 2-Chloroethyl vinyl ether	10.251	63	87875	51.31	ug/L	97
56) 4-Methyl-2-pentanone	10.284	43	1142778	228.98	ug/L	92
57) cis-1,3-Dichloropropene	10.526	75	440801	48.29	ug/L	91
60) Ethyl methacrylate	11.119	69	292566	50.47	ug/L	85
61) Toluene	10.888	91	1173176	47.21	ug/l	99
62) trans-1,3-Dichloropropene	11.119	75	398537	53.61	ug/l	84
63) 2-Hexanone	11.316	43	767995	247.17	ug/l	93
64) 1,1,2-Trichloroethane	11.294	97	216043	52.58	ug/l	98
65) 1,3-Dichloropropane	11.591	76	376817	53.11	ug/l	98
66) Tetrachloroethene	11.635	164	231470	51.31	ug/l	96
67) Dibromochloromethane	11.876	129	266678	52.96	ug/l	99
68) 1,2-Dibromoethane	12.096	107	219679	53.63	ug/l	98
69) 1-Chlorohexane	12.272	91	398148	46.11	ug/l	93
70) Chlorobenzene	12.557	112	771869	48.90	ug/l	98
71) 1,1,1,2-Tetrachloroethane	12.601	131	288064	51.82	ug/l	99
72) Ethylbenzene	12.612	91	1379647	47.88	ug/l	100
73) m-Xylene & p-Xylene	12.689	91	2154349	96.97	ug/l	100
74) o-Xylene	13.161	91	1088979	47.62	ug/l	100
75) Styrene	13.205	104	808350	45.88	ug/l	98
76) Isopropylbenzene	13.534	105	1406912	48.33	ug/L	99
77) cis-1,4-Dichloro-2-butene	13.600	53	94154	45.79	ug/L	79
79) Bromoform	13.567	173	177210	60.64	ug/l	98
80) 1,1,2,2-Tetrachloroethane	13.732	83	273064	51.86	ug/l	98
82) 1,2,3-Trichloropropane	13.886	110	92559	58.64	ug/l	91
83) trans-1,4-Dichloro-2-b...	13.951	53	75895	46.00	ug/L	85
84) n-Propylbenzene	13.962	91	1601972	46.62	ug/l	99
85) Bromobenzene	14.017	156	299745	50.29	ug/l	95
86) 1,3,5-Trimethylbenzene	14.127	105	1179499	47.15	ug/l	99
87) 2-Chlorotoluene	14.149	91	1073124	46.27	ug/l	93
88) 4-Chlorotoluene	14.204	91	983313	48.31	ug/l	93
89) tert-Butylbenzene	14.478	134	260358	45.58	ug/l	93
90) 1,2,4-Trimethylbenzene	14.522	105	1183113	47.55	ug/l	99
91) sec-Butylbenzene	14.676	105	1515893	46.36	ug/l	99
92) p-Isopropyltoluene	14.808	119	1295144	46.98	ug/l	98
93) 1,3-Dichlorobenzene	14.907	146	598994	47.51	ug/l	100
94) 1,4-Dichlorobenzene	14.995	146	592686	47.15	ug/l	99
95) n-Butylbenzene	15.170	91	1162742	44.66	ug/l	99
96) 1,2-Dichlorobenzene	15.324	146	555852	47.67	ug/l	99
97) 1,2-Dibromo-3-chloropr...	15.950	157	57761	54.35	ug/l	97
98) 1,2,4-Trichlorobenzene	16.587	180	374387	49.81	ug/l	98
99) Hexachlorobutadiene	16.674	225	229981	56.08	ug/l	100
100) Naphthalene	16.784	128	819327	44.93	ug/l	99
101) 1,2,3-Trichlorobenzene	16.971	180	330330	48.74	ug/l	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY704.D
Acq On : 29 Jun 2018 6:31 pm
Operator : DNguye
Sample : VMF5F28C
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 02 09:53:49 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

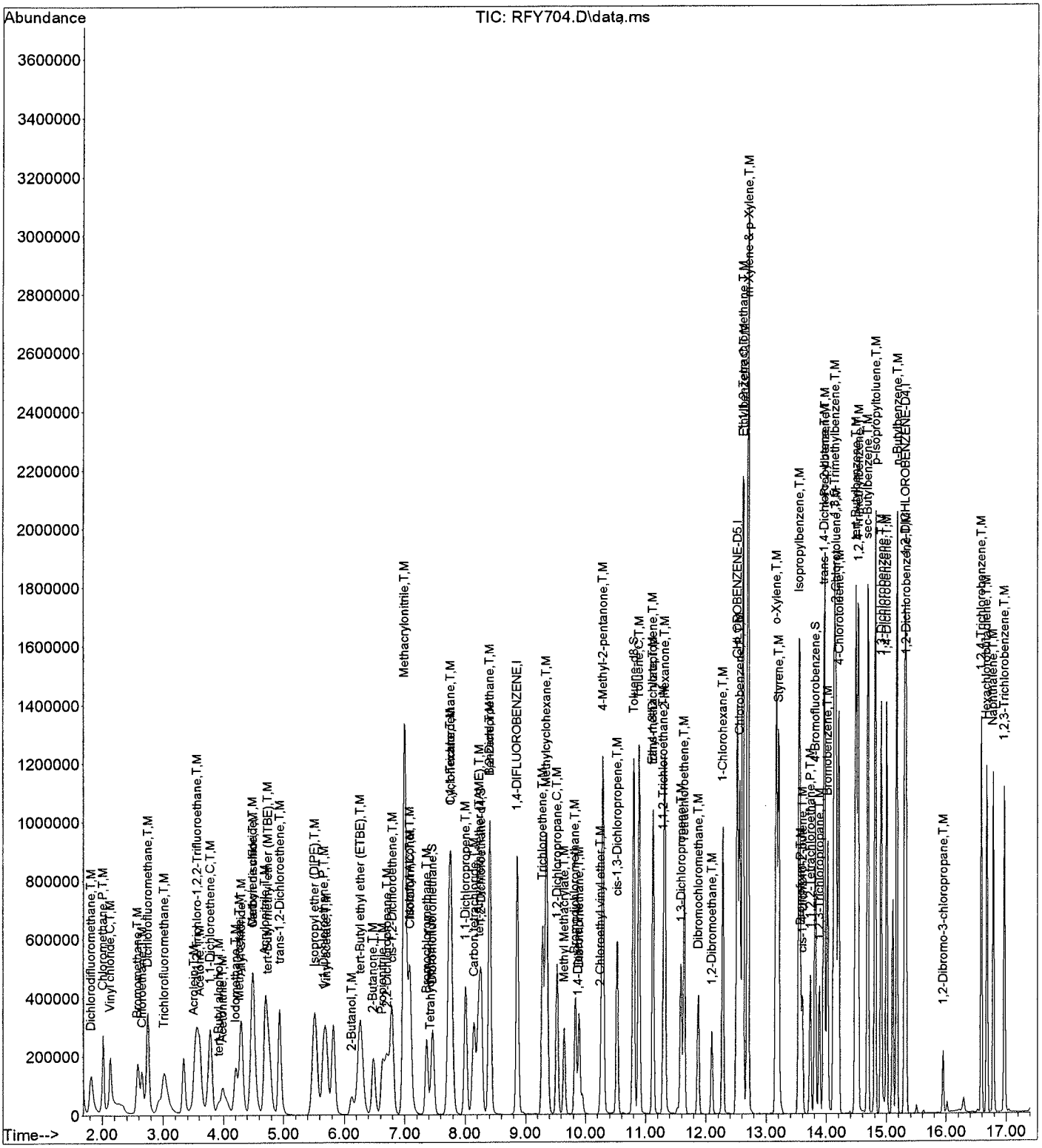
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY704.D
Acq On : 29 Jun 2018 6:31 pm
Operator : DNguye
Sample : VMF5F28C
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 02 09:53:49 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY709.D
Acq On : 29 Jun 2018 8:34 pm
Operator : DNguye
Sample : 18F187-07M 100uL
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 03 15:26:08 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	970288	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	808468	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	365534	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.473	111	269920	52.35	ug/l	0.00
Spiked Amount 50.000			Recovery =	104.70%		
45) 1,2-Dichloroethane-d4	8.275	65	292303	54.30	ug/l	0.00
Spiked Amount 50.000			Recovery =	108.60%		
59) Toluene-d8	10.800	98	971276	52.75	ug/l	0.00
Spiked Amount 50.000			Recovery =	105.50%		
81) 4-Bromofluorobenzene	13.809	95	689868	97.84	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~195.68%~~ 108.7%		
90 MD 7.3.18						
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.819	85	341721	48.53	ug/l	100
4) Chloromethane	2.017	50	320410	40.34	ug/l	98
5) Vinyl chloride	2.137	62	253661	49.82	ug/l	98
7) Bromomethane	2.577	94	206989	45.88	ug/l	98
8) Dichlorofluoromethane	2.752	67	593122	58.67	ug/L	99
9) Chloroethane	2.653	64	191957	45.80	ug/l	97
10) Trichlorofluoromethane	3.016	101	425526	47.63	ug/l	100
11) Acrolein	3.510	55	121513	309.85	ug/L	80
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	231527	60.77	ug/l	98
13) Acetone	3.620	43	332353	271.93	ug/l	99
14) tert-Butyl alcohol	3.927	59	148747	338.97	ug/L #	1
15) Acetonitrile	3.993	41	250770	531.90	ug/L	82
16) Methyl acetate	4.267	43	200620	52.98	ug/L	92
17) 1,1-Dichloroethene	3.784	61	438915	49.66	ug/l	96
18) Iodomethane	4.202	142	379427	49.25	ug/l	99
19) Allyl Chloride	4.300	76	138110	48.32	ug/L	95
20) Methylene chloride	4.487	49	382844	46.17	ug/l	86
21) Carbon disulfide	4.509	76	745545	43.49	ug/L	99
22) Acrylonitrile	4.696	53	369335	229.35	ug/l	99
23) tert-Butyl methyl ethe...	4.751	73	713672	54.83	ug/L	95
24) trans-1,2-Dichloroethene	4.937	61	377191	46.53	ug/l	95
25) Isopropyl ether (DIPE)	5.519	45	815446	40.24	ug/l	89
26) Vinyl acetate	5.706	43	485499	45.88	ug/l	94
27) 1,1-Dichloroethane	5.662	63	468099	48.95	ug/l	99
28) 2-Butanol	6.112	45	117725	280.69	ug/L	89
29) tert-Butyl ethyl ether...	6.266	59	814536	48.85	ug/l	98
30) 2-Butanone	6.485	43	432164	226.82	ug/l	92
31) Propionitrile	6.628	54	298061	497.33	ug/L	99
32) 2,2-Dichloropropane	6.705	77	407854	55.64	ug/l	99
33) cis-1,2-Dichloroethene	6.793	96	288020	49.34	ug/l	96
34) Methacrylonitrile	7.001	52	348883	491.52	ug/L	87
35) Isobutyl Alcohol	7.078	43	212939	900.53	ug/L	97
36) Chloroform	7.089	83	468944	51.26	ug/l	97
37) Bromochloromethane	7.364	49	191294	40.98	ug/l	80
38) Tetrahydrofuran	7.441	42	55024	41.30	ug/L	92
40) 1,1,1-Trichloroethane	7.759	97	421390	48.58	ug/l	96
41) Cyclohexane	7.759	84	527852	48.93	ug/L	90
42) 1,1-Dichloropropene	8.011	110	128371	48.77	ug/L	98
43) Carbon tetrachloride	8.143	119	374382	53.69	ug/L	98

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY709.D
Acq On : 29 Jun 2018 8:34 pm
Operator : DNguye
Sample : 18F187-07M 100uL
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 03 15:26:08 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) tert-Amyl methyl ether...	8.231	87	171444	49.91	ug/l	92
46) 1,2-Dichloroethane	8.407	62	335792	51.10	ug/L	99
47) Benzene	8.407	78	984810	48.26	ug/L	97
48) Trichloroethene	9.285	130	282557	50.29	ug/L	96
49) Methylcyclohexane	9.351	83	551288	44.38	ug/L	94
50) 1,2-Dichloropropane	9.527	63	252787	46.42	ug/L	91
51) Methyl Methacrylate	9.647	69	143596	48.71	ug/L	81
52) Bromodichloromethane	9.834	83	336223	50.21	ug/L	96
53) 1,4-Dioxane	9.878	88	50962	1095.47	ug/L	92
54) Dibromomethane	9.889	93	148149	52.52	ug/L	96
55) 2-Chloroethyl vinyl ether	10.251	63	81346	52.02	ug/L	99
56) 4-Methyl-2-pentanone	10.284	43	981508	215.38	ug/L	91
57) cis-1,3-Dichloropropene	10.526	75	416120	49.93	ug/L	90
60) Ethyl methacrylate	11.119	69	268284	50.94	ug/L	84
61) Toluene	10.888	91	1112844	49.29	ug/l	100
62) trans-1,3-Dichloropropene	11.119	75	369695	54.73	ug/l	83
63) 2-Hexanone	11.316	43	650794	230.51	ug/l	92
64) 1,1,2-Trichloroethane	11.294	97	200519	53.71	ug/l	98
65) 1,3-Dichloropropane	11.591	76	346767	53.79	ug/l	98
66) Tetrachloroethene	11.646	164	218828	53.39	ug/l	96
67) Dibromochloromethane	11.876	129	252691	55.23	ug/l	100
68) 1,2-Dibromoethane	12.096	107	203889	54.78	ug/l	99
69) 1-Chlorohexane	12.283	91	379564	48.38	ug/l	94
70) Chlorobenzene	12.557	112	715505	49.89	ug/l	98
71) 1,1,1,2-Tetrachloroethane	12.601	131	271893	53.83	ug/l	99
72) Ethylbenzene	12.612	91	1314694	50.21	ug/l	99
73) m-Xylene & p-Xylene	12.689	91	2010300	99.59	ug/l	99
74) o-Xylene	13.161	91	1029056	49.53	ug/l	100
75) Styrene	13.205	104	761151	47.54	ug/l	98
76) Isopropylbenzene	13.545	105	1326585	50.15	ug/L	99
77) cis-1,4-Dichloro-2-butene	13.600	53	85227	45.62	ug/L	80
79) Bromoform	13.567	173	160779	62.27	ug/l	98
80) 1,1,2,2-Tetrachloroethane	13.732	83	251014	53.96	ug/l	97
82) 1,2,3-Trichloropropane	13.886	110	85121	61.04	ug/l	91
83) trans-1,4-Dichloro-2-b...	13.951	53	69353	47.58	ug/L	89
84) n-Propylbenzene	13.962	91	1511947	49.81	ug/l	99
85) Bromobenzene	14.017	156	277004	52.61	ug/l	95
86) 1,3,5-Trimethylbenzene	14.127	105	1098970	49.73	ug/l	100
87) 2-Chlorotoluene	14.149	91	1107518	54.05	ug/l	99
88) 4-Chlorotoluene	14.204	91	825122	45.89	ug/l	100
89) tert-Butylbenzene	14.478	134	247404	49.03	ug/l	94
90) 1,2,4-Trimethylbenzene	14.522	105	1107448	50.38	ug/l	99
91) sec-Butylbenzene	14.687	105	1434140	49.64	ug/l	98
92) p-Isopropyltoluene	14.808	119	1216445	49.95	ug/l	98
93) 1,3-Dichlorobenzene	14.907	146	551033	49.48	ug/l	99
94) 1,4-Dichlorobenzene	15.005	146	547178	49.28	ug/l	99
95) n-Butylbenzene	15.170	91	1083635	47.12	ug/l	99
96) 1,2-Dichlorobenzene	15.324	146	515998	50.10	ug/l	99
97) 1,2-Dibromo-3-chloropr...	15.950	157	53720	57.22	ug/l	97
98) 1,2,4-Trichlorobenzene	16.587	180	338209	50.94	ug/l	98
99) Hexachlorobutadiene	16.685	225	213919	59.04	ug/l	99
100) Naphthalene	16.784	128	722354	44.84	ug/l	100
101) 1,2,3-Trichlorobenzene	16.971	180	290250	48.48	ug/l	97

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY709.D
Acq On : 29 Jun 2018 8:34 pm
Operator : DNguye
Sample : 18F187-07M 100uL
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 03 15:26:08 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY709.D
Acq On : 29 Jun 2018 8:34 pm
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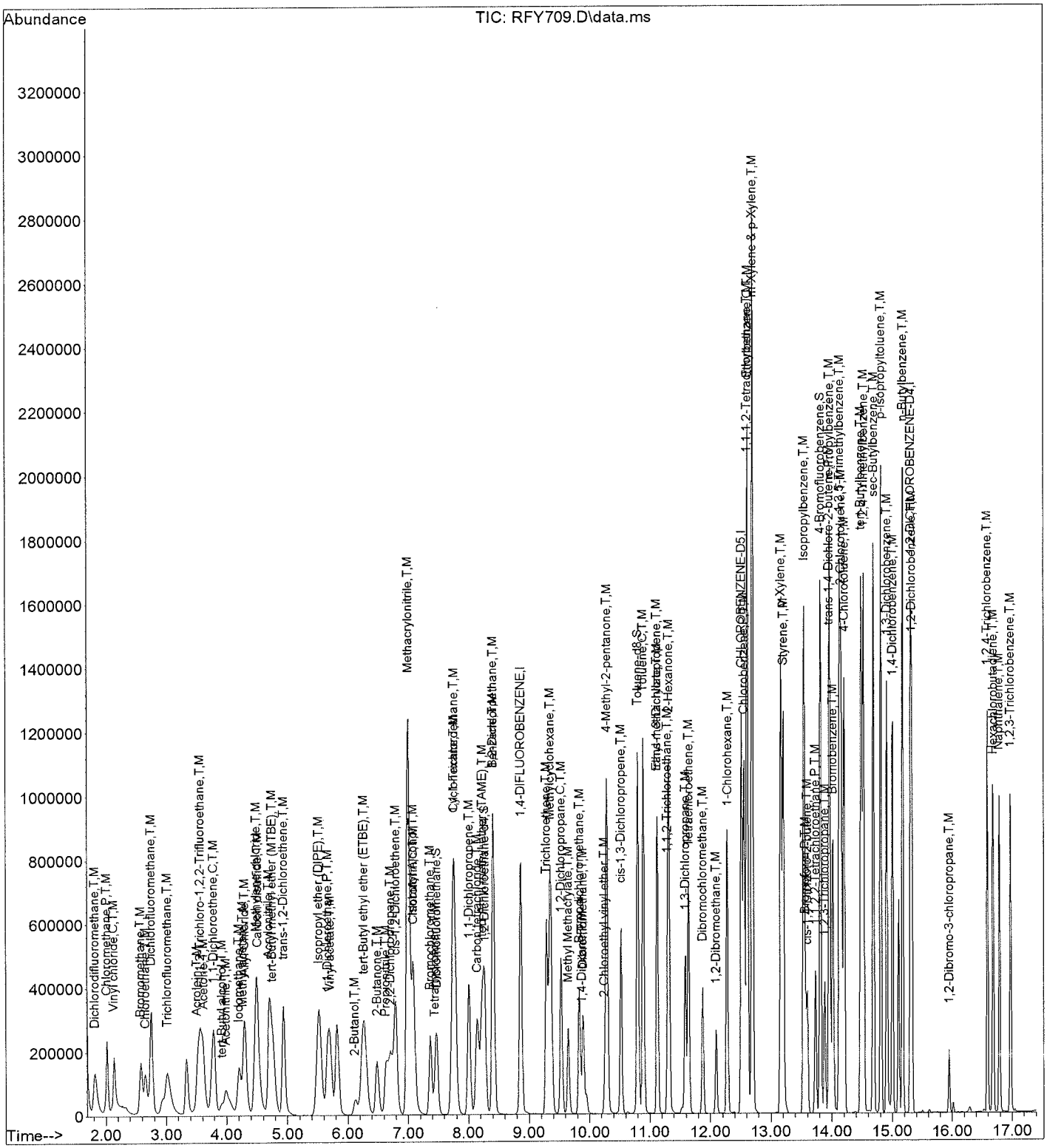

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY710.D
Acq On : 29 Jun 2018 8:59 pm
Operator : DNguye
Sample : 18F187-07S 100uL
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 03 15:26:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	973590	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	815737	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	368700	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.474	111	265492	51.32	ug/l	0.00
Spiked Amount 50.000			Recovery =	102.64%		
45) 1,2-Dichloroethane-d4	8.275	65	290746	53.83	ug/l	0.00
Spiked Amount 50.000			Recovery =	107.66%		
59) Toluene-d8	10.800	98	979483	52.72	ug/l	0.00
Spiked Amount 50.000			Recovery =	105.44%		
81) 4-Bromofluorobenzene	13.809	95	692150	97.32	ug/l	0.00
Spiked Amount 50.000			Recovery =	~~194.64%~~ 108.1%		
90 MD 7.3.18						
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.819	85	316085	44.74	ug/l	99
4) Chloromethane	2.017	50	310293	38.94	ug/l	100
5) Vinyl chloride	2.137	62	241085	47.19	ug/l	100
7) Bromomethane	2.588	94	196548	43.42	ug/l	100
8) Dichlorofluoromethane	2.752	67	565059	55.70	ug/L	99
9) Chloroethane	2.654	64	180495	42.92	ug/l	97
10) Trichlorofluoromethane	3.016	101	395356	44.10	ug/l	100
11) Acrolein	3.521	55	126666	321.90	ug/L	82
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	228038	59.65	ug/l	97
13) Acetone	3.609	43	347825	283.62	ug/l	98
14) tert-Butyl alcohol	3.927	59	153929	349.59	ug/L	79
15) Acetonitrile	3.993	41	252782	534.28	ug/L	77
16) Methyl acetate	4.268	43	194498	51.19	ug/L	91
17) 1,1-Dichloroethene	3.784	61	426932	48.14	ug/l	97
18) Iodomethane	4.213	142	367797	47.57	ug/l	99
19) Allyl Chloride	4.300	76	131029	45.69	ug/L	97
20) Methylene chloride	4.487	49	385515	46.34	ug/l	86
21) Carbon disulfide	4.498	76	796124	46.29	ug/L	100
22) Acrylonitrile	4.696	53	388557	240.47	ug/l	99
23) tert-Butyl methyl ethe...	4.751	73	690704	52.89	ug/L	95
24) trans-1,2-Dichloroethene	4.937	61	365986	44.99	ug/l	93
25) Isopropyl ether (DIPE)	5.519	45	790890	38.90	ug/l	91
26) Vinyl acetate	5.717	43	473875	44.63	ug/l	94
27) 1,1-Dichloroethane	5.673	63	446895	46.57	ug/l	99
28) 2-Butanol	6.134	45	120394	286.08	ug/L #	60
29) tert-Butyl ethyl ether...	6.266	59	823705	49.23	ug/l	99
30) 2-Butanone	6.485	43	458626	239.89	ug/l	92
31) Propionitrile	6.628	54	296043	492.29	ug/L	98
32) 2,2-Dichloropropane	6.705	77	392146	53.31	ug/l	98
33) cis-1,2-Dichloroethene	6.793	96	281053	47.98	ug/l	95
34) Methacrylonitrile	7.001	52	351742	493.87	ug/L	87
35) Isobutyl Alcohol	7.078	43	211591	891.79	ug/L	99
36) Chloroform	7.089	83	461299	50.25	ug/l	97
37) Bromochloromethane	7.364	49	189095	40.37	ug/l	80
38) Tetrahydrofuran	7.430	42	53291	39.86	ug/L	89
40) 1,1,1-Trichloroethane	7.759	97	410721	47.19	ug/l	96
41) Cyclohexane	7.759	84	500369	46.23	ug/L	91
42) 1,1-Dichloropropene	8.012	110	124653	47.20	ug/L	98
43) Carbon tetrachloride	8.143	119	362700	51.83	ug/L	99

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY710.D
Acq On : 29 Jun 2018 8:59 pm
Operator : DNguye
Sample : 18F187-07S 100uL
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 03 15:26:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44)	tert-Amyl methyl ether...	8.231	87	167439	48.58	ug/l	91
46)	1,2-Dichloroethane	8.418	62	328541	49.83	ug/L	98
47)	Benzene	8.407	78	968520	47.30	ug/L	97
48)	Trichloroethene	9.285	130	274146	48.63	ug/L	98
49)	Methylcyclohexane	9.351	83	529638	42.49	ug/L	93
50)	1,2-Dichloropropane	9.527	63	245727	44.97	ug/L	90
51)	Methyl Methacrylate	9.648	69	142752	48.26	ug/L	81
52)	Bromodichloromethane	9.834	83	329457	49.03	ug/L	96
53)	1,4-Dioxane	9.878	88	49246	1055.00	ug/L	98
54)	Dibromomethane	9.889	93	142829	50.46	ug/L	94
55)	2-Chloroethyl vinyl ether	10.251	63	79048	50.38	ug/L	96
56)	4-Methyl-2-pentanone	10.284	43	1049849	229.60	ug/L	92
57)	cis-1,3-Dichloropropene	10.526	75	400077	47.84	ug/L	91
60)	Ethyl methacrylate	11.130	69	259827	48.89	ug/L	86
61)	Toluene	10.888	91	1084203	47.59	ug/l	100
62)	trans-1,3-Dichloropropene	11.130	75	363599	53.35	ug/l	82
63)	2-Hexanone	11.316	43	703400	246.92	ug/l	93
64)	1,1,2-Trichloroethane	11.305	97	197782	52.50	ug/l	97
65)	1,3-Dichloropropane	11.591	76	345988	53.19	ug/l	100
66)	Tetrachloroethene	11.646	164	212070	51.28	ug/l	96
67)	Dibromochloromethane	11.876	129	245468	53.17	ug/l	100
68)	1,2-Dibromoethane	12.096	107	202163	53.84	ug/l	99
69)	1-Chlorohexane	12.283	91	365287	46.14	ug/l	95
70)	Chlorobenzene	12.557	112	694838	48.02	ug/l	98
71)	1,1,1,2-Tetrachloroethane	12.601	131	264133	51.82	ug/l	100
72)	Ethylbenzene	12.612	91	1296084	49.06	ug/l	100
73)	m-Xylene & p-Xylene	12.689	91	1958592	96.16	ug/l	99
74)	o-Xylene	13.161	91	1007895	48.08	ug/l	99
75)	Styrene	13.205	104	738413	45.71	ug/l	98
76)	Isopropylbenzene	13.545	105	1301087	48.75	ug/L	100
77)	cis-1,4-Dichloro-2-butene	13.600	53	83283	44.18	ug/L	76
79)	Bromoform	13.567	173	160494	61.63	ug/l	98
80)	1,1,2,2-Tetrachloroethane	13.732	83	245211	52.26	ug/l	98
82)	1,2,3-Trichloropropane	13.886	110	83171	59.13	ug/l	92
83)	trans-1,4-Dichloro-2-b...	13.951	53	67620	46.00	ug/L	87
84)	n-Propylbenzene	13.962	91	1474741	48.17	ug/l	99
85)	Bromobenzene	14.017	156	274655	51.71	ug/l	96
86)	1,3,5-Trimethylbenzene	14.127	105	1094764	49.11	ug/l	99
87)	2-Chlorotoluene	14.149	91	1081947	52.35	ug/l	100
88)	4-Chlorotoluene	14.204	91	822277	45.34	ug/l	100
89)	tert-Butylbenzene	14.479	134	240258	47.21	ug/l	95
90)	1,2,4-Trimethylbenzene	14.522	105	1082781	48.84	ug/l	99
91)	sec-Butylbenzene	14.687	105	1414051	48.53	ug/l	98
92)	p-Isopropyltoluene	14.808	119	1186140	48.28	ug/l	98
93)	1,3-Dichlorobenzene	14.907	146	543989	48.43	ug/l	99
94)	1,4-Dichlorobenzene	15.006	146	529839	47.31	ug/l	99
95)	n-Butylbenzene	15.170	91	1059802	45.69	ug/l	99
96)	1,2-Dichlorobenzene	15.324	146	509558	49.05	ug/l	99
97)	1,2-Dibromo-3-chloropr...	15.950	157	53385	56.37	ug/l	97
98)	1,2,4-Trichlorobenzene	16.587	180	334960	50.02	ug/l	98
99)	Hexachlorobutadiene	16.685	225	209756	57.40	ug/l	100
100)	Naphthalene	16.784	128	729165	44.87	ug/l	100
101)	1,2,3-Trichlorobenzene	16.971	180	292697	48.47	ug/l	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY710.D
Acq On : 29 Jun 2018 8:59 pm
Operator : DNguye
Sample : 18F187-07S 100uL
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 03 15:26:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
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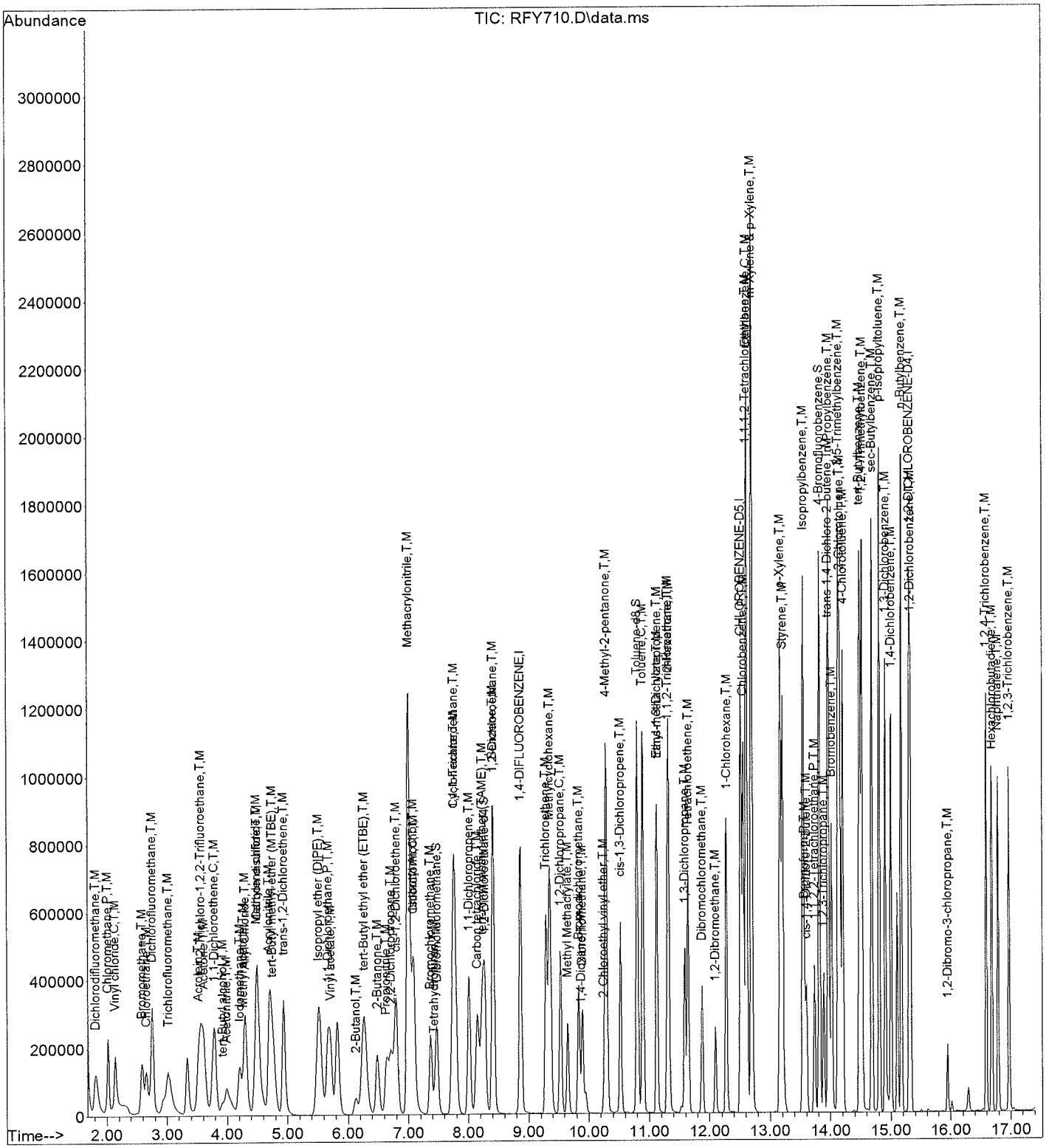
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



INITIAL CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RDY193
Instrument ID: F5
GC Column:RTX502.2ID:0.25mm (mm)

Contract: JBER TO075
SAS No.: SDG No.: 18F187
BFB Injection Date : 04/19/18
BFB Injection Time : 09:37
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.79
75	30.0 - 60.0% of mass 95	47.38
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.97
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	71.63
175	5.0 - 9.0% of mass 174	5.31(7.4)1
176	95.0 - 101.0% of mass 174	69.85(97.5)1
177	5.0 - 9.0% of mass 176	4.27(6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD02	VOF5D191	RDY195	04/19/18	10:42
2	VSTD04	VOF5D192	RDY196	04/19/18	11:07
3	VSTD010	VOF5D193	RDY197	04/19/18	11:32
4	VSTD020	VOF5D194	RDY198	04/19/18	11:58
5	VSTD050	VOF5D195	RDY199	04/19/18	12:23
6	VSTD100	VOF5D196	RDY200	04/19/18	12:48
7	VSTD200	VOF5D197	RDY201	04/19/18	13:13
8	VSTD300	VOF5D198	RDY202	04/19/18	13:38
9	VSTD500	VOF5D199	RDY203	04/19/18	14:03
10	VSTD050	IVOF5D1901	RDY206	04/19/18	15:18

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F5
Beginning DateTime :04/19/18 10:42
Spike Units :PPB
IC File :RDY199

Column Spec :RTX-502.2 ID :0.25MM
Ending DateTime :04/19/18 14:03
HPChem Method :VOF5D19

M	IDX	Parameters	2 10:42 RDY195	4 11:07 RDY196	10 11:32 RDY197	20 11:58 RDY198	50 12:23 RDY199	100 12:48 RDY200	200 13:13 RDY201	300 13:38 RDY202	500 14:03 RDY203	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	8.8606
	2	Chlorotrifluoroethylene	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	3	Dichlorodifluoromethane	0.388	0.362	0.380	0.373	0.343	0.355	0.348	0.352	0.364	0.363	4.15	1.8300
	4	Chloromethane	0.387	0.402	0.424	0.429	0.397	0.411	0.407	0.408	0.420	0.409	3.24	2.0716
	5	Vinyl chloride	0.223	0.262	0.287	0.284	0.256	0.259	0.265	0.252	0.274	0.262	7.29	2.1802
	6	2-Chloro-1,1,1-trifluoroethane	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	7	Bromomethane	0.219	0.223	0.249	0.241	0.226	0.233	0.230	0.231	0.239	0.232	4.06	2.6315
	8	Dichlorofluoromethane	0.457	0.446	0.518	0.565	0.537	0.545	0.529	0.539	0.552	0.521	7.96	2.7633
	9	Chloroethane	0.177	0.209	0.232	0.230	0.214	0.223	0.217	0.217	0.225	0.216	7.61	2.6950
	10	Trichlorofluoromethane	0.410	0.438	0.490	0.481	0.453	0.469	0.460	0.463	0.479	0.460	5.35	3.0268
5	11	Acrolein	0.019	0.014	0.024	0.022	0.021	0.020	0.020	0.021	0.020	0.020	13.85	3.5233
	12	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.144	0.170	0.197	0.215	0.205	0.209	0.205	0.206	0.215	0.196	12.07	3.5636
5	13	Acetone	0.082	0.066	0.063	0.061	0.058	0.060	0.057	0.059	0.060	0.063	12.20	3.6185
5	14	tert-Butyl alcohol	0.022	0.020	0.020	0.024	0.024	0.024	0.022	0.024	0.023	0.023	7.06	3.9259
10	15	Acetonitrile	0.013	0.016	0.016	0.020	0.021	0.026	0.024	0.026	0.025	0.021	22.87	3.9942
	16	Methyl acetate	0.149	0.215	0.197	0.209	0.194	0.201	0.191	0.197	0.203	0.195	9.70	4.2760
	17	1,1-Dichloroethene	0.345	0.407	0.454	0.503	0.478	0.482	0.471	0.473	0.485	0.455	10.81	3.7978
	18	Iodomethane	0.320	0.359	0.390	0.430	0.411	0.416	0.406	0.414	0.427	0.397	9.07	4.2321
	19	Allyl Chloride	0.113	0.127	0.148	0.163	0.151	0.157	0.152	0.155	0.159	0.147	11.19	4.3126
	20	Methylene chloride	0.542	0.465	0.424	0.451	0.393	0.395	0.386	0.392	0.397	0.427	12.11	4.5079
	21	Carbon disulfide	0.716	0.759	0.828	0.972	0.954	0.948	0.868	0.944	0.961	0.883	10.84	4.5188
5	22	Acrylonitrile	0.072	0.078	0.078	0.088	0.083	0.087	0.083	0.087	0.091	0.083	7.29	4.7067
	23	tert-Butyl methyl ether (MTBE)	0.491	0.600	0.641	0.737	0.706	0.719	0.683	0.703	0.757	0.671	12.34	4.7518
	24	trans-1,2-Dichloroethene	0.323	0.368	0.407	0.461	0.436	0.445	0.433	0.436	0.449	0.418	10.73	4.9446
	25	Isopropyl ether (DIPE)	0.784	0.960	1.044	1.161	1.094	1.110	1.072	1.080	1.093	1.044	10.67	5.5180
	26	Vinyl acetate	0.440	0.518	0.567	0.559	0.548	0.581	0.556	0.557	0.583	0.545	8.02	5.7156
	27	1,1-Dichloroethane	0.399	0.417	0.486	0.545	0.511	0.523	0.510	0.512	0.532	0.493	10.32	5.6729
5	28	2-Butanol	0.020	0.021	0.021	0.023	0.021	0.022	0.021	0.022	0.023	0.022	5.02	6.1243
	29	tert-Butyl ethyl ether (ETBE)	0.692	0.809	0.825	1.027	0.885	0.885	0.845	0.890	0.875	0.859	10.29	6.2707
5	30	2-Butanone	0.091	0.092	0.094	0.102	0.098	0.102	0.098	0.101	0.105	0.098	4.89	6.4817
10	31	Propionitrile	0.027	0.029	0.030	0.034	0.032	0.033	0.030	0.031	0.032	0.031	6.81	6.6342
	32	2,2-Dichloropropane	0.323	0.351	0.382	0.419	0.390	0.393	0.377	0.383	0.382	0.378	7.14	6.7135
	33	cis-1,2-Dichloroethene	0.246	0.267	0.292	0.332	0.309	0.317	0.310	0.312	0.323	0.301	9.28	6.7952
10	34	Methacrylonitrile	0.030	0.032	0.036	0.041	0.038	0.039	0.037	0.038	0.039	0.037	9.70	7.0002
20	35	Isobutyl Alcohol	0.012	0.010	0.012	0.013	0.012	0.013	0.012	0.012	0.013	0.012	7.03	7.0697
	36	Chloroform	0.387	0.432	0.471	0.508	0.480	0.494	0.484	0.486	0.502	0.471	8.19	7.0868
	37	Bromochloromethane	0.185	0.224	0.236	0.262	0.249	0.255	0.248	0.250	0.254	0.241	9.75	7.3637
	38	Tetrahydrofuran	0.081	0.078	0.066	0.072	0.065	0.065	0.062	0.064	0.066	0.069	9.84	7.4369
	39	Dibromofluoromethane	------	0.239	0.225	0.302	0.282	0.250	0.268	0.274	0.285	0.266	9.71	7.4681
	40	1,1,1-Trichloroethane	0.326	0.404	0.440	0.493	0.457	0.474	0.467	0.472	0.490	0.447	11.87	7.7590
	41	Cyclohexane	0.438	0.499	0.537	0.587	0.534	0.592	0.588	0.600	0.627	0.556	10.69	7.7578
	42	1,1-Dichloropropene	0.106	0.114	0.131	0.151	0.141	0.144	0.142	0.143	0.149	0.136	11.69	8.0091
	43	Carbon tetrachloride	0.262	0.308	0.347	0.392	0.371	0.385	0.380	0.387	0.401	0.359	12.86	8.1470
	44	tert-Amyl methyl ether (TAME)	0.134	0.154	0.179	0.189	0.182	0.189	0.184	0.188	0.193	0.177	11.22	8.2323
	45	1,2-Dichloroethane-d4	0.206	0.262	0.250	0.319	0.303	0.272	0.289	0.293	0.302	0.277	12.34	8.2714
	46	1,2-Dichloroethane	0.257	0.307	0.337	0.369	0.351	0.360	0.350	0.355	0.361	0.339	10.49	8.4105
	47	Benzene	0.828	0.912	1.034	1.150	1.092	1.127	1.099	1.100	1.122	1.052	10.44	8.4068
	48	Trichloroethene	0.236	0.254	0.286	0.314	0.298	0.306	0.300	0.302	0.310	0.290	9.33	9.2852
	49	Methylcyclohexane	0.517	0.585	0.614	0.683	0.596	0.683	0.677	0.690	0.716	0.640	10.22	9.3498
	50	1,2-Dichloropropane	0.211	0.242	0.279	0.305	0.293	0.301	0.295	0.296	0.304	0.281	11.55	9.5267
	51	Methyl Methacrylate	0.143	0.136	0.144	0.160	0.156	0.160	0.153	0.156	0.160	0.152	5.80	9.6475
	52	Bromodichloromethane	0.277	0.290	0.333	0.370	0.360	0.372	0.363	0.366	0.376	0.345	10.75	9.8293
20	53	1,4-Dioxane	------	0.002	0.002	0.003	0.002	0.003	0.002	0.002	0.003	0.002	8.29	9.8767
	54	Dibromomethane	0.109	0.128	0.136	0.159	0.152	0.156	0.152	0.156	0.160	0.145	12.00	9.8890
	55	2-Chloroethyl vinyl ether	0.063	0.068	0.079	0.086	0.083	0.088	0.083	0.085	0.090	0.081	11.35	10.2514
5	56	4-Methyl-2-pentanone	0.209	0.226	0.216	0.251	0.235	0.250	0.238	0.242	0.246	0.235	6.28	10.2843
	57	cis-1,3-Dichloropropene	0.339	0.379	0.421	0.461	0.446	0.461	0.448	0.451	0.460	0.430	10.03	10.5186
	58	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	12.5132

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4/23/18

59	Toluene-d8	0.905	1.081	1.027	1.343	1.277	1.103	1.162	1.164	1.187	1.139	11.45	10.7967
60	Ethyl methacrylate	0.255	0.292	0.318	0.353	0.341	0.354	0.335	0.338	0.344	0.326	10.04	11.1188
61	Toluene	1.137	1.314	1.382	1.529	1.460	1.481	1.439	1.405	1.421	1.396	8.22	10.8882
62	trans-1,3-Dichloropropene	0.314	0.381	0.405	0.452	0.441	0.454	0.435	0.433	0.446	0.418	10.91	11.1188
5 63	2-Hexanone	0.153	0.164	0.164	0.187	0.176	0.189	0.178	0.179	0.182	0.175	6.88	11.3164
64	1,1,2-Trichloroethane	0.185	0.214	0.227	0.248	0.241	0.248	0.236	0.236	0.243	0.231	8.78	11.2944
65	1,3-Dichloropropane	0.310	0.359	0.391	0.434	0.420	0.432	0.412	0.411	0.421	0.399	10.17	11.5799
66	Tetrachloroethene	0.197	0.230	0.247	0.280	0.264	0.267	0.263	0.262	0.271	0.253	10.12	11.6348
67	Dibromochloromethane	0.204	0.242	0.276	0.303	0.295	0.308	0.302	0.303	0.313	0.283	12.99	11.8727
68	1,2-Dibromoethane	0.167	0.199	0.223	0.248	0.242	0.252	0.243	0.244	0.253	0.230	12.61	12.0947
69	1-Chlorohexane	0.376	0.430	0.486	0.532	0.509	0.518	0.508	0.495	0.513	0.485	10.38	12.2716
70	Chlorobenzene	0.695	0.803	0.889	0.975	0.935	0.948	0.920	0.901	0.917	0.887	9.75	12.5473
71	1,1,1,2-Tetrachloroethane	0.213	0.272	0.312	0.342	0.334	0.341	0.331	0.330	0.337	0.312	13.81	12.6010
72	Ethylbenzene	1.261	1.468	1.637	1.780	1.712	1.746	1.689	1.647	1.635	1.619	9.95	12.6034
2 73	m-Xylene & p-Xylene	1.005	1.130	1.270	1.387	1.335	1.366	1.301	1.255	1.187	1.248	9.84	12.6888
74	o-Xylene	1.021	1.152	1.281	1.404	1.350	1.384	1.336	1.315	1.320	1.285	9.54	13.1610
75	Styrene	0.747	0.875	0.975	1.086	1.042	1.076	1.040	1.030	1.039	0.990	11.19	13.1939
76	Isopropylbenzene	1.288	1.455	1.666	1.820	1.728	1.766	1.694	1.658	1.647	1.636	10.09	13.5343
77	cis-1,4-Dichloro-2-butene	0.104	0.102	0.107	0.119	0.120	0.125	0.118	0.119	0.125	0.116	7.73	13.5892
78	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	15.3008
79	Bromoform	0.263	0.301	0.330	0.383	0.367	0.383	0.376	0.375	0.400	0.353	12.88	13.5660
80	1,1,2,2-Tetrachloroethane	0.519	0.577	0.616	0.699	0.674	0.678	0.645	0.643	0.675	0.636	9.03	13.7221
81	4-Bromofluorobenzene	0.816	0.955	0.846	1.127	1.067	0.909	0.973	0.974	1.014	0.965	10.28	13.8088
82	1,2,3-Trichloropropane	0.143	0.174	0.184	0.209	0.202	0.206	0.196	0.195	0.207	0.191	11.16	13.8795
83	trans-1,4-Dichloro-2-butene	0.167	0.189	0.192	0.214	0.208	0.215	0.203	0.199	0.208	0.199	7.59	13.9515
84	n-Propylbenzene	3.241	3.756	4.294	4.659	4.464	4.474	4.287	4.100	4.093	4.152	10.39	13.9588
85	Bromobenzene	0.548	0.669	0.724	0.774	0.749	0.758	0.749	0.735	0.776	0.720	10.03	14.0174
86	1,3,5-Trimethylbenzene	2.362	2.770	3.082	3.341	3.213	3.228	3.142	3.017	3.053	3.023	9.78	14.1211
87	2-Chlorotoluene	2.306	2.519	2.851	3.076	2.947	2.988	2.929	2.786	2.822	2.803	8.69	14.1491
88	4-Chlorotoluene	1.984	2.162	2.494	2.719	2.599	2.632	2.536	2.474	2.534	2.459	9.57	14.1930
89	tert-Butylbenzene	0.525	0.600	0.694	0.768	0.730	0.738	0.720	0.702	0.734	0.690	11.25	14.4785
90	1,2,4-Trimethylbenzene	2.414	2.686	3.095	3.268	3.211	3.242	3.123	2.984	3.037	3.007	9.43	14.5127
91	sec-Butylbenzene	3.124	3.583	4.112	4.393	4.222	4.251	4.094	3.914	3.871	3.952	9.93	14.6761
92	p-Isopropyltoluene	2.649	2.985	3.434	3.706	3.536	3.576	3.472	3.329	3.296	3.331	9.83	14.8079
93	1,3-Dichlorobenzene	1.259	1.367	1.524	1.634	1.602	1.615	1.590	1.539	1.581	1.523	8.35	14.9067
94	1,4-Dichlorobenzene	1.242	1.349	1.518	1.662	1.587	1.608	1.584	1.542	1.578	1.519	8.93	14.9946
95	n-Butylbenzene	2.537	2.827	3.269	3.512	3.309	3.370	3.272	3.099	3.117	3.146	9.52	15.1653
96	1,2-Dichlorobenzene	1.113	1.273	1.419	1.560	1.466	1.484	1.462	1.431	1.473	1.409	9.57	15.3239
97	1,2-Dibromo-3-chloropropane	0.091	0.116	0.121	0.138	0.134	0.143	0.132	0.136	0.145	0.128	13.14	15.9498
98	1,2,4-Trichlorobenzene	0.804	0.822	0.921	0.990	0.938	0.960	0.939	0.915	0.885	0.908	6.78	16.5866
99	Hexachlorobutadiene	0.404	0.422	0.497	0.548	0.515	0.526	0.524	0.513	0.510	0.496	9.91	16.6744
100	Naphthalene	1.907	1.915	2.142	2.384	2.293	2.381	2.303	2.269	2.239	2.204	8.22	16.7842
101	1,2,3-Trichlorobenzene	0.742	0.725	0.817	0.881	0.843	0.864	0.851	0.835	0.813	0.819	6.45	16.9709

Spike Amount = Nominal Amount * M
Ave_%RSD : 9.7 Max_%RSD : 22.9

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
15	Acetonitrile	-0.00821	0.02507	0.9989

Sa 4/23/18

Compound List Report F5

Method Path : C:\MSDCHEM\1\METHODS\
Method File : VOF5D19.M
Title : METHOD 8260 5mL
Last Update : Thu Apr 19 14:31:57 2018
Response Via : Initial Calibration

Total Cpnds : 101

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	8.868	1.000	A	1	A	B
2	T	Chlorotrifluoroethylene	116	1.808	0.204	A	2	A	B
3	T	Dichlorodifluoromethane	85	1.830	0.206	A	1	A	B
4	T	Chloromethane	50	2.072	0.234	A	1	A	B
5	T	Vinyl chloride	62	2.181	0.246	A	1	A	B
6	T	2-Chloro-1,1,1-trifluoroethane	118	2.159	0.243	A	2	A	B
7	T	Bromomethane	94	2.643	0.298	A	1	A	B
8	T	Dichlorofluoromethane	67	2.774	0.313	A	1	A	B
9	T	Chloroethane	64	2.697	0.304	A	2	A	B
10	T	Trichlorofluoromethane	101	3.027	0.341	A	1	A	B
11	T	Acrolein	55	3.532	0.398	A	1	A	B
12	T	1,1,2-Trichloro-1,2,2-Trifl...	151	3.565	0.402	A	1	A	B
13	T	Acetone	43	3.620	0.408	A	2	A	B
14	T	tert-Butyl alcohol	59	3.927	0.443	A	1	A	B
15	T	Acetonitrile	41	3.993	0.450	L	2	A	B
16	T	Methyl acetate	43	4.279	0.483	A	1	A	B
17	T	1,1-Dichloroethene	61	3.795	0.428	A	2	A	B
18	T	Iodomethane	142	4.235	0.478	A	1	A	B
19	T	Allyl Chloride	76	4.311	0.486	A	1	A	B
20	T	Methylene chloride	49	4.509	0.508	A	2	A	B
21	T	Carbon disulfide	76	4.520	0.510	A	1	A	B
22	T	Acrylonitrile	53	4.707	0.531	A	2	A	B
23	T	tert-Butyl methyl ether (MTBE)	73	4.751	0.536	A	1	A	B
24	T	trans-1,2-Dichloroethene	61	4.948	0.558	A	2	A	B
25	T	Isopropyl ether (DIPE)	45	5.519	0.622	A	1	A	B
26	T	Vinyl acetate	43	5.717	0.645	A	1	A	B
27	T	1,1-Dichloroethane	63	5.673	0.640	A	2	A	B
28	T	2-Butanol	45	6.123	0.690	A	1	A	B
29	T	tert-Butyl ethyl ether (ETBE)	59	6.277	0.708	A	1	A	B
30	T	2-Butanone	43	6.485	0.731	A	1	A	B
31	T	Propionitrile	54	6.639	0.749	A	1	A	B
32	T	2,2-Dichloropropane	77	6.716	0.757	A	2	A	B
33	T	cis-1,2-Dichloroethene	96	6.804	0.767	A	2	A	B
34	T	Methacrylonitrile	52	7.001	0.789	A	2	A	B
35	T	Isobutyl Alcohol	43	7.067	0.797	A	1	A	B
36	T	Chloroform	83	7.089	0.799	A	2	A	B
37	T	Bromochloromethane	49	7.364	0.830	A	2	A	B
38	T	Tetrahydrofuran	42	7.441	0.839	A	2	A	B
39	S	Dibromofluoromethane	111	7.474	0.843	A	2	A	B
40	T	1,1,1-Trichloroethane	97	7.759	0.875	A	2	A	B
41	T	Cyclohexane	84	7.759	0.875	A	2	A	B
42	T	1,1-Dichloropropene	110	8.012	0.903	A	1	A	B
43	T	Carbon tetrachloride	119	8.143	0.918	A	1	A	B
44	T	tert-Amyl methyl ether (TAME)	87	8.231	0.928	A	2	A	B
45	S	1,2-Dichloroethane-d4	65	8.275	0.933	A	1	A	B
46	T	1,2-Dichloroethane	62	8.418	0.949	A	1	A	B
47	T	Benzene	78	8.407	0.948	A	2	A	B
48	T	Trichloroethene	130	9.285	1.047	A	3	A	B
49	T	Methylcyclohexane	83	9.351	1.054	A	2	A	B
50	T	1,2-Dichloropropane	63	9.527	1.074	A	2	A	B
51	T	Methyl Methacrylate	69	9.648	1.088	A	2	A	B
52	T	Bromodichloromethane	83	9.834	1.109	A	1	A	B
53	T	1,4-Dioxane	88	9.878	1.114	A	1	A	B
54	T	Dibromomethane	93	9.889	1.115	A	2	A	B
55	T	2-Chloroethyl vinyl ether	63	10.251	1.156	A	1	A	B
56	T	4-Methyl-2-pentanone	43	10.284	1.160	A	3	A	B

SM 4/23/18

57	T	cis-1,3-Dichloropropene	75	10.526	1.187	A	3	A	B
58	I	CHLOROBENZENE-D5	117	12.513	1.000	A	2	A	B
59	S	Toluene-d8	98	10.800	0.863	A	1	A	B
60	T	Ethyl methacrylate	69	11.119	0.889	A	2	A	B
61	T	Toluene	91	10.888	0.870	A	1	A	B
62	T	trans-1,3-Dichloropropene	75	11.119	0.889	A	2	A	B
63	T	2-Hexanone	43	11.316	0.904	A	2	A	B
64	T	1,1,2-Trichloroethane	97	11.294	0.903	A	3	A	B
65	T	1,3-Dichloropropane	76	11.580	0.925	A	1	A	B
66	T	Tetrachloroethene	164	11.635	0.930	A	3	A	B
67	T	Dibromochloromethane	129	11.876	0.949	A	1	A	B
68	T	1,2-Dibromoethane	107	12.096	0.967	A	1	A	B
69	T	1-Chlorohexane	91	12.272	0.981	A	3	A	B
70	T	Chlorobenzene	112	12.546	1.003	A	3	A	B
71	T	1,1,1,2-Tetrachloroethane	131	12.601	1.007	A	3	A	B
72	T	Ethylbenzene	91	12.601	1.007	A	1	A	B
73	T	m-Xylene & p-Xylene	91	12.689	1.014	A	1	A	B
74	T	o-Xylene	91	13.161	1.052	A	1	A	B
75	T	Styrene	104	13.194	1.054	A	2	A	B
76	T	Isopropylbenzene	105	13.534	1.082	A	3	A	B
77	T	cis-1,4-Dichloro-2-butene	53	13.589	1.086	A	2	A	B
78	I	1,2-DICHLOROBENZENE-D4	152	15.302	1.000	A	1	A	B
79	T	Bromoform	173	13.567	0.887	A	2	A	B
80	T	1,1,2,2-Tetrachloroethane	83	13.721	0.897	A	1	A	B
81	S	4-Bromofluorobenzene	95	13.809	0.902	A	2	A	B
82	T	1,2,3-Trichloropropane	110	13.886	0.907	A	2	A	B
83	T	trans-1,4-Dichloro-2-butene	53	13.951	0.912	A	1	A	B
84	T	n-Propylbenzene	91	13.962	0.912	A	2	A	B
85	T	Bromobenzene	156	14.017	0.916	A	2	A	B
86	T	1,3,5-Trimethylbenzene	105	14.127	0.923	A	2	A	B
87	T	2-Chlorotoluene	91	14.149	0.925	A	1	A	B
88	T	4-Chlorotoluene	91	14.193	0.928	A	1	A	B
89	T	tert-Butylbenzene	134	14.479	0.946	A	2	A	B
90	T	1,2,4-Trimethylbenzene	105	14.511	0.948	A	1	A	B
91	T	sec-Butylbenzene	105	14.676	0.959	A	1	A	B
92	T	p-Isopropyltoluene	119	14.808	0.968	A	2	A	B
93	T	1,3-Dichlorobenzene	146	14.907	0.974	A	2	A	B
94	T	1,4-Dichlorobenzene	146	14.995	0.980	A	2	A	B
95	T	n-Butylbenzene	91	15.170	0.991	A	2	A	B
96	T	1,2-Dichlorobenzene	146	15.324	1.001	A	2	A	B
97	T	1,2-Dibromo-3-chloropropane	157	15.950	1.042	A	2	A	B
98	T	1,2,4-Trichlorobenzene	180	16.587	1.084	A	2	A	B
99	T	Hexachlorobutadiene	225	16.674	1.090	A	2	A	B
100	T	Naphthalene	128	16.784	1.097	A	1	A	B
101	T	1,2,3-Trichlorobenzene	180	16.971	1.109	A	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

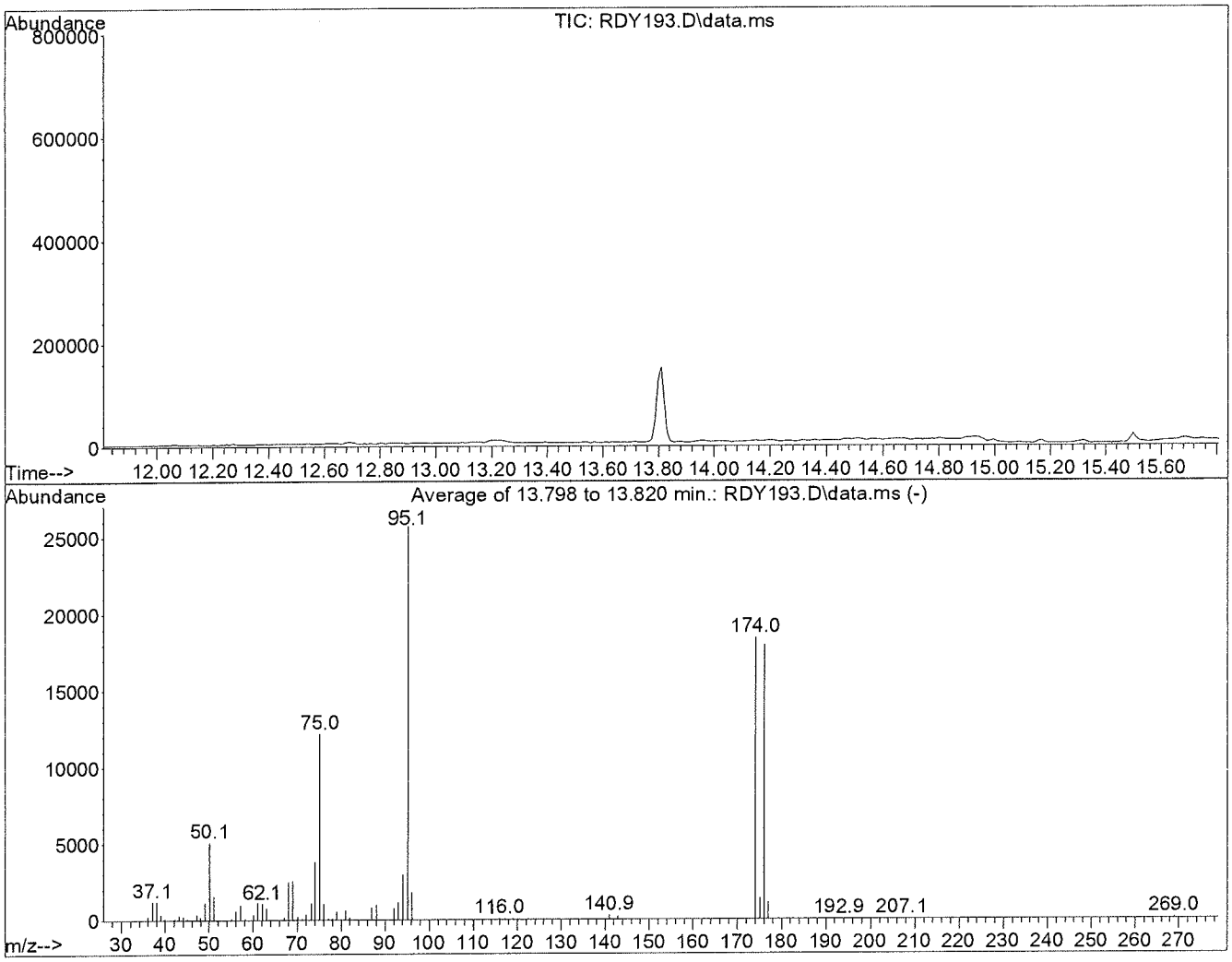
VOF5D19.M Fri Apr 20 15:06:17 2018

SC 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY193.D
Acq On : 19 Apr 2018 9:37 am
Operator : DNguye
Sample : BFBF5D11
Misc : T/CHK
ALS Vial : 1 Sample Multiplier: 1

Integration File: rte.p

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL
Last Update : Thu Apr 19 14:31:57 2018



AutoFind: Scans 1104, 1105, 1106; Background Corrected with Scan 1099

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.8	5092	PASS
75	95	30	60	47.4	12191	PASS
95	95	100	100	100.0	25728	PASS
96	95	5	9	7.0	1793	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	71.6	18428	PASS
175	174	5	9	7.4	1365	PASS
176	174	95	101	97.5	17970	PASS
177	176	5	9	6.1	1098	PASS

SM 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY195.D
Acq On : 19 Apr 2018 10:42 am
Operator : DNguye
Sample : VOF5D191
Misc : 2.0ppb 8260/10ppb KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 20 15:11:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.857	114	809405	50.00	ug/l		-0.01
58) CHLOROBENZENE-D5	12.513	117	705983	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	321809	50.00	ug/l		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.463	111	5642	1.31	ug/l		-0.01
Spiked Amount 50.000			Recovery =	2.62%			
45) 1,2-Dichloroethane-d4	8.264	65	6683	1.49	ug/l		-0.01
Spiked Amount 50.000			Recovery =	2.98%			
59) Toluene-d8	10.800	98	25546	1.59	ug/l		0.00
Spiked Amount 50.000			Recovery =	3.18%			
81) 4-Bromofluorobenzene	13.809	95	10500	1.69	ug/l		0.00
Spiked Amount 50.000			Recovery =	3.38%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.830	85	12547	2.14	ug/l		72
4) Chloromethane	2.072	50	12530	1.89	ug/l		97
5) Vinyl chloride	2.170	62	7207	1.70	ug/l		71
7) Bromomethane	2.621	94	7087	1.88	ug/l		70
8) Dichlorofluoromethane	2.752	67	14804	1.76	ug/L		95
9) Chloroethane	2.697	64	5725	1.64	ug/l	#	1
10) Trichlorofluoromethane	3.016	101	13275	1.78	ug/l		97
11) Acrolein	3.521	55	3156	9.65	ug/L		87
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	4677	1.47	ug/l		92
13) Acetone	3.620	43	13313	13.06	ug/l	#	85
14) tert-Butyl alcohol	3.927	59	3575	9.77	ug/L	#	1
15) Acetonitrile	3.993	41	4226	26.80	ug/L		63
16) Methyl acetate	4.268	43	4814	1.52	ug/L		97
17) 1,1-Dichloroethene	3.795	61	11185	1.52	ug/l		92
18) Iodomethane	4.224	142	10366	1.61	ug/l		94
19) Allyl Chloride	4.311	76	3645	1.53	ug/L		95
20) Methylene chloride	4.498	49	17556	2.54	ug/l		96
21) Carbon disulfide	4.509	76	23196	1.62	ug/L		91
22) Acrylonitrile	4.707	53	11602	8.64	ug/l		97
23) tert-Butyl methyl ethe...	4.762	73	15900	1.46	ug/L		74
24) trans-1,2-Dichloroethene	4.937	61	10458	1.55	ug/l		95
25) Isopropyl ether (DIPE)	5.508	45	25388	1.50	ug/l		93
26) Vinyl acetate	5.717	43	14261	1.62	ug/l		99
27) 1,1-Dichloroethane	5.673	63	12928	1.62	ug/l		94
28) 2-Butanol	6.123	45	3208	9.17	ug/L	#	60
29) tert-Butyl ethyl ether...	6.255	59	22391	1.61	ug/l		94
30) 2-Butanone	6.485	43	14789	9.30	ug/l		99
31) Propionitrile	6.639	54	8719	17.44	ug/L		89
32) 2,2-Dichloropropane	6.694	77	10460	1.71	ug/l		88
33) cis-1,2-Dichloroethene	6.793	96	7949	1.63	ug/l		94
34) Methacrylonitrile	7.001	52	9587	16.19	ug/L		93
35) Isobutyl Alcohol	7.078	43	8082	40.97	ug/L		87
36) Chloroform	7.078	83	12526	1.64	ug/l		99
37) Bromochloromethane	7.364	49	6005	1.54	ug/l		95
38) Tetrahydrofuran	7.452	42	2623	2.36	ug/L		77
40) 1,1,1-Trichloroethane	7.759	97	10539	1.46	ug/l		98
41) Cyclohexane	7.759	84	14182	1.58	ug/L		90
42) 1,1-Dichloropropene	8.001	110	3420	1.56	ug/L		84
43) Carbon tetrachloride	8.143	119	8473	1.46	ug/L		98

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY195.D
Acq On : 19 Apr 2018 10:42 am
Operator : DNguye
Sample : VOF5D191
Misc : 2.0ppb 8260/10ppb KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 20 15:11:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44)	tert-Amyl methyl ether...	8.231	87	4330	1.51	ug/l		95
46)	1,2-Dichloroethane	8.407	62	8328	1.52	ug/L		94
47)	Benzene	8.407	78	26799	1.57	ug/L		99
48)	Trichloroethene	9.285	130	7627	1.63	ug/L		96
49)	Methylcyclohexane	9.340	83	16723	1.61	ug/L		85
50)	1,2-Dichloropropane	9.527	63	6843	1.51	ug/L		97
51)	Methyl Methacrylate	9.648	69	4624	1.88	ug/L		83
52)	Bromodichloromethane	9.834	83	8969	1.61	ug/L		99
53)	1,4-Dioxane	9.878	88	886	22.83	ug/L	#	50
54)	Dibromomethane	9.889	93	3531	1.50	ug/L		89
55)	2-Chloroethyl vinyl ether	10.251	63	2044	1.57	ug/L		82
56)	4-Methyl-2-pentanone	10.284	43	33826	8.90	ug/L		96
57)	cis-1,3-Dichloropropene	10.515	75	10969	1.58	ug/L		91
60)	Ethyl methacrylate	11.119	69	7211	1.57	ug/L		98
61)	Toluene	10.888	91	32115	1.63	ug/l		96
62)	trans-1,3-Dichloropropene	11.119	75	8865	1.50	ug/l		92
63)	2-Hexanone	11.316	43	21593	8.76	ug/l		97
64)	1,1,2-Trichloroethane	11.294	97	5226	1.60	ug/l		97
65)	1,3-Dichloropropane	11.580	76	8743	1.55	ug/l		94
66)	Tetrachloroethene	11.635	164	5564	1.55	ug/l		97
67)	Dibromochloromethane	11.876	129	5757	1.44	ug/l		96
68)	1,2-Dibromoethane	12.085	107	4730	1.46	ug/l		90
69)	1-Chlorohexane	12.272	91	10608	1.55	ug/l		86
70)	Chlorobenzene	12.546	112	19624	1.57	ug/l	#	66
71)	1,1,1,2-Tetrachloroethane	12.601	131	6024	1.37	ug/l	#	1
72)	Ethylbenzene	12.601	91	35605	1.56	ug/l		100
73)	m-Xylene & p-Xylene	12.689	91	56771	3.22	ug/l		99
74)	o-Xylene	13.161	91	28843	1.59	ug/l		96
75)	Styrene	13.194	104	21101	1.51	ug/l		97
76)	Isopropylbenzene	13.534	105	36378	1.57	ug/L		99
77)	cis-1,4-Dichloro-2-butene	13.589	53	2929	1.80	ug/L		85
79)	Bromoform	13.556	173	3388	1.49	ug/l		92
80)	1,1,2,2-Tetrachloroethane	13.721	83	6685	1.63	ug/l		100
82)	1,2,3-Trichloropropane	13.875	110	1840	1.50	ug/l		94
83)	trans-1,4-Dichloro-2-b...	13.952	53	2148	1.67	ug/L		70
84)	n-Propylbenzene	13.952	91	41719	1.56	ug/l		99
85)	Bromobenzene	14.017	156	7048	1.52	ug/l		94
86)	1,3,5-Trimethylbenzene	14.116	105	30400	1.56	ug/l		99
87)	2-Chlorotoluene	14.149	91	29690	1.65	ug/l		99
88)	4-Chlorotoluene	14.193	91	25545	1.61	ug/l		98
89)	tert-Butylbenzene	14.479	134	6760	1.52	ug/l		99
90)	1,2,4-Trimethylbenzene	14.512	105	31068	1.61	ug/l		97
91)	sec-Butylbenzene	14.676	105	40218	1.58	ug/l		99
92)	p-Isopropyltoluene	14.808	119	34100	1.59	ug/l		99
93)	1,3-Dichlorobenzene	14.907	146	16203	1.65	ug/l		98
94)	1,4-Dichlorobenzene	14.995	146	15985	1.64	ug/l		98
95)	n-Butylbenzene	15.159	91	32660	1.61	ug/l		98
96)	1,2-Dichlorobenzene	15.324	146	14322	1.58	ug/l	#	70
97)	1,2-Dibromo-3-chloropr...	15.950	157	1174	1.42	ug/l		84
98)	1,2,4-Trichlorobenzene	16.587	180	10349	1.77	ug/l		99
99)	Hexachlorobutadiene	16.674	225	5199	1.63	ug/l		98
100)	Naphthalene	16.784	128	24545	1.73	ug/l		99
101)	1,2,3-Trichlorobenzene	16.971	180	9554	1.81	ug/l		97

SA 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY195.D
Acq On : 19 Apr 2018 10:42 am
Operator : DNguye
Sample : VOF5D191
Misc : 2.0ppb 8260/10ppb KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 20 15:11:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

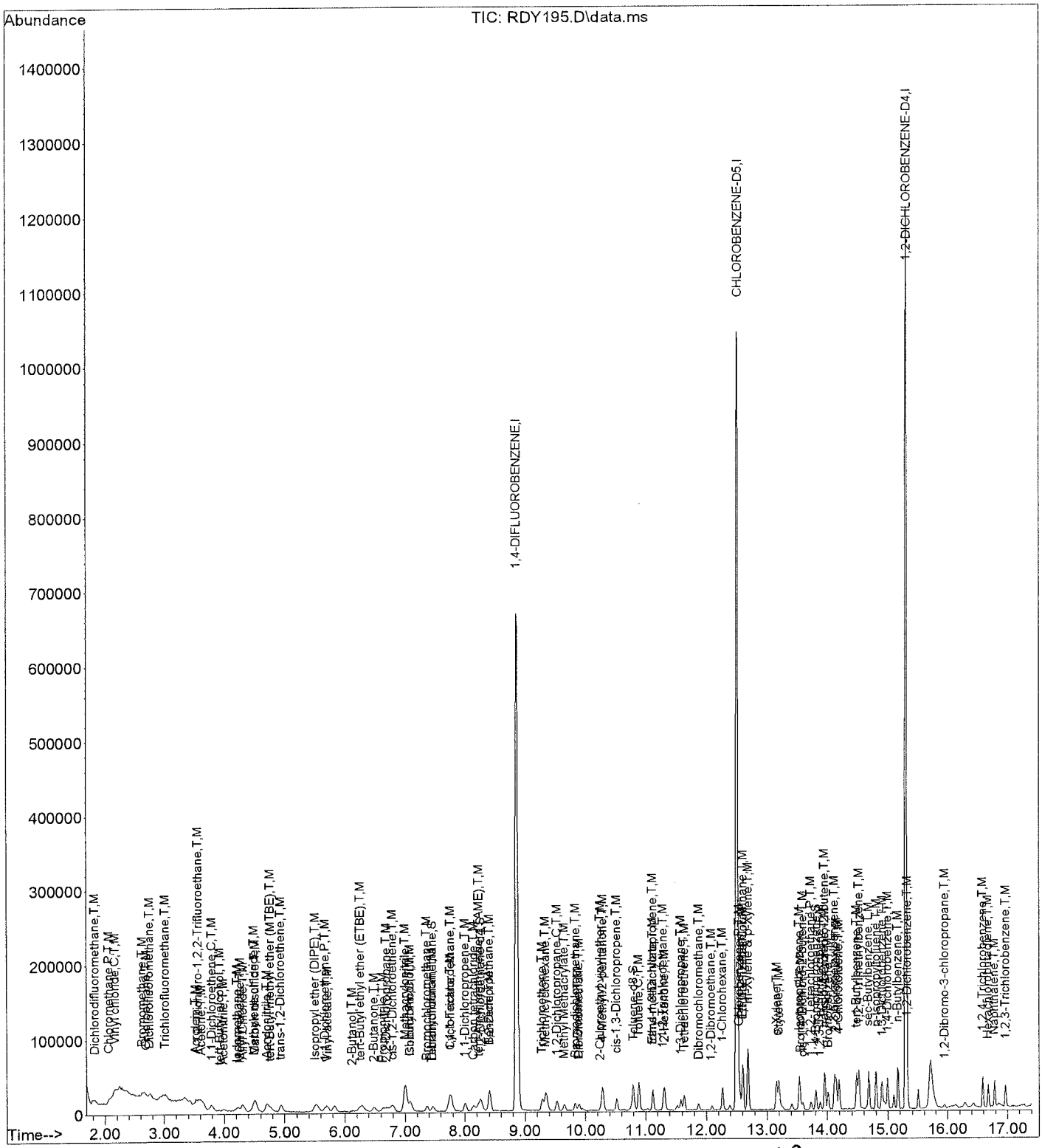
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SW 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY195.D
Acq On : 19 Apr 2018 10:42 am
Operator : DNguye
Sample : VOF5D191
Misc : 2.0ppb 8260/10ppb KET-AA-TBA
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 20 15:11:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



SU 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY196.D
Acq On : 19 Apr 2018 11:07 am
Operator : DNguye
Sample : VOF5D192
Misc : 4.0ppb 8260/20ppb KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 20 15:13:58 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.857	114	800755	50.00	ug/l		-0.01
58) CHLOROBENZENE-D5	12.513	117	693448	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	313061	50.00	ug/l		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.473	111	15295	3.59	ug/l		0.00
Spiked Amount 50.000			Recovery =	7.18%			
45) 1,2-Dichloroethane-d4	8.275	65	16810	3.78	ug/l		0.00
Spiked Amount 50.000			Recovery =	7.56%			
59) Toluene-d8	10.789	98	59988	3.80	ug/l		-0.01
Spiked Amount 50.000			Recovery =	7.60%			
81) 4-Bromofluorobenzene	13.809	95	23925	3.96	ug/l		0.00
Spiked Amount 50.000			Recovery =	7.92%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.830	85	23192	3.99	ug/l		92
4) Chloromethane	2.071	50	25722	3.92	ug/l		100
5) Vinyl chloride	2.181	62	16805	4.00	ug/l		99
7) Bromomethane	2.631	94	14299	3.84	ug/l		87
8) Dichlorofluoromethane	2.763	67	28594	3.43	ug/L		96
9) Chloroethane	2.686	64	13397	3.87	ug/l	#	70
10) Trichlorofluoromethane	3.038	101	28056	3.81	ug/l		100
11) Acrolein	3.521	55	4445	13.73	ug/L	#	51
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	10907	3.47	ug/l		98
13) Acetone	3.620	43	21150	20.97	ug/l	#	94
14) tert-Butyl alcohol	3.927	59	6357	17.55	ug/L	#	75
15) Acetonitrile	4.004	41	10220	41.84	ug/L		71
16) Methyl acetate	4.278	43	13764	4.40	ug/L		90
17) 1,1-Dichloroethene	3.795	61	26053	3.57	ug/l		94
18) Iodomethane	4.234	142	22968	3.61	ug/l		99
19) Allyl Chloride	4.311	76	8166	3.46	ug/L		98
20) Methylene chloride	4.509	49	29819	4.36	ug/l		98
21) Carbon disulfide	4.520	76	48616	3.44	ug/L		100
22) Acrylonitrile	4.707	53	25016	18.82	ug/l		98
23) tert-Butyl methyl ethe...	4.751	73	38424	3.58	ug/L		99
24) trans-1,2-Dichloroethene	4.937	61	23602	3.53	ug/l		97
25) Isopropyl ether (DIPE)	5.519	45	61527	3.68	ug/l		96
26) Vinyl acetate	5.706	43	33156	3.80	ug/l		98
27) 1,1-Dichloroethane	5.673	63	26701	3.38	ug/l		94
28) 2-Butanol	6.145	45	6801	19.65	ug/L	#	60
29) tert-Butyl ethyl ether...	6.277	59	51833	3.77	ug/l		93
30) 2-Butanone	6.485	43	29584	18.81	ug/l		99
31) Propionitrile	6.628	54	18335	37.07	ug/L		96
32) 2,2-Dichloropropane	6.727	77	22507	3.72	ug/l		98
33) cis-1,2-Dichloroethene	6.793	96	17128	3.56	ug/l		99
34) Methacrylonitrile	6.990	52	20755	35.43	ug/L		88
35) Isobutyl Alcohol	7.078	43	13104	67.15	ug/L		76
36) Chloroform	7.078	83	27653	3.66	ug/l		98
37) Bromochloromethane	7.364	49	14369	3.73	ug/l		97
38) Tetrahydrofuran	7.441	42	4993	4.54	ug/L		88
40) 1,1,1-Trichloroethane	7.759	97	25893	3.62	ug/l		98
41) Cyclohexane	7.748	84	31982	3.59	ug/L		94
42) 1,1-Dichloropropene	8.000	110	7300	3.36	ug/L		96
43) Carbon tetrachloride	8.154	119	19761	3.43	ug/L		98

4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY196.D
Acq On : 19 Apr 2018 11:07 am
Operator : DNguye
Sample : VOF5D192
Misc : 4.0ppb 8260/20ppb KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 20 15:13:58 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
44) tert-Amyl methyl ether...	8.242	87	9887	3.49 ug/l #	90
46) 1,2-Dichloroethane	8.407	62	19641	3.62 ug/L	100
47) Benzene	8.407	78	58427	3.47 ug/L	98
48) Trichloroethene	9.285	130	16260	3.51 ug/L	97
49) Methylcyclohexane	9.351	83	37461	3.65 ug/L	93
50) 1,2-Dichloropropane	9.527	63	15506	3.45 ug/L	97
51) Methyl Methacrylate	9.647	69	8736	3.59 ug/L	95
52) Bromodichloromethane	9.823	83	18598	3.37 ug/L	92
53) 1,4-Dioxane	9.878	88	2590	67.46 ug/L	92
54) Dibromomethane	9.889	93	8189	3.52 ug/L	99
55) 2-Chloroethyl vinyl ether	10.251	63	4369	3.39 ug/L	93
56) 4-Methyl-2-pentanone	10.284	43	72494	19.28 ug/L	98
57) cis-1,3-Dichloropropene	10.526	75	24286	3.53 ug/L	95
60) Ethyl methacrylate	11.119	69	16203	3.59 ug/L	98
61) Toluene	10.888	91	72887	3.76 ug/l	97
62) trans-1,3-Dichloropropene	11.119	75	21119	3.64 ug/l	99
63) 2-Hexanone	11.316	43	45409	18.75 ug/l	98
64) 1,1,2-Trichloroethane	11.294	97	11888	3.71 ug/l	97
65) 1,3-Dichloropropane	11.580	76	19925	3.60 ug/l	97
66) Tetrachloroethene	11.635	164	12765	3.63 ug/l	96
67) Dibromochloromethane	11.876	129	13435	3.42 ug/l	99
68) 1,2-Dibromoethane	12.096	107	11044	3.46 ug/l	96
69) 1-Chlorohexane	12.272	91	23842	3.54 ug/l	94
70) Chlorobenzene	12.546	112	44568	3.62 ug/l	85
71) 1,1,1,2-Tetrachloroethane	12.601	131	15067	3.48 ug/l #	1
72) Ethylbenzene	12.601	91	81451	3.63 ug/l	99
73) m-Xylene & p-Xylene	12.689	91	125351	7.24 ug/l	100
74) o-Xylene	13.161	91	63921	3.59 ug/l	100
75) Styrene	13.194	104	48567	3.54 ug/l	99
76) Isopropylbenzene	13.534	105	80729	3.56 ug/L	99
77) cis-1,4-Dichloro-2-butene	13.589	53	5640	3.52 ug/L	93
79) Bromoform	13.567	173	7531	3.41 ug/l	96
80) 1,1,2,2-Tetrachloroethane	13.721	83	14455	3.63 ug/l	100
82) 1,2,3-Trichloropropane	13.875	110	4357	3.65 ug/l	98
83) trans-1,4-Dichloro-2-b...	13.951	53	4733	3.79 ug/L	91
84) n-Propylbenzene	13.962	91	94060	3.62 ug/l	99
85) Bromobenzene	14.017	156	16765	3.72 ug/l	99
86) 1,3,5-Trimethylbenzene	14.116	105	69374	3.67 ug/l	97
87) 2-Chlorotoluene	14.149	91	63096	3.60 ug/l	100
88) 4-Chlorotoluene	14.193	91	54158	3.52 ug/l	98
89) tert-Butylbenzene	14.478	134	15026	3.48 ug/l	97
90) 1,2,4-Trimethylbenzene	14.511	105	67266	3.57 ug/l	99
91) sec-Butylbenzene	14.676	105	89748	3.63 ug/l	98
92) p-Isopropyltoluene	14.808	119	74766	3.58 ug/l	99
93) 1,3-Dichlorobenzene	14.907	146	34228	3.59 ug/l	98
94) 1,4-Dichlorobenzene	14.994	146	33783	3.55 ug/l	99
95) n-Butylbenzene	15.159	91	70797	3.59 ug/l	99
96) 1,2-Dichlorobenzene	15.324	146	31870	3.61 ug/l	87
97) 1,2-Dibromo-3-chloropr...	15.950	157	2898	3.60 ug/l	95
98) 1,2,4-Trichlorobenzene	16.587	180	20585	3.62 ug/l	100
99) Hexachlorobutadiene	16.674	225	10569	3.41 ug/l	99
100) Naphthalene	16.784	128	47968	3.48 ug/l	100
101) 1,2,3-Trichlorobenzene	16.971	180	18170	3.54 ug/l	98

SM 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY196.D
Acq On : 19 Apr 2018 11:07 am
Operator : DNguye
Sample : VOF5D192
Misc : 4.0ppb 8260/20ppb KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 20 15:13:58 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

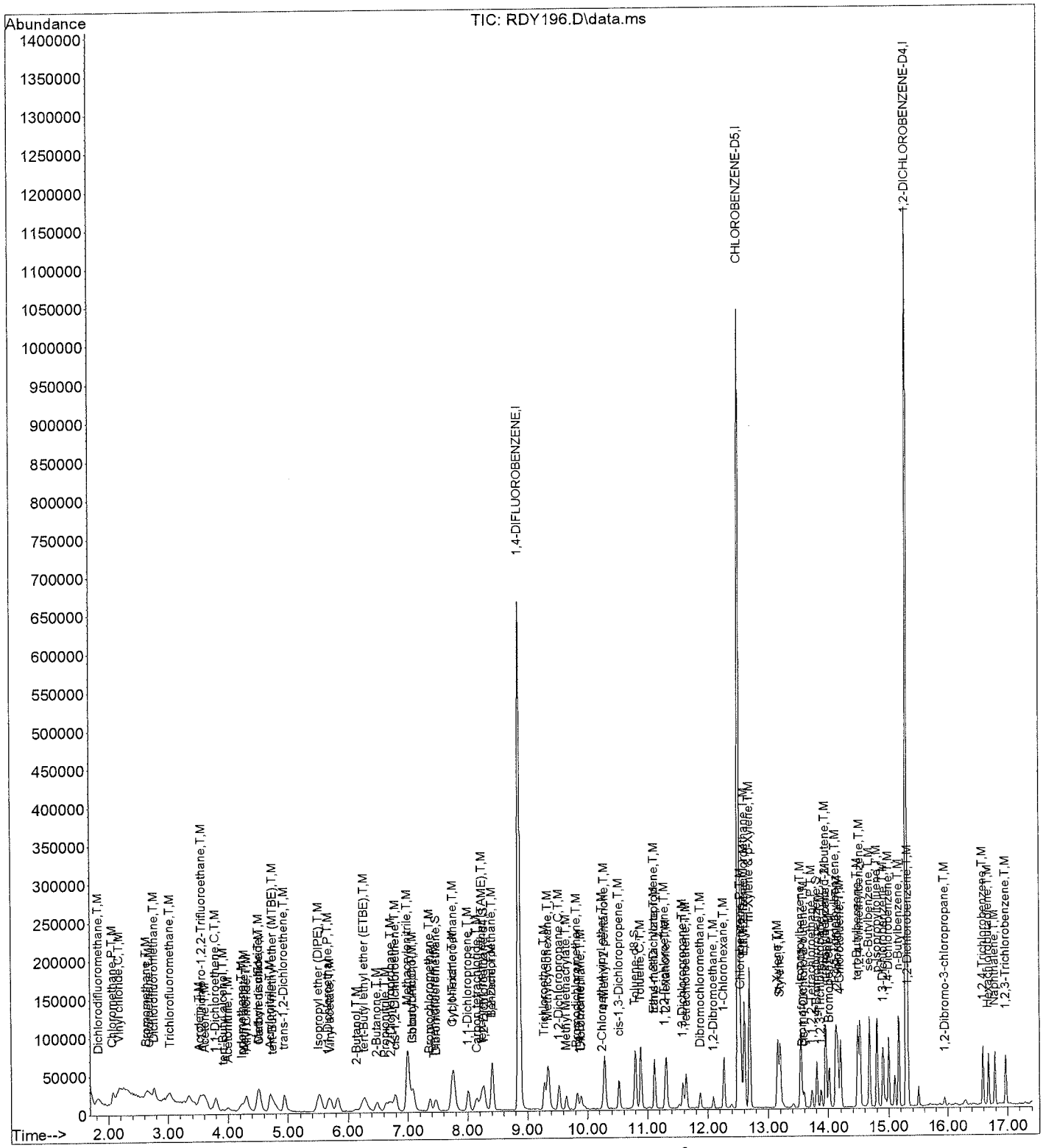
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SC 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY196.D
Acq On : 19 Apr 2018 11:07 am
Operator : DNguye
Sample : VOF5D192
Misc : 4.0ppb 8260/20ppb KET-AA-TBA
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 20 15:13:58 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



SM 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY197.D
Acq On : 19 Apr 2018 11:32 am
Operator : DNguye
Sample : VOF5D193
Misc : 10ppb 8260/50ppb KET-AA-TBA
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 20 15:14:05 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.868	114	846548	50.00	ug/l		0.00
58) CHLOROBENZENE-D5	12.513	117	733819	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	333866	50.00	ug/l		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.463	111	38124	8.48	ug/l		-0.01
Spiked Amount 50.000			Recovery =	16.96%			
45) 1,2-Dichloroethane-d4	8.275	65	42373	9.02	ug/l		0.00
Spiked Amount 50.000			Recovery =	18.04%			
59) Toluene-d8	10.800	98	150714	9.02	ug/l		0.00
Spiked Amount 50.000			Recovery =	18.04%			
81) 4-Bromofluorobenzene	13.809	95	56517	8.78	ug/l		0.00
Spiked Amount 50.000			Recovery =	17.56%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.830	85	64422	10.49	ug/l		99
4) Chloromethane	2.072	50	71714	10.35	ug/l		98
5) Vinyl chloride	2.181	62	48514	10.92	ug/l		98
7) Bromomethane	2.632	94	42227	10.73	ug/l		94
8) Dichlorofluoromethane	2.763	67	87723	9.95	ug/L		96
9) Chloroethane	2.686	64	39308	10.75	ug/l	#	76
10) Trichlorofluoromethane	3.027	101	82994	10.65	ug/l		100
11) Acrolein	3.532	55	20479	59.85	ug/L		81
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	33277	10.01	ug/l		100
13) Acetone	3.620	43	52959	49.66	ug/l		100
14) tert-Butyl alcohol	3.938	59	17290	45.16	ug/L	#	1
15) Acetonitrile	3.993	41	27790	81.86	ug/L		91
16) Methyl acetate	4.278	43	33281	10.07	ug/L		96
17) 1,1-Dichloroethene	3.795	61	76924	9.98	ug/l		100
18) Iodomethane	4.224	142	66016	9.82	ug/l		99
19) Allyl Chloride	4.311	76	25129	10.08	ug/L		97
20) Methylene chloride	4.509	49	71835	9.93	ug/l		98
21) Carbon disulfide	4.520	76	140195	9.37	ug/L		99
22) Acrylonitrile	4.707	53	66209	47.12	ug/l		98
23) tert-Butyl methyl ethe...	4.740	73	108453	9.55	ug/L		88
24) trans-1,2-Dichloroethene	4.948	61	68897	9.74	ug/l		99
25) Isopropyl ether (DIPE)	5.519	45	176780	10.00	ug/l		99
26) Vinyl acetate	5.717	43	95970	10.40	ug/l		100
27) 1,1-Dichloroethane	5.673	63	82350	9.87	ug/l		99
28) 2-Butanol	6.134	45	17683	48.32	ug/L		97
29) tert-Butyl ethyl ether...	6.266	59	139757	9.61	ug/l		98
30) 2-Butanone	6.485	43	79474	47.81	ug/l		100
31) Propionitrile	6.639	54	51107	97.74	ug/L		98
32) 2,2-Dichloropropane	6.716	77	64699	10.12	ug/l		99
33) cis-1,2-Dichloroethene	6.793	96	49500	9.72	ug/l		98
34) Methacrylonitrile	6.990	52	60123	97.08	ug/L		97
35) Isobutyl Alcohol	7.067	43	39038	189.23	ug/L		95
36) Chloroform	7.089	83	79732	9.99	ug/l		99
37) Bromochloromethane	7.364	49	40026	9.83	ug/l		99
38) Tetrahydrofuran	7.441	42	11192	9.63	ug/L		97
40) 1,1,1-Trichloroethane	7.759	97	74415	9.83	ug/l		99
41) Cyclohexane	7.759	84	90935	9.66	ug/L		100
42) 1,1-Dichloropropene	8.012	110	22141	9.64	ug/L		97
43) Carbon tetrachloride	8.154	119	58809	9.67	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY197.D
Acq On : 19 Apr 2018 11:32 am
Operator : DNguye
Sample : VOF5D193
Misc : 10ppb 8260/50ppb KET-AA-TBA
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 20 15:14:05 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
44) tert-Amyl methyl ether...	8.231	87	30224	10.09 ug/l		94
46) 1,2-Dichloroethane	8.418	62	57131	9.97 ug/L		97
47) Benzene	8.407	78	175150	9.84 ug/L		99
48) Trichloroethene	9.285	130	48379	9.87 ug/L		99
49) Methylcyclohexane	9.351	83	103928	9.59 ug/L		97
50) 1,2-Dichloropropane	9.527	63	47168	9.93 ug/L		99
51) Methyl Methacrylate	9.648	69	24310	9.45 ug/L		96
52) Bromodichloromethane	9.834	83	56315	9.64 ug/L		96
53) 1,4-Dioxane	9.878	88	7313	180.18 ug/L		95
54) Dibromomethane	9.889	93	23050	9.37 ug/L		96
55) 2-Chloroethyl vinyl ether	10.251	63	13322	9.76 ug/L		95
56) 4-Methyl-2-pentanone	10.284	43	183193	46.08 ug/L		99
57) cis-1,3-Dichloropropene	10.515	75	71216	9.79 ug/L		98
60) Ethyl methacrylate	11.119	69	46676	9.76 ug/L		99
61) Toluene	10.888	91	202834	9.90 ug/l		99
62) trans-1,3-Dichloropropene	11.119	75	59442	9.69 ug/l		98
63) 2-Hexanone	11.316	43	120421	46.99 ug/l		100
64) 1,1,2-Trichloroethane	11.294	97	33243	9.81 ug/l		99
65) 1,3-Dichloropropane	11.580	76	57340	9.80 ug/l		99
66) Tetrachloroethene	11.635	164	36289	9.75 ug/l		97
67) Dibromochloromethane	11.876	129	40520	9.76 ug/l		98
68) 1,2-Dibromoethane	12.096	107	32765	9.70 ug/l		98
69) 1-Chlorohexane	12.272	91	71345	10.02 ug/l		97
70) Chlorobenzene	12.557	112	130473	10.02 ug/l		97
71) 1,1,1,2-Tetrachloroethane	12.601	131	45758	9.98 ug/l	#	74
72) Ethylbenzene	12.601	91	240193	10.11 ug/l		100
73) m-Xylene & p-Xylene	12.689	91	372733	20.34 ug/l		99
74) o-Xylene	13.161	91	188034	9.97 ug/l		100
75) Styrene	13.194	104	143039	9.84 ug/l		100
76) Isopropylbenzene	13.534	105	244560	10.19 ug/L		100
77) cis-1,4-Dichloro-2-butene	13.589	53	15746	9.29 ug/L		99
79) Bromoform	13.567	173	22056	9.35 ug/l		99
80) 1,1,2,2-Tetrachloroethane	13.732	83	41104	9.67 ug/l		98
82) 1,2,3-Trichloropropane	13.875	110	12285	9.65 ug/l		98
83) trans-1,4-Dichloro-2-b...	13.951	53	12807	9.62 ug/L		95
84) n-Propylbenzene	13.962	91	286727	10.34 ug/l		100
85) Bromobenzene	14.017	156	48345	10.05 ug/l		98
86) 1,3,5-Trimethylbenzene	14.116	105	205784	10.19 ug/l		99
87) 2-Chlorotoluene	14.149	91	190368	10.17 ug/l		99
88) 4-Chlorotoluene	14.193	91	166537	10.14 ug/l		99
89) tert-Butylbenzene	14.479	134	46365	10.06 ug/l		99
90) 1,2,4-Trimethylbenzene	14.511	105	206658	10.29 ug/l		100
91) sec-Butylbenzene	14.676	105	274572	10.41 ug/l		99
92) p-Isopropyltoluene	14.808	119	229266	10.31 ug/l		99
93) 1,3-Dichlorobenzene	14.907	146	101770	10.00 ug/l		100
94) 1,4-Dichlorobenzene	14.995	146	101353	9.99 ug/l		99
95) n-Butylbenzene	15.170	91	218291	10.39 ug/l		99
96) 1,2-Dichlorobenzene	15.324	146	94755	10.07 ug/l		97
97) 1,2-Dibromo-3-chloropr...	15.950	157	8100	9.45 ug/l		97
98) 1,2,4-Trichlorobenzene	16.587	180	61500	10.14 ug/l		99
99) Hexachlorobutadiene	16.674	225	33164	10.02 ug/l		99
100) Naphthalene	16.784	128	143033	9.72 ug/l		99
101) 1,2,3-Trichlorobenzene	16.971	180	54572	9.98 ug/l		98

SW 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY197.D
Acq On : 19 Apr 2018 11:32 am
Operator : DNguye
Sample : VOF5D193
Misc : 10ppb 8260/50ppb KET-AA-TBA
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 20 15:14:05 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

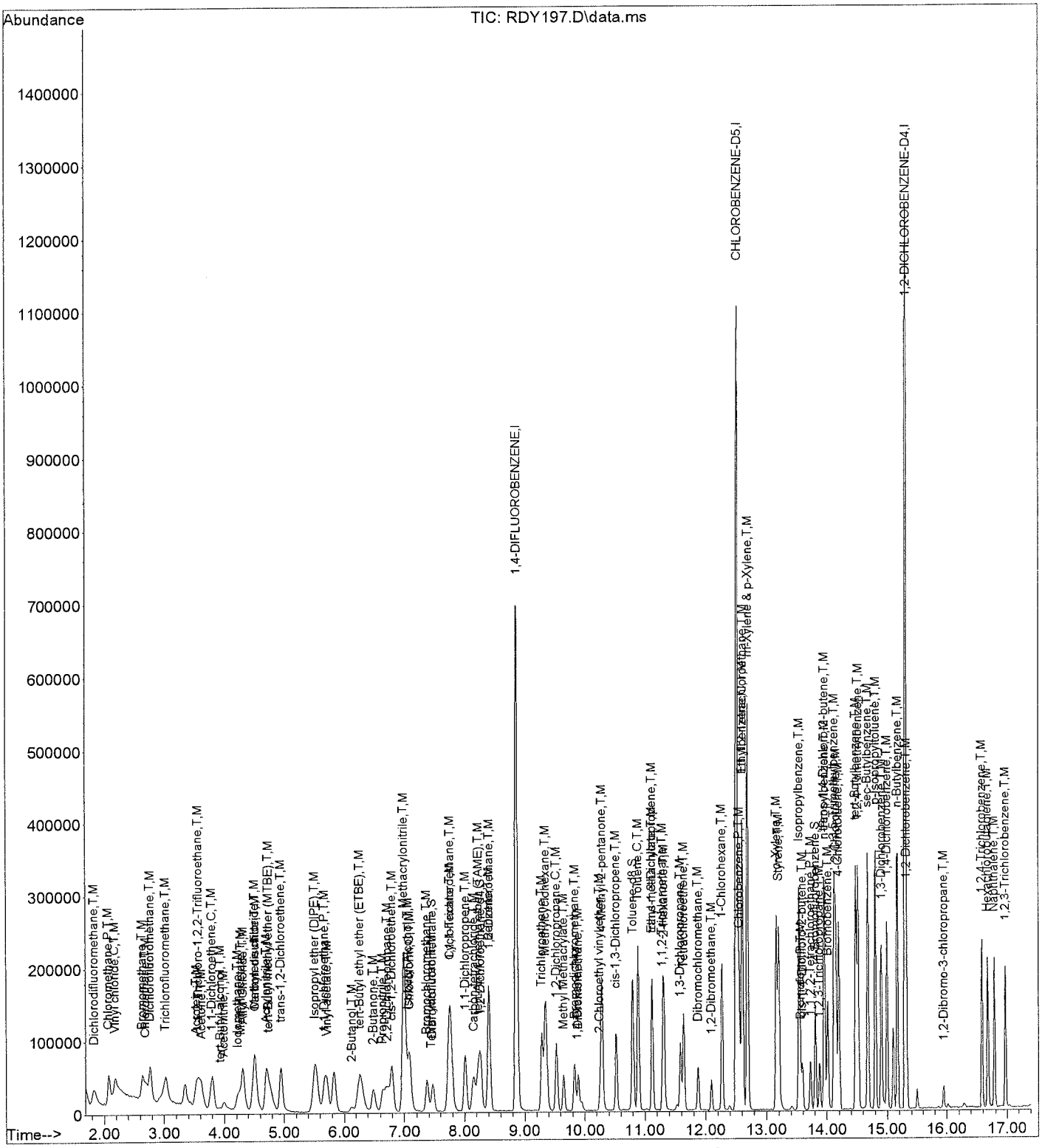
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SV 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY197.D
Acq On : 19 Apr 2018 11:32 am
Operator : DNguye
Sample : VOF5D193
Misc : 10ppb 8260/50ppb KET-AA-TBA
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 20 15:14:05 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



Sm 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY198.D
Acq On : 19 Apr 2018 11:58 am
Operator : DNguye
Sample : VOF5D194
Misc : 20ppb 8260/100ppb KET-AA-TBA
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 20 15:14:11 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.857	114	837961	50.00	ug/l		-0.01
58) CHLOROBENZENE-D5	12.513	117	736747	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	336317	50.00	ug/l		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.463	111	101373	22.77	ug/l		-0.01
Spiked Amount 50.000			Recovery =	45.54%			
45) 1,2-Dichloroethane-d4	8.275	65	106845	22.98	ug/l		0.00
Spiked Amount 50.000			Recovery =	45.96%			
59) Toluene-d8	10.800	98	395747	23.59	ug/l		0.00
Spiked Amount 50.000			Recovery =	47.18%			
81) 4-Bromofluorobenzene	13.809	95	151578	23.36	ug/l		0.00
Spiked Amount 50.000			Recovery =	46.72%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.830	85	125031	20.56	ug/l		98
4) Chloromethane	2.072	50	143665	20.95	ug/l		98
5) Vinyl chloride	2.181	62	95170	21.64	ug/l		99
7) Bromomethane	2.632	94	80654	20.70	ug/l		96
8) Dichlorofluoromethane	2.763	67	189363	21.69	ug/L		99
9) Chloroethane	2.698	64	76935	21.25	ug/l		94
10) Trichlorofluoromethane	3.027	101	161332	20.91	ug/l		98
11) Acrolein	3.521	55	37707	111.33	ug/L		97
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	72153	21.93	ug/l		100
13) Acetone	3.609	43	102112	96.74	ug/l		99
14) tert-Butyl alcohol	3.916	59	39838	105.12	ug/L	#	1
15) Acetonitrile	3.993	41	67433	176.90	ug/L		94
16) Methyl acetate	4.279	43	70219	21.47	ug/L		97
17) 1,1-Dichloroethene	3.795	61	168574	22.08	ug/l		98
18) Iodomethane	4.235	142	144158	21.66	ug/l		100
19) Allyl Chloride	4.312	76	54600	22.12	ug/L		97
20) Methylene chloride	4.509	49	151320	21.13	ug/l		97
21) Carbon disulfide	4.520	76	325776	22.01	ug/L		98
22) Acrylonitrile	4.707	53	147218	105.86	ug/l		99
23) tert-Butyl methyl ethe...	4.751	73	246964	21.97	ug/L		99
24) trans-1,2-Dichloroethene	4.937	61	154606	22.08	ug/l		99
25) Isopropyl ether (DIPE)	5.519	45	388988	22.23	ug/l		99
26) Vinyl acetate	5.717	43	187322	20.50	ug/l		100
27) 1,1-Dichloroethane	5.673	63	182549	22.10	ug/l		100
28) 2-Butanol	6.123	45	38397	106.01	ug/L	#	60
29) tert-Butyl ethyl ether...	6.266	59	344181	23.90	ug/l		93
30) 2-Butanone	6.485	43	171297	104.10	ug/l		98
31) Propionitrile	6.628	54	112794	217.92	ug/L		99
32) 2,2-Dichloropropane	6.705	77	140396	22.18	ug/l		99
33) cis-1,2-Dichloroethene	6.793	96	111271	22.07	ug/l		99
34) Methacrylonitrile	6.991	52	136999	223.49	ug/L		98
35) Isobutyl Alcohol	7.067	43	87079	426.42	ug/L		99
36) Chloroform	7.089	83	170294	21.55	ug/l		99
37) Bromochloromethane	7.364	49	87913	21.81	ug/l		99
38) Tetrahydrofuran	7.441	42	24075	20.92	ug/L		97
40) 1,1,1-Trichloroethane	7.759	97	165365	22.08	ug/l		99
41) Cyclohexane	7.759	84	196753	21.12	ug/L		99
42) 1,1-Dichloropropene	8.012	110	50651	22.28	ug/L		100
43) Carbon tetrachloride	8.143	119	131498	21.83	ug/L		99

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY198.D
Acq On : 19 Apr 2018 11:58 am
Operator : DNguye
Sample : VOF5D194
Misc : 20ppb 8260/100ppb KET-AA-TBA
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 20 15:14:11 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
44) tert-Amyl methyl ether...	8.231	87	63440	21.39 ug/l	98
46) 1,2-Dichloroethane	8.407	62	123724	21.80 ug/L	100
47) Benzene	8.407	78	385361	21.86 ug/L	100
48) Trichloroethene	9.285	130	105351	21.71 ug/L	98
49) Methylcyclohexane	9.351	83	229061	21.35 ug/L	100
50) 1,2-Dichloropropane	9.527	63	102083	21.71 ug/L	98
51) Methyl Methacrylate	9.648	69	53683	21.08 ug/L	99
52) Bromodichloromethane	9.823	83	123859	21.42 ug/L	98
53) 1,4-Dioxane	9.878	88	16896	420.55 ug/L	99
54) Dibromomethane	9.889	93	53327	21.89 ug/L	99
55) 2-Chloroethyl vinyl ether	10.251	63	28880	21.39 ug/L	100
56) 4-Methyl-2-pentanone	10.284	43	420036	106.73 ug/L	100
57) cis-1,3-Dichloropropene	10.515	75	154618	21.48 ug/L	99
60) Ethyl methacrylate	11.119	69	104088	21.69 ug/L	99
61) Toluene	10.888	91	450598	21.90 ug/l	99
62) trans-1,3-Dichloropropene	11.119	75	133190	21.64 ug/l	99
63) 2-Hexanone	11.316	43	275471	107.07 ug/l	99
64) 1,1,2-Trichloroethane	11.295	97	73016	21.46 ug/l	98
65) 1,3-Dichloropropane	11.580	76	127862	21.77 ug/l	98
66) Tetrachloroethene	11.635	164	82617	22.12 ug/l	99
67) Dibromochloromethane	11.876	129	89206	21.40 ug/l	100
68) 1,2-Dibromoethane	12.096	107	73064	21.54 ug/l	99
69) 1-Chlorohexane	12.272	91	156639	21.91 ug/l	100
70) Chlorobenzene	12.546	112	287347	21.99 ug/l	99
71) 1,1,1,2-Tetrachloroethane	12.601	131	100650	21.86 ug/l	99
72) Ethylbenzene	12.601	91	524462	21.98 ug/l	99
73) m-Xylene & p-Xylene	12.689	91	817219	44.43 ug/l	100
74) o-Xylene	13.161	91	413844	21.86 ug/l	99
75) Styrene	13.194	104	319913	21.93 ug/l	99
76) Isopropylbenzene	13.534	105	536413	22.25 ug/L	99
77) cis-1,4-Dichloro-2-butene	13.589	53	35158	20.65 ug/L	98
79) Bromoform	13.567	173	51537	21.70 ug/l	98
80) 1,1,2,2-Tetrachloroethane	13.721	83	94101	21.99 ug/l	99
82) 1,2,3-Trichloropropane	13.886	110	28147	21.94 ug/l	98
83) trans-1,4-Dichloro-2-b...	13.952	53	28780	21.46 ug/L	97
84) n-Propylbenzene	13.963	91	626779	22.44 ug/l	100
85) Bromobenzene	14.017	156	104122	21.49 ug/l	99
86) 1,3,5-Trimethylbenzene	14.116	105	449411	22.10 ug/l	100
87) 2-Chlorotoluene	14.149	91	413777	21.95 ug/l	100
88) 4-Chlorotoluene	14.193	91	365814	22.11 ug/l	99
89) tert-Butylbenzene	14.479	134	103321	22.26 ug/l	98
90) 1,2,4-Trimethylbenzene	14.512	105	439684	21.74 ug/l	99
91) sec-Butylbenzene	14.676	105	590910	22.23 ug/l	99
92) p-Isopropyltoluene	14.808	119	498524	22.25 ug/l	100
93) 1,3-Dichlorobenzene	14.907	146	219794	21.45 ug/l	98
94) 1,4-Dichlorobenzene	14.995	146	223629	21.89 ug/l	100
95) n-Butylbenzene	15.170	91	472426	22.33 ug/l	99
96) 1,2-Dichlorobenzene	15.324	146	209814	22.14 ug/l	99
97) 1,2-Dibromo-3-chloropr...	15.950	157	18622	21.56 ug/l	99
98) 1,2,4-Trichlorobenzene	16.587	180	133237	21.81 ug/l	99
99) Hexachlorobutadiene	16.675	225	73758	22.13 ug/l	100
100) Naphthalene	16.784	128	320754	21.64 ug/l	100
101) 1,2,3-Trichlorobenzene	16.971	180	118526	21.52 ug/l	98

SLC 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY198.D
Acq On : 19 Apr 2018 11:58 am
Operator : DNguye
Sample : VOF5D194
Misc : 20ppb 8260/100ppb KET-AA-TBA
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 20 15:14:11 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

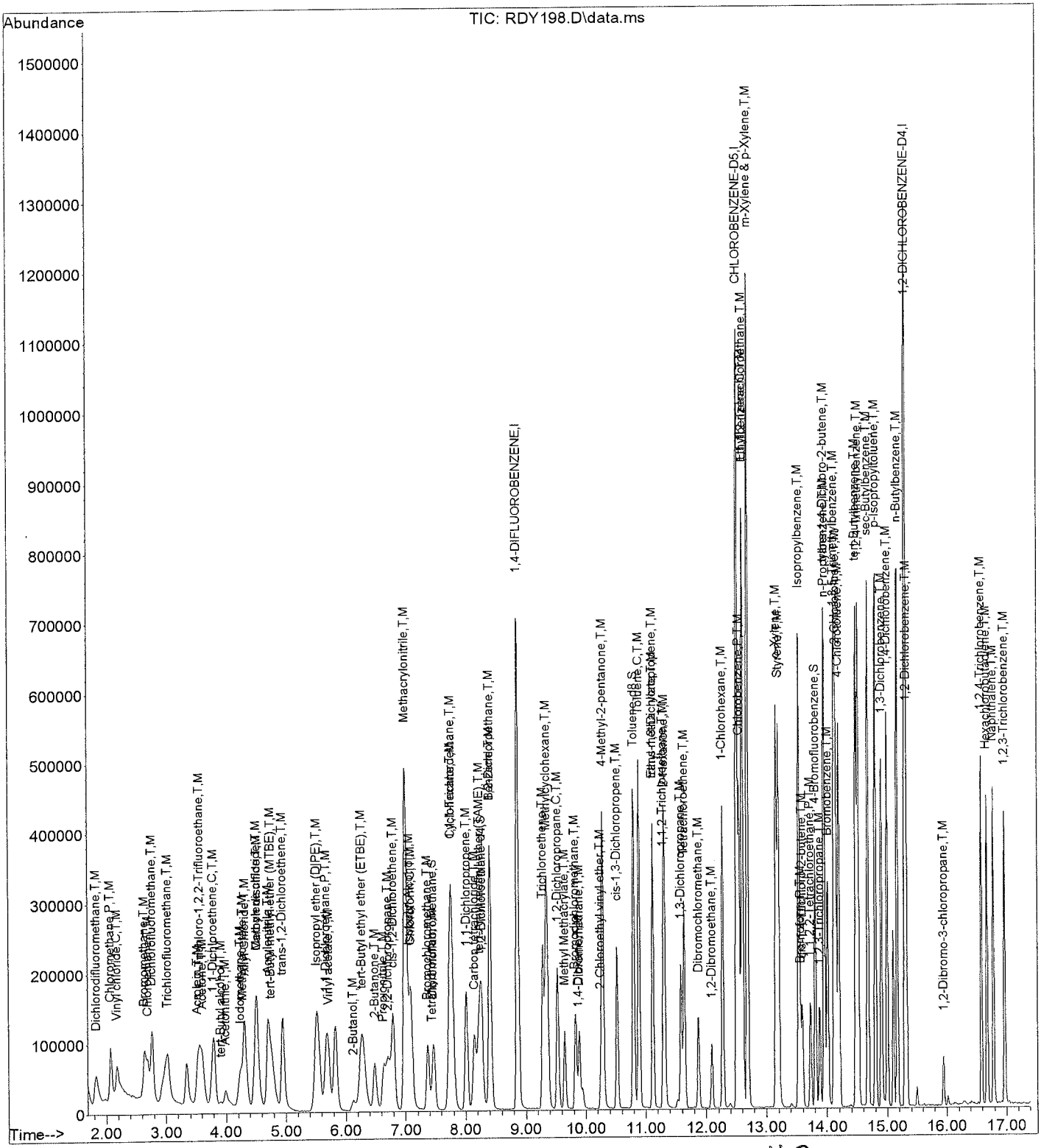
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SA 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY198.D
Acq On : 19 Apr 2018 11:58 am
Operator : DNguye
Sample : VOF5D194
Misc : 20ppb 8260/100ppb KET-AA-TBA
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 20 15:14:11 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



SM 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY199.D
Acq On : 19 Apr 2018 12:23 pm
Operator : DNguye
Sample : VOF5D195
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 20 15:14:17 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.868	114	873261	50.00	ug/l	0.00
58) CHLOROBENZENE-D5	12.513	117	757559	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	347367	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.474	111	245969	53.01	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.02%		
45) 1,2-Dichloroethane-d4	8.275	65	264878	54.67	ug/l	0.00
Spiked Amount 50.000			Recovery =	109.34%		
59) Toluene-d8	10.800	98	967079	56.05	ug/l	0.00
Spiked Amount 50.000			Recovery =	112.10%		
81) 4-Bromofluorobenzene	13.809	95	370577	55.30	ug/l	0.00
Spiked Amount 50.000			Recovery =	110.60%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.830	85	299795	47.31	ug/l	100
4) Chloromethane	2.072	50	346524	48.48	ug/l	100
5) Vinyl chloride	2.181	62	223445	48.76	ug/l	100
7) Bromomethane	2.643	94	197726	48.70	ug/l	100
8) Dichlorofluoromethane	2.774	67	469158	51.56	ug/L	100
9) Chloroethane	2.697	64	186755	49.51	ug/l	100
10) Trichlorofluoromethane	3.027	101	395348	49.17	ug/l	100
11) Acrolein	3.532	55	91295	258.66	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	179439	52.33	ug/l	100
13) Acetone	3.620	43	252818	229.84	ug/l	100
14) tert-Butyl alcohol	3.927	59	105412	266.91	ug/L	100
15) Acetonitrile	3.993	41	181971	432.03	ug/L	100
16) Methyl acetate	4.279	43	169611	49.77	ug/L	100
17) 1,1-Dichloroethene	3.795	61	417425	52.47	ug/l	100
18) Iodomethane	4.235	142	359222	51.80	ug/l	100
19) Allyl Chloride	4.311	76	131787	51.23	ug/L	100
20) Methylene chloride	4.509	49	343109	45.98	ug/l	100
21) Carbon disulfide	4.520	76	833111	54.00	ug/L	100
22) Acrylonitrile	4.707	53	361807	249.64	ug/l	100
23) tert-Butyl methyl ethe...	4.751	73	616862	52.66	ug/L	100
24) trans-1,2-Dichloroethene	4.948	61	380951	52.21	ug/l	100
25) Isopropyl ether (DIPE)	5.519	45	955072	52.37	ug/l	100
26) Vinyl acetate	5.717	43	478285	50.22	ug/l	100
27) 1,1-Dichloroethane	5.673	63	446190	51.84	ug/l	100
28) 2-Butanol	6.123	45	91771	243.12	ug/L	100
29) tert-Butyl ethyl ether...	6.277	59	772668	51.49	ug/l	100
30) 2-Butanone	6.485	43	426739	248.86	ug/l	100
31) Propionitrile	6.639	54	279585	518.33	ug/L	100
32) 2,2-Dichloropropane	6.716	77	340798	51.65	ug/l	100
33) cis-1,2-Dichloroethene	6.804	96	269536	51.30	ug/l	100
34) Methacrylonitrile	7.001	52	331211	518.47	ug/L	100
35) Isobutyl Alcohol	7.067	43	217204	1020.63	ug/L	100
36) Chloroform	7.089	83	419098	50.90	ug/l	100
37) Bromochloromethane	7.364	49	217625	51.80	ug/l	100
38) Tetrahydrofuran	7.441	42	56799	47.36	ug/L	100
40) 1,1,1-Trichloroethane	7.759	97	398830	51.09	ug/l	100
41) Cyclohexane	7.759	84	466284	48.03	ug/L	100
42) 1,1-Dichloropropene	8.012	110	122845	51.86	ug/L	100
43) Carbon tetrachloride	8.143	119	324255	51.66	ug/L	100

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY199.D
Acq On : 19 Apr 2018 12:23 pm
Operator : DNguye
Sample : VOF5D195
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 20 15:14:17 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) tert-Amyl methyl ether...	8.231	87	159244	51.51	ug/l	100
46) 1,2-Dichloroethane	8.418	62	306143	51.77	ug/L	100
47) Benzene	8.407	78	954000	51.94	ug/L	100
48) Trichloroethene	9.285	130	260643	51.55	ug/L	100
49) Methylcyclohexane	9.351	83	520819	46.59	ug/L	100
50) 1,2-Dichloropropane	9.527	63	256036	52.24	ug/L	100
51) Methyl Methacrylate	9.648	69	135922	51.23	ug/L	100
52) Bromodichloromethane	9.834	83	314448	52.17	ug/L	100
53) 1,4-Dioxane	9.878	88	42639	1018.40	ug/L	100
54) Dibromomethane	9.889	93	132371	52.14	ug/L	100
55) 2-Chloroethyl vinyl ether	10.251	63	72355	51.41	ug/L	100
56) 4-Methyl-2-pentanone	10.284	43	1026759	250.35	ug/L	100
57) cis-1,3-Dichloropropene	10.526	75	389704	51.95	ug/L	100
60) Ethyl methacrylate	11.119	69	258705	52.42	ug/L	100
61) Toluene	10.888	91	1106238	52.29	ug/l	100
62) trans-1,3-Dichloropropene	11.119	75	333790	52.73	ug/l	100
63) 2-Hexanone	11.316	43	666011	251.75	ug/l	100
64) 1,1,2-Trichloroethane	11.294	97	182912	52.28	ug/l	100
65) 1,3-Dichloropropane	11.580	76	317885	52.63	ug/l	100
66) Tetrachloroethene	11.635	164	199982	52.07	ug/l	100
67) Dibromochloromethane	11.876	129	223825	52.21	ug/l	100
68) 1,2-Dibromoethane	12.096	107	183111	52.51	ug/l	100
69) 1-Chlorohexane	12.272	91	385966	52.50	ug/l	100
70) Chlorobenzene	12.546	112	707943	52.68	ug/l	100
71) 1,1,1,2-Tetrachloroethane	12.601	131	253052	53.46	ug/l	100
72) Ethylbenzene	12.601	91	1296577	52.85	ug/l	100
73) m-Xylene & p-Xylene	12.689	91	2023083	106.96	ug/l	100
74) o-Xylene	13.161	91	1022812	52.54	ug/l	100
75) Styrene	13.194	104	789411	52.62	ug/l	100
76) Isopropylbenzene	13.534	105	1309297	52.82	ug/L	100
77) cis-1,4-Dichloro-2-butene	13.589	53	91178	52.08	ug/L	100
79) Bromoform	13.567	173	127571	52.00	ug/l	100
80) 1,1,2,2-Tetrachloroethane	13.721	83	234265	53.00	ug/l	100
82) 1,2,3-Trichloropropane	13.886	110	70188	52.97	ug/l	100
83) trans-1,4-Dichloro-2-b...	13.951	53	72351	52.24	ug/L	100
84) n-Propylbenzene	13.962	91	1550591	53.76	ug/l	100
85) Bromobenzene	14.017	156	260061	51.97	ug/l	100
86) 1,3,5-Trimethylbenzene	14.127	105	1115982	53.14	ug/l	100
87) 2-Chlorotoluene	14.149	91	1023602	52.57	ug/l	100
88) 4-Chlorotoluene	14.193	91	902863	52.84	ug/l	100
89) tert-Butylbenzene	14.479	134	253577	52.88	ug/l	100
90) 1,2,4-Trimethylbenzene	14.511	105	1115459	53.40	ug/l	100
91) sec-Butylbenzene	14.676	105	1466662	53.43	ug/l	100
92) p-Isopropyltoluene	14.808	119	1228427	53.08	ug/l	100
93) 1,3-Dichlorobenzene	14.907	146	556320	52.56	ug/l	100
94) 1,4-Dichlorobenzene	14.995	146	551212	52.24	ug/l	100
95) n-Butylbenzene	15.170	91	1149386	52.59	ug/l	100
96) 1,2-Dichlorobenzene	15.324	146	509268	52.03	ug/l	100
97) 1,2-Dibromo-3-chloropr...	15.950	157	46391	52.00	ug/l	100
98) 1,2,4-Trichlorobenzene	16.587	180	325866	51.65	ug/l	100
99) Hexachlorobutadiene	16.674	225	179020	52.00	ug/l	100
100) Naphthalene	16.784	128	796670	52.04	ug/l	100
101) 1,2,3-Trichlorobenzene	16.971	180	292768	51.46	ug/l	100

SV 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY199.D
Acq On : 19 Apr 2018 12:23 pm
Operator : DNguye
Sample : VOF5D195
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 20 15:14:17 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

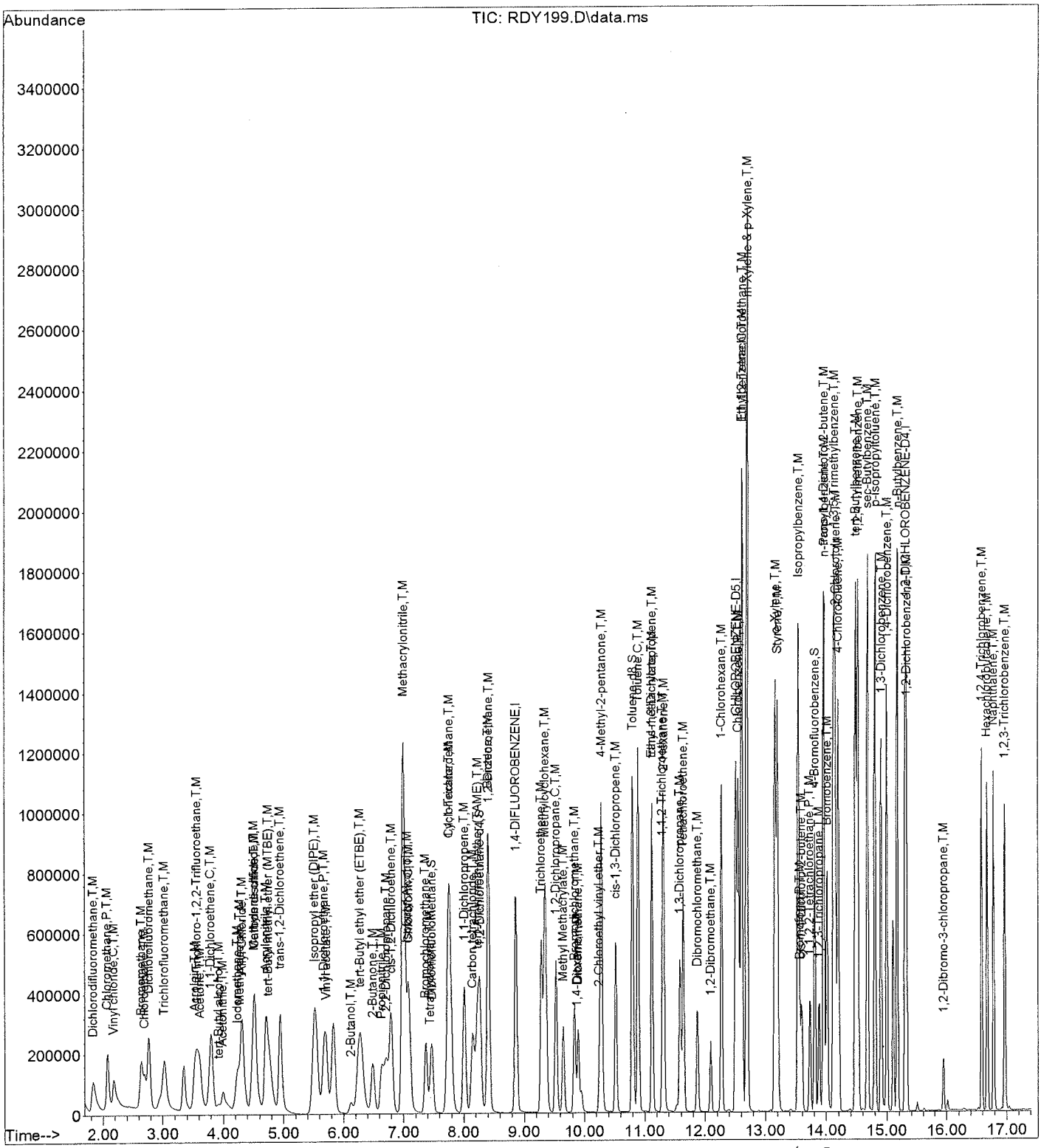
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SV 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY199.D
Acq On : 19 Apr 2018 12:23 pm
Operator : DNguye
Sample : VOF5D195
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 20 15:14:17 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



SA 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY200.D
Acq On : 19 Apr 2018 12:48 pm
Operator : DNguye
Sample : VOF5D196
Misc : 100ppb 8260/500ppb KET-AA-TBA
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 20 15:14:22 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.857	114	864142	50.00	ug/l		-0.01
58) CHLOROBENZENE-D5	12.513	117	751776	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	351932	50.00	ug/l		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.463	111	432138	94.11	ug/l		-0.01
Spiked Amount 50.000			Recovery =	188.22%			
45) 1,2-Dichloroethane-d4	8.275	65	470510	98.14	ug/l		0.00
Spiked Amount 50.000			Recovery =	196.28%			
59) Toluene-d8	10.789	98	1659124	96.90	ug/l		-0.01
Spiked Amount 50.000			Recovery =	193.80%			
81) 4-Bromofluorobenzene	13.809	95	639882	94.25	ug/l		0.00
Spiked Amount 50.000			Recovery =	188.50%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.830	85	613667	97.86	ug/l		100
4) Chloromethane	2.072	50	710616	100.47	ug/l		99
5) Vinyl chloride	2.181	62	447931	98.78	ug/l		98
7) Bromomethane	2.632	94	403333	100.39	ug/l		99
8) Dichlorofluoromethane	2.763	67	941669	104.59	ug/L		100
9) Chloroethane	2.697	64	385138	103.18	ug/l		98
10) Trichlorofluoromethane	3.027	101	809993	101.80	ug/l		100
11) Acrolein	3.521	55	174111	498.51	ug/L		90
12) 1,1,2-Trichloro-1,2,2-...	3.554	151	360841	106.34	ug/l		98
13) Acetone	3.620	43	522019	479.58	ug/l		100
14) tert-Butyl alcohol	3.927	59	208070	532.40	ug/L	#	1
15) Acetonitrile	3.993	41	444657	1042.77	ug/L		81
16) Methyl acetate	4.279	43	347478	103.03	ug/L		99
17) 1,1-Dichloroethene	3.795	61	833546	105.89	ug/l		99
18) Iodomethane	4.235	142	719105	104.80	ug/l		100
19) Allyl Chloride	4.311	76	272016	106.86	ug/L		97
20) Methylene chloride	4.509	49	682387	92.40	ug/l		100
21) Carbon disulfide	4.520	76	1638262	107.31	ug/L		100
22) Acrylonitrile	4.707	53	751767	524.17	ug/l		98
23) tert-Butyl methyl ethe...	4.751	73	1242072	107.16	ug/L		100
24) trans-1,2-Dichloroethene	4.948	61	769046	106.52	ug/l		99
25) Isopropyl ether (DIPE)	5.519	45	1917629	106.26	ug/l		98
26) Vinyl acetate	5.717	43	1003397	106.47	ug/l		100
27) 1,1-Dichloroethane	5.673	63	903553	106.09	ug/l		100
28) 2-Butanol	6.123	45	193982	519.32	ug/L	#	60
29) tert-Butyl ethyl ether...	6.266	59	1529998	103.03	ug/l		99
30) 2-Butanone	6.474	43	883872	520.88	ug/l		99
31) Propionitrile	6.628	54	563880	1056.43	ug/L		100
32) 2,2-Dichloropropane	6.716	77	678600	103.94	ug/l		100
33) cis-1,2-Dichloroethene	6.793	96	547451	105.30	ug/l		100
34) Methacrylonitrile	7.001	52	675874	1069.16	ug/L		99
35) Isobutyl Alcohol	7.067	43	444731	2111.81	ug/L		99
36) Chloroform	7.089	83	853457	104.74	ug/l		99
37) Bromochloromethane	7.364	49	440127	105.87	ug/l		99
38) Tetrahydrofuran	7.430	42	112702	94.97	ug/L		97
40) 1,1,1-Trichloroethane	7.759	97	819848	106.13	ug/l		99
41) Cyclohexane	7.759	84	1023409	106.53	ug/L		99
42) 1,1-Dichloropropene	8.012	110	248439	105.98	ug/L		100
43) Carbon tetrachloride	8.143	119	665072	107.09	ug/L		100

SM 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY200.D
Acq On : 19 Apr 2018 12:48 pm
Operator : DNguye
Sample : VOF5D196
Misc : 100ppb 8260/500ppb KET-AA-TBA
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 20 15:14:22 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) tert-Amyl methyl ether...	8.231	87	327462	107.04	ug/l	97
46) 1,2-Dichloroethane	8.407	62	622769	106.42	ug/L	100
47) Benzene	8.407	78	1948148	107.19	ug/L	100
48) Trichloroethene	9.285	130	528242	105.57	ug/L	99
49) Methylcyclohexane	9.351	83	1179841	106.65	ug/L	99
50) 1,2-Dichloropropane	9.527	63	519568	107.14	ug/L	99
51) Methyl Methacrylate	9.648	69	276066	105.14	ug/L	99
52) Bromodichloromethane	9.823	83	642164	107.67	ug/L	99
53) 1,4-Dioxane	9.878	88	88191	2128.60	ug/L	99
54) Dibromomethane	9.889	93	270227	107.56	ug/L	99
55) 2-Chloroethyl vinyl ether	10.251	63	152495	109.50	ug/L	99
56) 4-Methyl-2-pentanone	10.284	43	2156609	531.38	ug/L	99
57) cis-1,3-Dichloropropene	10.515	75	796987	107.37	ug/L	99
60) Ethyl methacrylate	11.119	69	532939	108.81	ug/L	99
61) Toluene	10.888	91	2226872	106.06	ug/l	99
62) trans-1,3-Dichloropropene	11.119	75	682482	108.65	ug/l	98
63) 2-Hexanone	11.316	43	1424276	542.51	ug/l	99
64) 1,1,2-Trichloroethane	11.294	97	372974	107.43	ug/l	99
65) 1,3-Dichloropropane	11.580	76	649395	108.33	ug/l	99
66) Tetrachloroethene	11.635	164	402022	105.48	ug/l	98
67) Dibromochloromethane	11.865	129	463179	108.87	ug/l	99
68) 1,2-Dibromoethane	12.096	107	378775	109.45	ug/l	99
69) 1-Chlorohexane	12.272	91	779517	106.85	ug/l	99
70) Chlorobenzene	12.546	112	1425662	106.91	ug/l	98
71) 1,1,1,2-Tetrachloroethane	12.601	131	513382	109.30	ug/l	100
72) Ethylbenzene	12.601	91	2625162	107.83	ug/l	99
73) m-Xylene & p-Xylene	12.689	91	4108537	218.88	ug/l	100
74) o-Xylene	13.161	91	2081481	107.74	ug/l	100
75) Styrene	13.194	104	1617790	108.67	ug/l	99
76) Isopropylbenzene	13.534	105	2655228	107.95	ug/L	99
77) cis-1,4-Dichloro-2-butene	13.589	53	188419	108.45	ug/L	97
79) Bromoform	13.567	173	269270	108.33	ug/l	98
80) 1,1,2,2-Tetrachloroethane	13.721	83	476972	106.50	ug/l	98
82) 1,2,3-Trichloropropane	13.875	110	144859	107.90	ug/l	98
83) trans-1,4-Dichloro-2-b...	13.951	53	151223	107.77	ug/L	99
84) n-Propylbenzene	13.951	91	3149042	107.75	ug/l	100
85) Bromobenzene	14.017	156	533720	105.28	ug/l	100
86) 1,3,5-Trimethylbenzene	14.127	105	2272294	106.79	ug/l	100
87) 2-Chlorotoluene	14.149	91	2102864	106.60	ug/l	100
88) 4-Chlorotoluene	14.193	91	1852575	107.02	ug/l	100
89) tert-Butylbenzene	14.479	134	519644	106.97	ug/l	100
90) 1,2,4-Trimethylbenzene	14.511	105	2281606	107.82	ug/l	100
91) sec-Butylbenzene	14.676	105	2991790	107.57	ug/l	100
92) p-Isopropyltoluene	14.808	119	2516841	107.34	ug/l	100
93) 1,3-Dichlorobenzene	14.907	146	1136889	106.03	ug/l	99
94) 1,4-Dichlorobenzene	14.995	146	1131579	105.85	ug/l	100
95) n-Butylbenzene	15.159	91	2372287	107.14	ug/l	100
96) 1,2-Dichlorobenzene	15.324	146	1044386	105.31	ug/l	99
97) 1,2-Dibromo-3-chloropr...	15.950	157	100455	111.13	ug/l	98
98) 1,2,4-Trichlorobenzene	16.587	180	675515	105.68	ug/l	99
99) Hexachlorobutadiene	16.674	225	370318	106.16	ug/l	99
100) Naphthalene	16.784	128	1675831	108.04	ug/l	100
101) 1,2,3-Trichlorobenzene	16.971	180	607820	105.44	ug/l	99

SA 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY200.D
Acq On : 19 Apr 2018 12:48 pm
Operator : DNguye
Sample : VOF5D196
Misc : 100ppb 8260/500ppb KET-AA-TBA
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 20 15:14:22 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

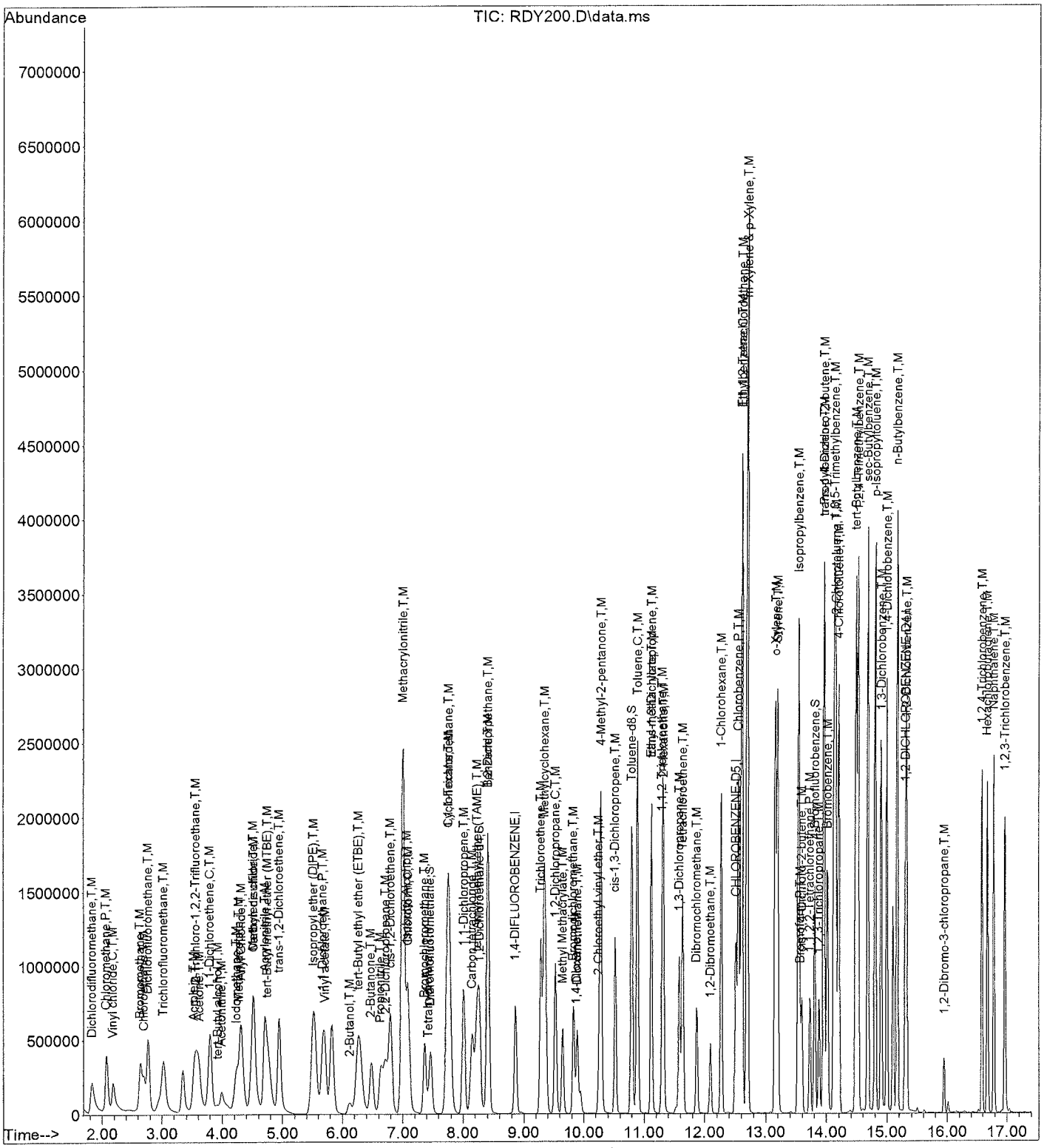
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

SG 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY200.D
Acq On : 19 Apr 2018 12:48 pm
Operator : DNguye
Sample : VOF5D196
Misc : 100ppb 8260/500ppb KET-AA-TBA
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 20 15:14:22 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



SM 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY201.D
Acq On : 19 Apr 2018 1:13 pm
Operator : DNguye
Sample : VOF5D197
Misc : 200ppb 8260/1000ppb KET-AA-TBA
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 20 15:14:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.857	114	871820	50.00	ug/l		-0.01
58) CHLOROBENZENE-D5	12.513	117	767111	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.291	152	359267	50.00	ug/l		#-0.01
System Monitoring Compounds							
39) Dibromofluoromethane	7.474	111	935321	201.90	ug/l		0.00
Spiked Amount 50.000			Recovery =	403.80%			
45) 1,2-Dichloroethane-d4	8.264	65	1006355	208.05	ug/l		-0.01
Spiked Amount 50.000			Recovery =	416.10%			
59) Toluene-d8	10.789	98	3564517	204.03	ug/l		-0.01
Spiked Amount 50.000			Recovery =	408.06%			
81) 4-Bromofluorobenzene	13.809	95	1398424	201.78	ug/l		0.00
Spiked Amount 50.000			Recovery =	403.56%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.830	85	1212762	191.69	ug/l		99
4) Chloromethane	2.072	50	1419720	198.95	ug/l		98
5) Vinyl chloride	2.181	62	924090	201.98	ug/l		98
7) Bromomethane	2.632	94	803126	198.13	ug/l		98
8) Dichlorofluoromethane	2.763	67	1845435	203.16	ug/L		99
9) Chloroethane	2.697	64	758473	201.40	ug/l		99
10) Trichlorofluoromethane	3.027	101	1605487	200.01	ug/l		99
11) Acrolein	3.521	55	343346	974.40	ug/L		91
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	715537	209.01	ug/l		98
13) Acetone	3.620	43	994671	905.76	ug/l		100
14) tert-Butyl alcohol	3.927	59	386683	980.71	ug/L	#	1
15) Acetonitrile	3.993	41	840086	1938.45	ug/L		80
16) Methyl acetate	4.278	43	667335	196.14	ug/L		99
17) 1,1-Dichloroethene	3.795	61	1642999	206.88	ug/l		99
18) Iodomethane	4.235	142	1416139	204.56	ug/l		99
19) Allyl Chloride	4.311	76	530783	206.68	ug/L		97
20) Methylene chloride	4.509	49	1344448	180.45	ug/l		99
21) Carbon disulfide	4.520	76	3025552	196.43	ug/L		99
22) Acrylonitrile	4.707	53	1455917	1006.20	ug/l		99
23) tert-Butyl methyl ethe...	4.751	73	2382027	203.69	ug/L		99
24) trans-1,2-Dichloroethene	4.948	61	1509857	207.29	ug/l		99
25) Isopropyl ether (DIPE)	5.519	45	3739055	205.36	ug/l		100
26) Vinyl acetate	5.717	43	1939082	203.95	ug/l		100
27) 1,1-Dichloroethane	5.673	63	1777634	206.88	ug/l		100
28) 2-Butanol	6.112	45	366765	973.23	ug/L		95
29) tert-Butyl ethyl ether...	6.277	59	2947194	196.72	ug/l		98
30) 2-Butanone	6.474	43	1713580	1000.94	ug/l		99
31) Propionitrile	6.628	54	1062221	1972.54	ug/L		99
32) 2,2-Dichloropropane	6.716	77	1315107	199.66	ug/l		100
33) cis-1,2-Dichloroethene	6.793	96	1080866	206.06	ug/l		99
34) Methacrylonitrile	7.001	52	1291156	2024.49	ug/L		98
35) Isobutyl Alcohol	7.067	43	840361	3955.33	ug/L		100
36) Chloroform	7.089	83	1688881	205.45	ug/l		99
37) Bromochloromethane	7.364	49	865129	206.27	ug/l		99
38) Tetrahydrofuran	7.430	42	214516	179.18	ug/L		98
40) 1,1,1-Trichloroethane	7.759	97	1628147	208.91	ug/l		99
41) Cyclohexane	7.759	84	2051287	211.64	ug/L		99
42) 1,1-Dichloropropene	8.012	110	496317	209.85	ug/L		99
43) Carbon tetrachloride	8.143	119	1325265	211.51	ug/L		100

SM 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY201.D
Acq On : 19 Apr 2018 1:13 pm
Operator : DNguye
Sample : VOF5D197
Misc : 200ppb 8260/1000ppb KET-AA-TBA
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 20 15:14:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) tert-Amyl methyl ether...	8.231	87	641921	207.99	ug/l	95
46) 1,2-Dichloroethane	8.407	62	1221382	206.87	ug/L	100
47) Benzene	8.407	78	3833201	209.04	ug/L	100
48) Trichloroethene	9.285	130	1046736	207.36	ug/L	99
49) Methylcyclohexane	9.351	83	2361030	211.54	ug/L	100
50) 1,2-Dichloropropane	9.527	63	1030279	210.58	ug/L	99
51) Methyl Methacrylate	9.647	69	532420	200.99	ug/L	99
52) Bromodichloromethane	9.834	83	1264534	210.16	ug/L	99
53) 1,4-Dioxane	9.878	88	170087	4069.12	ug/L	98
54) Dibromomethane	9.889	93	531468	209.68	ug/L	99
55) 2-Chloroethyl vinyl ether	10.251	63	289359	205.95	ug/L	98
56) 4-Methyl-2-pentanone	10.284	43	4153389	1014.36	ug/L	99
57) cis-1,3-Dichloropropene	10.515	75	1560692	208.40	ug/L	99
60) Ethyl methacrylate	11.119	69	1027689	205.64	ug/L	98
61) Toluene	10.888	91	4414577	206.06	ug/l	99
62) trans-1,3-Dichloropropene	11.119	75	1334908	208.27	ug/l	98
63) 2-Hexanone	11.316	43	2731134	1019.50	ug/l	100
64) 1,1,2-Trichloroethane	11.294	97	723289	204.16	ug/l	99
65) 1,3-Dichloropropane	11.580	76	1262785	206.45	ug/l	99
66) Tetrachloroethene	11.635	164	805883	207.21	ug/l	99
67) Dibromochloromethane	11.865	129	927732	213.71	ug/l	100
68) 1,2-Dibromoethane	12.096	107	745046	210.98	ug/l	98
69) 1-Chlorohexane	12.272	91	1557777	209.26	ug/l	99
70) Chlorobenzene	12.546	112	2822798	207.45	ug/l	98
71) 1,1,1,2-Tetrachloroethane	12.601	131	1016211	212.02	ug/l	99
72) Ethylbenzene	12.601	91	5183233	208.64	ug/l	99
73) m-Xylene & p-Xylene	12.689	91	7982236	416.76	ug/l	99
74) o-Xylene	13.161	91	4099716	207.96	ug/l	99
75) Styrene	13.194	104	3191798	210.12	ug/l	99
76) Isopropylbenzene	13.534	105	5197877	207.10	ug/L	99
77) cis-1,4-Dichloro-2-butene	13.589	53	362628	204.55	ug/L	96
79) Bromoform	13.567	173	540221	212.89	ug/l	99
80) 1,1,2,2-Tetrachloroethane	13.721	83	926600	202.68	ug/l	99
82) 1,2,3-Trichloropropane	13.875	110	282276	205.95	ug/l	97
83) trans-1,4-Dichloro-2-b...	13.951	53	291092	203.21	ug/L	99
84) n-Propylbenzene	13.951	91	6160601	206.50	ug/l	99
85) Bromobenzene	14.017	156	1076698	208.04	ug/l	99
86) 1,3,5-Trimethylbenzene	14.116	105	4515674	207.89	ug/l	100
87) 2-Chlorotoluene	14.149	91	4208907	209.01	ug/l	100
88) 4-Chlorotoluene	14.193	91	3644481	206.23	ug/l	100
89) tert-Butylbenzene	14.479	134	1034524	208.61	ug/l	98
90) 1,2,4-Trimethylbenzene	14.511	105	4487311	207.72	ug/l	99
91) sec-Butylbenzene	14.676	105	5883762	207.23	ug/l	99
92) p-Isopropyltoluene	14.808	119	4989715	208.45	ug/l	99
93) 1,3-Dichlorobenzene	14.907	146	2284875	208.74	ug/l	100
94) 1,4-Dichlorobenzene	14.995	146	2277015	208.65	ug/l	100
95) n-Butylbenzene	15.159	91	4701727	208.01	ug/l	99
96) 1,2-Dichlorobenzene	15.324	146	2101372	207.57	ug/l	99
97) 1,2-Dibromo-3-chloropr...	15.950	157	189739	205.62	ug/l	100
98) 1,2,4-Trichlorobenzene	16.587	180	1349401	206.79	ug/l	100
99) Hexachlorobutadiene	16.674	225	753389	211.57	ug/l	100
100) Naphthalene	16.784	128	3308927	208.98	ug/l	99
101) 1,2,3-Trichlorobenzene	16.971	180	1222460	207.74	ug/l	100

SG 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY201.D
Acq On : 19 Apr 2018 1:13 pm
Operator : DNguye
Sample : VOF5D197
Misc : 200ppb 8260/1000ppb KET-AA-TBA
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 20 15:14:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

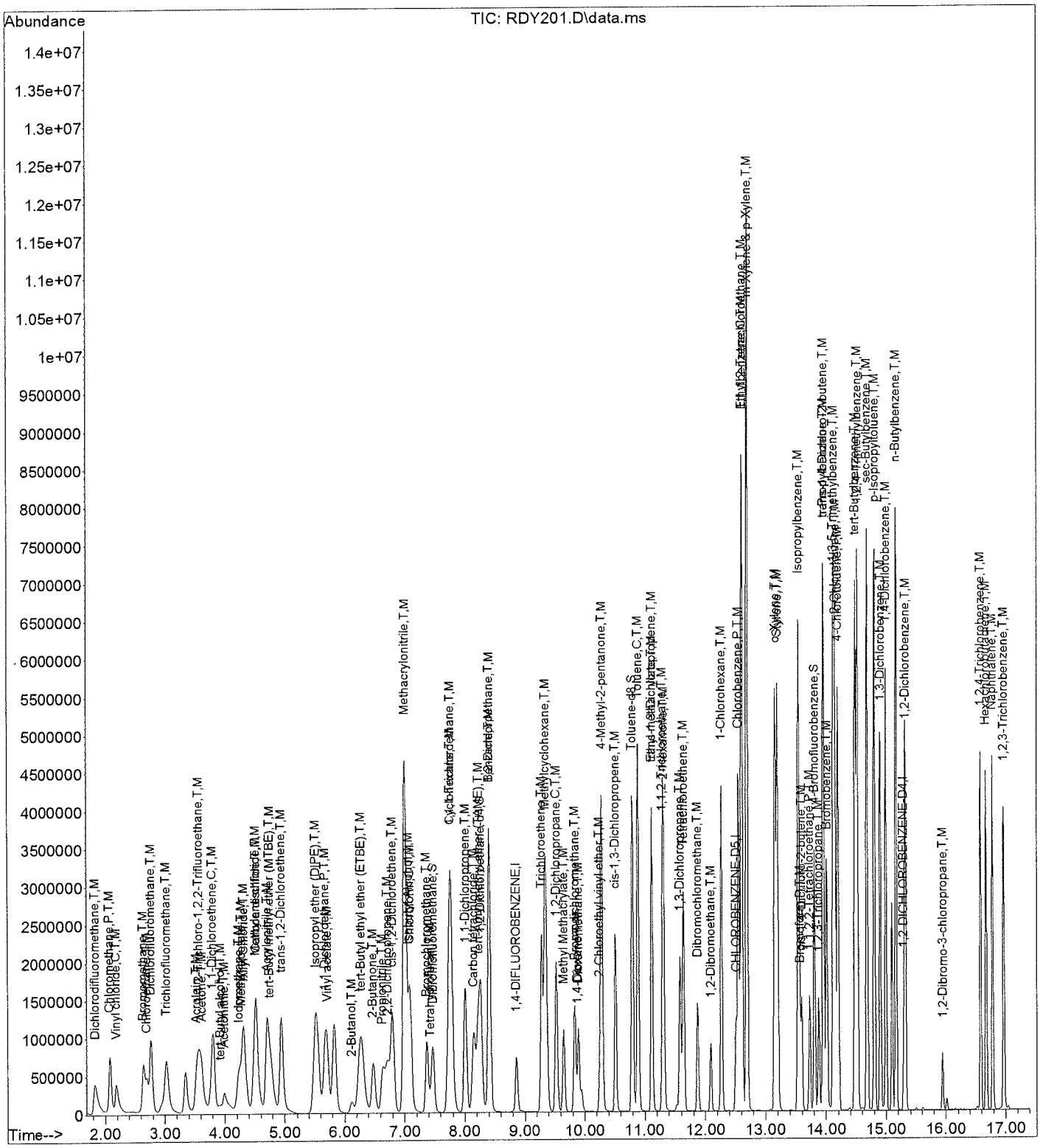
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5/4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY201.D
Acq On : 19 Apr 2018 1:13 pm
Operator : DNguye
Sample : VOF5D197
Misc : 200ppb 8260/1000ppb KET-AA-TBA
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 20 15:14:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



SC 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY202.D
Acq On : 19 Apr 2018 1:38 pm
Operator : DNguye
Sample : VOF5D198
Misc : 300ppb 8260/1500ppb KET-AA-TBA
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 20 15:14:33 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.868	114	861366	50.00	ug/l		0.00
58) CHLOROBENZENE-D5	12.513	117	771334	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	368354	50.00	ug/l	#	0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.473	111	1418611	309.94	ug/l		0.00
Spiked Amount 50.000			Recovery =	619.88%			
45) 1,2-Dichloroethane-d4	8.275	65	1513456	316.69	ug/l		0.00
Spiked Amount 50.000			Recovery =	633.38%			
59) Toluene-d8	10.800	98	5386530	306.63	ug/l		0.00
Spiked Amount 50.000			Recovery =	613.26%			
81) 4-Bromofluorobenzene	13.809	95	2151815	302.83	ug/l		0.00
Spiked Amount 50.000			Recovery =	605.66%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.830	85	1820046	291.16	ug/l		100
4) Chloromethane	2.071	50	2107753	298.95	ug/l		98
5) Vinyl chloride	2.181	62	1303334	288.33	ug/l		98
7) Bromomethane	2.631	94	1193021	297.89	ug/l		99
8) Dichlorofluoromethane	2.763	67	2785687	310.39	ug/L		100
9) Chloroethane	2.697	64	1122176	301.60	ug/l		99
10) Trichlorofluoromethane	3.027	101	2392509	301.67	ug/l		99
11) Acrolein	3.521	55	533487	1532.38	ug/L		92
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	1064571	314.73	ug/l		99
13) Acetone	3.620	43	1531920	1411.91	ug/l		99
14) tert-Butyl alcohol	3.927	59	612918	1573.36	ug/L	#	1
15) Acetonitrile	3.993	41	1324014	3082.41	ug/L		81
16) Methyl acetate	4.278	43	1018436	302.96	ug/L		98
17) 1,1-Dichloroethene	3.806	61	2445025	311.60	ug/l		99
18) Iodomethane	4.234	142	2139751	312.84	ug/l		99
19) Allyl Chloride	4.311	76	798551	314.72	ug/L		97
20) Methylene chloride	4.509	49	2026107	275.25	ug/l		99
21) Carbon disulfide	4.520	76	4880481	320.71	ug/L		99
22) Acrylonitrile	4.707	53	2238747	1566.01	ug/l		99
23) tert-Butyl methyl ethe...	4.761	73	3631151	314.28	ug/L		100
24) trans-1,2-Dichloroethene	4.948	61	2255685	313.44	ug/l		99
25) Isopropyl ether (DIPE)	5.519	45	5581144	310.26	ug/l		99
26) Vinyl acetate	5.717	43	2878255	306.40	ug/l		100
27) 1,1-Dichloroethane	5.673	63	2647059	311.80	ug/l		100
28) 2-Butanol	6.123	45	569659	1529.97	ug/L		96
29) tert-Butyl ethyl ether...	6.277	59	4598223	310.65	ug/l		100
30) 2-Butanone	6.485	43	2597497	1535.67	ug/l		99
31) Propionitrile	6.639	54	1614056	3033.67	ug/L		99
32) 2,2-Dichloropropane	6.716	77	1978643	304.04	ug/l		100
33) cis-1,2-Dichloroethene	6.804	96	1610973	310.86	ug/l		99
34) Methacrylonitrile	7.012	52	1962629	3114.68	ug/L		97
35) Isobutyl Alcohol	7.067	43	1278038	6088.35	ug/L		99
36) Chloroform	7.089	83	2511477	309.22	ug/l		99
37) Bromochloromethane	7.364	49	1292330	311.86	ug/l		97
38) Tetrahydrofuran	7.429	42	329541	278.60	ug/L		99
40) 1,1,1-Trichloroethane	7.759	97	2441541	317.07	ug/l		99
41) Cyclohexane	7.759	84	3103221	324.06	ug/L		99
42) 1,1-Dichloropropene	8.011	110	740897	317.07	ug/L		99
43) Carbon tetrachloride	8.154	119	1999067	322.91	ug/L		100

SCM 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY202.D
Acq On : 19 Apr 2018 1:38 pm
Operator : DNguye
Sample : VOF5D198
Misc : 300ppb 8260/1500ppb KET-AA-TBA
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 20 15:14:33 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44)	tert-Amyl methyl ether...	8.231	87	972059	318.78	ug/l	96
46)	1,2-Dichloroethane	8.418	62	1834869	314.55	ug/L	100
47)	Benzene	8.407	78	5685464	313.82	ug/L	100
48)	Trichloroethene	9.285	130	1561743	313.13	ug/L	99
49)	Methylcyclohexane	9.351	83	3568130	323.58	ug/L	99
50)	1,2-Dichloropropane	9.527	63	1527903	316.07	ug/L	99
51)	Methyl Methacrylate	9.647	69	807863	308.67	ug/L	98
52)	Bromodichloromethane	9.834	83	1893460	318.50	ug/L	99
53)	1,4-Dioxane	9.878	88	255683	6191.13	ug/L	98
54)	Dibromomethane	9.889	93	804457	321.23	ug/L	99
55)	2-Chloroethyl vinyl ether	10.251	63	439203	316.39	ug/L	99
56)	4-Methyl-2-pentanone	10.284	43	6260131	1547.44	ug/L	98
57)	cis-1,3-Dichloropropene	10.526	75	2332034	315.17	ug/L	99
60)	Ethyl methacrylate	11.119	69	1562852	311.01	ug/L	98
61)	Toluene	10.888	91	6502019	301.83	ug/l	99
62)	trans-1,3-Dichloropropene	11.119	75	2004891	311.09	ug/l	98
63)	2-Hexanone	11.316	43	4131426	1533.77	ug/l	99
64)	1,1,2-Trichloroethane	11.294	97	1092608	306.72	ug/l	99
65)	1,3-Dichloropropane	11.580	76	1900016	308.93	ug/l	99
66)	Tetrachloroethene	11.635	164	1210227	309.48	ug/l	100
67)	Dibromochloromethane	11.876	129	1402579	321.32	ug/l	99
68)	1,2-Dibromoethane	12.096	107	1131512	318.66	ug/l	99
69)	1-Chlorohexane	12.271	91	2293007	306.33	ug/l	99
70)	Chlorobenzene	12.546	112	4168880	304.69	ug/l	99
71)	1,1,1,2-Tetrachloroethane	12.601	131	1526834	316.81	ug/l	99
72)	Ethylbenzene	12.612	91	7620173	305.05	ug/l	99
73)	m-Xylene & p-Xylene	12.689	91	11613559	603.03	ug/l	98
74)	o-Xylene	13.161	91	6085587	307.01	ug/l	99
75)	Styrene	13.194	104	4768706	312.21	ug/l	100
76)	Isopropylbenzene	13.534	105	7674974	304.12	ug/L	99
77)	cis-1,4-Dichloro-2-butene	13.589	53	552864	310.15	ug/L	95
79)	Bromoform	13.567	173	828751	318.54	ug/l	99
80)	1,1,2,2-Tetrachloroethane	13.721	83	1420172	302.98	ug/l	99
82)	1,2,3-Trichloropropane	13.885	110	431913	307.36	ug/l	98
83)	trans-1,4-Dichloro-2-b...	13.951	53	440232	299.74	ug/L	98
84)	n-Propylbenzene	13.962	91	9060648	296.22	ug/l	98
85)	Bromobenzene	14.017	156	1624941	306.23	ug/l	98
86)	1,3,5-Trimethylbenzene	14.127	105	6668984	299.44	ug/l	99
87)	2-Chlorotoluene	14.149	91	6157461	298.22	ug/l	100
88)	4-Chlorotoluene	14.193	91	5467288	301.75	ug/l	99
89)	tert-Butylbenzene	14.478	134	1552109	305.26	ug/l	97
90)	1,2,4-Trimethylbenzene	14.511	105	6594544	297.73	ug/l	98
91)	sec-Butylbenzene	14.676	105	8649946	297.13	ug/l	99
92)	p-Isopropyltoluene	14.808	119	7356730	299.76	ug/l	99
93)	1,3-Dichlorobenzene	14.907	146	3402306	303.15	ug/l	99
94)	1,4-Dichlorobenzene	14.994	146	3408014	304.58	ug/l	100
95)	n-Butylbenzene	15.170	91	6849488	295.55	ug/l	99
96)	1,2-Dichlorobenzene	15.324	146	3163710	304.80	ug/l	99
97)	1,2-Dibromo-3-chloropr...	15.950	157	299716	316.78	ug/l	99
98)	1,2,4-Trichlorobenzene	16.586	180	2021322	302.11	ug/l	100
99)	Hexachlorobutadiene	16.674	225	1134263	310.68	ug/l	99
100)	Naphthalene	16.784	128	5014394	308.87	ug/l	99
101)	1,2,3-Trichlorobenzene	16.971	180	1844680	305.75	ug/l	99

SG 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY202.D
Acq On : 19 Apr 2018 1:38 pm
Operator : DNguye
Sample : VOF5D198
Misc : 300ppb 8260/1500ppb KET-AA-TBA
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 20 15:14:33 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

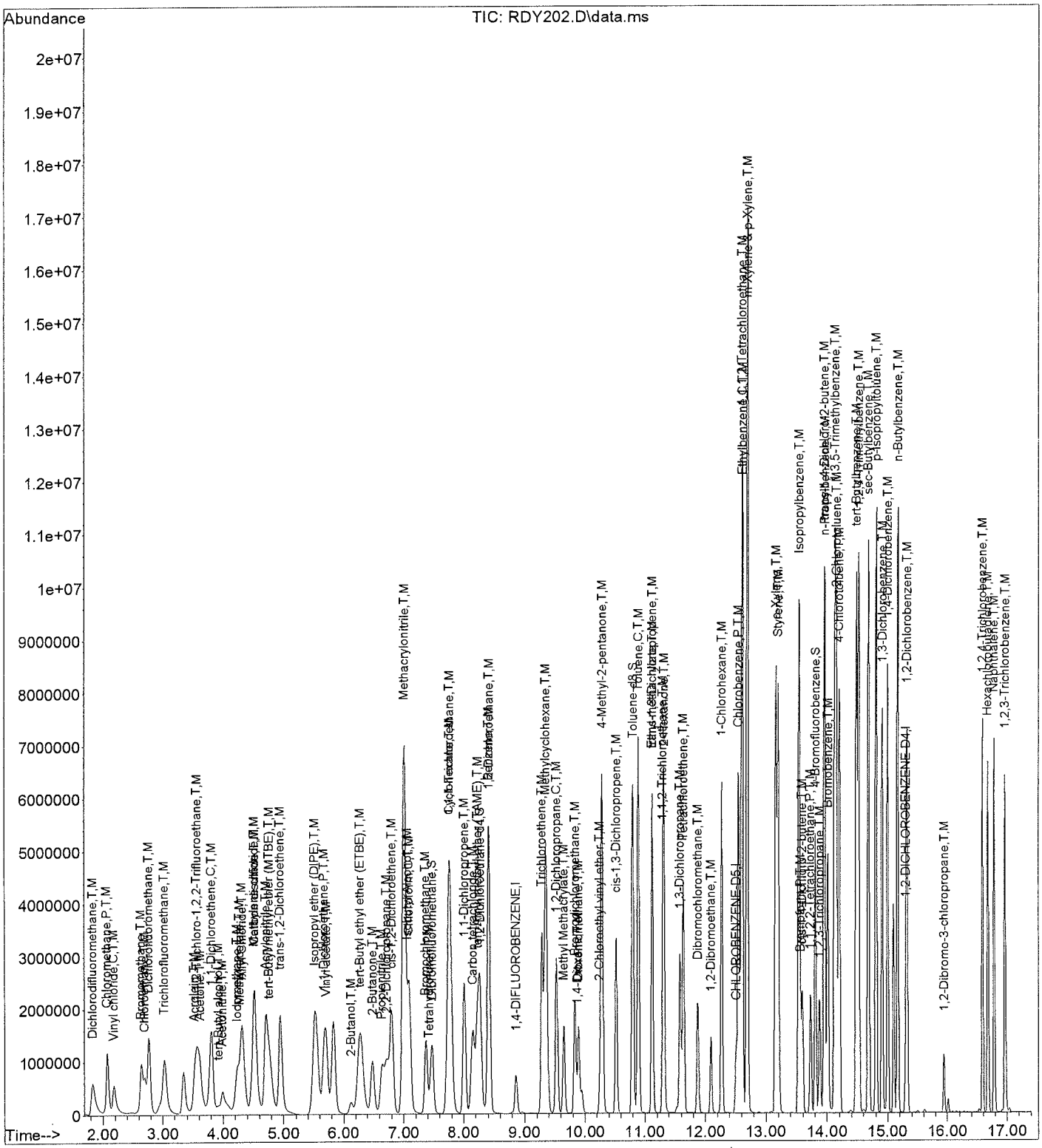
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

SU 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY202.D
Acq On : 19 Apr 2018 1:38 pm
Operator : DNguye
Sample : VOF5D198
Misc : 300ppb 8260/1500ppb KET-AA-TBA
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 20 15:14:33 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



SC 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY203.D
Acq On : 19 Apr 2018 2:03 pm
Operator : DNguye
Sample : VOF5D199
Misc : 500ppb 8260/2500ppb KET-AA-TBA
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 20 15:14:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-DIFLUOROBENZENE	8.857	114	839645	50.00 ug/l	-0.01
58) CHLOROBENZENE-D5	12.513	117	749300	50.00 ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	353348	50.00 ug/l	# 0.00
System Monitoring Compounds					
39) Dibromofluoromethane	7.463	111	2390388	535.77 ug/l	-0.01
Spiked Amount 50.000			Recovery	= 1071.54%	
45) 1,2-Dichloroethane-d4	8.264	65	2534285	544.02 ug/l	-0.01
Spiked Amount 50.000			Recovery	= 1088.04%	
59) Toluene-d8	10.800	98	8895767	521.29 ug/l	0.00
Spiked Amount 50.000			Recovery	= 1042.58%	
81) 4-Bromofluorobenzene	13.809	95	3582607	525.60 ug/l	0.00
Spiked Amount 50.000			Recovery	= 1051.20%	
Target Compounds					Qvalue
3) Dichlorodifluoromethane	1.830	85	3058478	501.94 ug/l	100
4) Chloromethane	2.072	50	3523767	512.72 ug/l	98
5) Vinyl chloride	2.181	62	2299613	521.89 ug/l	98
7) Bromomethane	2.632	94	2008261	514.43 ug/l	99
8) Dichlorofluoromethane	2.763	67	4632393	529.51 ug/L	100
9) Chloroethane	2.697	64	1887937	520.53 ug/l	99
10) Trichlorofluoromethane	3.027	101	4022887	520.36 ug/l	99
11) Acrolein	3.521	55	857319	2526.26 ug/L	89
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	1806282	547.83 ug/l	99
13) Acetone	3.620	43	2537080	2398.82 ug/l	99
14) tert-Butyl alcohol	3.916	59	977110	2573.13 ug/L #	1
15) Acetonitrile	3.993	41	2113379	5036.94 ug/L	80
16) Methyl acetate	4.268	43	1703541	519.87 ug/L	98
17) 1,1-Dichloroethene	3.806	61	4074879	532.75 ug/l	99
18) Iodomethane	4.235	142	3585684	537.80 ug/l	99
19) Allyl Chloride	4.322	76	1336403	540.33 ug/L	98
20) Methylene chloride	4.509	49	3331942	464.36 ug/l	100
21) Carbon disulfide	4.520	76	8068588	543.93 ug/L	99
22) Acrylonitrile	4.707	53	3821904	2742.59 ug/l	98
23) tert-Butyl methyl ethe...	4.751	73	6356852	564.42 ug/L	98
24) trans-1,2-Dichloroethene	4.948	61	3773256	537.88 ug/l	99
25) Isopropyl ether (DIPE)	5.519	45	9178907	523.46 ug/l	98
26) Vinyl acetate	5.717	43	4891217	534.16 ug/l	100
27) 1,1-Dichloroethane	5.673	63	4470691	540.22 ug/l	99
28) 2-Butanol	6.112	45	970727	2674.59 ug/L	95
29) tert-Butyl ethyl ether...	6.277	59	7347325	509.21 ug/l	97
30) 2-Butanone	6.474	43	4409304	2674.28 ug/l	99
31) Propionitrile	6.639	54	2706441	5218.44 ug/L	100
32) 2,2-Dichloropropane	6.716	77	3204261	505.10 ug/l	99
33) cis-1,2-Dichloroethene	6.793	96	2713002	537.05 ug/l	98
34) Methacrylonitrile	7.012	52	3254789	5298.95 ug/L	97
35) Isobutyl Alcohol	7.067	43	2136342	10440.43 ug/L	99
36) Chloroform	7.089	83	4211848	531.99 ug/l	99
37) Bromochloromethane	7.364	49	2136244	528.85 ug/l	97
38) Tetrahydrofuran	7.430	42	550228	477.21 ug/L	98
40) 1,1,1-Trichloroethane	7.759	97	4112783	547.93 ug/l	99
41) Cyclohexane	7.759	84	5261719	563.68 ug/L	98
42) 1,1-Dichloropropene	8.012	110	1252590	549.92 ug/L	100
43) Carbon tetrachloride	8.143	119	3370296	558.49 ug/L	100

SM 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY203.D
Acq On : 19 Apr 2018 2:03 pm
Operator : DNguye
Sample : VOF5D199
Misc : 500ppb 8260/2500ppb KET-AA-TBA
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 20 15:14:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
44)	tert-Amyl methyl ether...	8.231	87	1622112	545.72 ug/l	95
46)	1,2-Dichloroethane	8.407	62	3030636	532.97 ug/L	99
47)	Benzene	8.407	78	9419550	533.38 ug/L	100
48)	Trichloroethene	9.285	130	2600272	534.85 ug/L	99
49)	Methylcyclohexane	9.351	83	6010120	559.13 ug/L	99
50)	1,2-Dichloropropane	9.527	63	2552062	541.60 ug/L	98
51)	Methyl Methacrylate	9.648	69	1343346	526.55 ug/L	99
52)	Bromodichloromethane	9.823	83	3153924	544.26 ug/L	98
53)	1,4-Dioxane	9.867	88	431811	10726.39 ug/L	96
54)	Dibromomethane	9.889	93	1345058	550.99 ug/L	100
55)	2-Chloroethyl vinyl ether	10.251	63	755517	558.34 ug/L	100
56)	4-Methyl-2-pentanone	10.284	43	10326335	2618.59 ug/L	97
57)	cis-1,3-Dichloropropene	10.515	75	3858600	534.98 ug/L	98
60)	Ethyl methacrylate	11.119	69	2580915	528.71 ug/L	96
61)	Toluene	10.888	91	10644996	508.68 ug/l	99
62)	trans-1,3-Dichloropropene	11.119	75	3338502	533.25 ug/l	96
63)	2-Hexanone	11.316	43	6817027	2605.20 ug/l	98
64)	1,1,2-Trichloroethane	11.294	97	1822756	526.74 ug/l	98
65)	1,3-Dichloropropane	11.580	76	3155717	528.19 ug/l	99
66)	Tetrachloroethene	11.635	164	2032192	534.95 ug/l	100
67)	Dibromochloromethane	11.865	129	2344129	552.81 ug/l	99
68)	1,2-Dibromoethane	12.096	107	1894753	549.30 ug/l	100
69)	1-Chlorohexane	12.272	91	3842852	528.48 ug/l	99
70)	Chlorobenzene	12.546	112	6867755	516.70 ug/l	99
71)	1,1,1,2-Tetrachloroethane	12.601	131	2523873	539.09 ug/l	99
72)	Ethylbenzene	12.612	91	12249017	504.78 ug/l	97
73)	m-Xylene & p-Xylene	12.689	91	17793498	951.09 ug/l	94
74)	o-Xylene	13.161	91	9889337	513.57 ug/l	98
75)	Styrene	13.194	104	7788726	524.93 ug/l	99
76)	Isopropylbenzene	13.534	105	12338287	503.28 ug/L	97
77)	cis-1,4-Dichloro-2-butene	13.589	53	934035	539.40 ug/L	95
79)	Bromoform	13.567	173	1414697	566.85 ug/l	99
80)	1,1,2,2-Tetrachloroethane	13.721	83	2386571	530.77 ug/l	99
82)	1,2,3-Trichloropropane	13.886	110	731007	542.29 ug/l	97
83)	trans-1,4-Dichloro-2-b...	13.951	53	734271	521.17 ug/L	96
84)	n-Propylbenzene	13.962	91	14464246	492.96 ug/l	96
85)	Bromobenzene	14.017	156	2742071	538.71 ug/l	96
86)	1,3,5-Trimethylbenzene	14.127	105	10786934	504.91 ug/l	98
87)	2-Chlorotoluene	14.149	91	9970697	503.42 ug/l	99
88)	4-Chlorotoluene	14.193	91	8952225	515.07 ug/l	97
89)	tert-Butylbenzene	14.479	134	2592469	531.52 ug/l	95
90)	1,2,4-Trimethylbenzene	14.522	105	10731877	505.10 ug/l	96
91)	sec-Butylbenzene	14.676	105	13676577	489.76 ug/l	97
92)	p-Isopropyltoluene	14.808	119	11645167	494.64 ug/l	97
93)	1,3-Dichlorobenzene	14.907	146	5587119	518.97 ug/l	99
94)	1,4-Dichlorobenzene	14.995	146	5574112	519.32 ug/l	99
95)	n-Butylbenzene	15.170	91	11015154	495.48 ug/l	97
96)	1,2-Dichlorobenzene	15.324	146	5203941	522.66 ug/l	99
97)	1,2-Dibromo-3-chloropr...	15.950	157	513322	565.59 ug/l	98
98)	1,2,4-Trichlorobenzene	16.587	180	3126802	487.19 ug/l	99
99)	Hexachlorobutadiene	16.674	225	1803515	514.96 ug/l	99
100)	Naphthalene	16.784	128	7910143	507.94 ug/l	98
101)	1,2,3-Trichlorobenzene	16.971	180	2872575	496.33 ug/l	99

Sa 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY203.D
Acq On : 19 Apr 2018 2:03 pm
Operator : DNguye
Sample : VOF5D199
Misc : 500ppb 8260/2500ppb KET-AA-TBA
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 20 15:14:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

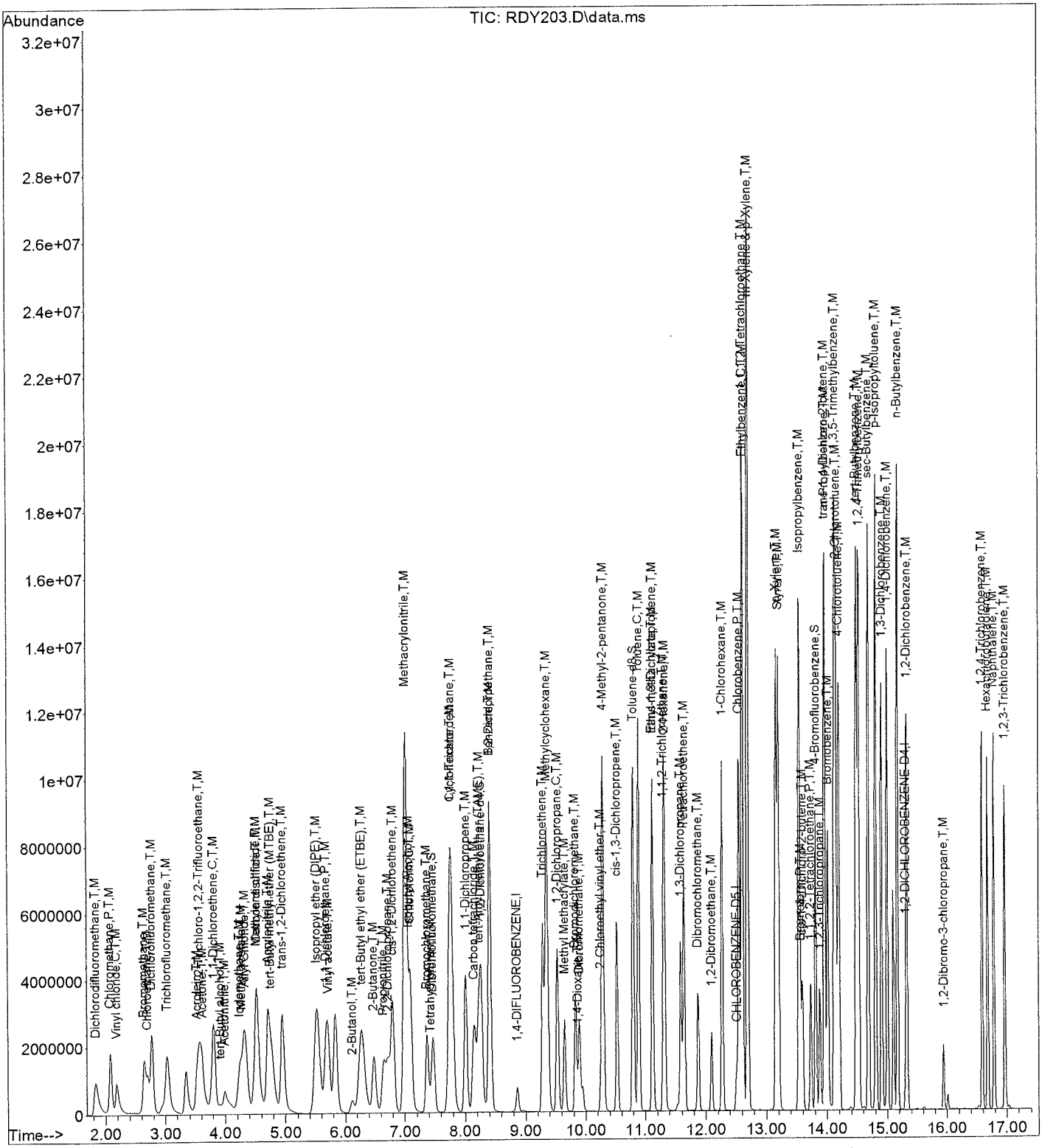
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SF 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY203.D
Acq On : 19 Apr 2018 2:03 pm
Operator : DNguye
Sample : VOF5D199
Misc : 500ppb 8260/2500ppb KET-AA-TBA
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 20 15:14:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



SM 4/23/18

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F5
IC_Beginning DateTime :04/19/18 10:42
Spike Amount :50 PPB
CC/CV File :RDY206
IC File :RDY199

Column Spec :RTX-502.2 ID :0.25MM
IC_Ending DateTime :04/19/18 14:03
HPChem Method :VOF5D19
Date_Time :04/19/18 15:18

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	50.000	0	806002	1	1	8.857	8.861	0				
	2	Chlorotrifluoroethylene												
	3	Dichlorodifluoromethane	56.484	13.0	330387	0.410	0.363	1.830	1.830	4.15				
	4	Chloromethane	56.985	14.0	375942	0.466	0.409	2.072	2.072	3.24				
	5	Vinyl chloride	56.984	14.0	241028	0.299	0.262	2.181	2.180	7.29				
	6	2-Chloro-1,1,1-trifluoroethane												
	7	Bromomethane	58.906	17.8	220747	0.274	0.232	2.631	2.632	4.06				
	8	Dichlorofluoromethane	57.387	14.8	481939	0.598	0.521	2.763	2.763	7.96				
	9	Chloroethane	59.012	18.0	205459	0.255	0.216	2.697	2.695	7.61				
	10	Trichlorofluoromethane	58.835	17.7	436628	0.542	0.460	3.027	3.027	5.35				
5	11	Acrolein	293.604	17.4	95646	0.024	0.020	3.521	3.523	13.85				
	12	1,1,2-Trichloro-1,2,2-Trifluoroethane	57.970	15.9	183478	0.228	0.196	3.565	3.564	12.07				
5	13	Acetone	269.249	7.7	273357	0.068	0.063	3.609	3.618	12.20				
5	14	tert-Butyl alcohol	278.656	11.5	101576	0.025	0.023	3.916	3.926	7.06				
10	15	Acetonitrile	569.125	13.8	223351	0.028	0.021	3.993	3.994	22.87	-0.0082	0.0251		0.9989
	16	Methyl acetate	56.917	13.8	179036	0.222	0.195	4.267	4.276	9.70				
	17	1,1-Dichloroethene	57.434	14.9	421696	0.523	0.455	3.795	3.798	10.81				
	18	Iodomethane	56.355	12.7	360686	0.448	0.397	4.234	4.232	9.07				
	19	Allyl Chloride	57.870	15.7	137397	0.170	0.147	4.311	4.313	11.19				
	20	Methylene chloride	51.540	3.1	355003	0.440	0.427	4.509	4.508	12.11				
	21	Carbon disulfide	59.492	19.0	847143	1.051	0.883	4.520	4.519	10.84				
5	22	Acrylonitrile	291.574	16.6	390039	0.097	0.083	4.696	4.707	7.29				
	23	tert-Butyl methyl ether (MTBE)	56.467	12.9	610482	0.757	0.671	4.751	4.752	12.34				
	24	trans-1,2-Dichloroethene	57.611	15.2	387952	0.481	0.418	4.937	4.945	10.73				
	25	Isopropyl ether (DIPE)	57.151	14.3	961990	1.194	1.044	5.519	5.518	10.67				
	26	Vinyl acetate	58.908	17.8	517796	0.642	0.545	5.706	5.716	8.02				
	27	1,1-Dichloroethane	57.270	14.5	454959	0.564	0.493	5.673	5.673	10.32				
5	28	2-Butanol	285.446	14.2	99450	0.025	0.022	6.123	6.124	5.02				
	29	tert-Butyl ethyl ether (ETBE)	56.980	14.0	789208	0.979	0.859	6.266	6.271	10.29				
5	30	2-Butanone	284.892	14.0	450904	0.112	0.098	6.474	6.482	4.89				
10	31	Propionitrile	557.355	11.5	277479	0.034	0.031	6.628	6.634	6.81				
	32	2,2-Dichloropropane	57.274	14.5	348778	0.433	0.378	6.705	6.714	7.14				
	33	cis-1,2-Dichloroethene	56.459	12.9	273786	0.340	0.301	6.793	6.795	9.28				
10	34	Methacrylonitrile	570.598	14.1	336437	0.042	0.037	6.990	7.000	9.70				
20	35	Isobutyl Alcohol	1083.757	8.4	212875	0.013	0.012	7.067	7.070	7.03				
	36	Chloroform	55.880	11.8	424686	0.527	0.471	7.089	7.087	8.19				
	37	Bromochloromethane	56.445	12.9	218871	0.272	0.241	7.364	7.364	9.75				
	38	Tetrahydrofuran	51.152	2.3	56616	0.070	0.069	7.440	7.437	9.84				
	39	Dibromofluoromethane	50.693	1.4	217111	0.269	0.266	7.462	7.468	9.71				
	40	1,1,1-Trichloroethane	56.298	12.6	405644	0.503	0.447	7.759	7.759	11.87				
	41	Cyclohexane	59.028	18.1	528930	0.656	0.556	7.748	7.758	10.69				
	42	1,1-Dichloropropene	56.944	13.9	124510	0.154	0.136	8.000	8.009	11.69				
	43	Carbon tetrachloride	57.299	14.6	331923	0.412	0.359	8.143	8.147	12.86				
	44	tert-Amyl methyl ether (TAME)	56.320	12.6	160698	0.199	0.177	8.231	8.232	11.22				
	45	1,2-Dichloroethane-d4	52.525	5.1	234884	0.291	0.277	8.264	8.271	12.34				
	46	1,2-Dichloroethane	56.692	13.4	309449	0.384	0.339	8.407	8.410	10.49				
	47	Benzene	57.158	14.3	968970	1.202	1.052	8.407	8.407	10.44				
	48	Trichloroethene	56.645	13.3	264355	0.328	0.290	9.285	9.285	9.33				
	49	Methylcyclohexane	59.352	18.7	612416	0.760	0.640	9.340	9.350	10.22				
	50	1,2-Dichloropropane	56.863	13.7	257209	0.319	0.281	9.527	9.527	11.55				
	51	Methyl Methacrylate	54.500	9.0	133471	0.166	0.152	9.647	9.648	5.80				
	52	Bromodichloromethane	56.423	12.8	313868	0.389	0.345	9.823	9.829	10.75				
20	53	1,4-Dioxane	1052.923	5.3	40689	0.003	0.002	9.878	9.877	8.29				
	54	Dibromomethane	56.695	13.4	132857	0.165	0.145	9.889	9.889	12.00				
	55	2-Chloroethyl vinyl ether	56.544	13.1	73447	0.091	0.081	10.251	10.251	11.35				
5	56	4-Methyl-2-pentanone	288.515	15.4	1092161	0.271	0.235	10.284	10.284	6.28				
	57	cis-1,3-Dichloropropene	56.639	13.3	392146	0.487	0.430	10.515	10.519	10.03				
	58	CHLOROBENZENE-D5	50.000	0	706736	1	1	12.502	12.513	0				
	59	Toluene-d8	51.679	3.4	831803	1.177	1.139	10.789	10.797	11.45				
	60	Ethyl methacrylate	55.808	11.6	256956	0.364	0.326	11.119	11.119	10.04				
	61	Toluene	56.457	12.9	1114353	1.577	1.396	10.888	10.888	8.22				
	62	trans-1,3-Dichloropropene	56.468	12.9	333444	0.472	0.418	11.119	11.119	10.91				
5	63	2-Hexanone	292.172	16.9	721097	0.204	0.175	11.305	11.316	6.88				
	64	1,1,2-Trichloroethane	55.869	11.7	182350	0.258	0.231	11.294	11.294	8.78				
	65	1,3-Dichloropropane	56.643	13.3	319192	0.452	0.399	11.580	11.580	10.17				
	66	Tetrachloroethene	56.610	13.2	202836	0.287	0.253	11.635	11.635	10.12				
	67	Dibromochloromethane	56.738	13.5	226924	0.321	0.283	11.865	11.873	12.99				
	68	1,2-Dibromoethane	56.814	13.6	184839	0.262	0.230	12.096	12.095	12.61				
	69	1-Chlorohexane	56.500	13.0	387507	0.548	0.485	12.271	12.272	10.38				
	70	Chlorobenzene	56.276	12.6	705497	0.998	0.887	12.546	12.547	9.75				
	71	1,1,1,2-Tetrachloroethane	56.447	12.9	249255	0.353	0.312	12.601	12.601	13.81				
	72	Ethylbenzene	57.114	14.2	1307219	1.850	1.619	12.601	12.603	9.95				
2	73	m-Xylene & p-Xylene	114.799	14.8	2025724	1.433	1.248	12.689	12.689	9.84				
	74	o-Xylene	57.049	14.1	1036139	1.466	1.285	13.150	13.161	9.54				
	75	Styrene	56.617	13.2	792354	1.121	0.990	13.194	13.194	11.19				
	76	Isopropylbenzene	56.989	14.0	1317780	1.865	1.636	13.534	13.534	10.09				
	77	cis-1,4-Dichloro-2-butene	56.329	12.7	92000	0.130	0.116	13.589	13.589	7.73				
	78	1,2-DICHLOROBENZENE-D4	50.000	0	316617	1	1	15.291	15.301	0				
	79	Bromoform	57.640	15.3	128901	0.407	0.353	13.567	13.566	12.88				

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80	1,1,2,2-Tetrachloroethane	57.143	14.3	230230	0.727	0.636	13.721	13.722	9.03				
81	4-Bromofluorobenzene	50.889	1.8	310814	0.982	0.965	13.809	13.809	10.28				
82	1,2,3-Trichloropropane	57.757	15.5	69763	0.220	0.191	13.875	13.880	11.16				
83	trans-1,4-Dichloro-2-butene	56.976	14.0	71928	0.227	0.199	13.940	13.951	7.59				
84	n-Propylbenzene	59.093	18.2	1553643	4.907	4.152	13.951	13.959	10.39				
85	Bromobenzene	58.143	16.3	265186	0.838	0.720	14.017	14.017	10.03				
86	1,3,5-Trimethylbenzene	58.435	16.9	1118622	3.533	3.023	14.116	14.121	9.78				
87	2-Chlorotoluene	59.128	18.3	1049351	3.314	2.803	14.149	14.149	8.69				
88	4-Chlorotoluene	56.363	12.7	877797	2.772	2.459	14.193	14.193	9.57				
89	tert-Butylbenzene	59.486	19.0	259979	0.821	0.690	14.478	14.479	11.25				
90	1,2,4-Trimethylbenzene	58.863	17.7	1120665	3.539	3.007	14.511	14.513	9.43				
91	sec-Butylbenzene	59.187	18.4	1480998	4.678	3.952	14.676	14.676	9.93				
92	p-Isopropyltoluene	59.044	18.1	1245555	3.934	3.331	14.797	14.808	9.83				
93	1,3-Dichlorobenzene	57.057	14.1	550418	1.738	1.523	14.896	14.907	8.35				
94	1,4-Dichlorobenzene	57.711	15.4	555048	1.753	1.519	14.994	14.995	8.93				
95	n-Butylbenzene	57.916	15.8	1153702	3.644	3.146	15.159	15.165	9.52				
96	1,2-Dichlorobenzene	57.248	14.5	510747	1.613	1.409	15.324	15.324	9.57				
97	1,2-Dibromo-3-chloropropane	57.178	14.4	46499	0.147	0.128	15.950	15.950	13.14				
98	1,2,4-Trichlorobenzene	57.337	14.7	329741	1.041	0.908	16.587	16.587	6.78				
99	Hexachlorobutadiene	56.693	13.4	177913	0.562	0.496	16.674	16.674	9.91				
100	Naphthalene	57.364	14.7	800469	2.528	2.204	16.784	16.784	8.22				
101	1,2,3-Trichlorobenzene	56.896	13.8	295061	0.932	0.819	16.971	16.971	6.45				

Spike Amount = Nominal Amount * M

SA 4/23/18

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	50.000	50.000	0.0	92	-0.01
2	T,M	Chlorotrifluoroethylene	50.000	0.000	100.0#	0	-1.81#
3	T,M	Dichlorodifluoromethane	50.000	56.484	-13.0	110	0.00
4	P,T,M	Chloromethane	50.000	56.985	-14.0	108	0.00
5	C,T,M	Vinyl chloride	50.000	56.984	-14.0	108	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	50.000	0.000	100.0#	0	-2.16#
7	T,M	Bromomethane	50.000	58.906	-17.8	112	-0.01
8	T,M	Dichlorofluoromethane	50.000	57.387	-14.8	103	-0.01
9	T,M	Chloroethane	50.000	59.012	-18.0	110	0.00
10	T,M	Trichlorofluoromethane	50.000	58.835	-17.7	110	0.00
11	T,M	Acrolein	250.000	293.604	-17.4	105	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-Trifl	50.000	57.970	-15.9	102	0.00
13	T,M	Acetone	250.000	269.249	-7.7	108	-0.01
14	T,M	tert-Butyl alcohol	250.000	278.656	-11.5	96	-0.01
15	T,M	Acetonitrile	500.000	569.125	-13.8	123	0.00
16	T,M	Methyl acetate	50.000	56.917	-13.8	106	-0.01
17	C,T,M	1,1-Dichloroethene	50.000	57.434	-14.9	101	0.00
18	T,M	Iodomethane	50.000	56.355	-12.7	100	0.00
19	T,M	Allyl Chloride	50.000	57.870	-15.7	104	0.00
20	T,M	Methylene chloride	50.000	51.540	-3.1	103	0.00
21	T,M	Carbon disulfide	50.000	59.492	-19.0	102	0.00
22	T,M	Acrylonitrile	250.000	291.574	-16.6	108	-0.01
23	T,M	tert-Butyl methyl ether (MT	50.000	56.467	-12.9	99	0.00
24	T,M	trans-1,2-Dichloroethene	50.000	57.611	-15.2	102	-0.01
25	T,M	Isopropyl ether (DIPE)	50.000	57.151	-14.3	101	0.00
26	T,M	Vinyl acetate	50.000	58.908	-17.8	108	-0.01
27	P,T,M	1,1-Dichloroethane	50.000	57.270	-14.5	102	0.00
28	T,M	2-Butanol	250.000	285.446	-14.2	108	0.00
29	T,M	tert-Butyl ethyl ether (ETB	50.000	56.980	-14.0	102	-0.01
30	T,M	2-Butanone	250.000	284.892	-14.0	106	-0.01
31	T,M	Propionitrile	500.000	557.355	-11.5	99	-0.01
32	T,M	2,2-Dichloropropane	50.000	57.274	-14.5	102	-0.01
33	T,M	cis-1,2-Dichloroethene	50.000	56.459	-12.9	102	-0.01
34	T,M	Methacrylonitrile	500.000	570.598	-14.1	102	-0.01
35	T,M	Isobutyl Alcohol	1000.000	1083.757	-8.4	98	0.00
36	C,T,M	Chloroform	50.000	55.880	-11.8	101	0.00
37	T,M	Bromochloromethane	50.000	56.445	-12.9	101	0.00
38	T,M	Tetrahydrofuran	50.000	51.152	-2.3	100	0.00
39	S	Dibromofluoromethane	50.000	50.693	-1.4	88	-0.01
40	T,M	1,1,1-Trichloroethane	50.000	56.298	-12.6	102	0.00
41	T,M	Cyclohexane	50.000	59.028	-18.1	113	-0.01
42	T,M	1,1-Dichloropropene	50.000	56.944	-13.9	101	-0.01
43	T,M	Carbon tetrachloride	50.000	57.299	-14.6	102	0.00
44	T,M	tert-Amyl methyl ether (TAM	50.000	56.320	-12.6	101	0.00
45	S	1,2-Dichloroethane-d4	50.000	52.525	-5.0	89	-0.01
46	T,M	1,2-Dichloroethane	50.000	56.692	-13.4	101	-0.01
47	T,M	Benzene	50.000	57.158	-14.3	102	0.00
48	T,M	Trichloroethene	50.000	56.644	-13.3	101	0.00
49	T,M	Methylcyclohexane	50.000	59.352	-18.7	118	-0.01
50	C,T,M	1,2-Dichloropropane	50.000	56.863	-13.7	100	0.00
51	T,M	Methyl Methacrylate	50.000	54.501	-9.0	98	0.00

SA 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	50.000	56.423	-12.8	100	-0.01
53	T,M	1,4-Dioxane	1000.000	1052.923	-5.3	95	0.00
54	T,M	Dibromomethane	50.000	56.695	-13.4	100	0.00
55	T,M	2-Chloroethyl vinyl ether	50.000	56.544	-13.1	102	0.00
56	T,M	4-Methyl-2-pentanone	250.000	288.515	-15.4	106	0.00
57	T,M	cis-1,3-Dichloropropene	50.000	56.639	-13.3	101	-0.01
58	I	CHLOROBENZENE-D5	50.000	50.000	0.0	93	-0.01
59	S	Toluene-d8	50.000	51.679	-3.4	86	-0.01
60	T,M	Ethyl methacrylate	50.000	55.808	-11.6	99	0.00
61	C,T,M	Toluene	50.000	56.457	-12.9	101	0.00
62	T,M	trans-1,3-Dichloropropene	50.000	56.468	-12.9	100	0.00
63	T,M	2-Hexanone	250.000	292.172	-16.9	108	-0.01
64	T,M	1,1,2-Trichloroethane	50.000	55.869	-11.7	100	0.00
65	T,M	1,3-Dichloropropane	50.000	56.642	-13.3	100	0.00
66	T,M	Tetrachloroethene	50.000	56.610	-13.2	101	0.00
67	T,M	Dibromochloromethane	50.000	56.738	-13.5	101	-0.01
68	T,M	1,2-Dibromoethane	50.000	56.814	-13.6	101	0.00
69	T,M	1-Chlorohexane	50.000	56.500	-13.0	100	0.00
70	P,T,M	Chlorobenzene	50.000	56.276	-12.6	100	0.00
71	T,M	1,1,1,2-Tetrachloroethane	50.000	56.447	-12.9	98	0.00
72	C,T,M	Ethylbenzene	50.000	57.115	-14.2	101	0.00
73	T,M	m-Xylene & p-Xylene	100.000	114.799	-14.8	100	0.00
74	T,M	o-Xylene	50.000	57.049	-14.1	101	-0.01
75	T,M	Styrene	50.000	56.617	-13.2	100	0.00
76	T,M	Isopropylbenzene	50.000	56.989	-14.0	101	0.00
77	T,M	cis-1,4-Dichloro-2-butene	50.000	56.329	-12.7	101	0.00
78	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	91	-0.01
79	P,T,M	Bromoform	50.000	57.640	-15.3	101	0.00
80	P,T,M	1,1,2,2-Tetrachloroethane	50.000	57.142	-14.3	98	0.00
81	S	4-Bromofluorobenzene	50.000	50.889	-1.8	84	0.00
82	T,M	1,2,3-Trichloropropane	50.000	57.757	-15.5	99	-0.01
83	T,M	trans-1,4-Dichloro-2-butene	50.000	56.976	-14.0	99	-0.01
84	T,M	n-Propylbenzene	50.000	59.093	-18.2	100	-0.01
85	T,M	Bromobenzene	50.000	58.143	-16.3	102	0.00
86	T,M	1,3,5-Trimethylbenzene	50.000	58.435	-16.9	100	-0.01
87	T,M	2-Chlorotoluene	50.000	59.128	-18.3	103	0.00
88	T,M	4-Chlorotoluene	50.000	56.363	-12.7	97	0.00
89	T,M	tert-Butylbenzene	50.000	59.485	-19.0	103	0.00
90	T,M	1,2,4-Trimethylbenzene	50.000	58.863	-17.7	100	0.00
91	T,M	sec-Butylbenzene	50.000	59.187	-18.4	101	0.00
92	T,M	p-Isopropyltoluene	50.000	59.044	-18.1	101	-0.01
93	T,M	1,3-Dichlorobenzene	50.000	57.057	-14.1	99	-0.01
94	T,M	1,4-Dichlorobenzene	50.000	57.711	-15.4	101	0.00
95	T,M	n-Butylbenzene	50.000	57.916	-15.8	100	-0.01
96	T,M	1,2-Dichlorobenzene	50.000	57.248	-14.5	100	0.00
97	T,M	1,2-Dibromo-3-chloropropane	50.000	57.178	-14.4	100	0.00
98	T,M	1,2,4-Trichlorobenzene	50.000	57.337	-14.7	101	0.00
99	T,M	Hexachlorobutadiene	50.000	56.693	-13.4	99	0.00
100	T,M	Naphthalene	50.000	57.364	-14.7	100	0.00

SY 4/23/18

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
101 T,M	1,2,3-Trichlorobenzene	50.000	56.896	-13.8	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

SA 4/23/18

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	92	-0.01
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.81#
3	T,M	Dichlorodifluoromethane	0.363	0.410	-12.9	110	0.00
4	P,T,M	Chloromethane	0.409	0.466	-13.9	108	0.00
5	C,T,M	Vinyl chloride	0.262	0.299	-14.1	108	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.000	0.0	0#	-2.16#
7	T,M	Bromomethane	0.232	0.274	-18.1	112	-0.01
8	T,M	Dichlorofluoromethane	0.521	0.598	-14.8	103	-0.01
9	T,M	Chloroethane	0.216	0.255	-18.1	110	0.00
10	T,M	Trichlorofluoromethane	0.460	0.542	-17.8	110	0.00
11	T,M	Acrolein	0.020	0.024	-20.0	105	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-Trifl	0.196	0.228	-16.3	102	0.00
13	T,M	Acetone	0.063	0.068	-7.9	108	-0.01
14	T,M	tert-Butyl alcohol	0.023	0.025	-8.7	96	-0.01
15	T,M	Acetonitrile	0.021	0.028	-33.3#	123	0.00
16	T,M	Methyl acetate	0.195	0.222	-13.8	106	-0.01
17	C,T,M	1,1-Dichloroethene	0.455	0.523	-14.9	101	0.00
18	T,M	Iodomethane	0.397	0.448	-12.8	100	0.00
19	T,M	Allyl Chloride	0.147	0.170	-15.6	104	0.00
20	T,M	Methylene chloride	0.427	0.440	-3.0	103	0.00
21	T,M	Carbon disulfide	0.883	1.051	-19.0	102	0.00
22	T,M	Acrylonitrile	0.083	0.097	-16.9	108	-0.01
23	T,M	tert-Butyl methyl ether (MT	0.671	0.757	-12.8	99	0.00
24	T,M	trans-1,2-Dichloroethene	0.418	0.481	-15.1	102	-0.01
25	T,M	Isopropyl ether (DIPE)	1.044	1.194	-14.4	101	0.00
26	T,M	Vinyl acetate	0.545	0.642	-17.8	108	-0.01
27	P,T,M	1,1-Dichloroethane	0.493	0.564	-14.4	102	0.00
28	T,M	2-Butanol	0.022	0.025	-13.6	108	0.00
29	T,M	tert-Butyl ethyl ether (ETB	0.859	0.979	-14.0	102	-0.01
30	T,M	2-Butanone	0.098	0.112	-14.3	106	-0.01
31	T,M	Propionitrile	0.031	0.034	-9.7	99	-0.01
32	T,M	2,2-Dichloropropane	0.378	0.433	-14.6	102	-0.01
33	T,M	cis-1,2-Dichloroethene	0.301	0.340	-13.0	102	-0.01
34	T,M	Methacrylonitrile	0.037	0.042	-13.5	102	-0.01
35	T,M	Isobutyl Alcohol	0.012	0.013	-8.3	98	0.00
36	C,T,M	Chloroform	0.471	0.527	-11.9	101	0.00
37	T,M	Bromochloromethane	0.241	0.272	-12.9	101	0.00
38	T,M	Tetrahydrofuran	0.069	0.070	-1.4	100	0.00
39	S	Dibromofluoromethane	0.266	0.269	-1.1	88	-0.01
40	T,M	1,1,1-Trichloroethane	0.447	0.503	-12.5	102	0.00
41	T,M	Cyclohexane	0.556	0.656	-18.0	113	-0.01
42	T,M	1,1-Dichloropropene	0.136	0.154	-13.2	101	-0.01
43	T,M	Carbon tetrachloride	0.359	0.412	-14.8	102	0.00
44	T,M	tert-Amyl methyl ether (TAM	0.177	0.199	-12.4	101	0.00
45	S	1,2-Dichloroethane-d4	0.277	0.291	-5.1	89	-0.01
46	T,M	1,2-Dichloroethane	0.339	0.384	-13.3	101	-0.01
47	T,M	Benzene	1.052	1.202	-14.3	102	0.00
48	T,M	Trichloroethene	0.290	0.328	-13.1	101	0.00
49	T,M	Methylcyclohexane	0.640	0.760	-18.8	118	-0.01
50	C,T,M	1,2-Dichloropropane	0.281	0.319	-13.5	100	0.00
51	T,M	Methyl Methacrylate	0.152	0.166	-9.2	98	0.00

SA 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	0.345	0.389	-12.8	100	-0.01
53	T,M	1,4-Dioxane	0.002	0.003	-50.0#	95	0.00
54	T,M	Dibromomethane	0.145	0.165	-13.8	100	0.00
55	T,M	2-Chloroethyl vinyl ether	0.081	0.091	-12.3	102	0.00
56	T,M	4-Methyl-2-pentanone	0.235	0.271	-15.3	106	0.00
57	T,M	cis-1,3-Dichloropropene	0.430	0.487	-13.3	101	-0.01
58	I	CHLOROBENZENE-D5	1.000	1.000	0.0	93	-0.01
59	S	Toluene-d8	1.139	1.177	-3.3	86	-0.01
60	T,M	Ethyl methacrylate	0.326	0.364	-11.7	99	0.00
61	C,T,M	Toluene	1.396	1.577	-13.0	101	0.00
62	T,M	trans-1,3-Dichloropropene	0.418	0.472	-12.9	100	0.00
63	T,M	2-Hexanone	0.175	0.204	-16.6	108	-0.01
64	T,M	1,1,2-Trichloroethane	0.231	0.258	-11.7	100	0.00
65	T,M	1,3-Dichloropropane	0.399	0.452	-13.3	100	0.00
66	T,M	Tetrachloroethene	0.253	0.287	-13.4	101	0.00
67	T,M	Dibromochloromethane	0.283	0.321	-13.4	101	-0.01
68	T,M	1,2-Dibromoethane	0.230	0.262	-13.9	101	0.00
69	T,M	1-Chlorohexane	0.485	0.548	-13.0	100	0.00
70	P,T,M	Chlorobenzene	0.887	0.998	-12.5	100	0.00
71	T,M	1,1,1,2-Tetrachloroethane	0.312	0.353	-13.1	98	0.00
72	C,T,M	Ethylbenzene	1.619	1.850	-14.3	101	0.00
73	T,M	m-Xylene & p-Xylene	1.248	1.433	-14.8	100	0.00
74	T,M	o-Xylene	1.285	1.466	-14.1	101	-0.01
75	T,M	Styrene	0.990	1.121	-13.2	100	0.00
76	T,M	Isopropylbenzene	1.636	1.865	-14.0	101	0.00
77	T,M	cis-1,4-Dichloro-2-butene	0.116	0.130	-12.1	101	0.00
78	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	91	-0.01
79	P,T,M	Bromoform	0.353	0.407	-15.3	101	0.00
80	P,T,M	1,1,2,2-Tetrachloroethane	0.636	0.727	-14.3	98	0.00
81	S	4-Bromofluorobenzene	0.965	0.982	-1.8	84	0.00
82	T,M	1,2,3-Trichloropropane	0.191	0.220	-15.2	99	-0.01
83	T,M	trans-1,4-Dichloro-2-butene	0.199	0.227	-14.1	99	-0.01
84	T,M	n-Propylbenzene	4.152	4.907	-18.2	100	-0.01
85	T,M	Bromobenzene	0.720	0.838	-16.4	102	0.00
86	T,M	1,3,5-Trimethylbenzene	3.023	3.533	-16.9	100	-0.01
87	T,M	2-Chlorotoluene	2.803	3.314	-18.2	103	0.00
88	T,M	4-Chlorotoluene	2.459	2.772	-12.7	97	0.00
89	T,M	tert-Butylbenzene	0.690	0.821	-19.0	103	0.00
90	T,M	1,2,4-Trimethylbenzene	3.007	3.539	-17.7	100	0.00
91	T,M	sec-Butylbenzene	3.952	4.678	-18.4	101	0.00
92	T,M	p-Isopropyltoluene	3.331	3.934	-18.1	101	-0.01
93	T,M	1,3-Dichlorobenzene	1.523	1.738	-14.1	99	-0.01
94	T,M	1,4-Dichlorobenzene	1.519	1.753	-15.4	101	0.00
95	T,M	n-Butylbenzene	3.146	3.644	-15.8	100	-0.01
96	T,M	1,2-Dichlorobenzene	1.409	1.613	-14.5	100	0.00
97	T,M	1,2-Dibromo-3-chloropropane	0.128	0.147	-14.8	100	0.00
98	T,M	1,2,4-Trichlorobenzene	0.908	1.041	-14.6	101	0.00
99	T,M	Hexachlorobutadiene	0.496	0.562	-13.3	99	0.00
100	T,M	Naphthalene	2.204	2.528	-14.7	100	0.00

Sm 4/23/18

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
101 T,M	1,2,3-Trichlorobenzene	0.819	0.932	-13.8	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

SA 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.857	114	806002	50.00	ug/l		-0.01
58) CHLOROBENZENE-D5	12.502	117	706736	50.00	ug/l		-0.01
78) 1,2-DICHLOROBENZENE-D4	15.291	152	316617	50.00	ug/l		-0.01
System Monitoring Compounds							
39) Dibromofluoromethane	7.462	111	217111	50.69	ug/l		-0.01
Spiked Amount 50.000			Recovery =	101.38%			
45) 1,2-Dichloroethane-d4	8.264	65	234884	52.53	ug/l		-0.01
Spiked Amount 50.000			Recovery =	105.06%			
59) Toluene-d8	10.789	98	831803	51.68	ug/l		-0.01
Spiked Amount 50.000			Recovery =	103.36%			
81) 4-Bromofluorobenzene	13.809	95	310814	50.89	ug/l		0.00
Spiked Amount 50.000			Recovery =	101.78%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.830	85	330387	56.48	ug/l		99
4) Chloromethane	2.071	50	375942	56.98	ug/l		100
5) Vinyl chloride	2.181	62	241028	56.98	ug/l		99
7) Bromomethane	2.631	94	220747	58.91	ug/l		98
8) Dichlorofluoromethane	2.763	67	481939	57.39	ug/L		100
9) Chloroethane	2.697	64	205459	59.01	ug/l		99
10) Trichlorofluoromethane	3.027	101	436628	58.84	ug/l		99
11) Acrolein	3.521	55	95646	293.60	ug/L		95
12) 1,1,2-Trichloro-1,2,2-...	3.565	151	183478	57.97	ug/l		98
13) Acetone	3.609	43	273357	269.25	ug/l		100
14) tert-Butyl alcohol	3.916	59	101576	278.66	ug/L	#	1
15) Acetonitrile	3.993	41	223351	569.13	ug/L		80
16) Methyl acetate	4.267	43	179036	56.92	ug/L		100
17) 1,1-Dichloroethene	3.795	61	421696	57.43	ug/l		99
18) Iodomethane	4.234	142	360686	56.36	ug/l		99
19) Allyl Chloride	4.311	76	137397	57.87	ug/L		98
20) Methylene chloride	4.509	49	355003	51.54	ug/l		98
21) Carbon disulfide	4.520	76	847143	59.49	ug/L		98
22) Acrylonitrile	4.696	53	390039	291.57	ug/l		99
23) tert-Butyl methyl ethe...	4.750	73	610482	56.47	ug/L		100
24) trans-1,2-Dichloroethene	4.937	61	387952	57.61	ug/l		99
25) Isopropyl ether (DIPE)	5.519	45	961990	57.15	ug/l		98
26) Vinyl acetate	5.706	43	517796	58.91	ug/l		100
27) 1,1-Dichloroethane	5.673	63	454959	57.27	ug/l		99
28) 2-Butanol	6.123	45	99450	285.45	ug/L		99
29) tert-Butyl ethyl ether...	6.266	59	789208	56.98	ug/l		99
30) 2-Butanone	6.474	43	450904	284.89	ug/l		99
31) Propionitrile	6.628	54	277479	557.36	ug/L		100
32) 2,2-Dichloropropane	6.705	77	348778	57.27	ug/l		99
33) cis-1,2-Dichloroethene	6.793	96	273786	56.46	ug/l		100
34) Methacrylonitrile	6.990	52	336437	570.60	ug/L		97
35) Isobutyl Alcohol	7.067	43	212875	1083.76	ug/L		100
36) Chloroform	7.089	83	424686	55.88	ug/l		99
37) Bromochloromethane	7.364	49	218871	56.45	ug/l		99
38) Tetrahydrofuran	7.440	42	56616	51.15	ug/L		100
40) 1,1,1-Trichloroethane	7.759	97	405644	56.30	ug/l		100
41) Cyclohexane	7.748	84	528930	59.03	ug/L		99
42) 1,1-Dichloropropene	8.000	110	124510	56.94	ug/L		100
43) Carbon tetrachloride	8.143	119	331923	57.30	ug/L		98

SA 4/23/18

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44)	tert-Amyl methyl ether...	8.231	87	160698	56.32	ug/l	98
46)	1,2-Dichloroethane	8.407	62	309449	56.69	ug/L	99
47)	Benzene	8.407	78	968970	57.16	ug/L	99
48)	Trichloroethene	9.285	130	264355	56.64	ug/L	99
49)	Methylcyclohexane	9.340	83	612416	59.35	ug/L	99
50)	1,2-Dichloropropane	9.527	63	257209	56.86	ug/L	99
51)	Methyl Methacrylate	9.647	69	133471	54.50	ug/L	99
52)	Bromodichloromethane	9.823	83	313868	56.42	ug/L	99
53)	1,4-Dioxane	9.878	88	40689	1052.92	ug/L	96
54)	Dibromomethane	9.889	93	132857	56.70	ug/L	99
55)	2-Chloroethyl vinyl ether	10.251	63	73447	56.54	ug/L	99
56)	4-Methyl-2-pentanone	10.284	43	1092161	288.51	ug/L	99
57)	cis-1,3-Dichloropropene	10.515	75	392146	56.64	ug/L	100
60)	Ethyl methacrylate	11.119	69	256956	55.81	ug/L	100
61)	Toluene	10.888	91	1114353	56.46	ug/l	100
62)	trans-1,3-Dichloropropene	11.119	75	333444	56.47	ug/l	99
63)	2-Hexanone	11.305	43	721097	292.17	ug/l	99
64)	1,1,2-Trichloroethane	11.294	97	182350	55.87	ug/l	98
65)	1,3-Dichloropropane	11.580	76	319192	56.64	ug/l	99
66)	Tetrachloroethene	11.635	164	202836	56.61	ug/l	100
67)	Dibromochloromethane	11.865	129	226924	56.74	ug/l	100
68)	1,2-Dibromoethane	12.096	107	184839	56.81	ug/l	99
69)	1-Chlorohexane	12.271	91	387507	56.50	ug/l	100
70)	Chlorobenzene	12.546	112	705497	56.28	ug/l	98
71)	1,1,1,2-Tetrachloroethane	12.601	131	249255	56.45	ug/l	99
72)	Ethylbenzene	12.601	91	1307219	57.11	ug/l	99
73)	m-Xylene & p-Xylene	12.689	91	2025724	114.80	ug/l	99
74)	o-Xylene	13.150	91	1036139	57.05	ug/l	100
75)	Styrene	13.194	104	792354	56.62	ug/l	100
76)	Isopropylbenzene	13.534	105	1317780	56.99	ug/L	100
77)	cis-1,4-Dichloro-2-butene	13.589	53	92000	56.33	ug/L	98
79)	Bromoform	13.567	173	128901	57.64	ug/l	98
80)	1,1,2,2-Tetrachloroethane	13.721	83	230230	57.14	ug/l	99
82)	1,2,3-Trichloropropane	13.874	110	69763	57.76	ug/l	99
83)	trans-1,4-Dichloro-2-b...	13.940	53	71928	56.98	ug/L	99
84)	n-Propylbenzene	13.951	91	1553643	59.09	ug/l	100
85)	Bromobenzene	14.017	156	265186	58.14	ug/l	98
86)	1,3,5-Trimethylbenzene	14.116	105	1118622	58.43	ug/l	99
87)	2-Chlorotoluene	14.149	91	1049351	59.13	ug/l	100
88)	4-Chlorotoluene	14.193	91	877797	56.36	ug/l	99
89)	tert-Butylbenzene	14.478	134	259979	59.49	ug/l	97
90)	1,2,4-Trimethylbenzene	14.511	105	1120665	58.86	ug/l	100
91)	sec-Butylbenzene	14.676	105	1480998	59.19	ug/l	100
92)	p-Isopropyltoluene	14.797	119	1245555	59.04	ug/l	100
93)	1,3-Dichlorobenzene	14.896	146	550418	57.06	ug/l	99
94)	1,4-Dichlorobenzene	14.994	146	555048	57.71	ug/l	100
95)	n-Butylbenzene	15.159	91	1153702	57.92	ug/l	100
96)	1,2-Dichlorobenzene	15.324	146	510747	57.25	ug/l	100
97)	1,2-Dibromo-3-chloropr...	15.950	157	46499	57.18	ug/l	99
98)	1,2,4-Trichlorobenzene	16.586	180	329741	57.34	ug/l	99
99)	Hexachlorobutadiene	16.674	225	177913	56.69	ug/l	98
100)	Naphthalene	16.784	128	800469	57.36	ug/l	100
101)	1,2,3-Trichlorobenzene	16.971	180	295061	56.90	ug/l	99

SM 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

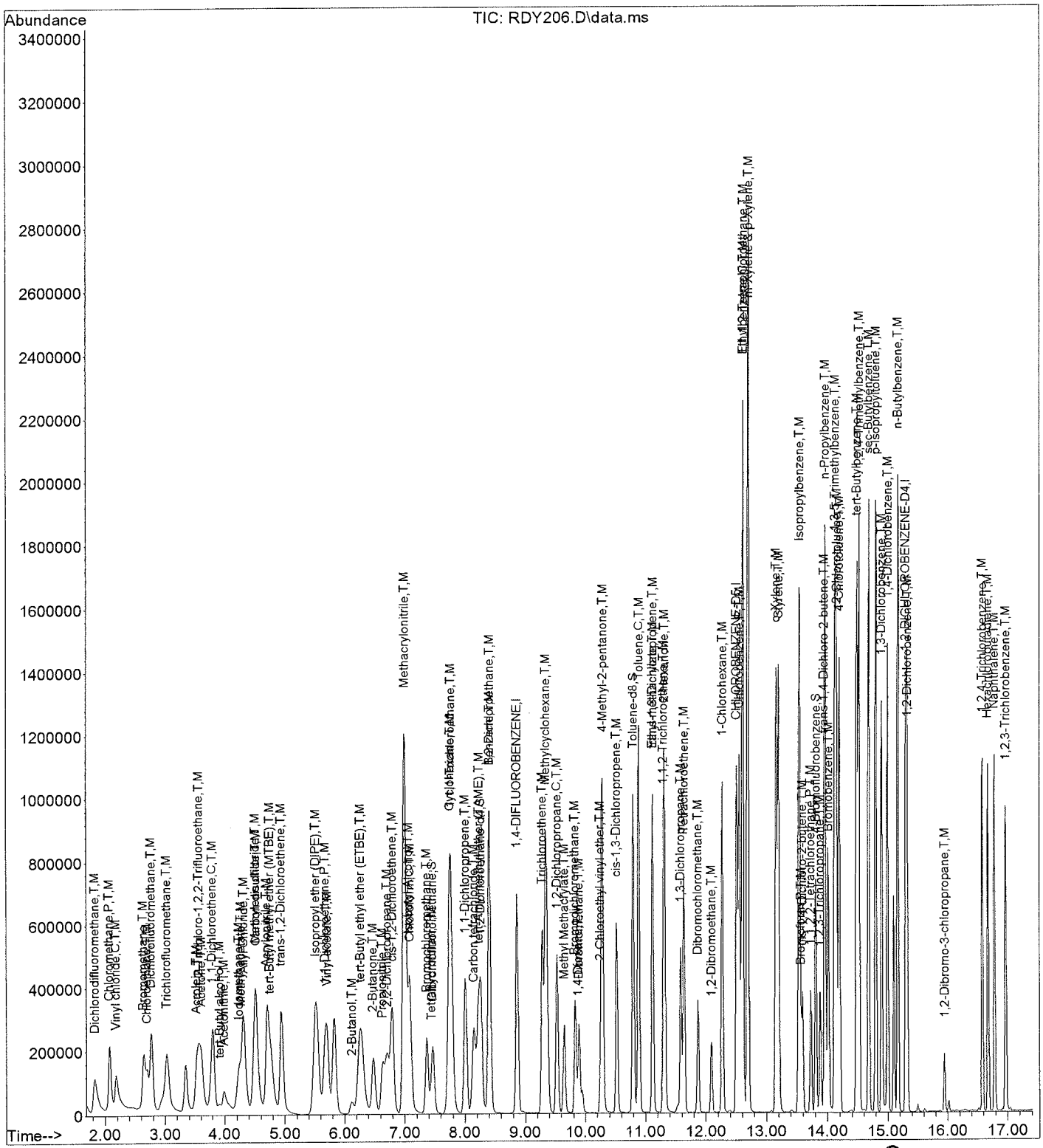
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SM 4/23/18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18D19\
Data File : RDY206.D
Acq On : 19 Apr 2018 3:18 pm
Operator : DNguye
Sample : IVOF5D1901
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 15:14:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Thu Apr 19 14:31:57 2018
Response via : Initial Calibration



SH 4/23/18

DAILY CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RFY636
Instrument ID: F5
GC Column:RTX502.2ID:0.25mm (mm)

Contract: JBER TO075
SAS No.: SDG No.: 18F187
BFB Injection Date : 06/27/18
BFB Injection Time : 08:57
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.96
75	30.0 - 60.0% of mass 95	46.34
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.58
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	69.29
175	5.0 - 9.0% of mass 174	5.52(8.0)1
176	95.0 - 101.0% of mass 174	67.75(97.8)1
177	5.0 - 9.0% of mass 176	5.12(7.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	CVOF5D1934	RFY637	06/27/18	09:33
2	MBLK1S	VMF5F26B	RFY641	06/27/18	11:41
3	LCS1S	VMF5F26L	RFY638	06/27/18	10:28
4	LCD1S	VMF5F26C	RFY639	06/27/18	10:53
5	18Q2DP009-SB0401-SO-0	F187-01I	RFY653	06/27/18	16:36
6	18Q2DP009-SB0401-SO-1	F187-02I	RFY654	06/27/18	17:00
7	18Q2DP009-SB0402-SO-0	F187-03I	RFY655	06/27/18	17:25
8	18Q2DP009-SB0801-SO-0	F187-04I	RFY656	06/27/18	17:50
9	18Q2DP009-SB0802-SO-0	F187-05I	RFY658	06/27/18	18:39
10	18Q2DP009-SB0502-SO-0	F187-08I	RFY659	06/27/18	19:03
11	18Q2DP009-SB0701-SO-0	F187-10I	RFY660	06/27/18	19:28
12	VSTD050	EVOF5D1934	RFY663	06/27/18	20:41

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RDY199
Instrument ID: F5
GC Column : RTX502.2ID:0.25mm (mm)

Project: JBER TO075
SDG No: 18F187
Date Analyzed: 04/19/2018
Time Analyzed: 12:23
Heated Purge (Y/N): Y

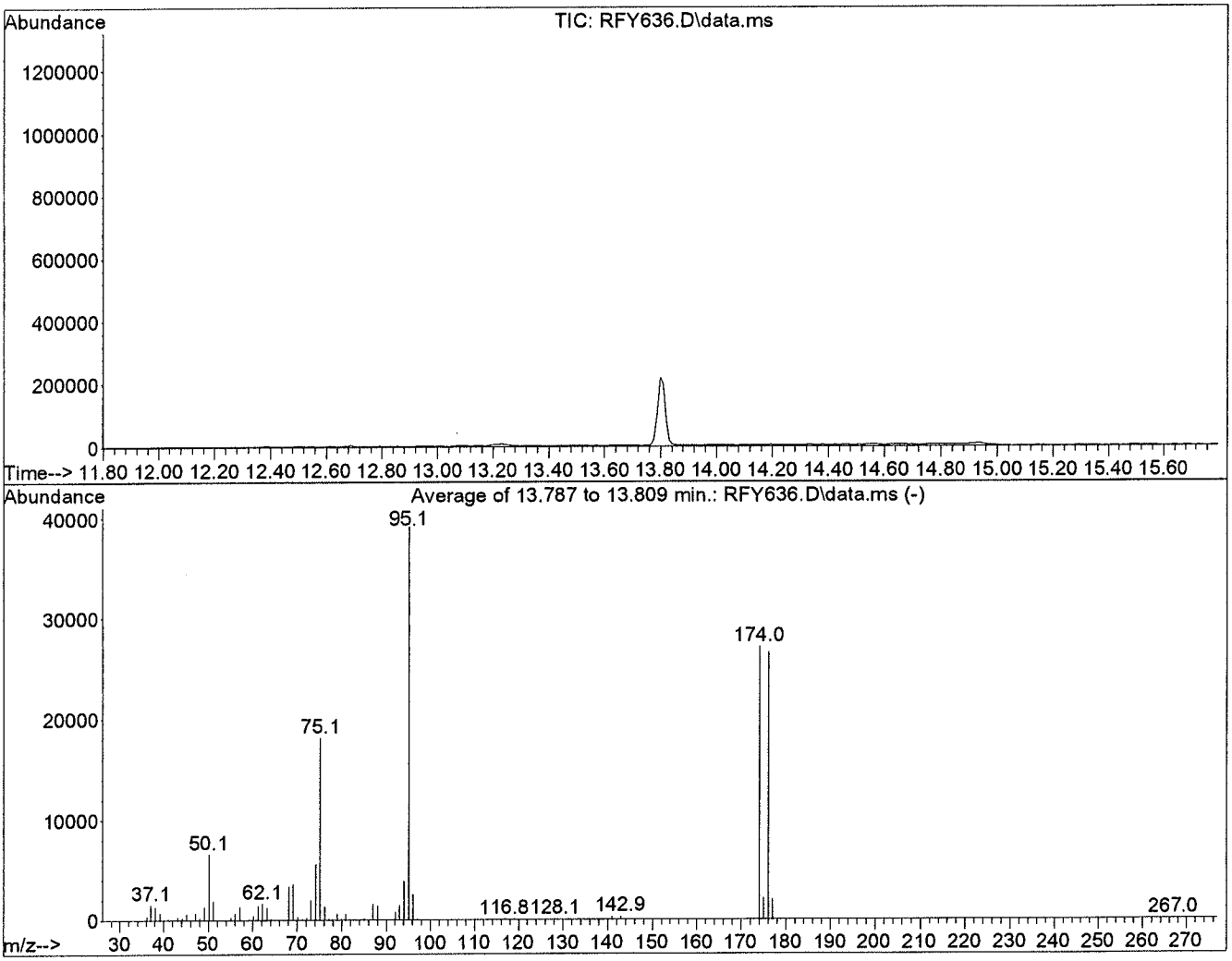
		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	873261	8.87	757559	12.51	347367	15.30
	UPPER LIMIT	1746522	9.04	1515118	12.68	694734	15.47
	LOWER LIMIT	436631	8.70	378780	12.34	173684	15.13
	SAMPLE ID						
1	VSTD050	1362088	8.85	1131642	12.50	508966	15.29
2	MBLK1S	1334049	8.86	1117402	12.51	500543	15.30
3	LCS1S	1413079	8.86	1184450	12.50	530244	15.29
4	LCD1S	1355470	8.86	1129227	12.50	505471	15.29
5	18Q2DP009-SB0401-SO-0	1299493	8.86	1086169	12.51	470978	15.30
6	18Q2DP009-SB0401-SO-1	1300112	8.86	1089319	12.51	479173	15.30
7	18Q2DP009-SB0402-SO-0	1306974	8.86	1085754	12.51	475165	15.30
8	18Q2DP009-SB0801-SO-0	1298803	8.87	1085376	12.51	487608	15.30
9	18Q2DP009-SB0802-SO-0	1307808	8.86	1101832	12.51	490351	15.30
10	18Q2DP009-SB0502-SO-0	1290186	8.87	1087682	12.51	486838	15.30
11	18Q2DP009-SB0701-SO-0	1310637	8.87	1083502	12.51	482957	15.30
12	VSTD050	1196309	8.87	1012887	12.51	462129	15.30

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY636.D
Acq On : 27 Jun 2018 8:57 am
Operator : DNguye
Sample : BFBF5F26
Misc : T/CHK
ALS Vial : 1 Sample Multiplier: 1

Integration File: rte.p

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL
Last Update : Wed May 02 12:17:35 2018



AutoFind: Scans 1103, 1104, 1105; Background Corrected with Scan 1098

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.0	6639	PASS
75	95	30	60	46.3	18141	PASS
95	95	100	100	100.0	39144	PASS
96	95	5	9	6.6	2575	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.3	27125	PASS
175	174	5	9	8.0	2162	PASS
176	174	95	101	97.8	26522	PASS
177	176	5	9	7.6	2004	PASS

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I 1,4-DIFLUOROBENZENE	50.000	50.000	0.0	156	-0.02
2	T,M Chlorotrifluoroethylene	50.000	0.000	100.0#	0	-0.03
3	T,M Dichlorodifluoromethane	50.000	44.653	10.7	147	-0.02
4	P,T,M Chloromethane	50.000	42.484	15.0	137	-0.04
5	C,T,M Vinyl chloride	50.000	44.639	10.7	143	-0.04
6	T,M 2-Chloro-1,1,1-trifluoroeth	50.000	0.000	100.0#	0	-0.04
7	T,M Bromomethane	50.000	45.747	8.5	147	-0.06
8	T,M Dichlorofluoromethane	50.000	53.779	-7.6	163	-0.03
9	T,M Chloroethane	50.000	46.955	6.1	148	-0.05
10	T,M Trichlorofluoromethane	50.000	45.410	9.2	144	-0.02
11	T,M Acrolein	250.000	268.398	-7.4	162	-0.02
12	T,M 1,1,2-Trichloro-1,2,2-Trifl	50.000	55.098	-10.2	164	-0.01
13	T,M Acetone	250.000	258.042	-3.2	175	-0.02
14	T,M tert-Butyl alcohol	250.000	313.583	-25.4#	183	-0.01
15	T,M Acetonitrile	500.000	518.688	-3.7	188	-0.01
16	T,M Methyl acetate	50.000	56.699	-13.4	178	-0.02
17	C,T,M 1,1-Dichloroethene	50.000	47.418	5.2	141	-0.02
18	T,M Iodomethane	50.000	47.648	4.7	143	-0.04
19	T,M Allyl Chloride	50.000	48.116	3.8	146	-0.02
20	T,M Methylene chloride	50.000	47.176	5.6	160	-0.03
21	T,M Carbon disulfide	50.000	54.988	-10.0	159	-0.02
22	T,M Acrylonitrile	250.000	221.197	11.5	138	-0.02
23	T,M tert-Butyl methyl ether (MT	50.000	50.454	-0.9	149	-0.02
24	T,M trans-1,2-Dichloroethene	50.000	45.487	9.0	136	-0.02
25	T,M Isopropyl ether (DIPE)	50.000	39.830	20.3#	119	-0.01
26	T,M Vinyl acetate	50.000	51.731	-3.5	161	-0.02
27	P,T,M 1,1-Dichloroethane	50.000	47.103	5.8	142	-0.02
28	T,M 2-Butanol	250.000	303.244	-21.3#	195	-0.02
29	T,M tert-Butyl ethyl ether (ETB	50.000	46.567	6.9	141	-0.03
30	T,M 2-Butanone	250.000	226.790	9.3	142	-0.02
31	T,M Propionitrile	500.000	470.506	5.9	142	-0.02
32	T,M 2,2-Dichloropropane	50.000	51.363	-2.7	155	-0.02
33	T,M cis-1,2-Dichloroethene	50.000	47.972	4.1	146	-0.03
34	T,M Methacrylonitrile	500.000	447.060	10.6	134	-0.02
35	T,M Isobutyl Alcohol	1000.000	831.884	16.8	127	-0.01
36	C,T,M Chloroform	50.000	47.314	5.4	145	-0.02
37	T,M Bromochloromethane	50.000	40.827	18.3	123	-0.02
38	T,M Tetrahydrofuran	50.000	38.468	23.1#	127	-0.02
39	S Dibromofluoromethane	50.000	50.550	-1.1	149	-0.02
40	T,M 1,1,1-Trichloroethane	50.000	44.367	11.3	135	-0.02
41	T,M Cyclohexane	50.000	57.791	-15.6	188	-0.02
42	T,M 1,1-Dichloropropene	50.000	47.364	5.3	142	-0.02
43	T,M Carbon tetrachloride	50.000	46.853	6.3	141	-0.01
44	T,M tert-Amyl methyl ether (TAM	50.000	45.724	8.6	138	-0.01
45	S 1,2-Dichloroethane-d4	50.000	48.966	2.1	140	-0.02
46	T,M 1,2-Dichloroethane	50.000	45.024	10.0	136	-0.02
47	T,M Benzene	50.000	47.842	4.3	144	-0.01
48	T,M Trichloroethene	50.000	47.759	4.5	145	-0.01
49	T,M Methylcyclohexane	50.000	55.164	-10.3	185	-0.01
50	C,T,M 1,2-Dichloropropane	50.000	46.891	6.2	140	-0.01
51	T,M Methyl Methacrylate	50.000	47.023	6.0	143	-0.01

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	50.000	45.892	8.2	137	-0.01
53	T,M	1,4-Dioxane	1000.000	1020.252	-2.0	156	-0.01
54	T,M	Dibromomethane	50.000	47.938	4.1	143	-0.01
55	T,M	2-Chloroethyl vinyl ether	50.000	53.539	-7.1	162	-0.01
56	T,M	4-Methyl-2-pentanone	250.000	210.511	15.8	131	-0.01
57	T,M	cis-1,3-Dichloropropene	50.000	47.639	4.7	143	-0.01
58	I	CHLOROBENZENE-D5	50.000	50.000	0.0	149	-0.01
59	S	Toluene-d8	50.000	54.100	-8.2	144	-0.01
60	T,M	Ethyl methacrylate	50.000	49.055	1.9	140	0.00
61	C,T,M	Toluene	50.000	48.196	3.6	138	-0.01
62	T,M	trans-1,3-Dichloropropene	50.000	52.074	-4.1	148	-0.01
63	T,M	2-Hexanone	250.000	229.177	8.3	136	-0.01
64	T,M	1,1,2-Trichloroethane	50.000	52.146	-4.3	149	-0.01
65	T,M	1,3-Dichloropropane	50.000	51.717	-3.4	147	0.00
66	T,M	Tetrachloroethene	50.000	52.168	-4.3	150	0.00
67	T,M	Dibromochloromethane	50.000	50.367	-0.7	144	-0.01
68	T,M	1,2-Dibromoethane	50.000	50.348	-0.7	143	-0.01
69	T,M	1-Chlorohexane	50.000	48.181	3.6	137	0.00
70	P,T,M	Chlorobenzene	50.000	48.706	2.6	138	0.00
71	T,M	1,1,1,2-Tetrachloroethane	50.000	49.259	1.5	138	0.00
72	C,T,M	Ethylbenzene	50.000	48.631	2.7	137	0.00
73	T,M	m-Xylene & p-Xylene	100.000	96.532	3.5	135	-0.01
74	T,M	o-Xylene	50.000	47.933	4.1	136	-0.01
75	T,M	Styrene	50.000	46.972	6.1	133	0.00
76	T,M	Isopropylbenzene	50.000	48.507	3.0	137	0.00
77	T,M	cis-1,4-Dichloro-2-butene	50.000	41.704	16.6	120	0.00
78	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	147	-0.01
79	P,T,M	Bromoform	50.000	56.299	-12.6	159	-0.01
80	P,T,M	1,1,2,2-Tetrachloroethane	50.000	51.907	-3.8	144	0.00
81	S	4-Bromofluorobenzene	50.000	52.705	-5.4	140	-0.01
82	T,M	1,2,3-Trichloropropane	50.000	55.109	-10.2	152	-0.01
83	T,M	trans-1,4-Dichloro-2-butene	50.000	44.105	11.8	124	-0.01
84	T,M	n-Propylbenzene	50.000	49.442	1.1	135	-0.01
85	T,M	Bromobenzene	50.000	50.952	-1.9	144	-0.01
86	T,M	1,3,5-Trimethylbenzene	50.000	48.658	2.7	134	-0.01
87	T,M	2-Chlorotoluene	50.000	50.570	-1.1	141	0.00
88	T,M	4-Chlorotoluene	50.000	46.848	6.3	130	0.00
89	T,M	tert-Butylbenzene	50.000	47.368	5.3	131	0.00
90	T,M	1,2,4-Trimethylbenzene	50.000	48.957	2.1	134	0.00
91	T,M	sec-Butylbenzene	50.000	49.486	1.0	136	0.00
92	T,M	p-Isopropyltoluene	50.000	49.192	1.6	136	-0.01
93	T,M	1,3-Dichlorobenzene	50.000	49.104	1.8	137	-0.01
94	T,M	1,4-Dichlorobenzene	50.000	48.959	2.1	137	0.00
95	T,M	n-Butylbenzene	50.000	48.286	3.4	135	-0.01
96	T,M	1,2-Dichlorobenzene	50.000	48.509	3.0	137	-0.01
97	T,M	1,2-Dibromo-3-chloropropane	50.000	51.670	-3.3	146	-0.01
98	T,M	1,2,4-Trichlorobenzene	50.000	51.284	-2.6	145	0.00
99	T,M	Hexachlorobutadiene	50.000	55.857	-11.7	157	0.00
100	T,M	Naphthalene	50.000	43.288	13.4	122	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
101 T,M	1,2,3-Trichlorobenzene	50.000	48.125	3.8	137	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	156	-0.02
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-0.03
3	T,M	Dichlorodifluoromethane	0.363	0.324	10.7	147	-0.02
4	P,T,M	Chloromethane	0.409	0.348	14.9	137	-0.04
5	C,T,M	Vinyl chloride	0.262	0.234	10.7	143	-0.04
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.002	0.0	0#	-0.04
7	T,M	Bromomethane	0.232	0.213	8.2	147	-0.06
8	T,M	Dichlorofluoromethane	0.521	0.560	-7.5	163	-0.03
9	T,M	Chloroethane	0.216	0.203	6.0	148	-0.05
10	T,M	Trichlorofluoromethane	0.460	0.418	9.1	144	-0.02
11	T,M	Acrolein	0.020	0.022	-10.0	162	-0.02
12	T,M	1,1,2-Trichloro-1,2,2-Trifl	0.196	0.216	-10.2	164	-0.01
13	T,M	Acetone	0.063	0.065	-3.2	175	-0.02
14	T,M	tert-Butyl alcohol	0.023	0.028	-21.7#	183	-0.01
15	T,M	Acetonitrile	0.021	0.025	-19.0	188	-0.01
16	T,M	Methyl acetate	0.195	0.221	-13.3	178	-0.02
17	C,T,M	1,1-Dichloroethene	0.455	0.432	5.1	141	-0.02
18	T,M	Iodomethane	0.397	0.378	4.8	143	-0.04
19	T,M	Allyl Chloride	0.147	0.142	3.4	146	-0.02
20	T,M	Methylene chloride	0.427	0.403	5.6	160	-0.03
21	T,M	Carbon disulfide	0.883	0.971	-10.0	159	-0.02
22	T,M	Acrylonitrile	0.083	0.073	12.0	138	-0.02
23	T,M	tert-Butyl methyl ether (MT	0.671	0.677	-0.9	149	-0.02
24	T,M	trans-1,2-Dichloroethene	0.418	0.380	9.1	136	-0.02
25	T,M	Isopropyl ether (DIPE)	1.044	0.832	20.3#	119	-0.01
26	T,M	Vinyl acetate	0.545	0.564	-3.5	161	-0.02
27	P,T,M	1,1-Dichloroethane	0.493	0.464	5.9	142	-0.02
28	T,M	2-Butanol	0.022	0.026	-18.2	195	-0.02
29	T,M	tert-Butyl ethyl ether (ETB	0.859	0.800	6.9	141	-0.03
30	T,M	2-Butanone	0.098	0.089	9.2	142	-0.02
31	T,M	Propionitrile	0.031	0.029	6.5	142	-0.02
32	T,M	2,2-Dichloropropane	0.378	0.388	-2.6	155	-0.02
33	T,M	cis-1,2-Dichloroethene	0.301	0.289	4.0	146	-0.03
34	T,M	Methacrylonitrile	0.037	0.033	10.8	134	-0.02
35	T,M	Isobutyl Alcohol	0.012	0.010	16.7	127	-0.01
36	C,T,M	Chloroform	0.471	0.446	5.3	145	-0.02
37	T,M	Bromochloromethane	0.241	0.196	18.7	123	-0.02
38	T,M	Tetrahydrofuran	0.069	0.053	23.2#	127	-0.02
39	S	Dibromofluoromethane	0.266	0.269	-1.1	149	-0.02
40	T,M	1,1,1-Trichloroethane	0.447	0.397	11.2	135	-0.02
41	T,M	Cyclohexane	0.556	0.642	-15.5	188	-0.02
42	T,M	1,1-Dichloropropene	0.136	0.128	5.9	142	-0.02
43	T,M	Carbon tetrachloride	0.359	0.337	6.1	141	-0.01
44	T,M	tert-Amyl methyl ether (TAM	0.177	0.162	8.5	138	-0.01
45	S	1,2-Dichloroethane-d4	0.277	0.272	1.8	140	-0.02
46	T,M	1,2-Dichloroethane	0.339	0.305	10.0	136	-0.02
47	T,M	Benzene	1.052	1.006	4.4	144	-0.01
48	T,M	Trichloroethene	0.290	0.277	4.5	145	-0.01
49	T,M	Methylcyclohexane	0.640	0.706	-10.3	185	-0.01
50	C,T,M	1,2-Dichloropropane	0.281	0.263	6.4	140	-0.01
51	T,M	Methyl Methacrylate	0.152	0.143	5.9	143	-0.01

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	0.345	0.317	8.1	137	-0.01
53	T,M	1,4-Dioxane	0.002	0.002	0.0	156	-0.01
54	T,M	Dibromomethane	0.145	0.139	4.1	143	-0.01
55	T,M	2-Chloroethyl vinyl ether	0.081	0.086	-6.2	162	-0.01
56	T,M	4-Methyl-2-pentanone	0.235	0.198	15.7	131	-0.01
57	T,M	cis-1,3-Dichloropropene	0.430	0.409	4.9	143	-0.01
58	I	CHLOROBENZENE-D5	1.000	1.000	0.0	149	-0.01
59	S	Toluene-d8	1.139	1.232	-8.2	144	-0.01
60	T,M	Ethyl methacrylate	0.326	0.320	1.8	140	0.00
61	C,T,M	Toluene	1.396	1.346	3.6	138	-0.01
62	T,M	trans-1,3-Dichloropropene	0.418	0.435	-4.1	148	-0.01
63	T,M	2-Hexanone	0.175	0.160	8.6	136	-0.01
64	T,M	1,1,2-Trichloroethane	0.231	0.241	-4.3	149	-0.01
65	T,M	1,3-Dichloropropane	0.399	0.412	-3.3	147	0.00
66	T,M	Tetrachloroethene	0.253	0.264	-4.3	150	0.00
67	T,M	Dibromochloromethane	0.283	0.285	-0.7	144	-0.01
68	T,M	1,2-Dibromoethane	0.230	0.232	-0.9	143	-0.01
69	T,M	1-Chlorohexane	0.485	0.468	3.5	137	0.00
70	P,T,M	Chlorobenzene	0.887	0.864	2.6	138	0.00
71	T,M	1,1,1,2-Tetrachloroethane	0.312	0.308	1.3	138	0.00
72	C,T,M	Ethylbenzene	1.619	1.575	2.7	137	0.00
73	T,M	m-Xylene & p-Xylene	1.248	1.205	3.4	135	-0.01
74	T,M	o-Xylene	1.285	1.232	4.1	136	-0.01
75	T,M	Styrene	0.990	0.930	6.1	133	0.00
76	T,M	Isopropylbenzene	1.636	1.587	3.0	137	0.00
77	T,M	cis-1,4-Dichloro-2-butene	0.116	0.096	17.2	120	0.00
78	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	147	-0.01
79	P,T,M	Bromoform	0.353	0.398	-12.7	159	-0.01
80	P,T,M	1,1,2,2-Tetrachloroethane	0.636	0.661	-3.9	144	0.00
81	S	4-Bromofluorobenzene	0.965	1.017	-5.4	140	-0.01
82	T,M	1,2,3-Trichloropropane	0.191	0.210	-9.9	152	-0.01
83	T,M	trans-1,4-Dichloro-2-butene	0.199	0.176	11.6	124	-0.01
84	T,M	n-Propylbenzene	4.152	4.106	1.1	135	-0.01
85	T,M	Bromobenzene	0.720	0.734	-1.9	144	-0.01
86	T,M	1,3,5-Trimethylbenzene	3.023	2.942	2.7	134	-0.01
87	T,M	2-Chlorotoluene	2.803	2.835	-1.1	141	0.00
88	T,M	4-Chlorotoluene	2.459	2.304	6.3	130	0.00
89	T,M	tert-Butylbenzene	0.690	0.654	5.2	131	0.00
90	T,M	1,2,4-Trimethylbenzene	3.007	2.944	2.1	134	0.00
91	T,M	sec-Butylbenzene	3.952	3.911	1.0	136	0.00
92	T,M	p-Isopropyltoluene	3.331	3.278	1.6	136	-0.01
93	T,M	1,3-Dichlorobenzene	1.523	1.496	1.8	137	-0.01
94	T,M	1,4-Dichlorobenzene	1.519	1.487	2.1	137	0.00
95	T,M	n-Butylbenzene	3.146	3.038	3.4	135	-0.01
96	T,M	1,2-Dichlorobenzene	1.409	1.367	3.0	137	-0.01
97	T,M	1,2-Dibromo-3-chloropropane	0.128	0.133	-3.9	146	-0.01
98	T,M	1,2,4-Trichlorobenzene	0.908	0.932	-2.6	145	0.00
99	T,M	Hexachlorobutadiene	0.496	0.554	-11.7	157	0.00
100	T,M	Naphthalene	2.204	1.908	13.4	122	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
101 T,M	1,2,3-Trichlorobenzene	0.819	0.788	3.8	137	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.846	114	1362088	50.00	ug/l		-0.02
58) CHLOROBENZENE-D5	12.502	117	1131642	50.00	ug/l		-0.01
78) 1,2-DICHLOROBENZENE-D4	15.291	152	508966	50.00	ug/l		-0.01
System Monitoring Compounds							
39) Dibromofluoromethane	7.452	111	365864	50.55	ug/l		-0.02
Spiked Amount 50.000			Recovery =	101.10%			
45) 1,2-Dichloroethane-d4	8.253	65	370043	48.97	ug/l		-0.02
Spiked Amount 50.000			Recovery =	97.94%			
59) Toluene-d8	10.789	98	1394294	54.10	ug/l		-0.01
Spiked Amount 50.000			Recovery =	108.20%			
81) 4-Bromofluorobenzene	13.798	95	517468	52.71	ug/l		-0.01
Spiked Amount 50.000			Recovery =	105.42%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.808	85	441382	44.65	ug/l		98
4) Chloromethane	2.028	50	473648	42.48	ug/l		100
5) Vinyl chloride	2.138	62	319078	44.64	ug/l		97
7) Bromomethane	2.588	94	289712	45.75	ug/l		100
8) Dichlorofluoromethane	2.741	67	763230	53.78	ug/L		100
9) Chloroethane	2.643	64	276268	46.95	ug/l		96
10) Trichlorofluoromethane	3.005	101	569503	45.41	ug/l		99
11) Acrolein	3.510	55	147759	268.40	ug/L		79
12) 1,1,2-Trichloro-1,2,2-...	3.554	151	294704	55.10	ug/l		99
13) Acetone	3.598	43	442726	258.04	ug/l		95
14) tert-Butyl alcohol	3.916	59	193172	313.58	ug/L	#	1
15) Acetonitrile	3.982	41	343006	518.69	ug/L		81
16) Methyl acetate	4.257	43	301397	56.70	ug/L		91
17) 1,1-Dichloroethene	3.774	61	588361	47.42	ug/l		95
18) Iodomethane	4.191	142	515352	47.65	ug/l		97
19) Allyl Chloride	4.290	76	193056	48.12	ug/L		98
20) Methylene chloride	4.476	49	549133	47.18	ug/l		85
21) Carbon disulfide	4.498	76	1323227	54.99	ug/L		99
22) Acrylonitrile	4.685	53	500044	221.20	ug/l		99
23) tert-Butyl methyl ethe...	4.729	73	921820	50.45	ug/L		96
24) trans-1,2-Dichloroethene	4.926	61	517642	45.49	ug/l		93
25) Isopropyl ether (DIPE)	5.508	45	1133008	39.83	ug/l		91
26) Vinyl acetate	5.695	43	768431	51.73	ug/l		94
27) 1,1-Dichloroethane	5.651	63	632358	47.10	ug/l		99
28) 2-Butanol	6.101	45	178543	303.24	ug/L		93
29) tert-Butyl ethyl ether...	6.244	59	1089987	46.57	ug/l		99
30) 2-Butanone	6.464	43	606593	226.79	ug/l		90
31) Propionitrile	6.617	54	395851	470.51	ug/L		98
32) 2,2-Dichloropropane	6.694	77	528574	51.36	ug/l		99
33) cis-1,2-Dichloroethene	6.771	96	393126	47.97	ug/l		93
34) Methacrylonitrile	6.980	52	445459	447.06	ug/L		83
35) Isobutyl Alcohol	7.056	43	276137	831.88	ug/L		98
36) Chloroform	7.067	83	607675	47.31	ug/l		96
37) Bromochloromethane	7.342	49	267536	40.83	ug/l		86
38) Tetrahydrofuran	7.419	42	71952	38.47	ug/L		91
40) 1,1,1-Trichloroethane	7.737	97	540227	44.37	ug/l		95
41) Cyclohexane	7.737	84	875122	57.79	ug/L		91
42) 1,1-Dichloropropene	7.990	110	175013	47.36	ug/L		99
43) Carbon tetrachloride	8.132	119	458668	46.85	ug/L		100

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44)	tert-Amyl methyl ether...	8.220	87	220475	45.72	ug/l		96
46)	1,2-Dichloroethane	8.396	62	415318	45.02	ug/L		99
47)	Benzene	8.396	78	1370606	47.84	ug/L		97
48)	Trichloroethene	9.274	130	376667	47.76	ug/L		98
49)	Methylcyclohexane	9.340	83	961907	55.16	ug/L		93
50)	1,2-Dichloropropane	9.516	63	358433	46.89	ug/L		88
51)	Methyl Methacrylate	9.637	69	194612	47.02	ug/L	#	76
52)	Bromodichloromethane	9.823	83	431417	45.89	ug/L		96
53)	1,4-Dioxane	9.867	88	66628	1020.25	ug/L		89
54)	Dibromomethane	9.878	93	189840	47.94	ug/L		94
55)	2-Chloroethyl vinyl ether	10.241	63	117524	53.54	ug/L		99
56)	4-Methyl-2-pentanone	10.273	43	1346677	210.51	ug/L		92
57)	cis-1,3-Dichloropropene	10.515	75	557404	47.64	ug/L		89
60)	Ethyl methacrylate	11.119	69	361654	49.05	ug/L		85
61)	Toluene	10.877	91	1523239	48.20	ug/l		100
62)	trans-1,3-Dichloropropene	11.108	75	492370	52.07	ug/l		81
63)	2-Hexanone	11.306	43	905688	229.18	ug/l		92
64)	1,1,2-Trichloroethane	11.284	97	272524	52.15	ug/l		98
65)	1,3-Dichloropropane	11.580	76	466656	51.72	ug/l		97
66)	Tetrachloroethene	11.635	164	299301	52.17	ug/l		95
67)	Dibromochloromethane	11.865	129	322557	50.37	ug/l		99
68)	1,2-Dibromoethane	12.085	107	262285	50.35	ug/l		99
69)	1-Chlorohexane	12.272	91	529126	48.18	ug/l		93
70)	Chlorobenzene	12.546	112	977712	48.71	ug/l		97
71)	1,1,1,2-Tetrachloroethane	12.601	131	348288	49.26	ug/l		99
72)	Ethylbenzene	12.601	91	1782230	48.63	ug/l		99
73)	m-Xylene & p-Xylene	12.678	91	2727512	96.53	ug/l		99
74)	o-Xylene	13.150	91	1393973	47.93	ug/l		99
75)	Styrene	13.194	104	1052596	46.97	ug/l		99
76)	Isopropylbenzene	13.534	105	1796010	48.51	ug/L		99
77)	cis-1,4-Dichloro-2-butene	13.589	53	109064	41.70	ug/L		79
79)	Bromoform	13.556	173	202386	56.30	ug/l		98
80)	1,1,2,2-Tetrachloroethane	13.721	83	336189	51.91	ug/l		98
82)	1,2,3-Trichloropropane	13.875	110	107003	55.11	ug/l		94
83)	trans-1,4-Dichloro-2-b...	13.941	53	89506	44.11	ug/L		89
84)	n-Propylbenzene	13.952	91	2089633	49.44	ug/l		99
85)	Bromobenzene	14.006	156	373569	50.95	ug/l		98
86)	1,3,5-Trimethylbenzene	14.116	105	1497331	48.66	ug/l		100
87)	2-Chlorotoluene	14.149	91	1442706	50.57	ug/l		99
88)	4-Chlorotoluene	14.193	91	1172852	46.85	ug/l		99
89)	tert-Butylbenzene	14.479	134	332788	47.37	ug/l		95
90)	1,2,4-Trimethylbenzene	14.512	105	1498312	48.96	ug/l		99
91)	sec-Butylbenzene	14.676	105	1990538	49.49	ug/l		98
92)	p-Isopropyltoluene	14.797	119	1668152	49.19	ug/l		98
93)	1,3-Dichlorobenzene	14.896	146	761467	49.10	ug/l		99
94)	1,4-Dichlorobenzene	14.995	146	756929	48.96	ug/l		98
95)	n-Butylbenzene	15.159	91	1546219	48.29	ug/l		99
96)	1,2-Dichlorobenzene	15.313	146	695705	48.51	ug/l		99
97)	1,2-Dibromo-3-chloropr...	15.939	157	67547	51.67	ug/l		96
98)	1,2,4-Trichlorobenzene	16.587	180	474105	51.28	ug/l		98
99)	Hexachlorobutadiene	16.675	225	281778	55.86	ug/l		100
100)	Naphthalene	16.784	128	971015	43.29	ug/l		100
101)	1,2,3-Trichlorobenzene	16.971	180	401195	48.13	ug/l		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

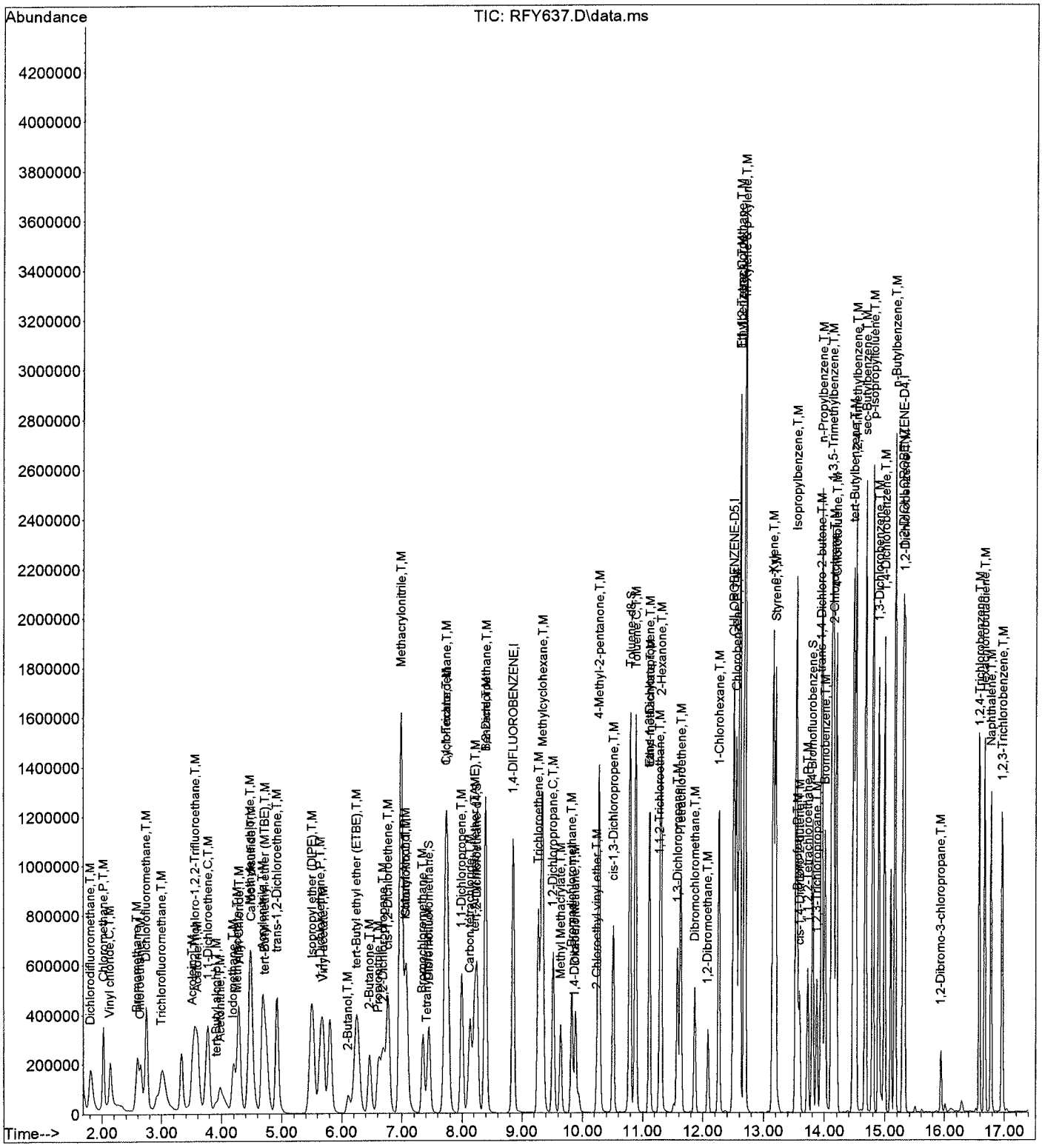
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY637.D
Acq On : 27 Jun 2018 9:33 am
Operator : DNguye
Sample : CVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 29 12:50:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	50.000	50.000	0.0	137	0.00
2	T,M	Chlorotrifluoroethylene	50.000	0.000	100.0#	0	-1.81#
3	T,M	Dichlorodifluoromethane	50.000	38.046	23.9#	110	-0.01
4	P,T,M	Chloromethane	50.000	35.164	29.7#	99	-0.06
5	C,T,M	Vinyl chloride	50.000	38.607	22.8#	108	-0.04
6	T,M	2-Chloro-1,1,1-trifluoroeth	50.000	0.000	100.0#	0	-0.03
7	T,M	Bromomethane	50.000	39.479	21.0#	111	-0.07
8	T,M	Dichlorofluoromethane	50.000	53.399	-6.8	142	-0.02
9	T,M	Chloroethane	50.000	39.166	21.7#	108	-0.04
10	T,M	Trichlorofluoromethane	50.000	36.659	26.7#	102	0.00
11	T,M	Acrolein	250.000	281.808	-12.7	149	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-Trifl	50.000	54.836	-9.7	144	0.01
13	T,M	Acetone	250.000	240.782	3.7	144	0.00
14	T,M	tert-Butyl alcohol	250.000	325.574	-30.2#	167	0.00
15	T,M	Acetonitrile	500.000	552.989	-10.6	177	0.00
16	T,M	Methyl acetate	50.000	55.341	-10.7	152	-0.01
17	C,T,M	1,1-Dichloroethene	50.000	47.775	4.5	125	-0.01
18	T,M	Iodomethane	50.000	48.465	3.1	128	-0.02
19	T,M	Allyl Chloride	50.000	47.541	4.9	127	-0.01
20	T,M	Methylene chloride	50.000	48.591	2.8	145	-0.02
21	T,M	Carbon disulfide	50.000	48.678	2.6	123	-0.01
22	T,M	Acrylonitrile	250.000	233.604	6.6	128	-0.01
23	T,M	tert-Butyl methyl ether (MT	50.000	54.224	-8.4	141	0.00
24	T,M	trans-1,2-Dichloroethene	50.000	44.988	10.0	118	-0.01
25	T,M	Isopropyl ether (DIPE)	50.000	41.748	16.5	109	0.00
26	T,M	Vinyl acetate	50.000	50.081	-0.2	137	0.00
27	P,T,M	1,1-Dichloroethane	50.000	47.743	4.5	126	0.00
28	T,M	2-Butanol	250.000	290.542	-16.2	164	0.01
29	T,M	tert-Butyl ethyl ether (ETB	50.000	48.979	2.0	130	-0.01
30	T,M	2-Butanone	250.000	229.909	8.0	127	0.00
31	T,M	Propionitrile	500.000	495.173	1.0	131	0.00
32	T,M	2,2-Dichloropropane	50.000	46.504	7.0	123	0.00
33	T,M	cis-1,2-Dichloroethene	50.000	48.495	3.0	129	-0.01
34	T,M	Methacrylonitrile	500.000	479.902	4.0	127	0.00
35	T,M	Isobutyl Alcohol	1000.000	874.017	12.6	117	0.01
36	C,T,M	Chloroform	50.000	49.099	1.8	132	0.00
37	T,M	Bromochloromethane	50.000	42.621	14.8	113	0.00
38	T,M	Tetrahydrofuran	50.000	40.334	19.3	117	0.00
39	S	Dibromofluoromethane	50.000	51.839	-3.7	134	0.00
40	T,M	1,1,1-Trichloroethane	50.000	43.364	13.3	116	0.00
41	T,M	Cyclohexane	50.000	52.472	-4.9	150	0.00
42	T,M	1,1-Dichloropropene	50.000	47.937	4.1	127	0.00
43	T,M	Carbon tetrachloride	50.000	47.331	5.3	126	0.01
44	T,M	tert-Amyl methyl ether (TAM	50.000	48.758	2.5	130	0.00
45	S	1,2-Dichloroethane-d4	50.000	51.339	-2.7	129	0.00
46	T,M	1,2-Dichloroethane	50.000	47.593	4.8	126	0.00
47	T,M	Benzene	50.000	48.769	2.5	129	0.00
48	T,M	Trichloroethene	50.000	48.429	3.1	129	0.00
49	T,M	Methylcyclohexane	50.000	50.232	-0.5	148	0.00
50	C,T,M	1,2-Dichloropropane	50.000	47.504	5.0	125	0.00
51	T,M	Methyl Methacrylate	50.000	49.718	0.6	133	0.00

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	50.000	48.779	2.4	128	0.00
53	T,M	1,4-Dioxane	1000.000	1062.326	-6.2	143	0.00
54	T,M	Dibromomethane	50.000	51.240	-2.5	135	0.01
55	T,M	2-Chloroethyl vinyl ether	50.000	52.695	-5.4	140	0.00
56	T,M	4-Methyl-2-pentanone	250.000	222.900	10.8	122	0.00
57	T,M	cis-1,3-Dichloropropene	50.000	48.791	2.4	129	0.00
58	I	CHLOROBENZENE-D5	50.000	50.000	0.0	134	0.00
59	S	Toluene-d8	50.000	52.984	-6.0	126	0.00
60	T,M	Ethyl methacrylate	50.000	51.609	-3.2	132	0.01
61	C,T,M	Toluene	50.000	48.279	3.4	123	0.00
62	T,M	trans-1,3-Dichloropropene	50.000	51.609	-3.2	131	0.01
63	T,M	2-Hexanone	250.000	226.161	9.5	120	0.00
64	T,M	1,1,2-Trichloroethane	50.000	53.643	-7.3	137	0.01
65	T,M	1,3-Dichloropropane	50.000	53.869	-7.7	137	0.01
66	T,M	Tetrachloroethene	50.000	49.653	0.7	128	0.01
67	T,M	Dibromochloromethane	50.000	53.061	-6.1	136	0.00
68	T,M	1,2-Dibromoethane	50.000	53.486	-7.0	136	0.00
69	T,M	1-Chlorohexane	50.000	45.916	8.2	117	0.01
70	P,T,M	Chlorobenzene	50.000	49.776	0.4	126	0.01
71	T,M	1,1,1,2-Tetrachloroethane	50.000	52.188	-4.4	131	0.00
72	C,T,M	Ethylbenzene	50.000	48.170	3.7	122	0.01
73	T,M	m-Xylene & p-Xylene	100.000	97.226	2.8	122	0.00
74	T,M	o-Xylene	50.000	48.544	2.9	124	0.00
75	T,M	Styrene	50.000	47.645	4.7	121	0.01
76	T,M	Isopropylbenzene	50.000	48.325	3.3	122	0.01
77	T,M	cis-1,4-Dichloro-2-butene	50.000	40.903	18.2	105	0.01
78	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	133	0.00
79	P,T,M	Bromoform	50.000	57.056	-14.1	146	0.00
80	P,T,M	1,1,2,2-Tetrachloroethane	50.000	54.111	-8.2	136	0.01
81	S	4-Bromofluorobenzene	50.000	51.884	-3.8	125	0.00
82	T,M	1,2,3-Trichloropropane	50.000	56.318	-12.6	141	0.00
83	T,M	trans-1,4-Dichloro-2-butene	50.000	41.422	17.2	105	0.00
84	T,M	n-Propylbenzene	50.000	47.137	5.7	117	0.00
85	T,M	Bromobenzene	50.000	51.207	-2.4	131	0.00
86	T,M	1,3,5-Trimethylbenzene	50.000	48.280	3.4	121	0.00
87	T,M	2-Chlorotoluene	50.000	52.003	-4.0	132	0.00
88	T,M	4-Chlorotoluene	50.000	43.168	13.7	109	0.01
89	T,M	tert-Butylbenzene	50.000	46.124	7.8	116	0.00
90	T,M	1,2,4-Trimethylbenzene	50.000	48.316	3.4	120	0.01
91	T,M	sec-Butylbenzene	50.000	47.673	4.7	119	0.01
92	T,M	p-Isopropyltoluene	50.000	47.978	4.0	120	0.00
93	T,M	1,3-Dichlorobenzene	50.000	47.600	4.8	120	0.00
94	T,M	1,4-Dichlorobenzene	50.000	48.031	3.9	122	0.01
95	T,M	n-Butylbenzene	50.000	44.119	11.8	112	0.00
96	T,M	1,2-Dichlorobenzene	50.000	48.466	3.1	124	0.00
97	T,M	1,2-Dibromo-3-chloropropane	50.000	54.126	-8.3	138	0.00
98	T,M	1,2,4-Trichlorobenzene	50.000	47.918	4.2	123	0.00
99	T,M	Hexachlorobutadiene	50.000	53.038	-6.1	136	0.01
100	T,M	Naphthalene	50.000	43.398	13.2	111	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
101 T,M	1,2,3-Trichlorobenzene	50.000	47.732	4.5	123	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I 1,4-DIFLUOROBENZENE	1.000	1.000	0.0	137	0.00
2	T,M Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.81#
3	T,M Dichlorodifluoromethane	0.363	0.276	24.0#	110	-0.01
4	P,T,M Chloromethane	0.409	0.288	29.6#	99	-0.06
5	C,T,M Vinyl chloride	0.262	0.203	22.5#	108	-0.04
6	T,M 2-Chloro-1,1,1-trifluoroeth	0.000	0.002	0.0	0#	-0.03
7	T,M Bromomethane	0.232	0.184	20.7#	111	-0.07
8	T,M Dichlorofluoromethane	0.521	0.556	-6.7	142	-0.02
9	T,M Chloroethane	0.216	0.169	21.8#	108	-0.04
10	T,M Trichlorofluoromethane	0.460	0.338	26.5#	102	0.00
11	T,M Acrolein	0.020	0.023	-15.0	149	-0.01
12	T,M 1,1,2-Trichloro-1,2,2-Trifl	0.196	0.215	-9.7	144	0.01
13	T,M Acetone	0.063	0.061	3.2	144	0.00
14	T,M tert-Butyl alcohol	0.023	0.029	-26.1#	167	0.00
15	T,M Acetonitrile	0.021	0.027	-28.6#	177	0.00
16	T,M Methyl acetate	0.195	0.216	-10.8	152	-0.01
17	C,T,M 1,1-Dichloroethene	0.455	0.435	4.4	125	-0.01
18	T,M Iodomethane	0.397	0.385	3.0	128	-0.02
19	T,M Allyl Chloride	0.147	0.140	4.8	127	-0.01
20	T,M Methylene chloride	0.427	0.415	2.8	145	-0.02
21	T,M Carbon disulfide	0.883	0.860	2.6	123	-0.01
22	T,M Acrylonitrile	0.083	0.078	6.0	128	-0.01
23	T,M tert-Butyl methyl ether (MT	0.671	0.727	-8.3	141	0.00
24	T,M trans-1,2-Dichloroethene	0.418	0.376	10.0	118	-0.01
25	T,M Isopropyl ether (DIPE)	1.044	0.872	16.5	109	0.00
26	T,M Vinyl acetate	0.545	0.546	-0.2	137	0.00
27	P,T,M 1,1-Dichloroethane	0.493	0.471	4.5	126	0.00
28	T,M 2-Butanol	0.022	0.025	-13.6	164	0.01
29	T,M tert-Butyl ethyl ether (ETB	0.859	0.842	2.0	130	-0.01
30	T,M 2-Butanone	0.098	0.090	8.2	127	0.00
31	T,M Propionitrile	0.031	0.031	0.0	131	0.00
32	T,M 2,2-Dichloropropane	0.378	0.351	7.1	123	0.00
33	T,M cis-1,2-Dichloroethene	0.301	0.292	3.0	129	-0.01
34	T,M Methacrylonitrile	0.037	0.035	5.4	127	0.00
35	T,M Isobutyl Alcohol	0.012	0.011	8.3	117	0.01
36	C,T,M Chloroform	0.471	0.463	1.7	132	0.00
37	T,M Bromochloromethane	0.241	0.205	14.9	113	0.00
38	T,M Tetrahydrofuran	0.069	0.055	20.3#	117	0.00
39	S Dibromofluoromethane	0.266	0.275	-3.4	134	0.00
40	T,M 1,1,1-Trichloroethane	0.447	0.388	13.2	116	0.00
41	T,M Cyclohexane	0.556	0.583	-4.9	150	0.00
42	T,M 1,1-Dichloropropene	0.136	0.130	4.4	127	0.00
43	T,M Carbon tetrachloride	0.359	0.340	5.3	126	0.01
44	T,M tert-Amyl methyl ether (TAM	0.177	0.173	2.3	130	0.00
45	S 1,2-Dichloroethane-d4	0.277	0.285	-2.9	129	0.00
46	T,M 1,2-Dichloroethane	0.339	0.322	5.0	126	0.00
47	T,M Benzene	1.052	1.026	2.5	129	0.00
48	T,M Trichloroethene	0.290	0.280	3.4	129	0.00
49	T,M Methylcyclohexane	0.640	0.643	-0.5	148	0.00
50	C,T,M 1,2-Dichloropropane	0.281	0.267	5.0	125	0.00
51	T,M Methyl Methacrylate	0.152	0.151	0.7	133	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	0.345	0.337	2.3	128	0.00
53	T,M	1,4-Dioxane	0.002	0.003	-50.0#	143	0.00
54	T,M	Dibromomethane	0.145	0.149	-2.8	135	0.01
55	T,M	2-Chloroethyl vinyl ether	0.081	0.085	-4.9	140	0.00
56	T,M	4-Methyl-2-pentanone	0.235	0.209	11.1	122	0.00
57	T,M	cis-1,3-Dichloropropene	0.430	0.419	2.6	129	0.00
58	I	CHLOROBENZENE-D5	1.000	1.000	0.0	134	0.00
59	S	Toluene-d8	1.139	1.207	-6.0	126	0.00
60	T,M	Ethyl methacrylate	0.326	0.336	-3.1	132	0.01
61	C,T,M	Toluene	1.396	1.348	3.4	123	0.00
62	T,M	trans-1,3-Dichloropropene	0.418	0.431	-3.1	131	0.01
63	T,M	2-Hexanone	0.175	0.158	9.7	120	0.00
64	T,M	1,1,2-Trichloroethane	0.231	0.248	-7.4	137	0.01
65	T,M	1,3-Dichloropropane	0.399	0.430	-7.8	137	0.01
66	T,M	Tetrachloroethene	0.253	0.252	0.4	128	0.01
67	T,M	Dibromochloromethane	0.283	0.300	-6.0	136	0.00
68	T,M	1,2-Dibromoethane	0.230	0.246	-7.0	136	0.00
69	T,M	1-Chlorohexane	0.485	0.446	8.0	117	0.01
70	P,T,M	Chlorobenzene	0.887	0.883	0.5	126	0.01
71	T,M	1,1,1,2-Tetrachloroethane	0.312	0.326	-4.5	131	0.00
72	C,T,M	Ethylbenzene	1.619	1.560	3.6	122	0.01
73	T,M	m-Xylene & p-Xylene	1.248	1.214	2.7	122	0.00
74	T,M	o-Xylene	1.285	1.248	2.9	124	0.00
75	T,M	Styrene	0.990	0.943	4.7	121	0.01
76	T,M	Isopropylbenzene	1.636	1.581	3.4	122	0.01
77	T,M	cis-1,4-Dichloro-2-butene	0.116	0.095	18.1	105	0.01
78	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	133	0.00
79	P,T,M	Bromoform	0.353	0.403	-14.2	146	0.00
80	P,T,M	1,1,2,2-Tetrachloroethane	0.636	0.689	-8.3	136	0.01
81	S	4-Bromofluorobenzene	0.965	1.001	-3.7	125	0.00
82	T,M	1,2,3-Trichloropropane	0.191	0.215	-12.6	141	0.00
83	T,M	trans-1,4-Dichloro-2-butene	0.199	0.165	17.1	105	0.00
84	T,M	n-Propylbenzene	4.152	3.914	5.7	117	0.00
85	T,M	Bromobenzene	0.720	0.738	-2.5	131	0.00
86	T,M	1,3,5-Trimethylbenzene	3.023	2.919	3.4	121	0.00
87	T,M	2-Chlorotoluene	2.803	2.915	-4.0	132	0.00
88	T,M	4-Chlorotoluene	2.459	2.123	13.7	109	0.01
89	T,M	tert-Butylbenzene	0.690	0.637	7.7	116	0.00
90	T,M	1,2,4-Trimethylbenzene	3.007	2.905	3.4	120	0.01
91	T,M	sec-Butylbenzene	3.952	3.768	4.7	119	0.01
92	T,M	p-Isopropyltoluene	3.331	3.197	4.0	120	0.00
93	T,M	1,3-Dichlorobenzene	1.523	1.450	4.8	120	0.00
94	T,M	1,4-Dichlorobenzene	1.519	1.459	3.9	122	0.01
95	T,M	n-Butylbenzene	3.146	2.776	11.8	112	0.00
96	T,M	1,2-Dichlorobenzene	1.409	1.366	3.1	124	0.00
97	T,M	1,2-Dibromo-3-chloropropane	0.128	0.139	-8.6	138	0.00
98	T,M	1,2,4-Trichlorobenzene	0.908	0.870	4.2	123	0.00
99	T,M	Hexachlorobutadiene	0.496	0.526	-6.0	136	0.01
100	T,M	Naphthalene	2.204	1.913	13.2	111	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
101 T,M	1,2,3-Trichlorobenzene	0.819	0.782	4.5	123	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.868	114	1196309	50.00	ug/l		0.00
58) CHLOROBENZENE-D5	12.513	117	1012887	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	462129	50.00	ug/l		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.474	111	329532	51.84	ug/l		0.00
Spiked Amount 50.000			Recovery =	103.68%			
45) 1,2-Dichloroethane-d4	8.275	65	340754	51.34	ug/l		0.00
Spiked Amount 50.000			Recovery =	102.68%			
59) Toluene-d8	10.800	98	1222244	52.98	ug/l		0.00
Spiked Amount 50.000			Recovery =	105.96%			
81) 4-Bromofluorobenzene	13.809	95	462530	51.88	ug/l		0.00
Spiked Amount 50.000			Recovery =	103.76%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.819	85	330301	38.05	ug/l		100
4) Chloromethane	2.017	50	344329	35.16	ug/l		100
5) Vinyl chloride	2.137	62	242374	38.61	ug/l		99
7) Bromomethane	2.577	94	219590	39.48	ug/l		100
8) Dichlorofluoromethane	2.752	67	665602	53.40	ug/L		99
9) Chloroethane	2.654	64	202394	39.17	ug/l		97
10) Trichlorofluoromethane	3.027	101	403793	36.66	ug/l		99
11) Acrolein	3.521	55	136259	281.81	ug/L		77
12) 1,1,2-Trichloro-1,2,2-...	3.576	151	257605	54.84	ug/l		99
13) Acetone	3.620	43	362833	240.78	ug/l		95
14) tert-Butyl alcohol	3.927	59	176149	325.57	ug/L	#	1
15) Acetonitrile	3.993	41	321831	552.99	ug/L		82
16) Methyl acetate	4.268	43	258374	55.34	ug/L		90
17) 1,1-Dichloroethene	3.784	61	520638	47.77	ug/l		95
18) Iodomethane	4.213	142	460398	48.47	ug/l		97
19) Allyl Chloride	4.300	76	167533	47.54	ug/L		98
20) Methylene chloride	4.487	49	496764	48.59	ug/l		85
21) Carbon disulfide	4.509	76	1028809	48.68	ug/L		97
22) Acrylonitrile	4.696	53	463818	233.60	ug/l		99
23) tert-Butyl methyl ethe...	4.751	73	870117	54.22	ug/L		96
24) trans-1,2-Dichloroethene	4.937	61	449649	44.99	ug/l		92
25) Isopropyl ether (DIPE)	5.519	45	1043020	41.75	ug/l		90
26) Vinyl acetate	5.717	43	653373	50.08	ug/l		92
27) 1,1-Dichloroethane	5.673	63	562941	47.74	ug/l		100
28) 2-Butanol	6.134	45	150244	290.54	ug/L	#	60
29) tert-Butyl ethyl ether...	6.266	59	1006897	48.98	ug/l		97
30) 2-Butanone	6.485	43	540092	229.91	ug/l		90
31) Propionitrile	6.639	54	365900	495.17	ug/L		99
32) 2,2-Dichloropropane	6.716	77	420323	46.50	ug/l		100
33) cis-1,2-Dichloroethene	6.793	96	349045	48.49	ug/l		92
34) Methacrylonitrile	7.001	52	419984	479.90	ug/L		83
35) Isobutyl Alcohol	7.078	43	254812	874.02	ug/L		98
36) Chloroform	7.089	83	553851	49.10	ug/l		97
37) Bromochloromethane	7.364	49	245294	42.62	ug/l		84
38) Tetrahydrofuran	7.441	42	66260	40.33	ug/L		88
40) 1,1,1-Trichloroethane	7.759	97	463751	43.36	ug/l		96
41) Cyclohexane	7.759	84	697864	52.47	ug/L		91
42) 1,1-Dichloropropene	8.012	110	155572	47.94	ug/L		97
43) Carbon tetrachloride	8.154	119	406954	47.33	ug/L		98

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44)	tert-Amyl methyl ether...	8.231	87	206492	48.76	ug/l		97
46)	1,2-Dichloroethane	8.418	62	385588	47.59	ug/L		99
47)	Benzene	8.407	78	1227108	48.77	ug/L		97
48)	Trichloroethene	9.285	130	335462	48.43	ug/L		98
49)	Methylcyclohexane	9.351	83	769308	50.23	ug/L		93
50)	1,2-Dichloropropane	9.527	63	318926	47.50	ug/L		88
51)	Methyl Methacrylate	9.648	69	180720	49.72	ug/L	#	77
52)	Bromodichloromethane	9.834	83	402745	48.78	ug/L		99
53)	1,4-Dioxane	9.878	88	60932	1062.33	ug/L		94
54)	Dibromomethane	9.900	93	178218	51.24	ug/L		93
55)	2-Chloroethyl vinyl ether	10.251	63	101593	52.70	ug/L		97
56)	4-Methyl-2-pentanone	10.284	43	1252377	222.90	ug/L		92
57)	cis-1,3-Dichloropropene	10.526	75	501398	48.79	ug/L		89
60)	Ethyl methacrylate	11.130	69	340555	51.61	ug/L		84
61)	Toluene	10.888	91	1365718	48.28	ug/l		99
62)	trans-1,3-Dichloropropene	11.130	75	436771	51.61	ug/l		82
63)	2-Hexanone	11.316	43	799975	226.16	ug/l		91
64)	1,1,2-Trichloroethane	11.305	97	250928	53.64	ug/l		98
65)	1,3-Dichloropropane	11.591	76	435062	53.87	ug/l		99
66)	Tetrachloroethene	11.646	164	254980	49.65	ug/l		97
67)	Dibromochloromethane	11.876	129	304149	53.06	ug/l		98
68)	1,2-Dibromoethane	12.096	107	249393	53.49	ug/l		98
69)	1-Chlorohexane	12.283	91	451335	45.92	ug/l		92
70)	Chlorobenzene	12.557	112	894333	49.78	ug/l		97
71)	1,1,1,2-Tetrachloroethane	12.601	131	330279	52.19	ug/l		99
72)	Ethylbenzene	12.612	91	1580091	48.17	ug/l		99
73)	m-Xylene & p-Xylene	12.689	91	2458838	97.23	ug/l		99
74)	o-Xylene	13.161	91	1263602	48.54	ug/l		100
75)	Styrene	13.205	104	955640	47.65	ug/l		100
76)	Isopropylbenzene	13.545	105	1601493	48.33	ug/L		99
77)	cis-1,4-Dichloro-2-butene	13.600	53	95744	40.90	ug/L		81
79)	Bromoform	13.567	173	186235	57.06	ug/l		99
80)	1,1,2,2-Tetrachloroethane	13.732	83	318211	54.11	ug/l		99
82)	1,2,3-Trichloropropane	13.886	110	99288	56.32	ug/l		92
83)	trans-1,4-Dichloro-2-b...	13.952	53	76325	41.42	ug/L		89
84)	n-Propylbenzene	13.962	91	1808883	47.14	ug/l		99
85)	Bromobenzene	14.017	156	340891	51.21	ug/l		96
86)	1,3,5-Trimethylbenzene	14.127	105	1348994	48.28	ug/l		100
87)	2-Chlorotoluene	14.149	91	1347044	52.00	ug/l		100
88)	4-Chlorotoluene	14.204	91	981277	43.17	ug/l		98
89)	tert-Butylbenzene	14.479	134	294225	46.12	ug/l		94
90)	1,2,4-Trimethylbenzene	14.522	105	1342609	48.32	ug/l		100
91)	sec-Butylbenzene	14.687	105	1741118	47.67	ug/l		98
92)	p-Isopropyltoluene	14.808	119	1477250	47.98	ug/l		97
93)	1,3-Dichlorobenzene	14.907	146	670217	47.60	ug/l		99
94)	1,4-Dichlorobenzene	15.006	146	674248	48.03	ug/l		99
95)	n-Butylbenzene	15.170	91	1282784	44.12	ug/l		100
96)	1,2-Dichlorobenzene	15.324	146	631120	48.47	ug/l		98
97)	1,2-Dibromo-3-chloropr...	15.950	157	64247	54.13	ug/l		95
98)	1,2,4-Trichlorobenzene	16.587	180	402220	47.92	ug/l		97
99)	Hexachlorobutadiene	16.685	225	242938	53.04	ug/l		100
100)	Naphthalene	16.784	128	883913	43.40	ug/l		100
101)	1,2,3-Trichlorobenzene	16.971	180	361302	47.73	ug/l		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

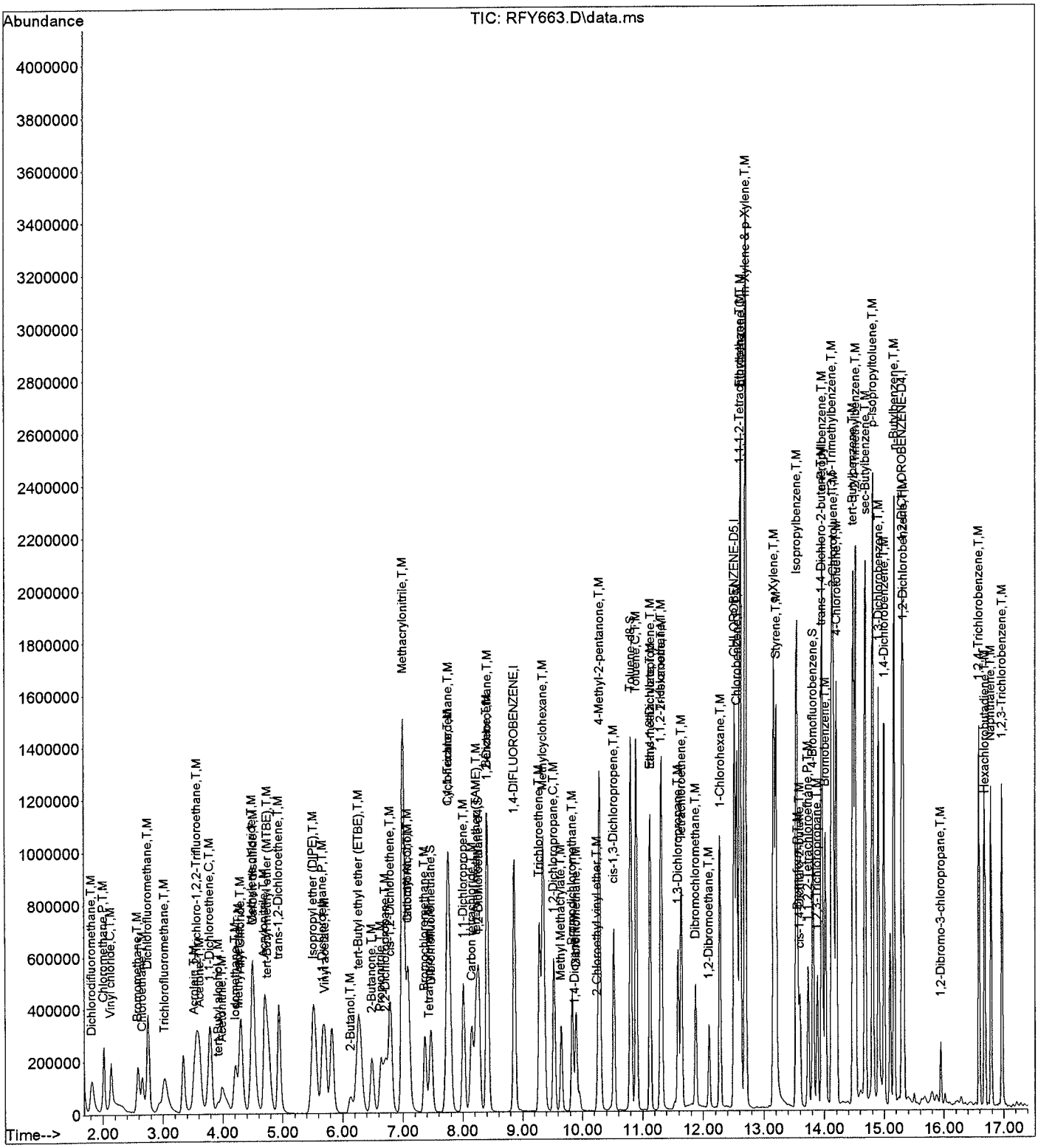
Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\DATA\18F27\
Data File : RFY663.D
Acq On : 27 Jun 2018 8:41 pm
Operator : DNguye
Sample : EVOF5D1934
Misc : 50ppb 8260/250ppb KET-AA-TBA
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 29 12:51:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration



5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RFY701
Instrument ID: F5
GC Column:RTX502.2ID:0.25mm (mm)

Contract: JBER TO075
SAS No.: SDG No.: 18F187
BFB Injection Date : 06/29/18
BFB Injection Time : 16:49
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.36
75	30.0 - 60.0% of mass 95	46.23
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.42
173	Less than 2.0% of mass 174	0.27(0.4)1
174	Greater than 50% of mass 95	70.89
175	5.0 - 9.0% of mass 174	5.84(8.2)1
176	95.0 - 101.0% of mass 174	70.00(98.7)1
177	5.0 - 9.0% of mass 176	4.66(6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	CVOF5D1935	RFY702	06/29/18	17:32
2	MBLK2S	VMF5F28B	RFY706	06/29/18	19:20
3	LCS2S	VMF5F28L	RFY703	06/29/18	18:07
4	LCD2S	VMF5F28C	RFY704	06/29/18	18:31
5	18Q2DP009-SB0501-SO-0	F187-07I	RFY708	06/29/18	20:10
6	18Q2DP009-SB0501-SO-0MS	F187-07M	RFY709	06/29/18	20:34
7	18Q2DP009-SB0501-SO-0MSD	F187-07S	RFY710	06/29/18	20:59
8	18Q2DP009-SOTB01M	F187-09I	RFY712	06/29/18	21:48
9	18Q2DP009-SB0702-SO-0	F187-11I	RFY713	06/29/18	22:13
10	18Q2DP009-SB0301-SO-0	F187-12I	RFY714	06/29/18	22:37
11	18Q2DP009-SB0302-SO-0	F187-13I	RFY715	06/29/18	23:02
12	18Q2DP009-SB0602-SO-0	F187-14I	RFY716	06/29/18	23:27
13	18Q2DP009-SB0601-SO-0	F187-15I	RFY717	06/29/18	23:52
14	18Q2DP009-SB0601-SO-1	F187-16I	RFY718	06/30/18	00:16
15	18Q2DP009-IDW-SO01	F187-17I	RFY719	06/30/18	00:41
16	VSTD050	EVOF5D1935	RFY726	06/30/18	03:33

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RDY199
Instrument ID: F5
GC Column : RTX502.2ID:0.25mm (mm)

Project: JBER TO075
SDG No: 18F187
Date Analyzed: 04/19/2018
Time Analyzed: 12:23
Heated Purge (Y/N): Y

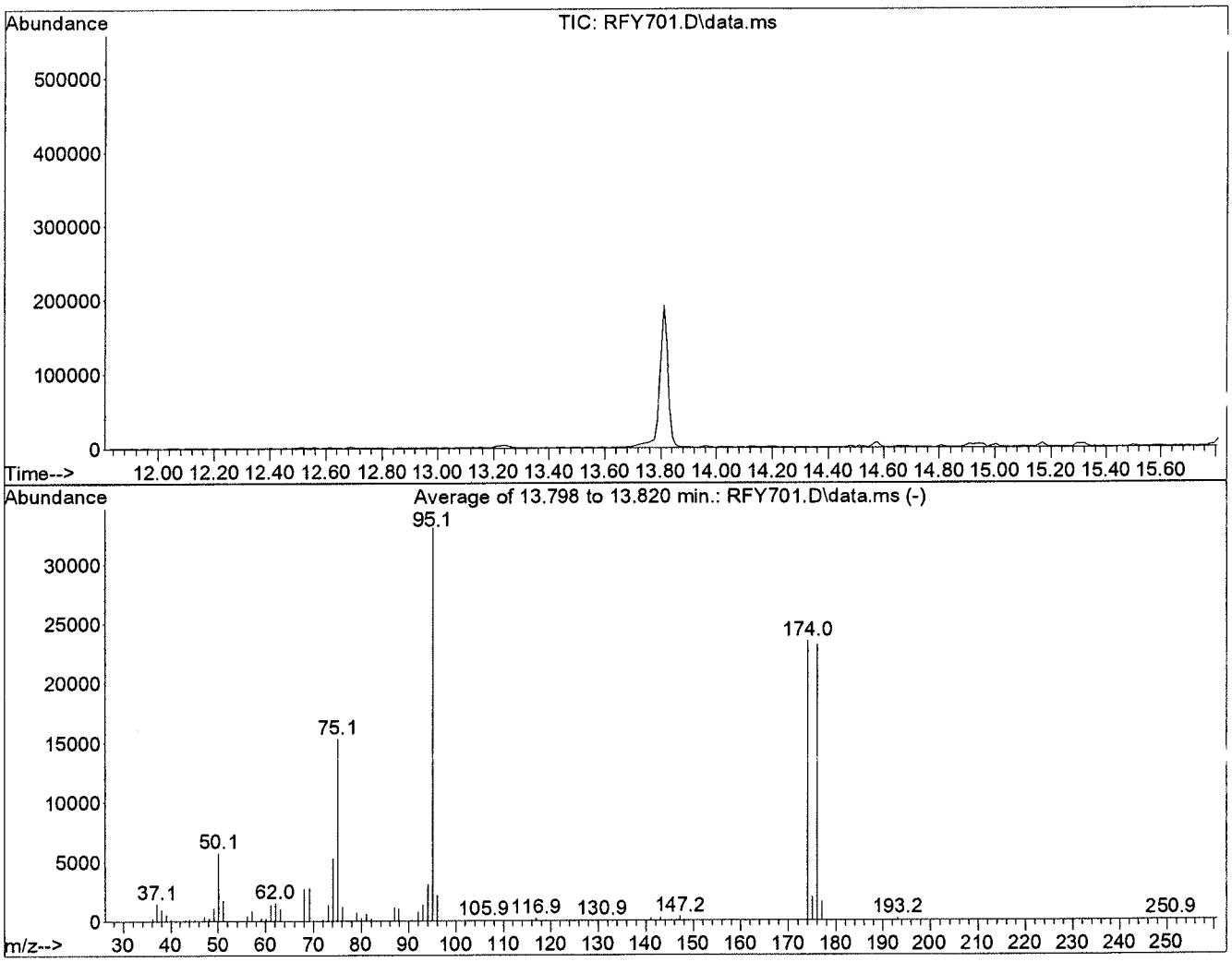
		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	873261	8.87	757559	12.51	347367	15.30
	UPPER LIMIT	1746522	9.04	1515118	12.68	694734	15.47
	LOWER LIMIT	436631	8.70	378780	12.34	173684	15.13
	SAMPLE ID						
1	VSTD050	1052255	8.86	875962	12.51	398905	15.30
2	MBLK2S	1018757	8.86	844900	12.51	370992	15.30
3	LCS2S	1031650	8.86	863851	12.51	386339	15.30
4	LCD2S	1062611	8.86	889760	12.51	413779	15.30
5	18Q2DP009-SB0501-SO-0	1013787	8.87	840862	12.51	376296	15.30
6	18Q2DP009-SB0501-SO-0MS	970288	8.87	808468	12.51	365534	15.30
7	18Q2DP009-SB0501-SO-0MSD	973590	8.87	815737	12.51	368700	15.30
8	18Q2DP009-SOTB01M	886351	8.87	758772	12.51	339094	15.30
9	18Q2DP009-SB0702-SO-0	940621	8.87	808652	12.51	361472	15.30
10	18Q2DP009-SB0301-SO-0	942913	8.87	815394	12.51	368113	15.30
11	18Q2DP009-SB0302-SO-0	948121	8.87	815720	12.51	364630	15.30
12	18Q2DP009-SB0602-SO-0	975269	8.87	812784	12.51	368277	15.30
13	18Q2DP009-SB0601-SO-0	961560	8.87	809796	12.51	362421	15.30
14	18Q2DP009-SB0601-SO-1	968584	8.87	801708	12.51	366001	15.30
15	18Q2DP009-IDW-SO01	958122	8.87	811472	12.51	369614	15.30
16	VSTD050	1089570	8.87	912949	12.51	408389	15.30

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY701.D
Acq On : 29 Jun 2018 4:49 pm
Operator : DNguye
Sample : BFBF5F28
Misc : T/CHK
ALS Vial : 1 Sample Multiplier: 1

Integration File: rte.p

Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Title : METHOD 8260 5mL
Last Update : Wed May 02 12:17:35 2018



AutoFind: Scans 1104, 1105, 1106; Background Corrected with Scan 1099

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.4	5747	PASS
75	95	30	60	46.2	15306	PASS
95	95	100	100	100.0	33107	PASS
96	95	5	9	6.4	2125	PASS
173	174	0.00	2	0.4	89	PASS
174	95	50	100	70.9	23470	PASS
175	174	5	9	8.2	1935	PASS
176	174	95	101	98.7	23175	PASS
177	176	5	9	6.7	1544	PASS

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY702.D
Acq On : 29 Jun 2018 5:32 pm
Operator : DNguye
Sample : CVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 02 09:52:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	50.000	50.000	0.0	120	-0.01
2	T,M	Chlorotrifluoroethylene	50.000	0.000	100.0#	0	-1.81#
3	T,M	Dichlorodifluoromethane	50.000	50.056	-0.1	128	-0.01
4	P,T,M	Chloromethane	50.000	43.271	13.5	108	-0.06
5	C,T,M	Vinyl chloride	50.000	50.948	-1.9	126	-0.04
6	T,M	2-Chloro-1,1,1-trifluoroeth	50.000	0.000	100.0#	0	-0.03
7	T,M	Bromomethane	50.000	48.659	2.7	120	-0.06
8	T,M	Dichlorofluoromethane	50.000	57.740	-15.5	135	-0.02
9	T,M	Chloroethane	50.000	49.310	1.4	120	-0.04
10	T,M	Trichlorofluoromethane	50.000	51.000	-2.0	125	-0.01
11	T,M	Acrolein	250.000	295.821	-18.3	138	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-Trifl	50.000	60.189	-20.4#	139	-0.01
13	T,M	Acetone	250.000	258.722	-3.5	136	-0.01
14	T,M	tert-Butyl alcohol	250.000	334.347	-33.7#	151	0.00
15	T,M	Acetonitrile	500.000	544.552	-8.9	153	-0.01
16	T,M	Methyl acetate	50.000	59.644	-19.3	144	-0.01
17	C,T,M	1,1-Dichloroethene	50.000	49.488	1.0	114	-0.01
18	T,M	Iodomethane	50.000	48.737	2.5	113	-0.03
19	T,M	Allyl Chloride	50.000	47.770	4.5	112	-0.01
20	T,M	Methylene chloride	50.000	48.538	2.9	127	-0.02
21	T,M	Carbon disulfide	50.000	45.672	8.7	102	-0.02
22	T,M	Acrylonitrile	250.000	222.064	11.2	107	-0.01
23	T,M	tert-Butyl methyl ether (MT	50.000	54.156	-8.3	124	0.00
24	T,M	trans-1,2-Dichloroethene	50.000	45.952	8.1	106	-0.01
25	T,M	Isopropyl ether (DIPE)	50.000	39.609	20.8#	91	0.00
26	T,M	Vinyl acetate	50.000	50.521	-1.0	121	-0.01
27	P,T,M	1,1-Dichloroethane	50.000	47.702	4.6	111	-0.01
28	T,M	2-Butanol	250.000	334.286	-33.7#	166	-0.01
29	T,M	tert-Butyl ethyl ether (ETB	50.000	48.578	2.8	114	-0.01
30	T,M	2-Butanone	250.000	225.845	9.7	109	-0.01
31	T,M	Propionitrile	500.000	485.691	2.9	113	-0.01
32	T,M	2,2-Dichloropropane	50.000	55.604	-11.2	130	-0.01
33	T,M	cis-1,2-Dichloroethene	50.000	48.042	3.9	113	-0.01
34	T,M	Methacrylonitrile	500.000	492.531	1.5	114	-0.01
35	T,M	Isobutyl Alcohol	1000.000	877.933	12.2	104	0.00
36	C,T,M	Chloroform	50.000	50.364	-0.7	119	-0.01
37	T,M	Bromochloromethane	50.000	41.522	17.0	97	0.00
38	T,M	Tetrahydrofuran	50.000	40.282	19.4	102	-0.01
39	S	Dibromofluoromethane	50.000	51.802	-3.6	118	-0.01
40	T,M	1,1,1-Trichloroethane	50.000	47.753	4.5	113	0.00
41	T,M	Cyclohexane	50.000	57.039	-14.1	143	-0.01
42	T,M	1,1-Dichloropropene	50.000	47.754	4.5	111	-0.01
43	T,M	Carbon tetrachloride	50.000	51.693	-3.4	121	0.00
44	T,M	tert-Amyl methyl ether (TAM	50.000	48.704	2.6	114	0.00
45	S	1,2-Dichloroethane-d4	50.000	53.522	-7.0	118	-0.01
46	T,M	1,2-Dichloroethane	50.000	49.755	0.5	116	-0.01
47	T,M	Benzene	50.000	47.773	4.5	111	0.00
48	T,M	Trichloroethene	50.000	48.864	2.3	114	0.00
49	T,M	Methylcyclohexane	50.000	55.016	-10.0	142	0.00
50	C,T,M	1,2-Dichloropropane	50.000	45.553	8.9	105	0.00
51	T,M	Methyl Methacrylate	50.000	48.015	4.0	113	0.00

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY702.D
Acq On : 29 Jun 2018 5:32 pm
Operator : DNguye
Sample : CVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 02 09:52:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	50.000	49.029	1.9	113	-0.01
53	T,M	1,4-Dioxane	1000.000	1061.734	-6.2	126	0.00
54	T,M	Dibromomethane	50.000	49.888	0.2	115	0.00
55	T,M	2-Chloroethyl vinyl ether	50.000	51.886	-3.8	122	0.00
56	T,M	4-Methyl-2-pentanone	250.000	209.737	16.1	101	0.00
57	T,M	cis-1,3-Dichloropropene	50.000	48.298	3.4	112	0.00
58	I	CHLOROBENZENE-D5	50.000	50.000	0.0	116	0.00
59	S	Toluene-d8	50.000	53.014	-6.0	109	0.00
60	T,M	Ethyl methacrylate	50.000	49.530	0.9	109	0.00
61	C,T,M	Toluene	50.000	47.235	5.5	104	0.00
62	T,M	trans-1,3-Dichloropropene	50.000	53.419	-6.8	117	0.00
63	T,M	2-Hexanone	250.000	226.142	9.5	104	0.00
64	T,M	1,1,2-Trichloroethane	50.000	52.238	-4.5	116	0.00
65	T,M	1,3-Dichloropropane	50.000	53.398	-6.8	117	0.01
66	T,M	Tetrachloroethene	50.000	51.239	-2.5	114	0.00
67	T,M	Dibromochloromethane	50.000	52.764	-5.5	117	0.00
68	T,M	1,2-Dibromoethane	50.000	53.307	-6.6	117	0.00
69	T,M	1-Chlorohexane	50.000	46.742	6.5	103	0.00
70	P,T,M	Chlorobenzene	50.000	49.163	1.7	108	0.01
71	T,M	1,1,1,2-Tetrachloroethane	50.000	52.185	-4.4	113	0.00
72	C,T,M	Ethylbenzene	50.000	48.165	3.7	105	0.01
73	T,M	m-Xylene & p-Xylene	100.000	97.905	2.1	106	0.00
74	T,M	o-Xylene	50.000	47.661	4.7	105	0.00
75	T,M	Styrene	50.000	46.504	7.0	102	0.01
76	T,M	Isopropylbenzene	50.000	48.798	2.4	107	0.00
77	T,M	cis-1,4-Dichloro-2-butene	50.000	45.561	8.9	101	0.01
78	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	115	0.00
79	P,T,M	Bromoform	50.000	59.968	-19.9	132	0.00
80	P,T,M	1,1,2,2-Tetrachloroethane	50.000	52.340	-4.7	113	0.01
81	S	4-Bromofluorobenzene	50.000	52.557	-5.1	109	0.00
82	T,M	1,2,3-Trichloropropane	50.000	59.140	-18.3	128	0.00
83	T,M	trans-1,4-Dichloro-2-butene	50.000	46.518	7.0	102	0.00
84	T,M	n-Propylbenzene	50.000	48.846	2.3	104	0.00
85	T,M	Bromobenzene	50.000	51.056	-2.1	113	0.00
86	T,M	1,3,5-Trimethylbenzene	50.000	48.638	2.7	105	0.00
87	T,M	2-Chlorotoluene	50.000	47.800	4.4	104	0.00
88	T,M	4-Chlorotoluene	50.000	50.092	-0.2	109	0.01
89	T,M	tert-Butylbenzene	50.000	46.788	6.4	102	0.00
90	T,M	1,2,4-Trimethylbenzene	50.000	48.176	3.6	104	0.01
91	T,M	sec-Butylbenzene	50.000	48.108	3.8	103	0.00
92	T,M	p-Isopropyltoluene	50.000	48.477	3.0	105	0.00
93	T,M	1,3-Dichlorobenzene	50.000	48.460	3.1	106	0.00
94	T,M	1,4-Dichlorobenzene	50.000	47.674	4.7	105	0.00
95	T,M	n-Butylbenzene	50.000	45.535	8.9	99	0.00
96	T,M	1,2-Dichlorobenzene	50.000	47.981	4.0	106	0.00
97	T,M	1,2-Dibromo-3-chloropropane	50.000	55.832	-11.7	123	0.00
98	T,M	1,2,4-Trichlorobenzene	50.000	49.865	0.3	111	0.00
99	T,M	Hexachlorobutadiene	50.000	56.370	-12.7	124	0.01
100	T,M	Naphthalene	50.000	42.821	14.4	94	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY702.D
Acq On : 29 Jun 2018 5:32 pm
Operator : DNguye
Sample : CVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 02 09:52:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
101	T,M 1,2,3-Trichlorobenzene	50.000	47.689	4.6	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY702.D
Acq On : 29 Jun 2018 5:32 pm
Operator : DNguye
Sample : CVOF5D1935
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Quant Time: Jul 02 09:52:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	120	-0.01
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.81#
3	T,M	Dichlorodifluoromethane	0.363	0.363	0.0	128	-0.01
4	P,T,M	Chloromethane	0.409	0.354	13.4	108	-0.06
5	C,T,M	Vinyl chloride	0.262	0.267	-1.9	126	-0.04
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.002	0.0	0#	-0.03
7	T,M	Bromomethane	0.232	0.226	2.6	120	-0.06
8	T,M	Dichlorofluoromethane	0.521	0.602	-15.5	135	-0.02
9	T,M	Chloroethane	0.216	0.213	1.4	120	-0.04
10	T,M	Trichlorofluoromethane	0.460	0.470	-2.2	125	-0.01
11	T,M	Acrolein	0.020	0.024	-20.0	138	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-Trifl	0.196	0.236	-20.4#	139	-0.01
13	T,M	Acetone	0.063	0.065	-3.2	136	-0.01
14	T,M	tert-Butyl alcohol	0.023	0.030	-30.4#	151	0.00
15	T,M	Acetonitrile	0.021	0.026	-23.8#	153	-0.01
16	T,M	Methyl acetate	0.195	0.233	-19.5	144	-0.01
17	C,T,M	1,1-Dichloroethene	0.455	0.451	0.9	114	-0.01
18	T,M	Iodomethane	0.397	0.387	2.5	113	-0.03
19	T,M	Allyl Chloride	0.147	0.141	4.1	112	-0.01
20	T,M	Methylene chloride	0.427	0.415	2.8	127	-0.02
21	T,M	Carbon disulfide	0.883	0.807	8.6	102	-0.02
22	T,M	Acrylonitrile	0.083	0.074	10.8	107	-0.01
23	T,M	tert-Butyl methyl ether (MT	0.671	0.726	-8.2	124	0.00
24	T,M	trans-1,2-Dichloroethene	0.418	0.384	8.1	106	-0.01
25	T,M	Isopropyl ether (DIPE)	1.044	0.827	20.8#	91	0.00
26	T,M	Vinyl acetate	0.545	0.551	-1.1	121	-0.01
27	P,T,M	1,1-Dichloroethane	0.493	0.470	4.7	111	-0.01
28	T,M	2-Butanol	0.022	0.029	-31.8#	166	-0.01
29	T,M	tert-Butyl ethyl ether (ETB	0.859	0.835	2.8	114	-0.01
30	T,M	2-Butanone	0.098	0.089	9.2	109	-0.01
31	T,M	Propionitrile	0.031	0.030	3.2	113	-0.01
32	T,M	2,2-Dichloropropane	0.378	0.420	-11.1	130	-0.01
33	T,M	cis-1,2-Dichloroethene	0.301	0.289	4.0	113	-0.01
34	T,M	Methacrylonitrile	0.037	0.036	2.7	114	-0.01
35	T,M	Isobutyl Alcohol	0.012	0.011	8.3	104	0.00
36	C,T,M	Chloroform	0.471	0.475	-0.8	119	-0.01
37	T,M	Bromochloromethane	0.241	0.200	17.0	97	0.00
38	T,M	Tetrahydrofuran	0.069	0.055	20.3#	102	-0.01
39	S	Dibromofluoromethane	0.266	0.275	-3.4	118	-0.01
40	T,M	1,1,1-Trichloroethane	0.447	0.427	4.5	113	0.00
41	T,M	Cyclohexane	0.556	0.634	-14.0	143	-0.01
42	T,M	1,1-Dichloropropene	0.136	0.130	4.4	111	-0.01
43	T,M	Carbon tetrachloride	0.359	0.372	-3.6	121	0.00
44	T,M	tert-Amyl methyl ether (TAM	0.177	0.172	2.8	114	0.00
45	S	1,2-Dichloroethane-d4	0.277	0.297	-7.2	118	-0.01
46	T,M	1,2-Dichloroethane	0.339	0.337	0.6	116	-0.01
47	T,M	Benzene	1.052	1.005	4.5	111	0.00
48	T,M	Trichloroethene	0.290	0.283	2.4	114	0.00
49	T,M	Methylcyclohexane	0.640	0.704	-10.0	142	0.00
50	C,T,M	1,2-Dichloropropane	0.281	0.256	8.9	105	0.00
51	T,M	Methyl Methacrylate	0.152	0.146	3.9	113	0.00

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY702.D
Acq On : 29 Jun 2018 5:32 pm
Operator : DNguye
Sample : CVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 02 09:52:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	0.345	0.338	2.0	113	-0.01
53	T,M	1,4-Dioxane	0.002	0.003	-50.0#	126	0.00
54	T,M	Dibromomethane	0.145	0.145	0.0	115	0.00
55	T,M	2-Chloroethyl vinyl ether	0.081	0.084	-3.7	122	0.00
56	T,M	4-Methyl-2-pentanone	0.235	0.197	16.2	101	0.00
57	T,M	cis-1,3-Dichloropropene	0.430	0.415	3.5	112	0.00
58	I	CHLOROBENZENE-D5	1.000	1.000	0.0	116	0.00
59	S	Toluene-d8	1.139	1.207	-6.0	109	0.00
60	T,M	Ethyl methacrylate	0.326	0.323	0.9	109	0.00
61	C,T,M	Toluene	1.396	1.319	5.5	104	0.00
62	T,M	trans-1,3-Dichloropropene	0.418	0.446	-6.7	117	0.00
63	T,M	2-Hexanone	0.175	0.158	9.7	104	0.00
64	T,M	1,1,2-Trichloroethane	0.231	0.241	-4.3	116	0.00
65	T,M	1,3-Dichloropropane	0.399	0.426	-6.8	117	0.01
66	T,M	Tetrachloroethene	0.253	0.260	-2.8	114	0.00
67	T,M	Dibromochloromethane	0.283	0.299	-5.7	117	0.00
68	T,M	1,2-Dibromoethane	0.230	0.245	-6.5	117	0.00
69	T,M	1-Chlorohexane	0.485	0.454	6.4	103	0.00
70	P,T,M	Chlorobenzene	0.887	0.872	1.7	108	0.01
71	T,M	1,1,1,2-Tetrachloroethane	0.312	0.326	-4.5	113	0.00
72	C,T,M	Ethylbenzene	1.619	1.560	3.6	105	0.01
73	T,M	m-Xylene & p-Xylene	1.248	1.222	2.1	106	0.00
74	T,M	o-Xylene	1.285	1.225	4.7	105	0.00
75	T,M	Styrene	0.990	0.921	7.0	102	0.01
76	T,M	Isopropylbenzene	1.636	1.597	2.4	107	0.00
77	T,M	cis-1,4-Dichloro-2-butene	0.116	0.105	9.5	101	0.01
78	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	115	0.00
79	P,T,M	Bromoform	0.353	0.424	-20.1#	132	0.00
80	P,T,M	1,1,2,2-Tetrachloroethane	0.636	0.666	-4.7	113	0.01
81	S	4-Bromofluorobenzene	0.965	1.014	-5.1	109	0.00
82	T,M	1,2,3-Trichloropropane	0.191	0.226	-18.3	128	0.00
83	T,M	trans-1,4-Dichloro-2-butene	0.199	0.185	7.0	102	0.00
84	T,M	n-Propylbenzene	4.152	4.056	2.3	104	0.00
85	T,M	Bromobenzene	0.720	0.735	-2.1	113	0.00
86	T,M	1,3,5-Trimethylbenzene	3.023	2.941	2.7	105	0.00
87	T,M	2-Chlorotoluene	2.803	2.679	4.4	104	0.00
88	T,M	4-Chlorotoluene	2.459	2.464	-0.2	109	0.01
89	T,M	tert-Butylbenzene	0.690	0.646	6.4	102	0.00
90	T,M	1,2,4-Trimethylbenzene	3.007	2.897	3.7	104	0.01
91	T,M	sec-Butylbenzene	3.952	3.802	3.8	103	0.00
92	T,M	p-Isopropyltoluene	3.331	3.230	3.0	105	0.00
93	T,M	1,3-Dichlorobenzene	1.523	1.476	3.1	106	0.00
94	T,M	1,4-Dichlorobenzene	1.519	1.448	4.7	105	0.00
95	T,M	n-Butylbenzene	3.146	2.865	8.9	99	0.00
96	T,M	1,2-Dichlorobenzene	1.409	1.352	4.0	106	0.00
97	T,M	1,2-Dibromo-3-chloropropane	0.128	0.143	-11.7	123	0.00
98	T,M	1,2,4-Trichlorobenzene	0.908	0.906	0.2	111	0.00
99	T,M	Hexachlorobutadiene	0.496	0.559	-12.7	124	0.01
100	T,M	Naphthalene	2.204	1.887	14.4	94	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY702.D
Acq On : 29 Jun 2018 5:32 pm
Operator : DNguye
Sample : CVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 02 09:52:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
101	T,M 1,2,3-Trichlorobenzene	0.819	0.781	4.6	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY702.D
Acq On : 29 Jun 2018 5:32 pm
Operator : DNguye
Sample : CVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 02 09:52:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-DIFLUOROBENZENE	8.857	114	1052255	50.00	ug/l	-0.01
58) CHLOROBENZENE-D5	12.513	117	875962	50.00	ug/l	0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	398905	50.00	ug/l	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.463	111	289640	51.80	ug/l	-0.01
Spiked Amount 50.000			Recovery =	103.60%		
45) 1,2-Dichloroethane-d4	8.264	65	312467	53.52	ug/l	-0.01
Spiked Amount 50.000			Recovery =	107.04%		
59) Toluene-d8	10.800	98	1057614	53.01	ug/l	0.00
Spiked Amount 50.000			Recovery =	106.02%		
81) 4-Bromofluorobenzene	13.809	95	404429	52.56	ug/l	0.00
Spiked Amount 50.000			Recovery =	105.12%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.819	85	382242	50.06	ug/l	99
4) Chloromethane	2.017	50	372688	43.27	ug/l	99
5) Vinyl chloride	2.137	62	281336	50.95	ug/l	99
7) Bromomethane	2.588	94	238059	48.66	ug/l	99
8) Dichlorofluoromethane	2.752	67	633051	57.74	ug/L	100
9) Chloroethane	2.654	64	224132	49.31	ug/l	99
10) Trichlorofluoromethane	3.016	101	494114	51.00	ug/l	99
11) Acrolein	3.521	55	125811	295.82	ug/L	90
12) 1,1,2-Trichloro-1,2,2-...	3.554	151	248703	60.19	ug/l	99
13) Acetone	3.609	43	342922	258.72	ug/l	95
14) tert-Butyl alcohol	3.927	59	159113	334.35	ug/L #	1
15) Acetonitrile	3.982	41	278627	544.55	ug/L	83
16) Methyl acetate	4.268	43	244934	59.64	ug/L	92
17) 1,1-Dichloroethene	3.784	61	474365	49.49	ug/l	97
18) Iodomethane	4.202	142	407228	48.74	ug/l	100
19) Allyl Chloride	4.300	76	148069	47.77	ug/L	98
20) Methylene chloride	4.487	49	436471	48.54	ug/l	87
21) Carbon disulfide	4.498	76	849048	45.67	ug/L	99
22) Acrylonitrile	4.696	53	387814	222.06	ug/l	98
23) tert-Butyl methyl ethe...	4.751	73	764385	54.16	ug/L	95
24) trans-1,2-Dichloroethene	4.937	61	403982	45.95	ug/l	94
25) Isopropyl ether (DIPE)	5.519	45	870425	39.61	ug/l	91
26) Vinyl acetate	5.706	43	579751	50.52	ug/l	94
27) 1,1-Dichloroethane	5.662	63	494727	47.70	ug/l	99
28) 2-Butanol	6.112	45	152049	334.29	ug/L	93
29) tert-Butyl ethyl ether...	6.266	59	878405	48.58	ug/l	99
30) 2-Butanone	6.474	43	466660	225.85	ug/l	91
31) Propionitrile	6.628	54	315677	485.69	ug/L	99
32) 2,2-Dichloropropane	6.705	77	442062	55.60	ug/l	98
33) cis-1,2-Dichloroethene	6.793	96	304144	48.04	ug/l	95
34) Methacrylonitrile	6.990	52	379133	492.53	ug/L	87
35) Isobutyl Alcohol	7.067	43	225133	877.93	ug/L	97
36) Chloroform	7.078	83	499713	50.36	ug/l	97
37) Bromochloromethane	7.364	49	210196	41.52	ug/l	82
38) Tetrahydrofuran	7.430	42	58207	40.28	ug/L	90
40) 1,1,1-Trichloroethane	7.759	97	449194	47.75	ug/l	95
41) Cyclohexane	7.748	84	667264	57.04	ug/L	91
42) 1,1-Dichloropropene	8.001	110	136316	47.75	ug/L	98
43) Carbon tetrachloride	8.143	119	390935	51.69	ug/L	98

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ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 02 09:52:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) tert-Amyl methyl ether...	8.231	87	181427	48.70	ug/l	91
46) 1,2-Dichloroethane	8.407	62	354560	49.75	ug/L	98
47) Benzene	8.407	78	1057312	47.77	ug/L	97
48) Trichloroethene	9.285	130	297719	48.86	ug/L	97
49) Methylcyclohexane	9.351	83	741105	55.02	ug/L	93
50) 1,2-Dichloropropane	9.527	63	269002	45.55	ug/L	90
51) Methyl Methacrylate	9.647	69	153514	48.01	ug/L	81
52) Bromodichloromethane	9.823	83	356063	49.03	ug/L	97
53) 1,4-Dioxane	9.878	88	53565	1061.73	ug/L	90
54) Dibromomethane	9.889	93	152622	49.89	ug/L	92
55) 2-Chloroethyl vinyl ether	10.251	63	87988	51.89	ug/L	99
56) 4-Methyl-2-pentanone	10.284	43	1036520	209.74	ug/L	92
57) cis-1,3-Dichloropropene	10.526	75	436569	48.30	ug/L	91
60) Ethyl methacrylate	11.119	69	282657	49.53	ug/L	85
61) Toluene	10.888	91	1155563	47.23	ug/l	99
62) trans-1,3-Dichloropropene	11.119	75	390972	53.42	ug/l	83
63) 2-Hexanone	11.316	43	691775	226.14	ug/l	93
64) 1,1,2-Trichloroethane	11.294	97	211325	52.24	ug/l	98
65) 1,3-Dichloropropane	11.591	76	372964	53.40	ug/l	99
66) Tetrachloroethene	11.635	164	227555	51.24	ug/l	96
67) Dibromochloromethane	11.876	129	261558	52.76	ug/l	99
68) 1,2-Dibromoethane	12.096	107	214959	53.31	ug/l	100
69) 1-Chlorohexane	12.272	91	397341	46.74	ug/l	95
70) Chlorobenzene	12.557	112	763907	49.16	ug/l	99
71) 1,1,1,2-Tetrachloroethane	12.601	131	285613	52.19	ug/l	99
72) Ethylbenzene	12.612	91	1366354	48.17	ug/l	100
73) m-Xylene & p-Xylene	12.689	91	2141276	97.90	ug/l	100
74) o-Xylene	13.161	91	1072912	47.66	ug/l	100
75) Styrene	13.205	104	806651	46.50	ug/l	99
76) Isopropylbenzene	13.534	105	1398539	48.80	ug/L	99
77) cis-1,4-Dichloro-2-butene	13.600	53	92230	45.56	ug/L	76
79) Bromoform	13.567	173	168960	59.97	ug/l	99
80) 1,1,2,2-Tetrachloroethane	13.732	83	265689	52.34	ug/l	97
82) 1,2,3-Trichloropropane	13.886	110	89999	59.14	ug/l	90
83) trans-1,4-Dichloro-2-b...	13.951	53	73988	46.52	ug/L	84
84) n-Propylbenzene	13.962	91	1618014	48.85	ug/l	99
85) Bromobenzene	14.017	156	293383	51.06	ug/l	95
86) 1,3,5-Trimethylbenzene	14.127	105	1173077	48.64	ug/l	99
87) 2-Chlorotoluene	14.149	91	1068782	47.80	ug/l	93
88) 4-Chlorotoluene	14.204	91	982877	50.09	ug/l	93
89) tert-Butylbenzene	14.479	134	257632	46.79	ug/l	93
90) 1,2,4-Trimethylbenzene	14.522	105	1155578	48.18	ug/l	99
91) sec-Butylbenzene	14.676	105	1516640	48.11	ug/l	99
92) p-Isopropyltoluene	14.808	119	1288412	48.48	ug/l	98
93) 1,3-Dichlorobenzene	14.907	146	588974	48.46	ug/l	99
94) 1,4-Dichlorobenzene	14.995	146	577679	47.67	ug/l	98
95) n-Butylbenzene	15.170	91	1142836	45.54	ug/l	100
96) 1,2-Dichlorobenzene	15.324	146	539323	47.98	ug/l	99
97) 1,2-Dibromo-3-chloropr...	15.950	157	57205	55.83	ug/l	96
98) 1,2,4-Trichlorobenzene	16.587	180	361298	49.86	ug/l	98
99) Hexachlorobutadiene	16.685	225	222872	56.37	ug/l	98
100) Naphthalene	16.784	128	752824	42.82	ug/l	100
101) 1,2,3-Trichlorobenzene	16.971	180	311589	47.69	ug/l	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY702.D
Acq On : 29 Jun 2018 5:32 pm
Operator : DNguye
Sample : CVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 02 09:52:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
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Acq On : 29 Jun 2018 5:32 pm
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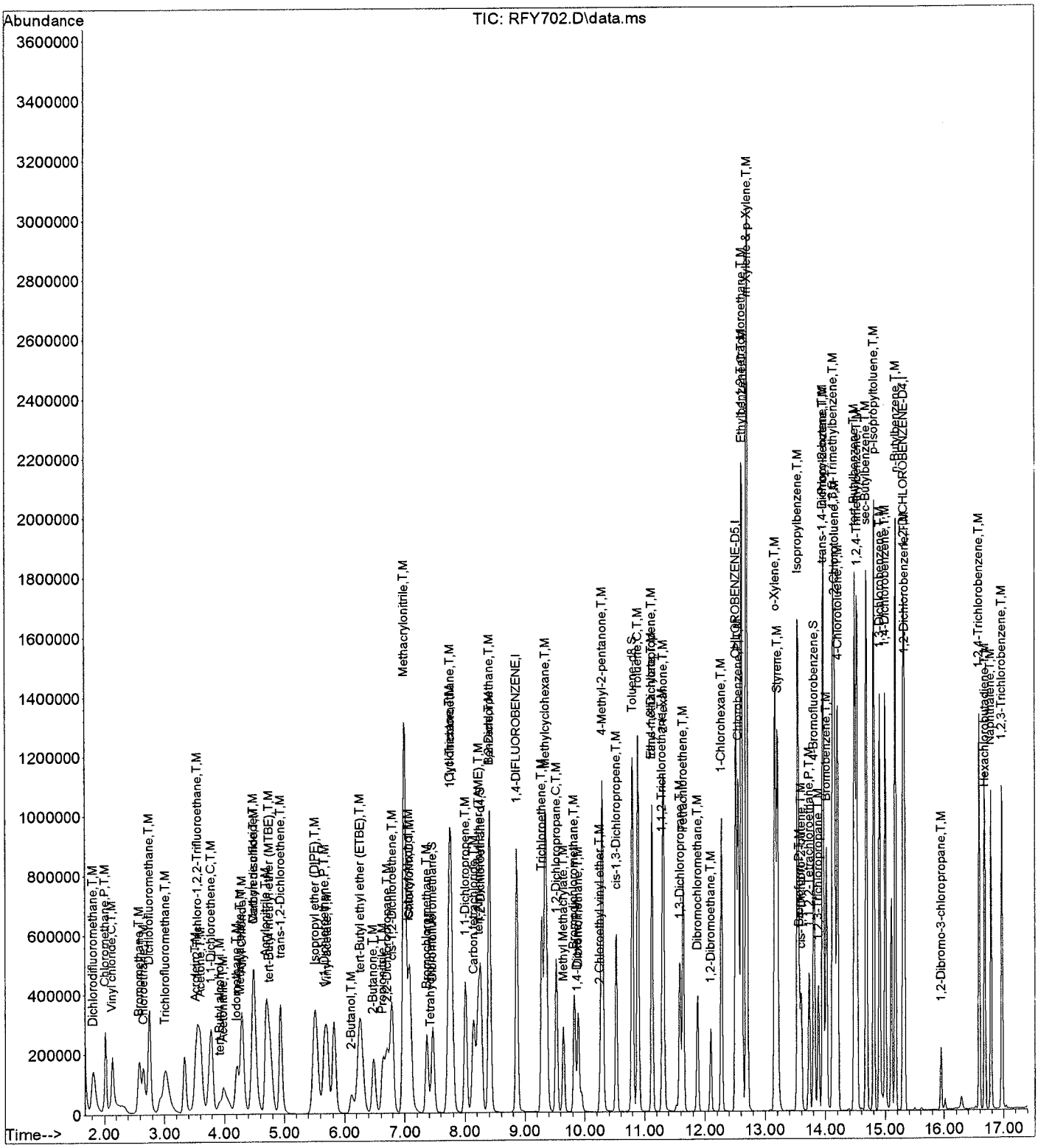

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY726.D
Acq On : 30 Jun 2018 3:33 am
Operator : DNguye
Sample : EVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 02 09:54:19 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I 1,4-DIFLUOROBENZENE	50.000	50.000	0.0	125	0.00
2	T,M Chlorotrifluoroethylene	50.000	0.000	100.0#	0	-1.81#
3	T,M Dichlorodifluoromethane	50.000	41.708	16.6	110	-0.01
4	P,T,M Chloromethane	50.000	38.189	23.6#	98	-0.06
5	C,T,M Vinyl chloride	50.000	43.750	12.5	112	-0.04
6	T,M 2-Chloro-1,1,1-trifluoroeth	50.000	0.000	100.0#	0	-0.03
7	T,M Bromomethane	50.000	44.672	10.7	114	-0.06
8	T,M Dichlorofluoromethane	50.000	53.730	-7.5	130	-0.02
9	T,M Chloroethane	50.000	44.913	10.2	113	-0.04
10	T,M Trichlorofluoromethane	50.000	43.532	12.9	110	0.00
11	T,M Acrolein	250.000	315.941	-26.4#	152	-0.01
12	T,M 1,1,2-Trichloro-1,2,2-Trifl	50.000	57.830	-15.7	138	0.01
13	T,M Acetone	250.000	251.686	-0.7	137	0.00
14	T,M tert-Butyl alcohol	250.000	329.612	-31.8#	154	0.01
15	T,M Acetonitrile	500.000	555.554	-11.1	162	0.01
16	T,M Methyl acetate	50.000	59.259	-18.5	149	0.00
17	C,T,M 1,1-Dichloroethene	50.000	47.996	4.0	114	0.00
18	T,M Iodomethane	50.000	48.204	3.6	116	-0.02
19	T,M Allyl Chloride	50.000	46.478	7.0	113	0.00
20	T,M Methylene chloride	50.000	46.811	6.4	127	-0.01
21	T,M Carbon disulfide	50.000	43.965	12.1	102	0.00
22	T,M Acrylonitrile	250.000	240.213	3.9	120	0.00
23	T,M tert-Butyl methyl ether (MT	50.000	53.443	-6.9	127	0.00
24	T,M trans-1,2-Dichloroethene	50.000	44.723	10.6	107	0.00
25	T,M Isopropyl ether (DIPE)	50.000	40.304	19.4	96	0.01
26	T,M Vinyl acetate	50.000	46.038	7.9	114	0.00
27	P,T,M 1,1-Dichloroethane	50.000	47.537	4.9	114	0.00
28	T,M 2-Butanol	250.000	326.912	-30.8#	168	0.01
29	T,M tert-Butyl ethyl ether (ETB	50.000	47.266	5.5	115	0.00
30	T,M 2-Butanone	250.000	236.643	5.3	119	0.01
31	T,M Propionitrile	500.000	508.635	-1.7	122	0.00
32	T,M 2,2-Dichloropropane	50.000	45.881	8.2	111	0.00
33	T,M cis-1,2-Dichloroethene	50.000	48.657	2.7	118	0.00
34	T,M Methacrylonitrile	500.000	476.895	4.6	115	0.00
35	T,M Isobutyl Alcohol	1000.000	900.648	9.9	110	0.01
36	C,T,M Chloroform	50.000	48.704	2.6	119	0.00
37	T,M Bromochloromethane	50.000	40.932	18.1	99	0.01
38	T,M Tetrahydrofuran	50.000	40.594	18.8	107	0.01
39	S Dibromofluoromethane	50.000	52.142	-4.3	123	0.00
40	T,M 1,1,1-Trichloroethane	50.000	44.377	11.2	108	0.01
41	T,M Cyclohexane	50.000	52.624	-5.2	137	0.01
42	T,M 1,1-Dichloropropene	50.000	47.432	5.1	114	0.00
43	T,M Carbon tetrachloride	50.000	48.346	3.3	117	0.01
44	T,M tert-Amyl methyl ether (TAM	50.000	49.035	1.9	119	0.01
45	S 1,2-Dichloroethane-d4	50.000	50.571	-1.1	115	0.00
46	T,M 1,2-Dichloroethane	50.000	47.115	5.8	114	0.00
47	T,M Benzene	50.000	47.804	4.4	115	0.01
48	T,M Trichloroethene	50.000	48.883	2.2	118	0.01
49	T,M Methylcyclohexane	50.000	48.603	2.8	130	0.00
50	C,T,M 1,2-Dichloropropane	50.000	46.272	7.5	111	0.01
51	T,M Methyl Methacrylate	50.000	48.786	2.4	119	0.01

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY726.D
Acq On : 30 Jun 2018 3:33 am
Operator : DNguye
Sample : EVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 02 09:54:19 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	50.000	48.766	2.5	117	0.00
53	T,M	1,4-Dioxane	1000.000	1082.532	-8.3	133	0.01
54	T,M	Dibromomethane	50.000	50.374	-0.7	121	0.01
55	T,M	2-Chloroethyl vinyl ether	50.000	50.528	-1.1	123	0.01
56	T,M	4-Methyl-2-pentanone	250.000	224.393	10.2	112	0.01
57	T,M	cis-1,3-Dichloropropene	50.000	46.386	7.2	111	0.00
58	I	CHLOROBENZENE-D5	50.000	50.000	0.0	121	0.00
59	S	Toluene-d8	50.000	52.860	-5.7	114	0.00
60	T,M	Ethyl methacrylate	50.000	50.455	-0.9	116	0.01
61	C,T,M	Toluene	50.000	47.564	4.9	110	0.01
62	T,M	trans-1,3-Dichloropropene	50.000	50.472	-0.9	115	0.01
63	T,M	2-Hexanone	250.000	239.237	4.3	115	0.00
64	T,M	1,1,2-Trichloroethane	50.000	53.469	-6.9	123	0.01
65	T,M	1,3-Dichloropropane	50.000	53.248	-6.5	122	0.01
66	T,M	Tetrachloroethene	50.000	50.020	-0.0	116	0.01
67	T,M	Dibromochloromethane	50.000	52.766	-5.5	122	0.00
68	T,M	1,2-Dibromoethane	50.000	53.657	-7.3	123	0.00
69	T,M	1-Chlorohexane	50.000	45.772	8.5	105	0.01
70	P,T,M	Chlorobenzene	50.000	47.950	4.1	110	0.01
71	T,M	1,1,1,2-Tetrachloroethane	50.000	52.216	-4.4	118	0.01
72	C,T,M	Ethylbenzene	50.000	47.926	4.1	109	0.01
73	T,M	m-Xylene & p-Xylene	100.000	94.918	5.1	107	0.01
74	T,M	o-Xylene	50.000	47.209	5.6	108	0.00
75	T,M	Styrene	50.000	45.828	8.3	105	0.01
76	T,M	Isopropylbenzene	50.000	48.445	3.1	111	0.01
77	T,M	cis-1,4-Dichloro-2-butene	50.000	39.730	20.5#	92	0.01
78	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	118	0.00
79	P,T,M	Bromoform	50.000	61.300	-22.6#	139	0.00
80	P,T,M	1,1,2,2-Tetrachloroethane	50.000	54.835	-9.7	122	0.01
81	S	4-Bromofluorobenzene	50.000	52.872	-5.7	112	0.00
82	T,M	1,2,3-Trichloropropane	50.000	58.755	-17.5	130	0.00
83	T,M	trans-1,4-Dichloro-2-butene	50.000	43.749	12.5	98	0.00
84	T,M	n-Propylbenzene	50.000	47.739	4.5	104	0.00
85	T,M	Bromobenzene	50.000	52.159	-4.3	118	0.00
86	T,M	1,3,5-Trimethylbenzene	50.000	47.796	4.4	106	0.00
87	T,M	2-Chlorotoluene	50.000	50.555	-1.1	113	0.01
88	T,M	4-Chlorotoluene	50.000	44.605	10.8	99	0.01
89	T,M	tert-Butylbenzene	50.000	48.069	3.9	107	0.01
90	T,M	1,2,4-Trimethylbenzene	50.000	48.169	3.7	106	0.01
91	T,M	sec-Butylbenzene	50.000	47.936	4.1	105	0.01
92	T,M	p-Isopropyltoluene	50.000	47.323	5.4	105	0.00
93	T,M	1,3-Dichlorobenzene	50.000	48.034	3.9	107	0.00
94	T,M	1,4-Dichlorobenzene	50.000	47.650	4.7	107	0.01
95	T,M	n-Butylbenzene	50.000	43.881	12.2	98	0.00
96	T,M	1,2-Dichlorobenzene	50.000	48.647	2.7	110	0.00
97	T,M	1,2-Dibromo-3-chloropropane	50.000	58.784	-17.6	133	0.00
98	T,M	1,2,4-Trichlorobenzene	50.000	47.711	4.6	109	0.00
99	T,M	Hexachlorobutadiene	50.000	54.474	-8.9	123	0.01
100	T,M	Naphthalene	50.000	45.107	9.8	102	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY726.D
Acq On : 30 Jun 2018 3:33 am
Operator : DNguye
Sample : EVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 02 09:54:19 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
101 T,M	1,2,3-Trichlorobenzene	50.000	47.019	6.0	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY726.D
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Operator : DNguye
Sample : EVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
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Quant Time: Jul 02 09:54:19 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	125	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.81#
3	T,M	Dichlorodifluoromethane	0.363	0.303	16.5	110	-0.01
4	P,T,M	Chloromethane	0.409	0.313	23.5#	98	-0.06
5	C,T,M	Vinyl chloride	0.262	0.230	12.2	112	-0.04
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.002	0.0	0#	-0.03
7	T,M	Bromomethane	0.232	0.208	10.3	114	-0.06
8	T,M	Dichlorofluoromethane	0.521	0.560	-7.5	130	-0.02
9	T,M	Chloroethane	0.216	0.194	10.2	113	-0.04
10	T,M	Trichlorofluoromethane	0.460	0.401	12.8	110	0.00
11	T,M	Acrolein	0.020	0.026	-30.0#	152	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-Trifl	0.196	0.227	-15.8	138	0.01
13	T,M	Acetone	0.063	0.063	0.0	137	0.00
14	T,M	tert-Butyl alcohol	0.023	0.030	-30.4#	154	0.01
15	T,M	Acetonitrile	0.021	0.027	-28.6#	162	0.01
16	T,M	Methyl acetate	0.195	0.231	-18.5	149	0.00
17	C,T,M	1,1-Dichloroethene	0.455	0.437	4.0	114	0.00
18	T,M	Iodomethane	0.397	0.383	3.5	116	-0.02
19	T,M	Allyl Chloride	0.147	0.137	6.8	113	0.00
20	T,M	Methylene chloride	0.427	0.400	6.3	127	-0.01
21	T,M	Carbon disulfide	0.883	0.777	12.0	102	0.00
22	T,M	Acrylonitrile	0.083	0.080	3.6	120	0.00
23	T,M	tert-Butyl methyl ether (MT	0.671	0.717	-6.9	127	0.00
24	T,M	trans-1,2-Dichloroethene	0.418	0.374	10.5	107	0.00
25	T,M	Isopropyl ether (DIPE)	1.044	0.842	19.3	96	0.01
26	T,M	Vinyl acetate	0.545	0.502	7.9	114	0.00
27	P,T,M	1,1-Dichloroethane	0.493	0.469	4.9	114	0.00
28	T,M	2-Butanol	0.022	0.028	-27.3#	168	0.01
29	T,M	tert-Butyl ethyl ether (ETB	0.859	0.812	5.5	115	0.00
30	T,M	2-Butanone	0.098	0.093	5.1	119	0.01
31	T,M	Propionitrile	0.031	0.031	0.0	122	0.00
32	T,M	2,2-Dichloropropane	0.378	0.347	8.2	111	0.00
33	T,M	cis-1,2-Dichloroethene	0.301	0.293	2.7	118	0.00
34	T,M	Methacrylonitrile	0.037	0.035	5.4	115	0.00
35	T,M	Isobutyl Alcohol	0.012	0.011	8.3	110	0.01
36	C,T,M	Chloroform	0.471	0.459	2.5	119	0.00
37	T,M	Bromochloromethane	0.241	0.197	18.3	99	0.01
38	T,M	Tetrahydrofuran	0.069	0.056	18.8	107	0.01
39	S	Dibromofluoromethane	0.266	0.277	-4.1	123	0.00
40	T,M	1,1,1-Trichloroethane	0.447	0.397	11.2	108	0.01
41	T,M	Cyclohexane	0.556	0.585	-5.2	137	0.01
42	T,M	1,1-Dichloropropene	0.136	0.129	5.1	114	0.00
43	T,M	Carbon tetrachloride	0.359	0.347	3.3	117	0.01
44	T,M	tert-Amyl methyl ether (TAM	0.177	0.174	1.7	119	0.01
45	S	1,2-Dichloroethane-d4	0.277	0.281	-1.4	115	0.00
46	T,M	1,2-Dichloroethane	0.339	0.319	5.9	114	0.00
47	T,M	Benzene	1.052	1.005	4.5	115	0.01
48	T,M	Trichloroethene	0.290	0.283	2.4	118	0.01
49	T,M	Methylcyclohexane	0.640	0.622	2.8	130	0.00
50	C,T,M	1,2-Dichloropropane	0.281	0.260	7.5	111	0.01
51	T,M	Methyl Methacrylate	0.152	0.148	2.6	119	0.01

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY726.D
Acq On : 30 Jun 2018 3:33 am
Operator : DNguye
Sample : EVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 02 09:54:19 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	T,M	Bromodichloromethane	0.345	0.337	2.3	117	0.00
53	T,M	1,4-Dioxane	0.002	0.003	-50.0#	133	0.01
54	T,M	Dibromomethane	0.145	0.146	-0.7	121	0.01
55	T,M	2-Chloroethyl vinyl ether	0.081	0.081	0.0	123	0.01
56	T,M	4-Methyl-2-pentanone	0.235	0.211	10.2	112	0.01
57	T,M	cis-1,3-Dichloropropene	0.430	0.398	7.4	111	0.00
58	I	CHLOROBENZENE-D5	1.000	1.000	0.0	121	0.00
59	S	Toluene-d8	1.139	1.204	-5.7	114	0.00
60	T,M	Ethyl methacrylate	0.326	0.329	-0.9	116	0.01
61	C,T,M	Toluene	1.396	1.328	4.9	110	0.01
62	T,M	trans-1,3-Dichloropropene	0.418	0.422	-1.0	115	0.01
63	T,M	2-Hexanone	0.175	0.167	4.6	115	0.00
64	T,M	1,1,2-Trichloroethane	0.231	0.247	-6.9	123	0.01
65	T,M	1,3-Dichloropropane	0.399	0.425	-6.5	122	0.01
66	T,M	Tetrachloroethene	0.253	0.254	-0.4	116	0.01
67	T,M	Dibromochloromethane	0.283	0.299	-5.7	122	0.00
68	T,M	1,2-Dibromoethane	0.230	0.247	-7.4	123	0.00
69	T,M	1-Chlorohexane	0.485	0.444	8.5	105	0.01
70	P,T,M	Chlorobenzene	0.887	0.851	4.1	110	0.01
71	T,M	1,1,1,2-Tetrachloroethane	0.312	0.326	-4.5	118	0.01
72	C,T,M	Ethylbenzene	1.619	1.552	4.1	109	0.01
73	T,M	m-Xylene & p-Xylene	1.248	1.185	5.0	107	0.01
74	T,M	o-Xylene	1.285	1.213	5.6	108	0.00
75	T,M	Styrene	0.990	0.907	8.4	105	0.01
76	T,M	Isopropylbenzene	1.636	1.585	3.1	111	0.01
77	T,M	cis-1,4-Dichloro-2-butene	0.116	0.092	20.7#	92	0.01
78	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	118	0.00
79	P,T,M	Bromoform	0.353	0.433	-22.7#	139	0.00
80	P,T,M	1,1,2,2-Tetrachloroethane	0.636	0.698	-9.7	122	0.01
81	S	4-Bromofluorobenzene	0.965	1.020	-5.7	112	0.00
82	T,M	1,2,3-Trichloropropane	0.191	0.224	-17.3	130	0.00
83	T,M	trans-1,4-Dichloro-2-butene	0.199	0.174	12.6	98	0.00
84	T,M	n-Propylbenzene	4.152	3.964	4.5	104	0.00
85	T,M	Bromobenzene	0.720	0.751	-4.3	118	0.00
86	T,M	1,3,5-Trimethylbenzene	3.023	2.890	4.4	106	0.00
87	T,M	2-Chlorotoluene	2.803	2.834	-1.1	113	0.01
88	T,M	4-Chlorotoluene	2.459	2.194	10.8	99	0.01
89	T,M	tert-Butylbenzene	0.690	0.664	3.8	107	0.01
90	T,M	1,2,4-Trimethylbenzene	3.007	2.896	3.7	106	0.01
91	T,M	sec-Butylbenzene	3.952	3.788	4.1	105	0.01
92	T,M	p-Isopropyltoluene	3.331	3.153	5.3	105	0.00
93	T,M	1,3-Dichlorobenzene	1.523	1.463	3.9	107	0.00
94	T,M	1,4-Dichlorobenzene	1.519	1.447	4.7	107	0.01
95	T,M	n-Butylbenzene	3.146	2.761	12.2	98	0.00
96	T,M	1,2-Dichlorobenzene	1.409	1.371	2.7	110	0.00
97	T,M	1,2-Dibromo-3-chloropropane	0.128	0.151	-18.0	133	0.00
98	T,M	1,2,4-Trichlorobenzene	0.908	0.867	4.5	109	0.00
99	T,M	Hexachlorobutadiene	0.496	0.540	-8.9	123	0.01
100	T,M	Naphthalene	2.204	1.988	9.8	102	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY726.D
Acq On : 30 Jun 2018 3:33 am
Operator : DNguye
Sample : EVOF5D1935
Misc : 50ppb 8260/250oob KET-AA-TBA
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 02 09:54:19 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.17min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
101 T,M	1,2,3-Trichlorobenzene	0.819	0.770	6.0	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
Data File : RFY726.D
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Operator : DNguye
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Quant Time: Jul 02 09:54:19 2018
Quant Method : C:\MSDCHEM\1\METHODS\VOF5D19.M
Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-DIFLUOROBENZENE	8.868	114	1089570	50.00	ug/l		0.00
58) CHLOROBENZENE-D5	12.513	117	912949	50.00	ug/l		0.00
78) 1,2-DICHLOROBENZENE-D4	15.302	152	408389	50.00	ug/l		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.474	111	301883	52.14	ug/l		0.00
Spiked Amount 50.000			Recovery =	104.28%			
45) 1,2-Dichloroethane-d4	8.275	65	305709	50.57	ug/l		0.00
Spiked Amount 50.000			Recovery =	101.14%			
59) Toluene-d8	10.800	98	1099074	52.86	ug/l		0.00
Spiked Amount 50.000			Recovery =	105.72%			
81) 4-Bromofluorobenzene	13.809	95	416524	52.87	ug/l		0.00
Spiked Amount 50.000			Recovery =	105.74%			
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.819	85	329784	41.71	ug/l		100
4) Chloromethane	2.017	50	340580	38.19	ug/l		100
5) Vinyl chloride	2.138	62	250157	43.75	ug/l		99
7) Bromomethane	2.588	94	226302	44.67	ug/l		100
8) Dichlorofluoromethane	2.752	67	609971	53.73	ug/L		99
9) Chloroethane	2.654	64	211384	44.91	ug/l		89
10) Trichlorofluoromethane	3.027	101	436719	43.53	ug/l		99
11) Acrolein	3.521	55	139133	315.94	ug/L		81
12) 1,1,2-Trichloro-1,2,2-...	3.576	151	247431	57.83	ug/l		98
13) Acetone	3.620	43	345425	251.69	ug/l		96
14) tert-Butyl alcohol	3.938	59	162422	329.61	ug/L	#	1
15) Acetonitrile	4.004	41	294517	555.55	ug/L		93
16) Methyl acetate	4.279	43	251982	59.26	ug/L		90
17) 1,1-Dichloroethene	3.795	61	476386	48.00	ug/l		95
18) Iodomethane	4.213	142	417060	48.20	ug/l		97
19) Allyl Chloride	4.312	76	149173	46.48	ug/L		98
20) Methylene chloride	4.498	49	435869	46.81	ug/l		84
21) Carbon disulfide	4.520	76	846310	43.97	ug/L		98
22) Acrylonitrile	4.707	53	434386	240.21	ug/l		100
23) tert-Butyl methyl ethe...	4.751	73	781063	53.44	ug/L		95
24) trans-1,2-Dichloroethene	4.948	61	407117	44.72	ug/l		93
25) Isopropyl ether (DIPE)	5.530	45	917097	40.30	ug/l		91
26) Vinyl acetate	5.717	43	547043	46.04	ug/l		94
27) 1,1-Dichloroethane	5.673	63	510492	47.54	ug/l		100
28) 2-Butanol	6.134	45	153968	326.91	ug/L	#	60
29) tert-Butyl ethyl ether...	6.277	59	884999	47.27	ug/l		98
30) 2-Butanone	6.496	43	506311	236.64	ug/l		92
31) Propionitrile	6.639	54	342313	508.64	ug/L		99
32) 2,2-Dichloropropane	6.716	77	377696	45.88	ug/l		100
33) cis-1,2-Dichloroethene	6.804	96	318967	48.66	ug/l		92
34) Methacrylonitrile	7.002	52	380115	476.90	ug/L		83
35) Isobutyl Alcohol	7.078	43	239148	900.65	ug/L		100
36) Chloroform	7.089	83	500379	48.70	ug/l		96
37) Bromochloromethane	7.375	49	214559	40.93	ug/l		81
38) Tetrahydrofuran	7.452	42	60738	40.59	ug/L		86
40) 1,1,1-Trichloroethane	7.770	97	432247	44.38	ug/l		96
41) Cyclohexane	7.770	84	637448	52.62	ug/L		90
42) 1,1-Dichloropropene	8.012	110	140198	47.43	ug/L		98
43) Carbon tetrachloride	8.154	119	378592	48.35	ug/L		99

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Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44)	tert-Amyl methyl ether...	8.242	87	189135	49.03	ug/l		91
46)	1,2-Dichloroethane	8.418	62	347654	47.12	ug/L		98
47)	Benzene	8.418	78	1095521	47.80	ug/L		97
48)	Trichloroethene	9.296	130	308393	48.88	ug/L		97
49)	Methylcyclohexane	9.351	83	677936	48.60	ug/L		92
50)	1,2-Dichloropropane	9.538	63	282939	46.27	ug/L		90
51)	Methyl Methacrylate	9.659	69	161509	48.79	ug/L	#	78
52)	Bromodichloromethane	9.834	83	366708	48.77	ug/L		100
53)	1,4-Dioxane	9.889	88	56551	1082.53	ug/L		88
54)	Dibromomethane	9.900	93	159575	50.37	ug/L		94
55)	2-Chloroethyl vinyl ether	10.262	63	88723	50.53	ug/L		98
56)	4-Methyl-2-pentanone	10.295	43	1148280	224.39	ug/L		91
57)	cis-1,3-Dichloropropene	10.526	75	434150	46.39	ug/L		90
60)	Ethyl methacrylate	11.130	69	300094	50.46	ug/L		83
61)	Toluene	10.899	91	1212741	47.56	ug/l		99
62)	trans-1,3-Dichloropropene	11.130	75	384998	50.47	ug/l		82
63)	2-Hexanone	11.316	43	762733	239.24	ug/l		92
64)	1,1,2-Trichloroethane	11.306	97	225437	53.47	ug/l		98
65)	1,3-Dichloropropane	11.591	76	387618	53.25	ug/l		99
66)	Tetrachloroethene	11.646	164	231518	50.02	ug/l		97
67)	Dibromochloromethane	11.876	129	272615	52.77	ug/l		99
68)	1,2-Dibromoethane	12.096	107	225504	53.66	ug/l		100
69)	1-Chlorohexane	12.283	91	405522	45.77	ug/l		94
70)	Chlorobenzene	12.557	112	776525	47.95	ug/l		98
71)	1,1,1,2-Tetrachloroethane	12.612	131	297847	52.22	ug/l		98
72)	Ethylbenzene	12.612	91	1416967	47.93	ug/l		100
73)	m-Xylene & p-Xylene	12.700	91	2163619	94.92	ug/l		100
74)	o-Xylene	13.161	91	1107605	47.21	ug/l		99
75)	Styrene	13.205	104	828491	45.83	ug/l		100
76)	Isopropylbenzene	13.545	105	1447058	48.44	ug/L		100
77)	cis-1,4-Dichloro-2-butene	13.600	53	83822	39.73	ug/L		79
79)	Bromoform	13.567	173	176818	61.30	ug/l		98
80)	1,1,2,2-Tetrachloroethane	13.732	83	284972	54.84	ug/l		100
82)	1,2,3-Trichloropropane	13.886	110	91539	58.76	ug/l		93
83)	trans-1,4-Dichloro-2-b...	13.952	53	71239	43.75	ug/L		92
84)	n-Propylbenzene	13.963	91	1618946	47.74	ug/l		99
85)	Bromobenzene	14.017	156	306848	52.16	ug/l		94
86)	1,3,5-Trimethylbenzene	14.127	105	1180167	47.80	ug/l		100
87)	2-Chlorotoluene	14.160	91	1157258	50.55	ug/l		99
88)	4-Chlorotoluene	14.204	91	896020	44.60	ug/l		99
89)	tert-Butylbenzene	14.490	134	270976	48.07	ug/l		97
90)	1,2,4-Trimethylbenzene	14.523	105	1182867	48.17	ug/l		99
91)	sec-Butylbenzene	14.687	105	1547138	47.94	ug/l		98
92)	p-Isopropyltoluene	14.808	119	1287642	47.32	ug/l		98
93)	1,3-Dichlorobenzene	14.907	146	597677	48.03	ug/l		99
94)	1,4-Dichlorobenzene	15.006	146	591121	47.65	ug/l		98
95)	n-Butylbenzene	15.170	91	1127484	43.88	ug/l		99
96)	1,2-Dichlorobenzene	15.324	146	559816	48.65	ug/l		99
97)	1,2-Dibromo-3-chloropr...	15.950	157	61662	58.78	ug/l		96
98)	1,2,4-Trichlorobenzene	16.587	180	353915	47.71	ug/l		98
99)	Hexachlorobutadiene	16.685	225	220499	54.47	ug/l		99
100)	Naphthalene	16.784	128	811868	45.11	ug/l		99
101)	1,2,3-Trichlorobenzene	16.971	180	314518	47.02	ug/l		98

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Quant Title : METHOD 8260 5mL
QLast Update : Wed May 02 12:17:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\18F29\
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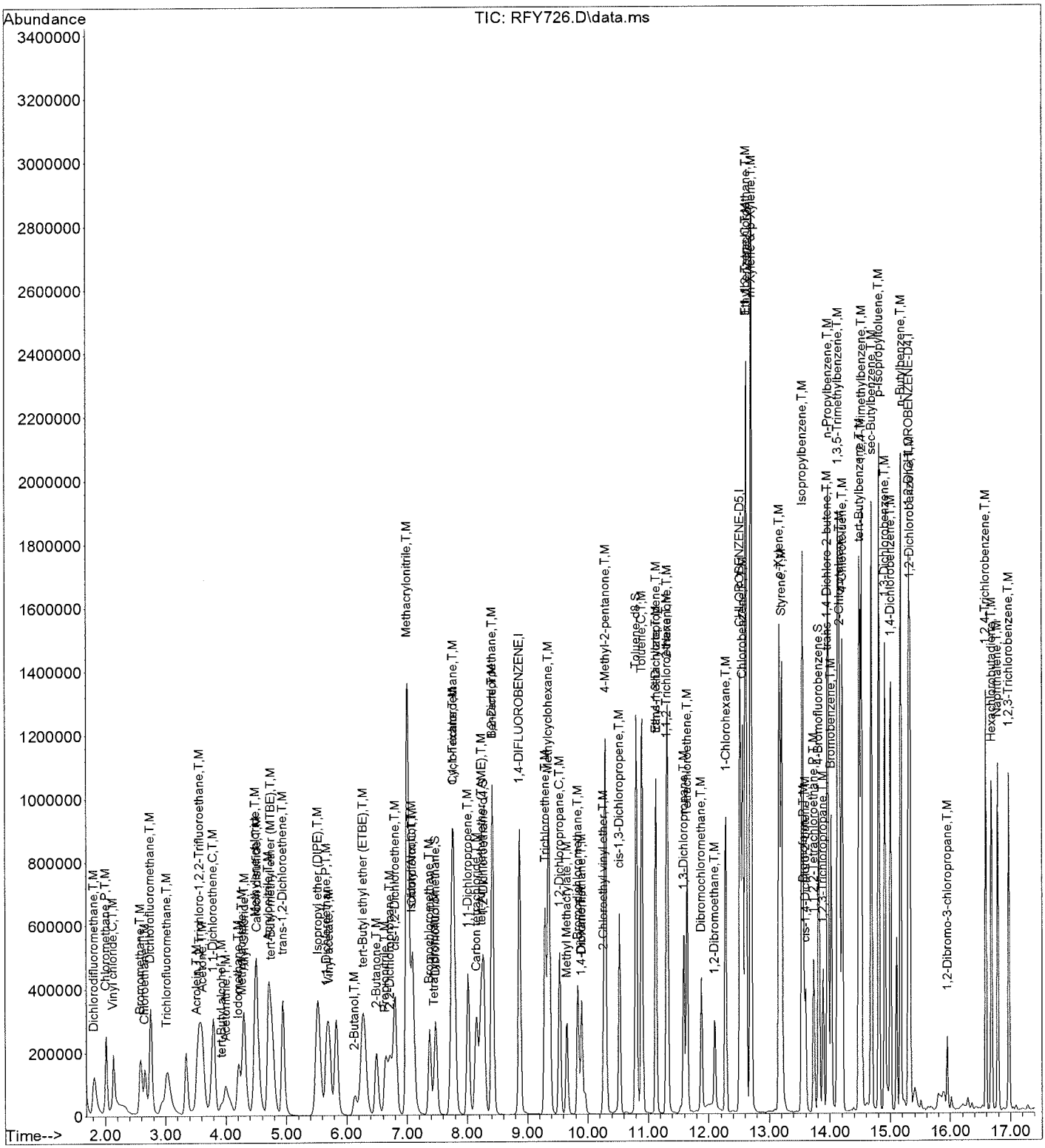


ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 4/19/18 ☑ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge Book #: AF5-013

BATCH VOF5D19

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		12DY193	BFBF5D11 ✓	1µL	NA	NA	NA		9:37
02		194	1.0ppb	.02µL					
03		195	VOF5D191 ✓	.04µL					2/10 ppb
04		196	2 ✓	.08µL					20
05		197	3 ✓	.2µL					10 50
06		198	4 ✓	.4µL					20 100
07		199	5 ✓	1µL					50 250
08		200	6 ✓	2µL					100 500
09		201	7 ✓	4µL					200 1000
10		202	8 ✓	6µL					300 1500
11		203	9 ✓	10µL					500 2500ppb
12		204	RINSE						
13		205	↓						
14		206	IVOF5D1901 ✓						50 /250 ppb
15		207	RINSE						
16		208	LOQ VERT. ✓	.1µL					5ppb/25ppb 4:58
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									DM 4/20/18
28									
29									
30									

Instrument No.	F5
INITIAL CALIBRATION REFERENCE	
DATE	4/19/18
ICAL ID	VOF5D19

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC CS2	SVI-29-51-02	★	250
DCC Ket-AA 4 add	-50-01		250/250
DCC 8260	-59-03		250
DCC 624	-50-02		250
BFB	-42-03	1	50
IS/SURR.	-38-03 -47-03	1 ★	250 250
ICV/LCS CS2	-04-02	1	250
ICV/LCS Ket-AA 8260	-31-02 -46-01	5 5	250 50/50
ICV/LCS 624	-59-02	1	250
ICV/LCS 3rd 2.8 standard	-09-01 -08-03	5 5	50 250
Data File Folder	18D19		

	LOT #	Syringe Lot #
pH strip		MW-01-03-05-02
Chlorine strip		MW-01-02-10-1
Methanol	SWIA-018-08-18	↓ -10-1
$NaHSO_4$		SWIA-03 -09-5
Reagent Water	DW3-18-001	MW-01-02-13
Sand		MW-01-03-04-1

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF5	

Comments: ★: Varied amount
Total Mean of ICAL and QC is 100µL

☐ Refer to sample weight log

Analyzed By: DM

Date Disposed: 4/20/18 Disposed By: DM

ANALYSIS LOG FOR VOLATILES

SOP ☐ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: ☐ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge Book #: AF5-014

BATCH CVOF5D1934 ES 06/29/18

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH<2	Matrix W Cl_2<5ppm	Matrix S	Notes
01		RFY636	DFBF5F26						8:57
02		637	CVOF5D1934						
03		638	VMF5F26L						
04		639	↓ C						
05		640	RINSE						
06		641	VMF5F26B	100 µL	50				
07		642	18F161-06I	↓	*			✓	
08		643	-06M	↓	↓			✓	gs lw
09		644	-06S	↓	↓			✓	✓
10		645	RINSE						
11		646	18F161-07I	100 µl	*			✓	
12		647	-08I	↓	↓			✓	
13		648	-10I	↓	↓			✓	
14		649	-06M	↓	↓			✓	
15		650	-06S	↓	↓			✓	
16		651	RINSE						
17		652	VMF036SB	100 µl	*			✓	
18		653	18F187-01I	↓	↓			✓	
19		654	-02I	↓	↓			✓	
20		655	-03I	↓	↓			✓	
21		656	-04I	↓	↓			✓	
22		657	RINSE						
23		658	18F187-05I	100 µl	*			✓	
24		659	-08I	↓	↓			✓	
25		660	-10I	↓	↓			✓	
26		661	18F185-01I	↓	↓			✓	
27		662	18F535-01I	↓	↓			✓	
28		663	EVOF5D1934					✓	8:41
29		↓ 664→673	RINSE						
30									

Instrument No.	F5
INITIAL CALIBRATION REFERENCE	
DATE	04/19/18
ICAL ID	VOF5D19

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SVI-29-64-01	1	
DCC	-80-01	2.5	
DCC	-52-02	5	
DCC	-79-03	1	
DCC	-78-02	1	50/250
BFB	-42-02	1	
IS/SURR.	-63-02	5	
ICV/LCS	-70-02	1	
ICV/LCS	-68-03	5	
ICV/LCS	-46-02	5	
ICV/LCS	-72-01	1	
ICV/LCS	-73-03	5	
ICV/LCS	-72-02	5	
Data File Folder	18F27		

	LOT #	Syringe Lot #
pH strip		MSV-01-03-05-02
Chlorine strip		-02-13
Methanol	SWIA-006-08-06	-03-09-5
$NaHSO_4$		-07-01
Reagent Water	RW3-18-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF5	

Comments:

☑ Refer to sample weight log ✓

Analyzed By: DM

Date Disposed: 6/28/18 Disposed By: DM

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 6/29/18 ☑ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge Book #: AF5-014

BATCH CVOF5D1935

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH<2	Matrix W Cl_2<5ppm	Matrix S	Notes
01		RFY 701	BFBF5F28 /						16:49
02		02	CVOF5D1935 /						
03		03	VMF5F28L /						
04		04	↓ C /						
05		05	RINSE						
06		06	VMF5F28B /	100mL	50				
07		07	VMS0405B /	↓	☆			/	
08		08	18F187-07I /		☆			/	
09		09	↓ 07M /		↓			/	
10		10	↓ 07S /	↓	↓			/	
11		11	RINSE						
12		12	18F187-09I /	100mL	☆			/	
13		13	↓ 11I /	↓	↓			/	
14		14	12I /					/	
15		15	13I /					/	
16		16	14I /					/	
17		17	15I /					/	
18		18	16I /					/	
19		19	↓ 17I /					/	
20		20	18F195-02I /	↓	↓			/	
21		21	RINSE						
22		22	↓						
23		23							
24		24	↓						
25		25	18F195-02J /	2.0mL	☆			/	
26		24	CVOF5D1935 /						03:33
27		27	RINSE						
28		↓	↓						
29	↓	39	↓						
30									

Instrument No.	F5
INITIAL CALIBRATION REFERENCE	
DATE	4/19/18
ICAL ID	VOF5D19

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SV1-29-64-01	1	
DCC	-80-01	2.5	
DCC	-52-02 -29-03	5 1	
DCC	-78-02	1	
BFB	-42-02	1	50/250
IS/SURR.	-63-02	5	
ICV/LCS	-70-02	1	
ICV/LCS	-65-03 -46-02	5 5	
ICV/LCS	-72-01	1	
ICV/LCS	↓ -72-02 -72-03	5 5	
Data File Folder	18F29		

	LOT #	Syringe Lot #
pH strip		MSV-01-0305-02
Chlorine strip		-02-13
Methanol	SWA-606-05-06	-03-09-5
$NaHSO_4$		-07-01
Reagent Water	RW3-18-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF5	

Comments:

☐ Refer to sample weight log

Analyzed By: DM

Date Disposed: 7/2/18 Disposed By: DM

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR VOLATILES

FileID: 18VMF039

PrepBatchID	Lab Sample ID	W1 (g)	DateTime	Wf (g)	DateTime	ExpWs(g)	Ws(g)	%Moisture	CorrExt Vol(ml)	PrepFactor	PFx50 df(I)	df(J)	df(K)	Comments
18VMF03901	18F187-01I	124.24	6/26/18 17:06	164.18	6/26/18 17:06	25	20.330	4.8	25.97584	1.28	64			
18VMF03902	18F187-02I	124.29	6/26/18 17:06	164.56	6/26/18 17:06	25	20.660	4.6	25.95036	1.26	63			
18VMF03903	18F187-03I	124.69	6/26/18 17:07	166.09	6/26/18 17:07	25	21.790	5.3	26.15487	1.2	60			
18VMF03904	18F187-04I	124.62	6/26/18 17:07	168.33	6/26/18 17:07	25	24.100	8.6	27.0726	1.12	56			
18VMF03905	18F187-05I	124.86	6/26/18 17:07	167.56	6/26/18 17:07	25	23.090	4.9	26.13141	1.13	56.5			
18VMF03906	18F187-07I	124.74	6/26/18 17:07	165.67	6/26/18 17:07	25	21.320	3.9	25.83148	1.21	60.5			
18VMF03907	18F187-07M	124.70	6/26/18 17:07	167.09	6/26/18 17:07	25	22.780	3.9	25.88842	1.14	57			
18VMF03908	18F187-07S	124.56	6/26/18 17:08	167.94	6/26/18 17:08	25	23.770	3.9	25.92703	1.09	54.5			
18VMF03909	18F187-08I	124.96	6/26/18 17:08	168.43	6/26/18 17:08	25	23.860	3.5	25.8351	1.08	54			
18VMF03910	18F187-09I	143.72	6/26/18 17:08	142.90	6/26/18 17:08	25	-20.430	MD 7/3/18	25	1	50			TRIP BLANK
18VMF03911	18F187-10I	124.54	6/26/18 17:08	166.25	6/26/18 17:08	25	22.100	5.8	26.2818	1.19	59.5			
18VMF03912	18F187-11I	124.68	6/26/18 17:09	170.58	6/26/18 17:09	25	26.290	4.7	26.23563	0.998	49.9			
18VMF03913	18F187-12I	124.33	6/26/18 17:09	169.77	6/26/18 17:09	25	25.830	4	26.0332	1.01	50.5			
18VMF03914	18F187-13I	124.38	6/26/18 17:09	167.72	6/26/18 17:09	25	23.730	6.5	26.54245	1.12	56			
18VMF03915	18F187-14I	124.84	6/26/18 17:09	169.64	6/26/18 17:09	25	25.190	5.1	26.28469	1.04	52			
18VMF03916	18F187-15I	124.62	6/26/18 17:09	169.59	6/26/18 17:10	25	25.360	7.6	26.92736	1.06	53			
18VMF03917	18F187-16I	124.78	6/26/18 17:10	171.41	6/26/18 17:10	25	27.020	6.9	26.86438	0.994	49.7			
18VMF03918	18F187-17I	124.48	6/26/18 17:10	164.26	6/26/18 17:10	25	20.170	8.1	26.63377	1.32	66			

☑ EMAX-5035 Rev.4 ☑ Balance Calibration Check performed prior to use BlankSoil Lot#: Prepared By: RTorra

☐ Encore ☐ Balance ID 25650797 MeOH/Surr. ID: LOT # 5V2B-12-07-01 Standard Added By: N/A

☐ Frozen Sample ☑ Balance ID 25451062 Weight MeOH(g): 19.61 Witnessed By: ODinh

☑ Pre-weighed vial / jar LOT # PV-002-06-25 Vol MeOH(ml): 25 Extract Rcvd By: ***NA***

☐ Volumetric dispenser was checked with 5-ml volumetric flask Expected Ws(g) 25 Extract Location: ***VW01***

W1=Weight of Vial+Solvent Wf=W1 + Sample

LABORATORY REPORT FOR

CH2M HILL

JBER TO078

METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

SDG#: 18F187

CASE NARRATIVE

Client : CH2M HILL

Project: JBER TO075

SDG : 18F187

METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

A total of fifteen (15) soil samples were received on 06/26/18 to be analyzed for Semi Volatile Organics by GC/MS in accordance with Method SW3550B/8270C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios as well as DDT breakdown were evaluated. Results were within acceptance criteria. Tailing factor for Benzidine and Pentachlorophenol were also verified and results were within the method limits. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were four (4) CCVs (Data file ID: RFH623, RFH645, RGH003 and RGH006) associated with this SDG. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. SVF043SB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. All analytes were within LCS limits except for: SVF043SL/SVF043SC - RPD for 4-Nitrophenol (RPD=27*) was not within QC limits. The rest of the analytes were in control. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed. 18F187-07M/18F187-07S - all analytes were within MS QC limits. Refer to Matrix QC summary form for details.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

Samples F187-15 to -17 were initially analyzed at dilution to minimize matrix interference as exhibited by the color of their extracts. Refer to extraction log for details.

LAB CHRONICLE
SEMI VOLATILE ORGANICS BY GC/MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Instrument ID : E7

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	SVF043SB	1	NA	06/29/1813:37	06/28/1815:30	RFH625	RAH169	18SVF043S	Method Blank
LCS1S	SVF043SL	1	NA	06/29/1813:56	06/28/1815:30	RFH626	RAH169	18SVF043S	Lab Control Sample (LCS)
LCD1S	SVF043SC	1	NA	06/29/1814:15	06/28/1815:30	RFH627	RAH169	18SVF043S	LCS Duplicate
18Q2DP009-SB0501-SO-0MS	18F187-07M	1	3.9	06/29/1814:34	06/28/1815:30	RFH628	RAH169	18SVF043S	Matrix Spike Sample (MS)
18Q2DP009-SB0501-SO-0MSD	18F187-07S	1	3.9	06/29/1814:53	06/28/1815:30	RFH629	RAH169	18SVF043S	MS Duplicate (MSD)
18Q2DP009-SB0401-SO-0	18F187-01	1	4.8	06/29/1815:12	06/28/1815:30	RFH630	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0401-SO-1	18F187-02	1	4.6	06/29/1815:31	06/28/1815:30	RFH631	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0402-SO-0	18F187-03	1	5.3	06/29/1815:50	06/28/1815:30	RFH632	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0801-SO-0	18F187-04	1	8.6	06/29/1816:09	06/28/1815:30	RFH633	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0802-SO-0	18F187-05	1	4.9	06/29/1816:28	06/28/1815:30	RFH634	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0501-SO-0	18F187-07	1	3.9	06/29/1816:47	06/28/1815:30	RFH635	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0502-SO-0	18F187-08	1	3.5	06/29/1817:06	06/28/1815:30	RFH636	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0701-SO-0	18F187-10	1	5.8	06/29/1817:25	06/28/1815:30	RFH637	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0702-SO-0	18F187-11	1	4.7	06/29/1817:44	06/28/1815:30	RFH638	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0301-SO-0	18F187-12	1	4.0	06/29/1818:03	06/28/1815:30	RFH639	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0602-SO-0	18F187-14	1	5.1	06/29/1818:42	06/28/1815:30	RFH641	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0601-SO-0	18F187-15	2	7.6	06/29/1819:01	06/28/1815:30	RFH642	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0601-SO-1	18F187-16	2	6.9	06/29/1819:20	06/28/1815:30	RFH643	RAH169	18SVF043S	Field Sample
18Q2DP009-IDW-SO01	18F187-17	2	8.1	06/29/1819:39	06/28/1815:30	RFH644	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0302-SO-0	18F187-13N	1	6.5	07/03/1808:54	06/28/1815:30	RGH005	RAH169	18SVF043S	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18 16:10
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0401-SO-0	Date Analyzed:	06/29/18 15:12
Lab Samp ID:	18F187-01	Dilution Factor:	1
Lab File ID:	RFH630	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	4.8
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.087	0.18
1,2-Dichlorobenzene	ND	0.35	0.087	0.18
1,3-Dichlorobenzene	ND	0.35	0.087	0.18
1,4-Dichlorobenzene	ND	0.35	0.087	0.18
2,4,5-Trichlorophenol	ND	0.35	0.096	0.18
2,4,6-Trichlorophenol	ND	0.35	0.087	0.18
2,4-Dichlorophenol	ND	0.35	0.087	0.18
2,4-Dimethylphenol	ND	0.35	0.087	0.18
2,4-Dinitrophenol	ND	0.70	0.090	0.18
2,4-Dinitrotoluene	ND	0.35	0.087	0.18
2,6-Dinitrotoluene	ND	0.35	0.087	0.18
2-Chloronaphthalene	ND	0.35	0.087	0.18
2-Chlorophenol	ND	0.35	0.087	0.18
2-Methylnaphthalene	ND	0.35	0.087	0.18
2-Methylphenol	ND	0.35	0.087	0.18
2-Nitroaniline	ND	0.35	0.087	0.18
2-Nitrophenol	ND	0.35	0.087	0.18
3,3'-Dichlorobenzidine	ND	0.35	0.088	0.18
3 & 4-Methylphenol	ND	0.35	0.087	0.18
3-Nitroaniline	ND	0.35	0.087	0.18
4-Bromophenyl phenyl ether	ND	0.35	0.095	0.18
4-Chloro-3-methylphenol	ND	0.35	0.087	0.18
4-Chloroaniline	ND	0.35	0.087	0.18
4-Chlorophenyl phenyl ether	ND	0.35	0.087	0.18
4-Nitroaniline	ND	0.35	0.13	0.18
Acenaphthene	ND	0.35	0.087	0.18
Acenaphthylene	ND	0.35	0.087	0.18
Anthracene	ND	0.35	0.087	0.18
Benzo (a) anthracene	ND	0.35	0.087	0.18
Benzo (a) pyrene	ND	0.35	0.087	0.18
Benzo (b) fluoranthene	ND	0.35	0.090	0.18
Benzo (g,h,i) perylene	ND	0.35	0.091	0.18
Benzo(k)fluoranthene	ND	0.35	0.087	0.18
Benzoic Acid	ND	1.4	0.35	0.70
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.18
bis (2-Chloroethyl) ether	ND	0.35	0.087	0.18
Butyl benzylphthalate	ND	0.35	0.087	0.18
Carbazole	ND	0.35	0.093	0.18
Chrysene	ND	0.35	0.087	0.18
Dibenzo (a,h) anthracene	ND	0.35	0.087	0.18
Dibenzofuran	ND	0.35	0.087	0.18
Diethyl phthalate	ND	0.35	0.087	0.18
Dimethyl phthalate	ND	0.35	0.087	0.18
Di-n-butylphthalate	ND	0.35	0.10	0.18
Di-n-octylphthalate	ND	0.35	0.10	0.18
Fluoranthene	ND	0.35	0.13	0.18
Fluorene	ND	0.35	0.087	0.18
Hexachlorobenzene	ND	0.35	0.087	0.18
Hexachlorobutadiene	ND	0.35	0.087	0.18
Hexachloroethane	ND	0.35	0.087	0.18
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.087	0.18
Isophorone	ND	0.35	0.087	0.18
Naphthalene	ND	0.35	0.087	0.18
Nitrobenzene	ND	0.35	0.087	0.18
N-Nitrosodimethylamine	ND	0.35	0.087	0.18
n-Nitrosodi-n-propylamine	ND	0.35	0.087	0.18
n-Nitrosodiphenylamine	ND	0.35	0.16	0.18
Pentachlorophenol	ND	0.70	0.087	0.18
Phenanthrene	ND	0.35	0.087	0.18
Phenol	ND	0.35	0.087	0.18
Pyrene	ND	0.35	0.17	0.18
Azobenzene	ND	0.35	0.10	0.18
4,6-Dinitro-2-methylphenol	ND	0.70	0.087	0.18
Benzyl Alcohol	ND	0.35	0.087	0.18
bis (2-Chloroisopropyl) ether	ND	0.35	0.087	0.18
bis (2-Chloroethoxy) methane	ND	0.35	0.087	0.18
1,4-Dioxane	ND	0.35	0.087	0.18
4-Nitrophenol	ND	0.70	0.11	0.18

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.32	2.10	63	39-132
2-Fluorobiphenyl	0.478	0.700	68	44-115
2-Fluorophenol	1.51	2.10	72	35-115
Nitrobenzene-d5	0.505	0.700	72	37-122
Phenol-d5	1.60	2.10	76	33-122
Terphenyl-d14	0.539	0.700	77	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30.03g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

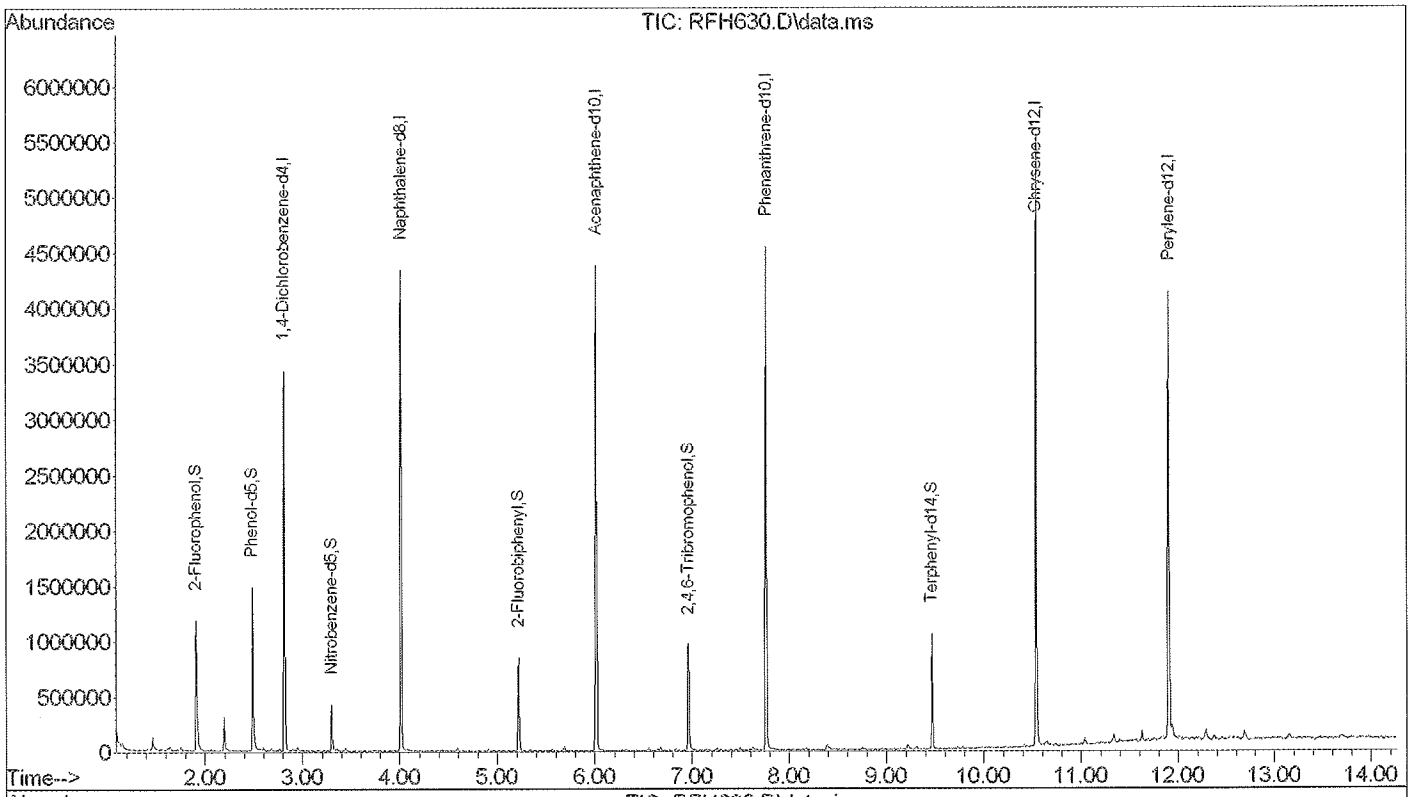
Data File : D:\DATA\18F29\RFH630.D Vial: 10
Acq On : 29 Jun 2018 15:12 Operator: RZh
Sample : 18F187-01 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:56:47 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

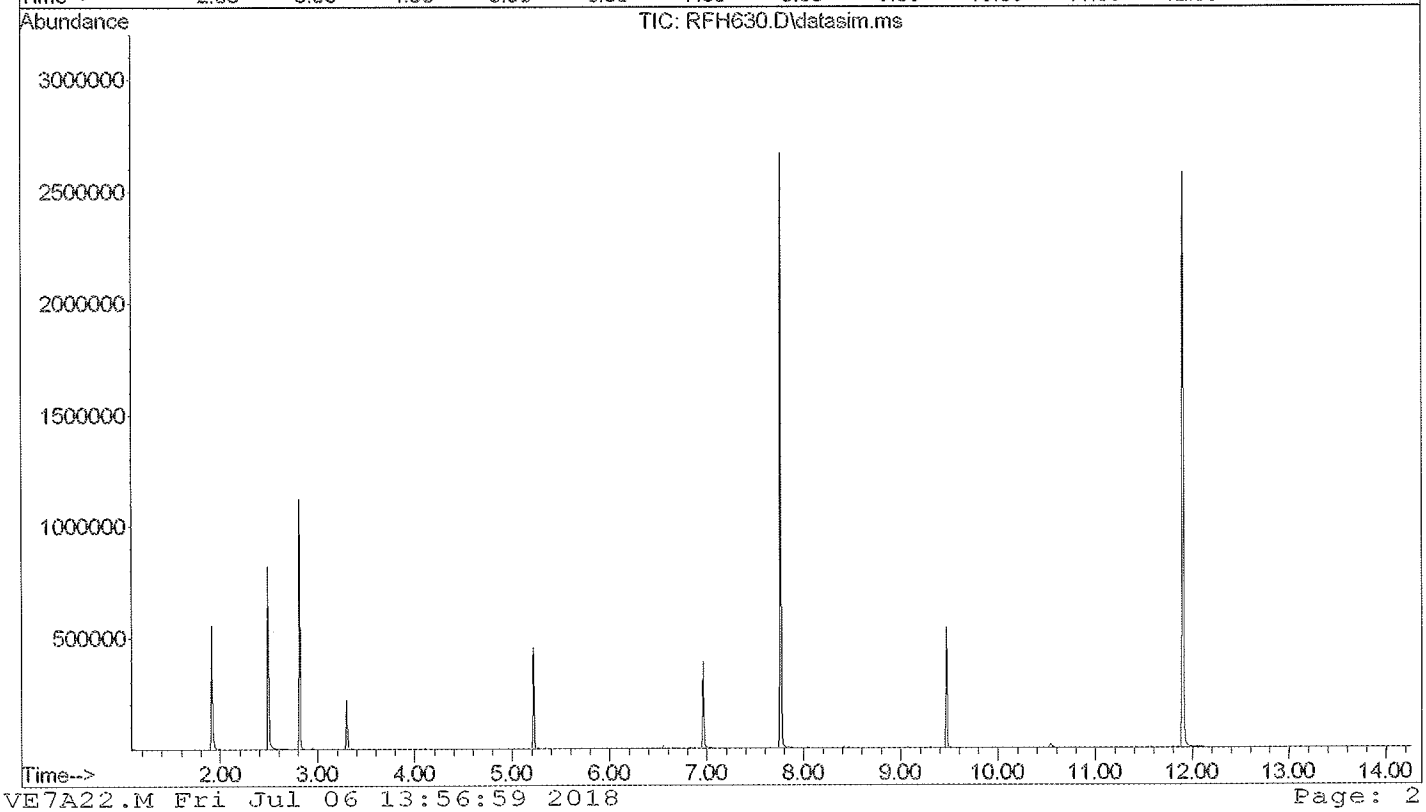
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	438649	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1624839	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	828673	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1727745	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	1811874	40.00	ppm	0.00
97) Perylene-d12	11.900	264	1696911	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	263883	21.52	ppm	0.00
Spiked Amount 30.000			Recovery =	71.73%		
6) Phenol-d5	2.486	99	370798	22.86	ppm	0.01
Spiked Amount 30.000			Recovery =	76.20%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	116920	7.22	ppm	0.00
Spiked Amount 10.000			Recovery =	72.20%		
46) 2-Fluorobiphenyl	5.220	172	242675	6.84	ppm	-0.01
Spiked Amount 10.000			Recovery =	68.40%		
75) 2,4,6-Tribromophenol	6.963	330	113423	18.90	ppm	0.00
Spiked Amount 30.000			Recovery =	63.00%		
90) Terphenyl-d14	9.466	244	303043	7.71	ppm	-0.01
Spiked Amount 10.000			Recovery =	77.10%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH630.D Vial: 10
Acq On : 29 Jun 2018 15:12 Operator: RZh
Sample : 18F187-01 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:56:47 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18 16:11
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0401-SO-1	Date Analyzed:	06/29/18 15:31
Lab Samp ID:	18F187-02	Dilution Factor:	1
Lab File ID:	RFH631	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	4.6
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.087	0.18
1,2-Dichlorobenzene	ND	0.35	0.087	0.18
1,3-Dichlorobenzene	ND	0.35	0.087	0.18
1,4-Dichlorobenzene	ND	0.35	0.087	0.18
2,4,5-Trichlorophenol	ND	0.35	0.095	0.18
2,4,6-Trichlorophenol	ND	0.35	0.087	0.18
2,4-Dichlorophenol	ND	0.35	0.087	0.18
2,4-Dimethylphenol	ND	0.35	0.087	0.18
2,4-Dinitrophenol	ND	0.70	0.090	0.18
2,4-Dinitrotoluene	ND	0.35	0.087	0.18
2,6-Dinitrotoluene	ND	0.35	0.087	0.18
2-Chloronaphthalene	ND	0.35	0.087	0.18
2-Chlorophenol	ND	0.35	0.087	0.18
2-Methylnaphthalene	ND	0.35	0.087	0.18
2-Methylphenol	ND	0.35	0.087	0.18
2-Nitroaniline	ND	0.35	0.087	0.18
2-Nitrophenol	ND	0.35	0.087	0.18
3,3'-Dichlorobenzidine	ND	0.35	0.088	0.18
3 & 4-Methylphenol	ND	0.35	0.087	0.18
3-Nitroaniline	ND	0.35	0.087	0.18
4-Bromophenyl phenyl ether	ND	0.35	0.094	0.18
4-Chloro-3-methylphenol	ND	0.35	0.087	0.18
4-Chloroaniline	ND	0.35	0.087	0.18
4-Chlorophenyl phenyl ether	ND	0.35	0.087	0.18
4-Nitroaniline	ND	0.35	0.13	0.18
Acenaphthene	ND	0.35	0.087	0.18
Acenaphthylene	ND	0.35	0.087	0.18
Anthracene	ND	0.35	0.087	0.18
Benzo (a) anthracene	ND	0.35	0.087	0.18
Benzo (a) pyrene	ND	0.35	0.087	0.18
Benzo (b) fluoranthene	ND	0.35	0.090	0.18
Benzo (g,h,i) perylene	ND	0.35	0.091	0.18
Benzo(k)fluoranthene	ND	0.35	0.087	0.18
Benzoic Acid	ND	1.4	0.35	0.70
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.18
bis (2-Chloroethyl) ether	ND	0.35	0.087	0.18
Butyl benzylphthalate	ND	0.35	0.087	0.18
Carbazole	ND	0.35	0.093	0.18
Chrysene	ND	0.35	0.087	0.18
Dibenzo (a,h) anthracene	ND	0.35	0.087	0.18
Dibenzofuran	ND	0.35	0.087	0.18
Diethyl phthalate	ND	0.35	0.087	0.18
Dimethyl phthalate	ND	0.35	0.087	0.18
Di-n-butylphthalate	ND	0.35	0.10	0.18
Di-n-octylphthalate	ND	0.35	0.10	0.18
Fluoranthene	ND	0.35	0.13	0.18
Fluorene	ND	0.35	0.087	0.18
Hexachlorobenzene	ND	0.35	0.087	0.18
Hexachlorobutadiene	ND	0.35	0.087	0.18
Hexachloroethane	ND	0.35	0.087	0.18
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.087	0.18
Isophorone	ND	0.35	0.087	0.18
Naphthalene	ND	0.35	0.087	0.18
Nitrobenzene	ND	0.35	0.087	0.18
N-Nitrosodimethylamine	ND	0.35	0.087	0.18
n-Nitrosodi-n-propylamine	ND	0.35	0.087	0.18
n-Nitrosodiphenylamine	ND	0.35	0.16	0.18
Pentachlorophenol	ND	0.70	0.087	0.18
Phenanthrene	ND	0.35	0.087	0.18
Phenol	ND	0.35	0.087	0.18
Pyrene	ND	0.35	0.17	0.18
Azobenzene	ND	0.35	0.10	0.18
4,6-Dinitro-2-methylphenol	ND	0.70	0.087	0.18
Benzyl Alcohol	ND	0.35	0.087	0.18
bis (2-Chloroisopropyl) ether	ND	0.35	0.087	0.18
bis (2-Chloroethoxy) methane	ND	0.35	0.087	0.18
1,4-Dioxane	ND	0.35	0.087	0.18
4-Nitrophenol	ND	0.70	0.11	0.18

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.73	2.10	83	39-132
2-Fluorobiphenyl	0.561	0.699	80	44-115
2-Fluorophenol	1.97	2.10	94	35-115
Nitrobenzene-d5	0.621	0.699	89	37-122
Phenol-d5	1.96	2.10	93	33-122
Terphenyl-d14	0.628	0.699	90	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30.03g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

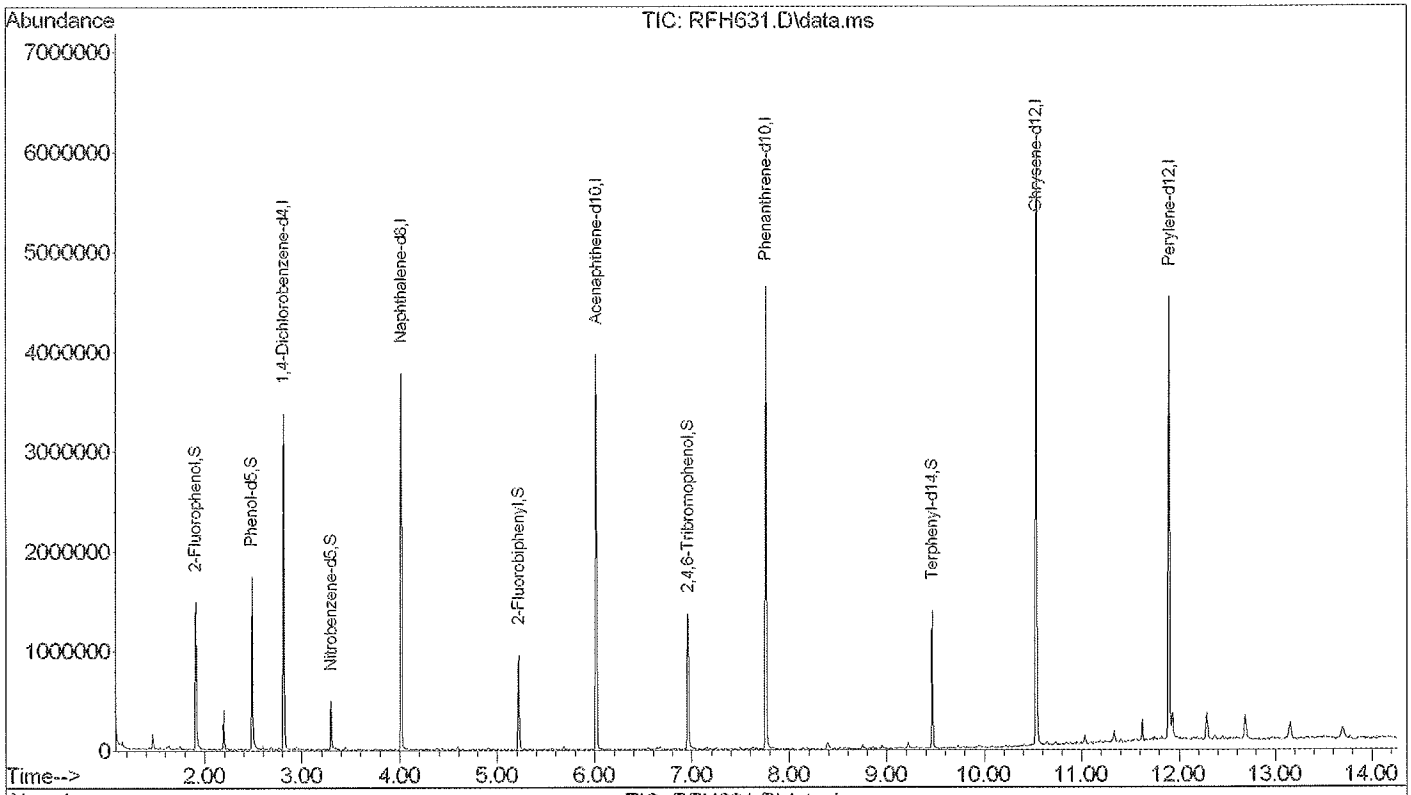
Data File : D:\DATA\18F29\RFH631.D Vial: 11
Acq On : 29 Jun 2018 15:31 Operator: RZh
Sample : 18F187-02 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:21 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

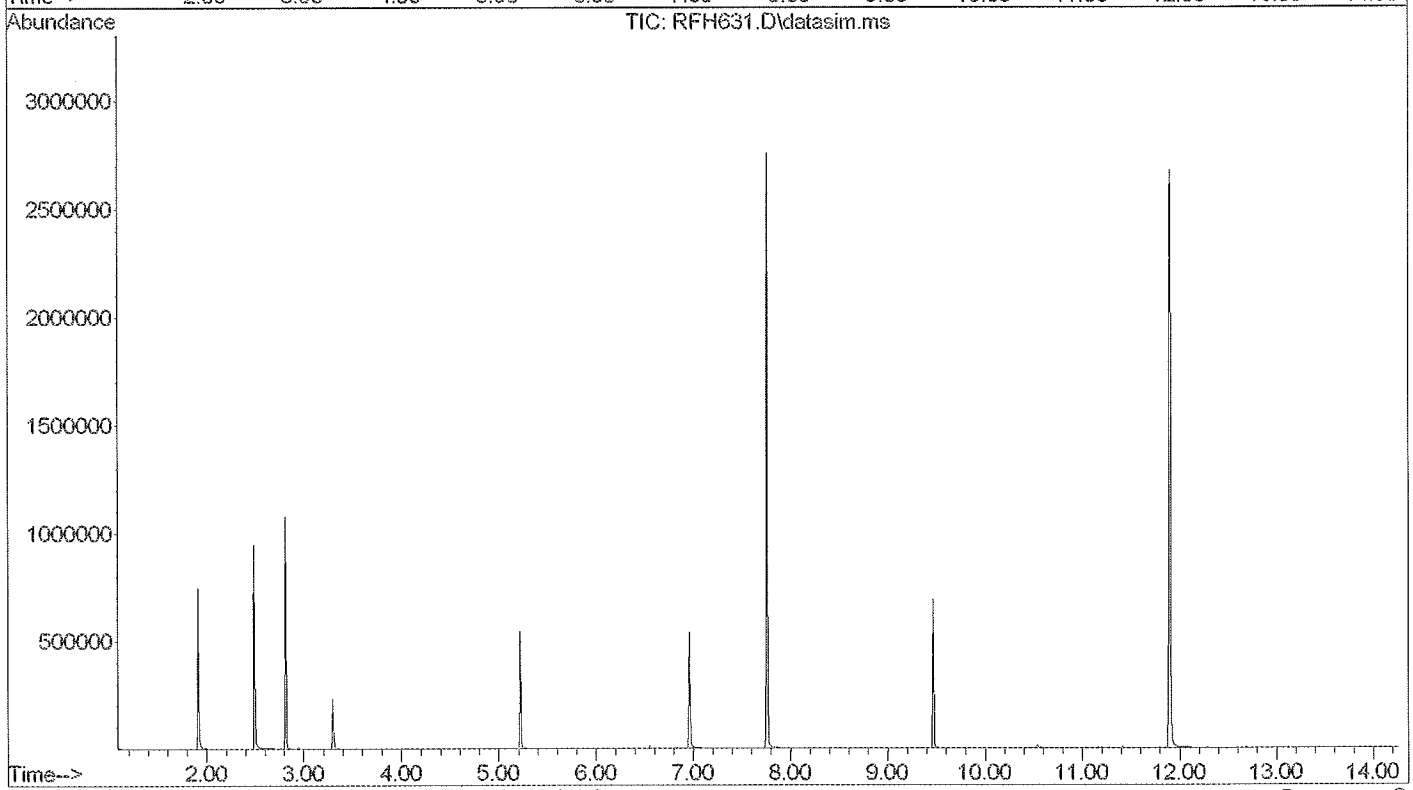
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	385274	40.00	ppm	0.00
21) Naphthalene-d8	4.011	136	1445250	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	806043	40.00	ppm	-0.01
71) Phenanthrene-d10	7.756	188	1756473	40.00	ppm	-0.01
87) Chrysene-d12	10.533	240	2083688	40.00	ppm	-0.01
97) Perylene-d12	11.900	264	1909891	40.00	ppm	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	304694	28.28	ppm	0.00
Spiked Amount 30.000			Recovery =	94.27%		
6) Phenol-d5	2.486	99	398964	28.01	ppm	0.01
Spiked Amount 30.000			Recovery =	93.37%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	128048	8.89	ppm	0.00
Spiked Amount 10.000			Recovery =	88.90%		
46) 2-Fluorobiphenyl	5.219	172	277470	8.04	ppm	-0.01
Spiked Amount 10.000			Recovery =	80.40%		
75) 2,4,6-Tribromophenol	6.963	330	151286	24.80	ppm	0.00
Spiked Amount 30.000			Recovery =	82.67%		
90) Terphenyl-d14	9.466	244	406716	9.00	ppm	-0.01
Spiked Amount 10.000			Recovery =	90.00%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH631.D Vial: 11
Acq On : 29 Jun 2018 15:31 Operator: RZh
Sample : 18F187-02 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:21 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18 16:30
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0402-SO-0	Date Analyzed:	06/29/18 15:50
Lab Samp ID:	18F187-03	Dilution Factor:	1
Lab File ID:	RFH632	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	5.3
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.088	0.18
1,2-Dichlorobenzene	ND	0.35	0.088	0.18
1,3-Dichlorobenzene	ND	0.35	0.088	0.18
1,4-Dichlorobenzene	ND	0.35	0.088	0.18
2,4,5-Trichlorophenol	ND	0.35	0.096	0.18
2,4,6-Trichlorophenol	ND	0.35	0.088	0.18
2,4-Dichlorophenol	ND	0.35	0.088	0.18
2,4-Dimethylphenol	ND	0.35	0.088	0.18
2,4-Dinitrophenol	ND	0.70	0.091	0.18
2,4-Dinitrotoluene	ND	0.35	0.088	0.18
2,6-Dinitrotoluene	ND	0.35	0.088	0.18
2-Chloronaphthalene	ND	0.35	0.088	0.18
2-Chlorophenol	ND	0.35	0.088	0.18
2-Methylnaphthalene	ND	0.35	0.088	0.18
2-Methylphenol	ND	0.35	0.088	0.18
2-Nitroaniline	ND	0.35	0.088	0.18
2-Nitrophenol	ND	0.35	0.088	0.18
3,3'-Dichlorobenzidine	ND	0.35	0.089	0.18
3 & 4-Methylphenol	ND	0.35	0.088	0.18
3-Nitroaniline	ND	0.35	0.088	0.18
4-Bromophenyl phenyl ether	ND	0.35	0.095	0.18
4-Chloro-3-methylphenol	ND	0.35	0.088	0.18
4-Chloroaniline	ND	0.35	0.088	0.18
4-Chlorophenyl phenyl ether	ND	0.35	0.088	0.18
4-Nitroaniline	ND	0.35	0.13	0.18
Acenaphthene	ND	0.35	0.088	0.18
Acenaphthylene	ND	0.35	0.088	0.18
Anthracene	ND	0.35	0.088	0.18
Benzo (a) anthracene	ND	0.35	0.088	0.18
Benzo (a) pyrene	ND	0.35	0.088	0.18
Benzo (b) fluoranthene	ND	0.35	0.091	0.18
Benzo (g,h,i) perylene	ND	0.35	0.092	0.18
Benzo(k)fluoranthene	ND	0.35	0.088	0.18
Benzoic Acid	ND	1.4	0.35	0.70
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.18
bis (2-Chloroethyl) ether	ND	0.35	0.088	0.18
Butyl benzylphthalate	ND	0.35	0.088	0.18
Carbazole	ND	0.35	0.094	0.18
Chrysene	ND	0.35	0.088	0.18
Dibenzo (a,h) anthracene	ND	0.35	0.088	0.18
Dibenzofuran	ND	0.35	0.088	0.18
Diethyl phthalate	ND	0.35	0.088	0.18
Dimethyl phthalate	ND	0.35	0.088	0.18
Di-n-butylphthalate	ND	0.35	0.10	0.18
Di-n-octylphthalate	ND	0.35	0.10	0.18
Fluoranthene	ND	0.35	0.13	0.18
Fluorene	ND	0.35	0.088	0.18
Hexachlorobenzene	ND	0.35	0.088	0.18
Hexachlorobutadiene	ND	0.35	0.088	0.18
Hexachloroethane	ND	0.35	0.088	0.18
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.088	0.18
Isophorone	ND	0.35	0.088	0.18
Naphthalene	ND	0.35	0.088	0.18
Nitrobenzene	ND	0.35	0.088	0.18
N-Nitrosodimethylamine	ND	0.35	0.088	0.18
n-Nitrosodi-n-propylamine	ND	0.35	0.088	0.18
n-Nitrosodiphenylamine	ND	0.35	0.16	0.18
Pentachlorophenol	ND	0.70	0.088	0.18
Phenanthrene	ND	0.35	0.088	0.18
Phenol	ND	0.35	0.088	0.18
Pyrene	ND	0.35	0.17	0.18
Azobenzene	ND	0.35	0.10	0.18
4,6-Dinitro-2-methylphenol	ND	0.70	0.088	0.18
Benzyl Alcohol	ND	0.35	0.088	0.18
bis (2-Chloroisopropyl) ether	ND	0.35	0.088	0.18
bis (2-Chloroethoxy) methane	ND	0.35	0.088	0.18
1,4-Dioxane	ND	0.35	0.088	0.18
4-Nitrophenol	ND	0.70	0.11	0.18

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.43	2.11	68	39-132
2-Fluorobiphenyl	0.469	0.704	67	44-115
2-Fluorophenol	1.57	2.11	74	35-115
Nitrobenzene-d5	0.490	0.704	70	37-122
Phenol-d5	1.66	2.11	79	33-122
Terphenyl-d14	0.559	0.704	79	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.
Sample Amount : 30.03g Final Volume : 2ml
Prepared by : JVille Analyzed by : KVu

Quantitation Report (QT Reviewed)

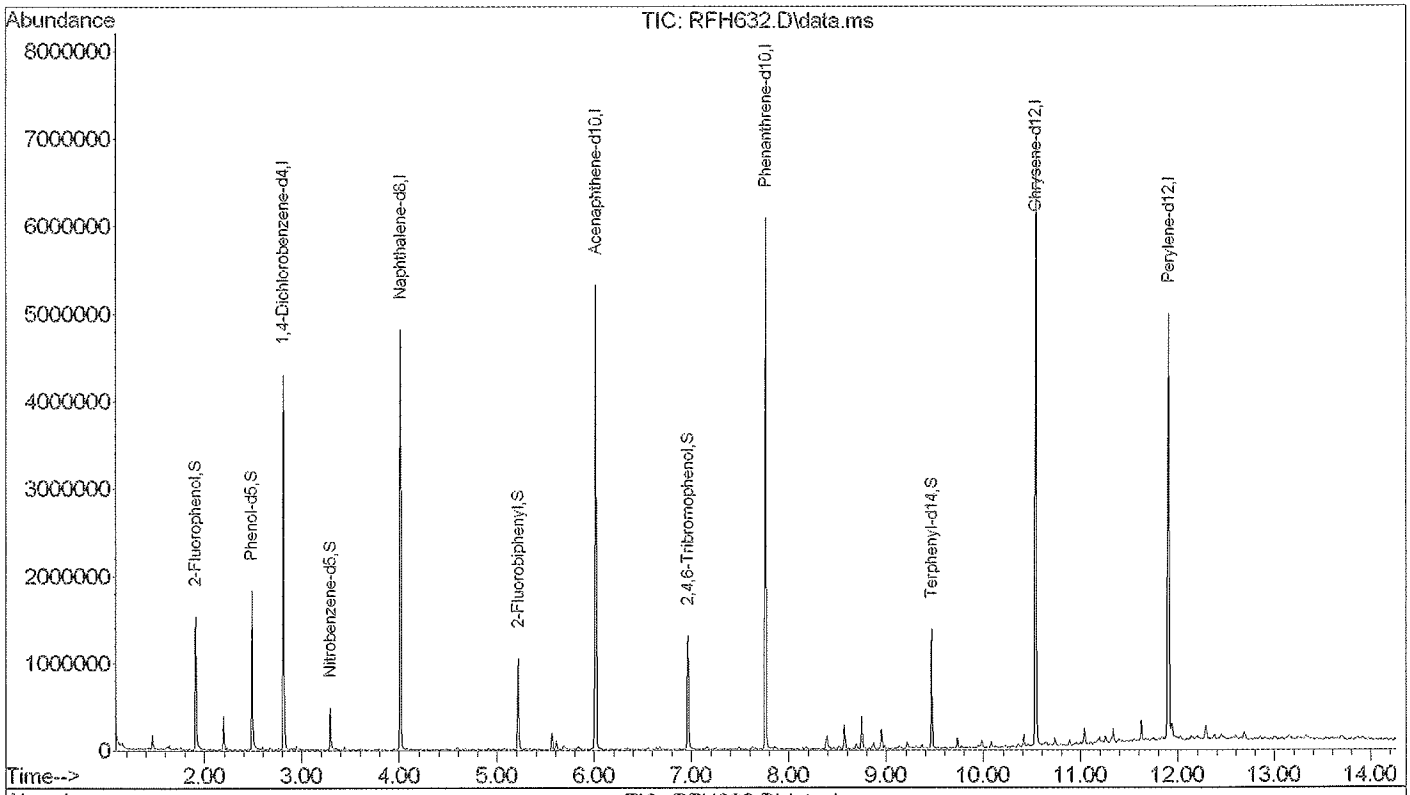
Data File : D:\DATA\18F29\RFH632.D Vial: 12
Acq On : 29 Jun 2018 15:50 Operator: RZh
Sample : 18F187-03 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:25 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

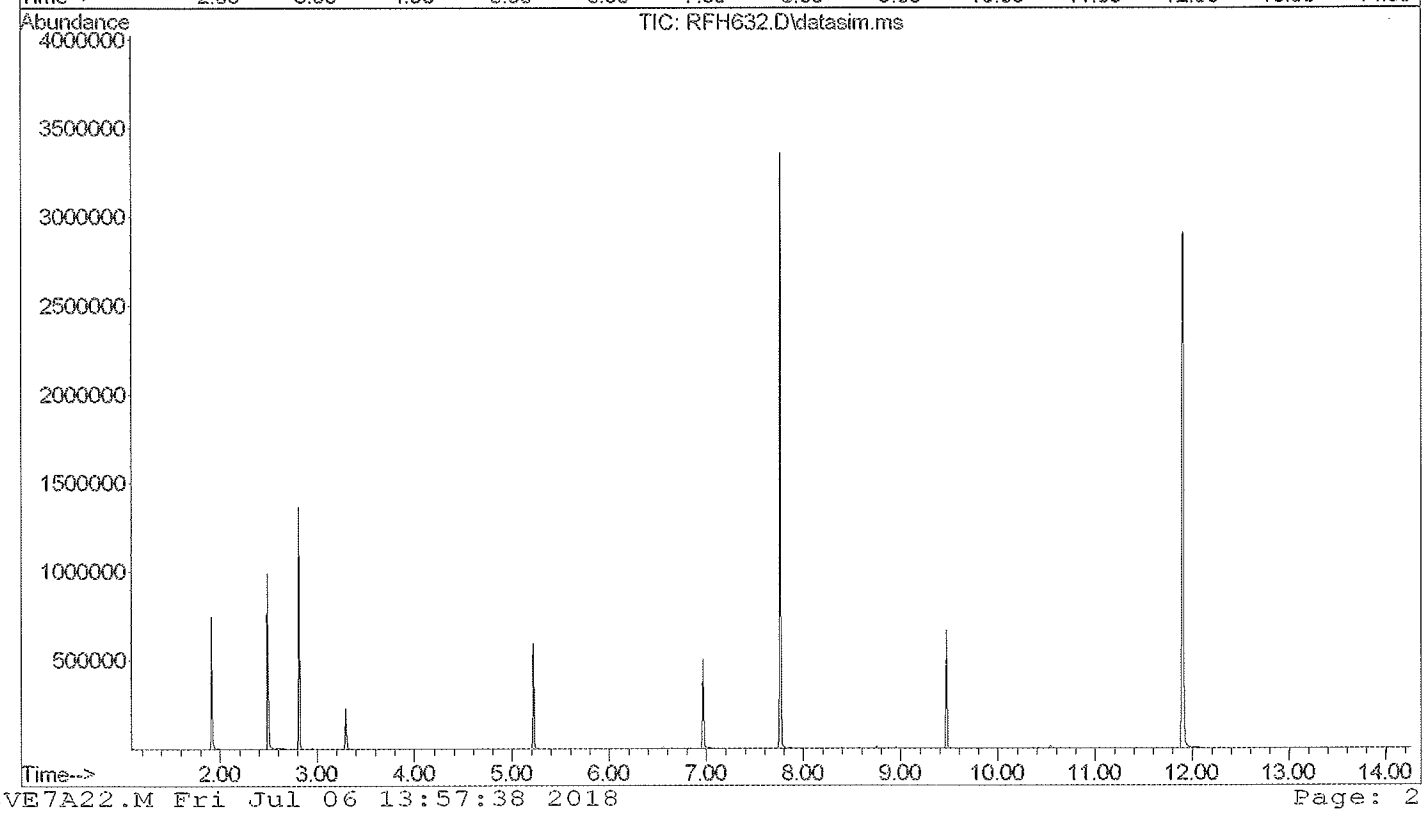
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	479498	40.00	ppm	0.00
21) Naphthalene-d8	4.011	136	1835528	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	1016797	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	2081995	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	2378682	40.00	ppm	0.00
97) Perylene-d12	11.900	264	2099857	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	299806	22.36	ppm	0.00
Spiked Amount 30.000			Recovery =	74.53%		
6) Phenol-d5	2.486	99	418663	23.61	ppm	0.01
Spiked Amount 30.000			Recovery =	78.70%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	127486	6.97	ppm	0.00
Spiked Amount 10.000			Recovery =	69.70%		
46) 2-Fluorobiphenyl	5.219	172	290654	6.67	ppm	-0.01
Spiked Amount 10.000			Recovery =	66.70%		
75) 2,4,6-Tribromophenol	6.963	330	147216	20.36	ppm	0.00
Spiked Amount 30.000			Recovery =	67.87%		
90) Terphenyl-d14	9.466	244	410033	7.95	ppm	-0.01
Spiked Amount 10.000			Recovery =	79.50%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH632.D Vial: 12
Acq On : 29 Jun 2018 15:50 Operator: RZh
Sample : 18F187-03 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:25 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18 18:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0801-SO-0	Date Analyzed:	06/29/18 16:09
Lab Samp ID:	18F187-04	Dilution Factor:	1
Lab File ID:	RFH633	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	8.6
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.36	0.091	0.18
1,2-Dichlorobenzene	ND	0.36	0.091	0.18
1,3-Dichlorobenzene	ND	0.36	0.091	0.18
1,4-Dichlorobenzene	ND	0.36	0.091	0.18
2,4,5-Trichlorophenol	ND	0.36	0.10	0.18
2,4,6-Trichlorophenol	ND	0.36	0.091	0.18
2,4-Dichlorophenol	ND	0.36	0.091	0.18
2,4-Dimethylphenol	ND	0.36	0.091	0.18
2,4-Dinitrophenol	ND	0.73	0.094	0.18
2,4-Dinitrotoluene	ND	0.36	0.091	0.18
2,6-Dinitrotoluene	ND	0.36	0.091	0.18
2-Chloronaphthalene	ND	0.36	0.091	0.18
2-Chlorophenol	ND	0.36	0.091	0.18
2-Methylnaphthalene	ND	0.36	0.091	0.18
2-Methylphenol	ND	0.36	0.091	0.18
2-Nitroaniline	ND	0.36	0.091	0.18
2-Nitrophenol	ND	0.36	0.091	0.18
3,3'-Dichlorobenzidine	ND	0.36	0.092	0.18
3 & 4-Methylphenol	ND	0.36	0.091	0.18
3-Nitroaniline	ND	0.36	0.091	0.18
4-Bromophenyl phenyl ether	ND	0.36	0.098	0.18
4-Chloro-3-methylphenol	ND	0.36	0.091	0.18
4-Chloroaniline	ND	0.36	0.091	0.18
4-Chlorophenyl phenyl ether	ND	0.36	0.091	0.18
4-Nitroaniline	ND	0.36	0.13	0.18
Acenaphthene	ND	0.36	0.091	0.18
Acenaphthylene	ND	0.36	0.091	0.18
Anthracene	ND	0.36	0.091	0.18
Benzo (a) anthracene	ND	0.36	0.091	0.18
Benzo (a) pyrene	ND	0.36	0.091	0.18
Benzo (b) fluoranthene	ND	0.36	0.094	0.18
Benzo (g,h,i) perylene	ND	0.36	0.095	0.18
Benzo(k)fluoranthene	ND	0.36	0.091	0.18
Benzoic Acid	ND	1.5	0.36	0.73
bis (2-Ethylhexyl) phthalate	ND	0.36	0.13	0.18
bis (2-Chloroethyl) ether	ND	0.36	0.091	0.18
Butyl benzylphthalate	ND	0.36	0.091	0.18
Carbazole	ND	0.36	0.097	0.18
Chrysene	ND	0.36	0.091	0.18
Dibenzo (a,h) anthracene	ND	0.36	0.091	0.18
Dibenzofuran	ND	0.36	0.091	0.18
Diethyl phthalate	ND	0.36	0.091	0.18
Dimethyl phthalate	ND	0.36	0.091	0.18
Di-n-butylphthalate	ND	0.36	0.11	0.18
Di-n-octylphthalate	ND	0.36	0.11	0.18
Fluoranthene	ND	0.36	0.14	0.18
Fluorene	ND	0.36	0.091	0.18
Hexachlorobenzene	ND	0.36	0.091	0.18
Hexachlorobutadiene	ND	0.36	0.091	0.18
Hexachloroethane	ND	0.36	0.091	0.18
Indeno (1,2,3-c,d) pyrene	ND	0.36	0.091	0.18
Isophorone	ND	0.36	0.091	0.18
Naphthalene	ND	0.36	0.091	0.18
Nitrobenzene	ND	0.36	0.091	0.18
N-Nitrosodimethylamine	ND	0.36	0.091	0.18
n-Nitrosodi-n-propylamine	ND	0.36	0.091	0.18
n-Nitrosodiphenylamine	ND	0.36	0.17	0.18
Pentachlorophenol	ND	0.73	0.091	0.18
Phenanthrene	ND	0.36	0.091	0.18
Phenol	ND	0.36	0.091	0.18
Pyrene	ND	0.36	0.18	0.18
Azobenzene	ND	0.36	0.11	0.18
4,6-Dinitro-2-methylphenol	ND	0.73	0.091	0.18
Benzyl Alcohol	ND	0.36	0.091	0.18
bis (2-Chloroisopropyl) ether	ND	0.36	0.091	0.18
bis (2-Chloroethoxy) methane	ND	0.36	0.091	0.18
1,4-Dioxane	ND	0.36	0.091	0.18
4-Nitrophenol	ND	0.73	0.12	0.18

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.50	2.19	69	39-132
2-Fluorobiphenyl	0.425	0.729	58	44-115
2-Fluorophenol	1.22	2.19	56	35-115
Nitrobenzene-d5	0.437	0.729	60	37-122
Phenol-d5	1.33	2.19	61	33-122
Terphenyl-d14	0.602	0.729	83	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.
Sample Amount : 30.01g Final Volume : 2ml
Prepared by : JVille Analyzed by : KVu

Quantitation Report (QT Reviewed)

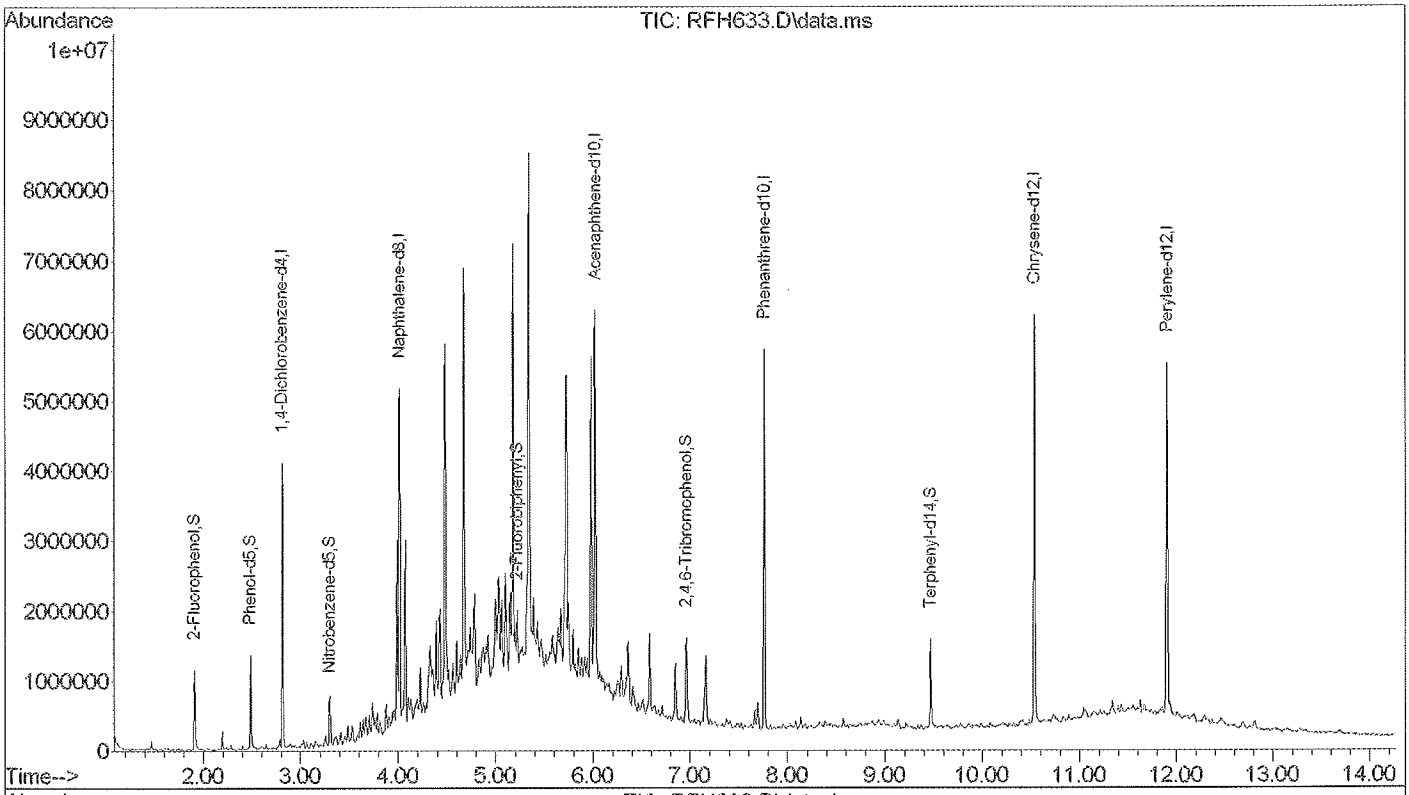
Data File : D:\DATA\18F29\RFH633.D Vial: 13
Acq On : 29 Jun 2018 16:09 Operator: RZh
Sample : 18F187-04 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:58:05 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

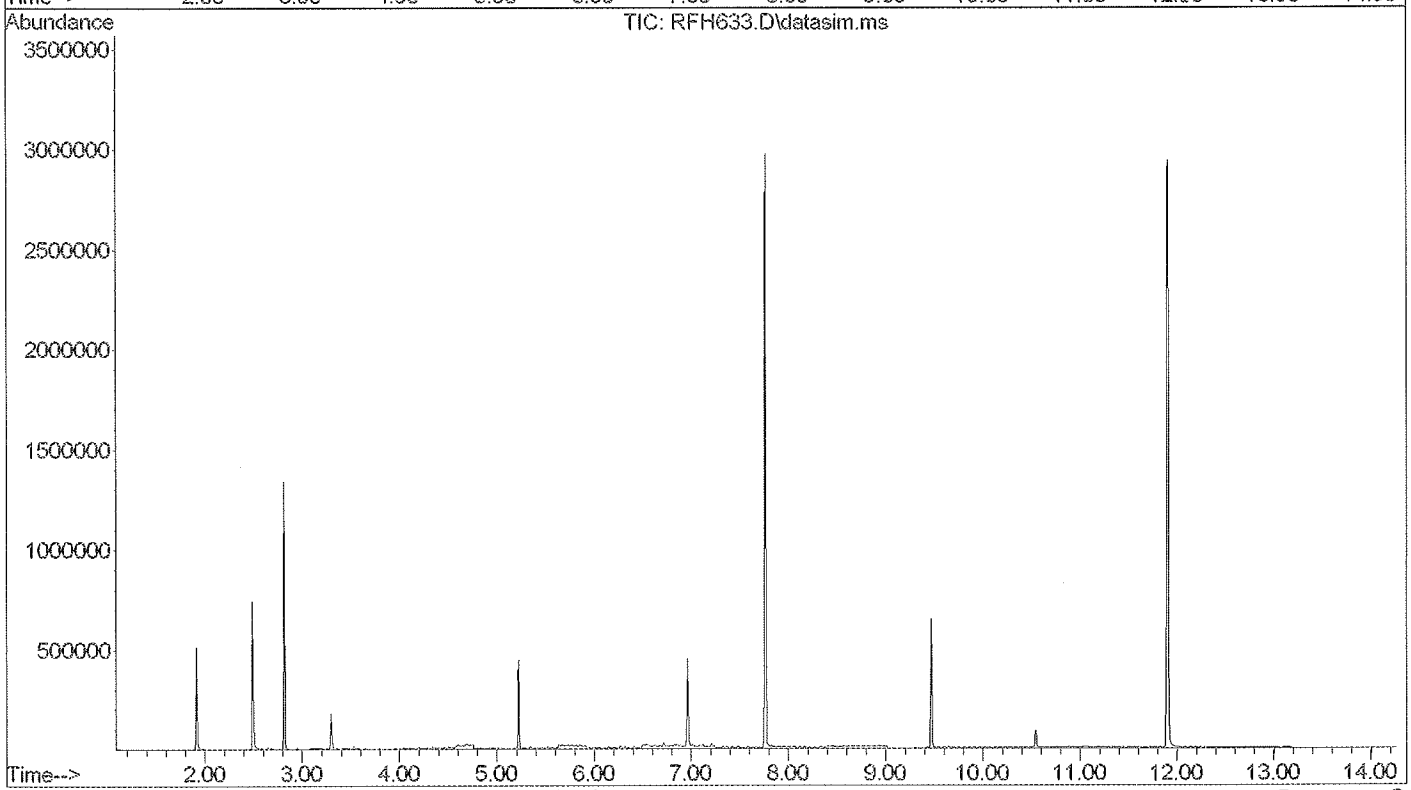
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	471818	40.00	ppm	0.00
21) Naphthalene-d8	4.016	136	1675652	40.00	ppm	0.00
41) Acenaphthene-d10	6.018	164	924842	40.00	ppm	0.00
71) Phenanthrene-d10	7.761	188	1849682	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	2074841	40.00	ppm	0.00
97) Perylene-d12	11.900	264	2059359	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	220715	16.73	ppm	0.00
Spiked Amount 30.000			Recovery =	55.77%		
6) Phenol-d5	2.486	99	318621	18.26	ppm	0.01
Spiked Amount 30.000			Recovery =	60.87%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	100036	5.99	ppm	0.00
Spiked Amount 10.000			Recovery =	59.90%		
46) 2-Fluorobiphenyl	5.220	172	231017	5.83	ppm	-0.01
Spiked Amount 10.000			Recovery =	58.30%		
75) 2,4,6-Tribromophenol	6.963	330	132214	20.58	ppm	0.00
Spiked Amount 30.000			Recovery =	68.60%		
90) Terphenyl-d14	9.466	244	371466	8.25	ppm	-0.01
Spiked Amount 10.000			Recovery =	82.50%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH633.D Vial: 13
Acq On : 29 Jun 2018 16:09 Operator: RZh
Sample : 18F187-04 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:58:05 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/21/18 19:45
Project	: JBER T0075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0802-SO-0	Date Analyzed:	06/29/18 16:28
Lab Samp ID:	18F187-05	Dilution Factor:	1
Lab File ID:	RFH634	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	4.9
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.087	0.18
1,2-Dichlorobenzene	ND	0.35	0.087	0.18
1,3-Dichlorobenzene	ND	0.35	0.087	0.18
1,4-Dichlorobenzene	ND	0.35	0.087	0.18
2,4,5-Trichlorophenol	ND	0.35	0.096	0.18
2,4,6-Trichlorophenol	ND	0.35	0.087	0.18
2,4-Dichlorophenol	ND	0.35	0.087	0.18
2,4-Dimethylphenol	ND	0.35	0.087	0.18
2,4-Dinitrophenol	ND	0.70	0.090	0.18
2,4-Dinitrotoluene	ND	0.35	0.087	0.18
2,6-Dinitrotoluene	ND	0.35	0.087	0.18
2-Chloronaphthalene	ND	0.35	0.087	0.18
2-Chlorophenol	ND	0.35	0.087	0.18
2-Methylnaphthalene	ND	0.35	0.087	0.18
2-Methylphenol	ND	0.35	0.087	0.18
2-Nitroaniline	ND	0.35	0.087	0.18
2-Nitrophenol	ND	0.35	0.087	0.18
3,3'-Dichlorobenzidine	ND	0.35	0.088	0.18
3 & 4-Methylphenol	ND	0.35	0.087	0.18
3-Nitroaniline	ND	0.35	0.087	0.18
4-Bromophenyl phenyl ether	ND	0.35	0.095	0.18
4-Chloro-3-methylphenol	ND	0.35	0.087	0.18
4-Chloroaniline	ND	0.35	0.087	0.18
4-Chlorophenyl phenyl ether	ND	0.35	0.087	0.18
4-Nitroaniline	ND	0.35	0.13	0.18
Acenaphthene	ND	0.35	0.087	0.18
Acenaphthylene	ND	0.35	0.087	0.18
Anthracene	ND	0.35	0.087	0.18
Benzo (a) anthracene	ND	0.35	0.087	0.18
Benzo (a) pyrene	ND	0.35	0.087	0.18
Benzo (b) fluoranthene	ND	0.35	0.090	0.18
Benzo (g,h,i) perylene	ND	0.35	0.091	0.18
Benzo(k)fluoranthene	ND	0.35	0.087	0.18
Benzoic Acid	ND	1.4	0.35	0.70
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.18
bis (2-Chloroethyl) ether	ND	0.35	0.087	0.18
Butyl benzylphthalate	ND	0.35	0.087	0.18
Carbazole	ND	0.35	0.094	0.18
Chrysene	ND	0.35	0.087	0.18
Dibenzo (a,h) anthracene	ND	0.35	0.087	0.18
Dibenzofuran	ND	0.35	0.087	0.18
Diethyl phthalate	ND	0.35	0.087	0.18
Dimethyl phthalate	ND	0.35	0.087	0.18
Di-n-butylphthalate	ND	0.35	0.10	0.18
Di-n-octylphthalate	ND	0.35	0.10	0.18
Fluoranthene	ND	0.35	0.13	0.18
Fluorene	ND	0.35	0.087	0.18
Hexachlorobenzene	ND	0.35	0.087	0.18
Hexachlorobutadiene	ND	0.35	0.087	0.18
Hexachloroethane	ND	0.35	0.087	0.18
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.087	0.18
Isophorone	ND	0.35	0.087	0.18
Naphthalene	ND	0.35	0.087	0.18
Nitrobenzene	ND	0.35	0.087	0.18
N-Nitrosodimethylamine	ND	0.35	0.087	0.18
n-Nitrosodi-n-propylamine	ND	0.35	0.087	0.18
n-Nitrosodiphenylamine	ND	0.35	0.16	0.18
Pentachlorophenol	ND	0.70	0.087	0.18
Phenanthrene	ND	0.35	0.087	0.18
Phenol	ND	0.35	0.087	0.18
Pyrene	ND	0.35	0.17	0.18
Azobenzene	ND	0.35	0.10	0.18
4,6-Dinitro-2-methylphenol	ND	0.70	0.087	0.18
Benzyl Alcohol	ND	0.35	0.087	0.18
bis (2-Chloroisopropyl) ether	ND	0.35	0.087	0.18
bis (2-Chloroethoxy) methane	ND	0.35	0.087	0.18
1,4-Dioxane	ND	0.35	0.087	0.18
4-Nitrophenol	ND	0.70	0.11	0.18

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.54	2.10	73	39-132
2-Fluorobiphenyl	0.541	0.701	77	44-115
2-Fluorophenol	1.66	2.10	79	35-115
Nitrobenzene-d5	0.603	0.701	86	37-122
Phenol-d5	1.79	2.10	85	33-122
Terphenyl-d14	0.667	0.701	95	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30.02g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

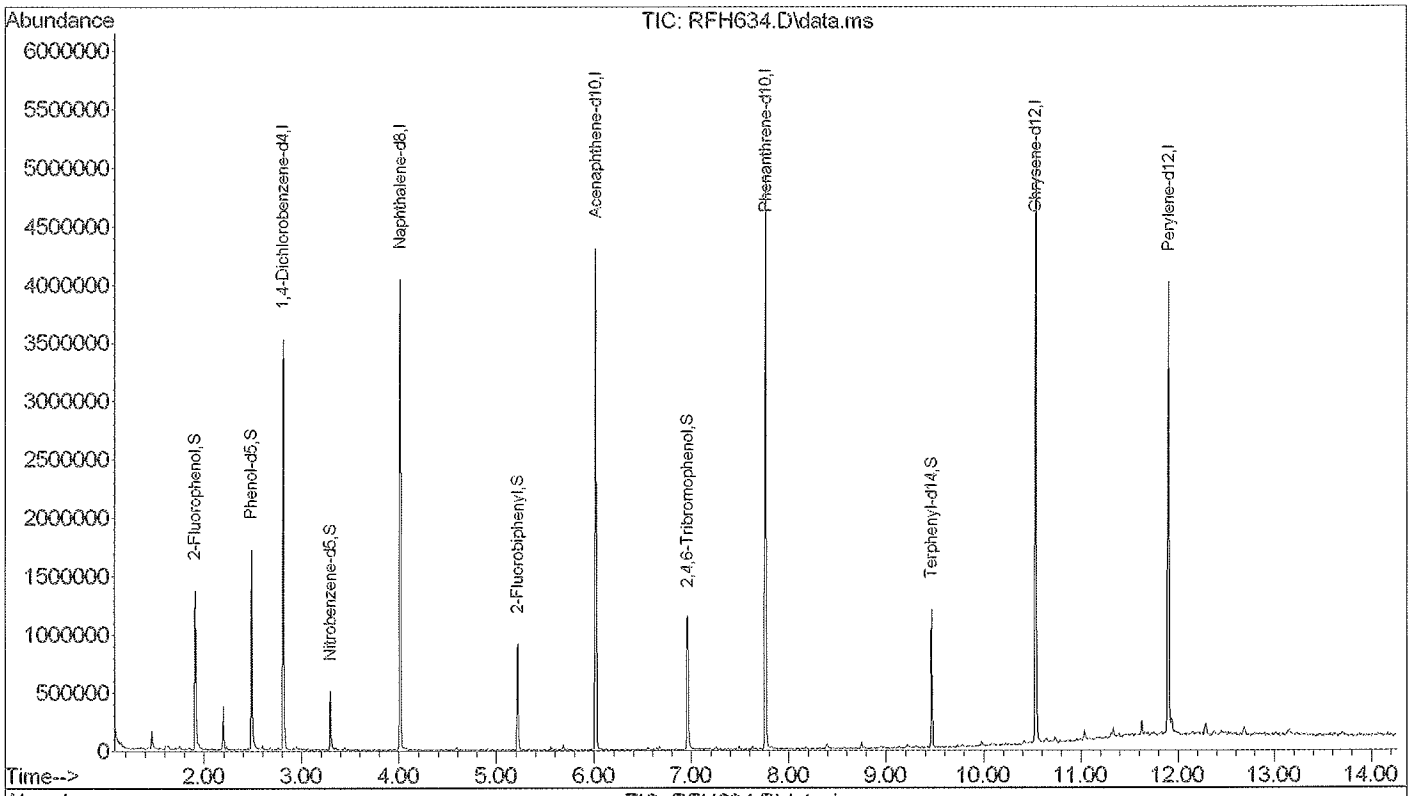
Data File : D:\DATA\18F29\RFH634.D Vial: 14
Acq On : 29 Jun 2018 16:28 Operator: RZh
Sample : 18F187-05 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:34 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

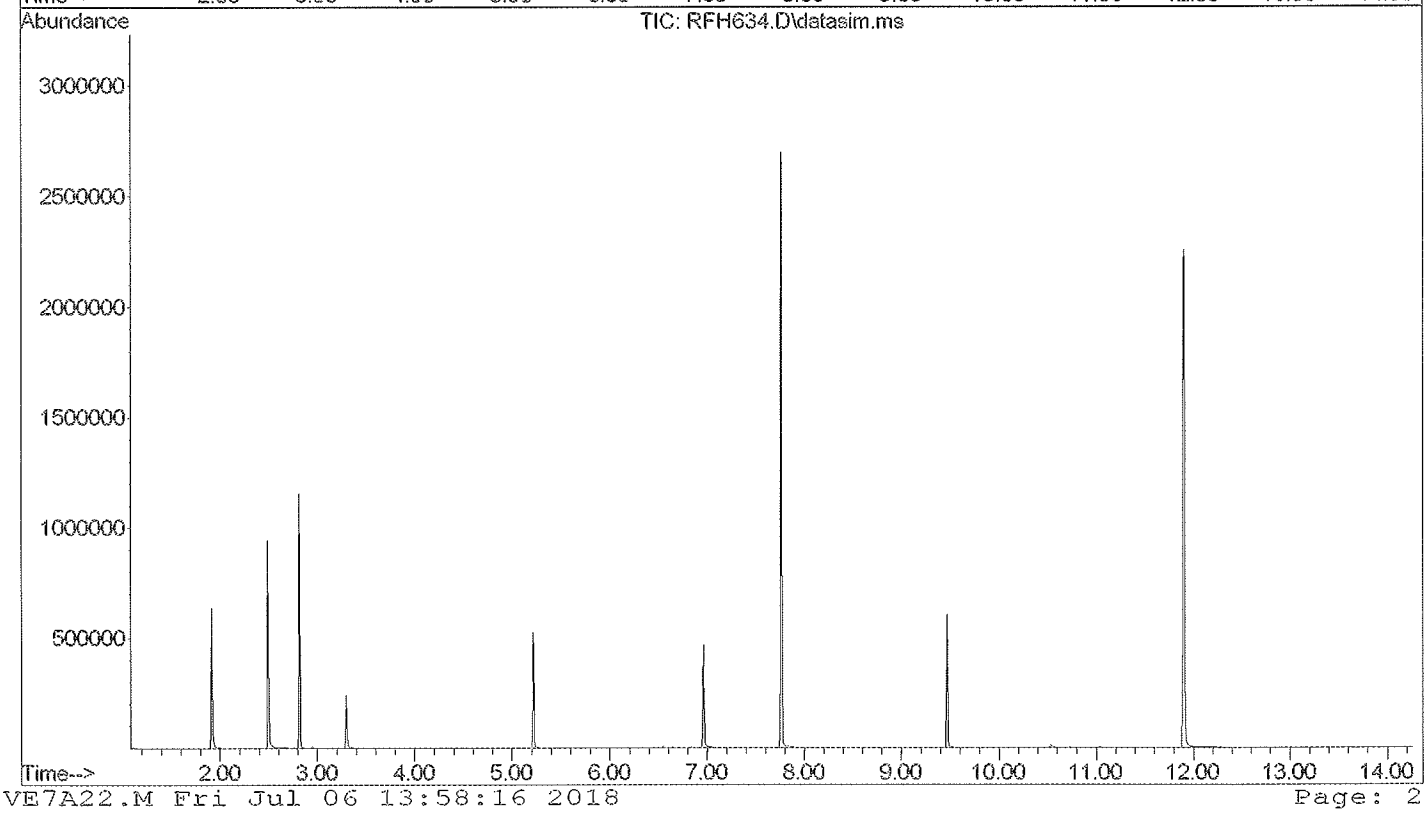
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	433444	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1542001	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	825129	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1789137	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	1766406	40.00	ppm	-0.01
97) Perylene-d12	11.900	264	1587776	40.00	ppm	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	287774	23.74	ppm	0.00
Spiked Amount 30.000			Recovery =	79.13%		
6) Phenol-d5	2.486	99	408782	25.51	ppm	0.01
Spiked Amount 30.000			Recovery =	85.03%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	132192	8.60	ppm	0.00
Spiked Amount 10.000			Recovery =	86.00%		
46) 2-Fluorobiphenyl	5.220	172	273006	7.72	ppm	-0.01
Spiked Amount 10.000			Recovery =	77.20%		
75) 2,4,6-Tribromophenol	6.963	330	136783	22.02	ppm	0.00
Spiked Amount 30.000			Recovery =	73.40%		
90) Terphenyl-d14	9.466	244	364940	9.52	ppm	-0.01
Spiked Amount 10.000			Recovery =	95.20%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH634.D Vial: 14
Acq On : 29 Jun 2018 16:28 Operator: RZh
Sample : 18F187-05 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:34 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18 11:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0501-SO-0	Date Analyzed:	06/29/18 16:47
Lab Samp ID:	18F187-07	Dilution Factor:	1
Lab File ID:	RFH635	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	3.9
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.086	0.17
1,2-Dichlorobenzene	ND	0.35	0.086	0.17
1,3-Dichlorobenzene	ND	0.35	0.086	0.17
1,4-Dichlorobenzene	ND	0.35	0.086	0.17
2,4,5-Trichlorophenol	ND	0.35	0.095	0.17
2,4,6-Trichlorophenol	ND	0.35	0.086	0.17
2,4-Dichlorophenol	ND	0.35	0.086	0.17
2,4-Dimethylphenol	ND	0.35	0.086	0.17
2,4-Dinitrophenol	ND	0.69	0.089	0.17
2,4-Dinitrotoluene	ND	0.35	0.086	0.17
2,6-Dinitrotoluene	ND	0.35	0.086	0.17
2-Chloronaphthalene	ND	0.35	0.086	0.17
2-Chlorophenol	ND	0.35	0.086	0.17
2-Methylnaphthalene	ND	0.35	0.086	0.17
2-Methylphenol	ND	0.35	0.086	0.17
2-Nitroaniline	ND	0.35	0.086	0.17
2-Nitrophenol	ND	0.35	0.086	0.17
3,3'-Dichlorobenzidine	ND	0.35	0.087	0.17
3 & 4-Methylphenol	ND	0.35	0.086	0.17
3-Nitroaniline	ND	0.35	0.086	0.17
4-Bromophenyl phenyl ether	ND	0.35	0.094	0.17
4-Chloro-3-methylphenol	ND	0.35	0.086	0.17
4-Chloroaniline	ND	0.35	0.086	0.17
4-Chlorophenyl phenyl ether	ND	0.35	0.086	0.17
4-Nitroaniline	ND	0.35	0.12	0.17
Acenaphthene	ND	0.35	0.086	0.17
Acenaphthylene	ND	0.35	0.086	0.17
Anthracene	ND	0.35	0.086	0.17
Benzo (a) anthracene	ND	0.35	0.086	0.17
Benzo (a) pyrene	ND	0.35	0.086	0.17
Benzo (b) fluoranthene	ND	0.35	0.089	0.17
Benzo (g,h,i) perylene	ND	0.35	0.091	0.17
Benzo(k)fluoranthene	ND	0.35	0.086	0.17
Benzoic Acid	ND	1.4	0.35	0.69
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.17
bis (2-Chloroethyl) ether	ND	0.35	0.086	0.17
Butyl benzylphthalate	ND	0.35	0.086	0.17
Carbazole	ND	0.35	0.093	0.17
Chrysene	ND	0.35	0.086	0.17
Dibenzo (a,h) anthracene	ND	0.35	0.086	0.17
Dibenzofuran	ND	0.35	0.086	0.17
Diethyl phthalate	ND	0.35	0.086	0.17
Dimethyl phthalate	ND	0.35	0.086	0.17
Di-n-butylphthalate	ND	0.35	0.10	0.17
Di-n-octylphthalate	ND	0.35	0.10	0.17
Fluoranthene	ND	0.35	0.13	0.17
Fluorene	ND	0.35	0.086	0.17
Hexachlorobenzene	ND	0.35	0.086	0.17
Hexachlorobutadiene	ND	0.35	0.086	0.17
Hexachloroethane	ND	0.35	0.086	0.17
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.086	0.17
Isophorone	ND	0.35	0.086	0.17
Naphthalene	ND	0.35	0.086	0.17
Nitrobenzene	ND	0.35	0.086	0.17
N-Nitrosodimethylamine	ND	0.35	0.086	0.17
n-Nitrosodi-n-propylamine	ND	0.35	0.086	0.17
n-Nitrosodiphenylamine	ND	0.35	0.16	0.17
Pentachlorophenol	ND	0.69	0.086	0.17
Phenanthrene	ND	0.35	0.086	0.17
Phenol	ND	0.35	0.086	0.17
Pyrene	ND	0.35	0.17	0.17
Azobenzene	ND	0.35	0.10	0.17
4,6-Dinitro-2-methylphenol	ND	0.69	0.086	0.17
Benzyl Alcohol	ND	0.35	0.086	0.17
bis (2-Chloroisopropyl) ether	ND	0.35	0.086	0.17
bis (2-Chloroethoxy) methane	ND	0.35	0.086	0.17
1,4-Dioxane	ND	0.35	0.086	0.17
4-Nitrophenol	ND	0.69	0.11	0.17

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.42	2.08	68	39-132
2-Fluorobiphenyl	0.504	0.694	73	44-115
2-Fluorophenol	1.59	2.08	76	35-115
Nitrobenzene-d5	0.494	0.694	71	37-122
Phenol-d5	1.72	2.08	83	33-122
Terphenyl-d14	0.576	0.694	83	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.
Sample Amount : 30g
Prepared by : JVille
Final Volume : 2ml
Analyzed by : KVu

Quantitation Report (QT Reviewed)

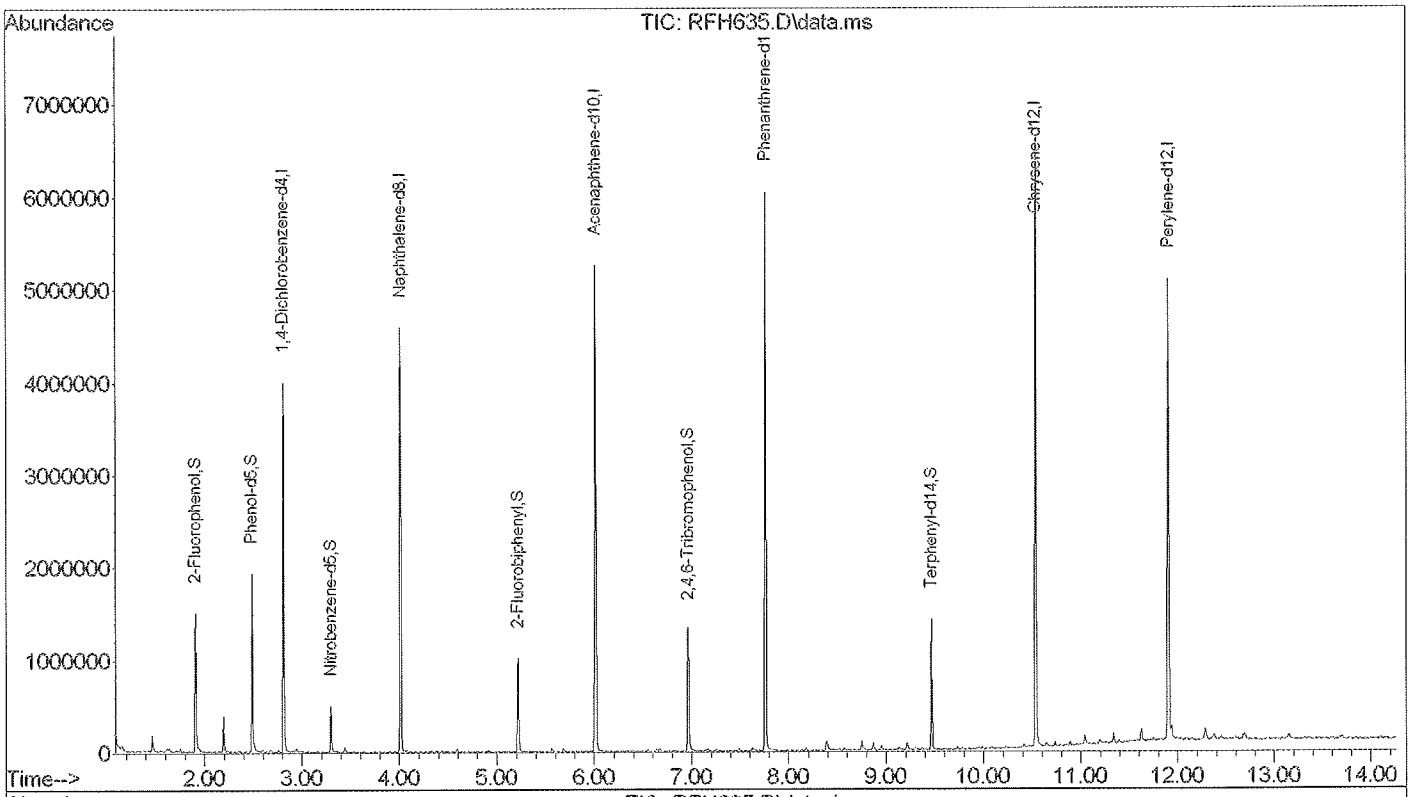
Data File : D:\DATA\18F29\RFH635.D Vial: 15
Acq On : 29 Jun 2018 16:47 Operator: RZh
Sample : 18F187-07 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:39 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

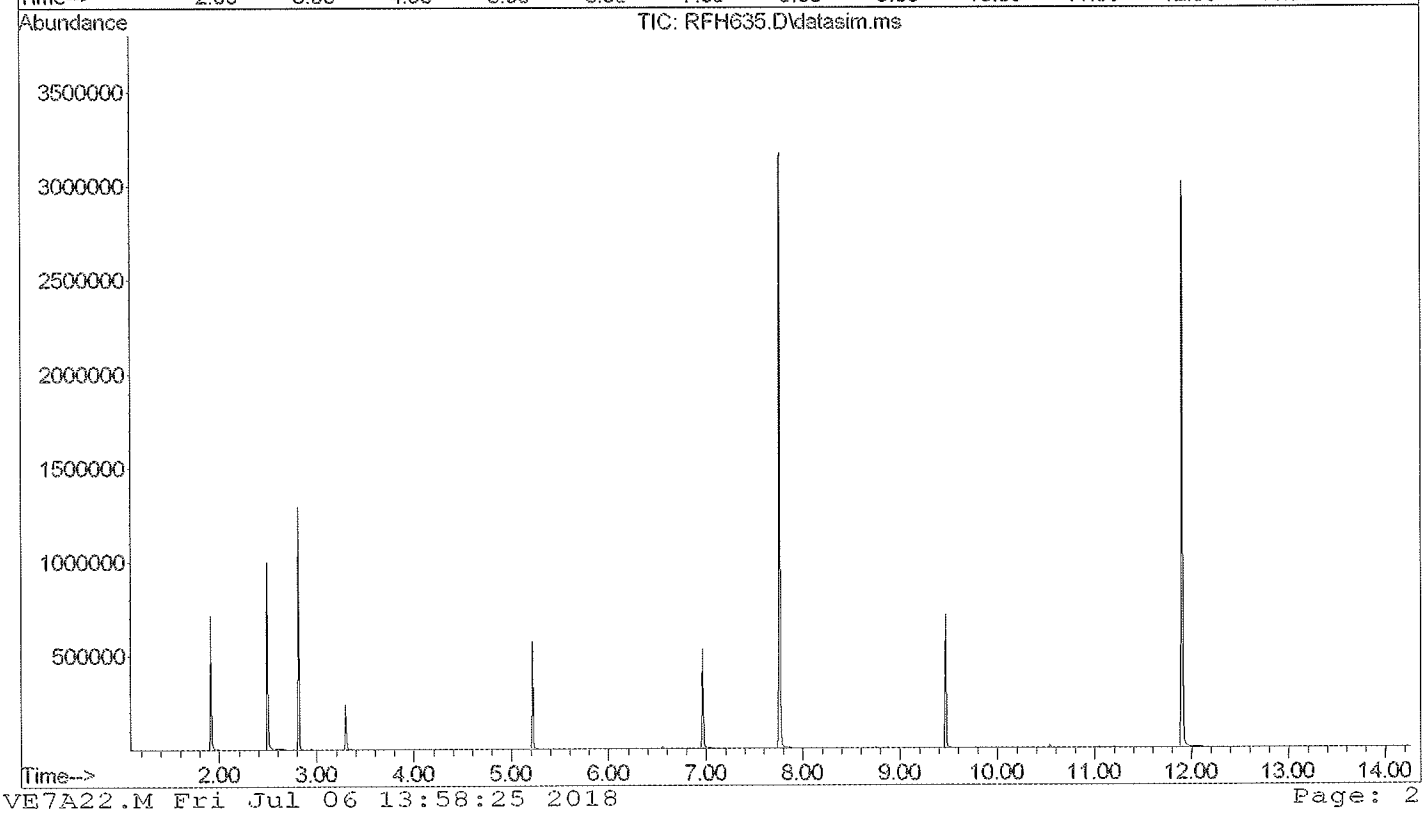
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	451828	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1704381	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	1013950	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	2176086	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	2281099	40.00	ppm	-0.01
97) Perylene-d12	11.900	264	2077275	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	288984	22.87	ppm	0.00
Spiked Amount 30.000			Recovery =	76.23%		
6) Phenol-d5	2.486	99	414399	24.80	ppm	0.01
Spiked Amount 30.000			Recovery =	82.67%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	120990	7.12	ppm	0.00
Spiked Amount 10.000			Recovery =	71.20%		
46) 2-Fluorobiphenyl	5.220	172	315817	7.27	ppm	-0.01
Spiked Amount 10.000			Recovery =	72.70%		
75) 2,4,6-Tribromophenol	6.963	330	154207	20.41	ppm	0.00
Spiked Amount 30.000			Recovery =	68.03%		
90) Terphenyl-d14	9.466	244	410945	8.30	ppm	-0.01
Spiked Amount 10.000			Recovery =	83.00%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH635.D Vial: 15
Acq On : 29 Jun 2018 16:47 Operator: RZh
Sample : 18F187-07 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:39 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18 12:30
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0502-SO-0	Date Analyzed:	06/29/18 17:06
Lab Samp ID:	18F187-08	Dilution Factor:	1
Lab File ID:	RFH636	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	3.5
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.086	0.17
1,2-Dichlorobenzene	ND	0.35	0.086	0.17
1,3-Dichlorobenzene	ND	0.35	0.086	0.17
1,4-Dichlorobenzene	ND	0.35	0.086	0.17
2,4,5-Trichlorophenol	ND	0.35	0.094	0.17
2,4,6-Trichlorophenol	ND	0.35	0.086	0.17
2,4-Dichlorophenol	ND	0.35	0.086	0.17
2,4-Dimethylphenol	ND	0.35	0.086	0.17
2,4-Dinitrophenol	ND	0.69	0.089	0.17
2,4-Dinitrotoluene	ND	0.35	0.086	0.17
2,6-Dinitrotoluene	ND	0.35	0.086	0.17
2-Chloronaphthalene	ND	0.35	0.086	0.17
2-Chlorophenol	ND	0.35	0.086	0.17
2-Methylnaphthalene	ND	0.35	0.086	0.17
2-Methylphenol	ND	0.35	0.086	0.17
2-Nitroaniline	ND	0.35	0.086	0.17
2-Nitrophenol	ND	0.35	0.086	0.17
3,3'-Dichlorobenzidine	ND	0.35	0.087	0.17
3 & 4-Methylphenol	ND	0.35	0.086	0.17
3-Nitroaniline	ND	0.35	0.086	0.17
4-Bromophenyl phenyl ether	ND	0.35	0.093	0.17
4-Chloro-3-methylphenol	ND	0.35	0.086	0.17
4-Chloroaniline	ND	0.35	0.086	0.17
4-Chlorophenyl phenyl ether	ND	0.35	0.086	0.17
4-Nitroaniline	ND	0.35	0.12	0.17
Acenaphthene	ND	0.35	0.086	0.17
Acenaphthylene	ND	0.35	0.086	0.17
Anthracene	ND	0.35	0.086	0.17
Benzo (a) anthracene	ND	0.35	0.086	0.17
Benzo (a) pyrene	ND	0.35	0.086	0.17
Benzo (b) fluoranthene	ND	0.35	0.089	0.17
Benzo (g,h,i) perylene	ND	0.35	0.090	0.17
Benzo(k)fluoranthene	ND	0.35	0.086	0.17
Benzoic Acid	ND	1.4	0.35	0.69
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.17
bis (2-Chloroethyl) ether	ND	0.35	0.086	0.17
Butyl benzylphthalate	ND	0.35	0.086	0.17
Carbazole	ND	0.35	0.092	0.17
Chrysene	ND	0.35	0.086	0.17
Dibenzo (a,h) anthracene	ND	0.35	0.086	0.17
Dibenzofuran	ND	0.35	0.086	0.17
Diethyl phthalate	ND	0.35	0.086	0.17
Dimethyl phthalate	ND	0.35	0.086	0.17
Di-n-butylphthalate	ND	0.35	0.10	0.17
Di-n-octylphthalate	ND	0.35	0.10	0.17
Fluoranthene	ND	0.35	0.13	0.17
Fluorene	ND	0.35	0.086	0.17
Hexachlorobenzene	ND	0.35	0.086	0.17
Hexachlorobutadiene	ND	0.35	0.086	0.17
Hexachloroethane	ND	0.35	0.086	0.17
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.086	0.17
Isophorone	ND	0.35	0.086	0.17
Naphthalene	ND	0.35	0.086	0.17
Nitrobenzene	ND	0.35	0.086	0.17
N-Nitrosodimethylamine	ND	0.35	0.086	0.17
n-Nitrosodi-n-propylamine	ND	0.35	0.086	0.17
n-Nitrosodiphenylamine	ND	0.35	0.16	0.17
Pentachlorophenol	ND	0.69	0.086	0.17
Phenanthrene	ND	0.35	0.086	0.17
Phenol	ND	0.35	0.086	0.17
Pyrene	ND	0.35	0.17	0.17
Azobenzene	ND	0.35	0.099	0.17
4,6-Dinitro-2-methylphenol	ND	0.69	0.086	0.17
Benzyl Alcohol	ND	0.35	0.086	0.17
bis (2-Chloroisopropyl) ether	ND	0.35	0.086	0.17
bis (2-Chloroethoxy) methane	ND	0.35	0.086	0.17
1,4-Dioxane	ND	0.35	0.086	0.17
4-Nitrophenol	ND	0.69	0.11	0.17

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.34	2.07	65	39-132
2-Fluorobiphenyl	0.504	0.691	73	44-115
2-Fluorophenol	1.68	2.07	81	35-115
Nitrobenzene-d5	0.502	0.691	73	37-122
Phenol-d5	1.78	2.07	86	33-122
Terphenyl-d14	0.556	0.691	81	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.
Sample Amount : 30.02g
Prepared by : JVille
Final Volume : 2ml
Analyzed by : KVu

Quantitation Report (QT Reviewed)

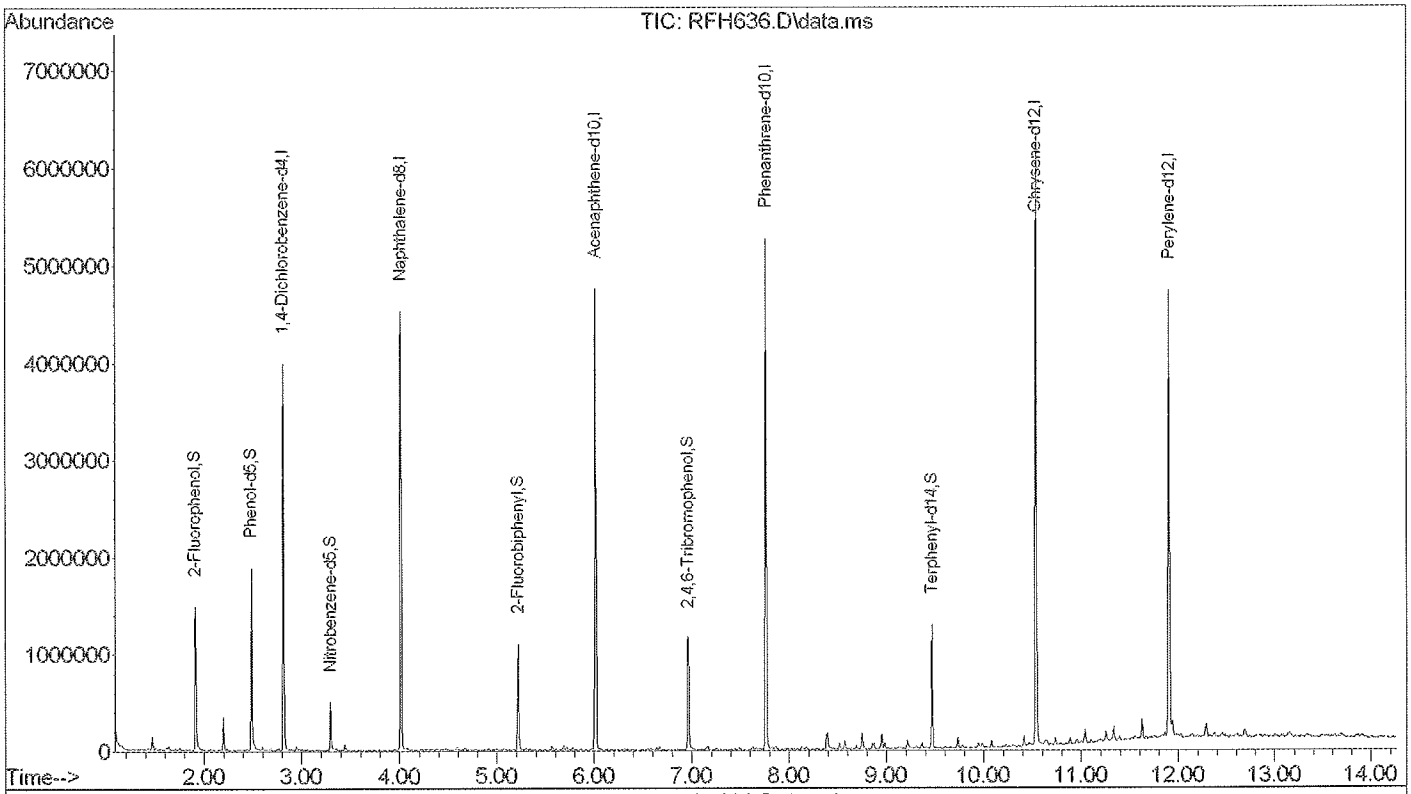
Data File : D:\DATA\18F29\RFH636.D Vial: 16
Acq On : 29 Jun 2018 17:06 Operator: RZh
Sample : 18F187-08 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:44 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

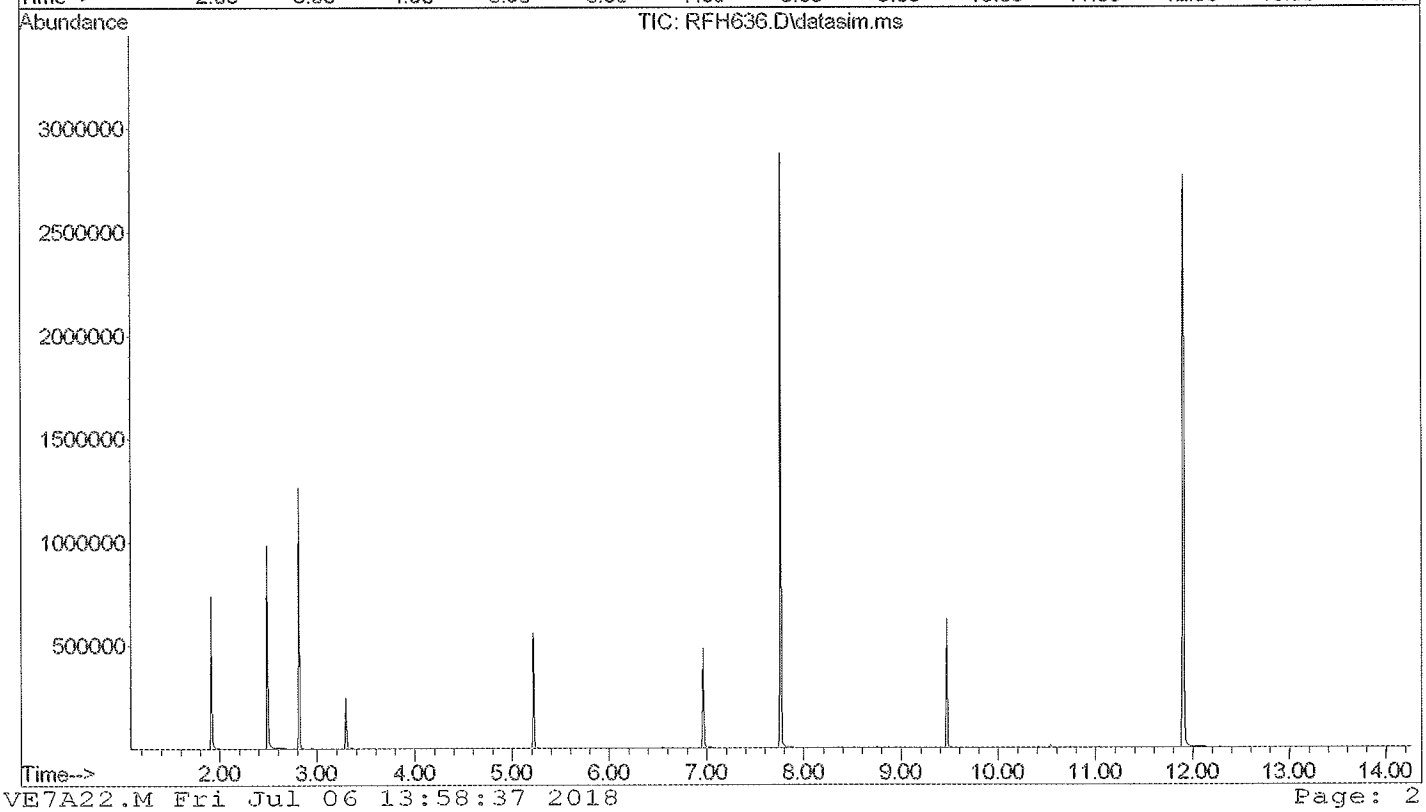
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	440172	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1731299	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	907241	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1889632	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	2080878	40.00	ppm	0.00
97) Perylene-d12	11.900	264	1917973	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	298907	24.29	ppm	0.00
Spiked Amount 30.000			Recovery =	80.97%		
6) Phenol-d5	2.486	99	419466	25.77	ppm	0.01
Spiked Amount 30.000			Recovery =	85.90%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	125528	7.27	ppm	0.00
Spiked Amount 10.000			Recovery =	72.70%		
46) 2-Fluorobiphenyl	5.219	172	283754	7.30	ppm	-0.01
Spiked Amount 10.000			Recovery =	73.00%		
75) 2,4,6-Tribromophenol	6.963	330	127302	19.40	ppm	0.00
Spiked Amount 30.000			Recovery =	64.67%		
90) Terphenyl-d14	9.466	244	363831	8.06	ppm	-0.01
Spiked Amount 10.000			Recovery =	80.60%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH636.D Vial: 16
Acq On : 29 Jun 2018 17:06 Operator: RZh
Sample : 18F187-08 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:44 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18 13:55
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0701-SO-0	Date Analyzed:	06/29/18 17:25
Lab Samp ID:	18F187-10	Dilution Factor:	1
Lab File ID:	RFH637	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	5.8
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.088	0.18
1,2-Dichlorobenzene	ND	0.35	0.088	0.18
1,3-Dichlorobenzene	ND	0.35	0.088	0.18
1,4-Dichlorobenzene	ND	0.35	0.088	0.18
2,4,5-Trichlorophenol	ND	0.35	0.097	0.18
2,4,6-Trichlorophenol	ND	0.35	0.088	0.18
2,4-Dichlorophenol	ND	0.35	0.088	0.18
2,4-Dimethylphenol	ND	0.35	0.088	0.18
2,4-Dinitrophenol	ND	0.71	0.091	0.18
2,4-Dinitrotoluene	ND	0.35	0.088	0.18
2,6-Dinitrotoluene	ND	0.35	0.088	0.18
2-Chloronaphthalene	ND	0.35	0.088	0.18
2-Chlorophenol	ND	0.35	0.088	0.18
2-Methylnaphthalene	ND	0.35	0.088	0.18
2-Methylphenol	ND	0.35	0.088	0.18
2-Nitroaniline	ND	0.35	0.088	0.18
2-Nitrophenol	ND	0.35	0.088	0.18
3,3'-Dichlorobenzidine	ND	0.35	0.089	0.18
3 & 4-Methylphenol	ND	0.35	0.088	0.18
3-Nitroaniline	ND	0.35	0.088	0.18
4-Bromophenyl phenyl ether	ND	0.35	0.096	0.18
4-Chloro-3-methylphenol	ND	0.35	0.088	0.18
4-Chloroaniline	ND	0.35	0.088	0.18
4-Chlorophenyl phenyl ether	ND	0.35	0.088	0.18
4-Nitroaniline	ND	0.35	0.13	0.18
Acenaphthene	ND	0.35	0.088	0.18
Acenaphthylene	ND	0.35	0.088	0.18
Anthracene	ND	0.35	0.088	0.18
Benzo (a) anthracene	ND	0.35	0.088	0.18
Benzo (a) pyrene	ND	0.35	0.088	0.18
Benzo (b) fluoranthene	ND	0.35	0.091	0.18
Benzo (g,h,i) perylene	ND	0.35	0.092	0.18
Benzo(k)fluoranthene	ND	0.35	0.088	0.18
Benzoic Acid	ND	1.4	0.35	0.71
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.18
bis (2-Chloroethyl) ether	ND	0.35	0.088	0.18
Butyl benzylphthalate	ND	0.35	0.088	0.18
Carbazole	ND	0.35	0.094	0.18
Chrysene	ND	0.35	0.088	0.18
Dibenzo (a,h) anthracene	ND	0.35	0.088	0.18
Dibenzofuran	ND	0.35	0.088	0.18
Diethyl phthalate	ND	0.35	0.088	0.18
Dimethyl phthalate	ND	0.35	0.088	0.18
Di-n-butylphthalate	ND	0.35	0.10	0.18
Di-n-octylphthalate	ND	0.35	0.10	0.18
Fluoranthene	ND	0.35	0.13	0.18
Fluorene	ND	0.35	0.088	0.18
Hexachlorobenzene	ND	0.35	0.088	0.18
Hexachlorobutadiene	ND	0.35	0.088	0.18
Hexachloroethane	ND	0.35	0.088	0.18
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.088	0.18
Isophorone	ND	0.35	0.088	0.18
Naphthalene	ND	0.35	0.088	0.18
Nitrobenzene	ND	0.35	0.088	0.18
N-Nitrosodimethylamine	ND	0.35	0.088	0.18
n-Nitrosodi-n-propylamine	ND	0.35	0.088	0.18
n-Nitrosodiphenylamine	ND	0.35	0.16	0.18
Pentachlorophenol	ND	0.71	0.088	0.18
Phenanthrene	ND	0.35	0.088	0.18
Phenol	ND	0.35	0.088	0.18
Pyrene	ND	0.35	0.17	0.18
Azobenzene	ND	0.35	0.10	0.18
4,6-Dinitro-2-methylphenol	ND	0.71	0.088	0.18
Benzyl Alcohol	ND	0.35	0.088	0.18
bis (2-Chloroisopropyl) ether	ND	0.35	0.088	0.18
bis (2-Chloroethoxy) methane	ND	0.35	0.088	0.18
1,4-Dioxane	ND	0.35	0.088	0.18
4-Nitrophenol	ND	0.71	0.11	0.18

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.33	2.12	63	39-132
2-Fluorobiphenyl	0.470	0.708	66	44-115
2-Fluorophenol	1.56	2.12	73	35-115
Nitrobenzene-d5	0.512	0.708	72	37-122
Phenol-d5	1.59	2.12	75	33-122
Terphenyl-d14	0.567	0.708	80	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30.01g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

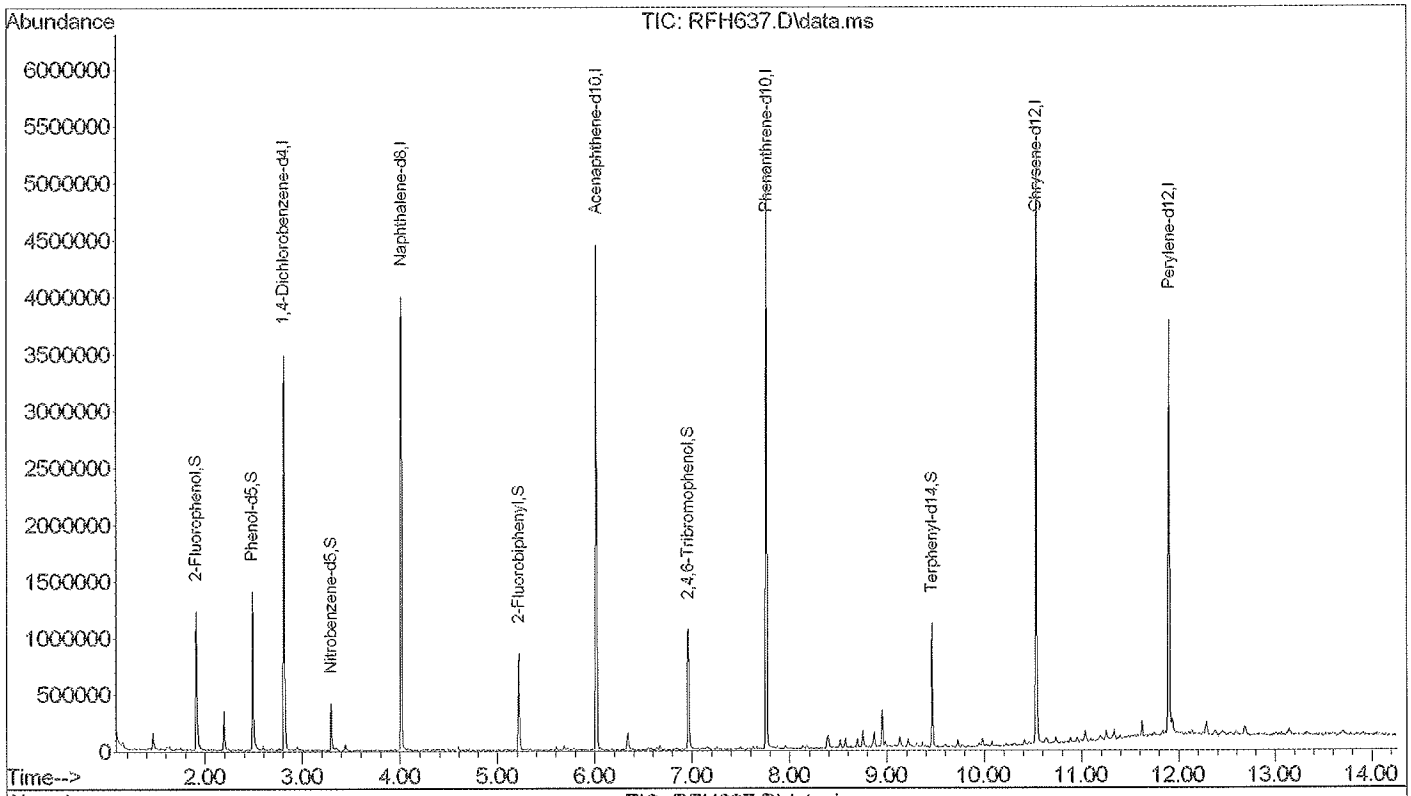
Data File : D:\DATA\18F29\RFH637.D Vial: 17
Acq On : 29 Jun 2018 17:25 Operator: RZh
Sample : 18F187-10 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:48 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

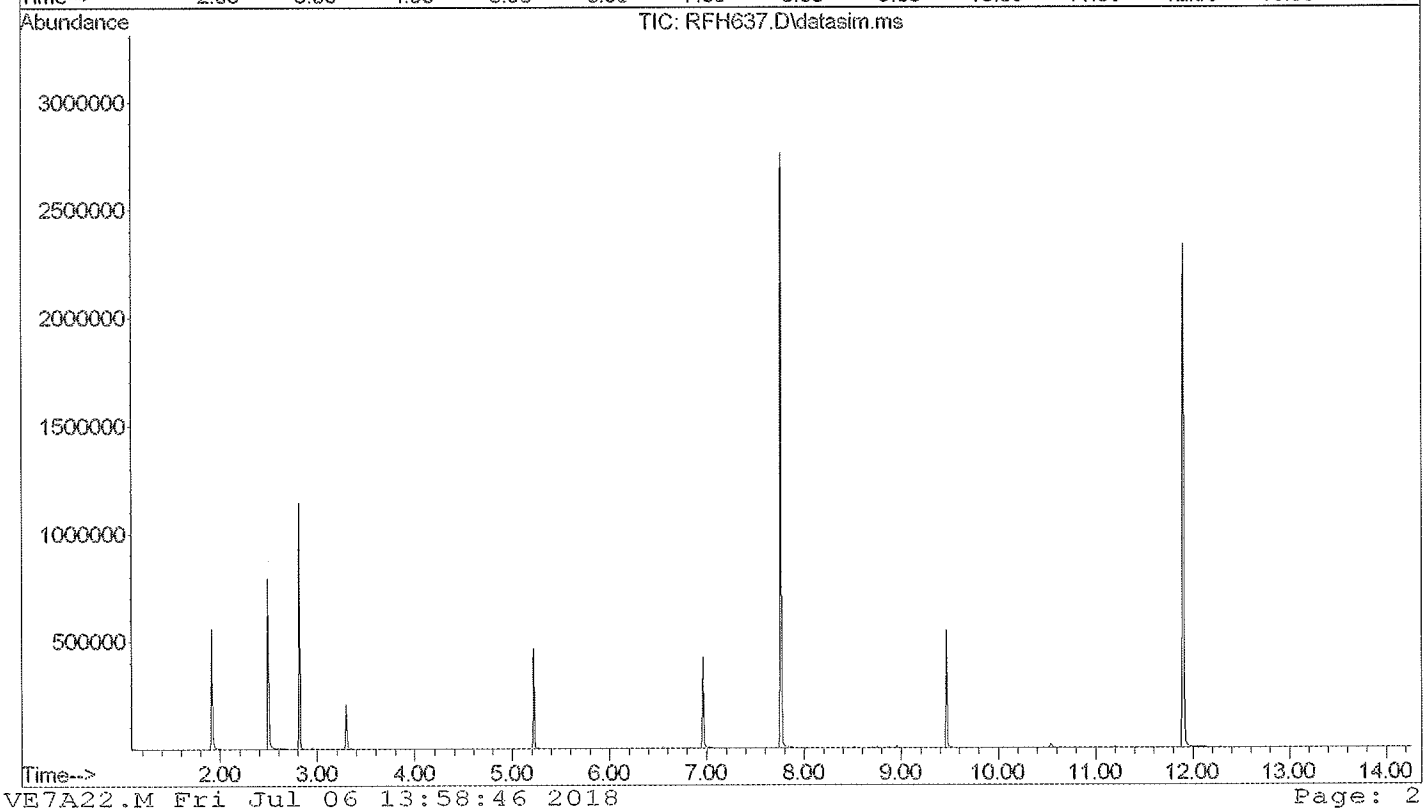
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	423905	40.00	ppm	0.00
21) Naphthalene-d8	4.011	136	1559801	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	834017	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1814408	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	1793449	40.00	ppm	-0.01
97) Perylene-d12	11.900	264	1562136	40.00	ppm	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	261266	22.04	ppm	0.00
Spiked Amount 30.000			Recovery =	73.47%		
6) Phenol-d5	2.486	99	353222	22.53	ppm	0.01
Spiked Amount 30.000			Recovery =	75.10%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	112528	7.24	ppm	0.00
Spiked Amount 10.000			Recovery =	72.40%		
46) 2-Fluorobiphenyl	5.219	172	237486	6.65	ppm	-0.01
Spiked Amount 10.000			Recovery =	66.50%		
75) 2,4,6-Tribromophenol	6.963	330	118693	18.84	ppm	0.00
Spiked Amount 30.000			Recovery =	62.80%		
90) Terphenyl-d14	9.466	244	311661	8.01	ppm	-0.01
Spiked Amount 10.000			Recovery =	80.10%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH637.D Vial: 17
Acq On : 29 Jun 2018 17:25 Operator: RZh
Sample : 18F187-10 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:48 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/22/18 14:15
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0702-SO-0	Date Analyzed:	06/29/18 17:44
Lab Samp ID:	18F187-11	Dilution Factor:	1
Lab File ID:	RFH638	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	4.7
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.087	0.18
1,2-Dichlorobenzene	ND	0.35	0.087	0.18
1,3-Dichlorobenzene	ND	0.35	0.087	0.18
1,4-Dichlorobenzene	ND	0.35	0.087	0.18
2,4,5-Trichlorophenol	ND	0.35	0.095	0.18
2,4,6-Trichlorophenol	ND	0.35	0.087	0.18
2,4-Dichlorophenol	ND	0.35	0.087	0.18
2,4-Dimethylphenol	ND	0.35	0.087	0.18
2,4-Dinitrophenol	ND	0.70	0.090	0.18
2,4-Dinitrotoluene	ND	0.35	0.087	0.18
2,6-Dinitrotoluene	ND	0.35	0.087	0.18
2-Chloronaphthalene	ND	0.35	0.087	0.18
2-Chlorophenol	ND	0.35	0.087	0.18
2-Methylnaphthalene	ND	0.35	0.087	0.18
2-Methylphenol	ND	0.35	0.087	0.18
2-Nitroaniline	ND	0.35	0.087	0.18
2-Nitrophenol	ND	0.35	0.087	0.18
3,3'-Dichlorobenzidine	ND	0.35	0.088	0.18
3 & 4-Methylphenol	ND	0.35	0.087	0.18
3-Nitroaniline	ND	0.35	0.087	0.18
4-Bromophenyl phenyl ether	ND	0.35	0.094	0.18
4-Chloro-3-methylphenol	ND	0.35	0.087	0.18
4-Chloroaniline	ND	0.35	0.087	0.18
4-Chlorophenyl phenyl ether	ND	0.35	0.087	0.18
4-Nitroaniline	ND	0.35	0.13	0.18
Acenaphthene	ND	0.35	0.087	0.18
Acenaphthylene	ND	0.35	0.087	0.18
Anthracene	ND	0.35	0.087	0.18
Benzo (a) anthracene	ND	0.35	0.087	0.18
Benzo (a) pyrene	ND	0.35	0.087	0.18
Benzo (b) fluoranthene	ND	0.35	0.090	0.18
Benzo (g,h,i) perylene	ND	0.35	0.091	0.18
Benzo(k)fluoranthene	ND	0.35	0.087	0.18
Benzoic Acid	ND	1.4	0.35	0.70
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.18
bis (2-Chloroethyl) ether	ND	0.35	0.087	0.18
Butyl benzylphthalate	ND	0.35	0.087	0.18
Carbazole	ND	0.35	0.093	0.18
Chrysene	ND	0.35	0.087	0.18
Dibenzo (a,h) anthracene	ND	0.35	0.087	0.18
Dibenzofuran	ND	0.35	0.087	0.18
Diethyl phthalate	ND	0.35	0.087	0.18
Dimethyl phthalate	ND	0.35	0.087	0.18
Di-n-butylphthalate	ND	0.35	0.10	0.18
Di-n-octylphthalate	ND	0.35	0.10	0.18
Fluoranthene	ND	0.35	0.13	0.18
Fluorene	ND	0.35	0.087	0.18
Hexachlorobenzene	ND	0.35	0.087	0.18
Hexachlorobutadiene	ND	0.35	0.087	0.18
Hexachloroethane	ND	0.35	0.087	0.18
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.087	0.18
Isophorone	ND	0.35	0.087	0.18
Naphthalene	ND	0.35	0.087	0.18
Nitrobenzene	ND	0.35	0.087	0.18
N-Nitrosodimethylamine	ND	0.35	0.087	0.18
n-Nitrosodi-n-propylamine	ND	0.35	0.087	0.18
n-Nitrosodiphenylamine	ND	0.35	0.16	0.18
Pentachlorophenol	ND	0.70	0.087	0.18
Phenanthrene	ND	0.35	0.087	0.18
Phenol	ND	0.35	0.087	0.18
Pyrene	ND	0.35	0.17	0.18
Azobenzene	ND	0.35	0.10	0.18
4,6-Dinitro-2-methylphenol	ND	0.70	0.087	0.18
Benzyl Alcohol	ND	0.35	0.087	0.18
bis (2-Chloroisopropyl) ether	ND	0.35	0.087	0.18
bis (2-Chloroethoxy) methane	ND	0.35	0.087	0.18
1,4-Dioxane	ND	0.35	0.087	0.18
4-Nitrophenol	ND	0.70	0.11	0.18

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.51	2.10	72	39-132
2-Fluorobiphenyl	0.526	0.700	75	44-115
2-Fluorophenol	1.67	2.10	80	35-115
Nitrobenzene-d5	0.529	0.700	76	37-122
Phenol-d5	1.68	2.10	80	33-122
Terphenyl-d14	0.573	0.700	82	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30.02g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

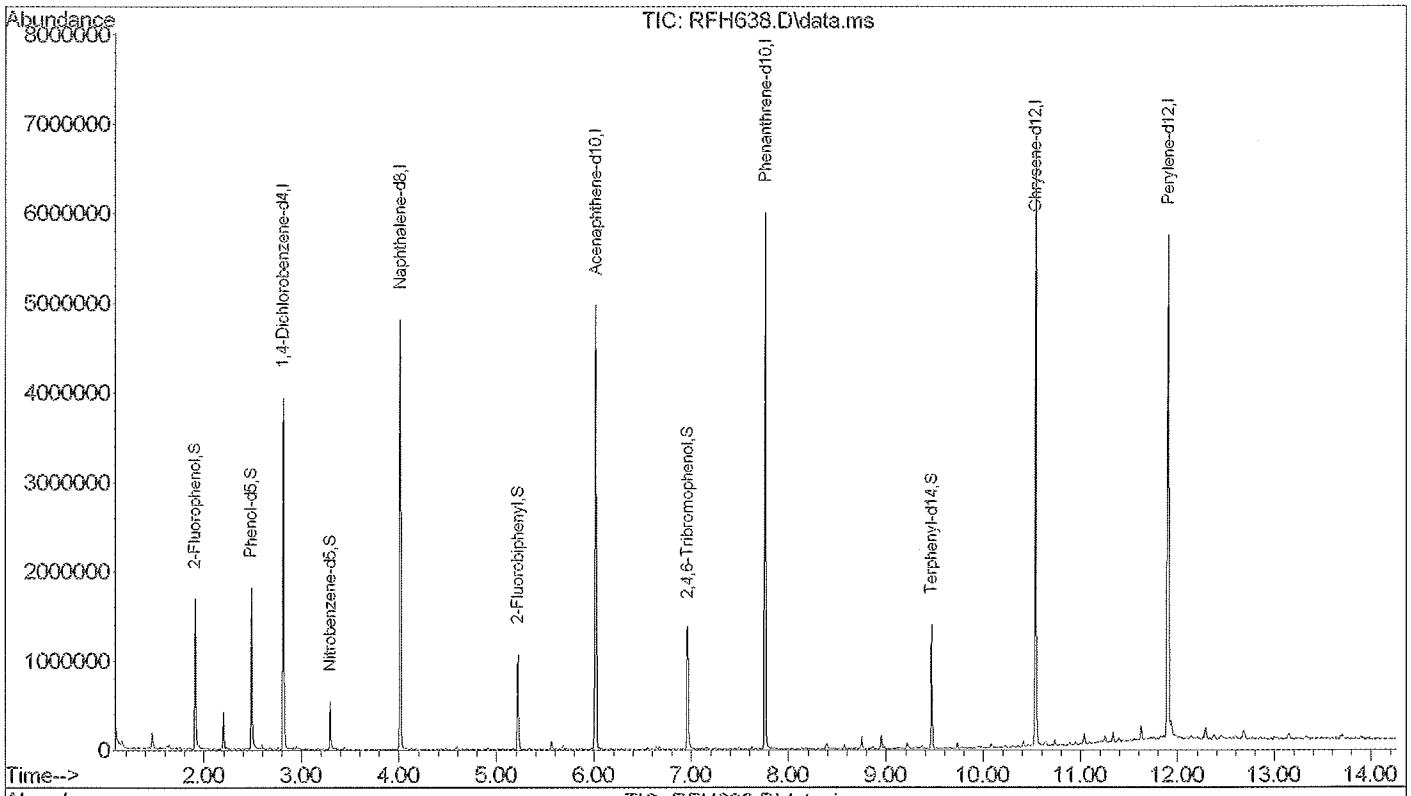
Data File : D:\DATA\18F29\RFH638.D Vial: 18
Acq On : 29 Jun 2018 17:44 Operator: RZh
Sample : 18F187-11 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:53 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

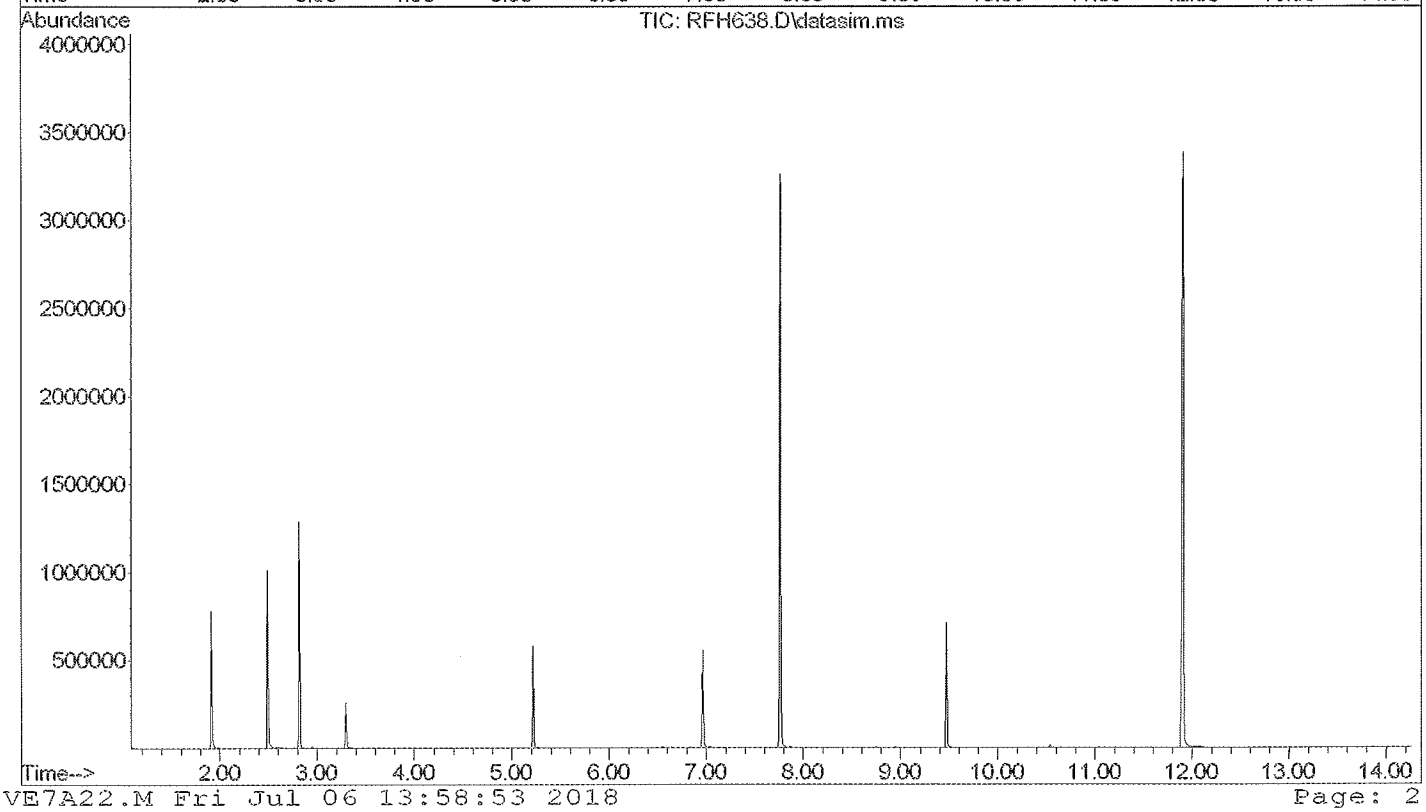
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	465480	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1778960	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	985343	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	2118642	40.00	ppm	0.00
87) Chrysene-d12	10.534	240	2343185	40.00	ppm	0.00
97) Perylene-d12	11.900	264	2318766	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	311780	23.96	ppm	0.00
Spiked Amount 30.000			Recovery =	79.87%		
6) Phenol-d5	2.486	99	414515	24.08	ppm	0.01
Spiked Amount 30.000			Recovery =	80.27%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	134133	7.57	ppm	0.00
Spiked Amount 10.000			Recovery =	75.70%		
46) 2-Fluorobiphenyl	5.220	172	317769	7.53	ppm	-0.01
Spiked Amount 10.000			Recovery =	75.30%		
75) 2,4,6-Tribromophenol	6.963	330	158537	21.55	ppm	0.00
Spiked Amount 30.000			Recovery =	71.83%		
90) Terphenyl-d14	9.466	244	416639	8.20	ppm	-0.01
Spiked Amount 10.000			Recovery =	82.00%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH638.D Vial: 18
Acq On : 29 Jun 2018 17:44 Operator: RZh
Sample : 18F187-11 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:53 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18 10:15
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0301-SO-0	Date Analyzed:	06/29/18 18:03
Lab Samp ID:	18F187-12	Dilution Factor:	1
Lab File ID:	RFH639	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	4.0
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.086	0.17
1,2-Dichlorobenzene	ND	0.35	0.086	0.17
1,3-Dichlorobenzene	ND	0.35	0.086	0.17
1,4-Dichlorobenzene	ND	0.35	0.086	0.17
2,4,5-Trichlorophenol	ND	0.35	0.095	0.17
2,4,6-Trichlorophenol	ND	0.35	0.086	0.17
2,4-Dichlorophenol	ND	0.35	0.086	0.17
2,4-Dimethylphenol	ND	0.35	0.086	0.17
2,4-Dinitrophenol	ND	0.69	0.090	0.17
2,4-Dinitrotoluene	ND	0.35	0.086	0.17
2,6-Dinitrotoluene	ND	0.35	0.086	0.17
2-Chloronaphthalene	ND	0.35	0.086	0.17
2-Chlorophenol	ND	0.35	0.086	0.17
2-Methylnaphthalene	ND	0.35	0.086	0.17
2-Methylphenol	ND	0.35	0.086	0.17
2-Nitroaniline	ND	0.35	0.086	0.17
2-Nitrophenol	ND	0.35	0.086	0.17
3,3'-Dichlorobenzidine	ND	0.35	0.088	0.17
3 & 4-Methylphenol	ND	0.35	0.086	0.17
3-Nitroaniline	ND	0.35	0.086	0.17
4-Bromophenyl phenyl ether	ND	0.35	0.094	0.17
4-Chloro-3-methylphenol	ND	0.35	0.086	0.17
4-Chloroaniline	ND	0.35	0.086	0.17
4-Chlorophenyl phenyl ether	ND	0.35	0.086	0.17
4-Nitroaniline	ND	0.35	0.12	0.17
Acenaphthene	ND	0.35	0.086	0.17
Acenaphthylene	ND	0.35	0.086	0.17
Anthracene	ND	0.35	0.086	0.17
Benzo (a) anthracene	ND	0.35	0.086	0.17
Benzo (a) pyrene	ND	0.35	0.086	0.17
Benzo (b) fluoranthene	ND	0.35	0.090	0.17
Benzo (g,h,i) perylene	ND	0.35	0.091	0.17
Benzo(k)fluoranthene	ND	0.35	0.086	0.17
Benzoic Acid	ND	1.4	0.35	0.69
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.17
bis (2-Chloroethyl) ether	ND	0.35	0.086	0.17
Butyl benzylphthalate	ND	0.35	0.086	0.17
Carbazole	ND	0.35	0.093	0.17
Chrysene	ND	0.35	0.086	0.17
Dibenzo (a,h) anthracene	ND	0.35	0.086	0.17
Dibenzofuran	ND	0.35	0.086	0.17
Diethyl phthalate	ND	0.35	0.086	0.17
Dimethyl phthalate	ND	0.35	0.086	0.17
Di-n-butylphthalate	ND	0.35	0.10	0.17
Di-n-octylphthalate	ND	0.35	0.10	0.17
Fluoranthene	ND	0.35	0.13	0.17
Fluorene	ND	0.35	0.086	0.17
Hexachlorobenzene	ND	0.35	0.086	0.17
Hexachlorobutadiene	ND	0.35	0.086	0.17
Hexachloroethane	ND	0.35	0.086	0.17
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.086	0.17
Isophorone	ND	0.35	0.086	0.17
Naphthalene	ND	0.35	0.086	0.17
Nitrobenzene	ND	0.35	0.086	0.17
N-Nitrosodimethylamine	ND	0.35	0.086	0.17
n-Nitrosodi-n-propylamine	ND	0.35	0.086	0.17
n-Nitrosodiphenylamine	ND	0.35	0.16	0.17
Pentachlorophenol	ND	0.69	0.086	0.17
Phenanthrene	ND	0.35	0.086	0.17
Phenol	ND	0.35	0.086	0.17
Pyrene	ND	0.35	0.17	0.17
Azobenzene	ND	0.35	0.10	0.17
4,6-Dinitro-2-methylphenol	ND	0.69	0.086	0.17
Benzyl Alcohol	ND	0.35	0.086	0.17
bis (2-Chloroisopropyl) ether	ND	0.35	0.086	0.17
bis (2-Chloroethoxy) methane	ND	0.35	0.086	0.17
1,4-Dioxane	ND	0.35	0.086	0.17
4-Nitrophenol	ND	0.69	0.11	0.17

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.41	2.08	68	39-132
2-Fluorobiphenyl	0.524	0.694	75	44-115
2-Fluorophenol	1.63	2.08	78	35-115
Nitrobenzene-d5	0.526	0.694	76	37-122
Phenol-d5	1.63	2.08	78	33-122
Terphenyl-d14	0.554	0.694	80	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30.02g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

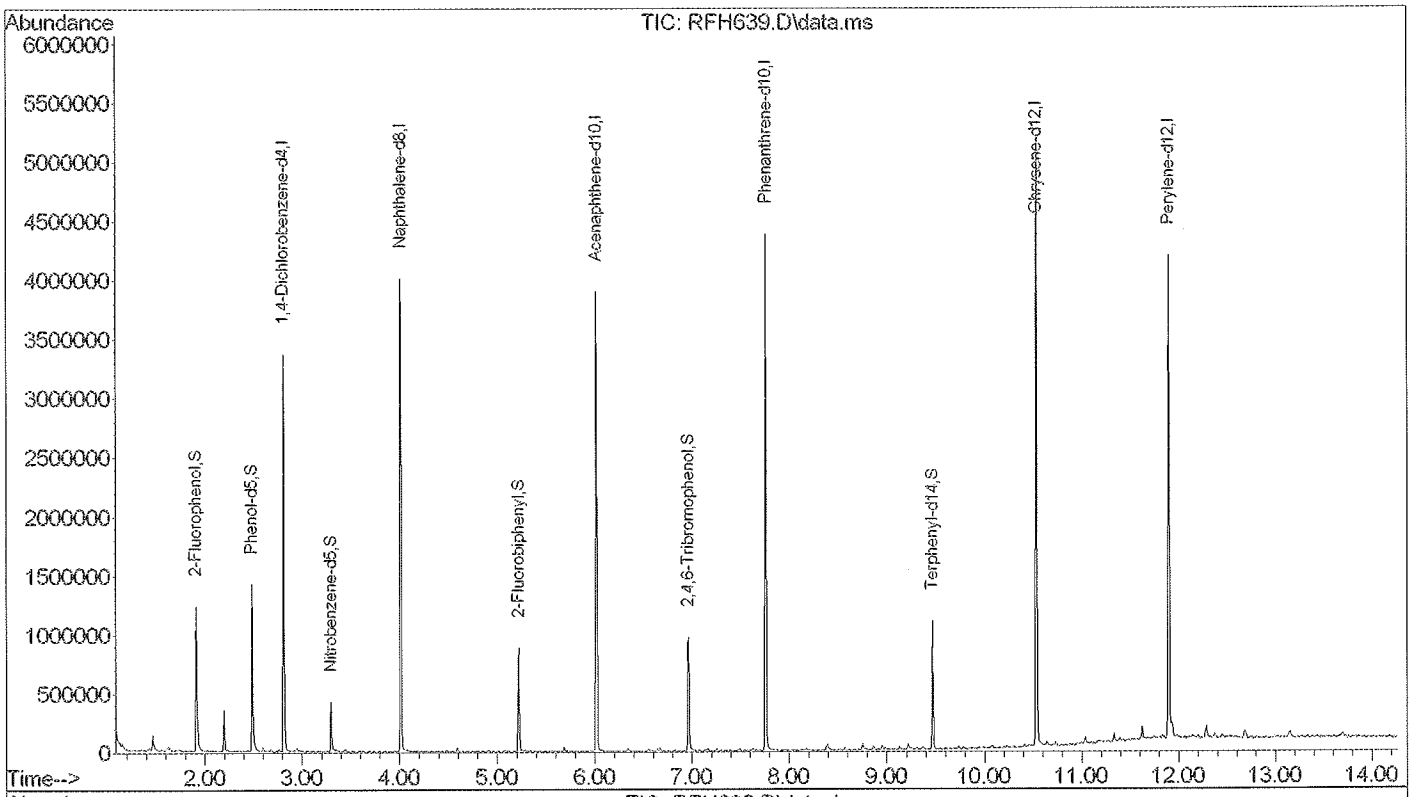
Data File : D:\DATA\18F29\RFH639.D Vial: 19
Acq On : 29 Jun 2018 18:03 Operator: RZh
Sample : 18F187-12 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:58 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

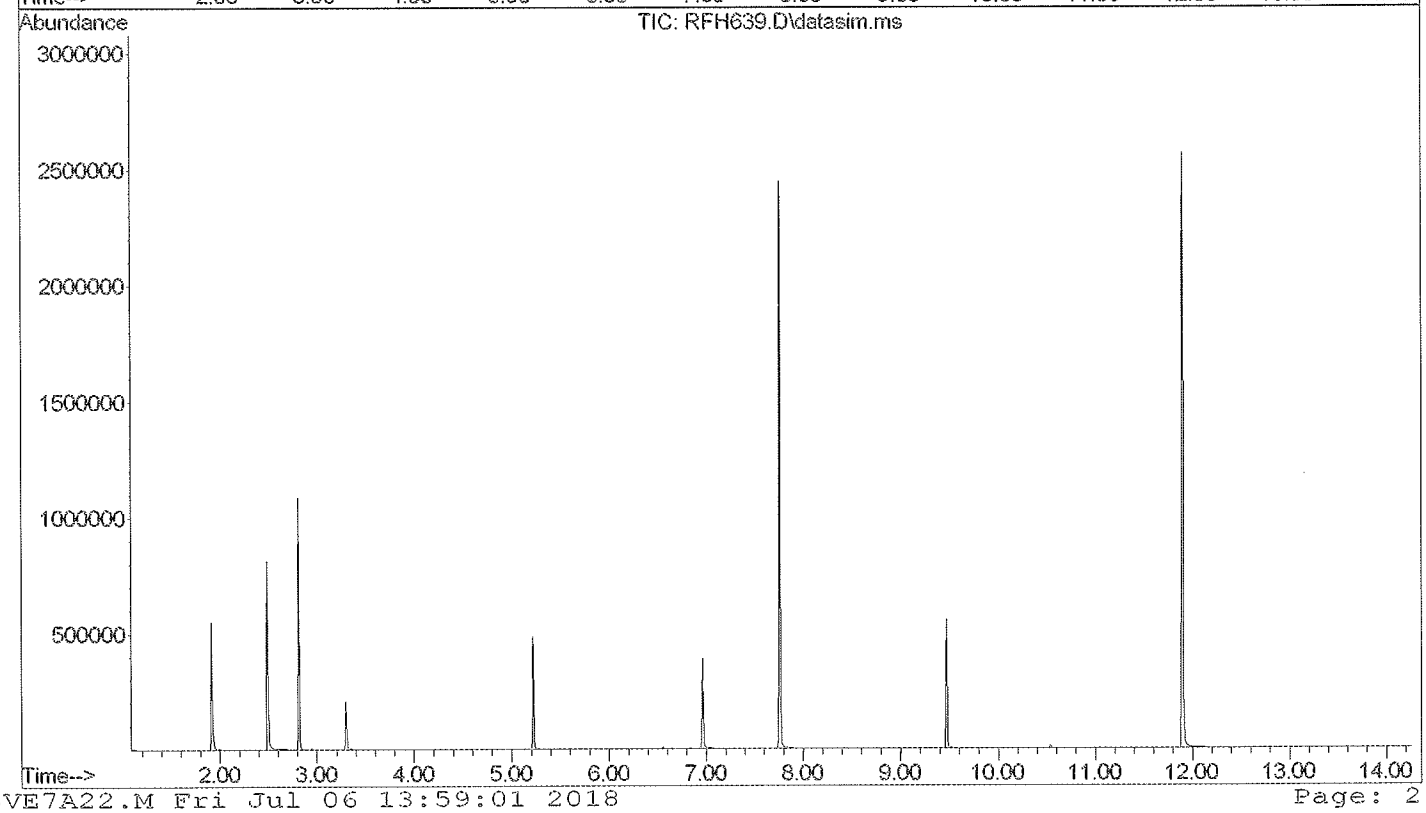
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	412612	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1516055	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	771787	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1589364	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	1828749	40.00	ppm	-0.01
97) Perylene-d12	11.895	264	1707029	40.00	ppm	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	270465	23.44	ppm	0.00
Spiked Amount 30.000			Recovery =	78.13%		
6) Phenol-d5	2.486	99	357505	23.43	ppm	0.01
Spiked Amount 30.000			Recovery =	78.10%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	114430	7.57	ppm	0.00
Spiked Amount 10.000			Recovery =	75.70%		
46) 2-Fluorobiphenyl	5.220	172	249437	7.55	ppm	-0.01
Spiked Amount 10.000			Recovery =	75.50%		
75) 2,4,6-Tribromophenol	6.963	330	111856	20.27	ppm	0.00
Spiked Amount 30.000			Recovery =	67.57%		
90) Terphenyl-d14	9.466	244	316539	7.98	ppm	-0.01
Spiked Amount 10.000			Recovery =	79.80%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH639.D Vial: 19
Acq On : 29 Jun 2018 18:03 Operator: RZh
Sample : 18F187-12 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:21:58 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18 10:35
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0302-SO-0	Date Analyzed:	07/03/18 08:54
Lab Samp ID:	18F187-13N	Dilution Factor:	1
Lab File ID:	RGH005	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	6.5
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.36	0.089	0.18
1,2-Dichlorobenzene	ND	0.36	0.089	0.18
1,3-Dichlorobenzene	ND	0.36	0.089	0.18
1,4-Dichlorobenzene	ND	0.36	0.089	0.18
2,4,5-Trichlorophenol	ND	0.36	0.097	0.18
2,4,6-Trichlorophenol	ND	0.36	0.089	0.18
2,4-Dichlorophenol	ND	0.36	0.089	0.18
2,4-Dimethylphenol	ND	0.36	0.089	0.18
2,4-Dinitrophenol	ND	0.71	0.092	0.18
2,4-Dinitrotoluene	ND	0.36	0.089	0.18
2,6-Dinitrotoluene	ND	0.36	0.089	0.18
2-Chloronaphthalene	ND	0.36	0.089	0.18
2-Chlorophenol	ND	0.36	0.089	0.18
2-Methylnaphthalene	ND	0.36	0.089	0.18
2-Methylphenol	ND	0.36	0.089	0.18
2-Nitroaniline	ND	0.36	0.089	0.18
2-Nitrophenol	ND	0.36	0.089	0.18
3,3'-Dichlorobenzidine	ND	0.36	0.090	0.18
3 & 4-Methylphenol	ND	0.36	0.089	0.18
3-Nitroaniline	ND	0.36	0.089	0.18
4-Bromophenyl phenyl ether	ND	0.36	0.096	0.18
4-Chloro-3-methylphenol	ND	0.36	0.089	0.18
4-Chloroaniline	ND	0.36	0.089	0.18
4-Chlorophenyl phenyl ether	ND	0.36	0.089	0.18
4-Nitroaniline	ND	0.36	0.13	0.18
Acenaphthene	ND	0.36	0.089	0.18
Acenaphthylene	ND	0.36	0.089	0.18
Anthracene	ND	0.36	0.089	0.18
Benzo (a) anthracene	ND	0.36	0.089	0.18
Benzo (a) pyrene	ND	0.36	0.089	0.18
Benzo (b) fluoranthene	ND	0.36	0.092	0.18
Benzo (g,h,i) perylene	ND	0.36	0.093	0.18
Benzo(k)fluoranthene	ND	0.36	0.089	0.18
Benzoic Acid	ND	1.4	0.36	0.71
bis (2-Ethylhexyl) phthalate	ND	0.36	0.12	0.18
bis (2-Chloroethyl) ether	ND	0.36	0.089	0.18
Butyl benzylphthalate	ND	0.36	0.089	0.18
Carbazole	ND	0.36	0.095	0.18
Chrysene	ND	0.36	0.089	0.18
Dibenzo (a,h) anthracene	ND	0.36	0.089	0.18
Dibenzofuran	ND	0.36	0.089	0.18
Diethyl phthalate	ND	0.36	0.089	0.18
Dimethyl phthalate	ND	0.36	0.089	0.18
Di-n-butylphthalate	ND	0.36	0.10	0.18
Di-n-octylphthalate	ND	0.36	0.10	0.18
Fluoranthene	ND	0.36	0.13	0.18
Fluorene	ND	0.36	0.089	0.18
Hexachlorobenzene	ND	0.36	0.089	0.18
Hexachlorobutadiene	ND	0.36	0.089	0.18
Hexachloroethane	ND	0.36	0.089	0.18
Indeno (1,2,3-c,d) pyrene	ND	0.36	0.089	0.18
Isophorone	ND	0.36	0.089	0.18
Naphthalene	ND	0.36	0.089	0.18
Nitrobenzene	ND	0.36	0.089	0.18
N-Nitrosodimethylamine	ND	0.36	0.089	0.18
n-Nitrosodi-n-propylamine	ND	0.36	0.089	0.18
n-Nitrosodiphenylamine	ND	0.36	0.16	0.18
Pentachlorophenol	ND	0.71	0.089	0.18
Phenanthrene	ND	0.36	0.089	0.18
Phenol	ND	0.36	0.089	0.18
Pyrene	ND	0.36	0.17	0.18
Azobenzene	ND	0.36	0.10	0.18
4,6-Dinitro-2-methylphenol	ND	0.71	0.089	0.18
Benzyl Alcohol	ND	0.36	0.089	0.18
bis (2-Chloroisopropyl) ether	ND	0.36	0.089	0.18
bis (2-Chloroethoxy) methane	ND	0.36	0.089	0.18
1,4-Dioxane	ND	0.36	0.089	0.18
4-Nitrophenol	ND	0.71	0.11	0.18

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.22	2.14	57	39-132
2-Fluorobiphenyl	0.478	0.713	67	44-115
2-Fluorophenol	1.48	2.14	69	35-115
Nitrobenzene-d5	0.422	0.713	59	37-122
Phenol-d5	1.51	2.14	70	33-122
Terphenyl-d14	0.565	0.713	79	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.
Sample Amount : 30g
Prepared by : JVille
Final Volume : 2ml
Analyzed by : KVu

Quantitation Report (QT Reviewed)

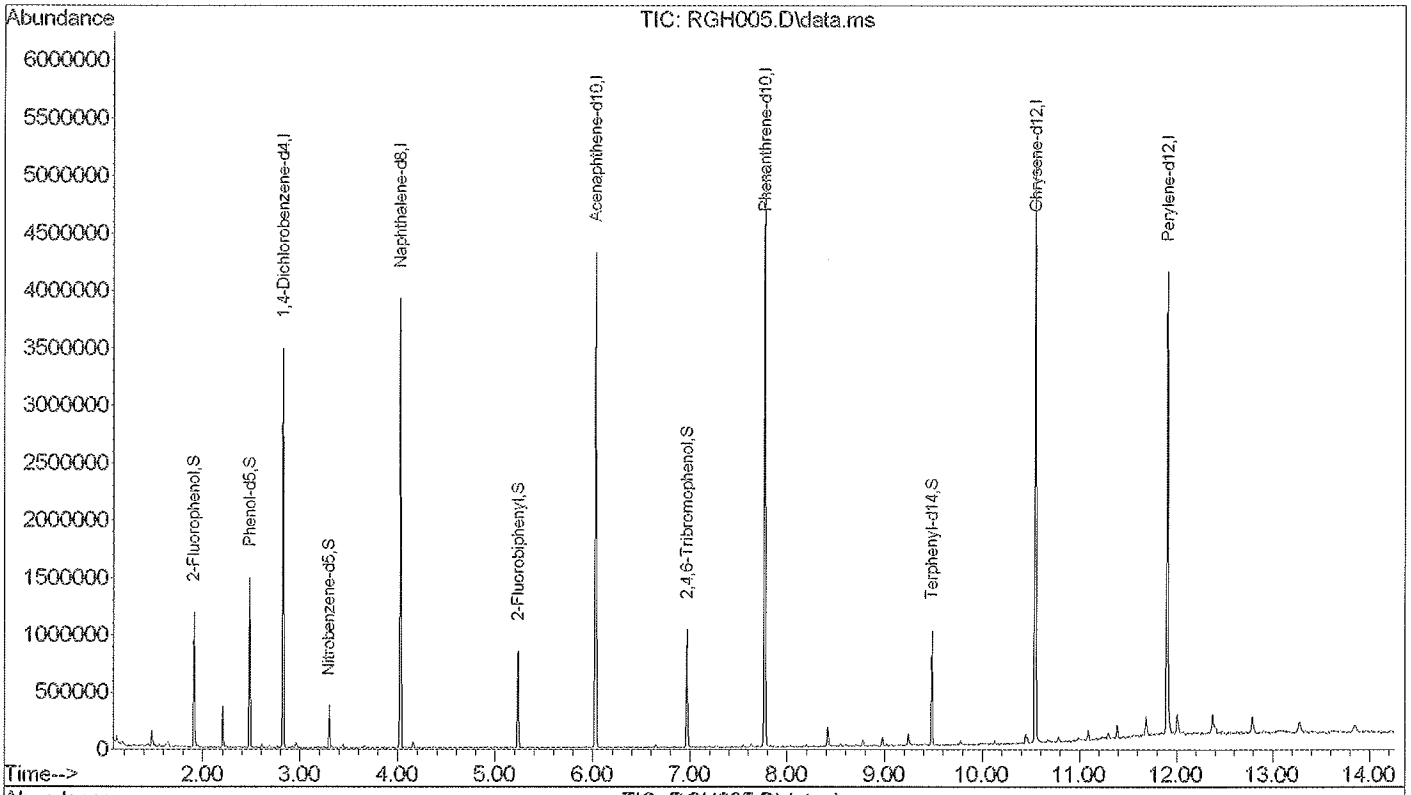
Data File : D:\DATA\18G03\RGH005.D Vial: 5
Acq On : 3 Jul 2018 8:54 Operator: KVu
Sample : 18F187-13N Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:59:52 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

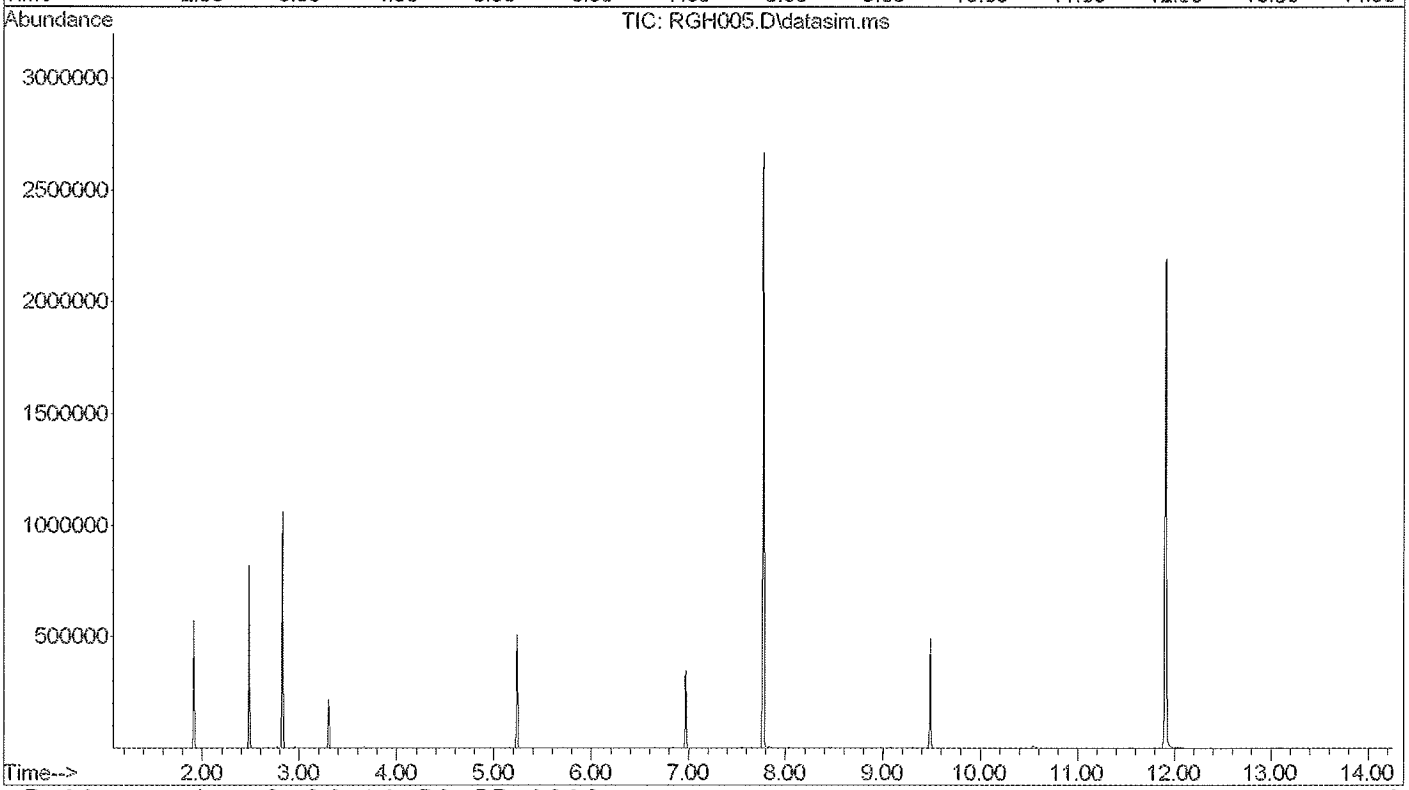
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.825	152	423069	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	1586163	40.00	ppm	0.00
41) Acenaphthene-d10	6.027	164	908702	40.00	ppm	0.00
71) Phenanthrene-d10	7.770	188	1807297	40.00	ppm	0.00
87) Chrysene-d12	10.543	240	1785375	40.00	ppm	0.00
97) Perylene-d12	11.904	264	1654909	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.910	112	245381	20.74	ppm	0.00
Spiked Amount 30.000			Recovery =	69.13%		
6) Phenol-d5	2.481	99	330236	21.11	ppm	0.00
Spiked Amount 30.000			Recovery =	70.37%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.300	82	93578	5.92	ppm	0.00
Spiked Amount 10.000			Recovery =	59.20%		
46) 2-Fluorobiphenyl	5.239	172	260933	6.70	ppm	0.00
Spiked Amount 10.000			Recovery =	67.00%		
75) 2,4,6-Tribromophenol	6.968	330	107531	17.13	ppm	0.00
Spiked Amount 30.000			Recovery =	57.10%		
90) Terphenyl-d14	9.483	244	307079	7.93	ppm	0.00
Spiked Amount 10.000			Recovery =	79.30%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH005.D Vial: 5
Acq On : 3 Jul 2018 8:54 Operator: KVu
Sample : 18F187-13N Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:59:52 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18 12:15
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0602-SO-0	Date Analyzed:	06/29/18 18:42
Lab Samp ID:	18F187-14	Dilution Factor:	1
Lab File ID:	RFH641	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	5.1
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.35	0.087	0.18
1,2-Dichlorobenzene	ND	0.35	0.087	0.18
1,3-Dichlorobenzene	ND	0.35	0.087	0.18
1,4-Dichlorobenzene	ND	0.35	0.087	0.18
2,4,5-Trichlorophenol	ND	0.35	0.096	0.18
2,4,6-Trichlorophenol	ND	0.35	0.087	0.18
2,4-Dichlorophenol	ND	0.35	0.087	0.18
2,4-Dimethylphenol	ND	0.35	0.087	0.18
2,4-Dinitrophenol	ND	0.70	0.091	0.18
2,4-Dinitrotoluene	ND	0.35	0.087	0.18
2,6-Dinitrotoluene	ND	0.35	0.087	0.18
2-Chloronaphthalene	ND	0.35	0.087	0.18
2-Chlorophenol	ND	0.35	0.087	0.18
2-Methylnaphthalene	ND	0.35	0.087	0.18
2-Methylphenol	ND	0.35	0.087	0.18
2-Nitroaniline	ND	0.35	0.087	0.18
2-Nitrophenol	ND	0.35	0.087	0.18
3,3'-Dichlorobenzidine	ND	0.35	0.089	0.18
3 & 4-Methylphenol	ND	0.35	0.087	0.18
3-Nitroaniline	ND	0.35	0.087	0.18
4-Bromophenyl phenyl ether	ND	0.35	0.095	0.18
4-Chloro-3-methylphenol	ND	0.35	0.087	0.18
4-Chloroaniline	ND	0.35	0.087	0.18
4-Chlorophenyl phenyl ether	ND	0.35	0.087	0.18
4-Nitroaniline	ND	0.35	0.13	0.18
Acenaphthene	ND	0.35	0.087	0.18
Acenaphthylene	ND	0.35	0.087	0.18
Anthracene	ND	0.35	0.087	0.18
Benzo (a) anthracene	ND	0.35	0.087	0.18
Benzo (a) pyrene	ND	0.35	0.087	0.18
Benzo (b) fluoranthene	ND	0.35	0.091	0.18
Benzo (g,h,i) perylene	ND	0.35	0.092	0.18
Benzo(k)fluoranthene	ND	0.35	0.087	0.18
Benzoic Acid	ND	1.4	0.35	0.70
bis (2-Ethylhexyl) phthalate	ND	0.35	0.12	0.18
bis (2-Chloroethyl) ether	ND	0.35	0.087	0.18
Butyl benzylphthalate	ND	0.35	0.087	0.18
Carbazole	ND	0.35	0.094	0.18
Chrysene	ND	0.35	0.087	0.18
Dibenzo (a,h) anthracene	ND	0.35	0.087	0.18
Dibenzofuran	ND	0.35	0.087	0.18
Diethyl phthalate	ND	0.35	0.087	0.18
Dimethyl phthalate	ND	0.35	0.087	0.18
Di-n-butylphthalate	ND	0.35	0.10	0.18
Di-n-octylphthalate	ND	0.35	0.10	0.18
Fluoranthene	ND	0.35	0.13	0.18
Fluorene	ND	0.35	0.087	0.18
Hexachlorobenzene	ND	0.35	0.087	0.18
Hexachlorobutadiene	ND	0.35	0.087	0.18
Hexachloroethane	ND	0.35	0.087	0.18
Indeno (1,2,3-c,d) pyrene	ND	0.35	0.087	0.18
Isophorone	ND	0.35	0.087	0.18
Naphthalene	ND	0.35	0.087	0.18
Nitrobenzene	ND	0.35	0.087	0.18
N-Nitrosodimethylamine	ND	0.35	0.087	0.18
n-Nitrosodi-n-propylamine	ND	0.35	0.087	0.18
n-Nitrosodiphenylamine	ND	0.35	0.16	0.18
Pentachlorophenol	ND	0.70	0.087	0.18
Phenanthrene	ND	0.35	0.087	0.18
Phenol	ND	0.35	0.087	0.18
Pyrene	ND	0.35	0.17	0.18
Azobenzene	ND	0.35	0.10	0.18
4,6-Dinitro-2-methylphenol	ND	0.70	0.087	0.18
Benzyl Alcohol	ND	0.35	0.087	0.18
bis (2-Chloroisopropyl) ether	ND	0.35	0.087	0.18
bis (2-Chloroethoxy) methane	ND	0.35	0.087	0.18
1,4-Dioxane	ND	0.35	0.087	0.18
4-Nitrophenol	ND	0.70	0.11	0.18

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.50	2.11	71	39-132
2-Fluorobiphenyl	0.475	0.703	68	44-115
2-Fluorophenol	1.65	2.11	78	35-115
Nitrobenzene-d5	0.561	0.703	80	37-122
Phenol-d5	1.72	2.11	82	33-122
Terphenyl-d14	0.618	0.703	88	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.
Sample Amount : 30.03g Final Volume : 2ml
Prepared by : JVille Analyzed by : KVu

Quantitation Report (QT Reviewed)

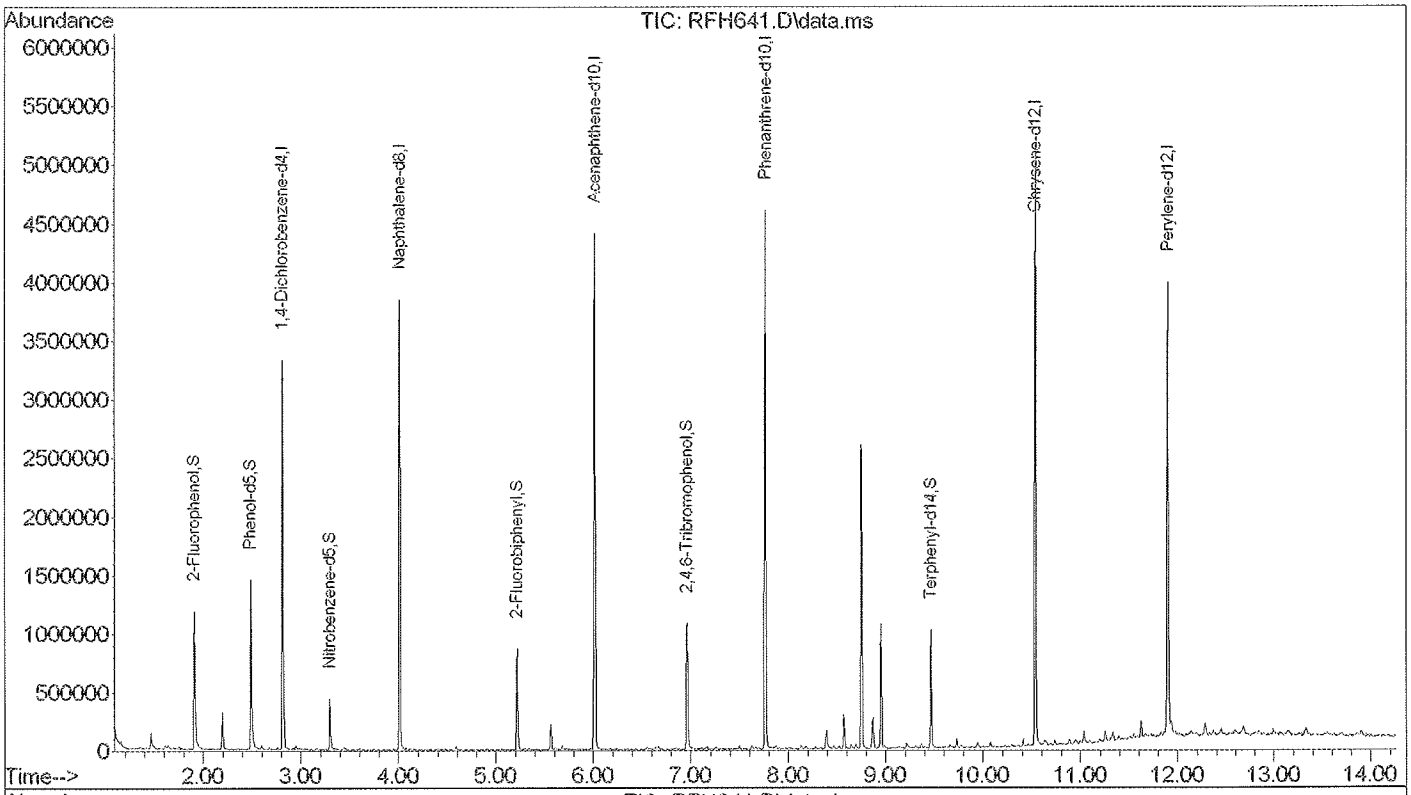
Data File : D:\DATA\18F29\RFH641.D Vial: 21
Acq On : 29 Jun 2018 18:42 Operator: RZh
Sample : 18F187-14 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:22:08 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

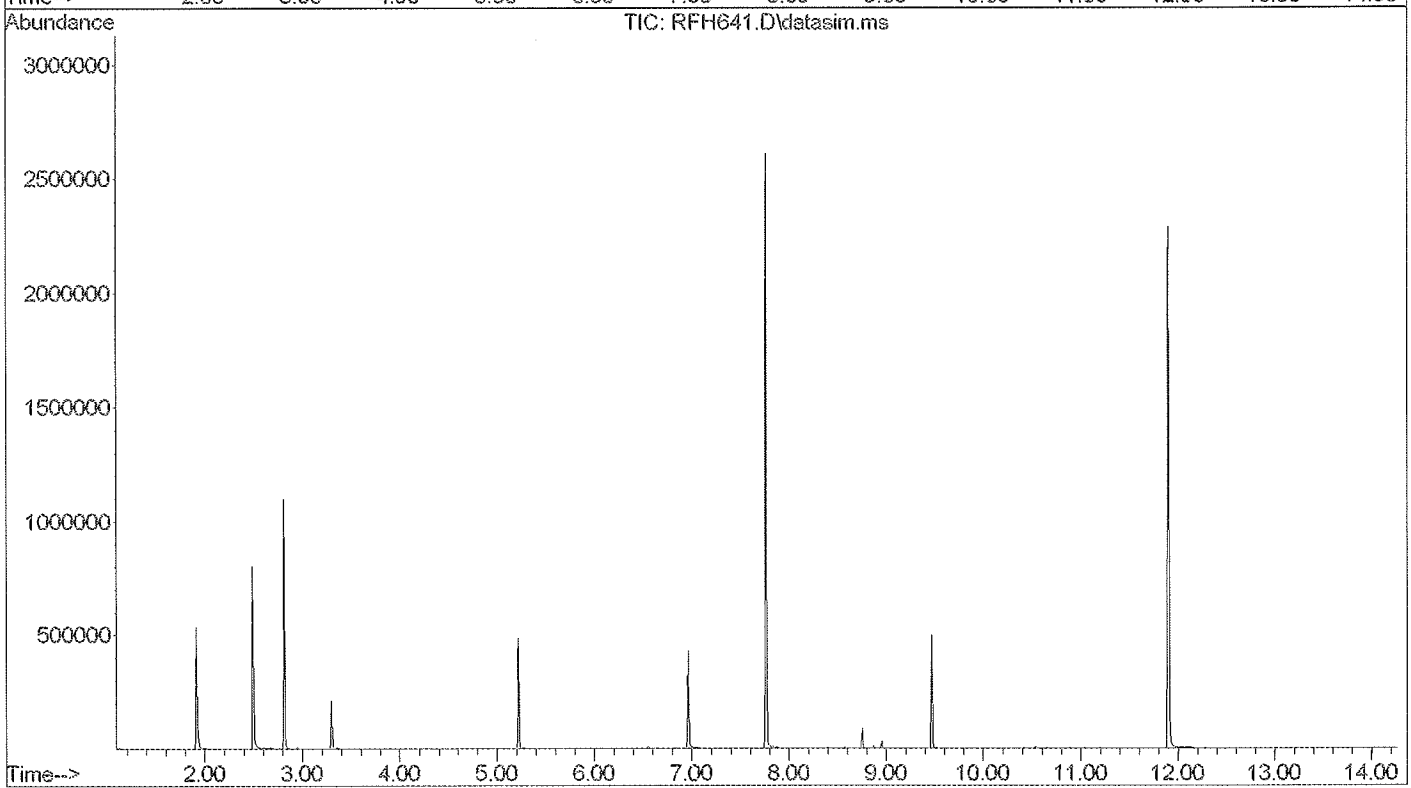
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	419424	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1500477	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	845049	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1676423	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	1611235	40.00	ppm	0.00
97) Perylene-d12	11.895	264	1537754	40.00	ppm	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	275380	23.48	ppm	0.00
Spiked Amount 30.000			Recovery =	78.27%		
6) Phenol-d5	2.486	99	381155	24.58	ppm	0.01
Spiked Amount 30.000			Recovery =	81.93%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	119575	8.00	ppm	0.00
Spiked Amount 10.000			Recovery =	80.00%		
46) 2-Fluorobiphenyl	5.219	172	245215	6.77	ppm	-0.01
Spiked Amount 10.000			Recovery =	67.70%		
75) 2,4,6-Tribromophenol	6.963	330	124114	21.32	ppm	0.00
Spiked Amount 30.000			Recovery =	71.07%		
90) Terphenyl-d14	9.466	244	307631	8.80	ppm	-0.01
Spiked Amount 10.000			Recovery =	88.00%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH641.D Vial: 21
Acq On : 29 Jun 2018 18:42 Operator: RZh
Sample : 18F187-14 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:22:08 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18 12:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0601-SO-0	Date Analyzed:	06/29/18 19:01
Lab Samp ID:	18F187-15	Dilution Factor:	2
Lab File ID:	RFH642	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	7.6
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.72	0.18	0.36
1,2-Dichlorobenzene	ND	0.72	0.18	0.36
1,3-Dichlorobenzene	ND	0.72	0.18	0.36
1,4-Dichlorobenzene	ND	0.72	0.18	0.36
2,4,5-Trichlorophenol	ND	0.72	0.20	0.36
2,4,6-Trichlorophenol	ND	0.72	0.18	0.36
2,4-Dichlorophenol	ND	0.72	0.18	0.36
2,4-Dimethylphenol	ND	0.72	0.18	0.36
2,4-Dinitrophenol	ND	1.4	0.19	0.36
2,4-Dinitrotoluene	ND	0.72	0.18	0.36
2,6-Dinitrotoluene	ND	0.72	0.18	0.36
2-Chloronaphthalene	ND	0.72	0.18	0.36
2-Chlorophenol	ND	0.72	0.18	0.36
2-Methylnaphthalene	ND	0.72	0.18	0.36
2-Methylphenol	ND	0.72	0.18	0.36
2-Nitroaniline	ND	0.72	0.18	0.36
2-Nitrophenol	ND	0.72	0.18	0.36
3,3'-Dichlorobenzidine	ND	0.72	0.18	0.36
3 & 4-Methylphenol	ND	0.72	0.18	0.36
3-Nitroaniline	ND	0.72	0.18	0.36
4-Bromophenyl phenyl ether	ND	0.72	0.19	0.36
4-Chloro-3-methylphenol	ND	0.72	0.18	0.36
4-Chloroaniline	ND	0.72	0.18	0.36
4-Chlorophenyl phenyl ether	ND	0.72	0.18	0.36
4-Nitroaniline	ND	0.72	0.26	0.36
Acenaphthene	ND	0.72	0.18	0.36
Acenaphthylene	ND	0.72	0.18	0.36
Anthracene	ND	0.72	0.18	0.36
Benzo (a) anthracene	ND	0.72	0.18	0.36
Benzo (a) pyrene	ND	0.72	0.18	0.36
Benzo (b) fluoranthene	ND	0.72	0.19	0.36
Benzo (g,h,i) perylene	ND	0.72	0.19	0.36
Benzo(k)fluoranthene	ND	0.72	0.18	0.36
Benzoic Acid	ND	2.9	0.72	1.4
bis (2-Ethylhexyl) phthalate	ND	0.72	0.25	0.36
bis (2-Chloroethyl) ether	ND	0.72	0.18	0.36
Butyl benzylphthalate	ND	0.72	0.18	0.36
Carbazole	ND	0.72	0.19	0.36
Chrysene	ND	0.72	0.18	0.36
Dibenzo (a,h) anthracene	ND	0.72	0.18	0.36
Dibenzofuran	ND	0.72	0.18	0.36
Diethyl phthalate	ND	0.72	0.18	0.36
Dimethyl phthalate	ND	0.72	0.18	0.36
Di-n-butylphthalate	ND	0.72	0.21	0.36
Di-n-octylphthalate	ND	0.72	0.21	0.36
Fluoranthene	ND	0.72	0.27	0.36
Fluorene	ND	0.72	0.18	0.36
Hexachlorobenzene	ND	0.72	0.18	0.36
Hexachlorobutadiene	ND	0.72	0.18	0.36
Hexachloroethane	ND	0.72	0.18	0.36
Indeno (1,2,3-c,d) pyrene	ND	0.72	0.18	0.36
Isophorone	ND	0.72	0.18	0.36
Naphthalene	ND	0.72	0.18	0.36
Nitrobenzene	ND	0.72	0.18	0.36
N-Nitrosodimethylamine	ND	0.72	0.18	0.36
n-Nitrosodi-n-propylamine	ND	0.72	0.18	0.36
n-Nitrosodiphenylamine	ND	0.72	0.33	0.36
Pentachlorophenol	ND	1.4	0.18	0.36
Phenanthrene	ND	0.72	0.18	0.36
Phenol	ND	0.72	0.18	0.36
Pyrene	ND	0.72	0.35	0.36
Azobenzene	ND	0.72	0.21	0.36
4,6-Dinitro-2-methylphenol	ND	1.4	0.18	0.36
Benzyl Alcohol	ND	0.72	0.18	0.36
bis (2-Chloroisopropyl) ether	ND	0.72	0.18	0.36
bis (2-Chloroethoxy) methane	ND	0.72	0.18	0.36
1,4-Dioxane	ND	0.72	0.18	0.36
4-Nitrophenol	ND	1.4	0.23	0.36

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.57	2.16	72	39-132
2-Fluorobiphenyl	0.554	0.722	77	44-115
2-Fluorophenol	1.72	2.16	80	35-115
Nitrobenzene-d5	0.510	0.722	71	37-122
Phenol-d5	1.67	2.16	77	33-122
Terphenyl-d14	0.607	0.722	84	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30.01g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

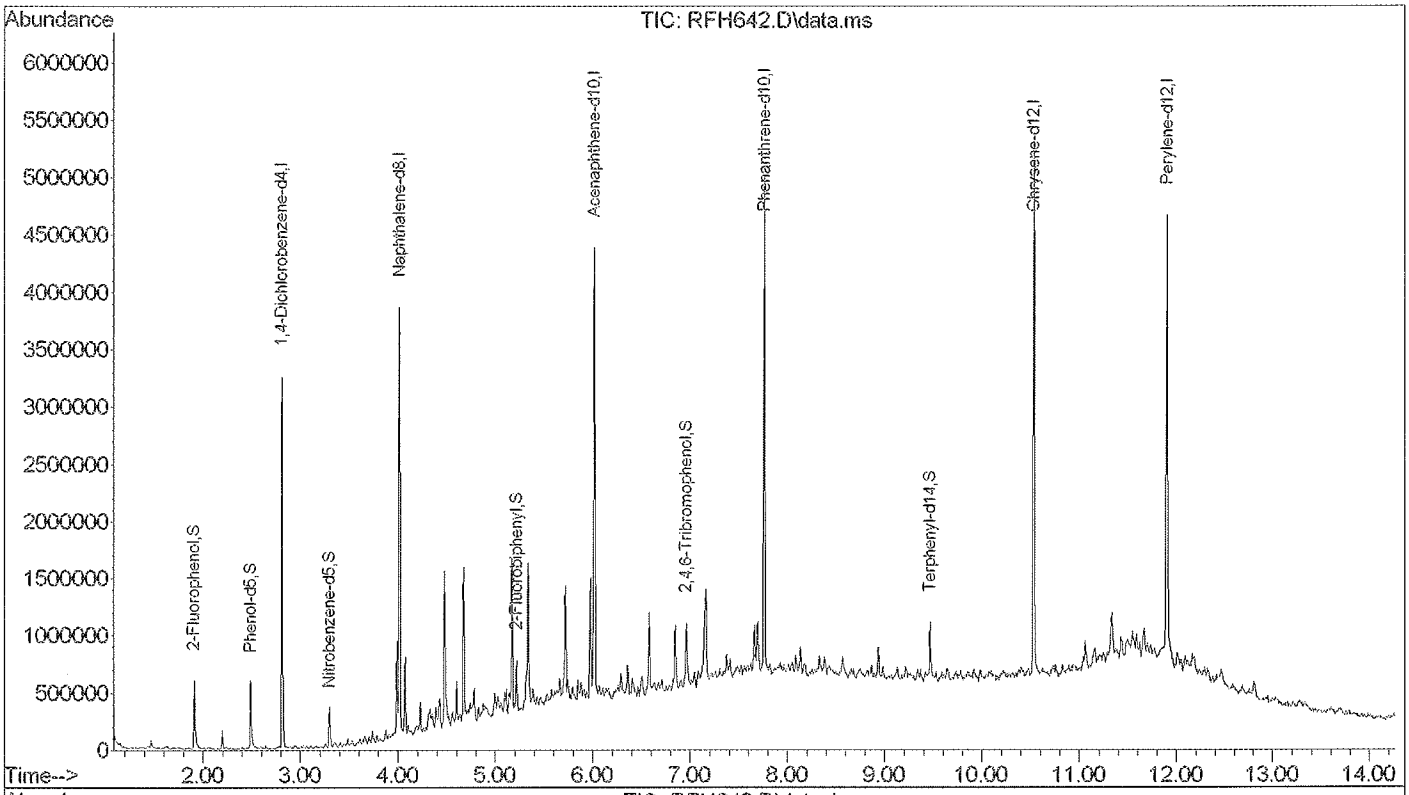
Data File : D:\DATA\18F29\RFH642.D Vial: 22
Acq On : 29 Jun 2018 19:01 Operator: RZh
Sample : 18F187-15 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:59:36 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

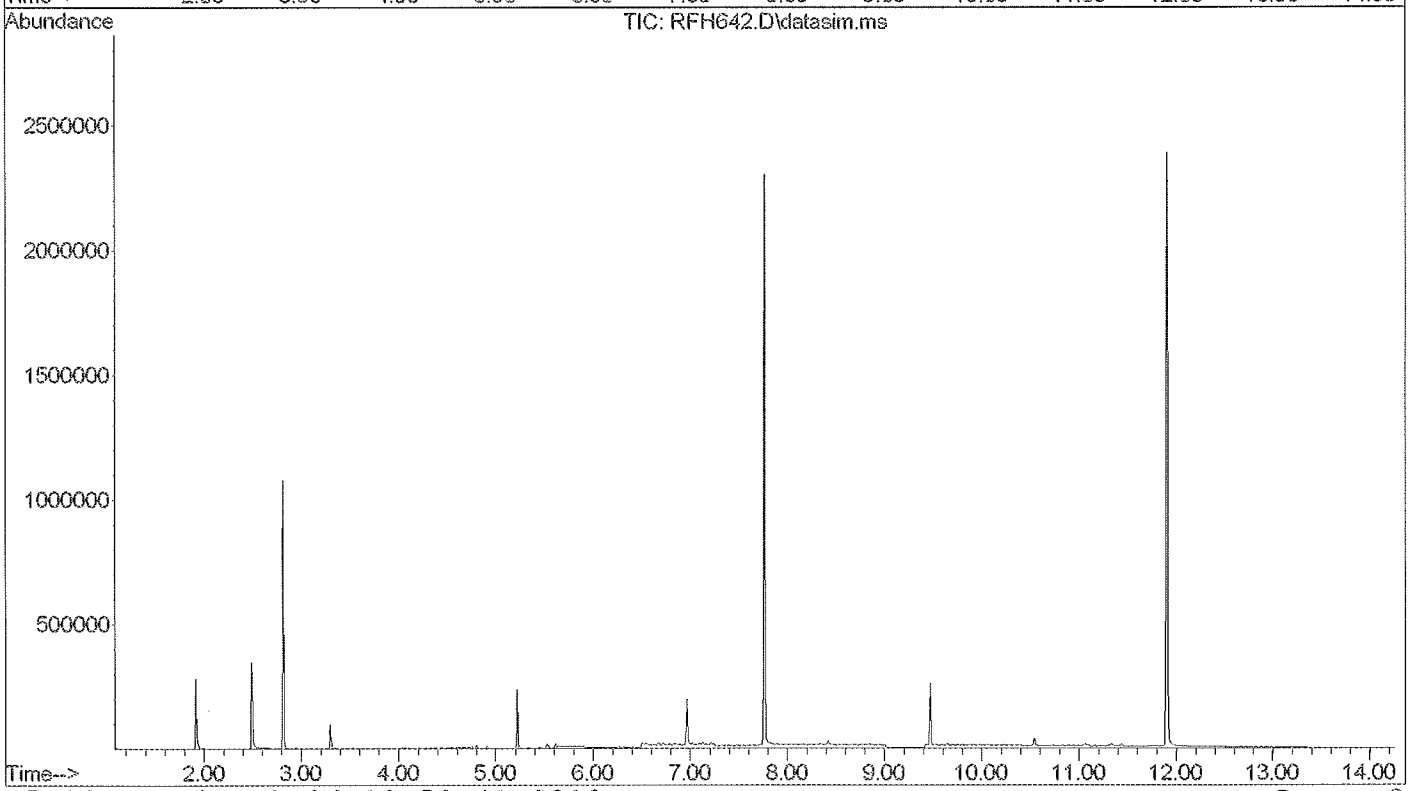
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	398151	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1436854	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	746966	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1492093	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	1551648	40.00	ppm	0.00
97) Perylene-d12	11.900	264	1557478	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	133032	11.95	ppm	0.00
Spiked Amount 30.000			Recovery =	39.83%		
6) Phenol-d5	2.492	99	170019	11.55	ppm	0.02
Spiked Amount 30.000			Recovery =	38.50%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	50662	3.54	ppm	0.00
Spiked Amount 10.000			Recovery =	35.40%		
46) 2-Fluorobiphenyl	5.220	172	122971	3.84	ppm	-0.01
Spiked Amount 10.000			Recovery =	38.40%		
75) 2,4,6-Tribromophenol	6.963	330	56361	10.88	ppm	0.00
Spiked Amount 30.000			Recovery =	36.27%		
90) Terphenyl-d14	9.466	244	141557	4.21	ppm	-0.01
Spiked Amount 10.000			Recovery =	42.10%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH642.D Vial: 22
Acq On : 29 Jun 2018 19:01 Operator: RZh
Sample : 18F187-15 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:59:36 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18 12:51
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0601-SO-1	Date Analyzed:	06/29/18 19:20
Lab Samp ID:	18F187-16	Dilution Factor:	2
Lab File ID:	RFH643	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	6.9
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.72	0.18	0.36
1,2-Dichlorobenzene	ND	0.72	0.18	0.36
1,3-Dichlorobenzene	ND	0.72	0.18	0.36
1,4-Dichlorobenzene	ND	0.72	0.18	0.36
2,4,5-Trichlorophenol	ND	0.72	0.20	0.36
2,4,6-Trichlorophenol	ND	0.72	0.18	0.36
2,4-Dichlorophenol	ND	0.72	0.18	0.36
2,4-Dimethylphenol	ND	0.72	0.18	0.36
2,4-Dinitrophenol	ND	1.4	0.18	0.36
2,4-Dinitrotoluene	ND	0.72	0.18	0.36
2,6-Dinitrotoluene	ND	0.72	0.18	0.36
2-Chloronaphthalene	ND	0.72	0.18	0.36
2-Chlorophenol	ND	0.72	0.18	0.36
2-Methylnaphthalene	ND	0.72	0.18	0.36
2-Methylphenol	ND	0.72	0.18	0.36
2-Nitroaniline	ND	0.72	0.18	0.36
2-Nitrophenol	ND	0.72	0.18	0.36
3,3'-Dichlorobenzidine	ND	0.72	0.18	0.36
3 & 4-Methylphenol	ND	0.72	0.18	0.36
3-Nitroaniline	ND	0.72	0.18	0.36
4-Bromophenyl phenyl ether	ND	0.72	0.19	0.36
4-Chloro-3-methylphenol	ND	0.72	0.18	0.36
4-Chloroaniline	ND	0.72	0.18	0.36
4-Chlorophenyl phenyl ether	ND	0.72	0.18	0.36
4-Nitroaniline	ND	0.72	0.26	0.36
Acenaphthene	ND	0.72	0.18	0.36
Acenaphthylene	ND	0.72	0.18	0.36
Anthracene	ND	0.72	0.18	0.36
Benzo (a) anthracene	ND	0.72	0.18	0.36
Benzo (a) pyrene	ND	0.72	0.18	0.36
Benzo (b) fluoranthene	ND	0.72	0.18	0.36
Benzo (g,h,i) perylene	ND	0.72	0.19	0.36
Benzo(k)fluoranthene	ND	0.72	0.18	0.36
Benzoic Acid	ND	2.9	0.72	1.4
bis (2-Ethylhexyl) phthalate	ND	0.72	0.25	0.36
bis (2-Chloroethyl) ether	ND	0.72	0.18	0.36
Butyl benzylphthalate	ND	0.72	0.18	0.36
Carbazole	ND	0.72	0.19	0.36
Chrysene	ND	0.72	0.18	0.36
Dibenzo (a,h) anthracene	ND	0.72	0.18	0.36
Dibenzofuran	ND	0.72	0.18	0.36
Diethyl phthalate	ND	0.72	0.18	0.36
Dimethyl phthalate	ND	0.72	0.18	0.36
Di-n-butylphthalate	ND	0.72	0.21	0.36
Di-n-octylphthalate	ND	0.72	0.21	0.36
Fluoranthene	ND	0.72	0.27	0.36
Fluorene	ND	0.72	0.18	0.36
Hexachlorobenzene	ND	0.72	0.18	0.36
Hexachlorobutadiene	ND	0.72	0.18	0.36
Hexachloroethane	ND	0.72	0.18	0.36
Indeno (1,2,3-c,d) pyrene	ND	0.72	0.18	0.36
Isophorone	ND	0.72	0.18	0.36
Naphthalene	ND	0.72	0.18	0.36
Nitrobenzene	ND	0.72	0.18	0.36
N-Nitrosodimethylamine	ND	0.72	0.18	0.36
n-Nitrosodi-n-propylamine	ND	0.72	0.18	0.36
n-Nitrosodiphenylamine	ND	0.72	0.33	0.36
Pentachlorophenol	ND	1.4	0.18	0.36
Phenanthrene	ND	0.72	0.18	0.36
Phenol	ND	0.72	0.18	0.36
Pyrene	ND	0.72	0.34	0.36
Azobenzene	ND	0.72	0.21	0.36
4,6-Dinitro-2-methylphenol	ND	1.4	0.18	0.36
Benzyl Alcohol	ND	0.72	0.18	0.36
bis (2-Chloroisopropyl) ether	ND	0.72	0.18	0.36
bis (2-Chloroethoxy) methane	ND	0.72	0.18	0.36
1,4-Dioxane	ND	0.72	0.18	0.36
4-Nitrophenol	ND	1.4	0.23	0.36

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.53	2.15	71	39-132
2-Fluorobiphenyl	0.496	0.716	69	44-115
2-Fluorophenol	1.63	2.15	76	35-115
Nitrobenzene-d5	0.527	0.716	74	37-122
Phenol-d5	1.67	2.15	78	33-122
Terphenyl-d14	0.590	0.716	82	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.
Sample Amount : 30.01g Final Volume : 2ml
Prepared by : JVille Analyzed by : KVu

Quantitation Report (QT Reviewed)

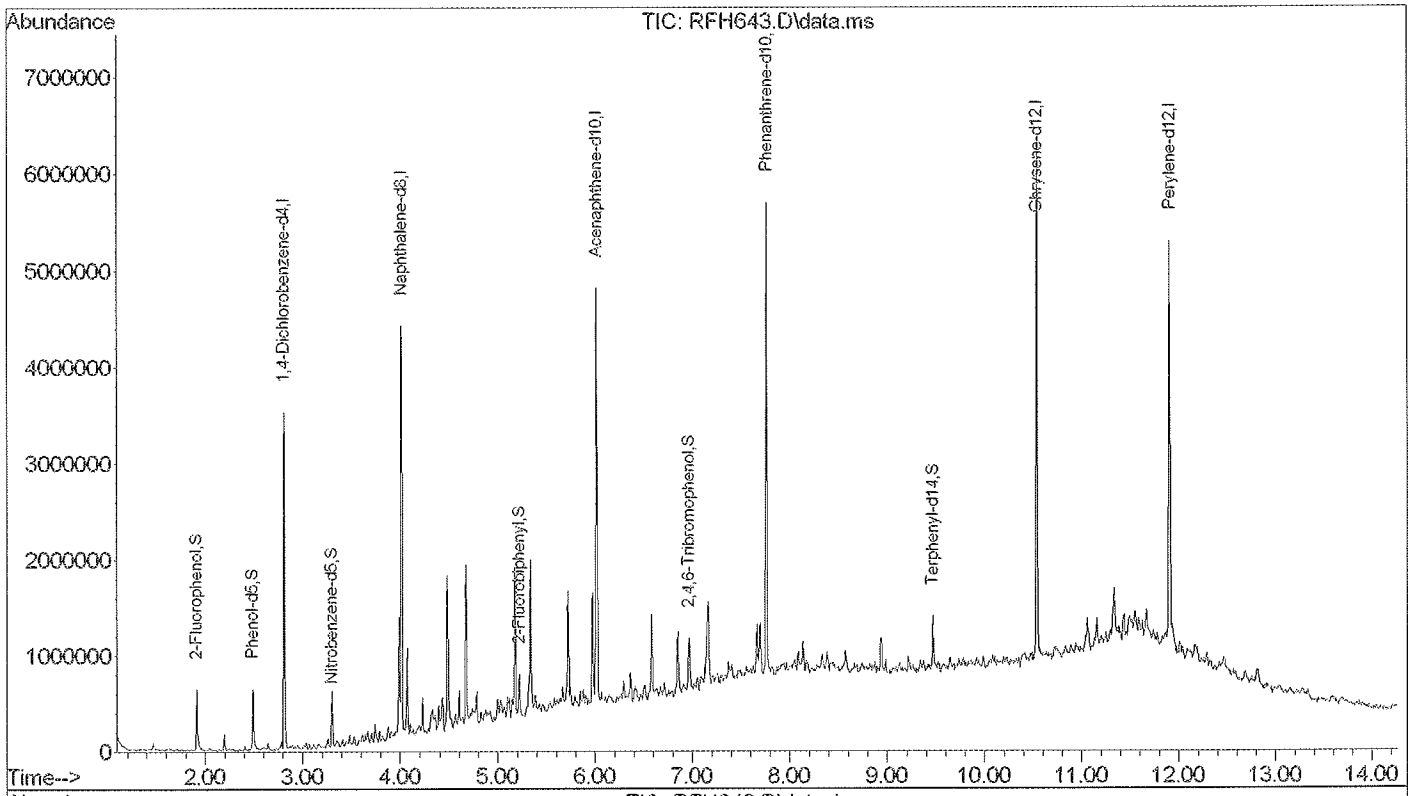
Data File : D:\DATA\18F29\RFH643.D Vial: 23
Acq On : 29 Jun 2018 19:20 Operator: RZh
Sample : 18F187-16 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:59:49 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

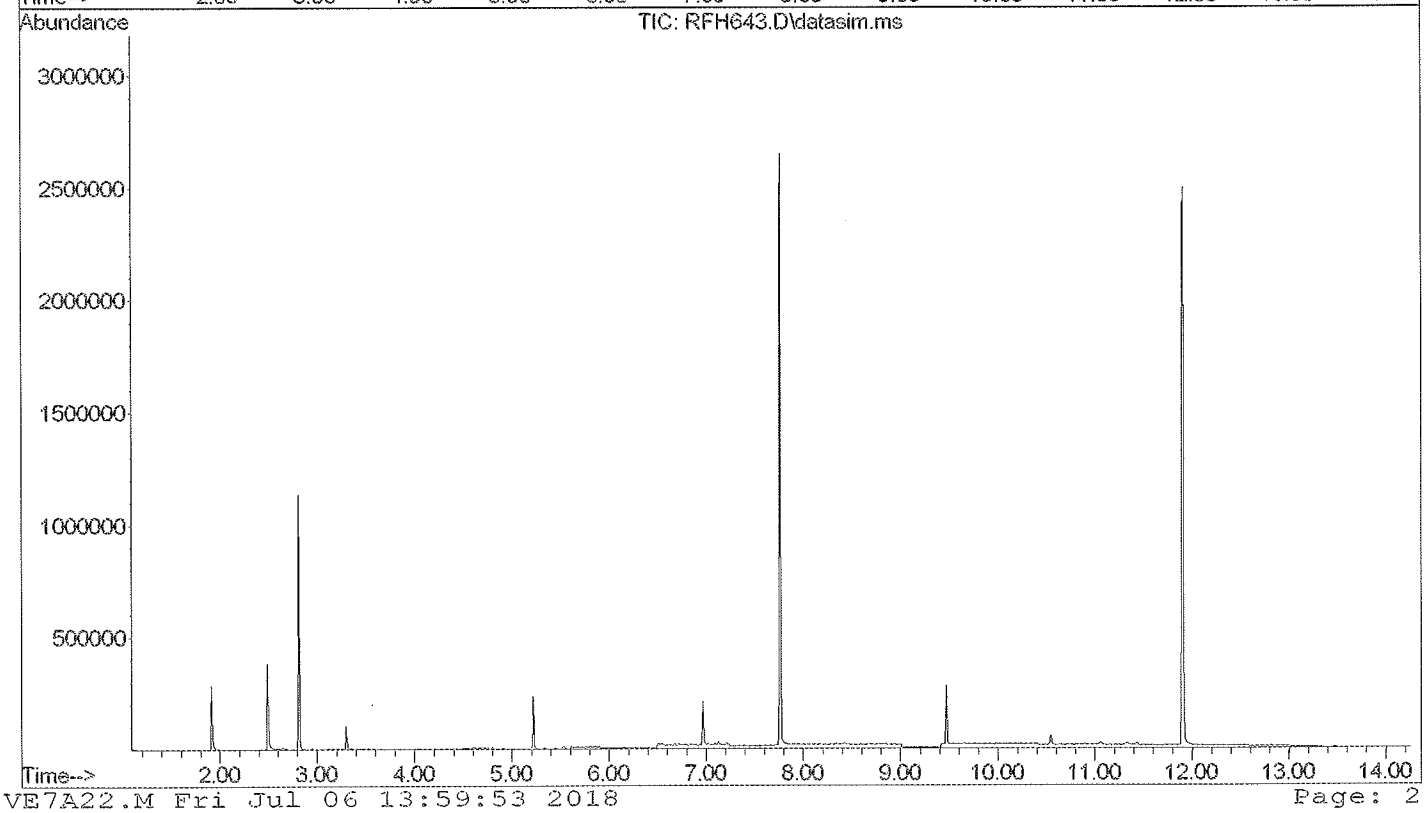
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	421712	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1593000	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	816771	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1628416	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	1761374	40.00	ppm	0.00
97) Perylene-d12	11.900	264	1669555	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	134482	11.41	ppm	0.00
Spiked Amount 30.000			Recovery =	38.03%		
6) Phenol-d5	2.486	99	182232	11.69	ppm	0.01
Spiked Amount 30.000			Recovery =	38.97%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	58455	3.68	ppm	0.00
Spiked Amount 10.000			Recovery =	36.80%		
46) 2-Fluorobiphenyl	5.220	172	121263	3.47	ppm	-0.01
Spiked Amount 10.000			Recovery =	34.70%		
75) 2,4,6-Tribromophenol	6.963	330	60307	10.66	ppm	0.00
Spiked Amount 30.000			Recovery =	35.53%		
90) Terphenyl-d14	9.466	244	157578	4.12	ppm	-0.01
Spiked Amount 10.000			Recovery =	41.20%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH643.D Vial: 23
Acq On : 29 Jun 2018 19:20 Operator: RZh
Sample : 18F187-16 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:59:49 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/23/18 13:20
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-IDW-S001	Date Analyzed:	06/29/18 19:39
Lab Samp ID:	18F187-17	Dilution Factor:	2
Lab File ID:	RFH644	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	8.1
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.72	0.18	0.36
1,2-Dichlorobenzene	ND	0.72	0.18	0.36
1,3-Dichlorobenzene	ND	0.72	0.18	0.36
1,4-Dichlorobenzene	ND	0.72	0.18	0.36
2,4,5-Trichlorophenol	ND	0.72	0.20	0.36
2,4,6-Trichlorophenol	ND	0.72	0.18	0.36
2,4-Dichlorophenol	ND	0.72	0.18	0.36
2,4-Dimethylphenol	ND	0.72	0.18	0.36
2,4-Dinitrophenol	ND	1.5	0.19	0.36
2,4-Dinitrotoluene	ND	0.72	0.18	0.36
2,6-Dinitrotoluene	ND	0.72	0.18	0.36
2-Chloronaphthalene	ND	0.72	0.18	0.36
2-Chlorophenol	ND	0.72	0.18	0.36
2-Methylnaphthalene	ND	0.72	0.18	0.36
2-Methylphenol	ND	0.72	0.18	0.36
2-Nitroaniline	ND	0.72	0.18	0.36
2-Nitrophenol	ND	0.72	0.18	0.36
3,3'-Dichlorobenzidine	ND	0.72	0.18	0.36
3 & 4-Methylphenol	ND	0.72	0.18	0.36
3-Nitroaniline	ND	0.72	0.18	0.36
4-Bromophenyl phenyl ether	ND	0.72	0.20	0.36
4-Chloro-3-methylphenol	ND	0.72	0.18	0.36
4-Chloroaniline	ND	0.72	0.18	0.36
4-Chlorophenyl phenyl ether	ND	0.72	0.18	0.36
4-Nitroaniline	ND	0.72	0.26	0.36
Acenaphthene	ND	0.72	0.18	0.36
Acenaphthylene	ND	0.72	0.18	0.36
Anthracene	ND	0.72	0.18	0.36
Benzo (a) anthracene	ND	0.72	0.18	0.36
Benzo (a) pyrene	ND	0.72	0.18	0.36
Benzo (b) fluoranthene	ND	0.72	0.19	0.36
Benzo (g,h,i) perylene	ND	0.72	0.19	0.36
Benzo(k)fluoranthene	ND	0.72	0.18	0.36
Benzoic Acid	ND	2.9	0.72	1.5
bis (2-Ethylhexyl) phthalate	ND	0.72	0.25	0.36
bis (2-Chloroethyl) ether	ND	0.72	0.18	0.36
Butyl benzylphthalate	ND	0.72	0.18	0.36
Carbazole	ND	0.72	0.19	0.36
Chrysene	ND	0.72	0.18	0.36
Dibenzo (a,h) anthracene	ND	0.72	0.18	0.36
Dibenzofuran	ND	0.72	0.18	0.36
Diethyl phthalate	ND	0.72	0.18	0.36
Dimethyl phthalate	ND	0.72	0.18	0.36
Di-n-butylphthalate	ND	0.72	0.21	0.36
Di-n-octylphthalate	ND	0.72	0.21	0.36
Fluoranthene	ND	0.72	0.27	0.36
Fluorene	ND	0.72	0.18	0.36
Hexachlorobenzene	ND	0.72	0.18	0.36
Hexachlorobutadiene	ND	0.72	0.18	0.36
Hexachloroethane	ND	0.72	0.18	0.36
Indeno (1,2,3-c,d) pyrene	ND	0.72	0.18	0.36
Isophorone	ND	0.72	0.18	0.36
Naphthalene	ND	0.72	0.18	0.36
Nitrobenzene	ND	0.72	0.18	0.36
N-Nitrosodimethylamine	ND	0.72	0.18	0.36
n-Nitrosodi-n-propylamine	ND	0.72	0.18	0.36
n-Nitrosodiphenylamine	ND	0.72	0.33	0.36
Pentachlorophenol	ND	1.5	0.18	0.36
Phenanthrene	ND	0.72	0.18	0.36
Phenol	ND	0.72	0.18	0.36
Pyrene	ND	0.72	0.35	0.36
Azobenzene	ND	0.72	0.21	0.36
4,6-Dinitro-2-methylphenol	ND	1.5	0.18	0.36
Benzyl Alcohol	ND	0.72	0.18	0.36
bis (2-Chloroisopropyl) ether	ND	0.72	0.18	0.36
bis (2-Chloroethoxy) methane	ND	0.72	0.18	0.36
1,4-Dioxane	ND	0.72	0.18	0.36
4-Nitrophenol	ND	1.5	0.23	0.36

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.51	2.18	69	39-132
2-Fluorobiphenyl	0.373	0.725	51	44-115
2-Fluorophenol	1.09	2.18	50	35-115
Nitrobenzene-d5	0.349	0.725	48	37-122
Phenol-d5	1.30	2.18	60	33-122
Terphenyl-d14	0.583	0.725	80	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

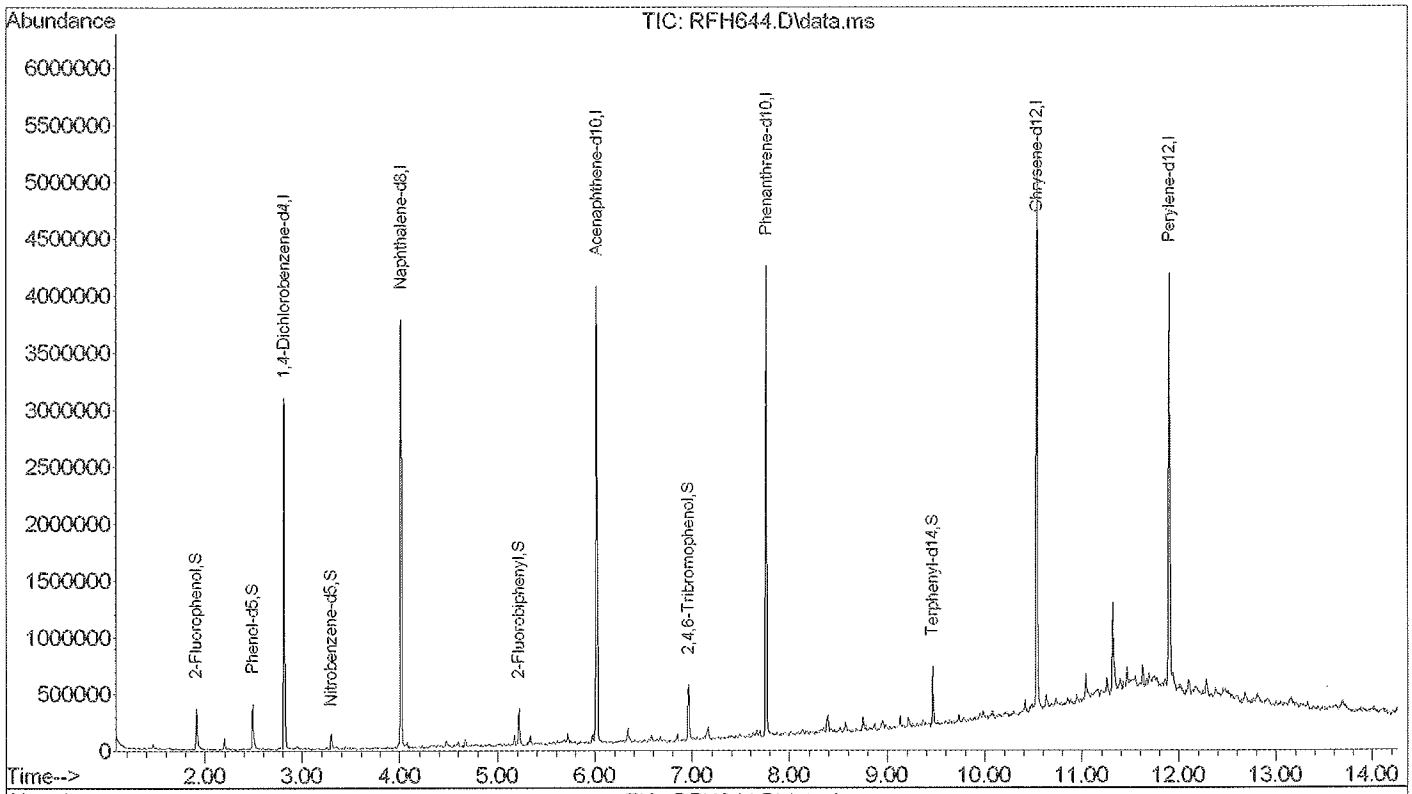
Data File : D:\DATA\18F29\RFH644.D Vial: 24
Acq On : 29 Jun 2018 19:39 Operator: RZh
Sample : 18F187-17 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:00:06 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

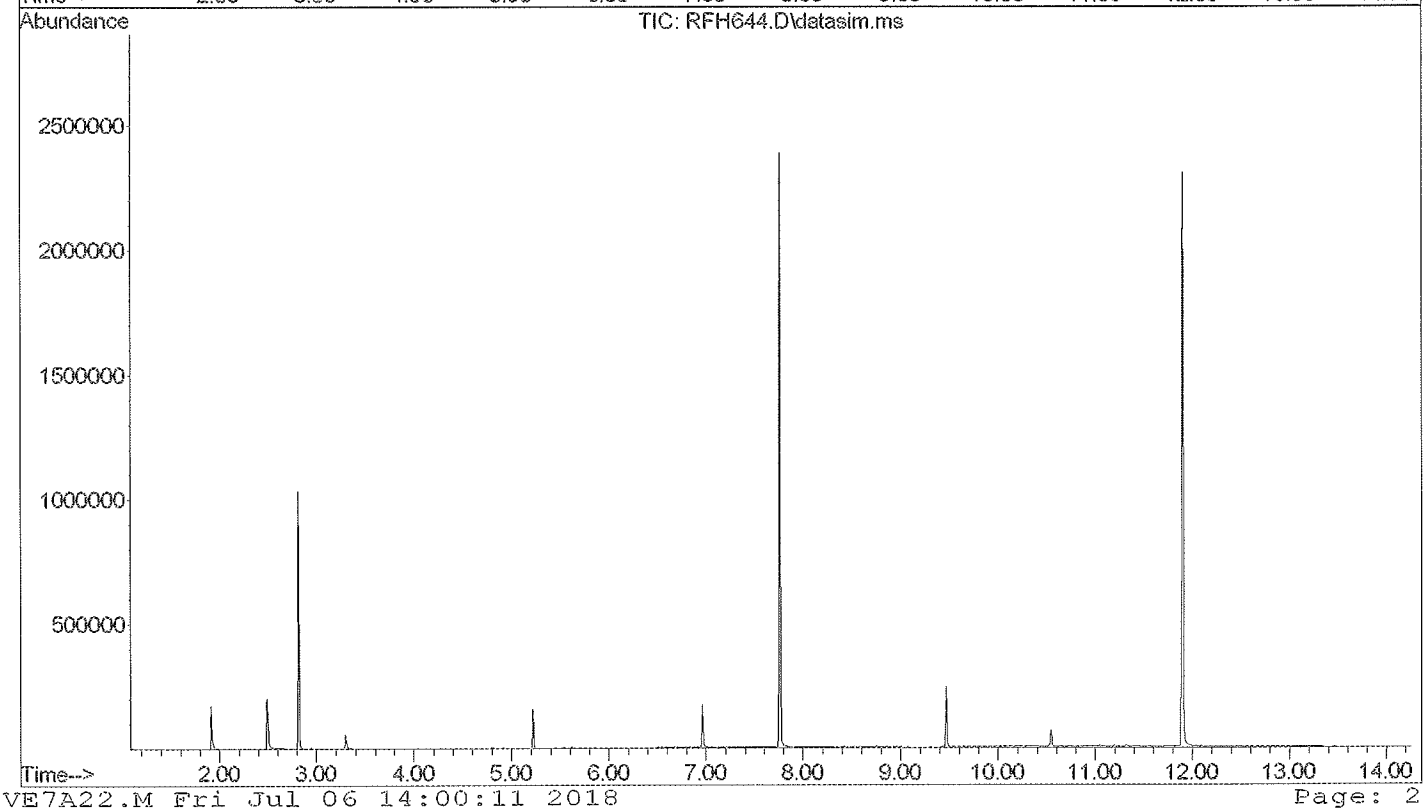
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.816	152	385604	40.00	ppm	0.00
21) Naphthalene-d8	4.011	136	1494910	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	780079	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1529804	40.00	ppm	0.00
87) Chrysene-d12	10.533	240	1593271	40.00	ppm	0.00
97) Perylene-d12	11.895	264	1490792	40.00	ppm	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	80854	7.50	ppm	0.00
Spiked Amount 30.000			Recovery =	25.00%		
6) Phenol-d5	2.491	99	127825	8.97	ppm	0.02
Spiked Amount 30.000			Recovery =	29.90%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	35886	2.41	ppm	0.00
Spiked Amount 10.000			Recovery =	24.10%		
46) 2-Fluorobiphenyl	5.219	172	85998	2.57	ppm	-0.01
Spiked Amount 10.000			Recovery =	25.70%		
75) 2,4,6-Tribromophenol	6.963	330	55172	10.39	ppm	0.00
Spiked Amount 30.000			Recovery =	34.63%		
90) Terphenyl-d14	9.466	244	138996	4.02	ppm	-0.01
Spiked Amount 10.000			Recovery =	40.20%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH644.D Vial: 24
Acq On : 29 Jun 2018 19:39 Operator: RZh
Sample : 18F187-17 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:00:06 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





QC SUMMARIES

METHOD SW3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: CH2M HILL	Date Collected:	06/28/18 15:30
Project	: JBER TO075	Date Received:	06/28/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: MBLK1S	Date Analyzed:	06/29/18 13:37
Lab Samp ID:	SVF043SB	Dilution Factor:	1
Lab File ID:	RFH625	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	NA
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
1,2,4-Trichlorobenzene	ND	0.33	0.083	0.17
1,2-Dichlorobenzene	ND	0.33	0.083	0.17
1,3-Dichlorobenzene	ND	0.33	0.083	0.17
1,4-Dichlorobenzene	ND	0.33	0.083	0.17
2,4,5-Trichlorophenol	ND	0.33	0.091	0.17
2,4,6-Trichlorophenol	ND	0.33	0.083	0.17
2,4-Dichlorophenol	ND	0.33	0.083	0.17
2,4-Dimethylphenol	ND	0.33	0.083	0.17
2,4-Dinitrophenol	ND	0.67	0.086	0.17
2,4-Dinitrotoluene	ND	0.33	0.083	0.17
2,6-Dinitrotoluene	ND	0.33	0.083	0.17
2-Chloronaphthalene	ND	0.33	0.083	0.17
2-Chlorophenol	ND	0.33	0.083	0.17
2-Methylnaphthalene	ND	0.33	0.083	0.17
2-Methylphenol	ND	0.33	0.083	0.17
2-Nitroaniline	ND	0.33	0.083	0.17
2-Nitrophenol	ND	0.33	0.083	0.17
3,3'-Dichlorobenzidine	ND	0.33	0.084	0.17
3 & 4-Methylphenol	ND	0.33	0.083	0.17
3-Nitroaniline	ND	0.33	0.083	0.17
4-Bromophenyl phenyl ether	ND	0.33	0.090	0.17
4-Chloro-3-methylphenol	ND	0.33	0.083	0.17
4-Chloroaniline	ND	0.33	0.083	0.17
4-Chlorophenyl phenyl ether	ND	0.33	0.083	0.17
4-Nitroaniline	ND	0.33	0.12	0.17
Acenaphthene	ND	0.33	0.083	0.17
Acenaphthylene	ND	0.33	0.083	0.17
Anthracene	ND	0.33	0.083	0.17
Benzo (a) anthracene	ND	0.33	0.083	0.17
Benzo (a) pyrene	ND	0.33	0.083	0.17
Benzo (b) fluoranthene	ND	0.33	0.086	0.17
Benzo (g,h,i) perylene	ND	0.33	0.087	0.17
Benzo(k)fluoranthene	ND	0.33	0.083	0.17
Benzoic Acid	ND	1.3	0.33	0.67
bis (2-Ethylhexyl) phthalate	ND	0.33	0.12	0.17
bis (2-Chloroethyl) ether	ND	0.33	0.083	0.17
Butyl benzylphthalate	ND	0.33	0.083	0.17
Carbazole	ND	0.33	0.089	0.17
Chrysene	ND	0.33	0.083	0.17
Dibenzo (a,h) anthracene	ND	0.33	0.083	0.17
Dibenzofuran	ND	0.33	0.083	0.17
Diethyl phthalate	ND	0.33	0.083	0.17
Dimethyl phthalate	ND	0.33	0.083	0.17
Di-n-butylphthalate	ND	0.33	0.097	0.17
Di-n-octylphthalate	ND	0.33	0.097	0.17
Fluoranthene	ND	0.33	0.13	0.17
Fluorene	ND	0.33	0.083	0.17
Hexachlorobenzene	ND	0.33	0.083	0.17
Hexachlorobutadiene	ND	0.33	0.083	0.17
Hexachloroethane	ND	0.33	0.083	0.17
Indeno (1,2,3-c,d) pyrene	ND	0.33	0.083	0.17
Isophorone	ND	0.33	0.083	0.17
Naphthalene	ND	0.33	0.083	0.17
Nitrobenzene	ND	0.33	0.083	0.17
N-Nitrosodimethylamine	ND	0.33	0.083	0.17
n-Nitrosodi-n-propylamine	ND	0.33	0.083	0.17
n-Nitrosodiphenylamine	ND	0.33	0.15	0.17
Pentachlorophenol	ND	0.67	0.083	0.17
Phenanthrene	ND	0.33	0.083	0.17
Phenol	ND	0.33	0.083	0.17
Pyrene	ND	0.33	0.16	0.17
Azobenzene	ND	0.33	0.096	0.17
4,6-Dinitro-2-methylphenol	ND	0.67	0.083	0.17
Benzyl Alcohol	ND	0.33	0.083	0.17
bis (2-Chloroisopropyl) ether	ND	0.33	0.083	0.17
bis (2-Chloroethoxy) methane	ND	0.33	0.083	0.17
1,4-Dioxane	ND	0.33	0.083	0.17
4-Nitrophenol	ND	0.67	0.11	0.17

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.40	2.00	70	39-132
2-Fluorobiphenyl	0.450	0.667	68	44-115
2-Fluorophenol	1.60	2.00	80	35-115
Nitrobenzene-d5	0.531	0.667	80	37-122
Phenol-d5	1.65	2.00	83	33-122
Terphenyl-d14	0.523	0.667	78	54-127

Notes:
(1): 4-Methylphenol cannot be separated from 3-Methylphenol
(2): n-Nitrosodiphenylamine cannot be separated from Diphenylamine
(3): 1,2-Diphenylhydrazine is analyzed as Azobenzene due to decomposition in injector

Detection limits are reported relative to sample result significant figures.
Sample Amount : 30g
Prepared by : JVille
Final Volume : 2ml
Analyzed by : KVu

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : SW3550B/8270C

MATRIX	: SOIL		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1S	LCS1S	LCD1S
LAB SAMPLE ID	: SVF043SB	SVF043SL	SVF043SC
LAB FILE ID	: RFH625	RFH626	RFH627
DATE PREPARED	: 06/28/18 15:30	06/28/18 15:30	06/28/18 15:30
DATE ANALYZED	: 06/29/18 13:37	06/29/18 13:56	06/29/18 14:15
PREP BATCH	: 18SVF043S	18SVF043S	18SVF043S
CALIBRATION REF	: RAH169	RAH169	RAH169

ACCESSION:

PARAMETERS	MBResult (mg/kg)	SpikeAmt (mg/kg)	LCSResult (mg/kg)	LCSRec (%)	SpikeAmt (mg/kg)	LCDResult (mg/kg)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,2,4-Trichlorobenzene	ND	1.33	1.08	81	1.33	1.08	81	0	34-118	20
1,2-Dichlorobenzene	ND	1.33	1.09	82	1.33	1.10	83	1	33-117	20
1,3-Dichlorobenzene	ND	1.33	1.11	83	1.33	1.06	80	5	30-115	20
1,4-Dichlorobenzene	ND	1.33	1.11	83	1.33	1.09	82	2	31-115	20
2,4,5-Trichlorophenol	ND	1.33	1.05	79	1.33	1.01	76	4	41-124	20
2,4,6-Trichlorophenol	ND	1.33	1.09	82	1.33	1.06	80	3	39-126	20
2,4-Dichlorophenol	ND	1.33	1.13	85	1.33	1.14	86	1	40-122	20
2,4-Dimethylphenol	ND	1.33	1.23	92	1.33	1.19	89	3	30-127	20
2,4-Dinitrophenol	ND	1.33	0.784	59	1.33	0.924	69	16	20-130	20
2,4-Dinitrotoluene	ND	1.33	1.16	87	1.33	1.16	87	0	48-126	20
2,6-Dinitrotoluene	ND	1.33	1.13	85	1.33	1.16	87	3	46-124	20
2-Chloronaphthalene	ND	1.33	1.17	88	1.33	1.15	86	2	41-114	20
2-Chlorophenol	ND	1.33	1.21	91	1.33	1.19	89	2	34-121	20
2-Methylnaphthalene	ND	1.33	1.03	77	1.33	1.03	77	0	38-122	20
2-Methylphenol	ND	1.33	1.11	83	1.33	1.21	91	9	32-122	20
2-Nitroaniline	ND	1.33	1.23	92	1.33	1.26	95	2	44-127	20
2-Nitrophenol	ND	1.33	1.17	88	1.33	1.22	92	4	36-123	20
3,3'-Dichlorobenzidine	ND	1.33	1.34	101	1.33	1.32	99	2	22-121	20
3 & 4-Methylphenol	ND	1.33	1.18	89	1.33	1.20	90	2	34-119	20
3-Nitroaniline	ND	1.33	1.13	85	1.33	1.11	83	2	33-119	20
4-Bromophenyl phenyl ether	ND	1.33	1.27	95	1.33	1.25	94	2	46-124	20
4-Chloro-3-Methylphenol	ND	1.33	1.22	92	1.33	1.19	89	2	45-122	20
4-Chloroaniline	ND	1.33	0.960	72	1.33	0.981	74	2	17-106	20
4-Chlorophenyl phenyl ether	ND	1.33	1.20	90	1.33	1.25	94	4	45-121	20
4-Nitroaniline	ND	1.33	0.985	74	1.33	1.02	77	3	50-130	20
Acenaphthene	ND	1.33	1.15	86	1.33	1.18	89	3	40-123	20
Acenaphthylene	ND	1.33	1.12	84	1.33	1.03	77	8	32-132	20
Anthracene	ND	1.33	1.09	82	1.33	1.08	81	1	47-123	20
Benzo (a) anthracene	ND	1.33	1.16	87	1.33	1.14	86	2	49-126	20
Benzo (a) pyrene	ND	1.33	1.20	90	1.33	1.15	86	4	45-129	20
Benzo (b) fluoranthene	ND	1.33	1.12	84	1.33	1.07	80	5	45-132	20
Benzo (g,h,i) perylene	ND	1.33	1.12	84	1.33	1.11	83	1	43-134	20
Benzo(k)fluoranthene	ND	1.33	1.14	86	1.33	1.19	89	4	47-132	20
Benzoic Acid	ND	2.67	2.23	84	2.67	2.31	87	4	40-130	20
bis (2-Ethylhexyl) phthalate	ND	1.33	1.45	109	1.33	1.39	104	4	51-133	20
bis (2-Chloroethyl) ether	ND	1.33	1.23	92	1.33	1.22	92	1	31-120	20
Butyl benzylphthalate	ND	1.33	1.47	110	1.33	1.40	105	5	48-132	20
Carbazole	ND	1.33	1.26	95	1.33	1.27	95	1	50-123	20
Chrysene	ND	1.33	1.16	87	1.33	1.14	86	2	50-124	20
Dibenzo (a,h) anthracene	ND	1.33	1.14	86	1.33	1.14	86	0	45-134	20
Dibenzofuran	ND	1.33	1.20	90	1.33	1.19	89	1	44-120	20
Diethyl phthalate	ND	1.33	1.44	108	1.33	1.36	102	6	50-124	20
Dimethyl phthalate	ND	1.33	1.30	98	1.33	1.29	97	1	48-124	20
Di-n-butylphthalate	ND	1.33	1.54	116	1.33	1.54	116	0	51-128	20
Di-n-octylphthalate	ND	1.33	1.46	110	1.33	1.46	110	0	45-140	20
Fluoranthene	ND	1.33	1.14	86	1.33	1.12	84	2	50-127	20
Fluorene	ND	1.33	1.09	82	1.33	1.10	83	1	43-125	20
Hexachlorobenzene	ND	1.33	1.22	92	1.33	1.16	87	5	45-122	20
Hexachlorobutadiene	ND	1.33	1.12	84	1.33	1.10	83	2	32-123	20
Hexachloroethane	ND	1.33	1.07	80	1.33	1.10	83	3	28-117	20
Indeno (1,2,3-c,d) pyrene	ND	1.33	1.16	87	1.33	1.11	83	4	45-133	20
Isophorone	ND	1.33	0.890	67	1.33	0.920	69	3	30-122	20
Naphthalene	ND	1.33	1.05	79	1.33	1.07	80	2	35-123	20
Nitrobenzene	ND	1.33	1.29	97	1.33	1.29	97	0	34-122	20
N-Nitrosodimethylamine	ND	1.33	1.10	83	1.33	1.13	85	3	23-120	20
n-Nitrosodi-n-propylamine	ND	1.33	1.19	89	1.33	1.26	95	6	36-120	20
n-Nitrosodiphenylamine	ND	1.33	1.30	98	1.33	1.25	94	4	38-127	20
Pentachlorophenol	ND	1.33	1.09	82	1.33	1.08	81	1	25-133	20
Phenanthrene	ND	1.33	1.13	85	1.33	1.11	83	2	50-121	20
Phenol	ND	1.33	1.21	91	1.33	1.24	93	2	34-121	20
Pyrene	ND	1.33	1.16	87	1.33	1.12	84	4	47-127	20
Azobenzene	ND	1.33	1.38	104	1.33	1.38	104	0	39-125	20
4,6-Dinitro-2-Methylphenol	ND	1.33	1.32	99	1.33	1.36	102	3	29-132	20
Benzyl Alcohol	ND	1.33	1.21	91	1.33	1.25	94	3	29-122	20
bis (2-Chloroisopropyl) ether	ND	1.33	1.22	92	1.33	1.25	94	2	33-131	20
bis (2-Chloroethoxy) methane	ND	1.33	1.09	82	1.33	1.12	84	3	36-121	20
1,4-Dioxane	ND	1.33	1.09	82	1.33	1.20	90	10	30-130	20
4-Nitrophenol	ND	1.33	0.924	69	1.33	1.21	91	27*	30-132	20

SURROGATE PARAMETERS	SpikeAmt (mg/kg)	LCSResult (mg/kg)	LCSRec (%)	SpikeAmt (mg/kg)	LCDResult (mg/kg)	LCDRec (%)	QCLimit (%)
2,4,6-Tribromophenol	2.00	1.49	75	2.00	1.43	72	39-132
2-Fluorobiphenyl	0.667	0.466	70	0.667	0.449	67	44-115
2-Fluorophenol	2.00	1.58	79	2.00	1.50	75	35-115
Nitrobenzene-d5	0.667	0.519	78	0.667	0.551	83	37-122
Phenol-d5	2.00	1.70	85	2.00	1.65	83	33-122
Terphenyl-d14	0.667	0.557	84	0.667	0.524	79	54-127

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate
* Out of QC Limit

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : SW3550B/8270C

MATRIX	: SOIL		% MOISTURE:3.9
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 18Q2DP009-SB0501-SO-0	18Q2DP009-SB0501-SO-0MS	18Q2DP009-SB0501-SO-0MSD
LAB SAMPLE ID	: 18F187-07	18F187-07M	18F187-07S
LAB FILE ID	: RFH635	RFH628	RFH629
DATE PREPARED	: 06/28/18 15:30	06/28/18 15:30	06/28/18 15:30
DATE ANALYZED	: 06/29/18 16:47	06/29/18 14:34	06/29/18 14:53
PREP BATCH	: 18SVF043S	18SVF043S	18SVF043S
CALIBRATION REF	: RAH169	RAH169	RAH169

ACCESSION:

PARAMETERS	PSResult (mg/kg)	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,2,4-Trichlorobenzene	ND	1.39	1.10	79	1.39	1.09	79	1	34-118	20
1,2-Dichlorobenzene	ND	1.39	1.14	82	1.39	1.11	80	3	33-117	20
1,3-Dichlorobenzene	ND	1.39	1.13	81	1.39	1.09	79	4	30-115	20
1,4-Dichlorobenzene	ND	1.39	1.11	80	1.39	1.09	79	2	31-115	20
2,4,5-Trichlorophenol	ND	1.39	1.12	81	1.39	1.05	76	6	41-124	20
2,4,6-Trichlorophenol	ND	1.39	1.08	78	1.39	1.02	74	6	39-126	20
2,4-Dichlorophenol	ND	1.39	1.22	88	1.39	1.12	81	9	40-122	20
2,4-Dimethylphenol	ND	1.39	1.25	90	1.39	1.23	89	2	30-127	20
2,4-Dinitrophenol	ND	1.39	0.998	72	1.39	0.918	66	8	20-130	20
2,4-Dinitrotoluene	ND	1.39	1.28	92	1.39	1.24	89	3	48-126	20
2,6-Dinitrotoluene	ND	1.39	1.21	87	1.39	1.23	89	2	46-124	20
2-Chloronaphthalene	ND	1.39	1.17	84	1.39	1.12	81	4	41-114	20
2-Chlorophenol	ND	1.39	1.19	86	1.39	1.19	86	0	34-121	20
2-Methylnaphthalene	ND	1.39	1.01	73	1.39	1.03	74	2	38-122	20
2-Methylphenol	ND	1.39	1.14	82	1.39	1.13	81	1	32-122	20
2-Nitroaniline	ND	1.39	1.47	106	1.39	1.26	91	15	44-127	20
2-Nitrophenol	ND	1.39	1.17	84	1.39	1.18	85	1	36-123	20
3,3'-Dichlorobenzidine	ND	1.39	1.38	99	1.39	1.36	98	1	22-121	20
3 & 4-Methylphenol	ND	1.39	1.20	86	1.39	1.19	86	1	34-119	20
3-Nitroaniline	ND	1.39	1.26	91	1.39	1.19	86	6	33-119	20
4-Bromophenyl phenyl ether	ND	1.39	1.22	88	1.39	1.29	93	6	46-124	20
4-Chloro-3-Methylphenol	ND	1.39	1.23	89	1.39	1.29	93	5	45-122	20
4-Chloroaniline	ND	1.39	0.956	69	1.39	0.994	72	4	17-106	20
4-Chlorophenyl phenyl ether	ND	1.39	1.26	91	1.39	1.21	87	4	45-121	20
4-Nitroaniline	ND	1.39	1.25	90	1.39	1.14	82	9	50-130	20
Acenaphthene	ND	1.39	1.18	85	1.39	1.16	84	2	40-123	20
Acenaphthylene	ND	1.39	1.20	86	1.39	1.04	75	14	32-132	20
Anthracene	ND	1.39	1.12	81	1.39	1.14	82	2	47-123	20
Benzo (a) anthracene	ND	1.39	1.17	84	1.39	1.18	85	1	49-126	20
Benzo (a) pyrene	ND	1.39	1.17	84	1.39	1.20	86	3	45-129	20
Benzo (b) fluoranthene	ND	1.39	1.13	81	1.39	1.12	81	1	45-132	20
Benzo (g,h,i) perylene	ND	1.39	1.15	83	1.39	1.15	83	0	43-134	20
Benzo(k)fluoranthene	ND	1.39	1.22	88	1.39	1.24	89	2	47-132	20
Benzoic Acid	ND	2.77	2.16	78	2.77	2.05	74	5	40-130	20
bis (2-Ethylhexyl) phthalate	ND	1.39	1.44	104	1.39	1.51	109	5	51-133	20
bis (2-Chloroethyl) ether	ND	1.39	1.28	92	1.39	1.22	88	5	31-120	20
Butyl benzylphthalate	ND	1.39	1.49	107	1.39	1.52	110	2	48-132	20
Carbazole	ND	1.39	1.33	96	1.39	1.36	98	2	50-123	20
Chrysene	ND	1.39	1.15	83	1.39	1.15	83	0	50-124	20
Dibenzo (a,h) anthracene	ND	1.39	1.17	84	1.39	1.18	85	1	45-134	20
Dibenzofuran	ND	1.39	1.20	86	1.39	1.14	82	5	44-120	20
Diethyl phthalate	ND	1.39	1.40	101	1.39	1.36	98	3	50-124	20
Dimethyl phthalate	ND	1.39	1.35	97	1.39	1.35	97	0	48-124	20
Di-n-butylphthalate	ND	1.39	1.55	112	1.39	1.59	115	3	51-128	20
Di-n-octylphthalate	ND	1.39	1.36	98	1.39	1.44	104	6	45-140	20
Fluoranthene	ND	1.39	1.22	88	1.39	1.21	87	1	50-127	20
Fluorene	ND	1.39	1.12	81	1.39	1.06	76	6	43-125	20
Hexachlorobenzene	ND	1.39	1.15	83	1.39	1.17	84	2	45-122	20
Hexachlorobutadiene	ND	1.39	1.10	79	1.39	1.14	82	4	32-123	20
Hexachloroethane	ND	1.39	1.18	85	1.39	1.10	79	7	28-117	20
Indeno (1,2,3-c,d) pyrene	ND	1.39	1.18	85	1.39	1.14	82	3	45-133	20
Isophorone	ND	1.39	0.827	60	1.39	0.823	59	0	30-122	20
Naphthalene	ND	1.39	1.06	76	1.39	1.07	77	1	35-123	20
Nitrobenzene	ND	1.39	1.32	95	1.39	1.26	91	5	34-122	20
N-Nitrosodimethylamine	ND	1.39	1.13	81	1.39	1.14	82	1	23-120	20
n-Nitrosodi-n-propylamine	ND	1.39	1.28	92	1.39	1.21	87	6	36-120	20
n-Nitrosodiphenylamine	ND	1.39	1.23	89	1.39	1.28	92	4	38-127	20
Pentachlorophenol	ND	1.39	1.20	86	1.39	1.17	84	3	25-133	20
Phenanthrene	ND	1.39	1.14	82	1.39	1.17	84	3	50-121	20
Phenol	ND	1.39	1.20	86	1.39	1.25	90	4	34-121	20
Pyrene	ND	1.39	1.18	85	1.39	1.15	83	3	47-127	20
Azobenzene	ND	1.39	1.31	94	1.39	1.35	97	3	39-125	20
4,6-Dinitro-2-Methylphenol	ND	1.39	1.46	105	1.39	1.41	102	3	29-132	20
Benzyl Alcohol	ND	1.39	1.25	90	1.39	1.21	87	3	29-122	20
bis (2-Chloroisopropyl) ether	ND	1.39	1.16	84	1.39	1.21	87	4	33-131	20
bis (2-Chloroethoxy) methane	ND	1.39	1.13	81	1.39	1.11	80	2	36-121	20
1,4-Dioxane	ND	1.39	1.08	78	1.39	1.07	77	1	30-130	20
4-Nitrophenol	ND	1.39	1.32	95	1.39	1.15	83	14	30-132	20

SURROGATE PARAMETERS	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	QCLimit (%)
2,4,6-Tribromophenol	2.08	1.49	72	2.08	1.55	74	39-132
2-Fluorobiphenyl	0.694	0.463	67	0.694	0.449	65	44-115
2-Fluorophenol	2.08	1.53	74	2.08	1.57	75	35-115
Nitrobenzene-d5	0.694	0.527	76	0.694	0.541	78	37-122
Phenol-d5	2.08	1.64	79	2.08	1.69	81	33-122
Terphenyl-d14	0.694	0.521	75	0.694	0.534	77	54-127

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

QC DATA

Quantitation Report (QT Reviewed)

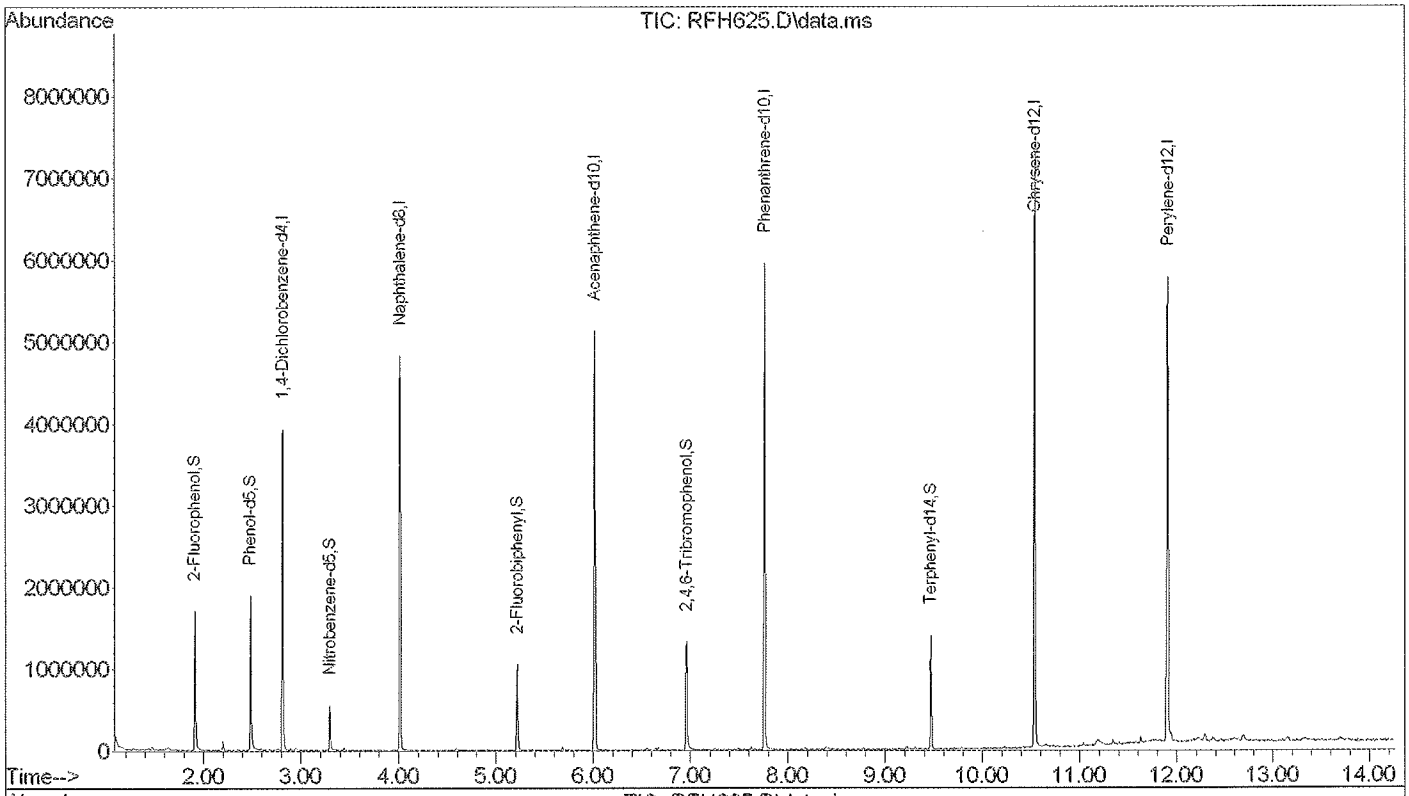
Data File : D:\DATA\18F29\RFH625.D Vial: 5
Acq On : 29 Jun 2018 13:37 Operator: RZh
Sample : SVF043SB Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:20:51 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

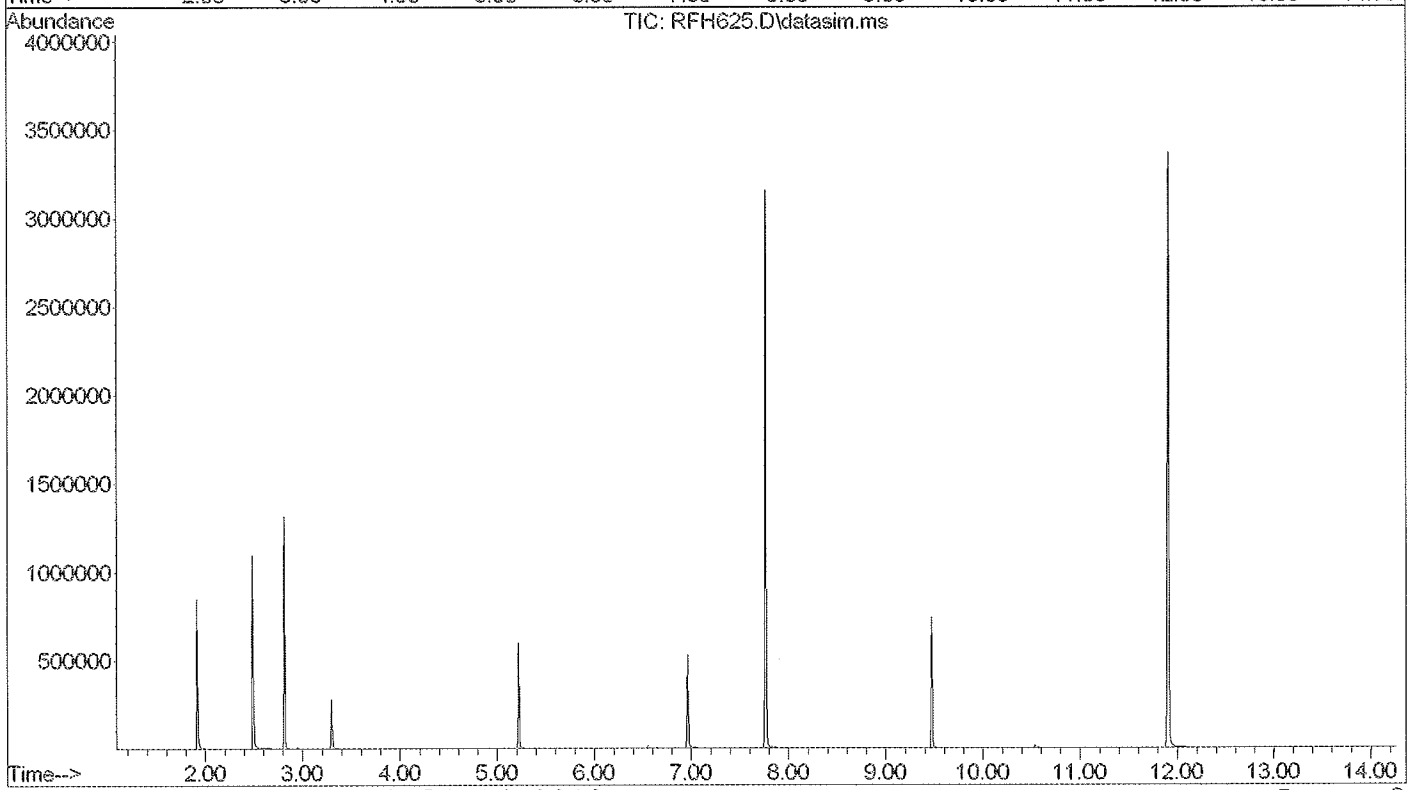
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.816	152	493504	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	1828500	40.00	ppm	-0.01
41) Acenaphthene-d10	6.013	164	1034615	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	2131058	40.00	ppm	0.00
87) Chrysene-d12	10.538	240	2475376	40.00	ppm	0.00
97) Perylene-d12	11.905	264	2310530	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.910	112	331424	24.02	ppm	0.00
Spiked Amount 30.000			Recovery =	80.07%		
6) Phenol-d5	2.486	99	452272	24.78	ppm	0.01
Spiked Amount 30.000			Recovery =	82.60%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.295	82	145219	7.97	ppm	0.00
Spiked Amount 10.000			Recovery =	79.70%		
46) 2-Fluorobiphenyl	5.220	172	299314	6.75	ppm	-0.01
Spiked Amount 10.000			Recovery =	67.50%		
75) 2,4,6-Tribromophenol	6.963	330	155574	21.02	ppm	0.00
Spiked Amount 30.000			Recovery =	70.07%		
90) Terphenyl-d14	9.466	244	420899	7.84	ppm	-0.01
Spiked Amount 10.000			Recovery =	78.40%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH625.D Vial: 5
Acq On : 29 Jun 2018 13:37 Operator: RZh
Sample : SVF043SB Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:20:51 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH626.D Vial: 6
Acq On : 29 Jun 2018 13:56 Operator: RZh
Sample : SVF043SL Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:54:32 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.816	152	459051	40.00	ppm	0.00
21) Naphthalene-d8	4.016	136	1647618	40.00	ppm	0.00
41) Acenaphthene-d10	6.013	164	933171	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	1871279	40.00	ppm	0.00
87) Chrysene-d12	10.538	240	1965365	40.00	ppm	0.00
97) Perylene-d12	11.900	264	1828789	40.00	ppm	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	303737	23.66	ppm	0.00
Spiked Amount 30.000			Recovery =	78.87%		
6) Phenol-d5	2.486	99	432905	25.50	ppm	0.01
Spiked Amount 30.000			Recovery =	85.00%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	127781	7.78	ppm	0.00
Spiked Amount 10.000			Recovery =	77.80%		
46) 2-Fluorobiphenyl	5.219	172	279128	6.98	ppm	-0.01
Spiked Amount 10.000			Recovery =	69.80%		
75) 2,4,6-Tribromophenol	6.963	330	144981	22.31	ppm	0.00
Spiked Amount 30.000			Recovery =	74.37%		
90) Terphenyl-d14	9.466	244	355955	8.35	ppm	-0.01
Spiked Amount 10.000			Recovery =	83.50%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.193	88	76290	16.32	ppm	94
3) N-nitrosodimethylamine	1.312	74	122552	16.50	ppm	96
4) Pyridine	1.336	79	500013	36.17	ppm	98
7) Phenol	2.497	94	301699	18.17	ppm	92
8) Aniline	2.549	93	281246	14.27	ppm	98
9) bis(2-chloroethyl)ether	2.580	93	218987	18.41	ppm	98
10) 2-Chlorophenol	2.648	128	267749	18.16	ppm	94
11) 1,3-Dichlorobenzene	2.773	146	288308	16.71	ppm	99
13) 1,4-Dichlorobenzene	2.830	146	292653	16.72	ppm	96
14) Benzyl alcohol	2.907	108	161488	18.14	ppm	88
15) 1,2-Dichlorobenzene	2.960	146	271643	16.29	ppm	93
16) 2-Methylphenol	2.993	107	187839	16.67	ppm	84
17) bis(2-chloroisopropyl)...	3.017	45	386653	18.28	ppm	92
18) 4-Methylphenol	3.128	107	260489	17.63	ppm	94
19) N-Nitroso-di-n-propyla...	3.137	70	195448	17.91	ppm	96
20) Hexachloroethane	3.259	117	109202	16.12	ppm	95
23) Nitrobenzene	3.314	77	304409	19.42	ppm	95
24) Isophorone	3.535	82	389575	13.34	ppm	97
25) 2-Nitrophenol	3.622	139	132298	17.49	ppm	99
26) 2,4-Dimethylphenol	3.646	107	276969	18.52	ppm	89
27) Benzoic acid	3.737	105	357835	33.50	ppm	89
28) bis(2-Chloroethoxy)met...	3.742	93	265587	16.38	ppm	100
29) 3,5-Dimethylphenol	3.785	107	336658	19.09	ppm	99
30) 2,4-Dichlorophenol	3.862	162	222393	16.94	ppm	96
31) 1,2,4-Trichlorobenzene	3.954	180	265159	16.17	ppm	97
32) 3,4-Dimethylphenol	3.958	107	360332	19.22	ppm	94
33) Naphthalene	4.036	128	643516	15.82	ppm	100
34) 4-Chloroaniline	4.089	127	243406	14.39	ppm	97
35) 2,6-Dichlorophenol	4.098	162	238945	17.57	ppm	93
36) Hexachlorobutadiene	4.161	225	196836	16.81	ppm	98

Quantitation Report (QT Reviewed)

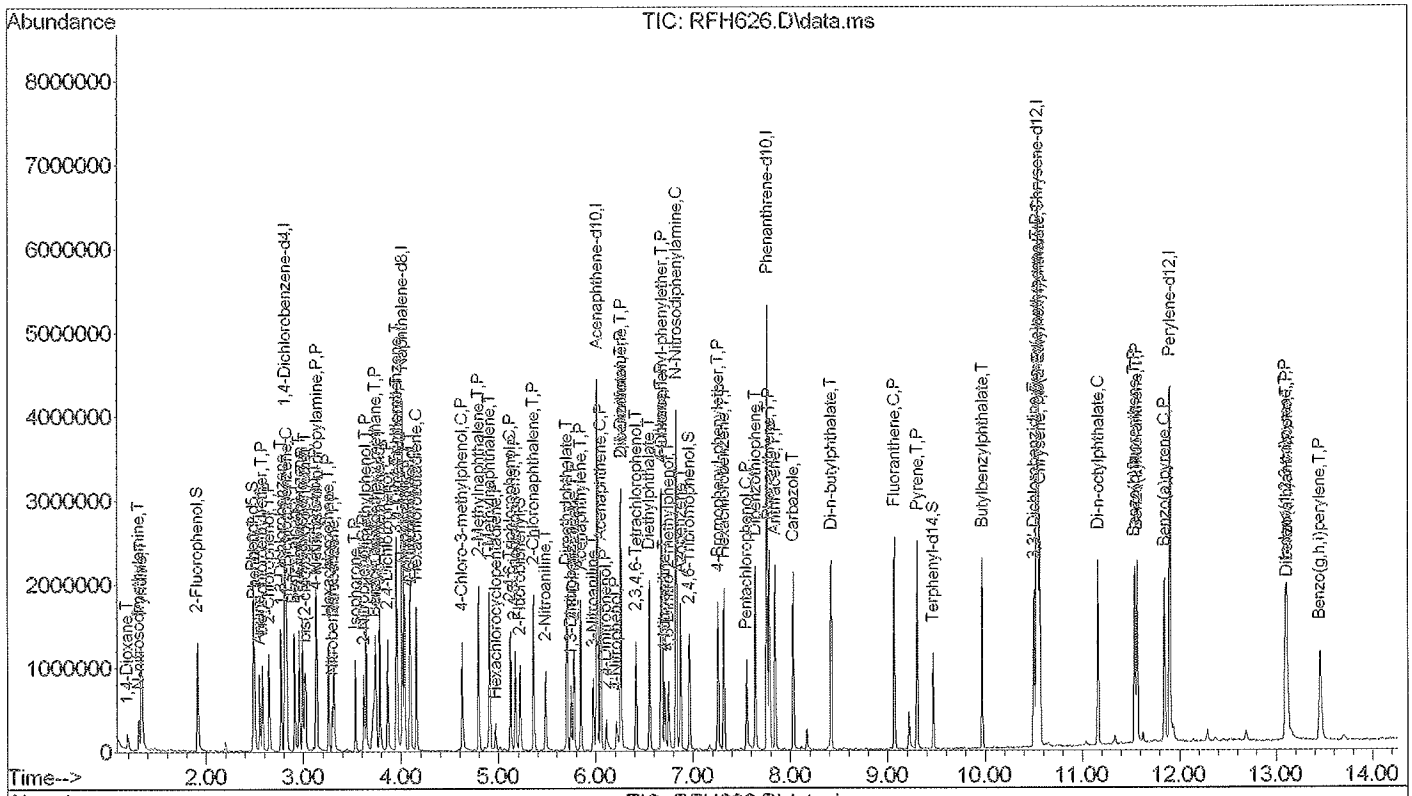
Data File : D:\DATA\18F29\RFH626.D Vial: 6
Acq On : 29 Jun 2018 13:56 Operator: RZh
Sample : SVF043SL Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:54:32 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

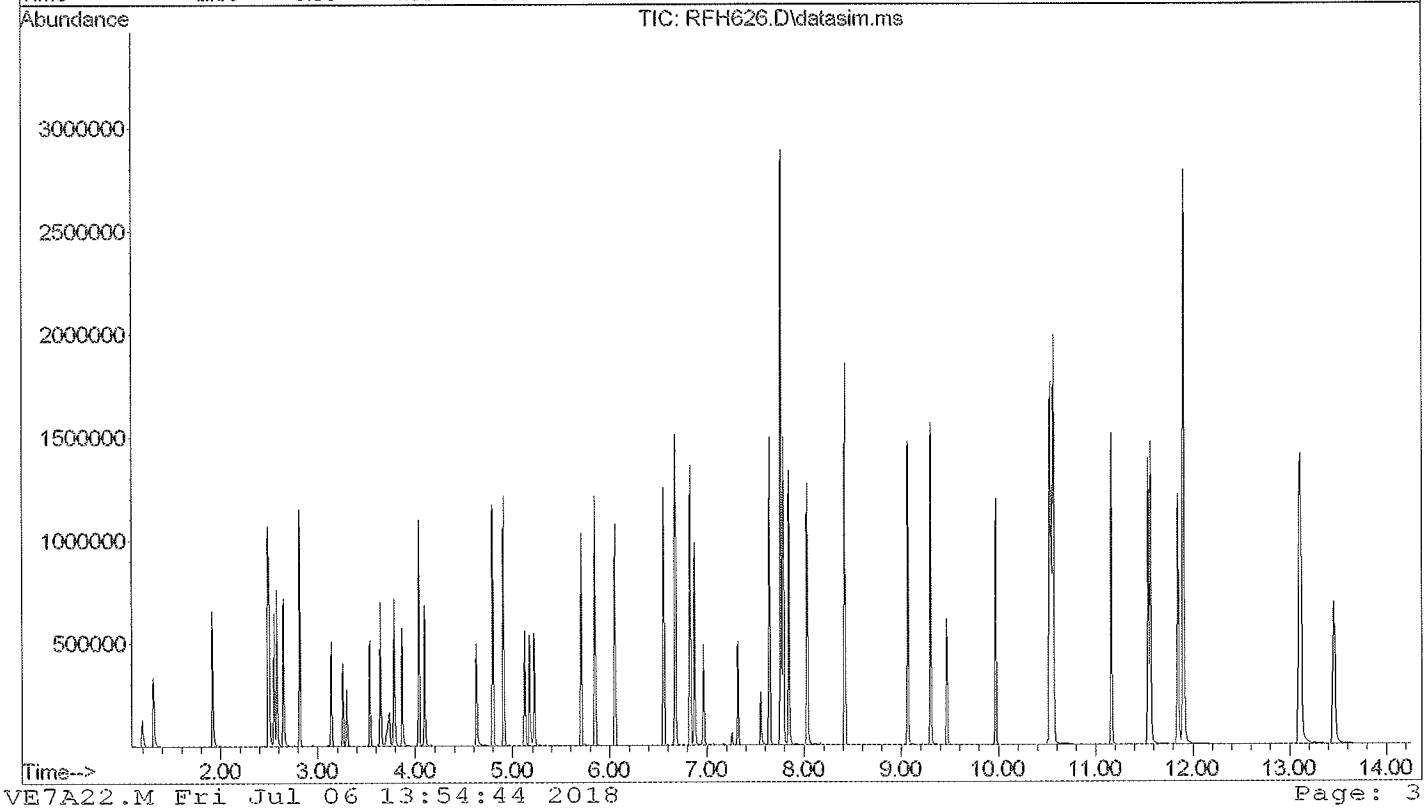
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.624	107	224192	18.28	ppm	98
39)	2-Methylnaphthalene	4.797	142	450438	15.52	ppm	94
40)	1-Methylnaphthalene	4.907	142	430115	15.61	ppm	98
42)	Hexachlorocyclopentadiene	4.974	237	40179	3.28	ppm	100
44)	2,4,6-Trichlorophenol	5.123	196	191550	16.30	ppm	96
45)	2,4,5-Trichlorophenol	5.166	196	190434	15.82	ppm	97
49)	2-Chloronaphthalene	5.359	162	516241	17.48	ppm	97
50)	2-Nitroaniline	5.484	65	154382	18.44	ppm	99
53)	Dimethylphthalate	5.705	163	676973	19.52	ppm	97
54)	1,3-Dinitrobenzene	5.748	168	80184	16.55	ppm	98
55)	2,6-Dinitrotoluene	5.777	165	124946	17.01	ppm	96
57)	Acenaphthylene	5.845	152	784955	16.78	ppm	100
58)	3-Nitroaniline	5.974	138	123469	16.97	ppm	95
59)	Acenaphthene	6.051	153	518095	17.19	ppm	95
60)	2,4-Dinitrophenol	6.109	184	46979	11.75	ppm	92
61)	4-Nitrophenol	6.214	109	75939	13.86	ppm	88
62)	2,4-Dinitrotoluene	6.262	165	169667	17.37	ppm	91
63)	Dibenzofuran	6.262	168	802221	18.03	ppm	93
65)	2,3,4,6-Tetrachlorophenol	6.415	232	175774	14.97	ppm	96
67)	Diethylphthalate	6.553	149	731935	21.59	ppm	99
68)	Fluorene	6.675	166	553055	16.40	ppm	95
69)	4-Chlorophenyl-phenyle...	6.680	204	335256	18.02	ppm	98
70)	4-Nitroaniline	6.708	138	106818	14.78	ppm	89
72)	4,6-Dinitro-2-methylph...	6.750	198	111630	19.85	ppm	88
73)	N-Nitrosodiphenylamine	6.825	169	524174	19.48	ppm	93
74)	Azobenzene	6.873	77	614217	20.71	ppm	98
76)	4-Bromophenyl-phenylether	7.257	248	237899	19.04	ppm	92
77)	Hexachlorobenzene	7.319	284	232760	18.24	ppm	100
78)	Pentachlorophenol	7.550	266	122191	16.41	ppm	97
79)	Dibenzothiophene	7.640	184	855131	17.41	ppm	96
80)	Phenanthrene	7.783	178	844704	17.02	ppm	99
82)	Anthracene	7.842	178	813585	16.35	ppm	98
83)	Carbazole	8.028	167	766787	18.86	ppm	98
84)	Di-n-butylphthalate	8.420	149	1153902	23.04	ppm	98
86)	Fluoranthene	9.067	202	967202	17.10	ppm	99
89)	Pyrene	9.303	202	994620	17.35	ppm	100
91)	Butylbenzylphthalate	9.971	149	448992	22.02	ppm	98
93)	3,3'-Dichlorobenzidine	10.504	252	391064	20.03	ppm	98
94)	Benzo(a)anthracene	10.528	228	956987	17.40	ppm	99
95)	Chrysene	10.562	228	907858	17.34	ppm	96
96)	bis(2-Ethylhexyl)phtha...	10.547	149	671937	21.79	ppm	100
98)	Di-n-octylphthalate	11.164	149	1081909	21.92	ppm	97
99)	Benzo(b)fluoranthene	11.538	252	863117	16.78	ppm	97
100)	Benzo(k)fluoranthene	11.563	252	859129	17.13	ppm	96
102)	Benzo(a)pyrene	11.848	252	863360	17.99	ppm	100
104)	Indeno(1,2,3-cd)pyrene	13.099	276	965769	17.35	ppm	97
105)	Dibenzo(a,h)anthracene	13.113	278	783169	17.10	ppm	98
106)	Benzo(g,h,i)perylene	13.453	276	790810	16.86	ppm	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH626.D Vial: 6
Acq On : 29 Jun 2018 13:56 Operator: RZh
Sample : SVF043SL Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:54:32 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH627.D Vial: 7
Acq On : 29 Jun 2018 14:15 Operator: RZh
Sample : SVF043SC Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:55:03 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.816	152	470057	40.00	ppm	0.00
21) Naphthalene-d8	4.017	136	1722277	40.00	ppm	0.00
41) Acenaphthene-d10	6.018	164	976598	40.00	ppm	0.00
71) Phenanthrene-d10	7.761	188	2002284	40.00	ppm	0.00
87) Chrysene-d12	10.538	240	2197577	40.00	ppm	0.00
97) Perylene-d12	11.900	264	2042578	40.00	ppm	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	295338	22.47	ppm	0.00
Spiked Amount 30.000			Recovery =	74.90%		
6) Phenol-d5	2.486	99	430582	24.77	ppm	0.01
Spiked Amount 30.000			Recovery =	82.57%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.295	82	141752	8.26	ppm	0.00
Spiked Amount 10.000			Recovery =	82.60%		
46) 2-Fluorobiphenyl	5.220	172	281628	6.73	ppm	-0.01
Spiked Amount 10.000			Recovery =	67.30%		
75) 2,4,6-Tribromophenol	6.963	330	148715	21.39	ppm	0.00
Spiked Amount 30.000			Recovery =	71.30%		
90) Terphenyl-d14	9.466	244	374334	7.85	ppm	-0.01
Spiked Amount 10.000			Recovery =	78.50%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.192	88	86010	17.97	ppm	95
3) N-nitrosodimethylamine	1.307	74	128706	16.93	ppm	86
4) Pyridine	1.336	79	453281	32.02	ppm	99
7) Phenol	2.497	94	316820	18.63	ppm	94
8) Aniline	2.549	93	290055	14.37	ppm	96
9) bis(2-chloroethyl)ether	2.580	93	222250	18.25	ppm	99
10) 2-Chlorophenol	2.648	128	270050	17.88	ppm	99
11) 1,3-Dichlorobenzene	2.768	146	281414	15.93	ppm	97
13) 1,4-Dichlorobenzene	2.830	146	292188	16.30	ppm	97
14) Benzyl alcohol	2.912	108	171414	18.81	ppm	89
15) 1,2-Dichlorobenzene	2.960	146	281242	16.47	ppm	99
16) 2-Methylphenol	2.993	107	208567	18.08	ppm	97
17) bis(2-chloroisopropyl)...	3.022	45	406731	18.78	ppm	92
18) 4-Methylphenol	3.128	107	273393	18.07	ppm	95
19) N-Nitroso-di-n-propyla...	3.137	70	210813	18.87	ppm	96
20) Hexachloroethane	3.259	117	114671	16.53	ppm	93
23) Nitrobenzene	3.314	77	317493	19.37	ppm	94
24) Isophorone	3.535	82	421223	13.80	ppm	95
25) 2-Nitrophenol	3.622	139	144397	18.27	ppm	94
26) 2,4-Dimethylphenol	3.646	107	278441	17.82	ppm	97
27) Benzoic acid	3.737	105	387237	34.68	ppm	91
28) bis(2-Chloroethoxy)met...	3.742	93	285683	16.86	ppm	98
29) 3,5-Dimethylphenol	3.785	107	356752	19.35	ppm	98
30) 2,4-Dichlorophenol	3.862	162	235106	17.13	ppm	95
31) 1,2,4-Trichlorobenzene	3.954	180	277093	16.16	ppm	98
32) 3,4-Dimethylphenol	3.959	107	372465	19.01	ppm	95
33) Naphthalene	4.036	128	680691	16.01	ppm	99
34) 4-Chloroaniline	4.089	127	260099	14.71	ppm	99
35) 2,6-Dichlorophenol	4.099	162	255050	17.94	ppm	97
36) Hexachlorobutadiene	4.161	225	201106	16.43	ppm	98

Quantitation Report (QT Reviewed)

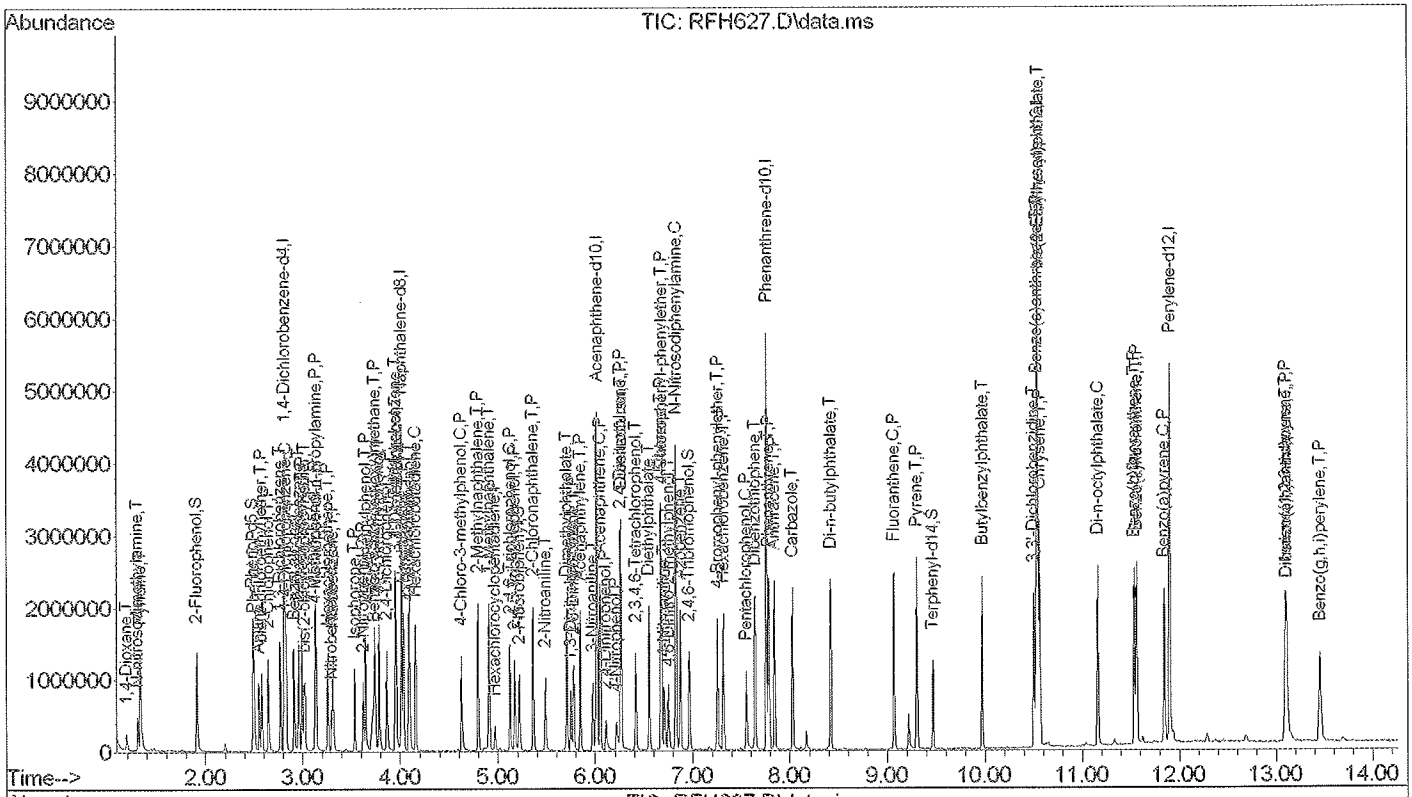
Data File : D:\DATA\18F29\RFH627.D Vial: 7
Acq On : 29 Jun 2018 14:15 Operator: RZh
Sample : SVF043SC Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:55:03 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

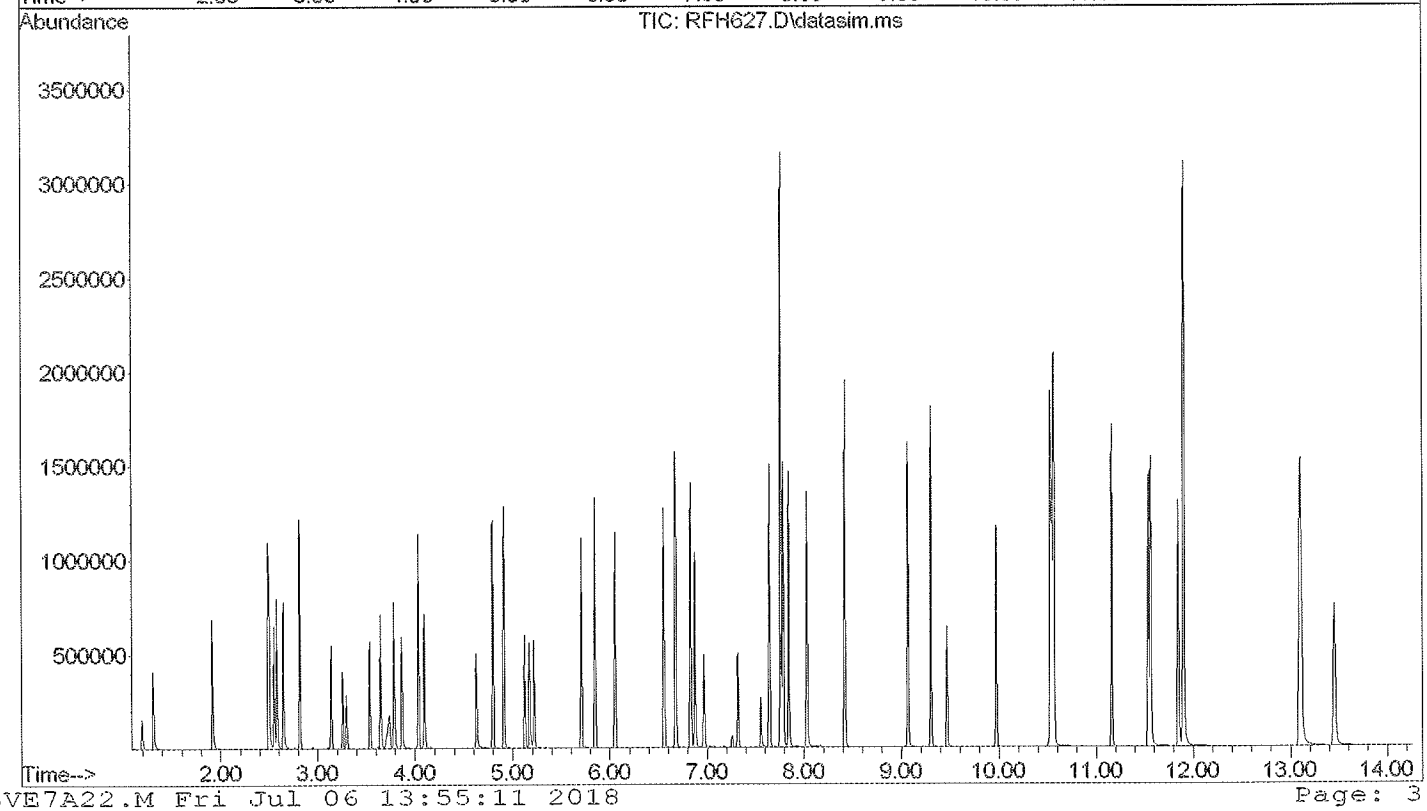
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.624	107	228464	17.82	ppm	99
39)	2-Methylnaphthalene	4.797	142	470627	15.51	ppm	95
40)	1-Methylnaphthalene	4.907	142	450815	15.66	ppm	98
42)	Hexachlorocyclopentadiene	4.969	237	43599	3.40	ppm	97
44)	2,4,6-Trichlorophenol	5.123	196	195020	15.85	ppm	91
45)	2,4,5-Trichlorophenol	5.171	196	190405	15.12	ppm	93
49)	2-Chloronaphthalene	5.359	162	532359	17.23	ppm	98
50)	2-Nitroaniline	5.484	65	164934	18.83	ppm	99
53)	Dimethylphthalate	5.705	163	703745	19.39	ppm	100
54)	1,3-Dinitrobenzene	5.748	168	84906	16.74	ppm	98
55)	2,6-Dinitrotoluene	5.777	165	134081	17.44	ppm	96
57)	Acenaphthylene	5.845	152	753903	15.40	ppm	95
58)	3-Nitroaniline	5.975	138	126929	16.67	ppm	92
59)	Acenaphthene	6.051	153	555981	17.63	ppm	92
60)	2,4-Dinitrophenol	6.109	184	59578	13.87	ppm	97
61)	4-Nitrophenol	6.214	109	104484	18.22	ppm	75
62)	2,4-Dinitrotoluene	6.257	165	177580	17.37	ppm	90
63)	Dibenzofuran	6.262	168	834065	17.91	ppm	95
65)	2,3,4,6-Tetrachlorophenol	6.416	232	176872	14.40	ppm	97
67)	Diethylphthalate	6.553	149	725774	20.45	ppm	100
68)	Fluorene	6.675	166	584326	16.55	ppm	96
69)	4-Chlorophenyl-phenyle...	6.680	204	365577	18.78	ppm	100
70)	4-Nitroaniline	6.708	138	115197	15.23	ppm	89
72)	4,6-Dinitro-2-methylph...	6.755	198	122763	20.36	ppm	96
73)	N-Nitrosodiphenylamine	6.826	169	541121	18.79	ppm	98
74)	Azobenzene	6.873	77	655671	20.66	ppm	100
76)	4-Bromophenyl-phenylether	7.257	248	250846	18.76	ppm	96
77)	Hexachlorobenzene	7.319	284	237096	17.36	ppm	99
78)	Pentachlorophenol	7.550	266	128987	16.19	ppm	96
79)	Dibenzothiophene	7.645	184	887648	16.89	ppm	96
80)	Phenanthrene	7.783	178	887503	16.71	ppm	99
82)	Anthracene	7.842	178	865832	16.26	ppm	100
83)	Carbazole	8.028	167	827209	19.01	ppm	99
84)	Di-n-butylphthalate	8.415	149	1238603	23.11	ppm	99
86)	Fluoranthene	9.067	202	1018915	16.84	ppm	99
89)	Pyrene	9.298	202	1078276	16.82	ppm	99
91)	Butylbenzylphthalate	9.971	149	477852	20.96	ppm	97
93)	3,3'-Dichlorobenzidine	10.499	252	433187	19.84	ppm	99
94)	Benzo(a)anthracene	10.528	228	1048379	17.05	ppm	99
95)	Chrysene	10.562	228	999107	17.07	ppm	99
96)	bis(2-Ethylhexyl)phtha...	10.543	149	719261	20.86	ppm	99
98)	Di-n-octylphthalate	11.159	149	1205732	21.87	ppm	96
99)	Benzo(b)fluoranthene	11.538	252	918124	15.98	ppm	96
100)	Benzo(k)fluoranthene	11.563	252	1000584	17.86	ppm	97
102)	Benzo(a)pyrene	11.843	252	923872	17.24	ppm	98
104)	Indeno(1,2,3-cd)pyrene	13.099	276	1034738	16.64	ppm	100
105)	Dibenzo(a,h)anthracene	13.109	278	875137	17.11	ppm	96
106)	Benzo(g,h,i)perylene	13.453	276	869210	16.59	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH627.D Vial: 7
Acq On : 29 Jun 2018 14:15 Operator: RZh
Sample : SVF043SC Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:55:03 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH628.D Vial: 8
Acq On : 29 Jun 2018 14:34 Operator: RZh
Sample : 18F187-07M Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:55:29 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.816	152	493139	40.00	ppm	0.00
21) Naphthalene-d8	4.017	136	1812670	40.00	ppm	0.00
41) Acenaphthene-d10	6.013	164	1007442	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	2215226	40.00	ppm	0.00
87) Chrysene-d12	10.538	240	2564080	40.00	ppm	0.00
97) Perylene-d12	11.900	264	2386401	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.910	112	305029	22.12	ppm	0.00
Spiked Amount 30.000			Recovery =	73.73%		
6) Phenol-d5	2.486	99	432219	23.70	ppm	0.01
Spiked Amount 30.000			Recovery =	79.00%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.295	82	137234	7.60	ppm	0.00
Spiked Amount 10.000			Recovery =	76.00%		
46) 2-Fluorobiphenyl	5.220	172	288070	6.68	ppm	-0.01
Spiked Amount 10.000			Recovery =	66.80%		
75) 2,4,6-Tribromophenol	6.963	330	165015	21.45	ppm	0.00
Spiked Amount 30.000			Recovery =	71.50%		
90) Terphenyl-d14	9.466	244	417778	7.51	ppm	-0.01
Spiked Amount 10.000			Recovery =	75.10%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.192	88	78439	15.62	ppm	93
3) N-nitrosodimethylamine	1.307	74	129972	16.29	ppm	92
4) Pyridine	1.336	79	440793	29.68	ppm	99
7) Phenol	2.496	94	309380	17.34	ppm	91
8) Aniline	2.549	93	299500	14.14	ppm	95
9) bis(2-chloroethyl)ether	2.580	93	236303	18.49	ppm	95
10) 2-Chlorophenol	2.648	128	272646	17.21	ppm	90
11) 1,3-Dichlorobenzene	2.773	146	301119	16.25	ppm	98
13) 1,4-Dichlorobenzene	2.830	146	301910	16.06	ppm	93
14) Benzyl alcohol	2.912	108	171779	17.97	ppm	95
15) 1,2-Dichlorobenzene	2.960	146	293867	16.41	ppm	97
16) 2-Methylphenol	2.993	107	198975	16.44	ppm	90
17) bis(2-chloroisopropyl)...	3.022	45	378725	16.67	ppm	96
18) 4-Methylphenol	3.128	107	274566	17.30	ppm	91
19) N-Nitroso-di-n-propyla...	3.137	70	216951	18.51	ppm	95
20) Hexachloroethane	3.255	117	123253	16.94	ppm	87
23) Nitrobenzene	3.314	77	328205	19.03	ppm	92
24) Isophorone	3.535	82	383029	11.92	ppm	99
25) 2-Nitrophenol	3.622	139	140254	16.86	ppm	83
26) 2,4-Dimethylphenol	3.646	107	295434	17.96	ppm	83
27) Benzoic acid	3.732	105	366198	31.16	ppm	95
28) bis(2-Chloroethoxy)met...	3.742	93	291440	16.34	ppm	99
29) 3,5-Dimethylphenol	3.785	107	363070	18.72	ppm	96
30) 2,4-Dichlorophenol	3.862	162	255057	17.66	ppm	92
31) 1,2,4-Trichlorobenzene	3.949	180	286565	15.88	ppm	100
32) 3,4-Dimethylphenol	3.959	107	387226	18.78	ppm	96
33) Naphthalene	4.036	128	686655	15.34	ppm	98
34) 4-Chloroaniline	4.089	127	256395	13.78	ppm	99
35) 2,6-Dichlorophenol	4.099	162	253300	16.93	ppm	97
36) Hexachlorobutadiene	4.156	225	203963	15.83	ppm	100

Quantitation Report (QT Reviewed)

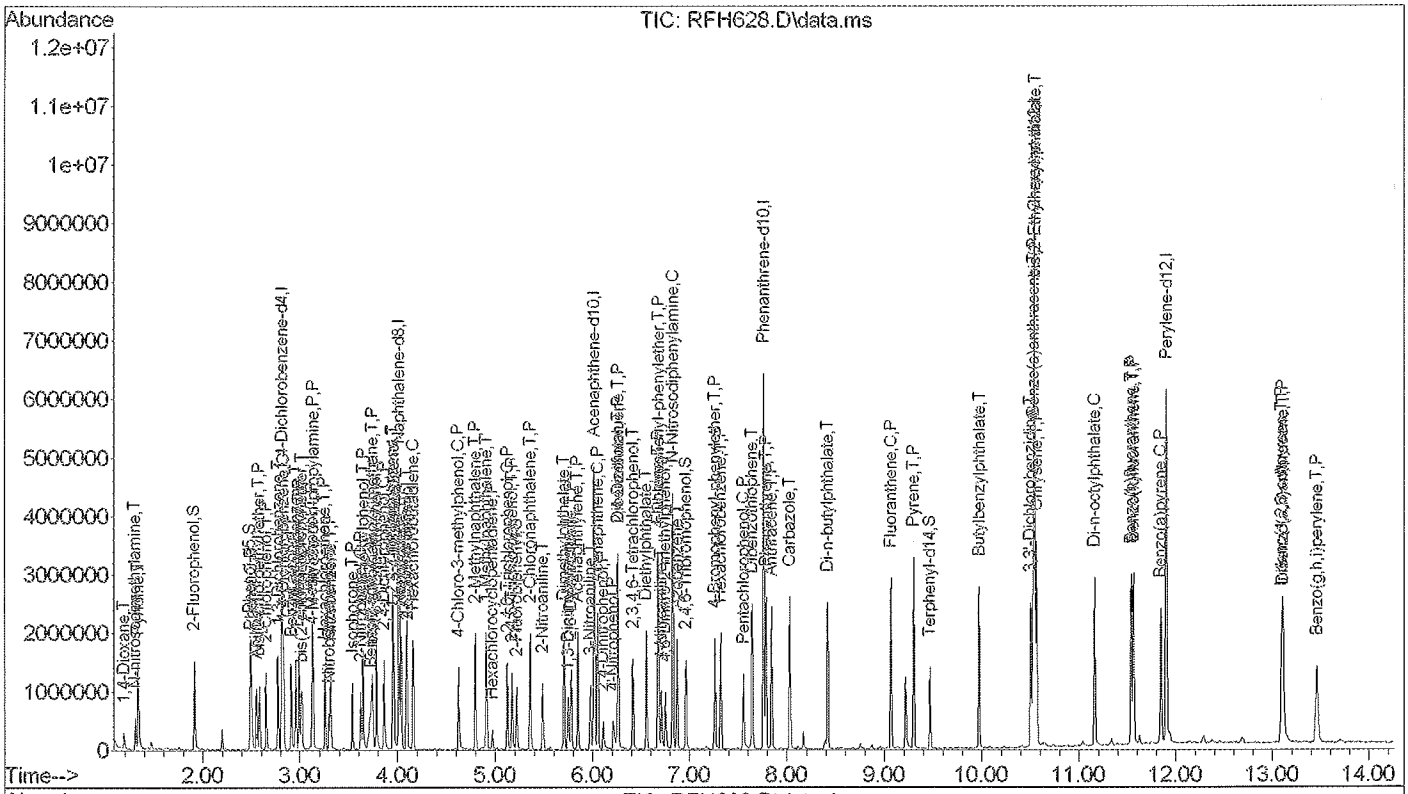
Data File : D:\DATA\18F29\RFH628.D Vial: 8
Acq On : 29 Jun 2018 14:34 Operator: RZh
Sample : 18F187-07M Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:55:29 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

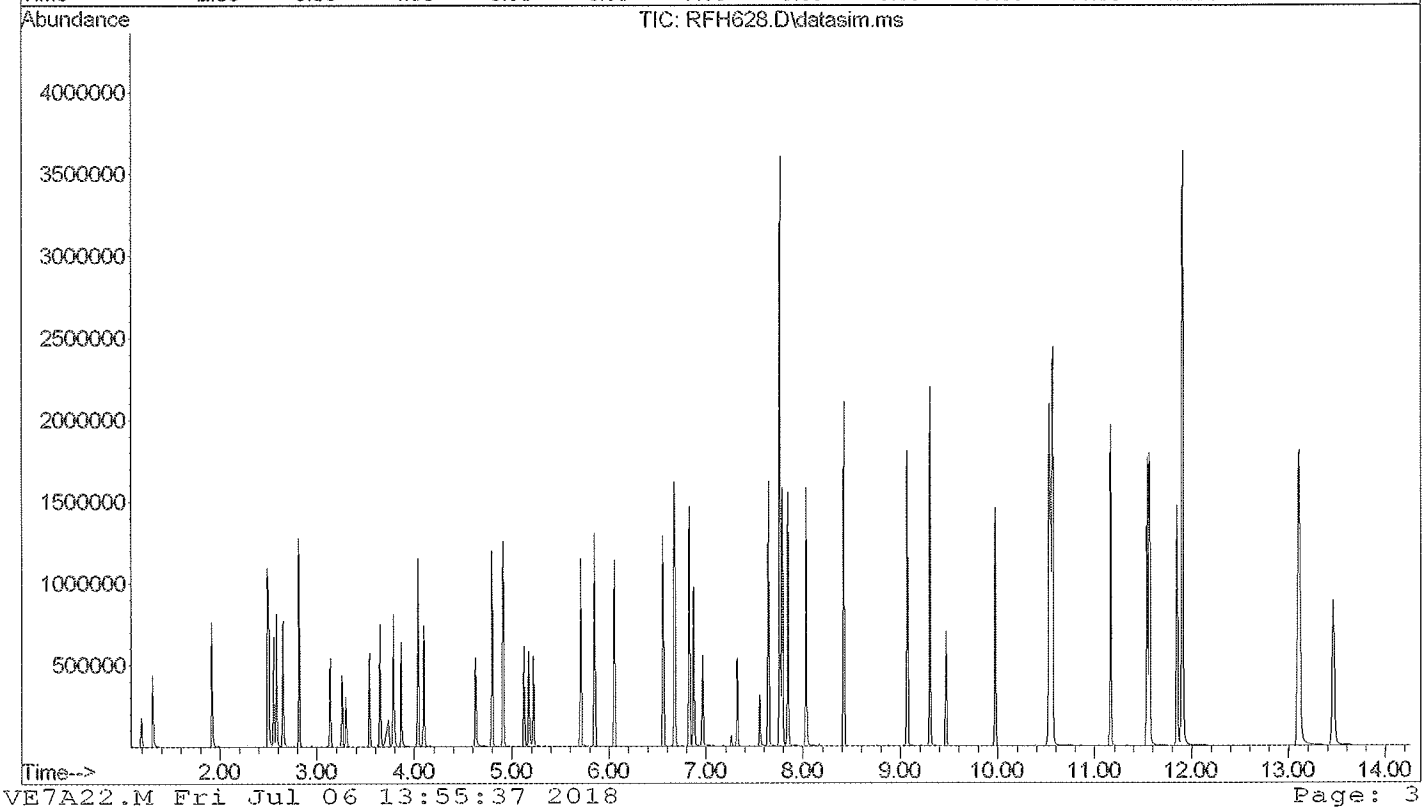
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.624	107	238661	17.69	ppm	92
39)	2-Methylnaphthalene	4.797	142	464801	14.55	ppm	98
40)	1-Methylnaphthalene	4.907	142	449278	14.82	ppm	97
42)	Hexachlorocyclopentadiene	4.969	237	44449	3.36	ppm	93
44)	2,4,6-Trichlorophenol	5.123	196	197413	15.56	ppm	90
45)	2,4,5-Trichlorophenol	5.171	196	210242	16.18	ppm	99
49)	2-Chloronaphthalene	5.359	162	539645	16.93	ppm	99
50)	2-Nitroaniline	5.484	65	191952	21.24	ppm	94
53)	Dimethylphthalate	5.705	163	728139	19.44	ppm	98
54)	1,3-Dinitrobenzene	5.748	168	98411	18.81	ppm	95
55)	2,6-Dinitrotoluene	5.777	165	137891	17.39	ppm	91
57)	Acenaphthylene	5.845	152	871947	17.26	ppm	99
58)	3-Nitroaniline	5.975	138	143171	18.22	ppm	91
59)	Acenaphthene	6.051	153	551455	16.95	ppm	94
60)	2,4-Dinitrophenol	6.109	184	64105	14.39	ppm	94
61)	4-Nitrophenol	6.210	109	112112	18.96	ppm	85
62)	2,4-Dinitrotoluene	6.262	165	195115	18.50	ppm	94
63)	Dibenzofuran	6.262	168	830759	17.30	ppm	92
65)	2,3,4,6-Tetrachlorophenol	6.416	232	192098	15.16	ppm	99
67)	Diethylphthalate	6.553	149	740716	20.23	ppm	100
68)	Fluorene	6.675	166	588467	16.16	ppm	96
69)	4-Chlorophenyl-phenyle...	6.680	204	363549	18.10	ppm	99
70)	4-Nitroaniline	6.708	138	140431	17.99	ppm	87
72)	4,6-Dinitro-2-methylph...	6.750	198	140542	21.01	ppm	93
73)	N-Nitrosodiphenylamine	6.826	169	565518	17.75	ppm	98
74)	Azobenzene	6.873	77	663090	18.89	ppm	98
76)	4-Bromophenyl-phenylether	7.257	248	260742	17.62	ppm	100
77)	Hexachlorobenzene	7.319	284	250180	16.56	ppm	99
78)	Pentachlorophenol	7.555	266	152667	17.32	ppm	100
79)	Dibenzothiophene	7.645	184	1060520	18.24	ppm	100
80)	Phenanthrene	7.788	178	963116	16.39	ppm	99
82)	Anthracene	7.842	178	950175	16.13	ppm	100
83)	Carbazole	8.028	167	922778	19.17	ppm	98
84)	Di-n-butylphthalate	8.415	149	1321410	22.29	ppm	99
86)	Fluoranthene	9.067	202	1173240	17.52	ppm	100
89)	Pyrene	9.299	202	1270040	16.98	ppm	99
91)	Butylbenzylphthalate	9.971	149	569837	21.42	ppm	98
93)	3,3'-Dichlorobenzidine	10.499	252	505652	19.85	ppm	98
94)	Benzo(a)anthracene	10.529	228	1210010	16.86	ppm	98
95)	Chrysene	10.563	228	1131614	16.57	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.543	149	833512	20.72	ppm	99
98)	Di-n-octylphthalate	11.160	149	1266276	19.66	ppm	99
99)	Benzo(b)fluoranthene	11.539	252	1094724	16.31	ppm	97
100)	Benzo(k)fluoranthene	11.563	252	1148477	17.55	ppm	97
102)	Benzo(a)pyrene	11.844	252	1056580	16.87	ppm	98
104)	Indeno(1,2,3-cd)pyrene	13.095	276	1239511	17.06	ppm	98
105)	Dibenzo(a,h)anthracene	13.109	278	1010767	16.92	ppm	98
106)	Benzo(g,h,i)perylene	13.454	276	1013285	16.56	ppm	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH628.D Vial: 8
Acq On : 29 Jun 2018 14:34 Operator: RZh
Sample : 18F187-07M Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:55:29 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH629.D Vial: 9
Acq On : 29 Jun 2018 14:53 Operator: RZh
Sample : 18F187-07S Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:55:53 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.816	152	482531	40.00	ppm	0.00
21) Naphthalene-d8	4.017	136	1785043	40.00	ppm	0.00
41) Acenaphthene-d10	6.013	164	1066211	40.00	ppm	-0.01
71) Phenanthrene-d10	7.761	188	2176824	40.00	ppm	0.00
87) Chrysene-d12	10.539	240	2506282	40.00	ppm	0.00
97) Perylene-d12	11.901	264	2358841	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	305342	22.63	ppm	0.00
Spiked Amount 30.000			Recovery =	75.43%		
6) Phenol-d5	2.486	99	433593	24.30	ppm	0.01
Spiked Amount 30.000			Recovery =	81.00%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	138780	7.80	ppm	0.00
Spiked Amount 10.000			Recovery =	78.00%		
46) 2-Fluorobiphenyl	5.220	172	295541	6.47	ppm	-0.01
Spiked Amount 10.000			Recovery =	64.70%		
75) 2,4,6-Tribromophenol	6.964	330	169220	22.39	ppm	0.00
Spiked Amount 30.000			Recovery =	74.63%		
90) Terphenyl-d14	9.466	244	418380	7.70	ppm	-0.01
Spiked Amount 10.000			Recovery =	77.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.192	88	75571	15.38	ppm	93
3) N-nitrosodimethylamine	1.307	74	127717	16.36	ppm	91
4) Pyridine	1.331	79	446540	30.73	ppm	100
7) Phenol	2.497	94	314075	17.99	ppm	96
8) Aniline	2.549	93	291500	14.07	ppm	95
9) bis(2-chloroethyl)ether	2.580	93	220144	17.61	ppm	97
10) 2-Chlorophenol	2.648	128	265024	17.10	ppm	98
11) 1,3-Dichlorobenzene	2.768	146	286120	15.78	ppm	97
13) 1,4-Dichlorobenzene	2.830	146	287744	15.64	ppm	97
14) Benzyl alcohol	2.907	108	162533	17.37	ppm	90
15) 1,2-Dichlorobenzene	2.955	146	280501	16.01	ppm	99
16) 2-Methylphenol	2.993	107	192780	16.28	ppm	90
17) bis(2-chloroisopropyl)...	3.017	45	387187	17.41	ppm	98
18) 4-Methylphenol	3.128	107	266646	17.17	ppm	98
19) N-Nitroso-di-n-propyla...	3.137	70	199726	17.41	ppm	97
20) Hexachloroethane	3.255	117	112531	15.80	ppm	94
23) Nitrobenzene	3.314	77	308257	18.15	ppm	94
24) Isophorone	3.535	82	375296	11.86	ppm	99
25) 2-Nitrophenol	3.623	139	138865	16.95	ppm	92
26) 2,4-Dimethylphenol	3.646	107	287833	17.77	ppm	85
27) Benzoic acid	3.733	105	342144	29.57	ppm	91
28) bis(2-Chloroethoxy)met...	3.742	93	280341	15.96	ppm	96
29) 3,5-Dimethylphenol	3.785	107	354168	18.54	ppm	96
30) 2,4-Dichlorophenol	3.862	162	229092	16.10	ppm	99
31) 1,2,4-Trichlorobenzene	3.949	180	279534	15.73	ppm	99
32) 3,4-Dimethylphenol	3.959	107	379115	18.67	ppm	93
33) Naphthalene	4.036	128	678907	15.40	ppm	100
34) 4-Chloroaniline	4.089	127	262487	14.33	ppm	98
35) 2,6-Dichlorophenol	4.099	162	247431	16.80	ppm	99
36) Hexachlorobutadiene	4.157	225	208320	16.42	ppm	97

Quantitation Report (QT Reviewed)

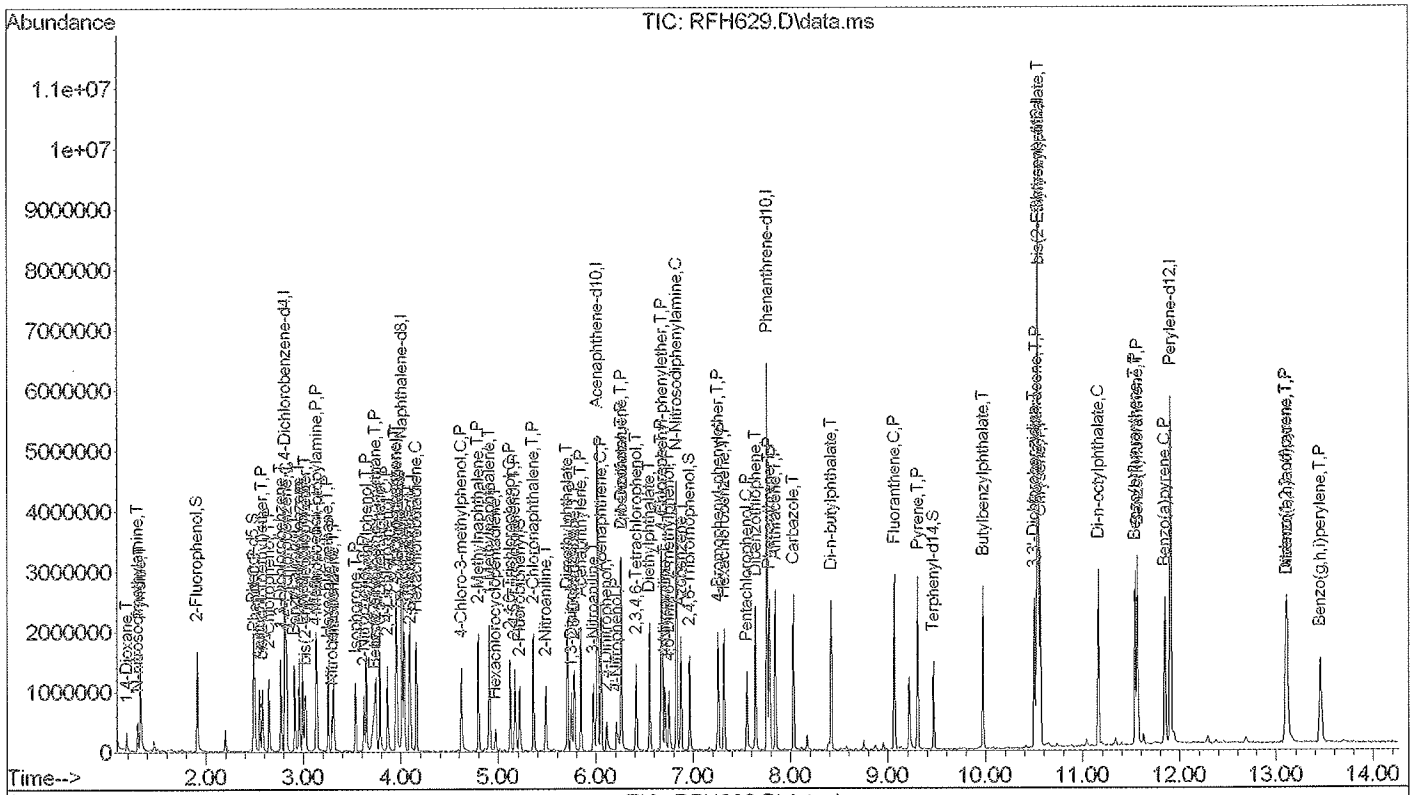
Data File : D:\DATA\18F29\RFH629.D Vial: 9
Acq On : 29 Jun 2018 14:53 Operator: RZh
Sample : 18F187-07S Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:55:53 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

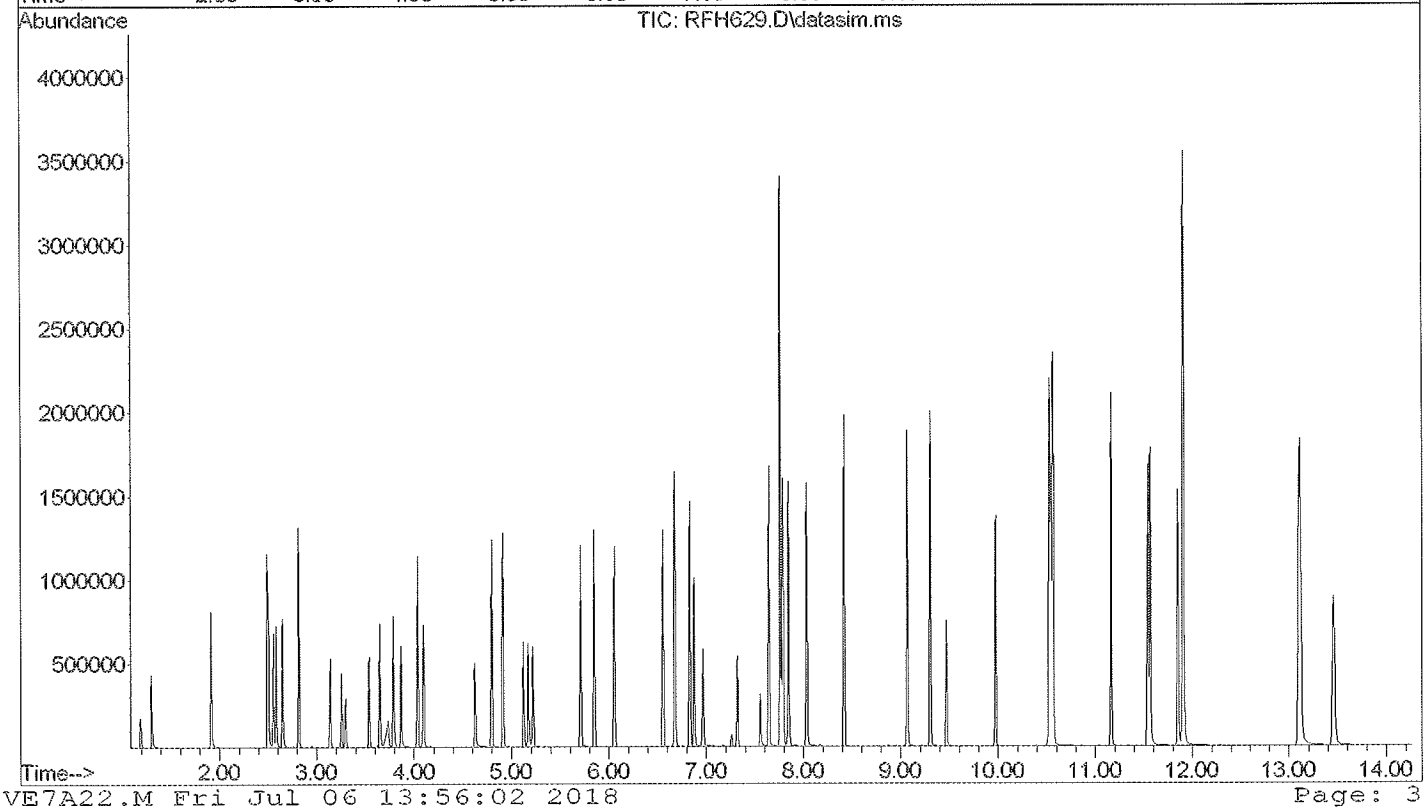
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.625	107	246815	18.58	ppm	96
39)	2-Methylnaphthalene	4.797	142	466190	14.82	ppm	96
40)	1-Methylnaphthalene	4.907	142	462211	15.49	ppm	99
42)	Hexachlorocyclopentadiene	4.970	237	44529	3.18	ppm	92
44)	2,4,6-Trichlorophenol	5.118	196	198348	14.77	ppm	89
45)	2,4,5-Trichlorophenol	5.167	196	208612	15.17	ppm	98
49)	2-Chloronaphthalene	5.359	162	545416	16.16	ppm	100
50)	2-Nitroaniline	5.484	65	173916	18.18	ppm	96
53)	Dimethylphthalate	5.705	163	770416	19.44	ppm	100
54)	1,3-Dinitrobenzene	5.749	168	101506	18.33	ppm	99
55)	2,6-Dinitrotoluene	5.778	165	148905	17.74	ppm	95
57)	Acenaphthylene	5.845	152	804305	15.04	ppm	97
58)	3-Nitroaniline	5.975	138	142478	17.14	ppm	81
59)	Acenaphthene	6.052	153	574346	16.68	ppm	93
60)	2,4-Dinitrophenol	6.109	184	61669	13.24	ppm	85
61)	4-Nitrophenol	6.210	109	104161	16.64	ppm	91
62)	2,4-Dinitrotoluene	6.263	165	199672	17.89	ppm	94
63)	Dibenzofuran	6.263	168	837066	16.47	ppm	95
65)	2,3,4,6-Tetrachlorophenol	6.416	232	202216	15.07	ppm	92
67)	Diethylphthalate	6.554	149	758616	19.58	ppm	97
68)	Fluorene	6.676	166	589297	15.29	ppm	97
69)	4-Chlorophenyl-phenyle...	6.680	204	369728	17.40	ppm	100
70)	4-Nitroaniline	6.708	138	135236	16.37	ppm	90
72)	4,6-Dinitro-2-methylph...	6.751	198	132850	20.27	ppm	91
73)	N-Nitrosodiphenylamine	6.826	169	576518	18.42	ppm	97
74)	Azobenzene	6.873	77	671981	19.48	ppm	100
76)	4-Bromophenyl-phenylether	7.258	248	269708	18.55	ppm	100
77)	Hexachlorobenzene	7.319	284	249640	16.82	ppm	99
78)	Pentachlorophenol	7.551	266	145925	16.85	ppm	93
79)	Dibenzothiophene	7.645	184	1039884	18.20	ppm	99
80)	Phenanthrene	7.784	178	972151	16.84	ppm	100
82)	Anthracene	7.843	178	948370	16.38	ppm	100
83)	Carbazole	8.029	167	929857	19.66	ppm	98
84)	Di-n-butylphthalate	8.415	149	1336009	22.93	ppm	100
86)	Fluoranthene	9.068	202	1150754	17.49	ppm	99
89)	Pyrene	9.304	202	1209947	16.55	ppm	99
91)	Butylbenzylphthalate	9.972	149	569982	21.92	ppm	98
93)	3,3'-Dichlorobenzidine	10.500	252	489040	19.64	ppm	99
94)	Benzo(a)anthracene	10.524	228	1191163	16.98	ppm	98
95)	Chrysene	10.563	228	1106434	16.57	ppm	99
96)	bis(2-Ethylhexyl)phtha...	10.543	149	856696	21.79	ppm	99
98)	Di-n-octylphthalate	11.160	149	1319013	20.72	ppm	97
99)	Benzo(b)fluoranthene	11.539	252	1069976	16.13	ppm	98
100)	Benzo(k)fluoranthene	11.563	252	1154268	17.84	ppm	98
102)	Benzo(a)pyrene	11.844	252	1071998	17.32	ppm	98
104)	Indeno(1,2,3-cd)pyrene	13.100	276	1181879	16.46	ppm	100
105)	Dibenzo(a,h)anthracene	13.110	278	1002965	16.98	ppm	97
106)	Benzo(g,h,i)perylene	13.454	276	998672	16.51	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH629.D Vial: 9
Acq On : 29 Jun 2018 14:53 Operator: RZh
Sample : 18F187-07S Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:55:53 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAH164
Instrument ID: E7

Project: JBER TO075
SDG No.: 18F187
DFTPP Injection Date: 01/22/18
DFTPP Injection Time: 14:21

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.05
68	Less than 2% of mass 69	0.49(1.1)1
69	Relative abundance of mass 198	42.46
70	Less than 2.0% of mass 69	0.21(0.5)1
127	40.0 - 60.0% of mass 198	45.63
197	Less than 1.0% of mass 198	0.70
198	Base Peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	7.03
275	10.0 - 30.0% of mass 198	28.78
365	Greater than 1.00% of mass 198	3.80
441	Present, but less than mass 443	12.15(76.5)3
442	Greater than 40.0% of mass 198	82.04
443	17.0 - 23.0% of mass 442	15.87(19.3)2

1-Value is % mass 69
2-Value is % mass 442
3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD100	SVE7A221	RAH165	01/22/18	14:31
2	SSTD080	SVE7A222	RAH166	01/22/18	14:50
3	SSTD050	SVE7A223	RAH167	01/22/18	15:09
4	SSTD040	SVE7A224	RAH168	01/22/18	15:27
5	SSTD025	SVE7A225	RAH169	01/22/18	15:46
6	SSTD020	SVE7A226	RAH170	01/22/18	16:05
7	SSTD010	SVE7A227	RAH171	01/22/18	16:24
8	SSTD004	SVE7A228	RAH172	01/22/18	16:43

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E7
Beginning DateTime :01/22/18 14:31
Spike Units :PPM
IC File :RAH169

Column Spec :ZB-SemiVoa ID :0.18MM
Ending DateTime :01/22/18 16:43
HPChem Method :SVE7A22

IDX	Parameters	4 16:43 RAH172	10 16:24 RAH171	20 16:05 RAH170	25 15:46 RAH169	40 15:27 RAH168	50 15:09 RAH167	80 14:50 RAH166	100 14:31 RAH165	Av_RRF	% RSD	Av_Rt_M
1	1,4-Dichlorobenzene-d4	1	1	1	1	1	1	1	1	1	0	2.8207
2	1,4-Dioxane	0.429	0.417	0.414	0.402	0.396	0.386	------	------	0.407	3.88	1.1649
3	N-nitrosodimethylamine	0.667	0.653	0.658	0.667	0.650	0.651	------	------	0.647	3.41	1.3059
4	Pyridine	1.204	1.204	1.196	1.231	1.182	1.192	1.199	1.222	1.205	1.20	1.3326
5	2-Fluorophenol	1.127	1.119	1.081	1.132	1.101	1.122	------	------	1.118	2.36	1.9018
6	Phenol-d5	1.511	1.451	1.460	1.495	1.485	1.474	------	------	1.478	1.51	2.4775
7	Phenol	1.482	1.445	1.420	1.482	1.471	1.459	------	------	1.477	1.57	2.4879
8	Aniline	1.699	1.705	1.696	1.758	1.730	1.724	------	------	1.719	1.37	2.5521
8	bis(2-chloroethyl)ether	0.996	1.016	1.067	1.042	1.040	1.051	------	------	1.036	2.50	2.5835
9	2-Chlorophenol	1.210	1.188	1.344	1.367	1.383	1.218	------	------	1.285	6.32	2.6231
10	1,3-Dichlorobenzene	1.501	1.500	1.479	1.536	1.500	1.503	------	------	1.503	1.22	2.9461
11	1,3-Dichlorobenzene-d4	------	------	------	------	------	------	------	------	0.000	0.00	2.7760
12	1,2-Dichlorobenzene	1.547	1.493	1.536	1.543	1.519	1.511	------	------	1.525	1.36	0.0000
13	1,4-Dichlorobenzene	1.725	1.763	1.788	1.774	1.773	1.793	------	------	1.776	1.66	2.8351
14	Benzyl alcohol	1.795	1.727	1.727	1.458	1.462	1.458	------	------	1.453	0.53	2.9171
15	1,2-Dichlorobenzene	1.445	1.420	1.481	1.480	1.486	1.455	------	------	1.462	1.28	2.9647
16	2-Methylphenol	1.035	0.940	0.881	0.980	0.986	0.955	------	------	0.982	3.28	2.9887
17	bis(2-chloroisopropyl)ether	1.215	1.207	1.202	1.284	1.282	1.282	------	------	1.243	3.19	3.0279
18	4-Methylphenol	1.663	1.684	1.806	1.860	1.767	1.783	------	------	1.787	1.09	3.1245
19	N-Nitroso-di-n-propylamine	0.948	0.900	0.867	0.920	0.932	0.928	------	------	0.951	3.12	3.1461
20	Hexachloroethane	0.600	0.578	0.590	0.595	0.596	0.582	------	------	0.590	1.47	3.2685
21	Naphthalene-d8	1	1	1	1	1	1	1	1	1	0	3.0262
22	Nitrobenzene-d5	0.384	0.392	0.410	0.399	0.401	0.406	------	------	0.399	2.36	3.0009
23	Nitrobenzene	0.375	0.377	0.382	0.384	0.380	0.386	------	------	0.381	1.13	3.3182
24	Isophorone	0.696	0.724	0.709	0.691	0.718	0.714	------	------	0.709	1.81	3.3126
25	2-Nitrophenol	0.173	0.178	0.183	0.175	0.197	0.195	------	------	0.184	5.72	3.3437
26	2,4-Dimethylphenol	0.363	0.355	0.365	0.364	0.367	0.367	------	------	0.363	1.61	3.6270
27	Benzoic acid	0.280	0.236	0.261	0.266	0.272	0.275	0.281	0.300	0.259	13.40	3.6469
28	bis(2-Chloroethoxy)methane	0.703	0.688	0.682	0.678	0.680	0.682	------	------	0.682	1.27	3.7204
29	2,5-Dimethylphenol	0.433	0.299	0.332	0.328	0.324	0.333	------	------	0.358	6.27	3.7531
30	2,4-Dichlorophenol	0.338	0.457	0.457	0.347	0.347	0.343	------	------	0.428	0.93	3.7826
31	1,2,4-Trichlorobenzene	0.393	0.388	0.392	0.402	0.398	0.393	------	------	0.319	3.64	3.8620
32	3,4-Dimethylphenol	0.442	0.438	0.447	0.434	0.441	0.441	------	------	0.398	2.18	3.9618
33	Naphthalene	0.980	0.961	1.002	0.990	0.983	1.001	------	------	0.425	2.03	3.9601
34	4-Chloroaniline	0.399	0.407	0.414	0.415	0.413	0.418	------	------	0.988	1.57	4.0478
35	2,6-Dichlorophenol	0.337	0.327	0.325	0.332	0.328	0.332	------	------	0.408	1.60	4.0869
36	Hexachlorobutadiene	0.290	0.278	0.287	0.286	0.279	0.287	------	------	0.330	1.45	4.1021
37	Hydroquinone	------	------	------	------	------	------	------	------	0.284	1.76	4.1726
38	4-Chloro-3-methylphenol	0.279	0.303	0.305	0.296	0.300	0.302	------	------	0.000	0.00	0.0000
39	2-Methylnaphthalene	0.705	0.710	0.701	0.693	0.699	0.720	------	------	0.298	3.17	4.6169
40	1-Methylnaphthalene	0.660	0.676	0.682	0.653	0.666	0.675	------	------	0.705	1.34	4.8095
41	Acenaphthene-d10	1	1	1	1	1	1	1	1	0.669	1.64	4.9213
42	Hexachlorocyclopentadiene	0.456	0.489	0.530	0.553	0.549	0.572	------	------	1	0	6.0279
43	2,3,5-Trichlorophenol	0.482	0.502	0.502	0.516	0.508	0.506	------	------	0.525	8.36	4.9884
44	2,4,6-Trichlorophenol	0.494	0.487	0.515	0.519	0.498	0.517	------	------	0.502	2.51	4.9956
45	2,4,5-Trichlorophenol	0.475	0.506	0.526	0.515	0.539	0.537	------	------	0.504	2.51	5.1270
46	2-Fluorobiphenyl	1.567	1.628	1.648	1.812	1.808	1.838	------	------	0.516	4.26	5.1624
47	2,3,4-Trichlorophenol	0.472	0.466	0.513	0.461	0.508	0.506	------	------	1.713	6.52	5.2340
48	Biphenyl	1.587	1.625	1.667	1.651	1.651	1.666	------	------	0.469	5.24	5.2381
49	2-Chloronaphthalene	1.259	1.241	1.274	1.277	1.254	1.270	------	------	1.673	3.37	5.3503
50	2-Nitroaniline	0.324	0.350	0.381	0.360	0.374	0.363	------	------	1.622	2.38	5.3711
51	2,6-Dimethylnaphthalene	1.126	1.135	1.194	1.167	1.160	1.184	------	------	1.308	5.30	5.2804
52	1,4-Dinitrobenzene	0.158	0.186	0.196	0.186	0.183	0.189	------	------	0.321	5.60	5.4371
53	Dimethylphthalate	1.515	1.493	1.501	1.479	1.473	1.460	------	------	1.161	2.37	5.2341
54	1,3-Dinitrobenzene	0.210	0.211	0.210	0.203	0.206	0.206	------	------	0.183	7.07	5.6615
55	2,6-Dinitrotoluene	0.308	0.306	0.328	0.318	0.312	0.316	------	------	1.487	1.35	5.7185
56	1,2-Dinitrobenzene	0.192	0.192	0.198	0.198	0.196	0.197	------	------	0.208	1.26	5.7467
57	Acenaphthylene	2.274	2.008	2.082	2.091	2.015	2.069	------	------	0.315	2.57	5.7853
58	3-Nitroaniline	0.300	0.308	0.314	0.308	0.309	0.312	------	------	0.124	4.16	5.8407
59	Acenaphthene	1.225	1.287	1.301	1.308	1.316	1.314	------	------	2.006	5.95	5.8592
60	2,4-Dinitrophenol	0.114	0.160	0.186	0.192	0.191	0.194	------	------	0.312	3.08	5.9786
61	4-Nitrophenol	0.188	0.231	0.241	0.262	0.236	0.250	------	------	1.292	2.67	6.0672
62	2,4-Dinitrotoluene	0.400	0.422	0.430	0.427	0.416	0.417	------	------	0.173	18.12	6.1048
63	Dibenzofuran	1.895	1.928	1.925	1.898	1.884	1.913	------	------	0.235	10.86	6.1759
64	2,3,5,6-Tetrachlorophenol	0.339	0.367	0.391	0.379	0.376	0.380	------	------	0.278	19.89	6.2654
65	2,3,4,6-Tetrachlorophenol	0.221	0.474	0.558	0.482	0.526	0.538	------	------	1.407	6.89	6.2750
66	2,3,5-Trimethylnaphthalene	1.088	1.152	1.153	1.138	1.118	1.157	------	------	0.342	4.88	6.2678
67	Diethylphthalate	1.439	1.484	1.485	1.460	1.417	1.435	------	------	0.303	8.88	6.4268
68	Fluorene	1.322	1.427	1.427	1.439	1.458	1.481	------	------	1.134	2.37	6.3290
69	4-Chlorophenyl-phenylether	0.784	0.806	0.891	0.787	0.786	0.812	------	------	1.453	1.91	6.5712
70	4-Nitroaniline	0.267	0.295	0.317	0.354	0.302	0.325	------	------	1.446	2.87	6.6884
71	Phenanthrene-d10	1	1	1	1	1	1	1	1	0.797	1.75	6.6978
72	4,6-Dinitro-2-methylphenol	0.080	0.107	0.121	0.128	0.126	0.124	------	------	0.310	9.54	6.7103
73	N-Nitrosodiphenylamine	0.539	0.567	0.589	0.582	0.570	0.578	------	------	1	0	6.7705
74	Azobenzene	0.626	0.625	0.641	0.626	0.641	0.644	------	------	0.114	15.97	6.7509
75	2,4,6-Tribromophenol	0.128	0.132	0.141	0.142	0.146	0.145	------	------	0.575	5.18	6.8398
76	4-Bromophenyl-phenylether	0.231	0.254	0.251	0.292	0.289	0.282	------	------	0.247	1.42	6.8873
77	Hexachlorobenzene	0.272	0.275	0.273	0.267	0.274	0.275	------	------	0.938	5.26	6.9211
78	Pentachlorophenol	0.134	0.148	0.168	0.170	0.165	0.169	------	------	0.272	8.25	6.9724
79	Dibenzothiophene	0.972	0.986	1.106	1.088	1.074	1.074	------	------	0.263	1.08	7.0670
80	Phenanthrene	1.065	1.059	1.067	1.060	1.051	1.062	------	------	0.159	2.25	7.2249
81	Dinoseb	------	------	------	------	------	------	------	------	1.050	3.35	7.0347
82	Anthracene	1.020	1.053	1.085	1.073	1.080	1.071	------	------	1.061	0.52	7.2971
83	Carbazole	0.852	0.877	0.873	0.915	0.882	0.904	------	------	0.000	0.00	0.0000
84	Di-n-butylphthalate	0.982	1.017	1.072	1.124	1.062	1.128	------	------	1.064	2.26	7.8337
85	1-Methylphenanthrene	0.774	0.788	0.778	0.851	0.798	0.813	------	------	0.869	4.73	8.0350
86	Fluoranthene	1.118	1.155	1.212	1.265	1.211	1.293	------	------	1.071	5.00	8.4328
87	Chrysene-d12	1	1	1	1	1	1	1	1	0.792	2.55	8.4683
88	Benzidine	------	------	------	------	------	------	------	------	1.205	5.39	9.0745
89	Pyrene	1.151	1.181	1.204	1.131	1.185	1.149	------	------	1	0	10.5434
90	Terphenyl-d14	0.863	0.879	0.890	0.841	0.887	0.847	------	------	0.000	0.00	0.0000
91	Butylbenzylphthalate	0.378	0.405	0.426	0.419	0.431	0.431	------	------	0.167	5.37	8.3088
92	bis(2-ethylhexyl)adipate	0.284	0.319	0.337	0.320	0.334	0.334	------	------	0.868	5.38	8.2789
93	3,3'-Dichlorobenzidine	0.354	0.383	0.405	0.418	0.405	0.421	------	------	0.415	5.26	8.8823
94	Benzo(a)anthracene	1.121	1.113	1.117	1.117	1.121	1.127	------	------	0.365	6.20	10.0623
95	Chrysene	1.076	1.063	1.064	1.059	1.069	1.063	------	------	1.119	6.31	10.0668
96	bis(2-Ethylhexyl)phthalate	0.564	0.621	0.654	0.632	0.643	0.652	------	------	0.419	8.41	10.2332
97	Perylene-d12	1	1	1	1	1	1	1	1	1.068	0.56	10.2684
98	Di-n-octylphthalate	0.929	1.033	1.124	1.097	1.154	1.140	------	------	0.628	5.36	10.3622
99	Benzo(b)fluoranthene	1.163	1.079	1.115	1.097	1.163	1.120	------	------	1	0	11.9065
100	Benzo(k)fluoranthene	0.992	1.113	1.131	1.100	1.130	1.130	------	------	1.079	7.90	11.1780
101	Benzo(e)pyrene	1.062	1.057	1.085	1.079	1.087	1.105	------	------	1.125	4.39	11.5420
102	Benzo(a)pyrene	0.986	1.007	1.038	1.061	1.083	1.102	------	------	1.097	4.82	11.5678
103	Perylene	1.021	1.057	1.090	1.073	1.114	1.082	------	------	1.071	2.67	11.8000
104	Indeno(1,2,3-cd)pyrene	1.121	1.161	1.221	1.233	1.262	1.288	------	------	1.050	4.25	11.8500
105	Dibenzo(a,h)anthracene	0.885	0.976	1.009	1.036	1.034	1.070	------	------	1.077	3.12	11.9321
106	Benzo(g,h,i)perylene	0.948	0.991	1.032	1.052	1.059	1.073	------	------	1.218	5.28	13.1001
										1.607	2.28	13.1196
										1.026	4.66	13.4584

Ave_%RSD : 3.9 Max_%RSD : 18.1

Use Least Square Linear Regression with weighting factor of inverse concentration
Resp_Ratio = x0 + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
60	2,4-Dinitrophenol	-0.00891	0.20168	0.9888
72	4,6-Dinitro-2-methylphenol	-0.00496	0.13021	0.9995

Per 01-26-18

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E7
Beginning DateTime :01/22/18 14:31
Spike Units :PPM
IC File :RAH169

Column Spec :ZB-SemiVoa ID :0.18MM
Ending DateTime :01/22/18 16:43
HPChem Method :SVE7A22

IDX	Parameters	4 16:43 RAH172	10 16:24 RAH171	20 16:05 RAH170	25 15:46 RAH169	40 15:27 RAH168	50 15:09 RAH167	80 14:50 RAH166	100 14:31 RAH165	AvDRec	% RSD	Av Rt M
1	1,4-Dichlorobenzene-d4	1	1	1	1	1	1	1	1	1	0	2.8207
2	1,4-Dioxane	105	102	102	99	97	95	------	------	3.1	3.88	1.1949
3	N-nitrosodimethylamine	93	101	105	103	100	101	------	------	2.2	3.41	1.3059
4	Pyridine	100	100	99	102	99	99	100	101	1.6	1.20	1.3326
5	2-Fluorophenol	101	100	97	104	98	101	------	------	1.7	2.36	1.9018
6	Phenol-d5	102	98	99	101	100	100	------	------	1.2	1.21	2.4773
7	Phenol	101	100	98	101	102	98	------	------	1.3	1.57	2.4879
8	Aniline	99	99	98	102	101	100	------	------	1	1.34	2.5231
9	bis(2-chloroethyl)ether	96	98	103	101	100	101	------	------	2	2.50	2.5835
10	2-Chlorophenol	94	92	105	106	108	95	------	------	6.5	6.91	2.6461
11	1,3-Dichlorobenzene	100	100	98	102	100	100	------	------	1.2	1.22	2.7760
12	1,3-Dichlorobenzene-d4	------	------	------	------	------	------	------	------	0.000	0.00	2.8000
13	1,4-Dichlorobenzene	101	98	101	101	100	99	------	------	1.1	1.36	2.8351
14	Benzyl alcohol	98	98	102	100	100	102	------	------	1.3	1.66	2.9117
15	1,2-Dichlorobenzene	100	99	100	100	101	100	------	------	.5	0.53	2.9647
16	2-Methylphenol	105	96	100	101	101	97	------	------	2.3	3.28	2.9887
17	bis(2-chloroisopropyl)ether	104	103	98	101	97	97	------	------	2.8	3.19	3.0279
18	4-Methylphenol	98	100	101	100	101	100	------	------	.8	1.09	3.1545
19	N-Nitroso-di-n-propylamine	100	95	102	104	100	100	------	------	.5	0.52	3.1721
20	Hexachloroethane	102	98	100	101	101	99	------	------	1.2	1.47	3.1461
21	Naphthalene-d8	1	1	1	1	1	1	1	1	1	0	3.2685
22	Nitrobenzene-d5	96	98	103	100	101	102	------	------	1.8	2.36	4.0262
23	Nitrobenzene	98	98	100	101	100	101	------	------	.9	1.15	3.3009
24	Isophorone	98	102	100	97	101	101	------	------	1.4	1.81	3.3196
25	2-Nitrophenol	94	97	99	95	107	106	------	------	4.6	5.72	3.5437
26	2,4-Dimethylphenol	100	97	101	100	101	101	------	------	1.2	1.61	3.6270
27	Benzoic acid	73	89	101	103	105	106	108	116	9.7	13.40	3.6467
28	bis(2-Chloroethoxy)methane	112	98	99	95	96	97	------	------	4.3	6.27	3.7204
29	2,5-Dimethylphenol	101	100	100	99	99	101	------	------	.7	0.93	3.7531
30	2,4-Dichlorophenol	94	102	101	99	99	104	------	------	2.6	3.64	3.7826
31	1,2,4-Trichlorobenzene	99	98	98	101	100	104	------	------	1.6	2.18	3.8620
32	3,4-Dimethylphenol	97	101	98	100	101	103	------	------	1.6	2.03	3.9218
33	Naphthalene	100	97	101	100	99	101	------	------	1	1.31	3.9601
34	4-Chloroaniline	97	99	101	101	100	101	------	------	1.2	1.60	4.0478
35	2,6-Dichlorophenol	102	99	98	101	99	100	------	------	1.1	1.42	4.0961
36	Hexachlorobutadiene	105	98	101	101	98	101	------	------	1.5	1.72	4.1041
37	Hydroquinone	------	------	------	------	------	------	------	------	0.000	0.00	4.1749
38	4-Chloro-3-methylphenol	94	102	102	99	101	101	------	------	2.2	3.17	0.0000
39	2-Methylnaphthalene	100	101	99	98	99	102	------	------	1	1.24	4.6179
40	1-Methylnaphthalene	99	101	102	98	100	101	------	------	1.3	1.64	4.8095
41	Acenaphthene-d10	1	1	1	1	1	1	1	1	1	0	4.9213
42	Hexachlorocyclopentadiene	87	93	101	105	105	109	------	------	6.6	8.36	6.0279
43	2,3,5-Trichlorophenol	92	105	100	100	100	103	------	------	2.8	4.42	4.9884
44	2,4,6-Trichlorophenol	98	97	102	99	99	103	------	------	2.2	2.51	4.9956
45	2,4,5-Trichlorophenol	92	99	103	99	103	104	------	------	2.7	2.76	5.1270
46	2-Fluorobiphenyl	91	95	96	106	106	106	------	------	3.4	4.59	5.1624
47	2,3,4-Trichlorophenol	96	95	104	94	103	107	------	------	5.6	6.32	5.2340
48	Biphenyl	99	99	101	100	99	103	------	------	5.1	5.74	5.2581
49	2-Chloronaphthalene	96	98	101	101	99	102	------	------	1.8	2.34	5.3503
50	2-Nitroaniline	99	98	101	101	99	102	------	------	1.1	1.39	5.3711
51	2,6-Dimethylnaphthalene	90	97	106	100	104	101	------	------	4	5.60	5.4894
52	1,4-Dinitrobenzene	97	98	103	101	100	102	------	------	1.8	2.31	5.5321
53	Dimethylphthalate	86	102	107	102	100	103	------	------	4.6	7.07	5.5615
54	1,3-Dinitrobenzene	102	100	101	99	99	98	------	------	1.1	1.35	5.6915
55	2,6-Dinitrotoluene	101	101	101	98	99	99	------	------	1.3	1.26	5.7182
56	1,2-Dinitrobenzene	98	97	104	101	99	100	------	------	2	2.57	5.7467
57	Acenaphthylene	98	100	102	103	100	100	------	------	2.6	4.16	5.7853
58	3-Nitroaniline	96	99	101	102	100	103	------	------	3.9	5.95	5.8407
59	Acenaphthene	98	100	104	104	100	103	------	------	2	3.08	5.8592
60	2,4-Dinitrophenol	95	100	101	101	102	102	------	------	1.8	2.87	5.9786
61	4-Nitrophenol	101	97	101	102	99	100	------	------	1.5	1.97	6.0672
62	2,4-Dinitrotoluene	80	98	103	111	100	106	------	------	7.1	10.86	6.1048
63	Dibenzofuran	95	101	103	102	99	100	------	------	1.8	2.36	6.1759
64	2,3,5,6-Tetrachlorophenol	99	101	101	100	99	100	------	------	.8	0.93	6.2624
65	2,3,4,6-Tetrachlorophenol	88	99	105	102	101	102	------	------	3.4	4.89	6.2750
66	2,3,5-Trimethylnaphthalene	91	94	111	96	105	107	------	------	7.5	8.88	6.3676
67	Diethylphthalate	96	102	102	100	99	102	------	------	1.9	2.37	6.4196
68	Fluorene	99	102	102	100	98	99	------	------	1.2	1.31	6.5290
69	4-Chlorophenyl-phenylether	94	101	101	100	101	102	------	------	1.6	1.91	6.5712
70	4-Nitroaniline	98	101	102	98	99	102	------	------	2	2.87	6.6884
71	Phenanthrene-d10	86	95	102	114	97	105	------	------	1.6	1.75	6.6978
72	4,6-Dinitro-2-methylphenol	1	1	1	1	1	1	1	1	7.1	9.54	6.7103
73	N-Nitrosodiphenylamine	100	98	100	104	100	98	------	------	1	0	6.7705
74	Azobenzene	97	99	102	99	103	101	------	------	1.6	2.40	6.7509
75	2,4,6-Tribromophenol	99	99	101	99	101	102	------	------	1.8	2.18	6.8398
76	4-Bromophenyl-phenylether	92	95	101	102	105	104	------	------	1.8	2.18	6.8823
77	Hexachlorobenzene	87	95	94	106	107	108	------	------	1.3	1.46	6.8873
78	Pentachlorophenol	100	101	100	98	100	101	------	------	4.3	5.42	6.9711
79	Dibenzothiophene	84	95	106	107	107	106	------	------	8.1	9.45	7.2724
80	Phenanthrene	93	94	105	104	105	105	------	------	.7	1.08	7.3290
81	Dinoseb	100	100	101	100	99	100	------	------	7.5	9.22	7.5541
82	Anthracene	96	99	102	101	102	101	------	------	4.5	5.35	7.6549
83	Carbazole	92	98	100	105	101	104	------	------	1.2	0.52	7.7671
84	Di-n-butylphthalate	92	98	100	105	100	103	------	------	4	0.00	7.8000
85	1-Methylphenanthrene	98	99	98	102	98	103	------	------	0.000	0.00	0.0000
86	Fluoranthene	92	96	100	105	100	107	------	------	1.7	2.26	7.8537
87	Chrysene-d12	1	1	1	1	1	1	1	1	3.8	4.73	8.0350
88	Benzidine	------	------	------	------	------	------	------	------	3.6	5.00	8.4328
89	Pyrene	99	101	103	97	102	98	------	------	2.1	2.55	8.4683
90	Terphenyl-d14	99	101	103	97	102	98	------	------	4	5.39	9.0745
91	Butylbenzylphthalate	91	98	103	101	104	104	------	------	1	0	10.5434
92	bis(2-ethylhexyl)adipate	88	99	105	99	104	104	------	------	0.000	0.00	0.0000
93	3,3'-Dichlorobenzidine	89	96	102	105	102	106	------	------	2	2.37	9.3089
94	Benzo(a)anthracene	100	99	100	100	100	101	------	------	2	2.38	9.4789
95	Chrysene	101	100	100	99	100	100	------	------	3.8	4.92	9.9843
96	bis(2-Ethylhexyl)phthalate	90	99	104	101	102	104	------	------	4.2	6.20	10.0642
97	Perylene-d12	1	1	1	1	1	1	1	1	5	6.31	10.5088
98	Di-n-octylphthalate	86	96	104	102	107	106	------	------	.3	0.21	10.5315
99	Benzo(b)fluoranthene	100	94	99	98	106	102	------	------	.4	0.41	10.5740
100	Benzo(k)fluoranthene	90	101	102	103	100	103	------	------	.4	0.36	10.2680
101	Benzo(e)pyrene	95	99	101	100	101	103	------	------	3.7	5.36	10.3623
102	Benzo(a)pyrene	94	96	101	101	103	105	------	------	1	0	11.9065
103	Perylene	95	98	101	100	103	103	------	------	6.1	7.90	11.1780
104	Indeno(1,2,3-cd)pyrene	92	95	100	103	104	106	------	------	3.3	4.39	11.5420
105	Dibenzo(a,h)anthracene	88	98	101	103	103	107	------	------	3.5	4.82	11.5678
106	Benzo(g,h,i)perylene	92	97	101	103	103	105	------	------	2	2.67	11.8000
										3.4	4.25	11.8500
										2.4	3.16	11.9321
										4.2	5.29	13.1001
										4.8	6.48	13.1196
										3.7	4.66	13.4584

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Method Path : C:\msdchem\1\METHODS\
Method File : SVE7A22.M
Title : SEMIVOLATILES
Last Update : Tue Jan 23 12:02:03 2018
Response Via : Initial Calibration

Total Cpnds : 106

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dichlorobenzene-d4	152	2.821	1.000	A	1	A	B
2	T	1,4-Dioxane	88	1.193	0.423	A	1	A	B
3	T	N-nitrosodimethylamine	74	1.303	0.462	A	1	A	B
4	T	Pyridine	79	1.331	0.472	A	1	A	B
5	S	2-Fluorophenol	112	1.901	0.674	A	1	A	B
6	S	Phenol-d5	99	2.476	0.878	A	1	A	B
7	C,P	Phenol	94	2.486	0.881	A	1	A	B
8	T	Aniline	93	2.554	0.905	A	1	A	B
9	T	bis(2-chloroethyl)ether	93	2.585	0.916	A	1	A	B
10	T	2-Chlorophenol	128	2.648	0.939	A	1	A	B
11	T	1,3-Dichlorobenzene	146	2.778	0.985	A	1	A	B
12	S	1,2-Dichlorobenzene-d4	152	2.989	1.060	A	1	A	B
13	C	1,4-Dichlorobenzene	146	2.835	1.005	A	1	A	B
14	T	Benzyl alcohol	108	2.912	1.032	A	1	A	B
15	T	1,2-Dichlorobenzene	146	2.965	1.051	A	1	A	B
16	T	2-Methylphenol	107	2.989	1.060	A	1	A	B
17	T	bis(2-chloroisopropyl)ether	45	3.027	1.073	A	1	A	B
18	T	4-Methylphenol	107	3.123	1.107	A	1	A	B
19	P,P	N-Nitroso-di-n-propylamine	70	3.147	1.116	A	1	A	B
20	T	Hexachloroethane	117	3.269	1.159	A	1	A	B
21	I	Naphthalene-d8	136	4.026	1.000	A	1	A	B
22	S	Nitrobenzene-d5	82	3.300	0.820	A	1	A	B
23	T	Nitrobenzene	77	3.318	0.824	A	1	A	B
24	T	Isophorone	82	3.544	0.880	A	1	A	B
25	C,P	2-Nitrophenol	139	3.627	0.901	A	1	A	B
26	T	2,4-Dimethylphenol	107	3.646	0.906	A	1	A	B
27	T	Benzoic acid	105	3.713	0.922	A	1	A	B
28	T	bis(2-Chloroethoxy)methane	93	3.752	0.932	A	1	A	B
29	T	3,5-Dimethylphenol	107	3.785	0.940	A	1	A	B
30	C,P	2,4-Dichlorophenol	162	3.862	0.959	A	1	A	B
31	T	1,2,4-Trichlorobenzene	180	3.963	0.984	A	1	A	B
32	T	3,4-Dimethylphenol	107	3.959	0.983	A	1	A	B
33	T	Naphthalene	128	4.050	1.006	A	1	A	B
34	T	4-Chloroaniline	127	4.099	1.018	A	1	A	B
35	T	2,6-Dichlorophenol	162	4.103	1.019	A	1	A	B
36	C	Hexachlorobutadiene	225	4.176	1.037	A	1	A	B
37	T	Hydroquinone	110	0.000	0.000	A	1	A	B
38	C,P	4-Chloro-3-methylphenol	107	4.619	1.147	A	1	A	B
39	T	2-Methylnaphthalene	142	4.811	1.195	A	1	A	B
40	T	1-Methylnaphthalene	142	4.921	1.222	A	1	A	B
41	I	Acenaphthene-d10	164	6.027	1.000	A	1	A	B
42	P	Hexachlorocyclopentadiene	237	4.988	0.828	A	1	A	B
43	T	2,3,5-Trichlorophenol	196	4.998	0.829	A	1	A	B
44	C,P	2,4,6-Trichlorophenol	196	5.128	0.851	A	1	A	B
45	T	2,4,5-Trichlorophenol	196	5.162	0.856	A	1	A	B
46	S	2-Fluorobiphenyl	172	5.234	0.868	A	1	A	B
47	T	2,3,4-Trichlorophenol	196	5.239	0.869	A	1	A	B
48	T	Biphenyl	154	5.350	0.888	A	1	A	B
49	T	2-Chloronaphthalene	162	5.374	0.892	A	1	A	B
50	T	2-Nitroaniline	65	5.489	0.911	A	1	A	B
51	T	2,6-Dimethylnaphthalene	156	5.537	0.919	A	1	A	B
52	T	1,4-Dinitrobenzene	168	5.661	0.939	A	1	A	B
53	T	Dimethylphthalate	163	5.719	0.949	A	1	A	B
54	T	2,4-Dinitrotoluene	168	5.748	0.954	A	1	A	B

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55	T	2,6-Dinitrotoluene	165	5.787	0.960	A	1	A	B
56	T	1,2-Dinitrobenzene	168	5.840	0.969	A	1	A	B
57	T	Acenaphthylene	152	5.859	0.972	A	1	A	B
58	T	3-Nitroaniline	138	5.979	0.992	A	1	A	B
59	C,P	Acenaphthene	153	6.066	1.006	A	1	A	B
60	P	2,4-Dinitrophenol	184	6.104	1.013	L	1	A	B
61	P	4-Nitrophenol	109	6.176	1.025	A	1	A	B
62	T	2,4-Dinitrotoluene	165	6.267	1.040	A	1	A	B
63	T	Dibenzofuran	168	6.277	1.041	A	1	A	B
64	T	2,3,5,6-Tetrachlorophenol	230	6.368	1.057	A	1	A	B
65	T	2,3,4,6-Tetrachlorophenol	232	6.420	1.065	A	1	A	B
66	T	2,3,5-Trimethylnaphthalene	170	6.530	1.083	A	1	A	B
67	T	Diethylphthalate	149	6.572	1.090	A	1	A	B
68	T	Fluorene	166	6.689	1.110	A	1	A	B
69	T	4-Chlorophenyl-phenylether	204	6.699	1.111	A	1	A	B
70	T	4-Nitroaniline	138	6.713	1.114	A	1	A	B
71	I	Phenanthrene-d10	188	7.770	1.000	A	1	A	B
72	T	4,6-Dinitro-2-methylphenol	198	6.750	0.869	L	1	A	B
73	C	N-Nitrosodiphenylamine	169	6.840	0.880	A	1	A	B
74	T	Azobenzene	77	6.887	0.886	A	1	A	B
75	S	2,4,6-Tribromophenol	330	6.973	0.897	A	1	A	B
76	T	4-Bromophenyl-phenylether	248	7.271	0.936	A	1	A	B
77	T	Hexachlorobenzene	284	7.328	0.943	A	1	A	B
78	C,P	Pentachlorophenol	266	7.555	0.972	A	1	A	B
79	T	Dibenzothiophene	184	7.654	0.985	A	1	A	B
80	T	Phenanthrene	178	7.797	1.003	A	1	A	B
81	T	Dinoseb	211	0.000	0.000	A	1	A	B
82	T	Anthracene	178	7.856	1.011	A	1	A	B
83	T	Carbazole	167	8.037	1.034	A	1	A	B
84	T	Di-n-butylphthalate	149	8.434	1.085	A	1	A	B
85	T	1-Methylphenanthrene	192	8.468	1.090	A	1	A	B
86	C,P	Fluoranthene	202	9.077	1.168	A	1	A	B
87	I	Chrysene-d12	240	10.543	1.000	A	1	A	B
88	T	Benzidine	184	0.000	0.000	A	1	A	B
89	T	Pyrene	202	9.308	0.883	A	1	A	B
90	S	Terphenyl-d14	244	9.479	0.899	A	1	A	B
91	T	Butylbenzylphthalate	149	9.984	0.947	A	1	A	B
92	T	bis(2-ethylhexyl)adipate	129	10.063	0.954	A	1	A	B
93	T	3,3'-Dichlorobenzidine	252	10.509	0.997	A	1	A	B
94	T	Benzo(a)anthracene	228	10.533	0.999	A	1	A	B
95	T	Chrysene	228	10.567	1.002	A	1	A	B
96	T	bis(2-Ethylhexyl)phthalate	149	10.562	1.002	A	1	A	B
97	I	Perylene-d12	264	11.910	1.000	A	1	A	B
98	C	Di-n-octylphthalate	149	11.179	0.939	A	1	A	B
99	T	Benzo(b)fluoranthene	252	11.544	0.969	A	1	A	B
100	T	Benzo(k)fluoranthene	252	11.568	0.971	A	1	A	B
101	T	Benzo(e)pyrene	252	11.802	0.991	A	1	A	B
102	C,P	Benzo(a)pyrene	252	11.853	0.995	A	1	A	B
103	T	Perylene	252	11.933	1.002	A	1	A	B
104	T	Indeno(1,2,3-cd)pyrene	276	13.104	1.100	A	1	A	B
105	T	Dibenzo(a,h)anthracene	278	13.119	1.102	A	1	A	B
106	T	Benzo(g,h,i)perylene	276	13.459	1.130	A	1	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

SVE7A22.M Tue Jan 23 12:13:51 2018

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Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E7 — Column Spec.:ZB-SemiVoa ID.:0.18MM
Beginning DateTime :01/22/18 14:31 — Ending DateTime :01/22/18 16:43
IC File :RAH169 — HPChem Method :SVE7A22

WATER Init. Vol. (ml) : 1000 — Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 — Final Vol. (ml) : 2

IDX	Parameters	ON COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dichlorobenzene-d4	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	4	8	.2667	RAH172
3	N-nitrosodimethylamine	4	8	.2667	RAH172
4	Pyridine	4	8	.2667	RAH172
5	2-Fluorophenol	4	8	.2667	RAH172
6	Phenol-d5	4	8	.2667	RAH172
7	Phenol	4	8	.2667	RAH172
8	Aniline	4	8	.2667	RAH172
9	bis(2-chloroethyl)ether	4	8	.2667	RAH172
10	2-Chlorophenol	4	8	.2667	RAH172
11	1,3-Dichlorobenzene	4	8	.2667	RAH172
12	1,2-Dichlorobenzene-d4	NA	NA	NA	NA
13	1,4-Dichlorobenzene	4	8	.2667	RAH172
14	Benzyl alcohol	4	8	.2667	RAH172
15	1,2-Dichlorobenzene	4	8	.2667	RAH172
16	2-Methylphenol	4	8	.2667	RAH172
17	bis(2-chloroisopropyl)ether	4	8	.2667	RAH172
18	4-Methylphenol	4	8	.2667	RAH172
19	N-Nitroso-di-n-propylamine	4	8	.2667	RAH172
20	Hexachloroethane	4	8	.2667	RAH172
21	Naphthalene-d8	IntSTD	IntSTD	IntSTD	IntSTD
22	Nitrobenzene-d5	4	8	.2667	RAH172
23	Nitrobenzene	4	8	.2667	RAH172
24	Isophorone	4	8	.2667	RAH172
25	2-Nitrophenol	4	8	.2667	RAH172
26	2,4-Dimethylphenol	4	8	.2667	RAH172
27	Benzoic acid	4	8	.2667	RAH172
28	bis(2-Chloroethoxy)methane	4	8	.2667	RAH172
29	3,5-Dimethylphenol	4	8	.2667	RAH172
30	2,4-Dichlorophenol	4	8	.2667	RAH172
31	1,2,4-Trichlorobenzene	4	8	.2667	RAH172
32	3,4-Dimethylphenol	4	8	.2667	RAH172
33	Naphthalene	4	8	.2667	RAH172
34	4-Chloroaniline	4	8	.2667	RAH172
35	2,6-Dichlorophenol	4	8	.2667	RAH172
36	Hexachlorobutadiene	4	8	.2667	RAH172
37	Hydroquinone	NA	NA	NA	NA
38	4-Chloro-3-methylphenol	4	8	.2667	RAH172
39	2-Methylnaphthalene	4	8	.2667	RAH172
40	1-Methylnaphthalene	4	8	.2667	RAH172
41	Acenaphthene-d10	IntSTD	IntSTD	IntSTD	IntSTD
42	Hexachlorocyclopentadiene	4	8	.2667	RAH172
43	2,3,5-Trichlorophenol	4	8	.2667	RAH172
44	2,4,6-Trichlorophenol	4	8	.2667	RAH172
45	2,4,5-Trichlorophenol	4	8	.2667	RAH172
46	2-Fluorobiphenyl	4	8	.2667	RAH172
47	2,3,4-Trichlorophenol	4	8	.2667	RAH172
48	Biphenyl	4	8	.2667	RAH172
49	2-Chloronaphthalene	4	8	.2667	RAH172
50	2-Nitroaniline	4	8	.2667	RAH172
51	2,6-Dimethylnaphthalene	4	8	.2667	RAH172
52	1,4-Dinitrobenzene	4	8	.2667	RAH172
53	Dimethylphthalate	4	8	.2667	RAH172
54	1,3-Dinitrobenzene	4	8	.2667	RAH172
55	2,6-Dinitrotoluene	4	8	.2667	RAH172
56	1,2-Dinitrobenzene	4	8	.2667	RAH172
57	Acenaphthylene	4	8	.2667	RAH172
58	3-Nitroaniline	4	8	.2667	RAH172
59	Acenaphthene	4	8	.2667	RAH172
60	2,4-Dinitrophenol	4	8	.2667	RAH172
61	4-Nitrophenol	4	8	.2667	RAH172
62	2,4-Dinitrotoluene	4	8	.2667	RAH172
63	Dibenzofuran	4	8	.2667	RAH172
64	2,3,5,6-Tetrachlorophenol	4	8	.2667	RAH172
65	2,3,4,6-Tetrachlorophenol	4	8	.2667	RAH172
66	2,3,5-Trimethylnaphthalene	4	8	.2667	RAH172
67	Diethylphthalate	4	8	.2667	RAH172
68	Fluorene	4	8	.2667	RAH172
69	4-Chlorophenyl-phenylether	4	8	.2667	RAH172
70	4-Nitroaniline	4	8	.2667	RAH172
71	Phenanthrene-d10	IntSTD	IntSTD	IntSTD	IntSTD
72	4,6-Dinitro-2-methylphenol	4	8	.2667	RAH172
73	N-Nitrosodiphenylamine	4	8	.2667	RAH172
74	Azobenzene	4	8	.2667	RAH172
75	2,4,6-Tribromophenol	4	8	.2667	RAH172
76	4-Bromophenyl-phenylether	4	8	.2667	RAH172
77	Hexachlorobenzene	4	8	.2667	RAH172
78	Pentachlorophenol	4	8	.2667	RAH172
79	Dibenzothiophene	4	8	.2667	RAH172
80	Phenanthrene	4	8	.2667	RAH172
81	Dinoseb	NA	NA	NA	NA
82	Anthracene	4	8	.2667	RAH172
83	Carbazole	4	8	.2667	RAH172
84	Di-n-butylphthalate	4	8	.2667	RAH172
85	1-Methylphenanthrene	4	8	.2667	RAH172
86	Fluoranthene	4	8	.2667	RAH172
87	Chrysene-d12	IntSTD	IntSTD	IntSTD	IntSTD
88	Benzidine	NA	NA	NA	NA
89	Pyrene	4	8	.2667	RAH172
90	Terphenyl-d14	4	8	.2667	RAH172
91	Butylbenzylphthalate	4	8	.2667	RAH172
92	bis(2-ethylhexyl)adipate	4	8	.2667	RAH172
93	3,3'-Dichlorobenzidine	4	8	.2667	RAH172
94	Benzo(a)anthracene	4	8	.2667	RAH172
95	Chrysene	4	8	.2667	RAH172
96	bis(2-Ethylhexyl)phthalate	4	8	.2667	RAH172
97	Perylene-d12	IntSTD	IntSTD	IntSTD	IntSTD
98	Di-n-octylphthalate	4	8	.2667	RAH172
99	Benzo(b)fluoranthene	4	8	.2667	RAH172
100	Benzo(k)fluoranthene	4	8	.2667	RAH172
101	Benzo(e)pyrene	4	8	.2667	RAH172
102	Benzo(a)pyrene	4	8	.2667	RAH172
103	Perylene	4	8	.2667	RAH172
104	Indeno(1,2,3-cd)pyrene	4	8	.2667	RAH172
105	Dibenzo(a,h)anthracene	4	8	.2667	RAH172
106	Benzo(g,h,i)perylene	4	8	.2667	RAH172

pw 01-26-18

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E7 — Column Spec :ZB-SemiVoa ID :0.18MM
Beginning DateTime :01/22/18 14:31 — Ending DateTime :01/22/18 16:43
IC File :RAH169 — HPChem Method :SVE7A22

WATER Init. Vol. (ml) : 1000 — Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 — Final Vol. (ml) : 1

IDX	Parameters	ON COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dichlorobenzene-d4	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	4	4	.1333	RAH172
3	N-nitrosodimethylamine	4	4	.1333	RAH172
4	Pyridine	4	4	.1333	RAH172
5	2-Fluorophenol	4	4	.1333	RAH172
6	Phenol-d5	4	4	.1333	RAH172
7	Phenol	4	4	.1333	RAH172
8	Aniline	4	4	.1333	RAH172
9	bis(2-chloroethyl)ether	4	4	.1333	RAH172
10	2-Chlorophenol	4	4	.1333	RAH172
11	1,3-Dichlorobenzene	4	4	.1333	RAH172
12	1,2-Dichlorobenzene-d4	NA	NA	NA	NA
13	1,4-Dichlorobenzene	4	4	.1333	RAH172
14	Benzyl alcohol	4	4	.1333	RAH172
15	1,2-Dichlorobenzene	4	4	.1333	RAH172
16	2-Methylphenol	4	4	.1333	RAH172
17	bis(2-chloroisopropyl)ether	4	4	.1333	RAH172
18	4-Methylphenol	4	4	.1333	RAH172
19	N-Nitroso-di-n-propylamine	4	4	.1333	RAH172
20	Hexachloroethane	4	4	.1333	RAH172
21	Naphthalene-d8	IntSTD	IntSTD	IntSTD	IntSTD
22	Nitrobenzene-d5	4	4	.1333	RAH172
23	Nitrobenzene	4	4	.1333	RAH172
24	Isophorone	4	4	.1333	RAH172
25	2-Nitrophenol	4	4	.1333	RAH172
26	2,4-Dimethylphenol	4	4	.1333	RAH172
27	Benzoic acid	4	4	.1333	RAH172
28	bis(2-Chloroethoxy)methane	4	4	.1333	RAH172
29	3,5-Dimethylphenol	4	4	.1333	RAH172
30	2,4-Dichlorophenol	4	4	.1333	RAH172
31	1,2,4-Trichlorobenzene	4	4	.1333	RAH172
32	3,4-Dimethylphenol	4	4	.1333	RAH172
33	Naphthalene	4	4	.1333	RAH172
34	4-Chloroaniline	4	4	.1333	RAH172
35	2,6-Dichlorophenol	4	4	.1333	RAH172
36	Hexachlorobutadiene	4	4	.1333	RAH172
37	Hydroquinone	NA	NA	NA	NA
38	4-Chloro-3-methylphenol	4	4	.1333	RAH172
39	2-Methylnaphthalene	4	4	.1333	RAH172
40	1-Methylnaphthalene	4	4	.1333	RAH172
41	Acenaphthene-d10	IntSTD	IntSTD	IntSTD	IntSTD
42	Hexachlorocyclopentadiene	4	4	.1333	RAH172
43	2,3,5-Trichlorophenol	4	4	.1333	RAH172
44	2,4,6-Trichlorophenol	4	4	.1333	RAH172
45	2,4,5-Trichlorophenol	4	4	.1333	RAH172
46	2-Fluorobiphenyl	4	4	.1333	RAH172
47	2,3,4-Trichlorophenol	4	4	.1333	RAH172
48	Biphenyl	4	4	.1333	RAH172
49	2-Chloronaphthalene	4	4	.1333	RAH172
50	2-Nitroaniline	4	4	.1333	RAH172
51	2,6-Dimethylnaphthalene	4	4	.1333	RAH172
52	1,4-Dinitrobenzene	4	4	.1333	RAH172
53	Dimethylphthalate	4	4	.1333	RAH172
54	1,3-Dinitrobenzene	4	4	.1333	RAH172
55	2,6-Dinitrotoluene	4	4	.1333	RAH172
56	1,2-Dinitrobenzene	4	4	.1333	RAH172
57	Acenaphthylene	4	4	.1333	RAH172
58	3-Nitroaniline	4	4	.1333	RAH172
59	Acenaphthene	4	4	.1333	RAH172
60	2,4-Dinitrophenol	4	4	.1333	RAH172
61	4-Nitrophenol	4	4	.1333	RAH172
62	2,4-Dinitrotoluene	4	4	.1333	RAH172
63	Dibenzofuran	4	4	.1333	RAH172
64	2,3,5,6-Tetrachlorophenol	4	4	.1333	RAH172
65	2,3,4,6-Tetrachlorophenol	4	4	.1333	RAH172
66	2,3,5-Trimethylnaphthalene	4	4	.1333	RAH172
67	Diethylphthalate	4	4	.1333	RAH172
68	Fluorene	4	4	.1333	RAH172
69	4-Chlorophenyl-phenylether	4	4	.1333	RAH172
70	4-Nitroaniline	4	4	.1333	RAH172
71	Phenanthrene-d10	IntSTD	IntSTD	IntSTD	IntSTD
72	4,6-Dinitro-2-methylphenol	4	4	.1333	RAH172
73	N-Nitrosodiphenylamine	4	4	.1333	RAH172
74	Azobenzene	4	4	.1333	RAH172
75	2,4,6-Tribromophenol	4	4	.1333	RAH172
76	4-Bromophenyl-phenylether	4	4	.1333	RAH172
77	Hexachlorobenzene	4	4	.1333	RAH172
78	Pentachlorophenol	4	4	.1333	RAH172
79	Dibenzothiophene	4	4	.1333	RAH172
80	Phenanthrene	4	4	.1333	RAH172
81	Dinoseb	NA	NA	NA	NA
82	Anthracene	4	4	.1333	RAH172
83	Carbazole	4	4	.1333	RAH172
84	Di-n-butylphthalate	4	4	.1333	RAH172
85	1-Methylphenanthrene	4	4	.1333	RAH172
86	Fluoranthene	4	4	.1333	RAH172
87	Chrysene-d12	IntSTD	IntSTD	IntSTD	IntSTD
88	Benzidine	NA	NA	NA	NA
89	Pyrene	4	4	.1333	RAH172
90	Terphenyl-d14	4	4	.1333	RAH172
91	Butylbenzylphthalate	4	4	.1333	RAH172
92	bis(2-ethylhexyl)adipate	4	4	.1333	RAH172
93	3,3'-Dichlorobenzidine	4	4	.1333	RAH172
94	Benzo(a)anthracene	4	4	.1333	RAH172
95	Chrysene	4	4	.1333	RAH172
96	bis(2-Ethylhexyl)phthalate	4	4	.1333	RAH172
97	Perylene-d12	IntSTD	IntSTD	IntSTD	IntSTD
98	Di-n-octylphthalate	4	4	.1333	RAH172
99	Benzo(b)fluoranthene	4	4	.1333	RAH172
100	Benzo(k)fluoranthene	4	4	.1333	RAH172
101	Benzo(e)pyrene	4	4	.1333	RAH172
102	Benzo(a)pyrene	4	4	.1333	RAH172
103	Perylene	4	4	.1333	RAH172
104	Indeno(1,2,3-cd)pyrene	4	4	.1333	RAH172
105	Dibenzo(a,h)anthracene	4	4	.1333	RAH172
106	Benzo(g,h,i)perylene	4	4	.1333	RAH172

JW 01-26-18

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAH169
Instrument ID: E7

Project:ICAL
SDG No.:CAL\8270\2018
Date Analyzed: 01/22/18
Time Analyzed: 15:46

		IS1(DCB)		IS2(NPT)		IS3(ANT)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	459657	2.82	1739389	4.03	962917	6.03
	UPPER LIMIT	919314	3.32	3478778	4.53	1925834	6.53
	LOWER LIMIT	229829	2.32	869695	3.53	481459	5.53
	SAMPLE ID						
1	SVE7A221	401176	2.82	1512653	4.03	867448	6.03
2	SVE7A222	405525	2.82	1541118	4.03	877747	6.03
3	SVE7A223	447184	2.82	1632751	4.03	914591	6.03
4	SVE7A224	421645	2.82	1587036	4.03	909722	6.03
5	SVE7A226	422704	2.82	1591398	4.03	900994	6.03
6	SVE7A227	413360	2.82	1583467	4.03	912380	6.03
7	SVE7A228	400754	2.82	1542449	4.03	890580	6.03

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

01-26-18

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAH169
Instrument ID: E7

Project:ICAL
SDG No.:CAL\8270\2018
Date Analyzed: 01/22/18
Time Analyzed: 15:46

	IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
12 HOUR STD	2080878	7.77	2467262	10.54	2331017	11.91
UPPER LIMIT	4161756	8.27	4934524	11.04	4662034	12.41
LOWER LIMIT	1040439	7.27	1233631	10.04	1165509	11.41
SAMPLE ID						
1 SVE7A221	1919792	7.77	1981459	10.54	1833455	11.91
2 SVE7A222	1933491	7.77	1979865	10.54	1851071	11.90
3 SVE7A223	1960148	7.77	2300556	10.55	2142293	11.91
4 SVE7A224	1886469	7.77	1998264	10.54	1799809	11.91
5 SVE7A226	1961154	7.77	2049326	10.54	1869505	11.90
6 SVE7A227	1987220	7.77	2034237	10.54	1851531	11.90
7 SVE7A228	1909389	7.77	1951793	10.54	1799305	11.90

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

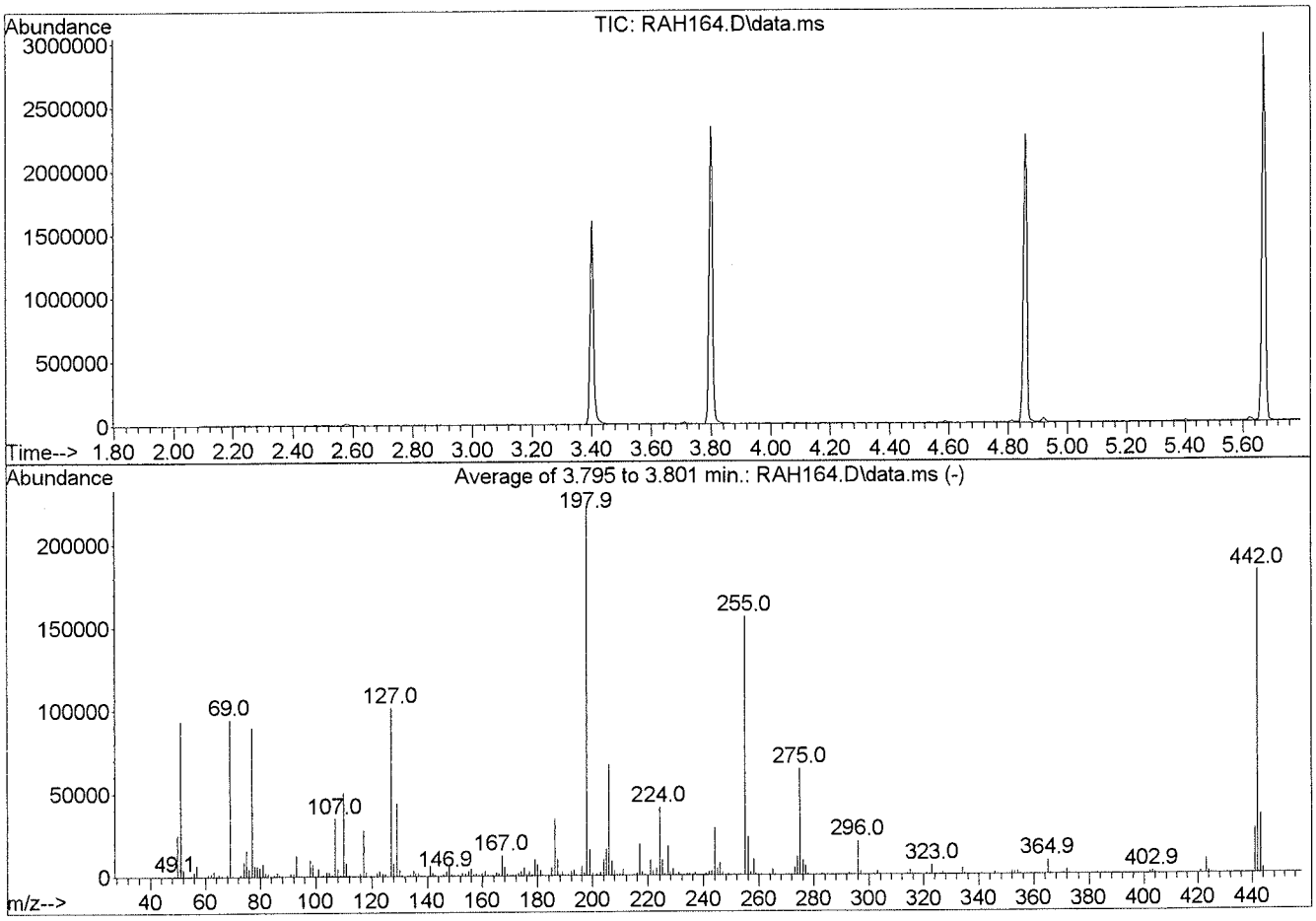
Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

mc 01-26-18

Data Path : D:\DATA\18A22\
Data File : RAH164.D
Acq On : 22 Jan 2018 14:21
Operator : KVu
Sample : DFTE7A2201
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPP.M
Title : DFTPP
Last Update : Tue Jan 23 12:56:03 2018



AutoFind: Scans 607, 608, 609; Background Corrected with Scan 599

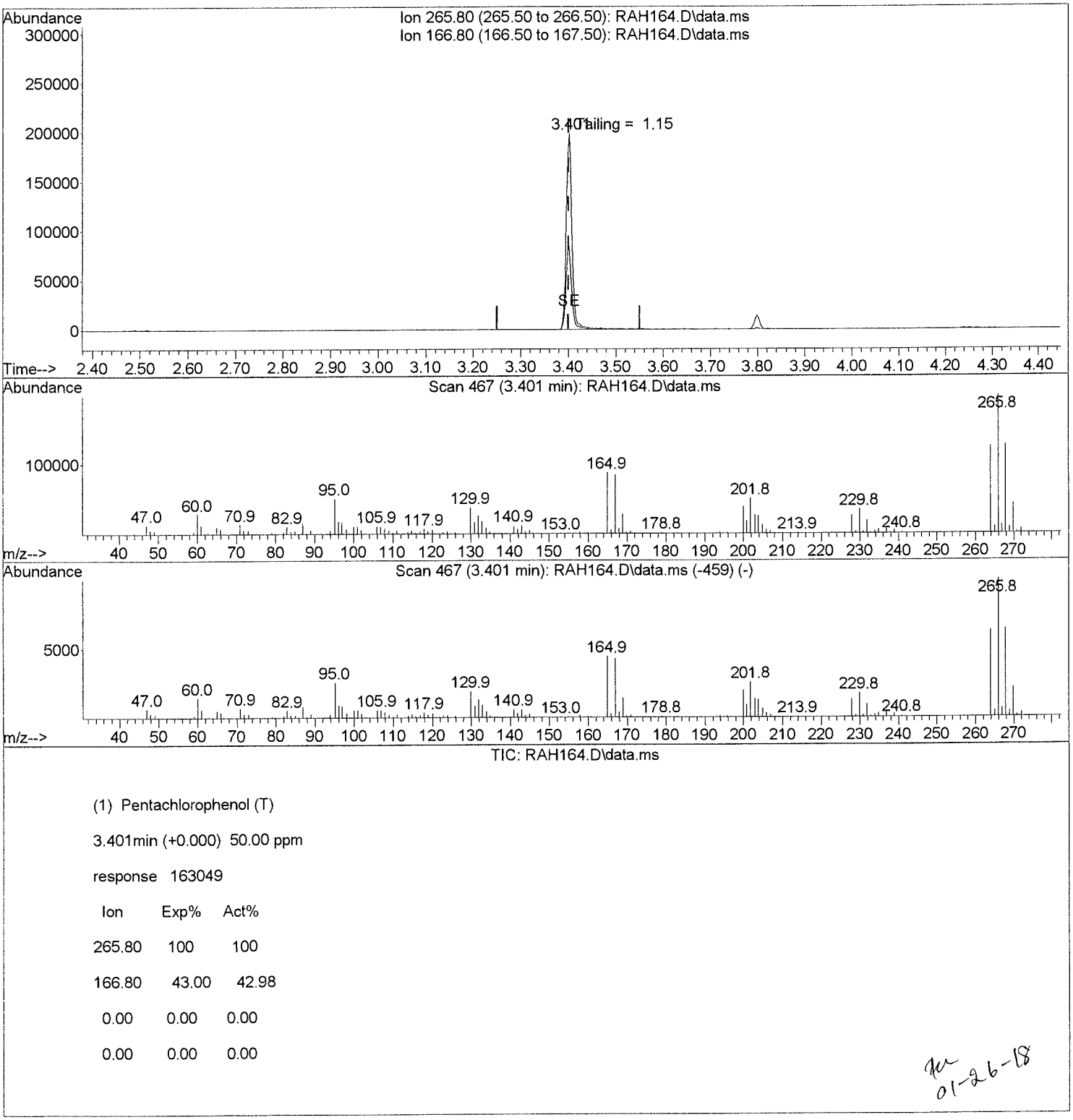
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	42.1	93533	PASS
68	69	0.00	2	1.1	1081	PASS
69	198	0.00	100	42.5	94448	PASS
70	69	0.00	2	0.5	477	PASS
127	198	40	60	45.6	101480	PASS
197	198	0.00	1	0.7	1558	PASS
198	198	100	100	100.0	222421	PASS
199	198	5	9	7.0	15629	PASS
275	198	10	30	28.8	64005	PASS
365	198	1	100	3.8	8450	PASS
441	443	0.01	100	76.5	27021	PASS
442	198	40	100	82.0	182469	PASS
443	442	17	23	19.3	35301	PASS

RW 01-26-18

Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:56:40 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00



TIC: RAH164.D\data.ms

(1) Pentachlorophenol (T)

3.401min (+0.000) 50.00 ppm

response 163049

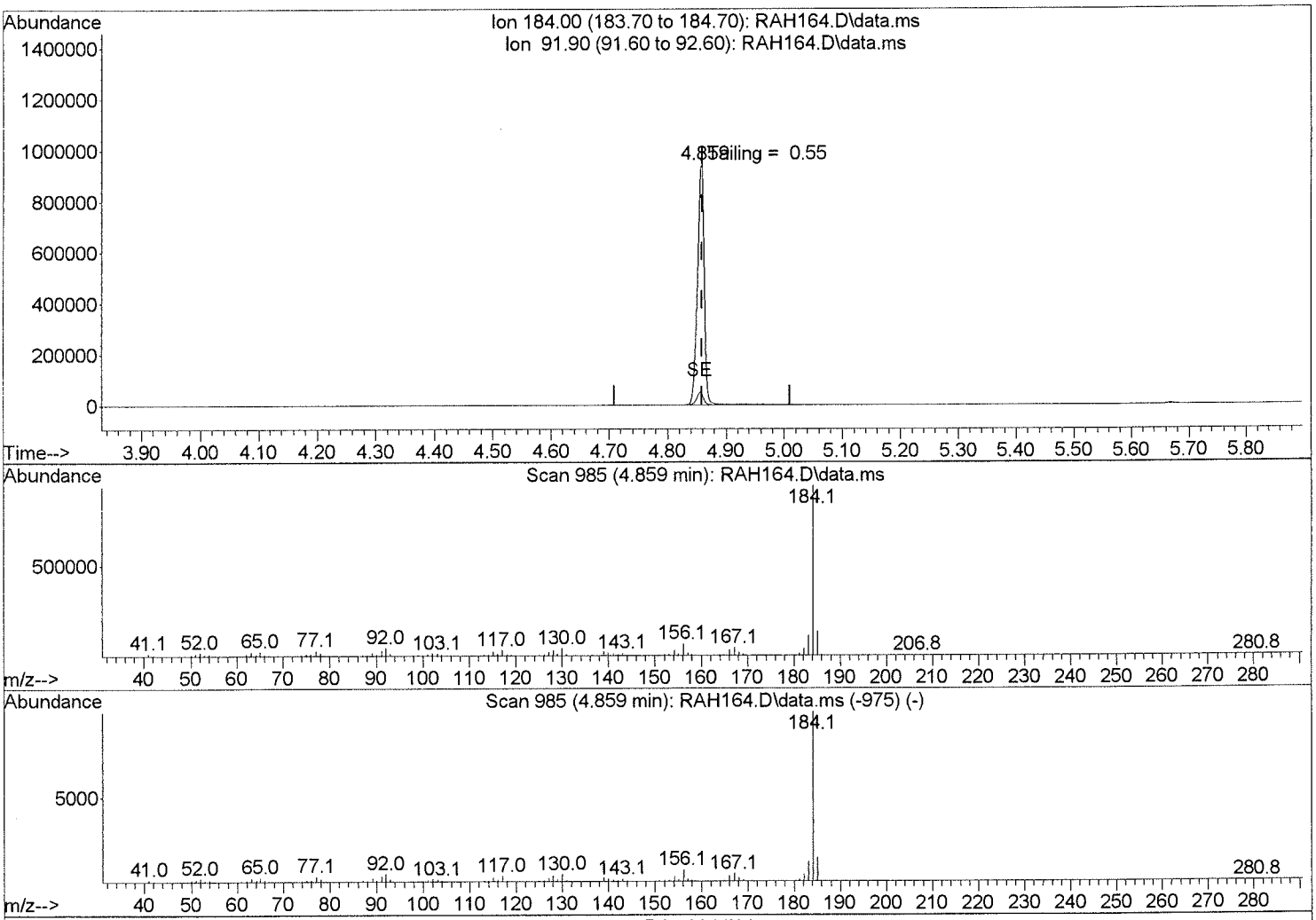
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	42.98
0.00	0.00	0.00
0.00	0.00	0.00

01-26-18

Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:56:40 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00



TIC: RAH164.D\data.ms

(3) Benzidine (T)

4.859min (0.000) 50.00 ppm

response 761991

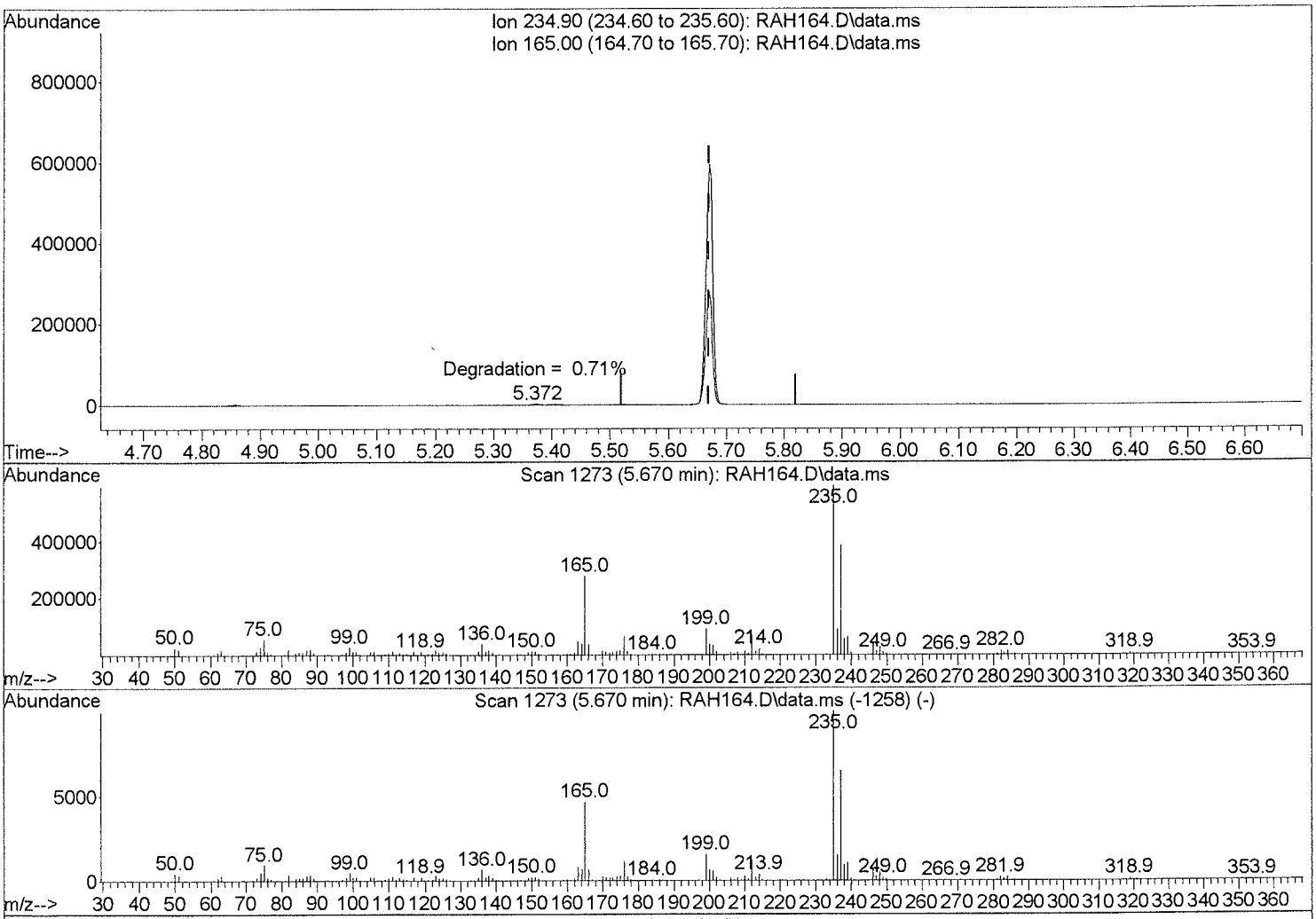
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	5.09
0.00	0.00	0.00
0.00	0.00	0.00

01-26-18

Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:56:40 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00



TIC: RAH164.D\data.ms

(6) DDT (T)

5.670min (0.000) 50.00 ppm

response 476501

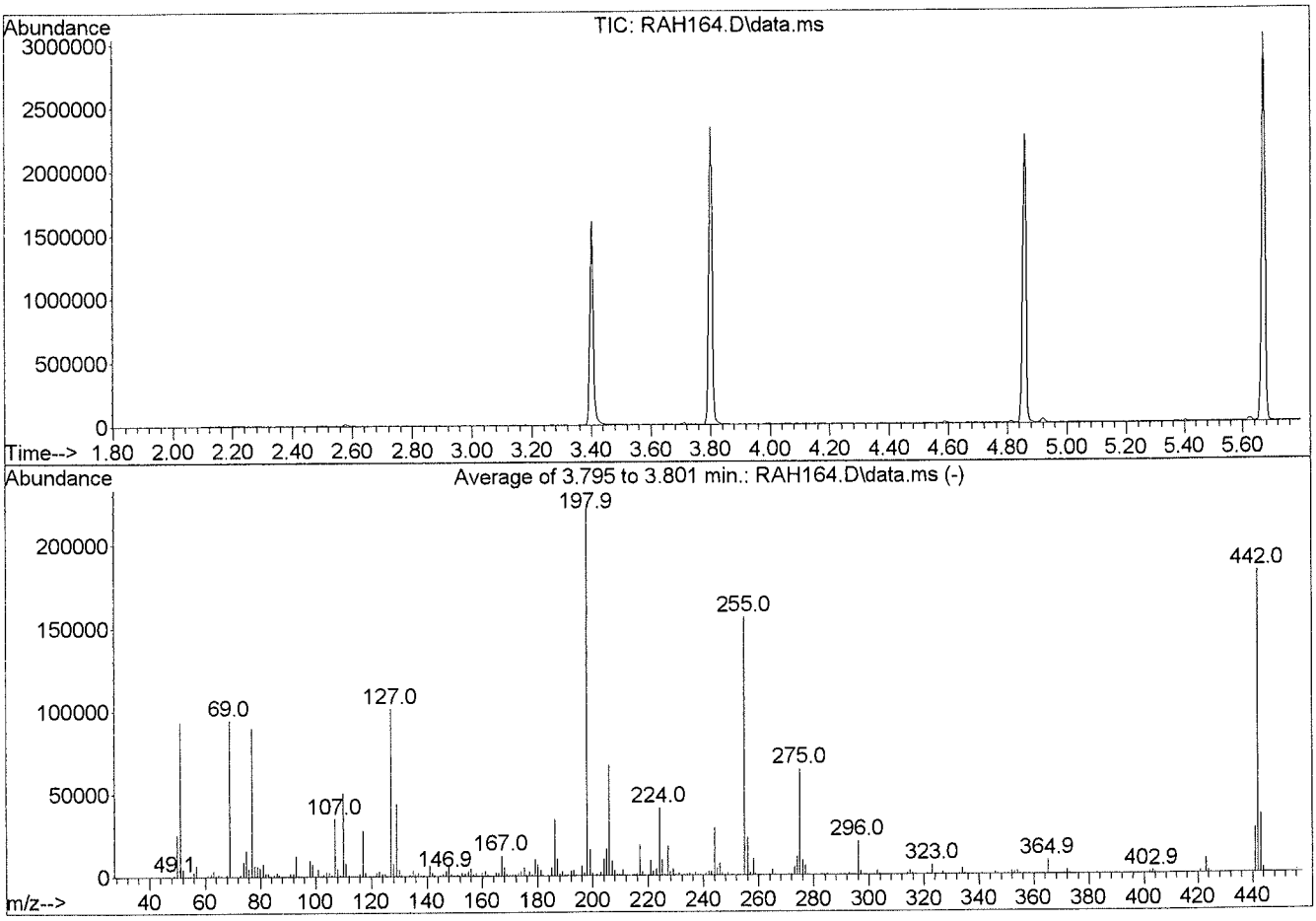
Ion	Exp%	Act%
234.90	100	100
165.00	47.00	47.01
0.00	0.00	0.00
0.00	0.00	0.00

01-26-18

Data Path : D:\DATA\18A22\
Data File : RAH164.D
Acq On : 22 Jan 2018 14:21
Operator : KVu
Sample : DFTE7A2201
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : Semivolatiles DFTPP
Last Update : Tue Jan 23 12:53:12 2018



AutoFind: Scans 607, 608, 609; Background Corrected with Scan 599

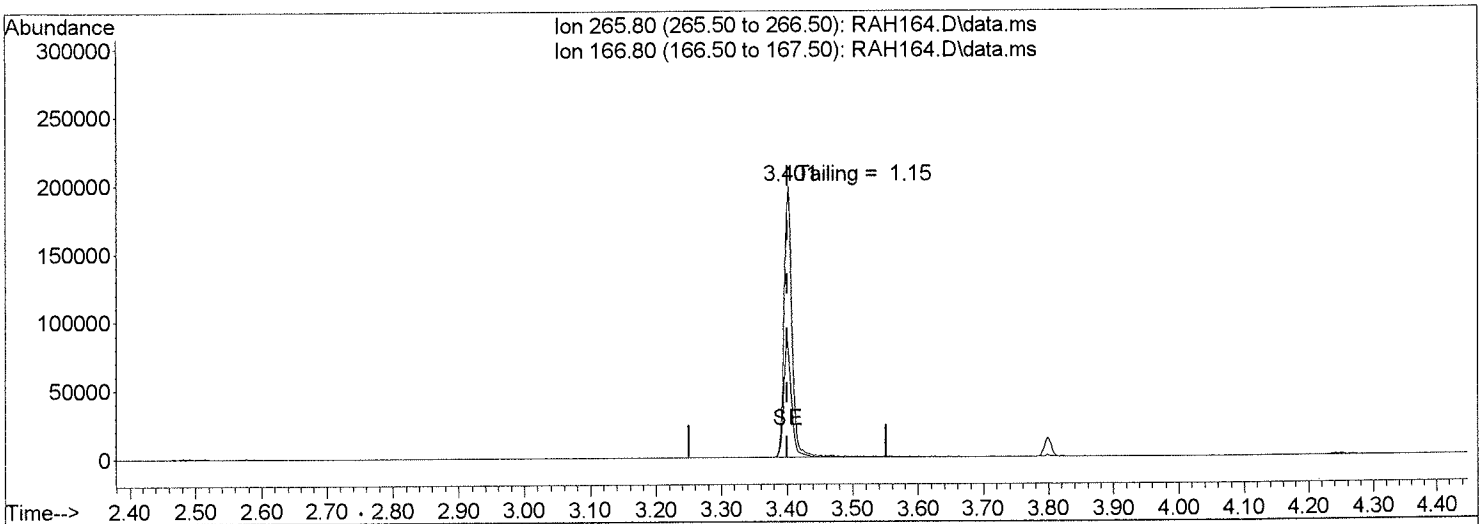
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	42.1	93533	PASS
68	69	0.00	2	1.1	1081	PASS
69	198	0.00	100	42.5	94448	PASS
70	69	0.00	2	0.5	477	PASS
127	198	10	80	45.6	101480	PASS
197	198	0.00	2	0.7	1558	PASS
198	198	100	100	100.0	222421	PASS
199	198	5	9	7.0	15629	PASS
275	198	10	60	28.8	64005	PASS
365	198	1	100	3.8	8450	PASS
441	442	0.01	24	14.8	27021	PASS
442	198	50	100	82.0	182469	PASS
443	442	15	24	19.3	35301	PASS

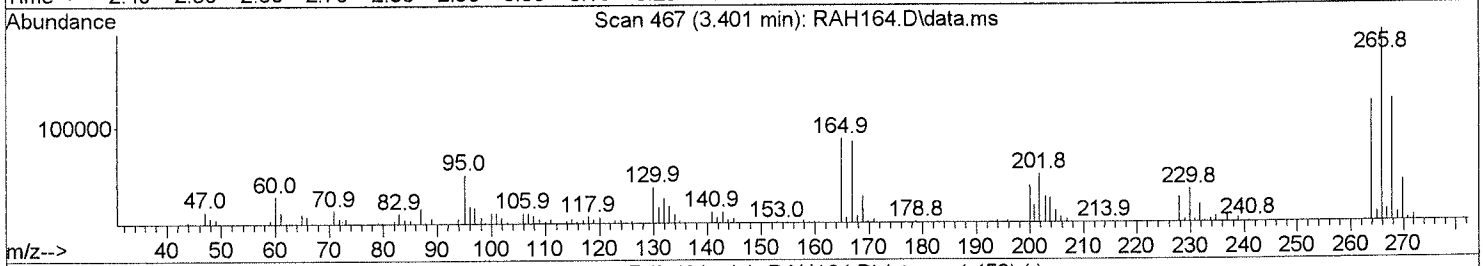
JM 01-26-18

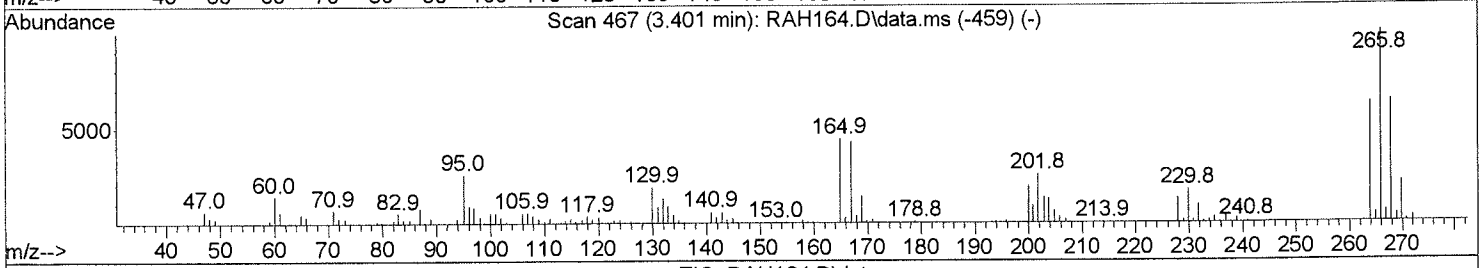
Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:53:33 2018
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP
QLast Update : Tue Jan 23 12:53:12 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RAH164.D\data.ms

(1) Pentachlorophenol (T)

3.401min (+0.000) 50.00 ppm

response 163049

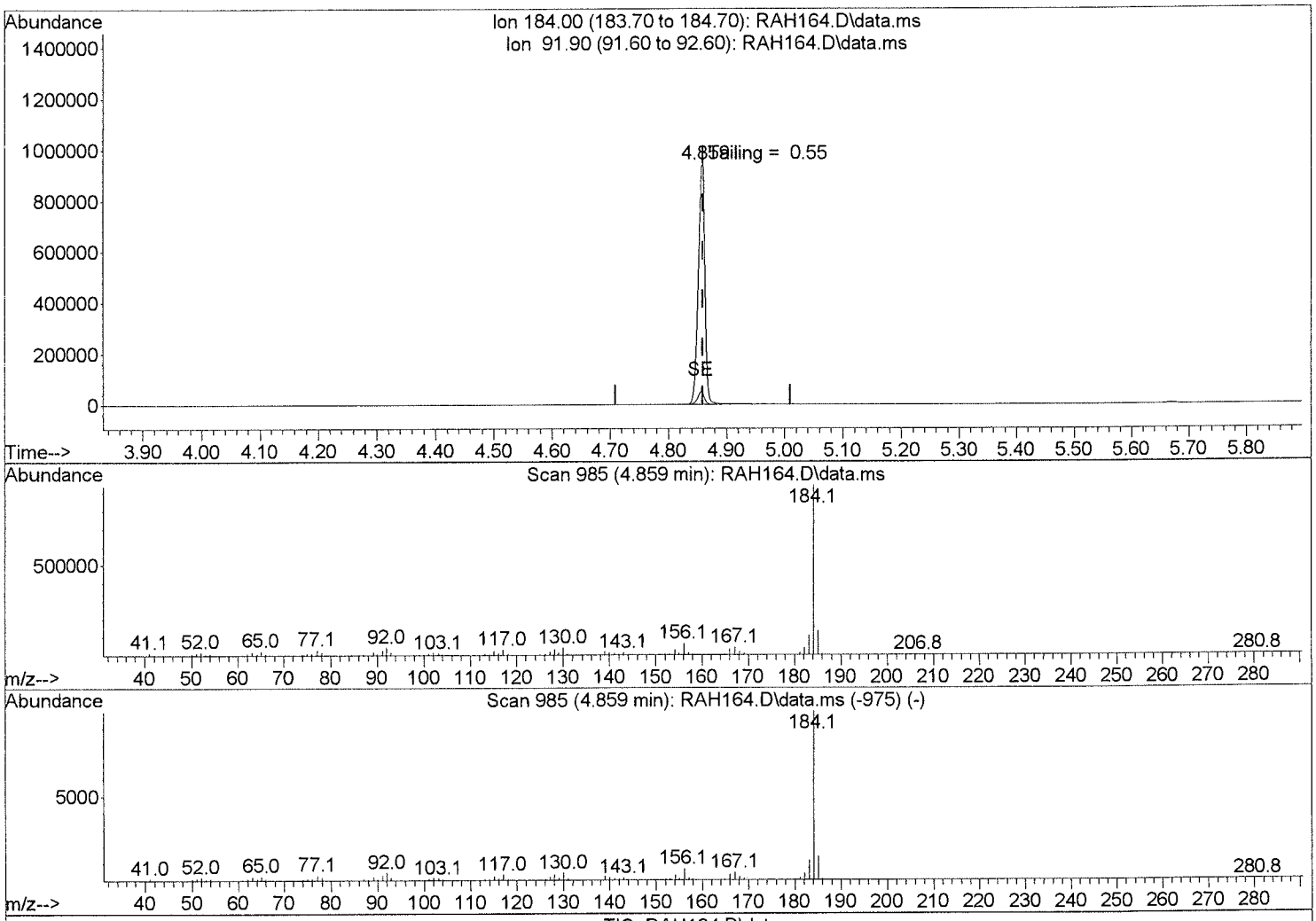
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	42.98
0.00	0.00	0.00
0.00	0.00	0.00

JM 01-26-18

Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:53:33 2018
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP
QLast Update : Tue Jan 23 12:53:12 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00



TIC: RAH164.D\data.ms

(3) Benzidine (T)

4.859min (0.000) 50.00 ppm

response 761991

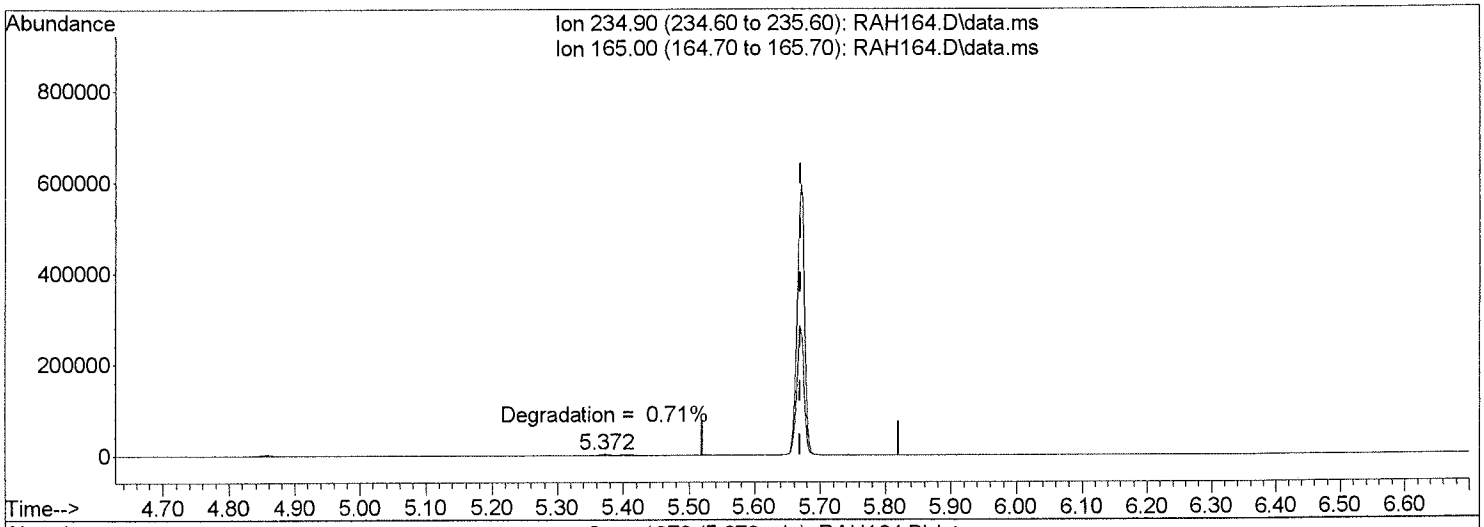
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	5.09
0.00	0.00	0.00
0.00	0.00	0.00

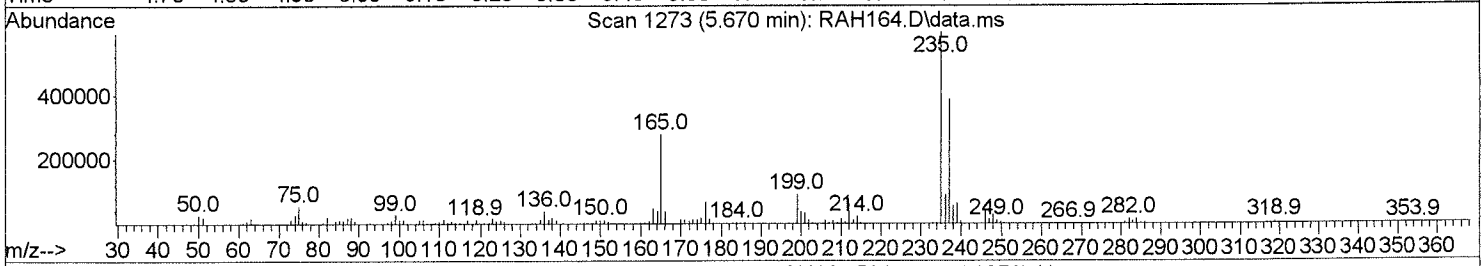
01-26-18

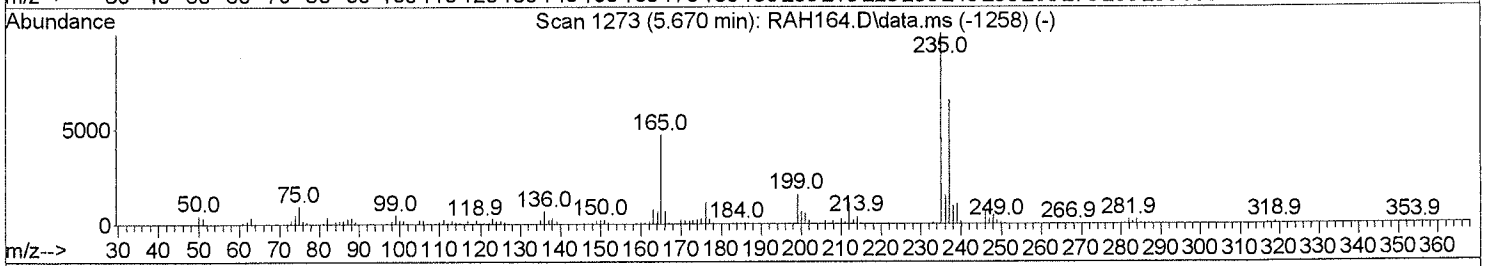
Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:53:33 2018
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP
QLast Update : Tue Jan 23 12:53:12 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RAH164.D\data.ms

(6) DDT (T)

5.670min (0.000) 50.00 ppm

response 476501

Ion	Exp%	Act%
234.90	100	100
165.00	47.00	47.01
0.00	0.00	0.00
0.00	0.00	0.00

pw 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH172.D Vial: 10
Acq On : 22 Jan 2018 16:43 Operator: KVu
Sample : SVE7A228 Inst : E7
Misc : 4PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:08:12 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.821	152	400754	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	1542449	40.00	ppm	0.00
41) Acenaphthene-d10	6.027	164	890580	40.00	ppm	0.00
71) Phenanthrene-d10	7.770	188	1909389	40.00	ppm	0.00
87) Chrysene-d12	10.543	240	1951793	40.00	ppm	0.00
97) Perylene-d12	11.905	264	1799305	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.901	112	45159	4.03	ppm	0.00
Spiked Amount 30.000			Recovery =	13.43%		
6) Phenol-d5	2.476	99	60555	4.09	ppm	0.00
Spiked Amount 30.000			Recovery =	13.63%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.300	82	59255	3.85	ppm	0.00
Spiked Amount 10.000			Recovery =	38.50%		
46) 2-Fluorobiphenyl	5.234	172	139564	3.66	ppm	0.00
Spiked Amount 10.000			Recovery =	36.60%		
75) 2,4,6-Tribromophenol	6.968	330	24363	3.67	ppm	0.00
Spiked Amount 30.000			Recovery =	12.23%		
90) Terphenyl-d14	9.479	244	168404	3.98	ppm	0.00
Spiked Amount 10.000			Recovery =	39.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.197	88	17206	4.22	ppm	98
3) N-nitrosodimethylamine	1.308	74	24198	3.73	ppm	96
4) Pyridine	1.336	79	48073	3.98	ppm	96
7) Phenol	2.486	94	58575	4.04	ppm	98
8) Aniline	2.549	93	68070	3.96	ppm	97
9) bis(2-chloroethyl)ether	2.580	93	39917	3.84	ppm	93
10) 2-Chlorophenol	2.643	128	48474	3.77	ppm	99
11) 1,3-Dichlorobenzene	2.773	146	60166	4.00	ppm	98
13) 1,4-Dichlorobenzene	2.835	146	61986	4.06	ppm	99
14) Benzyl alcohol	2.907	108	30534	3.93	ppm	99
15) 1,2-Dichlorobenzene	2.965	146	57973	3.98	ppm	95
16) 2-Methylphenol	2.989	107	41372	4.21	ppm	99
17) bis(2-chloroisopropyl)...	3.027	45	76664	4.15	ppm	93
18) 4-Methylphenol	3.123	107	50685	3.93	ppm	93
19) N-Nitroso-di-n-propyla...	3.142	70	38009	3.99	ppm	93
20) Hexachloroethane	3.269	117	24065	4.07	ppm	100
23) Nitrobenzene	3.318	77	57786	3.94	ppm	100
24) Isophorone	3.539	82	107419	3.93	ppm	97
25) 2-Nitrophenol	3.627	139	26622	3.76	ppm	86
26) 2,4-Dimethylphenol	3.646	107	56032	4.00	ppm	97
27) Benzoic acid	3.670	105	29173	2.92	ppm	100
28) bis(2-Chloroethoxy)met...	3.752	93	68285	4.50	ppm	96
29) 3,5-Dimethylphenol	3.780	107	66791	4.05	ppm	100
30) 2,4-Dichlorophenol	3.857	162	46085	3.75	ppm	98
31) 1,2,4-Trichlorobenzene	3.959	180	60956	3.97	ppm	94
32) 3,4-Dimethylphenol	3.959	107	68202	3.89	ppm	97
33) Naphthalene	4.045	128	152546	4.01	ppm	99
34) 4-Chloroaniline	4.094	127	61495	3.88	ppm	99
35) 2,6-Dichlorophenol	4.103	162	52028	4.09	ppm	94
36) Hexachlorobutadiene	4.176	225	44663	4.07	ppm	98

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH172.D
Acq On : 22 Jan 2018 16:43
Sample : SVE7A228
Misc : 4PPM
Integrator: RTE
Quant Time: Jan 23 12:08:12 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 10
Operator: KVu
Inst : E7
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38)	4-Chloro-3-methylphenol	4.615	107	43084	3.75	ppm		97
39)	2-Methylnaphthalene	4.806	142	108810	4.00	ppm		95
40)	1-Methylnaphthalene	4.921	142	101751	3.95	ppm		99
42)	Hexachlorocyclopentadiene	4.988	237	40625	3.48	ppm		97
43)	2,3,5-Trichlorophenol	4.993	196	40302	3.68	ppm		98
44)	2,4,6-Trichlorophenol	5.123	196	44010	3.92	ppm		91
45)	2,4,5-Trichlorophenol	5.162	196	42274	3.68	ppm		93
47)	2,3,4-Trichlorophenol	5.234	196	42051	3.84	ppm		87
48)	Biphenyl	5.350	154	141318	3.86	ppm		98
49)	2-Chloronaphthalene	5.369	162	112134	3.98	ppm		99
50)	2-Nitroaniline	5.484	65	28884	3.62	ppm		96
51)	2,6-Dimethylnaphthalene	5.532	156	100241	3.88	ppm		98
52)	1,4-Dinitrobenzene	5.661	168	14088	3.46	ppm		96
53)	Dimethylphthalate	5.715	163	134918	4.08	ppm		97
54)	1,3-Dinitrobenzene	5.743	168	18669	4.04	ppm		88
55)	2,6-Dinitrotoluene	5.782	165	27417	3.91	ppm		98
56)	1,2-Dinitrobenzene	5.835	168	10187	3.69	ppm	#	74
57)	Acenaphthylene	5.854	152	157958	3.54	ppm		98
58)	3-Nitroaniline	5.975	138	26719	3.85	ppm		99
59)	Acenaphthene	6.066	153	109061	3.79	ppm		91
60)	2,4-Dinitrophenol	6.104	184	10193	4.04	ppm		97
61)	4-Nitrophenol	6.171	109	16733	3.20	ppm		90
62)	2,4-Dinitrotoluene	6.262	165	35614	3.82	ppm		99
63)	Dibenzofuran	6.272	168	168752	3.97	ppm		96
64)	2,3,5,6-Tetrachlorophenol	6.363	230	30151	3.64	ppm		98
65)	2,3,4,6-Tetrachlorophenol	6.416	232	39241	3.50	ppm		99
66)	2,3,5-Trimethylnaphtha...	6.525	170	96866	3.84	ppm		93
67)	Diethylphthalate	6.567	149	128144	3.96	ppm		98
68)	Fluorene	6.684	166	121640	3.78	ppm		99
69)	4-Chlorophenyl-phenyle...	6.694	204	69801	3.93	ppm		94
70)	4-Nitroaniline	6.703	138	23735	3.44	ppm		81
72)	4,6-Dinitro-2-methylph...	6.745	198	15295	3.98	ppm		93
73)	N-Nitrosodiphenylamine	6.835	169	106745	3.89	ppm		96
74)	Azobenzene	6.883	77	119548	3.95	ppm		99
76)	4-Bromophenyl-phenylether	7.272	248	44092	3.46	ppm		74
77)	Hexachlorobenzene	7.328	284	51902	3.99	ppm		97
78)	Pentachlorophenol	7.550	266	25673	3.38	ppm		98
79)	Dibenzothiophene	7.654	184	185653	3.70	ppm		98
80)	Phenanthrene	7.793	178	203438	4.02	ppm		99
82)	Anthracene	7.851	178	194706	3.83	ppm		100
83)	Carbazole	8.033	167	156991	3.78	ppm		100
84)	Di-n-butylphthalate	8.430	149	187755	3.67	ppm		100
85)	1-Methylphenanthrene	8.463	192	147696	3.91	ppm		100
86)	Fluoranthene	9.072	202	213556	3.70	ppm		99
89)	Pyrene	9.308	202	224736	3.95	ppm		97
91)	Butylbenzylphthalate	9.984	149	73825	3.65	ppm		99
92)	bis(2-ethylhexyl)adipate	10.063	129	55426	3.53	ppm		97
93)	3,3'-Dichlorobenzidine	10.509	252	69053	3.56	ppm		99
94)	Benzo(a)anthracene	10.528	228	218785	4.01	ppm		97
95)	Chrysene	10.567	228	209964	4.04	ppm		100
96)	bis(2-Ethylhexyl)phtha...	10.562	149	110050	3.59	ppm		99
98)	Di-n-octylphthalate	11.179	149	167128	3.44	ppm		100
99)	Benzo(b)fluoranthene	11.539	252	201623	3.98	ppm		98
100)	Benzo(k)fluoranthene	11.563	252	178423	3.62	ppm		94
101)	Benzo(e)pyrene	11.797	252	183921	3.82	ppm		93

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH172.D
Acq On : 22 Jan 2018 16:43
Sample : SVE7A228
Misc : 4PPM
Integrator: RTE
Quant Time: Jan 23 12:08:12 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 10
Operator: KVu
Inst : E7
Multiplr: 1.00

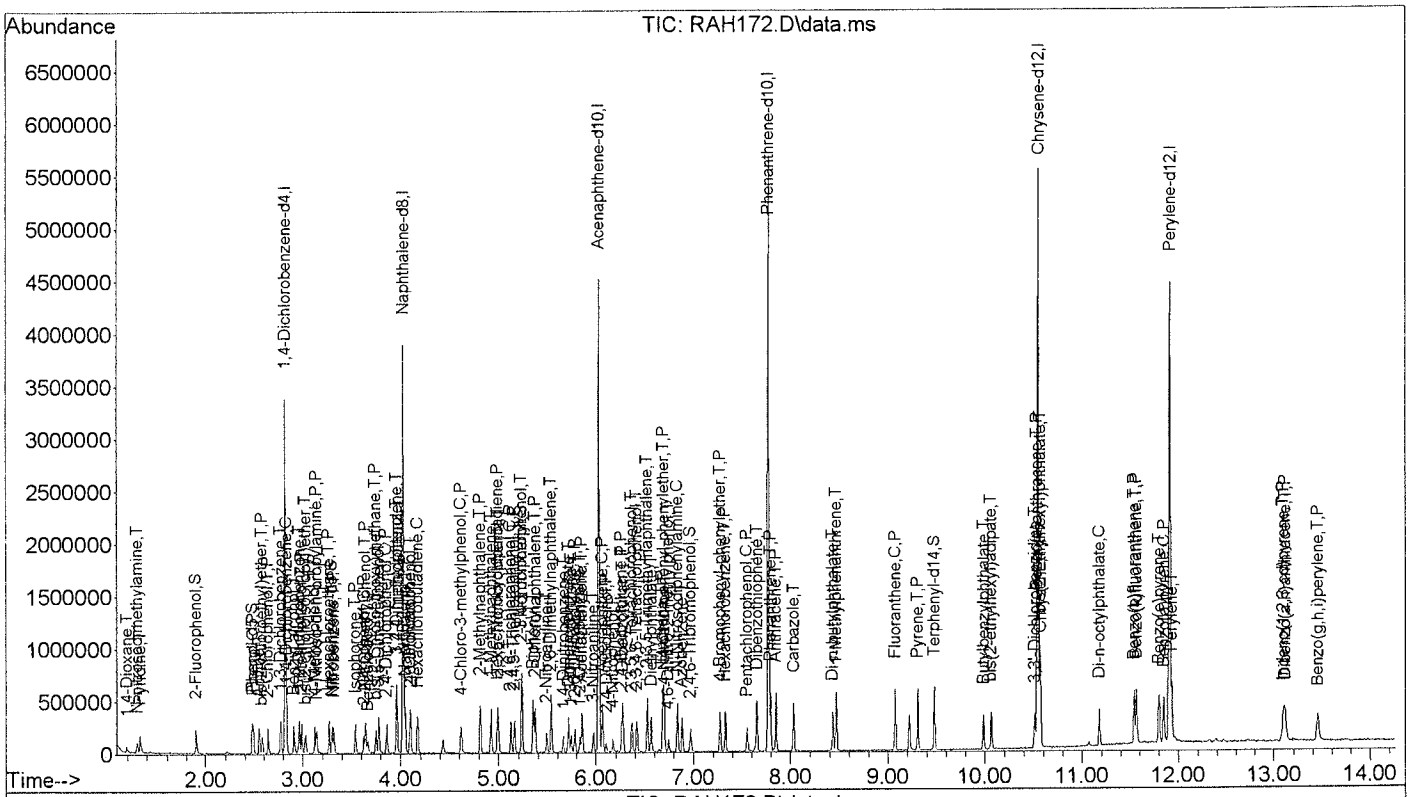
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.849	252	177453	3.76	ppm	94
103) Perylene	11.928	252	183754	3.79	ppm	94
104) Indeno(1,2,3-cd)pyrene	13.090	276	201675	3.68	ppm	97
105) Dibenzo(a,h)anthracene	13.114	278	159311	3.54	ppm	92
106) Benzo(g,h,i)perylene	13.454	276	170497	3.70	ppm	94

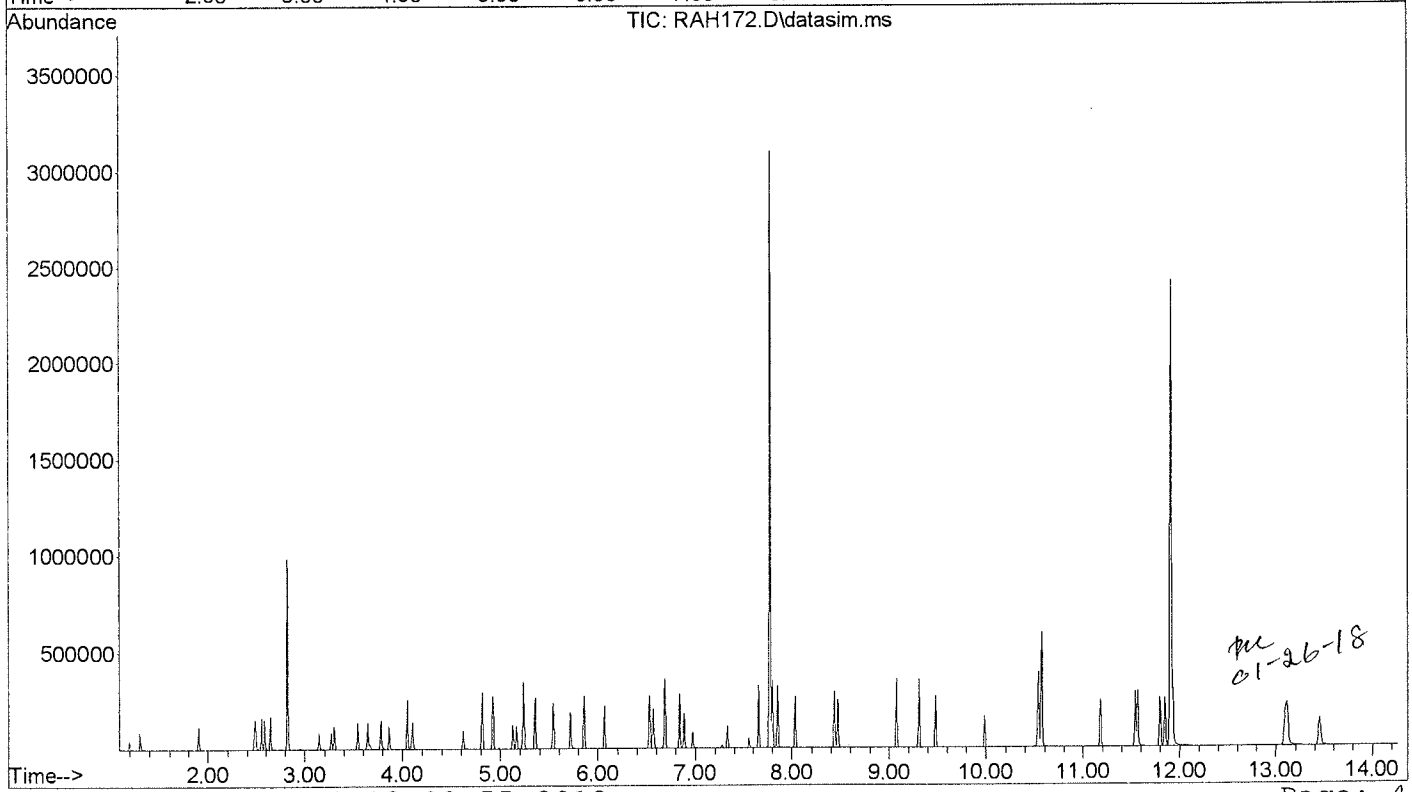
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH172.D Vial: 10
Acq On : 22 Jan 2018 16:43 Operator: KVu
Sample : SVE7A228 Inst : E7
Misc : 4PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:08:12 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





pc 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH171.D
Acq On : 22 Jan 2018 16:24
Sample : SVE7A227
Misc : 10PPM
Integrator: RTE
Quant Time: Jan 23 12:03:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 9
Operator: KVu
Inst : E7
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.821	152	413360	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	1583467	40.00	ppm	0.00
41) Acenaphthene-d10	6.027	164	912380	40.00	ppm	0.00
71) Phenanthrene-d10	7.770	188	1987220	40.00	ppm	0.00
87) Chrysene-d12	10.543	240	2034237	40.00	ppm	0.00
97) Perylene-d12	11.900	264	1851531	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.901	112	115656	10.01	ppm	0.00
Spiked Amount 30.000			Recovery =	33.37%		
6) Phenol-d5	2.476	99	149990	9.81	ppm	0.00
Spiked Amount 30.000			Recovery =	32.70%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.300	82	155016	9.82	ppm	0.00
Spiked Amount 10.000			Recovery =	98.20%		
46) 2-Fluorobiphenyl	5.234	172	371338	9.50	ppm	0.00
Spiked Amount 10.000			Recovery =	95.00%		
75) 2,4,6-Tribromophenol	6.968	330	65401	9.48	ppm	0.00
Spiked Amount 30.000			Recovery =	31.60%		
90) Terphenyl-d14	9.479	244	446973	10.13	ppm	0.00
Spiked Amount 10.000			Recovery =	101.30%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.197	88	43113	10.24	ppm	100
3) N-nitrosodimethylamine	1.307	74	67476	10.09	ppm	94
4) Pyridine	1.336	79	124441	10.00	ppm	96
7) Phenol	2.486	94	149333	9.99	ppm	96
8) Aniline	2.554	93	176167	9.92	ppm	100
9) bis(2-chloroethyl)ether	2.580	93	104994	9.80	ppm	95
10) 2-Chlorophenol	2.643	128	122734	9.24	ppm	99
11) 1,3-Dichlorobenzene	2.773	146	154962	9.98	ppm	99
13) 1,4-Dichlorobenzene	2.835	146	154335	9.79	ppm	97
14) Benzyl alcohol	2.912	108	78847	9.84	ppm	95
15) 1,2-Dichlorobenzene	2.965	146	149247	9.94	ppm	99
16) 2-Methylphenol	2.989	107	97119	9.57	ppm	92
17) bis(2-chloroisopropyl)...	3.027	45	196909	10.34	ppm	100
18) 4-Methylphenol	3.123	107	132716	9.98	ppm	98
19) N-Nitroso-di-n-propyla...	3.142	70	92979	9.46	ppm	94
20) Hexachloroethane	3.268	117	59742	9.79	ppm	99
23) Nitrobenzene	3.318	77	149277	9.91	ppm	100
24) Isophorone	3.539	82	286768	10.22	ppm	98
25) 2-Nitrophenol	3.627	139	70421	9.69	ppm	84
26) 2,4-Dimethylphenol	3.646	107	139159	9.68	ppm	100
27) Benzoic acid	3.684	105	90903	8.85	ppm	95
28) bis(2-Chloroethoxy)met...	3.751	93	153613	9.86	ppm	100
29) 3,5-Dimethylphenol	3.780	107	169035	9.97	ppm	97
30) 2,4-Dichlorophenol	3.862	162	129032	10.22	ppm	95
31) 1,2,4-Trichlorobenzene	3.958	180	153814	9.76	ppm	97
32) 3,4-Dimethylphenol	3.958	107	181430	10.07	ppm	99
33) Naphthalene	4.045	128	380484	9.73	ppm	100
34) 4-Chloroaniline	4.094	127	161168	9.92	ppm	98
35) 2,6-Dichlorophenol	4.103	162	129549	9.91	ppm	97
36) Hexachlorobutadiene	4.171	225	109882	9.76	ppm	98

pm 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH171.D Vial: 9
Acq On : 22 Jan 2018 16:24 Operator: KVu
Sample : SVE7A227 Inst : E7
Misc : 10PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38)	4-Chloro-3-methylphenol	4.615	107	120053	10.19	ppm		99
39)	2-Methylnaphthalene	4.806	142	281165	10.08	ppm		95
40)	1-Methylnaphthalene	4.921	142	267573	10.11	ppm		100
42)	Hexachlorocyclopentadiene	4.988	237	111612	9.32	ppm		100
43)	2,3,5-Trichlorophenol	4.993	196	117428	10.47	ppm		99
44)	2,4,6-Trichlorophenol	5.128	196	110991	9.66	ppm		99
45)	2,4,5-Trichlorophenol	5.161	196	116200	9.87	ppm		99
47)	2,3,4-Trichlorophenol	5.239	196	106236	9.48	ppm		92
48)	Biphenyl	5.349	154	370764	9.89	ppm		99
49)	2-Chloronaphthalene	5.369	162	283095	9.80	ppm		100
50)	2-Nitroaniline	5.488	65	79932	9.77	ppm		95
51)	2,6-Dimethylnaphthalene	5.532	156	258847	9.77	ppm		100
52)	1,4-Dinitrobenzene	5.657	168	42517	10.18	ppm		91
53)	Dimethylphthalate	5.714	163	340537	10.04	ppm		98
54)	1,3-Dinitrobenzene	5.743	168	48209	10.18	ppm		95
55)	2,6-Dinitrotoluene	5.782	165	69816	9.72	ppm		96
56)	1,2-Dinitrobenzene	5.835	168	28390	10.04	ppm	#	86
57)	Acenaphthylene	5.859	152	456903	9.99	ppm		99
58)	3-Nitroaniline	5.974	138	70157	9.86	ppm		97
59)	Acenaphthene	6.066	153	293902	9.97	ppm		100
60)	2,4-Dinitrophenol	6.104	184	36409	9.68	ppm		95
61)	4-Nitrophenol	6.171	109	52789	9.86	ppm		99
62)	2,4-Dinitrotoluene	6.262	165	96208	10.07	ppm		99
63)	Dibenzofuran	6.272	168	439828	10.11	ppm		99
64)	2,3,5,6-Tetrachlorophenol	6.368	230	83701	9.86	ppm		98
65)	2,3,4,6-Tetrachlorophenol	6.420	232	108081	9.42	ppm		97
66)	2,3,5-Trimethylnaphtha...	6.530	170	262782	10.16	ppm		99
67)	Diethylphthalate	6.567	149	338604	10.21	ppm		99
68)	Fluorene	6.684	166	333833	10.12	ppm		97
69)	4-Chlorophenyl-phenyle...	6.699	204	184024	10.12	ppm		98
70)	4-Nitroaniline	6.708	138	67288	9.52	ppm		91
72)	4,6-Dinitro-2-methylph...	6.750	198	53215	9.75	ppm		100
73)	N-Nitrosodiphenylamine	6.840	169	281473	9.85	ppm		100
74)	Azobenzene	6.887	77	310516	9.86	ppm		100
76)	4-Bromophenyl-phenylether	7.271	248	126386	9.52	ppm		99
77)	Hexachlorobenzene	7.328	284	136809	10.10	ppm		99
78)	Pentachlorophenol	7.555	266	73499	9.30	ppm		98
79)	Dibenzothiophene	7.654	184	489793	9.39	ppm		98
80)	Phenanthrene	7.797	178	526019	9.98	ppm		99
82)	Anthracene	7.851	178	523379	9.90	ppm		98
83)	Carbazole	8.033	167	405976	9.40	ppm		100
84)	Di-n-butylphthalate	8.430	149	520109	9.78	ppm		98
85)	1-Methylphenanthrene	8.468	192	391547	9.96	ppm		99
86)	Fluoranthene	9.072	202	573875	9.55	ppm		99
89)	Pyrene	9.308	202	600788	10.12	ppm		99
91)	Butylbenzylphthalate	9.984	149	206190	9.77	ppm		99
92)	bis(2-ethylhexyl)adipate	10.063	129	162301	9.93	ppm		99
93)	3,3'-Dichlorobenzidine	10.504	252	195001	9.65	ppm		100
94)	Benzo(a)anthracene	10.528	228	566129	9.94	ppm		100
95)	Chrysene	10.562	228	540823	9.98	ppm		99
96)	bis(2-Ethylhexyl)phtha...	10.562	149	315637	9.89	ppm		99
98)	Di-n-octylphthalate	11.174	149	478101	9.57	ppm		98
99)	Benzo(b)fluoranthene	11.539	252	488673	9.38	ppm		100
100)	Benzo(k)fluoranthene	11.563	252	515314	10.15	ppm		100
101)	Benzo(e)pyrene	11.797	252	489148	9.87	ppm		99

pm 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH171.D Vial: 9
Acq On : 22 Jan 2018 16:24 Operator: KVu
Sample : SVE7A227 Inst : E7
Misc : 10PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

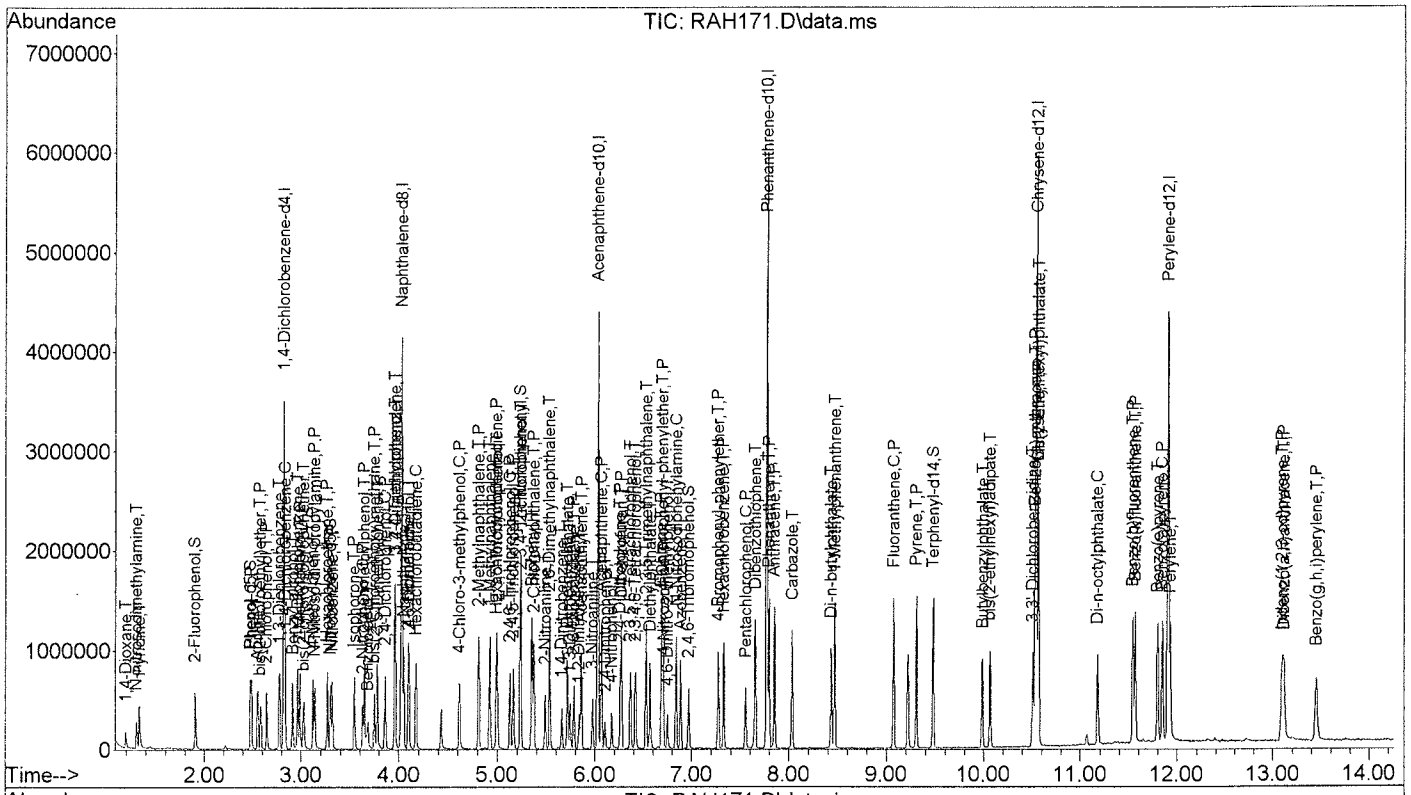
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.844	252	466236	9.60	ppm	97
103) Perylene	11.928	252	489248	9.82	ppm	98
104) Indeno(1,2,3-cd)pyrene	13.094	276	537572	9.54	ppm	96
105) Dibenzo(a,h)anthracene	13.114	278	451574	9.74	ppm	99
106) Benzo(g,h,i)perylene	13.449	276	458611	9.66	ppm	100

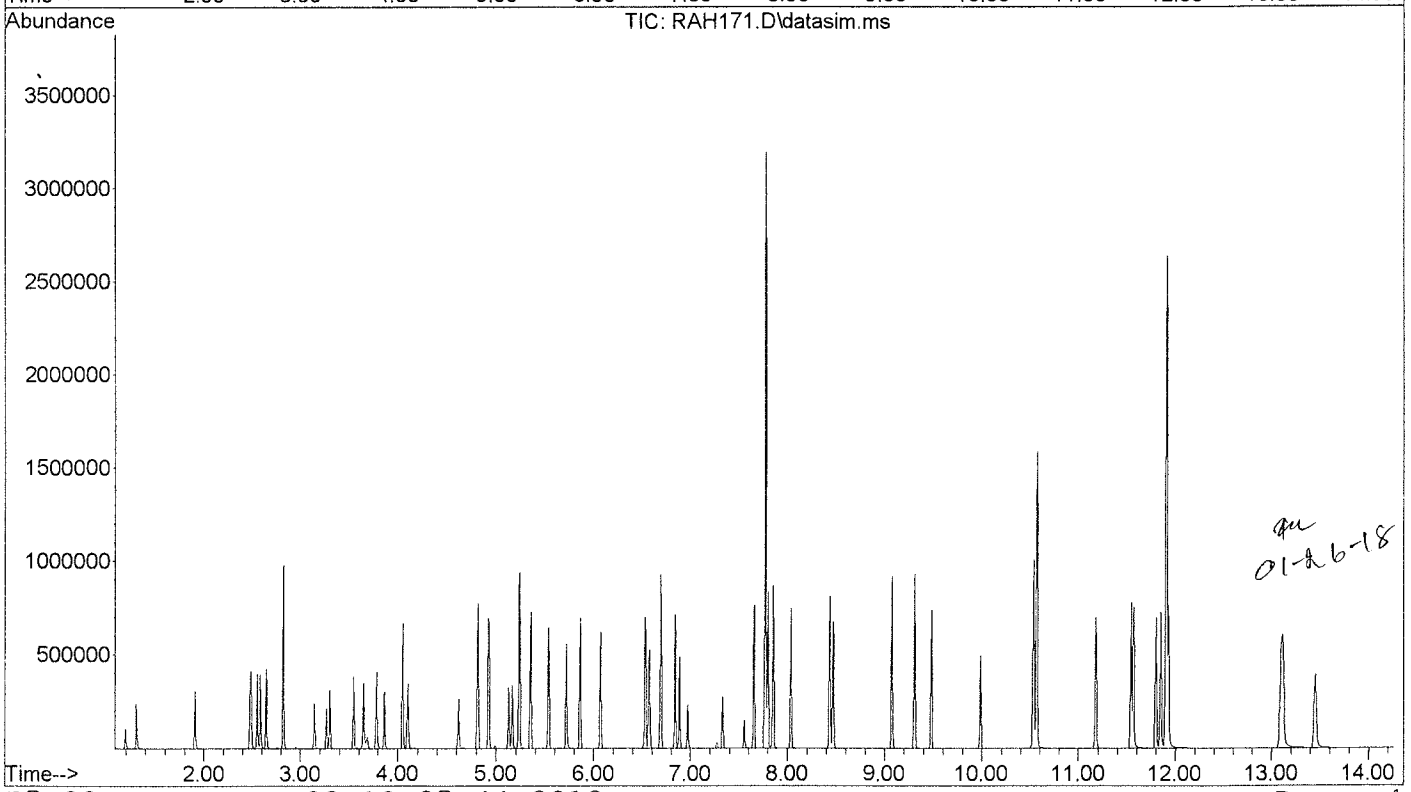
(#) = qualifier out of range (m) = manual integration (+) = signals summed

pw 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH171.D Vial: 9
Acq On : 22 Jan 2018 16:24 Operator: KVu
Sample : SVE7A227 Inst : E7
Misc : 10PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH170.D
Acq On : 22 Jan 2018 16:05
Sample : SVE7A226
Misc : 20PPM
Integrator: RTE
Quant Time: Jan 23 12:03:26 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 8
Operator: KVu
Inst : E7
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.821	152	422704	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	1591398	40.00	ppm	0.00
41) Acenaphthene-d10	6.027	164	900994	40.00	ppm	0.00
71) Phenanthrene-d10	7.770	188	1961154	40.00	ppm	0.00
87) Chrysene-d12	10.542	240	2049326	40.00	ppm	0.00
97) Perylene-d12	11.904	264	1869505	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.901	112	228434	19.33	ppm	0.00
Spiked Amount 30.000			Recovery =	64.43%		
6) Phenol-d5	2.476	99	308498	19.74	ppm	0.00
Spiked Amount 30.000			Recovery =	65.80%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.300	82	326054	20.56	ppm	0.00
Spiked Amount 10.000			Recovery =	205.60%		
46) 2-Fluorobiphenyl	5.234	172	742343	19.23	ppm	0.00
Spiked Amount 10.000			Recovery =	192.30%		
75) 2,4,6-Tribromophenol	6.973	330	137804	20.23	ppm	0.00
Spiked Amount 30.000			Recovery =	67.43%		
90) Terphenyl-d14	9.479	244	911674	20.51	ppm	0.00
Spiked Amount 10.000			Recovery =	205.10%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.192	88	87507	20.33	ppm	98
3) N-nitrosodimethylamine	1.303	74	139084	20.34	ppm	94
4) Pyridine	1.331	79	252769	19.86	ppm	100
7) Phenol	2.486	94	300071	19.62	ppm	98
8) Aniline	2.554	93	358380	19.74	ppm	100
9) bis(2-chloroethyl)ether	2.585	93	225451	20.58	ppm	97
10) 2-Chlorophenol	2.648	128	284052	20.92	ppm	97
11) 1,3-Dichlorobenzene	2.777	146	312521	19.68	ppm	96
13) 1,4-Dichlorobenzene	2.835	146	324680	20.15	ppm	99
14) Benzyl alcohol	2.912	108	166654	20.33	ppm	99
15) 1,2-Dichlorobenzene	2.965	146	305845	19.92	ppm	98
16) 2-Methylphenol	2.989	107	207883	20.04	ppm	95
17) bis(2-chloroisopropyl)...	3.027	45	380829	19.55	ppm	99
18) 4-Methylphenol	3.123	107	275966	20.29	ppm	100
19) N-Nitroso-di-n-propyla...	3.147	70	204293	20.33	ppm	95
20) Hexachloroethane	3.268	117	124643	19.98	ppm	100
23) Nitrobenzene	3.318	77	303781	20.06	ppm	99
24) Isophorone	3.544	82	563965	20.00	ppm	95
25) 2-Nitrophenol	3.627	139	145834	19.97	ppm	100
26) 2,4-Dimethylphenol	3.646	107	290266	20.10	ppm	99
27) Benzoic acid	3.703	105	207440	20.11	ppm	98
28) bis(2-Chloroethoxy)met...	3.751	93	311736	19.91	ppm	98
29) 3,5-Dimethylphenol	3.780	107	339518	19.93	ppm	94
30) 2,4-Dichlorophenol	3.862	162	256586	20.23	ppm	98
31) 1,2,4-Trichlorobenzene	3.963	180	311805	19.68	ppm	96
32) 3,4-Dimethylphenol	3.958	107	355675	19.65	ppm	99
33) Naphthalene	4.045	128	796901	20.28	ppm	100
34) 4-Chloroaniline	4.094	127	329326	20.16	ppm	99
35) 2,6-Dichlorophenol	4.103	162	258353	19.67	ppm	100
36) Hexachlorobutadiene	4.176	225	228105	20.17	ppm	98

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH170.D Vial: 8
Acq On : 22 Jan 2018 16:05 Operator: KVu
Sample : SVE7A226 Inst : E7
Misc : 20PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:26 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38)	4-Chloro-3-methylphenol	4.619	107	242626	20.49	ppm		98
39)	2-Methylnaphthalene	4.811	142	558093	19.90	ppm		98
40)	1-Methylnaphthalene	4.921	142	542737	20.40	ppm		100
42)	Hexachlorocyclopentadiene	4.988	237	238883	20.20	ppm		99
43)	2,3,5-Trichlorophenol	4.993	196	221764	20.03	ppm		98
44)	2,4,6-Trichlorophenol	5.128	196	230796	20.34	ppm		100
45)	2,4,5-Trichlorophenol	5.161	196	239443	20.61	ppm		97
47)	2,3,4-Trichlorophenol	5.239	196	231232	20.90	ppm		96
48)	Biphenyl	5.349	154	751063	20.29	ppm		97
49)	2-Chloronaphthalene	5.369	162	573813	20.12	ppm		99
50)	2-Nitroaniline	5.488	65	171743	21.25	ppm		98
51)	2,6-Dimethylnaphthalene	5.532	156	537900	20.57	ppm		99
52)	1,4-Dinitrobenzene	5.661	168	88130	21.37	ppm		98
53)	Dimethylphthalate	5.719	163	676284	20.19	ppm		100
54)	1,3-Dinitrobenzene	5.743	168	94811	20.26	ppm		97
55)	2,6-Dinitrotoluene	5.782	165	147707	20.83	ppm		99
56)	1,2-Dinitrobenzene	5.840	168	57931	20.76	ppm	#	85
57)	Acenaphthylene	5.859	152	938147	20.77	ppm		100
58)	3-Nitroaniline	5.979	138	141569	20.15	ppm		95
59)	Acenaphthene	6.065	153	586218	20.14	ppm		100
60)	2,4-Dinitrophenol	6.104	184	83827	20.22	ppm		94
61)	4-Nitrophenol	6.176	109	108352	20.49	ppm		97
62)	2,4-Dinitrotoluene	6.262	165	193725	20.54	ppm		100
63)	Dibenzofuran	6.276	168	867102	20.19	ppm		100
64)	2,3,5,6-Tetrachlorophenol	6.367	230	176218	21.02	ppm		98
65)	2,3,4,6-Tetrachlorophenol	6.420	232	251495	22.19	ppm		89
66)	2,3,5-Trimethylnaphtha...	6.530	170	519249	20.33	ppm		96
67)	Diethylphthalate	6.572	149	669004	20.43	ppm		99
68)	Fluorene	6.689	166	660864	20.29	ppm		99
69)	4-Chlorophenyl-phenyle...	6.698	204	365480	20.35	ppm		100
70)	4-Nitroaniline	6.708	138	142865	20.47	ppm		92
72)	4,6-Dinitro-2-methylph...	6.750	198	118228	20.04	ppm		99
73)	N-Nitrosodiphenylamine	6.840	169	577645	20.48	ppm		98
74)	Azobenzene	6.887	77	628238	20.22	ppm		99
76)	4-Bromophenyl-phenylether	7.271	248	245914	18.78	ppm		81
77)	Hexachlorobenzene	7.328	284	267513	20.00	ppm		99
78)	Pentachlorophenol	7.555	266	164667	21.10	ppm		97
79)	Dibenzothiophene	7.654	184	1084070	21.06	ppm		99
80)	Phenanthrene	7.797	178	1045863	20.11	ppm		100
82)	Anthracene	7.851	178	1063833	20.40	ppm		99
83)	Carbazole	8.033	167	856480	20.10	ppm		99
84)	Di-n-butylphthalate	8.434	149	1055404	20.11	ppm		100
85)	1-Methylphenanthrene	8.468	192	761317	19.61	ppm		99
86)	Fluoranthene	9.072	202	1188752	20.05	ppm		99
89)	Pyrene	9.308	202	1233902	20.64	ppm		98
91)	Butylbenzylphthalate	9.984	149	436284	20.52	ppm		100
92)	bis(2-ethylhexyl)adipate	10.063	129	345589	20.98	ppm		97
93)	3,3'-Dichlorobenzidine	10.508	252	414498	20.36	ppm		98
94)	Benzo(a)anthracene	10.533	228	1144691	19.96	ppm		99
95)	Chrysene	10.567	228	1089732	19.96	ppm		100
96)	bis(2-Ethylhexyl)phtha...	10.562	149	670098	20.84	ppm		98
98)	Di-n-octylphthalate	11.178	149	1050622	20.82	ppm		100
99)	Benzo(b)fluoranthene	11.543	252	1042439	19.83	ppm		99
100)	Benzo(k)fluoranthene	11.567	252	1042235	20.33	ppm		99
101)	Benzo(e)pyrene	11.796	252	1010666	20.19	ppm		100

mc 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH170.D
Acq On : 22 Jan 2018 16:05
Sample : SVE7A226
Misc : 20PPM
Integrator: RTE
Quant Time: Jan 23 12:03:26 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 8
Operator: KVu
Inst : E7
Multiplr: 1.00

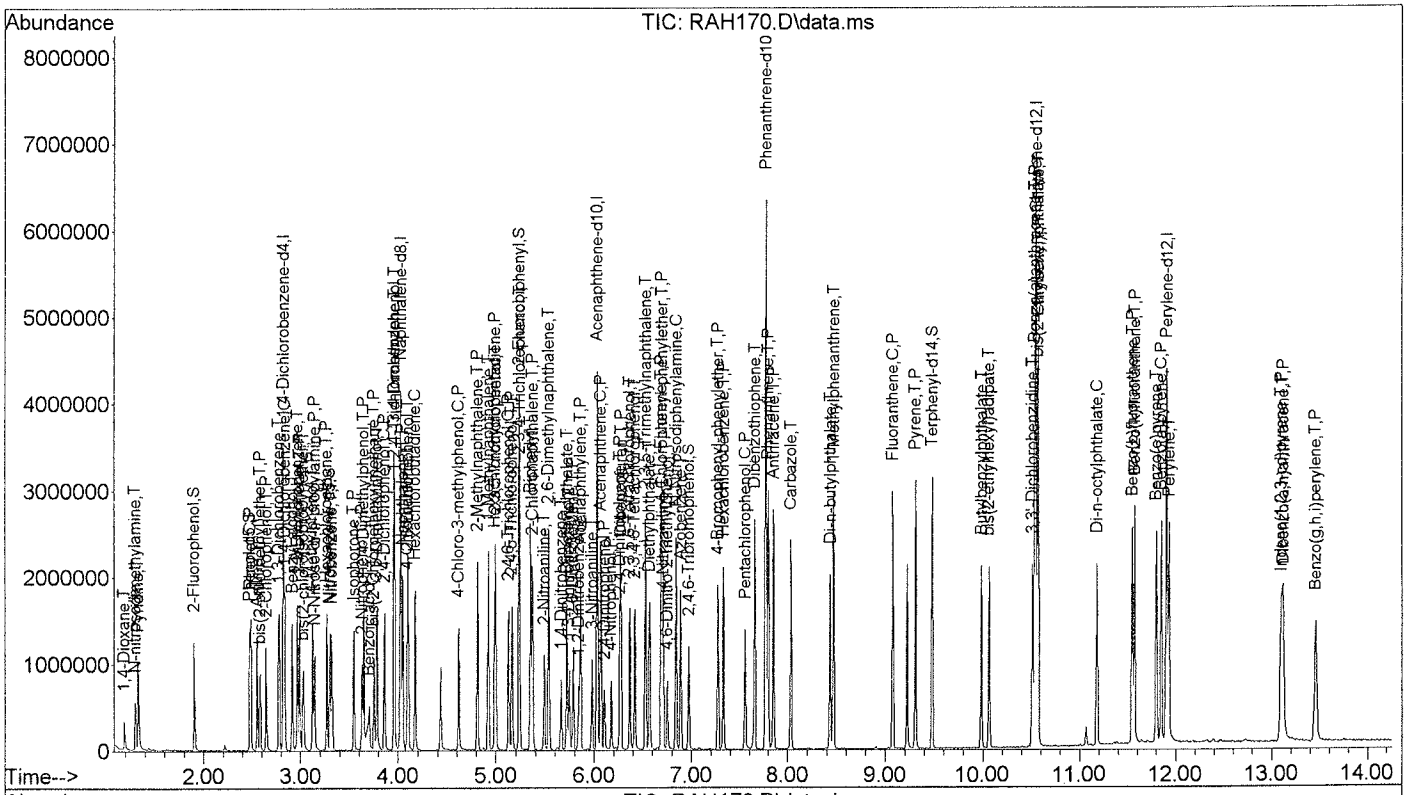
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.848	252	988932	20.16	ppm	100
103) Perylene	11.932	252	1019088	20.25	ppm	97
104) Indeno(1,2,3-cd)pyrene	13.099	276	1140944	20.05	ppm	99
105) Dibenzo(a,h)anthracene	13.118	278	943025	20.15	ppm	100
106) Benzo(g,h,i)perylene	13.458	276	964623	20.12	ppm	98

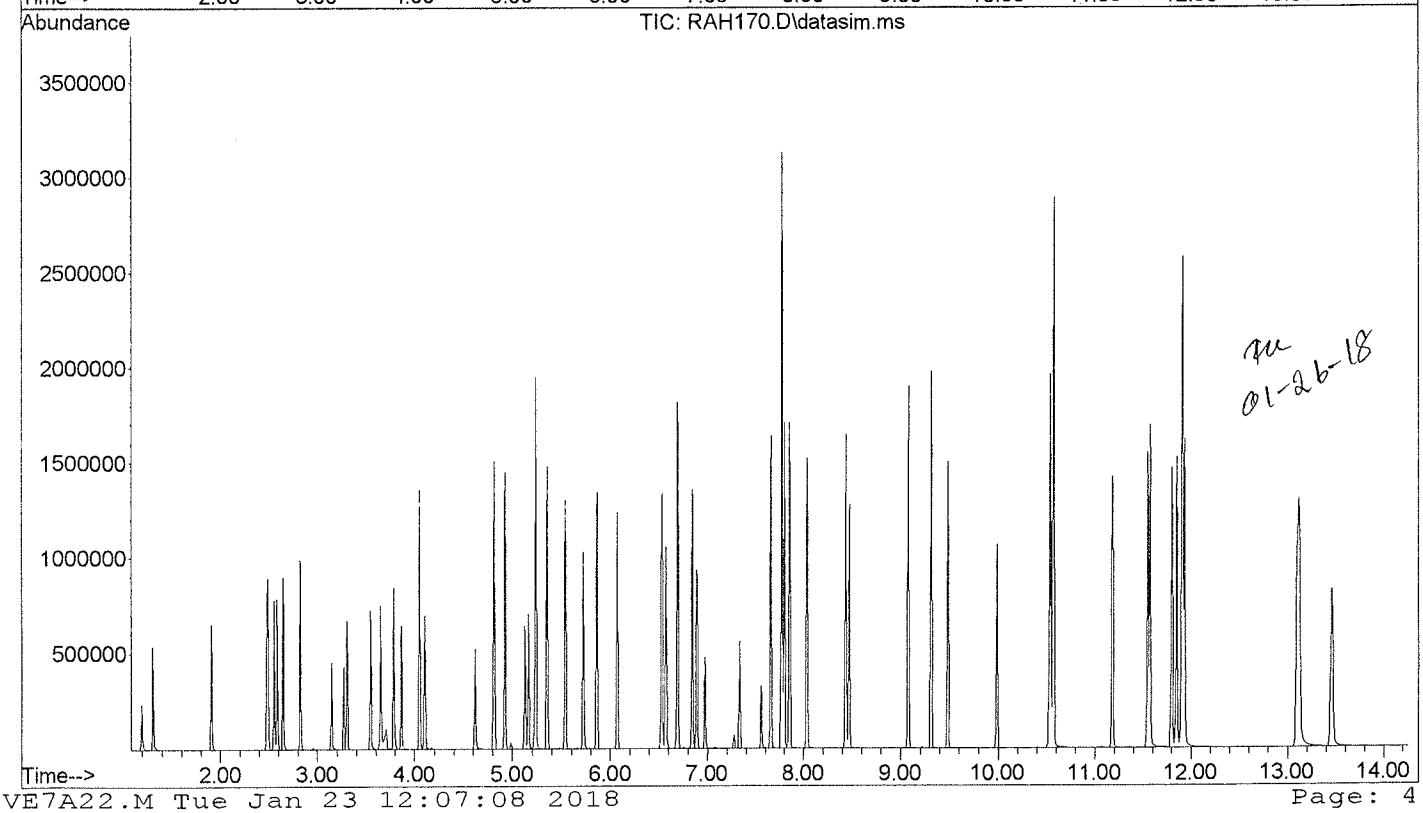
(#) = qualifier out of range (m) = manual integration (+) = signals summed

RM 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH170.D Vial: 8
Acq On : 22 Jan 2018 16:05 Operator: KVu
Sample : SVE7A226 Inst : E7
Misc : 20PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:26 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH169.D
Acq On : 22 Jan 2018 15:46
Sample : SVE7A225
Misc : 25PPM
Integrator: RTE
Quant Time: Jan 23 12:03:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 7
Operator: KVu
Inst : E7
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.821	152	459657	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	1739389	40.00	ppm	0.00
41) Acenaphthene-d10	6.027	164	962917	40.00	ppm	0.00
71) Phenanthrene-d10	7.770	188	2080878	40.00	ppm	0.00
87) Chrysene-d12	10.543	240	2467262	40.00	ppm	0.00
97) Perylene-d12	11.910	264	2331017	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.901	112	333012	25.91	ppm	0.00
Spiked Amount 30.000			Recovery =	86.37%		
6) Phenol-d5	2.476	99	429407	25.26	ppm	0.00
Spiked Amount 30.000			Recovery =	84.20%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.300	82	434085	25.04	ppm	0.00
Spiked Amount 10.000			Recovery =	250.40%		
46) 2-Fluorobiphenyl	5.234	172	1090371	26.44	ppm	0.00
Spiked Amount 10.000			Recovery =	264.40%		
75) 2,4,6-Tribromophenol	6.973	330	184373	25.51	ppm	0.00
Spiked Amount 30.000			Recovery =	85.03%		
90) Terphenyl-d14	9.479	244	1297086	24.24	ppm	0.00
Spiked Amount 10.000			Recovery =	242.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.193	88	115385	24.65	ppm	100
3) N-nitrosodimethylamine	1.303	74	191498	25.75	ppm	100
4) Pyridine	1.331	79	353711	25.55	ppm	100
7) Phenol	2.486	94	421008	25.32	ppm	100
8) Aniline	2.554	93	504445	25.55	ppm	100
9) bis(2-chloroethyl)ether	2.585	93	301341	25.30	ppm	100
10) 2-Chlorophenol	2.648	128	392840	26.61	ppm	100
11) 1,3-Dichlorobenzene	2.778	146	441153	25.54	ppm	100
13) 1,4-Dichlorobenzene	2.835	146	443318	25.30	ppm	100
14) Benzyl alcohol	2.912	108	222458	24.96	ppm	100
15) 1,2-Dichlorobenzene	2.965	146	418972	25.10	ppm	100
16) 2-Methylphenol	2.989	107	284448	25.22	ppm	100
17) bis(2-chloroisopropyl)...	3.027	45	535466	25.28	ppm	100
18) 4-Methylphenol	3.123	107	370599	25.05	ppm	100
19) N-Nitroso-di-n-propyla...	3.147	70	284347	26.02	ppm	100
20) Hexachloroethane	3.269	117	170917	25.20	ppm	100
23) Nitrobenzene	3.318	77	417319	25.21	ppm	100
24) Isophorone	3.544	82	751484	24.38	ppm	100
25) 2-Nitrophenol	3.627	139	190414	23.85	ppm	100
26) 2,4-Dimethylphenol	3.646	107	395536	25.06	ppm	100
27) Benzoic acid	3.713	105	288846	25.61	ppm	100
28) bis(2-Chloroethoxy)met...	3.752	93	409256	23.91	ppm	100
29) 3,5-Dimethylphenol	3.785	107	462268	24.83	ppm	100
30) 2,4-Dichlorophenol	3.862	162	344975	24.89	ppm	100
31) 1,2,4-Trichlorobenzene	3.963	180	436701	25.22	ppm	100
32) 3,4-Dimethylphenol	3.959	107	494091	24.97	ppm	100
33) Naphthalene	4.050	128	1076294	25.06	ppm	100
34) 4-Chloroaniline	4.099	127	451618	25.30	ppm	100
35) 2,6-Dichlorophenol	4.103	162	363298	25.31	ppm	100
36) Hexachlorobutadiene	4.176	225	310561	25.12	ppm	100

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH169.D Vial: 7
Acq On : 22 Jan 2018 15:46 Operator: KVu
Sample : SVE7A225 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38) 4-Chloro-3-methylphenol	4.619	107	322211	24.89	ppm	100
39) 2-Methylnaphthalene	4.811	142	753033	24.57	ppm	100
40) 1-Methylnaphthalene	4.921	142	710156	24.42	ppm	100
42) Hexachlorocyclopentadiene	4.988	237	332621	26.32	ppm	100
43) 2,3,5-Trichlorophenol	4.998	196	294835	24.92	ppm	100
44) 2,4,6-Trichlorophenol	5.128	196	310350	25.59	ppm	100
45) 2,4,5-Trichlorophenol	5.162	196	308290	24.82	ppm	100
47) 2,3,4-Trichlorophenol	5.239	196	277532	23.47	ppm	100
48) Biphenyl	5.350	154	993640	25.12	ppm	100
49) 2-Chloronaphthalene	5.374	162	768398	25.22	ppm	100
50) 2-Nitroaniline	5.489	65	216428	25.05	ppm	100
51) 2,6-Dimethylnaphthalene	5.537	156	702544	25.14	ppm	100
52) 1,4-Dinitrobenzene	5.661	168	112081	25.43	ppm	100
53) Dimethylphthalate	5.719	163	890144	24.87	ppm	100
54) 1,3-Dinitrobenzene	5.748	168	122242	24.45	ppm	100
55) 2,6-Dinitrotoluene	5.787	165	192235	25.37	ppm	100
56) 1,2-Dinitrobenzene	5.840	168	77263	25.90	ppm	100
57) Acenaphthylene	5.859	152	1258207	26.06	ppm	100
58) 3-Nitroaniline	5.979	138	197839	26.35	ppm	100
59) Acenaphthene	6.066	153	787113	25.31	ppm	100
60) 2,4-Dinitrophenol	6.104	184	115762	25.61	ppm	100
61) 4-Nitrophenol	6.176	109	157921	27.94	ppm	100
62) 2,4-Dinitrotoluene	6.267	165	257221	25.52	ppm	100
63) Dibenzofuran	6.277	168	1142340	24.88	ppm	100
64) 2,3,5,6-Tetrachlorophenol	6.368	230	228310	25.49	ppm	100
65) 2,3,4,6-Tetrachlorophenol	6.420	232	290375	23.97	ppm	100
66) 2,3,5-Trimethylnaphtha...	6.530	170	684612	25.08	ppm	100
67) Diethylphthalate	6.572	149	878583	25.11	ppm	100
68) Fluorene	6.689	166	866320	24.89	ppm	100
69) 4-Chlorophenyl-phenyle...	6.699	204	472074	24.60	ppm	100
70) 4-Nitroaniline	6.713	138	212802	28.53	ppm	100
72) 4,6-Dinitro-2-methylph...	6.750	198	166228	26.06	ppm	100
73) N-Nitrosodiphenylamine	6.840	169	739998	24.73	ppm	100
74) Azobenzene	6.887	77	814230	24.69	ppm	100
76) 4-Bromophenyl-phenylether	7.271	248	380004	27.34	ppm	100
77) Hexachlorobenzene	7.328	284	347817	24.51	ppm	100
78) Pentachlorophenol	7.555	266	221662	26.77	ppm	100
79) Dibenzothiophene	7.654	184	1414468	25.90	ppm	100
80) Phenanthrene	7.797	178	1379122	24.99	ppm	100
82) Anthracene	7.856	178	1395713	25.22	ppm	100
83) Carbazole	8.037	167	1190067	26.32	ppm	100
84) Di-n-butylphthalate	8.434	149	1461571	26.24	ppm	100
85) 1-Methylphenanthrene	8.468	192	1067598	25.92	ppm	100
86) Fluoranthene	9.077	202	1645212	26.16	ppm	100
89) Pyrene	9.308	202	1743571	24.22	ppm	100
91) Butylbenzylphthalate	9.984	149	645596	25.22	ppm	100
92) bis(2-ethylhexyl)adipate	10.063	129	493917	24.91	ppm	100
93) 3,3'-Dichlorobenzidine	10.509	252	644000	26.27	ppm	100
94) Benzo(a)anthracene	10.533	228	1723193	24.96	ppm	100
95) Chrysene	10.567	228	1633102	24.85	ppm	100
96) bis(2-Ethylhexyl)phtha...	10.562	149	974370	25.17	ppm	100
98) Di-n-octylphthalate	11.179	149	1598551	25.41	ppm	100
99) Benzo(b)fluoranthene	11.544	252	1597694	24.37	ppm	100
100) Benzo(k)fluoranthene	11.568	252	1648457	25.79	ppm	100
101) Benzo(e)pyrene	11.802	252	1566946	25.10	ppm	100

m 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH169.D
Acq On : 22 Jan 2018 15:46
Sample : SVE7A225
Misc : 25PPM
Integrator: RTE
Quant Time: Jan 23 12:03:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 7
Operator: KVu
Inst : E7
Multiplr: 1.00

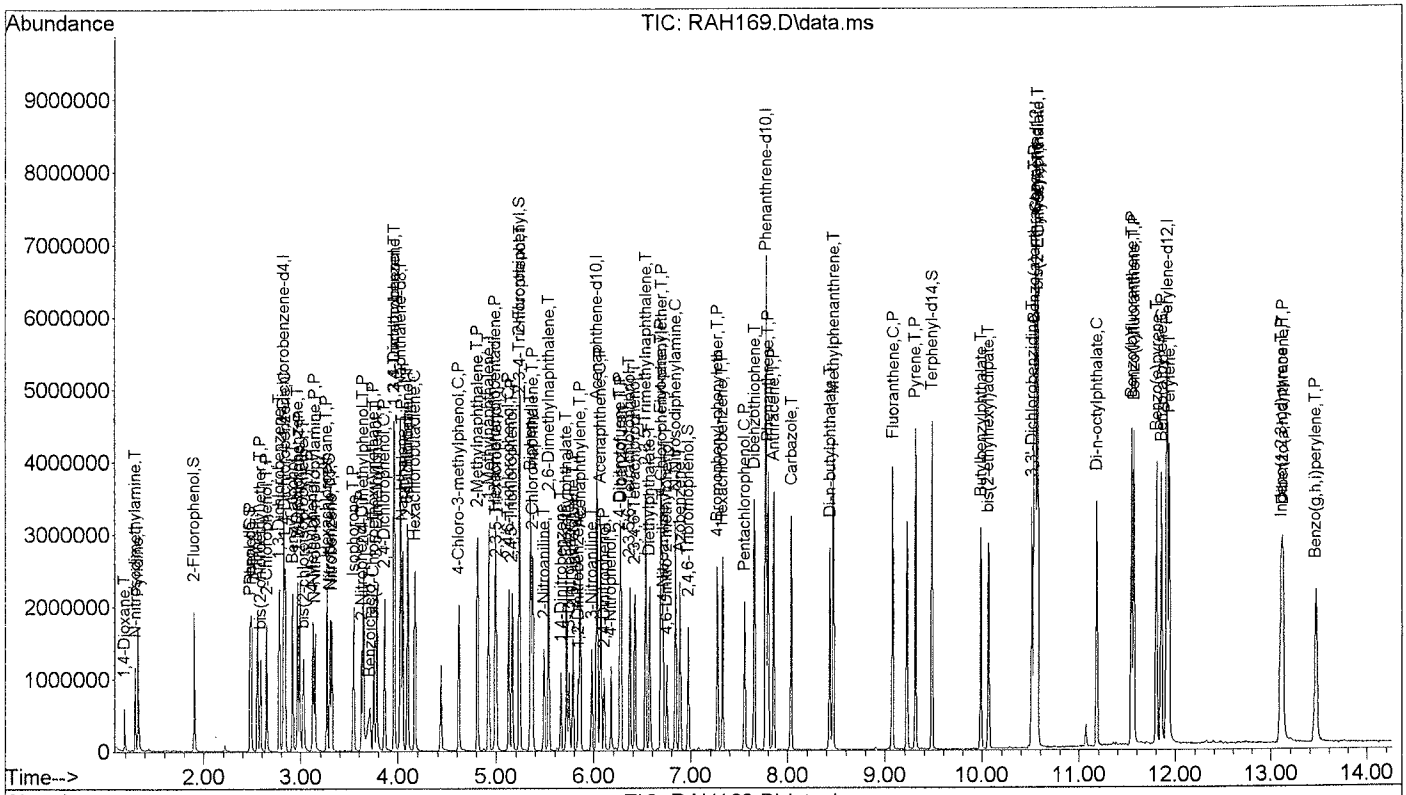
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.853	252	1545569	25.27	ppm	100
103) Perylene	11.933	252	1562826	24.91	ppm	100
104) Indeno(1,2,3-cd)pyrene	13.104	276	1825537	25.72	ppm	100
105) Dibenzo(a,h)anthracene	13.119	278	1508681	25.85	ppm	100
106) Benzo(g,h,i)perylene	13.459	276	1533358	25.65	ppm	100

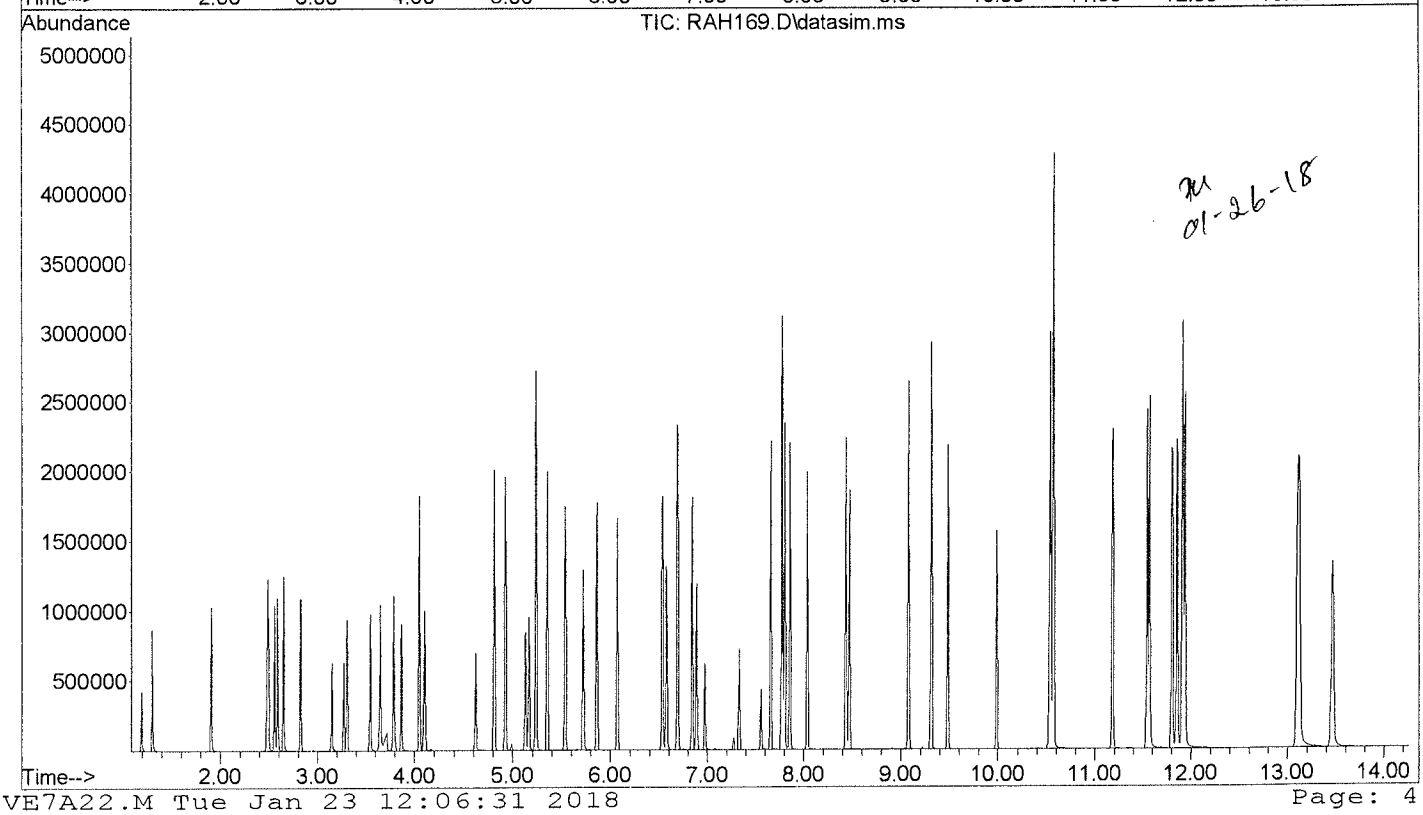
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH169.D Vial: 7
Acq On : 22 Jan 2018 15:46 Operator: KVu
Sample : SVE7A225 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





JU 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH168.D
Acq On : 22 Jan 2018 15:27
Sample : SVE7A224
Misc : 40PPM
Integrator: RTE
Quant Time: Jan 23 12:03:22 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 6
Operator: KVu
Inst : E7
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.821	152	421645	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	1587036	40.00	ppm	0.00
41) Acenaphthene-d10	6.027	164	909722	40.00	ppm	0.00
71) Phenanthrene-d10	7.770	188	1886469	40.00	ppm	0.00
87) Chrysene-d12	10.543	240	1998264	40.00	ppm	0.00
97) Perylene-d12	11.909	264	1799809	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.901	112	464200	39.37	ppm	0.00
Spiked Amount 30.000			Recovery =	131.23%		
6) Phenol-d5	2.481	99	626017	40.15	ppm	0.00
Spiked Amount 30.000			Recovery =	133.83%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.300	82	637190	40.28	ppm	0.00
Spiked Amount 10.000			Recovery =	402.80%		
46) 2-Fluorobiphenyl	5.234	172	1644563	42.20	ppm	0.00
Spiked Amount 10.000			Recovery =	422.00%		
75) 2,4,6-Tribromophenol	6.973	330	276168	42.16	ppm	0.00
Spiked Amount 30.000			Recovery =	140.53%		
90) Terphenyl-d14	9.479	244	1771927	40.88	ppm	0.00
Spiked Amount 10.000			Recovery =	408.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.197	88	167137	38.92	ppm	94
3) N-nitrosodimethylamine	1.307	74	273967	40.16	ppm	99
4) Pyridine	1.331	79	502493	39.58	ppm	99
7) Phenol	2.491	94	620097	40.65	ppm	99
8) Aniline	2.554	93	729496	40.29	ppm	100
9) bis(2-chloroethyl)ether	2.585	93	438333	40.12	ppm	99
10) 2-Chlorophenol	2.648	128	582932	43.04	ppm	98
11) 1,3-Dichlorobenzene	2.778	146	632571	39.93	ppm	100
13) 1,4-Dichlorobenzene	2.835	146	640423	39.84	ppm	99
14) Benzyl alcohol	2.912	108	325761	39.85	ppm	98
15) 1,2-Dichlorobenzene	2.965	146	616596	40.26	ppm	98
16) 2-Methylphenol	2.989	107	417021	40.30	ppm	99
17) bis(2-chloroisopropyl)...	3.027	45	755555	38.89	ppm	99
18) 4-Methylphenol	3.128	107	546847	40.30	ppm	98
19) N-Nitroso-di-n-propyla...	3.147	70	401491	40.06	ppm	98
20) Hexachloroethane	3.269	117	251382	40.40	ppm	95
23) Nitrobenzene	3.323	77	602695	39.91	ppm	99
24) Isophorone	3.548	82	1139873	40.53	ppm	100
25) 2-Nitrophenol	3.627	139	313118	42.99	ppm	91
26) 2,4-Dimethylphenol	3.646	107	582707	40.46	ppm	100
27) Benzoic acid	3.733	105	431837	41.97	ppm	94
28) bis(2-Chloroethoxy)met...	3.757	93	603720	38.66	ppm	98
29) 3,5-Dimethylphenol	3.785	107	672278	39.58	ppm	96
30) 2,4-Dichlorophenol	3.862	162	500769	39.59	ppm	100
31) 1,2,4-Trichlorobenzene	3.964	180	632578	40.04	ppm	98
32) 3,4-Dimethylphenol	3.964	107	731892	40.54	ppm	99
33) Naphthalene	4.050	128	1559560	39.80	ppm	99
34) 4-Chloroaniline	4.099	127	655495	40.24	ppm	99
35) 2,6-Dichlorophenol	4.104	162	521213	39.80	ppm	98
36) Hexachlorobutadiene	4.176	225	442494	39.23	ppm	99

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH168.D Vial: 6
Acq On : 22 Jan 2018 15:27 Operator: KVu
Sample : SVE7A224 Inst : E7
Misc : 40PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:22 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38) 4-Chloro-3-methylphenol	4.620	107	476807	40.37	ppm	90
39) 2-Methylnaphthalene	4.811	142	1109340	39.67	ppm	99
40) 1-Methylnaphthalene	4.922	142	1057533	39.85	ppm	100
42) Hexachlorocyclopentadiene	4.989	237	499353	41.83	ppm	100
43) 2,3,5-Trichlorophenol	4.998	196	446681	39.96	ppm	98
44) 2,4,6-Trichlorophenol	5.128	196	452901	39.52	ppm	98
45) 2,4,5-Trichlorophenol	5.162	196	483006	41.17	ppm	97
47) 2,3,4-Trichlorophenol	5.239	196	462314	41.38	ppm	93
48) Biphenyl	5.350	154	1483432	39.69	ppm	99
49) 2-Chloronaphthalene	5.374	162	1141243	39.64	ppm	100
50) 2-Nitroaniline	5.494	65	340493	41.72	ppm	96
51) 2,6-Dimethylnaphthalene	5.537	156	1055493	39.97	ppm	100
52) 1,4-Dinitrobenzene	5.662	168	166172	39.91	ppm	99
53) Dimethylphthalate	5.720	163	1340339	39.64	ppm	100
54) 1,3-Dinitrobenzene	5.748	168	186961	39.58	ppm	100
55) 2,6-Dinitrotoluene	5.787	165	283542	39.60	ppm	99
56) 1,2-Dinitrobenzene	5.845	168	112898	40.06	ppm	99
57) Acenaphthylene	5.859	152	1832824	40.18	ppm	99
58) 3-Nitroaniline	5.980	138	280682	39.57	ppm	96
59) Acenaphthene	6.071	153	1196951	40.73	ppm	98
60) 2,4-Dinitrophenol	6.104	184	173395	39.57	ppm	97
61) 4-Nitrophenol	6.181	109	214892	40.24	ppm	100
62) 2,4-Dinitrotoluene	6.267	165	378605	39.76	ppm	97
63) Dibenzofuran	6.277	168	1713720	39.51	ppm	100
64) 2,3,5,6-Tetrachlorophenol	6.368	230	342415	40.46	ppm	100
65) 2,3,4,6-Tetrachlorophenol	6.421	232	478386	41.80	ppm	100
66) 2,3,5-Trimethylnaphtha...	6.530	170	1016731	39.42	ppm	96
67) Diethylphthalate	6.572	149	1289135	39.00	ppm	99
68) Fluorene	6.689	166	1326206	40.33	ppm	97
69) 4-Chlorophenyl-phenyle...	6.699	204	714856	39.42	ppm	99
70) 4-Nitroaniline	6.713	138	274413	38.94	ppm	93
72) 4,6-Dinitro-2-methylph...	6.755	198	237276	40.16	ppm	100
73) N-Nitrosodiphenylamine	6.840	169	1112470	41.01	ppm	98
74) Azobenzene	6.887	77	1208849	40.44	ppm	99
76) 4-Bromophenyl-phenylether	7.272	248	538558	42.75	ppm	95
77) Hexachlorobenzene	7.329	284	517141	40.20	ppm	99
78) Pentachlorophenol	7.555	266	310495	41.37	ppm	100
79) Dibenzothiophene	7.654	184	2025747	40.91	ppm	100
80) Phenanthrene	7.797	178	1983325	39.64	ppm	100
82) Anthracene	7.856	178	2036880	40.60	ppm	99
83) Carbazole	8.038	167	1664737	40.61	ppm	100
84) Di-n-butylphthalate	8.435	149	2010296	39.81	ppm	99
85) 1-Methylphenanthrene	8.468	192	1468662	39.34	ppm	100
86) Fluoranthene	9.077	202	2283892	40.05	ppm	99
89) Pyrene	9.308	202	2367894	40.62	ppm	99
91) Butylbenzylphthalate	9.985	149	860770	41.52	ppm	98
92) bis(2-ethylhexyl)adipate	10.067	129	668204	41.60	ppm	99
93) 3,3'-Dichlorobenzidine	10.509	252	808584	40.73	ppm	98
94) Benzo(a)anthracene	10.533	228	2239470	40.05	ppm	99
95) Chrysene	10.572	228	2136705	40.14	ppm	99
96) bis(2-Ethylhexyl)phtha...	10.562	149	1284432	40.97	ppm	99
98) Di-n-octylphthalate	11.179	149	2076629	42.75	ppm	100
99) Benzo(b)fluoranthene	11.544	252	2145000	42.38	ppm	97
100) Benzo(k)fluoranthene	11.572	252	1980193	40.12	ppm	99
101) Benzo(e)pyrene	11.801	252	1956209	40.59	ppm	100

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH168.D
Acq On : 22 Jan 2018 15:27
Sample : SVE7A224
Misc : 40PPM
Integrator: RTE
Quant Time: Jan 23 12:03:22 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 6
Operator: KVu
Inst : E7
Multiplr: 1.00

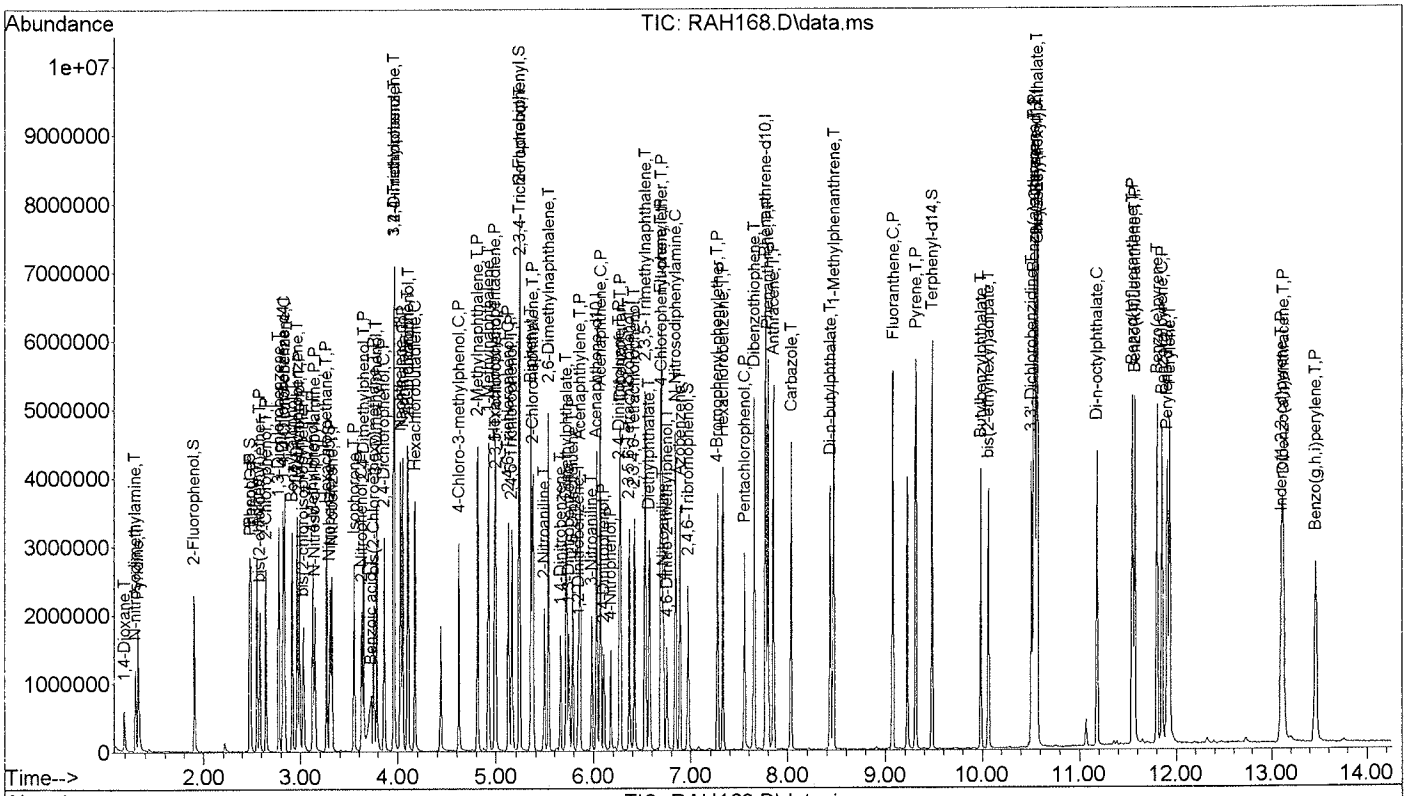
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.853	252	1949709	41.28	ppm	100
103) Perylene	11.933	252	2005204	41.40	ppm	99
104) Indeno(1,2,3-cd)pyrene	13.104	276	2275583	41.53	ppm	99
105) Dibenzo(a,h)anthracene	13.124	278	1860803	41.29	ppm	98
106) Benzo(g,h,i)perylene	13.463	276	1905201	41.28	ppm	99

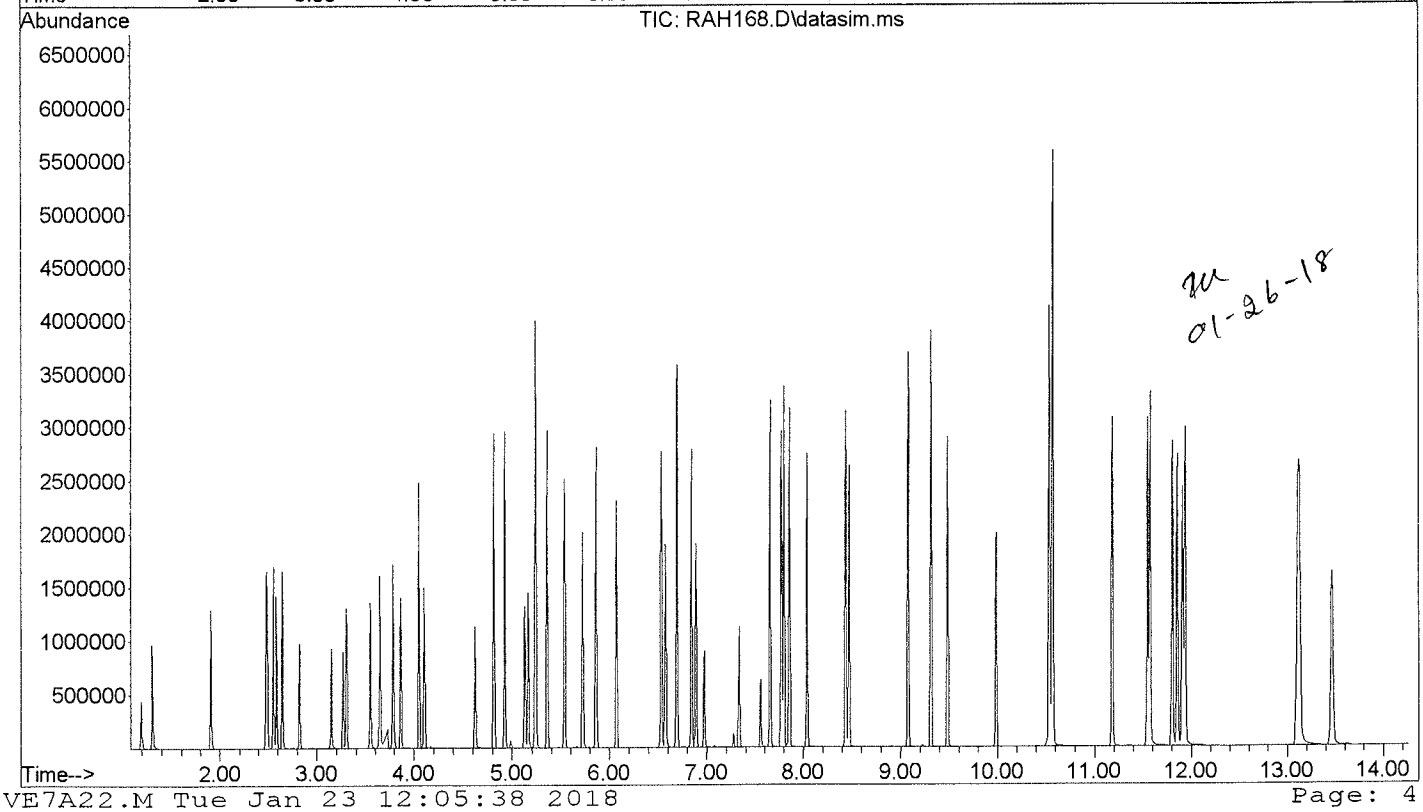
(#) = qualifier out of range (m) = manual integration (+) = signals summed

PR 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH168.D Vial: 6
Acq On : 22 Jan 2018 15:27 Operator: KVu
Sample : SVE7A224 Inst : E7
Misc : 40PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:22 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





JH 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH167.D
Acq On : 22 Jan 2018 15:09
Sample : SVE7A223
Misc : 50PPM
Integrator: RTE
Quant Time: Jan 23 12:03:20 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 5
Operator: KVu
Inst : E7
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.821	152	447184	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	1632751	40.00	ppm	0.00
41) Acenaphthene-d10	6.032	164	914591	40.00	ppm	0.00
71) Phenanthrene-d10	7.774	188	1960148	40.00	ppm	0.00
87) Chrysene-d12	10.548	240	2300556	40.00	ppm	0.00
97) Perylene-d12	11.910	264	2142293	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.906	112	628092	50.23	ppm	0.00
Spiked Amount 30.000			Recovery =	167.43%		
6) Phenol-d5	2.481	99	823261	49.79	ppm	0.00
Spiked Amount 30.000			Recovery =	165.97%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.305	82	828052	50.88	ppm	0.00
Spiked Amount 10.000			Recovery =	508.80%		
46) 2-Fluorobiphenyl	5.234	172	2078115	53.05	ppm	0.00
Spiked Amount 10.000			Recovery =	530.50%		
75) 2,4,6-Tribromophenol	6.973	330	356494	52.37	ppm	0.00
Spiked Amount 30.000			Recovery =	174.57%		
90) Terphenyl-d14	9.479	244	2435054	48.79	ppm	0.00
Spiked Amount 10.000			Recovery =	487.90%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.192	88	215584	47.34	ppm	95
3) N-nitrosodimethylamine	1.307	74	364114	50.33	ppm	92
4) Pyridine	1.331	79	666565	49.50	ppm	99
7) Phenol	2.491	94	793801	49.07	ppm	99
8) Aniline	2.554	93	962584	50.12	ppm	100
9) bis(2-chloroethyl)ether	2.585	93	587691	50.72	ppm	99
10) 2-Chlorophenol	2.648	128	680949	47.40	ppm	91
11) 1,3-Dichlorobenzene	2.777	146	839980	49.99	ppm	100
13) 1,4-Dichlorobenzene	2.835	146	844764	49.55	ppm	98
14) Benzyl alcohol	2.912	108	443297	51.13	ppm	96
15) 1,2-Dichlorobenzene	2.965	146	814936	50.18	ppm	99
16) 2-Methylphenol	2.989	107	533725	48.63	ppm	93
17) bis(2-chloroisopropyl)...	3.032	45	996149	48.35	ppm	100
18) 4-Methylphenol	3.128	107	716898	49.81	ppm	99
19) N-Nitroso-di-n-propyla...	3.152	70	530225	49.88	ppm	99
20) Hexachloroethane	3.268	117	325321	49.30	ppm	99
23) Nitrobenzene	3.323	77	788817	50.77	ppm	99
24) Isophorone	3.548	82	1456967	50.36	ppm	100
25) 2-Nitrophenol	3.627	139	398678	53.20	ppm	90
26) 2,4-Dimethylphenol	3.651	107	749689	50.60	ppm	92
27) Benzoic acid	3.742	105	562255	53.12	ppm	95
28) bis(2-Chloroethoxy)met...	3.756	93	779689	48.53	ppm	99
29) 3,5-Dimethylphenol	3.785	107	883678	50.57	ppm	97
30) 2,4-Dichlorophenol	3.867	162	679028	52.18	ppm	97
31) 1,2,4-Trichlorobenzene	3.963	180	843077	51.87	ppm	99
32) 3,4-Dimethylphenol	3.963	107	953338	51.33	ppm	100
33) Naphthalene	4.050	128	2043587	50.69	ppm	100
34) 4-Chloroaniline	4.099	127	847448	50.57	ppm	99
35) 2,6-Dichlorophenol	4.108	162	671058	49.80	ppm	100
36) Hexachlorobutadiene	4.176	225	586296	50.53	ppm	99

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH167.D Vial: 5
Acq On : 22 Jan 2018 15:09 Operator: KVu
Sample : SVE7A223 Inst : E7
Misc : 50PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:20 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.620	107	615879	50.69	ppm	99
39)	2-Methylnaphthalene	4.811	142	1468982	51.06	ppm	98
40)	1-Methylnaphthalene	4.921	142	1378639	50.50	ppm	99
42)	Hexachlorocyclopentadiene	4.988	237	654352	54.52	ppm	100
43)	2,3,5-Trichlorophenol	4.998	196	581412	51.73	ppm	100
44)	2,4,6-Trichlorophenol	5.128	196	590576	51.26	ppm	98
45)	2,4,5-Trichlorophenol	5.166	196	613411	52.00	ppm	98
47)	2,3,4-Trichlorophenol	5.239	196	602592	53.65	ppm	87
48)	Biphenyl	5.354	154	1942366	51.69	ppm	99
49)	2-Chloronaphthalene	5.374	162	1474715	50.95	ppm	99
50)	2-Nitroaniline	5.493	65	415189	50.60	ppm	100
51)	2,6-Dimethylnaphthalene	5.537	156	1353572	50.99	ppm	99
52)	1,4-Dinitrobenzene	5.666	168	216497	51.72	ppm	100
53)	Dimethylphthalate	5.724	163	1668789	49.09	ppm	99
54)	1,3-Dinitrobenzene	5.753	168	235781	49.64	ppm	97
55)	2,6-Dinitrotoluene	5.792	165	361299	50.19	ppm	99
56)	1,2-Dinitrobenzene	5.850	168	141251	49.85	ppm	90
57)	Acenaphthylene	5.864	152	2365846	51.59	ppm	94
58)	3-Nitroaniline	5.984	138	357111	50.07	ppm	97
59)	Acenaphthene	6.071	153	1502320	50.85	ppm	100
60)	2,4-Dinitrophenol	6.109	184	221839	49.88	ppm	99
61)	4-Nitrophenol	6.181	109	286339	53.33	ppm	98
62)	2,4-Dinitrotoluene	6.272	165	476847	49.81	ppm	99
63)	Dibenzofuran	6.277	168	2186940	50.15	ppm	100
64)	2,3,5,6-Tetrachlorophenol	6.373	230	434822	51.10	ppm	100
65)	2,3,4,6-Tetrachlorophenol	6.420	232	615541	53.49	ppm	100
66)	2,3,5-Trimethylnaphtha...	6.530	170	1322172	50.99	ppm	98
67)	Diethylphthalate	6.577	149	1640994	49.38	ppm	99
68)	Fluorene	6.694	166	1693465	51.23	ppm	98
69)	4-Chlorophenyl-phenyle...	6.699	204	928024	50.91	ppm	99
70)	4-Nitroaniline	6.717	138	371996	52.50	ppm	94
72)	4,6-Dinitro-2-methylph...	6.755	198	302871	48.99	ppm	97
73)	N-Nitrosodiphenylamine	6.845	169	1415537	50.22	ppm	99
74)	Azobenzene	6.892	77	1579033	50.84	ppm	100
76)	4-Bromophenyl-phenylether	7.276	248	708271	54.10	ppm	97
77)	Hexachlorobenzene	7.333	284	673865	50.41	ppm	97
78)	Pentachlorophenol	7.555	266	415264	53.25	ppm	99
79)	Dibenzothiophene	7.659	184	2631612	51.15	ppm	97
80)	Phenanthrene	7.802	178	2602757	50.07	ppm	100
82)	Anthracene	7.856	178	2625300	50.36	ppm	99
83)	Carbazole	8.037	167	2215808	52.03	ppm	100
84)	Di-n-butylphthalate	8.435	149	2763321	52.67	ppm	100
85)	1-Methylphenanthrene	8.473	192	1990791	51.32	ppm	99
86)	Fluoranthene	9.077	202	3167593	53.46	ppm	99
89)	Pyrene	9.313	202	3303240	49.22	ppm	99
91)	Butylbenzylphthalate	9.984	149	1240147	51.96	ppm	99
92)	bis(2-ethylhexyl)adipate	10.067	129	960347	51.94	ppm	100
93)	3,3'-Dichlorobenzidine	10.514	252	1209555	52.92	ppm	99
94)	Benzo(a)anthracene	10.533	228	3240667	50.34	ppm	100
95)	Chrysene	10.572	228	3056329	49.87	ppm	100
96)	bis(2-Ethylhexyl)phtha...	10.563	149	1875516	51.96	ppm	99
98)	Di-n-octylphthalate	11.179	149	3053357	52.81	ppm	100
99)	Benzo(b)fluoranthene	11.544	252	3132478	51.99	ppm	98
100)	Benzo(k)fluoranthene	11.573	252	3026476	51.51	ppm	98
101)	Benzo(e)pyrene	11.807	252	2957868	51.56	ppm	97

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH167.D Vial: 5
Acq On : 22 Jan 2018 15:09 Operator: KVu
Sample : SVE7A223 Inst : E7
Misc : 50PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:20 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

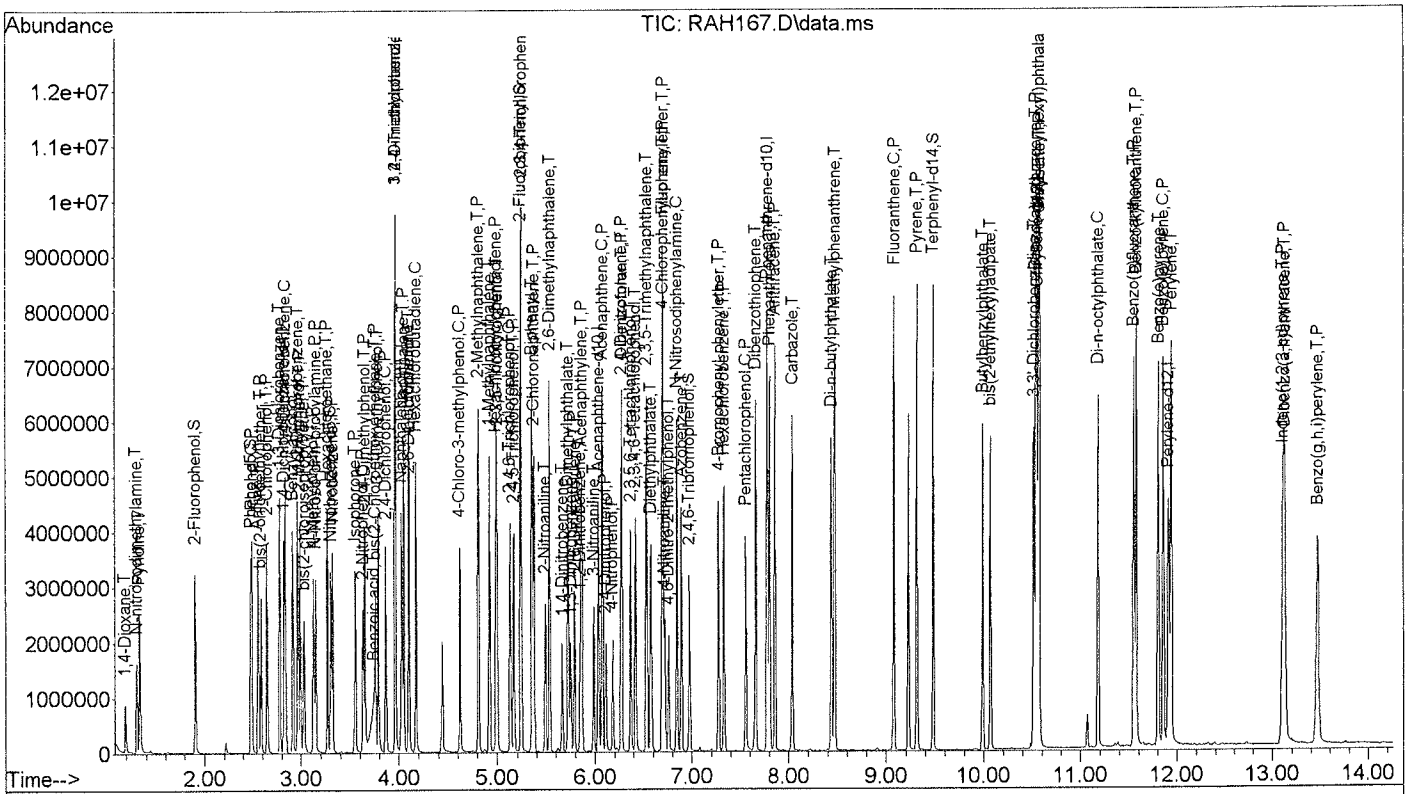
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.853	252	2952413	52.52	ppm	100
103) Perylene	11.938	252	2956017	51.27	ppm	100
104) Indeno(1,2,3-cd)pyrene	13.109	276	3444876	52.82	ppm	99
105) Dibenzo(a,h)anthracene	13.129	278	2864385	53.40	ppm	96
106) Benzo(g,h,i)perylene	13.468	276	2873549	52.31	ppm	100

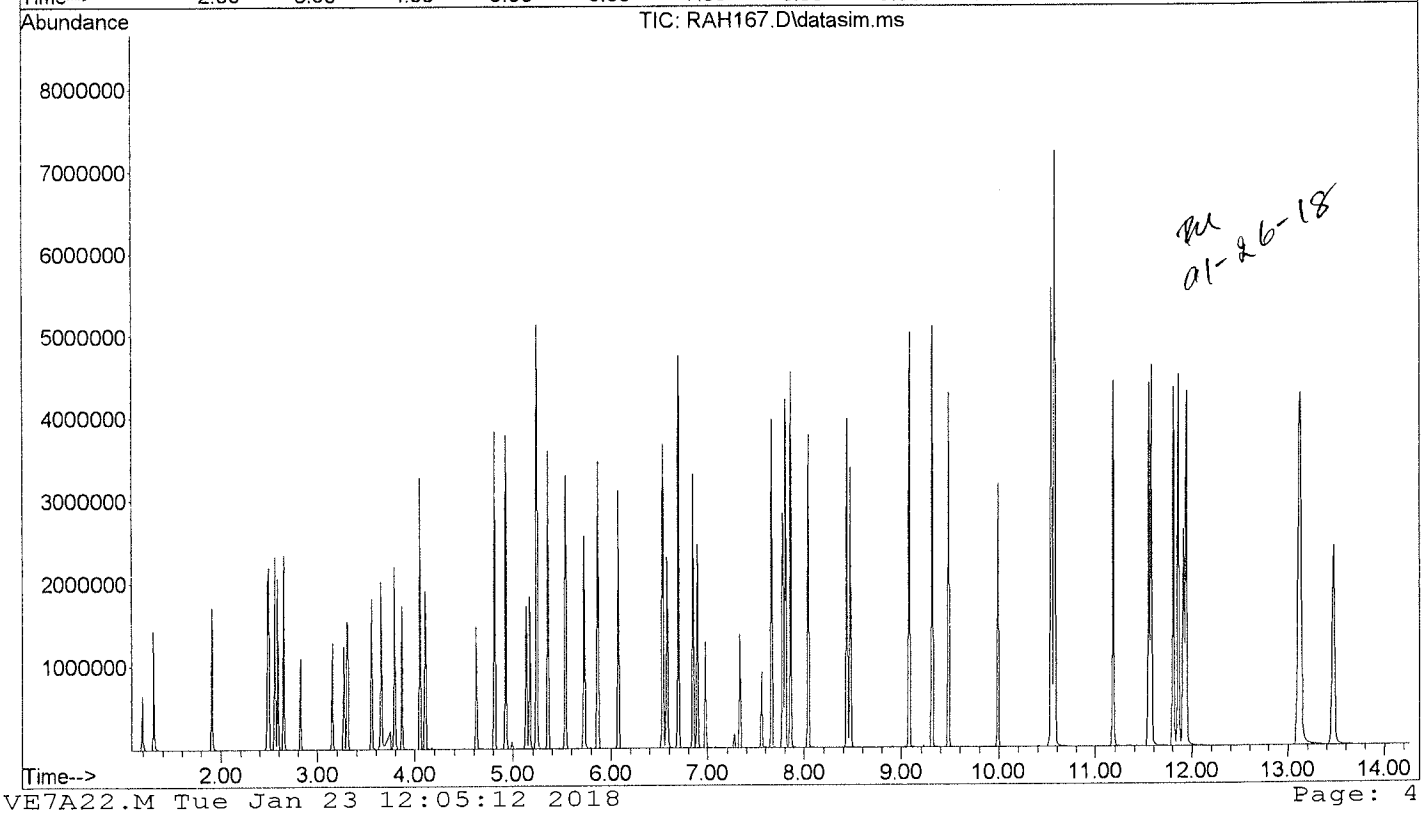
(#) = qualifier out of range (m) = manual integration (+) = signals summed

RM 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH167.D Vial: 5
Acq On : 22 Jan 2018 15:09 Operator: KVu
Sample : SVE7A223 Inst : E7
Misc : 50PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:03:20 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH166.D Vial: 4
Acq On : 22 Jan 2018 14:50 Operator: KVu
Sample : SVE7A222 Inst : E7
Misc : 80PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:04:34 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.821	152	405525	40.00	ppm	0.00
21) Naphthalene-d8	4.027	136	1541118	40.00	ppm	0.00
41) Acenaphthene-d10	6.028	164	877747	40.00	ppm	0.00
71) Phenanthrene-d10	7.770	188	1933491	40.00	ppm	0.00
87) Chrysene-d12	10.543	240	1979865	40.00	ppm	0.00
97) Perylene-d12	11.905	264	1851071	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 30.000			Recovery =	0.00%		
6) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 30.000			Recovery =	0.00%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	0.000	82	0d	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
46) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
75) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 30.000			Recovery =	0.00%		
90) Terphenyl-d14	0.000	244	0d	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
Target Compounds						Qvalue
4) Pyridine	1.331	79	972323	79.62	ppm	100
27) Benzoic acid	3.752	105	867648	86.84	ppm	88

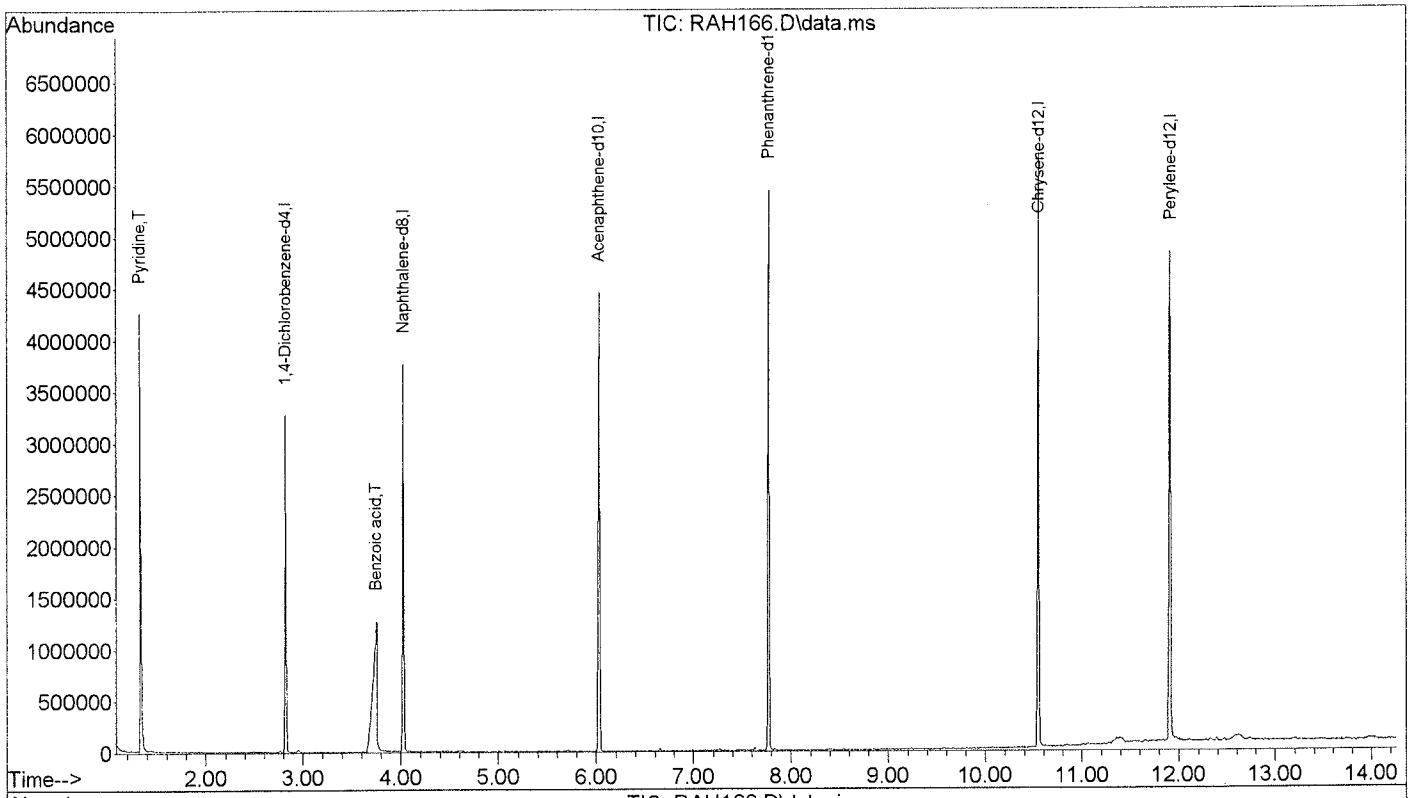
(#) = qualifier out of range (m) = manual integration (+) = signals summed

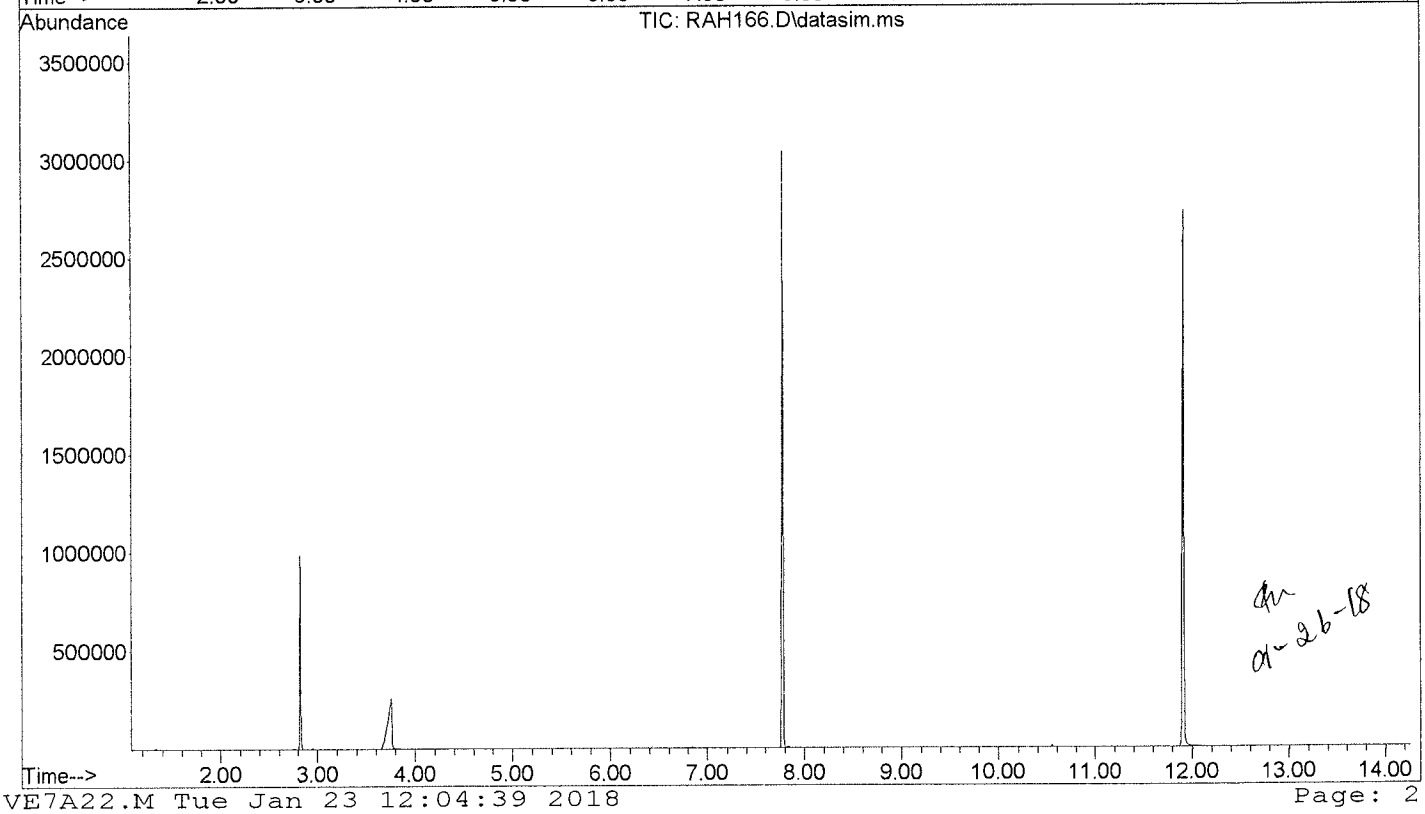
01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH166.D
Acq On : 22 Jan 2018 14:50
Sample : SVE7A222
Misc : 80PPM
Integrator: RTE
Quant Time: Jan 23 12:04:34 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 4
Operator: KVu
Inst : E7
Multiplr: 1.00





01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH165.D
Acq On : 22 Jan 2018 14:31
Sample : SVE7A221
Misc : 100PPM
Integrator: RTE
Quant Time: Jan 23 12:04:07 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 3
Operator: KVu
Inst : E7
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.821	152	401176	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	1512653	40.00	ppm	0.00
41) Acenaphthene-d10	6.027	164	867448	40.00	ppm	0.00
71) Phenanthrene-d10	7.770	188	1919792	40.00	ppm	0.00
87) Chrysene-d12	10.542	240	1981459	40.00	ppm	0.00
97) Perylene-d12	11.909	264	1833455	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 30.000			Recovery =	0.00%		
6) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 30.000			Recovery =	0.00%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	0.000	82	0d	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
46) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
75) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 30.000			Recovery =	0.00%		
90) Terphenyl-d14	0.000	244	0d	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
Target Compounds						Qvalue
4) Pyridine	1.331	79	1225807	101.47	ppm	98
27) Benzoic acid	3.766	105	1135738	115.81	ppm	96

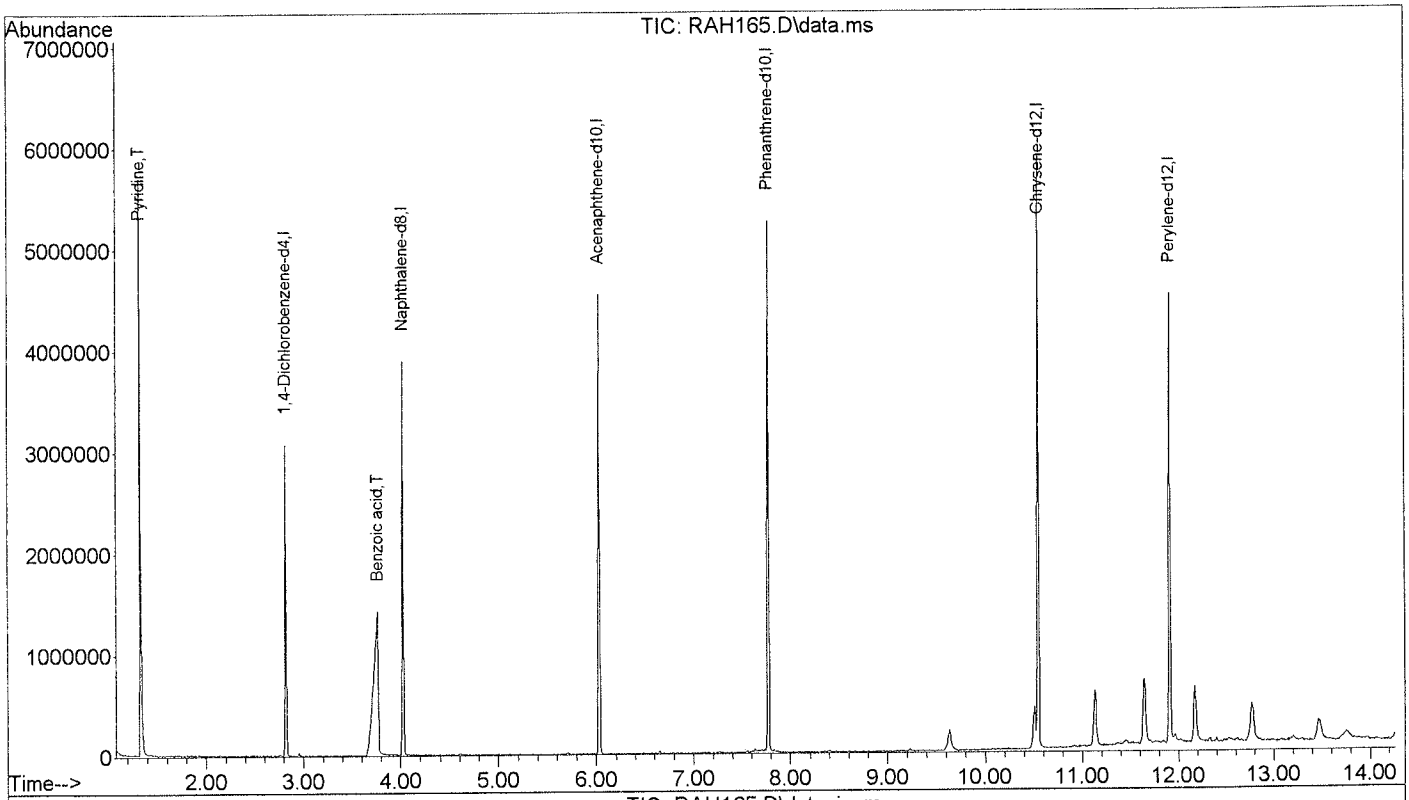
(#) = qualifier out of range (m) = manual integration (+) = signals summed

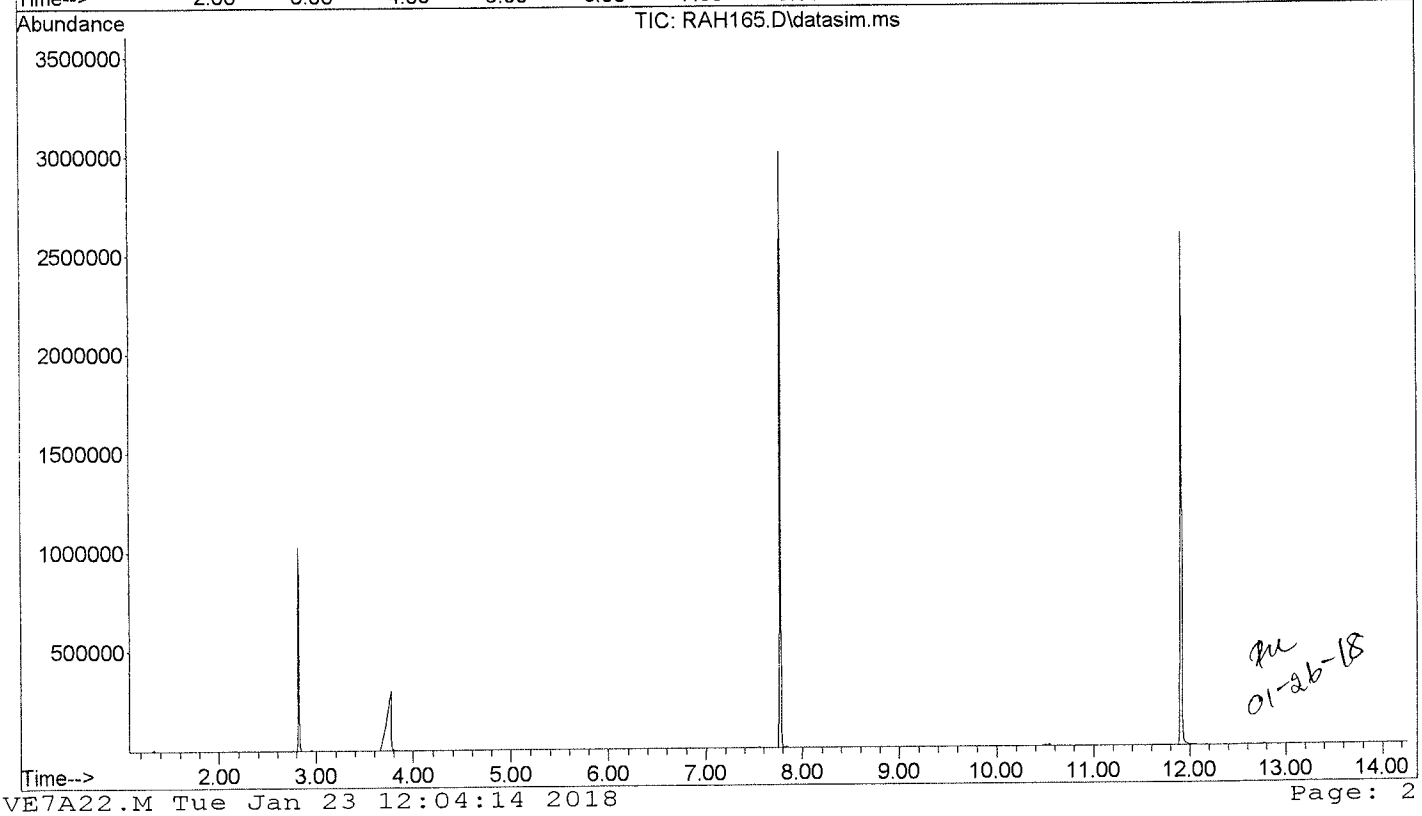
MW 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH165.D
Acq On : 22 Jan 2018 14:31
Sample : SVE7A221
Misc : 100PPM
Integrator: RTE
Quant Time: Jan 23 12:04:07 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 3
Operator: KVu
Inst : E7
Multiplr: 1.00





pw 01-26-18

SECOND SOURCE VERIFICATION

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAH204
Instrument ID: E7

Project: JBER TO075
SDG No.: 18F187
DFTPP Injection Date: 01/24/18
DFTPP Injection Time: 08:30

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.51
68	Less than 2% of mass 69	0.63(1.6)1
69	Relative abundance of mass 198	39.95
70	Less than 2.0% of mass 69	0.22(0.5)1
127	40.0 - 60.0% of mass 198	45.98
197	Less than 1.0% of mass 198	0.14
198	Base Peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	6.97
275	10.0 - 30.0% of mass 198	29.28
365	Greater than 1.00% of mass 198	4.17
441	Present, but less than mass 443	14.66(83.9)3
442	Greater than 40.0% of mass 198	91.31
443	17.0 - 23.0% of mass 442	17.47(19.1)2

1-Value is % mass 69
2-Value is % mass 442
3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD025	ISVE7A2202	RAH205	01/24/18	09:53

FORM V SV OLM02.0

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC Beginning DateTime :01/22/18 14:31
Spike Amount :25 PPM
CC/CV File :RAH205
IC File :RAH169

Column Spec :ZB-SemiVoa ID :0.18MM
IC Ending DateTime :01/22/18 16:43
HPChem Method :SVE7A22
Date_Time :01/24/18 09:53

M	IDX	Parameters	CC Con	CC% D	CC Resp	CCRRF	AvRRF	CC Rtm	AvRtm	% RSD	Co X0	Co X1	Co X2	Co Cor
	1	1,4-Dichlorobenzene-d4	40.000	0	490069	1	1	2.816	2.821	0				
	2	1,4-Dioxane	25.040	0.2	124977	0.408	0.407	1.188	1.165	3.88				
	3	N-nitrosodimethylamine	23.376	-6.5	185328	0.605	0.647	1.298	1.306	3.41				
	4	Pyridine	22.368	-5.2	388004	1.267	1.205	1.327	1.333	1.20				
	5	2-Fluorophenol	26.238	7.6	366385	1.196	1.118	1.901	1.902	2.36				
	6	Phenol-d5	25.254	1.0	427878	1.397	1.372	2.776	2.777	1.51				
	7	Phenol	26.720	7.2	414284	1.351	1.447	2.488	2.489	1.37				
	8	Aniline	26.577	6.3	359344	1.826	1.718	2.249	2.223	1.24				
	9	bis(2-chloroethyl)ether	25.351	1.4	321916	1.051	1.036	2.580	2.583	2.30				
	10	2-Chlorophenol	27.623	10.5	434842	1.420	1.285	2.643	2.646	6.91				
	11	1,3-Dichlorobenzene	25.503	2.0	469626	1.533	1.503	2.773	2.776	1.22				
	12	1,2-Dichlorobenzene-d4												
	13	1,4-Dichlorobenzene	25.437	1.7	475244	1.552	1.525	2.830	2.835	1.36				
	14	Benzyl alcohol	26.680	6.7	233519	0.828	0.770	5.807	5.811	1.66				
	15	1,2-Dichlorobenzene	26.045	4.2	462297	1.513	1.453	5.660	5.665	0.93				
	16	2-Methylphenol	27.151	8.6	326534	1.066	0.982	5.682	5.688	3.38				
	17	bis(2-chloroisopropyl)ether	24.519	-1.9	553652	1.808	1.843	3.027	3.028	3.19				
	18	4-Methylphenol	27.820	11.3	438797	1.433	1.287	3.123	3.125	1.09				
	19	N-Nitroso-di-n-propylamine	26.605	6.4	309946	1.012	0.951	3.147	3.148	3.12				
	20	Hexachloroethane	24.873	-0.5	179868	0.587	0.590	3.264	3.269	1.47				
	21	Naphthalene-d8	40.000	0	1776116	1	1	4.026	4.026	0				
#	22	Nitrobenzene-d5	8.564	2.8	131607	0.410	0.399	3.300	3.301	2.36				
	23	Nitrobenzene	27.403	9.8	463107	0.417	0.381	3.318	3.320	1.15				
	24	Isophorone	25.954	3.8	816862	0.736	0.709	3.534	3.544	1.81				
	25	2-Nitrophenol	26.079	4.3	212601	0.192	0.184	3.627	3.627	5.72				
	26	2,4-Dimethylphenol	27.103	8.4	436838	0.394	0.363	3.646	3.647	1.61				
	27	Benzoic acid	26.706	6.8	307508	0.277	0.259	3.718	3.720	13.40				
	28	bis(2-Chloroethoxy)methane	25.254	1.0	441323	0.398	0.394	3.752	3.753	6.27				
	29	2,5-Dimethylphenol	25.684	2.7	488220	0.440	0.428	3.780	3.783	0.93				
	30	2,4-Dichlorophenol	27.620	8.6	385507	0.347	0.319	3.862	3.862	3.64				
	31	1,2,4-Trichlorobenzene	26.860	7.3	275876	0.248	0.248	3.856	3.862	2.18				
	32	3,4-Dimethylphenol	27.473	9.9	557127	0.500	0.485	3.956	3.960	2.03				
	33	Naphthalene	26.549	6.2	1164250	1.049	0.988	4.045	4.048	1.31				
	34	4-Chloroaniline	26.044	4.2	474762	0.428	0.411	4.094	4.096	1.60				
	35	2,6-Dichlorophenol	26.486	5.9	388225	0.350	0.330	4.103	4.104	1.45				
	36	Hexachlorobutadiene	27.051	8.2	341441	0.308	0.284	4.171	4.175	1.72				
	37	Hydroquinone												
	38	4-Chloro-3-methylphenol	26.716	6.9	353134	0.318	0.298	4.620	4.618	3.17				
	39	2-Methylnaphthalene	22.738	-5.2	955869	0.862	0.705	4.806	4.810	1.34				
	40	1-Methylnaphthalene	23.793	3.2	783767	0.691	0.669	4.821	4.821	1.64				
	41	Acenaphthene-d10	40.000	0	1132606	1	1	6.052	6.058	0				
	42	Hexachlorocyclopentadiene	22.032	-11.9	335296	0.463	0.525	4.882	4.888	8.36				
	43	2,3,5-Trichlorophenol	23.320	-6.7	332267	0.458	0.492	4.993	4.996	4.45				
	44	2,7,6-Trichlorophenol	23.797	-4.8	347602	0.480	0.504	5.128	5.127	2.51				
	45	2,4,5-Trichlorophenol	24.762	-1.0	370341	0.511	0.516	5.162	5.162	4.46				
#	46	2-Fluorobiphenyl	24.157	-14.2	355336	1.471	1.713	5.234	5.234	6.52				
	47	2,3,4-Trichlorophenol	24.174	-14.2	326258	0.455	0.491	5.239	5.238	5.74				
	48	Biphenyl	23.143	-6.8	1072864	1.480	1.643	5.350	5.350	2.34				
	49	2-Chloronaphthalene	22.562	-2.3	1016624	1.400	1.643	5.328	5.327	1.38				
	50	2-Nitroaniline	23.186	-7.3	870872	1.174	1.268	5.288	5.289	1.20				
	51	2,6-Dimethylnaphthalene	24.004	-4.0	249713	0.345	0.359	5.482	5.497	3.60				
	52	1,4-Dinitrobenzene	22.965	-8.1	772935	1.066	1.161	5.532	5.534	2.37				
	53	Dimethylphthalate	24.545	-1.8	130275	0.180	0.183	5.661	5.661	7.07				
	54	1,3-Dinitrobenzene	23.171	-7.3	998797	1.378	1.487	5.719	5.719	1.35				
	55	2,6-Dinitrotoluene	23.764	-6.1	141295	0.195	0.208	5.748	5.747	1.56				
	56	1,2-Dinitrobenzene	24.083	-3.7	219802	0.303	0.315	5.787	5.785	2.57				
	57	Acenaphthylene	25.022	2.9	92393	0.127	0.124	5.845	5.841	4.16				
	58	3-Nitroaniline	23.376	-6.5	75613	2.162	2.067	5.859	5.859	5.95				
	59	Acenaphthene	24.453	-2.2	1543016	2.135	2.016	5.870	5.870	3.08				
	60	2,4-Dinitrophenol	24.426	-2.3	915905	1.264	1.292	6.066	6.067	2.67				
	61	4-Nitrophenol	22.355	-10.6	132474	0.183	0.173	6.104	6.105	18.12	-0.0089	0.2017		0.9998
	62	2,4-Dinitrotoluene	23.578	-5.7	152185	0.210	0.235	6.176	6.176	10.86				
	63	Dibenzofuran	24.172	-3.3	286223	0.395	0.419	6.267	6.262	2.36				
	64	2,3,5,6-Tetrachlorophenol	23.825	-7.7	1336436	1.847	1.907	6.277	6.275	0.03				
	65	2,3,4,6-Tetrachlorophenol	23.851	-4.6	258889	0.355	0.372	6.368	6.368	4.89				
	66	2,3,5-Trimethylnaphthalene	20.821	-17.3	300840	0.415	0.503	6.220	6.220	8.88				
	67	Diethylphthalate	22.935	-8.5	733980	1.040	1.124	6.230	6.227	2.37				
	68	Fluorene	25.860	3.4	1089639	1.503	1.453	6.576	6.571	1.31				
	69	4-Chlorophenyl-phenylether	23.880	-4.5	1000930	1.381	1.446	6.689	6.688	2.87				
	70	4-Nitroaniline	22.370	-10.5	517066	0.713	0.797	6.699	6.698	1.75				
	71	Phenanthrene-d10	22.688	-9.2	203818	0.281	0.310	6.713	6.710	9.54				
	72	4,6-Dinitro-2-methylphenol	40.000	0	2146564	1	1	7.774	7.771	0				
	73	N-Nitrosodiphenylamine	29.918	19.7	198398	0.148	0.114	6.750	6.751	15.97	-0.0050	0.1302		0.9995
	74	Azobenzene	22.218	-11.1	822388	0.612	0.575	6.870	6.870	2.18				
	75	2,4,6-Tribromophenol	26.787	7.1	865699	0.645	0.237	6.887	6.887	1.42				
	76	4-Bromophenyl-phenylether	28.884	15.5	782313	0.582	0.634	6.887	6.887	5.26				
	77	Hexachlorobenzene	25.920	3.7	1225214	0.144	0.132	6.973	6.971	8.22				
	78	Pentachlorophenol	26.905	7.6	385702	0.287	0.267	7.276	7.276	1.48				
	79	Dibenzothiophene	26.054	4.2	381381	0.284	0.273	7.333	7.327	1.08				
	80	Phenanthrene	29.798	19.2	254481	0.190	0.159	7.555	7.554	9.22				
	81	Dinoseb	28.092	12.4	1582715	1.180	1.050	7.659	7.655	5.35				
	82	Anthracene	25.970	3.9	1478433	1.102	1.061	7.797	7.797	0.52				
	83	Carbazole	25.803	3.2	1472998	1.098	1.064	7.856	7.854	2.26				
	84	Di-n-butylphthalate	27.725	11.4	1262371	0.962	0.869	8.037	8.035	4.73				
	85	1-Methylphenanthrene	27.681	10.7	1520394	1.185	1.071	8.434	8.433	5.00				
	86	Fluoranthene	25.321	1.3	1075748	0.802	0.792	8.468	8.466	3.55				
	87	Chrysene-d12	25.701	2.8	1667591	1.243	1.209	9.077	9.073	5.32				
	88	Benzidine	40.000	0	2230983	1	1	10.548	10.543	0				
	89	Pyrene	27.032	8.1	1759347	1.262	1.167	8.313	8.309	2.37				
#	90	Terphenyl-d14	24.323	-2.7	1324083	0.783	0.868	6.779	6.779	2.38				
	91	Butylbenzylphthalate	28.369	13.4	958472	0.687	0.715	6.987	6.984	4.82				
	92	bis(2-ethylhexyl)adipate	29.342	18.1	567746	0.380	0.332	10.067	10.064	6.20				
	93	3,3'-Dichlorobenzidine	28.262	13.1	626838	0.449	0.397	10.514	10.509	6.51				
	94	Benzo(a)anthracene	26.395	5.6	1647925	1.182	1.119	10.233	10.231	0.41				
	95	Chrysene	25.644	3.8	1542018	1.106	1.066	10.272	10.268	0.36				
	96	bis(2-Ethylhexyl)phthalate	28.340	13.4	991937	0.711	0.628	10.563	10.562	5.36				
	97	Perylene-d12	40.000	0	2051360	1	1	11.910	11.906	0				
	98	Di-n-octylphthalate	28.091	12.4	1555147	1.213	1.079	11.179	11.178	7.90				
	99	Benzo(b)fluoranthene	27.167	8.7	1528309	1.223	1.125	11.544	11.542	4.39				
	100	Benzo(k)fluoranthene	26.579	6.4	1425874	1.167	1.067	11.568	11.568	4.82				
	101	Benzo(e)pyrene	25.849	3.4	1420060	1.108	1.071	11.802	11.800	2.67				
	102	Benzo(a)pyrene	26.010	4.0	1400173	1.092	1.050	11.853	11.850	3.55				
	103	Perylene	26.743	7.0	1476430	1.152	1.077	11.933	11.936	2.18				
	104	Indeno(1,2,3-cd)pyrene	26.781	7.1	1672514	1.305	1.218	13.104	13.100	5.29				
	105	Dibenzo(a,h)anthracene	27.258	9.0	1399981	1.092	1.001	13.124	13.120	6.48				
	106	Benzo(g,h,i)perylene	27.652	10.6	1454609	1.135	1.026	13.463	13.458	4.66				

#: Verified at 8.333ppm

RH 01-26-18

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAH169
Instrument ID: E7

Project:ICAL
SDG No.:CAL\8270\2018
Date Analyzed: 01/22/18
Time Analyzed: 15:46

	IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
12 HOUR STD	459657	2.82	1739389	4.03	962917	6.03
UPPER LIMIT	919314	3.32	3478778	4.53	1925834	6.53
LOWER LIMIT	229829	2.32	869695	3.53	481459	5.53
SAMPLE ID						
1 ISVE7A222	490069	2.82	1776116	4.03	1159606	6.03

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

pu 01-26-18

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAH169
Instrument ID: E7

Project:ICAL
SDG No.:CAL\8270\2018
Date Analyzed: 01/22/18
Time Analyzed: 15:46

		IS4(PHN)		IS5(CRY)		IS6(PRY)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	2080878	7.77	2467262	10.54	2331017	11.91
	UPPER LIMIT	4161756	8.27	4934524	11.04	4662034	12.41
	LOWER LIMIT	1040439	7.27	1233631	10.04	1165509	11.41
	SAMPLE ID						
1	ISVE7A222	2146564	7.77	2230983	10.55	2051360	11.91

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

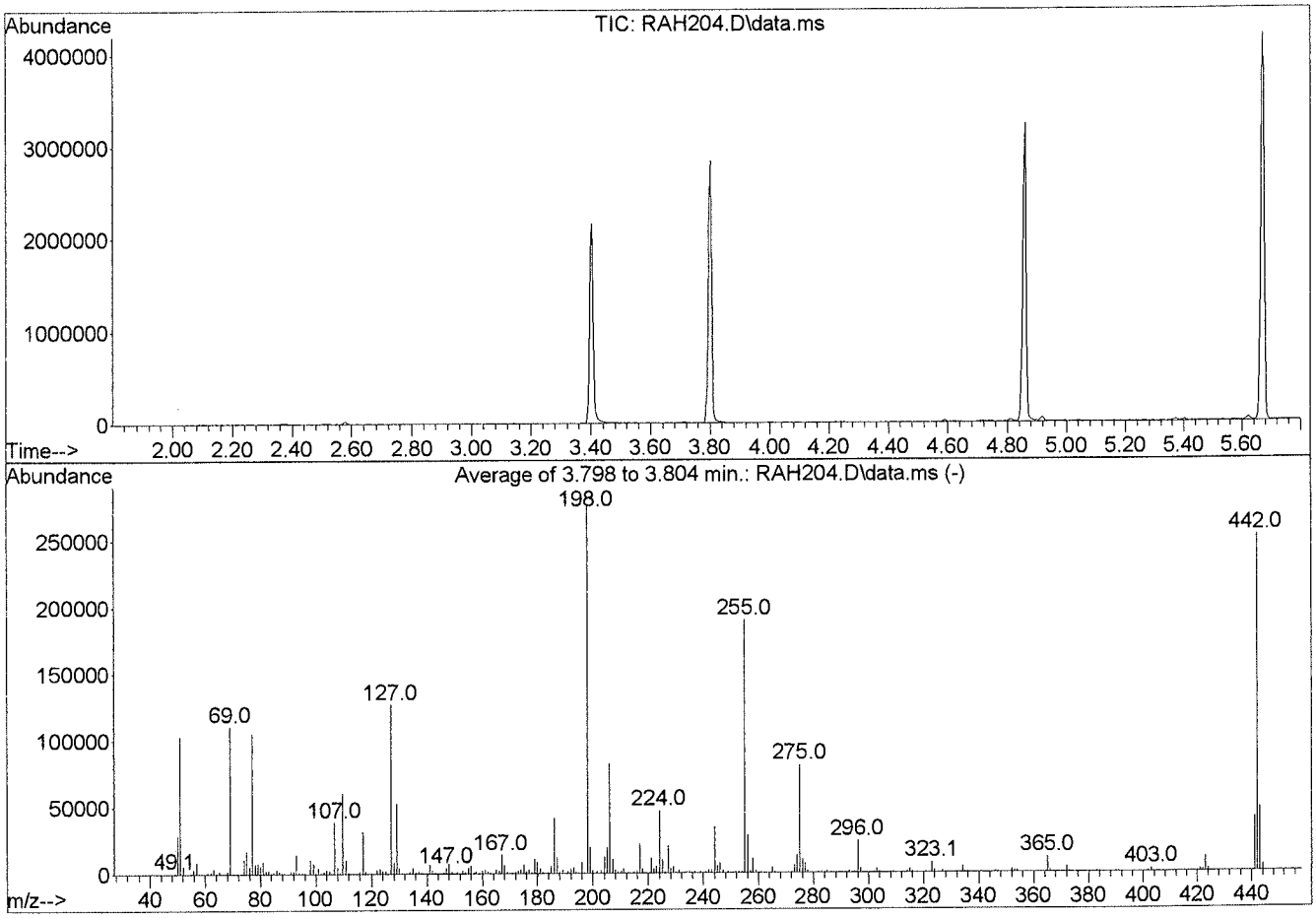
Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

RW 01-26-18

Data Path : D:\DATA\18A24\
Data File : RAH204.D
Acq On : 24 Jan 2018 8:30
Operator : KVu
Sample : DFTE7A2202
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPP.M
Title : DFTPP
Last Update : Tue Jan 23 12:56:03 2018



AutoFind: Scans 608, 609, 610; Background Corrected with Scan 599

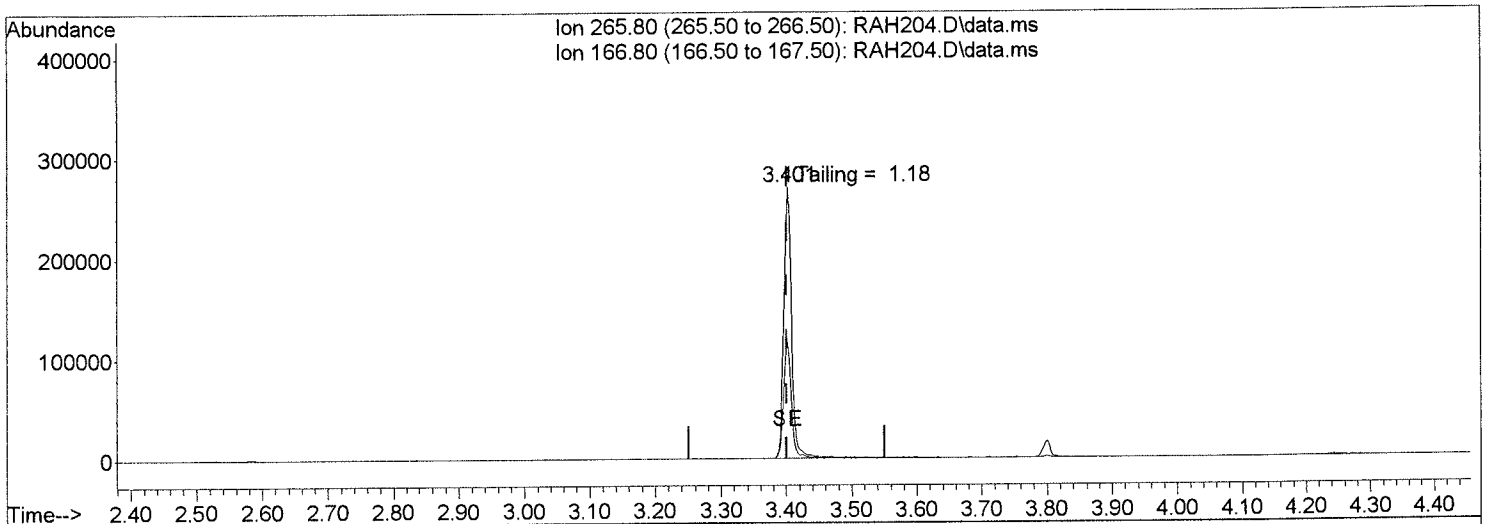
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.5	103616	PASS
68	69	0.00	2	1.6	1728	PASS
69	198	0.00	100	40.0	110360	PASS
70	69	0.00	2	0.5	594	PASS
127	198	40	60	46.0	127013	PASS
197	198	0.00	1	0.1	400	PASS
198	198	100	100	100.0	276245	PASS
199	198	5	9	7.0	19254	PASS
275	198	10	30	29.3	80880	PASS
365	198	1	100	4.2	11526	PASS
441	443	0.01	100	83.9	40499	PASS
442	198	40	100	91.3	252245	PASS
443	442	17	23	19.1	48267	PASS

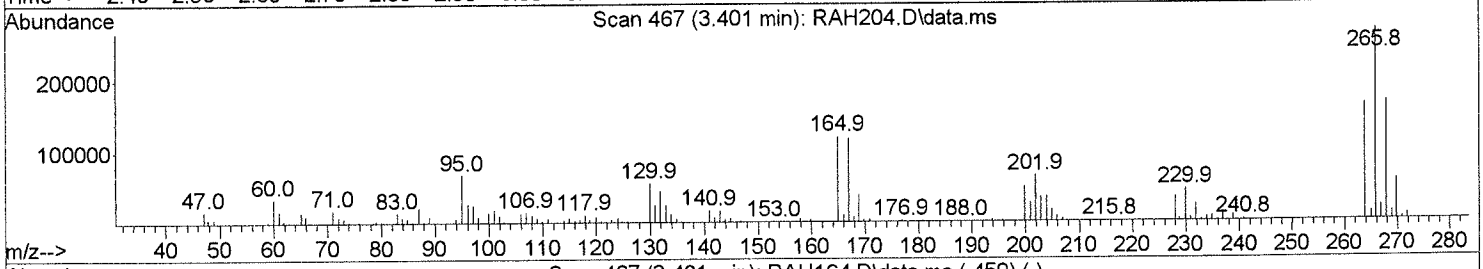
pw 01-26-18

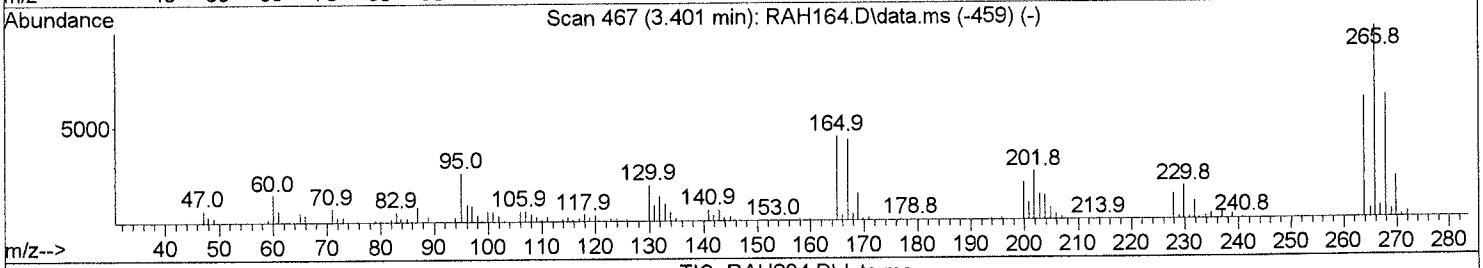
Quantitation Report (Qedit)

Data File : D:\DATA\18A24\RAH204.D
Acq On : 24 Jan 2018 8:30
Sample : DFTE7A2202
Misc :
Integrator: RTE
Quant Time: Jan 24 10:08:59 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RAH204.D\data.ms

(1) Pentachlorophenol (T)

3.401min (+0.000) 68.43 ppm

response 223146

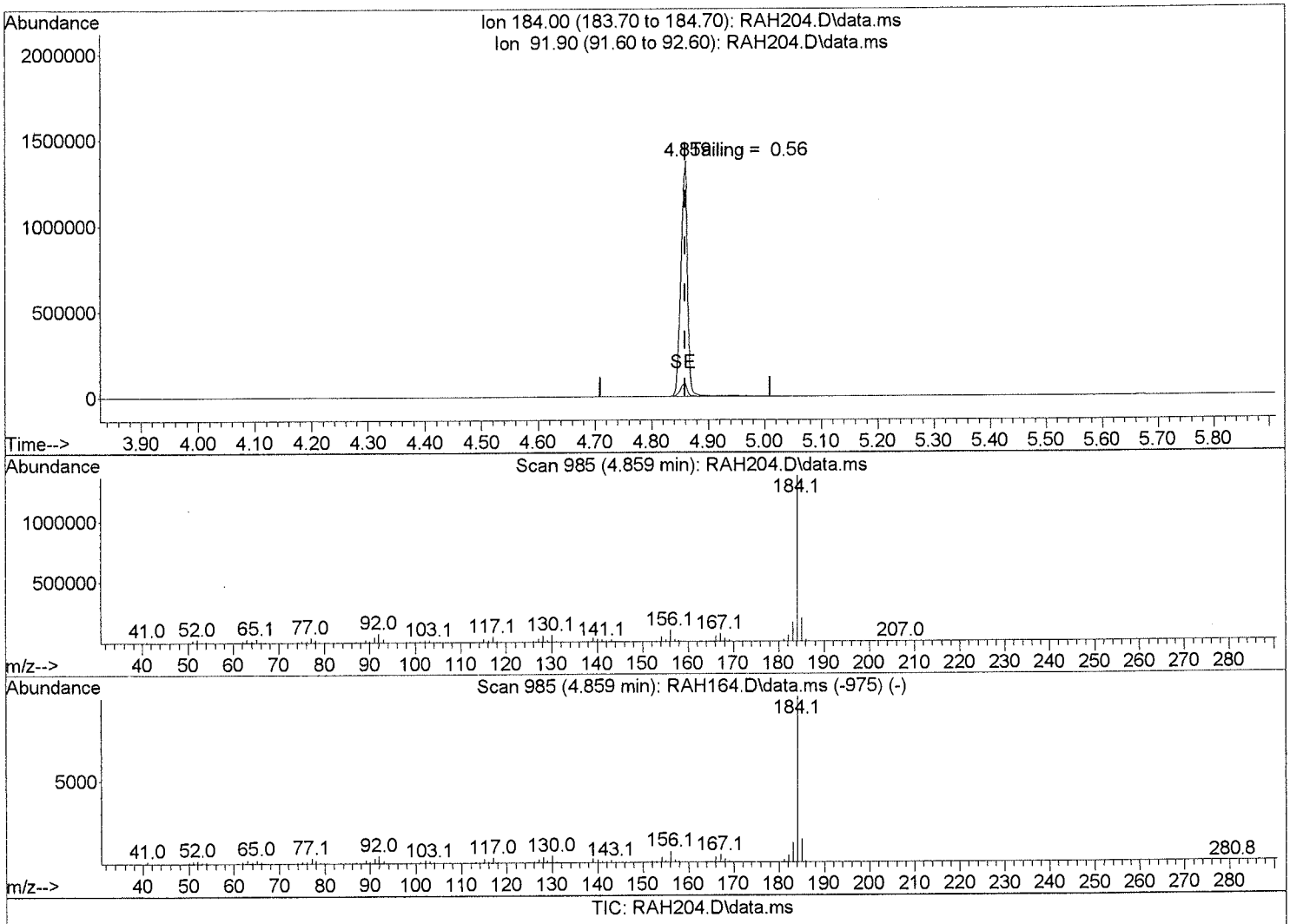
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	42.93
0.00	0.00	0.00
0.00	0.00	0.00

JW 01-26-18

Quantitation Report (Qedit)

Data File : D:\DATA\18A24\RAH204.D
Acq On : 24 Jan 2018 8:30
Sample : DFTE7A2202
Misc :
Integrator: RTE
Quant Time: Jan 24 10:08:59 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00



TIC: RAH204.D\data.ms

(3) Benzidine (T)

4.859min (+0.000) 72.42 ppm

response 1103675

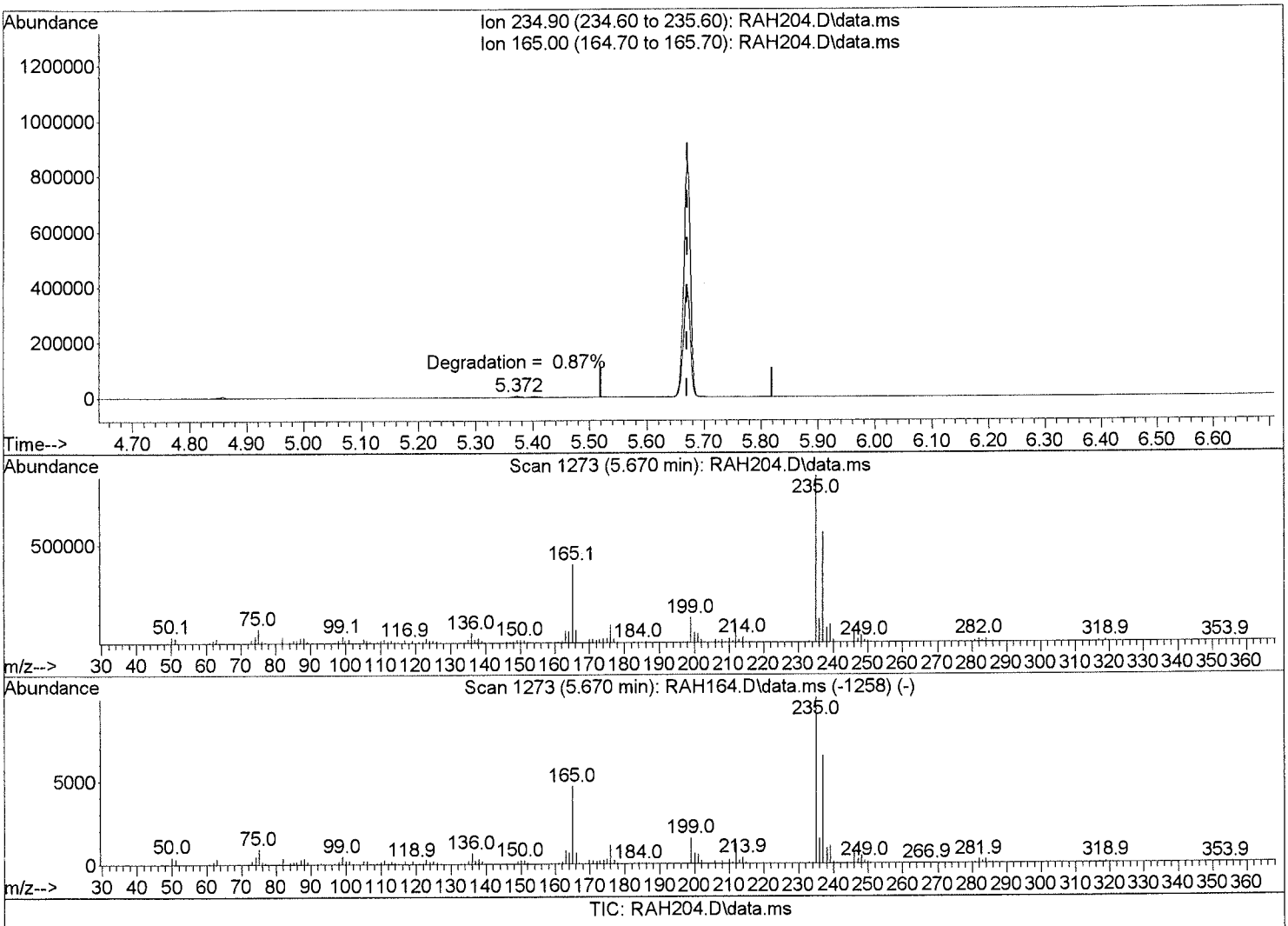
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	5.57
0.00	0.00	0.00
0.00	0.00	0.00

mc 01-26-18

Quantitation Report (Qedit)

Data File : D:\DATA\18A24\RAH204.D
Acq On : 24 Jan 2018 8:30
Sample : DFTE7A2202
Misc :
Integrator: RTE
Quant Time: Jan 24 10:08:59 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00



TIC: RAH204.D\data.ms

(6) DDT (T)

5.670min (+0.000) 72.92 ppm

response 694956

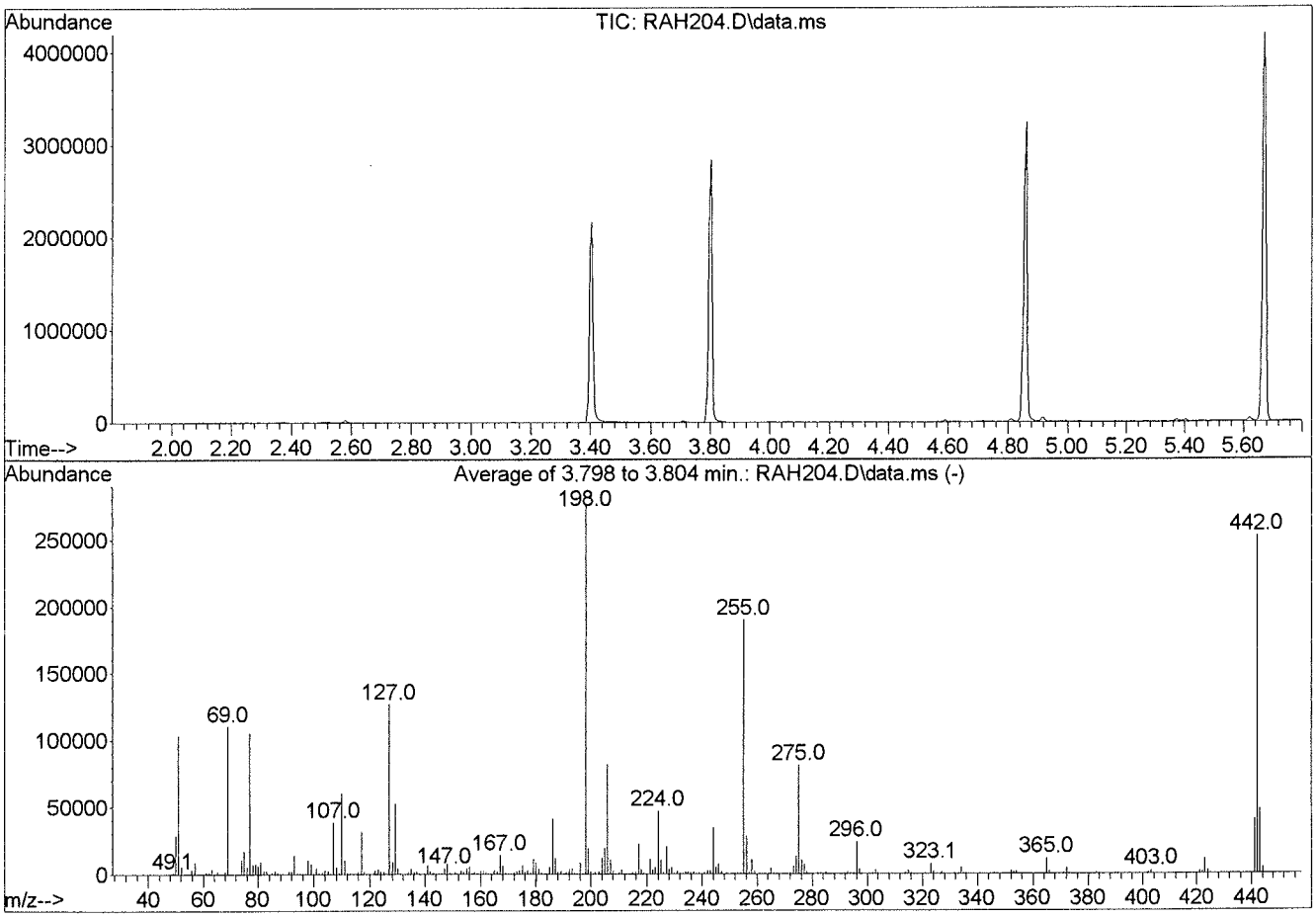
Ion	Exp%	Act%
234.90	100	100
165.00	47.00	47.55
0.00	0.00	0.00
0.00	0.00	0.00

01-26-18

Data Path : D:\DATA\18A24\
Data File : RAH204.D
Acq On : 24 Jan 2018 8:30
Operator : KVu
Sample : DFTE7A2202
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : Semivolatiles DFTPP
Last Update : Tue Jan 23 12:53:12 2018



AutoFind: Scans 608, 609, 610; Background Corrected with Scan 599

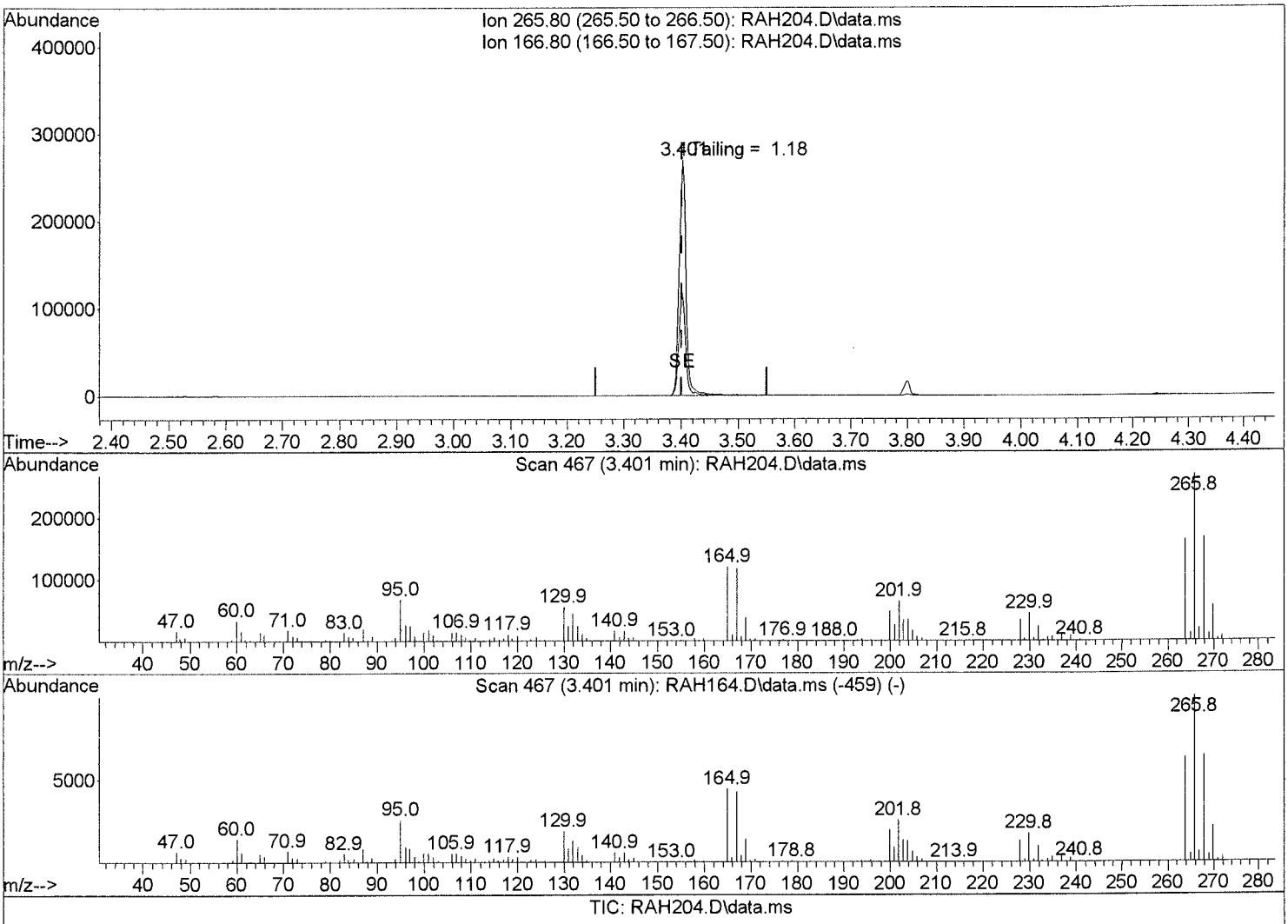
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	37.5	103616	PASS
68	69	0.00	2	1.6	1728	PASS
69	198	0.00	100	40.0	110360	PASS
70	69	0.00	2	0.5	594	PASS
127	198	10	80	46.0	127013	PASS
197	198	0.00	2	0.1	400	PASS
198	198	100	100	100.0	276245	PASS
199	198	5	9	7.0	19254	PASS
275	198	10	60	29.3	80880	PASS
365	198	1	100	4.2	11526	PASS
441	442	0.01	24	16.1	40499	PASS
442	198	50	100	91.3	252245	PASS
443	442	15	24	19.1	48267	PASS

KV 01-26-18

Quantitation Report (Qedit)

Data File : D:\DATA\18A24\RAH204.D
Acq On : 24 Jan 2018 8:30
Sample : DFTE7A2202
Misc :
Integrator: RTE
Quant Time: Jan 25 10:56:19 2018
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP
QLast Update : Tue Jan 23 12:53:12 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00



TIC: RAH204.D\data.ms

(1) Pentachlorophenol (T)

3.401min (+0.000) 68.43 ppm

response 223146

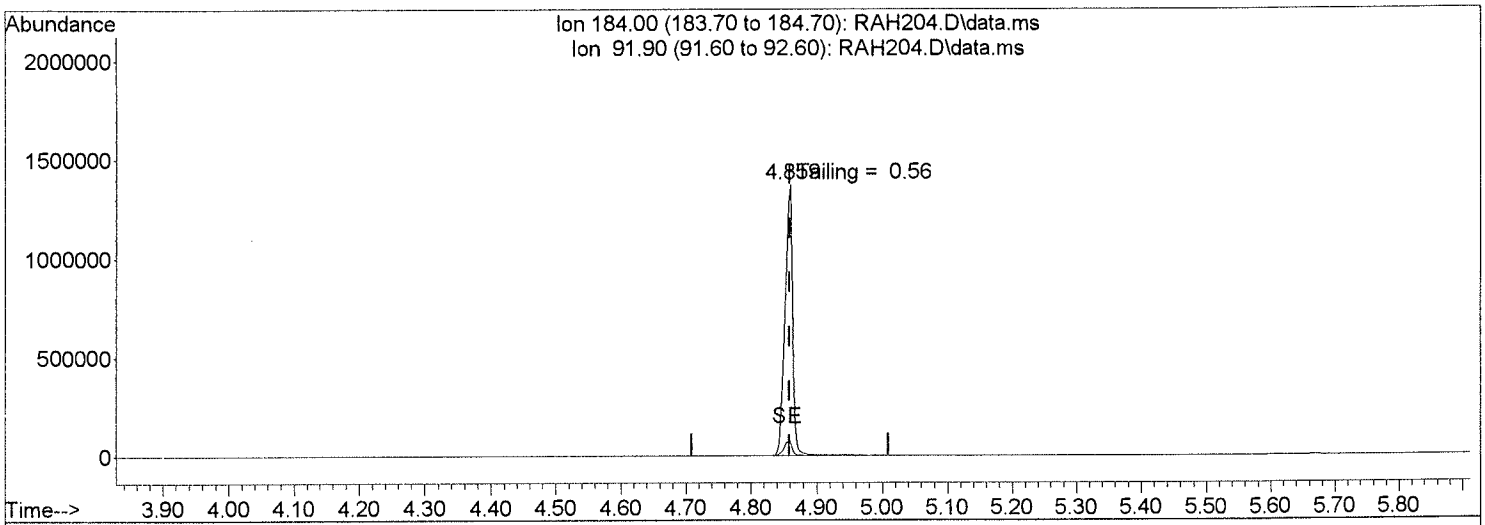
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	42.93
0.00	0.00	0.00
0.00	0.00	0.00

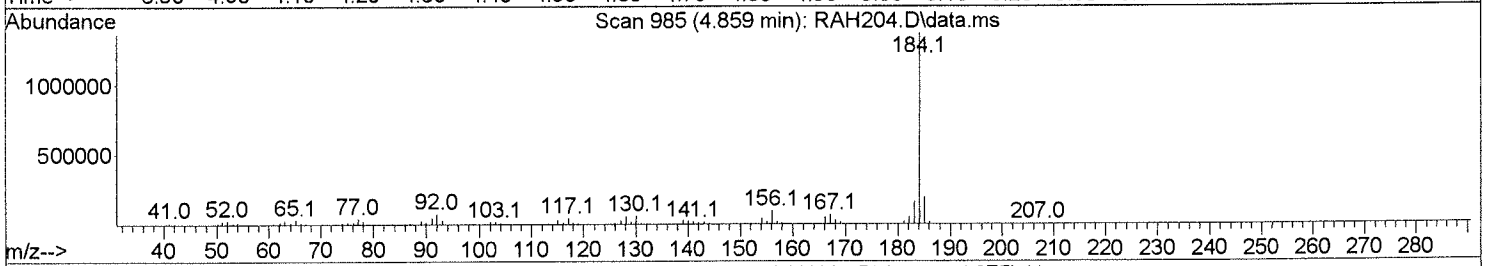
01-26-18

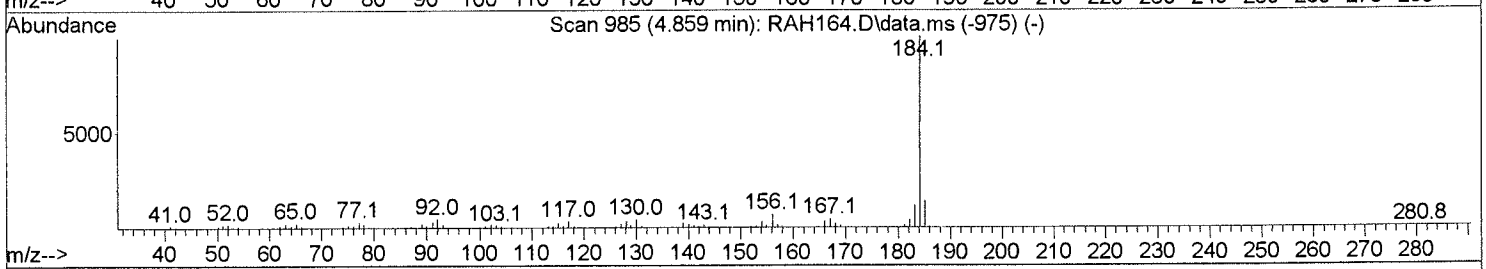
Quantitation Report (Qedit)

Data File : D:\DATA\18A24\RAH204.D
Acq On : 24 Jan 2018 8:30
Sample : DFTE7A2202
Misc :
Integrator: RTE
Quant Time: Jan 25 10:56:19 2018
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP
QLast Update : Tue Jan 23 12:53:12 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RAH204.D\data.ms

(3) Benzidine (T)

4.859min (+0.000) 72.42 ppm

response 1103675

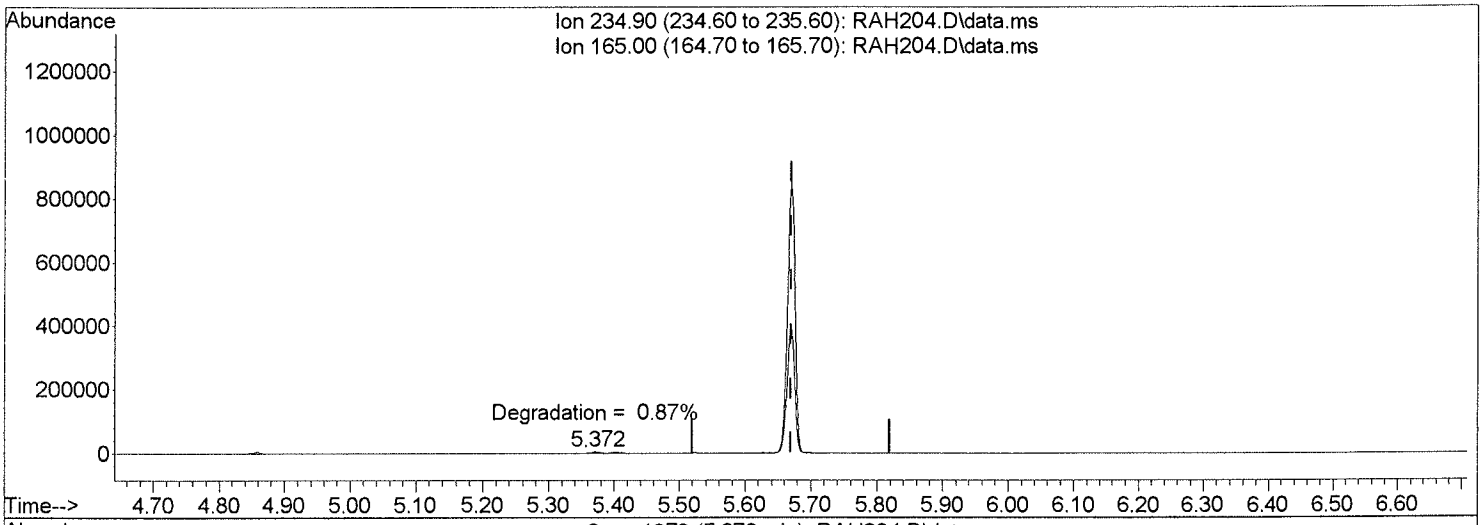
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	5.57
0.00	0.00	0.00
0.00	0.00	0.00

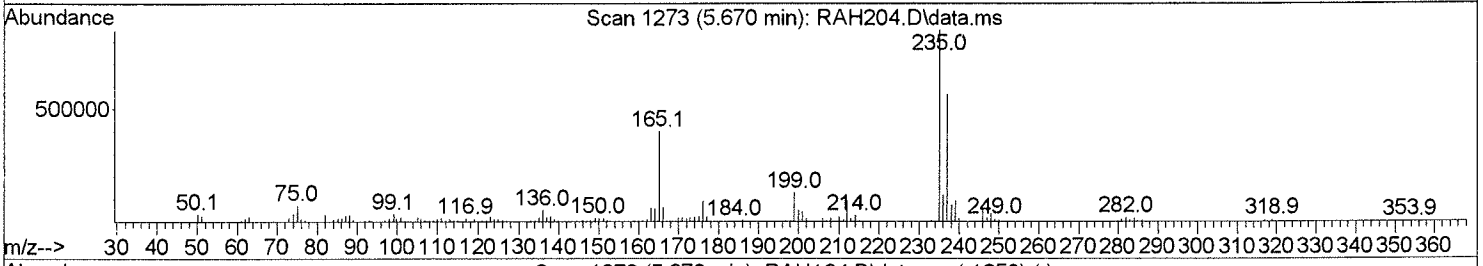
mc 01-26-18

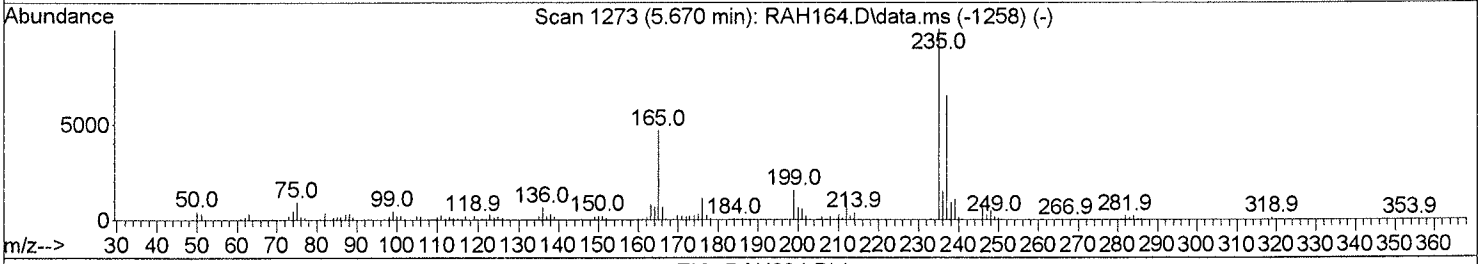
Quantitation Report (Qedit)

Data File : D:\DATA\18A24\RAH204.D
Acq On : 24 Jan 2018 8:30
Sample : DFTE7A2202
Misc :
Integrator: RTE
Quant Time: Jan 25 10:56:19 2018
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP
QLast Update : Tue Jan 23 12:53:12 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RAH204.D\data.ms

(6) DDT (T)

5.670min (+0.000) 72.92 ppm

response 694956

Ion	Exp%	Act%
234.90	100	100
165.00	47.00	47.55
0.00	0.00	0.00
0.00	0.00	0.00

RH 01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A24\RAH205.D
Acq On : 24 Jan 2018 9:53
Sample : ISVE7A2202
Misc : ICV
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 3
Operator: KVu
Inst : E7
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	107	0.00
2	T	1,4-Dioxane	25.000	25.040	-0.2	108	0.00
3	T	N-nitrosodimethylamine	25.000	23.376	6.5	97	0.00
4	T	Pyridine	25.000	26.292	-5.2	110	0.00
5	S	2-Fluorophenol	25.000	26.738	-7.0	110	0.00
6	S	Phenol-d5	25.000	25.257	-1.0	107	0.00
7	C,P	Phenol	25.000	26.790	-7.2	113	0.00
8	T	Aniline	25.000	26.577	-6.3	111	0.00
9	T,P	bis(2-chloroethyl)ether	25.000	25.351	-1.4	107	0.00
10	T,P	2-Chlorophenol	25.000	27.623	-10.5	111	0.00
11	T	1,3-Dichlorobenzene	25.000	25.503	-2.0	106	0.00
12	S	1,2-Dichlorobenzene-d4	25.000	0.000	100.0#	0	-2.99#
13	C	1,4-Dichlorobenzene	25.000	25.437	-1.7	107	0.00
14	T	Benzyl alcohol	25.000	26.680	-6.7	114	0.00
15	T	1,2-Dichlorobenzene	25.000	26.045	-4.2	111	0.00
16	T,P	2-Methylphenol	25.000	27.151	-8.6	115	0.00
17	T	bis(2-chloroisopropyl)ether	25.000	24.519	1.9	103	0.00
18	T,P	4-Methylphenol	25.000	27.821	-11.3	118	0.00
19	P,P	N-Nitroso-di-n-propylamine	25.000	26.605	-6.4	109	0.00
20	T,P	Hexachloroethane	25.000	24.873	0.5	105	0.00
21	I	Naphthalene-d8	40.000	40.000	0.0	102	0.00
22	S	Nitrobenzene-d5	25.000	8.564	65.7#	35	0.00
23	T,P	Nitrobenzene	25.000	27.403	-9.6	111	0.00
24	T,P	Isophorone	25.000	25.954	-3.8	109	0.00
25	C,P	2-Nitrophenol	25.000	26.079	-4.3	112	0.00
26	T,P	2,4-Dimethylphenol	25.000	27.103	-8.4	110	0.00
27	T	Benzoic acid	25.000	26.706	-6.8	106	0.00
28	T,P	bis(2-Chloroethoxy)methane	25.000	25.254	-1.0	108	0.00
29	T	3,5-Dimethylphenol	25.000	25.685	-2.7	106	0.00
30	C,P	2,4-Dichlorophenol	25.000	27.220	-8.9	112	0.00
31	T	1,2,4-Trichlorobenzene	25.000	26.860	-7.4	109	0.00
32	T	3,4-Dimethylphenol	25.000	27.475	-9.9	112	0.00
33	T.P	Naphthalene	25.000	26.549	-6.2	108	0.00
34	T	4-Chloroaniline	25.000	26.044	-4.2	105	0.00
35	T	2,6-Dichlorophenol	25.000	26.486	-5.9	107	0.00
36	C	Hexachlorobutadiene	25.000	27.051	-8.2	110	0.00
37	T	Hydroquinone	25.000	0.000	100.0#	0	0.00
38	C,P	4-Chloro-3-methylphenol	25.000	26.716	-6.9	110	0.00
39	T,P	2-Methylnaphthalene	25.000	25.736	-2.9	107	0.00
40	T	1-Methylnaphthalene	25.000	25.793	-3.2	108	0.00
41	I	Acenaphthene-d10	40.000	40.000	0.0	120	0.00
42	P	Hexachlorocyclopentadiene	25.000	22.032	11.9	101	0.00
43	T	2,3,5-Trichlorophenol	25.000	23.320	6.7	113	0.00
44	C,P	2,4,6-Trichlorophenol	25.000	23.797	4.8	112	0.00
45	T,P	2,4,5-Trichlorophenol	25.000	24.762	1.0	120	0.00
46	S	2-Fluorobiphenyl	25.000	7.154	71.4#	33	0.00
47	T	2,3,4-Trichlorophenol	25.000	23.145	7.4	119	0.00
48	T	Biphenyl	25.000	22.522	9.9	108	0.00
49	T,P	2-Chloronaphthalene	25.000	23.186	7.3	111	0.00

JM 01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A24\RAH205.D Vial: 3
Acq On : 24 Jan 2018 9:53 Operator: KVu
Sample : ISVE7A2202 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	25.000	24.004	4.0	115	0.00
51	T	2,6-Dimethylnaphthalene	25.000	22.965	8.1	110	0.00
52	T	1,4-Dinitrobenzene	25.000	24.545	1.8	116	0.00
53	T	Dimethylphthalate	25.000	23.171	7.3	112	0.00
54	T	1,3-Dinitrobenzene	25.000	23.464	6.1	116	0.00
55	T,P	2,6-Dinitrotoluene	25.000	24.083	3.7	114	0.00
56	T	1,2-Dinitrobenzene	25.000	25.692	-2.8	119	0.00
57	T,P	Acenaphthylene	25.000	26.572	-6.3	123	0.00
58	T	3-Nitroaniline	25.000	23.370	6.5	107	0.00
59	C,P	Acenaphthene	25.000	24.453	2.2	116	0.00
60	P	2,4-Dinitrophenol	25.000	24.426	2.3	114	0.00
61	P	4-Nitrophenol	25.000	22.356	10.6	96	0.00
62	T,P	2,4-Dinitrotoluene	25.000	23.579	5.7	111	0.00
63	T,P	Dibenzofuran	25.000	24.172	3.3	117	0.00
64	T	2,3,5,6-Tetrachlorophenol	25.000	23.822	4.7	113	0.00
65	T	2,3,4,6-Tetrachlorophenol	25.000	20.621	17.5	104	0.00
66	T	2,3,5-Trimethylnaphthalene	25.000	22.935	8.3	110	0.00
67	T	Diethylphthalate	25.000	25.860	-3.4	124	0.00
68	T,P	Fluorene	25.000	23.880	4.5	116	0.00
69	T,P	4-Chlorophenyl-phenylether	25.000	22.370	10.5	110	0.00
70	T	4-Nitroaniline	25.000	22.688	9.2	96	0.00
71	I	Phenanthrene-d10	40.000	40.000	0.0	103	0.00
72	T	4,6-Dinitro-2-methylphenol	25.000	29.918	-19.7	119	0.00
73	C	N-Nitrosodiphenylamine	25.000	26.769	-7.1	112	0.00
74	T	Azobenzene	25.000	28.884	-15.5	121	0.00
75	S	2,4,6-Tribromophenol	25.000	25.920	-3.7	105	0.00
76	T,P	4-Bromophenyl-phenylether	25.000	26.905	-7.6	101	0.00
77	T,P	Hexachlorobenzene	25.000	26.054	-4.2	110	0.00
78	C,P	Pentachlorophenol	25.000	29.798	-19.2	115	0.00
79	T	Dibenzothiophene	25.000	28.092	-12.4	112	0.00
80	T,P	Phenanthrene	25.000	25.970	-3.9	107	0.00
81	T	Dinoseb	25.000	0.000	100.0#	0	0.00
82	T,P	Anthracene	25.000	25.804	-3.2	106	0.00
83	T	Carbazole	25.000	27.795	-11.2	109	0.00
84	T	Di-n-butylphthalate	25.000	27.681	-10.7	109	0.00
85	T	1-Methylphenanthrene	25.000	25.321	-1.3	101	0.00
86	C,P	Fluoranthene	25.000	25.701	-2.8	101	0.00
87	I	Chrysene-d12	40.000	40.000	0.0	90	0.00
88	T	Benzidine	25.000	0.000	100.0#	0	0.00
89	T,P	Pyrene	25.000	27.032	-8.1	101	0.00
90	S	Terphenyl-d14	25.000	7.523	69.9#	28	0.00
91	T	Butylbenzylphthalate	25.000	28.360	-13.4	102	0.00
92	T	bis(2-ethylhexyl)adipate	25.000	29.542	-18.2	107	0.00
93	T	3,3'-Dichlorobenzidine	25.000	28.269	-13.1	97	0.00
94	T,P	Benzo(a)anthracene	25.000	26.395	-5.6	96	0.00
95	T,P	Chrysene	25.000	25.944	-3.8	94	0.00
96	T	bis(2-Ethylhexyl)phthalate	25.000	28.340	-13.4	102	0.00
97	I	Perylene-d12	40.000	40.000	0.0	88	0.00

PM 01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A24\RAH205.D Vial: 3
Acq On : 24 Jan 2018 9:53 Operator: KVu
Sample : ISVE7A2202 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	25.000	28.091	-12.4	97	0.00
99	T,P	Benzo(b)fluoranthene	25.000	27.184	-8.7	98	0.00
100	T,P	Benzo(k)fluoranthene	25.000	26.590	-6.4	91	0.00
101	T	Benzo(e)pyrene	25.000	25.849	-3.4	91	0.00
102	C,P	Benzo(a)pyrene	25.000	26.010	-4.0	91	0.00
103	T	Perylene	25.000	26.743	-7.0	94	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	25.000	26.781	-7.1	92	0.00
105	T,P	Dibenzo(a,h)anthracene	25.000	27.258	-9.0	93	0.00
106	T,P	Benzo(g,h,i)perylene	25.000	27.652	-10.6	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A24\RAH205.D Vial: 3
Acq On : 24 Jan 2018 9:53 Operator: KVu
Sample : ISVE7A2202 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	107	0.00
2	T	1,4-Dioxane	0.407	0.408	-0.2	108	0.00
3	T	N-nitrosodimethylamine	0.647	0.605	6.5	97	0.00
4	T	Pyridine	1.205	1.267	-5.1	110	0.00
5	S	2-Fluorophenol	1.118	1.196	-7.0	110	0.00
6	S	Phenol-d5	1.479	1.494	-1.0	107	0.00
7	C,P	Phenol	1.447	1.551	-7.2	113	0.00
8	T	Aniline	1.718	1.826	-6.3	111	0.00
9	T,P	bis(2-chloroethyl)ether	1.036	1.051	-1.4	107	0.00
10	T,P	2-Chlorophenol	1.285	1.420	-10.5	111	0.00
11	T	1,3-Dichlorobenzene	1.503	1.533	-2.0	106	0.00
12	S	1,2-Dichlorobenzene-d4	0.000	0.000#	0.0	0#	-2.99#
13	C	1,4-Dichlorobenzene	1.525	1.552	-1.8	107	0.00
14	T	Benzyl alcohol	0.776	0.828	-6.7	114	0.00
15	T	1,2-Dichlorobenzene	1.453	1.513	-4.1	111	0.00
16	T,P	2-Methylphenol	0.982	1.066	-8.6	115	0.00
17	T	bis(2-chloroisopropyl)ether	1.843	1.808	1.9	103	0.00
18	T,P	4-Methylphenol	1.287	1.433	-11.3	118	0.00
19	P,P	N-Nitroso-di-n-propylamine	0.951	1.012	-6.4	109	0.00
20	T,P	Hexachloroethane	0.590	0.587	0.5	105	0.00
21	I	Naphthalene-d8	1.000	1.000	0.0	102	0.00
22	S	Nitrobenzene-d5	0.399	0.137	65.7#	35#	0.00
23	T,P	Nitrobenzene	0.381	0.417	-9.4	111	0.00
24	T,P	Isophorone	0.709	0.736	-3.8	109	0.00
25	C,P	2-Nitrophenol	0.184	0.192	-4.3	112	0.00
26	T,P	2,4-Dimethylphenol	0.363	0.394	-8.5	110	0.00
27	T	Benzoic acid	0.259	0.277	-6.9	106	0.00
28	T,P	bis(2-Chloroethoxy)methane	0.394	0.398	-1.0	108	0.00
29	T	3,5-Dimethylphenol	0.428	0.440	-2.8	106	0.00
30	C,P	2,4-Dichlorophenol	0.319	0.347	-8.8	112	0.00
31	T	1,2,4-Trichlorobenzene	0.398	0.428	-7.5	109	0.00
32	T	3,4-Dimethylphenol	0.455	0.500	-9.9	112	0.00
33	T.P	Naphthalene	0.988	1.049	-6.2	108	0.00
34	T	4-Chloroaniline	0.411	0.428	-4.1	105	0.00
35	T	2,6-Dichlorophenol	0.330	0.350	-6.1	107	0.00
36	C	Hexachlorobutadiene	0.284	0.308	-8.5	110	0.00
37	T	Hydroquinone	0.000	0.000#	0.0	0#	0.00
38	C,P	4-Chloro-3-methylphenol	0.298	0.318	-6.7	110	0.00
39	T,P	2-Methylnaphthalene	0.705	0.726	-3.0	107	0.00
40	T	1-Methylnaphthalene	0.669	0.690	-3.1	108	0.00
41	I	Acenaphthene-d10	1.000	1.000	0.0	120	0.00
42	P	Hexachlorocyclopentadiene	0.525	0.463	11.8	101	0.00
43	T	2,3,5-Trichlorophenol	0.492	0.458	6.9	113	0.00
44	C,P	2,4,6-Trichlorophenol	0.504	0.480	4.8	112	0.00
45	T,P	2,4,5-Trichlorophenol	0.516	0.511	1.0	120	0.00
46	S	2-Fluorobiphenyl	1.713	0.490	71.4#	33#	0.00
47	T	2,3,4-Trichlorophenol	0.491	0.455	7.3	119	0.00
48	T	Biphenyl	1.643	1.480	9.9	108	0.00
49	T,P	2-Chloronaphthalene	1.266	1.174	7.3	111	0.00

01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A24\RAH205.D
Acq On : 24 Jan 2018 9:53
Sample : ISVE7A2202
Misc : ICV
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 3
Operator: KVu
Inst : E7
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	0.359	0.345	3.9	115	0.00
51	T	2,6-Dimethylnaphthalene	1.161	1.066	8.2	110	0.00
52	T	1,4-Dinitrobenzene	0.183	0.180	1.6	116	0.00
53	T	Dimethylphthalate	1.487	1.378	7.3	112	0.00
54	T	1,3-Dinitrobenzene	0.208	0.195	6.2	116	0.00
55	T,P	2,6-Dinitrotoluene	0.315	0.303	3.8	114	0.00
56	T	1,2-Dinitrobenzene	0.124	0.127	-2.4	119	0.00
57	T,P	Acenaphthylene	2.006	2.132	-6.3	123	0.00
58	T	3-Nitroaniline	0.312	0.292	6.4	107	0.00
59	C,P	Acenaphthene	1.292	1.264	2.2	116	0.00
60	P	2,4-Dinitrophenol	0.173	0.183	-5.8	114	0.00
61	P	4-Nitrophenol	0.235	0.210	10.6	96	0.00
62	T,P	2,4-Dinitrotoluene	0.419	0.395	5.7	111	0.00
63	T,P	Dibenzofuran	1.907	1.844	3.3	117	0.00
64	T	2,3,5,6-Tetrachlorophenol	0.372	0.355	4.6	113	0.00
65	T	2,3,4,6-Tetrachlorophenol	0.503	0.415	17.5	104	0.00
66	T	2,3,5-Trimethylnaphthalene	1.134	1.040	8.3	110	0.00
67	T	Diethylphthalate	1.453	1.503	-3.4	124	0.00
68	T,P	Fluorene	1.446	1.381	4.5	116	0.00
69	T,P	4-Chlorophenyl-phenylether	0.797	0.713	10.5	110	0.00
70	T	4-Nitroaniline	0.310	0.281	9.4	96	0.00
71	I	Phenanthrene-d10	1.000	1.000	0.0	103	0.00
72	T	4,6-Dinitro-2-methylphenol	0.114	0.148	-29.8#	119	0.00
73	C	N-Nitrosodiphenylamine	0.575	0.616	-7.1	112	0.00
74	T	Azobenzene	0.634	0.732	-15.5	121	0.00
75	S	2,4,6-Tribromophenol	0.139	0.144	-3.6	105	0.00
76	T,P	4-Bromophenyl-phenylether	0.267	0.287	-7.5	101	0.00
77	T,P	Hexachlorobenzene	0.273	0.284	-4.0	110	0.00
78	C,P	Pentachlorophenol	0.159	0.190	-19.5	115	0.00
79	T	Dibenzothiophene	1.050	1.180	-12.4	112	0.00
80	T,P	Phenanthrene	1.061	1.102	-3.9	107	0.00
81	T	Dinoseb	0.000	0.000#	0.0	0#	0.00
82	T,P	Anthracene	1.064	1.098	-3.2	106	0.00
83	T	Carbazole	0.869	0.966	-11.2	109	0.00
84	T	Di-n-butylphthalate	1.071	1.185	-10.6	109	0.00
85	T	1-Methylphenanthrene	0.792	0.802	-1.3	101	0.00
86	C,P	Fluoranthene	1.209	1.243	-2.8	101	0.00
87	I	Chrysene-d12	1.000	1.000	0.0	90	0.00
88	T	Benzidine	0.000	0.000#	0.0	0#	0.00
89	T,P	Pyrene	1.167	1.262	-8.1	101	0.00
90	S	Terphenyl-d14	0.868	0.261	69.9#	28#	0.00
91	T	Butylbenzylphthalate	0.415	0.471	-13.5	102	0.00
92	T	bis(2-ethylhexyl)adipate	0.322	0.380	-18.0	107	0.00
93	T	3,3'-Dichlorobenzidine	0.397	0.449	-13.1	97	0.00
94	T,P	Benzo(a)anthracene	1.119	1.182	-5.6	96	0.00
95	T,P	Chrysene	1.066	1.106	-3.8	94	0.00
96	T	bis(2-Ethylhexyl)phthalate	0.628	0.711	-13.2	102	0.00
97	I	Perylene-d12	1.000	1.000	0.0	88	0.00

01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A24\RAH205.D Vial: 3
Acq On : 24 Jan 2018 9:53 Operator: KVu
Sample : ISVE7A2202 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	1.079	1.213	-12.4	97	0.00
99	T,P	Benzo(b)fluoranthene	1.125	1.223	-8.7	98	0.00
100	T,P	Benzo(k)fluoranthene	1.097	1.167	-6.4	91	0.00
101	T	Benzo(e)pyrene	1.071	1.108	-3.5	91	0.00
102	C,P	Benzo(a)pyrene	1.050	1.092	-4.0	91	0.00
103	T	Perylene	1.077	1.152	-7.0	94	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	1.218	1.305	-7.1	92	0.00
105	T,P	Dibenzo(a,h)anthracene	1.001	1.092	-9.1	93	0.00
106	T,P	Benzo(g,h,i)perylene	1.026	1.135	-10.6	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

pm 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A24\RAH205.D Vial: 3
Acq On : 24 Jan 2018 9:53 Operator: KVu
Sample : ISVE7A2202 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.816	152	490069	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	1776116	40.00	ppm	0.00
41) Acenaphthene-d10	6.032	164	1159606	40.00	ppm	0.00
71) Phenanthrene-d10	7.774	188	2146564	40.00	ppm	0.00
87) Chrysene-d12	10.548	240	2230983	40.00	ppm	0.00
97) Perylene-d12	11.910	264	2051360	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.901	112	366385	26.74	ppm	0.00
Spiked Amount 30.000			Recovery =	89.13%		
6) Phenol-d5	2.476	99	457678	25.26	ppm	0.00
Spiked Amount 30.000			Recovery =	84.20%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.300	82	151607	8.56	ppm	0.00
Spiked Amount 10.000			Recovery =	85.60%		
46) 2-Fluorobiphenyl	5.234	172	355326	7.15	ppm	0.00
Spiked Amount 10.000			Recovery =	71.50%		
75) 2,4,6-Tribromophenol	6.973	330	193214	25.92	ppm	0.00
Spiked Amount 30.000			Recovery =	86.40%		
90) Terphenyl-d14	9.479	244	364083	7.52	ppm	0.00
Spiked Amount 10.000			Recovery =	75.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.188	88	124977	25.04	ppm	96
3) N-nitrosodimethylamine	1.298	74	185328	23.38	ppm	94
4) Pyridine	1.327	79	388004	26.29	ppm	100
7) Phenol	2.486	94	474984	26.79	ppm	99
8) Aniline	2.549	93	559344	26.58	ppm	99
9) bis(2-chloroethyl)ether	2.580	93	321916	25.35	ppm	99
10) 2-Chlorophenol	2.643	128	434842	27.62	ppm	100
11) 1,3-Dichlorobenzene	2.773	146	469626	25.50	ppm	98
13) 1,4-Dichlorobenzene	2.830	146	475244	25.44	ppm	98
14) Benzyl alcohol	2.907	108	253517	26.68	ppm	96
15) 1,2-Dichlorobenzene	2.960	146	463569	26.04	ppm	100
16) 2-Methylphenol	2.989	107	326534	27.15	ppm	98
17) bis(2-chloroisopropyl)...	3.027	45	553652	24.52	ppm	99
18) 4-Methylphenol	3.123	107	438797	27.82	ppm	99
19) N-Nitroso-di-n-propyla...	3.147	70	309946	26.60	ppm	96
20) Hexachloroethane	3.264	117	179868	24.87	ppm	98
23) Nitrobenzene	3.318	77	463107	27.40	ppm	99
24) Isophorone	3.544	82	816862	25.95	ppm	97
25) 2-Nitrophenol	3.627	139	212601	26.08	ppm	97
26) 2,4-Dimethylphenol	3.646	107	436838	27.10	ppm	98
27) Benzoic acid	3.718	105	307508	26.71	ppm	92
28) bis(2-Chloroethoxy)met...	3.752	93	441323	25.25	ppm	98
29) 3,5-Dimethylphenol	3.780	107	488220	25.68	ppm	93
30) 2,4-Dichlorophenol	3.862	162	385307	27.22	ppm	96
31) 1,2,4-Trichlorobenzene	3.959	180	474876	26.86	ppm	100
32) 3,4-Dimethylphenol	3.959	107	555127	27.47	ppm	100
33) Naphthalene	4.045	128	1164250	26.55	ppm	100
34) 4-Chloroaniline	4.094	127	474792	26.04	ppm	98
35) 2,6-Dichlorophenol	4.103	162	388225	26.49	ppm	99
36) Hexachlorobutadiene	4.171	225	341441	27.05	ppm	98

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A24\RAH205.D
Acq On : 24 Jan 2018 9:53
Sample : ISVE7A2202
Misc : ICV
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 3
Operator: KVu
Inst : E7
Multiplr: 1.00

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38)	4-Chloro-3-methylphenol	4.620	107	353134	26.72	ppm		98
39)	2-Methylnaphthalene	4.806	142	805366	25.74	ppm		98
40)	1-Methylnaphthalene	4.921	142	765967	25.79	ppm		98
42)	Hexachlorocyclopentadiene	4.988	237	335296	22.03	ppm		97
43)	2,3,5-Trichlorophenol	4.993	196	332297	23.32	ppm		96
44)	2,4,6-Trichlorophenol	5.128	196	347602	23.80	ppm		98
45)	2,4,5-Trichlorophenol	5.162	196	370341	24.76	ppm		97
47)	2,3,4-Trichlorophenol	5.239	196	329629	23.14	ppm		86
48)	Biphenyl	5.350	154	1072994	22.52	ppm		99
49)	2-Chloronaphthalene	5.369	162	850872	23.19	ppm		99
50)	2-Nitroaniline	5.489	65	249713	24.00	ppm		99
51)	2,6-Dimethylnaphthalene	5.532	156	772935	22.96	ppm		97
52)	1,4-Dinitrobenzene	5.661	168	130275	24.55	ppm		89
53)	Dimethylphthalate	5.719	163	998797	23.17	ppm		99
54)	1,3-Dinitrobenzene	5.748	168	141295	23.46	ppm		98
55)	2,6-Dinitrotoluene	5.787	165	219802	24.08	ppm		96
56)	1,2-Dinitrobenzene	5.845	168	92293	25.69	ppm	#	75
57)	Acenaphthylene	5.859	152	1545016	26.57	ppm		97
58)	3-Nitroaniline	5.979	138	211322	23.37	ppm		98
59)	Acenaphthene	6.066	153	915905	24.45	ppm		99
60)	2,4-Dinitrophenol	6.104	184	132474	24.43	ppm		96
61)	4-Nitrophenol	6.176	109	152185	22.36	ppm		97
62)	2,4-Dinitrotoluene	6.267	165	286223	23.58	ppm		99
63)	Dibenzofuran	6.277	168	1336436	24.17	ppm		99
64)	2,3,5,6-Tetrachlorophenol	6.368	230	256997	23.82	ppm		100
65)	2,3,4,6-Tetrachlorophenol	6.420	232	300840	20.62	ppm		100
66)	2,3,5-Trimethylnaphtha...	6.530	170	753980	22.93	ppm		97
67)	Diethylphthalate	6.572	149	1089639	25.86	ppm		100
68)	Fluorene	6.689	166	1000930	23.88	ppm		99
69)	4-Chlorophenyl-phenyle...	6.699	204	517066	22.37	ppm		98
70)	4-Nitroaniline	6.713	138	203818	22.69	ppm		94
72)	4,6-Dinitro-2-methylph...	6.750	198	198398	29.92	ppm		95
73)	N-Nitrosodiphenylamine	6.840	169	826288	26.77	ppm		97
74)	Azobenzene	6.887	77	982513	28.88	ppm		100
76)	4-Bromophenyl-phenylether	7.276	248	385702	26.90	ppm		96
77)	Hexachlorobenzene	7.333	284	381381	26.05	ppm		99
78)	Pentachlorophenol	7.555	266	254481	29.80	ppm		96
79)	Dibenzothiophene	7.659	184	1582715	28.09	ppm		99
80)	Phenanthrene	7.797	178	1478433	25.97	ppm		100
82)	Anthracene	7.856	178	1472998	25.80	ppm		99
83)	Carbazole	8.037	167	1296341	27.79	ppm		100
84)	Di-n-butylphthalate	8.434	149	1590394	27.68	ppm		99
85)	1-Methylphenanthrene	8.468	192	1075748	25.32	ppm		99
86)	Fluoranthene	9.077	202	1667591	25.70	ppm		98
89)	Pyrene	9.313	202	1759347	27.03	ppm		98
91)	Butylbenzylphthalate	9.984	149	656472	28.36	ppm		99
92)	bis(2-ethylhexyl)adipate	10.067	129	529746	29.54	ppm		97
93)	3,3'-Dichlorobenzidine	10.514	252	626638	28.27	ppm		98
94)	Benzo(a)anthracene	10.533	228	1647925	26.39	ppm		98
95)	Chrysene	10.572	228	1542018	25.94	ppm		99
96)	bis(2-Ethylhexyl)phtha...	10.562	149	991937	28.34	ppm		100
98)	Di-n-octylphthalate	11.179	149	1555147	28.09	ppm		99
99)	Benzo(b)fluoranthene	11.544	252	1568309	27.18	ppm		99
100)	Benzo(k)fluoranthene	11.568	252	1495874	26.59	ppm		99
101)	Benzo(e)pyrene	11.802	252	1420020	25.85	ppm		100

Thu 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A24\RAH205.D Vial: 3
Acq On : 24 Jan 2018 9:53 Operator: KVu
Sample : ISVE7A2202 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

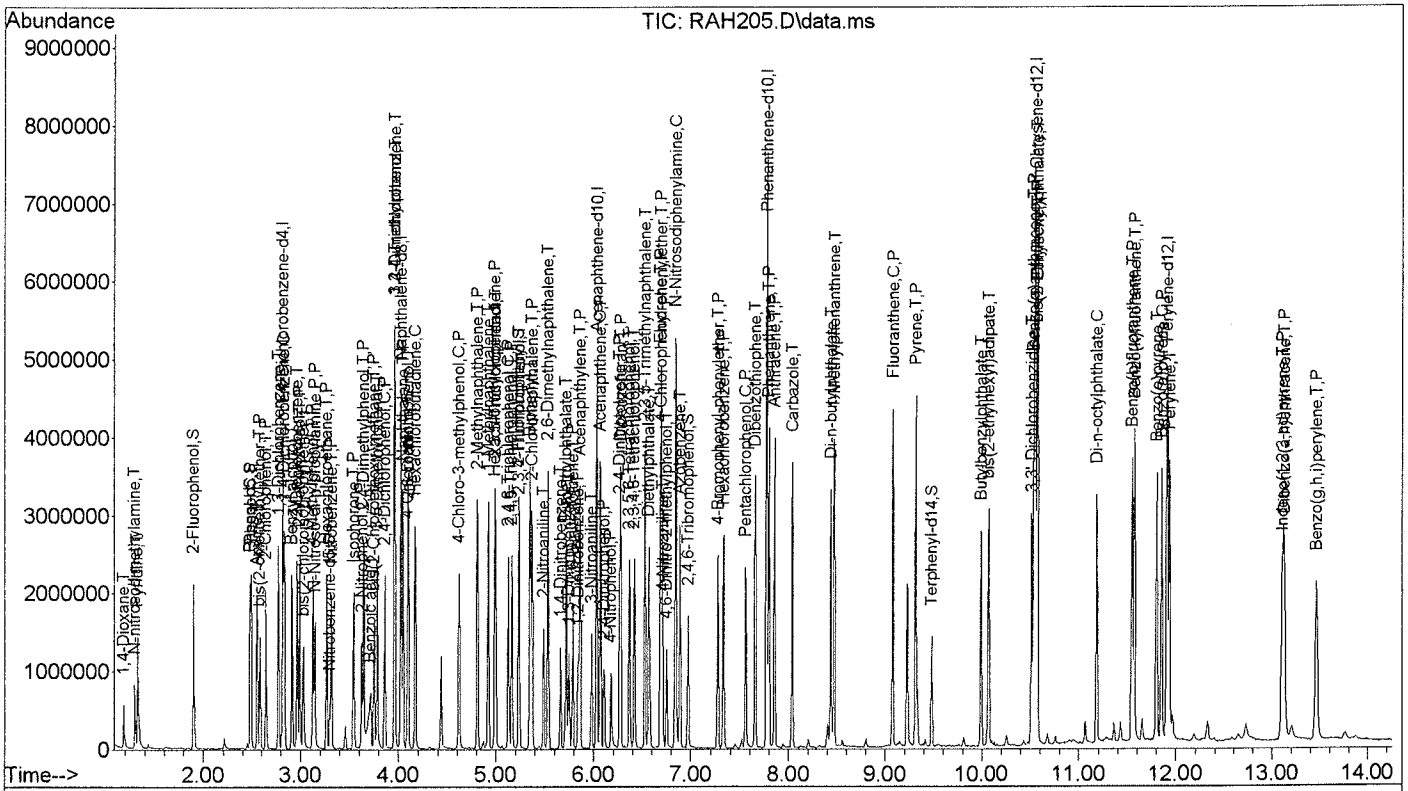
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.853	252	1400173	26.01	ppm	99
103) Perylene	11.933	252	1476430	26.74	ppm	100
104) Indeno(1,2,3-cd)pyrene	13.104	276	1672514	26.78	ppm	97
105) Dibenzo(a,h)anthracene	13.124	278	1399981	27.26	ppm	99
106) Benzo(g,h,i)perylene	13.463	276	1454609	27.65	ppm	99

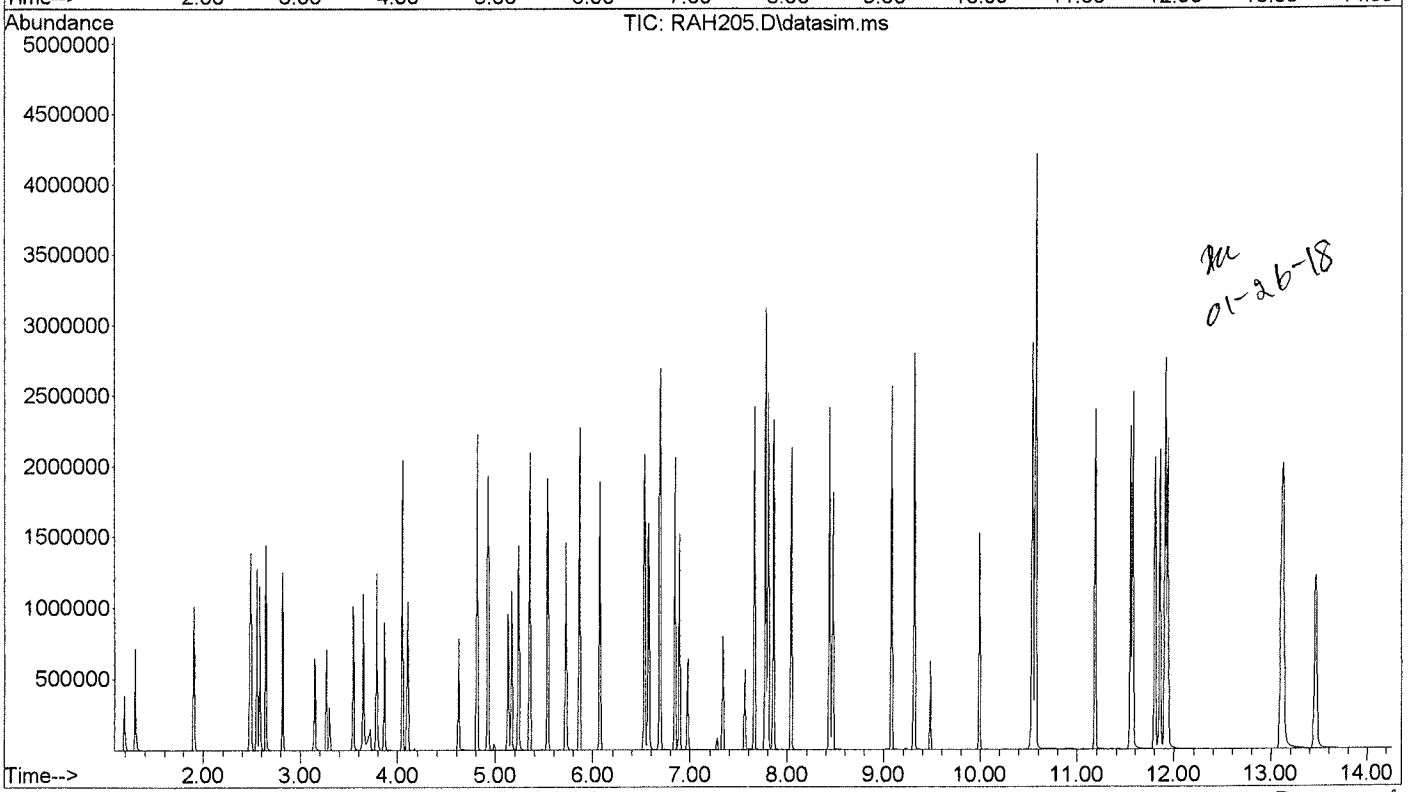
(#) = qualifier out of range (m) = manual integration (+) = signals summed

pw 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A24\RAH205.D Vial: 3
Acq On : 24 Jan 2018 9:53 Operator: KVu
Sample : ISVE7A2202 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 24 10:07:09 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





01-26-18

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc.

Project: JBER TO075

Lab Code: EMAX
SDG No: 18F187

Lab File ID: RFH622
DFPTT Injection Date: 06/29/18

Instrument ID: E7
DFPTT Injection Time: 12:30

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30 - 60% of mass 198	40.778
68	Less than 2% of mass 69	0.724(1.68)1
69	Present(Relative Abundance of mass 69)	43.110
70	Less than 2% of mass 69	0.155(.36)1
127	30 - 60% of mass 198	45.024
197	Less than 1% of mass 198	0.323
198	Base Peak, 100% relative abundance	100.000
199	5 - 9% of mass 198	7.213
275	10 - 30% of mass 198	25.419
365	Greater than 1% of mass 198	2.828
441	Present but less than mass 443	11.977(87.49)3
442	Greater than 40% of mass 198	70.971
443	17 - 23% of mass 442	13.689(19.29)2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD025	CSVE7A2278	RFH623	06/29/18	12:57
2	MBLK1S	SVF043SB	RFH625	06/29/18	13:37
3	LCS1S	SVF043SL	RFH626	06/29/18	13:56
4	LCD1S	SVF043SC	RFH627	06/29/18	14:15
5	18Q2DP009-SB0501-SO-0MS	18F187-07M	RFH628	06/29/18	14:34
6	18Q2DP009-SB0501-SO-0MSD	18F187-07S	RFH629	06/29/18	14:53
7	18Q2DP009-SB0401-SO-0	18F187-01	RFH630	06/29/18	15:12
8	18Q2DP009-SB0401-SO-1	18F187-02	RFH631	06/29/18	15:31
9	18Q2DP009-SB0402-SO-0	18F187-03	RFH632	06/29/18	15:50
10	18Q2DP009-SB0801-SO-0	18F187-04	RFH633	06/29/18	16:09
11	18Q2DP009-SB0802-SO-0	18F187-05	RFH634	06/29/18	16:28
12	18Q2DP009-SB0501-SO-0	18F187-07	RFH635	06/29/18	16:47
13	18Q2DP009-SB0502-SO-0	18F187-08	RFH636	06/29/18	17:06
14	18Q2DP009-SB0701-SO-0	18F187-10	RFH637	06/29/18	17:25
15	18Q2DP009-SB0702-SO-0	18F187-11	RFH638	06/29/18	17:44
16	18Q2DP009-SB0301-SO-0	18F187-12	RFH639	06/29/18	18:03
17	18Q2DP009-SB0602-SO-0	18F187-14	RFH641	06/29/18	18:42
18	18Q2DP009-SB0601-SO-0	18F187-15	RFH642	06/29/18	19:01
19	18Q2DP009-SB0601-SO-1	18F187-16	RFH643	06/29/18	19:20
20	18Q2DP009-IDW-SO01	18F187-17	RFH644	06/29/18	19:39
21	SSTD025	ESVE7A2279	RFH645	06/29/18	19:58

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.
Lab Code: EMAX
Lab File ID: RAH169
Instrument ID: E7

Project: JBER T0075
SDG No: 18F187
Date Analyzed: 01/22/18
Time Analyzed: 15:46

	INTERNAL STANDARD (IS)	1,4-Dichlorobenzene-d4		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10		Chrysene-d12		Perylene-d12	
		Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #
	12 HOUR STD	459657	2.82	1739389	4.03	962917	6.03	2080878	7.77	2467262	10.54	2331017	11.91
	UPPER LIMIT	919314	2.99	3478778	4.20	1925834	6.20	4161756	7.94	4934524	10.71	4662034	12.08
	LOWER LIMIT	229829	2.65	869695	3.86	481459	5.86	1040439	7.60	1233631	10.37	1165509	11.74
		Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #
1	SSTD025	764972	2.81	2843165	4.01	1549686	6.02	3187608	7.77	3562100	10.55	3236416	11.91
2	MBLK1S	493504	2.82	1828500	4.01	1034615	6.01	2131058	7.76	2475376	10.54	2310530	11.90
3	LCS1S	459051	2.82	1647618	4.02	933171	6.01	1871279	7.76	1965365	10.54	1828789	11.90
4	LCD1S	470057	2.82	1722277	4.02	976598	6.02	2002284	7.76	2197577	10.54	2042578	11.90
5	18Q2DP009-SB0501-SO-0MS	493139	2.82	1812670	4.02	1007442	6.01	2215226	7.76	2564080	10.54	2386401	11.90
6	18Q2DP009-SB0501-SO-0MSD	482531	2.82	1785043	4.02	1066211	6.01	2176824	7.76	2506282	10.54	2358841	11.90
7	18Q2DP009-SB0401-SO-0	438649	2.81	1624839	4.01	828673	6.01	1727745	7.76	1811874	10.53	1696911	11.90
8	18Q2DP009-SB0401-SO-1	385274	2.81	1445250	4.01	806043	6.01	1756473	7.76	2083688	10.53	1909891	11.90
9	18Q2DP009-SB0402-SO-0	479498	2.81	1835528	4.01	1016797	6.01	2081995	7.76	2378682	10.53	2099857	11.90
10	18Q2DP009-SB0801-SO-0	471818	2.81	1675652	4.02	924842	6.02	1849682	7.76	2074841	10.53	2059359	11.90
11	18Q2DP009-SB0802-SO-0	433444	2.81	1542001	4.01	825129	6.01	1789137	7.76	1766406	10.53	1587776	11.90
12	18Q2DP009-SB0501-SO-0	451828	2.81	1704381	4.01	1013950	6.01	2176086	7.76	2281099	10.53	2077275	11.90
13	18Q2DP009-SB0502-SO-0	440172	2.81	1731299	4.01	907241	6.01	1889632	7.76	2080878	10.53	1917973	11.90
14	18Q2DP009-SB0701-SO-0	423905	2.81	1559801	4.01	834017	6.01	1814408	7.76	1793449	10.53	1562136	11.90
15	18Q2DP009-SB0702-SO-0	465480	2.81	1778960	4.01	985343	6.01	2118642	7.76	2343185	10.53	2318766	11.90
16	18Q2DP009-SB0301-SO-0	412612	2.81	1516055	4.01	771787	6.01	1589364	7.76	1828749	10.53	1707029	11.90
17	18Q2DP009-SB0602-SO-0	419424	2.81	1500477	4.01	845049	6.01	1676423	7.76	1611235	10.53	1537754	11.90
18	18Q2DP009-SB0601-SO-0	398151	2.81	1436854	4.01	746966	6.01	1492093	7.76	1551648	10.53	1557478	11.90
19	18Q2DP009-SB0601-SO-1	421712	2.81	1593000	4.01	816771	6.01	1628416	7.76	1761374	10.53	1669555	11.90
20	18Q2DP009-IDW-SO01	385604	2.82	1494910	4.01	780079	6.01	1529804	7.76	1593271	10.53	1490792	11.90
21	SSTD025	510856	2.82	1969507	4.02	1121152	6.02	2320423	7.76	2319996	10.54	2053342	11.90

Area Upper Limit = +100% of ICAL Midpoint IS Area
Area Lower Limit = -50% of ICAL Midpoint IS Area
Retention Time(RT) Upper Limit = +10 seconds of of ICAL Midpoint IS RT
Retention Time(RT) Lower Limit = -10 seconds of of ICAL Midpoint IS RT

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC Beginning DateTime :01/22/18 14:31
Spike Amount :25 PPM
CC/CV File :RFH623
IC File :RAH169

Column Spec :ZB-SEMIVOA ID :0.18MM
IC Ending DateTime :01/22/18 16:43
HPChem Method :SVE7A22
Date_Time :06/29/18 12:57

M IDX	Parameters	CC Con	CC% D	CC Resp	CCRRF	AVRRF	CC Rtm	AVRtm	% RSD	Co X0	Co X1	Co X2	Co Cor
1	1,4-Dichlorobenzene-d4	40.000	0	764972	1	1	2.811	2.821	0				
2	1,4-Dioxane	28.133	12.5	219180	0.458	0.407	1.188	1.195	3.88				
3	N-nitrosodimethylamine	28.230	16.9	361709	0.757	0.647	1.303	1.306	3.41				
4	Pyridine	28.559	14.2	657865	1.376	1.205	1.327	1.333	1.50				
5	2-Fluorophenol	27.491	10.0	588004	1.230	1.118	1.906	1.902	2.36				
6	Phenol-d5	29.052	16.2	821743	1.719	1.479	2.486	2.477	1.21				
7	Phenol	28.325	13.3	783884	1.640	1.447	2.497	2.488	1.57				
8	Aniline	28.843	15.4	947550	1.982	1.718	2.549	2.553	1.34				
9	bis(2-chloroethyl)ether	28.426	13.9	564281	1.180	1.036	2.575	2.583	2.50				
10	2-Chlorophenol	25.267	1.1	620862	1.299	1.285	2.643	2.646	6.91				
11	1,3-Dichlorobenzene	25.167	0.7	723393	1.513	1.503	2.768	2.776	1.22				
12	1,2-Dichlorobenzene-d4												
13	1,4-Dichlorobenzene	25.035	0.1	730117	1.527	1.525	2.826	2.835	1.36				
14	Benzyl alcohol	25.646	2.6	380390	0.796	0.776	2.907	2.911	1.66				
15	1,2-Dichlorobenzene	25.985	3.9	721042	1.510	1.453	2.955	2.965	0.53				
16	2-Methylphenol	25.372	1.5	494507	1.034	0.982	2.980	2.989	3.28				
17	bis(2-chloroisopropyl)ether	25.867	3.5	913267	1.909	1.843	3.018	3.028	3.19				
18	4-Methylphenol	25.804	3.2	916664	1.917	1.843	3.128	3.139	3.09				
19	N-Nitroso-di-n-propylamine	25.909	3.6	637880	1.334	1.287	3.126	3.122	1.09				
20	Hexachloroethane	25.725	2.9	467807	0.978	0.951	3.137	3.148	3.12				
21	Naphthalene-d8	25.642	2.6	289453	0.605	0.590	3.255	3.269	1.47				
22	Nitrobenzene-d5	40.000	0	2843165	1	1	4.012	4.026	0				
23	Nitrobenzene	26.917	7.7	762746	0.429	0.399	3.296	3.301	2.36				
24	Isophorone	27.654	11.8	755249	0.426	0.381	3.317	3.320	1.15				
25	2-Nitrophenol	27.224	8.5	1364068	0.768	0.709	3.535	3.544	1.81				
26	2,4-Dimethylphenol	27.074	8.3	376255	0.212	0.184	3.617	3.627	5.75				
27	Benzoic acid	25.030	0.1	645784	0.363	0.363	3.641	3.647	1.61				
28	bis(2-Chloroethoxy)methane	21.877	-12.5	403255	0.227	0.259	3.737	3.720	13.40				
29	2,4-Dichlorophenol	25.887	3.5	724188	0.408	0.394	3.742	3.753	6.27				
30	3,5-Dimethylphenol	26.601	6.4	809405	0.455	0.428	3.785	3.783	0.93				
31	2,4-Dichlorophenol	24.623	-1.5	557073	0.314	0.319	3.822	3.862	3.64				
32	1,2,4-Trichlorobenzene	23.382	-6.5	661732	0.372	0.388	3.947	3.965	2.18				
33	3,4-Dimethylphenol	26.268	5.1	849612	0.478	0.455	3.958	3.960	2.03				
34	Naphthalene	25.005	0.0	1755321	0.988	0.988	4.036	4.048	1.51				
35	4-Chloroaniline	25.145	0.6	733805	0.413	0.411	4.089	4.096	1.60				
36	2,6-Dichlorophenol	24.401	-2.4	572533	0.322	0.330	4.094	4.104	1.42				
37	Hexachlorobutadiene	23.834	-4.7	481561	0.271	0.284	4.156	4.175	1.72				
38	Hydroquinone												
39	4-Chloro-3-methylphenol	26.006	4.0	550256	0.310	0.298	4.624	4.618	3.17				
40	2-Methylnaphthalene	26.642	6.6	1334589	0.751	0.705	4.797	4.810	1.34				
41	1-Methylnaphthalene	23.944	-4.2	1138247	0.641	0.669	4.907	4.921	1.64				
42	Acenaphthene-d10	40.000	0	1549686	1	1	6.018	6.028	0				
43	Hexachlorocyclopentadiene	21.319	-14.7	433591	0.448	0.525	4.969	4.988	8.36				
44	2,3,5-Trichlorophenol	21.368	-14.5	406905	0.420	0.492	4.998	4.996	4.42				
45	2,4,6-Trichlorophenol	21.978	-12.1	428031	0.443	0.504	5.118	5.127	2.51				
46	2,4,5-Trichlorophenol	21.896	-12.4	437640	0.452	0.516	5.166	5.162	4.48				
47	2-Fluorobiphenyl	22.863	-8.5	1517651	1.567	1.713	5.220	5.234	6.27				
48	2,3,4-Trichlorophenol	20.107	-19.6	382698	0.395	0.491	5.239	5.238	5.74				
49	Biphenyl	24.211	-3.2	1541471	1.592	1.643	5.335	5.350	2.34				
50	2-Chloronaphthalene	24.052	-3.8	1179555	1.218	1.266	5.359	5.371	1.39				
51	2-Nitroaniline	27.176	8.7	377857	0.390	0.359	5.784	5.789	5.60				
52	2,6-Dimethylnaphthalene	24.756	-1.0	1134492	1.150	1.161	5.524	5.534	2.31				
53	1,4-Dinitrobenzene	25.471	1.9	180663	0.187	0.183	5.661	5.661	7.07				
54	Dimethylphthalate	23.732	-5.1	1367066	1.411	1.487	5.710	5.719	1.35				
55	1,3-Dinitrobenzene	24.434	-2.3	196632	0.203	0.208	5.748	5.747	1.26				
56	2,6-Dinitrotoluene	23.506	-6.0	286705	0.296	0.315	5.777	5.785	2.57				
57	1,2-Dinitrobenzene	27.897	11.6	133925	0.138	0.124	5.840	5.841	4.16				
58	Acenaphthylene	25.020	0.1	1993829	2.059	2.006	5.850	5.859	5.95				
59	3-Nitroaniline	25.710	2.8	310688	0.321	0.312	5.979	5.967	3.08				
60	Acenaphthene	24.174	-3.3	1210030	1.249	1.292	6.056	6.067	2.67				
61	2,4-Dinitrophenol	27.243	9.0	199048	0.206	0.173	6.109	6.105	18.12	-0.0089	0.2017		0.9998
62	4-Nitrophenol	27.607	10.4	251155	0.259	0.235	6.209	6.176	10.86				
63	2,4-Dinitrotoluene	25.496	2.0	413617	0.427	0.419	6.262	6.265	2.56				
64	Dibenzofuran	24.285	-2.9	1794331	1.853	1.907	6.262	6.275	0.93				
65	2,3,5,6-Tetrachlorophenol	23.128	-7.5	333727	0.344	0.372	6.363	6.368	4.89				
66	2,3,4,6-Tetrachlorophenol	21.332	-14.7	415917	0.429	0.505	6.416	6.420	8.88				
67	2,3,5-Trimethylnaphthalene	27.055	8.2	1188633	1.227	1.134	6.516	6.529	2.37				
68	Diethylphthalate	25.259	1.0	1422318	1.468	1.453	6.558	6.571	1.91				
69	Fluorene	24.232	-3.1	1357332	1.401	1.446	6.675	6.688	2.87				
70	4-Chlorophenyl-phenylether	24.446	-2.2	755126	0.780	0.797	6.685	6.698	1.75				
71	4-Nitroaniline	24.212	-3.2	290678	0.300	0.310	6.717	6.710	9.54				
72	Phenanthrene-d10	40.000	0	3187608	1	1	7.765	7.771	0				
73	4,6-Dinitro-2-methylphenol	28.430	13.7	279176	0.140	0.114	6.735	6.751	15.97	-0.0050	0.1302		0.9995
74	N-Nitrosodiphenylamine	28.814	15.3	1320740	0.663	0.575	6.830	6.840	2.18				
75	Azobenzene	27.798	11.2	1404134	0.705	0.634	6.873	6.887	1.42				
76	2,4,6-Tribromophenol	22.887	-8.5	253342	0.127	0.139	6.963	6.971	5.49				
77	4-Bromophenyl-phenylether	25.334	1.3	539324	0.271	0.267	7.262	7.272	9.45				
78	Hexachlorobenzene	25.709	2.8	787102	0.394	0.373	7.324	7.329	1.08				
79	Pentachlorophenol	22.203	-11.5	281578	0.141	0.158	7.575	7.554	9.22				
80	Dibenzothiophene	26.837	7.3	2243268	1.127	1.050	7.643	7.622	3.33				
81	Phenanthrene	24.798	-0.8	2096345	1.052	1.061	7.788	7.797	0.52				
82	Dinoseb												
83	Anthracene	25.424	1.7	2155211	1.082	1.064	7.847	7.854	2.26				
84	Carbazole	26.654	6.6	1846041	0.927	0.869	8.033	8.035	4.73				
85	Di-n-butylphthalate	27.460	9.8	2342867	1.176	1.071	8.420	8.433	5.00				
86	1-Methylphenanthrene	26.327	5.3	1660889	0.834	0.792	8.763	8.768	2.55				
87	Fluoranthene	26.805	7.2	2582638	1.296	1.209	9.072	9.073	5.38				
88	Chrysene-d12	40.000	0	3562100	1	1	10.547	10.543	0				
89	Benzidine												
90	Pyrene	25.129	0.5	2611308	1.173	1.167	9.308	9.309	2.37				
91	Terphenyl-d14	25.250	1.0	1951026	0.876	0.868	9.470	9.479	2.38				
92	Butylbenzylphthalate	27.880	11.5	1030411	0.463	0.415	9.976	9.984	4.92				
93	bis(2-ethylhexyl)adipate	27.615	10.5	790529	0.355	0.322	10.054	10.064	6.20				
94	3,3'-Dichlorobenzidine	27.507	10.0	973367	0.437	0.397	10.509	10.509	6.31				
95	Benzo(a)anthracene	24.066	-3.7	2392046	1.078	1.119	10.533	10.531	0.41				
96	Chrysene	23.528	-5.9	2232715	1.003	1.066	10.572	10.568	0.56				
97	bis(2-Ethylhexyl)phthalate	25.912	3.6	1448098	0.650	0.628	10.552	10.562	5.36				
98	Perylene-d12	40.000	0	3236416	1	1	11.914	11.906	0				
99	Di-n-octylphthalate	29.124	16.5	2543710	1.258	1.079	11.169	11.178	7.90				
100	Benzo(b)fluoranthene	26.131	4.5	2378452	1.176	1.125	11.553	11.542	4.39				
101	Benzo(k)fluoranthene	26.279	4.9	2327052	1.150	1.067	11.577	11.568	4.82				
102	Benzo(e)pyrene	25.945	3.8	2248668	1.112	1.071	11.806	11.800	2.67				
103	Benzo(a)pyrene	26.227	4.9	2227437	1.101	1.050	11.858	11.859	4.25				
104	Perylene	24.470	-2.1	2131419	1.054	1.077	11.942	11.932	3.16				
105	Indeno(1,2,3-cd)pyrene	25.939	3.8	2555796	1.264	1.218	13.118	13.100	5.29				
106	Dibenzo(a,h)anthracene	26.393	5.6	2138667	1.057	1.001	13.128	13.120	6.48				
	Benzo(g,h,i)perylene	24.881	-0.5	2064898	1.021	1.026	13.477	13.458	4.66				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC Beginning DateTime :01/22/18 14:31
Sptke Amount :25 PPM
CC/CV File :RFH645
IC File :RAH169

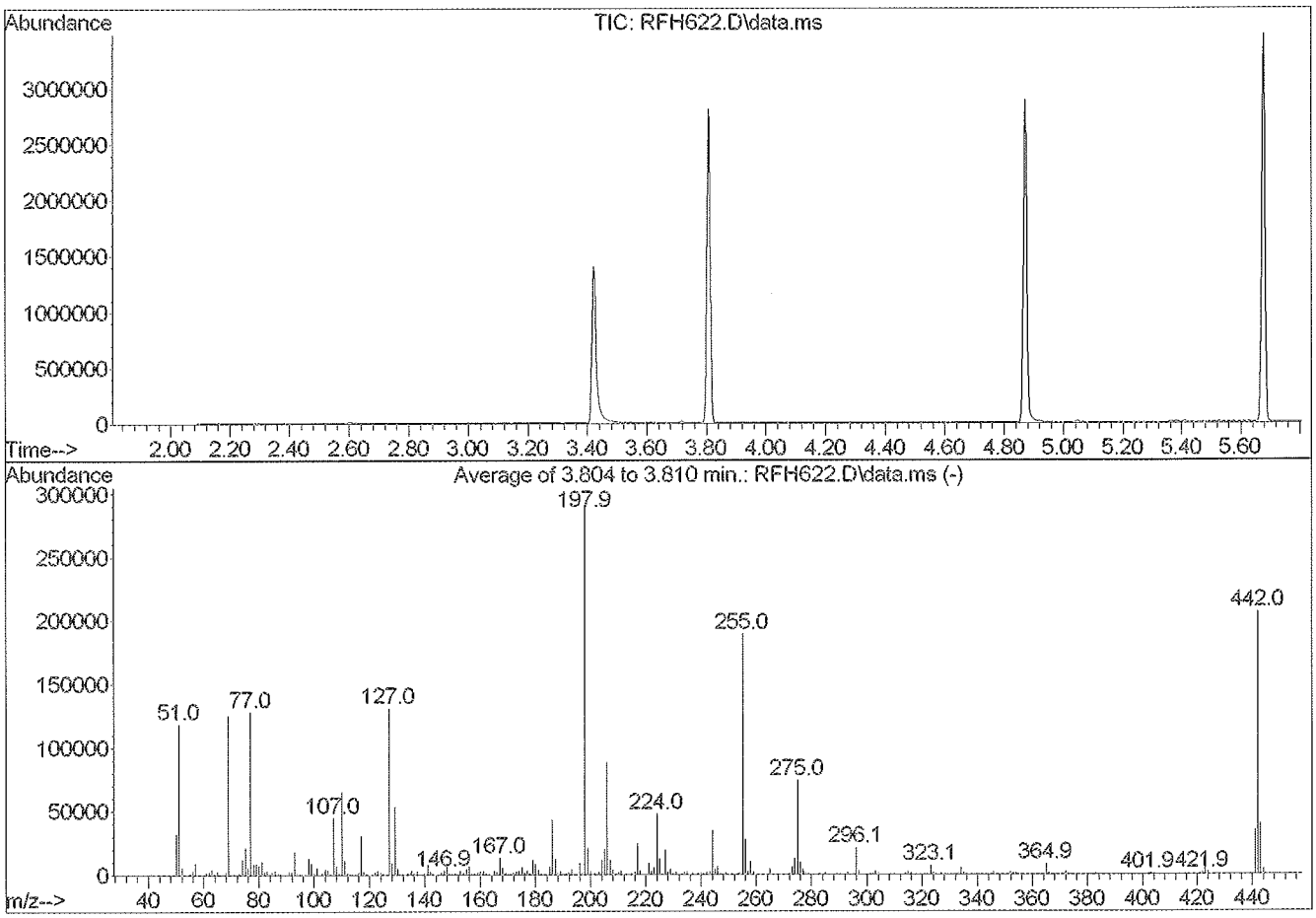
Column Spec :ZB-SEMIVOA ID :0.18MM
IC Ending DateTime :01/22/18 16:43
HPChem Method :SVE7A22
Date_Time :06/29/18 19:58

M IDX	Parameters	CC Con	CC% D	CC Resp	CCRRF	AvRRF	CC Rtm	AvRtm	% RSD	Co X0	Co X1	Co X2	Co Cor
1	1,4-Dichlorobenzene-d4	40.000	0	510856	1	1	2.816	2.821	0				
2	1,4-Dioxane	23.406	-6.4	121779	0.381	0.407	1.188	1.195	3.88				
3	N-nitrosodimethylamine	24.374	-2.5	201430	0.631	0.647	1.303	1.306	3.41				
4	Pyridine	24.869	-1.3	379280	1.189	1.205	1.331	1.333	1.20				
5	2-Fluorophenol	24.988	-0.0	356226	1.118	1.118	1.911	1.902	2.56				
6	Phenol-d5	26.141	4.6	493798	1.547	1.479	2.489	2.477	1.21				
7	Phenol	25.150	0.6	464815	1.456	1.447	2.497	2.488	1.57				
8	Aniline	26.061	4.2	571757	1.791	1.718	2.549	2.553	1.34				
9	bis(2-chloroethyl)ether	25.490	2.0	337404	1.057	1.036	2.580	2.583	2.50				
10	2-Chlorophenol	24.646	-1.4	404434	1.267	1.285	2.648	2.646	6.91				
11	1,3-Dichlorobenzene	23.819	-4.7	457218	1.432	1.503	2.768	2.776	1.22				
12	1,2-Dichlorobenzene-d4												
13	1,4-Dichlorobenzene	22.930	-8.3	446580	1.399	1.525	2.826	2.835	1.36				
14	Benzyl alcohol	23.317	-6.7	230953	0.723	0.776	2.907	2.911	1.66				
15	1,2-Dichlorobenzene	23.470	-6.1	435460	1.364	1.453	2.955	2.965	0.53				
16	2-Methylphenol	25.839	-4.6	298865	0.936	0.982	2.993	2.989	3.28				
17	bis(2-chloroisopropyl)ether	24.213	-3.1	569835	1.785	1.843	3.018	3.028	3.19				
18	4-Methylphenol	24.320	-2.7	322852	1.012	1.087	3.133	3.125	1.09				
19	N-Nitroso-di-n-propylamine	24.486	-2.1	297365	0.931	0.951	3.137	3.146	3.16				
20	Hexachloroethane	24.992	-0.0	188398	0.590	0.590	3.255	3.269	1.47				
21	Naphthalene-d8	40.000	0	1969507	1	1	4.016	4.026	0				
22	Nitrobenzene-d5	24.552	-1.8	481940	0.392	0.399	3.296	3.301	2.36				
23	Nitrobenzene	25.317	1.3	474438	0.385	0.381	3.314	3.320	1.15				
24	Isophorone	23.272	-6.8	812203	0.660	0.709	3.535	3.544	1.81				
25	2-Nitrophenol	23.137	-7.5	205153	0.170	0.184	3.622	3.627	5.72				
26	2,4-Dimethylphenol	23.353	-6.6	417375	0.339	0.363	3.646	3.647	1.61				
27	Benzoic acid	22.379	-10.5	285746	0.232	0.259	3.727	3.720	13.40				
28	bis(2-Chloroethoxy)methane	23.480	-6.1	455009	0.370	0.394	3.747	3.753	6.27				
29	3,5-Dimethylphenol	24.347	-2.6	513189	0.417	0.428	3.785	3.783	0.93				
30	2,4-Dichlorophenol	23.089	-7.8	362418	0.294	0.319	3.862	3.862	3.64				
31	1,2,4-Trichlorobenzene	21.902	-12.4	429381	0.349	0.398	3.957	3.962	2.18				
32	3,4-Dimethylphenol	23.682	-5.3	550250	0.431	0.455	3.958	3.960	2.03				
33	Naphthalene	22.837	-8.7	1110508	0.902	0.988	4.036	4.048	1.51				
34	4-Chloroaniline	21.900	-12.4	442721	0.360	0.411	4.089	4.096	1.60				
35	2,6-Dichlorophenol	22.592	-9.6	367212	0.298	0.330	4.098	4.104	1.42				
36	Hexachlorobutadiene	22.438	-10.2	314049	0.255	0.284	4.161	4.175	1.72				
37	Hydroquinone												
38	4-Chloro-3-methylphenol	24.155	-3.4	354044	0.288	0.298	4.624	4.618	3.17				
39	2-Methylnaphthalene	23.237	-7.1	806351	0.655	0.705	4.797	4.810	1.34				
40	1-Methylnaphthalene	22.839	-8.6	752095	0.611	0.669	4.907	4.921	1.64				
41	Acenaphthene-d10	40.000	0	1121152	1	1	6.018	6.028	0				
42	Hexachlorocyclopentadiene	18.253	-27.0	268572	0.383	0.525	4.969	4.988	8.36				
43	2,3,5-Trichlorophenol	19.660	-21.4	270849	0.387	0.492	5.003	4.996	4.42				
44	2,4,6-Trichlorophenol	20.426	-18.3	288467	0.412	0.504	5.123	5.127	2.51				
45	2,4,5-Trichlorophenol	19.532	-21.8	282435	0.403	0.516	5.162	5.162	4.46				
46	2-Fluorobiphenyl	21.452	-14.2	1030226	1.470	1.713	5.220	5.234	6.22				
47	2,3,4-Trichlorophenol	20.693	-17.2	284942	0.407	0.491	5.232	5.238	5.74				
48	Biphenyl	22.484	-10.1	1035634	1.478	1.643	5.335	5.350	2.34				
49	2-Chloronaphthalene	22.706	-9.2	805619	1.150	1.266	5.359	5.371	1.39				
50	2-Nitroaniline	24.288	-2.8	244287	0.349	0.359	5.484	5.489	5.60				
51	2,6-Dimethylnaphthalene	23.832	-8.7	742698	1.060	1.161	5.522	5.534	2.31				
52	1,4-Dinitrobenzene	25.046	-11.8	113130	0.161	0.183	5.661	5.661	7.07				
53	Dimethylphthalate	22.021	-11.9	917714	1.310	1.487	5.705	5.712	1.35				
54	1,3-Dinitrobenzene	20.733	-17.1	120710	0.172	0.208	5.748	5.747	1.56				
55	2,6-Dinitrotoluene	21.544	-13.8	190104	0.271	0.315	5.777	5.785	2.57				
56	1,2-Dinitrobenzene	24.221	-3.1	84123	0.120	0.124	5.835	5.841	4.16				
57	Acenaphthylene	20.784	-16.9	1168430	1.667	2.006	5.845	5.859	5.95				
58	3-Nitroaniline	21.753	-13.0	190237	0.271	0.312	5.975	5.979	3.08				
59	Acenaphthene	22.903	-8.4	826583	1.184	1.292	6.058	6.067	2.67				
60	2,4-Dinitrophenol	17.951	-28.2	91478	0.131	0.173	6.109	6.105	18.12	-0.0089	0.2017		0.9998
61	4-Nitrophenol	21.797	-12.8	143462	0.205	0.235	6.209	6.176	10.86				
62	2,4-Dinitrotoluene	22.462	-10.2	263628	0.376	0.419	6.262	6.265	2.56				
63	Dibenzofuran	21.873	-12.5	1169215	1.669	1.907	6.262	6.275	0.93				
64	2,3,5,6-Tetrachlorophenol	20.758	-17.0	216518	0.309	0.372	6.363	6.368	4.89				
65	2,3,4,6-Tetrachlorophenol	19.422	-22.0	274842	0.392	0.503	6.416	6.420	8.88				
66	2,3,5-Trimethylnaphthalene	25.670	2.7	812912	1.164	1.134	6.518	6.529	2.37				
67	Diethylphthalate	22.763	-8.9	927351	1.323	1.453	6.528	6.571	1.21				
68	Fluorene	21.757	-13.0	881722	1.258	1.446	6.675	6.688	2.87				
69	4-Chlorophenyl-phenylether	22.306	-10.8	498487	0.711	0.797	6.680	6.698	1.75				
70	4-Nitroaniline	19.877	-20.5	172643	0.246	0.310	6.713	6.710	9.54				
71	Phenanthrene-d10	40.000	0	2320433	1	1	7.761	7.771	0				
72	4,6-Dinitro-2-methylphenol	22.663	-1.3	174173	0.121	0.114	6.750	6.751	15.97	-0.0050	0.1302		0.9995
73	N-Nitrosodiphenylamine	25.611	2.4	854572	0.592	0.575	6.826	6.840	2.18				
74	Azobenzene	26.243	5.0	964944	0.665	0.634	6.873	6.887	1.46				
75	2,4,6-Tribromophenol	21.445	-14.2	172806	0.119	0.139	6.963	6.971	5.42				
76	4-Bromophenyl-phenylether	22.795	-8.8	353247	0.244	0.267	7.257	7.272	9.45				
77	Hexachlorobenzene	21.349	-14.6	337811	0.233	0.273	7.319	7.329	1.08				
78	Pentachlorophenol	18.143	-27.4	167490	0.115	0.159	7.555	7.554	9.22				
79	Dibenzothiophene	23.577	-5.6	1432253	0.988	1.050	7.645	7.655	5.35				
80	Phenanthrene	22.172	-11.3	1364425	0.941	1.061	7.788	7.797	0.52				
81	Dinoseb												
82	Anthracene	22.312	-10.8	1376832	0.949	1.064	7.842	7.854	2.26				
83	Carbazole	22.567	-9.7	1137805	0.785	0.869	8.028	8.035	4.73				
84	Di-n-butylphthalate	27.125	8.5	1684706	1.162	1.071	8.415	8.433	5.00				
85	1-Methylphenanthrene	22.360	-10.6	1026895	0.708	0.792	8.459	8.468	2.55				
86	Fluoranthene	25.178	-11.3	1555612	1.073	1.209	9.067	9.075	5.39				
87	Chrysene-d12	40.000	0	2319996	1	1	10.538	10.543	0				
88	Benzidine												
89	Pyrene	23.267	-6.9	1574732	1.086	1.167	9.303	9.309	2.37				
90	Terphenyl-d14	23.443	-6.2	1179768	0.814	0.868	9.466	9.479	2.38				
91	Butylbenzylphthalate	27.331	9.3	657894	0.454	0.415	9.971	9.984	4.92				
92	bis(2-ethylhexyl)adipate	27.082	8.3	505011	0.348	0.322	10.045	10.064	6.20				
93	3,3'-Dichlorobenzidine	25.726	-2.9	563125	0.388	0.367	10.499	10.509	6.31				
94	Benzo(a)anthracene	23.267	-6.7	1470954	1.014	1.119	10.527	10.531	0.71				
95	Chrysene	22.656	-9.4	1348430	0.930	1.066	10.563	10.568	0.26				
96	bis(2-Ethylhexyl)phthalate	21.817	-12.7	966271	0.666	0.628	10.543	10.562	5.36				
97	Perylene-d12	26.548	6.2	2053342	1	1	11.900	11.906	0				
98	Di-n-octylphthalate	40.000	0	1525222	1.188	1.079	11.160	11.178	7.90				
99	Benzo(b)fluoranthene	27.524	10.1	1254885	0.978	1.125	11.539	11.542	4.39				
100	Benzo(k)fluoranthene	21.730	-13.1	1289558	1.005	1.097	11.563	11.568	4.82				
101	Benzo(e)pyrene	22.601	-8.4	1278286	0.973	1.071	11.792	11.800	2.67				
102	Benzo(a)pyrene	22.701	-8.2	1240362	0.962	1.050	11.847	11.850	2.25				
103	Perylene	23.019	-7.9	1254743	0.978	1.077	11.824	11.832	4.63				
104	Indeno(1,2,3-cd)pyrene	22.705	-9.2	1377268	1.073	1.218	13.099	13.100	5.29				
105	Dibenzo(a,h)anthracene	22.032	-11.9	1165445	0.908	1.001	13.109	13.120	6.48				
106	Benzo(g,h,i)perylene	22.670	-9.3	1165972	0.909	1.026	13.459	13.458	4.66				
		22.144	-11.4										

Data Path : D:\DATA\18F29\
Data File : RFH622.D
Acq On : 29 Jun 2018 12:30
Operator : RZh
Sample : DFTE7A2278
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPP.M
Title : DFTPP
Last Update : Tue Jan 23 12:56:03 2018



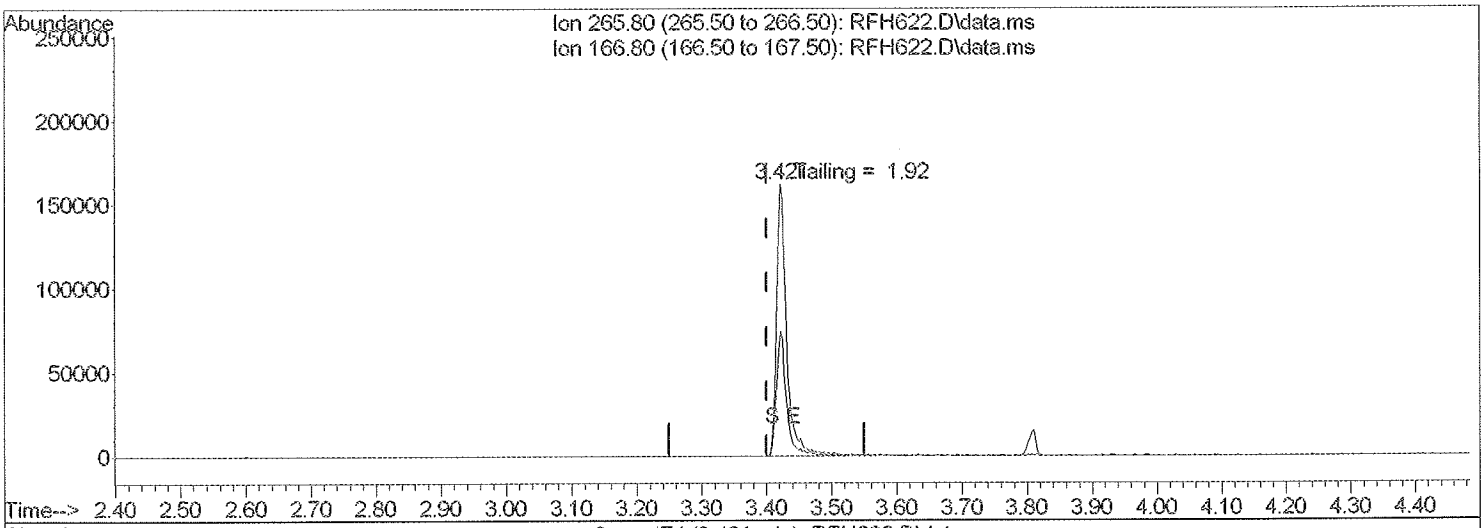
AutoFind: Scans 610, 611, 612; Background Corrected with Scan 601

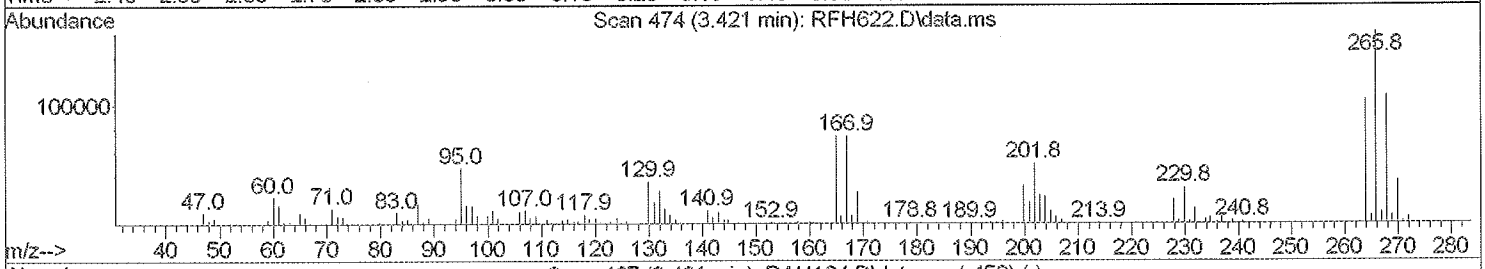
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	40.8	118433	PASS
68	69	0.00	2	1.7	2103	PASS
69	198	0.00	100	43.1	125205	PASS
70	69	0.00	2	0.4	450	PASS
127	198	40	60	45.0	130765	PASS
197	198	0.00	1	0.3	937	PASS
198	198	100	100	100.0	290432	PASS
199	198	5	9	7.2	20949	PASS
275	198	10	30	25.4	73824	PASS
365	198	1	100	2.8	8213	PASS
441	443	0.01	100	87.5	34784	PASS
442	198	40	100	71.0	206123	PASS
443	442	17	23	19.3	39757	PASS

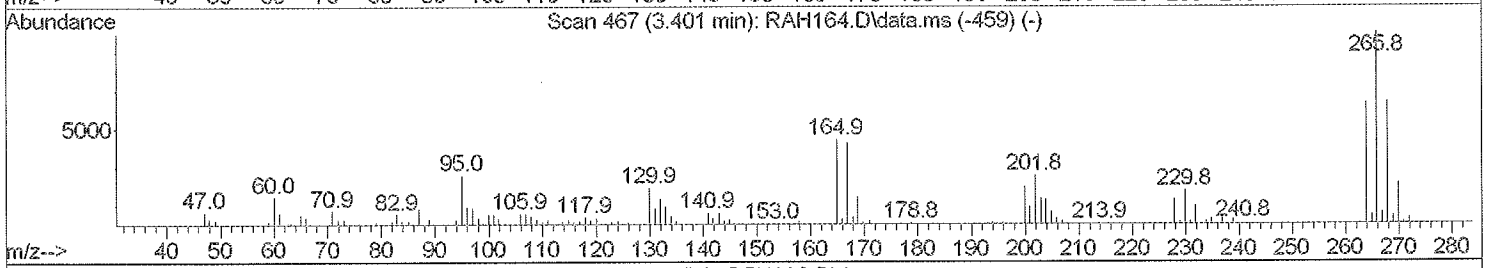
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH622.D
Acq On : 29 Jun 2018 12:30
Sample : DFTE7A2278
Misc :
Integrator: RTE
Quant Time: Jul 06 13:50:42 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH622.D\data.ms

(1) Pentachlorophenol (T)

3.421min (+0.020) 52.28 ppm

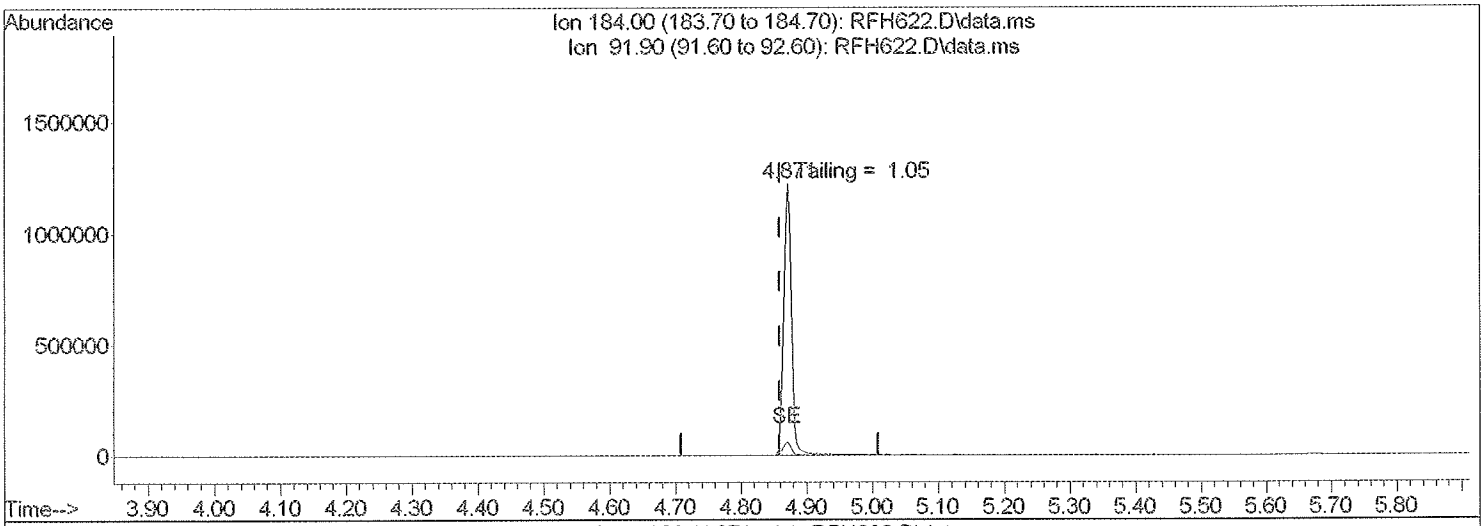
response 170499

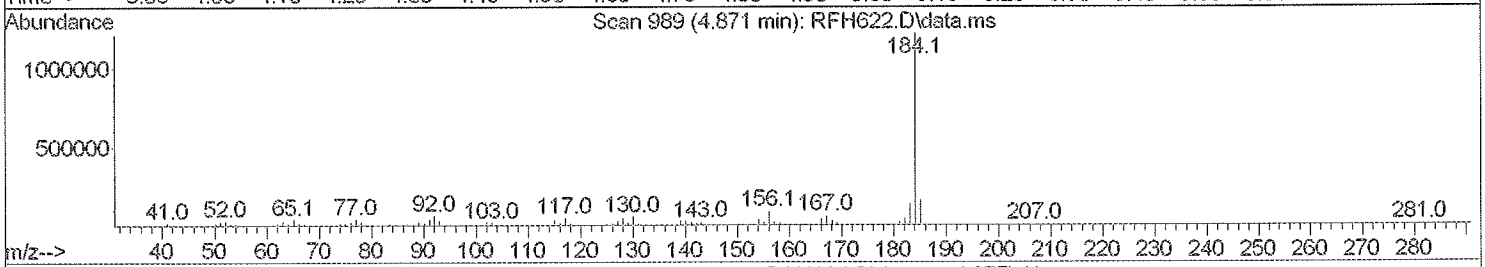
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	45.75
0.00	0.00	0.00
0.00	0.00	0.00

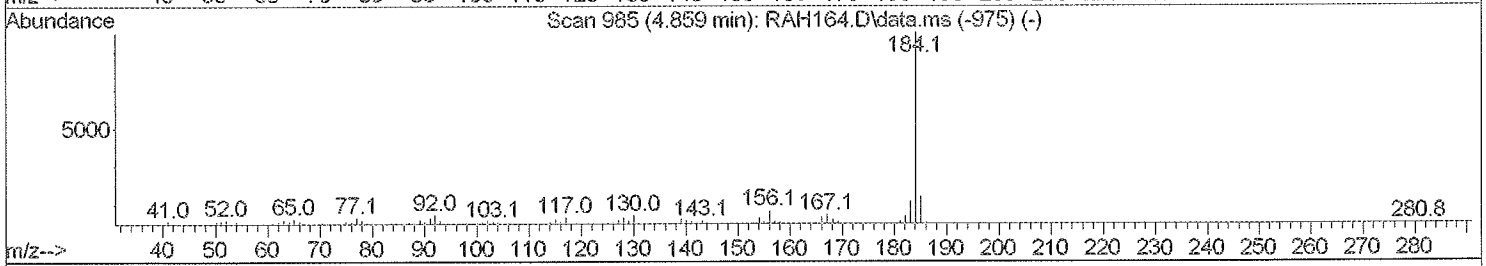
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH622.D
Acq On : 29 Jun 2018 12:30
Sample : DFTE7A2278
Misc :
Integrator: RTE
Quant Time: Jul 06 13:50:42 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH622.D\data.ms

(3) Benzidine (T)

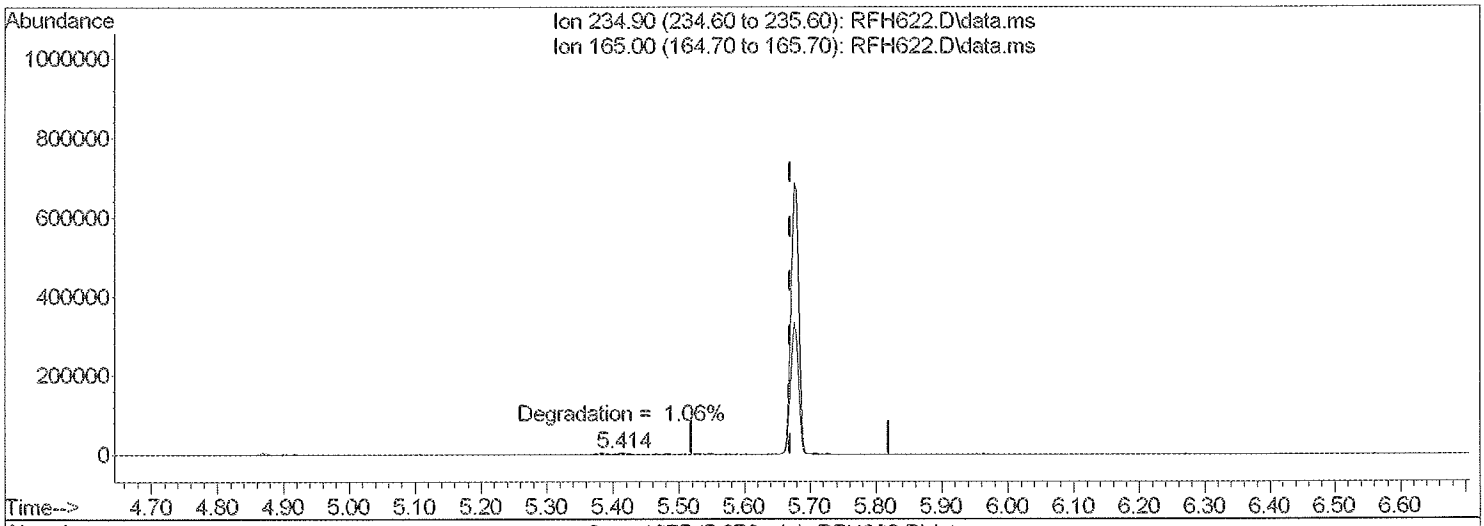
4.871min (+0.011) 63.87 ppm

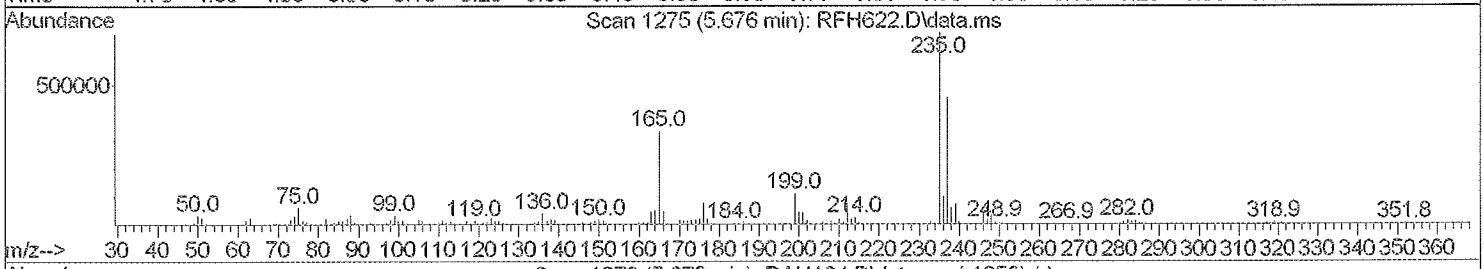
response 973416

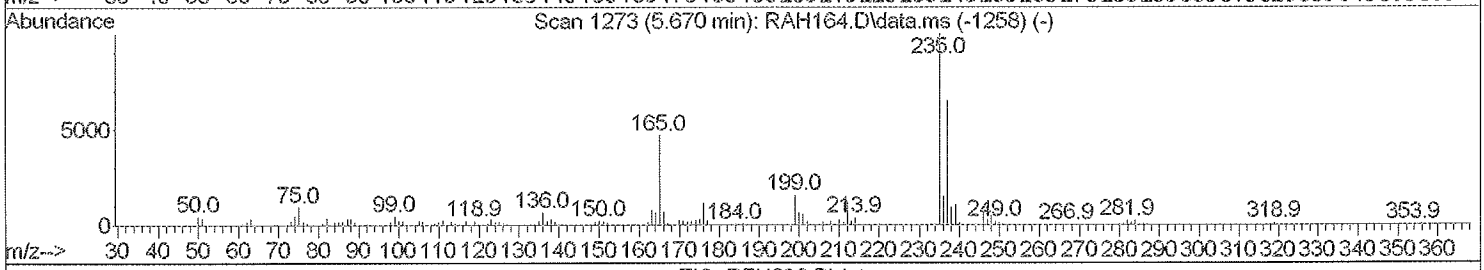
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	4.84
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH622.D Vial: 2
Acq On : 29 Jun 2018 12:30 Operator: RZh
Sample : DFTE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:50:42 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M







TIC: RFH622.D\data.ms

(6) DDT (T)

5.676min (+0.006) 57.73 ppm

response 550214

Ion	Exp%	Act%
234.90	100	100
165.00	47.00	48.38
0.00	0.00	0.00
0.00	0.00	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	166	0.00
2	T	1,4-Dioxane	25.000	28.133	-12.5	190	0.00
3	T	N-nitrosodimethylamine	25.000	29.229	-16.9	189	0.00
4	T	Pyridine	25.000	28.558	-14.2	186	0.00
5	S	2-Fluorophenol	25.000	27.491	-10.0	177	0.00
6	S	Phenol-d5	25.000	29.051	-16.2	191	0.01
7	C,P	Phenol	25.000	28.325	-13.3	186	0.01
8	T	Aniline	25.000	28.843	-15.4	188	0.00
9	T,P	bis(2-chloroethyl)ether	25.000	28.469	-13.9	187	-0.01
10	T,P	2-Chlorophenol	25.000	25.266	-1.1	158	0.00
11	T	1,3-Dichlorobenzene	25.000	25.167	-0.7	164	0.00
12	S	1,2-Dichlorobenzene-d4	25.000	0.000	100.0#	0	-2.99#
13	C	1,4-Dichlorobenzene	25.000	25.035	-0.1	165	0.00
14	T	Benzyl alcohol	25.000	25.646	-2.6	171	0.00
15	T	1,2-Dichlorobenzene	25.000	25.985	-3.9	172	0.00
16	T,P	2-Methylphenol	25.000	26.342	-5.4	174	0.00
17	T	bis(2-chloroisopropyl)ether	25.000	25.894	-3.6	170	0.00
18	T,P	4-Methylphenol	25.000	25.909	-3.6	172	0.00
19	P,P	N-Nitroso-di-n-propylamine	25.000	25.725	-2.9	165	0.00
20	T,P	Hexachloroethane	25.000	25.643	-2.6	169	-0.01
21	I	Naphthalene-d8	40.000	40.000	0.0	163	-0.01
22	S	Nitrobenzene-d5	25.000	26.917	-7.7	176	0.00
23	T,P	Nitrobenzene	25.000	27.954	-11.8	181	0.00
24	T,P	Isophorone	25.000	27.074	-8.3	182	0.00
25	C,P	2-Nitrophenol	25.000	28.871	-15.5	198	0.00
26	T,P	2,4-Dimethylphenol	25.000	25.030	-0.1	163	0.00
27	T	Benzoic acid	25.000	21.877	12.5	140	0.02
28	T,P	bis(2-Chloroethoxy)methane	25.000	25.887	-3.5	177	-0.01
29	T	3,5-Dimethylphenol	25.000	26.601	-6.4	175	0.00
30	C,P	2,4-Dichlorophenol	25.000	24.623	1.5	162	0.00
31	T	1,2,4-Trichlorobenzene	25.000	23.382	6.5	152	-0.01
32	T	3,4-Dimethylphenol	25.000	26.268	-5.1	172	0.00
33	T.P	Naphthalene	25.000	25.005	-0.0	163	-0.01
34	T	4-Chloroaniline	25.000	25.145	-0.6	162	-0.01
35	T	2,6-Dichlorophenol	25.000	24.401	2.4	158	0.00
36	C	Hexachlorobutadiene	25.000	23.834	4.7	155	-0.02
37	T	Hydroquinone	25.000	0.000	100.0#	0	0.00
38	C,P	4-Chloro-3-methylphenol	25.000	26.006	-4.0	171	0.00
39	T,P	2-Methylnaphthalene	25.000	26.642	-6.6	177	-0.01
40	T	1-Methylnaphthalene	25.000	23.944	4.2	160	-0.01
41	I	Acenaphthene-d10	40.000	40.000	0.0	161	0.00
42	P	Hexachlorocyclopentadiene	25.000	21.319	14.7	130	-0.02
43	T	2,3,5-Trichlorophenol	25.000	21.368	14.5	138	0.00
44	C,P	2,4,6-Trichlorophenol	25.000	21.978	12.1	138	0.00
45	T,P	2,4,5-Trichlorophenol	25.000	21.896	12.4	142	0.00
46	S	2-Fluorobiphenyl	25.000	22.863	8.5	139	-0.01
47	T	2,3,4-Trichlorophenol	25.000	20.107	19.6	138	0.00
48	T	Biphenyl	25.000	24.211	3.2	155	-0.01
49	T,P	2-Chloronaphthalene	25.000	24.052	3.8	154	-0.01

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	25.000	27.179	-8.7	175	0.00
51	T	2,6-Dimethylnaphthalene	25.000	24.756	1.0	158	-0.01
52	T	1,4-Dinitrobenzene	25.000	25.471	-1.9	161	0.00
53	T	Dimethylphthalate	25.000	23.732	5.1	154	0.00
54	T	1,3-Dinitrobenzene	25.000	24.434	2.3	161	0.00
55	T,P	2,6-Dinitrotoluene	25.000	23.506	6.0	149	0.00
56	T	1,2-Dinitrobenzene	25.000	27.897	-11.6	173	0.00
57	T,P	Acenaphthylene	25.000	25.659	-2.6	158	0.00
58	T	3-Nitroaniline	25.000	25.710	-2.8	157	0.00
59	C,P	Acenaphthene	25.000	24.174	3.3	154	0.00
60	P	2,4-Dinitrophenol	25.000	27.243	-9.0	172	0.00
61	P	4-Nitrophenol	25.000	27.607	-10.4	159	0.03
62	T,P	2,4-Dinitrotoluene	25.000	25.496	-2.0	161	0.00
63	T,P	Dibenzofuran	25.000	24.285	2.9	157	-0.01
64	T	2,3,5,6-Tetrachlorophenol	25.000	23.128	7.5	146	0.00
65	T	2,3,4,6-Tetrachlorophenol	25.000	21.332	14.7	143	0.00
66	T	2,3,5-Trimethylnaphthalene	25.000	27.055	-8.2	174	-0.01
67	T	Diethylphthalate	25.000	25.259	-1.0	162	-0.01
68	T,P	Fluorene	25.000	24.232	3.1	157	-0.01
69	T,P	4-Chlorophenyl-phenylether	25.000	24.446	2.2	160	-0.01
70	T	4-Nitroaniline	25.000	24.212	3.2	137	0.00
71	I	Phenanthrene-d10	40.000	40.000	0.0	153	0.00
72	T	4,6-Dinitro-2-methylphenol	25.000	28.430	-13.7	168	0.00
73	C	N-Nitrosodiphenylamine	25.000	28.814	-15.3	178	0.00
74	T	Azobenzene	25.000	27.798	-11.2	172	-0.01
75	S	2,4,6-Tribromophenol	25.000	22.887	8.5	137	0.00
76	T,P	4-Bromophenyl-phenylether	25.000	25.334	-1.3	142	0.00
77	T,P	Hexachlorobenzene	25.000	22.409	10.4	140	0.00
78	C,P	Pentachlorophenol	25.000	22.203	11.2	127	0.00
79	T	Dibenzothiophene	25.000	26.837	-7.3	159	0.00
80	T,P	Phenanthrene	25.000	24.798	0.8	152	0.00
81	T	Dinoseb	25.000	0.000	100.0#	0	0.00
82	T,P	Anthracene	25.000	25.424	-1.7	154	0.00
83	T	Carbazole	25.000	26.654	-6.6	155	0.00
84	T	Di-n-butylphthalate	25.000	27.460	-9.8	160	-0.01
85	T	1-Methylphenanthrene	25.000	26.327	-5.3	156	0.00
86	C,P	Fluoranthene	25.000	26.805	-7.2	157	0.00
87	I	Chrysene-d12	40.000	40.000	0.0	144	0.00
88	T	Benzidine	25.000	0.000	100.0#	0	0.00
89	T,P	Pyrene	25.000	25.129	-0.5	150	0.00
90	S	Terphenyl-d14	25.000	25.250	-1.0	150	0.00
91	T	Butylbenzylphthalate	25.000	27.880	-11.5	160	0.00
92	T	bis(2-ethylhexyl)adipate	25.000	27.614	-10.5	160	0.00
93	T	3,3'-Dichlorobenzidine	25.000	27.507	-10.0	151	0.00
94	T,P	Benzo(a)anthracene	25.000	24.066	3.7	139	0.00
95	T,P	Chrysene	25.000	23.528	5.9	137	0.00
96	T	bis(2-Ethylhexyl)phthalate	25.000	25.912	-3.6	149	0.00
97	I	Perylene-d12	40.000	40.000	0.0	139	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	25.000	29.124	-16.5	159	-0.01
99	T,P	Benzo(b)fluoranthene	25.000	26.131	-4.5	149	0.00
100	T,P	Benzo(k)fluoranthene	25.000	26.219	-4.9	141	0.00
101	T	Benzo(e)pyrene	25.000	25.945	-3.8	144	0.00
102	C,P	Benzo(a)pyrene	25.000	26.227	-4.9	144	0.00
103	T	Perylene	25.000	24.470	2.1	136	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	25.000	25.939	-3.8	140	0.01
105	T,P	Dibenzo(a,h)anthracene	25.000	26.393	-5.6	142	0.00
106	T,P	Benzo(g,h,i)perylene	25.000	24.880	0.5	135	0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	166	0.00
2	T	1,4-Dioxane	0.407	0.458	-12.5	190	0.00
3	T	N-nitrosodimethylamine	0.647	0.757	-17.0	189	0.00
4	T	Pyridine	1.205	1.376	-14.2	186	0.00
5	S	2-Fluorophenol	1.118	1.230	-10.0	177	0.00
6	S	Phenol-d5	1.479	1.719	-16.2	191	0.01
7	C,P	Phenol	1.447	1.640	-13.3	186	0.01
8	T	Aniline	1.718	1.982	-15.4	188	0.00
9	T,P	bis(2-chloroethyl)ether	1.036	1.180	-13.9	187	-0.01
10	T,P	2-Chlorophenol	1.285	1.299	-1.1	158	0.00
11	T	1,3-Dichlorobenzene	1.503	1.513	-0.7	164	0.00
12	S	1,2-Dichlorobenzene-d4	0.000	0.000#	0.0	0#	-2.99#
13	C	1,4-Dichlorobenzene	1.525	1.527	-0.1	165	0.00
14	T	Benzyl alcohol	0.776	0.796	-2.6	171	0.00
15	T	1,2-Dichlorobenzene	1.453	1.510	-3.9	172	0.00
16	T,P	2-Methylphenol	0.982	1.034	-5.3	174	0.00
17	T	bis(2-chloroisopropyl)ether	1.843	1.909	-3.6	170	0.00
18	T,P	4-Methylphenol	1.287	1.334	-3.7	172	0.00
19	P,P	N-Nitroso-di-n-propylamine	0.951	0.978	-2.8	165	0.00
20	T,P	Hexachloroethane	0.590	0.605	-2.5	169	-0.01
21	I	Naphthalene-d8	1.000	1.000	0.0	163	-0.01
22	S	Nitrobenzene-d5	0.399	0.429	-7.5	176	0.00
23	T,P	Nitrobenzene	0.381	0.426	-11.8	181	0.00
24	T,P	Isophorone	0.709	0.768	-8.3	182	0.00
25	C,P	2-Nitrophenol	0.184	0.212	-15.2	198	0.00
26	T,P	2,4-Dimethylphenol	0.363	0.363	0.0	163	0.00
27	T	Benzoic acid	0.259	0.227	12.4	140	0.02
28	T,P	bis(2-Chloroethoxy)methane	0.394	0.408	-3.6	177	-0.01
29	T	3,5-Dimethylphenol	0.428	0.455	-6.3	175	0.00
30	C,P	2,4-Dichlorophenol	0.319	0.314	1.6	162	0.00
31	T	1,2,4-Trichlorobenzene	0.398	0.372	6.5	152	-0.01
32	T	3,4-Dimethylphenol	0.455	0.478	-5.1	172	0.00
33	T.P	Naphthalene	0.988	0.988	0.0	163	-0.01
34	T	4-Chloroaniline	0.411	0.413	-0.5	162	-0.01
35	T	2,6-Dichlorophenol	0.330	0.322	2.4	158	0.00
36	C	Hexachlorobutadiene	0.284	0.271	4.6	155	-0.02
37	T	Hydroquinone	0.000	0.000#	0.0	0#	0.00
38	C,P	4-Chloro-3-methylphenol	0.298	0.310	-4.0	171	0.00
39	T,P	2-Methylnaphthalene	0.705	0.751	-6.5	177	-0.01
40	T	1-Methylnaphthalene	0.669	0.641	4.2	160	-0.01
41	I	Acenaphthene-d10	1.000	1.000	0.0	161	0.00
42	P	Hexachlorocyclopentadiene	0.525	0.448	14.7	130	-0.02
43	T	2,3,5-Trichlorophenol	0.492	0.420	14.6	138	0.00
44	C,P	2,4,6-Trichlorophenol	0.504	0.443	12.1	138	0.00
45	T,P	2,4,5-Trichlorophenol	0.516	0.452	12.4	142	0.00
46	S	2-Fluorobiphenyl	1.713	1.567	8.5	139	-0.01
47	T	2,3,4-Trichlorophenol	0.491	0.395	19.6	138	0.00
48	T	Biphenyl	1.643	1.592	3.1	155	-0.01
49	T,P	2-Chloronaphthalene	1.266	1.218	3.8	154	-0.01

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	0.359	0.390	-8.6	175	0.00
51	T	2,6-Dimethylnaphthalene	1.161	1.150	0.9	158	-0.01
52	T	1,4-Dinitrobenzene	0.183	0.187	-2.2	161	0.00
53	T	Dimethylphthalate	1.487	1.411	5.1	154	0.00
54	T	1,3-Dinitrobenzene	0.208	0.203	2.4	161	0.00
55	T,P	2,6-Dinitrotoluene	0.315	0.296	6.0	149	0.00
56	T	1,2-Dinitrobenzene	0.124	0.138	-11.3	173	0.00
57	T,P	Acenaphthylene	2.006	2.059	-2.6	158	0.00
58	T	3-Nitroaniline	0.312	0.321	-2.9	157	0.00
59	C,P	Acenaphthene	1.292	1.249	3.3	154	0.00
60	P	2,4-Dinitrophenol	0.173	0.206	-19.1	172	0.00
61	P	4-Nitrophenol	0.235	0.259	-10.2	159	0.03
62	T,P	2,4-Dinitrotoluene	0.419	0.427	-1.9	161	0.00
63	T,P	Dibenzofuran	1.907	1.853	2.8	157	-0.01
64	T	2,3,5,6-Tetrachlorophenol	0.372	0.344	7.5	146	0.00
65	T	2,3,4,6-Tetrachlorophenol	0.503	0.429	14.7	143	0.00
66	T	2,3,5-Trimethylnaphthalene	1.134	1.227	-8.2	174	-0.01
67	T	Diethylphthalate	1.453	1.468	-1.0	162	-0.01
68	T,P	Fluorene	1.446	1.401	3.1	157	-0.01
69	T,P	4-Chlorophenyl-phenylether	0.797	0.780	2.1	160	-0.01
70	T	4-Nitroaniline	0.310	0.300	3.2	137	0.00
71	I	Phenanthrene-d10	1.000	1.000	0.0	153	0.00
72	T	4,6-Dinitro-2-methylphenol	0.114	0.140	-22.8#	168	0.00
73	C	N-Nitrosodiphenylamine	0.575	0.663	-15.3	178	0.00
74	T	Azobenzene	0.634	0.705	-11.2	172	-0.01
75	S	2,4,6-Tribromophenol	0.139	0.127	8.6	137	0.00
76	T,P	4-Bromophenyl-phenylether	0.267	0.271	-1.5	142	0.00
77	T,P	Hexachlorobenzene	0.273	0.244	10.6	140	0.00
78	C,P	Pentachlorophenol	0.159	0.141	11.3	127	0.00
79	T	Dibenzothiophene	1.050	1.127	-7.3	159	0.00
80	T,P	Phenanthrene	1.061	1.052	0.8	152	0.00
81	T	Dinoseb	0.000	0.000#	0.0	0#	0.00
82	T,P	Anthracene	1.064	1.082	-1.7	154	0.00
83	T	Carbazole	0.869	0.927	-6.7	155	0.00
84	T	Di-n-butylphthalate	1.071	1.176	-9.8	160	-0.01
85	T	1-Methylphenanthrene	0.792	0.834	-5.3	156	0.00
86	C,P	Fluoranthene	1.209	1.296	-7.2	157	0.00
87	I	Chrysene-d12	1.000	1.000	0.0	144	0.00
88	T	Benzidine	0.000	0.000#	0.0	0#	0.00
89	T,P	Pyrene	1.167	1.173	-0.5	150	0.00
90	S	Terphenyl-d14	0.868	0.876	-0.9	150	0.00
91	T	Butylbenzylphthalate	0.415	0.463	-11.6	160	0.00
92	T	bis(2-ethylhexyl)adipate	0.322	0.355	-10.2	160	0.00
93	T	3,3'-Dichlorobenzidine	0.397	0.437	-10.1	151	0.00
94	T,P	Benzo(a)anthracene	1.119	1.078	3.7	139	0.00
95	T,P	Chrysene	1.066	1.003	5.9	137	0.00
96	T	bis(2-Ethylhexyl)phthalate	0.628	0.650	-3.5	149	0.00
97	I	Perylene-d12	1.000	1.000	0.0	139	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	1.079	1.258	-16.6	159	-0.01
99	T,P	Benzo(b)fluoranthene	1.125	1.176	-4.5	149	0.00
100	T,P	Benzo(k)fluoranthene	1.097	1.150	-4.8	141	0.00
101	T	Benzo(e)pyrene	1.071	1.112	-3.8	144	0.00
102	C,P	Benzo(a)pyrene	1.050	1.101	-4.9	144	0.00
103	T	Perylene	1.077	1.054	2.1	136	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	1.218	1.264	-3.8	140	0.01
105	T,P	Dibenzo(a,h)anthracene	1.001	1.057	-5.6	142	0.00
106	T,P	Benzo(g,h,i)perylene	1.026	1.021	0.5	135	0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.811	152	764972	40.00	ppm	0.00
21) Naphthalene-d8	4.012	136	2843165	40.00	ppm	-0.01
41) Acenaphthene-d10	6.018	164	1549686	40.00	ppm	0.00
71) Phenanthrene-d10	7.765	188	3187608	40.00	ppm	0.00
87) Chrysene-d12	10.547	240	3562100	40.00	ppm	0.00
97) Perylene-d12	11.914	264	3236416	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.906	112	588004	27.49	ppm	0.00
Spiked Amount 30.000			Recovery =	91.63%		
6) Phenol-d5	2.486	99	821743	29.05	ppm	0.01
Spiked Amount 30.000			Recovery =	96.83%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	762746	26.92	ppm	0.00
Spiked Amount 10.000			Recovery =	269.20%		
46) 2-Fluorobiphenyl	5.220	172	1517651	22.86	ppm	-0.01
Spiked Amount 10.000			Recovery =	228.60%		
75) 2,4,6-Tribromophenol	6.963	330	253342	22.89	ppm	0.00
Spiked Amount 30.000			Recovery =	76.30%		
90) Terphenyl-d14	9.470	244	1951026	25.25	ppm	0.00
Spiked Amount 10.000			Recovery =	252.50%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.188	88	219180	28.13	ppm	97
3) N-nitrosodimethylamine	1.303	74	361709	29.23	ppm	91
4) Pyridine	1.327	79	657865	28.56	ppm	98
7) Phenol	2.497	94	783884	28.32	ppm	96
8) Aniline	2.549	93	947550	28.84	ppm	96
9) bis(2-chloroethyl)ether	2.575	93	564281	28.47	ppm	98
10) 2-Chlorophenol	2.643	128	620865	25.27	ppm	90
11) 1,3-Dichlorobenzene	2.768	146	723393	25.17	ppm	98
13) 1,4-Dichlorobenzene	2.826	146	730117	25.04	ppm	97
14) Benzyl alcohol	2.907	108	380390	25.65	ppm	92
15) 1,2-Dichlorobenzene	2.955	146	721942	25.99	ppm	100
16) 2-Methylphenol	2.989	107	494507	26.34	ppm	96
17) bis(2-chloroisopropyl)...	3.018	45	912664	25.89	ppm	100
18) 4-Methylphenol	3.128	107	637880	25.91	ppm	94
19) N-Nitroso-di-n-propyla...	3.137	70	467807	25.72	ppm	96
20) Hexachloroethane	3.255	117	289453	25.64	ppm	91
23) Nitrobenzene	3.314	77	756249	27.95	ppm	94
24) Isophorone	3.535	82	1364068	27.07	ppm	94
25) 2-Nitrophenol	3.617	139	376750	28.87	ppm	93
26) 2,4-Dimethylphenol	3.641	107	645784	25.03	ppm	90
27) Benzoic acid	3.737	105	403255	21.88	ppm	92
28) bis(2-Chloroethoxy)met...	3.742	93	724188	25.89	ppm	99
29) 3,5-Dimethylphenol	3.785	107	809405	26.60	ppm	98
30) 2,4-Dichlorophenol	3.862	162	557943	24.62	ppm	97
31) 1,2,4-Trichlorobenzene	3.949	180	661732	23.38	ppm	97
32) 3,4-Dimethylphenol	3.959	107	849612	26.27	ppm	97
33) Naphthalene	4.036	128	1755321	25.01	ppm	100
34) 4-Chloroaniline	4.089	127	733805	25.15	ppm	99
35) 2,6-Dichlorophenol	4.094	162	572533	24.40	ppm	96
36) Hexachlorobutadiene	4.156	225	481561	23.83	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38)	4-Chloro-3-methylphenol	4.624	107	550256	26.01	ppm	90
39)	2-Methylnaphthalene	4.797	142	1334589	26.64	ppm	85
40)	1-Methylnaphthalene	4.907	142	1138247	23.94	ppm	97
42)	Hexachlorocyclopentadiene	4.969	237	433591	21.32	ppm	98
43)	2,3,5-Trichlorophenol	4.998	196	406905	21.37	ppm	100
44)	2,4,6-Trichlorophenol	5.118	196	429031	21.98	ppm	96
45)	2,4,5-Trichlorophenol	5.166	196	437640	21.90	ppm	97
47)	2,3,4-Trichlorophenol	5.239	196	382698	20.11	ppm	83
48)	Biphenyl	5.335	154	1541471	24.21	ppm	100
49)	2-Chloronaphthalene	5.359	162	1179555	24.05	ppm	98
50)	2-Nitroaniline	5.484	65	377854	27.18	ppm	100
51)	2,6-Dimethylnaphthalene	5.522	156	1113492	24.76	ppm	96
52)	1,4-Dinitrobenzene	5.661	168	180663	25.47	ppm	90
53)	Dimethylphthalate	5.710	163	1367066	23.73	ppm	98
54)	1,3-Dinitrobenzene	5.748	168	196632	24.43	ppm	90
55)	2,6-Dinitrotoluene	5.777	165	286705	23.51	ppm	94
56)	1,2-Dinitrobenzene	5.840	168	133925	27.90	ppm	90
57)	Acenaphthylene	5.850	152	1993829	25.66	ppm	100
58)	3-Nitroaniline	5.979	138	310688	25.71	ppm	89
59)	Acenaphthene	6.056	153	1210030	24.17	ppm	95
60)	2,4-Dinitrophenol	6.109	184	199048	27.24	ppm	90
61)	4-Nitrophenol	6.209	109	251155	27.61	ppm	88
62)	2,4-Dinitrotoluene	6.262	165	413617	25.50	ppm	91
63)	Dibenzofuran	6.262	168	1794331	24.29	ppm	95
64)	2,3,5,6-Tetrachlorophenol	6.363	230	333444	23.13	ppm	97
65)	2,3,4,6-Tetrachlorophenol	6.416	232	415917	21.33	ppm	98
66)	2,3,5-Trimethylnaphtha...	6.516	170	1188633	27.05	ppm	95
67)	Diethylphthalate	6.558	149	1422318	25.26	ppm	99
68)	Fluorene	6.675	166	1357332	24.23	ppm	96
69)	4-Chlorophenyl-phenyle...	6.684	204	755126	24.45	ppm	99
70)	4-Nitroaniline	6.717	138	290678	24.21	ppm	90
72)	4,6-Dinitro-2-methylph...	6.755	198	279176	28.43	ppm	90
73)	N-Nitrosodiphenylamine	6.830	169	1320740	28.81	ppm	89
74)	Azobenzene	6.873	77	1404134	27.80	ppm	99
76)	4-Bromophenyl-phenylether	7.262	248	539324	25.33	ppm	96
77)	Hexachlorobenzene	7.323	284	487102	22.41	ppm	98
78)	Pentachlorophenol	7.555	266	281578	22.20	ppm	93
79)	Dibenzothiophene	7.645	184	2245288	26.84	ppm	100
80)	Phenanthrene	7.788	178	2096345	24.80	ppm	100
82)	Anthracene	7.847	178	2155211	25.42	ppm	99
83)	Carbazole	8.033	167	1846041	26.65	ppm	99
84)	Di-n-butylphthalate	8.420	149	2342867	27.46	ppm	100
85)	1-Methylphenanthrene	8.463	192	1660889	26.33	ppm	96
86)	Fluoranthene	9.072	202	2582638	26.80	ppm	99
89)	Pyrene	9.308	202	2611308	25.13	ppm	100
91)	Butylbenzylphthalate	9.976	149	1030411	27.88	ppm	97
92)	bis(2-ethylhexyl)adipate	10.054	129	790626	27.61	ppm	93
93)	3,3'-Dichlorobenzidine	10.508	252	973567	27.51	ppm	99
94)	Benzo(a)anthracene	10.533	228	2399046	24.07	ppm	92
95)	Chrysene	10.572	228	2232715	23.53	ppm	98
96)	bis(2-Ethylhexyl)phtha...	10.552	149	1448098	25.91	ppm	98
98)	Di-n-octylphthalate	11.169	149	2543710	29.12	ppm	99
99)	Benzo(b)fluoranthene	11.553	252	2378452	26.13	ppm	98
100)	Benzo(k)fluoranthene	11.577	252	2327052	26.22	ppm	96
101)	Benzo(e)pyrene	11.806	252	2248668	25.95	ppm	97

Quantitation Report (QT Reviewed)

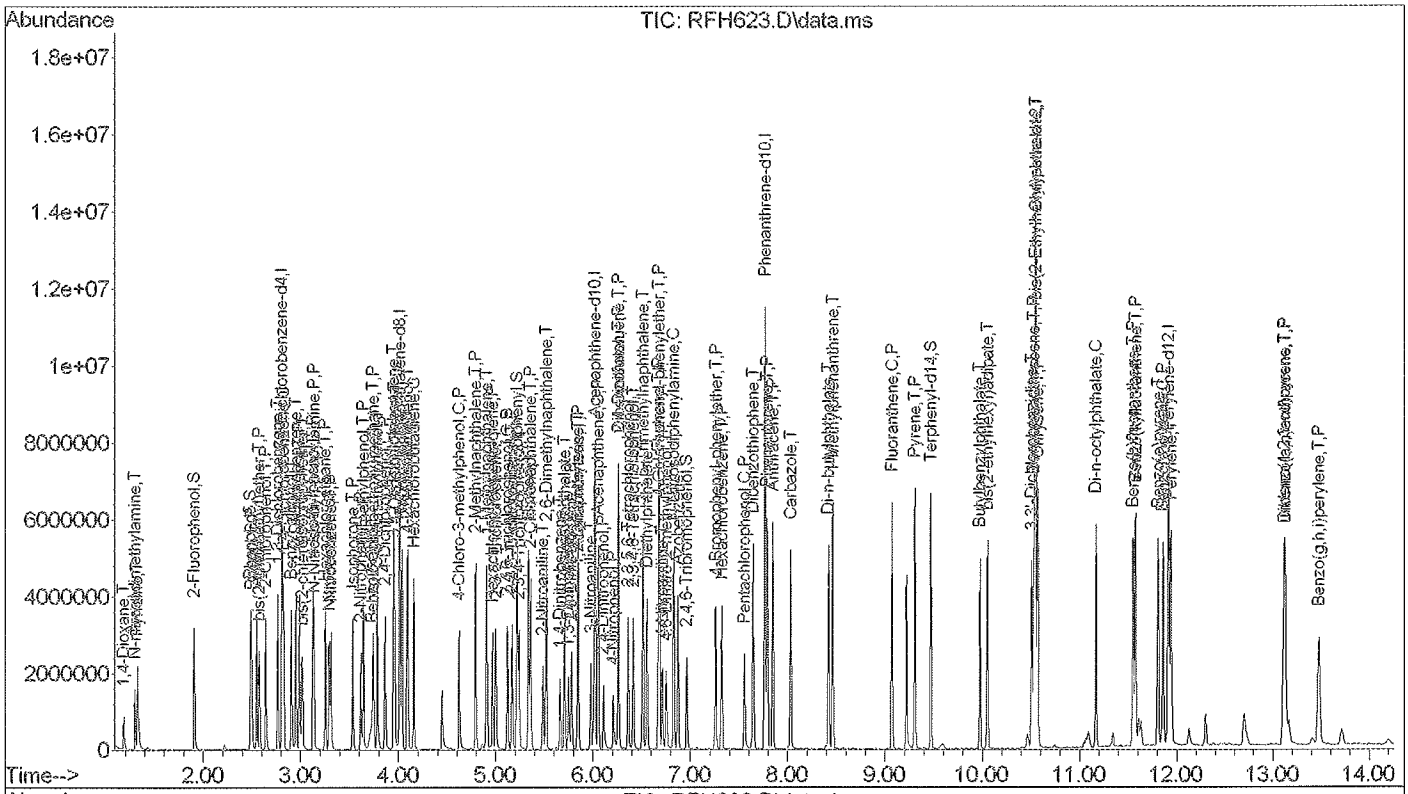
Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

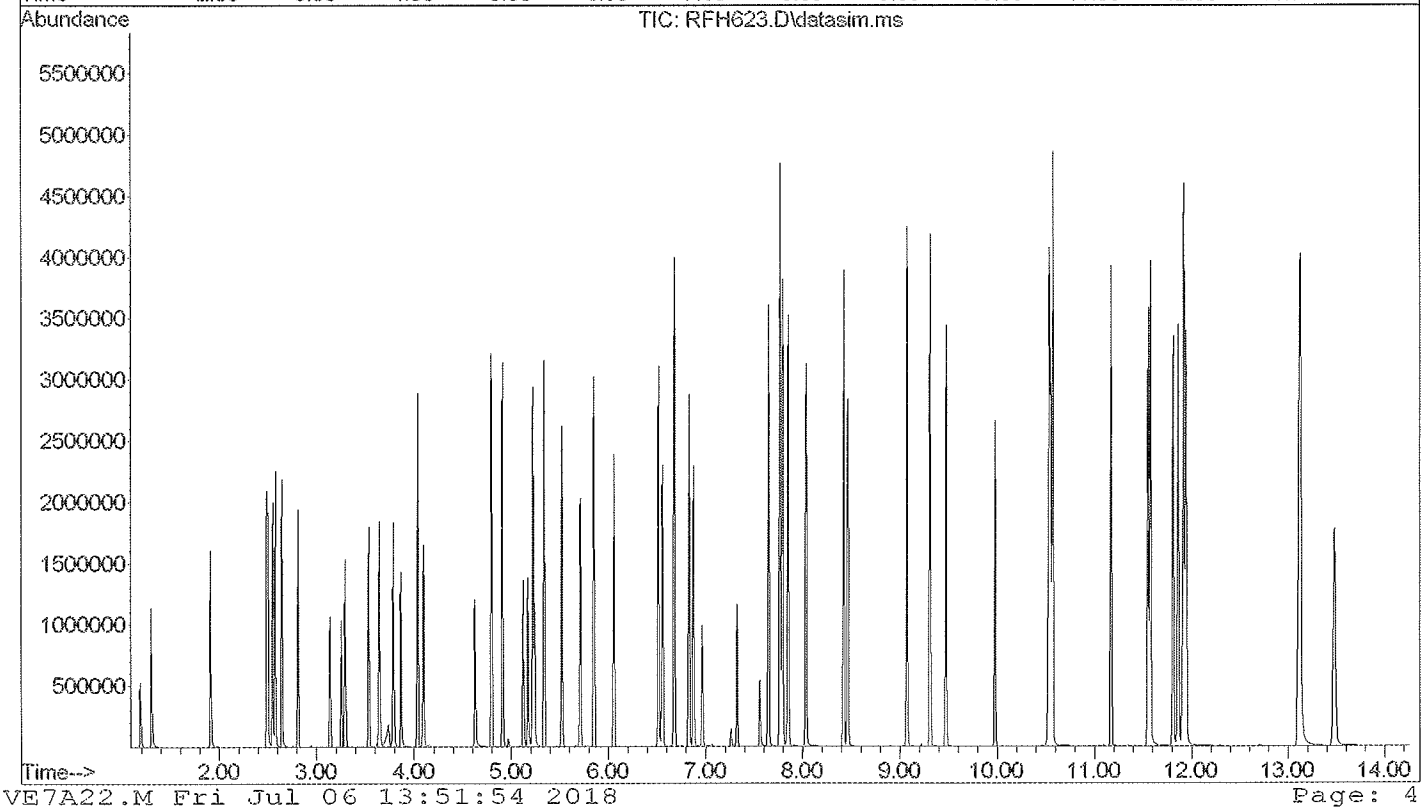
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.857	252	2227437	26.23	ppm	99
103) Perylene	11.942	252	2131419	24.47	ppm	98
104) Indeno(1,2,3-cd)pyrene	13.118	276	2555796	25.94	ppm	99
105) Dibenzo(a,h)anthracene	13.128	278	2138667	26.39	ppm	99
106) Benzo(g,h,i)perylene	13.477	276	2064898	24.88	ppm	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 13:14:15 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	111	0.00
2	T	1,4-Dioxane	25.000	23.406	6.4	106	0.00
3	T	N-nitrosodimethylamine	25.000	24.374	2.5	105	0.00
4	T	Pyridine	25.000	24.669	1.3	107	0.00
5	S	2-Fluorophenol	25.000	24.988	0.0	107	0.00
6	S	Phenol-d5	25.000	26.141	-4.6	115	0.01
7	C,P	Phenol	25.000	25.150	-0.6	110	0.01
8	T	Aniline	25.000	26.061	-4.2	113	0.00
9	T,P	bis(2-chloroethyl)ether	25.000	25.490	-2.0	112	0.00
10	T,P	2-Chlorophenol	25.000	24.646	1.4	103	0.00
11	T	1,3-Dichlorobenzene	25.000	23.819	4.7	104	0.00
12	S	1,2-Dichlorobenzene-d4	25.000	0.000	100.0#	0	-2.99#
13	C	1,4-Dichlorobenzene	25.000	22.930	8.3	101	0.00
14	T	Benzyl alcohol	25.000	23.317	6.7	104	0.00
15	T	1,2-Dichlorobenzene	25.000	23.470	6.1	104	0.00
16	T,P	2-Methylphenol	25.000	23.839	4.6	105	0.00
17	T	bis(2-chloroisopropyl)ether	25.000	24.213	3.1	106	0.00
18	T,P	4-Methylphenol	25.000	24.320	2.7	108	0.00
19	P,P	N-Nitroso-di-n-propylamine	25.000	24.486	2.1	105	0.00
20	T,P	Hexachloroethane	25.000	24.992	0.0	110	-0.01
21	I	Naphthalene-d8	40.000	40.000	0.0	113	0.00
22	S	Nitrobenzene-d5	25.000	24.552	1.8	111	0.00
23	T,P	Nitrobenzene	25.000	25.317	-1.3	114	0.00
24	T,P	Isophorone	25.000	23.272	6.9	108	0.00
25	C,P	2-Nitrophenol	25.000	23.137	7.5	110	0.00
26	T,P	2,4-Dimethylphenol	25.000	23.353	6.6	106	0.00
27	T	Benzoic acid	25.000	22.379	10.5	99	0.01
28	T,P	bis(2-Chloroethoxy)methane	25.000	23.480	6.1	111	0.00
29	T	3,5-Dimethylphenol	25.000	24.347	2.6	111	0.00
30	C,P	2,4-Dichlorophenol	25.000	23.089	7.6	105	0.00
31	T	1,2,4-Trichlorobenzene	25.000	21.902	12.4	98	0.00
32	T	3,4-Dimethylphenol	25.000	23.682	5.3	107	0.00
33	T.P	Naphthalene	25.000	22.837	8.7	103	-0.01
34	T	4-Chloroaniline	25.000	21.900	12.4	98	-0.01
35	T	2,6-Dichlorophenol	25.000	22.592	9.6	101	0.00
36	C	Hexachlorobutadiene	25.000	22.438	10.2	101	-0.01
37	T	Hydroquinone	25.000	0.000	100.0#	0	0.00
38	C,P	4-Chloro-3-methylphenol	25.000	24.155	3.4	110	0.00
39	T,P	2-Methylnaphthalene	25.000	23.237	7.1	107	-0.01
40	T	1-Methylnaphthalene	25.000	22.839	8.6	106	-0.01
41	I	Acenaphthene-d10	40.000	40.000	0.0	116	0.00
42	P	Hexachlorocyclopentadiene	25.000	18.253	27.0#	81	-0.02
43	T	2,3,5-Trichlorophenol	25.000	19.660	21.4#	92	0.00
44	C,P	2,4,6-Trichlorophenol	25.000	20.426	18.3	93	0.00
45	T,P	2,4,5-Trichlorophenol	25.000	19.532	21.9#	92	0.00
46	S	2-Fluorobiphenyl	25.000	21.452	14.2	94	-0.01
47	T	2,3,4-Trichlorophenol	25.000	20.693	17.2	103	0.00
48	T	Biphenyl	25.000	22.484	10.1	104	-0.01
49	T,P	2-Chloronaphthalene	25.000	22.706	9.2	105	-0.01

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	25.000	24.288	2.8	113	0.00
51	T	2,6-Dimethylnaphthalene	25.000	22.832	8.7	106	-0.01
52	T	1,4-Dinitrobenzene	25.000	22.046	11.8	101	0.00
53	T	Dimethylphthalate	25.000	22.021	11.9	103	-0.01
54	T	1,3-Dinitrobenzene	25.000	20.733	17.1	99	0.00
55	T,P	2,6-Dinitrotoluene	25.000	21.544	13.8	99	0.00
56	T	1,2-Dinitrobenzene	25.000	24.221	3.1	109	0.00
57	T,P	Acenaphthylene	25.000	20.784	16.9	93	-0.01
58	T	3-Nitroaniline	25.000	21.759	13.0	96	0.00
59	C,P	Acenaphthene	25.000	22.903	8.4	105	0.00
60	P	2,4-Dinitrophenol	25.000	17.951	28.2#	79	0.00
61	P	4-Nitrophenol	25.000	21.797	12.8	91	0.03
62	T,P	2,4-Dinitrotoluene	25.000	22.462	10.2	102	0.00
63	T,P	Dibenzofuran	25.000	21.873	12.5	102	-0.01
64	T	2,3,5,6-Tetrachlorophenol	25.000	20.758	17.0	95	0.00
65	T	2,3,4,6-Tetrachlorophenol	25.000	19.492	22.0#	95	0.00
66	T	2,3,5-Trimethylnaphthalene	25.000	25.670	-2.7	119	-0.01
67	T	Diethylphthalate	25.000	22.763	8.9	106	-0.01
68	T,P	Fluorene	25.000	21.758	13.0	102	-0.01
69	T,P	4-Chlorophenyl-phenylether	25.000	22.306	10.8	106	-0.02
70	T	4-Nitroaniline	25.000	19.877	20.5#	81	0.00
71	I	Phenanthrene-d10	40.000	40.000	0.0	112	0.00
72	T	4,6-Dinitro-2-methylphenol	25.000	24.663	1.3	105	0.00
73	C	N-Nitrosodiphenylamine	25.000	25.611	-2.4	115	-0.01
74	T	Azobenzene	25.000	26.242	-5.0	119	-0.01
75	S	2,4,6-Tribromophenol	25.000	21.445	14.2	94	0.00
76	T,P	4-Bromophenyl-phenylether	25.000	22.795	8.8	93	-0.01
77	T,P	Hexachlorobenzene	25.000	21.349	14.6	97	0.00
78	C,P	Pentachlorophenol	25.000	18.143	27.4#	76	0.00
79	T	Dibenzothiophene	25.000	23.517	5.9	101	0.00
80	T,P	Phenanthrene	25.000	22.172	11.3	99	0.00
81	T	Dinoseb	25.000	0.000	100.0#	0	0.00
82	T,P	Anthracene	25.000	22.312	10.8	99	-0.01
83	T	Carbazole	25.000	22.568	9.7	96	0.00
84	T	Di-n-butylphthalate	25.000	27.125	-8.5	115	-0.02
85	T	1-Methylphenanthrene	25.000	22.360	10.6	96	0.00
86	C,P	Fluoranthene	25.000	22.179	11.3	95	0.00
87	I	Chrysene-d12	40.000	40.000	0.0	94	0.00
88	T	Benzidine	25.000	0.000	100.0#	0	0.00
89	T,P	Pyrene	25.000	23.268	6.9	90	0.00
90	S	Terphenyl-d14	25.000	23.443	6.2	91	-0.01
91	T	Butylbenzylphthalate	25.000	27.331	-9.3	102	-0.01
92	T	bis(2-ethylhexyl)adipate	25.000	27.082	-8.3	102	-0.02
93	T	3,3'-Dichlorobenzidine	25.000	24.429	2.3	87	0.00
94	T,P	Benzo(a)anthracene	25.000	22.656	9.4	85	0.00
95	T,P	Chrysene	25.000	21.817	12.7	83	0.00
96	T	bis(2-Ethylhexyl)phthalate	25.000	26.547	-6.2	99	-0.02
97	I	Perylene-d12	40.000	40.000	0.0	88	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	25.000	27.524	-10.1	95	-0.02
99	T,P	Benzo(b)fluoranthene	25.000	21.731	13.1	79	0.00
100	T,P	Benzo(k)fluoranthene	25.000	22.901	8.4	78	0.00
101	T	Benzo(e)pyrene	25.000	22.701	9.2	80	0.00
102	C,P	Benzo(a)pyrene	25.000	23.019	7.9	80	0.00
103	T	Perylene	25.000	22.705	9.2	80	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	25.000	22.032	11.9	75	0.00
105	T,P	Dibenzo(a,h)anthracene	25.000	22.670	9.3	77	0.00
106	T,P	Benzo(g,h,i)perylene	25.000	22.144	11.4	76	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MW 7/6/18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	111	0.00
2	T	1,4-Dioxane	0.407	0.381	6.4	106	0.00
3	T	N-nitrosodimethylamine	0.647	0.631	2.5	105	0.00
4	T	Pyridine	1.205	1.189	1.3	107	0.00
5	S	2-Fluorophenol	1.118	1.118	0.0	107	0.00
6	S	Phenol-d5	1.479	1.547	-4.6	115	0.01
7	C,P	Phenol	1.447	1.456	-0.6	110	0.01
8	T	Aniline	1.718	1.791	-4.2	113	0.00
9	T,P	bis(2-chloroethyl)ether	1.036	1.057	-2.0	112	0.00
10	T,P	2-Chlorophenol	1.285	1.267	1.4	103	0.00
11	T	1,3-Dichlorobenzene	1.503	1.432	4.7	104	0.00
12	S	1,2-Dichlorobenzene-d4	0.000	0.000#	0.0	0#	-2.99#
13	C	1,4-Dichlorobenzene	1.525	1.399	8.3	101	0.00
14	T	Benzyl alcohol	0.776	0.723	6.8	104	0.00
15	T	1,2-Dichlorobenzene	1.453	1.364	6.1	104	0.00
16	T,P	2-Methylphenol	0.982	0.936	4.7	105	0.00
17	T	bis(2-chloroisopropyl)ether	1.843	1.785	3.1	106	0.00
18	T,P	4-Methylphenol	1.287	1.252	2.7	108	0.00
19	P,P	N-Nitroso-di-n-propylamine	0.951	0.931	2.1	105	0.00
20	T,P	Hexachloroethane	0.590	0.590	0.0	110	-0.01
21	I	Naphthalene-d8	1.000	1.000	0.0	113	0.00
22	S	Nitrobenzene-d5	0.399	0.392	1.8	111	0.00
23	T,P	Nitrobenzene	0.381	0.385	-1.0	114	0.00
24	T,P	Isophorone	0.709	0.660	6.9	108	0.00
25	C,P	2-Nitrophenol	0.184	0.170	7.6	110	0.00
26	T,P	2,4-Dimethylphenol	0.363	0.339	6.6	106	0.00
27	T	Benzoic acid	0.259	0.232	10.4	99	0.01
28	T,P	bis(2-Chloroethoxy)methane	0.394	0.370	6.1	111	0.00
29	T	3,5-Dimethylphenol	0.428	0.417	2.6	111	0.00
30	C,P	2,4-Dichlorophenol	0.319	0.294	7.8	105	0.00
31	T	1,2,4-Trichlorobenzene	0.398	0.349	12.3	98	0.00
32	T	3,4-Dimethylphenol	0.455	0.431	5.3	107	0.00
33	T.P	Naphthalene	0.988	0.902	8.7	103	-0.01
34	T	4-Chloroaniline	0.411	0.360	12.4	98	-0.01
35	T	2,6-Dichlorophenol	0.330	0.298	9.7	101	0.00
36	C	Hexachlorobutadiene	0.284	0.255	10.2	101	-0.01
37	T	Hydroquinone	0.000	0.000#	0.0	0#	0.00
38	C,P	4-Chloro-3-methylphenol	0.298	0.288	3.4	110	0.00
39	T,P	2-Methylnaphthalene	0.705	0.655	7.1	107	-0.01
40	T	1-Methylnaphthalene	0.669	0.611	8.7	106	-0.01
41	I	Acenaphthene-d10	1.000	1.000	0.0	116	0.00
42	P	Hexachlorocyclopentadiene	0.525	0.383	27.0#	81	-0.02
43	T	2,3,5-Trichlorophenol	0.492	0.387	21.3#	92	0.00
44	C,P	2,4,6-Trichlorophenol	0.504	0.412	18.3	93	0.00
45	T,P	2,4,5-Trichlorophenol	0.516	0.403	21.9#	92	0.00
46	S	2-Fluorobiphenyl	1.713	1.470	14.2	94	-0.01
47	T	2,3,4-Trichlorophenol	0.491	0.407	17.1	103	0.00
48	T	Biphenyl	1.643	1.478	10.0	104	-0.01
49	T,P	2-Chloronaphthalene	1.266	1.150	9.2	105	-0.01

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	0.359	0.349	2.8	113	0.00
51	T	2,6-Dimethylnaphthalene	1.161	1.060	8.7	106	-0.01
52	T	1,4-Dinitrobenzene	0.183	0.161	12.0	101	0.00
53	T	Dimethylphthalate	1.487	1.310	11.9	103	-0.01
54	T	1,3-Dinitrobenzene	0.208	0.172	17.3	99	0.00
55	T,P	2,6-Dinitrotoluene	0.315	0.271	14.0	99	0.00
56	T	1,2-Dinitrobenzene	0.124	0.120	3.2	109	0.00
57	T,P	Acenaphthylene	2.006	1.667	16.9	93	-0.01
58	T	3-Nitroaniline	0.312	0.271	13.1	96	0.00
59	C,P	Acenaphthene	1.292	1.184	8.4	105	0.00
60	P	2,4-Dinitrophenol	0.173	0.131	24.3#	79	0.00
61	P	4-Nitrophenol	0.235	0.205	12.8	91	0.03
62	T,P	2,4-Dinitrotoluene	0.419	0.376	10.3	102	0.00
63	T,P	Dibenzofuran	1.907	1.669	12.5	102	-0.01
64	T	2,3,5,6-Tetrachlorophenol	0.372	0.309	16.9	95	0.00
65	T	2,3,4,6-Tetrachlorophenol	0.503	0.392	22.1#	95	0.00
66	T	2,3,5-Trimethylnaphthalene	1.134	1.164	-2.6	119	-0.01
67	T	Diethylphthalate	1.453	1.323	8.9	106	-0.01
68	T,P	Fluorene	1.446	1.258	13.0	102	-0.01
69	T,P	4-Chlorophenyl-phenylether	0.797	0.711	10.8	106	-0.02
70	T	4-Nitroaniline	0.310	0.246	20.6#	81	0.00
71	I	Phenanthrene-d10	1.000	1.000	0.0	112	0.00
72	T	4,6-Dinitro-2-methylphenol	0.114	0.121	-6.1	105	0.00
73	C	N-Nitrosodiphenylamine	0.575	0.589	-2.4	115	-0.01
74	T	Azobenzene	0.634	0.665	-4.9	119	-0.01
75	S	2,4,6-Tribromophenol	0.139	0.119	14.4	94	0.00
76	T,P	4-Bromophenyl-phenylether	0.267	0.244	8.6	93	-0.01
77	T,P	Hexachlorobenzene	0.273	0.233	14.7	97	0.00
78	C,P	Pentachlorophenol	0.159	0.115	27.7#	76	0.00
79	T	Dibenzothiophene	1.050	0.988	5.9	101	0.00
80	T,P	Phenanthrene	1.061	0.941	11.3	99	0.00
81	T	Dinoseb	0.000	0.000#	0.0	0#	0.00
82	T,P	Anthracene	1.064	0.949	10.8	99	-0.01
83	T	Carbazole	0.869	0.785	9.7	96	0.00
84	T	Di-n-butylphthalate	1.071	1.162	-8.5	115	-0.02
85	T	1-Methylphenanthrene	0.792	0.708	10.6	96	0.00
86	C,P	Fluoranthene	1.209	1.073	11.2	95	0.00
87	I	Chrysene-d12	1.000	1.000	0.0	94	0.00
88	T	Benzidine	0.000	0.000#	0.0	0#	0.00
89	T,P	Pyrene	1.167	1.086	6.9	90	0.00
90	S	Terphenyl-d14	0.868	0.814	6.2	91	-0.01
91	T	Butylbenzylphthalate	0.415	0.454	-9.4	102	-0.01
92	T	bis(2-ethylhexyl)adipate	0.322	0.348	-8.1	102	-0.02
93	T	3,3'-Dichlorobenzidine	0.397	0.388	2.3	87	0.00
94	T,P	Benzo(a)anthracene	1.119	1.014	9.4	85	0.00
95	T,P	Chrysene	1.066	0.930	12.8	83	0.00
96	T	bis(2-Ethylhexyl)phthalate	0.628	0.666	-6.1	99	-0.02
97	I	Perylene-d12	1.000	1.000	0.0	88	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	1.079	1.188	-10.1	95	-0.02
99	T,P	Benzo(b)fluoranthene	1.125	0.978	13.1	79	0.00
100	T,P	Benzo(k)fluoranthene	1.097	1.005	8.4	78	0.00
101	T	Benzo(e)pyrene	1.071	0.973	9.2	80	0.00
102	C,P	Benzo(a)pyrene	1.050	0.967	7.9	80	0.00
103	T	Perylene	1.077	0.978	9.2	80	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	1.218	1.073	11.9	75	0.00
105	T,P	Dibenzo(a,h)anthracene	1.001	0.908	9.3	77	0.00
106	T,P	Benzo(g,h,i)perylene	1.026	0.909	11.4	76	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

KW 7/6/18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.816	152	510856	40.00	ppm	0.00
21) Naphthalene-d8	4.016	136	1969507	40.00	ppm	0.00
41) Acenaphthene-d10	6.018	164	1121152	40.00	ppm	0.00
71) Phenanthrene-d10	7.761	188	2320423	40.00	ppm	0.00
87) Chrysene-d12	10.538	240	2319996	40.00	ppm	0.00
97) Perylene-d12	11.900	264	2053342	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	356926	24.99	ppm	0.00
Spiked Amount 30.000			Recovery =	83.30%		
6) Phenol-d5	2.486	99	493798	26.14	ppm	0.01
Spiked Amount 30.000			Recovery =	87.13%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.296	82	481940	24.55	ppm	0.00
Spiked Amount 10.000			Recovery =	245.50%		
46) 2-Fluorobiphenyl	5.220	172	1030226	21.45	ppm	-0.01
Spiked Amount 10.000			Recovery =	214.50%		
75) 2,4,6-Tribromophenol	6.963	330	172806	21.45	ppm	0.00
Spiked Amount 30.000			Recovery =	71.50%		
90) Terphenyl-d14	9.466	244	1179768	23.44	ppm	-0.01
Spiked Amount 10.000			Recovery =	234.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.188	88	121779	23.41	ppm	89
3) N-nitrosodimethylamine	1.303	74	201430	24.37	ppm	92
4) Pyridine	1.331	79	379490	24.67	ppm	100
7) Phenol	2.497	94	464815	25.15	ppm	98
8) Aniline	2.549	93	571757	26.06	ppm	98
9) bis(2-chloroethyl)ether	2.580	93	337404	25.49	ppm	100
10) 2-Chlorophenol	2.648	128	404434	24.65	ppm	92
11) 1,3-Dichlorobenzene	2.768	146	457218	23.82	ppm	99
13) 1,4-Dichlorobenzene	2.826	146	446580	22.93	ppm	96
14) Benzyl alcohol	2.907	108	230953	23.32	ppm	90
15) 1,2-Dichlorobenzene	2.955	146	435460	23.47	ppm	96
16) 2-Methylphenol	2.994	107	298865	23.84	ppm	94
17) bis(2-chloroisopropyl)...	3.018	45	569935	24.21	ppm	96
18) 4-Methylphenol	3.133	107	399855	24.32	ppm	95
19) N-Nitroso-di-n-propyla...	3.137	70	297365	24.49	ppm	97
20) Hexachloroethane	3.255	117	188398	24.99	ppm	89
23) Nitrobenzene	3.314	77	474438	25.32	ppm	95
24) Isophorone	3.535	82	812203	23.27	ppm	98
25) 2-Nitrophenol	3.622	139	209153	23.14	ppm	86
26) 2,4-Dimethylphenol	3.646	107	417375	23.35	ppm	93
27) Benzoic acid	3.728	105	285746	22.38	ppm	86
28) bis(2-Chloroethoxy)met...	3.747	93	455009	23.48	ppm	97
29) 3,5-Dimethylphenol	3.785	107	513189	24.35	ppm	97
30) 2,4-Dichlorophenol	3.862	162	362418	23.09	ppm	93
31) 1,2,4-Trichlorobenzene	3.954	180	429381	21.90	ppm	98
32) 3,4-Dimethylphenol	3.959	107	530590	23.68	ppm	97
33) Naphthalene	4.036	128	1110508	22.84	ppm	100
34) 4-Chloroaniline	4.089	127	442721	21.90	ppm	98
35) 2,6-Dichlorophenol	4.098	162	367212	22.59	ppm	97
36) Hexachlorobutadiene	4.161	225	314049	22.44	ppm	99

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38)	4-Chloro-3-methylphenol	4.624	107	354044	24.15	ppm		96
39)	2-Methylnaphthalene	4.797	142	806351	23.24	ppm		95
40)	1-Methylnaphthalene	4.907	142	752095	22.84	ppm		97
42)	Hexachlorocyclopentadiene	4.969	237	268572	18.25	ppm		100
43)	2,3,5-Trichlorophenol	5.003	196	270849	19.66	ppm		97
44)	2,4,6-Trichlorophenol	5.123	196	288467	20.43	ppm		94
45)	2,4,5-Trichlorophenol	5.166	196	282435	19.53	ppm		98
47)	2,3,4-Trichlorophenol	5.239	196	284942	20.69	ppm		94
48)	Biphenyl	5.335	154	1035634	22.48	ppm		100
49)	2-Chloronaphthalene	5.359	162	805619	22.71	ppm		100
50)	2-Nitroaniline	5.484	65	244287	24.29	ppm		97
51)	2,6-Dimethylnaphthalene	5.522	156	742998	22.83	ppm		100
52)	1,4-Dinitrobenzene	5.661	168	113130	22.05	ppm		96
53)	Dimethylphthalate	5.705	163	917714	22.02	ppm		99
54)	1,3-Dinitrobenzene	5.748	168	120710	20.73	ppm		94
55)	2,6-Dinitrotoluene	5.777	165	190104	21.54	ppm		90
56)	1,2-Dinitrobenzene	5.835	168	84123	24.22	ppm	#	85
57)	Acenaphthylene	5.845	152	1168430	20.78	ppm		95
58)	3-Nitroaniline	5.975	138	190227	21.76	ppm		91
59)	Acenaphthene	6.056	153	829383	22.90	ppm		92
60)	2,4-Dinitrophenol	6.109	184	91478	17.95	ppm		91
61)	4-Nitrophenol	6.209	109	143462	21.80	ppm		90
62)	2,4-Dinitrotoluene	6.262	165	263628	22.46	ppm		91
63)	Dibenzofuran	6.262	168	1169215	21.87	ppm		92
64)	2,3,5,6-Tetrachlorophenol	6.363	230	216518	20.76	ppm		95
65)	2,3,4,6-Tetrachlorophenol	6.416	232	274942	19.49	ppm		97
66)	2,3,5-Trimethylnaphtha...	6.516	170	815912	25.67	ppm		94
67)	Diethylphthalate	6.558	149	927321	22.76	ppm		98
68)	Fluorene	6.675	166	881722	21.76	ppm		95
69)	4-Chlorophenyl-phenyle...	6.680	204	498487	22.31	ppm		99
70)	4-Nitroaniline	6.713	138	172643	19.88	ppm		87
72)	4,6-Dinitro-2-methylph...	6.750	198	174773	24.66	ppm		91
73)	N-Nitrosodiphenylamine	6.826	169	854572	25.61	ppm		87
74)	Azobenzene	6.873	77	964944	26.24	ppm		100
76)	4-Bromophenyl-phenylether	7.257	248	353247	22.79	ppm		95
77)	Hexachlorobenzene	7.319	284	337811	21.35	ppm		97
78)	Pentachlorophenol	7.555	266	167490	18.14	ppm		97
79)	Dibenzothiophene	7.645	184	1432253	23.52	ppm		100
80)	Phenanthrene	7.788	178	1364425	22.17	ppm		98
82)	Anthracene	7.842	178	1376832	22.31	ppm		100
83)	Carbazole	8.028	167	1137805	22.57	ppm		99
84)	Di-n-butylphthalate	8.415	149	1684706	27.13	ppm		99
85)	1-Methylphenanthrene	8.459	192	1026895	22.36	ppm		97
86)	Fluoranthene	9.067	202	1555612	22.18	ppm		99
89)	Pyrene	9.303	202	1574732	23.27	ppm		100
91)	Butylbenzylphthalate	9.971	149	657894	27.33	ppm		98
92)	bis(2-ethylhexyl)adipate	10.045	129	505011	27.08	ppm		88
93)	3,3'-Dichlorobenzidine	10.499	252	563125	24.43	ppm		99
94)	Benzo(a)anthracene	10.524	228	1470924	22.66	ppm		92
95)	Chrysene	10.562	228	1348430	21.82	ppm		99
96)	bis(2-Ethylhexyl)phtha...	10.543	149	966271	26.55	ppm		100
98)	Di-n-octylphthalate	11.160	149	1525222	27.52	ppm		99
99)	Benzo(b)fluoranthene	11.539	252	1254885	21.73	ppm		100
100)	Benzo(k)fluoranthene	11.563	252	1289558	22.90	ppm		97
101)	Benzo(e)pyrene	11.792	252	1248286	22.70	ppm		99

Quantitation Report (QT Reviewed)

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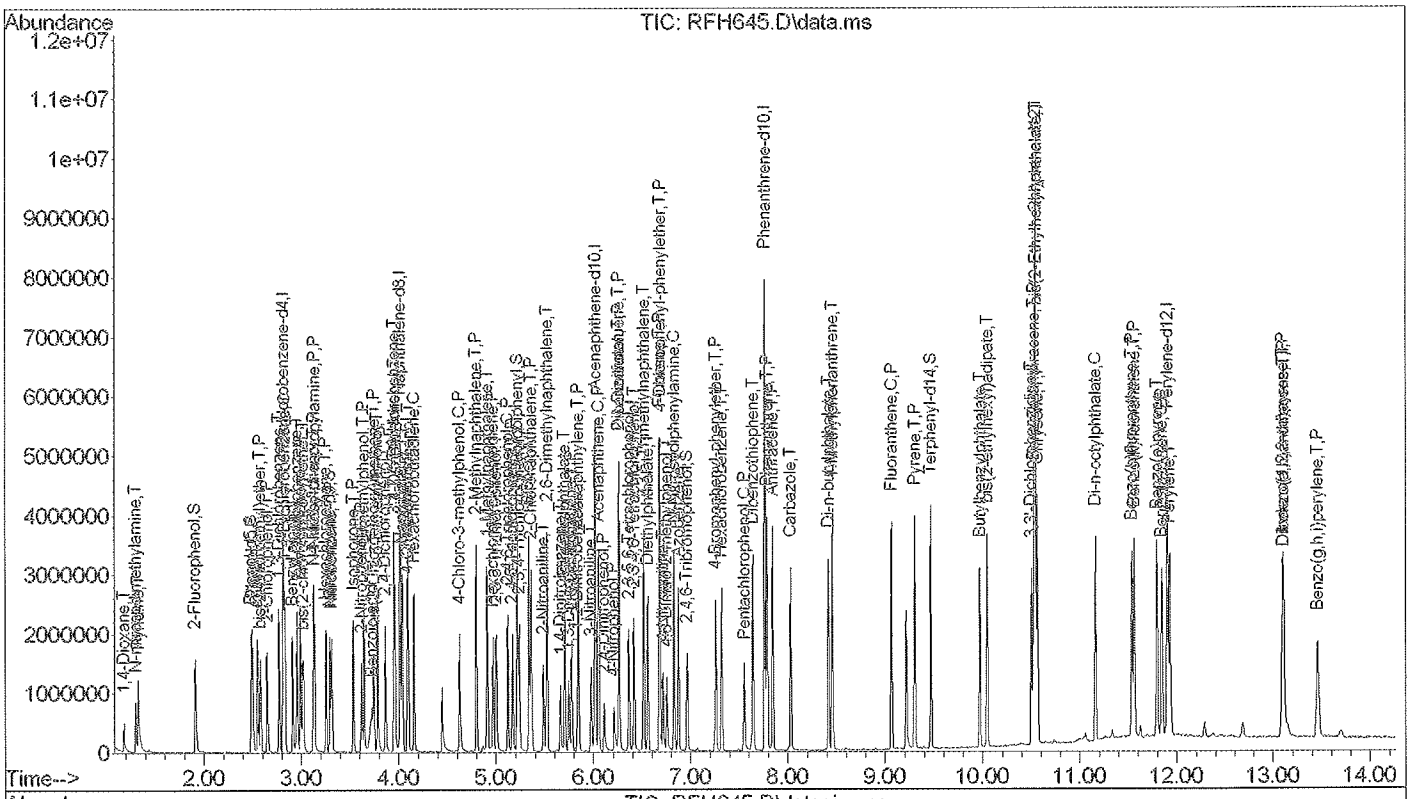
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

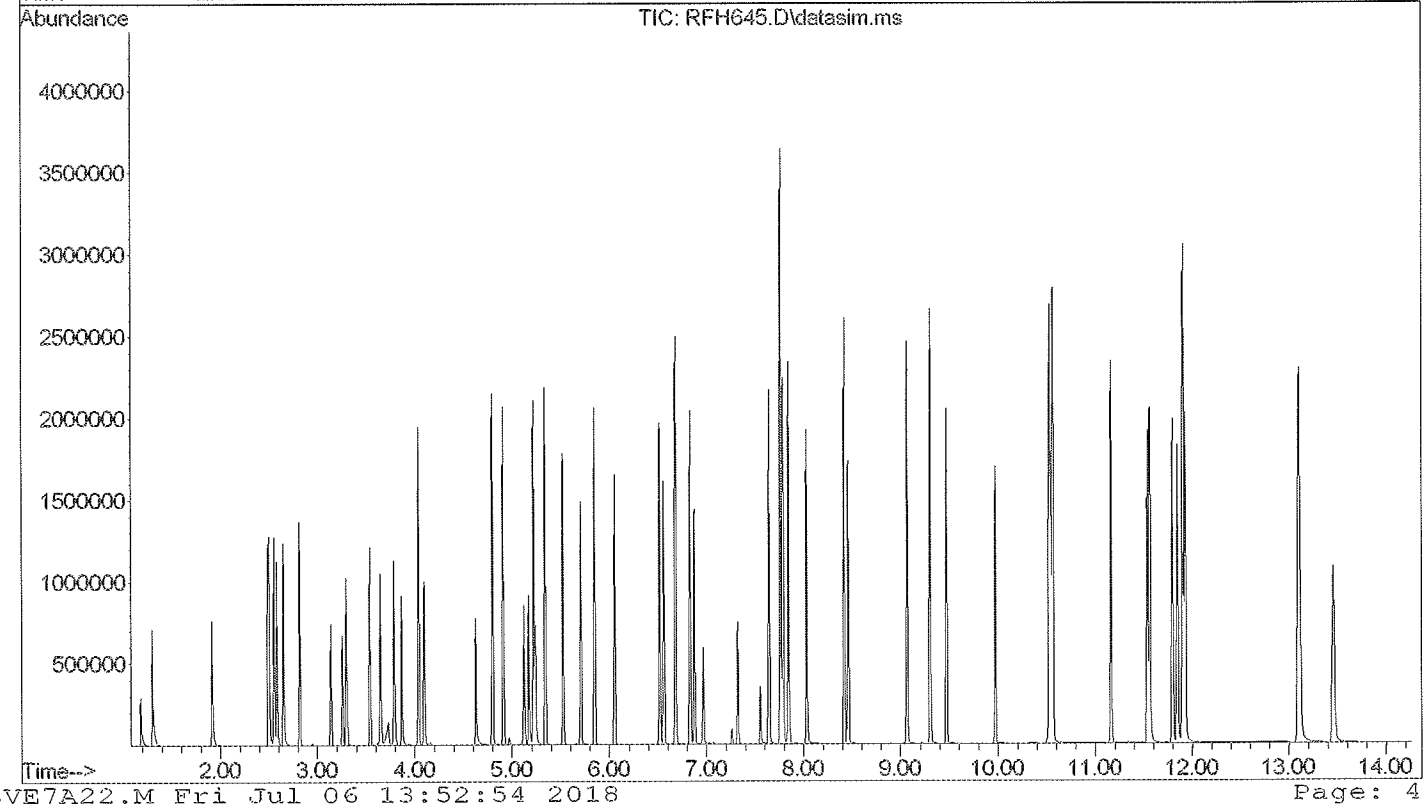
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.844	252	1240369	23.02	ppm	100
103) Perylene	11.924	252	1254743	22.71	ppm	100
104) Indeno(1,2,3-cd)pyrene	13.100	276	1377268	22.03	ppm	99
105) Dibenzo(a,h)anthracene	13.109	278	1165445	22.67	ppm	99
106) Benzo(g,h,i)perylene	13.459	276	1165972	22.14	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:16:11 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc.

Project: JBER TO075

Lab Code: EMAX
SDG No: 18F187

Lab File ID: RGH002
DFPTT Injection Date: 07/03/18

Instrument ID: E7
DFPTT Injection Time: 07:36

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30 - 60% of mass 198	33.653
68	Less than 2% of mass 69	0.671(1.83)1
69	Present(Relative Abundance of mass 69)	36.759
70	Less than 2% of mass 69	0.170(.46)1
127	30 - 60% of mass 198	47.268
197	Less than 1% of mass 198	0.209
198	Base Peak, 100% relative abundance	100.000
199	5 - 9% of mass 198	7.214
275	10 - 30% of mass 198	25.612
365	Greater than 1% of mass 198	2.651
441	Present but less than mass 443	15.432(85.67)3
442	Greater than 40% of mass 198	98.354
443	17 - 23% of mass 442	18.013(18.31)2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD025	CSVE7A2280	RGH003	07/03/18	08:16
2	18Q2DP009-SB0302-SO-0	18F187-13N	RGH005	07/03/18	08:54
3	SSTD025	ESVE7A2281	RGH006	07/03/18	09:21

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.
Lab Code: EMAX
Lab File ID: RAH169
Instrument ID: E7

Project: JBER TO075
SDG No: 18F187
Date Analyzed: 01/22/18
Time Analyzed: 15:46

	INTERNAL STANDARD (IS)	1,4-Dichlorobenzene-d4		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10		Chrysene-d12		Perylene-d12	
		Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #
	12 HOUR STD	459657	2.82	1739389	4.03	962917	6.03	2080878	7.77	2467262	10.54	2331017	11.91
	UPPER LIMIT	919314	2.99	3478778	4.20	1925834	6.20	4161756	7.94	4934524	10.71	4662034	12.08
	LOWER LIMIT	229829	2.65	869695	3.86	481459	5.86	1040439	7.60	1233631	10.37	1165509	11.74
		Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #
1	SSTD025	734532	2.83	2647015	4.03	1475852	6.03	3102864	7.77	3467441	10.55	3345670	11.91
2	18Q2DP009-SB0302-SO-0	423069	2.83	1586163	4.03	908702	6.03	1807297	7.77	1785375	10.54	1654909	11.90
3	SSTD025	671449	2.83	2413770	4.03	1372483	6.03	2993699	7.77	3292992	10.55	3101839	11.91

Area Upper Limit = +100% of ICAL Midpoint IS Area
Area Lower Limit = -50% of ICAL Midpoint IS Area
Retention Time(RT) Upper Limit = +10 seconds of of ICAL Midpoint IS RT
Retention Time(RT) Lower Limit = -10 seconds of of ICAL Midpoint IS RT

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC Beginning DateTime :01/22/18 14:31
Spike Amount :25 PPM
CC/CV File :RGH003
IC File :RAH169

Column Spec :ZB-SEMIVOA ID :0.18MM
IC Ending DateTime :01/22/18 16:43
HPChem Method :SVE7A22
Date_Time :07/03/18 08:16

M IDX	Parameters	CC Con	CC% D	CC Resp	CCRRF	AvRRF	CC Rtm	AvRtm	% RSD	Co X0	Co X1	Co X2	Co Cor
1	1,4-Dichlorobenzene-d4	40.000	0	734532	1	1	2.826	2.821	0				
2	1,4-Dioxane	24.590	-1.6	183954	0.401	0.407	1.212	1.195	3.88				
3	N-nitrosodimethylamine	23.467	-6.5	278784	0.607	0.647	1.317	1.306	3.41				
4	Pyridine	23.794	-4.8	226629	1.146	1.205	1.346	1.333	1.20				
5	2-Fluorophenol	25.950	3.8	532956	1.161	1.118	1.911	1.902	2.36				
6	Phenol-d5	24.356	-2.6	661523	1.441	1.479	2.481	2.477	1.51				
7	Phenol	24.280	-2.9	645200	1.405	1.447	2.491	2.488	1.57				
8	Aniline	25.172	0.7	794056	1.730	1.718	2.559	2.553	1.34				
9	bis(2-chloroethyl)ether	24.147	-3.4	459586	1.001	1.036	2.590	2.583	2.50				
10	2-Chlorophenol	23.969	-4.1	562553	1.232	1.285	5.578	5.646	6.91				
11	1,3-Dichlorobenzene	23.740	-5.0	655237	1.427	1.503	2.777	2.776	1.22				
12	1,2-Dichlorobenzene-d4												
13	1,4-Dichlorobenzene	24.076	-3.7	674206	1.469	1.525	2.840	2.835	1.36				
14	Benzyl alcohol	25.085	0.3	357258	0.778	0.776	2.917	2.911	1.66				
15	1,2-Dichlorobenzene	23.781	-4.9	634429	1.382	1.453	2.970	2.965	0.53				
16	2-Methylphenol	24.111	-3.6	432657	0.947	0.982	2.993	2.989	3.28				
17	bis(2-chloroisopropyl)ether	23.189	-7.2	784827	1.710	1.843	3.032	3.028	3.19				
18	4-Methylphenol	23.052	-7.8	544950	1.187	1.287	3.128	3.125	1.09				
19	N-Nitroso-di-n-propylamine	21.244	-15.0	370942	0.808	0.951	3.152	3.146	3.12				
20	Hexachloroethane	24.331	-2.7	263723	0.574	0.590	3.273	3.269	1.47				
21	Naphthalene-d8	40.000	0	2647015	1	1	4.026	4.026	0				
22	Nitrobenzene-d5	24.250	-3.0	639780	0.387	0.399	3.305	3.301	2.36				
23	Nitrobenzene	23.622	-4.3	602587	0.364	0.381	3.323	3.320	1.15				
24	Isophorone	24.446	-2.5	1146682	0.693	0.709	3.548	3.544	1.81				
25	2-Nitrophenol	24.955	-0.2	303187	0.183	0.184	3.627	3.627	5.72				
26	2,4-Dimethylphenol	24.283	-2.9	583295	0.353	0.363	3.651	3.647	1.61				
27	Benzoic acid	22.895	-8.4	392898	0.237	0.259	3.723	3.720	13.40				
28	bis(2-Chloroethoxy)methane	24.406	-2.4	635649	0.384	0.394	3.761	3.753	6.27				
29	2,5-Dimethylphenol	24.833	-0.7	703481	0.425	0.428	3.785	3.783	0.93				
30	2,4-Dichlorophenol	24.373	-2.3	514195	0.311	0.318	3.862	3.862	3.64				
31	1,2,4-Trichlorobenzene	23.805	-4.8	627232	0.379	0.398	3.963	3.966	5.18				
32	3,4-Dimethylphenol	23.960	-4.2	721483	0.436	0.455	3.963	3.960	2.03				
33	Naphthalene	24.534	-1.9	1603454	0.969	0.988	4.050	4.048	1.51				
34	4-Chloroaniline	25.226	0.9	685375	0.414	0.411	4.098	4.096	1.60				
35	2,6-Dichlorophenol	22.902	-8.4	500304	0.302	0.330	4.108	4.104	1.42				
36	Hexachlorobutadiene	21.147	-15.4	397805	0.240	0.284	4.180	4.175	1.72				
37	Hydroquinone												
38	4-Chloro-3-methylphenol	23.508	-6.0	463096	0.280	0.298	4.619	4.618	3.17				
39	2-Methylnaphthalene	24.549	-1.8	1144922	0.692	0.705	4.811	4.810	1.34				
40	1-Methylnaphthalene	24.115	-3.5	1067286	0.645	0.669	4.921	4.921	1.64				
41	Acenaphthene-d10	40.000	0	1475852	1	1	6.032	6.028	0				
42	Hexachlorocyclopentadiene	25.078	0.3	485733	0.527	0.525	4.988	4.988	8.36				
43	2,3,5-Trichlorophenol	23.220	-7.1	421102	0.457	0.462	4.993	4.996	4.42				
44	2,4,6-Trichlorophenol	23.126	-7.5	429935	0.466	0.504	5.128	5.127	2.51				
45	2,4,5-Trichlorophenol	23.620	-5.5	449607	0.487	0.516	5.161	5.162	4.46				
46	2-Fluorobiphenyl	22.729	-9.1	1436828	1.558	1.713	5.239	5.234	6.52				
47	2,3,4-Trichlorophenol	23.428	-6.3	424668	0.460	0.491	5.234	5.238	5.74				
48	Biphenyl	23.161	-7.4	1404323	1.522	1.643	5.354	5.350	2.34				
49	2-Chloronaphthalene	22.901	-8.4	1069589	1.160	1.266	5.373	5.371	1.39				
50	2-Nitroaniline	21.612	-13.6	286140	0.310	0.359	5.789	5.789	5.60				
51	2,6-Dimethylnaphthalene	24.497	-2.0	1049348	1.138	1.161	5.536	5.534	2.31				
52	1,4-Dinitrobenzene	21.729	-13.1	146778	0.159	0.183	5.657	5.661	7.07				
53	Dimethylphthalate	23.332	-6.7	1280008	1.388	1.487	5.724	5.719	1.35				
54	1,3-Dinitrobenzene	22.716	-9.1	174097	0.189	0.208	5.743	5.747	1.56				
55	2,6-Dinitrotoluene	22.619	-9.5	262737	0.285	0.315	5.787	5.785	2.57				
56	1,2-Dinitrobenzene	22.770	-8.9	104103	0.113	0.124	5.840	5.841	4.16				
57	Acenaphthylene	24.357	-2.6	1803441	1.954	2.006	5.859	5.859	5.95				
58	3-Nitroaniline	24.172	-3.3	278185	0.302	0.312	5.979	5.979	3.08				
59	Acenaphthene	22.657	-9.4	1080079	1.171	1.292	6.070	6.067	2.67				
60	2,4-Dinitrophenol	27.680	10.7	192815	0.209	0.173	6.099	6.105	18.12	-0.0089	0.2017		0.9998
61	4-Nitrophenol	24.024	-3.9	208144	0.226	0.235	6.171	6.176	10.86				
62	2,4-Dinitrotoluene	23.460	-6.2	362449	0.393	0.419	6.262	6.265	2.56				
63	Dibenzofuran	22.955	-8.2	1615285	1.751	1.907	6.277	6.275	0.93				
64	2,3,5,6-Tetrachlorophenol	23.604	-5.6	324093	0.351	0.372	6.367	6.368	4.89				
65	2,3,4,6-Tetrachlorophenol	22.301	-10.8	414085	0.449	0.503	6.416	6.420	8.88				
66	2,3,5-Trimethylnaphthalene	23.656	-5.4	989770	1.073	1.134	6.230	6.229	2.37				
67	Diethylphthalate	23.103	-7.6	1238942	1.343	1.453	6.581	6.571	1.91				
68	Fluorene	23.638	-5.4	1260990	1.367	1.446	6.689	6.688	2.87				
69	4-Chlorophenyl-phenylether	23.189	-7.2	682160	0.740	0.797	6.703	6.698	1.75				
70	4-Nitroaniline	25.287	1.1	289109	0.313	0.310	6.708	6.710	9.54				
71	Phenanthrene-d10	40.000	0	3102864	1	1	7.774	7.771	0				
72	4,6-Dinitro-2-methylphenol	28.079	12.3	268210	0.138	0.114	6.750	6.751	15.97	-0.0050	0.1302		0.9995
73	N-Nitrosodiphenylamine	23.835	-4.7	1063468	0.548	0.575	6.844	6.840	2.18				
74	Azobenzene	21.971	-12.1	1080292	0.557	0.634	6.892	6.887	1.42				
75	2,4,6-Tribromophenol	23.373	-6.5	251850	0.130	0.139	6.968	6.971	5.49				
76	4-Bromophenyl-phenylether	23.753	-1.0	512942	0.264	0.267	7.276	7.272	9.45				
77	Hexachlorobenzene	22.406	-10.4	474081	0.244	0.273	7.328	7.329	1.08				
78	Pentachlorophenol	24.625	-1.4	304360	0.157	0.159	7.520	7.524	9.22				
79	Dibenzothiophene	23.354	-1.4	2064873	1.062	1.050	7.634	7.632	3.33				
80	Phenanthrene	23.881	-4.5	1965146	1.013	1.061	7.797	7.797	0.52				
81	Dinoseb												
82	Anthracene	23.421	-6.3	1932661	0.997	1.064	7.856	7.854	2.26				
83	Carbazole	25.264	2.8	1732254	0.893	0.869	8.037	8.035	4.73				
84	Di-n-butylphthalate	27.232	3.1	2015277	1.038	1.071	8.449	8.433	5.00				
85	1-Methylphenanthrene	24.676	-1.3	1515388	0.781	0.792	8.473	8.458	2.55				
86	Fluoranthene	24.539	-1.8	2301471	1.187	1.209	9.077	9.072	5.36				
87	Chrysene-d12	40.000	0	3467441	1	1	10.553	10.543	0				
88	Benzidine												
89	Pyrene	24.008	-4.0	2428463	1.121	1.167	9.313	9.309	2.37				
90	Terphenyl-d14	24.432	-2.3	1837699	0.848	0.868	9.488	9.479	2.38				
91	Butylbenzylphthalate	24.978	-0.1	898617	0.415	0.415	10.002	9.984	4.92				
92	bis(2-ethylhexyl)adipate	25.005	0.0	696898	0.322	0.322	10.095	10.064	6.20				
93	3,3'-Dichlorobenzidine	27.017	8.1	930795	0.430	0.397	10.518	10.509	6.51				
94	Benzo(a)anthracene	24.618	-1.5	2388887	1.102	1.119	10.538	10.531	0.41				
95	Chrysene	23.611	-5.6	2181045	1.006	1.066	10.577	10.568	0.56				
96	bis(2-Ethylhexyl)phthalate	23.618	-5.5	1284793	0.593	0.628	10.587	10.562	5.36				
97	Perylene-d12	40.000	0	3345670	1	1	11.914	11.906	0				
98	Di-n-octylphthalate	24.556	-1.8	3217188	1.060	1.079	11.208	11.178	7.90				
99	Benzo(b)fluoranthene	24.449	-1.9	2599821	1.100	1.125	11.549	11.542	4.39				
100	Benzo(k)fluoranthene	23.525	-5.9	2158424	1.032	1.071	11.578	11.568	4.82				
101	Benzo(e)pyrene	24.566	-1.7	2201016	1.053	1.071	11.806	11.800	2.67				
102	Benzo(a)pyrene	24.594	-1.6	2159277	1.033	1.050	11.858	11.850	4.25				
103	Perylene	23.920	-4.3	2153771	1.030	1.077	11.938	11.932	3.16				
104	Indeno(1,2,3-cd)pyrene	24.768	-0.9	2522803	1.206	1.218	13.104	13.100	5.29				
105	Dibenzo(a,h)anthracene	25.016	0.1	2095504	1.002	1.001	13.129	13.120	6.48				
106	Benzo(g,h,i)perylene	24.822	-0.7	2129549	1.018	1.026	13.458	13.458	4.66				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC Beginning DateTime :01/22/18 14:31
Spike Amount :25 PPM
CC/CV File :RGH006
IC File :RAH169

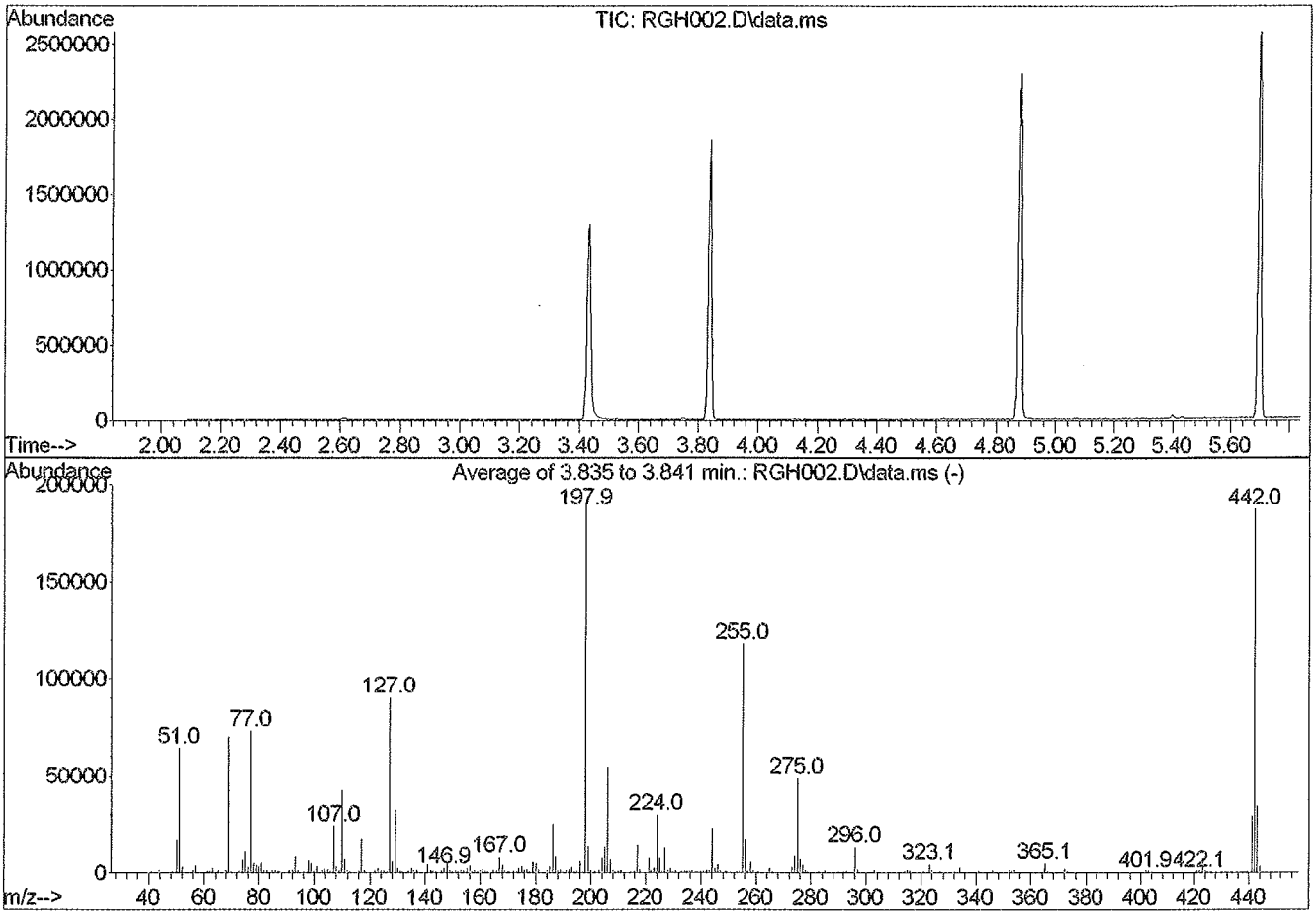
Column Spec :ZB-SEMIVOA ID :0.18MM
IC Ending DateTime :01/22/18 16:43
HPChem Method :SVE7A22
Date_Time :07/03/18 09:21

M IDX	Parameters	CC Con	CC% D	CC Resp	CCRRF	AVRRF	CC Rtm	AVRtm	% RSD	Co X0	Co X1	Co X2	Co Cor
1	1,4-Dichlorobenzene-d4	40.000	0	671449	1	1	2.826	2.821	0				
2	1,4-Dioxane	37.227	-3.1	165673	0.395	0.407	1.207	1.195	3.88				
3	N-nitrosodimethylamine	33.743	-5.0	257907	0.615	0.647	1.317	1.306	3.41				
4	Pyridine	33.580	-5.7	476783	1.136	1.205	1.346	1.333	3.20				
5	2-Fluorophenol	25.287	1.1	474747	1.131	1.118	1.911	1.902	2.36				
6	Phenol-d5	24.431	-2.3	606577	1.445	1.479	2.481	2.477	1.21				
7	Phenol	24.177	-3.3	587307	1.399	1.447	2.491	2.488	1.57				
8	Aniline	24.776	-0.9	714427	1.702	1.718	2.559	2.553	1.34				
9	bis(2-chloroethyl)ether	23.768	-4.9	413484	0.985	1.036	2.591	2.583	2.50				
10	2-Chlorophenol	23.509	-6.0	507051	1.208	1.285	2.648	2.642	6.91				
11	1,3-Dichlorobenzene	23.296	-6.8	587757	1.401	1.503	2.778	2.776	1.22				
12	1,2-Dichlorobenzene-d4												
13	1,4-Dichlorobenzene	23.496	-6.0	601453	1.433	1.525	2.840	2.835	1.36				
14	Benzyl alcohol	24.415	-2.3	317853	0.757	0.776	2.917	2.911	1.66				
15	1,2-Dichlorobenzene	23.087	-7.7	563014	1.342	1.453	2.970	2.965	0.53				
16	2-Methylphenol	22.830	-8.7	376184	0.896	0.982	2.993	2.989	3.28				
17	bis(2-chloroisopropyl)ether	22.864	-8.5	707345	1.686	1.843	3.033	3.028	3.18				
18	4-Methylphenol	23.193	-7.2	501191	1.194	1.287	3.128	3.122	1.09				
19	N-Nitroso-di-n-propylamine	20.663	-17.3	329816	0.786	0.951	3.157	3.148	3.12				
20	Hexachloroethane	23.842	-4.6	236227	0.563	0.590	3.273	3.269	1.47				
21	Naphthalene-d8	40.000	0	2413770	1	1	4.031	4.026	0				
22	Nitrobenzene-d5	23.147	-7.4	556866	0.369	0.399	3.305	3.301	2.36				
23	Nitrobenzene	22.905	-8.4	526078	0.349	0.381	3.323	3.320	1.15				
24	Isophorone	21.189	-15.2	906337	0.601	0.709	3.553	3.544	1.81				
25	2-Nitrophenol	24.511	-2.0	271549	0.180	0.184	3.627	3.627	5.72				
26	2,4-Dimethylphenol	23.476	-6.1	514234	0.341	0.363	3.651	3.647	1.61				
27	Benzoic acid	23.007	-8.0	360037	0.239	0.259	3.723	3.720	13.40				
28	bis(2-Chloroethoxy)methane	23.258	-7.0	552359	0.366	0.394	3.761	3.753	6.27				
29	2,5-Dimethylphenol	23.640	-7.8	595182	0.395	0.428	3.790	3.783	0.93				
30	2,4-Dichlorophenol	23.816	-4.7	428149	0.304	0.319	3.867	3.862	3.67				
31	1,2,4-Trichlorobenzene	23.188	-7.2	557148	0.369	0.398	3.963	3.956	5.18				
32	3,4-Dimethylphenol	23.242	-7.0	638209	0.423	0.455	3.963	3.960	2.03				
33	Naphthalene	24.333	-2.7	1450181	0.961	0.988	4.050	4.048	1.51				
34	4-Chloroaniline	24.511	-2.0	607269	0.403	0.411	4.098	4.096	1.60				
35	2,6-Dichlorophenol	23.115	-7.5	460449	0.305	0.330	4.108	4.104	1.42				
36	Hexachlorobutadiene	20.885	-16.5	358253	0.237	0.284	4.181	4.175	1.72				
37	Hydroquinone												
38	4-Chloro-3-methylphenol	23.233	-7.1	417352	0.277	0.298	4.620	4.618	3.17				
39	2-Methylnaphthalene	24.667	-1.3	1040037	0.695	0.705	4.811	4.810	1.34				
40	1-Methylnaphthalene	24.167	-3.3	975333	0.647	0.669	4.926	4.921	1.64				
41	Acenaphthene-d10	40.000	0	1372483	1	1	6.032	6.028	0				
42	Hexachlorocyclopentadiene	24.689	-1.2	744711	0.518	0.525	4.993	4.988	8.36				
43	2,3,5-Trichlorophenol	23.982	-4.0	393817	0.458	0.462	4.998	4.996	4.42				
44	2,4,6-Trichlorophenol	23.225	-6.9	226877	0.264	0.267	5.128	5.127	3.51				
45	2,4,5-Trichlorophenol	23.193	-7.2	400977	0.467	0.504	5.128	5.127	2.51				
46	2-Fluorobiphenyl	23.430	-6.3	414742	0.483	0.516	5.162	5.162	4.46				
47	2,3,4-Trichlorophenol	22.727	-9.1	1336127	1.558	1.713	5.239	5.234	6.52				
48	Biphenyl	21.222	-15.1	357726	0.417	0.491	5.239	5.238	5.74				
49	2-Chloronaphthalene	23.035	-7.8	1299118	1.514	1.643	5.354	5.350	2.34				
50	2-Nitroaniline	23.303	-6.8	1012148	1.180	1.266	5.373	5.371	1.39				
51	2,6-Dimethylnaphthalene	22.971	-8.3	276145	0.325	0.359	5.789	5.789	5.60				
52	1,4-Dinitrobenzene	24.345	-2.6	969811	1.131	1.161	5.536	5.534	2.31				
53	Dimethylphthalate	23.376	-6.5	146845	0.171	0.183	5.661	5.661	7.07				
54	1,3-Dinitrobenzene	23.431	-6.3	1195381	1.394	1.487	5.729	5.719	1.35				
55	2,6-Dinitrotoluene	22.381	-10.5	159513	0.186	0.208	5.744	5.747	1.56				
56	1,2-Dinitrobenzene	23.237	-7.1	251009	0.293	0.315	5.787	5.785	2.57				
57	Acenaphthylene	23.820	-4.6	1014477	0.118	0.124	5.845	5.841	4.16				
58	3-Nitroaniline	23.990	-4.0	256745	0.299	0.312	5.979	5.979	3.08				
59	Acenaphthene	23.187	-7.3	1027930	1.198	1.292	6.070	6.067	2.67				
60	2,4-Dinitrophenol	27.795	11.2	180104	0.210	0.173	6.104	6.105	18.12	-0.0089	0.2017		0.9998
61	4-Nitrophenol	23.836	-4.7	192052	0.224	0.235	6.176	6.176	10.86				
62	2,4-Dinitrotoluene	23.621	-5.4	339953	0.396	0.419	6.262	6.265	2.56				
63	Dibenzofuran	23.904	-4.4	1531516	1.785	1.907	6.277	6.275	0.93				
64	2,3,5,6-Tetrachlorophenol	23.928	-4.3	305520	0.356	0.372	6.368	6.368	4.89				
65	2,3,4,6-Tetrachlorophenol	21.781	-12.9	376102	0.438	0.503	6.420	6.420	8.66				
66	2,3,5-Trimethylnaphthalene	23.957	-4.2	932187	1.087	1.134	6.534	6.529	2.37				
67	Diethylphthalate	23.184	-7.3	1156212	1.348	1.453	6.581	6.571	1.91				
68	Fluorene	23.734	-5.1	1177415	1.373	1.446	6.689	6.688	2.87				
69	4-Chlorophenyl-phenylether	23.692	-5.2	648196	0.756	0.797	6.703	6.698	1.75				
70	4-Nitroaniline	24.447	-2.5	259028	0.303	0.310	6.713	6.710	9.54				
71	Phenanthrene-d10	40.000	0	2423629	1	1	7.774	7.771	0				
72	4,6-Dinitro-2-methylphenol	27.486	9.9	252998	0.135	0.114	6.750	6.751	15.97	-0.0050	0.1302		0.9995
73	N-Nitrosodiphenylamine	23.587	-5.7	1015382	0.543	0.575	6.845	6.840	2.18				
74	Azobenzene	21.577	-13.7	1023613	0.547	0.634	6.892	6.887	1.42				
75	2,4,6-Tribromophenol	22.837	-8.7	237409	0.127	0.139	6.973	6.971	5.49				
76	4-Bromophenyl-phenylether	20.626	-17.5	471381	0.220	0.267	7.281	7.272	9.45				
77	Hexachlorobenzene	20.869	-16.5	478791	0.220	0.263	7.328	7.329	1.08				
78	Pentachlorophenol	21.986	-12.1	446746	0.240	0.273	7.565	7.557	9.22				
79	Dibenzothiophene	23.885	-4.5	284484	0.152	0.159	7.525	7.524	2.55				
80	Phenanthrene	23.076	-7.7	1813182	0.969	1.050	7.659	7.655	5.35				
81	Dinoseb	22.918	-8.3	1819519	0.972	1.061	7.801	7.797	0.52				
82	Anthracene	23.421	-6.3	1864627	0.997	1.064	7.856	7.854	2.26				
83	Carbazole	22.155	-11.4	1701313	0.909	0.869	8.037	8.035	4.73				
84	Di-n-butylphthalate	23.624	-5.4	1895367	1.013	1.071	8.449	8.433	5.00				
85	1-Methylphenanthrene	24.330	-2.7	1441570	0.770	0.792	8.473	8.468	2.55				
86	Fluoranthene	23.963	-4.1	2168439	1.159	1.209	9.077	9.073	5.36				
87	Chrysene-d12	40.000	0	3292992	1	1	10.553	10.543	0				
88	Benzidine												
89	Pyrene	22.903	-8.4	2200168	1.069	1.167	9.313	9.309	2.37				
90	Terphenyl-d14	22.638	-5.4	1688530	0.820	0.868	9.488	9.479	2.38				
91	Butylbenzylphthalate	22.304	-1.2	862576	0.420	0.415	10.002	9.984	4.92				
92	bis(2-ethylhexyl)adipate	22.067	0.3	663467	0.322	0.322	10.093	10.064	6.20				
93	3,3'-Dichlorobenzidine	26.366	5.5	862671	0.419	0.397	10.518	10.509	6.51				
94	Benzo(a)anthracene	24.319	-2.7	2241118	1.089	1.119	10.538	10.531	0.41				
95	Chrysene	24.381	-2.5	2138887	1.039	1.066	10.577	10.568	0.56				
96	bis(2-Ethylhexyl)phthalate	24.114	-3.5	1245777	0.605	0.628	10.587	10.562	5.36				
97	Perylene-d12	40.000	0	3101839	1	1	11.914	11.906	0				
98	Di-n-octylphthalate	23.892	-4.4	2000030	1.032	1.079	11.208	11.178	7.90				
99	Benzo(b)fluoranthene	22.356	-6.6	2037084	1.051	1.062	11.553	11.542	4.39				
100	Benzo(k)fluoranthene	24.788	-0.8	2108615	1.088	1.071	11.578	11.568	4.82				
101	Benzo(e)pyrene	23.874	-4.5	1983135	1.023	1.071	11.806	11.800	2.67				
102	Benzo(a)pyrene	24.300	-2.8	1977979	1.020	1.050	11.858	11.850	4.25				
103	Perylene	23.721	-5.1	1980188	1.021	1.077	11.942	11.932	3.16				
104	Indeno(1,2,3-cd)pyrene	24.072	-3.7	2273183	1.173	1.218	13.104	13.100	5.29				
105	Dibenzo(a,h)anthracene	24.722	-1.1	1919927	0.990	1.001	13.129	13.120	6.48				
106	Benzo(g,h,i)perylene	23.939	-4.2	1904121	0.982	1.026	13.463	13.458	4.66				

Data Path : D:\DATA\18G03\
Data File : RGH002.D
Acq On : 3 Jul 2018 7:36
Operator : KVu
Sample : DFTE7A2280
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPP.M
Title : DFTPP
Last Update : Tue Jan 23 12:56:03 2018

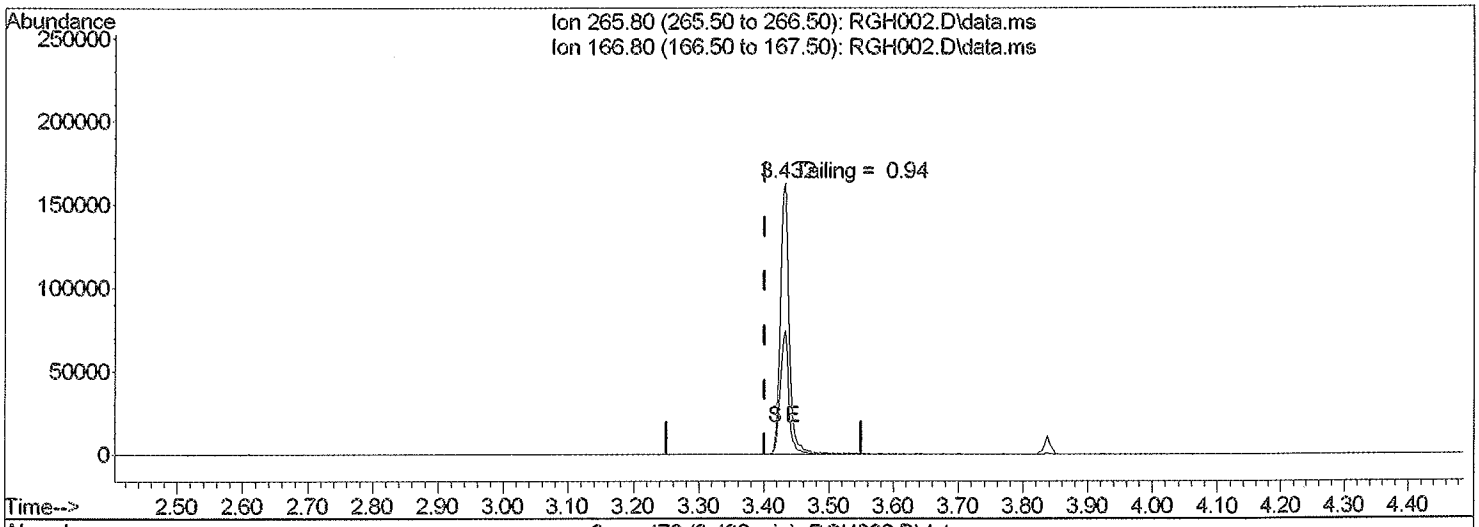


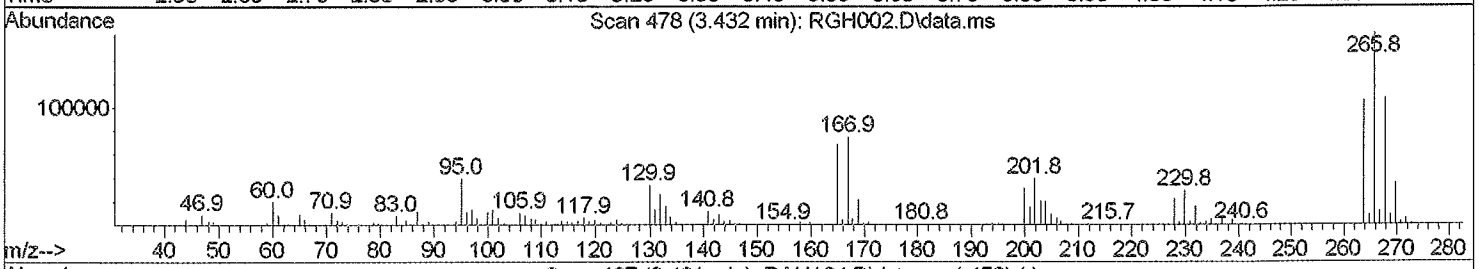
AutoFind: Scans 621, 622, 623; Background Corrected with Scan 613

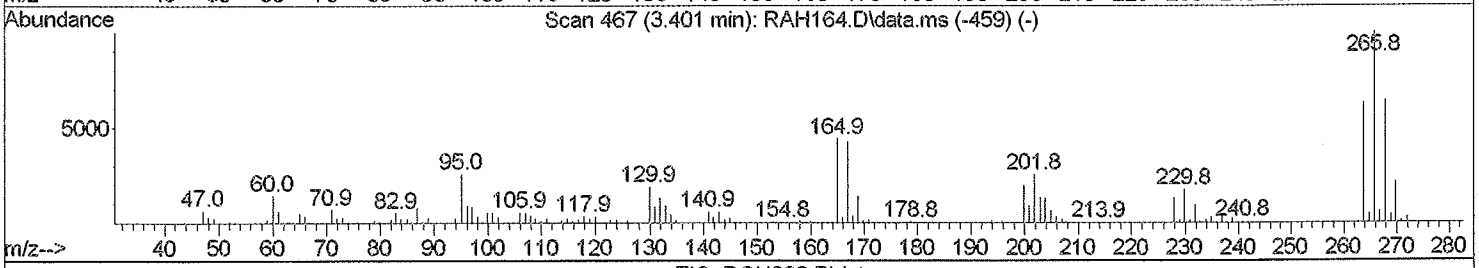
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.7	64125	PASS
68	69	0.00	2	1.8	1279	PASS
69	198	0.00	100	36.8	70043	PASS
70	69	0.00	2	0.5	324	PASS
127	198	40	60	47.3	90069	PASS
197	198	0.00	1	0.2	399	PASS
198	198	100	100	100.0	190549	PASS
199	198	5	9	7.2	13747	PASS
275	198	10	30	25.6	48803	PASS
365	198	1	100	2.7	5052	PASS
441	443	0.01	100	85.7	29405	PASS
442	198	40	100	98.4	187413	PASS
443	442	17	23	18.3	34323	PASS

Quantitation Report (Qedit)

Data File : D:\DATA\18G03\RGH002.D Vial: 2
Acq On : 3 Jul 2018 7:36 Operator: KVu
Sample : DFTE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 07:47:49 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M







TIC: RGH002.D\data.ms

(1) Pentachlorophenol (T)

3.432min (+0.031) 46.66 ppm

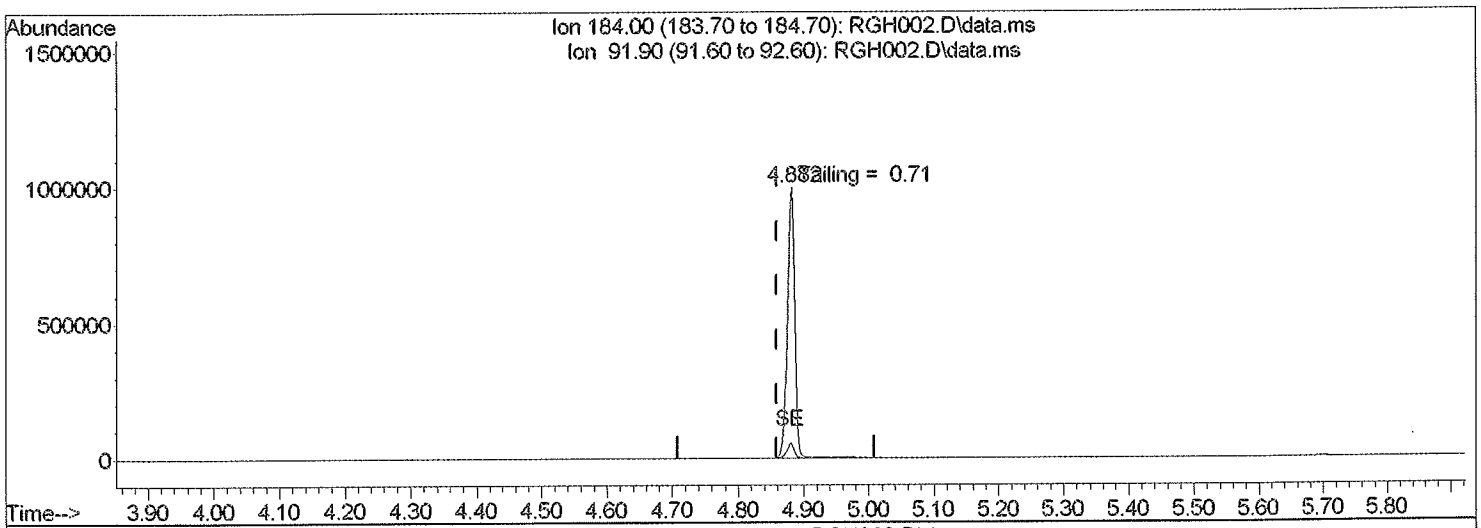
response 152163

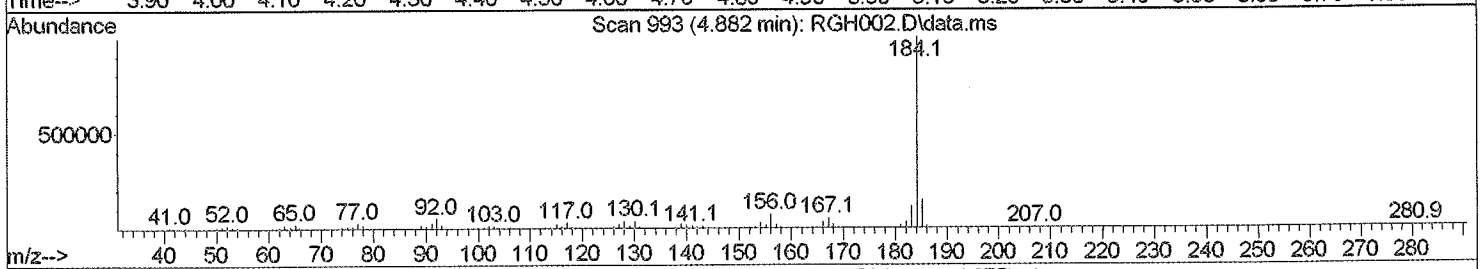
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	44.34
0.00	0.00	0.00
0.00	0.00	0.00

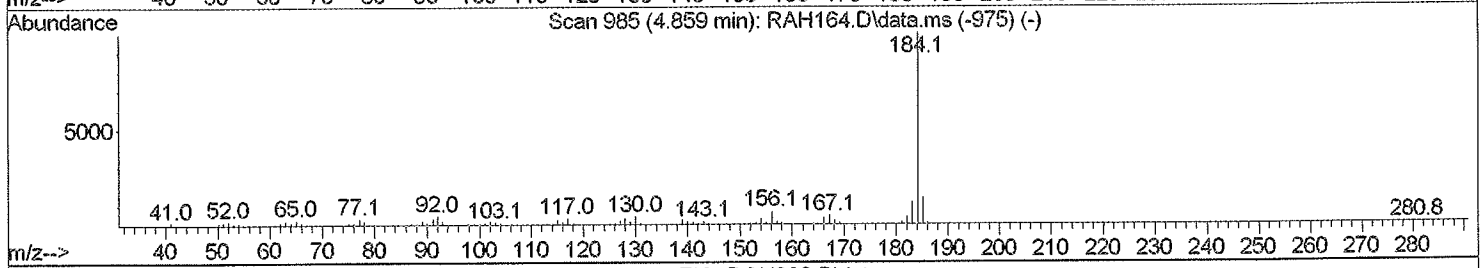
Quantitation Report (Qedit)

Data File : D:\DATA\18G03\RGH002.D
Acq On : 3 Jul 2018 7:36
Sample : DFTE7A2280
Misc :
Integrator: RTE
Quant Time: Jul 03 07:47:49 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RGH002.D\data.ms

(3) Benzidine (T)

4.882min (+0.023) 50.00 ppm

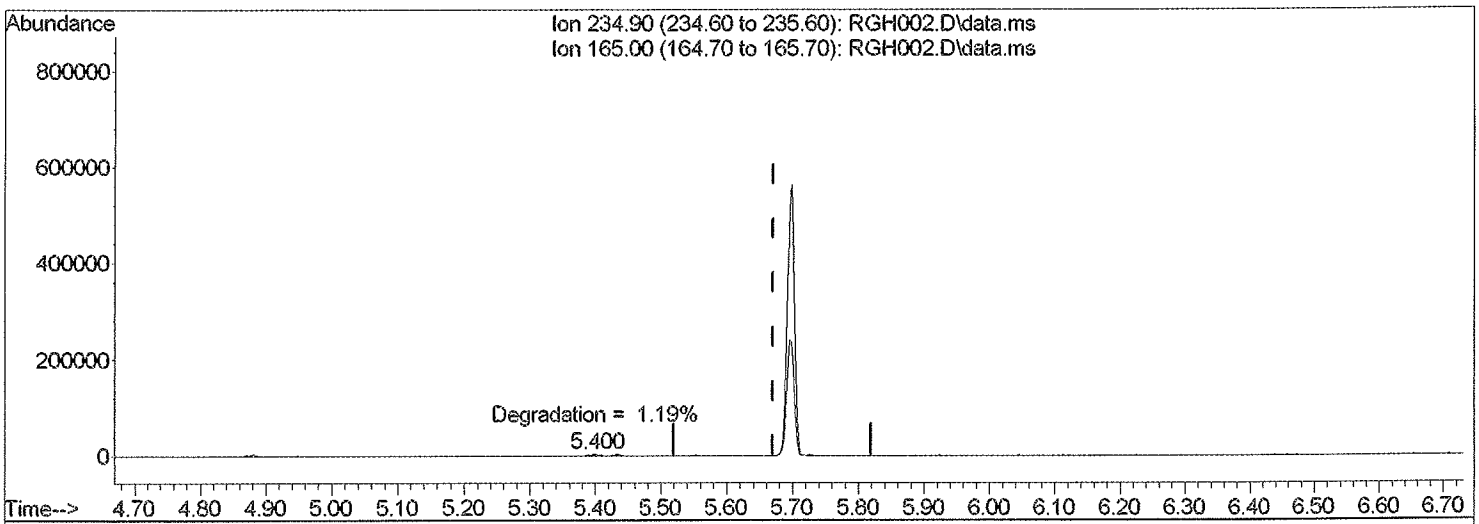
response 762014

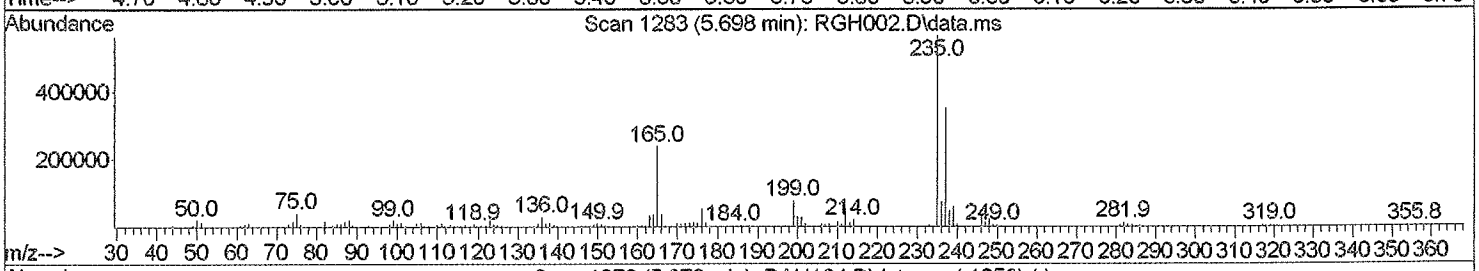
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	5.23
0.00	0.00	0.00
0.00	0.00	0.00

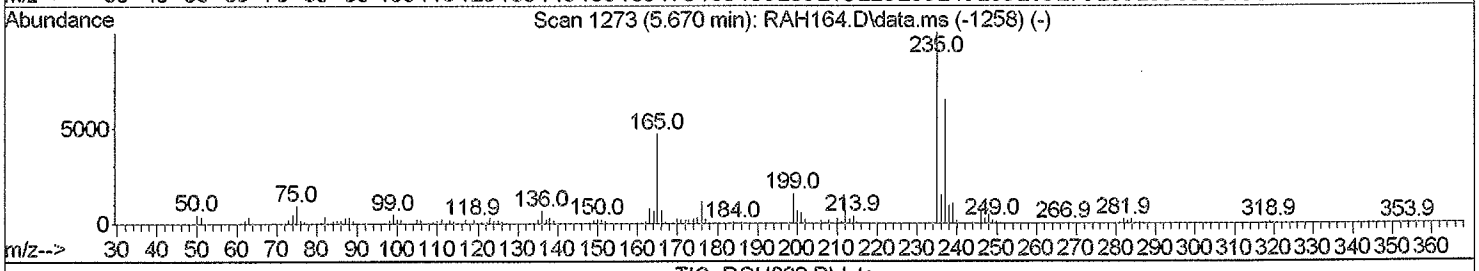
Quantitation Report (Qedit)

Data File : D:\DATA\18G03\RGH002.D
Acq On : 3 Jul 2018 7:36
Sample : DFTE7A2280
Misc :
Integrator: RTE
Quant Time: Jul 03 07:47:49 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RGH002.D\data.ms

(6) DDT (T)

5.698min (+0.028) 43.47 ppm

response 414290

Ion	Exp%	Act%
234.90	100	100
165.00	47.00	45.17
0.00	0.00	0.00
0.00	0.00	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	160	0.00
2	T	1,4-Dioxane	25.000	24.590	1.6	159	0.02
3	T	N-nitrosodimethylamine	25.000	23.461	6.2	146	0.01
4	T	Pyridine	25.000	23.794	4.8	149	0.01
5	S	2-Fluorophenol	25.000	25.950	-3.8	160	0.00
6	S	Phenol-d5	25.000	24.356	2.6	154	0.00
7	C,P	Phenol	25.000	24.280	2.9	153	0.00
8	T	Aniline	25.000	25.172	-0.7	157	0.00
9	T,P	bis(2-chloroethyl)ether	25.000	24.148	3.4	153	0.00
10	T,P	2-Chlorophenol	25.000	23.969	4.1	144	0.00
11	T	1,3-Dichlorobenzene	25.000	23.740	5.0	149	0.00
12	S	1,2-Dichlorobenzene-d4	25.000	0.000	100.0#	0	-2.99#
13	C	1,4-Dichlorobenzene	25.000	24.076	3.7	152	0.00
14	T	Benzyl alcohol	25.000	25.085	-0.3	161	0.00
15	T	1,2-Dichlorobenzene	25.000	23.781	4.9	151	0.00
16	T,P	2-Methylphenol	25.000	24.111	3.6	153	0.00
17	T	bis(2-chloroisopropyl)ether	25.000	23.189	7.2	147	0.00
18	T,P	4-Methylphenol	25.000	23.052	7.8	147	0.00
19	P,P	N-Nitroso-di-n-propylamine	25.000	21.244	15.0	130	0.00
20	T,P	Hexachloroethane	25.000	24.331	2.7	154	0.00
21	I	Naphthalene-d8	40.000	40.000	0.0	152	0.00
22	S	Nitrobenzene-d5	25.000	24.250	3.0	147	0.00
23	T,P	Nitrobenzene	25.000	23.925	4.3	144	0.00
24	T,P	Isophorone	25.000	24.446	2.2	153	0.00
25	C,P	2-Nitrophenol	25.000	24.955	0.2	159	0.00
26	T,P	2,4-Dimethylphenol	25.000	24.283	2.9	147	0.00
27	T	Benzoic acid	25.000	22.895	8.4	136	0.00
28	T,P	bis(2-Chloroethoxy)methane	25.000	24.406	2.4	155	0.00
29	T	3,5-Dimethylphenol	25.000	24.833	0.7	152	0.00
30	C,P	2,4-Dichlorophenol	25.000	24.373	2.5	149	0.00
31	T	1,2,4-Trichlorobenzene	25.000	23.805	4.8	144	0.00
32	T	3,4-Dimethylphenol	25.000	23.960	4.2	146	0.00
33	T.P	Naphthalene	25.000	24.534	1.9	149	0.00
34	T	4-Chloroaniline	25.000	25.226	-0.9	152	0.00
35	T	2,6-Dichlorophenol	25.000	22.902	8.4	138	0.00
36	C	Hexachlorobutadiene	25.000	21.147	15.4	128	0.00
37	T	Hydroquinone	25.000	0.000	100.0#	0	0.00
38	C,P	4-Chloro-3-methylphenol	25.000	23.508	6.0	144	0.00
39	T,P	2-Methylnaphthalene	25.000	24.549	1.8	152	0.00
40	T	1-Methylnaphthalene	25.000	24.115	3.5	150	0.00
41	I	Acenaphthene-d10	40.000	40.000	0.0	153	0.00
42	P	Hexachlorocyclopentadiene	25.000	25.078	-0.3	146	0.00
43	T	2,3,5-Trichlorophenol	25.000	23.220	7.1	143	0.00
44	C,P	2,4,6-Trichlorophenol	25.000	23.126	7.5	139	0.00
45	T,P	2,4,5-Trichlorophenol	25.000	23.620	5.5	146	0.00
46	S	2-Fluorobiphenyl	25.000	22.728	9.1	132	0.00
47	T	2,3,4-Trichlorophenol	25.000	23.428	6.3	153	0.00
48	T	Biphenyl	25.000	23.161	7.4	141	0.00
49	T,P	2-Chloronaphthalene	25.000	22.901	8.4	139	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	25.000	21.612	13.6	132	0.00
51	T	2,6-Dimethylnaphthalene	25.000	24.497	2.0	149	0.00
52	T	1,4-Dinitrobenzene	25.000	21.729	13.1	131	0.00
53	T	Dimethylphthalate	25.000	23.332	6.7	144	0.00
54	T	1,3-Dinitrobenzene	25.000	22.716	9.1	142	0.00
55	T,P	2,6-Dinitrotoluene	25.000	22.619	9.5	137	0.00
56	T	1,2-Dinitrobenzene	25.000	22.770	8.9	135	0.00
57	T,P	Acenaphthylene	25.000	24.357	2.6	143	0.00
58	T	3-Nitroaniline	25.000	24.172	3.3	141	0.00
59	C,P	Acenaphthene	25.000	22.657	9.4	137	0.00
60	P	2,4-Dinitrophenol	25.000	27.680	-10.7	167	0.00
61	P	4-Nitrophenol	25.000	24.024	3.9	132	0.00
62	T,P	2,4-Dinitrotoluene	25.000	23.460	6.2	141	0.00
63	T,P	Dibenzofuran	25.000	22.956	8.2	141	0.00
64	T	2,3,5,6-Tetrachlorophenol	25.000	23.604	5.6	142	0.00
65	T	2,3,4,6-Tetrachlorophenol	25.000	22.301	10.8	143	0.00
66	T	2,3,5-Trimethylnaphthalene	25.000	23.656	5.4	145	0.00
67	T	Diethylphthalate	25.000	23.103	7.6	141	0.00
68	T,P	Fluorene	25.000	23.638	5.4	146	0.00
69	T,P	4-Chlorophenyl-phenylether	25.000	23.189	7.2	145	0.00
70	T	4-Nitroaniline	25.000	25.286	-1.1	136	0.00
71	I	Phenanthrene-d10	40.000	40.000	0.0	149	0.00
72	T	4,6-Dinitro-2-methylphenol	25.000	28.079	-12.3	161	0.00
73	C	N-Nitrosodiphenylamine	25.000	23.835	4.7	144	0.00
74	T	Azobenzene	25.000	21.971	12.1	133	0.00
75	S	2,4,6-Tribromophenol	25.000	23.373	6.5	137	0.00
76	T,P	4-Bromophenyl-phenylether	25.000	24.753	1.0	135	0.00
77	T,P	Hexachlorobenzene	25.000	22.406	10.4	136	0.00
78	C,P	Pentachlorophenol	25.000	24.655	1.4	137	0.00
79	T	Dibenzothiophene	25.000	25.355	-1.4	146	0.00
80	T,P	Phenanthrene	25.000	23.881	4.5	142	0.00
81	T	Dinoseb	25.000	0.000	100.0#	0	0.00
82	T,P	Anthracene	25.000	23.421	6.3	138	0.00
83	T	Carbazole	25.000	25.694	-2.8	146	0.00
84	T	Di-n-butylphthalate	25.000	24.232	3.1	138	0.01
85	T	1-Methylphenanthrene	25.000	24.676	1.3	142	0.00
86	C,P	Fluoranthene	25.000	24.539	1.8	140	0.00
87	I	Chrysene-d12	40.000	40.000	0.0	141	0.00
88	T	Benzidine	25.000	0.000	100.0#	0	0.00
89	T,P	Pyrene	25.000	24.008	4.0	139	0.00
90	S	Terphenyl-d14	25.000	24.432	2.3	142	0.00
91	T	Butylbenzylphthalate	25.000	24.978	0.1	139	0.02
92	T	bis(2-ethylhexyl)adipate	25.000	25.005	-0.0	141	0.03
93	T	3,3'-Dichlorobenzidine	25.000	27.017	-8.1	145	0.00
94	T,P	Benzo(a)anthracene	25.000	24.619	1.5	139	0.00
95	T,P	Chrysene	25.000	23.610	5.6	134	0.00
96	T	bis(2-Ethylhexyl)phthalate	25.000	23.618	5.5	132	0.02
97	I	Perylene-d12	40.000	40.000	0.0	144	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	25.000	24.556	1.8	139	0.03
99	T,P	Benzo(b)fluoranthene	25.000	24.442	2.2	144	0.00
100	T,P	Benzo(k)fluoranthene	25.000	23.525	5.9	131	0.00
101	T	Benzo(e)pyrene	25.000	24.566	1.7	140	0.00
102	C,P	Benzo(a)pyrene	25.000	24.594	1.6	140	0.00
103	T	Perylene	25.000	23.920	4.3	138	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	25.000	24.768	0.9	138	0.00
105	T,P	Dibenzo(a,h)anthracene	25.000	25.016	-0.1	139	0.00
106	T,P	Benzo(g,h,i)perylene	25.000	24.822	0.7	139	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	160	0.00
2	T	1,4-Dioxane	0.407	0.401	1.5	159	0.02
3	T	N-nitrosodimethylamine	0.647	0.607	6.2	146	0.01
4	T	Pyridine	1.205	1.146	4.9	149	0.01
5	S	2-Fluorophenol	1.118	1.161	-3.8	160	0.00
6	S	Phenol-d5	1.479	1.441	2.6	154	0.00
7	C,P	Phenol	1.447	1.405	2.9	153	0.00
8	T	Aniline	1.718	1.730	-0.7	157	0.00
9	T,P	bis(2-chloroethyl)ether	1.036	1.001	3.4	153	0.00
10	T,P	2-Chlorophenol	1.285	1.232	4.1	144	0.00
11	T	1,3-Dichlorobenzene	1.503	1.427	5.1	149	0.00
12	S	1,2-Dichlorobenzene-d4	0.000	0.000#	0.0	0#	-2.99#
13	C	1,4-Dichlorobenzene	1.525	1.469	3.7	152	0.00
14	T	Benzyl alcohol	0.776	0.778	-0.3	161	0.00
15	T	1,2-Dichlorobenzene	1.453	1.382	4.9	151	0.00
16	T,P	2-Methylphenol	0.982	0.947	3.6	153	0.00
17	T	bis(2-chloroisopropyl)ether	1.843	1.710	7.2	147	0.00
18	T,P	4-Methylphenol	1.287	1.187	7.8	147	0.00
19	P,P	N-Nitroso-di-n-propylamine	0.951	0.808	15.0	130	0.00
20	T,P	Hexachloroethane	0.590	0.574	2.7	154	0.00
21	I	Naphthalene-d8	1.000	1.000	0.0	152	0.00
22	S	Nitrobenzene-d5	0.399	0.387	3.0	147	0.00
23	T,P	Nitrobenzene	0.381	0.364	4.5	144	0.00
24	T,P	Isophorone	0.709	0.693	2.3	153	0.00
25	C,P	2-Nitrophenol	0.184	0.183	0.5	159	0.00
26	T,P	2,4-Dimethylphenol	0.363	0.353	2.8	147	0.00
27	T	Benzoic acid	0.259	0.237	8.5	136	0.00
28	T,P	bis(2-Chloroethoxy)methane	0.394	0.384	2.5	155	0.00
29	T	3,5-Dimethylphenol	0.428	0.425	0.7	152	0.00
30	C,P	2,4-Dichlorophenol	0.319	0.311	2.5	149	0.00
31	T	1,2,4-Trichlorobenzene	0.398	0.379	4.8	144	0.00
32	T	3,4-Dimethylphenol	0.455	0.436	4.2	146	0.00
33	T.P	Naphthalene	0.988	0.969	1.9	149	0.00
34	T	4-Chloroaniline	0.411	0.414	-0.7	152	0.00
35	T	2,6-Dichlorophenol	0.330	0.302	8.5	138	0.00
36	C	Hexachlorobutadiene	0.284	0.240	15.5	128	0.00
37	T	Hydroquinone	0.000	0.000#	0.0	0#	0.00
38	C,P	4-Chloro-3-methylphenol	0.298	0.280	6.0	144	0.00
39	T,P	2-Methylnaphthalene	0.705	0.692	1.8	152	0.00
40	T	1-Methylnaphthalene	0.669	0.645	3.6	150	0.00
41	I	Acenaphthene-d10	1.000	1.000	0.0	153	0.00
42	P	Hexachlorocyclopentadiene	0.525	0.527	-0.4	146	0.00
43	T	2,3,5-Trichlorophenol	0.492	0.457	7.1	143	0.00
44	C,P	2,4,6-Trichlorophenol	0.504	0.466	7.5	139	0.00
45	T,P	2,4,5-Trichlorophenol	0.516	0.487	5.6	146	0.00
46	S	2-Fluorobiphenyl	1.713	1.558	9.0	132	0.00
47	T	2,3,4-Trichlorophenol	0.491	0.460	6.3	153	0.00
48	T	Biphenyl	1.643	1.522	7.4	141	0.00
49	T,P	2-Chloronaphthalene	1.266	1.160	8.4	139	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	0.359	0.310	13.6	132	0.00
51	T	2,6-Dimethylnaphthalene	1.161	1.138	2.0	149	0.00
52	T	1,4-Dinitrobenzene	0.183	0.159	13.1	131	0.00
53	T	Dimethylphthalate	1.487	1.388	6.7	144	0.00
54	T	1,3-Dinitrobenzene	0.208	0.189	9.1	142	0.00
55	T,P	2,6-Dinitrotoluene	0.315	0.285	9.5	137	0.00
56	T	1,2-Dinitrobenzene	0.124	0.113	8.9	135	0.00
57	T,P	Acenaphthylene	2.006	1.954	2.6	143	0.00
58	T	3-Nitroaniline	0.312	0.302	3.2	141	0.00
59	C,P	Acenaphthene	1.292	1.171	9.4	137	0.00
60	P	2,4-Dinitrophenol	0.173	0.209	-20.8#	167	0.00
61	P	4-Nitrophenol	0.235	0.226	3.8	132	0.00
62	T,P	2,4-Dinitrotoluene	0.419	0.393	6.2	141	0.00
63	T,P	Dibenzofuran	1.907	1.751	8.2	141	0.00
64	T	2,3,5,6-Tetrachlorophenol	0.372	0.351	5.6	142	0.00
65	T	2,3,4,6-Tetrachlorophenol	0.503	0.449	10.7	143	0.00
66	T	2,3,5-Trimethylnaphthalene	1.134	1.073	5.4	145	0.00
67	T	Diethylphthalate	1.453	1.343	7.6	141	0.00
68	T,P	Fluorene	1.446	1.367	5.5	146	0.00
69	T,P	4-Chlorophenyl-phenylether	0.797	0.740	7.2	145	0.00
70	T	4-Nitroaniline	0.310	0.313	-1.0	136	0.00
71	I	Phenanthrene-d10	1.000	1.000	0.0	149	0.00
72	T	4,6-Dinitro-2-methylphenol	0.114	0.138	-21.1#	161	0.00
73	C	N-Nitrosodiphenylamine	0.575	0.548	4.7	144	0.00
74	T	Azobenzene	0.634	0.557	12.1	133	0.00
75	S	2,4,6-Tribromophenol	0.139	0.130	6.5	137	0.00
76	T,P	4-Bromophenyl-phenylether	0.267	0.264	1.1	135	0.00
77	T,P	Hexachlorobenzene	0.273	0.244	10.6	136	0.00
78	C,P	Pentachlorophenol	0.159	0.157	1.3	137	0.00
79	T	Dibenzothiophene	1.050	1.065	-1.4	146	0.00
80	T,P	Phenanthrene	1.061	1.013	4.5	142	0.00
81	T	Dinoseb	0.000	0.000#	0.0	0#	0.00
82	T,P	Anthracene	1.064	0.997	6.3	138	0.00
83	T	Carbazole	0.869	0.893	-2.8	146	0.00
84	T	Di-n-butylphthalate	1.071	1.038	3.1	138	0.01
85	T	1-Methylphenanthrene	0.792	0.781	1.4	142	0.00
86	C,P	Fluoranthene	1.209	1.187	1.8	140	0.00
87	I	Chrysene-d12	1.000	1.000	0.0	141	0.00
88	T	Benzidine	0.000	0.000#	0.0	0#	0.00
89	T,P	Pyrene	1.167	1.121	3.9	139	0.00
90	S	Terphenyl-d14	0.868	0.848	2.3	142	0.00
91	T	Butylbenzylphthalate	0.415	0.415	0.0	139	0.02
92	T	bis(2-ethylhexyl)adipate	0.322	0.322	0.0	141	0.03
93	T	3,3'-Dichlorobenzidine	0.397	0.430	-8.3	145	0.00
94	T,P	Benzo(a)anthracene	1.119	1.102	1.5	139	0.00
95	T,P	Chrysene	1.066	1.006	5.6	134	0.00
96	T	bis(2-Ethylhexyl)phthalate	0.628	0.593	5.6	132	0.02
97	I	Perylene-d12	1.000	1.000	0.0	144	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	1.079	1.060	1.8	139	0.03
99	T,P	Benzo(b)fluoranthene	1.125	1.100	2.2	144	0.00
100	T,P	Benzo(k)fluoranthene	1.097	1.032	5.9	131	0.00
101	T	Benzo(e)pyrene	1.071	1.053	1.7	140	0.00
102	C,P	Benzo(a)pyrene	1.050	1.033	1.6	140	0.00
103	T	Perylene	1.077	1.030	4.4	138	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	1.218	1.206	1.0	138	0.00
105	T,P	Dibenzo(a,h)anthracene	1.001	1.002	-0.1	139	0.00
106	T,P	Benzo(g,h,i)perylene	1.026	1.018	0.8	139	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.825	152	734532	40.00	ppm	0.00
21) Naphthalene-d8	4.026	136	2647015	40.00	ppm	0.00
41) Acenaphthene-d10	6.032	164	1475852	40.00	ppm	0.00
71) Phenanthrene-d10	7.774	188	3102864	40.00	ppm	0.00
87) Chrysene-d12	10.553	240	3467441	40.00	ppm	0.00
97) Perylene-d12	11.914	264	3345670	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	532956	25.95	ppm	0.00
Spiked Amount 30.000			Recovery =	86.50%		
6) Phenol-d5	2.481	99	661523	24.36	ppm	0.00
Spiked Amount 30.000			Recovery =	81.20%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.305	82	639780	24.25	ppm	0.00
Spiked Amount 10.000			Recovery =	242.50%		
46) 2-Fluorobiphenyl	5.239	172	1436828	22.73	ppm	0.00
Spiked Amount 10.000			Recovery =	227.30%		
75) 2,4,6-Tribromophenol	6.968	330	251850	23.37	ppm	0.00
Spiked Amount 30.000			Recovery =	77.90%		
90) Terphenyl-d14	9.488	244	1837699	24.43	ppm	0.00
Spiked Amount 10.000			Recovery =	244.30%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.212	88	183954	24.59	ppm	89
3) N-nitrosodimethylamine	1.317	74	278784	23.46	ppm	82
4) Pyridine	1.346	79	526299	23.79	ppm	94
7) Phenol	2.491	94	645200	24.28	ppm	93
8) Aniline	2.559	93	794056	25.17	ppm	96
9) bis(2-chloroethyl)ether	2.590	93	459586	24.15	ppm	94
10) 2-Chlorophenol	2.648	128	565553	23.97	ppm	92
11) 1,3-Dichlorobenzene	2.778	146	655237	23.74	ppm	94
13) 1,4-Dichlorobenzene	2.840	146	674206	24.08	ppm	94
14) Benzyl alcohol	2.917	108	357258	25.08	ppm	92
15) 1,2-Dichlorobenzene	2.969	146	634429	23.78	ppm	95
16) 2-Methylphenol	2.993	107	434627	24.11	ppm	94
17) bis(2-chloroisopropyl)...	3.032	45	784827	23.19	ppm	98
18) 4-Methylphenol	3.128	107	544950	23.05	ppm	92
19) N-Nitroso-di-n-propyla...	3.152	70	370942	21.24	ppm	90
20) Hexachloroethane	3.273	117	263723	24.33	ppm	87
23) Nitrobenzene	3.323	77	602597	23.93	ppm	97
24) Isophorone	3.548	82	1146682	24.45	ppm	96
25) 2-Nitrophenol	3.627	139	303187	24.96	ppm	86
26) 2,4-Dimethylphenol	3.651	107	583295	24.28	ppm	94
27) Benzoic acid	3.723	105	392898	22.90	ppm	99
28) bis(2-Chloroethoxy)met...	3.761	93	635649	24.41	ppm	99
29) 3,5-Dimethylphenol	3.785	107	703481	24.83	ppm	88
30) 2,4-Dichlorophenol	3.862	162	514175	24.37	ppm	98
31) 1,2,4-Trichlorobenzene	3.963	180	627232	23.81	ppm	98
32) 3,4-Dimethylphenol	3.963	107	721483	23.96	ppm	95
33) Naphthalene	4.050	128	1603454	24.53	ppm	99
34) 4-Chloroaniline	4.098	127	685375	25.23	ppm	99
35) 2,6-Dichlorophenol	4.108	162	500304	22.90	ppm	99
36) Hexachlorobutadiene	4.180	225	397805	21.15	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38)	4-Chloro-3-methylphenol	4.619	107	463096	23.51	ppm		97
39)	2-Methylnaphthalene	4.811	142	1144922	24.55	ppm		92
40)	1-Methylnaphthalene	4.921	142	1067286	24.12	ppm		96
42)	Hexachlorocyclopentadiene	4.988	237	485733	25.08	ppm		98
43)	2,3,5-Trichlorophenol	4.993	196	421102	23.22	ppm		94
44)	2,4,6-Trichlorophenol	5.128	196	429935	23.13	ppm		99
45)	2,4,5-Trichlorophenol	5.161	196	449607	23.62	ppm		98
47)	2,3,4-Trichlorophenol	5.234	196	424668	23.43	ppm		85
48)	Biphenyl	5.354	154	1404323	23.16	ppm		99
49)	2-Chloronaphthalene	5.373	162	1069589	22.90	ppm		99
50)	2-Nitroaniline	5.488	65	286140	21.61	ppm		93
51)	2,6-Dimethylnaphthalene	5.536	156	1049348	24.50	ppm		92
52)	1,4-Dinitrobenzene	5.657	168	146778	21.73	ppm		87
53)	Dimethylphthalate	5.724	163	1280008	23.33	ppm		99
54)	1,3-Dinitrobenzene	5.743	168	174097	22.72	ppm		87
55)	2,6-Dinitrotoluene	5.787	165	262737	22.62	ppm		85
56)	1,2-Dinitrobenzene	5.840	168	104103	22.77	ppm	#	69
57)	Acenaphthylene	5.859	152	1802441	24.36	ppm		100
58)	3-Nitroaniline	5.979	138	278185	24.17	ppm		99
59)	Acenaphthene	6.070	153	1080079	22.66	ppm		96
60)	2,4-Dinitrophenol	6.099	184	192815	27.68	ppm		96
61)	4-Nitrophenol	6.171	109	208144	24.02	ppm		82
62)	2,4-Dinitrotoluene	6.262	165	362449	23.46	ppm		92
63)	Dibenzofuran	6.276	168	1615285	22.96	ppm		99
64)	2,3,5,6-Tetrachlorophenol	6.368	230	324093	23.60	ppm		99
65)	2,3,4,6-Tetrachlorophenol	6.415	232	414085	22.30	ppm		99
66)	2,3,5-Trimethylnaphtha...	6.530	170	989770	23.66	ppm		87
67)	Diethylphthalate	6.581	149	1238942	23.10	ppm		98
68)	Fluorene	6.689	166	1260990	23.64	ppm		94
69)	4-Chlorophenyl-phenyle...	6.703	204	682160	23.19	ppm		99
70)	4-Nitroaniline	6.708	138	289109	25.29	ppm		98
72)	4,6-Dinitro-2-methylph...	6.750	198	268210	28.08	ppm		99
73)	N-Nitrosodiphenylamine	6.844	169	1063468	23.83	ppm		94
74)	Azobenzene	6.892	77	1080292	21.97	ppm		96
76)	4-Bromophenyl-phenylether	7.276	248	512942	24.75	ppm		97
77)	Hexachlorobenzene	7.328	284	474081	22.41	ppm		94
78)	Pentachlorophenol	7.550	266	304360	24.66	ppm		98
79)	Dibenzothiophene	7.654	184	2064873	25.35	ppm		99
80)	Phenanthrene	7.797	178	1965146	23.88	ppm		99
82)	Anthracene	7.856	178	1932661	23.42	ppm		98
83)	Carbazole	8.037	167	1732224	25.69	ppm		99
84)	Di-n-butylphthalate	8.449	149	2012477	24.23	ppm		99
85)	1-Methylphenanthrene	8.473	192	1515388	24.68	ppm		97
86)	Fluoranthene	9.077	202	2301471	24.54	ppm		99
89)	Pyrene	9.313	202	2428463	24.01	ppm		99
91)	Butylbenzylphthalate	10.002	149	898617	24.98	ppm		93
92)	bis(2-ethylhexyl)adipate	10.093	129	696898	25.01	ppm		92
93)	3,3'-Dichlorobenzidine	10.519	252	930795	27.02	ppm		98
94)	Benzo(a)anthracene	10.538	228	2388887	24.62	ppm		99
95)	Chrysene	10.577	228	2181045	23.61	ppm		97
96)	bis(2-Ethylhexyl)phtha...	10.587	149	1284793	23.62	ppm		100
98)	Di-n-octylphthalate	11.208	149	2217188	24.56	ppm		99
99)	Benzo(b)fluoranthene	11.549	252	2299841	24.44	ppm		98
100)	Benzo(k)fluoranthene	11.577	252	2158494	23.53	ppm		99
101)	Benzo(e)pyrene	11.806	252	2201016	24.57	ppm		98

Quantitation Report (QT Reviewed)

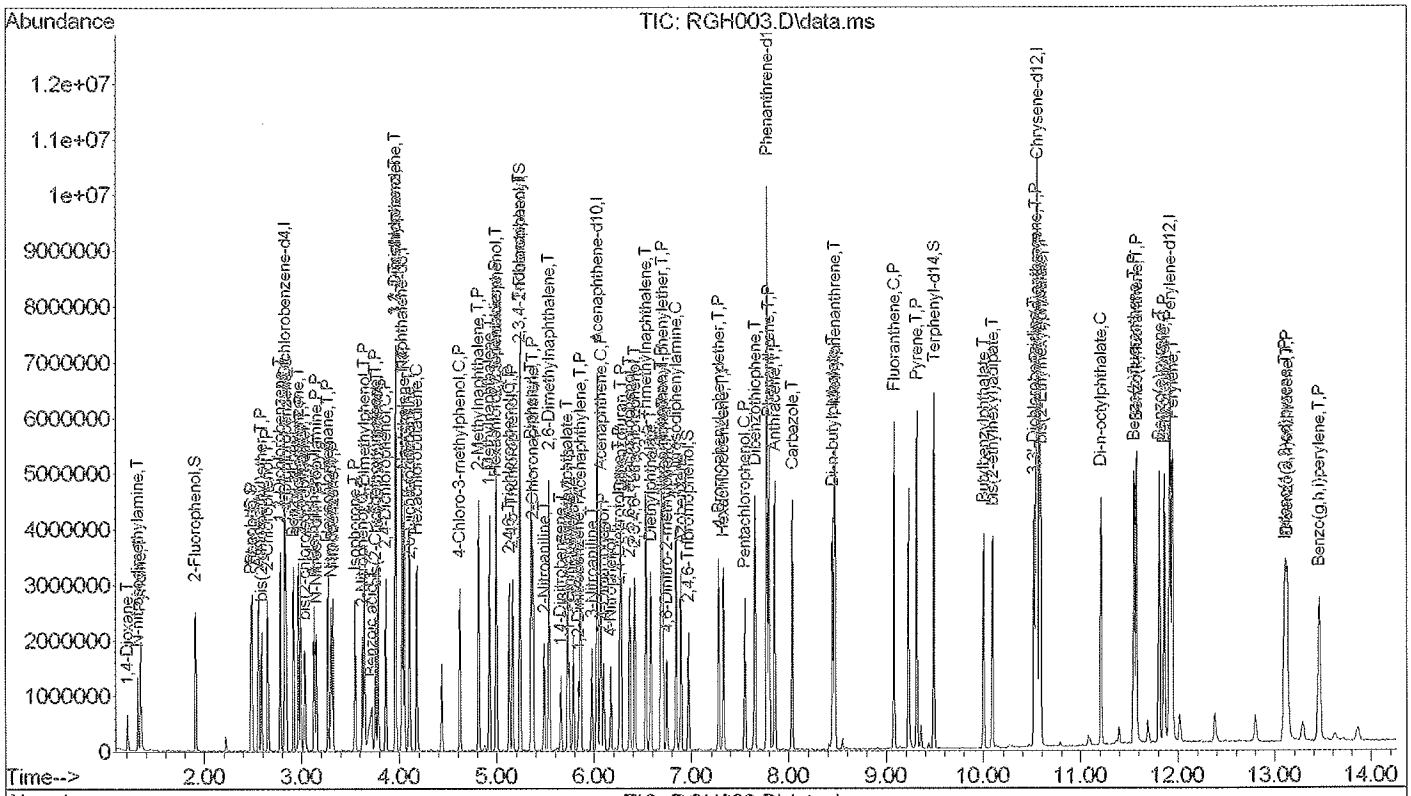
Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

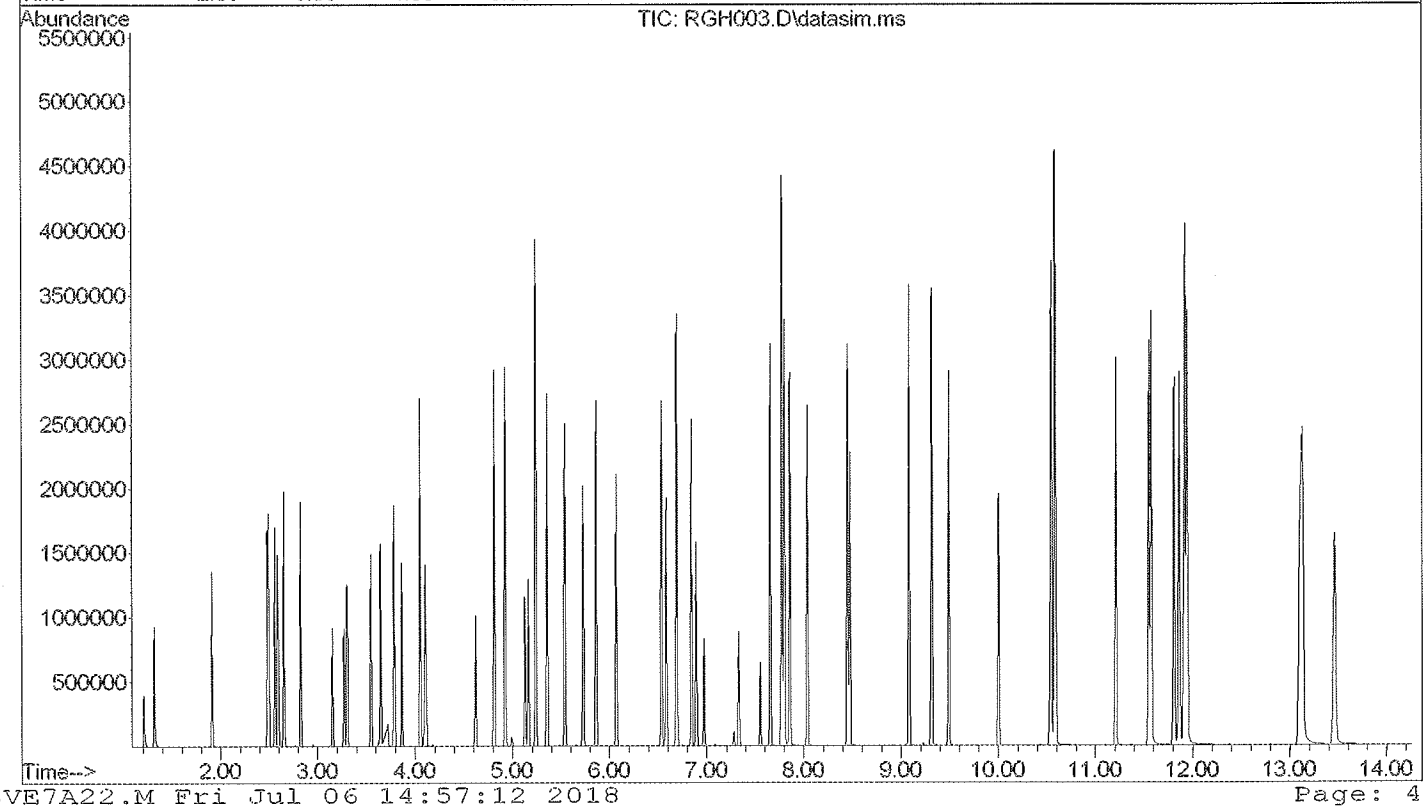
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.858	252	2159277	24.59	ppm	99
103) Perylene	11.938	252	2153771	23.92	ppm	100
104) Indeno(1,2,3-cd)pyrene	13.104	276	2522803	24.77	ppm	99
105) Dibenzo(a,h)anthracene	13.129	278	2095504	25.02	ppm	98
106) Benzo(g,h,i)perylene	13.458	276	2129549	24.82	ppm	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:30:24 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	146	0.00
2	T	1,4-Dioxane	25.000	24.227	3.1	144	0.01
3	T	N-nitrosodimethylamine	25.000	23.743	5.0	135	0.01
4	T	Pyridine	25.000	23.580	5.7	135	0.01
5	S	2-Fluorophenol	25.000	25.287	-1.1	143	0.00
6	S	Phenol-d5	25.000	24.432	2.3	141	0.00
7	C,P	Phenol	25.000	24.177	3.3	140	0.00
8	T	Aniline	25.000	24.776	0.9	142	0.00
9	T,P	bis(2-chloroethyl)ether	25.000	23.766	4.9	137	0.00
10	T,P	2-Chlorophenol	25.000	23.509	6.0	129	0.00
11	T	1,3-Dichlorobenzene	25.000	23.296	6.8	133	0.00
12	S	1,2-Dichlorobenzene-d4	25.000	0.000	100.0#	0	-2.99#
13	C	1,4-Dichlorobenzene	25.000	23.496	6.0	136	0.00
14	T	Benzyl alcohol	25.000	24.415	2.3	143	0.00
15	T	1,2-Dichlorobenzene	25.000	23.087	7.7	134	0.00
16	T,P	2-Methylphenol	25.000	22.830	8.7	132	0.00
17	T	bis(2-chloroisopropyl)ether	25.000	22.864	8.5	132	0.00
18	T,P	4-Methylphenol	25.000	23.193	7.2	135	0.00
19	P,P	N-Nitroso-di-n-propylamine	25.000	20.663	17.3	116	0.00
20	T,P	Hexachloroethane	25.000	23.842	4.6	138	0.00
21	I	Naphthalene-d8	40.000	40.000	0.0	139	0.00
22	S	Nitrobenzene-d5	25.000	23.147	7.4	128	0.00
23	T,P	Nitrobenzene	25.000	22.905	8.4	126	0.00
24	T,P	Isophorone	25.000	21.189	15.2	121	0.00
25	C,P	2-Nitrophenol	25.000	24.511	2.0	143	0.00
26	T,P	2,4-Dimethylphenol	25.000	23.477	6.1	130	0.00
27	T	Benzoic acid	25.000	23.008	8.0	125	0.00
28	T,P	bis(2-Chloroethoxy)methane	25.000	23.258	7.0	135	0.00
29	T	3,5-Dimethylphenol	25.000	23.040	7.8	129	0.00
30	C,P	2,4-Dichlorophenol	25.000	23.816	4.7	133	0.00
31	T	1,2,4-Trichlorobenzene	25.000	23.189	7.2	128	0.00
32	T	3,4-Dimethylphenol	25.000	23.242	7.0	129	0.00
33	T.P	Naphthalene	25.000	24.333	2.7	135	0.00
34	T	4-Chloroaniline	25.000	24.511	2.0	134	0.00
35	T	2,6-Dichlorophenol	25.000	23.115	7.5	127	0.00
36	C	Hexachlorobutadiene	25.000	20.885	16.5	115	0.00
37	T	Hydroquinone	25.000	0.000	100.0#	0	0.00
38	C,P	4-Chloro-3-methylphenol	25.000	23.233	7.1	130	0.00
39	T,P	2-Methylnaphthalene	25.000	24.667	1.3	139	0.00
40	T	1-Methylnaphthalene	25.000	24.167	3.3	137	0.00
41	I	Acenaphthene-d10	40.000	40.000	0.0	143	0.00
42	P	Hexachlorocyclopentadiene	25.000	24.689	1.2	134	0.00
43	T	2,3,5-Trichlorophenol	25.000	23.292	6.8	133	0.00
44	C,P	2,4,6-Trichlorophenol	25.000	23.193	7.2	129	0.00
45	T,P	2,4,5-Trichlorophenol	25.000	23.430	6.3	135	0.00
46	S	2-Fluorobiphenyl	25.000	22.727	9.1	123	0.00
47	T	2,3,4-Trichlorophenol	25.000	21.222	15.1	129	0.00
48	T	Biphenyl	25.000	23.039	7.8	131	0.00
49	T,P	2-Chloronaphthalene	25.000	23.303	6.8	132	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	25.000	22.671	9.3	129	0.00
51	T	2,6-Dimethylnaphthalene	25.000	24.345	2.6	138	0.00
52	T	1,4-Dinitrobenzene	25.000	23.376	6.5	131	0.00
53	T	Dimethylphthalate	25.000	23.431	6.3	134	0.00
54	T	1,3-Dinitrobenzene	25.000	22.381	10.5	130	0.00
55	T,P	2,6-Dinitrotoluene	25.000	23.237	7.1	131	0.00
56	T	1,2-Dinitrobenzene	25.000	23.860	4.6	131	0.00
57	T,P	Acenaphthylene	25.000	25.291	-1.2	138	0.00
58	T	3-Nitroaniline	25.000	23.989	4.0	130	0.00
59	C,P	Acenaphthene	25.000	23.187	7.3	131	0.00
60	P	2,4-Dinitrophenol	25.000	27.795	-11.2	156	0.00
61	P	4-Nitrophenol	25.000	23.836	4.7	122	0.00
62	T,P	2,4-Dinitrotoluene	25.000	23.661	5.4	132	0.00
63	T,P	Dibenzofuran	25.000	23.404	6.4	134	0.00
64	T	2,3,5,6-Tetrachlorophenol	25.000	23.928	4.3	134	0.00
65	T	2,3,4,6-Tetrachlorophenol	25.000	21.781	12.9	130	0.00
66	T	2,3,5-Trimethylnaphthalene	25.000	23.957	4.2	136	0.00
67	T	Diethylphthalate	25.000	23.184	7.3	132	0.00
68	T,P	Fluorene	25.000	23.734	5.1	136	0.00
69	T,P	4-Chlorophenyl-phenylether	25.000	23.694	5.2	137	0.00
70	T	4-Nitroaniline	25.000	24.447	2.2	122	0.00
71	I	Phenanthrene-d10	40.000	40.000	0.0	144	0.00
72	T	4,6-Dinitro-2-methylphenol	25.000	27.486	-9.9	152	0.00
73	C	N-Nitrosodiphenylamine	25.000	23.587	5.7	137	0.00
74	T	Azobenzene	25.000	21.577	13.7	126	0.00
75	S	2,4,6-Tribromophenol	25.000	22.837	8.7	129	0.00
76	T,P	4-Bromophenyl-phenylether	25.000	20.626	17.5	109	0.00
77	T,P	Hexachlorobenzene	25.000	21.982	12.1	129	0.00
78	C,P	Pentachlorophenol	25.000	23.885	4.5	128	0.00
79	T	Dibenzothiophene	25.000	23.076	7.7	128	0.00
80	T,P	Phenanthrene	25.000	22.918	8.3	132	0.00
81	T	Dinoseb	25.000	0.000	100.0#	0	0.00
82	T,P	Anthracene	25.000	23.421	6.3	134	0.00
83	T	Carbazole	25.000	26.155	-4.6	143	0.00
84	T	Di-n-butylphthalate	25.000	23.654	5.4	130	0.01
85	T	1-Methylphenanthrene	25.000	24.330	2.7	135	0.00
86	C,P	Fluoranthene	25.000	23.964	4.1	132	0.00
87	I	Chrysene-d12	40.000	40.000	0.0	133	0.00
88	T	Benzidine	25.000	0.000	100.0#	0	0.00
89	T,P	Pyrene	25.000	22.903	8.4	126	0.00
90	S	Terphenyl-d14	25.000	23.638	5.4	130	0.00
91	T	Butylbenzylphthalate	25.000	25.304	-1.2	134	0.02
92	T	bis(2-ethylhexyl)adipate	25.000	25.067	-0.3	134	0.03
93	T	3,3'-Dichlorobenzidine	25.000	26.366	-5.5	134	0.00
94	T,P	Benzo(a)anthracene	25.000	24.319	2.7	130	0.00
95	T,P	Chrysene	25.000	24.381	2.5	131	0.00
96	T	bis(2-Ethylhexyl)phthalate	25.000	24.114	3.5	128	0.02
97	I	Perylene-d12	40.000	40.000	0.0	133	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	25.000	23.892	4.4	125	0.03
99	T,P	Benzo(b)fluoranthene	25.000	23.352	6.6	128	0.00
100	T,P	Benzo(k)fluoranthene	25.000	24.788	0.8	128	0.00
101	T	Benzo(e)pyrene	25.000	23.874	4.5	127	0.00
102	C,P	Benzo(a)pyrene	25.000	24.300	2.8	128	0.00
103	T	Perylene	25.000	23.720	5.1	127	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	25.000	24.072	3.7	125	0.00
105	T,P	Dibenzo(a,h)anthracene	25.000	24.722	1.1	127	0.00
106	T,P	Benzo(g,h,i)perylene	25.000	23.939	4.2	124	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	146	0.00
2	T	1,4-Dioxane	0.407	0.395	2.9	144	0.01
3	T	N-nitrosodimethylamine	0.647	0.615	4.9	135	0.01
4	T	Pyridine	1.205	1.136	5.7	135	0.01
5	S	2-Fluorophenol	1.118	1.131	-1.2	143	0.00
6	S	Phenol-d5	1.479	1.445	2.3	141	0.00
7	C,P	Phenol	1.447	1.399	3.3	140	0.00
8	T	Aniline	1.718	1.702	0.9	142	0.00
9	T,P	bis(2-chloroethyl)ether	1.036	0.985	4.9	137	0.00
10	T,P	2-Chlorophenol	1.285	1.208	6.0	129	0.00
11	T	1,3-Dichlorobenzene	1.503	1.401	6.8	133	0.00
12	S	1,2-Dichlorobenzene-d4	0.000	0.000#	0.0	0#	-2.99#
13	C	1,4-Dichlorobenzene	1.525	1.433	6.0	136	0.00
14	T	Benzyl alcohol	0.776	0.757	2.4	143	0.00
15	T	1,2-Dichlorobenzene	1.453	1.342	7.6	134	0.00
16	T,P	2-Methylphenol	0.982	0.896	8.8	132	0.00
17	T	bis(2-chloroisopropyl)ether	1.843	1.686	8.5	132	0.00
18	T,P	4-Methylphenol	1.287	1.194	7.2	135	0.00
19	P,P	N-Nitroso-di-n-propylamine	0.951	0.786	17.4	116	0.00
20	T,P	Hexachloroethane	0.590	0.563	4.6	138	0.00
21	I	Naphthalene-d8	1.000	1.000	0.0	139	0.00
22	S	Nitrobenzene-d5	0.399	0.369	7.5	128	0.00
23	T,P	Nitrobenzene	0.381	0.349	8.4	126	0.00
24	T,P	Isophorone	0.709	0.601	15.2	121	0.00
25	C,P	2-Nitrophenol	0.184	0.180	2.2	143	0.00
26	T,P	2,4-Dimethylphenol	0.363	0.341	6.1	130	0.00
27	T	Benzoic acid	0.259	0.239	7.7	125	0.00
28	T,P	bis(2-Chloroethoxy)methane	0.394	0.366	7.1	135	0.00
29	T	3,5-Dimethylphenol	0.428	0.395	7.7	129	0.00
30	C,P	2,4-Dichlorophenol	0.319	0.304	4.7	133	0.00
31	T	1,2,4-Trichlorobenzene	0.398	0.369	7.3	128	0.00
32	T	3,4-Dimethylphenol	0.455	0.423	7.0	129	0.00
33	T.P	Naphthalene	0.988	0.961	2.7	135	0.00
34	T	4-Chloroaniline	0.411	0.403	1.9	134	0.00
35	T	2,6-Dichlorophenol	0.330	0.305	7.6	127	0.00
36	C	Hexachlorobutadiene	0.284	0.237	16.5	115	0.00
37	T	Hydroquinone	0.000	0.000#	0.0	0#	0.00
38	C,P	4-Chloro-3-methylphenol	0.298	0.277	7.0	130	0.00
39	T,P	2-Methylnaphthalene	0.705	0.695	1.4	139	0.00
40	T	1-Methylnaphthalene	0.669	0.647	3.3	137	0.00
41	I	Acenaphthene-d10	1.000	1.000	0.0	143	0.00
42	P	Hexachlorocyclopentadiene	0.525	0.518	1.3	134	0.00
43	T	2,3,5-Trichlorophenol	0.492	0.458	6.9	133	0.00
44	C,P	2,4,6-Trichlorophenol	0.504	0.467	7.3	129	0.00
45	T,P	2,4,5-Trichlorophenol	0.516	0.483	6.4	135	0.00
46	S	2-Fluorobiphenyl	1.713	1.558	9.0	123	0.00
47	T	2,3,4-Trichlorophenol	0.491	0.417	15.1	129	0.00
48	T	Biphenyl	1.643	1.514	7.9	131	0.00
49	T,P	2-Chloronaphthalene	1.266	1.180	6.8	132	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	2-Nitroaniline	0.359	0.325	9.5	129	0.00
51	T	2,6-Dimethylnaphthalene	1.161	1.131	2.6	138	0.00
52	T	1,4-Dinitrobenzene	0.183	0.171	6.6	131	0.00
53	T	Dimethylphthalate	1.487	1.394	6.3	134	0.00
54	T	1,3-Dinitrobenzene	0.208	0.186	10.6	130	0.00
55	T,P	2,6-Dinitrotoluene	0.315	0.293	7.0	131	0.00
56	T	1,2-Dinitrobenzene	0.124	0.118	4.8	131	0.00
57	T,P	Acenaphthylene	2.006	2.029	-1.1	138	0.00
58	T	3-Nitroaniline	0.312	0.299	4.2	130	0.00
59	C,P	Acenaphthene	1.292	1.198	7.3	131	0.00
60	P	2,4-Dinitrophenol	0.173	0.210	-21.4#	156	0.00
61	P	4-Nitrophenol	0.235	0.224	4.7	122	0.00
62	T,P	2,4-Dinitrotoluene	0.419	0.396	5.5	132	0.00
63	T,P	Dibenzofuran	1.907	1.785	6.4	134	0.00
64	T	2,3,5,6-Tetrachlorophenol	0.372	0.356	4.3	134	0.00
65	T	2,3,4,6-Tetrachlorophenol	0.503	0.438	12.9	130	0.00
66	T	2,3,5-Trimethylnaphthalene	1.134	1.087	4.1	136	0.00
67	T	Diethylphthalate	1.453	1.348	7.2	132	0.00
68	T,P	Fluorene	1.446	1.373	5.0	136	0.00
69	T,P	4-Chlorophenyl-phenylether	0.797	0.756	5.1	137	0.00
70	T	4-Nitroaniline	0.310	0.303	2.3	122	0.00
71	I	Phenanthrene-d10	1.000	1.000	0.0	144	0.00
72	T	4,6-Dinitro-2-methylphenol	0.114	0.135	-18.4	152	0.00
73	C	N-Nitrosodiphenylamine	0.575	0.543	5.6	137	0.00
74	T	Azobenzene	0.634	0.547	13.7	126	0.00
75	S	2,4,6-Tribromophenol	0.139	0.127	8.6	129	0.00
76	T,P	4-Bromophenyl-phenylether	0.267	0.220	17.6	109	0.00
77	T,P	Hexachlorobenzene	0.273	0.240	12.1	129	0.00
78	C,P	Pentachlorophenol	0.159	0.152	4.4	128	0.00
79	T	Dibenzothiophene	1.050	0.969	7.7	128	0.00
80	T,P	Phenanthrene	1.061	0.972	8.4	132	0.00
81	T	Dinoseb	0.000	0.000#	0.0	0#	0.00
82	T,P	Anthracene	1.064	0.997	6.3	134	0.00
83	T	Carbazole	0.869	0.909	-4.6	143	0.00
84	T	Di-n-butylphthalate	1.071	1.013	5.4	130	0.01
85	T	1-Methylphenanthrene	0.792	0.770	2.8	135	0.00
86	C,P	Fluoranthene	1.209	1.159	4.1	132	0.00
87	I	Chrysene-d12	1.000	1.000	0.0	133	0.00
88	T	Benzidine	0.000	0.000#	0.0	0#	0.00
89	T,P	Pyrene	1.167	1.069	8.4	126	0.00
90	S	Terphenyl-d14	0.868	0.820	5.5	130	0.00
91	T	Butylbenzylphthalate	0.415	0.420	-1.2	134	0.02
92	T	bis(2-ethylhexyl)adipate	0.322	0.322	0.0	134	0.03
93	T	3,3'-Dichlorobenzidine	0.397	0.419	-5.5	134	0.00
94	T,P	Benzo(a)anthracene	1.119	1.089	2.7	130	0.00
95	T,P	Chrysene	1.066	1.039	2.5	131	0.00
96	T	bis(2-Ethylhexyl)phthalate	0.628	0.605	3.7	128	0.02
97	I	Perylene-d12	1.000	1.000	0.0	133	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
98	C	Di-n-octylphthalate	1.079	1.032	4.4	125	0.03
99	T,P	Benzo(b)fluoranthene	1.125	1.051	6.6	128	0.00
100	T,P	Benzo(k)fluoranthene	1.097	1.088	0.8	128	0.00
101	T	Benzo(e)pyrene	1.071	1.023	4.5	127	0.00
102	C,P	Benzo(a)pyrene	1.050	1.020	2.9	128	0.00
103	T	Perylene	1.077	1.021	5.2	127	0.00
104	T,P	Indeno(1,2,3-cd)pyrene	1.218	1.173	3.7	125	0.00
105	T,P	Dibenzo(a,h)anthracene	1.001	0.990	1.1	127	0.00
106	T,P	Benzo(g,h,i)perylene	1.026	0.982	4.3	124	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.826	152	671449	40.00	ppm	0.00
21) Naphthalene-d8	4.031	136	2413770	40.00	ppm	0.00
41) Acenaphthene-d10	6.032	164	1372483	40.00	ppm	0.00
71) Phenanthrene-d10	7.774	188	2993699	40.00	ppm	0.00
87) Chrysene-d12	10.553	240	3292992	40.00	ppm	0.00
97) Perylene-d12	11.914	264	3101839	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	1.911	112	474747	25.29	ppm	0.00
Spiked Amount 30.000			Recovery =	84.30%		
6) Phenol-d5	2.481	99	606577	24.43	ppm	0.00
Spiked Amount 30.000			Recovery =	81.43%		
12) 1,2-Dichlorobenzene-d4	0.000	152	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
22) Nitrobenzene-d5	3.305	82	556866	23.15	ppm	0.00
Spiked Amount 10.000			Recovery =	231.50%		
46) 2-Fluorobiphenyl	5.239	172	1336127	22.73	ppm	0.00
Spiked Amount 10.000			Recovery =	227.30%		
75) 2,4,6-Tribromophenol	6.973	330	237409	22.84	ppm	0.00
Spiked Amount 30.000			Recovery =	76.13%		
90) Terphenyl-d14	9.488	244	1688530	23.64	ppm	0.00
Spiked Amount 10.000			Recovery =	236.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.207	88	165673	24.23	ppm	96
3) N-nitrosodimethylamine	1.317	74	257907	23.74	ppm	80
4) Pyridine	1.346	79	476783	23.58	ppm	94
7) Phenol	2.491	94	587307	24.18	ppm	92
8) Aniline	2.559	93	714427	24.78	ppm	94
9) bis(2-chloroethyl)ether	2.591	93	413484	23.77	ppm	92
10) 2-Chlorophenol	2.648	128	507051	23.51	ppm	92
11) 1,3-Dichlorobenzene	2.778	146	587757	23.30	ppm	92
13) 1,4-Dichlorobenzene	2.840	146	601453	23.50	ppm	95
14) Benzyl alcohol	2.917	108	317853	24.41	ppm	91
15) 1,2-Dichlorobenzene	2.970	146	563014	23.09	ppm	93
16) 2-Methylphenol	2.994	107	376184	22.83	ppm	88
17) bis(2-chloroisopropyl)...	3.032	45	707345	22.86	ppm	99
18) 4-Methylphenol	3.128	107	501191	23.19	ppm	93
19) N-Nitroso-di-n-propyla...	3.156	70	329816	20.66	ppm	89
20) Hexachloroethane	3.273	117	236227	23.84	ppm	89
23) Nitrobenzene	3.323	77	526078	22.91	ppm	95
24) Isophorone	3.553	82	906337	21.19	ppm	97
25) 2-Nitrophenol	3.627	139	271549	24.51	ppm	82
26) 2,4-Dimethylphenol	3.651	107	514234	23.48	ppm	92
27) Benzoic acid	3.723	105	360037	23.01	ppm	97
28) bis(2-Chloroethoxy)met...	3.761	93	552359	23.26	ppm	100
29) 3,5-Dimethylphenol	3.790	107	595182	23.04	ppm	85
30) 2,4-Dichlorophenol	3.867	162	458149	23.82	ppm	98
31) 1,2,4-Trichlorobenzene	3.963	180	557148	23.19	ppm	99
32) 3,4-Dimethylphenol	3.963	107	638209	23.24	ppm	92
33) Naphthalene	4.050	128	1450181	24.33	ppm	100
34) 4-Chloroaniline	4.098	127	607269	24.51	ppm	99
35) 2,6-Dichlorophenol	4.108	162	460449	23.11	ppm	100
36) Hexachlorobutadiene	4.181	225	358253	20.89	ppm	98

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38)	4-Chloro-3-methylphenol	4.619	107	417352	23.23	ppm		92
39)	2-Methylnaphthalene	4.811	142	1049037	24.67	ppm		93
40)	1-Methylnaphthalene	4.926	142	975333	24.17	ppm		96
42)	Hexachlorocyclopentadiene	4.993	237	444711	24.69	ppm		99
43)	2,3,5-Trichlorophenol	4.998	196	392817	23.29	ppm		93
44)	2,4,6-Trichlorophenol	5.128	196	400977	23.19	ppm		99
45)	2,4,5-Trichlorophenol	5.162	196	414742	23.43	ppm		98
47)	2,3,4-Trichlorophenol	5.239	196	357726	21.22	ppm		90
48)	Biphenyl	5.354	154	1299118	23.04	ppm		100
49)	2-Chloronaphthalene	5.373	162	1012148	23.30	ppm		100
50)	2-Nitroaniline	5.489	65	279145	22.67	ppm		98
51)	2,6-Dimethylnaphthalene	5.537	156	969811	24.34	ppm		93
52)	1,4-Dinitrobenzene	5.661	168	146845	23.38	ppm		95
53)	Dimethylphthalate	5.729	163	1195381	23.43	ppm		98
54)	1,3-Dinitrobenzene	5.743	168	159513	22.38	ppm		86
55)	2,6-Dinitrotoluene	5.787	165	251009	23.24	ppm		89
56)	1,2-Dinitrobenzene	5.845	168	101447	23.86	ppm	#	68
57)	Acenaphthylene	5.859	152	1740512	25.29	ppm		98
58)	3-Nitroaniline	5.979	138	256745	23.99	ppm		99
59)	Acenaphthene	6.070	153	1027930	23.19	ppm		98
60)	2,4-Dinitrophenol	6.104	184	180104	27.79	ppm		98
61)	4-Nitrophenol	6.176	109	192052	23.84	ppm		82
62)	2,4-Dinitrotoluene	6.262	165	339953	23.66	ppm		92
63)	Dibenzofuran	6.277	168	1531516	23.40	ppm		98
64)	2,3,5,6-Tetrachlorophenol	6.368	230	305520	23.93	ppm		100
65)	2,3,4,6-Tetrachlorophenol	6.420	232	376102	21.78	ppm		99
66)	2,3,5-Trimethylnaphtha...	6.534	170	932187	23.96	ppm		99
67)	Diethylphthalate	6.581	149	1156212	23.18	ppm		98
68)	Fluorene	6.689	166	1177415	23.73	ppm		94
69)	4-Chlorophenyl-phenyle...	6.703	204	648196	23.69	ppm		100
70)	4-Nitroaniline	6.713	138	259929	24.45	ppm		98
72)	4,6-Dinitro-2-methylph...	6.750	198	252998	27.49	ppm		87
73)	N-Nitrosodiphenylamine	6.844	169	1015382	23.59	ppm		93
74)	Azobenzene	6.892	77	1023613	21.58	ppm		96
76)	4-Bromophenyl-phenylether	7.281	248	412381	20.63	ppm		96
77)	Hexachlorobenzene	7.328	284	448746	21.98	ppm		96
78)	Pentachlorophenol	7.555	266	284484	23.89	ppm		98
79)	Dibenzothiophene	7.659	184	1813182	23.08	ppm		98
80)	Phenanthrene	7.802	178	1819519	22.92	ppm		99
82)	Anthracene	7.856	178	1864627	23.42	ppm		98
83)	Carbazole	8.037	167	1701313	26.16	ppm		98
84)	Di-n-butylphthalate	8.449	149	1895367	23.65	ppm		99
85)	1-Methylphenanthrene	8.473	192	1441570	24.33	ppm		96
86)	Fluoranthene	9.077	202	2168439	23.96	ppm		98
89)	Pyrene	9.313	202	2200168	22.90	ppm		99
91)	Butylbenzylphthalate	10.002	149	864546	25.30	ppm		95
92)	bis(2-ethylhexyl)adipate	10.093	129	663467	25.07	ppm		92
93)	3,3'-Dichlorobenzidine	10.519	252	862671	26.37	ppm		100
94)	Benzo(a)anthracene	10.538	228	2241118	24.32	ppm		100
95)	Chrysene	10.577	228	2138887	24.38	ppm		97
96)	bis(2-Ethylhexyl)phtha...	10.587	149	1245777	24.11	ppm		99
98)	Di-n-octylphthalate	11.208	149	2000030	23.89	ppm		99
99)	Benzo(b)fluoranthene	11.553	252	2037084	23.35	ppm		96
100)	Benzo(k)fluoranthene	11.578	252	2108615	24.79	ppm		99
101)	Benzo(e)pyrene	11.806	252	1983135	23.87	ppm		97

Quantitation Report (QT Reviewed)

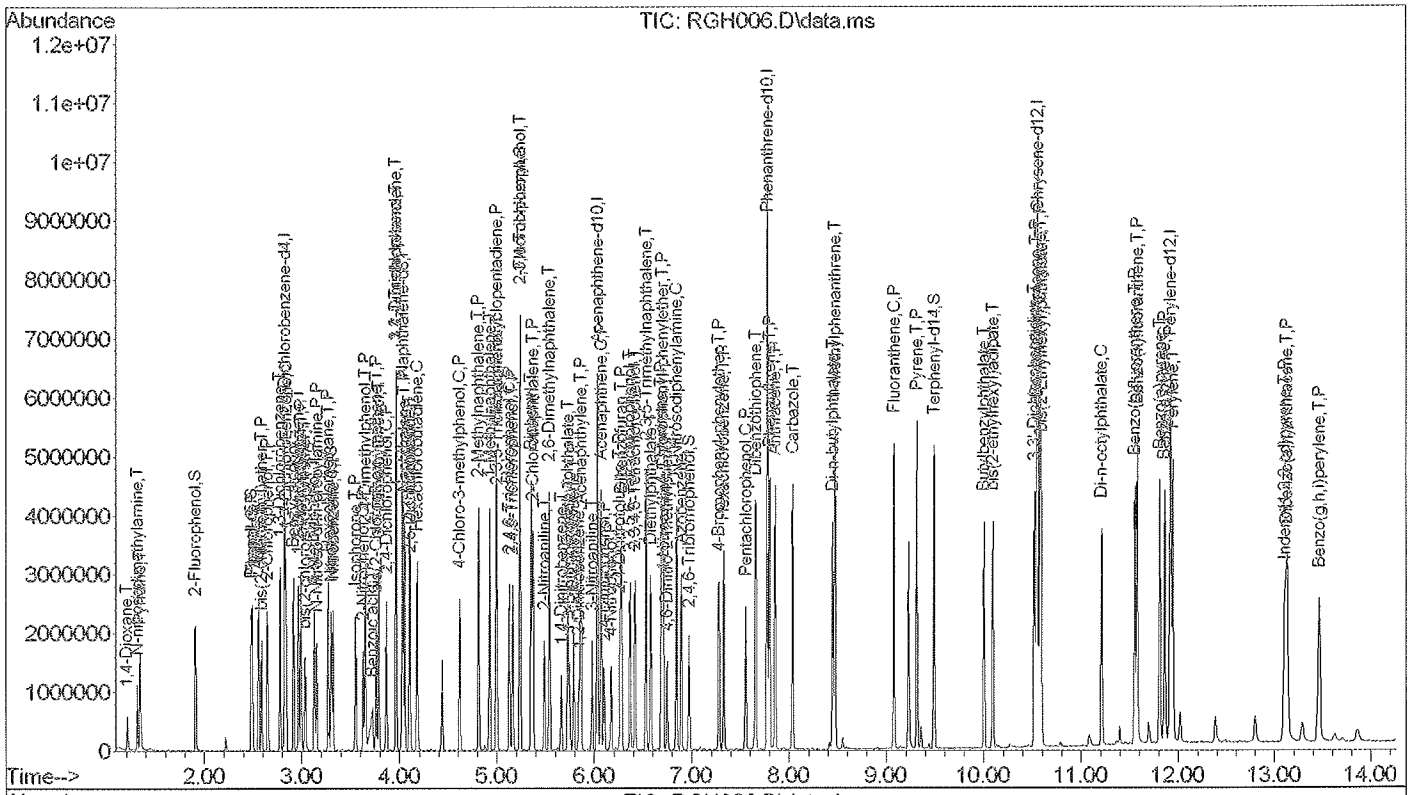
Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

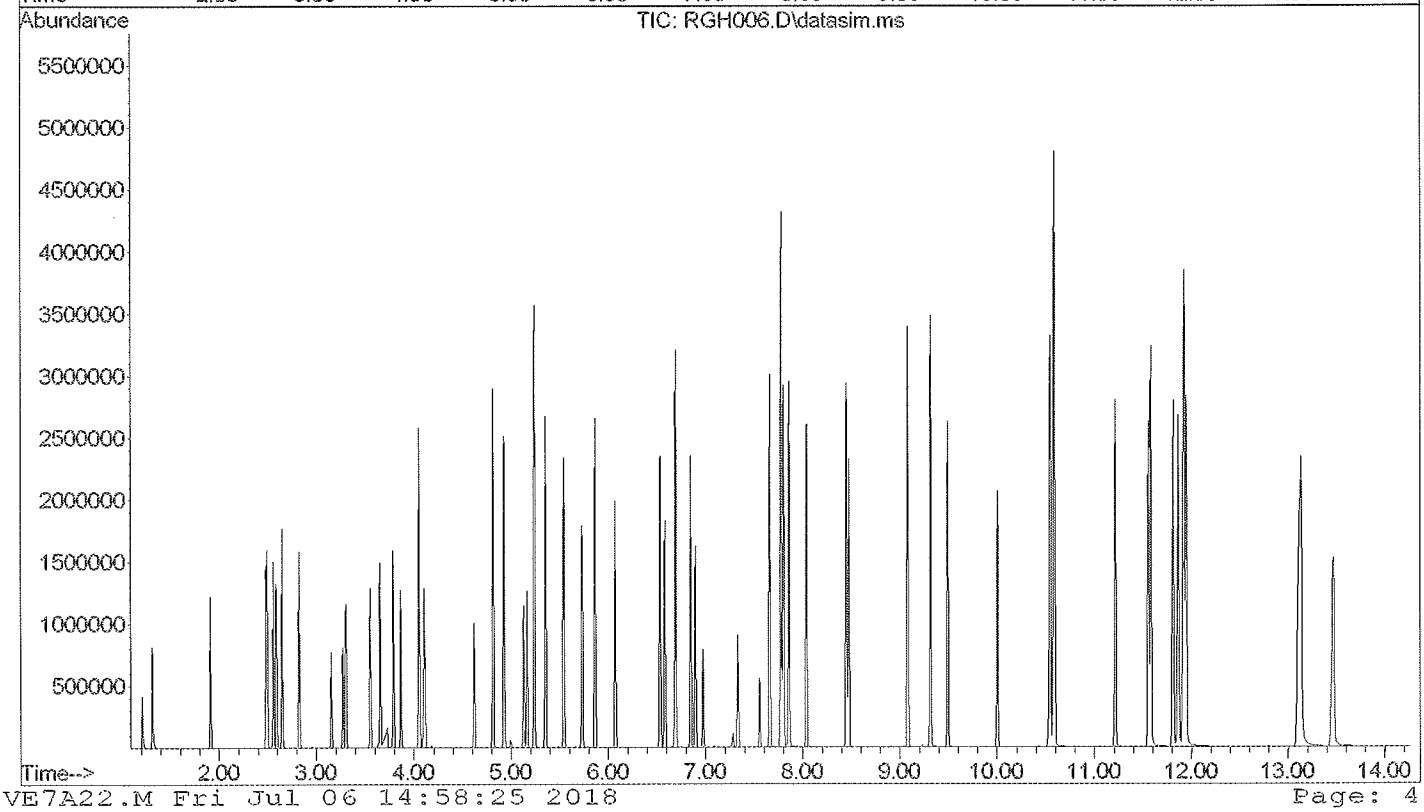
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) Benzo(a)pyrene	11.858	252	1977979	24.30	ppm	97
103) Perylene	11.942	252	1980188	23.72	ppm	99
104) Indeno(1,2,3-cd)pyrene	13.104	276	2273183	24.07	ppm	96
105) Dibenzo(a,h)anthracene	13.129	278	1919927	24.72	ppm	97
106) Benzo(g,h,i)perylene	13.463	276	1904121	23.94	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:57:28 2018
Quant Results File: SVE7A22.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22.M
Quant Title : SEMIVOLATILES
QLast Update : Tue Jan 23 12:02:03 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #: AE7-021

Method File: SVE7A22S Tune File: DFTPP Start Date/Time: 1/22/18 14:21 End Date/Time: 1/23/18 2:06

ANALYTICAL BATCH: SVE7A225

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RAH163	IBE7A2201				
	164	DFTE7A2201				
NA	165	SVE7A221	NA	NA	NA	100 ppm
	166	2				80
	167	3				50
	168	4				40
	169	5				25 r = 75.6%
	170	6				20
	171	7				10
	172	8				4
	173	9				2
	174	10				0.5
	175	11				0.15
	176	12				0.075
	177	13				0.05
	178	ISVE7A221				ICV **
	179	SVE7A22A1				100 ppm Ben
	180	2				80
	181	3				50
	182	4				40
	183	5				25
	184	6				10
	185	7				4
	186	ISVE7A22A1				ICV
	187	SVE7A22B1				50ppm App9 *
	188	2				40 ppm
	189	3				30
	190	4				25
	191	5				20
	192	6				10
	193	7				4
	194	ISVE7A22B1				ICV ***

Instrument No:	E7

INITIAL CALIBRATION REFERENCE	
Date	1/22/18
ICAL ID	SVE7A22/22A/22B/22C/S

Standards		
Name	ID	Conc. (mg/L)
DFTPP	SS2C-15-13-03	50
INT. STD.	SS2B-12-44-03	2000
ICV 8270	SS2C-15-16-02	25
DCC 8270 ICAL	SS2C-15-16-01	0.05-50
BENZIDINE ICAL	-15-02	4-100
APP 9 ICAL	-18-01	4-50
APP 9 ADD		
BENZIDINE ICV	SS2C-15-15-03	25
APP 9 ICV	-18-03	25

Solvent	ID
CH_2Cl_2	175771

DATA FILE	18A22

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE7	1/30/18

Comments: 8270 ICAL SS2C-15-17-01 80-100 ppm
*: not used
**: 3 analytes > 20%
***: 2 analytes > 20%
Analyzed By: KV
Date Disposed: NA
Disposed By: NA
This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE7-021

Method File: SVE7A225 Tune File: DFTPP Start Date/Time: 1/22/18 14:21 End Date/Time: 1/23/18 2:06

ANALYTICAL BATCH: SVE7A225

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAH 195	SVE7A22C1	NA	NA	NA	140ppm Add
	196	2				120
	197	3				100
	198	4				80
	199	5				50
	200	6				40
	201	7				20
	202	ISVE7A22C1				ICV
						KV 1/22/18

	Instrument No: E7
INITIAL CALIBRATION REFERENCE	
Date	1/22/18
ICAL ID	SVE7A22C

Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2B-12-44-03	2000
ICV		
DCC		
BENZIDINE		
APP 9		
APP 9 ADD ICAL	SS2C-15-17-02	20-140
APP 9 ADD ICV	↓ -17-03	50

Solvent	ID
CH_2Cl_2	175771

DATA FILE	18A22

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE7	1/30/18

Comments:

Analyzed By: KV
Date Disposed: NA
Disposed By: NA

This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE7-021

Method File: SVE7A22S Tune File: DFTPP Start Date/Time: 1/24/18 8:30 End Date/Time: 1/24/18 9:53

ANALYTICAL BATCH: ISVE7A2202

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RAH203	IBE7A2202				
	204	DFTE7A2202				
NA	205	ISVE7A2202	NA	NA	NA	V= 72.8%

Instrument No:	E7

INITIAL CALIBRATION REFERENCE	
Date	1/22/18
ICAL ID	SVE7A22

Standards		
Name	ID	Conc. (mg/L)
DFTPP	SS2C-15-13-03	50
INT. STD.	SS2B-12-44-03	2000
ICV 8270		
DCC		
BENZIDINE		
APP 9		
APP 9 ADD		

Solvent	ID
CH_2Cl_2	175771

DATA FILE	18A24

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE7	

Comments:

Analyzed By: KV

Date Disposed: NA

Disposed By: NA

This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE7-022

Method File: SVE7A225 Tune File: DFTPP Start Date/Time: 6/29/18 12:30 End Date/Time: 6/29/18 20:37

ANALYTICAL BATCH: CSVE7A2278

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RFH 621	2BE7A2278				
	622	DFTE7A2278				
	623	CSVE7A2278				
	624	CSVE7A22A78				
SVF0435	625	SVF0435B	1	X		
	626	SL				
	627	SC				
	628	18F187-07M				
	629	07S				
	630	01				
	631	02				
	632	03				
	633	04				
	634	05				
	635	07				
	636	08				
	637	10				
	638	11				
	639	12				
	640	13				IS low
	641	14				
	642	15	2			*
	643	16	2			*
	644	17	2			*
	645	ESVE7A2279				25 ppm
	646	79A				25/40 ppm
	647	79B				

6/29/18

Instrument No:	E7
INITIAL CALIBRATION REFERENCE	
Date	1/22/18
ICAL ID	SVE7A22/A/5
Standards	

Name	ID	Conc. (mg/L)
DFTPP	SS2C-15-27-02	50
INT. STD.	SS2B-16-02-03	2000
ICV		
DCC	SS2C-15-28-01	25
BENZIDINE	↓ 27-03	25
APP 9		
APP 9 ADD		
25/40	SS2C-15-28-02	25/40

Solvent	ID
CH_2Cl_2	181159
DATA FILE	18F29

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE7	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01 Syringe ID: ☑ 499766-J ☐

Comments: * Dark color

Analyzed By:

Date Disposed: 8/30/18

Disposed By:

This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE7-022

Method File: SVE7A22S Tune File: DFTPD Start Date/Time: 7/3/18 7:36 End Date/Time: 7/3/18 9:21

ANALYTICAL BATCH: CSVE7A2280

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RGH001	IBE7A2280				
	2	DFTE7A2280				
	3	CSVE7A2280				
	4	↓ A&C				Ben
SVF043S	5	18F187-13N	L	X		
	6	ESVE7A2281				
						MV 7/3/18

	Instrument No:	E7
INITIAL CALIBRATION REFERENCE		
Date	1/22/18	
ICAL ID	SVE7A22/22S	
Standards		
Name	ID	Conc. (mg/L)
DFTPP	SS2C-15-27-02	50
INT. STD.	SS2B-16-02-03	2000
ICV		
DCC	SS2C-15-28-01	25
BENZIDINE	↓ 27-03	25
APP 9		
APP 9 ADD		
Solvent	ID	
CH_2Cl_2	181159	
DATA FILE	17603	
Electronic Data Archival		
Location		Date
HPCHEM_SVOA/TOE7		

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01 Syringe ID: ☑ 499766-5 ☐

Comments:

Analyzed By: MV

Date Disposed: 7/3/18

Disposed By: MV

This page is checked during data review.

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☐ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☑ EMAX-3550	5
☐ EMAX-3580	2
☐ EMAX-625	1

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: fa 6/28/18 **ESV-103**
Preparation Batch: SVE043
Matrix: Soil
Micropipette ID: PE00-01 (1000 µL) ✓
Micropipette ID: PEMA-01 (200 µL) ✓
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2A-13-06-20	0.4 ✓
LCS/MS Full List +	SS2A-13-06-14	0.2 ✓
LCS/MS 3-comp.+	SS2B-16-02-01	0.2 ✓
LCS/MS 1,4 DIOXANE	SS2B-16-06-03	1.0 ✓
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	181159
Na_2SO_4	SWIB-003-36-01
H_2SO_4	-
NaOH	-
Silica Sand	-
Silica Gel	-
Reagent Water	-
Residual Chlorine Strip	-
pH Strip	-
Filter Paper	16380254

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVE043-SB	4	N/A	4
-SL	4		4
-SC	4		4
F187-01	6		4
-02	6		4
-03	4		4
-04	6		1
-05	6		1
-07	4		1
-07M	6		1
-07S	6		1
-08	6		1
-10	6		3
-11	4		3
-12	4		3
-13	6		3
-14	6		3
-15	4		3
-16	6		2
-17	6		2

TUNING	
Sonicator #	Reading
4	20%
6	45%

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3	35	35
4	35	35
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: fa — Witnessed By: TW
Standard Added By: fa — Checked By: ML
Extract Received By: fa 01/28/18 — Location: SFO/#12
Disposed By: — Disposed On:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
18SVF043S01	SVF043SB	30	g	6/28/18 10:36	2	30	2	1	
18SVF043S02	SVF043SL	30	g	6/28/18 10:36	2	30	2	1	
18SVF043S03	SVF043SC	30	g	6/28/18 10:36	2	30	2	1	
18SVF043S04	F187-01	30.03	g	6/28/18 10:38	2	30	2	1	slight yellow
18SVF043S05	F187-02	30.03	g	6/28/18 10:39	2	30	2	1	light yellow
18SVF043S06	F187-03	30.03	g	6/28/18 10:40	2	30	2	1	light yellow
18SVF043S07	F187-04	30.01	g	6/28/18 10:42	2	30	2	1	yellow
18SVF043S08	F187-05	30.02	g	6/28/18 10:44	2	30	2	1	
18SVF043S09	F187-07	30	g	6/28/18 10:45	2	30	2	1	
18SVF043S10	F187-07M	30	g	6/28/18 10:46	2	30	2	1	
18SVF043S11	F187-07S	30	g	6/28/18 10:46	2	30	2	1	
18SVF043S12	F187-08	30.02	g	6/28/18 10:48	2	30	2	1	light yellow
18SVF043S13	F187-10	30.01	g	6/28/18 10:50	2	30	2	1	light yellow
18SVF043S14	F187-11	30.02	g	6/28/18 10:52	2	30	2	1	slight yellow
18SVF043S15	F187-12	30.02	g	6/28/18 10:54	2	30	2	1	
18SVF043S16	F187-13	30	g	6/28/18 10:56	2	30	2	1	slight yellow
18SVF043S17	F187-14	30.03	g	6/28/18 10:57	2	30	2	1	light yellow
18SVF043S18	F187-15	30.01	g	6/28/18 10:58	2	30	2	1	orange
18SVF043S19	F187-16	30.01	g	6/28/18 10:59	2	30	2	1	orange
18SVF043S20	F187-17	30	g	6/28/18 11:00	2	30	2	1	orange

Balance ID: 10304418. Calibration check was verified prior to use.

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 6/28/18 15:30 ☐ pHAdj(≤2) @

Prepared By: JVille

☑ Extraction Ended @ 6/28/18 18:02 ☐ pHAdj(≥11) @

Checked By: ML

Comments:

Date 06/28/18

LABORATORY REPORT FOR

CH2M HILL

JBER TO078

METHOD SW3550B/8270C SIM
PAHS BY GC/MS SIM

SDG#: 18F187

CASE NARRATIVE

Client : CH2M HILL

Project: JBER TO075

SDG : 18F187

METHOD SW3550B/8270C SIM
PAHS BY GC/MS SIM

A total of fifteen (15) soil samples were received on 06/26/18 to be analyzed for PAHs by GC/MS SIM in accordance with Method SW3550B/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were four (4) CCVs (Data file ID: RFH623, RFH645, RGH003 and RGH006) associated with this SDG. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. SVF043SB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. SVF043SL/SVF043SC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed. 18F187-07M/18F187-07S - all analytes were within MS QC limits. Refer to Matrix QC summary form for details.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met. The following analytes were manually integrated:

- Naphthalene in sample F187-04
- Phenanthrene in sample F187-15
- Phenanthrene, Fluoranthene and Pyrene in sample F187-17

Hence, the original chromatogram was retained and corrected chromatogram was initialed and dated. The secondary reviewer concurred with the manual integrations.

Samples F187-15 to -17 were initially analyzed at dilution to minimize matrix interference as exhibited by the color of their extracts. Refer to extraction log for details.

LAB CHRONICLE
PAHs by GC/MS SIM

Client : CH2M HILL
Project : JBER TO075

SDG NO. : 18F187
Instrument ID : E7

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	SVF043SB	1	NA	06/29/1813:37	06/28/1815:30	RFH625	RAH169	18SVF043S	Method Blank
LCS1S	SVF043SL	1	NA	06/29/1813:56	06/28/1815:30	RFH626	RAH169	18SVF043S	Lab Control Sample (LCS)
LCD1S	SVF043SC	1	NA	06/29/1814:15	06/28/1815:30	RFH627	RAH169	18SVF043S	LCS Duplicate
18Q2DP009-SB0501-SO-0MS	18F187-07M	1	3.9	06/29/1814:34	06/28/1815:30	RFH628	RAH169	18SVF043S	Matrix Spike Sample (MS)
18Q2DP009-SB0501-SO-0MSD	18F187-07S	1	3.9	06/29/1814:53	06/28/1815:30	RFH629	RAH169	18SVF043S	MS Duplicate (MSD)
18Q2DP009-SB0401-SO-0	18F187-01	1	4.8	06/29/1815:12	06/28/1815:30	RFH630	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0401-SO-1	18F187-02	1	4.6	06/29/1815:31	06/28/1815:30	RFH631	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0402-SO-0	18F187-03	1	5.3	06/29/1815:50	06/28/1815:30	RFH632	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0801-SO-0	18F187-04	1	8.6	06/29/1816:09	06/28/1815:30	RFH633	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0802-SO-0	18F187-05	1	4.9	06/29/1816:28	06/28/1815:30	RFH634	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0501-SO-0	18F187-07	1	3.9	06/29/1816:47	06/28/1815:30	RFH635	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0502-SO-0	18F187-08	1	3.5	06/29/1817:06	06/28/1815:30	RFH636	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0701-SO-0	18F187-10	1	5.8	06/29/1817:25	06/28/1815:30	RFH637	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0702-SO-0	18F187-11	1	4.7	06/29/1817:44	06/28/1815:30	RFH638	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0301-SO-0	18F187-12	1	4.0	06/29/1818:03	06/28/1815:30	RFH639	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0302-SO-0	18F187-13	1	6.5	06/29/1818:22	06/28/1815:30	RFH640	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0602-SO-0	18F187-14	1	5.1	06/29/1818:42	06/28/1815:30	RFH641	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0601-SO-0	18F187-15	2	7.6	06/29/1819:01	06/28/1815:30	RFH642	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0601-SO-1	18F187-16	2	6.9	06/29/1819:20	06/28/1815:30	RFH643	RAH169	18SVF043S	Field Sample
18Q2DP009-IDW-SO01	18F187-17	2	8.1	06/29/1819:39	06/28/1815:30	RFH644	RAH169	18SVF043S	Field Sample
18Q2DP009-SB0302-SO-0	18F187-13N	1	6.5	07/03/1808:54	06/28/1815:30	RGH005	RAH169	18SVF043S	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/21/18 16:10
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0401-SO-0	Date Analyzed: 06/29/18 15:12
Lab Samp ID: 18F187-01	Dilution Factor: 1
Lab File ID: RFH630	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 4.8
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.011	0.0013	0.0026
Acenaphthylene	ND	0.011	0.0013	0.0026
Anthracene	0.0030J	0.011	0.0013	0.0026
Benzo (a) anthracene	0.0035J	0.011	0.0026	0.0053
Benzo (a) pyrene	ND	0.011	0.0013	0.0026
Benzo (b) fluoranthene	ND	0.011	0.0013	0.0026
Benzo(k)fluoranthene	ND	0.011	0.0013	0.0026
Benzo (g,h,i) perylene	ND	0.011	0.0013	0.0026
Chrysene	0.0029J	0.011	0.0023	0.0053
Dibenzo (a,h) anthracene	ND	0.011	0.0013	0.0026
Fluoranthene	0.0032J	0.011	0.0013	0.0026
Fluorene	ND	0.011	0.0013	0.0026
Indeno (1,2,3-c,d) pyrene	ND	0.011	0.0013	0.0026
Naphthalene	ND	0.011	0.0013	0.0026
Phenanthrene	0.0030J	0.011	0.0013	0.0026
Pyrene	0.0038J	0.011	0.0013	0.0026
2-Methylnaphthalene	ND	0.011	0.0013	0.0026
1-Methylnaphthalene	ND	0.011	0.0013	0.0026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.44	2.10	69	46-122
2-Fluorobiphenyl	0.437	0.700	62	46-115
Nitrobenzene-d5	0.520	0.700	74	44-125
Terphenyl-d14	0.530	0.700	76	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.03g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

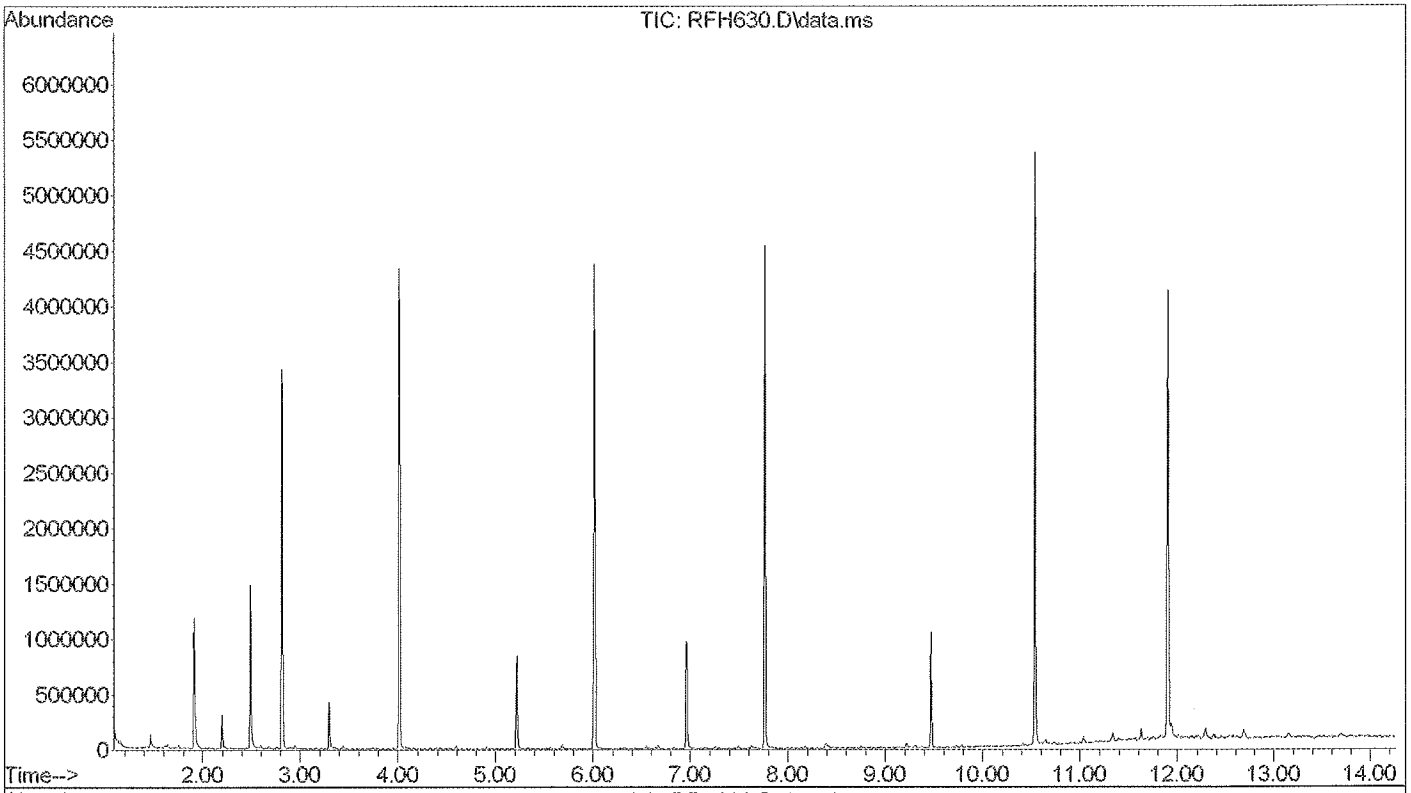
Data File : D:\DATA\18F29\RFH630.D Vial: 10
Acq On : 29 Jun 2018 15:12 Operator: RZh
Sample : 18F187-01 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:25:00 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

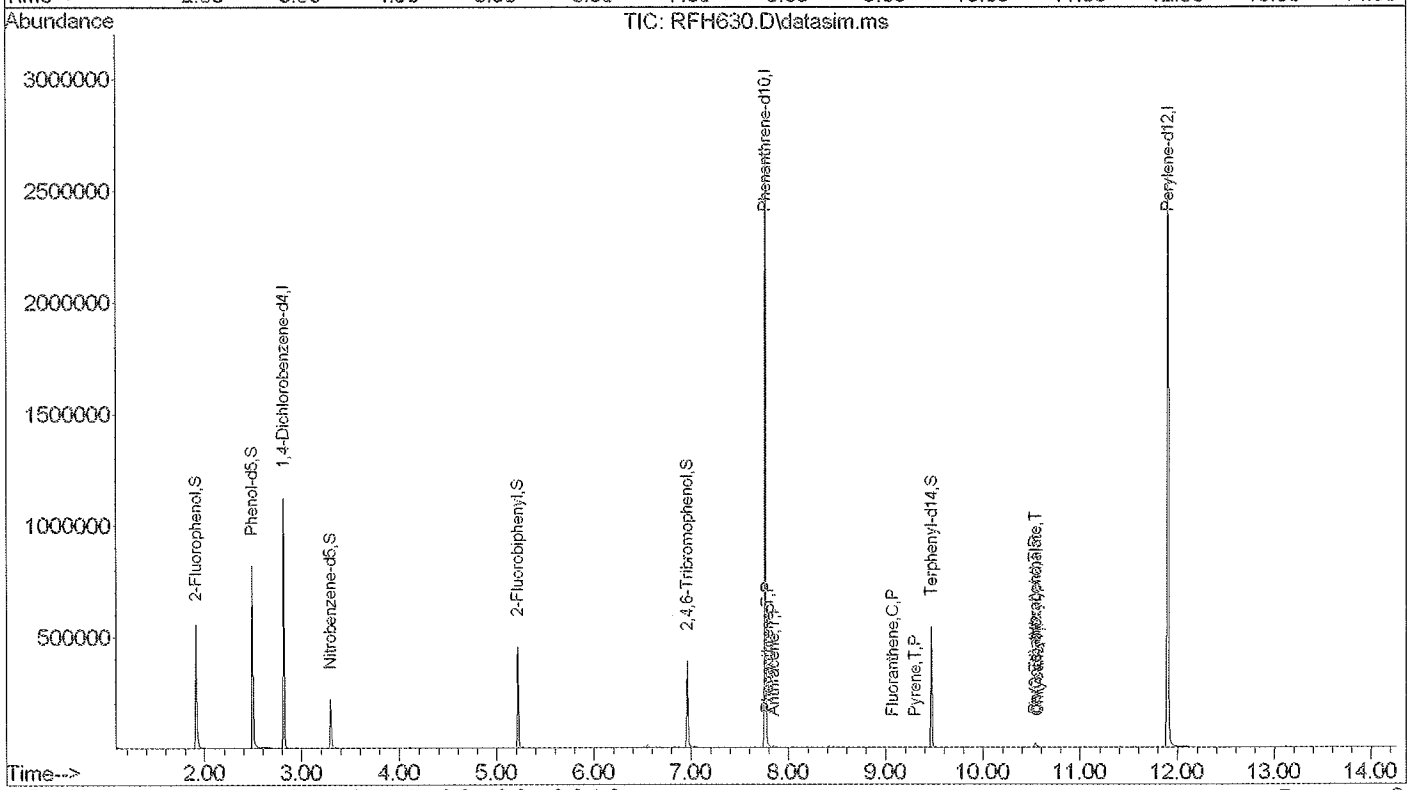
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	538432	40.00	ppm	-0.01
30) Phenanthrene-d10	7.759	188	2219021	40.00	ppm	-0.01
49) Perylene-d12	11.898	264	2433643	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	322499	22.26	ppm	0.00
Spiked Amount 30.000			Recovery =	74.20%		
5) Phenol-d5	2.489	99	424199	23.34	ppm	0.00
Spiked Amount 30.000			Recovery =	77.80%		
11) Nitrobenzene-d5	3.298	82	136728	7.43	ppm	0.00
Spiked Amount 10.000			Recovery =	74.30%		
21) 2-Fluorobiphenyl	5.218	172	303613	6.24	ppm	-0.02
Spiked Amount 10.000			Recovery =	62.40%		
33) 2,4,6-Tribromophenol	6.961	330	179573	20.58	ppm	0.00
Spiked Amount 30.000			Recovery =	68.60%		
44) Terphenyl-d14	9.469	244	402583	7.57	ppm	-0.01
Spiked Amount 10.000			Recovery =	75.70%		
Target Compounds						Qvalue
37] Phenanthrene	7.786	178	2554	0.04	ppm	93
38] Anthracene	7.850	178	2530	0.04	ppm	99
42] Fluoranthene	9.070	202	3146	0.05	ppm	96
43] Pyrene	9.306	202	3932	0.05	ppm	98
46] Benzo(a)anthracene	10.536	228	8513	0.05	ppm	58
47] Chrysene	10.565	228	2811	0.04	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.546	149	7847	0.24	ppm	80

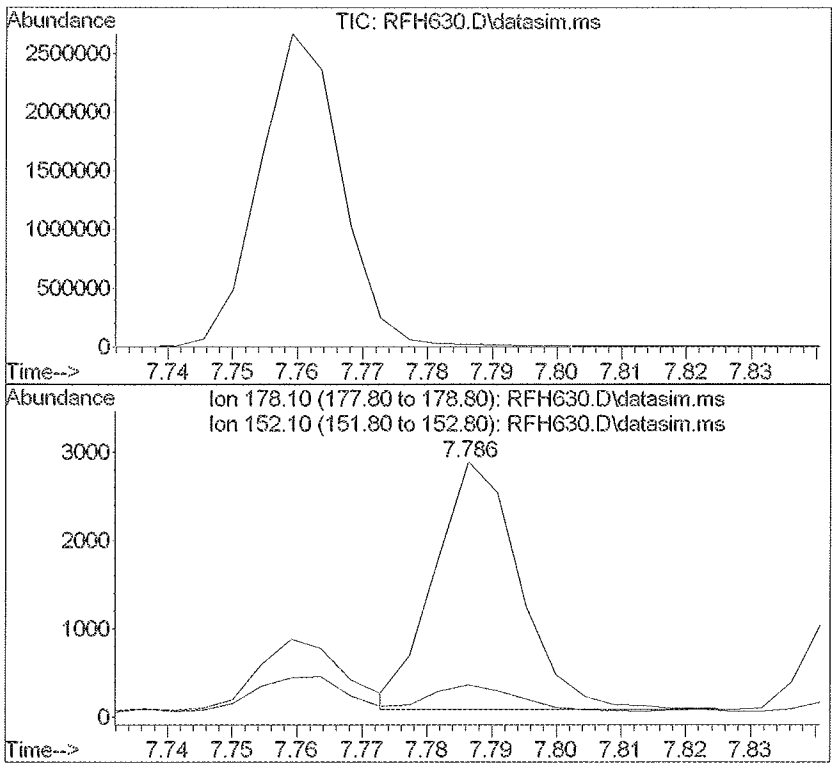
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH630.D Vial: 10
Acq On : 29 Jun 2018 15:12 Operator: RZh
Sample : 18F187-01 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:25:00 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



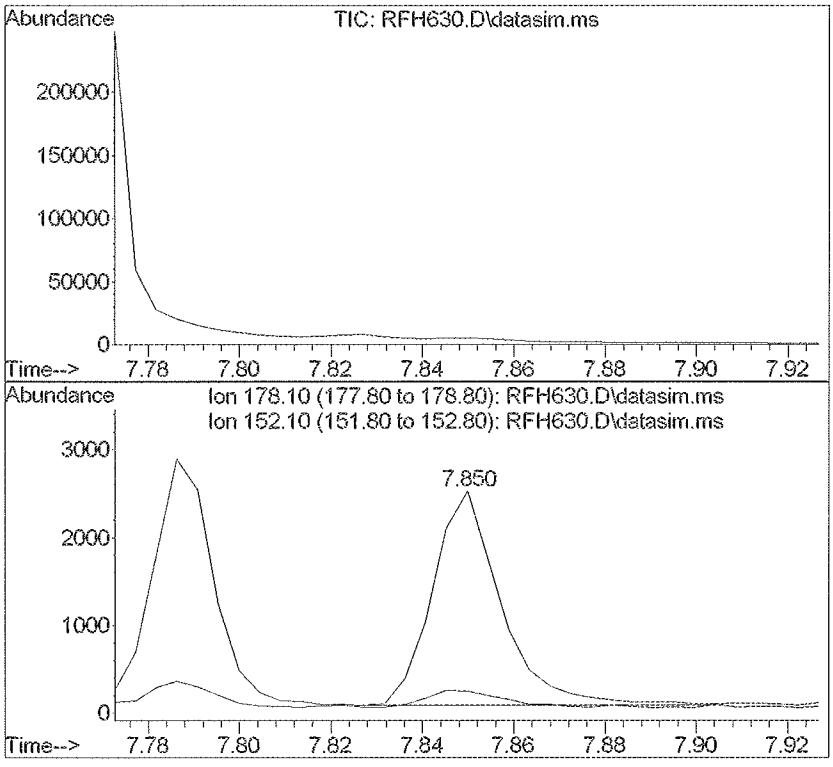




#37
Phenanthrene
Concen: 0.04 ppm
RT: 7.786 min Scan# 1401
Delta R.T. -0.014 min
Lab File: RFH630.D
Acq: 29 Jun 2018 15:12

Tgt Ion:178 Resp: 2554

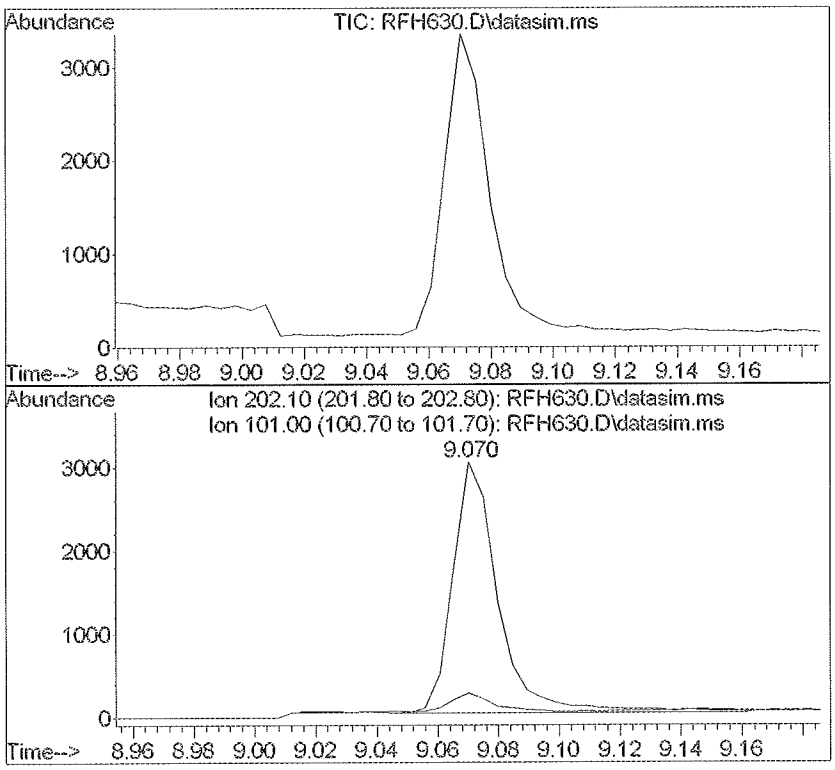
Ion	Ratio	Lower	Upper
178	100		
152	12.2	0.0	39.8



#38
Anthracene
Concen: 0.04 ppm
RT: 7.850 min Scan# 1415
Delta R.T. -0.004 min
Lab File: RFH630.D
Acq: 29 Jun 2018 15:12

Tgt Ion:178 Resp: 2530

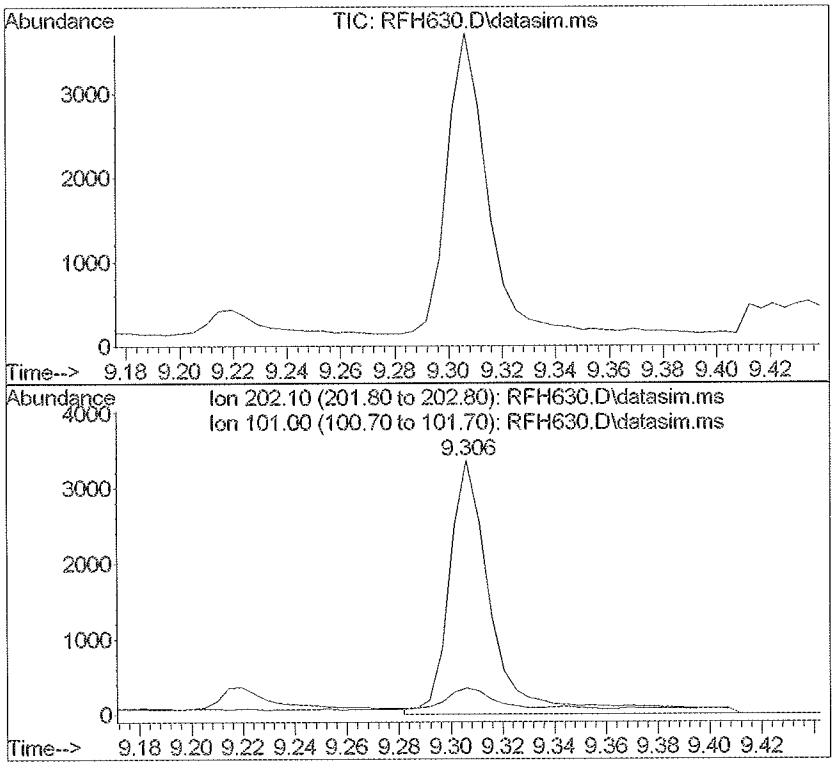
Ion	Ratio	Lower	Upper
178	100		
152	8.4	0.0	37.9



#42
Fluoranthene
Concen: 0.05 ppm
RT: 9.070 min Scan# 1675
Delta R.T. -0.005 min
Lab File: RFH630.D
Acq: 29 Jun 2018 15:12

Tgt Ion:202 Resp: 3146

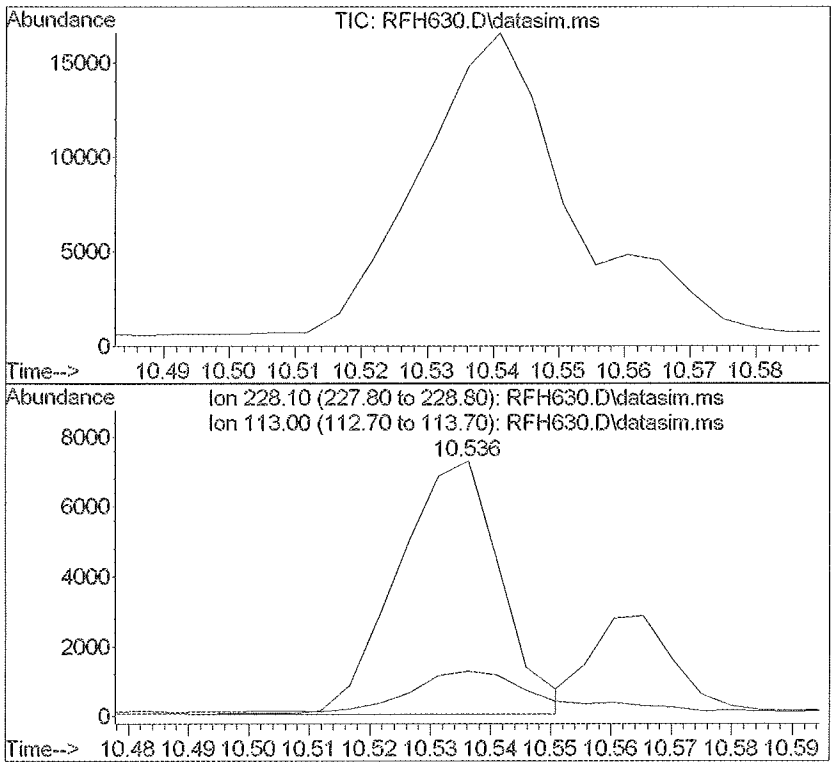
Ion	Ratio	Lower	Upper
202	100		
101	8.6	0.0	37.1



#43
Pyrene
Concen: 0.05 ppm
RT: 9.306 min Scan# 1724
Delta R.T. -0.005 min
Lab File: RFH630.D
Acq: 29 Jun 2018 15:12

Tgt Ion:202 Resp: 3932

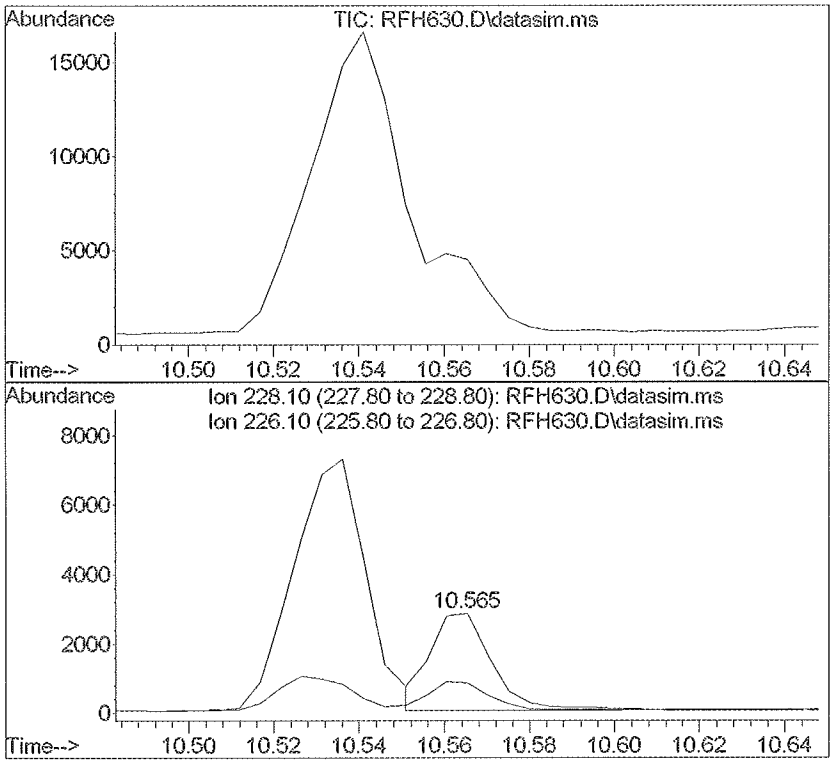
Ion	Ratio	Lower	Upper
202	100		
101	7.8	0.0	38.4



#46
Benzo(a)anthracene
Concen: 0.05 ppm
RT: 10.536 min Scan# 2001
Delta R.T. 0.000 min
Lab File: RFH630.D
Acq: 29 Jun 2018 15:12

Tgt Ion:228 Resp: 8513

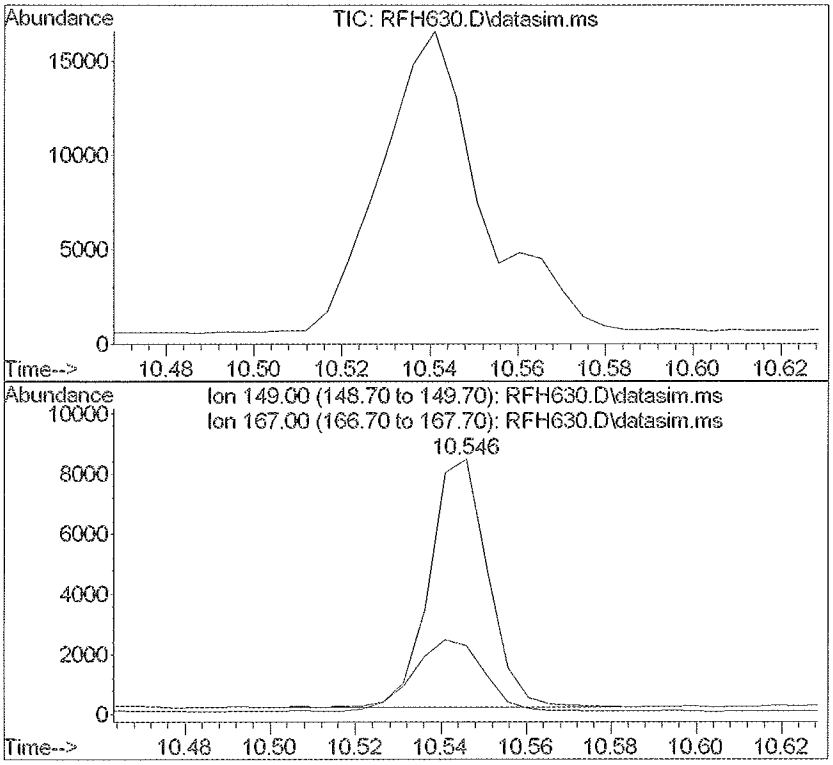
Ion	Ratio	Lower	Upper
228	100		
113	20.7	0.0	36.5



#47
Chrysene
Concen: 0.04 ppm
RT: 10.565 min Scan# 2007
Delta R.T. -0.005 min
Lab File: RFH630.D
Acq: 29 Jun 2018 15:12

Tgt Ion:228 Resp: 2811

Ion	Ratio	Lower	Upper
228	100		
226	30.0	0.0	59.8



#48
bis(2-Ethylhexyl)phthalate
Concen: 0.24 ppm
RT: 10.546 min Scan# 2003
Delta R.T. -0.014 min
Lab File: RFH630.D
Acq: 29 Jun 2018 15:12

Tgt Ion:149 Resp: 7847

Ion	Ratio	Lower	Upper
149	100		
167	34.1	0.0	54.4

METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/21/18 16:11
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0401-SO-1	Date Analyzed: 06/29/18 15:31
Lab Samp ID: 18F187-02	Dilution Factor: 1
Lab File ID: RFH631	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 4.6
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.010	0.0013	0.0026
Acenaphthylene	ND	0.010	0.0013	0.0026
Anthracene	ND	0.010	0.0013	0.0026
Benzo (a) anthracene	ND	0.010	0.0026	0.0052
Benzo (a) pyrene	ND	0.010	0.0013	0.0026
Benzo (b) fluoranthene	ND	0.010	0.0013	0.0026
Benzo(k)fluoranthene	ND	0.010	0.0013	0.0026
Benzo (g,h,i) perylene	ND	0.010	0.0013	0.0026
Chrysene	ND	0.010	0.0023	0.0052
Dibenzo (a,h) anthracene	ND	0.010	0.0013	0.0026
Fluoranthene	ND	0.010	0.0013	0.0026
Fluorene	ND	0.010	0.0013	0.0026
Indeno (1,2,3-c,d) pyrene	ND	0.010	0.0013	0.0026
Naphthalene	0.0020J	0.010	0.0013	0.0026
Phenanthrene	ND	0.010	0.0013	0.0026
Pyrene	ND	0.010	0.0013	0.0026
2-Methylnaphthalene	ND	0.010	0.0013	0.0026
1-Methylnaphthalene	ND	0.010	0.0013	0.0026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.91	2.10	91	46-122
2-Fluorobiphenyl	0.544	0.699	78	46-115
Nitrobenzene-d5	0.613	0.699	88	44-125
Terphenyl-d14	0.688	0.699	98	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.03g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

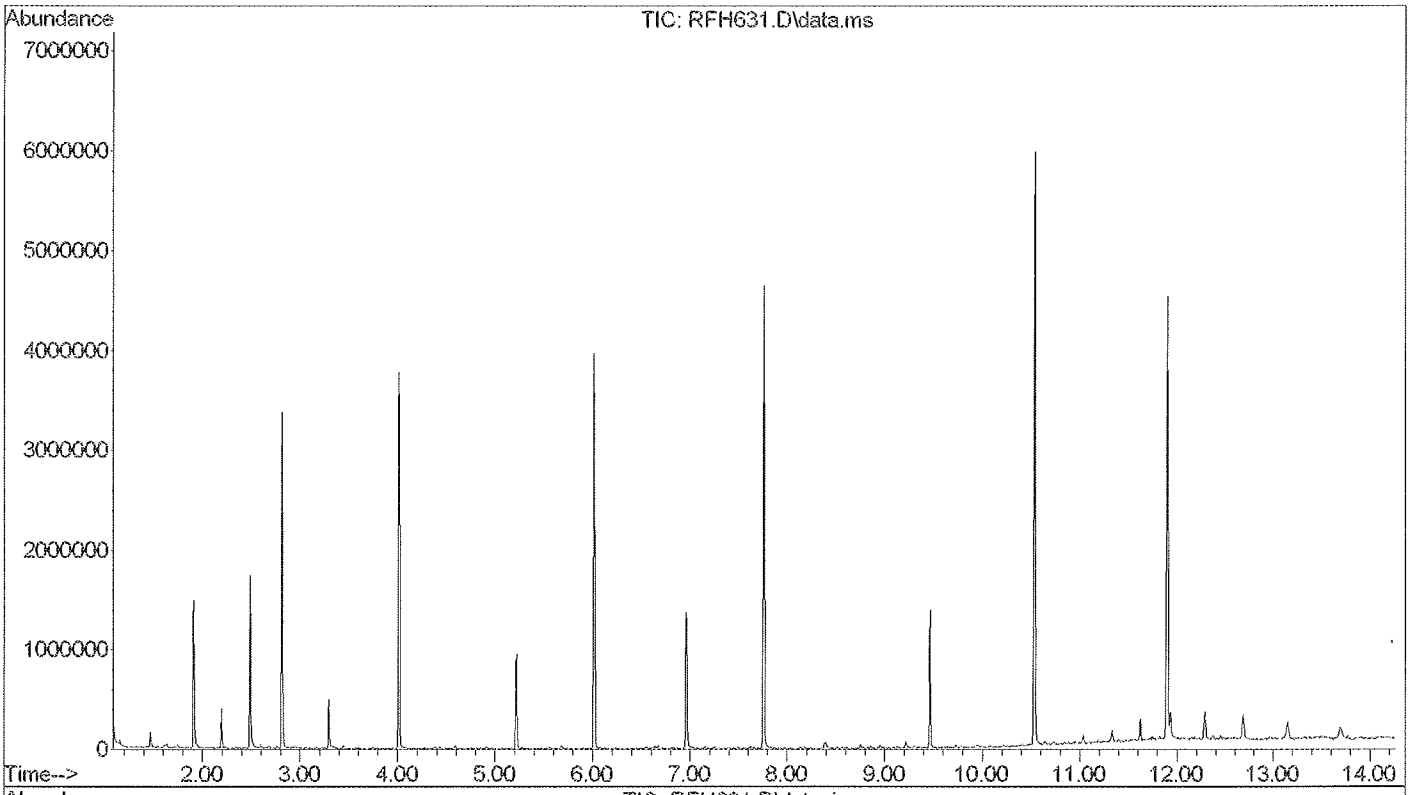
Data File : D:\DATA\18F29\RFH631.D Vial: 11
Acq On : 29 Jun 2018 15:31 Operator: RZh
Sample : 18F187-02 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:25:46 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

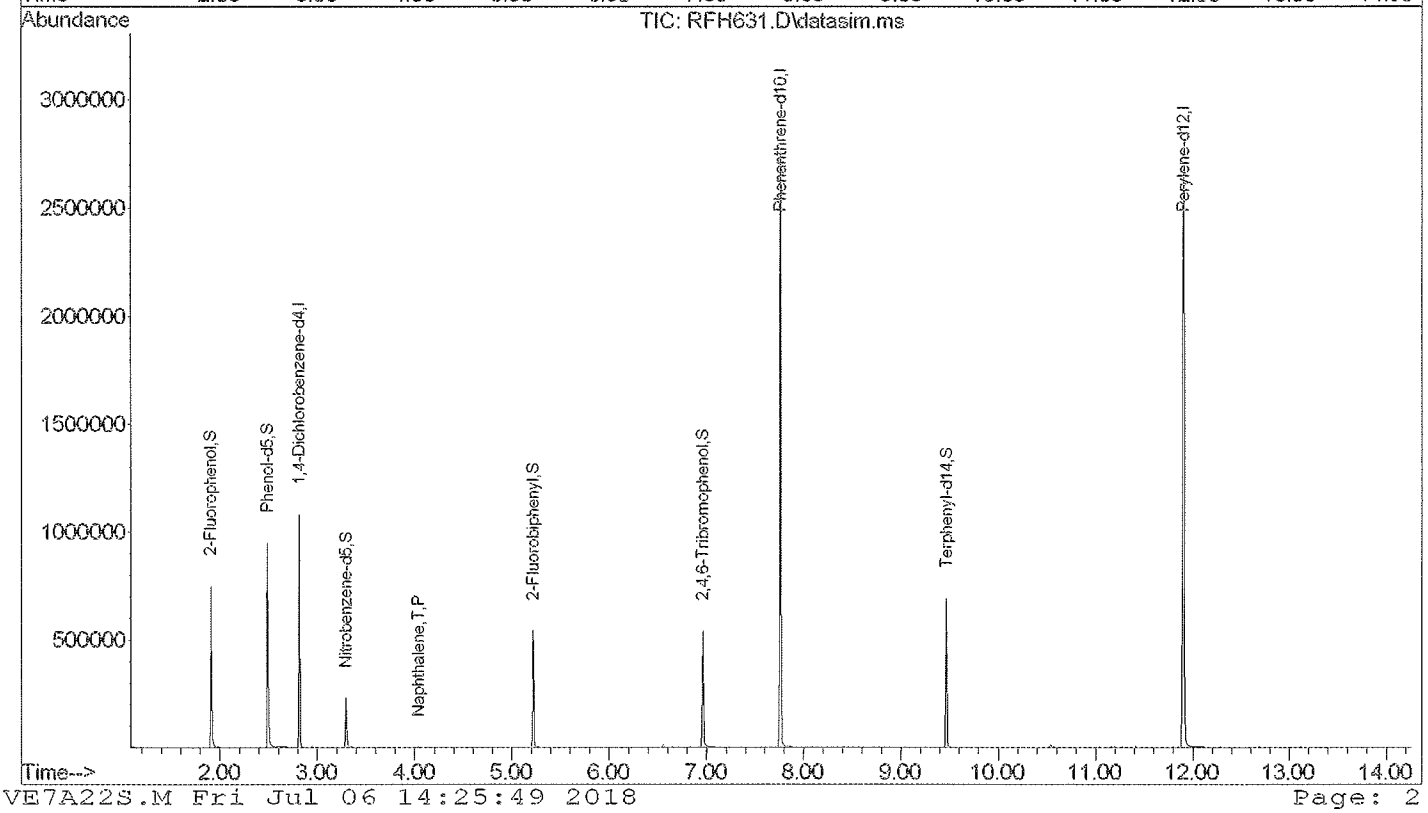
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	486501	40.00	ppm	-0.01
30) Phenanthrene-d10	7.759	188	2257485	40.00	ppm	-0.01
49) Perylene-d12	11.898	264	2731978	40.00	ppm	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol	1.909	112	356398	27.22	ppm	0.00
Spiked Amount 30.000			Recovery =	90.73%		
5) Phenol-d5	2.489	99	456345	27.79	ppm	0.00
Spiked Amount 30.000			Recovery =	92.63%		
11) Nitrobenzene-d5	3.298	82	146066	8.78	ppm	0.00
Spiked Amount 10.000			Recovery =	87.80%		
21) 2-Fluorobiphenyl	5.217	172	342542	7.79	ppm	-0.02
Spiked Amount 10.000			Recovery =	77.90%		
33) 2,4,6-Tribromophenol	6.961	330	242254	27.29	ppm	0.00
Spiked Amount 30.000			Recovery =	90.97%		
44) Terphenyl-d14	9.469	244	533162	9.86	ppm	-0.01
Spiked Amount 10.000			Recovery =	98.60%		
Target Compounds						Qvalue
14] Naphthalene	4.038	128	1285	0.03	ppm	97

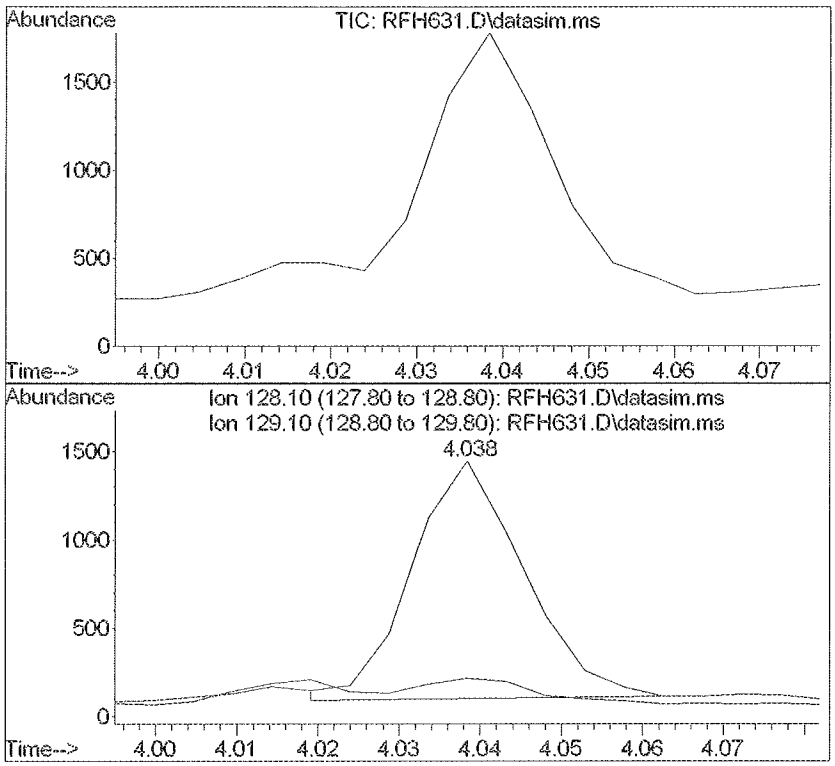
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH631.D Vial: 11
Acq On : 29 Jun 2018 15:31 Operator: RZh
Sample : 18F187-02 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:25:46 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M







#14
Naphthalene
Concen: 0.03 ppm
RT: 4.038 min Scan# 616
Delta R.T. -0.010 min
Lab File: RFH631.D
Acq: 29 Jun 2018 15:31

Tgt Ion:128 Resp: 1285

Ion	Ratio	Lower	Upper
128	100		
129	12.2	0.0	40.9

METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client	: CH2M HILL	Date Collected:	06/21/18 16:30
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0402-SO-0	Date Analyzed:	06/29/18 15:50
Lab Samp ID:	18F187-03	Dilution Factor:	1
Lab File ID:	RFH632	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	5.3
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.011	0.0013	0.0026
Acenaphthylene	ND	0.011	0.0013	0.0026
Anthracene	ND	0.011	0.0013	0.0026
Benzo (a) anthracene	ND	0.011	0.0026	0.0053
Benzo (a) pyrene	ND	0.011	0.0013	0.0026
Benzo (b) fluoranthene	ND	0.011	0.0013	0.0026
Benzo(k)fluoranthene	ND	0.011	0.0013	0.0026
Benzo (g,h,i) perylene	ND	0.011	0.0013	0.0026
Chrysene	ND	0.011	0.0023	0.0053
Dibenzo (a,h) anthracene	ND	0.011	0.0013	0.0026
Fluoranthene	ND	0.011	0.0013	0.0026
Fluorene	ND	0.011	0.0013	0.0026
Indeno (1,2,3-c,d) pyrene	ND	0.011	0.0013	0.0026
Naphthalene	ND	0.011	0.0013	0.0026
Phenanthrene	ND	0.011	0.0013	0.0026
Pyrene	ND	0.011	0.0013	0.0026
2-Methylnaphthalene	ND	0.011	0.0013	0.0026
1-Methylnaphthalene	ND	0.011	0.0013	0.0026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.61	2.11	76	46-122
2-Fluorobiphenyl	0.495	0.704	70	46-115
Nitrobenzene-d5	0.507	0.704	72	44-125
Terphenyl-d14	0.590	0.704	84	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30.03g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

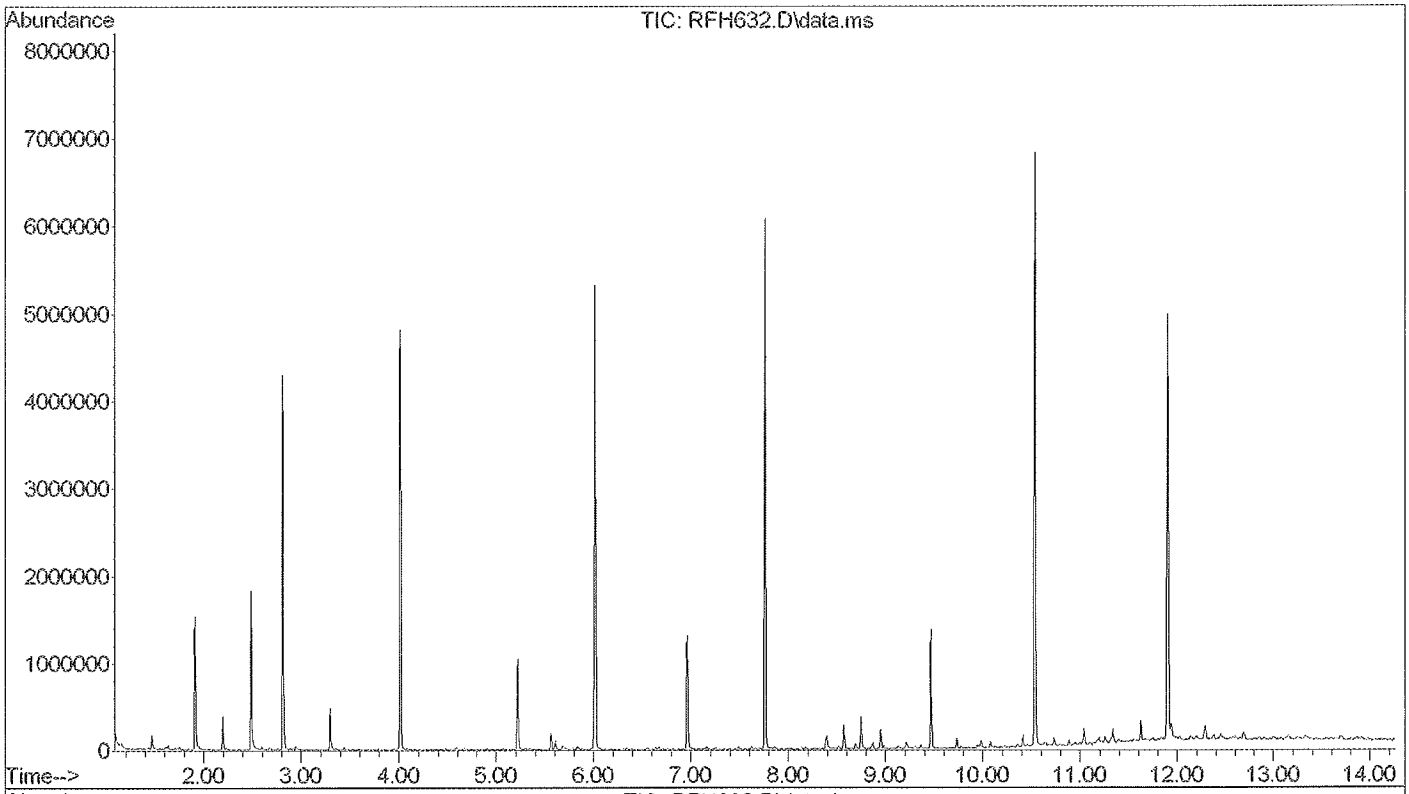
Data File : D:\DATA\18F29\RFH632.D Vial: 12
Acq On : 29 Jun 2018 15:50 Operator: RZh
Sample : 18F187-03 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:26:17 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

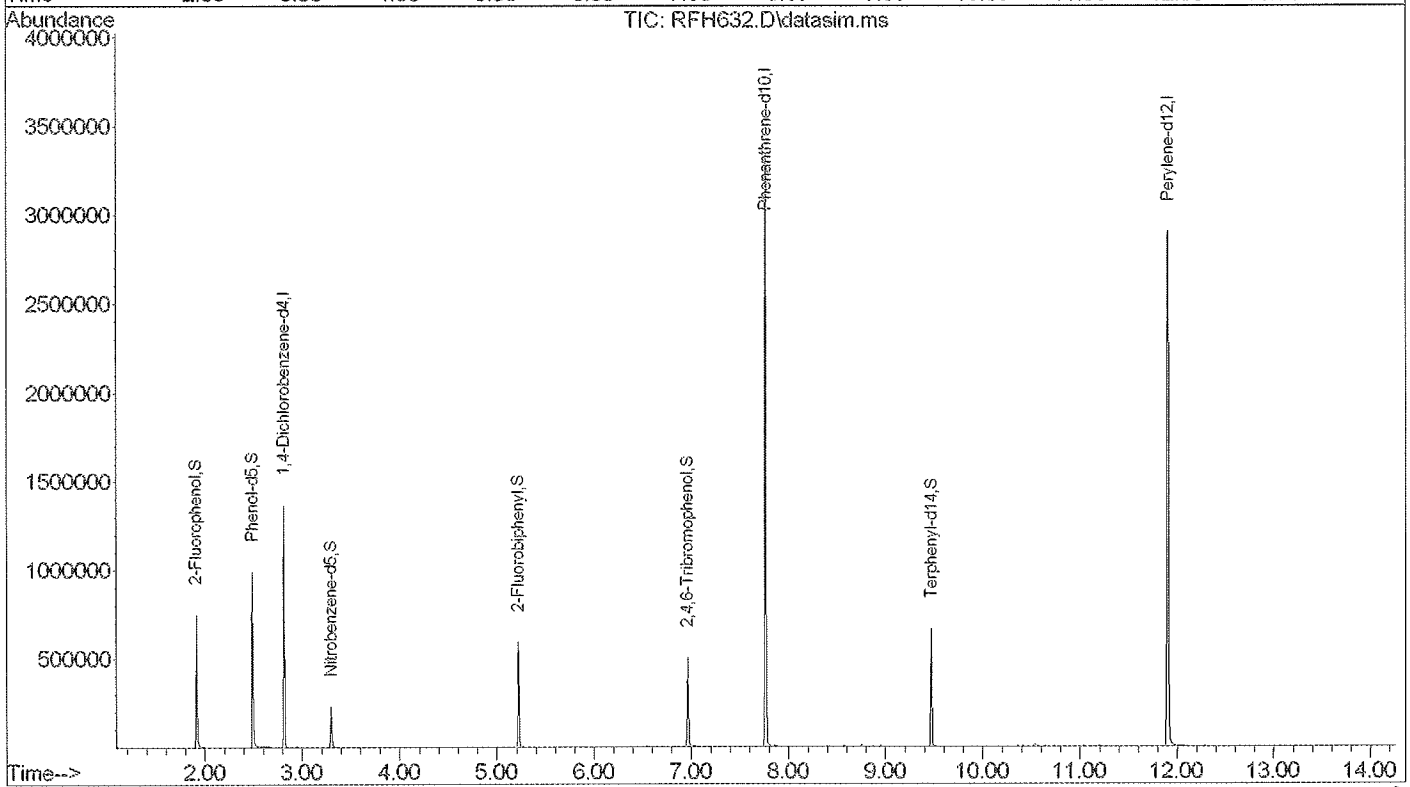
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	588897	40.00	ppm	-0.01
30) Phenanthrene-d10	7.759	188	2661663	40.00	ppm	-0.01
49) Perylene-d12	11.903	264	3018453	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.909	112	352435	22.24	ppm	0.00
Spiked Amount 30.000			Recovery =	74.13%		
5) Phenol-d5	2.489	99	474066	23.85	ppm	0.00
Spiked Amount 30.000			Recovery =	79.50%		
11) Nitrobenzene-d5	3.298	82	145194	7.21	ppm	0.00
Spiked Amount 10.000			Recovery =	72.10%		
21) 2-Fluorobiphenyl	5.217	172	374184	7.03	ppm	-0.02
Spiked Amount 10.000			Recovery =	70.30%		
33) 2,4,6-Tribromophenol	6.961	330	240055	22.94	ppm	0.00
Spiked Amount 30.000			Recovery =	76.47%		
44) Terphenyl-d14	9.468	244	534574	8.38	ppm	-0.01
Spiked Amount 10.000			Recovery =	83.80%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH632.D Vial: 12
Acq On : 29 Jun 2018 15:50 Operator: RZh
Sample : 18F187-03 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:26:17 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client	: CH2M HILL	Date Collected:	06/21/18 18:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 15:30
Sample ID	: 18Q2DP009-SB0801-SO-0	Date Analyzed:	06/29/18 16:09
Lab Samp ID:	18F187-04	Dilution Factor:	1
Lab File ID:	RFH633	Matrix:	SOIL
Ext Btch ID:	18SVF043S	% Moisture:	8.6
Calib. Ref.:	RAH169	Instrument ID:	E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.011	0.0014	0.0027
Acenaphthylene	ND	0.011	0.0014	0.0027
Anthracene	ND	0.011	0.0014	0.0027
Benzo (a) anthracene	ND	0.011	0.0027	0.0055
Benzo (a) pyrene	ND	0.011	0.0014	0.0027
Benzo (b) fluoranthene	ND	0.011	0.0014	0.0027
Benzo(k)fluoranthene	ND	0.011	0.0014	0.0027
Benzo (g,h,i) perylene	ND	0.011	0.0014	0.0027
Chrysene	ND	0.011	0.0024	0.0055
Dibenzo (a,h) anthracene	ND	0.011	0.0014	0.0027
Fluoranthene	ND	0.011	0.0014	0.0027
Fluorene	ND	0.011	0.0014	0.0027
Indeno (1,2,3-c,d) pyrene	ND	0.011	0.0014	0.0027
Naphthalene	0.0045J	0.011	0.0014	0.0027
Phenanthrene	ND	0.011	0.0014	0.0027
Pyrene	ND	0.011	0.0014	0.0027
2-Methylnaphthalene	ND	0.011	0.0014	0.0027
1-Methylnaphthalene	ND	0.011	0.0014	0.0027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.65	2.19	75	46-122
2-Fluorobiphenyl	0.375	0.729	51	46-115
Nitrobenzene-d5	0.392	0.729	54	44-125
Terphenyl-d14	0.638	0.729	88	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 30.01g	Final Volume	: 2ml
Prepared by	: JVille	Analyzed by	: KVu

Quantitation Report (QT Reviewed)

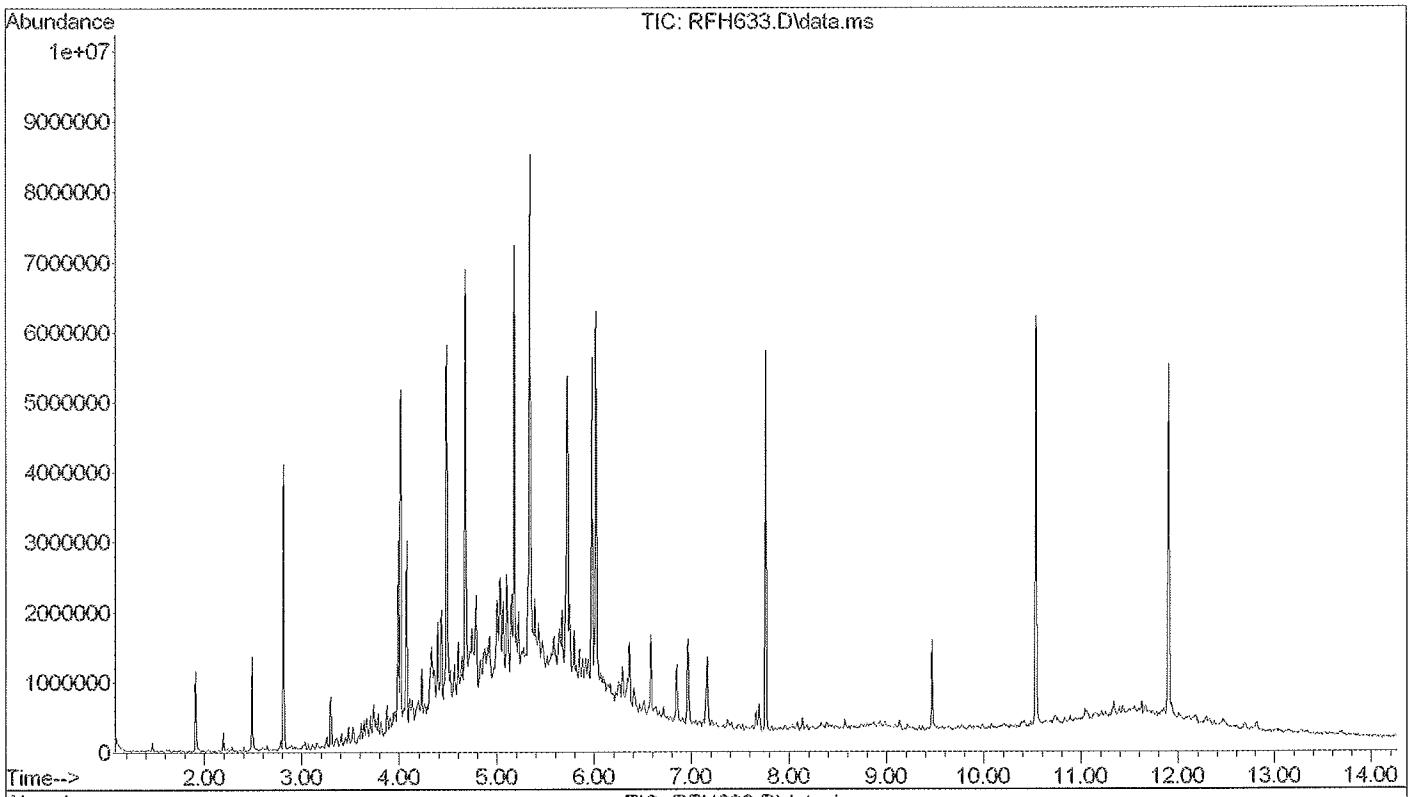
Data File : D:\DATA\18F29\RFH633.D Vial: 13
Acq On : 29 Jun 2018 16:09 Operator: RZh
Sample : 18F187-04 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:39:23 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

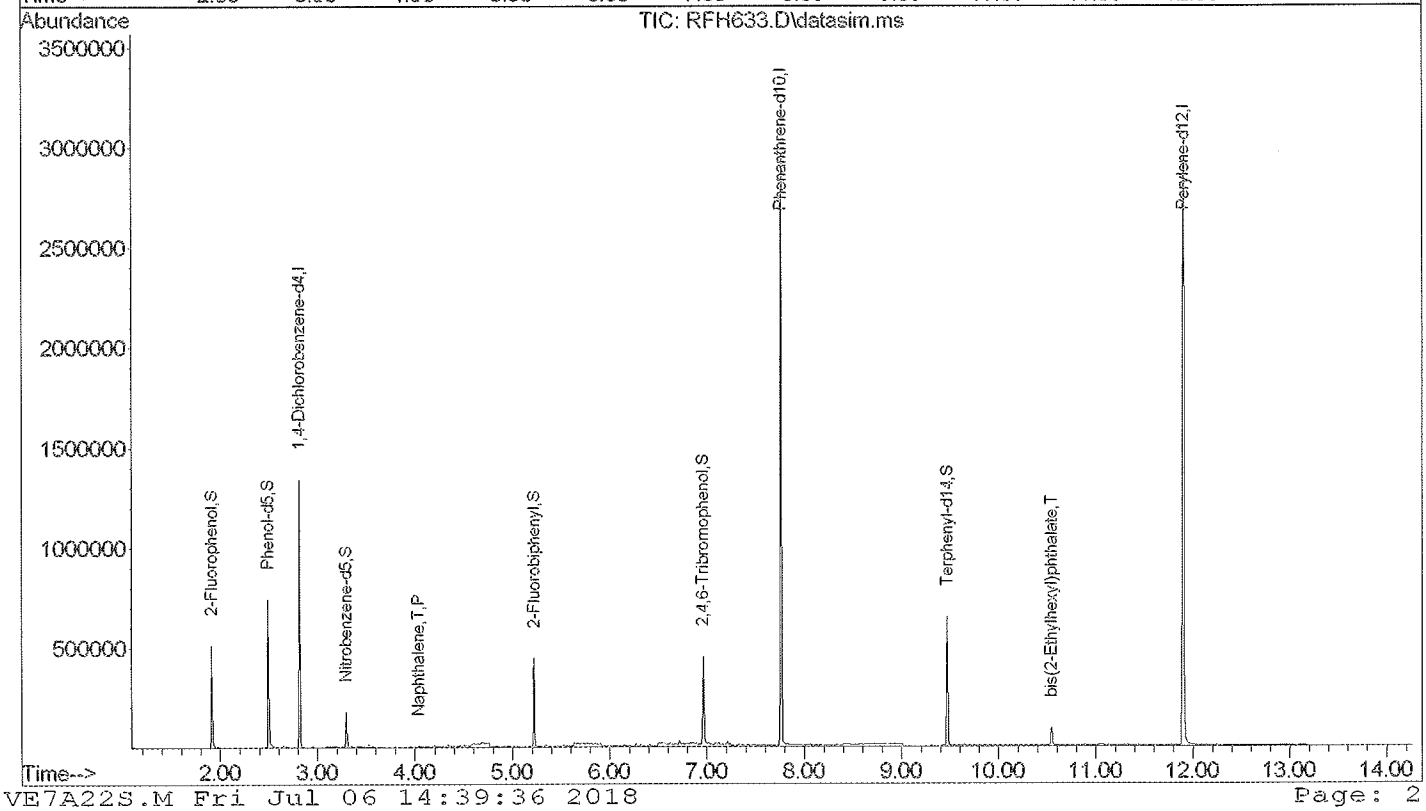
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	588544	40.00	ppm	0.00
30) Phenanthrene-d10	7.764	188	2416537	40.00	ppm	0.00
49) Perylene-d12	11.903	264	3026059	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	260062	16.42	ppm	0.00
Spiked Amount 30.000			Recovery =	54.73%		
5) Phenol-d5	2.489	99	360403	18.14	ppm	0.01
Spiked Amount 30.000			Recovery =	60.47%		
11) Nitrobenzene-d5	3.298	82	108061	5.37	ppm	0.00
Spiked Amount 10.000			Recovery =	53.70%		
21) 2-Fluorobiphenyl	5.222	172	273255	5.14	ppm	-0.01
Spiked Amount 10.000			Recovery =	51.40%		
33) 2,4,6-Tribromophenol	6.961	330	214654	22.59	ppm	0.00
Spiked Amount 30.000			Recovery =	75.30%		
44) Terphenyl-d14	9.469	244	506890	8.76	ppm	-0.01
Spiked Amount 10.000			Recovery =	87.60%		
Target Compounds			VV 7/6/18			Qvalue
14] Naphthalene	4.039	128	3342m	0.06	ppm	
48] bis(2-Ethylhexyl)phtha...	10.546	149	55536	1.38	ppm	94

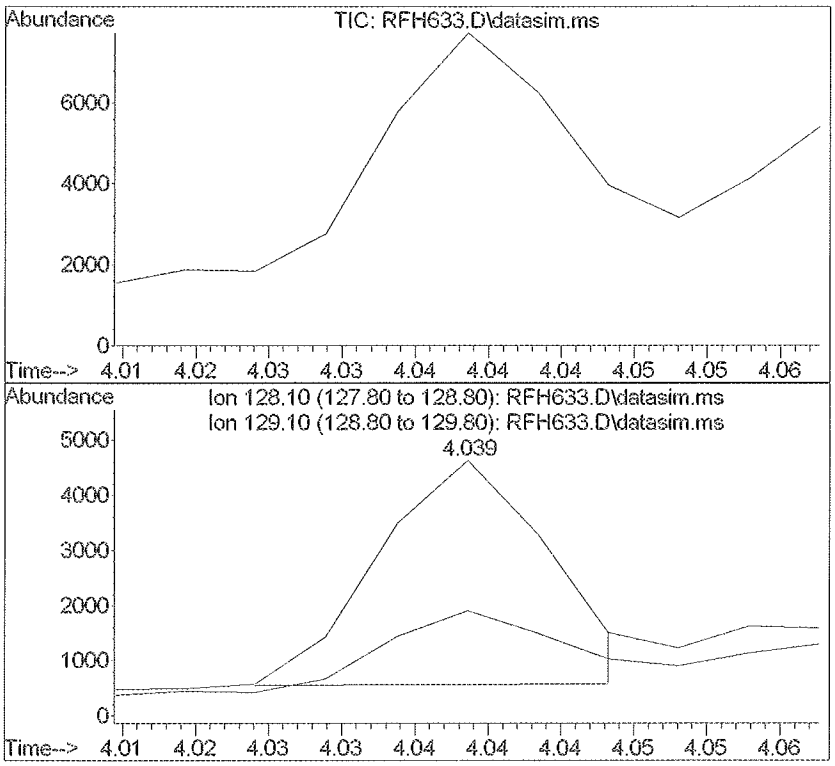
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH633.D Vial: 13
Acq On : 29 Jun 2018 16:09 Operator: RZh
Sample : 18F187-04 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:39:23 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



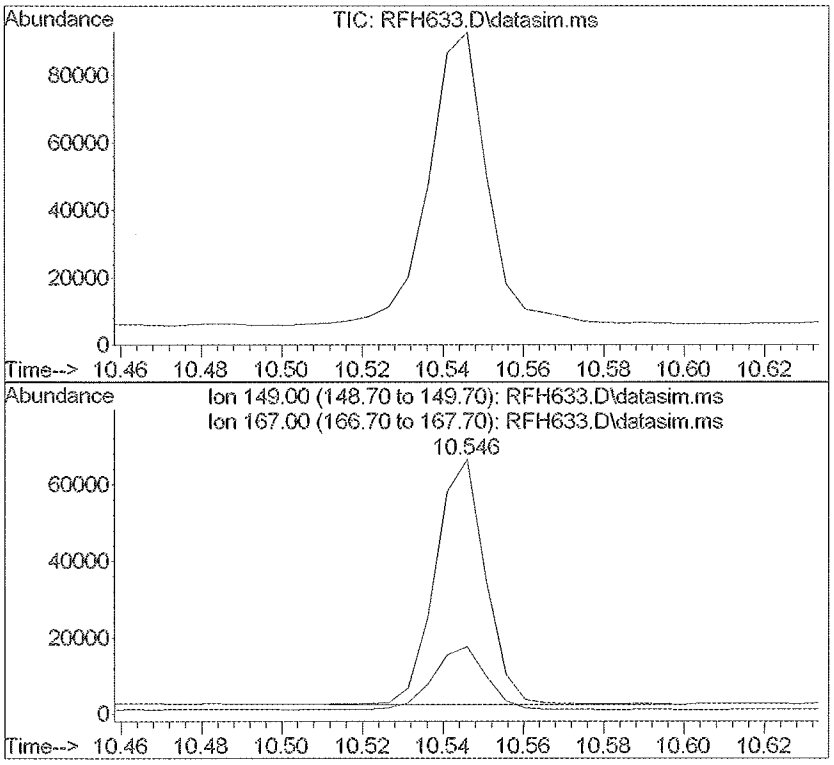




#14
Naphthalene
Concen: 0.06 ppm m
RT: 4.039 min Scan# 616
Delta R.T. -0.009 min
Lab File: RFH633.D
Acq: 29 Jun 2018 16:09

Tgt Ion:128 Resp: 3342

Ion	Ratio	Lower	Upper
128	100		
129	54.9	0.0	40.9#



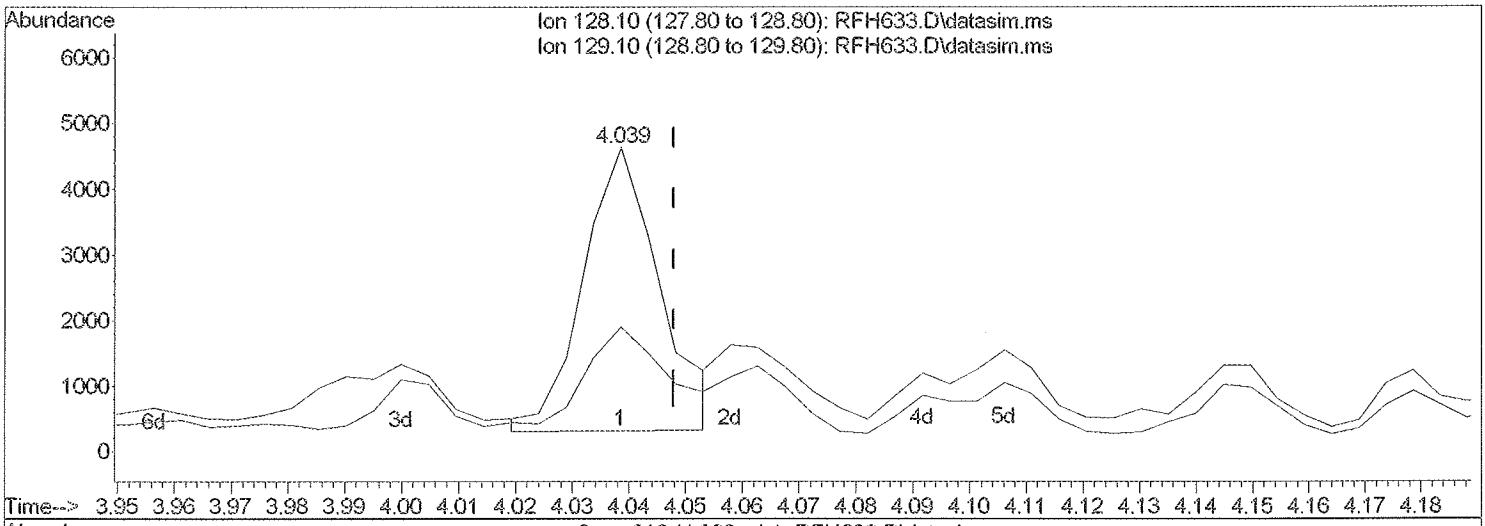
#48
bis(2-Ethylhexyl)phthalate
Concen: 1.38 ppm
RT: 10.546 min Scan# 2003
Delta R.T. -0.014 min
Lab File: RFH633.D
Acq: 29 Jun 2018 16:09

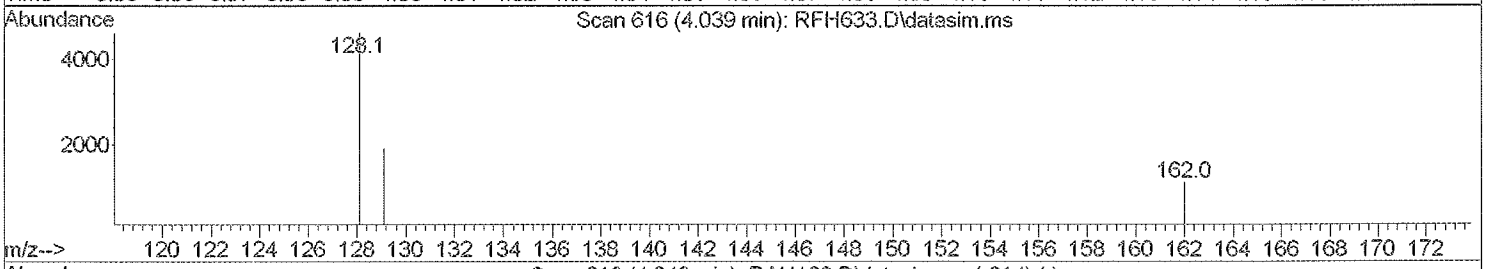
Tgt Ion:149 Resp: 55536

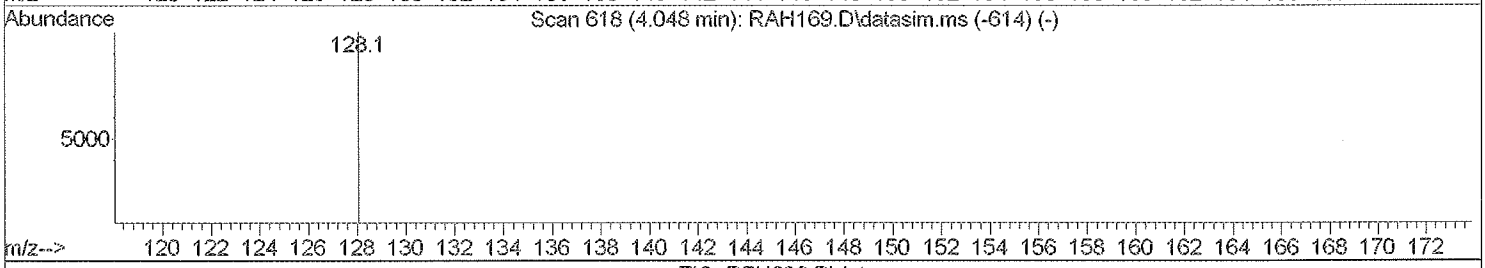
Ion	Ratio	Lower	Upper
149	100		
167	27.4	0.0	54.4

Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH633.D Vial: 13
Acq On : 29 Jun 2018 16:09 Operator: RZh
Sample : 18F187-04 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:27:36 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M







TIC: RFH633.D\data.ms

(14) Naphthalene (T,P)

4.039min (-0.009) 0.08 ppm

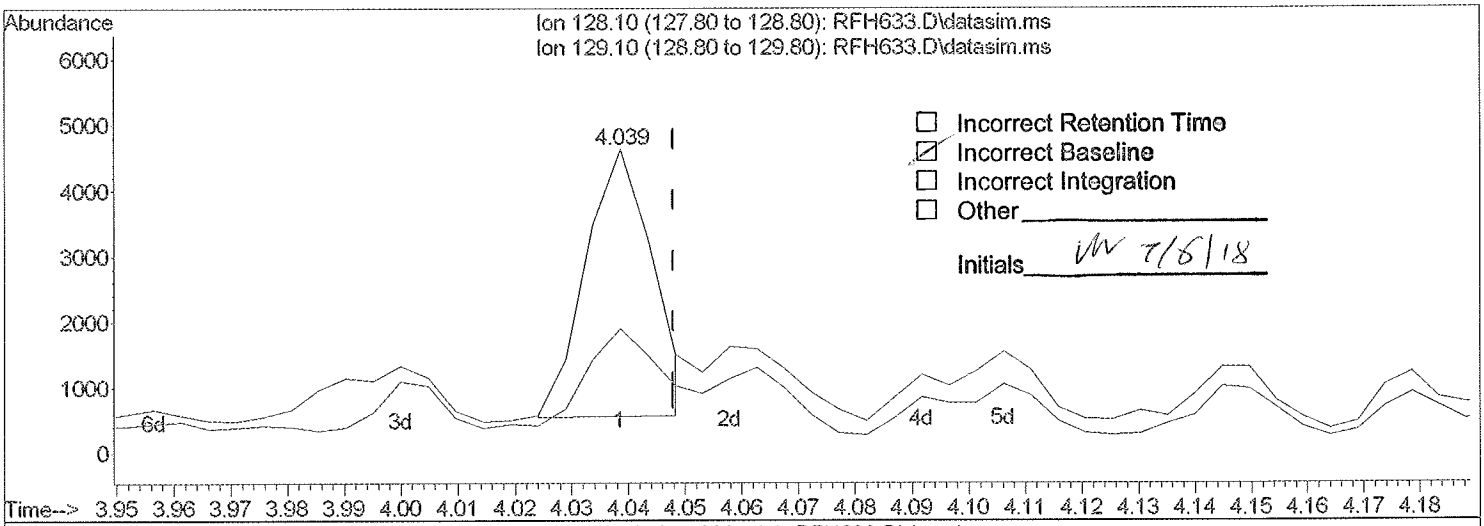
response 4036

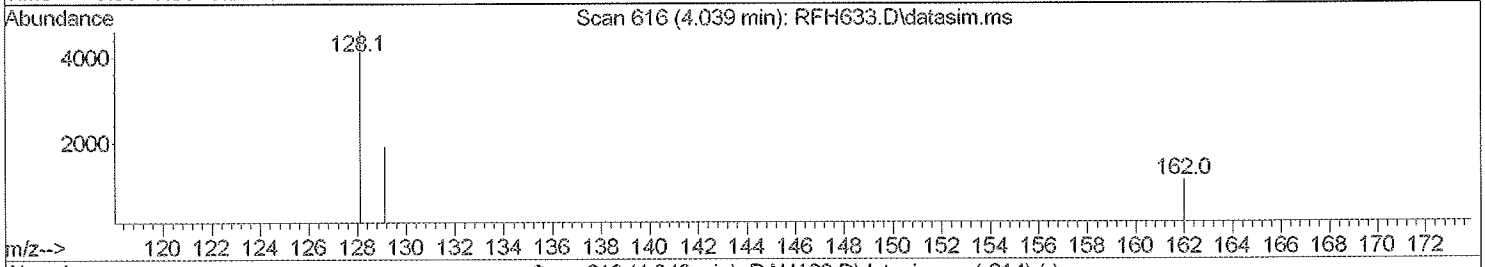
Ion	Exp%	Act%
128.10	100	100
129.10	10.90	45.49#
0.00	0.00	0.00
0.00	0.00	0.00

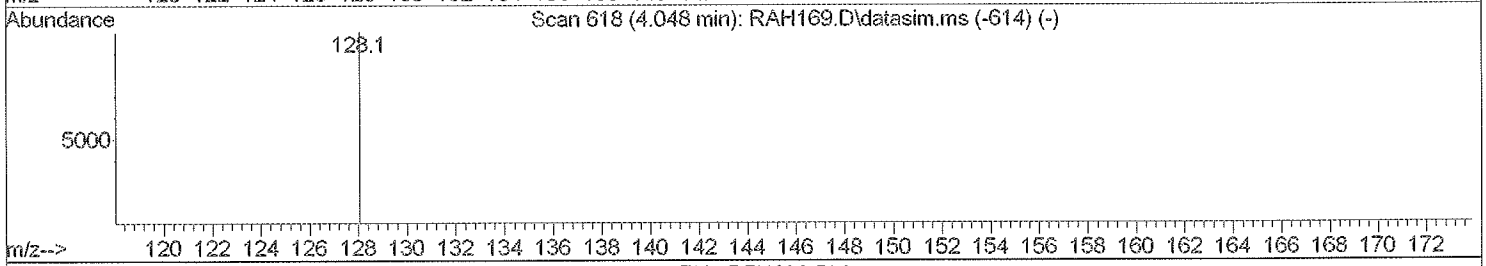
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH633.D
Acq On : 29 Jun 2018 16:09
Sample : 18F187-04
Misc :
Integrator: RTE
Quant Time: Jul 06 14:27:36 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 13
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH633.D\data.ms

(14) Naphthalene (T,P)

4.039min (-0.009) 0.06 ppm m

response 3342

Ion	Exp%	Act%
128.10	100	100
129.10	10.90	54.94#
0.00	0.00	0.00
0.00	0.00	0.00

METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/21/18 19:45
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0802-SO-0	Date Analyzed: 06/29/18 16:28
Lab Samp ID: 18F187-05	Dilution Factor: 1
Lab File ID: RFH634	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 4.9
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.011	0.0013	0.0026
Acenaphthylene	ND	0.011	0.0013	0.0026
Anthracene	ND	0.011	0.0013	0.0026
Benzo (a) anthracene	ND	0.011	0.0026	0.0053
Benzo (a) pyrene	ND	0.011	0.0013	0.0026
Benzo (b) fluoranthene	ND	0.011	0.0013	0.0026
Benzo(k)fluoranthene	ND	0.011	0.0013	0.0026
Benzo (g,h,i) perylene	ND	0.011	0.0013	0.0026
Chrysene	ND	0.011	0.0023	0.0053
Dibenzo (a,h) anthracene	ND	0.011	0.0013	0.0026
Fluoranthene	ND	0.011	0.0013	0.0026
Fluorene	ND	0.011	0.0013	0.0026
Indeno (1,2,3-c,d) pyrene	ND	0.011	0.0013	0.0026
Naphthalene	ND	0.011	0.0013	0.0026
Phenanthrene	ND	0.011	0.0013	0.0026
Pyrene	ND	0.011	0.0013	0.0026
2-Methylnaphthalene	ND	0.011	0.0013	0.0026
1-Methylnaphthalene	ND	0.011	0.0013	0.0026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.65	2.10	79	46-122
2-Fluorobiphenyl	0.488	0.701	70	46-115
Nitrobenzene-d5	0.588	0.701	84	44-125
Terphenyl-d14	0.596	0.701	85	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.02g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

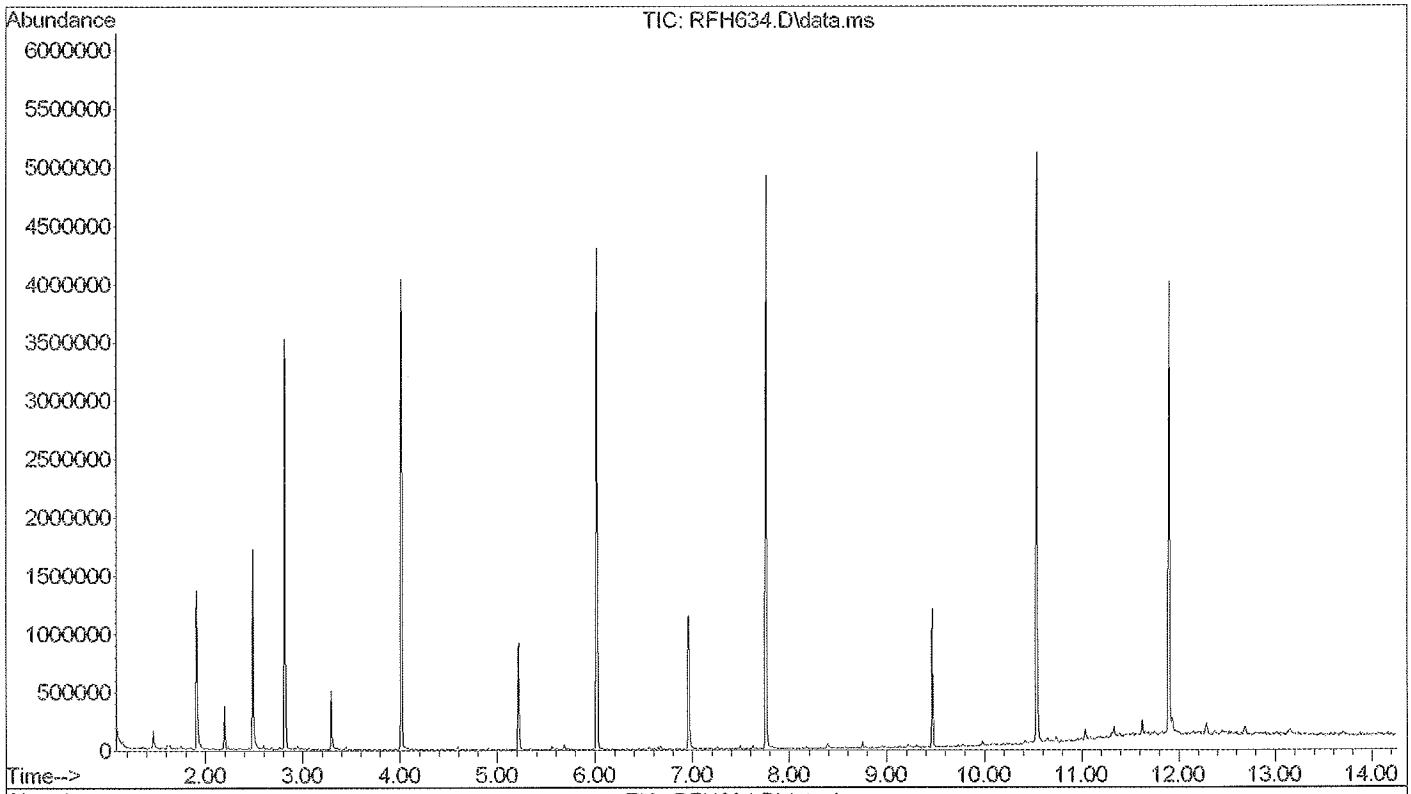
Data File : D:\DATA\18F29\RFH634.D Vial: 14
Acq On : 29 Jun 2018 16:28 Operator: RZh
Sample : 18F187-05 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:28:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

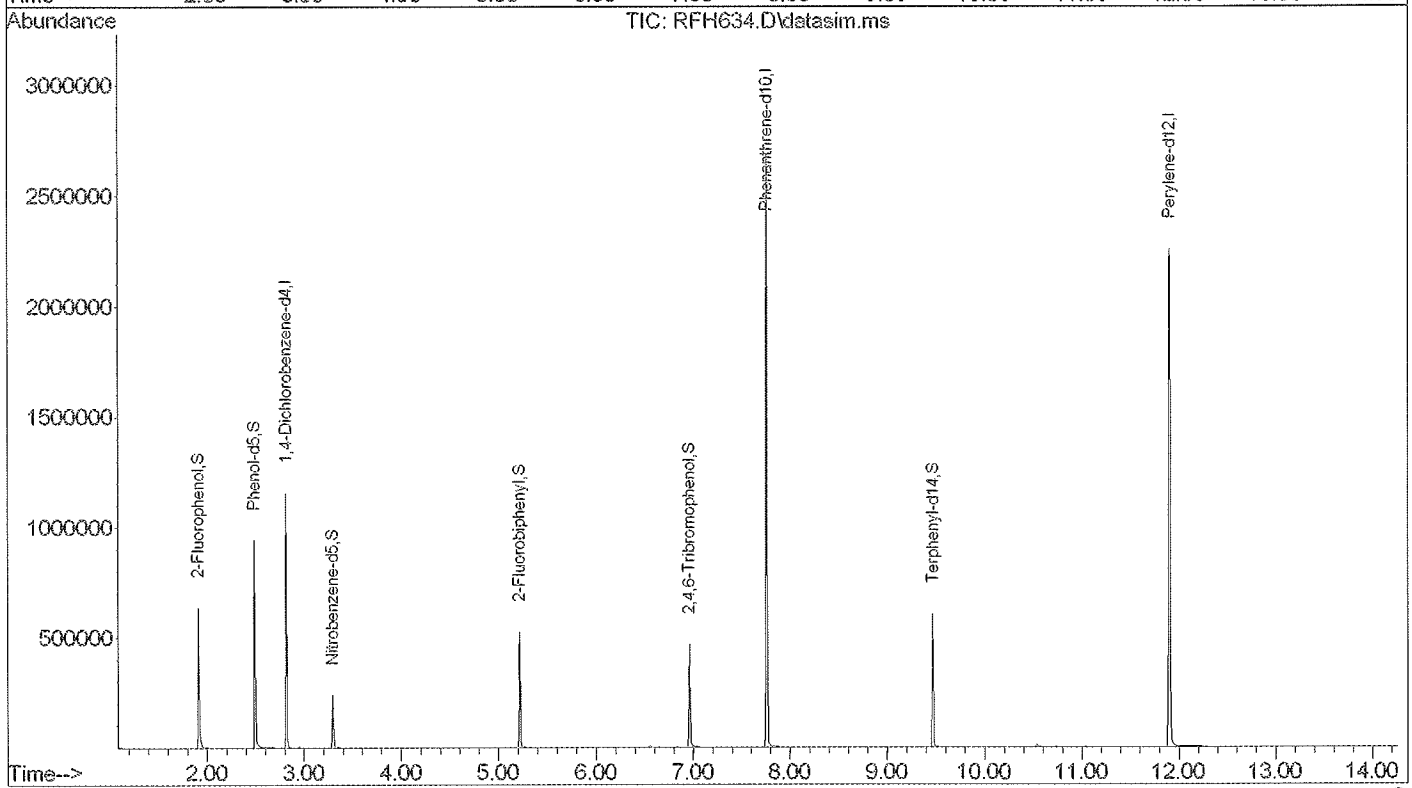
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	529367	40.00	ppm	0.00
30) Phenanthrene-d10	7.759	188	2317173	40.00	ppm	-0.01
49) Perylene-d12	11.898	264	2274203	40.00	ppm	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	351662	24.68	ppm	0.00
Spiked Amount 30.000			Recovery =	82.27%		
5) Phenol-d5	2.489	99	465118	26.03	ppm	0.01
Spiked Amount 30.000			Recovery =	86.77%		
11) Nitrobenzene-d5	3.298	82	151805	8.39	ppm	0.00
Spiked Amount 10.000			Recovery =	83.90%		
21) 2-Fluorobiphenyl	5.218	172	333193	6.97	ppm	-0.02
Spiked Amount 10.000			Recovery =	69.70%		
33) 2,4,6-Tribromophenol	6.961	330	215149	23.61	ppm	0.00
Spiked Amount 30.000			Recovery =	78.70%		
44) Terphenyl-d14	9.469	244	472513	8.51	ppm	-0.01
Spiked Amount 10.000			Recovery =	85.10%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH634.D Vial: 14
Acq On : 29 Jun 2018 16:28 Operator: RZh
Sample : 18F187-05 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:28:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/22/18 11:50
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0501-SO-0	Date Analyzed: 06/29/18 16:47
Lab Samp ID: 18F187-07	Dilution Factor: 1
Lab File ID: RFH635	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 3.9
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.010	0.0013	0.0026
Acenaphthylene	ND	0.010	0.0013	0.0026
Anthracene	ND	0.010	0.0013	0.0026
Benzo (a) anthracene	ND	0.010	0.0025	0.0052
Benzo (a) pyrene	ND	0.010	0.0013	0.0026
Benzo (b) fluoranthene	ND	0.010	0.0013	0.0026
Benzo(k)fluoranthene	ND	0.010	0.0013	0.0026
Benzo (g,h,i) perylene	ND	0.010	0.0013	0.0026
Chrysene	ND	0.010	0.0023	0.0052
Dibenzo (a,h) anthracene	ND	0.010	0.0013	0.0026
Fluoranthene	ND	0.010	0.0013	0.0026
Fluorene	ND	0.010	0.0013	0.0026
Indeno (1,2,3-c,d) pyrene	ND	0.010	0.0013	0.0026
Naphthalene	ND	0.010	0.0013	0.0026
Phenanthrene	ND	0.010	0.0013	0.0026
Pyrene	ND	0.010	0.0013	0.0026
2-Methylnaphthalene	ND	0.010	0.0013	0.0026
1-Methylnaphthalene	ND	0.010	0.0013	0.0026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.55	2.08	74	46-122
2-Fluorobiphenyl	0.497	0.694	72	46-115
Nitrobenzene-d5	0.536	0.694	77	44-125
Terphenyl-d14	0.555	0.694	80	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

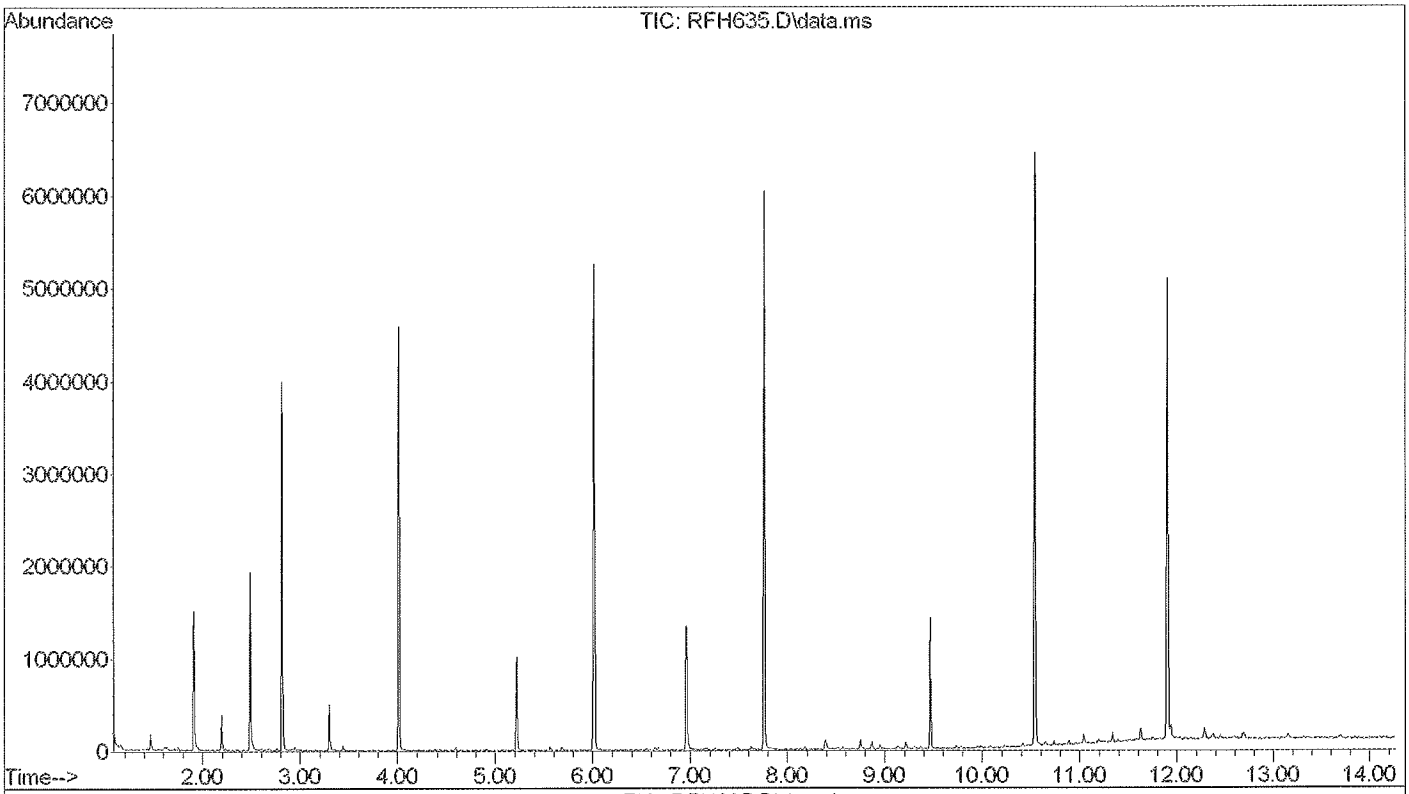
Data File : D:\DATA\18F29\RFH635.D Vial: 15
Acq On : 29 Jun 2018 16:47 Operator: RZh
Sample : 18F187-07 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:28:52 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

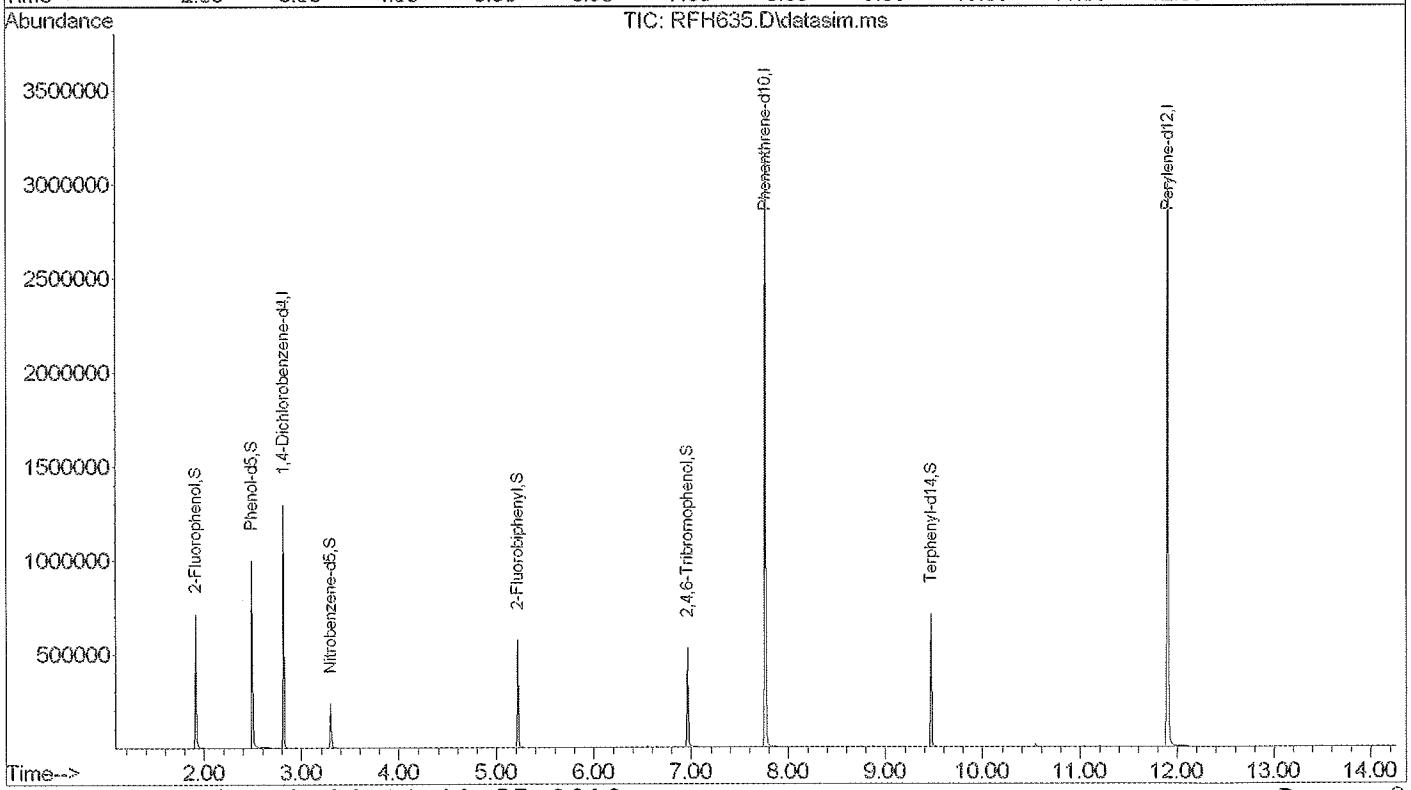
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	561597	40.00	ppm	-0.01
30) Phenanthrene-d10	7.764	188	2779988	40.00	ppm	0.00
49) Perylene-d12	11.898	264	3008347	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	352885	23.35	ppm	0.00
Spiked Amount 30.000			Recovery =	77.83%		
5) Phenol-d5	2.489	99	475767	25.10	ppm	0.00
Spiked Amount 30.000			Recovery =	83.67%		
11) Nitrobenzene-d5	3.298	82	148173	7.72	ppm	0.00
Spiked Amount 10.000			Recovery =	77.20%		
21) 2-Fluorobiphenyl	5.218	172	363225	7.16	ppm	-0.02
Spiked Amount 10.000			Recovery =	71.60%		
33) 2,4,6-Tribromophenol	6.961	330	243781	22.30	ppm	0.00
Spiked Amount 30.000			Recovery =	74.33%		
44) Terphenyl-d14	9.469	244	533157	8.01	ppm	-0.01
Spiked Amount 10.000			Recovery =	80.10%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH635.D Vial: 15
Acq On : 29 Jun 2018 16:47 Operator: RZh
Sample : 18F187-07 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:28:52 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/22/18 12:30
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0502-SO-0	Date Analyzed: 06/29/18 17:06
Lab Samp ID: 18F187-08	Dilution Factor: 1
Lab File ID: RFH636	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 3.5
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.010	0.0013	0.0026
Acenaphthylene	ND	0.010	0.0013	0.0026
Anthracene	ND	0.010	0.0013	0.0026
Benzo (a) anthracene	ND	0.010	0.0025	0.0052
Benzo (a) pyrene	ND	0.010	0.0013	0.0026
Benzo (b) fluoranthene	ND	0.010	0.0013	0.0026
Benzo(k)fluoranthene	ND	0.010	0.0013	0.0026
Benzo (g,h,i) perylene	ND	0.010	0.0013	0.0026
Chrysene	ND	0.010	0.0023	0.0052
Dibenzo (a,h) anthracene	ND	0.010	0.0013	0.0026
Fluoranthene	ND	0.010	0.0013	0.0026
Fluorene	ND	0.010	0.0013	0.0026
Indeno (1,2,3-c,d) pyrene	ND	0.010	0.0013	0.0026
Naphthalene	ND	0.010	0.0013	0.0026
Phenanthrene	ND	0.010	0.0013	0.0026
Pyrene	ND	0.010	0.0013	0.0026
2-Methylnaphthalene	ND	0.010	0.0013	0.0026
1-Methylnaphthalene	ND	0.010	0.0013	0.0026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.60	2.07	77	46-122
2-Fluorobiphenyl	0.505	0.691	73	46-115
Nitrobenzene-d5	0.557	0.691	81	44-125
Terphenyl-d14	0.585	0.691	85	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.02g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

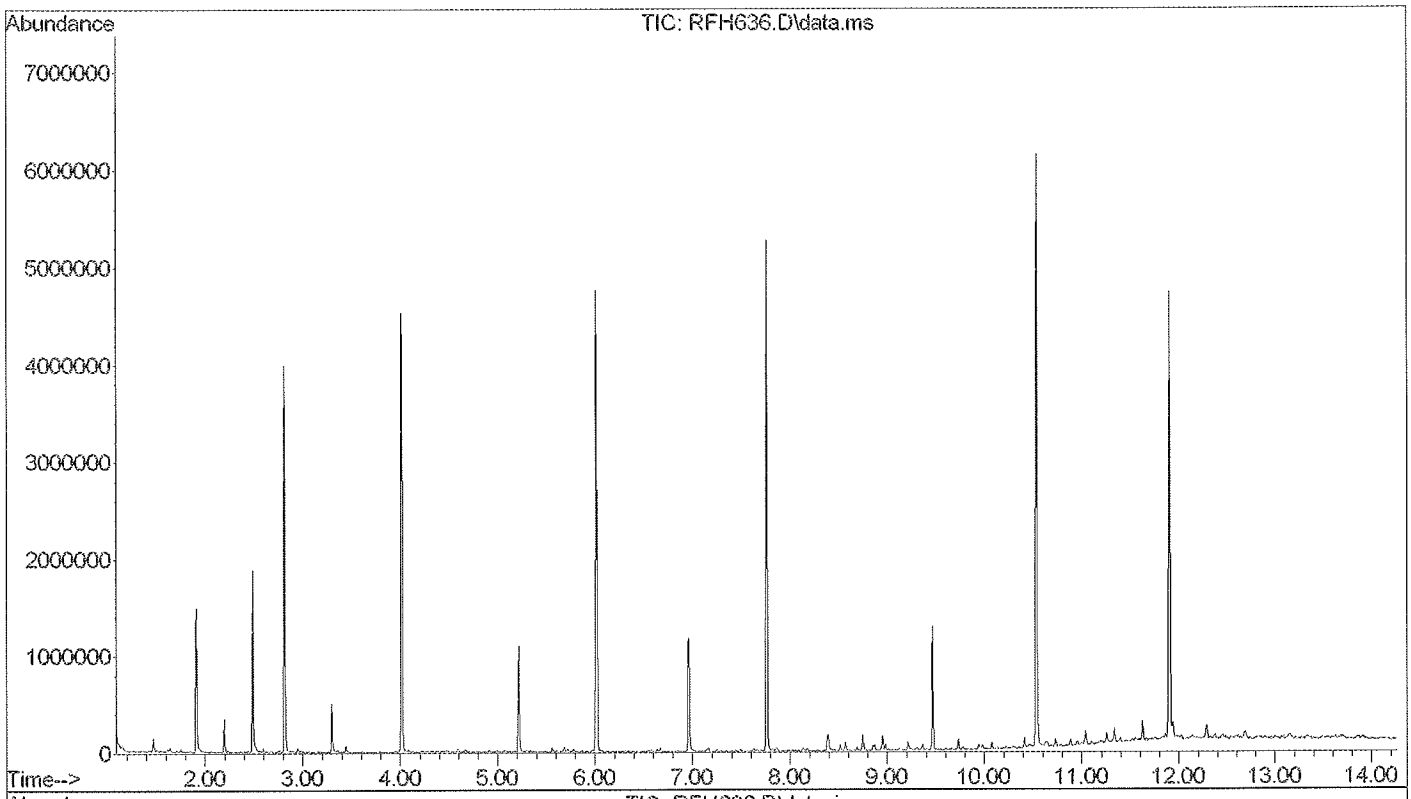
Data File : D:\DATA\18F29\RFH636.D Vial: 16
Acq On : 29 Jun 2018 17:06 Operator: RZh
Sample : 18F187-08 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:29:18 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

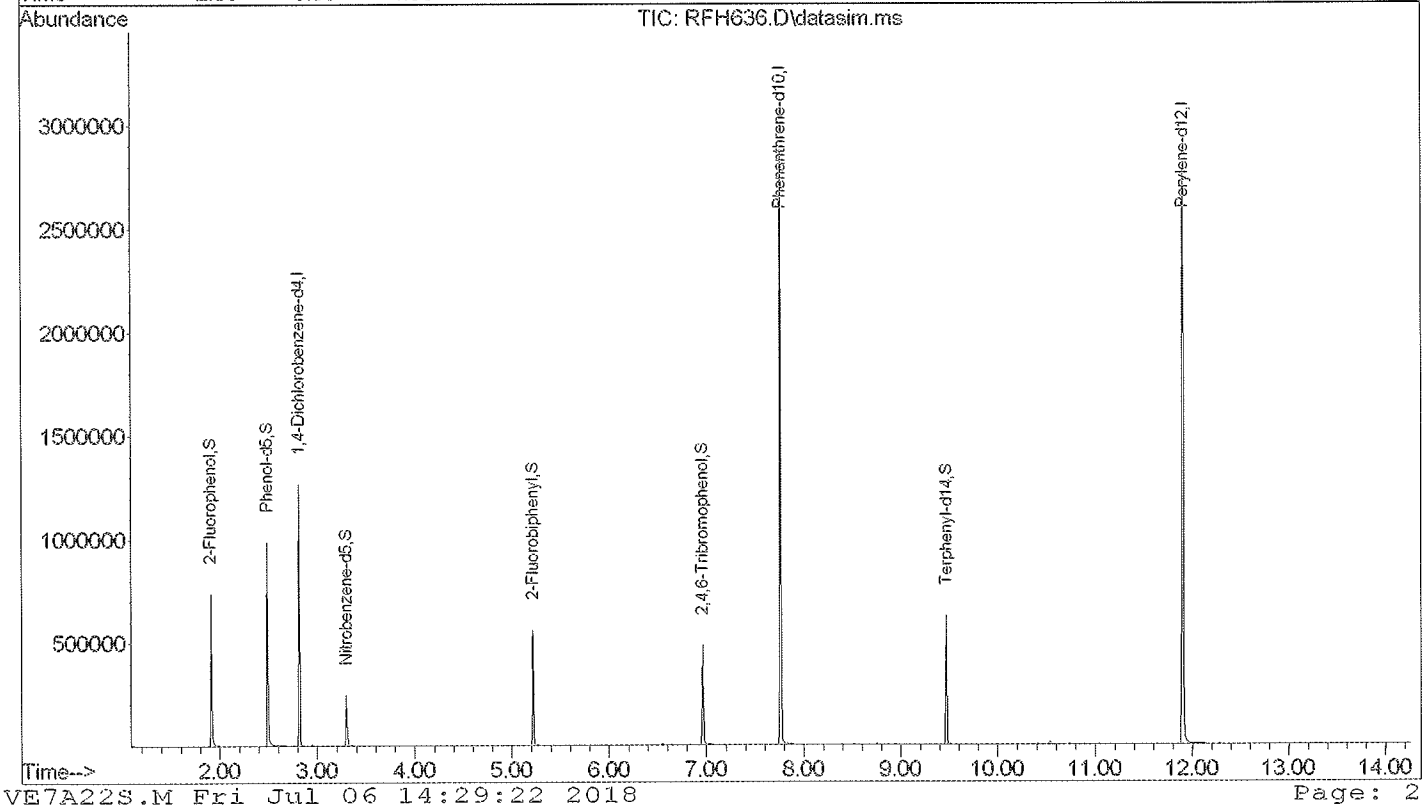
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	553784	40.00	ppm	-0.01
30) Phenanthrene-d10	7.759	188	2424247	40.00	ppm	-0.01
49) Perylene-d12	11.898	264	2737956	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.909	112	350969	23.55	ppm	0.00
Spiked Amount 30.000			Recovery =	78.50%		
5) Phenol-d5	2.489	99	475749	25.45	ppm	0.00
Spiked Amount 30.000			Recovery =	84.83%		
11) Nitrobenzene-d5	3.298	82	152695	8.07	ppm	0.00
Spiked Amount 10.000			Recovery =	80.70%		
21) 2-Fluorobiphenyl	5.217	172	365641	7.31	ppm	-0.02
Spiked Amount 10.000			Recovery =	73.10%		
33) 2,4,6-Tribromophenol	6.961	330	220786	23.16	ppm	0.00
Spiked Amount 30.000			Recovery =	77.20%		
44) Terphenyl-d14	9.469	244	492423	8.48	ppm	-0.01
Spiked Amount 10.000			Recovery =	84.80%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH636.D Vial: 16
Acq On : 29 Jun 2018 17:06 Operator: RZh
Sample : 18F187-08 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:29:18 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/22/18 13:55
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0701-SO-0	Date Analyzed: 06/29/18 17:25
Lab Samp ID: 18F187-10	Dilution Factor: 1
Lab File ID: RFH637	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 5.8
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.011	0.0013	0.0027
Acenaphthylene	ND	0.011	0.0013	0.0027
Anthracene	ND	0.011	0.0013	0.0027
Benzo (a) anthracene	ND	0.011	0.0026	0.0053
Benzo (a) pyrene	ND	0.011	0.0013	0.0027
Benzo (b) fluoranthene	ND	0.011	0.0013	0.0027
Benzo(k)fluoranthene	ND	0.011	0.0013	0.0027
Benzo (g,h,i) perylene	ND	0.011	0.0013	0.0027
Chrysene	ND	0.011	0.0023	0.0053
Dibenzo (a,h) anthracene	ND	0.011	0.0013	0.0027
Fluoranthene	ND	0.011	0.0013	0.0027
Fluorene	ND	0.011	0.0013	0.0027
Indeno (1,2,3-c,d) pyrene	ND	0.011	0.0013	0.0027
Naphthalene	ND	0.011	0.0013	0.0027
Phenanthrene	ND	0.011	0.0013	0.0027
Pyrene	ND	0.011	0.0013	0.0027
2-Methylnaphthalene	ND	0.011	0.0013	0.0027
1-Methylnaphthalene	ND	0.011	0.0013	0.0027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.51	2.12	71	46-122
2-Fluorobiphenyl	0.451	0.708	64	46-115
Nitrobenzene-d5	0.517	0.708	73	44-125
Terphenyl-d14	0.534	0.708	75	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.01g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

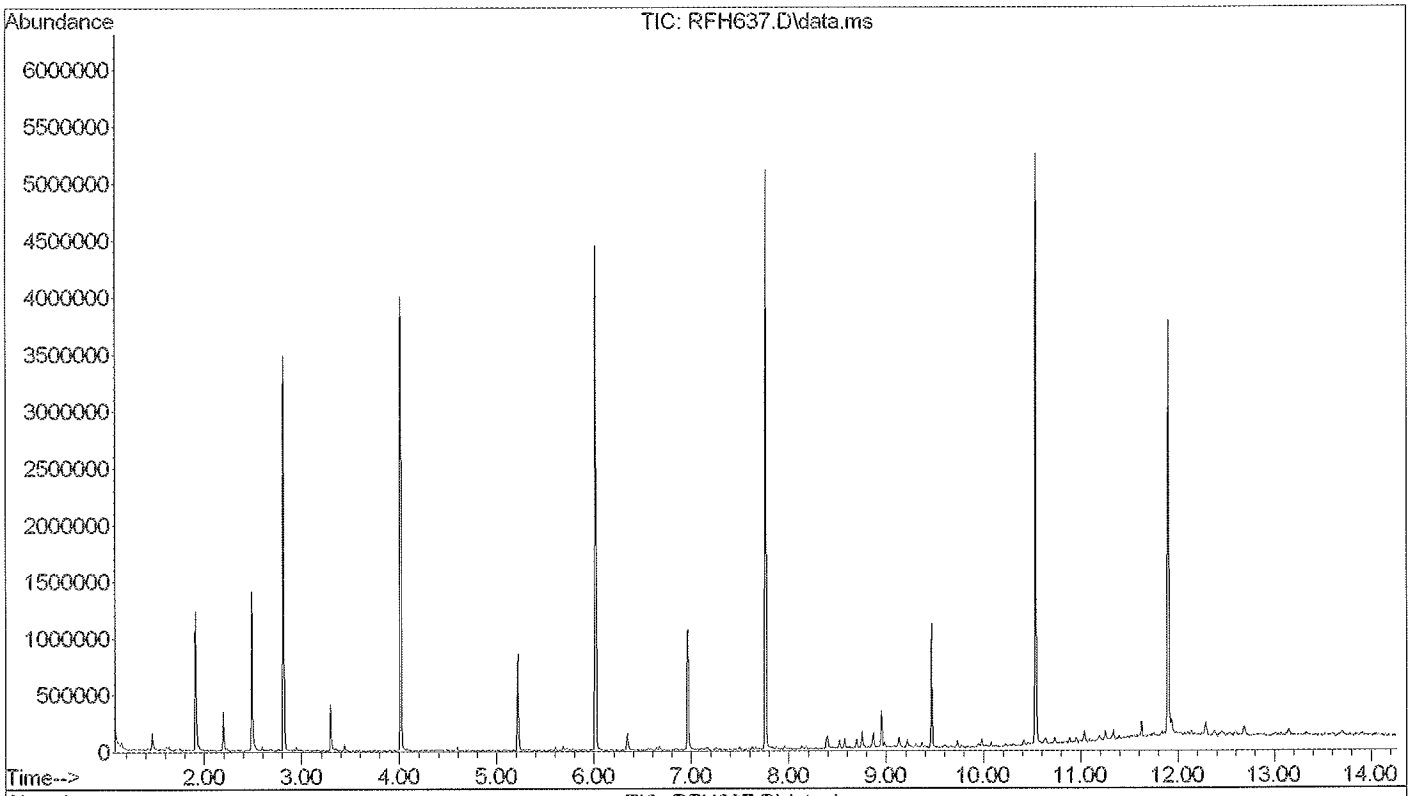
Data File : D:\DATA\18F29\RFH637.D Vial: 17
Acq On : 29 Jun 2018 17:25 Operator: RZh
Sample : 18F187-10 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:29:41 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

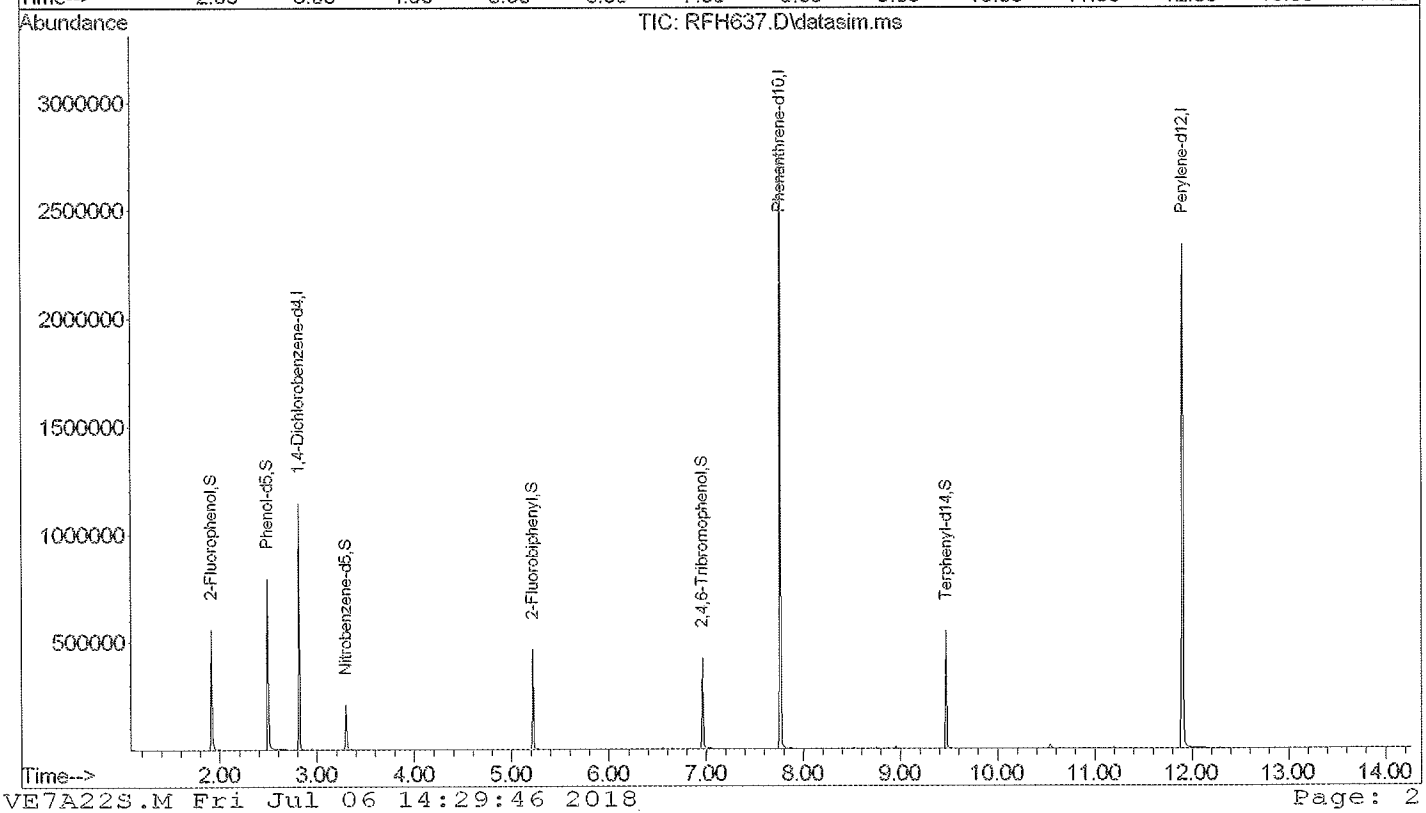
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	519331	40.00	ppm	-0.01
30) Phenanthrene-d10	7.759	188	2319597	40.00	ppm	-0.01
49) Perylene-d12	11.898	264	2280339	40.00	ppm	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	310694	22.23	ppm	0.00
Spiked Amount 30.000			Recovery =	74.10%		
5) Phenol-d5	2.489	99	401014	22.88	ppm	0.00
Spiked Amount 30.000			Recovery =	76.27%		
11) Nitrobenzene-d5	3.298	82	129829	7.31	ppm	0.00
Spiked Amount 10.000			Recovery =	73.10%		
21) 2-Fluorobiphenyl	5.217	172	299021	6.37	ppm	-0.02
Spiked Amount 10.000			Recovery =	63.70%		
33) 2,4,6-Tribromophenol	6.961	330	194641	21.34	ppm	0.00
Spiked Amount 30.000			Recovery =	71.13%		
44) Terphenyl-d14	9.469	244	419550	7.55	ppm	-0.01
Spiked Amount 10.000			Recovery =	75.50%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH637.D Vial: 17
Acq On : 29 Jun 2018 17:25 Operator: RZh
Sample : 18F187-10 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:29:41 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/22/18 14:15
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0702-SO-0	Date Analyzed: 06/29/18 17:44
Lab Samp ID: 18F187-11	Dilution Factor: 1
Lab File ID: RFH638	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 4.7
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.010	0.0013	0.0026
Acenaphthylene	ND	0.010	0.0013	0.0026
Anthracene	ND	0.010	0.0013	0.0026
Benzo (a) anthracene	ND	0.010	0.0026	0.0052
Benzo (a) pyrene	ND	0.010	0.0013	0.0026
Benzo (b) fluoranthene	ND	0.010	0.0013	0.0026
Benzo(k)fluoranthene	ND	0.010	0.0013	0.0026
Benzo (g,h,i) perylene	ND	0.010	0.0013	0.0026
Chrysene	ND	0.010	0.0023	0.0052
Dibenzo (a,h) anthracene	ND	0.010	0.0013	0.0026
Fluoranthene	ND	0.010	0.0013	0.0026
Fluorene	ND	0.010	0.0013	0.0026
Indeno (1,2,3-c,d) pyrene	ND	0.010	0.0013	0.0026
Naphthalene	ND	0.010	0.0013	0.0026
Phenanthrene	ND	0.010	0.0013	0.0026
Pyrene	ND	0.010	0.0013	0.0026
2-Methylnaphthalene	ND	0.010	0.0013	0.0026
1-Methylnaphthalene	ND	0.010	0.0013	0.0026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.64	2.10	78	46-122
2-Fluorobiphenyl	0.486	0.700	69	46-115
Nitrobenzene-d5	0.544	0.700	78	44-125
Terphenyl-d14	0.580	0.700	83	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.02g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

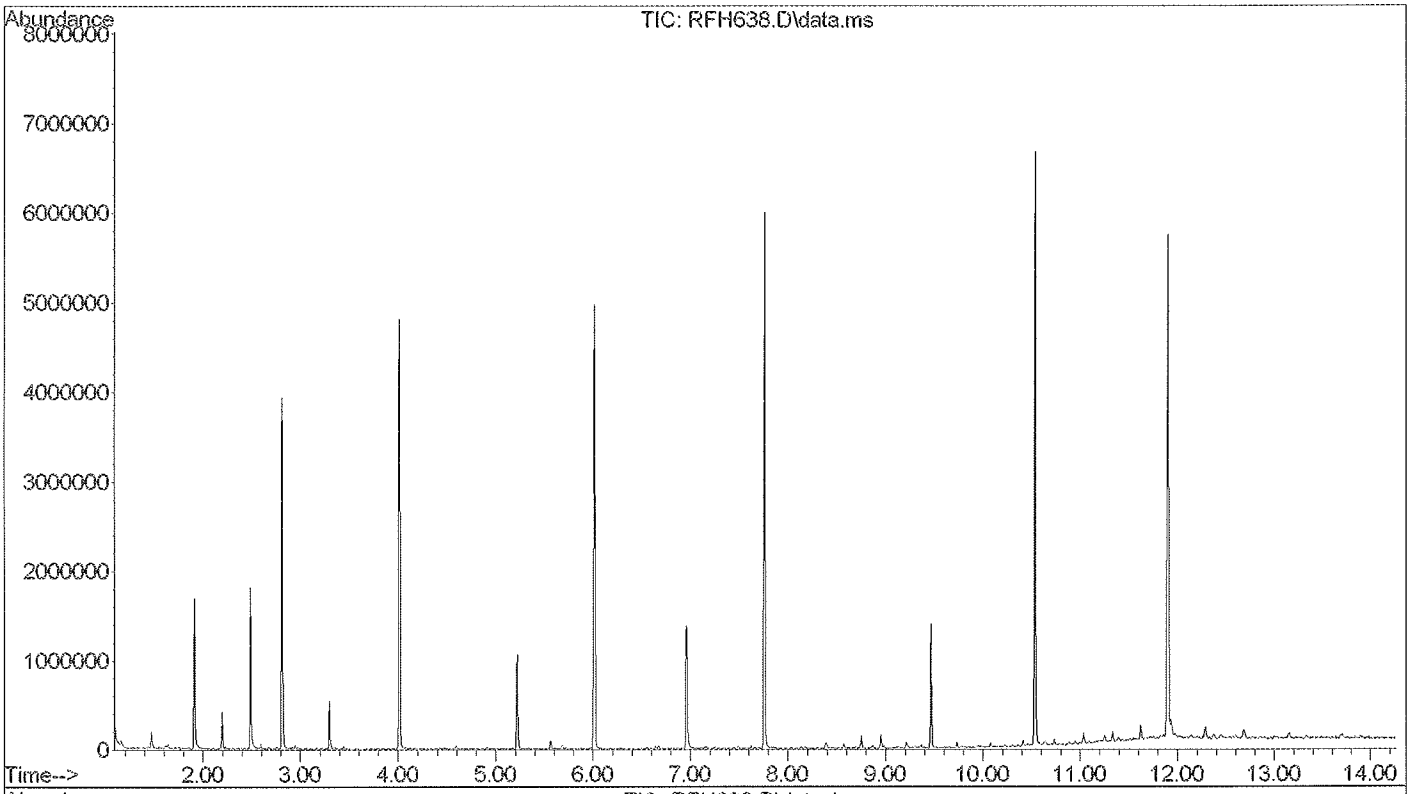
Data File : D:\DATA\18F29\RFH638.D Vial: 18
Acq On : 29 Jun 2018 17:44 Operator: RZh
Sample : 18F187-11 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:30:04 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

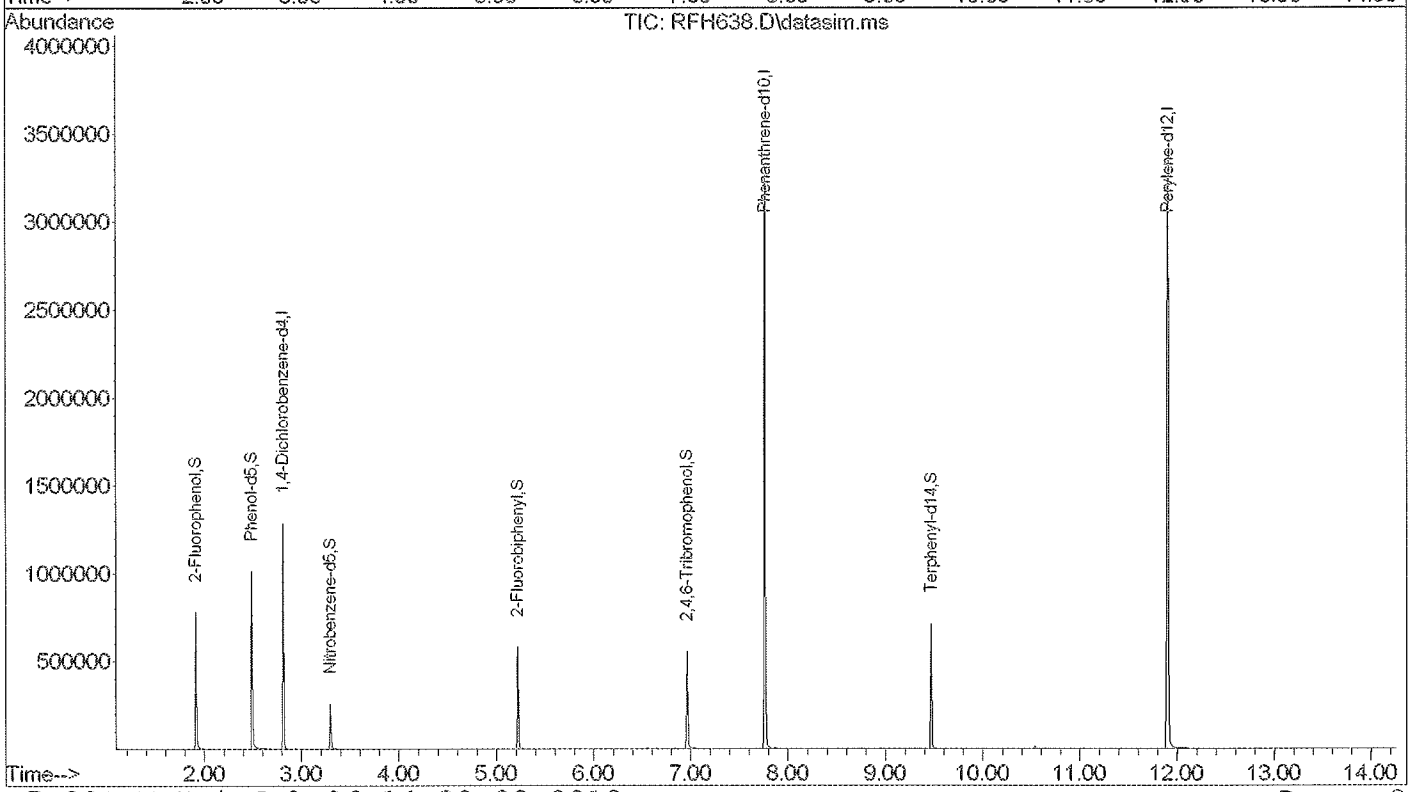
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	585289	40.00	ppm	-0.01
30) Phenanthrene-d10	7.759	188	2734633	40.00	ppm	-0.01
49) Perylene-d12	11.903	264	3356402	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	366293	23.25	ppm	0.00
Spiked Amount 30.000			Recovery =	77.50%		
5) Phenol-d5	2.489	99	482374	24.42	ppm	0.00
Spiked Amount 30.000			Recovery =	81.40%		
11) Nitrobenzene-d5	3.298	82	155736	7.79	ppm	0.00
Spiked Amount 10.000			Recovery =	77.90%		
21) 2-Fluorobiphenyl	5.218	172	367253	6.95	ppm	-0.02
Spiked Amount 10.000			Recovery =	69.50%		
33) 2,4,6-Tribromophenol	6.961	330	251718	23.41	ppm	0.00
Spiked Amount 30.000			Recovery =	78.03%		
44) Terphenyl-d14	9.469	244	543917	8.30	ppm	-0.01
Spiked Amount 10.000			Recovery =	83.00%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH638.D Vial: 18
Acq On : 29 Jun 2018 17:44 Operator: RZh
Sample : 18F187-11 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:30:04 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/23/18 10:15
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0301-SO-0	Date Analyzed: 06/29/18 18:03
Lab Samp ID: 18F187-12	Dilution Factor: 1
Lab File ID: RFH639	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 4.0
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.010	0.0013	0.0026
Acenaphthylene	ND	0.010	0.0013	0.0026
Anthracene	ND	0.010	0.0013	0.0026
Benzo (a) anthracene	ND	0.010	0.0026	0.0052
Benzo (a) pyrene	ND	0.010	0.0013	0.0026
Benzo (b) fluoranthene	ND	0.010	0.0013	0.0026
Benzo(k)fluoranthene	ND	0.010	0.0013	0.0026
Benzo (g,h,i) perylene	ND	0.010	0.0013	0.0026
Chrysene	ND	0.010	0.0023	0.0052
Dibenzo (a,h) anthracene	ND	0.010	0.0013	0.0026
Fluoranthene	ND	0.010	0.0013	0.0026
Fluorene	ND	0.010	0.0013	0.0026
Indeno (1,2,3-c,d) pyrene	ND	0.010	0.0013	0.0026
Naphthalene	ND	0.010	0.0013	0.0026
Phenanthrene	ND	0.010	0.0013	0.0026
Pyrene	ND	0.010	0.0013	0.0026
2-Methylnaphthalene	ND	0.010	0.0013	0.0026
1-Methylnaphthalene	ND	0.010	0.0013	0.0026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.57	2.08	75	46-122
2-Fluorobiphenyl	0.483	0.694	70	46-115
Nitrobenzene-d5	0.537	0.694	77	44-125
Terphenyl-d14	0.605	0.694	87	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.02g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

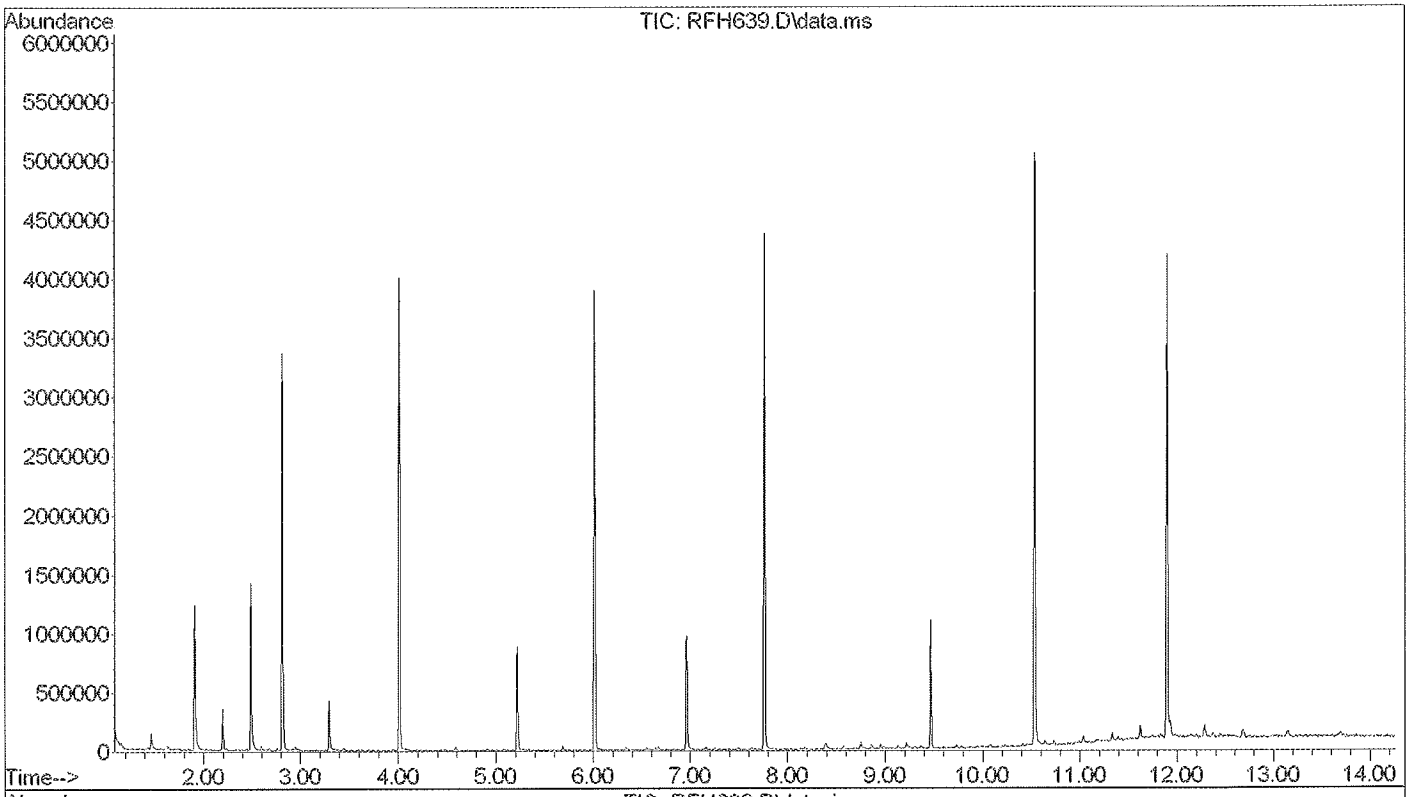
Data File : D:\DATA\18F29\RFH639.D Vial: 19
Acq On : 29 Jun 2018 18:03 Operator: RZh
Sample : 18F187-12 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:30:26 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

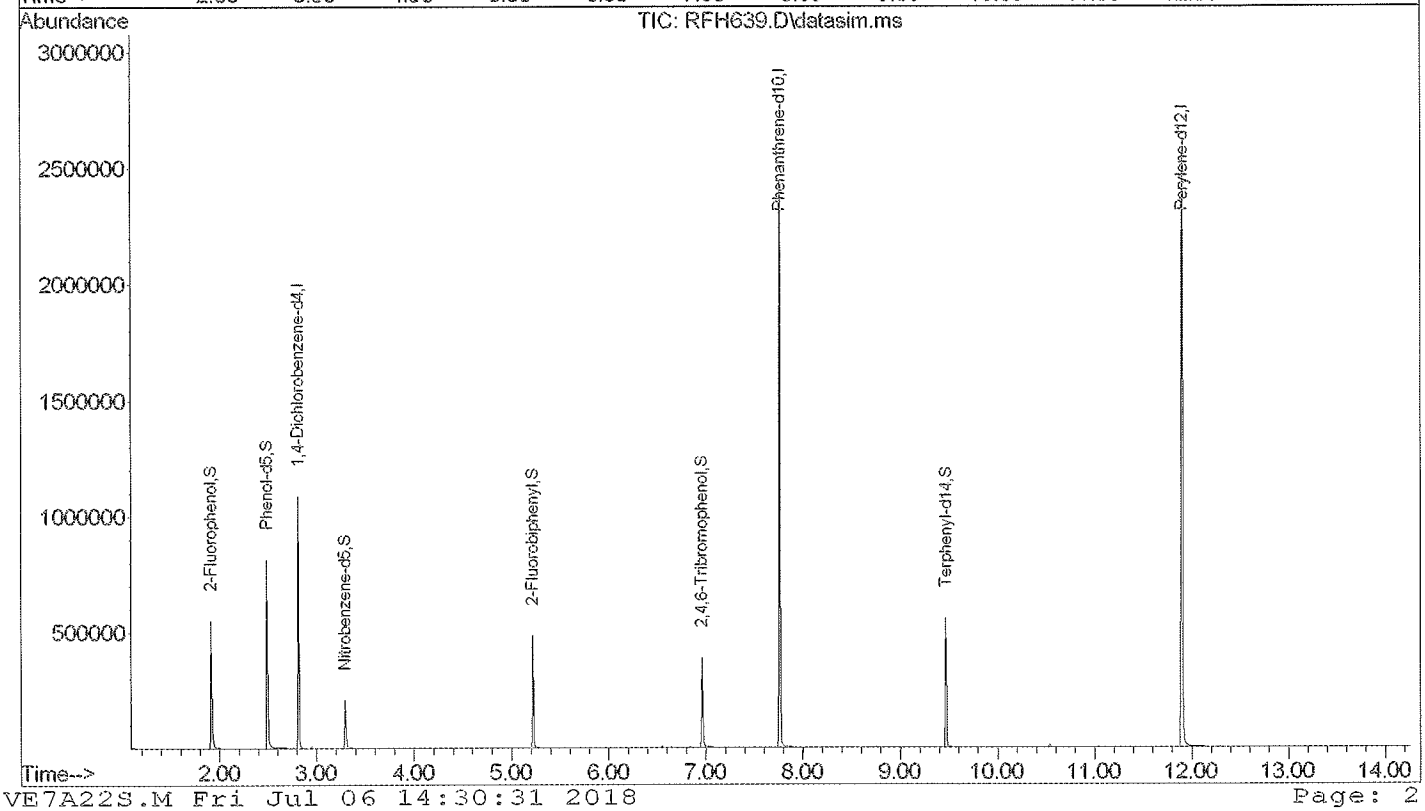
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	495484	40.00	ppm	0.00
30) Phenanthrene-d10	7.759	188	2036261	40.00	ppm	-0.01
49) Perylene-d12	11.898	264	2447950	40.00	ppm	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol	1.914	112	315624	23.67	ppm	0.00
Spiked Amount 30.000			Recovery =	78.90%		
5) Phenol-d5	2.489	99	412643	24.67	ppm	0.01
Spiked Amount 30.000			Recovery =	82.23%		
11) Nitrobenzene-d5	3.299	82	131077	7.74	ppm	0.00
Spiked Amount 10.000			Recovery =	77.40%		
21) 2-Fluorobiphenyl	5.218	172	311398	6.96	ppm	-0.02
Spiked Amount 10.000			Recovery =	69.60%		
33) 2,4,6-Tribromophenol	6.961	330	181117	22.62	ppm	0.00
Spiked Amount 30.000			Recovery =	75.40%		
44) Terphenyl-d14	9.469	244	425219	8.72	ppm	-0.01
Spiked Amount 10.000			Recovery =	87.20%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH639.D Vial: 19
Acq On : 29 Jun 2018 18:03 Operator: RZh
Sample : 18F187-12 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:30:26 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/23/18 10:35
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0302-SO-0	Date Analyzed: 07/03/18 08:54
Lab Samp ID: 18F187-13N	Dilution Factor: 1
Lab File ID: RGH005	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 6.5
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.011	0.0013	0.0027
Acenaphthylene	ND	0.011	0.0013	0.0027
Anthracene	ND	0.011	0.0013	0.0027
Benzo (a) anthracene	0.0035J	0.011	0.0026	0.0053
Benzo (a) pyrene	0.0027J	0.011	0.0013	0.0027
Benzo (b) fluoranthene	0.0034J	0.011	0.0013	0.0027
Benzo(k)fluoranthene	0.0030J	0.011	0.0013	0.0027
Benzo (g,h,i) perylene	0.0026J	0.011	0.0013	0.0027
Chrysene	0.0036J	0.011	0.0024	0.0053
Dibenzo (a,h) anthracene	0.0022J	0.011	0.0013	0.0027
Fluoranthene	0.0026J	0.011	0.0013	0.0027
Fluorene	ND	0.011	0.0013	0.0027
Indeno (1,2,3-c,d) pyrene	0.0023J	0.011	0.0013	0.0027
Naphthalene	ND	0.011	0.0013	0.0027
Phenanthrene	ND	0.011	0.0013	0.0027
Pyrene	0.0028J	0.011	0.0013	0.0027
2-Methylnaphthalene	ND	0.011	0.0013	0.0027
1-Methylnaphthalene	ND	0.011	0.0013	0.0027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.21	2.14	57	46-122
2-Fluorobiphenyl	0.479	0.713	67	46-115
Nitrobenzene-d5	0.434	0.713	61	44-125
Terphenyl-d14	0.502	0.713	70	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

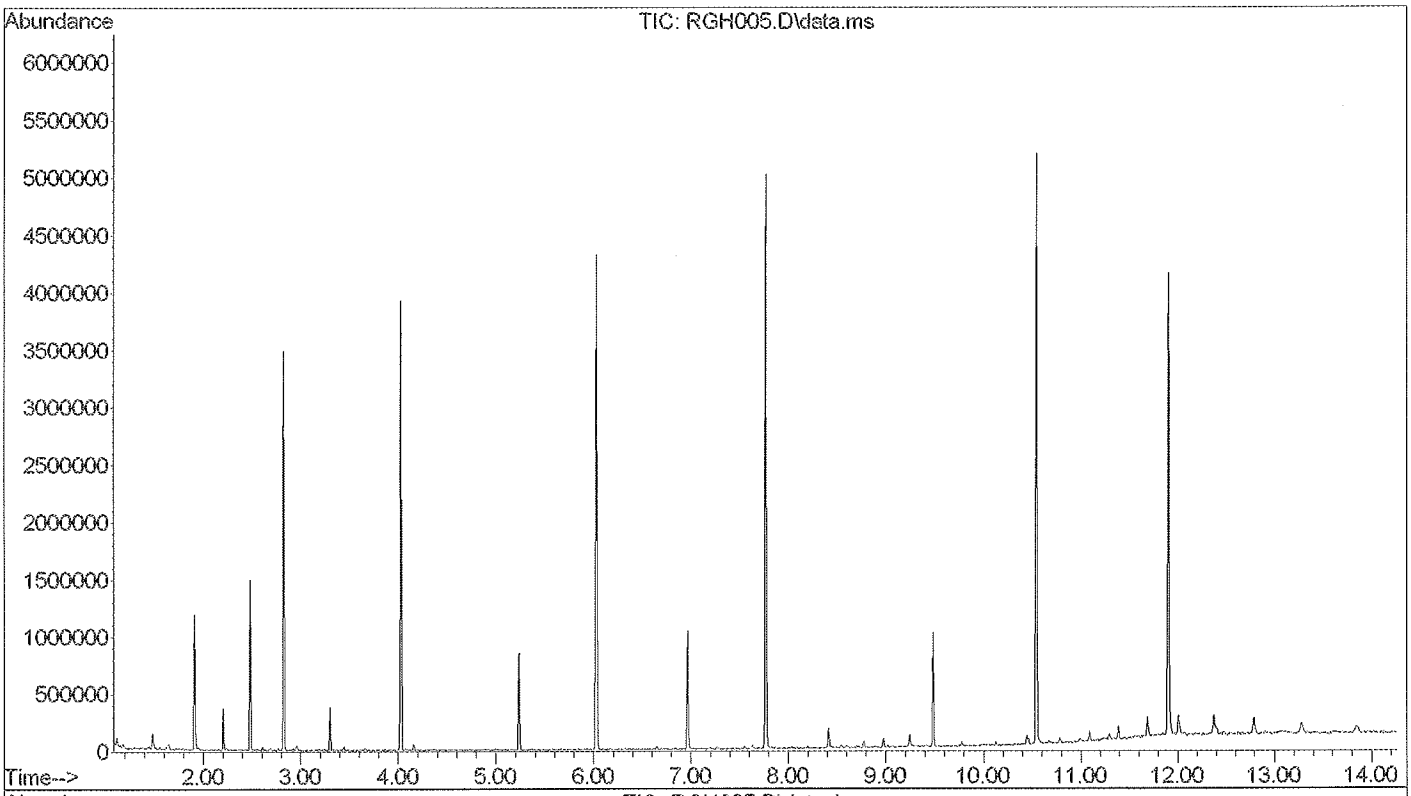
Data File : D:\DATA\18G03\RGH005.D Vial: 5
Acq On : 3 Jul 2018 8:54 Operator: KVu
Sample : 18F187-13N Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:50:27 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

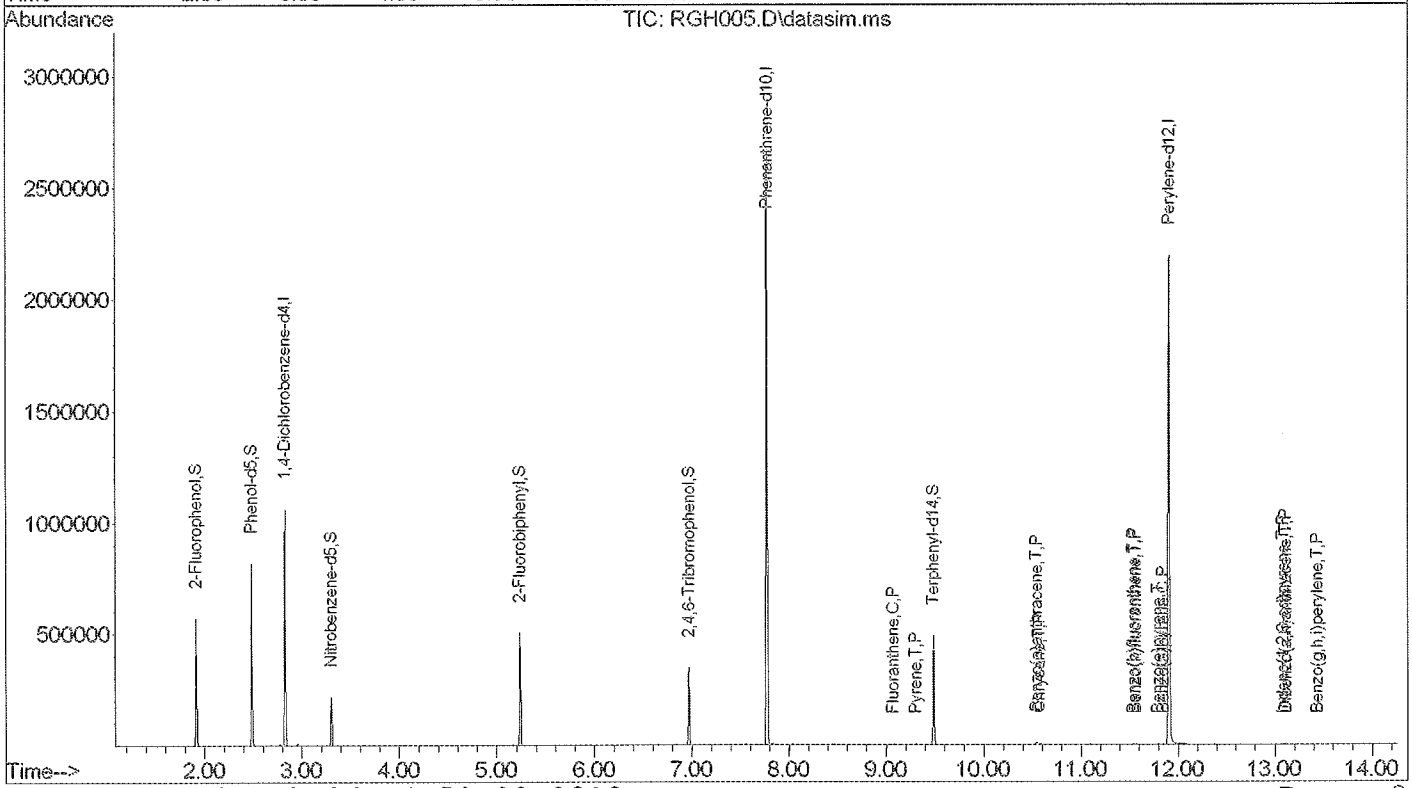
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-Dichlorobenzene-d4	2.828	152	503973	40.00	ppm		0.00
30) Phenanthrene-d10	7.773	188	2191570	40.00	ppm		0.00
49) Perylene-d12	11.907	264	2198273	40.00	ppm		0.00
System Monitoring Compounds							
4) 2-Fluorophenol	1.913	112	277155	20.43	ppm		0.00
Spiked Amount 30.000			Recovery =	68.10%			
5) Phenol-d5	2.484	99	364636	21.44	ppm		0.00
Spiked Amount 30.000			Recovery =	71.47%			
11) Nitrobenzene-d5	3.303	82	104934	6.09	ppm		0.00
Spiked Amount 10.000			Recovery =	60.90%			
21) 2-Fluorobiphenyl	5.237	172	305960	6.72	ppm		0.00
Spiked Amount 10.000			Recovery =	67.20%			
33) 2,4,6-Tribromophenol	6.971	330	146527	17.00	ppm		0.00
Spiked Amount 30.000			Recovery =	56.67%			
44) Terphenyl-d14	9.486	244	369300	7.03	ppm		0.00
Spiked Amount 10.000			Recovery =	70.30%			
Target Compounds							Qvalue
42] Fluoranthene	9.075	202	2433	0.04	ppm		94
43] Pyrene	9.306	202	2789	0.04	ppm		99
46] Benzo(a)anthracene	10.541	228	8300	0.05	ppm		81
47] Chrysene	10.570	228	3377	0.05	ppm		97
51] Benzo(b)fluoranthene	11.541	252	2784	0.05	ppm		95
52] Benzo(k)fluoranthene	11.565	252	2458	0.04	ppm		96
53] Benzo(e)pyrene	11.795	252	2525	0.04	ppm		95
54] Benzo(a)pyrene	11.846	252	2047	0.04	ppm		87
56] Indeno(1,2,3-cd)pyrene	13.087	276	2151	0.03	ppm	#	11
57] Dibenzo(a,h)anthracene	13.112	278	1698	0.03	ppm		98
58] Benzo(g,h,i)perylene	13.437	276	1984	0.04	ppm		86

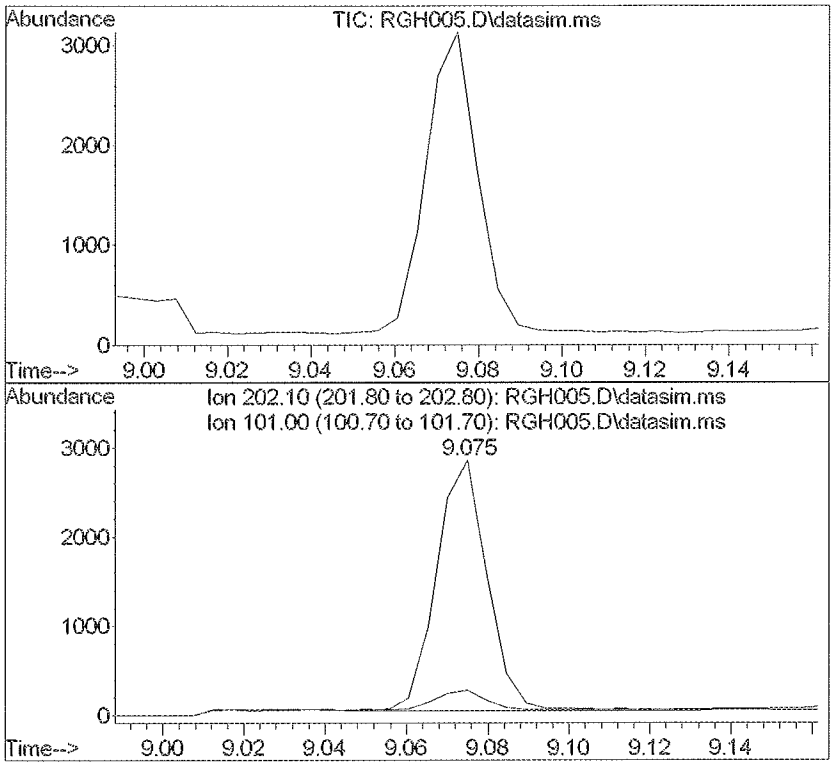
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH005.D Vial: 5
Acq On : 3 Jul 2018 8:54 Operator: KVu
Sample : 18F187-13N Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:50:27 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



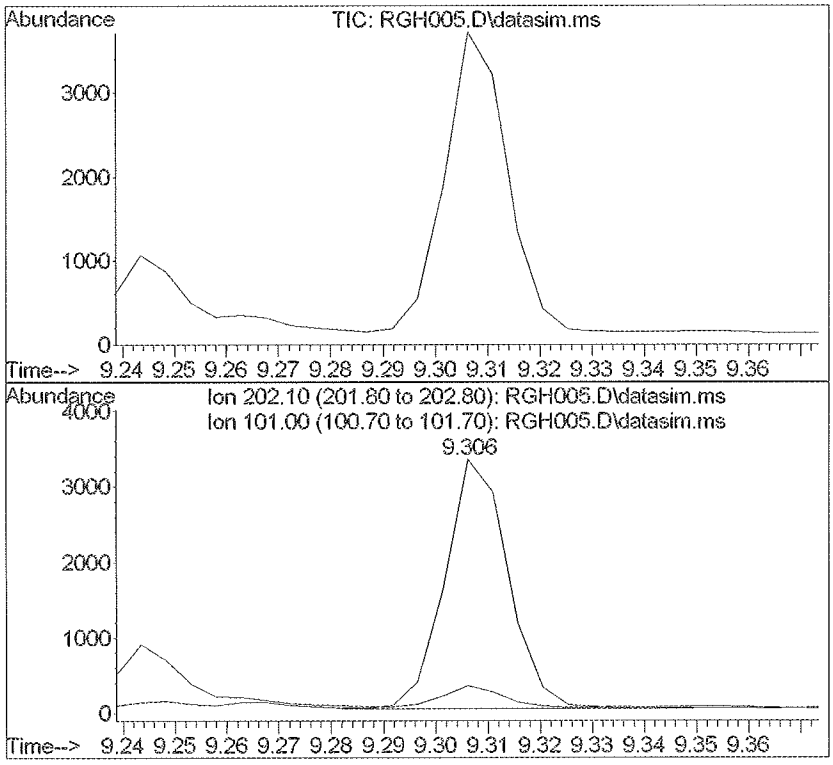




#42
Fluoranthene
Concen: 0.04 ppm
RT: 9.075 min Scan# 1676
Delta R.T. -0.000 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:202 Resp: 2433

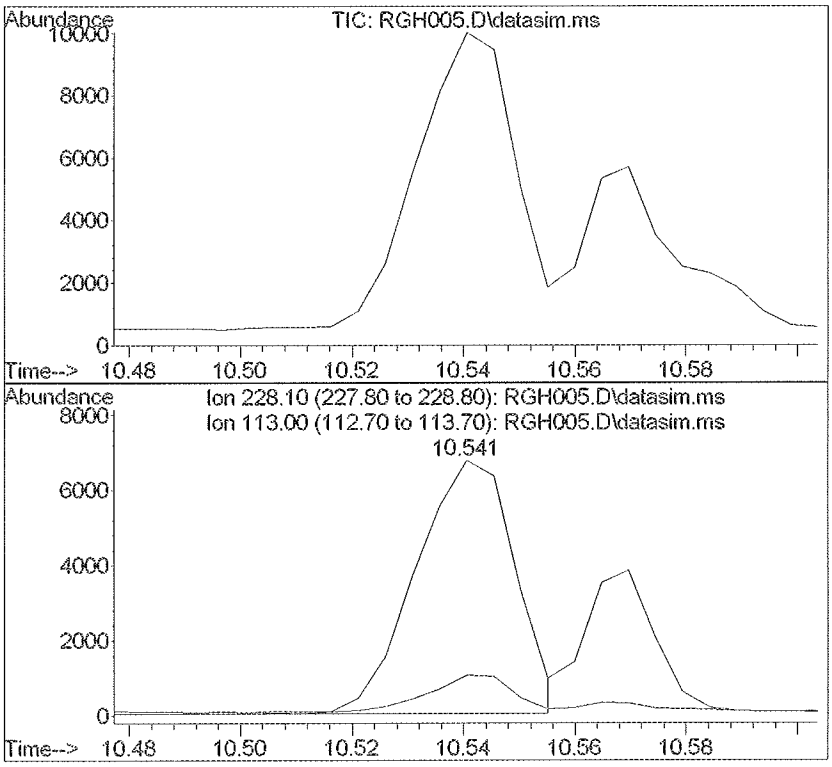
Ion	Ratio	Lower	Upper
202	100		
101	9.2	0.0	37.1



#43
Pyrene
Concen: 0.04 ppm
RT: 9.306 min Scan# 1724
Delta R.T. -0.005 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:202 Resp: 2789

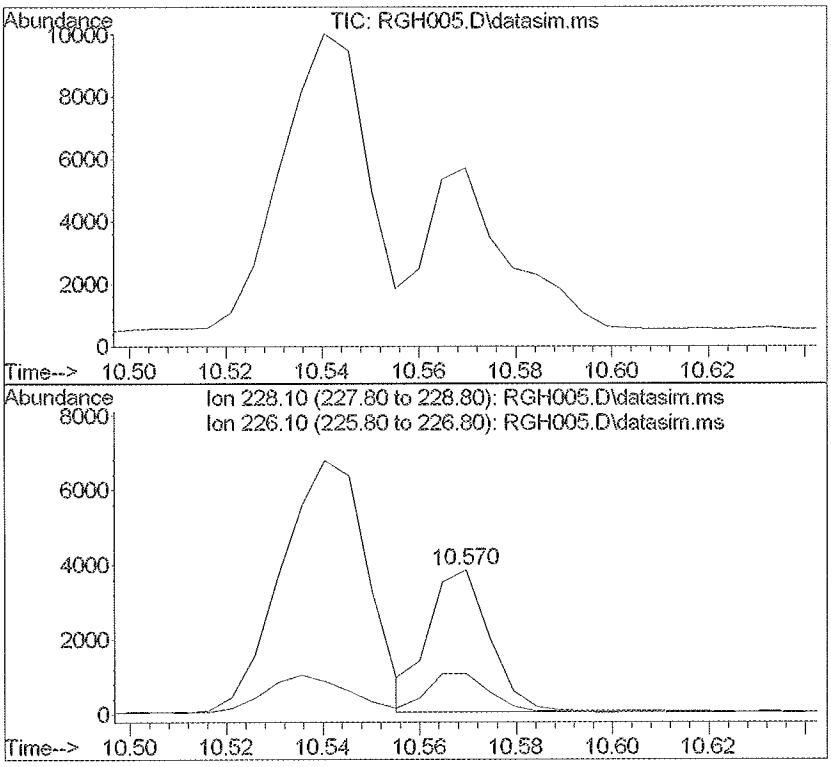
Ion	Ratio	Lower	Upper
202	100		
101	8.2	0.0	38.4



#46
Benzo(a)anthracene
Concen: 0.05 ppm
RT: 10.541 min Scan# 2002
Delta R.T. 0.005 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:228 Resp: 8300

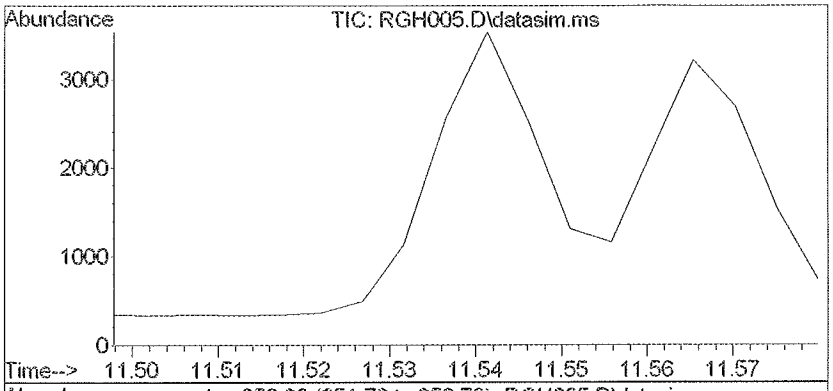
Ion	Ratio	Lower	Upper
228	100		
113	13.1	0.0	36.5

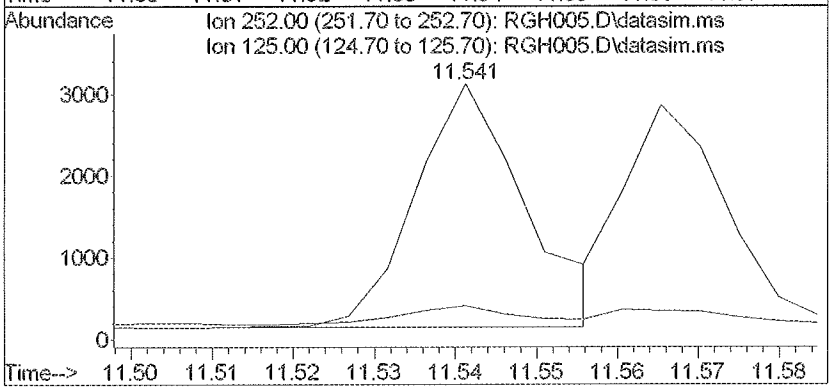


#47
Chrysene
Concen: 0.05 ppm
RT: 10.570 min Scan# 2008
Delta R.T. -0.000 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:228 Resp: 3377

Ion	Ratio	Lower	Upper
228	100		
226	28.0	0.0	59.8

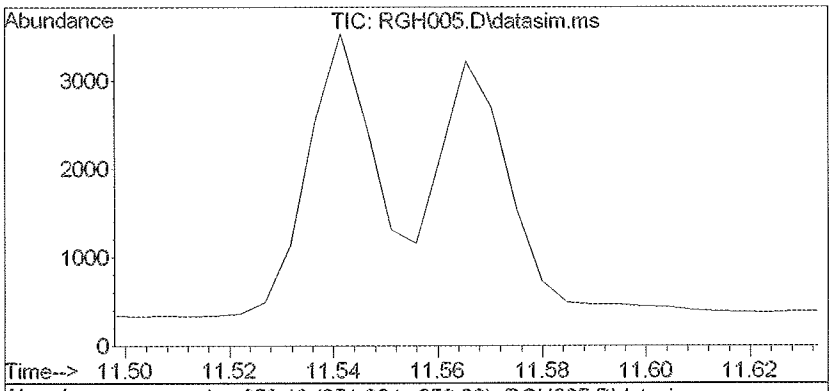


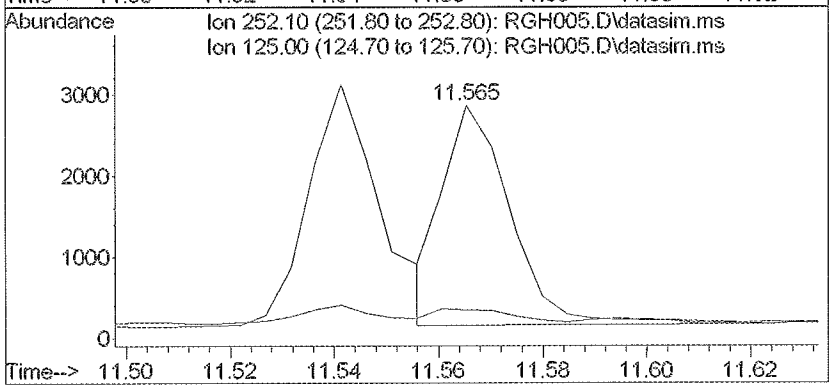


#51
Benzo(b)fluoranthene
Concen: 0.05 ppm
RT: 11.541 min Scan# 2209
Delta R.T. -0.006 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:252 Resp: 2784

Ion	Ratio	Lower	Upper
252	100		
125	8.5	0.0	36.7

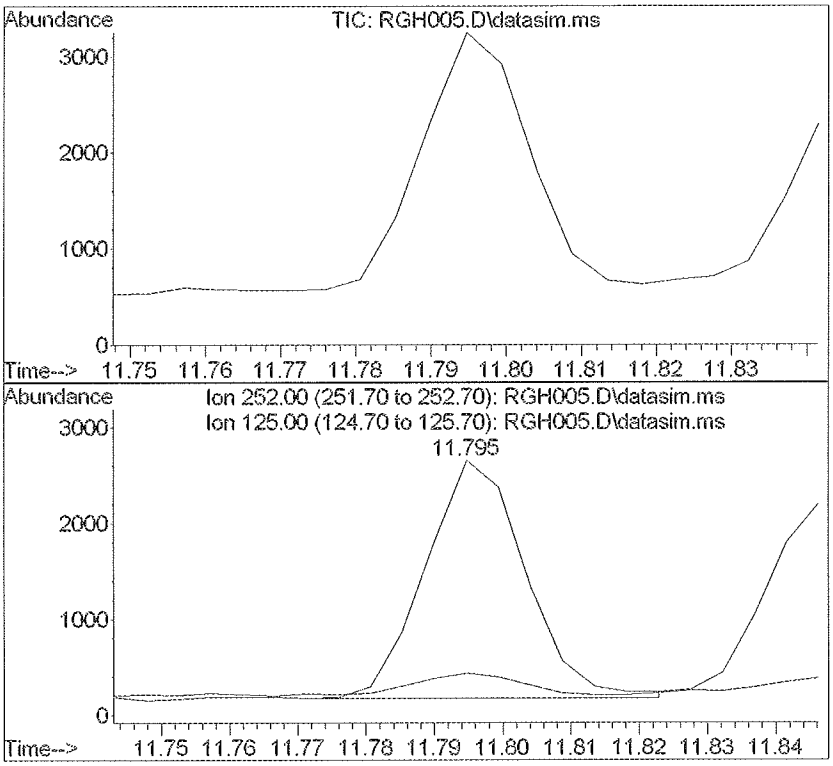




#52
Benzo(k)fluoranthene
Concen: 0.04 ppm
RT: 11.565 min Scan# 2214
Delta R.T. -0.006 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:252 Resp: 2458

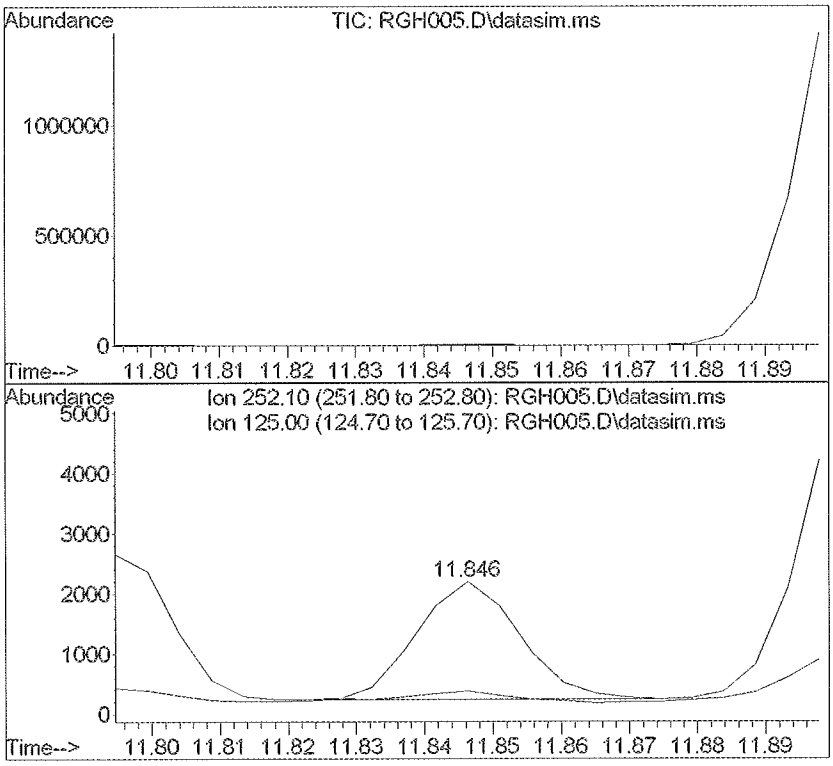
Ion	Ratio	Lower	Upper
252	100		
125	7.6	0.0	36.2



#53
Benzo(e)pyrene
Concen: 0.04 ppm
RT: 11.795 min Scan# 2262
Delta R.T. -0.005 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:252 Resp: 2525

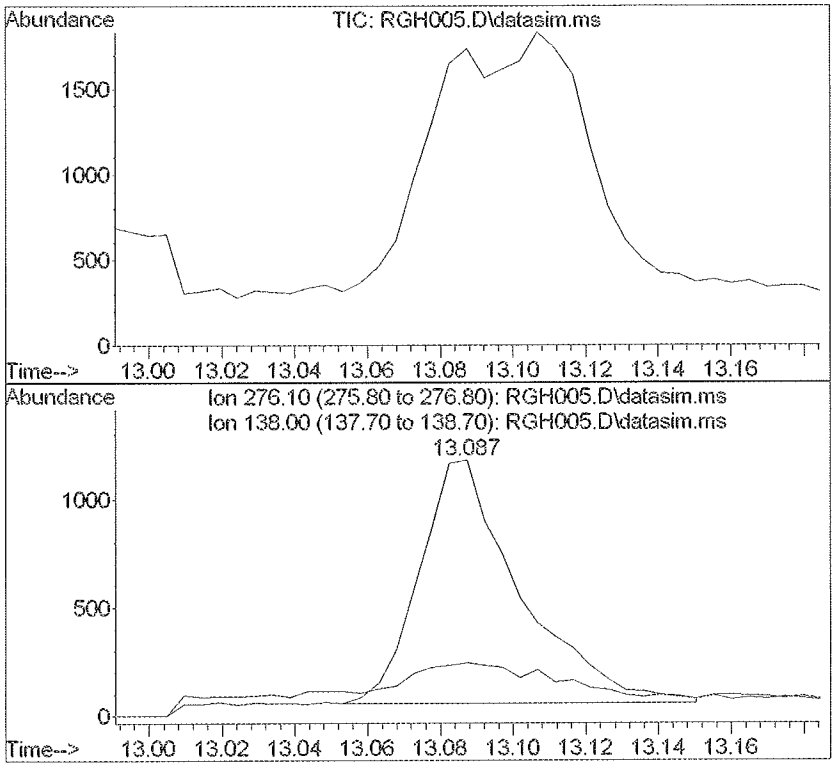
Ion	Ratio	Lower	Upper
252	100		
125	11.2	0.0	39.3



#54
Benzo(a)pyrene
Concen: 0.04 ppm
RT: 11.846 min Scan# 2273
Delta R.T. -0.005 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:252 Resp: 2047

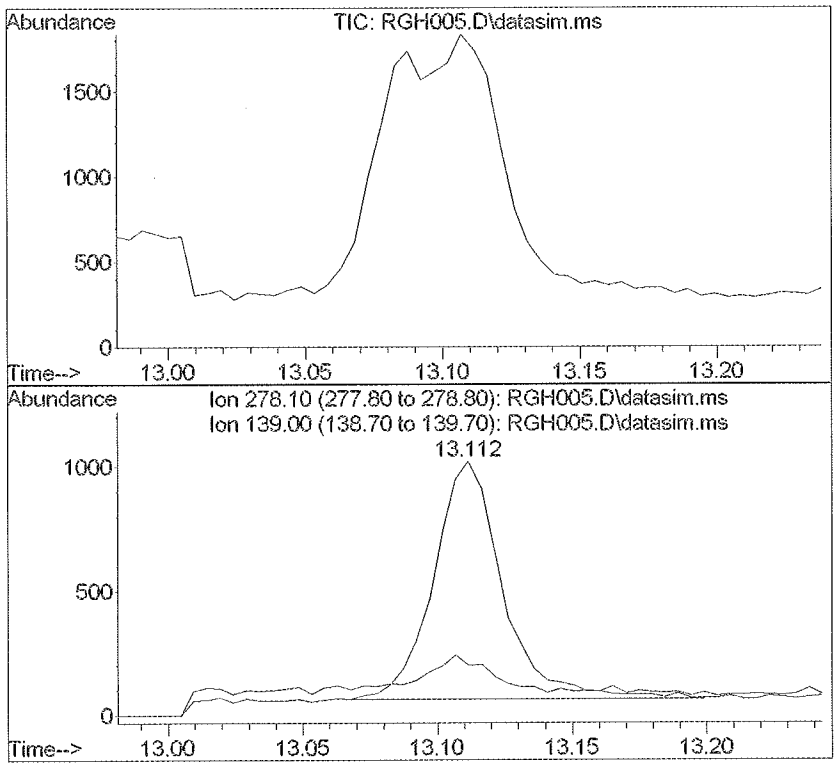
Ion	Ratio	Lower	Upper
252	100		
125	11.5	0.0	37.1



#56
Indeno(1,2,3-cd)pyrene
Concen: 0.03 ppm
RT: 13.087 min Scan# 2537
Delta R.T. -0.015 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:276 Resp: 2151

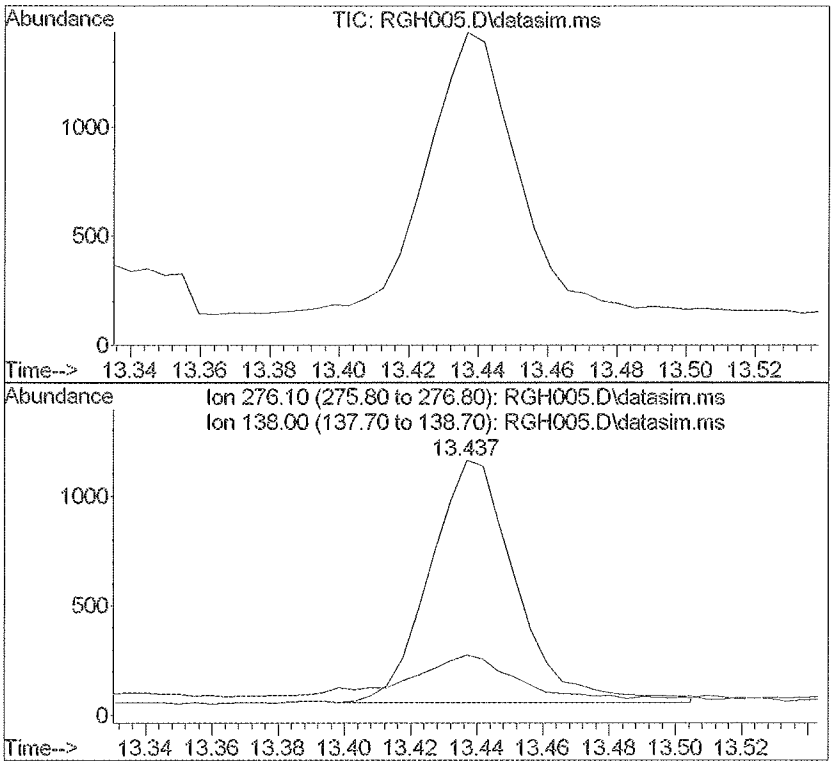
Ion	Ratio	Lower	Upper
276	100		
138	55.5	0.0	46.9#



#57
Dibenzo(a,h)anthracene
Concen: 0.03 ppm
RT: 13.112 min Scan# 2542
Delta R.T. -0.010 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:278 Resp: 1698

Ion	Ratio	Lower	Upper
278	100		
139	12.2	0.0	41.3



#58
Benzo(g,h,i)perylene
Concen: 0.04 ppm
RT: 13.437 min Scan# 2609
Delta R.T. -0.024 min
Lab File: RGH005.D
Acq: 3 Jul 2018 8:54

Tgt Ion:276 Resp: 1984

Ion	Ratio	Lower	Upper
276	100		
138	20.7	0.0	45.0

METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/23/18 12:15
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0602-SO-0	Date Analyzed: 06/29/18 18:42
Lab Samp ID: 18F187-14	Dilution Factor: 1
Lab File ID: RFH641	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 5.1
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.011	0.0013	0.0026
Acenaphthylene	ND	0.011	0.0013	0.0026
Anthracene	ND	0.011	0.0013	0.0026
Benzo (a) anthracene	ND	0.011	0.0026	0.0053
Benzo (a) pyrene	ND	0.011	0.0013	0.0026
Benzo (b) fluoranthene	ND	0.011	0.0013	0.0026
Benzo(k)fluoranthene	ND	0.011	0.0013	0.0026
Benzo (g,h,i) perylene	ND	0.011	0.0013	0.0026
Chrysene	ND	0.011	0.0023	0.0053
Dibenzo (a,h) anthracene	ND	0.011	0.0013	0.0026
Fluoranthene	ND	0.011	0.0013	0.0026
Fluorene	ND	0.011	0.0013	0.0026
Indeno (1,2,3-c,d) pyrene	ND	0.011	0.0013	0.0026
Naphthalene	ND	0.011	0.0013	0.0026
Phenanthrene	ND	0.011	0.0013	0.0026
Pyrene	ND	0.011	0.0013	0.0026
2-Methylnaphthalene	ND	0.011	0.0013	0.0026
1-Methylnaphthalene	ND	0.011	0.0013	0.0026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.62	2.11	77	46-122
2-Fluorobiphenyl	0.464	0.703	66	46-115
Nitrobenzene-d5	0.527	0.703	75	44-125
Terphenyl-d14	0.539	0.703	77	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.03g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

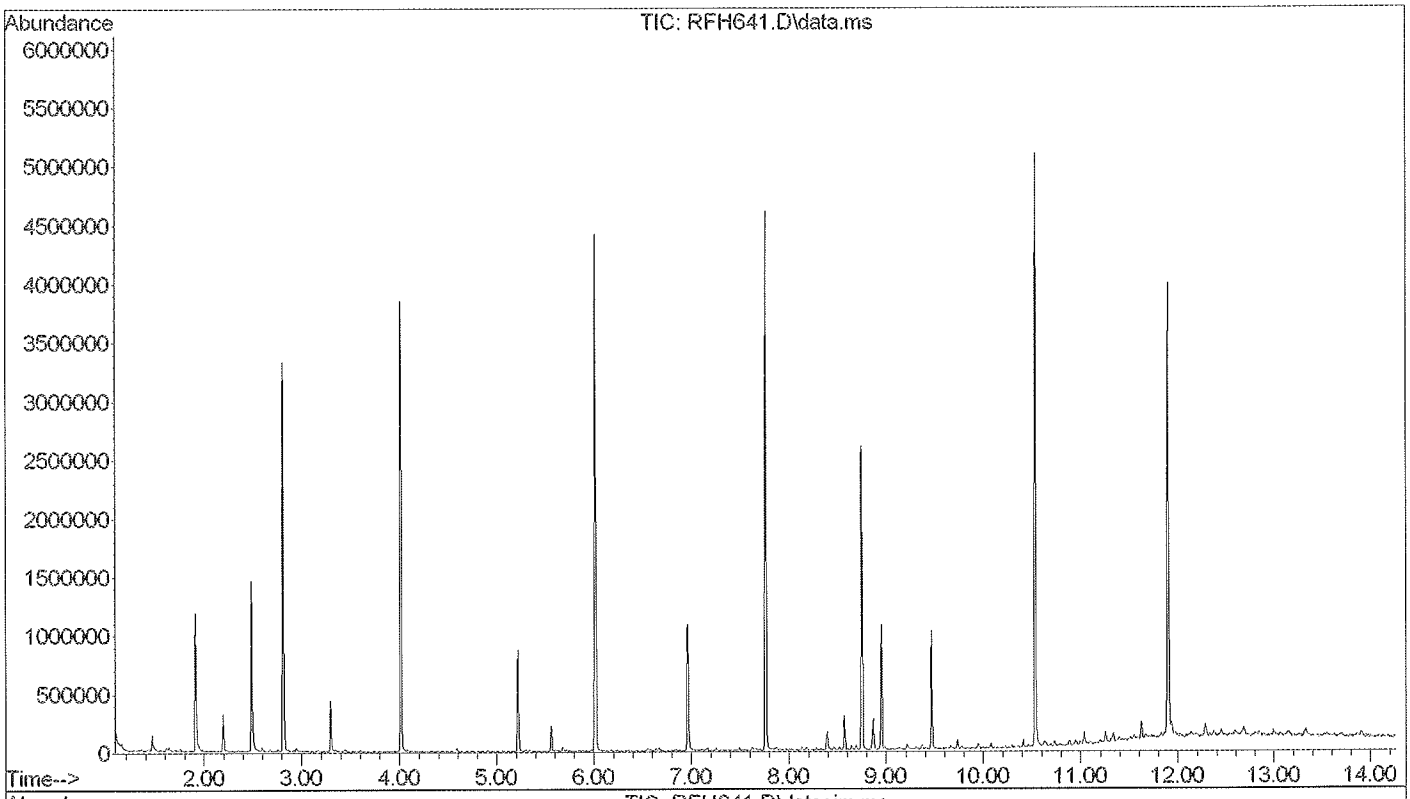
Data File : D:\DATA\18F29\RFH641.D Vial: 21
Acq On : 29 Jun 2018 18:42 Operator: RZh
Sample : 18F187-14 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:31:13 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

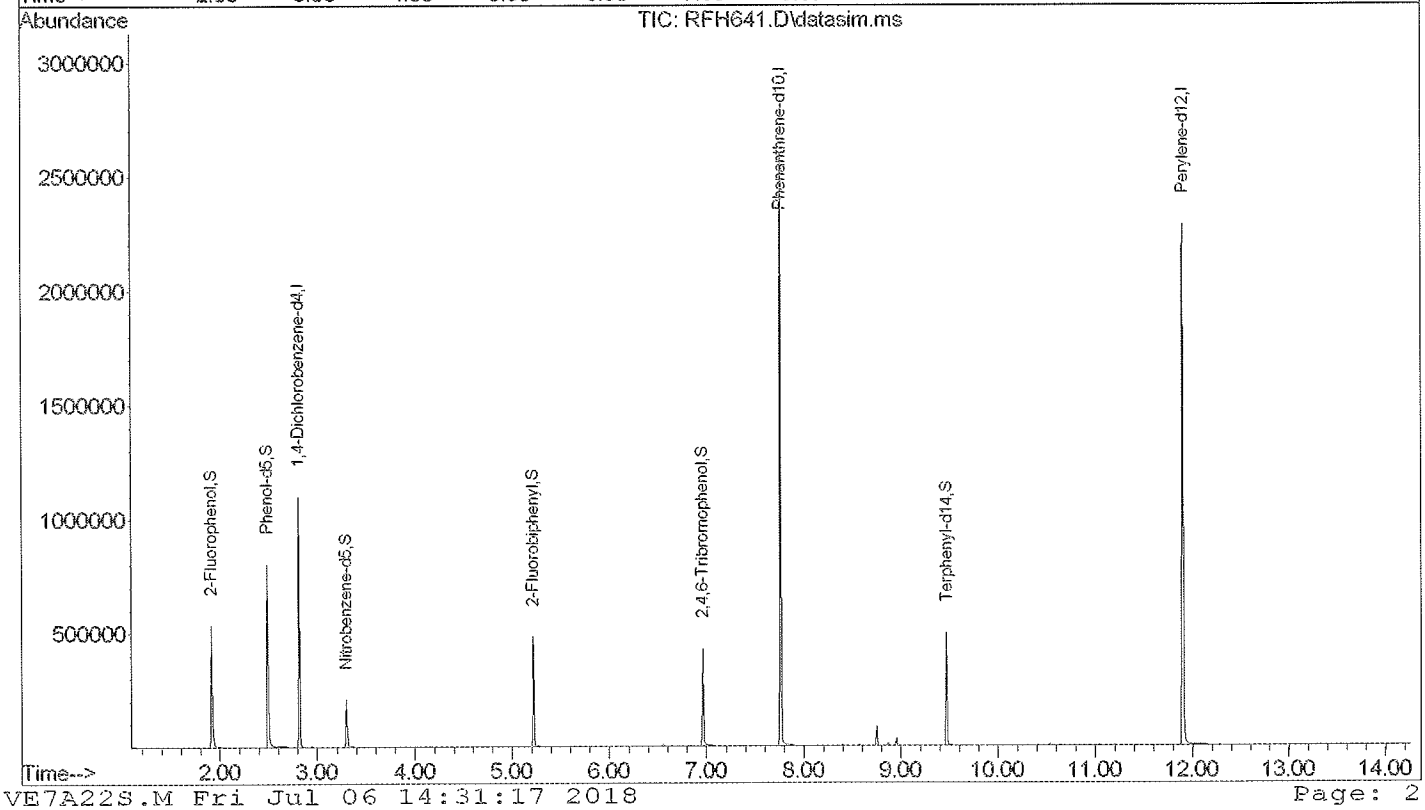
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	521093	40.00	ppm	-0.01
30) Phenanthrene-d10	7.759	188	2171667	40.00	ppm	-0.01
49) Perylene-d12	11.898	264	2216383	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	326139	23.26	ppm	0.00
Spiked Amount 30.000			Recovery =	77.53%		
5) Phenol-d5	2.489	99	433030	24.62	ppm	0.00
Spiked Amount 30.000			Recovery =	82.07%		
11) Nitrobenzene-d5	3.298	82	133839	7.51	ppm	0.00
Spiked Amount 10.000			Recovery =	75.10%		
21) 2-Fluorobiphenyl	5.217	172	311399	6.61	ppm	-0.02
Spiked Amount 10.000			Recovery =	66.10%		
33) 2,4,6-Tribromophenol	6.961	330	197329	23.11	ppm	0.00
Spiked Amount 30.000			Recovery =	77.03%		
44) Terphenyl-d14	9.469	244	399740	7.68	ppm	-0.01
Spiked Amount 10.000			Recovery =	76.80%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH641.D Vial: 21
Acq On : 29 Jun 2018 18:42 Operator: RZh
Sample : 18F187-14 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:31:13 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/23/18 12:50
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0601-SO-0	Date Analyzed: 06/29/18 19:01
Lab Samp ID: 18F187-15	Dilution Factor: 2
Lab File ID: RFH642	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 7.6
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.022	0.0027	0.0054
Acenaphthylene	ND	0.022	0.0027	0.0054
Anthracene	ND	0.022	0.0027	0.0054
Benzo (a) anthracene	ND	0.022	0.0053	0.011
Benzo (a) pyrene	ND	0.022	0.0027	0.0054
Benzo (b) fluoranthene	ND	0.022	0.0027	0.0054
Benzo(k)fluoranthene	ND	0.022	0.0027	0.0054
Benzo (g,h,i) perylene	0.0031J	0.022	0.0027	0.0054
Chrysene	ND	0.022	0.0048	0.011
Dibenzo (a,h) anthracene	ND	0.022	0.0027	0.0054
Fluoranthene	ND	0.022	0.0027	0.0054
Fluorene	ND	0.022	0.0027	0.0054
Indeno (1,2,3-c,d) pyrene	ND	0.022	0.0027	0.0054
Naphthalene	0.0080J	0.022	0.0027	0.0054
Phenanthrene	0.012J	0.022	0.0027	0.0054
Pyrene	0.0049J	0.022	0.0027	0.0054
2-Methylnaphthalene	0.031	0.022	0.0027	0.0054
1-Methylnaphthalene	0.022	0.022	0.0027	0.0054

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.75	2.16	81	46-122
2-Fluorobiphenyl	0.492	0.722	68	46-115
Nitrobenzene-d5	0.519	0.722	72	44-125
Terphenyl-d14	0.592	0.722	82	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.01g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH642.D Vial: 22
Acq On : 29 Jun 2018 19:01 Operator: RZh
Sample : 18F187-15 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:32:43 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

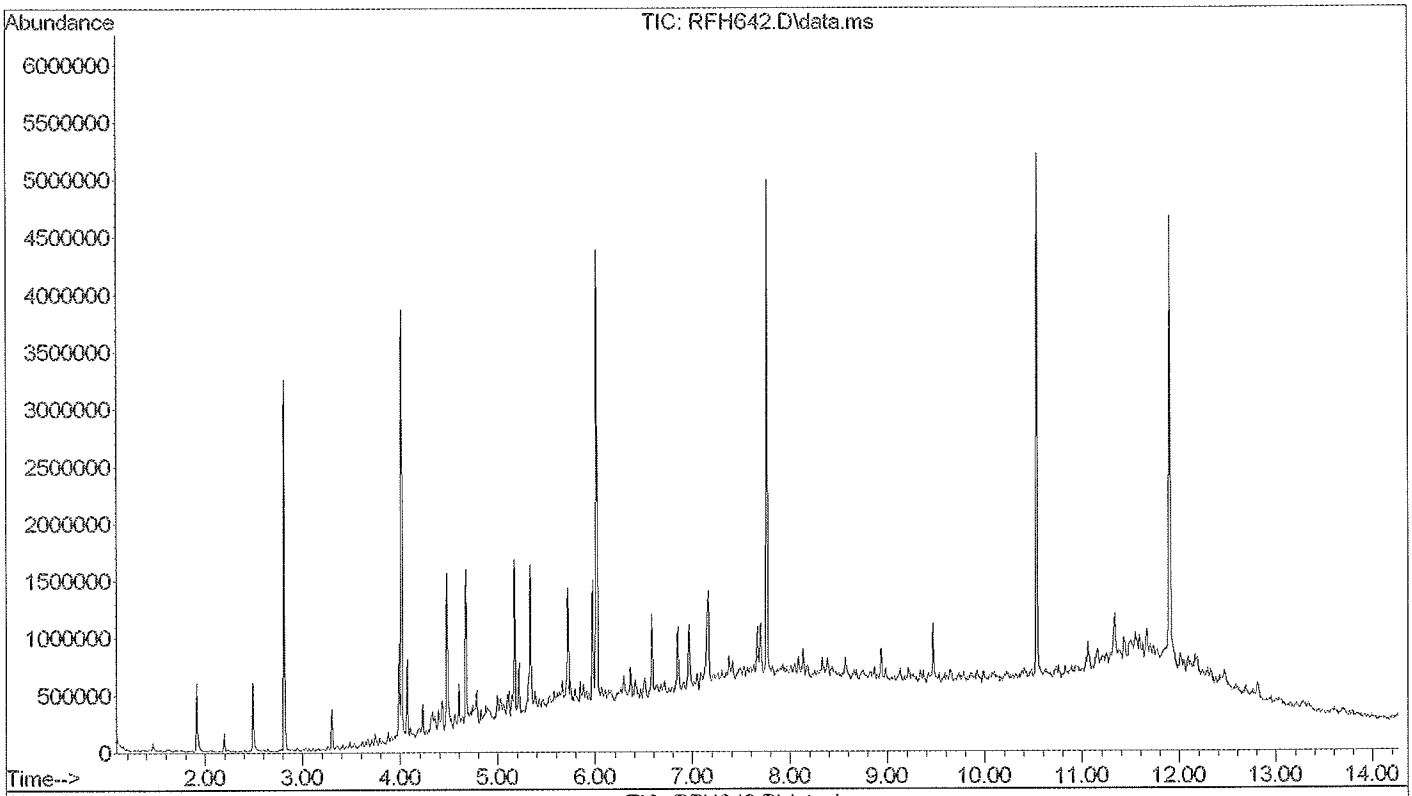
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	491495	40.00	ppm	0.00
30) Phenanthrene-d10	7.764	188	1962191	40.00	ppm	0.00
49) Perylene-d12	11.898	264	2306803	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.914	112	155830	11.78	ppm	0.00
Spiked Amount 30.000			Recovery =	39.27%		
5) Phenol-d5	2.489	99	197403	11.90	ppm	0.01
Spiked Amount 30.000			Recovery =	39.67%		
11) Nitrobenzene-d5	3.299	82	60494	3.60	ppm	0.00
Spiked Amount 10.000			Recovery =	36.00%		
21) 2-Fluorobiphenyl	5.218	172	151458	3.41	ppm	-0.02
Spiked Amount 10.000			Recovery =	34.10%		
33) 2,4,6-Tribromophenol	6.966	330	93551	12.12	ppm	0.00
Spiked Amount 30.000			Recovery =	40.40%		
44) Terphenyl-d14	9.469	244	192928	4.10	ppm	-0.01
Spiked Amount 10.000			Recovery =	41.00%		
Target Compounds						Qvalue
14] Naphthalene	4.039	128	2496	0.06	ppm	52
16] 2-Methylnaphthalene	4.800	142	6981	0.22	ppm #	65
17] 1-Methylnaphthalene	4.910	142	4665	0.15	ppm	88
37] Phenanthrene	7.786	178	4617m	0.09	ppm	
43] Pyrene	9.306	202	2142	0.03	ppm	95
58] Benzo(g,h,i)perylene	13.471	276	1227	0.02	ppm	76

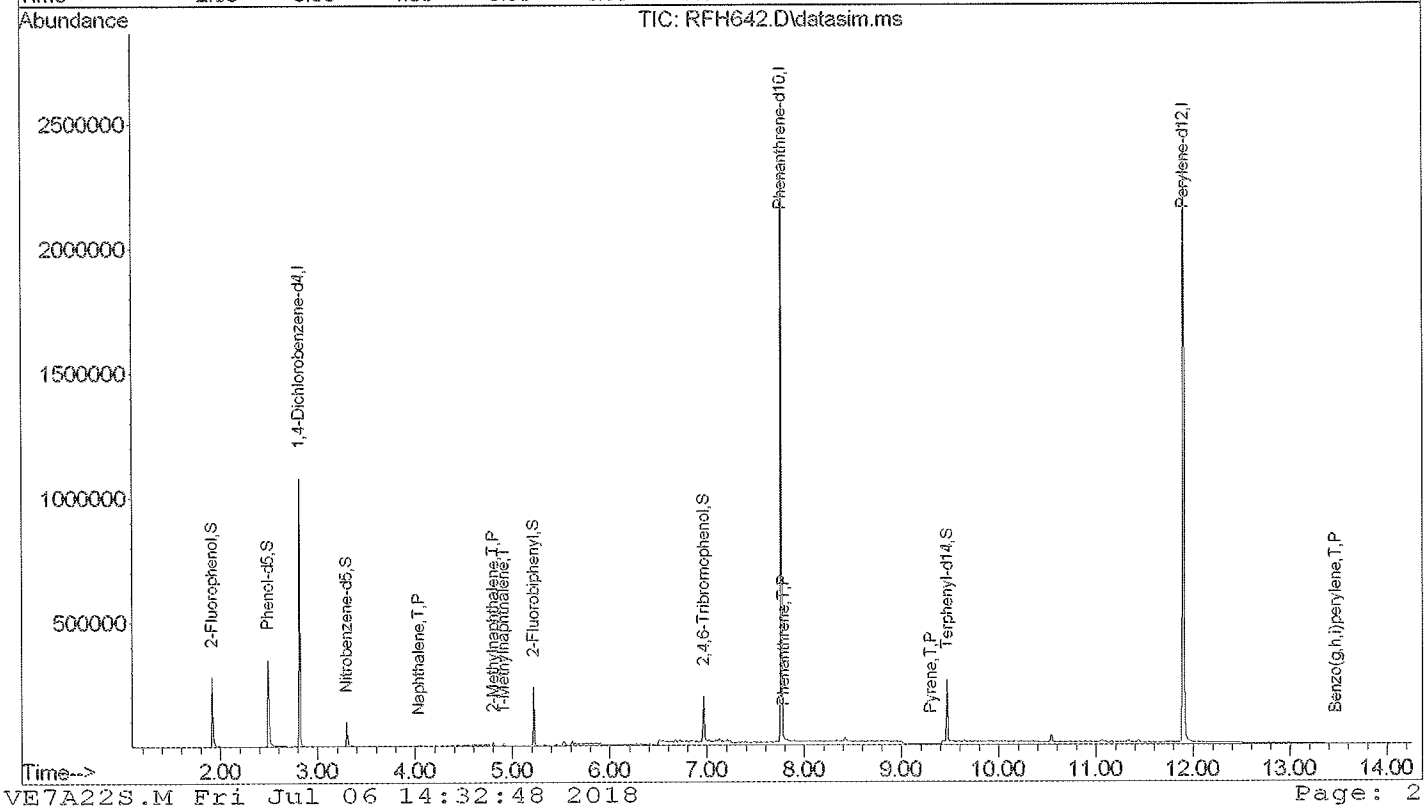
7/6/18

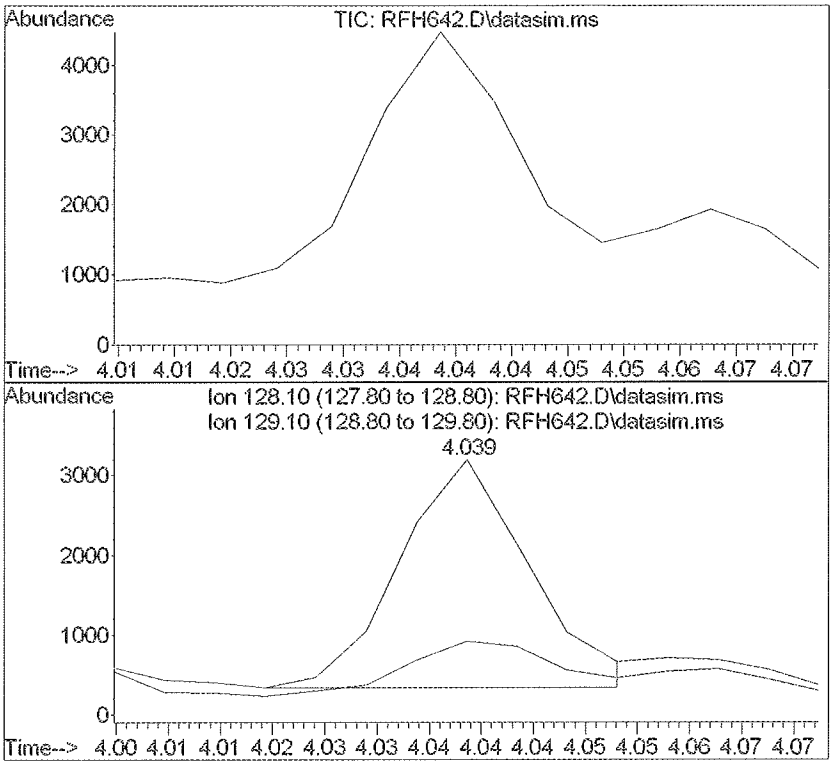
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH642.D Vial: 22
Acq On : 29 Jun 2018 19:01 Operator: RZh
Sample : 18F187-15 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:32:43 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



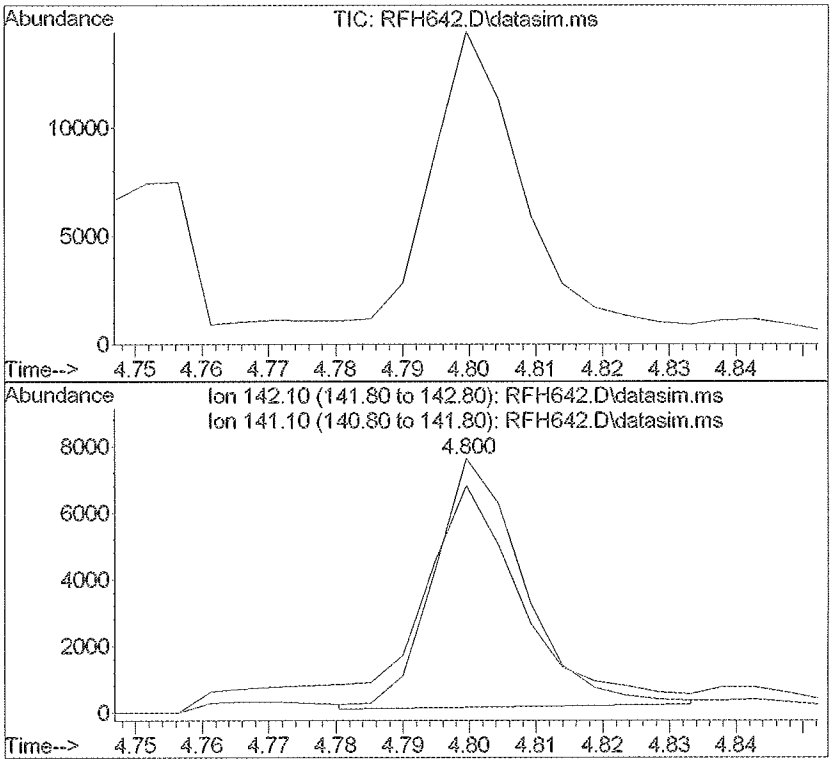




#14
Naphthalene
Concen: 0.06 ppm
RT: 4.039 min Scan# 616
Delta R.T. -0.009 min
Lab File: RFH642.D
Acq: 29 Jun 2018 19:01

Tgt Ion:128 Resp: 2496

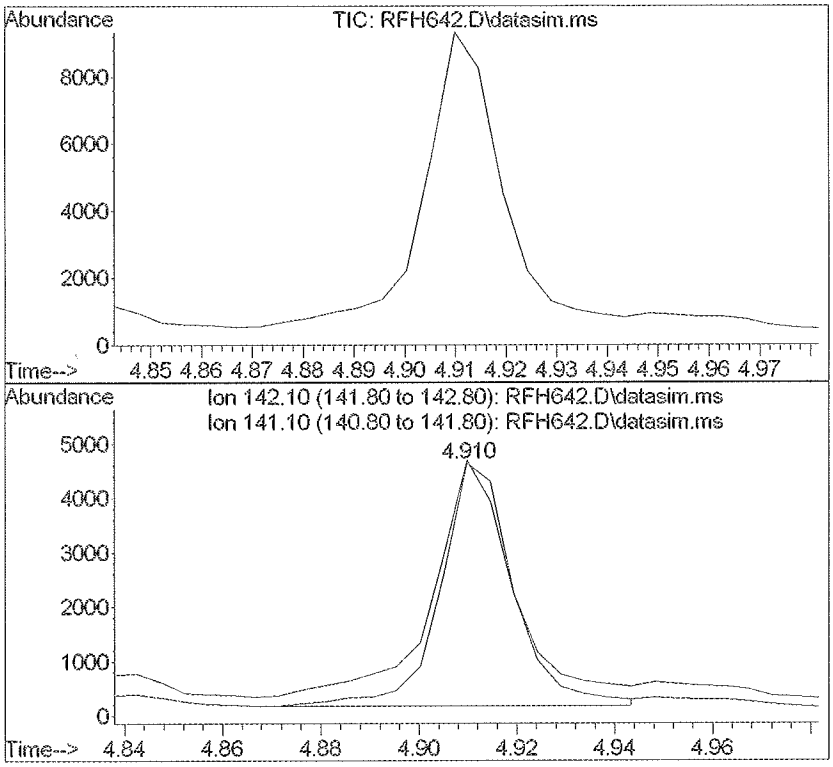
Ion	Ratio	Lower	Upper
128	100		
129	29.1	0.0	40.9



#16
2-Methylnaphthalene
Concen: 0.22 ppm
RT: 4.800 min Scan# 774
Delta R.T. -0.009 min
Lab File: RFH642.D
Acq: 29 Jun 2018 19:01

Tgt Ion:142 Resp: 6981

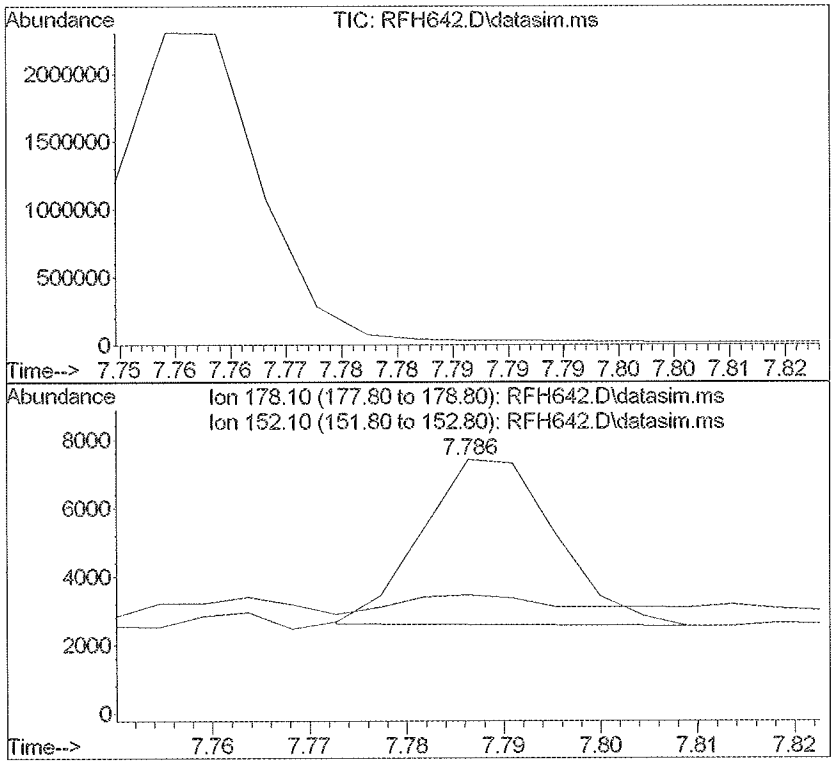
Ion	Ratio	Lower	Upper
142	100		
141	122.6	59.9	119.9#



#17
1-Methylnaphthalene
Concen: 0.15 ppm
RT: 4.910 min Scan# 797
Delta R.T. -0.014 min
Lab File: RFH642.D
Acq: 29 Jun 2018 19:01

Tgt Ion:142 Resp: 4665

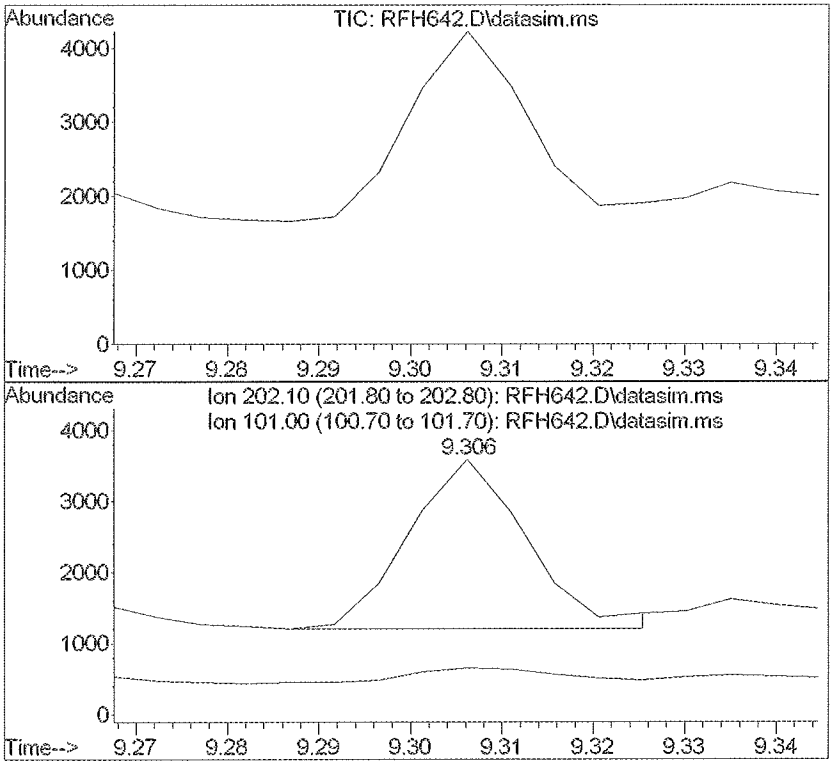
Ion	Ratio	Lower	Upper
142	100		
141	104.6	63.4	123.4



#37
Phenanthrene
Concen: 0.09 ppm m
RT: 7.786 min Scan# 1401
Delta R.T. -0.014 min
Lab File: RFH642.D
Acq: 29 Jun 2018 19:01

Tgt Ion:178 Resp: 4617

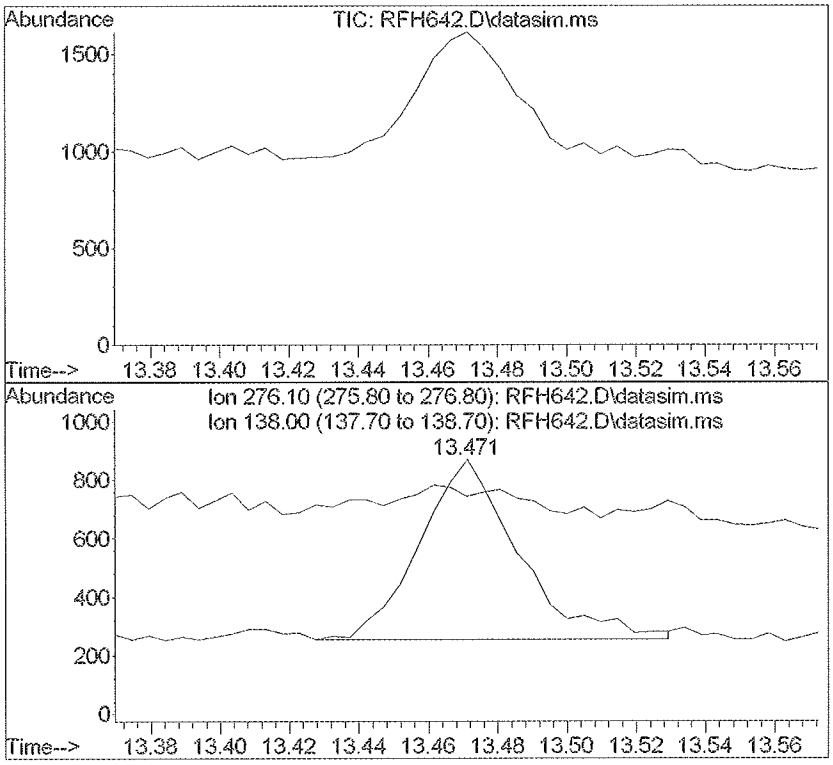
Ion	Ratio	Lower	Upper
178	100		
152	0.0	0.0	39.8



#43
Pyrene
Concen: 0.03 ppm
RT: 9.306 min Scan# 1724
Delta R.T. -0.005 min
Lab File: RFH642.D
Acq: 29 Jun 2018 19:01

Tgt Ion:202 Resp: 2142

Ion	Ratio	Lower	Upper
202	100		
101	10.2	0.0	38.4



#58
Benzo(g,h,i)perylene
Concen: 0.02 ppm
RT: 13.471 min Scan# 2616
Delta R.T. 0.010 min
Lab File: RFH642.D
Acq: 29 Jun 2018 19:01

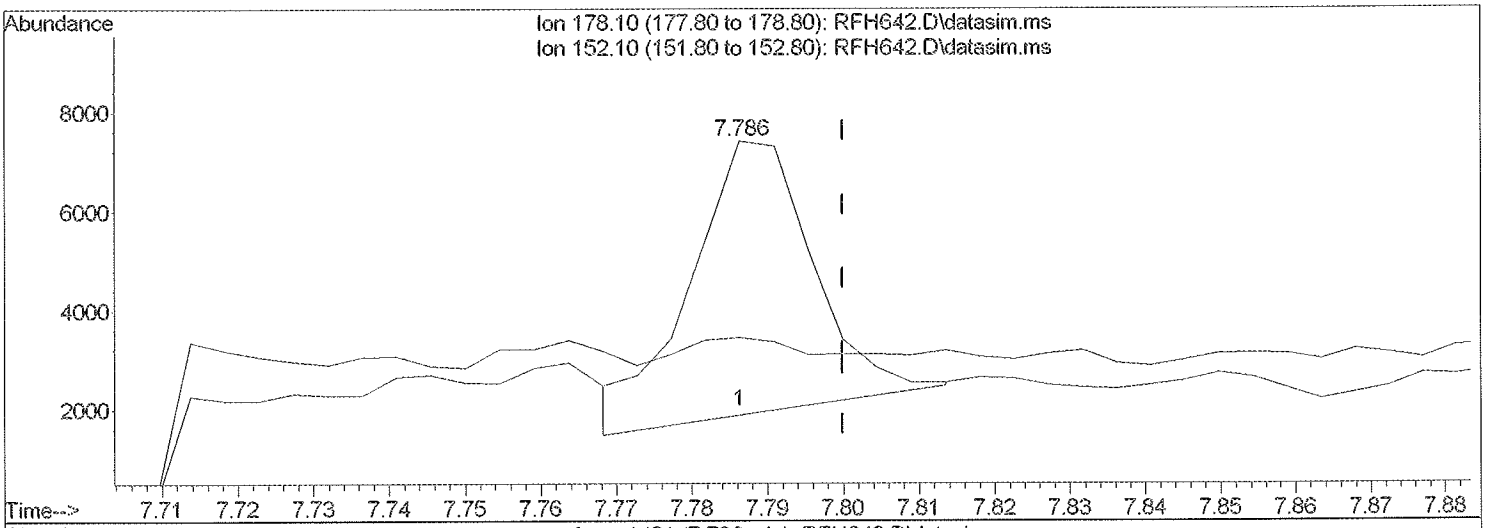
Tgt Ion:276 Resp: 1227

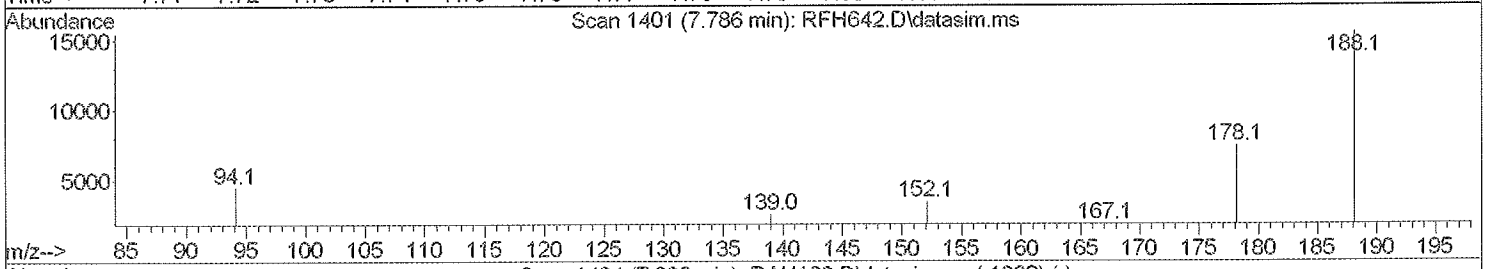
Ion	Ratio	Lower	Upper
276	100		
138	5.2	0.0	45.0

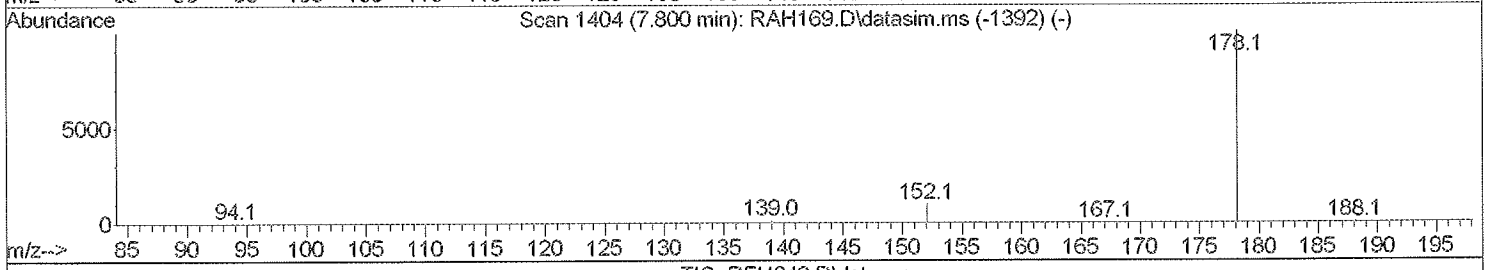
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH642.D
Acq On : 29 Jun 2018 19:01
Sample : 18F187-15 2X
Misc :
Integrator: RTE
Quant Time: Jul 06 14:17:44 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 22
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH642.D\data.ms

(37) Phenanthrene (T,P)

7.786min (-0.014) 0.12 ppm

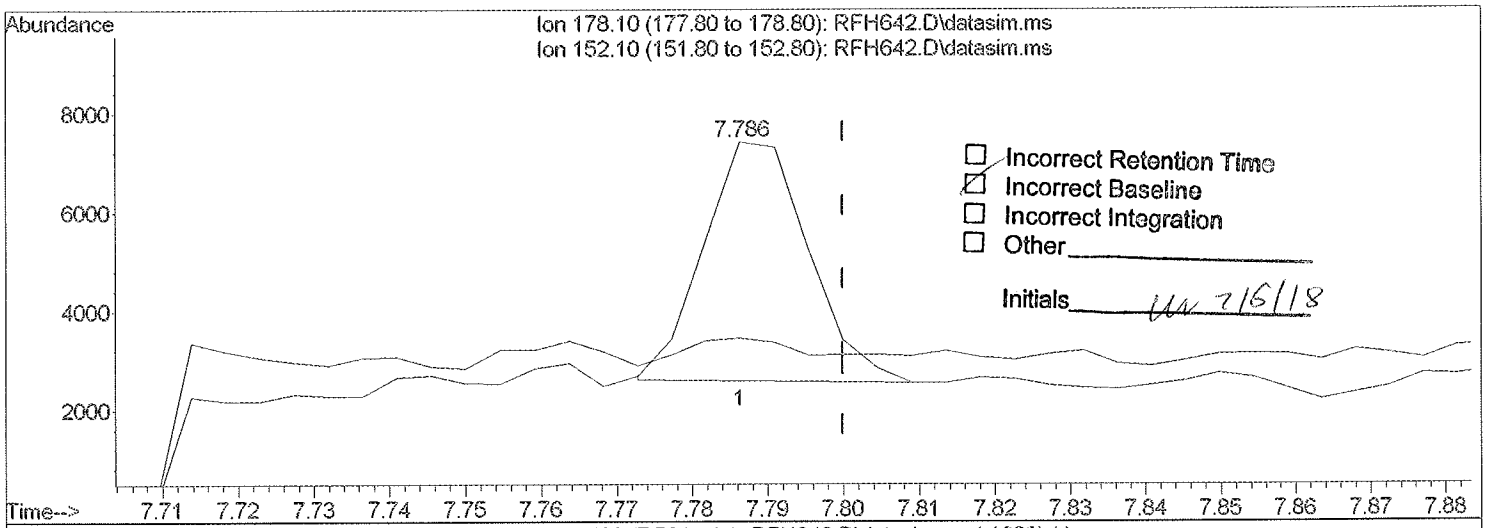
response 6266

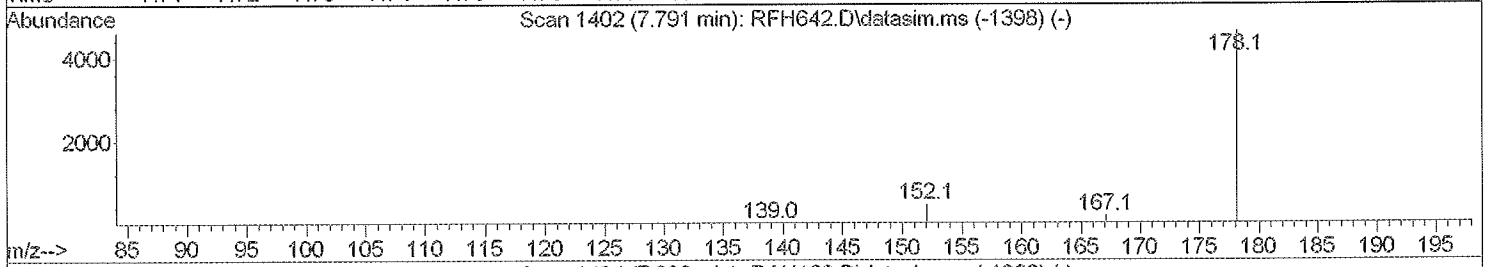
Ion	Exp%	Act%
178.10	100	100
152.10	9.80	0.00
0.00	0.00	0.00
0.00	0.00	0.00

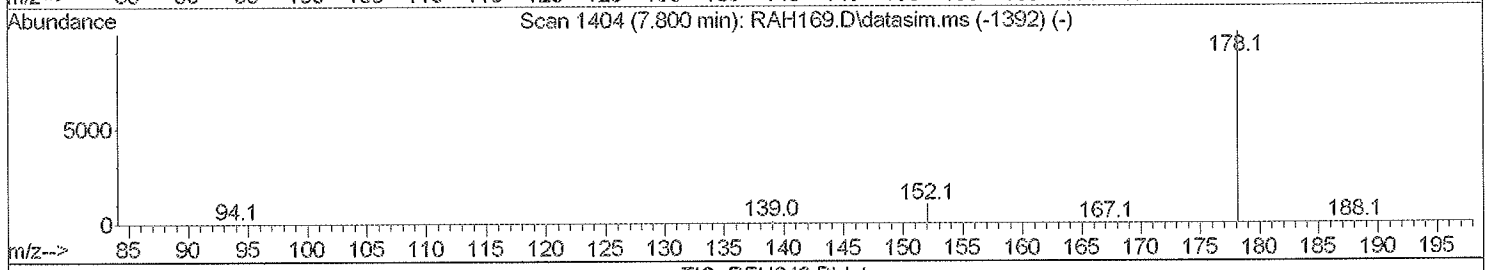
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH642.D
Acq On : 29 Jun 2018 19:01
Sample : 18F187-15 2X
Misc :
Integrator: RTE
Quant Time: Jul 06 14:17:44 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 22
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH642.D\data.ms

(37) Phenanthrene (T,P)

7.786min (-0.014) 0.09 ppm m

response 4617

Ion	Exp%	Act%
178.10	100	100
152.10	9.80	0.00
0.00	0.00	0.00
0.00	0.00	0.00

AM 7/10/18

METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/23/18 12:51
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : 18Q2DP009-SB0601-SO-1	Date Analyzed: 06/29/18 19:20
Lab Samp ID: 18F187-16	Dilution Factor: 2
Lab File ID: RFH643	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: 6.9
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.021	0.0027	0.0054
Acenaphthylene	ND	0.021	0.0027	0.0054
Anthracene	ND	0.021	0.0027	0.0054
Benzo (a) anthracene	ND	0.021	0.0053	0.011
Benzo (a) pyrene	ND	0.021	0.0027	0.0054
Benzo (b) fluoranthene	ND	0.021	0.0027	0.0054
Benzo(k)fluoranthene	ND	0.021	0.0027	0.0054
Benzo (g,h,i) perylene	ND	0.021	0.0027	0.0054
Chrysene	ND	0.021	0.0047	0.011
Dibenzo (a,h) anthracene	ND	0.021	0.0027	0.0054
Fluoranthene	ND	0.021	0.0027	0.0054
Fluorene	ND	0.021	0.0027	0.0054
Indeno (1,2,3-c,d) pyrene	ND	0.021	0.0027	0.0054
Naphthalene	0.0099J	0.021	0.0027	0.0054
Phenanthrene	0.011J	0.021	0.0027	0.0054
Pyrene	0.0049J	0.021	0.0027	0.0054
2-Methylnaphthalene	0.019J	0.021	0.0027	0.0054
1-Methylnaphthalene	0.014J	0.021	0.0027	0.0054

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.64	2.15	76	46-122
2-Fluorobiphenyl	0.468	0.716	65	46-115
Nitrobenzene-d5	0.517	0.716	72	44-125
Terphenyl-d14	0.587	0.716	82	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30.01g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

Quantitation Report (QT Reviewed)

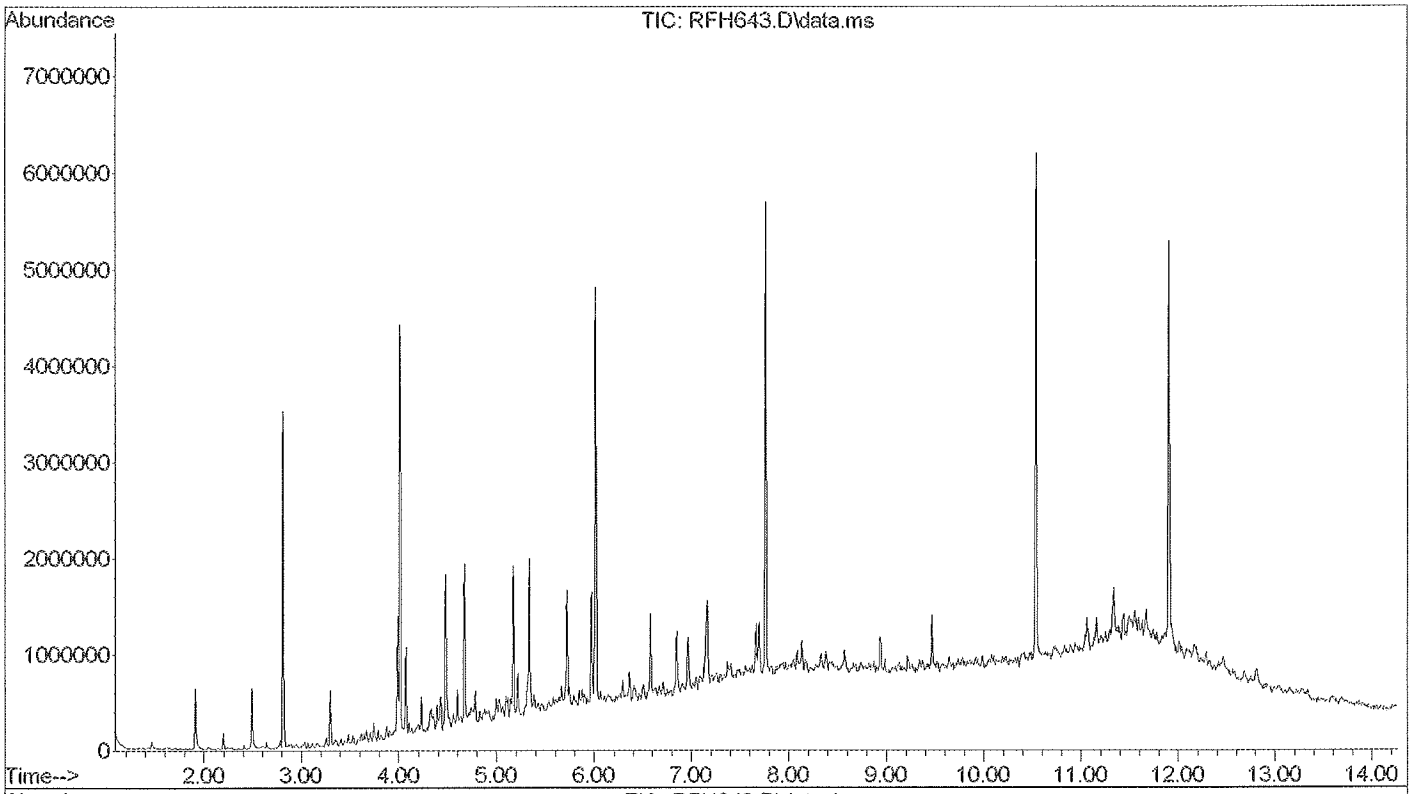
Data File : D:\DATA\18F29\RFH643.D Vial: 23
Acq On : 29 Jun 2018 19:20 Operator: RZh
Sample : 18F187-16 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:33:56 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

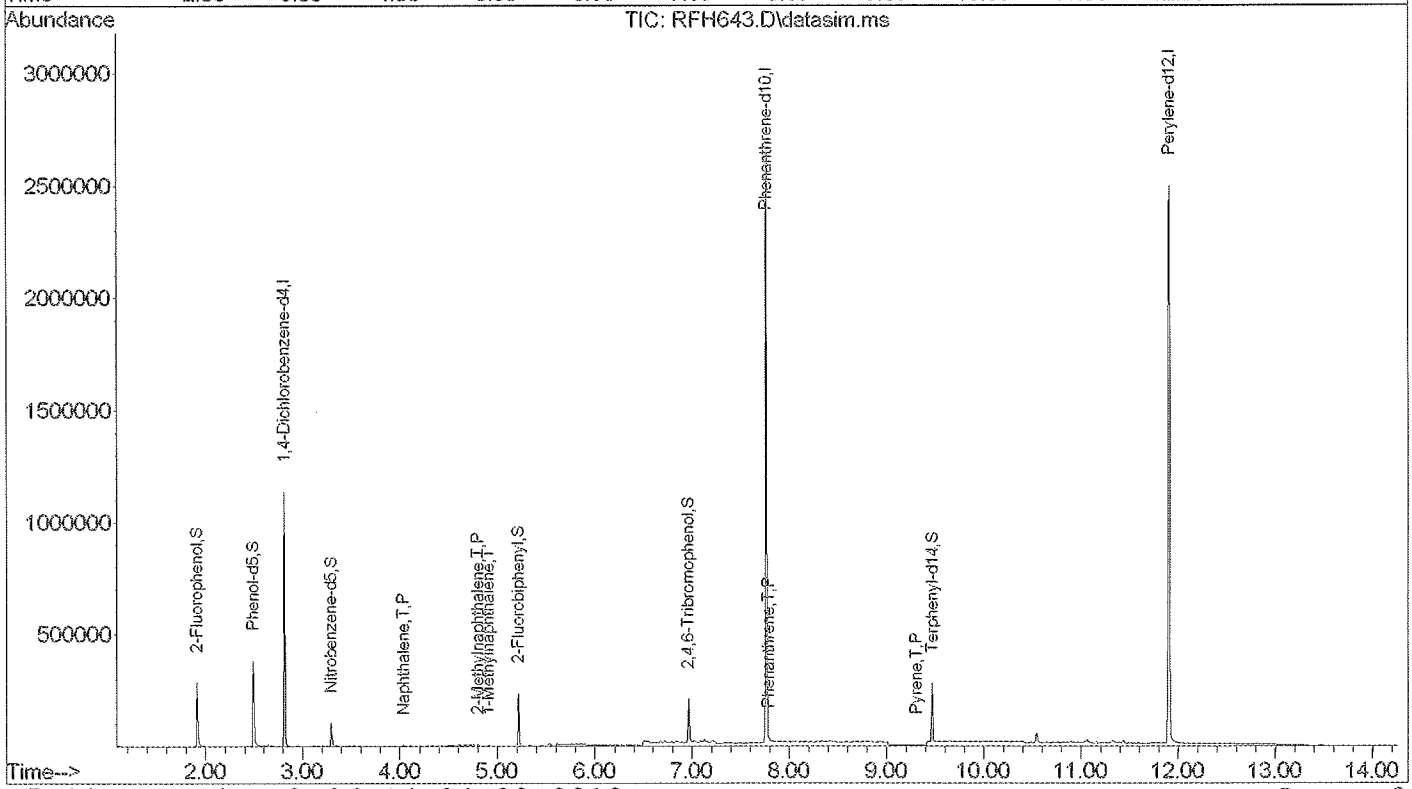
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-Dichlorobenzene-d4	2.814	152	526989	40.00	ppm		0.00
30) Phenanthrene-d10	7.764	188	2160765	40.00	ppm		0.00
49) Perylene-d12	11.903	264	2490251	40.00	ppm		0.00
System Monitoring Compounds							
4) 2-Fluorophenol	1.914	112	157779	11.12	ppm		0.00
Spiked Amount 30.000			Recovery =	37.07%			
5) Phenol-d5	2.489	99	211183	11.87	ppm		0.01
Spiked Amount 30.000			Recovery =	39.57%			
11) Nitrobenzene-d5	3.299	82	65059	3.61	ppm		0.00
Spiked Amount 10.000			Recovery =	36.10%			
21) 2-Fluorobiphenyl	5.218	172	155678	3.27	ppm		-0.02
Spiked Amount 10.000			Recovery =	32.70%			
33) 2,4,6-Tribromophenol	6.961	330	97128	11.43	ppm		0.00
Spiked Amount 30.000			Recovery =	38.10%			
44) Terphenyl-d14	9.469	244	212213	4.10	ppm		-0.01
Spiked Amount 10.000			Recovery =	41.00%			
Target Compounds							Qvalue
14] Naphthalene	4.039	128	3308	0.07	ppm		38
16] 2-Methylnaphthalene	4.800	142	4663	0.13	ppm	#	43
17] 1-Methylnaphthalene	4.910	142	3206	0.10	ppm	#	64
37] Phenanthrene	7.791	178	4471	0.08	ppm	#	73
43] Pyrene	9.306	202	2386	0.03	ppm		88

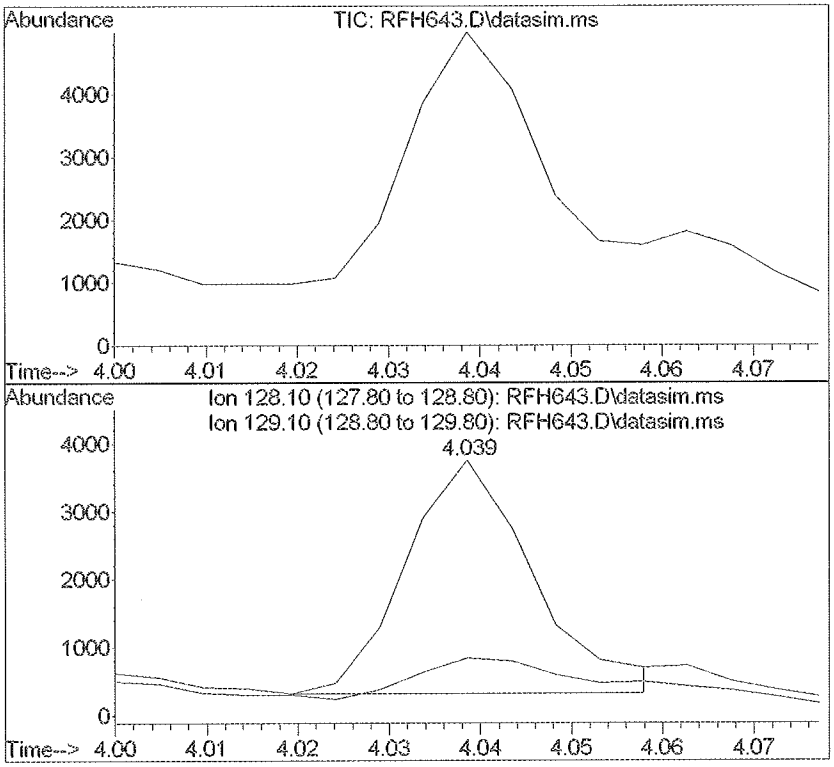
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH643.D Vial: 23
Acq On : 29 Jun 2018 19:20 Operator: RZh
Sample : 18F187-16 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:33:56 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



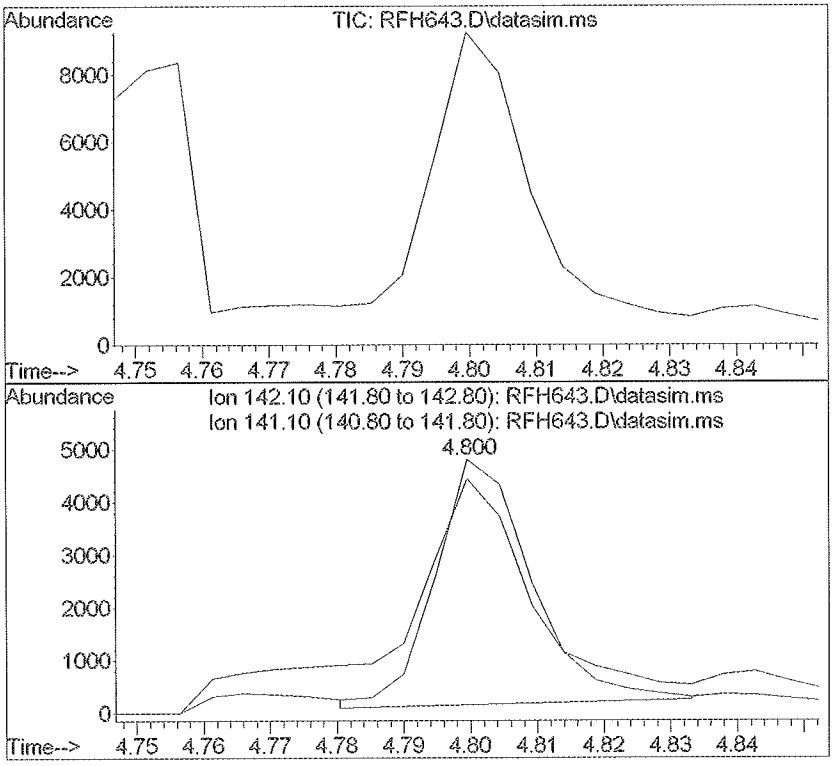




#14
Naphthalene
Concen: 0.07 ppm
RT: 4.039 min Scan# 616
Delta R.T. -0.009 min
Lab File: RFH643.D
Acq: 29 Jun 2018 19:20

Tgt Ion:128 Resp: 3308

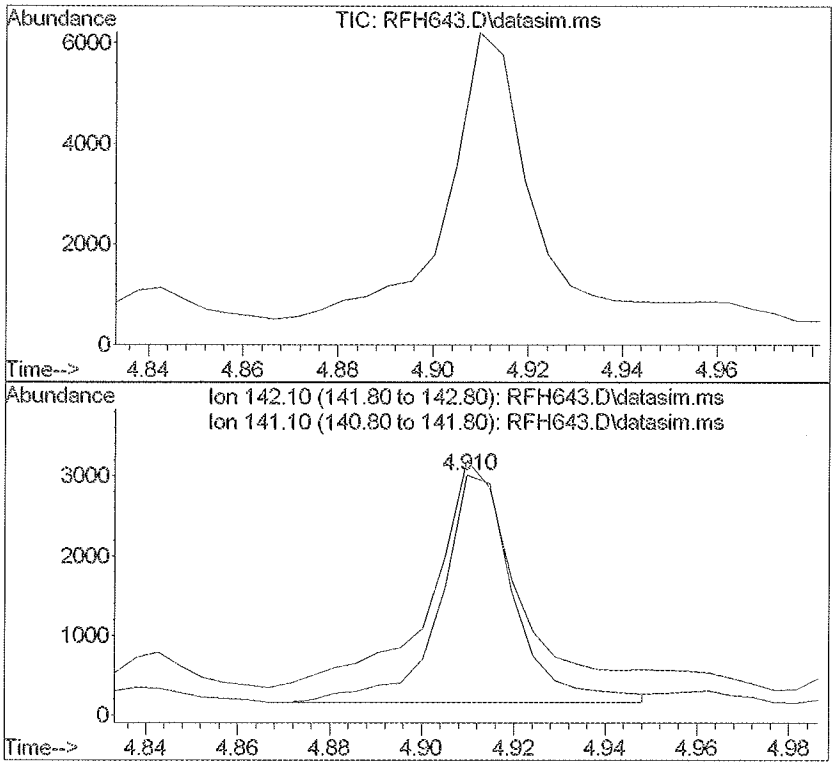
Ion	Ratio	Lower	Upper
128	100		
129	34.2	0.0	40.9



#16
2-Methylnaphthalene
Concen: 0.13 ppm
RT: 4.800 min Scan# 774
Delta R.T. -0.009 min
Lab File: RFH643.D
Acq: 29 Jun 2018 19:20

Tgt Ion:142 Resp: 4663

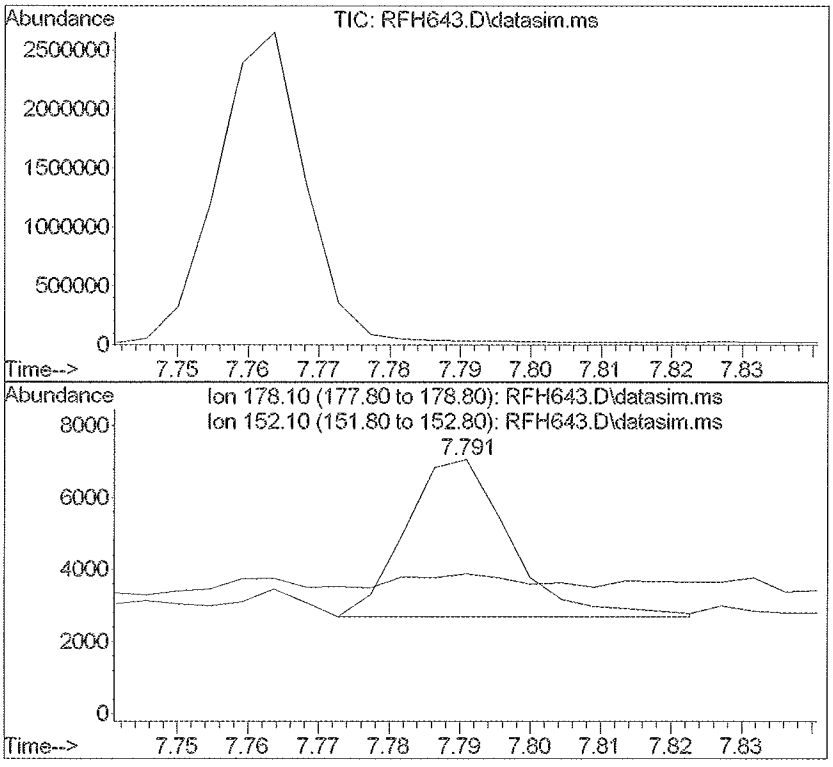
Ion	Ratio	Lower	Upper
142	100		
141	143.7	59.9	119.9#



#17
1-Methylnaphthalene
Concen: 0.10 ppm
RT: 4.910 min Scan# 797
Delta R.T. -0.014 min
Lab File: RFH643.D
Acq: 29 Jun 2018 19:20

Tgt Ion:142 Resp: 3206

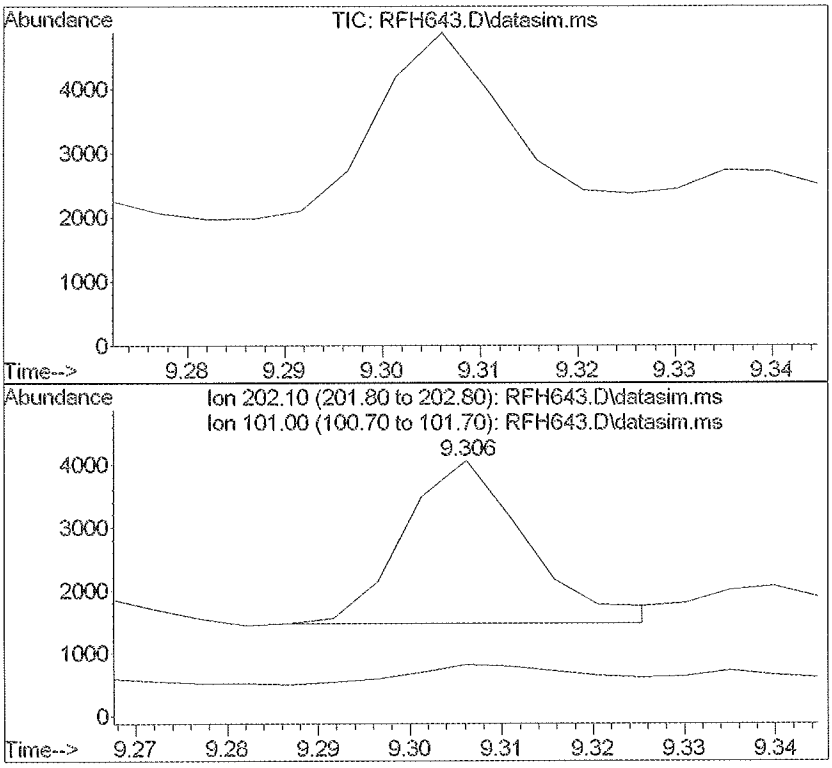
Ion	Ratio	Lower	Upper
142	100		
141	128.4	63.4	123.4#



#37
Phenanthrene
Concen: 0.08 ppm
RT: 7.791 min Scan# 1402
Delta R.T. -0.009 min
Lab File: RFH643.D
Acq: 29 Jun 2018 19:20

Tgt Ion:178 Resp: 4471

Ion	Ratio	Lower	Upper
178	100		
152	0.0	0.0	39.8



#43
Pyrene
Concen: 0.03 ppm
RT: 9.306 min Scan# 1724
Delta R.T. -0.005 min
Lab File: RFH643.D
Acq: 29 Jun 2018 19:20

Tgt Ion:202 Resp: 2386

Ion	Ratio	Lower	Upper
202	100		
101	12.7	0.0	38.4

METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL
Project : JBER TO075
Batch No. : 18F187
Sample ID : 18Q2DP009-IDW-SO01
Lab Samp ID: 18F187-17
Lab File ID: RFH644
Ext Btch ID: 18SVF043S
Calib. Ref.: RAH169

Date Collected: 06/23/18 13:20
Date Received: 06/26/18
Date Extracted: 06/28/18 15:30
Date Analyzed: 06/29/18 19:39
Dilution Factor: 2
Matrix: SOIL
% Moisture: 8.1
Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	0.0038J	0.022	0.0027	0.0054
Acenaphthylene	0.0036J	0.022	0.0027	0.0054
Anthracene	ND	0.022	0.0027	0.0054
Benzo (a) anthracene	ND	0.022	0.0053	0.011
Benzo (a) pyrene	ND	0.022	0.0027	0.0054
Benzo (b) fluoranthene	ND	0.022	0.0027	0.0054
Benzo(k)fluoranthene	ND	0.022	0.0027	0.0054
Benzo (g,h,i) perylene	0.0044J	0.022	0.0027	0.0054
Chrysene	ND	0.022	0.0048	0.011
Dibenzo (a,h) anthracene	ND	0.022	0.0027	0.0054
Fluoranthene	0.0071J	0.022	0.0027	0.0054
Fluorene	0.0037J	0.022	0.0027	0.0054
Indeno (1,2,3-c,d) pyrene	ND	0.022	0.0027	0.0054
Naphthalene	0.0080J	0.022	0.0027	0.0054
Phenanthrene	0.0083J	0.022	0.0027	0.0054
Pyrene	0.0069J	0.022	0.0027	0.0054
2-Methylnaphthalene	0.019J	0.022	0.0027	0.0054
1-Methylnaphthalene	0.014J	0.022	0.0027	0.0054

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.61	2.18	74	46-122
2-Fluorobiphenyl	0.353	0.725	49	46-115
Nitrobenzene-d5	0.344	0.725	47	44-125
Terphenyl-d14	0.555	0.725	77	58-133

Notes:

Detection limits are reported relative to sample result significant figures.
Sample Amount : 30g
Prepared by : JVille
Final Volume : 2ml
Analyzed by : KVu

Quantitation Report (QT Reviewed)

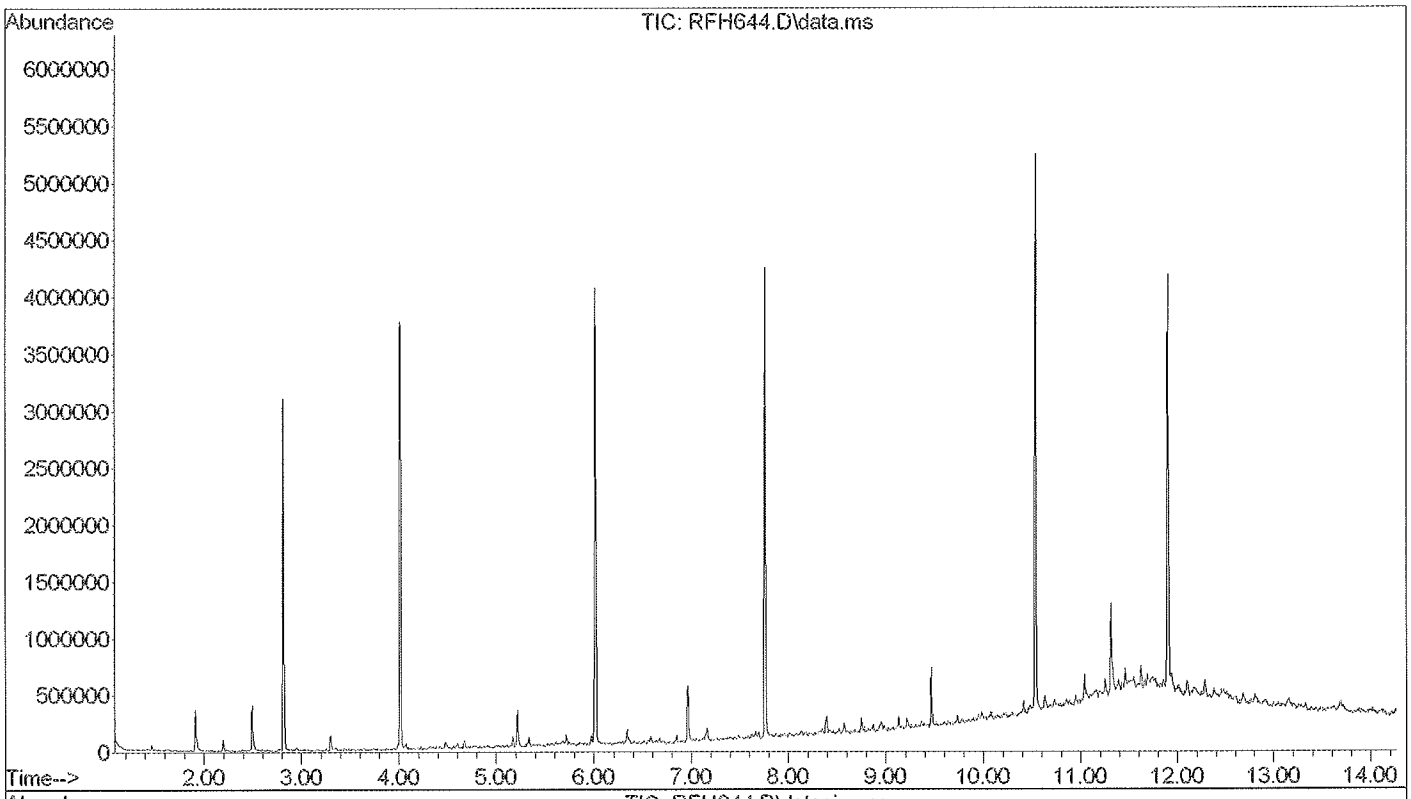
Data File : D:\DATA\18F29\RFH644.D Vial: 24
Acq On : 29 Jun 2018 19:39 Operator: RZh
Sample : 18F187-17 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:36:54 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

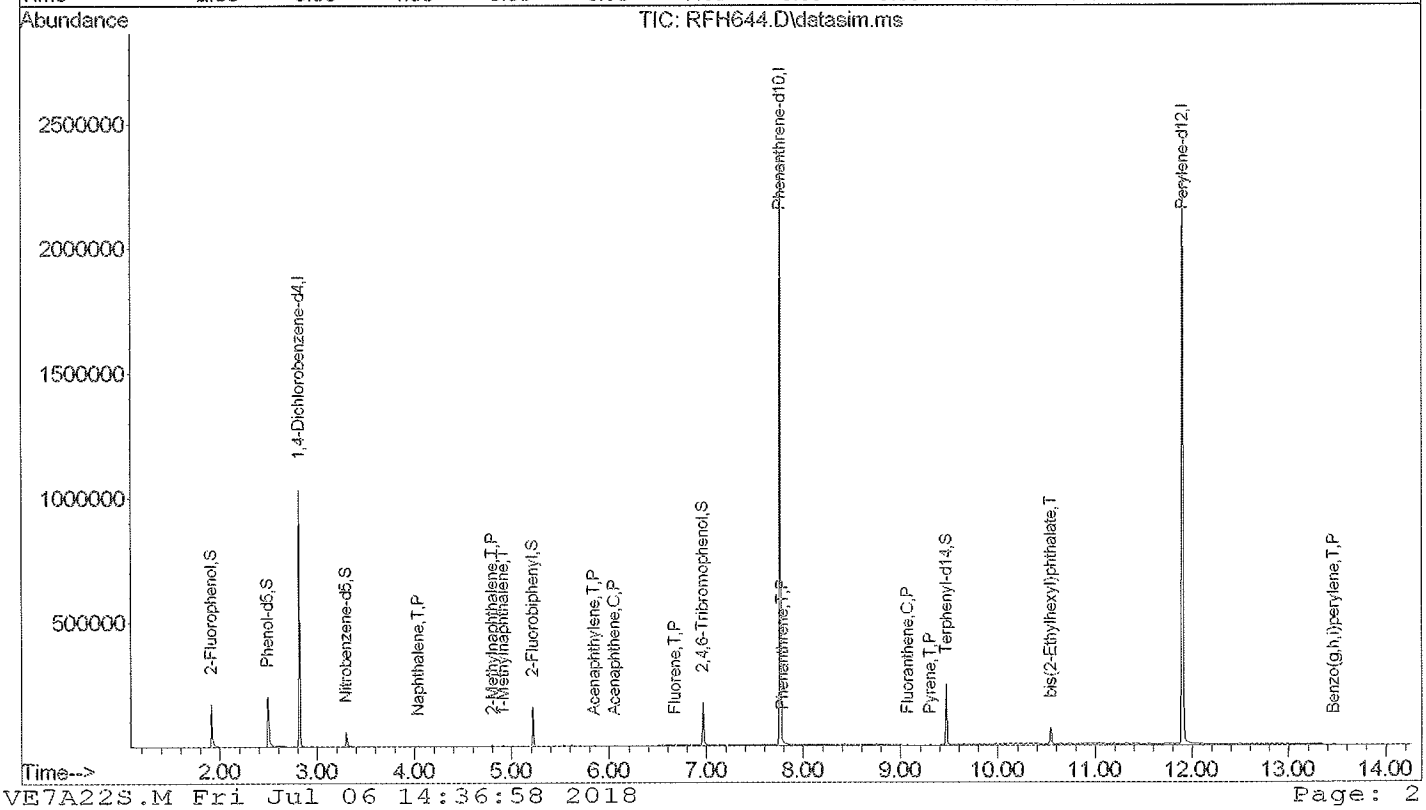
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	488828	40.00	ppm	-0.01
30) Phenanthrene-d10	7.759	188	2014170	40.00	ppm	-0.01
49) Perylene-d12	11.898	264	2192473	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	95519	7.26	ppm	0.00
Spiked Amount 30.000			Recovery =	24.20%		
5) Phenol-d5	2.494	99	135704	8.23	ppm	0.02
Spiked Amount 30.000			Recovery =	27.43%		
11) Nitrobenzene-d5	3.298	82	39657	2.37	ppm	0.00
Spiked Amount 10.000			Recovery =	23.70%		
21) 2-Fluorobiphenyl	5.217	172	107579	2.44	ppm	-0.02
Spiked Amount 10.000			Recovery =	24.40%		
33) 2,4,6-Tribromophenol	6.961	330	87634	11.06	ppm	0.00
Spiked Amount 30.000			Recovery =	36.87%		
44) Terphenyl-d14	9.469	244	184629	3.83	ppm	-0.01
Spiked Amount 10.000			Recovery =	38.30%		
Target Compounds			MW 7/6/18			Qvalue
14] Naphthalene	4.038	128	2455	0.06	ppm	97
16] 2-Methylnaphthalene	4.799	142	4183	0.13	ppm	81
17] 1-Methylnaphthalene	4.914	142	3008	0.10	ppm	98
25] Acenaphthylene	5.847	152	1201	0.03	ppm	84
26] Acenaphthene	6.054	153	898	0.03	ppm	81
29] Fluorene	6.678	166	970	0.03	ppm	86
37] Phenanthrene	7.786	178	3146m	0.06	ppm	
42] Fluoranthene	9.070	202	3029m	0.05	ppm	
43] Pyrene	9.306	202	3118m	0.05	ppm	
48] bis(2-Ethylhexyl)phtha...	10.541	149	41564	1.24	ppm	94
58] Benzo(g,h,i)perylene	13.466	276	1614	0.03	ppm	61

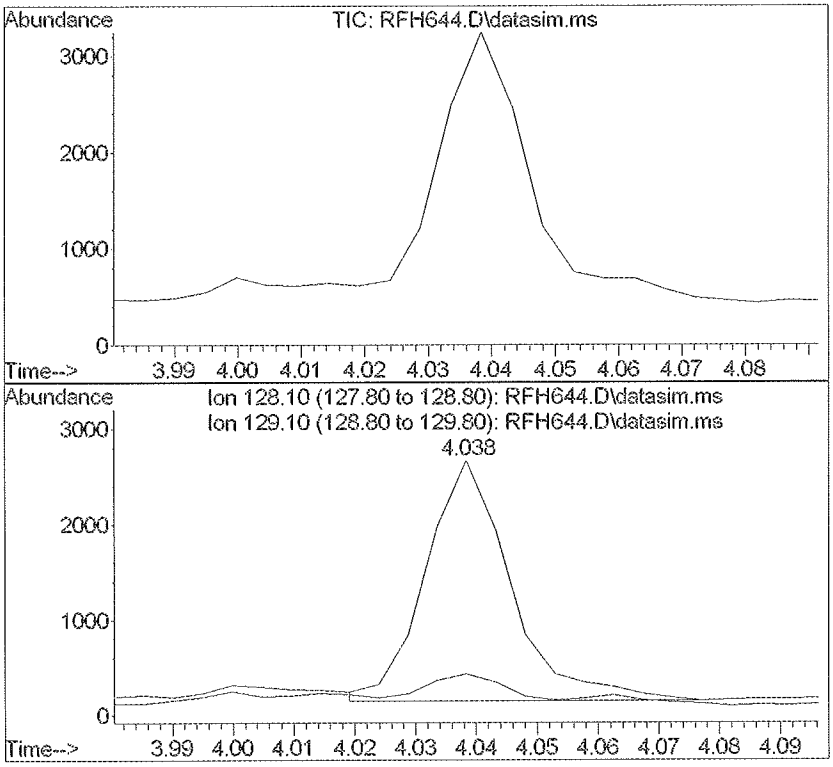
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH644.D Vial: 24
Acq On : 29 Jun 2018 19:39 Operator: RZh
Sample : 18F187-17 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:36:54 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



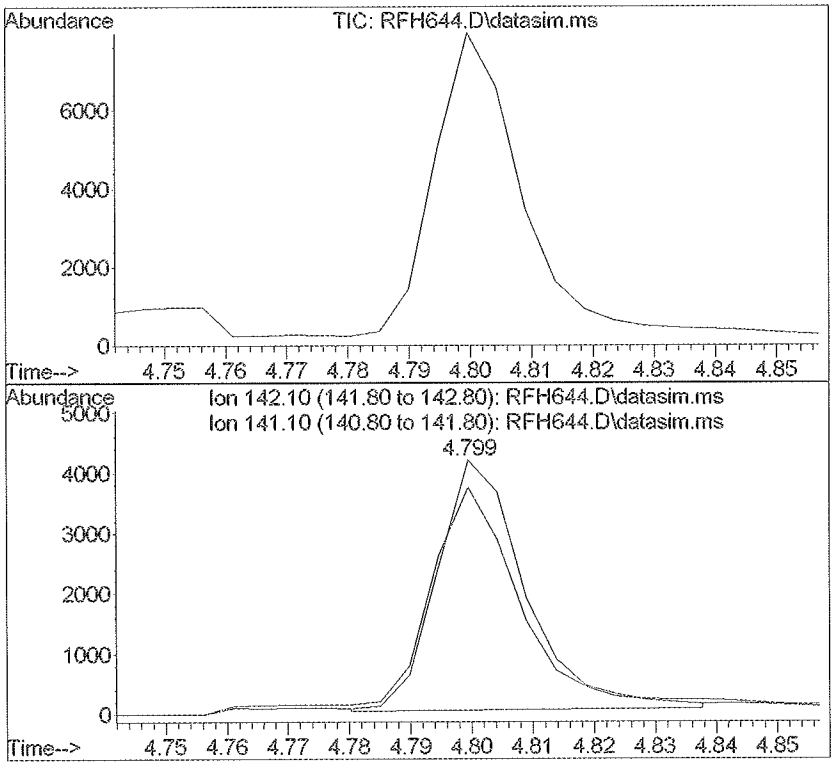




#14
Naphthalene
Concen: 0.06 ppm
RT: 4.038 min Scan# 616
Delta R.T. -0.010 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:128 Resp: 2455

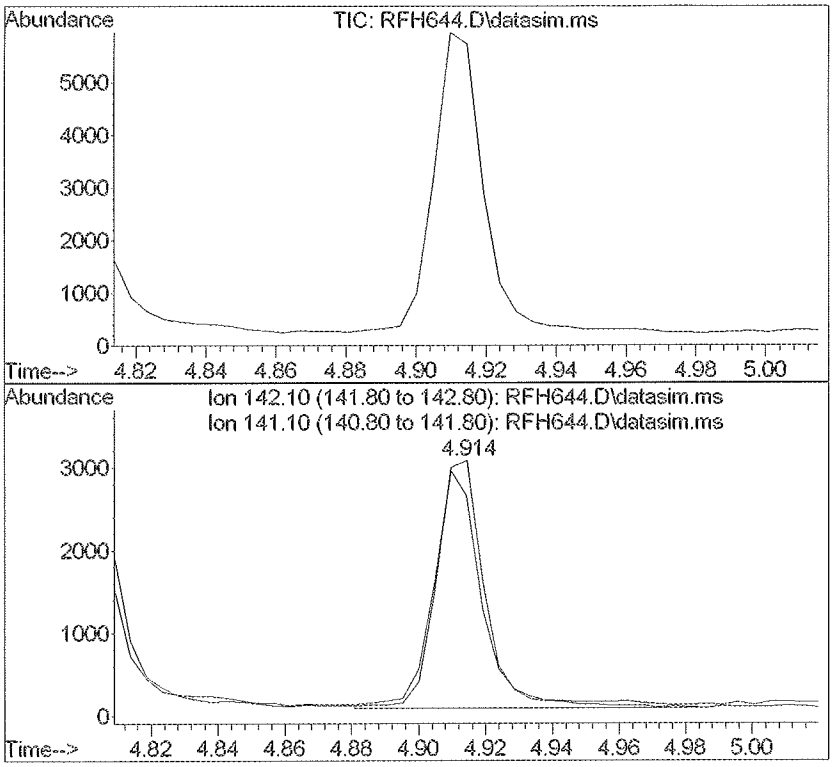
Ion	Ratio	Lower	Upper
128	100		
129	9.8	0.0	40.9



#16
2-Methylnaphthalene
Concen: 0.13 ppm
RT: 4.799 min Scan# 774
Delta R.T. -0.010 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:142 Resp: 4183

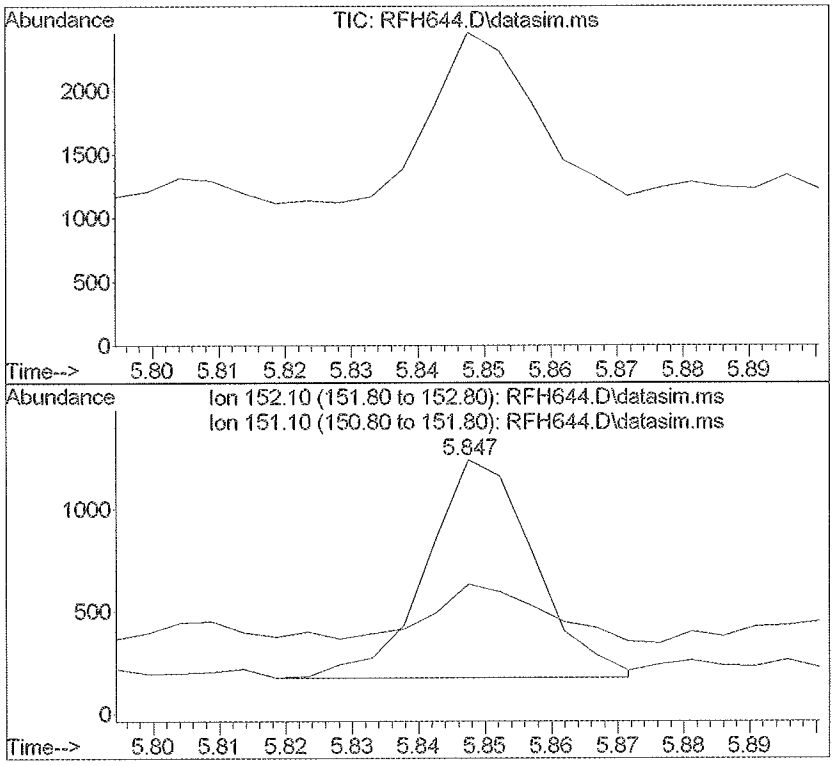
Ion	Ratio	Lower	Upper
142	100		
141	107.9	59.9	119.9



#17
1-Methylnaphthalene
Concen: 0.10 ppm
RT: 4.914 min Scan# 798
Delta R.T. -0.010 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:142 Resp: 3008

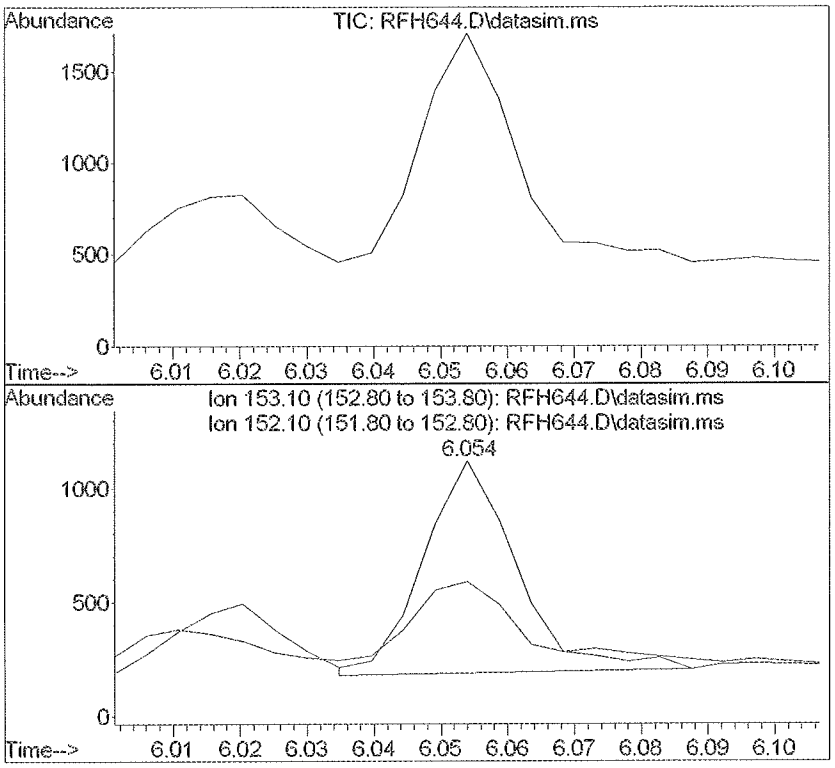
Ion	Ratio	Lower	Upper
142	100		
141	91.9	63.4	123.4



#25
Acenaphthylene
Concen: 0.03 ppm
RT: 5.847 min Scan# 992
Delta R.T. -0.015 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:152 Resp: 1201

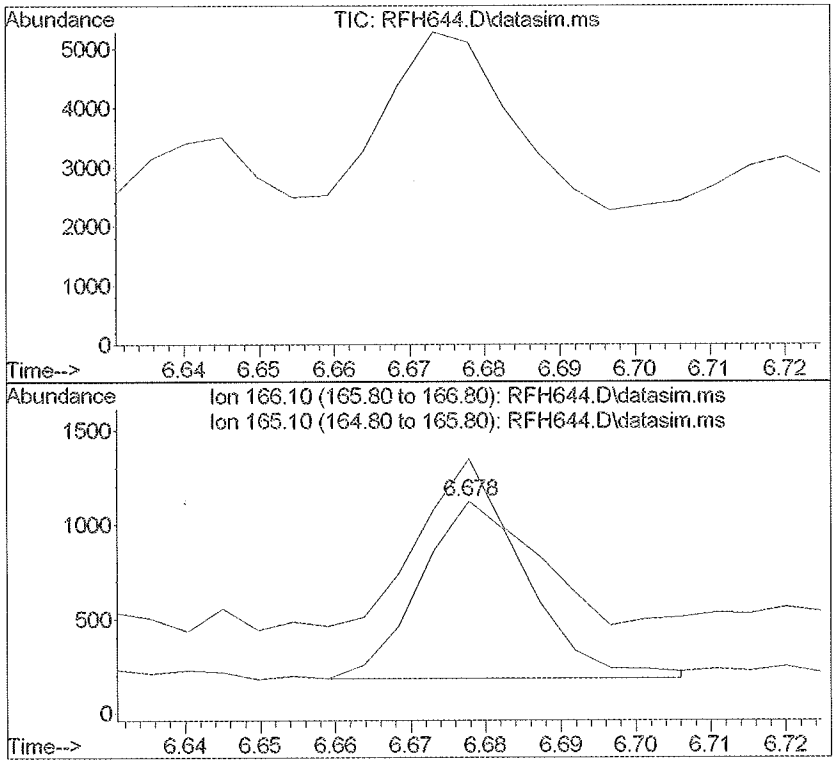
Ion	Ratio	Lower	Upper
152	100		
151	27.3	0.0	49.9



#26
Acenaphthene
Concen: 0.03 ppm
RT: 6.054 min Scan# 1035
Delta R.T. -0.014 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:153 Resp: 898

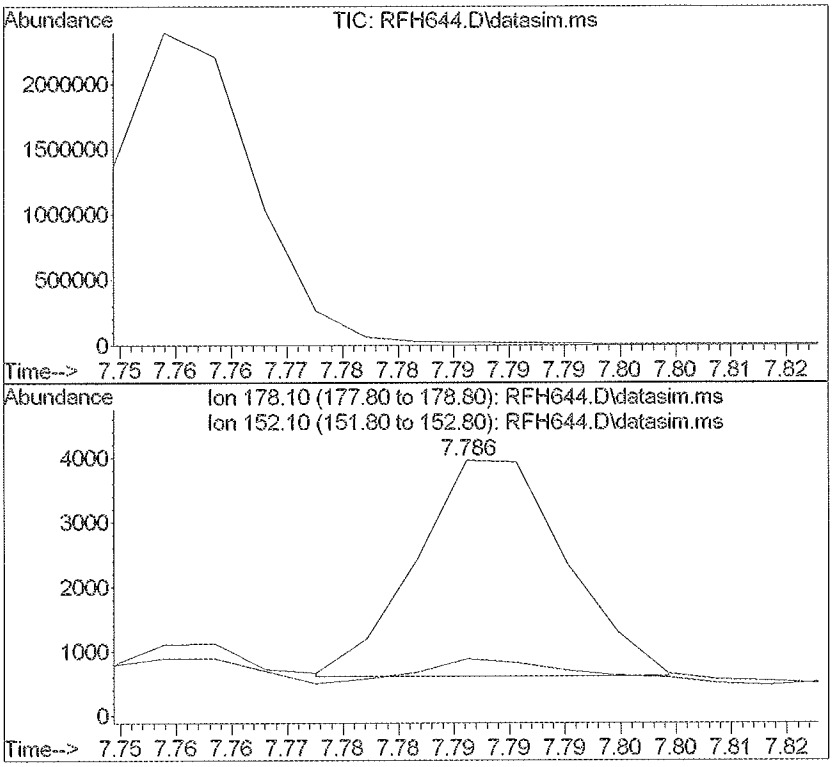
Ion	Ratio	Lower	Upper
153	100		
152	61.0	17.9	77.9



#29
Fluorene
Concen: 0.03 ppm
RT: 6.678 min Scan# 1166
Delta R.T. -0.009 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:166 Resp: 970

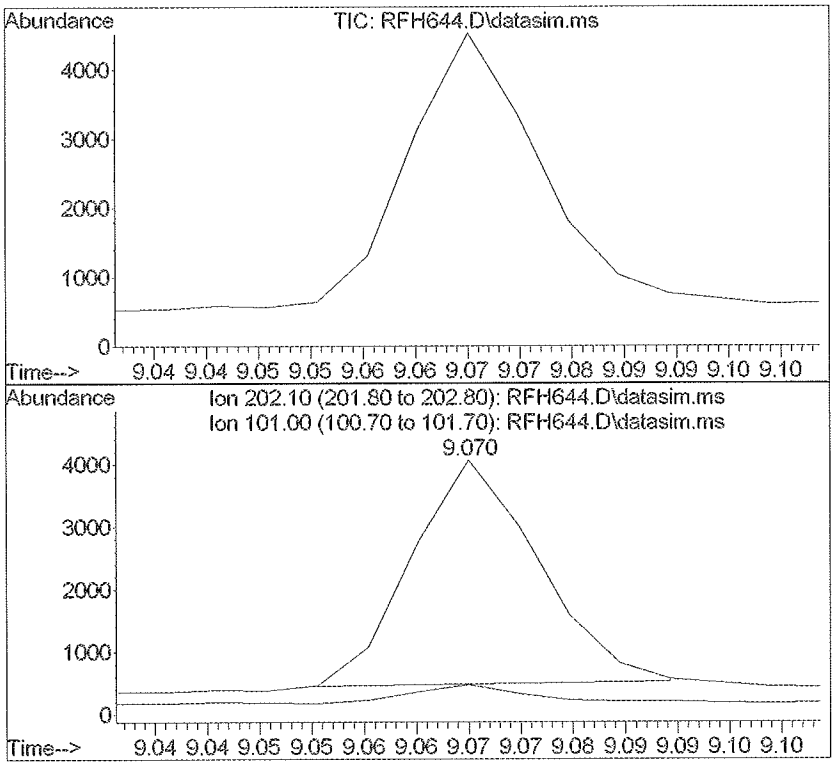
Ion	Ratio	Lower	Upper
166	100		
165	86.0	69.9	129.9



#37
Phenanthrene
Concen: 0.06 ppm m
RT: 7.786 min Scan# 1401
Delta R.T. -0.014 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:178 Resp: 3146

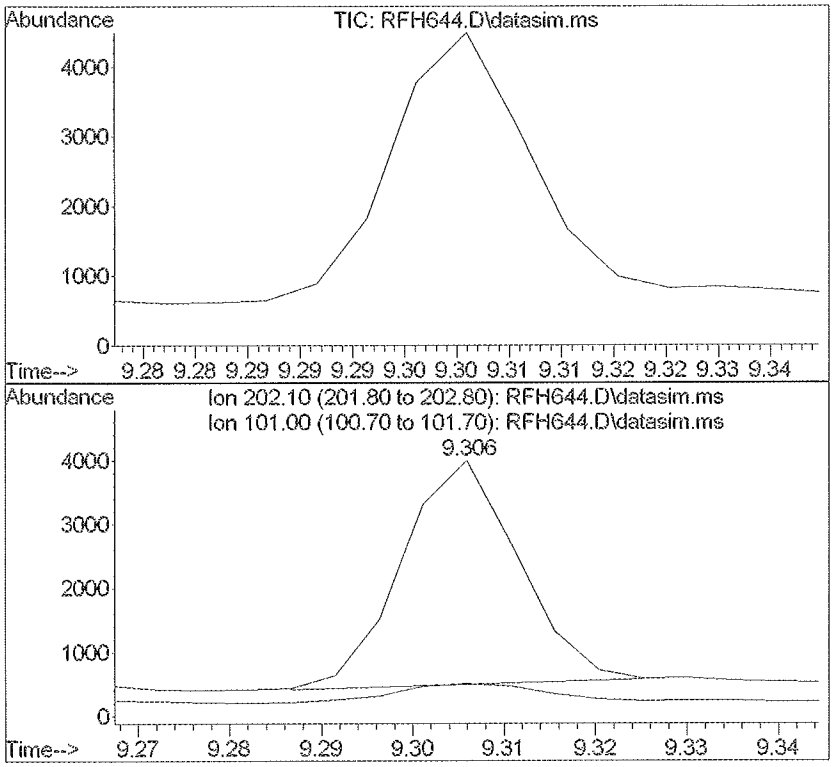
Ion	Ratio	Lower	Upper
178	100		
152	20.8	0.0	39.8



#42
Fluoranthene
Concen: 0.05 ppm m
RT: 9.070 min Scan# 1675
Delta R.T. -0.005 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:202 Resp: 3029

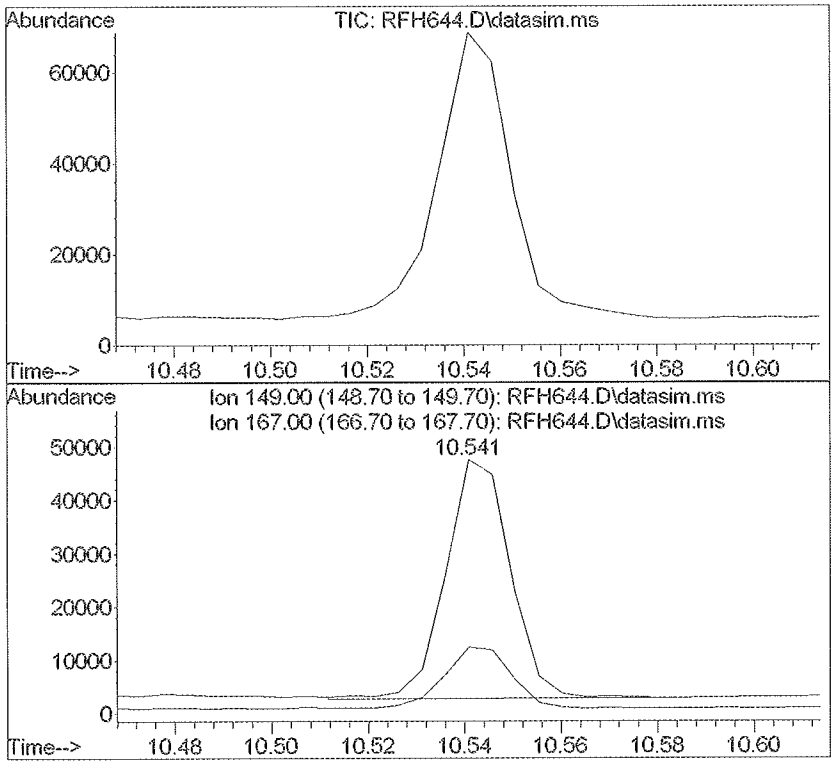
Ion	Ratio	Lower	Upper
202	100		
101	14.1	0.0	37.1



#43
Pyrene
Concen: 0.05 ppm m
RT: 9.306 min Scan# 1724
Delta R.T. -0.005 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:202 Resp: 3118

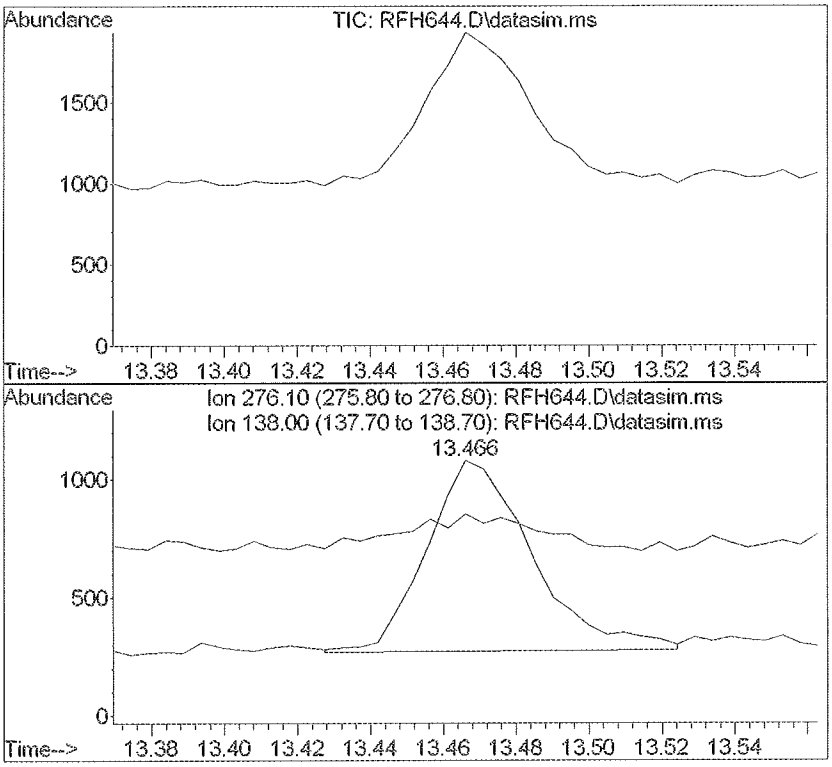
Ion	Ratio	Lower	Upper
202	100		
101	28.3	0.0	38.4



#48
bis(2-Ethylhexyl)phthalate
Concen: 1.24 ppm
RT: 10.541 min Scan# 2002
Delta R.T. -0.019 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

Tgt Ion:149 Resp: 41564

Ion	Ratio	Lower	Upper
149	100		
167	27.5	0.0	54.4



#58
Benzo(g,h,i)perylene
Concen: 0.03 ppm
RT: 13.466 min Scan# 2615
Delta R.T. 0.005 min
Lab File: RFH644.D
Acq: 29 Jun 2018 19:39

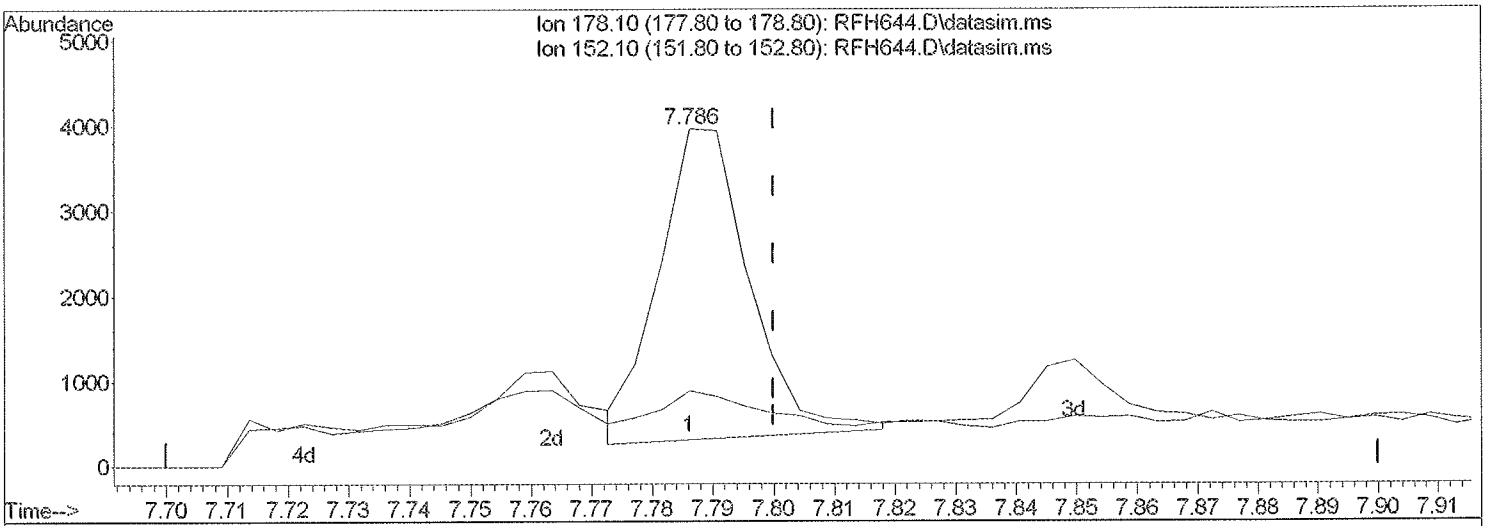
Tgt Ion:276 Resp: 1614

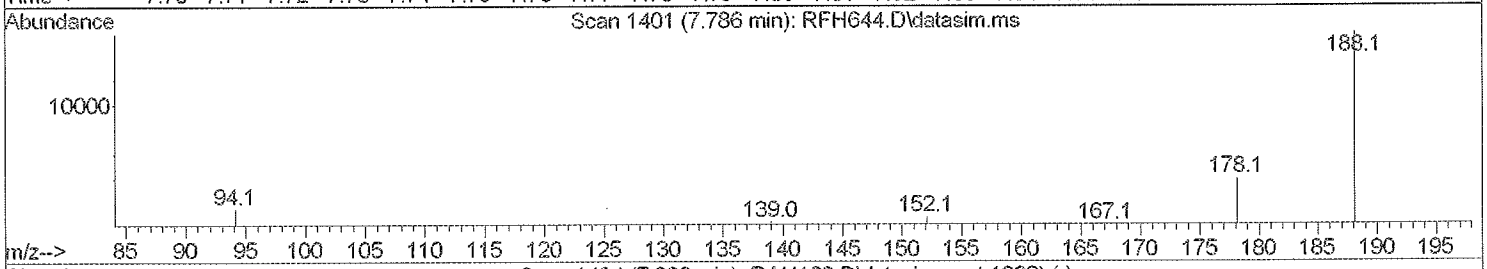
Ion	Ratio	Lower	Upper
276	100		
138	31.3	0.0	45.0

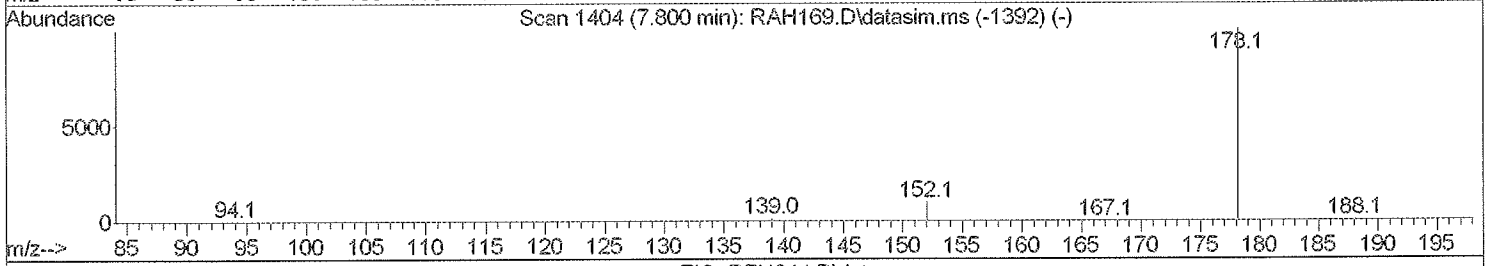
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH644.D
Acq On : 29 Jun 2018 19:39
Sample : 18F187-17 2X
Misc :
Integrator: RTE
Quant Time: Jul 06 14:17:52 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 24
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH644.D\data.ms

(37) Phenanthrene (T,P)

7.786min (-0.014) 0.07 ppm

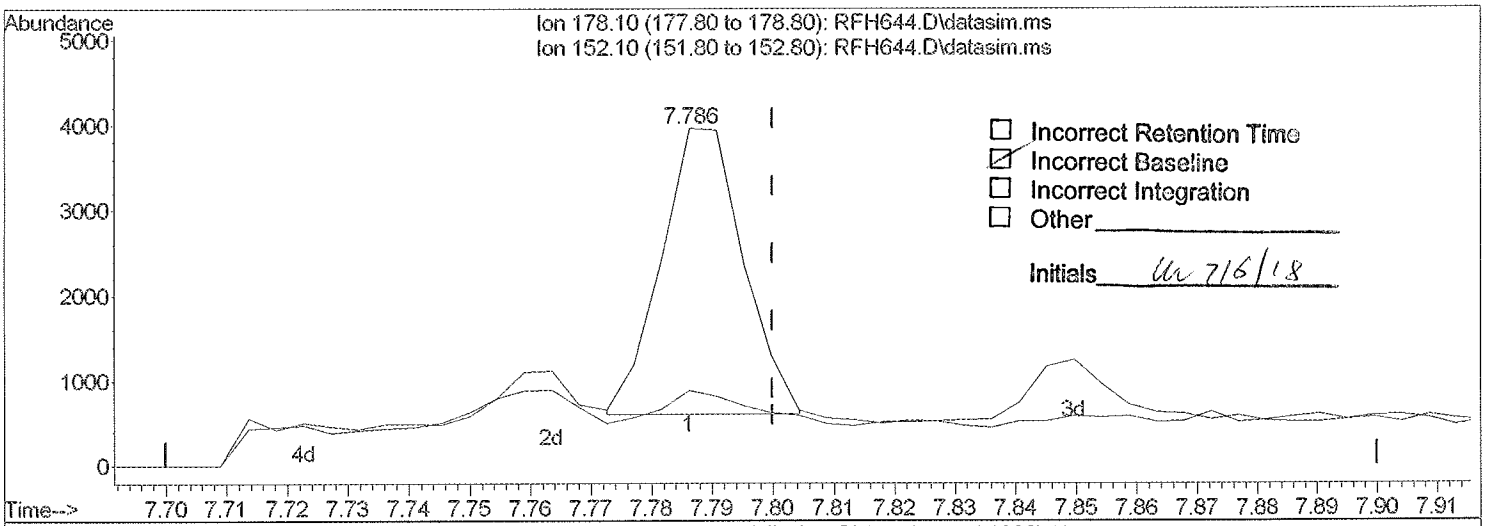
response 3803

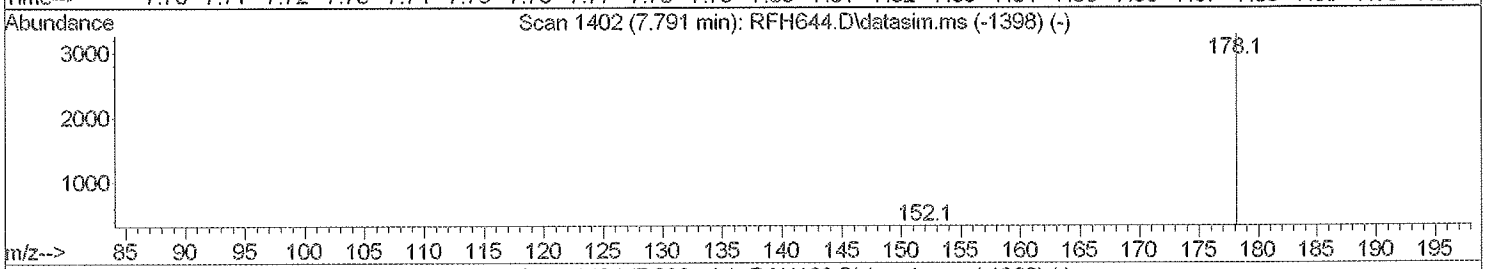
Ion	Exp%	Act%
178.10	100	100
152.10	9.80	17.17
0.00	0.00	0.00
0.00	0.00	0.00

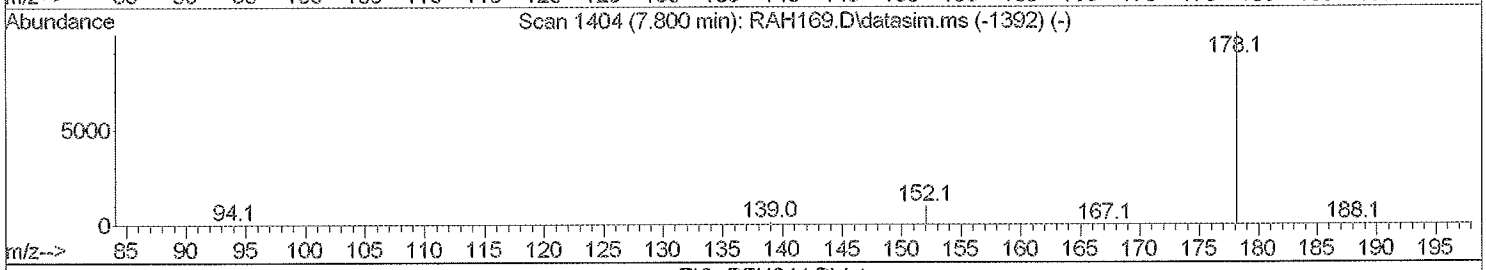
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH644.D
Acq On : 29 Jun 2018 19:39
Sample : 18F187-17 2X
Misc :
Integrator: RTE
Quant Time: Jul 06 14:17:52 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 24
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH644.D\data.ms

(37) Phenanthrene (T,P)

7.786min (-0.014) 0.06 ppm m

response 3146

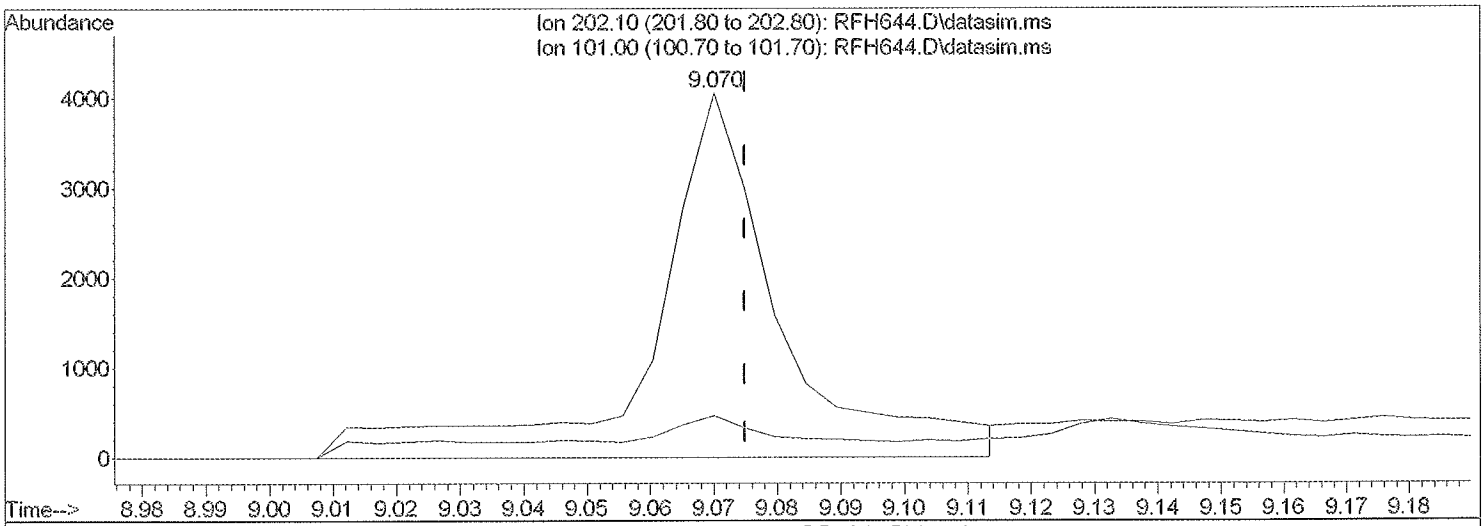
Ion	Exp%	Act%
178.10	100	100
152.10	9.80	20.76
0.00	0.00	0.00
0.00	0.00	0.00

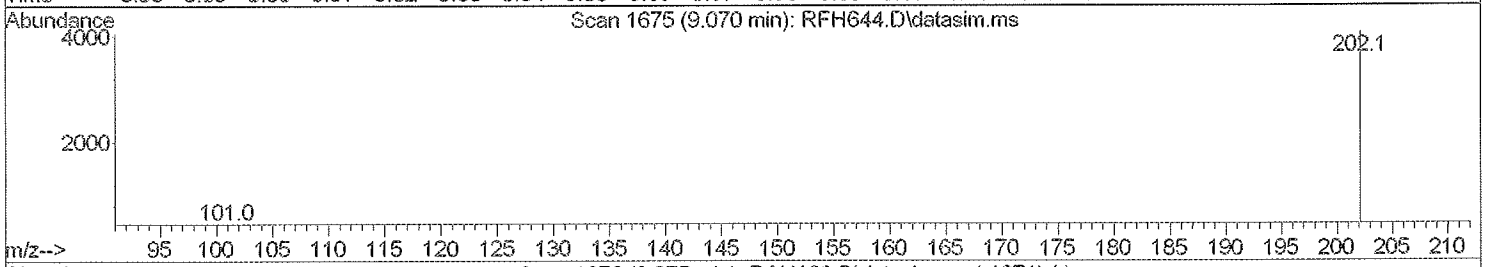
7/10/18

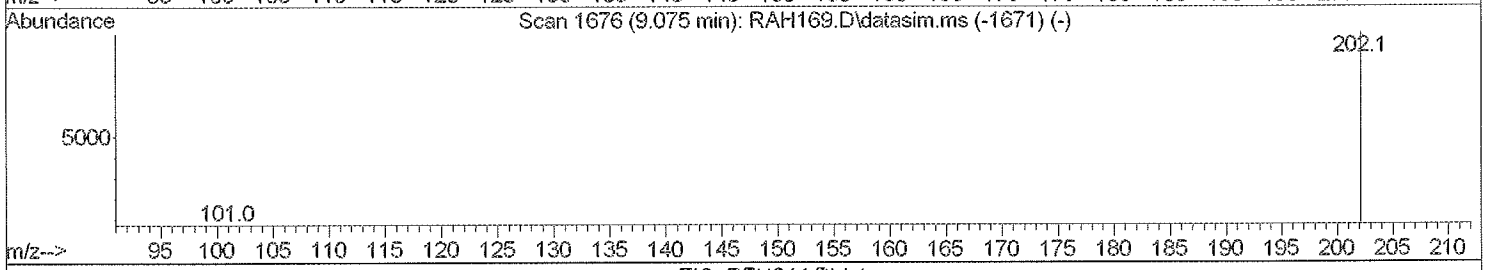
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH644.D
Acq On : 29 Jun 2018 19:39
Sample : 18F187-17 2X
Misc :
Integrator: RTE
Quant Time: Jul 06 14:17:52 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 24
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH644.D\data.ms

(42) Fluoranthene (C,P)

9.070min (-0.005) 0.09 ppm

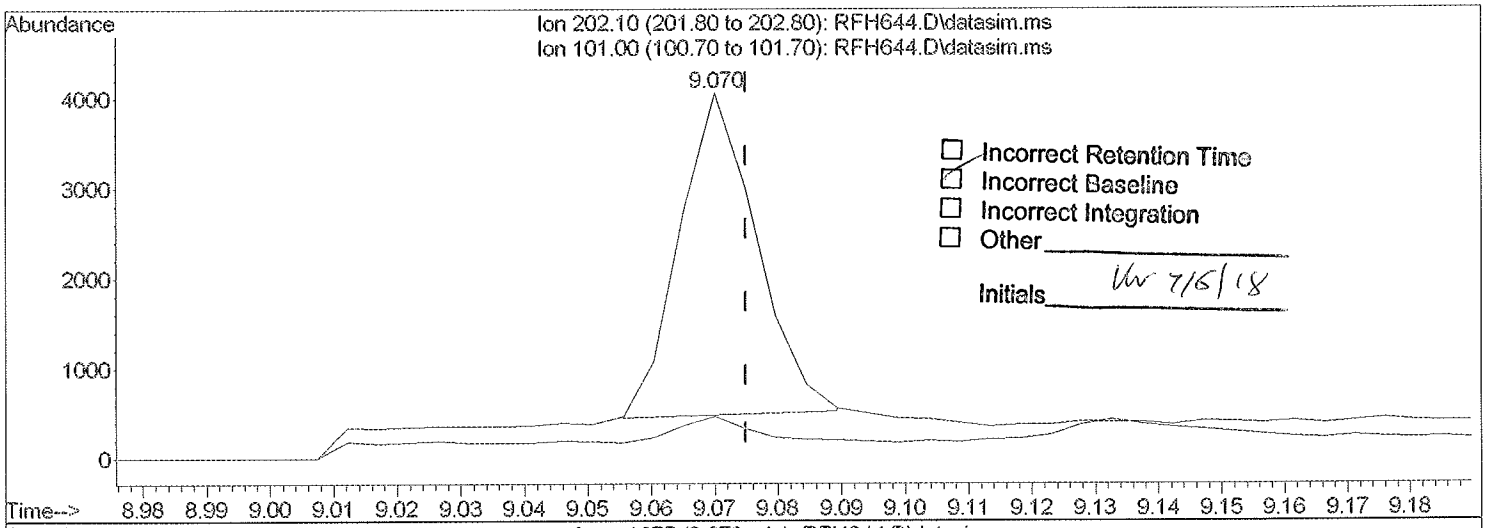
response 5694

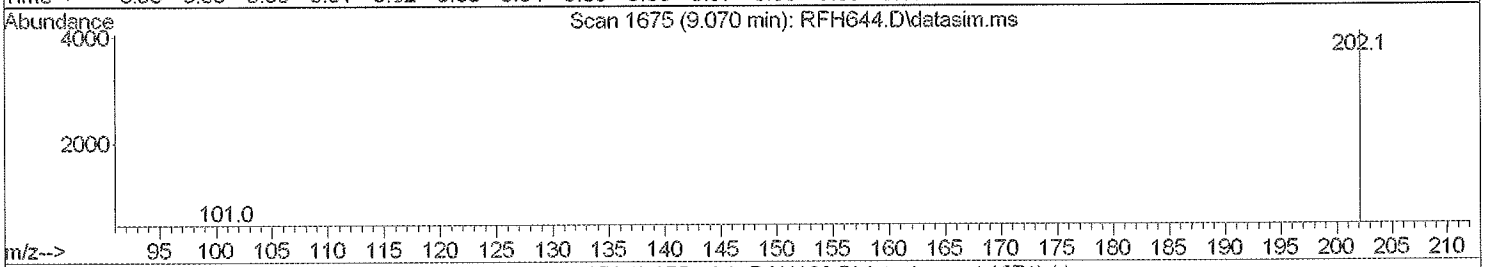
Ion	Exp%	Act%
202.10	100	100
101.00	7.10	7.50
0.00	0.00	0.00
0.00	0.00	0.00

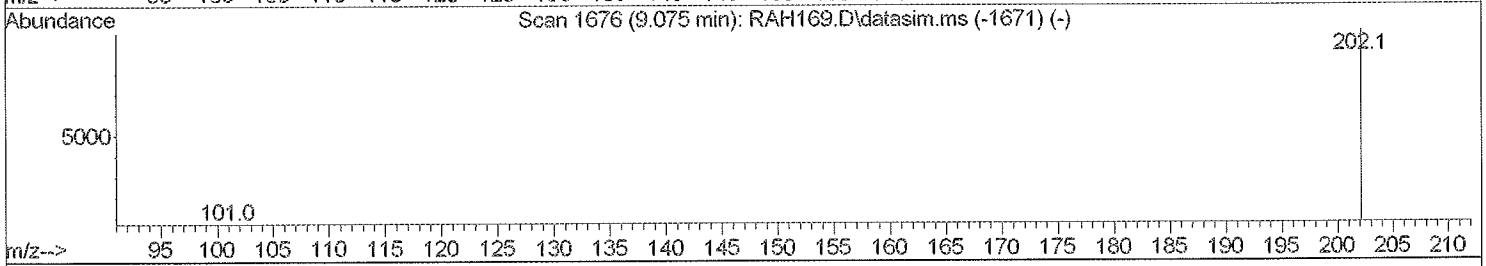
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH644.D
Acq On : 29 Jun 2018 19:39
Sample : 18F187-17 2X
Misc :
Integrator: RTE
Quant Time: Jul 06 14:17:52 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 24
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH644.D\data.ms

(42) Fluoranthene (C,P)

9.070min (-0.005) 0.05 ppm m

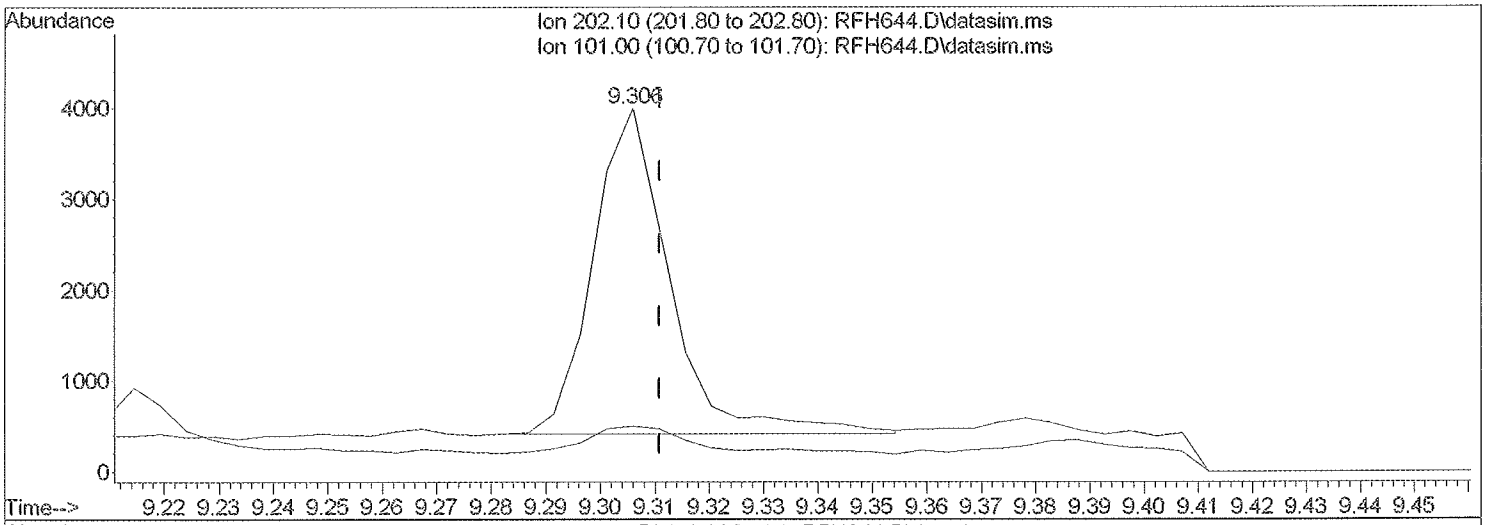
response 3029

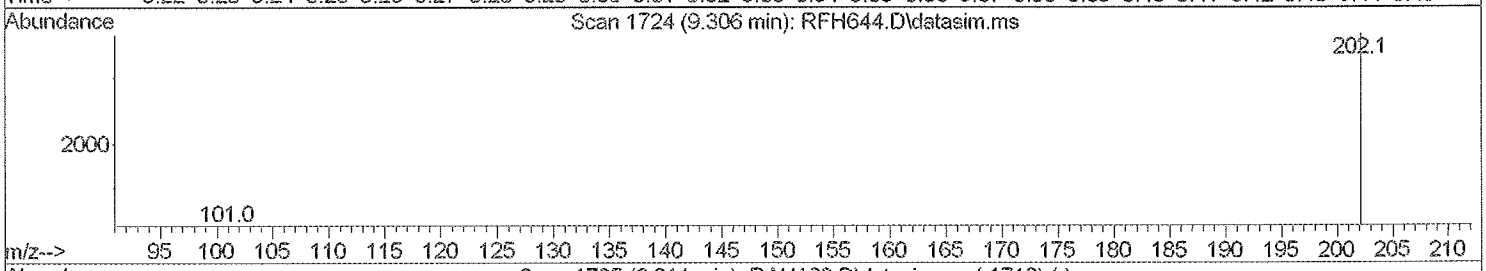
Ion	Exp%	Act%
202.10	100	100
101.00	7.10	14.10
0.00	0.00	0.00
0.00	0.00	0.00

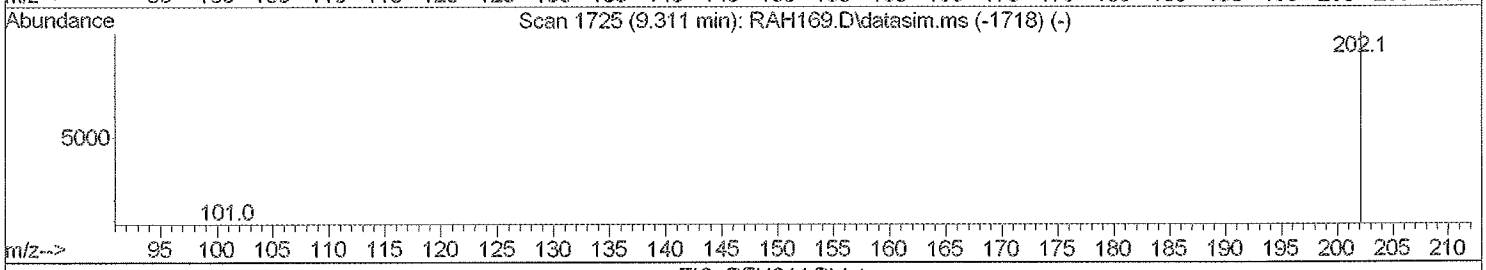
7/10/18

Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH644.D Vial: 24
Acq On : 29 Jun 2018 19:39 Operator: RZh
Sample : 18F187-17 2X Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:17:52 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M







TIC: RFH644.D\data.ms

(43) Pyrene (T,P)

9.306min (-0.005) 0.05 ppm

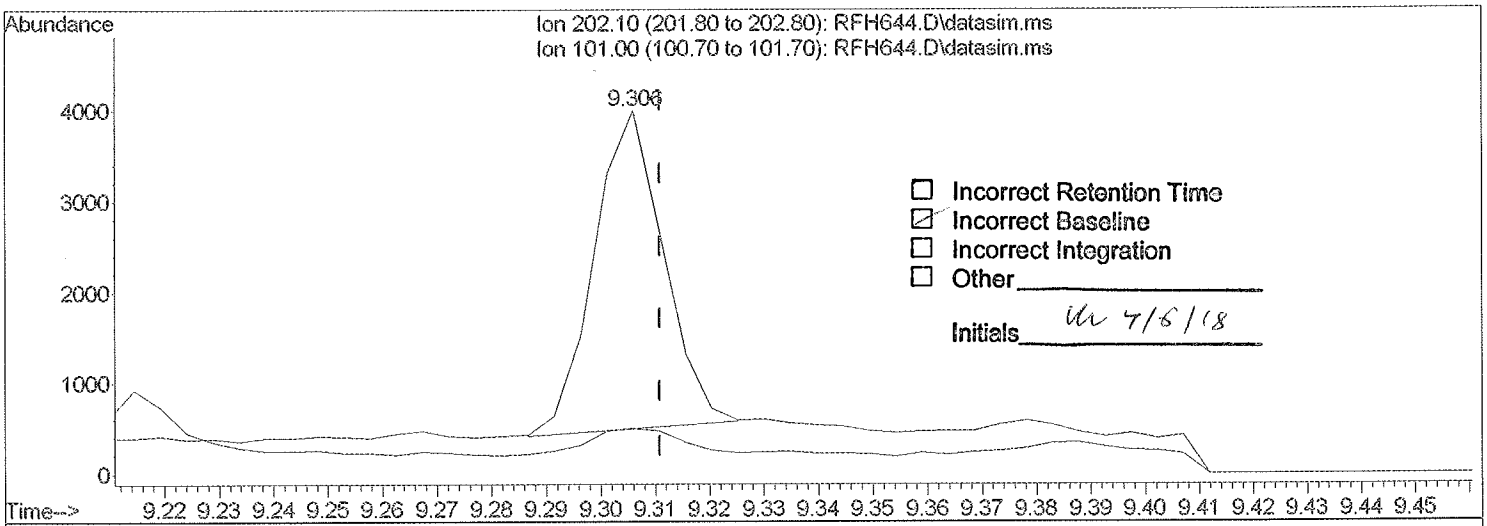
response 3501

Ion	Exp%	Act%
202.10	100	100
101.00	8.40	25.19
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

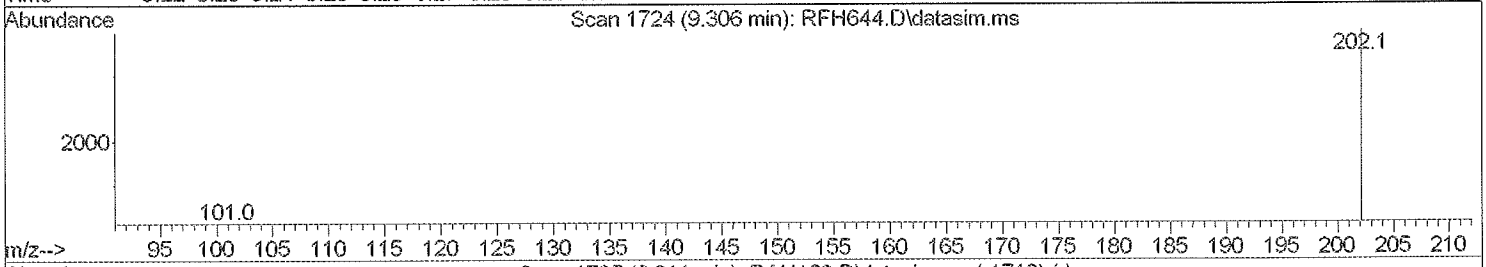
Data File : D:\DATA\18F29\RFH644.D
Acq On : 29 Jun 2018 19:39
Sample : 18F187-17 2X
Misc :
Integrator: RTE
Quant Time: Jul 06 14:17:52 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

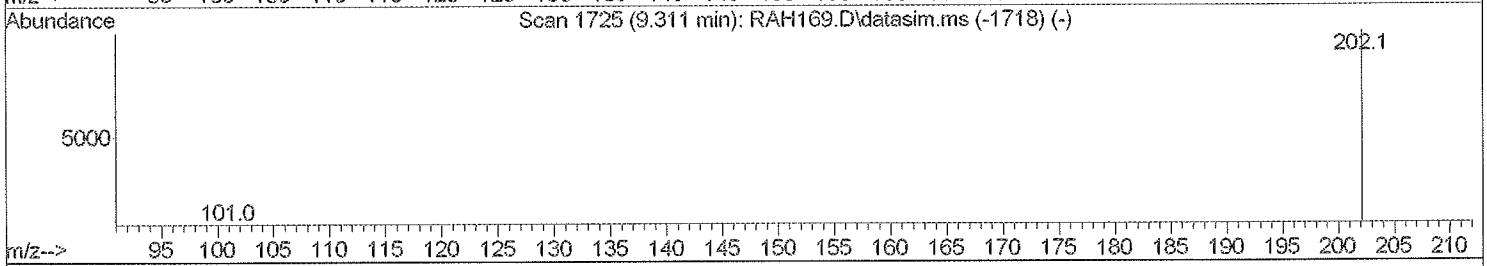
Vial: 24
Operator: RZh
Inst : E7
Multiplr: 1.00



☐ Incorrect Retention Time
☑ Incorrect Baseline
☐ Incorrect Integration
☐ Other_____

Initials MR 7/6/18





TIC: RFH644.D\data.ms

(43) Pyrene (T,P)

9.306min (-0.005) 0.05 ppm m

response 3118

Ion	Exp%	Act%
202.10	100	100
101.00	8.40	28.29
0.00	0.00	0.00
0.00	0.00	0.00

MR 7/6/18

QC SUMMARIES

METHOD SW3550B/8270C SIM
PAHs by GC/MS SIM

Client : CH2M HILL	Date Collected: 06/28/18 15:30
Project : JBER T0075	Date Received: 06/28/18
Batch No. : 18F187	Date Extracted: 06/28/18 15:30
Sample ID : MBLK1S	Date Analyzed: 06/29/18 13:37
Lab Samp ID: SVF043SB	Dilution Factor: 1
Lab File ID: RFH625	Matrix: SOIL
Ext Btch ID: 18SVF043S	% Moisture: NA
Calib. Ref.: RAH169	Instrument ID: E7

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Acenaphthene	ND	0.010	0.0012	0.0025
Acenaphthylene	ND	0.010	0.0012	0.0025
Anthracene	ND	0.010	0.0012	0.0025
Benzo (a) anthracene	ND	0.010	0.0025	0.0050
Benzo (a) pyrene	ND	0.010	0.0012	0.0025
Benzo (b) fluoranthene	ND	0.010	0.0012	0.0025
Benzo(k)fluoranthene	ND	0.010	0.0012	0.0025
Benzo (g,h,i) perylene	ND	0.010	0.0012	0.0025
Chrysene	ND	0.010	0.0022	0.0050
Dibenzo (a,h) anthracene	ND	0.010	0.0012	0.0025
Fluoranthene	ND	0.010	0.0012	0.0025
Fluorene	ND	0.010	0.0012	0.0025
Indeno (1,2,3-c,d) pyrene	ND	0.010	0.0012	0.0025
Naphthalene	ND	0.010	0.0012	0.0025
Phenanthrene	ND	0.010	0.0012	0.0025
Pyrene	ND	0.010	0.0012	0.0025
2-Methylnaphthalene	ND	0.010	0.0012	0.0025
1-Methylnaphthalene	ND	0.010	0.0012	0.0025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
2,4,6-Tribromophenol	1.54	2.00	77	46-122
2-Fluorobiphenyl	0.460	0.667	69	46-115
Nitrobenzene-d5	0.536	0.667	80	44-125
Terphenyl-d14	0.581	0.667	87	58-133

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount : 30g	Final Volume : 2ml
Prepared by : JVille	Analyzed by : KVu

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER T0075
BATCH NO. : 18F187
METHOD : SW3550B/8270C SIM

MATRIX	: SOIL		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1S	LCS1S	LCD1S
LAB SAMPLE ID	: SVF043SB	SVF043SL	SVF043SC
LAB FILE ID	: RFH625	RFH626	RFH627
DATE PREPARED	: 06/28/18 15:30	06/28/18 15:30	06/28/18 15:30
DATE ANALYZED	: 06/29/18 13:37	06/29/18 13:56	06/29/18 14:15
PREP BATCH	: 18SVF043S	18SVF043S	18SVF043S
CALIBRATION REF	: RAH169	RAH169	RAH169

ACCESSION:

PARAMETERS	MBResult (mg/kg)	SpikeAmt (mg/kg)	LCSResult (mg/kg)	LCSRec (%)	SpikeAmt (mg/kg)	LCDResult (mg/kg)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Acenaphthene	ND	1.33	1.05	79	1.33	1.05	79	0	44-111	20
Acenaphthylene	ND	1.33	1.08	81	1.33	1.09	82	1	39-116	20
Anthracene	ND	1.33	1.08	81	1.33	1.08	81	0	50-114	20
Benzo (a) anthracene	ND	1.33	1.08	81	1.33	1.14	86	5	54-122	20
Benzo (a) pyrene	ND	1.33	1.24	93	1.33	1.20	90	3	50-125	20
Benzo (b) fluoranthene	ND	1.33	1.17	88	1.33	1.13	85	3	53-128	20
Benzo(k)fluoranthene	ND	1.33	1.12	84	1.33	1.17	88	4	56-123	20
Benzo (g,h,i) perylene	ND	1.33	1.12	84	1.33	1.10	83	2	49-127	20
Chrysene	ND	1.33	1.09	82	1.33	1.16	87	6	57-118	20
Dibenzo (a,h) anthracene	ND	1.33	1.17	88	1.33	1.16	87	1	50-129	20
Fluoranthene	ND	1.33	1.11	83	1.33	1.12	84	1	55-119	20
Fluorene	ND	1.33	1.05	79	1.33	1.05	79	0	47-114	20
Indeno (1,2,3-c,d) pyrene	ND	1.33	1.15	86	1.33	1.14	86	1	49-130	20
Naphthalene	ND	1.33	0.992	74	1.33	0.986	74	1	38-111	20
Phenanthrene	ND	1.33	1.08	81	1.33	1.08	81	0	49-113	20
Pyrene	ND	1.33	1.10	83	1.33	1.13	85	3	55-117	20
2-Methylnaphthalene	ND	1.33	0.986	74	1.33	0.983	74	0	39-114	20
1-Methylnaphthalene	ND	1.33	0.993	74	1.33	0.985	74	1	43-111	20

SURROGATE PARAMETERS	SpikeAmt (mg/kg)	LCSResult (mg/kg)	LCSRec (%)	SpikeAmt (mg/kg)	LCDResult (mg/kg)	LCDRec (%)	QCLimit (%)
2,4,6-Tribromophenol	2.00	1.60	80	2.00	1.57	79	46-122
2-Fluorobiphenyl	0.667	0.464	70	0.667	0.449	67	46-115
Nitrobenzene-d5	0.667	0.524	79	0.667	0.512	77	44-125
Terphenyl-d14	0.667	0.528	79	0.667	0.539	81	58-133

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER T0075
BATCH NO. : 18F187
METHOD : SW3550B/8270C SIM

MATRIX	: SOIL		% MOISTURE:3.9
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 18Q2DP009-SB0501-SO-0	18Q2DP009-SB0501-SO-0MS	18Q2DP009-SB0501-SO-0MSD
LAB SAMPLE ID	: 18F187-07	18F187-07M	18F187-07S
LAB FILE ID	: RFH635	RFH628	RFH629
DATE PREPARED	: 06/28/18 15:30	06/28/18 15:30	06/28/18 15:30
DATE ANALYZED	: 06/29/18 16:47	06/29/18 14:34	06/29/18 14:53
PREP BATCH	: 18SVF043S	18SVF043S	18SVF043S
CALIBRATION REF	: RAH169	RAH169	RAH169

ACCESSION:

PARAMETERS	PSResult (mg/kg)	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Acenaphthene	ND	1.39	1.05	76	1.39	1.13	81	7	44-111	20
Acenaphthylene	ND	1.39	1.09	79	1.39	1.16	84	6	39-116	20
Anthracene	ND	1.39	1.11	80	1.39	1.13	81	2	50-114	20
Benzo (a) anthracene	ND	1.39	1.24	89	1.39	1.23	89	1	54-122	20
Benzo (a) pyrene	ND	1.39	1.22	88	1.39	1.23	89	1	50-125	20
Benzo (b) fluoranthene	ND	1.39	1.20	86	1.39	1.17	84	3	53-128	20
Benzo(k)fluoranthene	ND	1.39	1.20	86	1.39	1.21	87	1	56-123	20
Benzo (g,h,i) perylene	ND	1.39	1.15	83	1.39	1.15	83	0	49-127	20
Chrysene	ND	1.39	1.24	89	1.39	1.23	89	1	57-118	20
Dibenzo (a,h) anthracene	ND	1.39	1.21	87	1.39	1.21	87	0	50-129	20
Fluoranthene	ND	1.39	1.20	86	1.39	1.20	86	0	55-119	20
Fluorene	ND	1.39	1.05	76	1.39	1.09	79	4	47-114	20
Indeno (1,2,3-c,d) pyrene	ND	1.39	1.19	86	1.39	1.18	85	1	49-130	20
Naphthalene	ND	1.39	1.00	72	1.39	1.03	74	3	38-111	20
Phenanthrene	ND	1.39	1.10	79	1.39	1.10	79	0	49-113	20
Pyrene	ND	1.39	1.25	90	1.39	1.21	87	3	55-117	20
2-Methylnaphthalene	ND	1.39	0.965	70	1.39	1.01	73	5	39-114	20
1-Methylnaphthalene	ND	1.39	0.990	71	1.39	1.02	74	3	43-111	20

SURROGATE PARAMETERS	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	QCLimit (%)
2,4,6-Tribromophenol	2.08	1.63	78	2.08	1.68	81	46-122
2-Fluorobiphenyl	0.694	0.451	65	0.694	0.473	68	46-115
Nitrobenzene-d5	0.694	0.530	76	0.694	0.536	77	44-125
Terphenyl-d14	0.694	0.566	82	0.694	0.584	84	58-133

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

QC DATA

Quantitation Report (QT Reviewed)

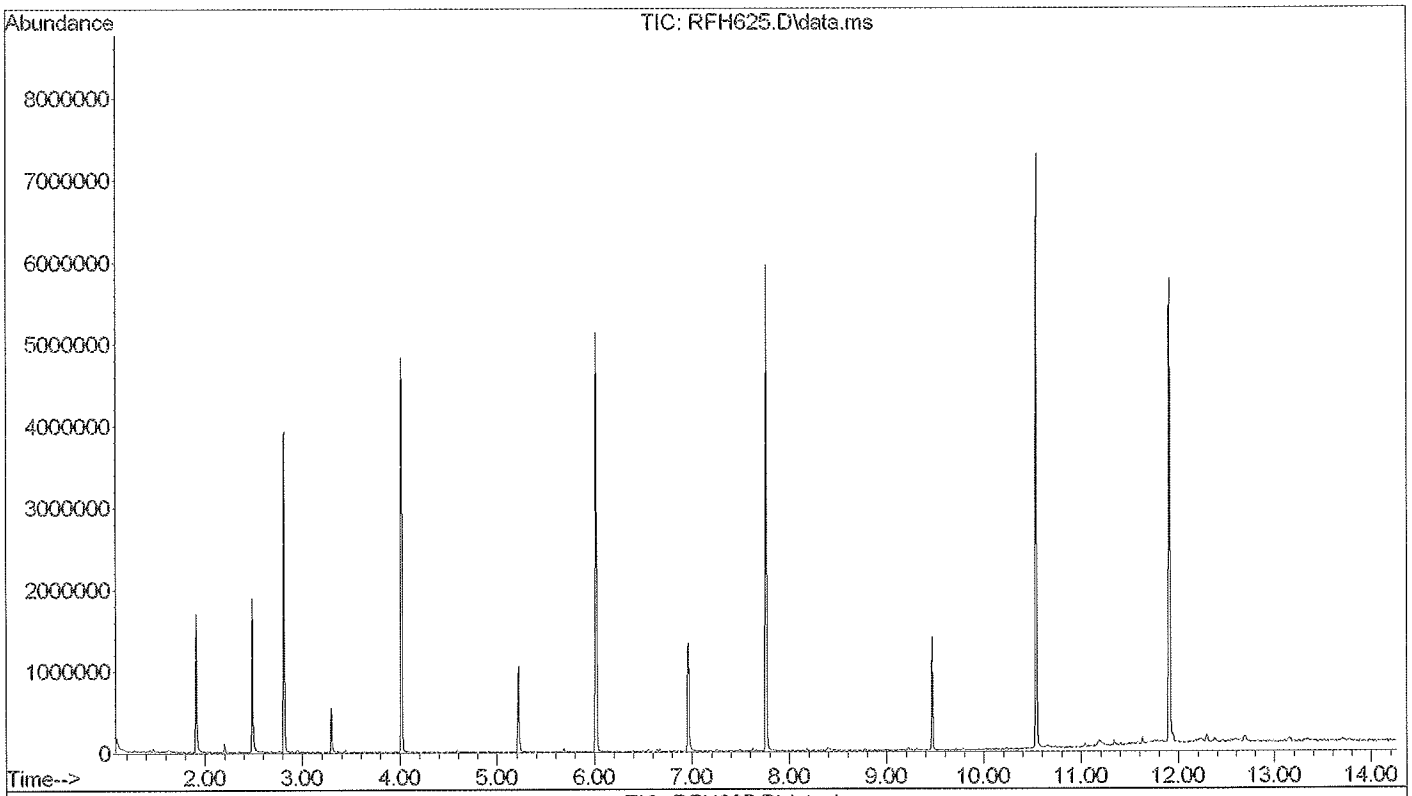
Data File : D:\DATA\18F29\RFH625.D Vial: 5
Acq On : 29 Jun 2018 13:37 Operator: RZh
Sample : SVF043SB Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:20:38 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

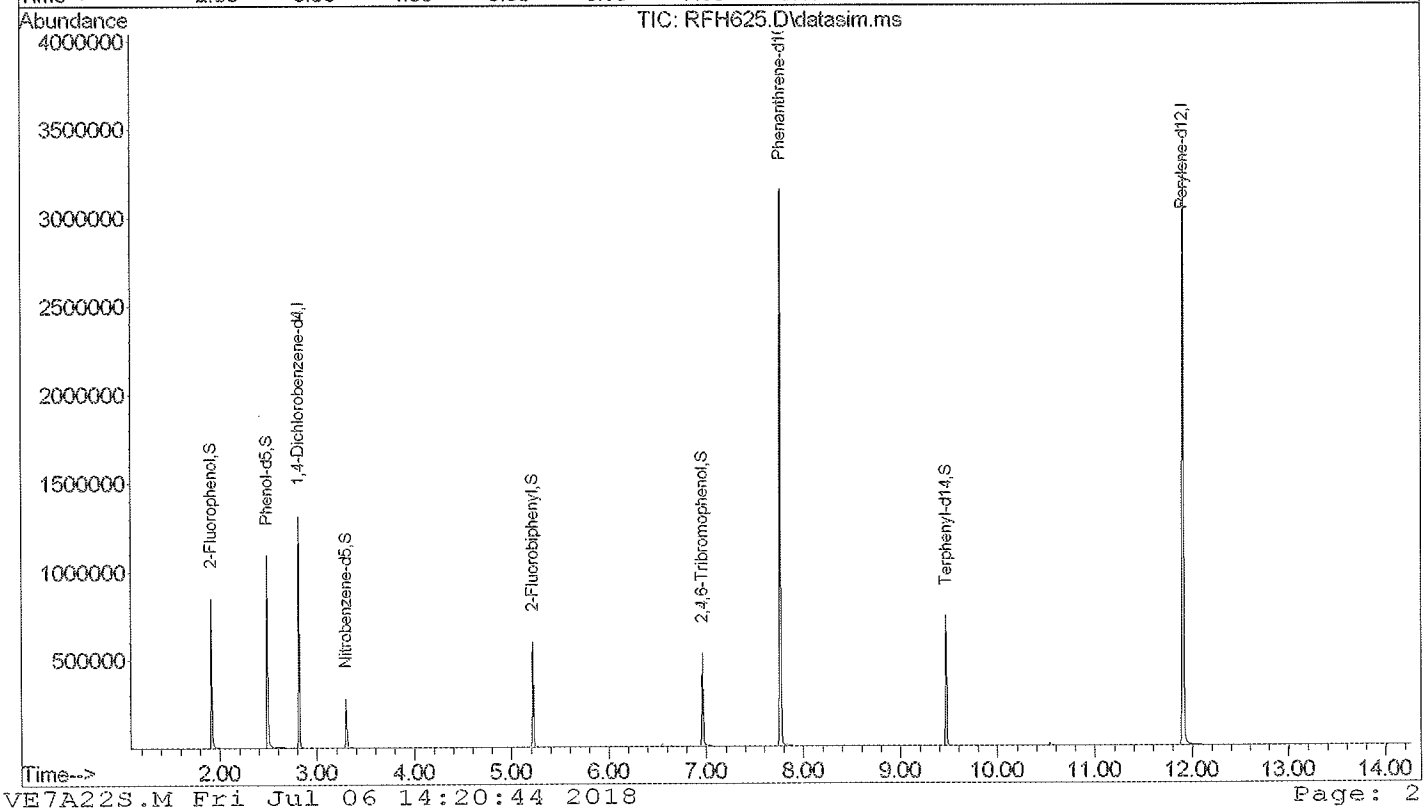
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	608103	40.00	ppm	-0.01
30) Phenanthrene-d10	7.764	188	2726876	40.00	ppm	0.00
49) Perylene-d12	11.903	264	3321144	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	390129	23.84	ppm	0.00
Spiked Amount 30.000			Recovery =	79.47%		
5) Phenol-d5	2.489	99	521133	25.39	ppm	0.00
Spiked Amount 30.000			Recovery =	84.63%		
11) Nitrobenzene-d5	3.298	82	167246	8.05	ppm	0.00
Spiked Amount 10.000			Recovery =	80.50%		
21) 2-Fluorobiphenyl	5.218	172	378865	6.90	ppm	-0.02
Spiked Amount 10.000			Recovery =	69.00%		
33) 2,4,6-Tribromophenol	6.961	330	247543	23.09	ppm	0.00
Spiked Amount 30.000			Recovery =	76.97%		
44) Terphenyl-d14	9.469	244	569557	8.72	ppm	-0.01
Spiked Amount 10.000			Recovery =	87.20%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH625.D Vial: 5
Acq On : 29 Jun 2018 13:37 Operator: RZh
Sample : SVF043SB Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:20:38 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH626.D Vial: 6
Acq On : 29 Jun 2018 13:56 Operator: RZh
Sample : SVF043SL Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:21:33 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	559948	40.00	ppm	-0.01
30) Phenanthrene-d10	7.763	188	2433203	40.00	ppm	0.00
49) Perylene-d12	11.902	264	2674646	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	358220	23.77	ppm	0.00
Spiked Amount 30.000			Recovery =	79.23%		
5) Phenol-d5	2.489	99	489490	25.90	ppm	0.00
Spiked Amount 30.000			Recovery =	86.33%		
11) Nitrobenzene-d5	3.298	82	150288	7.85	ppm	0.00
Spiked Amount 10.000			Recovery =	78.50%		
21) 2-Fluorobiphenyl	5.217	172	351695	6.95	ppm	-0.02
Spiked Amount 10.000			Recovery =	69.50%		
33) 2,4,6-Tribromophenol	6.961	330	230332	24.07	ppm	0.00
Spiked Amount 30.000			Recovery =	80.23%		
44) Terphenyl-d14	9.469	244	461541	7.92	ppm	-0.01
Spiked Amount 10.000			Recovery =	79.20%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	84489	16.21	ppm	99
3] N-nitrosodimethylamine	1.310	74	143381	17.62	ppm	91
6] Phenol	2.499	94	350744	19.45	ppm	96
7] bis(2-chloroethyl)ether	2.583	93	257822	18.01	ppm	99
8] 2-Chlorophenol	2.651	128	279389	16.45	ppm	92
9] N-Nitroso-di-n-propyla...	3.140	70	223086	20.71	ppm	97
10] Hexachloroethane	3.258	117	122551	16.61	ppm	96
12] 2,4-Dimethylphenol	3.644	107	316378	18.28	ppm	90
13] 2,4-Dichlorophenol	3.865	162	278762	16.95	ppm	97
14] Naphthalene	4.038	128	759713	14.88	ppm	100
15] 4-Chloro-3-methylphenol	4.627	107	264127	18.78	ppm	95
16] 2-Methylnaphthalene	4.799	142	546151	14.80	ppm	97
17] 1-Methylnaphthalene	4.910	142	522659	14.90	ppm	97
18] 2,4,6-Trichlorophenol	5.121	196	243211	16.79	ppm	96
19] 2,4,5-Trichlorophenol	5.169	196	240198	16.56	ppm	96
24] Dimethylphthalate	5.708	163	847583	18.88	ppm	99
25] Acenaphthylene	5.847	152	889918	16.19	ppm	99
26] Acenaphthene	6.054	153	623618	15.80	ppm	96
28] Diethylphthalate	6.556	149	875412	20.16	ppm	98
29] Fluorene	6.673	166	691267	15.75	ppm	97
31] N-Nitrosodiphenylamine	6.828	169	647574	19.08	ppm	100
32] Azobenzene	6.871	77	705709	21.12	ppm	100
34] Hexachlorobenzene	7.321	284	346455	17.67	ppm	98
35] Pentachlorophenol	7.553	266	165490	16.08	ppm	99
36] Dibenzothiophene	7.643	184	1084386	17.38	ppm	100
37] Phenanthrene	7.786	178	1075512	16.22	ppm	99
38] Anthracene	7.845	178	1047709	16.27	ppm	99
39] Carbazole	8.031	167	943142	18.67	ppm	100
40] Di-n-butylphthalate	8.418	149	1312542	21.84	ppm	99
42] Fluoranthene	9.065	202	1246533	16.72	ppm	98
43] Pyrene	9.301	202	1296876	16.48	ppm	97
45] Butylbenzylphthalate	9.974	149	543057	20.20	ppm	97
46] Benzo(a)anthracene	10.531	228	1280696	16.27	ppm	100
47] Chrysene	10.565	228	1223853	16.32	ppm	98
48] bis(2-Ethylhexyl)phtha...	10.545	149	800957	19.28	ppm	99

Quantitation Report (QT Reviewed)

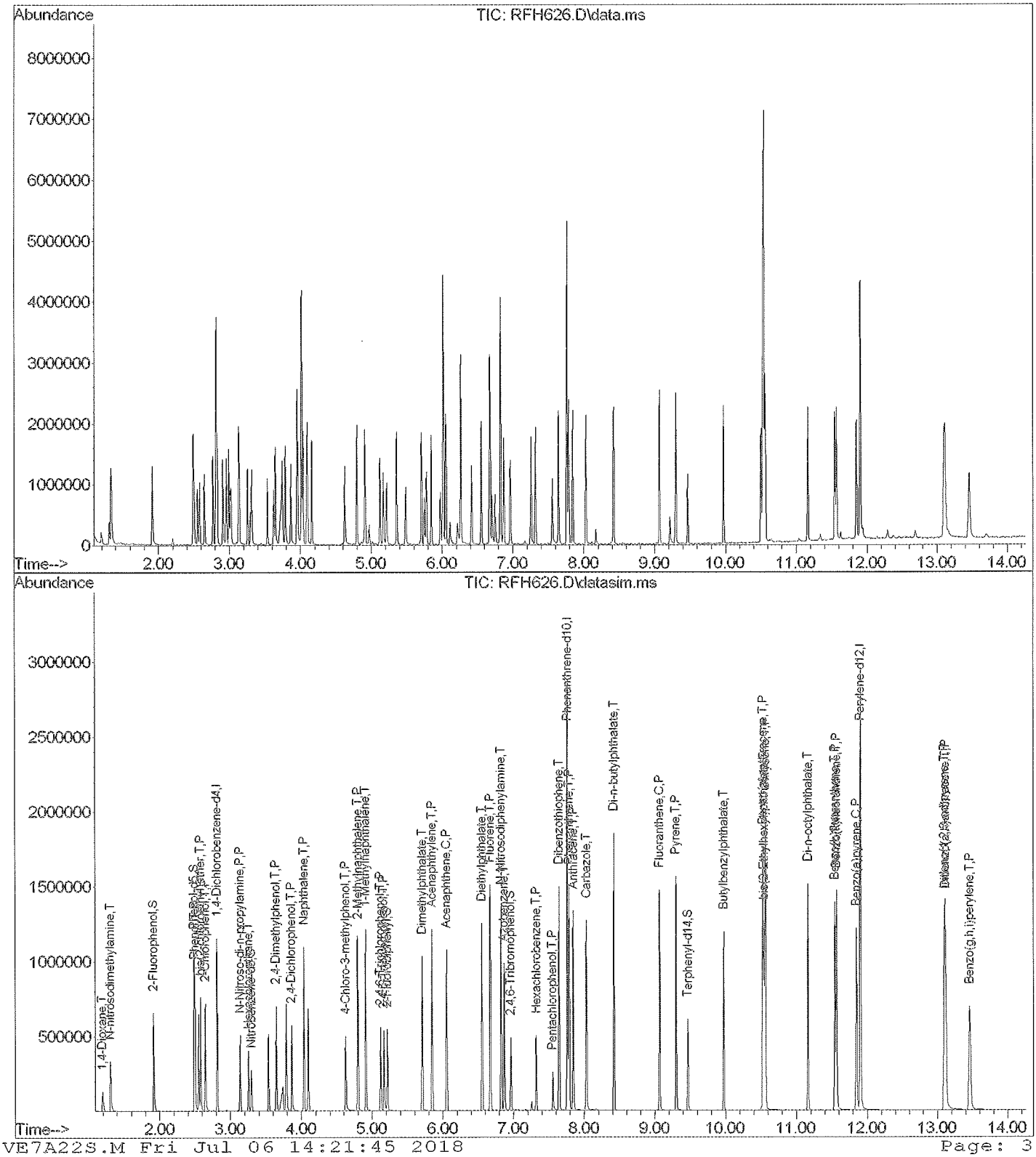
Data File : D:\DATA\18F29\RFH626.D Vial: 6
Acq On : 29 Jun 2018 13:56 Operator: RZh
Sample : SVF043SL Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:21:33 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50] Di-n-octylphthalate	11.162	149	1207418	18.34	ppm	99
51] Benzo(b)fluoranthene	11.541	252	1252736	17.58	ppm	96
52] Benzo(k)fluoranthene	11.565	252	1201278	16.86	ppm	99
54] Benzo(a)pyrene	11.846	252	1205305	18.54	ppm	98
56] Indeno(1,2,3-cd)pyrene	13.102	276	1392413	17.24	ppm	95
57] Dibenzo(a,h)anthracene	13.111	278	1172283	17.60	ppm	97
58] Benzo(g,h,i)perylene	13.456	276	1100426	16.76	ppm	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH626.D Vial: 6
Acq On : 29 Jun 2018 13:56 Operator: RZh
Sample : SVF043SL Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:21:33 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH627.D Vial: 7
Acq On : 29 Jun 2018 14:15 Operator: RZh
Sample : SVF043SC Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:22:03 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	586839	40.00	ppm	-0.01
30) Phenanthrene-d10	7.764	188	2554347	40.00	ppm	0.00
49) Perylene-d12	11.903	264	2944494	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	353398	22.38	ppm	0.00
Spiked Amount 30.000			Recovery =	74.60%		
5) Phenol-d5	2.489	99	491877	24.83	ppm	0.00
Spiked Amount 30.000			Recovery =	82.77%		
11) Nitrobenzene-d5	3.298	82	154153	7.69	ppm	0.00
Spiked Amount 10.000			Recovery =	76.90%		
21) 2-Fluorobiphenyl	5.218	172	357040	6.73	ppm	-0.02
Spiked Amount 10.000			Recovery =	67.30%		
33) 2,4,6-Tribromophenol	6.966	330	236043	23.50	ppm	0.00
Spiked Amount 30.000			Recovery =	78.33%		
44) Terphenyl-d14	9.469	244	495166	8.09	ppm	-0.01
Spiked Amount 10.000			Recovery =	80.90%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	81775	14.97	ppm	99
3] N-nitrosodimethylamine	1.310	74	144273	16.92	ppm	93
6] Phenol	2.499	94	359799	19.04	ppm	96
7] bis(2-chloroethyl)ether	2.583	93	265711	17.71	ppm	100
8] 2-Chlorophenol	2.650	128	288283	16.19	ppm	93
9] N-Nitroso-di-n-propyla...	3.140	70	238179	21.10	ppm	97
10] Hexachloroethane	3.258	117	126346	16.34	ppm	96
12] 2,4-Dimethylphenol	3.644	107	329780	18.18	ppm	89
13] 2,4-Dichlorophenol	3.865	162	291416	16.91	ppm	97
14] Naphthalene	4.039	128	791393	14.79	ppm	100
15] 4-Chloro-3-methylphenol	4.627	107	268704	18.23	ppm	95
16] 2-Methylnaphthalene	4.800	142	570163	14.74	ppm	97
17] 1-Methylnaphthalene	4.910	142	542982	14.77	ppm	97
18] 2,4,6-Trichlorophenol	5.121	196	252806	16.65	ppm	96
19] 2,4,5-Trichlorophenol	5.169	196	249707	16.43	ppm	96
24] Dimethylphthalate	5.708	163	887084	18.86	ppm	99
25] Acenaphthylene	5.848	152	942187	16.36	ppm	99
26] Acenaphthene	6.054	153	650764	15.73	ppm	96
28] Diethylphthalate	6.556	149	880397	19.34	ppm	98
29] Fluorene	6.673	166	723543	15.73	ppm	97
31] N-Nitrosodiphenylamine	6.828	169	670675	18.82	ppm	100
32] Azobenzene	6.871	77	748412	21.34	ppm	100
34] Hexachlorobenzene	7.322	284	355549	17.28	ppm	99
35] Pentachlorophenol	7.553	266	174362	16.14	ppm	99
36] Dibenzothiophene	7.643	184	1131199	17.27	ppm	100
37] Phenanthrene	7.786	178	1124426	16.15	ppm	99
38] Anthracene	7.845	178	1097235	16.23	ppm	99
39] Carbazole	8.031	167	1033688	19.50	ppm	99
40] Di-n-butylphthalate	8.418	149	1314659	20.84	ppm	99
42] Fluoranthene	9.065	202	1314477	16.80	ppm	98
43] Pyrene	9.301	202	1396362	16.90	ppm	98
45] Butylbenzylphthalate	9.974	149	570636	20.22	ppm	97
46] Benzo(a)anthracene	10.526	228	1417951	17.16	ppm	99
47] Chrysene	10.565	228	1373616	17.45	ppm	98
48] bis(2-Ethylhexyl)phtha...	10.545	149	882300	20.23	ppm	99

Quantitation Report (QT Reviewed)

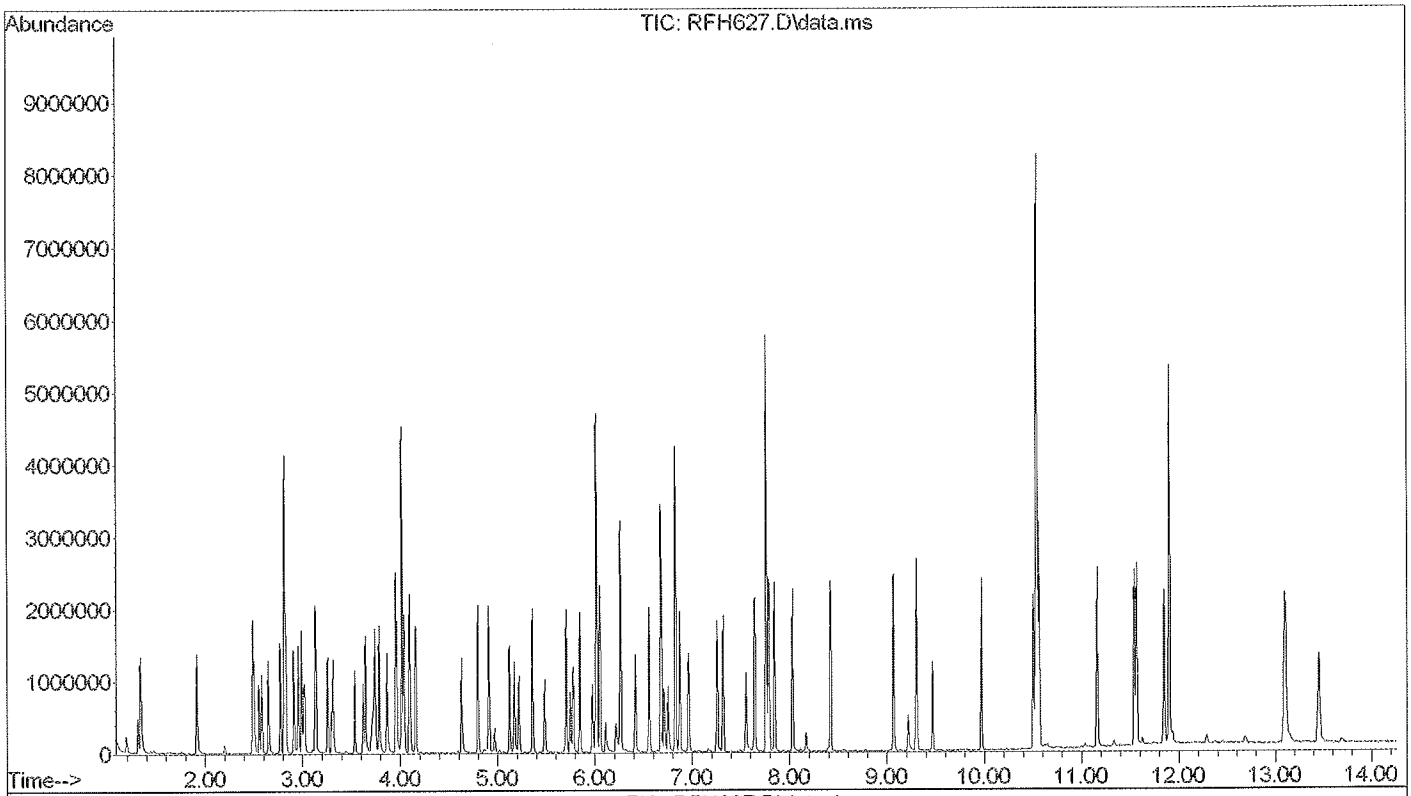
Data File : D:\DATA\18F29\RFH627.D Vial: 7
Acq On : 29 Jun 2018 14:15 Operator: RZh
Sample : SVF043SC Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:22:03 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

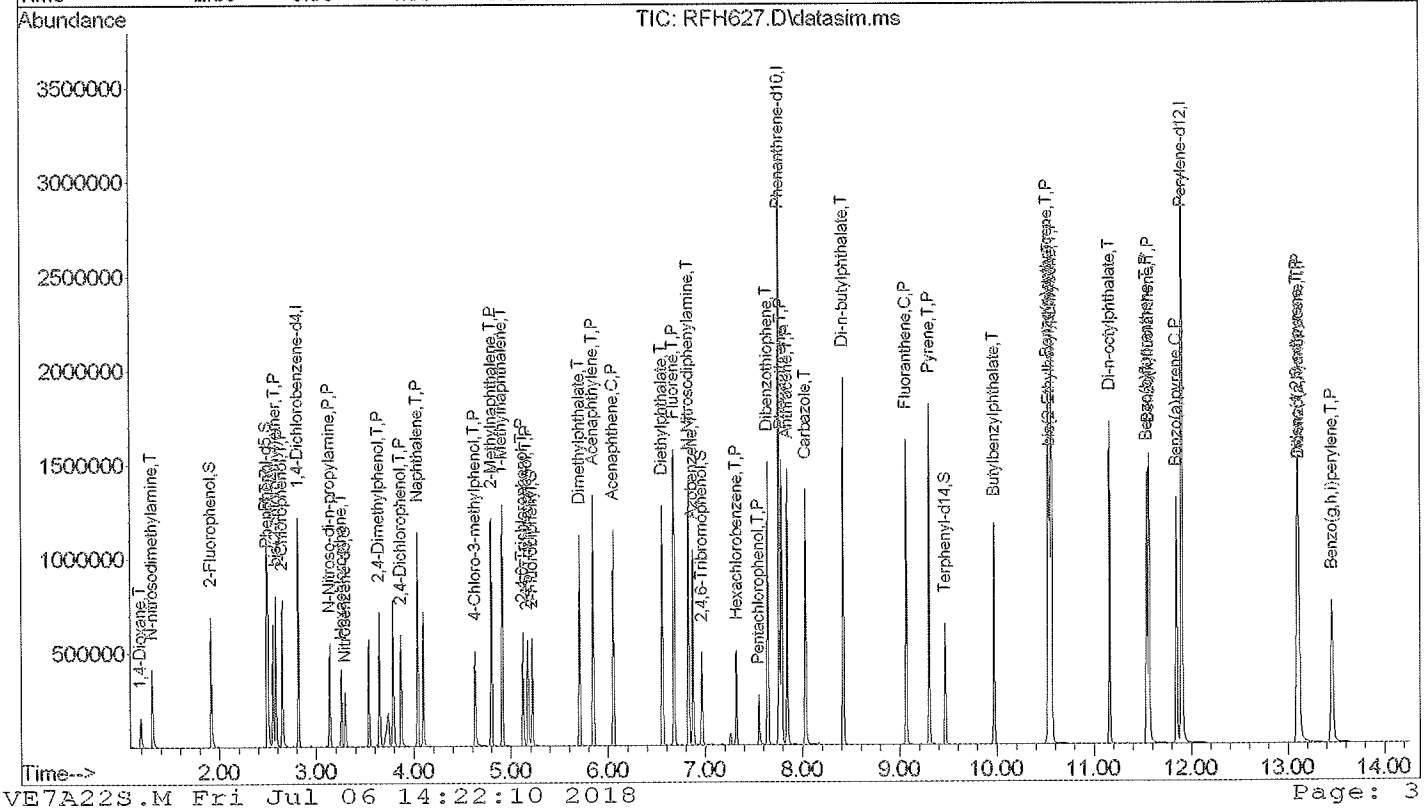
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50] Di-n-octylphthalate	11.162	149	1336978	18.45	ppm	99
51] Benzo(b)fluoranthene	11.541	252	1335106	17.02	ppm	97
52] Benzo(k)fluoranthene	11.565	252	1381049	17.61	ppm	97
54] Benzo(a)pyrene	11.846	252	1286569	17.97	ppm	97
56] Indeno(1,2,3-cd)pyrene	13.097	276	1515521	17.04	ppm	95
57] Dibenzo(a,h)anthracene	13.111	278	1279485	17.45	ppm	97
58] Benzo(g,h,i)perylene	13.456	276	1194455	16.53	ppm	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH627.D Vial: 7
Acq On : 29 Jun 2018 14:15 Operator: RZh
Sample : SVF043SC Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:22:03 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH628.D Vial: 8
Acq On : 29 Jun 2018 14:34 Operator: RZh
Sample : 18F187-07M Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:22:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	612988	40.00	ppm	-0.01
30) Phenanthrene-d10	7.764	188	2826453	40.00	ppm	0.00
49) Perylene-d12	11.903	264	3448792	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	362490	21.97	ppm	0.00
Spiked Amount 30.000			Recovery =	73.23%		
5) Phenol-d5	2.489	99	497791	24.06	ppm	0.00
Spiked Amount 30.000			Recovery =	80.20%		
11) Nitrobenzene-d5	3.298	82	160018	7.64	ppm	0.00
Spiked Amount 10.000			Recovery =	76.40%		
21) 2-Fluorobiphenyl	5.218	172	360132	6.50	ppm	-0.02
Spiked Amount 10.000			Recovery =	65.00%		
33) 2,4,6-Tribromophenol	6.961	330	261310	23.51	ppm	0.00
Spiked Amount 30.000			Recovery =	78.37%		
44) Terphenyl-d14	9.469	244	552899	8.17	ppm	-0.01
Spiked Amount 10.000			Recovery =	81.70%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	86559	15.17	ppm	99
3] N-nitrosodimethylamine	1.310	74	148542	16.67	ppm	92
6] Phenol	2.499	94	363255	18.40	ppm	96
7] bis(2-chloroethyl)ether	2.583	93	272994	17.42	ppm	99
8] 2-Chlorophenol	2.650	128	293643	15.79	ppm	92
9] N-Nitroso-di-n-propyla...	3.140	70	240288	20.37	ppm	97
10] Hexachloroethane	3.258	117	133417	16.52	ppm	96
12] 2,4-Dimethylphenol	3.644	107	341619	18.03	ppm	88
13] 2,4-Dichlorophenol	3.865	162	304935	16.94	ppm	97
14] Naphthalene	4.039	128	809442	14.49	ppm	100
15] 4-Chloro-3-methylphenol	4.627	107	286957	18.64	ppm	95
16] 2-Methylnaphthalene	4.800	142	562306	13.92	ppm	97
17] 1-Methylnaphthalene	4.910	142	548271	14.28	ppm	96
18] 2,4,6-Trichlorophenol	5.121	196	258196	16.28	ppm	96
19] 2,4,5-Trichlorophenol	5.169	196	264648	16.67	ppm	96
24] Dimethylphthalate	5.708	163	912707	18.57	ppm	99
25] Acenaphthylene	5.848	152	946844	15.74	ppm	99
26] Acenaphthene	6.054	153	653516	15.13	ppm	96
28] Diethylphthalate	6.556	149	901015	18.95	ppm	98
29] Fluorene	6.673	166	728422	15.16	ppm	97
31] N-Nitrosodiphenylamine	6.828	169	709212	17.98	ppm	100
32] Azobenzene	6.871	77	750459	19.34	ppm	100
34] Hexachlorobenzene	7.322	284	382332	16.79	ppm	99
35] Pentachlorophenol	7.553	266	204474	17.10	ppm	99
36] Dibenzothiophene	7.643	184	1236955	17.07	ppm	100
37] Phenanthrene	7.786	178	1217081	15.80	ppm	99
38] Anthracene	7.845	178	1195477	15.98	ppm	99
39] Carbazole	8.031	167	1151145	19.62	ppm	99
40] Di-n-butylphthalate	8.418	149	1473136	21.10	ppm	100
42] Fluoranthene	9.065	202	1501149	17.34	ppm	98
43] Pyrene	9.301	202	1649830	18.05	ppm	98
45] Butylbenzylphthalate	9.970	149	669701	21.44	ppm	97
46] Benzo(a)anthracene	10.526	228	1629517	17.83	ppm	99
47] Chrysene	10.565	228	1553594	17.84	ppm	98
48] bis(2-Ethylhexyl)phtha...	10.546	149	1024105	21.22	ppm	99

Quantitation Report (QT Reviewed)

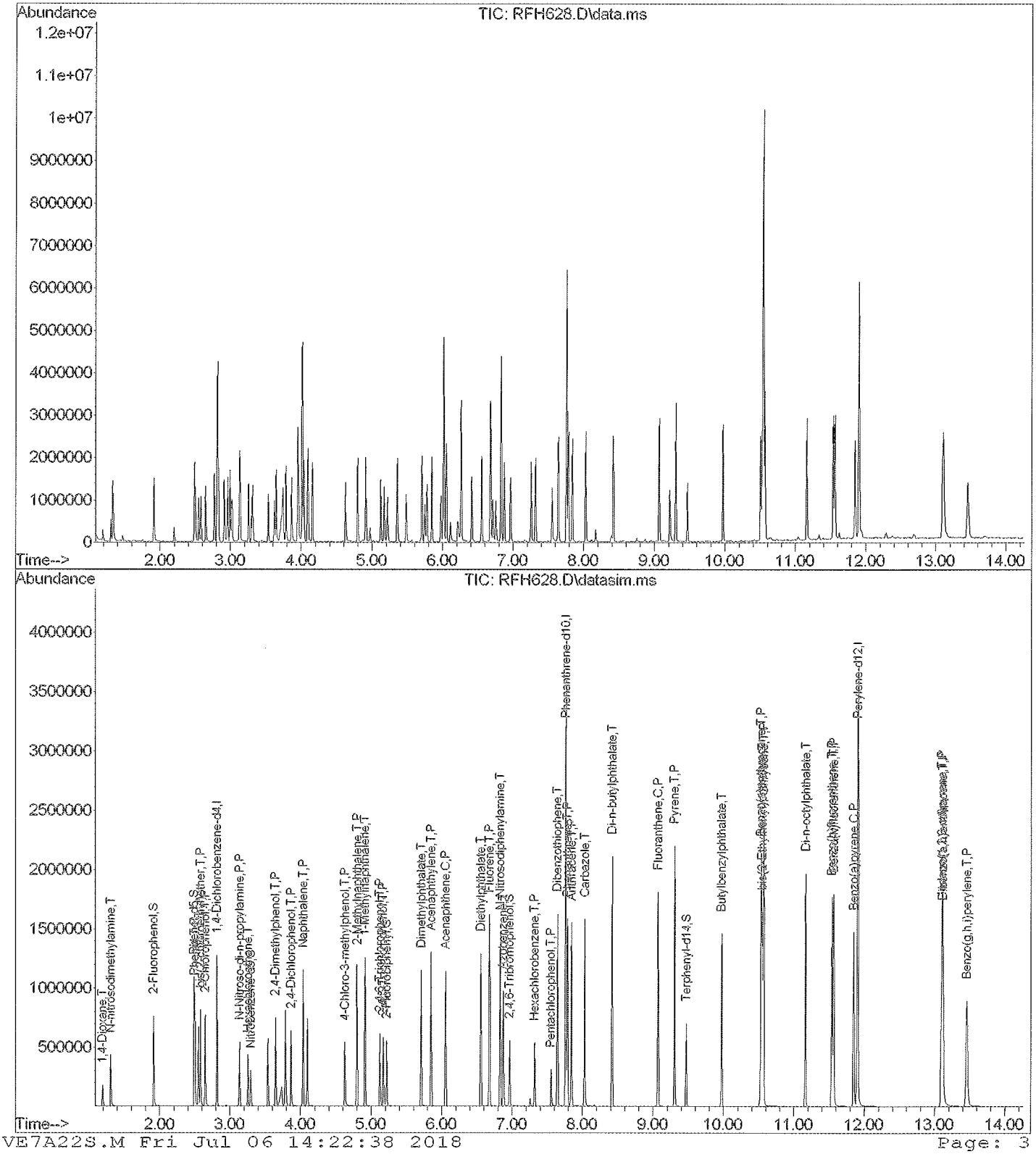
Data File : D:\DATA\18F29\RFH628.D Vial: 8
Acq On : 29 Jun 2018 14:34 Operator: RZh
Sample : 18F187-07M Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:22:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50] Di-n-octylphthalate	11.163	149	1560503	18.39	ppm	99
51] Benzo(b)fluoranthene	11.537	252	1582764	17.23	ppm	97
52] Benzo(k)fluoranthene	11.561	252	1587332	17.28	ppm	97
54] Benzo(a)pyrene	11.847	252	1475164	17.59	ppm	97
56] Indeno(1,2,3-cd)pyrene	13.098	276	1783893	17.13	ppm	95
57] Dibenzo(a,h)anthracene	13.112	278	1503653	17.51	ppm	97
58] Benzo(g,h,i)perylene	13.457	276	1397612	16.51	ppm	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH628.D Vial: 8
Acq On : 29 Jun 2018 14:34 Operator: RZh
Sample : 18F187-07M Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:22:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH629.D Vial: 9
Acq On : 29 Jun 2018 14:53 Operator: RZh
Sample : 18F187-07S Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:22:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	598340	40.00	ppm	-0.01
30) Phenanthrene-d10	7.764	188	2822018	40.00	ppm	0.00
49) Perylene-d12	11.903	264	3397959	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.913	112	373473	23.19	ppm	0.00
Spiked Amount 30.000			Recovery =	77.30%		
5) Phenol-d5	2.489	99	503619	24.94	ppm	0.00
Spiked Amount 30.000			Recovery =	83.13%		
11) Nitrobenzene-d5	3.299	82	157921	7.72	ppm	0.00
Spiked Amount 10.000			Recovery =	77.20%		
21) 2-Fluorobiphenyl	5.218	172	368785	6.82	ppm	-0.02
Spiked Amount 10.000			Recovery =	68.20%		
33) 2,4,6-Tribromophenol	6.962	330	269294	24.27	ppm	0.00
Spiked Amount 30.000			Recovery =	80.90%		
44) Terphenyl-d14	9.469	244	569015	8.42	ppm	-0.01
Spiked Amount 10.000			Recovery =	84.20%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	84287	15.14	ppm	100
3] N-nitrosodimethylamine	1.305	74	145106	16.69	ppm	91
6] Phenol	2.499	94	354904	18.42	ppm	96
7] bis(2-chloroethyl)ether	2.583	93	265688	17.37	ppm	99
8] 2-Chlorophenol	2.651	128	284061	15.65	ppm	92
9] N-Nitroso-di-n-propyla...	3.140	70	227711	19.78	ppm	97
10] Hexachloroethane	3.258	117	127767	16.20	ppm	96
12] 2,4-Dimethylphenol	3.644	107	325585	17.60	ppm	89
13] 2,4-Dichlorophenol	3.865	162	293005	16.68	ppm	97
14] Naphthalene	4.039	128	806489	14.79	ppm	100
15] 4-Chloro-3-methylphenol	4.627	107	283146	18.84	ppm	97
16] 2-Methylnaphthalene	4.800	142	571570	14.49	ppm	97
17] 1-Methylnaphthalene	4.910	142	551093	14.70	ppm	97
18] 2,4,6-Trichlorophenol	5.121	196	261123	16.87	ppm	96
19] 2,4,5-Trichlorophenol	5.170	196	268512	17.33	ppm	96
24] Dimethylphthalate	5.708	163	967980	20.18	ppm	99
25] Acenaphthylene	5.848	152	986112	16.79	ppm	99
26] Acenaphthene	6.054	153	686110	16.27	ppm	96
28] Diethylphthalate	6.556	149	908459	19.57	ppm	98
29] Fluorene	6.674	166	736045	15.69	ppm	97
31] N-Nitrosodiphenylamine	6.829	169	708965	18.01	ppm	100
32] Azobenzene	6.871	77	757869	19.56	ppm	100
34] Hexachlorobenzene	7.322	284	374215	16.46	ppm	99
35] Pentachlorophenol	7.553	266	203690	17.07	ppm	99
36] Dibenzothiophene	7.643	184	1239983	17.14	ppm	100
37] Phenanthrene	7.787	178	1221209	15.88	ppm	99
38] Anthracene	7.846	178	1212985	16.24	ppm	99
39] Carbazole	8.031	167	1155738	19.73	ppm	99
40] Di-n-butylphthalate	8.418	149	1467406	21.05	ppm	99
42] Fluoranthene	9.066	202	1496737	17.31	ppm	99
43] Pyrene	9.302	202	1598455	17.51	ppm	98
45] Butylbenzylphthalate	9.974	149	676827	21.70	ppm	96
46] Benzo(a)anthracene	10.527	228	1621150	17.76	ppm	99
47] Chrysene	10.566	228	1542707	17.74	ppm	98
48] bis(2-Ethylhexyl)phtha...	10.546	149	1027791	21.33	ppm	98

Quantitation Report (QT Reviewed)

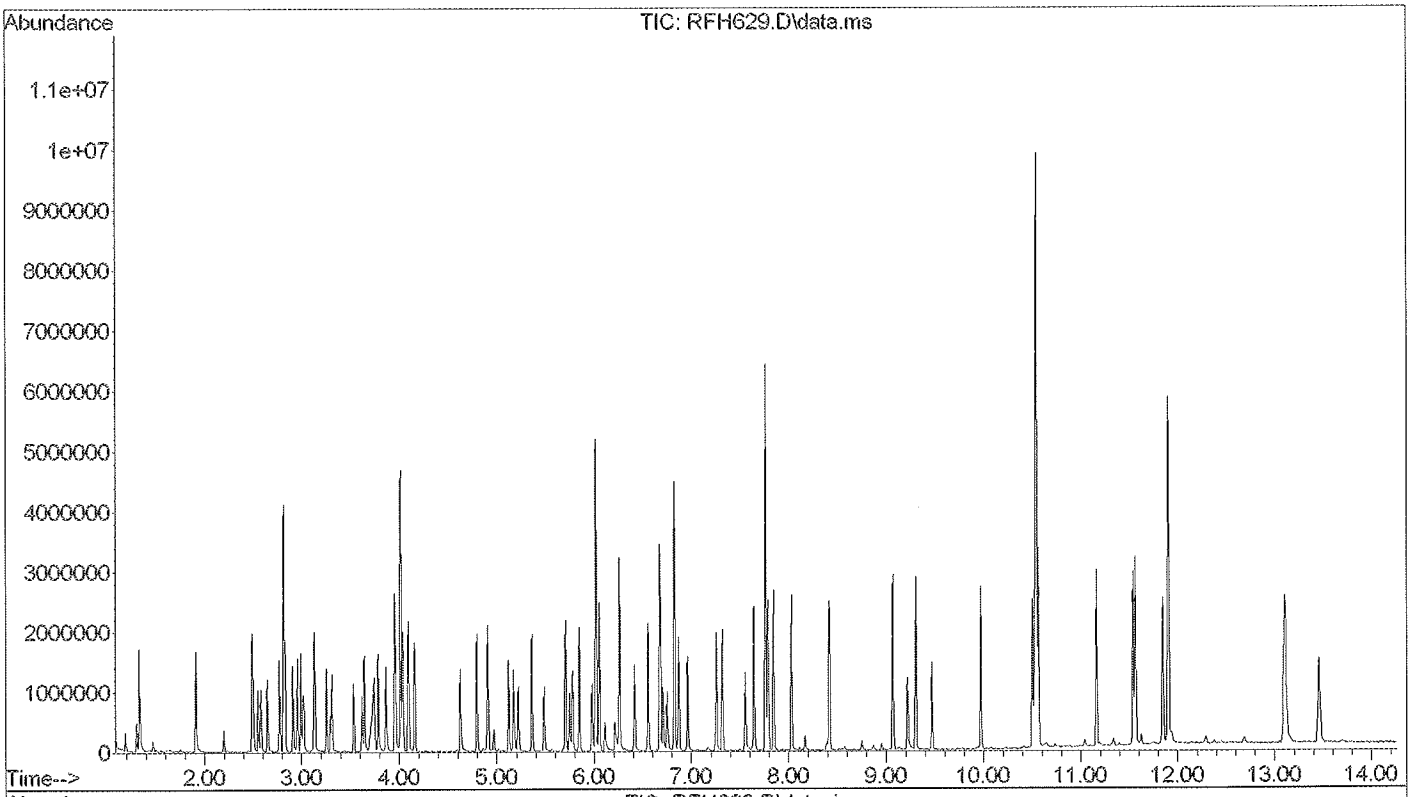
Data File : D:\DATA\18F29\RFH629.D Vial: 9
Acq On : 29 Jun 2018 14:53 Operator: RZh
Sample : 18F187-07S Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:22:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

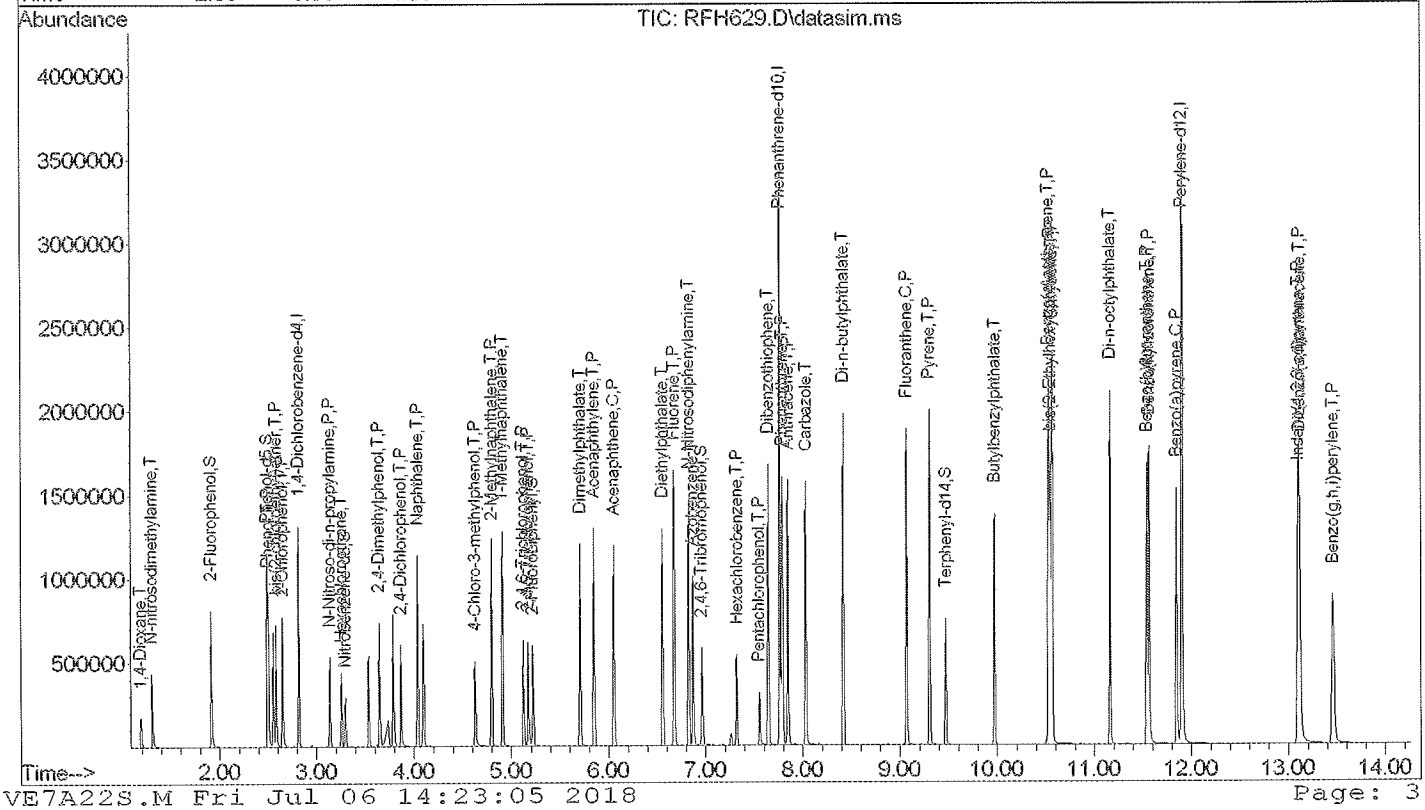
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50] Di-n-octylphthalate	11.163	149	1610876	19.26	ppm	99
51] Benzo(b)fluoranthene	11.542	252	1520826	16.80	ppm	97
52] Benzo(k)fluoranthene	11.566	252	1580742	17.46	ppm	97
54] Benzo(a)pyrene	11.847	252	1459398	17.67	ppm	97
56] Indeno(1,2,3-cd)pyrene	13.098	276	1752107	17.07	ppm	95
57] Dibenzo(a,h)anthracene	13.112	278	1477328	17.46	ppm	98
58] Benzo(g,h,i)perylene	13.457	276	1377042	16.51	ppm	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH629.D Vial: 9
Acq On : 29 Jun 2018 14:53 Operator: RZh
Sample : 18F187-07S Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 14:22:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAH164
Instrument ID: E7

Project: JBER T0075
SDG No.: 18F187
DFTPP Injection Date: 01/22/18
DFTPP Injection Time: 14:21

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.05
68	Less than 2% of mass 69	0.49(1.1)1
69	Relative abundance of mass 198	42.46
70	Less than 2.0% of mass 69	0.21(0.5)1
127	40.0 - 60.0% of mass 198	45.63
197	Less than 1.0% of mass 198	0.70
198	Base Peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	7.03
275	10.0 - 30.0% of mass 198	28.78
365	Greater than 1.00% of mass 198	3.80
441	Present, but less than mass 443	12.15(76.5)3
442	Greater than 40.0% of mass 198	82.04
443	17.0 - 23.0% of mass 442	15.87(19.3)2

1-Value is % mass 69 2-Value is % mass 442
3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD050	SVE7A223	RAH167	01/22/18	15:09
2	SSTD040	SVE7A224	RAH168	01/22/18	15:27
3	SSTD025	SVE7A225	RAH169	01/22/18	15:46
4	SSTD020	SVE7A226	RAH170	01/22/18	16:05
5	SSTD010	SVE7A227	RAH171	01/22/18	16:24
6	SSTD004	SVE7A228	RAH172	01/22/18	16:43
7	SSTD002	SVE7A229	RAH173	01/22/18	17:01
8	SSTD0.5	SVE7A2210	RAH174	01/22/18	17:20
9	SSTD0.15	SVE7A2211	RAH175	01/22/18	17:39
10	SSTD0.075	SVE7A2212	RAH176	01/22/18	17:58
11	SSTD0.05	SVE7A2213	RAH177	01/22/18	18:16
12	SSTD025	ISVE7A221	RAH178	01/22/18	18:35

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E7
Beginning DateTime :01/22/18 15:09
Spike Units :PPM
IC File :RAH169

Column Spec :ZB-SemiVoa ID :0.18MM
Ending DateTime :01/22/18 18:16
HPChem Method :SVE7A22S

IDX	Parameters	.05 18:16 RAH177	.075 17:58 RAH176	.15 17:39 RAH175	.5 17:20 RAH174	2 17:01 RAH173	4 16:43 RAH172	10 16:24 RAH171	20 16:05 RAH170	25 15:46 RAH169	40 15:27 RAH168	50 15:09 RAH167	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dichlorobenzene-d4	1	1	1	1	1	1	1	1	1	1	1	1	0	2.8222
2	1,4-Dioxane	0.596	0.506	0.468	0.386	0.352	0.367	0.370	0.374	0.375	0.368	0.374	0.413	18.80	1.1957
3	N-nitrosodimethylamine	0.575	0.562	0.555	0.548	0.541	0.590	0.598	0.606	0.612	0.602	0.605	0.581	4.50	1.3080
4	2-Fluorophenol	1.117	1.045	1.117	1.048	0.993	1.061	1.074	1.093	1.103	1.089	1.103	1.077	3.48	1.9046
5	Phenol-d5	1.430	1.298	1.340	1.323	1.240	1.331	1.377	1.391	1.372	1.374	1.376	1.350	3.81	2.4790
6	Phenol	1.101	1.176	1.308	1.260	1.222	1.313	1.338	1.368	1.370	1.355	1.358	1.288	6.90	2.4899
7	bis(2-chloroethyl)ether	1.111	1.071	1.121	1.025	0.934	0.984	0.994	0.996	1.002	0.999	1.010	1.022	5.54	2.5842
8	2-Chlorophenol	1.033	1.434	1.367	1.187	1.110	1.179	1.194	1.209	1.216	1.205	1.215	1.214	8.94	2.6472
9	N-Nitroso-di-n-propylamine	0.646	0.695	0.738	0.752	0.751	0.810	0.828	0.834	0.827	0.800	0.785	0.770	7.82	3.1465
10	Hexachloroethane	0.494	0.516	0.553	0.523	0.489	0.530	0.536	0.545	0.537	0.541	0.536	0.527	3.85	3.2688
11	Nitrobenzene-d5	1.416	1.223	1.441	1.282	1.255	1.358	1.397	1.422	1.417	1.421	1.407	1.367	5.63	3.3020
12	2,4-Dimethylphenol	1.090	1.128	1.229	1.165	1.165	1.271	1.310	1.312	1.303	1.318	1.311	1.237	6.89	3.6459
13	2,4-Dichlorophenol	1.129	1.097	1.175	1.111	1.074	1.175	1.230	1.235	1.224	1.241	1.230	1.175	5.31	3.8639
14	Naphthalene	3.693	3.779	3.972	3.645	3.388	3.573	3.618	3.636	3.609	3.607	3.592	3.646	3.92	4.0487
15	4-Chloro-3-methylphenol	0.933	0.885	0.942	0.921	0.888	1.042	1.086	1.103	1.061	1.108	1.083	1.005	9.01	4.6197
16	2-Methylnaphthalene	2.718	2.696	2.799	2.571	2.438	2.596	2.646	2.654	2.615	2.645	2.627	2.637	3.46	4.8096
17	1-Methylnaphthalene	2.531	2.543	2.682	2.492	2.325	2.490	2.518	2.522	2.474	2.511	2.479	2.506	3.30	4.9219
18	2,4,6-Trichlorophenol	0.922	0.964	1.008	0.952	0.915	1.059	1.106	1.123	1.090	1.129	1.116	1.035	8.18	5.1266
19	2,4,5-Trichlorophenol	0.818	0.888	0.945	0.942	0.939	1.087	1.154	1.178	1.123	1.179	1.145	1.036	12.69	5.1644
20	2,3,4-Trichlorophenol	0.795	0.769	0.840	0.837	0.836	0.964	1.016	1.030	0.984	1.033	1.017	0.920	11.32	5.2373
21	2-Fluorobiphenyl	4.106	3.734	3.807	3.535	3.290	3.529	3.581	3.574	3.491	3.574	3.528	3.614	5.79	5.2338
22	Biphenyl	3.454	3.490	3.688	3.440	3.188	3.428	3.471	3.473	3.364	3.428	3.371	3.436	3.45	5.3523
23	2,6-Dimethylnaphthalene	2.428	2.421	2.594	2.404	2.254	2.462	2.497	2.511	2.452	2.495	2.461	2.453	3.43	5.5350
24	Dimethylphthalate	3.350	3.291	3.318	3.137	2.880	3.259	3.331	3.312	3.103	3.211	3.084	3.207	4.48	5.7164
25	Acenaphthylene	3.840	3.905	4.065	3.817	3.571	3.975	4.071	4.069	3.911	4.028	3.934	3.926	3.78	5.8590
26	Acenaphthene	2.975	2.937	3.082	2.828	2.556	2.796	2.827	2.814	2.707	2.777	2.713	2.819	5.05	6.0676
27	2,3,5-Trimethylnaphthalene	2.623	2.488	2.577	2.369	2.167	2.413	2.483	2.480	2.372	2.447	2.384	2.436	4.96	6.5296
28	Diethylphthalate	3.463	3.147	3.060	2.982	2.769	3.153	3.249	3.213	3.030	3.076	2.986	3.103	5.72	6.5684
29	Fluorene	3.228	3.188	3.317	3.099	2.796	3.147	3.231	3.213	3.046	3.157	3.076	3.136	4.37	6.6881
30	Phenanthrene-d10	1	1	1	1	1	1	1	1	1	1	1	1	0	7.7727
31	N-Nitrosodiphenylamine	1.060	0.789	0.702	0.565	0.507	0.551	0.558	0.562	0.551	0.567	0.555	0.633	25.77	6.8392
32	Azobenzene	0.566	0.505	0.543	0.506	0.497	0.557	0.568	0.576	0.564	0.583	0.576	0.549	5.78	6.8866
33	2,4,6-Tribromophenol	0.182	0.135	0.147	0.135	0.137	0.152	0.162	0.168	0.169	0.171	0.171	0.157	10.63	6.9716
34	Hexachlorobenzene	0.388	0.351	0.353	0.317	0.283	0.309	0.306	0.311	0.306	0.310	0.310	0.322	9.16	7.3285
35	Pentachlorophenol	0.144	0.121	0.128	0.115	0.127	0.137	0.152	0.164	0.174	0.171	0.176	0.146	15.31	7.5552
36	Dibenzothiophene	1.256	1.055	1.105	0.983	0.915	0.982	0.989	0.998	0.996	0.997	1.005	1.026	8.72	7.6543
37	Phenanthrene	1.269	1.110	1.287	1.092	0.982	1.040	1.036	1.039	1.050	1.036	1.051	1.090	9.04	7.7970
38	Anthracene	1.194	1.025	1.114	1.002	0.968	1.032	1.047	1.060	1.070	1.058	1.074	1.059	5.60	7.8547
39	Carbazole	0.891	0.739	0.811	0.753	0.794	0.814	0.828	0.853	0.893	0.862	0.894	0.830	6.54	8.0360
40	Di-n-butylphthalate	1.170	0.890	0.933	0.868	0.875	0.937	0.993	1.027	1.066	1.034	1.074	0.988	9.74	8.4328
41	1-Methylphenanthrene	0.883	0.790	0.778	0.713	0.719	0.755	0.765	0.774	0.801	0.775	0.804	0.778	5.87	8.4680
42	Fluoranthene	1.529	1.185	1.208	1.106	1.131	1.148	1.174	1.201	1.289	1.222	1.287	1.225	9.45	9.0753
43	Pyrene	1.575	1.328	1.317	1.153	1.210	1.209	1.232	1.256	1.345	1.264	1.344	1.294	8.67	9.3091
44	Terphenyl-d14	1.121	0.964	0.939	0.856	0.898	0.899	0.922	0.941	1.018	0.954	1.028	0.958	7.71	9.4789
45	Butylbenzylphthalate	0.366	0.299	0.321	0.291	0.339	0.349	0.391	0.418	0.464	0.427	0.475	0.376	16.91	9.9847
46	Benzo(a)anthracene	3.410	2.581	1.892	1.291	1.272	1.174	1.183	1.211	1.374	1.229	1.370	1.635	44.36	10.5345
47	Chrysene	1.496	1.288	1.299	1.143	1.217	1.126	1.119	1.149	1.282	1.151	1.287	1.232	9.18	10.5677
48	bis(2-Ethylhexyl)phthalate	0.635	0.499	0.514	0.453	0.537	0.559	0.608	0.641	0.722	0.657	0.733	0.596	15.30	10.5602
49	Perylene-d12	1	1	1	1	1	1	1	1	1	1	1	1	0	11.9058
50	Di-n-octylphthalate	0.743	0.630	0.664	0.616	0.670	0.808	0.930	0.988	0.973	1.005	1.012	0.822	19.86	11.1771
51	Benzo(b)fluoranthene	1.165	1.062	1.050	0.950	0.912	1.012	1.076	1.129	1.100	1.092	1.173	1.066	7.71	11.5407
52	Benzo(k)fluoranthene	1.222	0.921	1.052	0.983	1.009	1.078	1.088	1.085	1.095	1.127	1.060	1.065	7.35	11.5657
53	Benzo(e)pyrene	1.217	0.994	1.049	0.940	0.927	1.000	1.031	1.056	1.050	1.058	1.071	1.036	7.44	11.7971
54	Benzo(a)pyrene	1.036	0.867	0.904	0.844	0.860	0.953	1.008	1.046	1.050	1.051	1.078	0.972	9.15	11.8482
55	Perylene	1.372	1.106	1.119	1.047	0.984	1.041	1.053	1.069	1.064	1.057	1.076	1.090	9.18	11.9297
56	Indeno(1,2,3-cd)pyrene	1.352	1.253	1.168	1.051	1.064	1.140	1.191	1.244	1.262	1.262	1.301	1.208	7.87	13.0968
57	Dibenzo(a,h)anthracene	1.116	0.938	0.955	0.876	0.891	0.956	0.995	1.039	1.052	1.054	1.085	0.996	7.95	13.1162
58	Benzo(g,h,i)perylene	1.148	0.945	1.000	0.883	0.874	0.933	0.965	1.002	1.012	1.005	1.034	0.982	7.76	13.4546

Ave_%RSD : 8.8 Max_%RSD : 44.4

Use Least Square Linear Regression with weighting factor of inverse concentration
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
2	1,4-Dioxane	0.00026	0.37159	0.9999
31	N-Nitrosodiphenylamine	0.00049	0.55702	0.9998
35	Pentachlorophenol	-0.00015	0.16953	0.9983
45	Butylbenzylphthalate	-0.00042	0.44281	0.9971
46	Benzo(a)anthracene	0.00222	1.28877	0.9980
48	bis(2-Ethylhexyl)phthalate	-0.00056	0.68394	0.9972
50	Di-n-octylphthalate	-0.00105	0.98673	0.9985

01-26-18

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E7
Beginning DateTime :01/22/18 15:09
Spike Units :PPM
IC File :RAH169

Column Spec :ZB-SemiVoa ID :0.18MM
Ending DateTime :01/22/18 18:16
HPChem Method :SVE7A22S

IDX	Parameters	.05 18:16 RAH177	.075 17:58 RAH176	.15 17:39 RAH175	.5 17:20 RAH174	2 17:01 RAH173	4 16:43 RAH172	10 16:24 RAH171	20 16:05 RAH170	25 15:46 RAH169	40 15:27 RAH168	50 15:09 RAH167	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dichlorobenzene-d4	1	1	1	1	1	1	1	1	1	1	1	1	0	2.8222
2	1,4-Dioxane	104	99	107	98	93	98	99	101	101	99	101	2.5	3.5	1.1957
3	N-nitrosodimethylamine	99	97	96	94	93	102	103	104	105	104	104	3.9	4.50	1.3080
4	2-Fluorophenol	104	97	104	97	92	99	100	101	102	101	102	2.7	3.48	1.9046
5	Phenol-d5	106	96	99	98	92	99	102	103	102	102	102	2.9	3.81	2.4790
6	Phenol	85	91	102	98	95	102	104	106	106	105	105	5.6	6.90	2.4899
7	bis(2-chloroethyl)ether	109	105	110	100	91	96	97	97	98	98	99	4.2	5.54	2.5842
8	2-Chlorophenol	85	118	113	98	91	97	98	100	100	99	100	5.7	8.94	2.6472
9	N-Nitroso-di-n-propylamine	84	90	96	98	98	105	108	108	107	104	102	6.3	7.82	3.1465
10	Hexachloroethane	94	98	105	99	93	101	102	103	102	103	102	3	3.85	3.2688
11	Nitrobenzene-d5	104	89	105	94	92	99	102	104	104	104	103	4.7	5.63	3.3020
12	2,4-Dimethylphenol	88	91	99	94	94	103	106	106	105	107	106	6	6.89	3.6459
13	2,4-Dichlorophenol	96	93	100	95	91	100	105	105	104	106	105	4.4	5.31	3.8639
14	Naphthalene	101	104	109	100	93	98	99	100	99	99	99	2.5	3.92	4.0487
15	4-Chloro-3-methylphenol	93	88	94	92	88	104	108	110	106	110	108	8.2	9.01	4.6197
16	2-Methylnaphthalene	103	102	106	97	92	98	100	101	99	100	100	2.3	3.46	4.8096
17	1-Methylnaphthalene	101	101	107	99	93	99	100	101	99	100	99	2	3.30	4.9219
18	2,4,6-Trichlorophenol	89	93	97	92	88	102	107	109	105	109	108	7.3	8.18	5.1266
19	2,4,5-Trichlorophenol	79	86	91	91	91	105	111	114	108	114	111	11.4	12.69	5.1644
20	2,3,4-Trichlorophenol	86	84	91	91	91	105	110	112	107	112	111	10.3	11.32	5.2373
21	2-Fluorobiphenyl	114	103	105	98	91	98	99	99	97	99	98	4.1	5.79	5.2338
22	Biphenyl	101	102	107	100	93	100	101	101	98	100	98	2.1	3.45	5.3523
23	2,6-Dimethylnaphthalene	99	99	106	98	92	100	102	102	100	102	100	2.3	3.43	5.5350
24	Dimethylphthalate	104	103	103	98	90	102	104	103	97	100	96	3.5	4.48	5.7164
25	Acenaphthylene	98	99	104	97	91	101	104	104	100	103	100	2.7	3.78	5.8590
26	Acenaphthene	106	104	109	100	91	99	100	100	96	99	96	3.6	5.05	6.0676
27	2,3,5-Trimethylnaphthalene	108	102	106	97	89	99	102	102	97	100	98	3.6	4.96	6.5296
28	Diethylphthalate	112	101	99	96	89	102	105	104	98	99	96	4.2	5.72	6.5684
29	Fluorene	103	102	106	99	89	100	103	102	97	101	98	3.1	4.37	6.6881
30	Phenanthrene-d10	1	1	1	1	1	1	1	1	1	1	1	1	0	7.7727
31	N-Nitrosodiphenylamine	120	95	103	94	89	98	100	101	99	102	100	4.6	7.7	6.8392
32	Azobenzene	103	92	99	92	91	101	103	105	103	106	105	4.8	5.78	6.8866
33	2,4,6-Tribromophenol	116	86	94	86	87	97	103	107	108	109	109	9.3	10.63	6.9716
34	Hexachlorobenzene	120	109	110	98	88	96	95	97	95	96	96	7.1	9.16	7.3285
35	Pentachlorophenol	155	118	99	75	77	82	90	97	103	101	104	14.6	22.5	7.5552
36	Dibenzothiophene	122	103	108	96	89	96	96	97	97	97	98	6	8.72	7.6543
37	Phenanthrene	116	102	118	100	90	95	95	95	96	95	96	6.6	9.04	7.7970
38	Anthracene	113	97	105	95	91	97	99	100	101	100	101	3.8	5.60	7.8547
39	Carbazole	107	89	98	91	96	98	100	103	108	104	108	5.3	6.54	8.0360
40	Di-n-butylphthalate	118	90	94	88	89	95	101	104	108	105	109	8	9.74	8.4328
41	1-Methylphenanthrene	113	102	100	92	92	97	98	99	103	100	103	3.9	5.87	8.4680
42	Fluoranthene	125	97	99	90	92	94	96	98	105	100	105	6.3	9.45	9.0753
43	Pyrene	122	103	102	89	94	93	95	97	104	98	104	6.2	8.67	9.3091
44	Terphenyl-d14	117	101	98	89	94	94	96	98	106	100	107	5.7	7.71	9.4789
45	Butylbenzylphthalate	159	119	98	73	79	80	89	95	105	97	107	16.3	23.9	9.9847
46	Benzo(a)anthracene	127	109	101	86	95	89	91	94	106	95	106	9	11.6	10.5345
47	Chrysene	121	105	105	93	99	91	91	93	104	93	104	7.2	9.18	10.5677
48	bis(2-Ethylhexyl)phthalate	158	117	97	73	80	83	89	94	106	96	107	16	23.2	10.5602
49	Perylene-d12	1	1	1	1	1	1	1	1	1	1	1	1	0	11.9058
50	Di-n-octylphthalate	161	121	96	71	70	83	95	100	99	102	103	15.7	25	11.1771
51	Benzo(b)fluoranthene	109	100	98	89	86	95	101	106	103	102	110	5.8	7.71	11.5407
52	Benzo(k)fluoranthene	115	86	99	92	95	101	102	102	103	106	100	5.2	7.35	11.5657
53	Benzo(e)pyrene	117	96	101	91	89	97	100	102	101	102	103	5	7.44	11.7971
54	Benzo(a)pyrene	107	89	93	87	88	98	104	108	108	108	111	8.1	9.15	11.8482
55	Perylene	126	101	103	96	90	96	97	98	98	97	99	5.5	9.18	11.9297
56	Indeno(1,2,3-cd)pyrene	112	104	97	87	88	94	99	103	104	104	108	6.4	7.87	13.0968
57	Dibenzo(a,h)anthracene	112	94	96	88	89	96	100	104	106	106	109	6.7	7.95	13.1162
58	Benzo(g,h,i)perylene	117	96	102	90	89	95	98	102	103	102	105	5.7	7.76	13.4546

RA 01-26-18

Method Path : C:\msdchem\1\METHODS\
Method File : SVE7A22S.M
Title : SEMIVOLATILES - SIM
Last Update : Tue Jan 23 12:44:06 2018
Response Via : Initial Calibration

Total Cpnds : 58

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dichlorobenzene-d4	-152	2.824	1.000	A	1	A	B
2	T	1,4-Dioxane	-88	1.195	0.423	L ✓	1	A	B
3	T	N-nitrosodimethylamine	-74	1.306	0.462	A	1	A	B
4	S	2-Fluorophenol	-112	1.904	0.674	A	1	A	B
5	S	Phenol-d5	-99	2.479	0.878	A	1	A	B
6	T	Phenol	-94	2.489	0.881	A	1	A	B
7	T	bis(2-chloroethyl)ether	-93	2.583	0.915	A	1	A	B
8	T	2-Chlorophenol	-128	2.645	0.937	A	1	A	B
9	P,P	N-Nitroso-di-n-propylamine	-70	3.150	1.115	A	1	A	B
10	T	Hexachloroethane	-117	3.271	1.158	A	1	A	B
11	S	Nitrobenzene-d5	-82	3.303	1.170	A	1	A	B
12	T	2,4-Dimethylphenol	-107	3.649	1.292	A	1	A	B
13	T	2,4-Dichlorophenol	-162	3.865	1.369	A	1	A	B
14	T	Naphthalene	-128	4.048	1.433	A	1	A	B
15	T	4-Chloro-3-methylphenol	-107	4.622	1.637	A	1	A	B
16	T	2-Methylnaphthalene	-142	4.809	1.703	A	1	A	B
17	T	1-Methylnaphthalene	-142	4.924	1.744	A	1	A	B
18	T	2,4,6-Trichlorophenol	-196	5.126	1.815	A	1	A	B
19	T	2,4,5-Trichlorophenol	-196	5.164	1.829	A	1	A	B
20	T	2,3,4-Trichlorophenol	-196	5.237	1.854	A	1	A	B
21	S	2-Fluorobiphenyl	-172	5.237	1.854	A	1	A	B
22	T	Biphenyl	-154	5.352	1.895	A	1	A	B
23	T	2,6-Dimethylnaphthalene	-156	5.535	1.960	A	1	A	B
24	T	Dimethylphthalate	-163	5.722	2.026	A	1	A	B
25	T	Acenaphthylene	-152	5.862	2.076	A	1	A	B
26	C,P	Acenaphthene	-153	6.068	2.149	A	1	A	B
27	T	2,3,5-Trimethylnaphthalene	-170	6.533	2.313	A	1	A	B
28	T	Diethylphthalate	-149	6.570	2.326	A	1	A	B
29	T	Fluorene	-166	6.687	2.368	A	1	A	B
30	I	Phenanthrene-d10	-188	7.773	1.000	A	1	A	B
31	T	N-Nitrosodiphenylamine	-169	6.843	0.880	L ✓	1	A	B
32	T	Azobenzene	-77	6.890	0.886	A	1	A	B
33	S	2,4,6-Tribromophenol	-330	6.971	0.897	A	1	A	B
34	T	Hexachlorobenzene	-284	7.331	0.943	A	1	A	B
35	T	Pentachlorophenol	-266	7.558	0.972	L ✓	1	A	B
36	T	Dibenzothiophene	-184	7.657	0.985	A	1	A	B
37	T	Phenanthrene	-178	7.800	1.003	A	1	A	B
38	T	Anthracene	-178	7.854	1.010	A	1	A	B
39	T	Carbazole	-167	8.036	1.034	A	1	A	B
40	T	Di-n-butylphthalate	-149	8.432	1.085	A	1	A	B
41	T	1-Methylphenanthrene	-192	8.471	1.090	A	1	A	B
42	C,P	Fluoranthene	-202	9.075	1.168	A	1	A	B
43	T	Pyrene	-202	9.311	1.198	A	1	A	B
44	S	Terphenyl-d14	-244	9.482	1.220	A	1	A	B
45	T	Butylbenzylphthalate	-149	9.987	1.285	L ✓	1	A	B
46	T	Benzo(a)anthracene	-228	10.536	1.355	L ✓	1	A	B
47	T	Chrysene	-228	10.570	1.360	A	1	A	B
48	T	bis(2-Ethylhexyl)phthalate	-149	10.560	1.359	L ✓	1	A	B
49	I	Perylene-d12	-264	11.908	1.000	A	1	A	B
50	T	Di-n-octylphthalate	-149	11.182	0.939	L ✓	1	A	B
51	T	Benzo(b)fluoranthene	-252	11.547	0.970	A	1	A	B
52	T	Benzo(k)fluoranthene	-252	11.571	0.972	A	1	A	B
53	T	Benzo(e)pyrene	-252	11.800	0.991	A	1	A	B
54	C,P	Benzo(a)pyrene	-252	11.851	0.995	A	1	A	B

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55	T	Perylene	-252	11.936	1.002	A	1	A	B
56	T	Indeno(1,2,3-cd)pyrene	-276	13.102	1.100	A	1	A	B
57	T	Dibenzo(a,h)anthracene	-278	13.122	1.102	A	1	A	B
58	T	Benzo(g,h,i)perylene	-276	13.461	1.130	A	1	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

SVE7A22S.M Tue Jan 23 12:50:53 2018

01-26-18

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E7 Column Spec :ZB-SemiVoa ID :0.18MM
Beginning DateTime :01/22/18 15:09 Ending DateTime :01/22/18 18:16
IC File :RAH169 HPChem Method :SVE7A22S

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 2

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dichlorobenzene-d4	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAH177
3	N-nitrosodimethylamine	.05	.1	.003333	RAH177
4	2-Fluorophenol	.05	.1	.003333	RAH177
5	Phenol-d5	.05	.1	.003333	RAH177
6	Phenol	.05	.1	.003333	RAH177
7	bis(2-chloroethyl)ether	.05	.1	.003333	RAH177
8	2-Chlorophenol	.05	.1	.003333	RAH177
9	N-Nitroso-di-n-propylamine	.05	.1	.003333	RAH177
10	Hexachloroethane	.05	.1	.003333	RAH177
11	Nitrobenzene-d5	.05	.1	.003333	RAH177
12	2,4-Dimethylphenol	.05	.1	.003333	RAH177
13	2,4-Dichlorophenol	.05	.1	.003333	RAH177
14	Naphthalene	.05	.1	.003333	RAH177
15	4-Chloro-3-methylphenol	.05	.1	.003333	RAH177
16	2-Methylnaphthalene	.05	.1	.003333	RAH177
17	1-Methylnaphthalene	.05	.1	.003333	RAH177
18	2,4,6-Trichlorophenol	.05	.1	.003333	RAH177
19	2,4,5-Trichlorophenol	.05	.1	.003333	RAH177
20	2,3,4-Trichlorophenol	.05	.1	.003333	RAH177
21	2-Fluorobiphenyl	.05	.1	.003333	RAH177
22	Biphenyl	.05	.1	.003333	RAH177
23	2,6-Dimethylnaphthalene	.05	.1	.003333	RAH177
24	Dimethylphthalate	.05	.1	.003333	RAH177
25	Acenaphthylene	.05	.1	.003333	RAH177
26	Acenaphthene	.05	.1	.003333	RAH177
27	2,3,5-Trimethylnaphthalene	.05	.1	.003333	RAH177
28	Diethylphthalate	.05	.1	.003333	RAH177
29	Fluorene	.05	.1	.003333	RAH177
30	Phenanthrene-d10	IntSTD	IntSTD	IntSTD	IntSTD
31	N-Nitrosodiphenylamine	.05	.1	.003333	RAH177
32	Azobenzene	.05	.1	.003333	RAH177
33	2,4,6-Tribromophenol	.05	.1	.003333	RAH177
34	Hexachlorobenzene	.05	.1	.003333	RAH177
35	Pentachlorophenol	.05	.1	.003333	RAH177
36	Dibenzothiophene	.05	.1	.003333	RAH177
37	Phenanthrene	.05	.1	.003333	RAH177
38	Anthracene	.05	.1	.003333	RAH177
39	Carbazole	.05	.1	.003333	RAH177
40	Di-n-butylphthalate	.05	.1	.003333	RAH177
41	1-Methylphenanthrene	.05	.1	.003333	RAH177
42	Fluoranthene	.05	.1	.003333	RAH177
43	Pyrene	.05	.1	.003333	RAH177
44	Terphenyl-d14	.05	.1	.003333	RAH177
45	Butylbenzylphthalate	.05	.1	.003333	RAH177
46	Benzo(a)anthracene	.05	.1	.003333	RAH177
47	Chrysene	.05	.1	.003333	RAH177
48	bis(2-Ethylhexyl)phthalate	.05	.1	.003333	RAH177
49	Perylene-d12	IntSTD	IntSTD	IntSTD	IntSTD
50	Di-n-octylphthalate	.05	.1	.003333	RAH177
51	Benzo(b)fluoranthene	.05	.1	.003333	RAH177
52	Benzo(k)fluoranthene	.05	.1	.003333	RAH177
53	Benzo(e)pyrene	.05	.1	.003333	RAH177
54	Benzo(a)pyrene	.05	.1	.003333	RAH177
55	Perylene	.05	.1	.003333	RAH177
56	Indeno(1,2,3-cd)pyrene	.05	.1	.003333	RAH177
57	Dibenzo(a,h)anthracene	.05	.1	.003333	RAH177
58	Benzo(g,h,i)perylene	.05	.1	.003333	RAH177

VM 01-26-18

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E7 Column Spec :ZB-SemiVoa ID :0.18MM
Beginning DateTime :01/22/18 15:09 Ending DateTime :01/22/18 18:16
IC File :RAH169 HPChem Method :SVE7A22S

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dichlorobenzene-d4	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.05	.001667	RAH177
3	N-nitrosodimethylamine	.05	.05	.001667	RAH177
4	2-Fluorophenol	.05	.05	.001667	RAH177
5	Phenol-d5	.05	.05	.001667	RAH177
6	Phenol	.05	.05	.001667	RAH177
7	bis(2-chloroethyl)ether	.05	.05	.001667	RAH177
8	2-Chlorophenol	.05	.05	.001667	RAH177
9	N-Nitroso-di-n-propylamine	.05	.05	.001667	RAH177
10	Hexachloroethane	.05	.05	.001667	RAH177
11	Nitrobenzene-d5	.05	.05	.001667	RAH177
12	2,4-Dimethylphenol	.05	.05	.001667	RAH177
13	2,4-Dichlorophenol	.05	.05	.001667	RAH177
14	Naphthalene	.05	.05	.001667	RAH177
15	4-Chloro-3-methylphenol	.05	.05	.001667	RAH177
16	2-Methylnaphthalene	.05	.05	.001667	RAH177
17	1-Methylnaphthalene	.05	.05	.001667	RAH177
18	2,4,6-Trichlorophenol	.05	.05	.001667	RAH177
19	2,4,5-Trichlorophenol	.05	.05	.001667	RAH177
20	2,3,4-Trichlorophenol	.05	.05	.001667	RAH177
21	2-Fluorobiphenyl	.05	.05	.001667	RAH177
22	Biphenyl	.05	.05	.001667	RAH177
23	2,6-Dimethylnaphthalene	.05	.05	.001667	RAH177
24	Dimethylphthalate	.05	.05	.001667	RAH177
25	Acenaphthylene	.05	.05	.001667	RAH177
26	Acenaphthene	.05	.05	.001667	RAH177
27	2,3,5-Trimethylnaphthalene	.05	.05	.001667	RAH177
28	Diethylphthalate	.05	.05	.001667	RAH177
29	Fluorene	.05	.05	.001667	RAH177
30	Phenanthrene-d10	IntSTD	IntSTD	IntSTD	IntSTD
31	N-Nitrosodiphenylamine	.05	.05	.001667	RAH177
32	Azobenzene	.05	.05	.001667	RAH177
33	2,4,6-Tribromophenol	.05	.05	.001667	RAH177
34	Hexachlorobenzene	.05	.05	.001667	RAH177
35	Pentachlorophenol	.05	.05	.001667	RAH177
36	Dibenzothiophene	.05	.05	.001667	RAH177
37	Phenanthrene	.05	.05	.001667	RAH177
38	Anthracene	.05	.05	.001667	RAH177
39	Carbazole	.05	.05	.001667	RAH177
40	Di-n-butylphthalate	.05	.05	.001667	RAH177
41	1-Methylphenanthrene	.05	.05	.001667	RAH177
42	Fluoranthene	.05	.05	.001667	RAH177
43	Pyrene	.05	.05	.001667	RAH177
44	Terphenyl-d14	.05	.05	.001667	RAH177
45	Butylbenzylphthalate	.05	.05	.001667	RAH177
46	Benzo(a)anthracene	.05	.05	.001667	RAH177
47	Chrysene	.05	.05	.001667	RAH177
48	bis(2-Ethylhexyl)phthalate	.05	.05	.001667	RAH177
49	Perylene-d12	IntSTD	IntSTD	IntSTD	IntSTD
50	Di-n-octylphthalate	.05	.05	.001667	RAH177
51	Benzo(b)fluoranthene	.05	.05	.001667	RAH177
52	Benzo(k)fluoranthene	.05	.05	.001667	RAH177
53	Benzo(e)pyrene	.05	.05	.001667	RAH177
54	Benzo(a)pyrene	.05	.05	.001667	RAH177
55	Perylene	.05	.05	.001667	RAH177
56	Indeno(1,2,3-cd)pyrene	.05	.05	.001667	RAH177
57	Dibenzo(a,h)anthracene	.05	.05	.001667	RAH177
58	Benzo(g,h,i)perylene	.05	.05	.001667	RAH177

01-26-18

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAH169
Instrument ID: E7

Project:ICAL
SDG No.:CAL\8270\2018
Date Analyzed: 01/22/18
Time Analyzed: 15:46

	IS1(DCB) AREA #	IS1(DCB) RT #	IS2(NPT) AREA #	IS2(NPT) RT #	IS3(ANT) AREA #	IS3(ANT) RT #
12 HOUR STD	562576	2.82	0	0.00	0	0.00
UPPER LIMIT	1125152	3.32	0	0.50	0	0.50
LOWER LIMIT	281288	2.32	0	-0.50	0	-0.50
SAMPLE ID						
1 SVE7A223	537950	2.82	0	0.00	0	0.00
2 SVE7A224	511501	2.82	0	0.00	0	0.00
3 SVE7A226	512078	2.82	0	0.00	0	0.00
4 SVE7A227	506334	2.82	0	0.00	0	0.00
5 SVE7A228	493692	2.82	0	0.00	0	0.00
6 SVE7A229	545319	2.82	0	0.00	0	0.00
7 SVE7A2210	487405	2.82	0	0.00	0	0.00
8 SVE7A2211	492298	2.82	0	0.00	0	0.00
9 SVE7A2212	480458	2.82	0	0.00	0	0.00
10 SVE7A2213	452070	2.82	0	0.00	0	0.00
11 ISVE7A221	533529	2.82	0	0.00	0	0.00

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

01-26-18

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAH169
Instrument ID: E7

Project:ICAL
SDG No.:CAL\8270\2018
Date Analyzed: 01/22/18
Time Analyzed: 15:46

		IS4(PHN)		IS5(CRY)		IS6(PRY)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	2636875	7.77	0	0.00	3203576	11.91
	UPPER LIMIT	5273750	8.27	0	0.50	6407152	12.41
	LOWER LIMIT	1318438	7.27	0	-0.50	1601788	11.41
	SAMPLE ID						
1	SVE7A223	2468537	7.77	0	0.00	2957603	11.91
2	SVE7A224	2381210	7.77	0	0.00	2509761	11.91
3	SVE7A226	2479503	7.77	0	0.00	2562171	11.91
4	SVE7A227	2504784	7.77	0	0.00	2523496	11.90
5	SVE7A228	2396084	7.77	0	0.00	2462170	11.91
6	SVE7A229	2585223	7.77	0	0.00	3143542	11.91
7	SVE7A2210	2356172	7.77	0	0.00	2471883	11.90
8	SVE7A2211	2329647	7.77	0	0.00	2443131	11.90
9	SVE7A2212	2350981	7.77	0	0.00	2436662	11.90
10	SVE7A2213	2126245	7.77	0	0.00	2264190	11.90
11	ISVE7A221	2565746	7.77	0	0.00	3138798	11.90

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

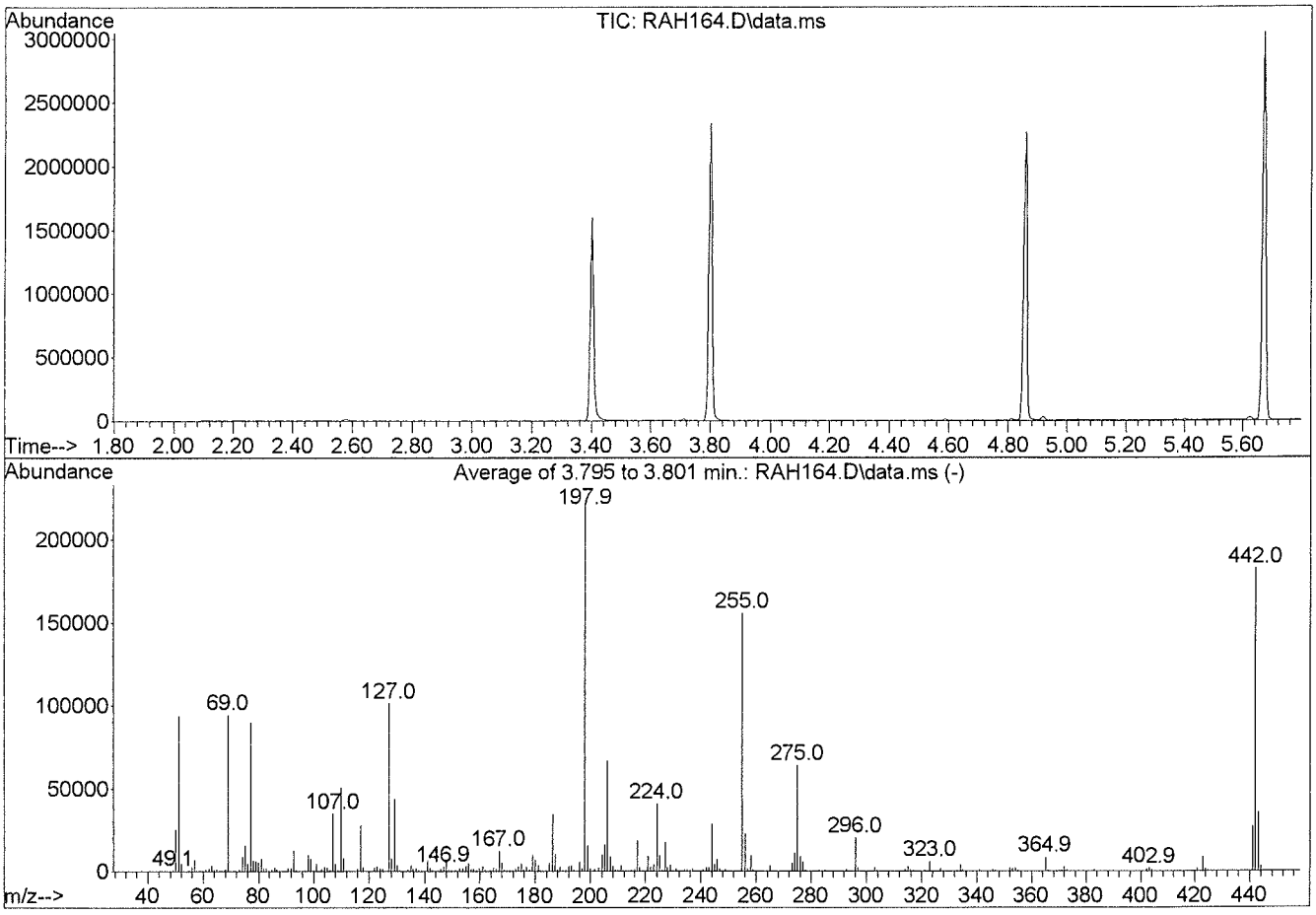
Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

01-26-18

Data Path : D:\DATA\18A22\
Data File : RAH164.D
Acq On : 22 Jan 2018 14:21
Operator : KVu
Sample : DFTE7A2201
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPP.M
Title : DFTPP
Last Update : Tue Jan 23 12:56:03 2018



AutoFind: Scans 607, 608, 609; Background Corrected with Scan 599

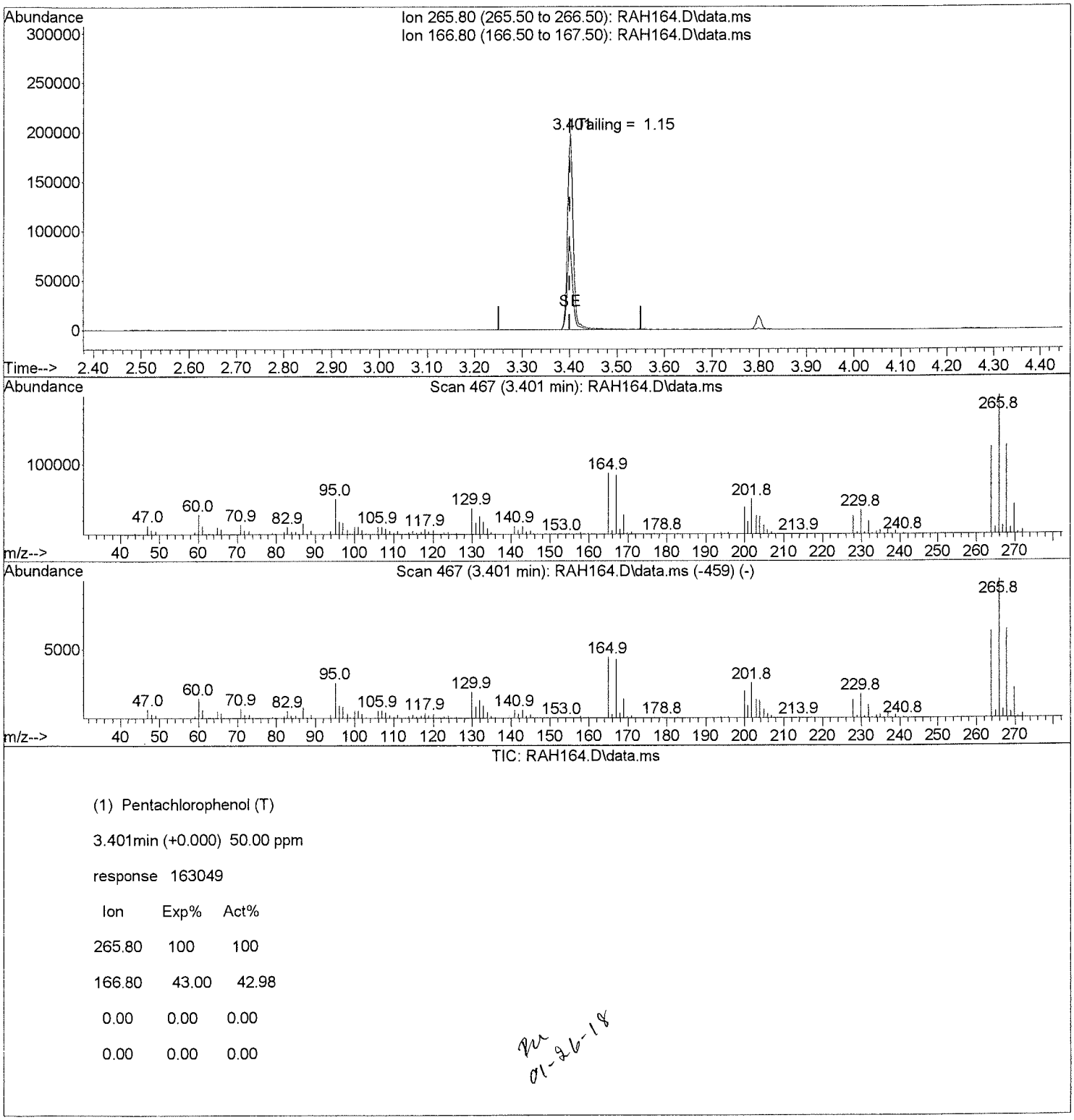
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	42.1	93533	PASS
68	69	0.00	2	1.1	1081	PASS
69	198	0.00	100	42.5	94448	PASS
70	69	0.00	2	0.5	477	PASS
127	198	40	60	45.6	101480	PASS
197	198	0.00	1	0.7	1558	PASS
198	198	100	100	100.0	222421	PASS
199	198	5	9	7.0	15629	PASS
275	198	10	30	28.8	64005	PASS
365	198	1	100	3.8	8450	PASS
441	443	0.01	100	76.5	27021	PASS
442	198	40	100	82.0	182469	PASS
443	442	17	23	19.3	35301	PASS

pw 01-26-18

Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:56:40 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00



TIC: RAH164.D\data.ms

(1) Pentachlorophenol (T)

3.401min (+0.000) 50.00 ppm

response 163049

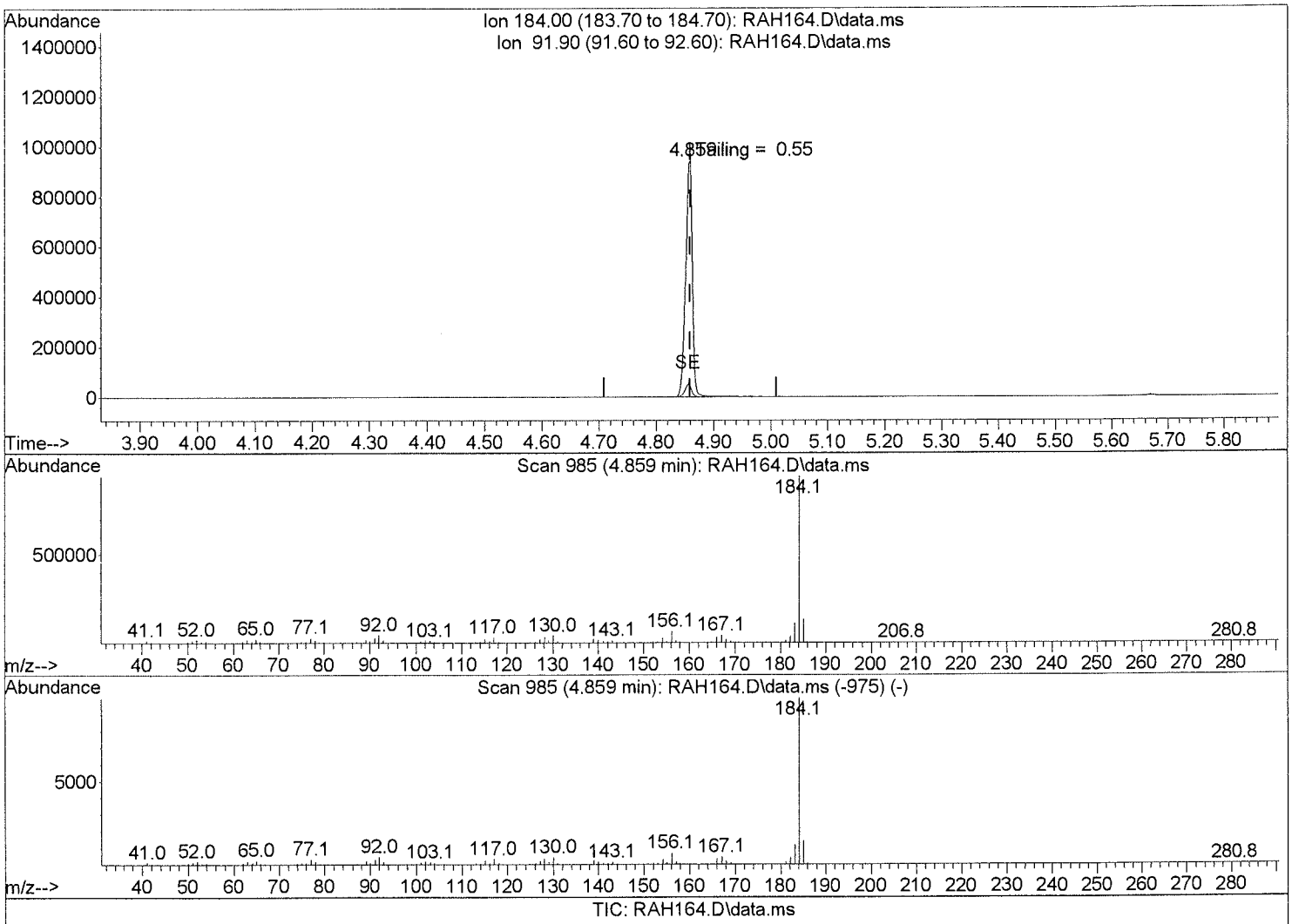
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	42.98
0.00	0.00	0.00
0.00	0.00	0.00

01-26-18

Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:56:40 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00



TIC: RAH164.D\data.ms

(3) Benzidine (T)

4.859min (0.000) 50.00 ppm

response 761991

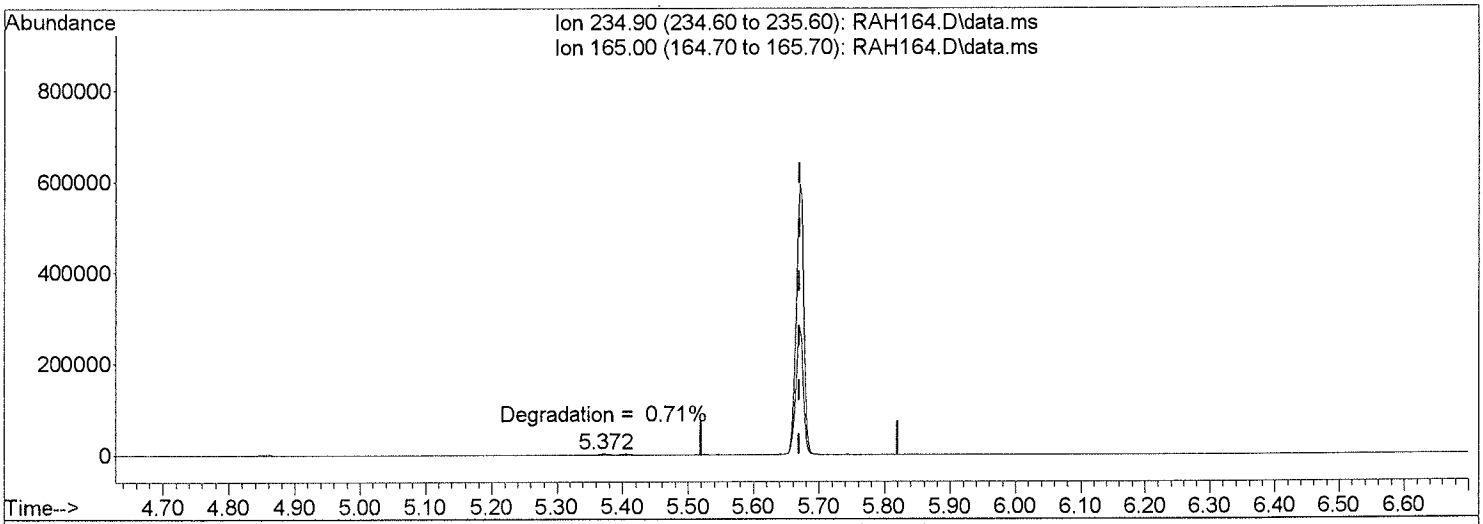
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	5.09
0.00	0.00	0.00
0.00	0.00	0.00

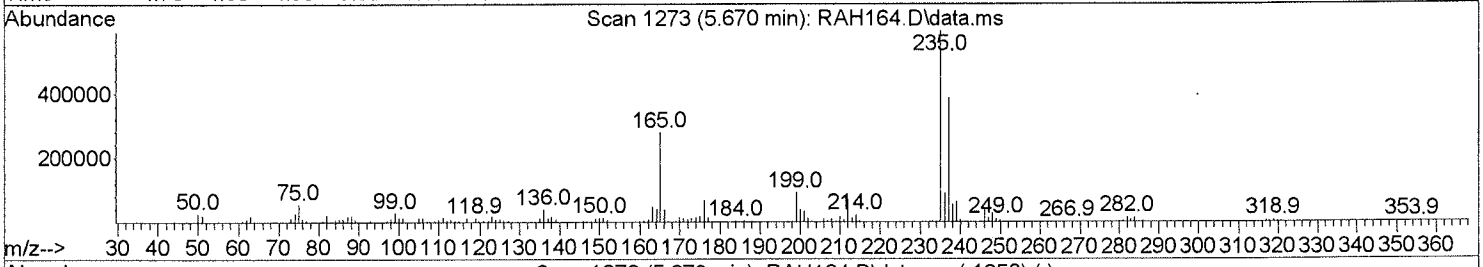
01-26-18

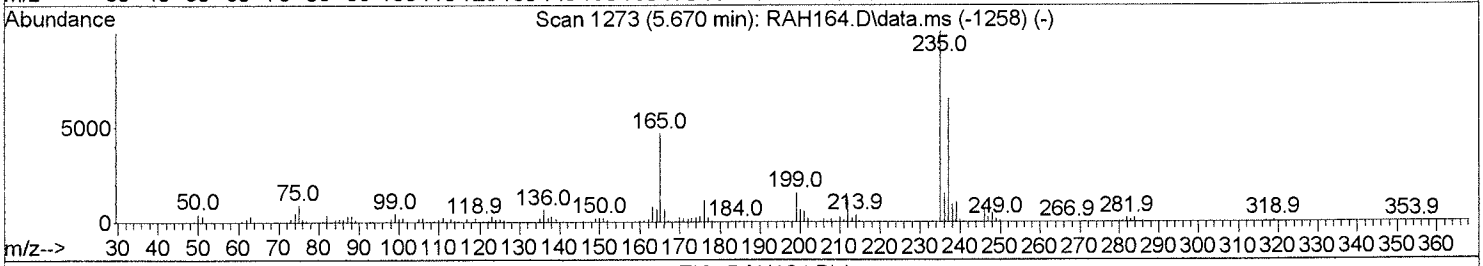
Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:56:40 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RAH164.D\data.ms

(6) DDT (T)

5.670min (0.000) 50.00 ppm

response 476501

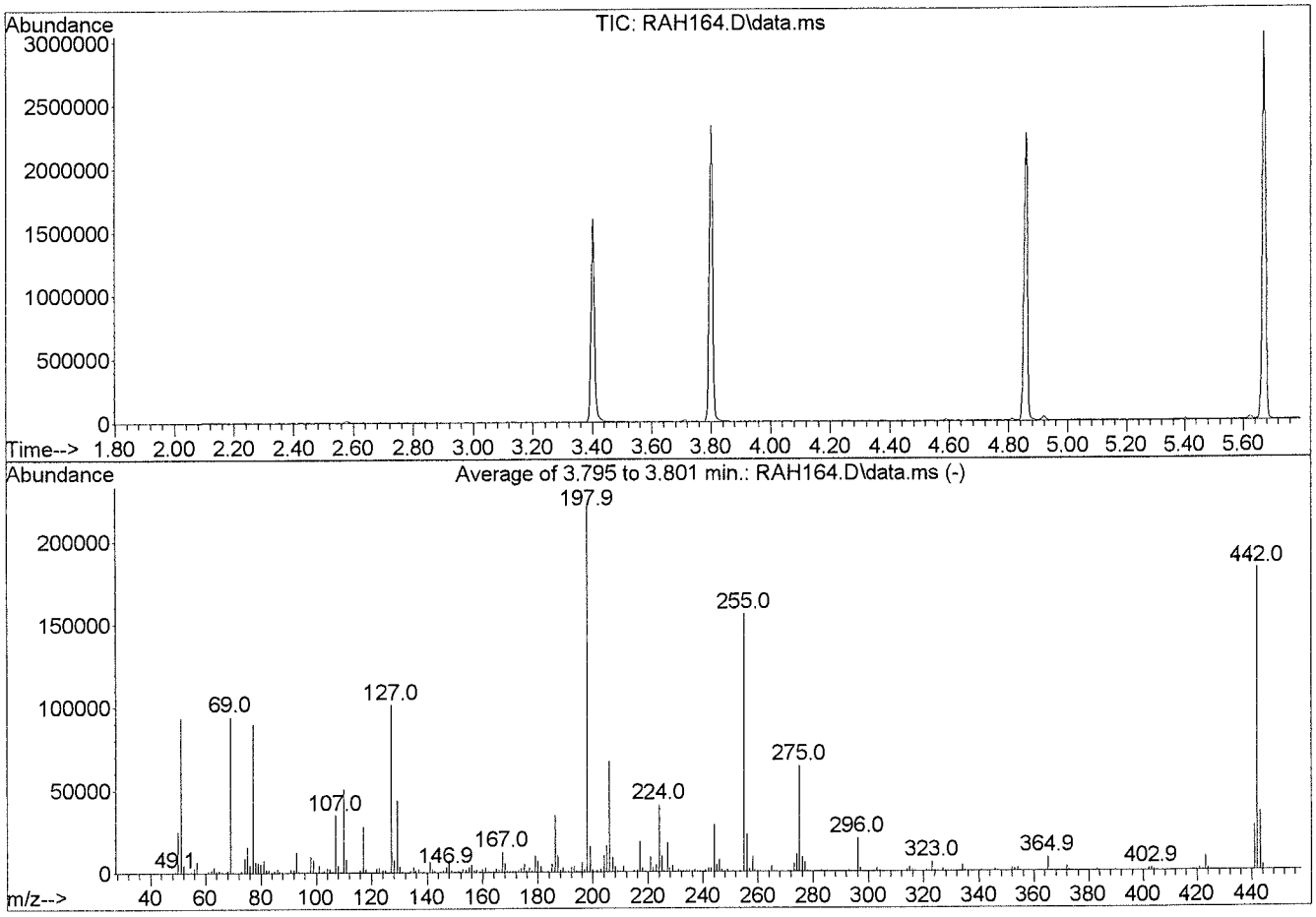
Ion	Exp%	Act%
234.90	100	100
165.00	47.00	47.01
0.00	0.00	0.00
0.00	0.00	0.00

01-26-18

Data Path : D:\DATA\18A22\
Data File : RAH164.D
Acq On : 22 Jan 2018 14:21
Operator : KVu
Sample : DFTE7A2201
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : Semivolatiles DFTPP
Last Update : Tue Jan 23 12:53:12 2018



AutoFind: Scans 607, 608, 609; Background Corrected with Scan 599

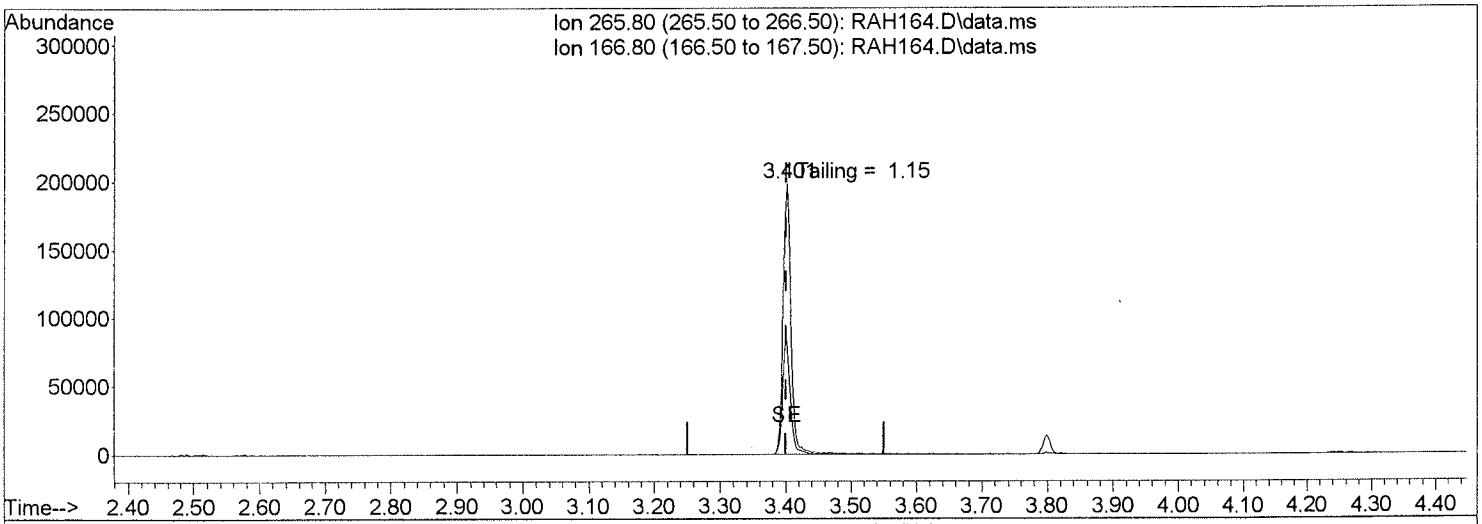
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	42.1	93533	PASS
68	69	0.00	2	1.1	1081	PASS
69	198	0.00	100	42.5	94448	PASS
70	69	0.00	2	0.5	477	PASS
127	198	10	80	45.6	101480	PASS
197	198	0.00	2	0.7	1558	PASS
198	198	100	100	100.0	222421	PASS
199	198	5	9	7.0	15629	PASS
275	198	10	60	28.8	64005	PASS
365	198	1	100	3.8	8450	PASS
441	442	0.01	24	14.8	27021	PASS
442	198	50	100	82.0	182469	PASS
443	442	15	24	19.3	35301	PASS

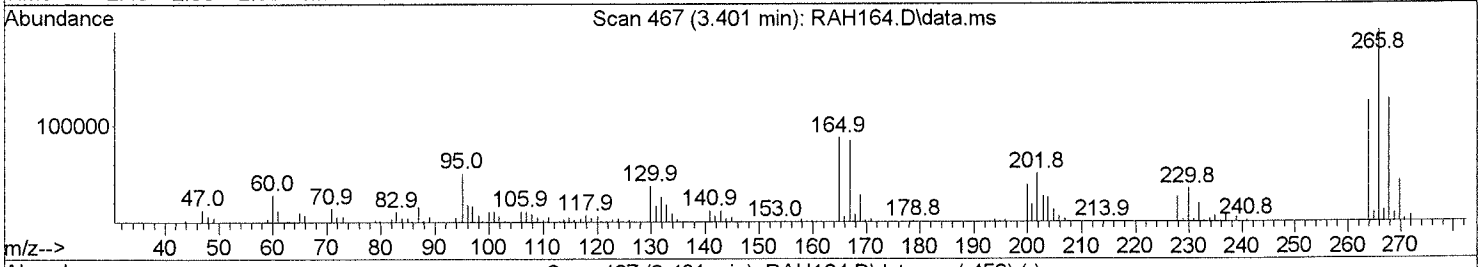
m 01-26-18

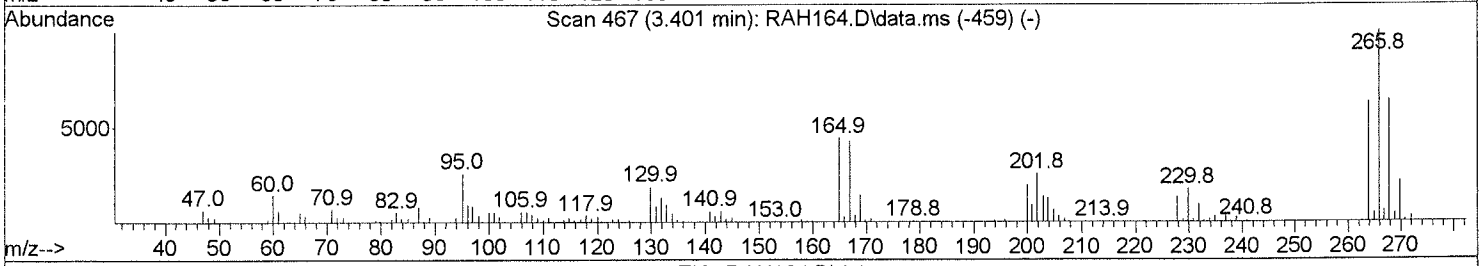
Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:53:33 2018
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP
QLast Update : Tue Jan 23 12:53:12 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RAH164.D\data.ms

(1) Pentachlorophenol (T)

3.401min (+0.000) 50.00 ppm

response 163049

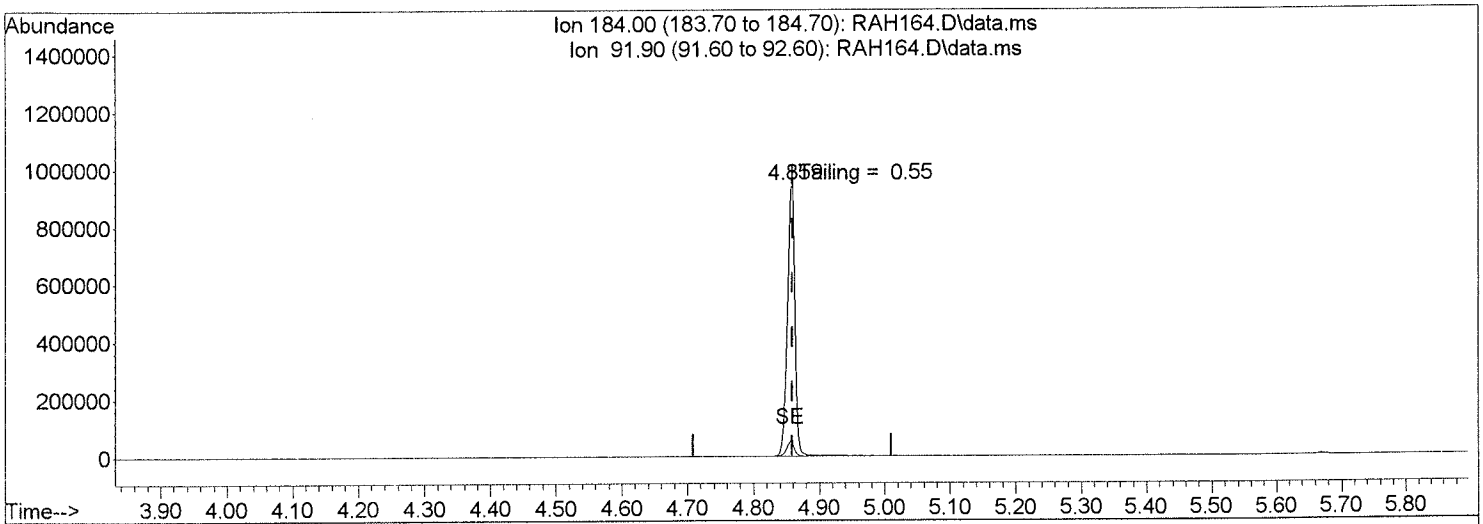
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	42.98
0.00	0.00	0.00
0.00	0.00	0.00

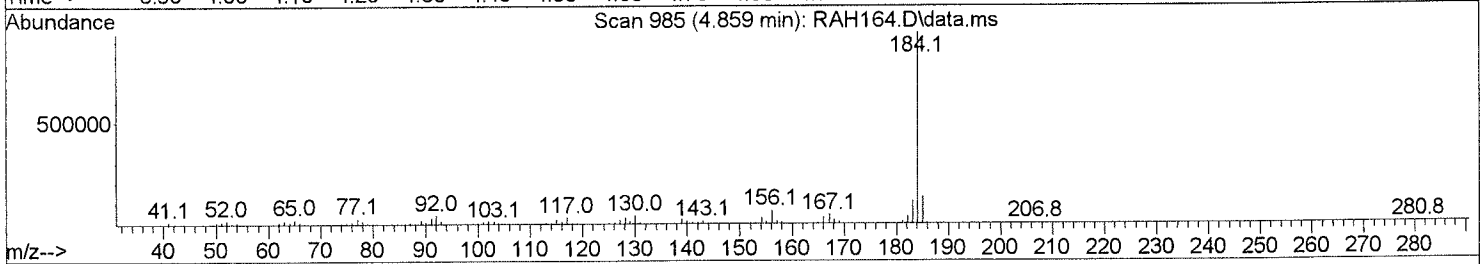
01-26-18

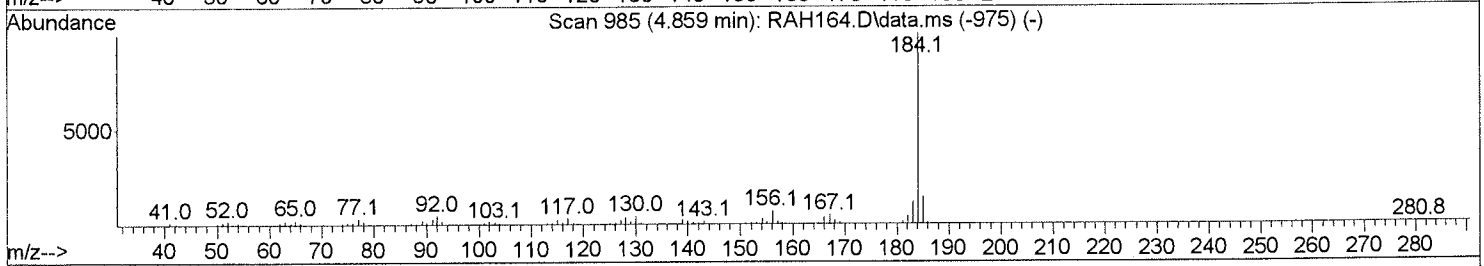
Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:53:33 2018
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP
QLast Update : Tue Jan 23 12:53:12 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RAH164.D\data.ms

(3) Benzidine (T)

4.859min (0.000) 50.00 ppm

response 761991

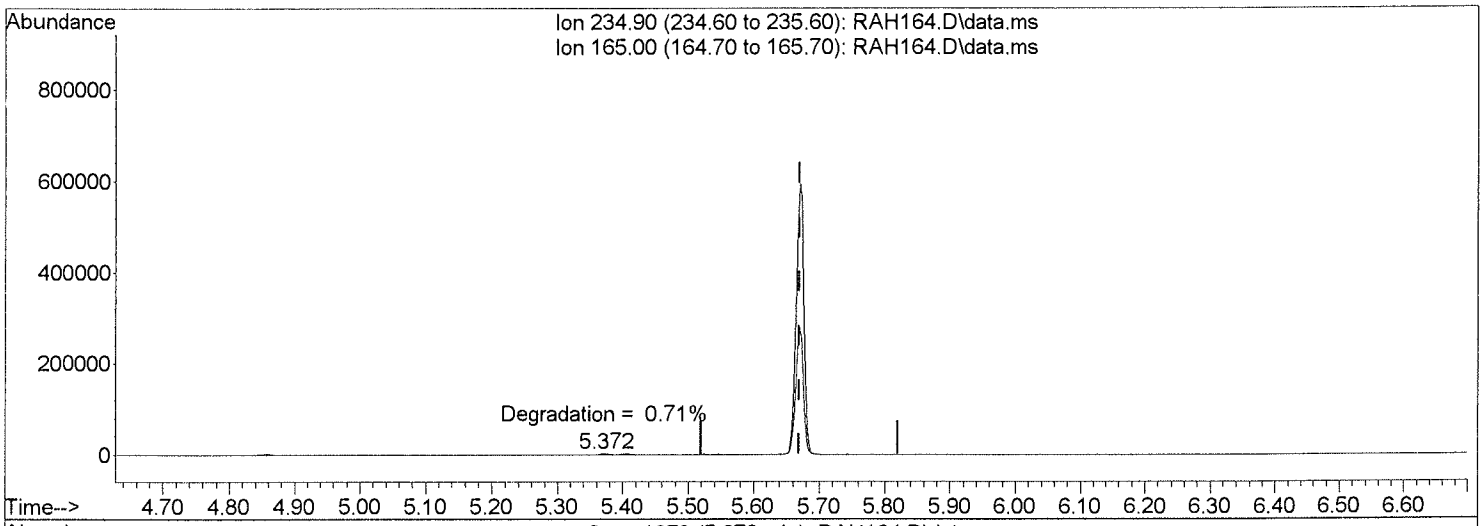
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	5.09
0.00	0.00	0.00
0.00	0.00	0.00

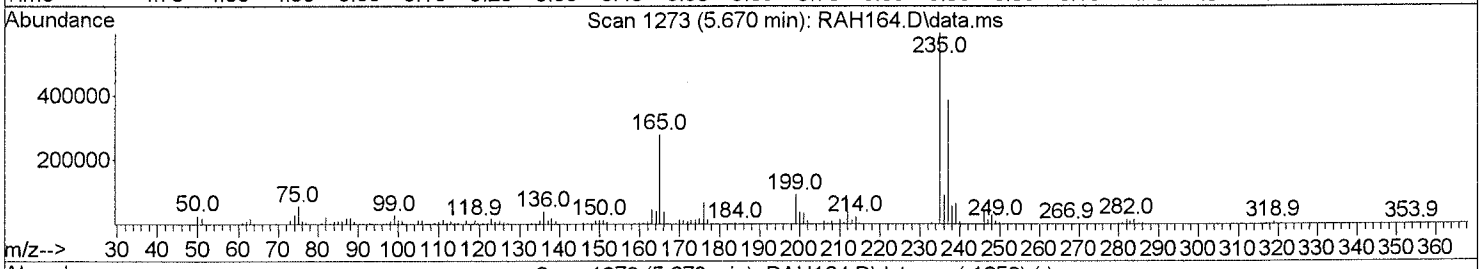
01-26-18

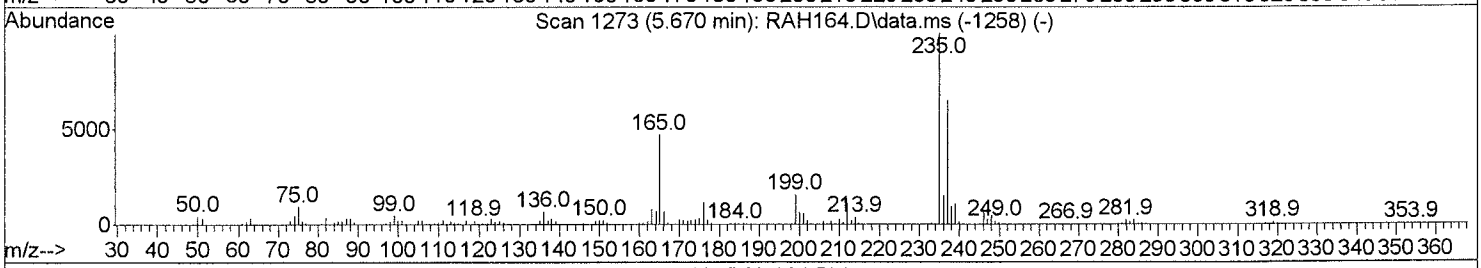
Quantitation Report (Qedit)

Data File : D:\DATA\18A22\RAH164.D
Acq On : 22 Jan 2018 14:21
Sample : DFTE7A2201
Misc :
Integrator: RTE
Quant Time: Jan 23 12:53:33 2018
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : Semivolatiles DFTPP
QLast Update : Tue Jan 23 12:53:12 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RAH164.D\data.ms

(6) DDT (T)

5.670min (0.000) 50.00 ppm

response 476501

Ion	Exp%	Act%
234.90	100	100
165.00	47.00	47.01
0.00	0.00	0.00
0.00	0.00	0.00

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH177.D Vial: 15
Acq On : 22 Jan 2018 18:16 Operator: KVu
Sample : SVE7A2213 Inst : E7
Misc : 0.05PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:47:42 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-Dichlorobenzene-d4	2.819	152	452070	40.00	ppm		0.00
30) Phenanthrene-d10	7.773	188	2126245	40.00	ppm		0.00
49) Perylene-d12	11.903	264	2264190	40.00	ppm		0.00
System Monitoring Compounds							
4) 2-Fluorophenol	1.909	112	631	0.05	ppm		0.00
Spiked Amount 30.000			Recovery =	0.17%			
5) Phenol-d5	2.479	99	808	0.05	ppm		0.00
Spiked Amount 30.000			Recovery =	0.17%			
11) Nitrobenzene-d5	3.303	82	800	0.05	ppm		0.00
Spiked Amount 10.000			Recovery =	0.50%			
21) 2-Fluorobiphenyl	5.232	172	2320	0.06	ppm		0.00
Spiked Amount 10.000			Recovery =	0.60%			
33) 2,4,6-Tribromophenol	6.971	330	485	0.06	ppm		0.00
Spiked Amount 30.000			Recovery =	0.20%			
44) Terphenyl-d14	9.478	244	2980	0.06	ppm		0.00
Spiked Amount 10.000			Recovery =	0.60%			
Target Compounds							Qvalue
2] 1,4-Dioxane	1.195	88	337	0.05	ppm	#	72
3] N-nitrosodimethylamine	1.315	74	325	0.05	ppm		80
6] Phenol	2.489	94	622	0.04	ppm	#	44
7] bis(2-chloroethyl)ether	2.588	93	628	0.05	ppm		89
8] 2-Chlorophenol	2.651	128	584	0.04	ppm		91
9] N-Nitroso-di-n-propyla...	3.145	70	365	0.04	ppm	#	62
10] Hexachloroethane	3.267	117	279	0.05	ppm		79
12] 2,4-Dimethylphenol	3.644	107	616	0.04	ppm	#	51
13] 2,4-Dichlorophenol	3.865	162	638	0.05	ppm		97
14] Naphthalene	4.048	128	2087	0.05	ppm		97
15] 4-Chloro-3-methylphenol	4.622	107	527	0.05	ppm		79
16] 2-Methylnaphthalene	4.809	142	1536	0.05	ppm		96
17] 1-Methylnaphthalene	4.920	142	1430	0.05	ppm		99
18] 2,4,6-Trichlorophenol	5.126	196	521	0.04	ppm		97
19] 2,4,5-Trichlorophenol	5.165	196	462	0.04	ppm		89
20] 2,3,4-Trichlorophenol	5.237	196	449	0.04	ppm	#	43
22] Biphenyl	5.353	154	1952	0.05	ppm		90
23] 2,6-Dimethylnaphthalene	5.535	156	1372	0.05	ppm		99
24] Dimethylphthalate	5.713	163	1893	0.05	ppm		99
25] Acenaphthylene	5.857	152	2170	0.05	ppm		75
26] Acenaphthene	6.064	153	1681	0.05	ppm		99
27] 2,3,5-Trimethylnaphtha...	6.528	170	1482	0.05	ppm		82
28] Diethylphthalate	6.566	149	1957	0.06	ppm		78
29] Fluorene	6.687	166	1824	0.05	ppm		98
31] N-Nitrosodiphenylamine	6.838	169	2818	0.06	ppm		77
32] Azobenzene	6.886	77	1503	0.05	ppm		89
34] Hexachlorobenzene	7.327	284	1030	0.06	ppm		92
35] Pentachlorophenol	7.558	266	383	0.08	ppm		94
36] Dibenzothiophene	7.652	184	3337	0.06	ppm		100
37] Phenanthrene	7.796	178	3374	0.06	ppm		95
38] Anthracene	7.854	178	3173	0.06	ppm		99
39] Carbazole	8.036	167	2367	0.05	ppm		97
40] Di-n-butylphthalate	8.433	149	3110	0.06	ppm		97
41] 1-Methylphenanthrene	8.466	192	2348	0.06	ppm		90
42] Fluoranthene	9.075	202	4063	0.06	ppm		97

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH177.D Vial: 15
Acq On : 22 Jan 2018 18:16 Operator: KVu
Sample : SVE7A2213 Inst : E7
Misc : 0.05PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:47:42 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
43] Pyrene	9.306	202	4185	0.06	ppm		100
45] Butylbenzylphthalate	9.983	149	973	0.08	ppm		99
46] Benzo(a)anthracene	10.541	228	9062	0.06	ppm		82
47] Chrysene	10.565	228	3976	0.06	ppm		99
48] bis(2-Ethylhexyl)phtha...	10.560	149	1689	0.08	ppm	#	7
50] Di-n-octylphthalate	11.172	149	2103	0.08	ppm		99
51] Benzo(b)fluoranthene	11.537	252	3296	0.05	ppm		99
52] Benzo(k)fluoranthene	11.561	252	3458	0.06	ppm		97
53] Benzo(e)pyrene	11.790	252	3443	0.06	ppm		95
54] Benzo(a)pyrene	11.842	252	2931	0.05	ppm		88
55] Perylene	11.921	252	3884	0.06	ppm	#	74
56] Indeno(1,2,3-cd)pyrene	13.087	276	3827	0.06	ppm		85
57] Dibenzo(a,h)anthracene	13.112	278	3158	0.06	ppm		96
58] Benzo(g,h,i)perylene	13.447	276	3250	0.06	ppm		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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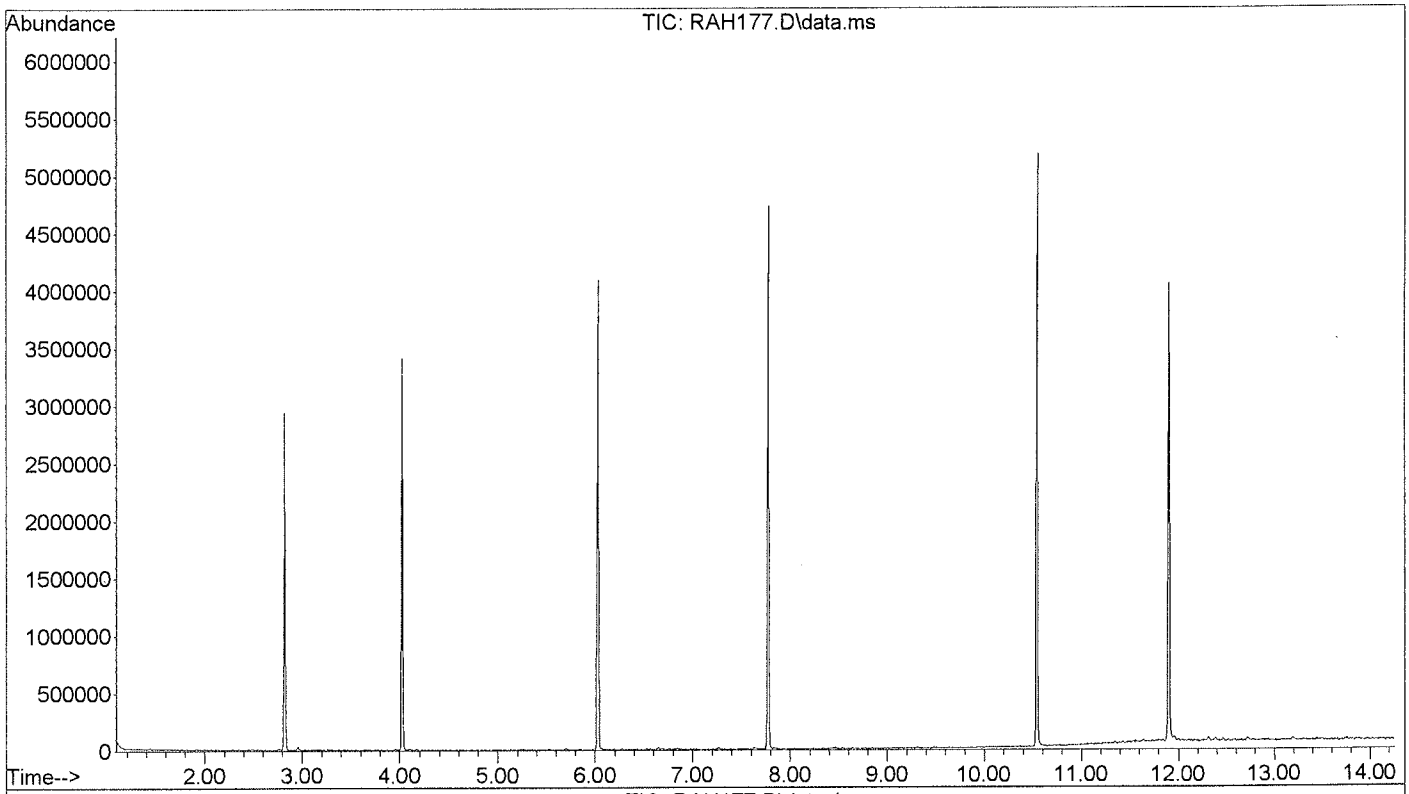
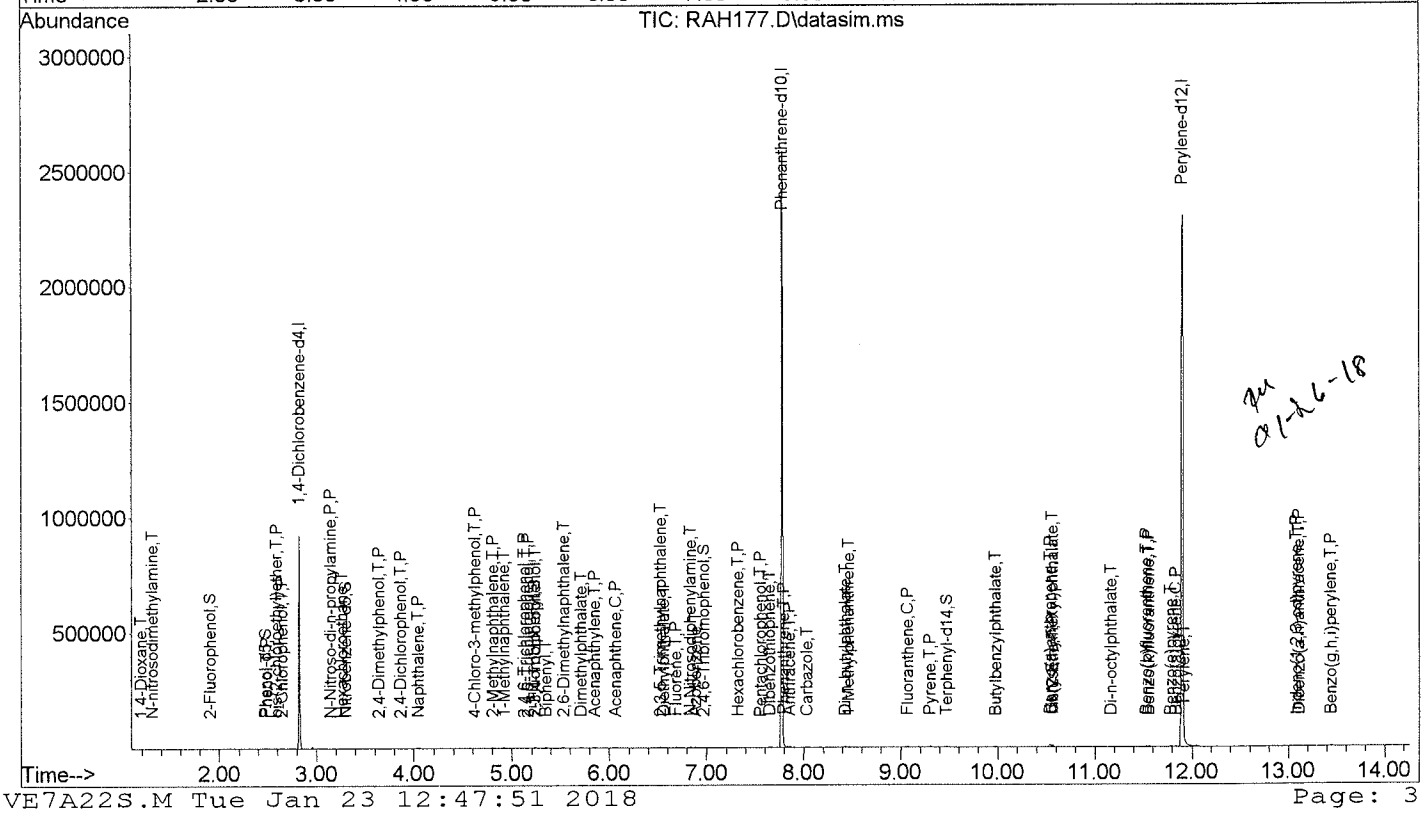
Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH177.D Vial: 15
Acq On : 22 Jan 2018 18:16 Operator: KVu
Sample : SVE7A2213 Inst : E7
Misc : 0.05PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:47:42 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





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Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH176.D Vial: 14
Acq On : 22 Jan 2018 17:58 Operator: KVu
Sample : SVE7A2212 Inst : E7
Misc : 0.075PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:25 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-Dichlorobenzene-d4	2.823	152	480458	40.00	ppm		0.00
30) Phenanthrene-d10	7.772	188	2350981	40.00	ppm		0.00
49) Perylene-d12	11.902	264	2436662	40.00	ppm		0.00
System Monitoring Compounds							
4) 2-Fluorophenol	1.908	112	941	0.07	ppm		0.00
Spiked Amount 30.000			Recovery =	0.23%			
5) Phenol-d5	2.478	99	1169	0.07	ppm		0.00
Spiked Amount 30.000			Recovery =	0.23%			
11) Nitrobenzene-d5	3.303	82	1102	0.07	ppm		0.00
Spiked Amount 10.000			Recovery =	0.70%			
21) 2-Fluorobiphenyl	5.232	172	3364	0.08	ppm		0.00
Spiked Amount 10.000			Recovery =	0.80%			
33) 2,4,6-Tribromophenol	6.971	330	596	0.06	ppm		0.00
Spiked Amount 30.000			Recovery =	0.20%			
44) Terphenyl-d14	9.477	244	4250	0.08	ppm		0.00
Spiked Amount 10.000			Recovery =	0.80%			
Target Compounds							Qvalue
2] 1,4-Dioxane	1.200	88	456	0.07	ppm		85
3] N-nitrosodimethylamine	1.315	74	506	0.07	ppm	#	36
6] Phenol	2.489	94	1059	0.07	ppm		69
7] bis(2-chloroethyl)ether	2.583	93	965	0.08	ppm		95
8] 2-Chlorophenol	2.650	128	1292	0.09	ppm		81
9] N-Nitroso-di-n-propyla...	3.145	70	626	0.07	ppm		96
10] Hexachloroethane	3.271	117	465	0.07	ppm	#	51
12] 2,4-Dimethylphenol	3.644	107	1016	0.07	ppm	#	62
13] 2,4-Dichlorophenol	3.865	162	988	0.07	ppm		92
14] Naphthalene	4.048	128	3404	0.08	ppm		90
15] 4-Chloro-3-methylphenol	4.622	107	797	0.07	ppm	#	1
16] 2-Methylnaphthalene	4.809	142	2429	0.08	ppm		87
17] 1-Methylnaphthalene	4.924	142	2291	0.08	ppm		100
18] 2,4,6-Trichlorophenol	5.126	196	868	0.07	ppm		97
19] 2,4,5-Trichlorophenol	5.164	196	800	0.06	ppm		99
20] 2,3,4-Trichlorophenol	5.237	196	693	0.06	ppm	#	56
22] Biphenyl	5.352	154	3144	0.08	ppm		79
23] 2,6-Dimethylnaphthalene	5.534	156	2181	0.07	ppm		94
24] Dimethylphthalate	5.712	163	2965	0.08	ppm		100
25] Acenaphthylene	5.857	152	3518	0.07	ppm		99
26] Acenaphthene	6.068	153	2646	0.08	ppm		97
27] 2,3,5-Trimethylnaphtha...	6.528	170	2241	0.08	ppm		87
28] Diethylphthalate	6.565	149	2835	0.08	ppm		83
29] Fluorene	6.687	166	2872	0.08	ppm		99
31] N-Nitrosodiphenylamine	6.838	169	3476	0.07	ppm		80
32] Azobenzene	6.885	77	2225	0.07	ppm		93
34] Hexachlorobenzene	7.326	284	1548	0.08	ppm		97
35] Pentachlorophenol	7.557	266	533	0.09	ppm		97
36] Dibenzothiophene	7.652	184	4650	0.08	ppm		99
37] Phenanthrene	7.795	178	4892	0.08	ppm		95
38] Anthracene	7.854	178	4520	0.07	ppm		99
39] Carbazole	8.035	167	3258	0.07	ppm		98
40] Di-n-butylphthalate	8.432	149	3924	0.07	ppm		84
41] 1-Methylphenanthrene	8.466	192	3482	0.08	ppm		96
42] Fluoranthene	9.075	202	5224	0.07	ppm		94

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Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH176.D Vial: 14
Acq On : 22 Jan 2018 17:58 Operator: KVu
Sample : SVE7A2212 Inst : E7
Misc : 0.075PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:25 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

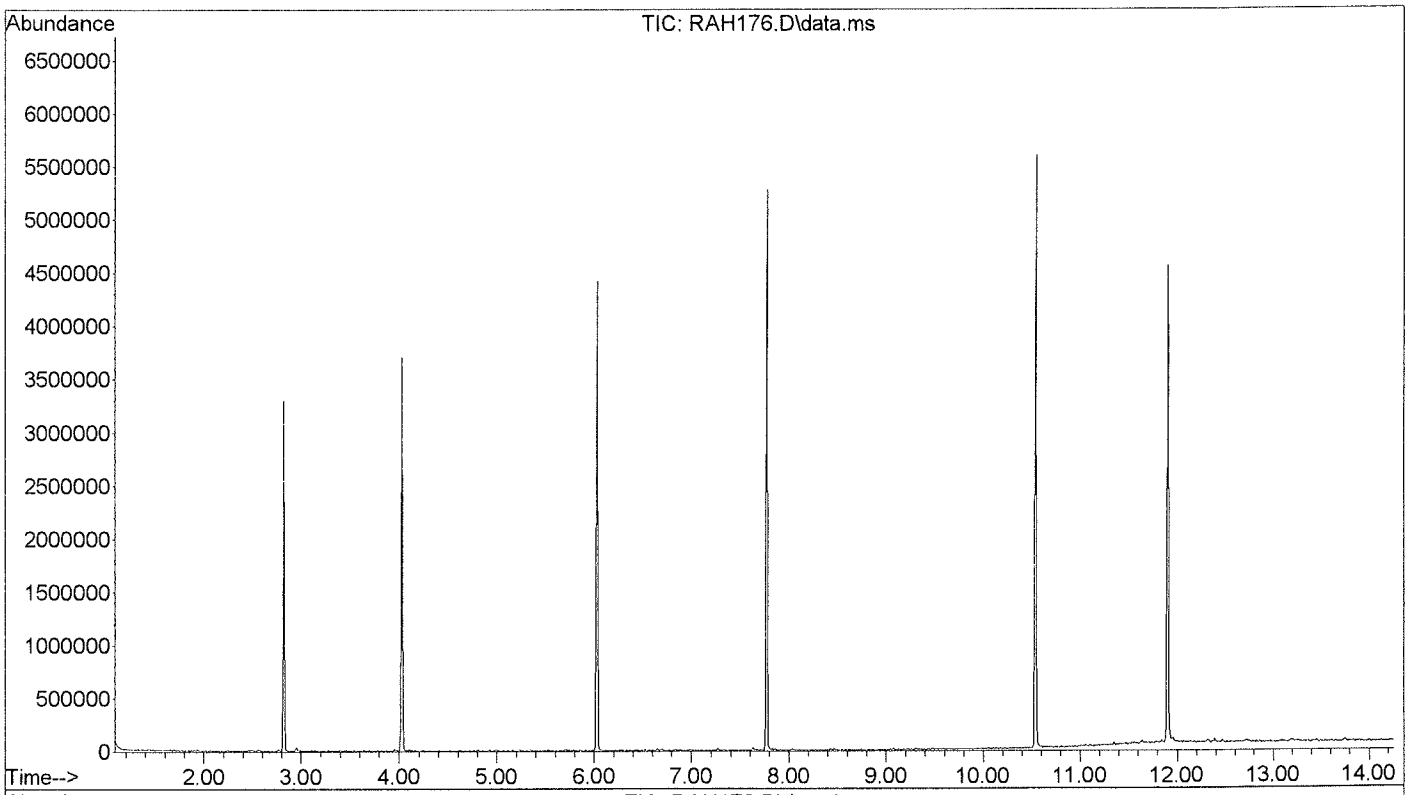
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
43] Pyrene	9.306	202	5854	0.08	ppm		99
45] Butylbenzylphthalate	9.982	149	1316	0.09	ppm		96
46] Benzo(a)anthracene	10.535	228	11376	0.08	ppm		85
47] Chrysene	10.565	228	5678	0.08	ppm		99
48] bis(2-Ethylhexyl)phtha...	10.555	149	2201	0.09	ppm	#	20
50] Di-n-octylphthalate	11.171	149	2877	0.09	ppm		94
51] Benzo(b)fluoranthene	11.536	252	4852	0.07	ppm		92
52] Benzo(k)fluoranthene	11.560	252	4207	0.06	ppm		93
53] Benzo(e)pyrene	11.790	252	4541	0.07	ppm		96
54] Benzo(a)pyrene	11.841	252	3963	0.07	ppm		96
55] Perylene	11.926	252	5051	0.08	ppm		97
56] Indeno(1,2,3-cd)pyrene	13.092	276	5724	0.08	ppm		95
57] Dibenzo(a,h)anthracene	13.111	278	4284	0.07	ppm		97
58] Benzo(g,h,i)perylene	13.446	276	4316	0.07	ppm		96

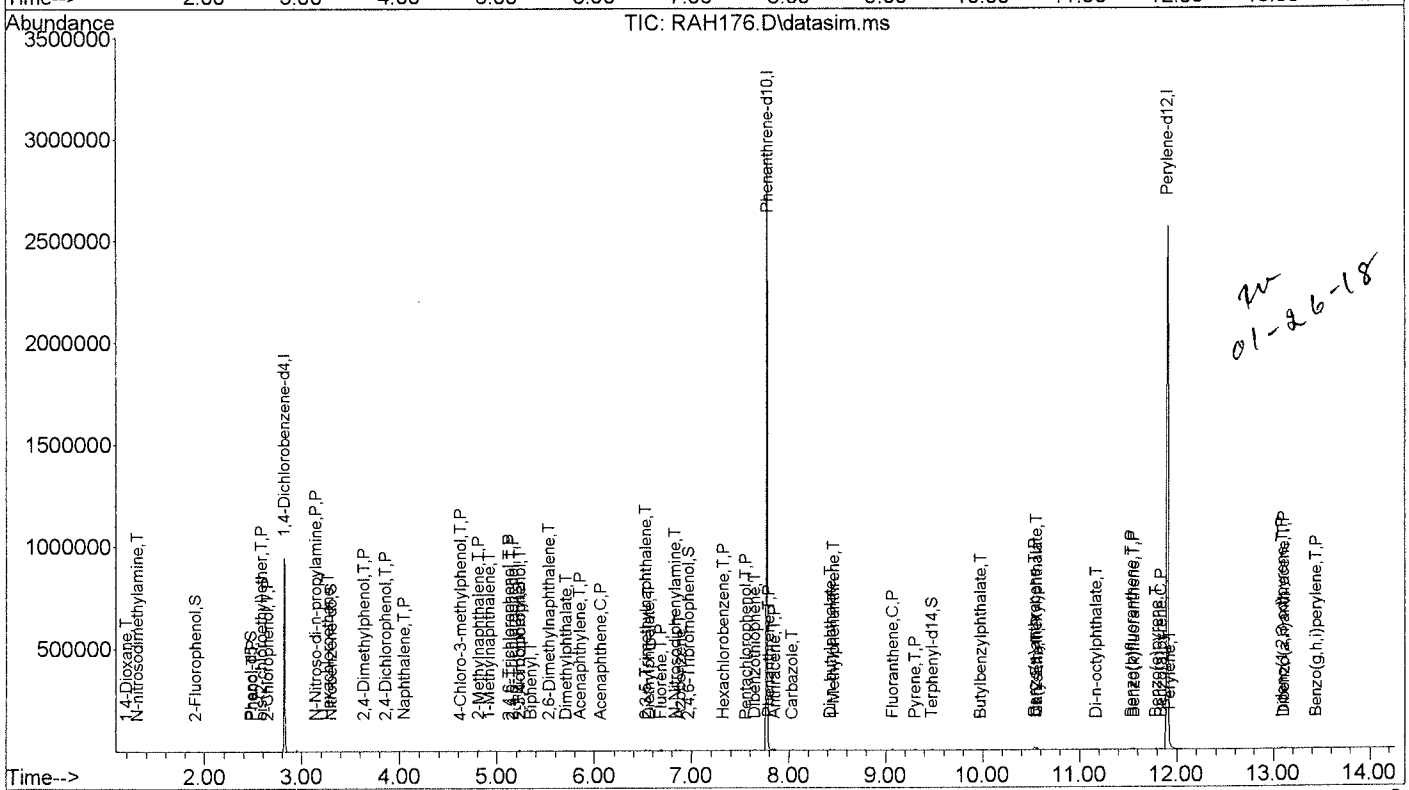
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH176.D Vial: 14
Acq On : 22 Jan 2018 17:58 Operator: KVu
Sample : SVE7A2212 Inst : E7
Misc : 0.075PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:25 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH175.D Vial: 13
Acq On : 22 Jan 2018 17:39 Operator: KVu
Sample : SVE7A2211 Inst : E7
Misc : 0.15PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:23 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-Dichlorobenzene-d4	2.819	152	492298	40.00	ppm		0.00
30) Phenanthrene-d10	7.773	188	2329647	40.00	ppm		0.00
49) Perylene-d12	11.903	264	2443131	40.00	ppm		0.00
System Monitoring Compounds							
4) 2-Fluorophenol	1.904	112	2063	0.16	ppm		0.00
Spiked Amount 30.000			Recovery =	0.53%			
5) Phenol-d5	2.478	99	2473	0.15	ppm		0.00
Spiked Amount 30.000			Recovery =	0.50%			
11) Nitrobenzene-d5	3.303	82	2661	0.16	ppm		0.00
Spiked Amount 10.000			Recovery =	1.60%			
21) 2-Fluorobiphenyl	5.232	172	7029	0.16	ppm		0.00
Spiked Amount 10.000			Recovery =	1.60%			
33) 2,4,6-Tribromophenol	6.971	330	1281	0.14	ppm		0.00
Spiked Amount 30.000			Recovery =	0.47%			
44) Terphenyl-d14	9.477	244	8205	0.15	ppm		0.00
Spiked Amount 10.000			Recovery =	1.50%			
Target Compounds							Qvalue
2] 1,4-Dioxane	1.195	88	864	0.16	ppm		91
3] N-nitrosodimethylamine	1.310	74	1024	0.14	ppm		81
6] Phenol	2.489	94	2415	0.15	ppm		87
7] bis(2-chloroethyl)ether	2.583	93	2070	0.16	ppm		97
8] 2-Chlorophenol	2.645	128	2523	0.17	ppm		88
9] N-Nitroso-di-n-propyla...	3.145	70	1362	0.14	ppm	#	21
10] Hexachloroethane	3.267	117	1020	0.16	ppm		93
12] 2,4-Dimethylphenol	3.644	107	2269	0.15	ppm	#	60
13] 2,4-Dichlorophenol	3.865	162	2170	0.15	ppm		82
14] Naphthalene	4.048	128	7332	0.16	ppm		95
15] 4-Chloro-3-methylphenol	4.617	107	1739	0.14	ppm		81
16] 2-Methylnaphthalene	4.809	142	5168	0.16	ppm		90
17] 1-Methylnaphthalene	4.919	142	4951	0.16	ppm		99
18] 2,4,6-Trichlorophenol	5.126	196	1861	0.15	ppm		85
19] 2,4,5-Trichlorophenol	5.164	196	1744	0.14	ppm		99
20] 2,3,4-Trichlorophenol	5.237	196	1550	0.14	ppm		73
22] Biphenyl	5.352	154	6809	0.16	ppm		99
23] 2,6-Dimethylnaphthalene	5.535	156	4789	0.16	ppm		98
24] Dimethylphthalate	5.713	163	6125	0.16	ppm		96
25] Acenaphthylene	5.857	152	7505	0.16	ppm		99
26] Acenaphthene	6.064	153	5689	0.16	ppm		100
27] 2,3,5-Trimethylnaphtha...	6.528	170	4757	0.16	ppm		95
28] Diethylphthalate	6.565	149	5649	0.15	ppm		97
29] Fluorene	6.687	166	6123	0.16	ppm		100
31] N-Nitrosodiphenylamine	6.838	169	6136	0.15	ppm		88
32] Azobenzene	6.885	77	4744	0.15	ppm		97
34] Hexachlorobenzene	7.326	284	3087	0.16	ppm		95
35] Pentachlorophenol	7.553	266	1118	0.15	ppm		98
36] Dibenzothiophene	7.652	184	9654	0.16	ppm		99
37] Phenanthrene	7.795	178	11245	0.18	ppm		96
38] Anthracene	7.854	178	9729	0.16	ppm		99
39] Carbazole	8.036	167	7084	0.15	ppm		100
40] Di-n-butylphthalate	8.432	149	8153	0.14	ppm		94
41] 1-Methylphenanthrene	8.466	192	6796	0.15	ppm		99
42] Fluoranthene	9.075	202	10550	0.15	ppm		98

01/26/18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH175.D Vial: 13
Acq On : 22 Jan 2018 17:39 Operator: KVu
Sample : SVE7A2211 Inst : E7
Misc : 0.15PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:23 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

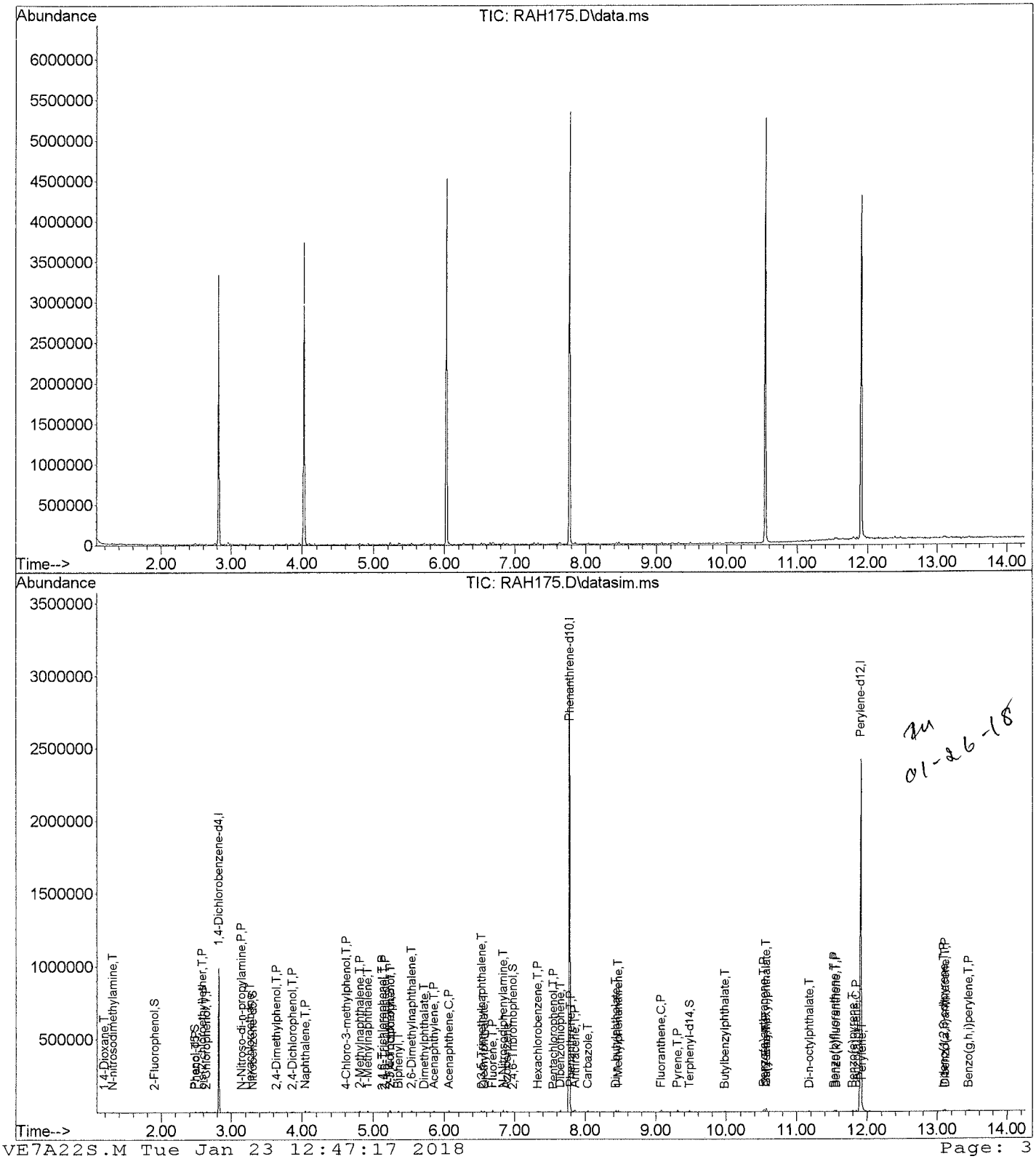
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.306	202	11506	0.15	ppm	99
45] Butylbenzylphthalate	9.983	149	2802	0.15	ppm	100
46] Benzo(a)anthracene	10.531	228	16531	0.15	ppm	90
47] Chrysene	10.565	228	11345	0.16	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.560	149	4490	0.15	ppm	93
50] Di-n-octylphthalate	11.177	149	6083	0.14	ppm	100
51] Benzo(b)fluoranthene	11.537	252	9623	0.15	ppm	99
52] Benzo(k)fluoranthene	11.561	252	9642	0.15	ppm	97
53] Benzo(e)pyrene	11.795	252	9609	0.15	ppm	96
54] Benzo(a)pyrene	11.847	252	8283	0.14	ppm	97
55] Perylene	11.927	252	10256	0.15	ppm	97
56] Indeno(1,2,3-cd)pyrene	13.093	276	10701	0.15	ppm	93
57] Dibenzo(a,h)anthracene	13.112	278	8746	0.14	ppm	97
58] Benzo(g,h,i)perylene	13.447	276	9162	0.15	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH175.D Vial: 13
Acq On : 22 Jan 2018 17:39 Operator: KVu
Sample : SVE7A2211 Inst : E7
Misc : 0.15PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:23 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH174.D Vial: 12
Acq On : 22 Jan 2018 17:20 Operator: KVu
Sample : SVE7A2210 Inst : E7
Misc : 0.5PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:21 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.823	152	487405	40.00	ppm	0.00
30) Phenanthrene-d10	7.773	188	2356172	40.00	ppm	0.00
49) Perylene-d12	11.903	264	2471883	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.904	112	6383	0.49	ppm	0.00
Spiked Amount 30.000			Recovery =	1.63%		
5) Phenol-d5	2.478	99	8061	0.49	ppm	0.00
Spiked Amount 30.000			Recovery =	1.63%		
11) Nitrobenzene-d5	3.303	82	7809	0.47	ppm	0.00
Spiked Amount 10.000			Recovery =	4.70%		
21) 2-Fluorobiphenyl	5.232	172	21536	0.49	ppm	0.00
Spiked Amount 10.000			Recovery =	4.90%		
33) 2,4,6-Tribromophenol	6.971	330	3990	0.43	ppm	0.00
Spiked Amount 30.000			Recovery =	1.43%		
44) Terphenyl-d14	9.477	244	25215	0.45	ppm	0.00
Spiked Amount 10.000			Recovery =	4.50%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	2351	0.49	ppm	100
3] N-nitrosodimethylamine	1.310	74	3338	0.47	ppm	91
6] Phenol	2.489	94	7677	0.49	ppm	100
7] bis(2-chloroethyl)ether	2.583	93	6244	0.50	ppm	100
8] 2-Chlorophenol	2.645	128	7233	0.49	ppm	96
9] N-Nitroso-di-n-propyla...	3.145	70	4583	0.49	ppm	95
10] Hexachloroethane	3.267	117	3189	0.50	ppm	94
12] 2,4-Dimethylphenol	3.644	107	7095	0.47	ppm	69
13] 2,4-Dichlorophenol	3.865	162	6771	0.47	ppm	95
14] Naphthalene	4.048	128	22208	0.50	ppm	98
15] 4-Chloro-3-methylphenol	4.618	107	5613	0.46	ppm	77
16] 2-Methylnaphthalene	4.809	142	15666	0.49	ppm	98
17] 1-Methylnaphthalene	4.919	142	15183	0.50	ppm	100
18] 2,4,6-Trichlorophenol	5.126	196	5800	0.46	ppm	99
19] 2,4,5-Trichlorophenol	5.164	196	5739	0.45	ppm	99
20] 2,3,4-Trichlorophenol	5.237	196	5099	0.45	ppm	89
22] Biphenyl	5.352	154	20961	0.50	ppm	100
23] 2,6-Dimethylnaphthalene	5.535	156	14647	0.49	ppm	99
24] Dimethylphthalate	5.713	163	19113	0.49	ppm	100
25] Acenaphthylene	5.857	152	23253	0.49	ppm	98
26] Acenaphthene	6.064	153	17232	0.50	ppm	99
27] 2,3,5-Trimethylnaphtha...	6.528	170	14432	0.49	ppm	98
28] Diethylphthalate	6.565	149	18168	0.48	ppm	99
29] Fluorene	6.687	166	18880	0.49	ppm	99
31] N-Nitrosodiphenylamine	6.838	169	16627	0.47	ppm	99
32] Azobenzene	6.885	77	14912	0.46	ppm	98
34] Hexachlorobenzene	7.326	284	9345	0.49	ppm	98
35] Pentachlorophenol	7.553	266	3379	0.37	ppm	100
36] Dibenzothiophene	7.652	184	28962	0.48	ppm	100
37] Phenanthrene	7.795	178	32173	0.50	ppm	98
38] Anthracene	7.854	178	29500	0.47	ppm	100
39] Carbazole	8.036	167	22184	0.45	ppm	100
40] Di-n-butylphthalate	8.432	149	25576	0.44	ppm	99
41] 1-Methylphenanthrene	8.466	192	21009	0.46	ppm	100
42] Fluoranthene	9.075	202	32565	0.45	ppm	98

pw 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH174.D Vial: 12
Acq On : 22 Jan 2018 17:20 Operator: KVu
Sample : SVE7A2210 Inst : E7
Misc : 0.5PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:21 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

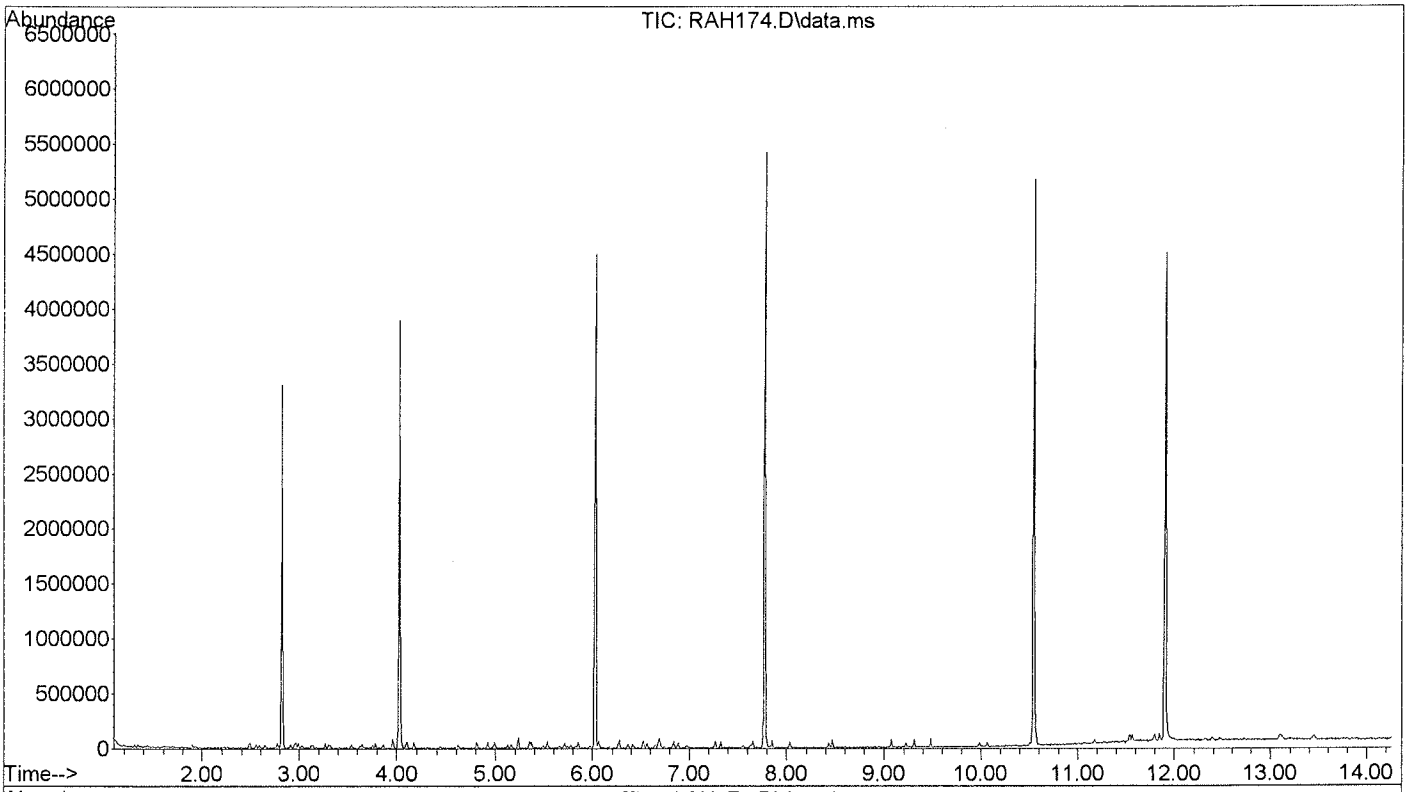
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.306	202	33973	0.45	ppm	99
45] Butylbenzylphthalate	9.983	149	8581	0.37	ppm	99
46] Benzo(a)anthracene	10.531	228	38027	0.43	ppm	95
47] Chrysene	10.565	228	33675	0.46	ppm	99
48] bis(2-Ethylhexyl)phtha...	10.560	149	13355	0.36	ppm	88
50] Di-n-octylphthalate	11.177	149	19019	0.35	ppm	98
51] Benzo(b)fluoranthene	11.537	252	29348	0.45	ppm	98
52] Benzo(k)fluoranthene	11.566	252	30358	0.46	ppm	98
53] Benzo(e)pyrene	11.795	252	29034	0.45	ppm	97
54] Benzo(a)pyrene	11.847	252	26077	0.43	ppm	98
55] Perylene	11.927	252	32353	0.48	ppm	100
56] Indeno(1,2,3-cd)pyrene	13.093	276	32483	0.44	ppm	97
57] Dibenzo(a,h)anthracene	13.112	278	27071	0.44	ppm	98
58] Benzo(g,h,i)perylene	13.447	276	27283	0.45	ppm	97

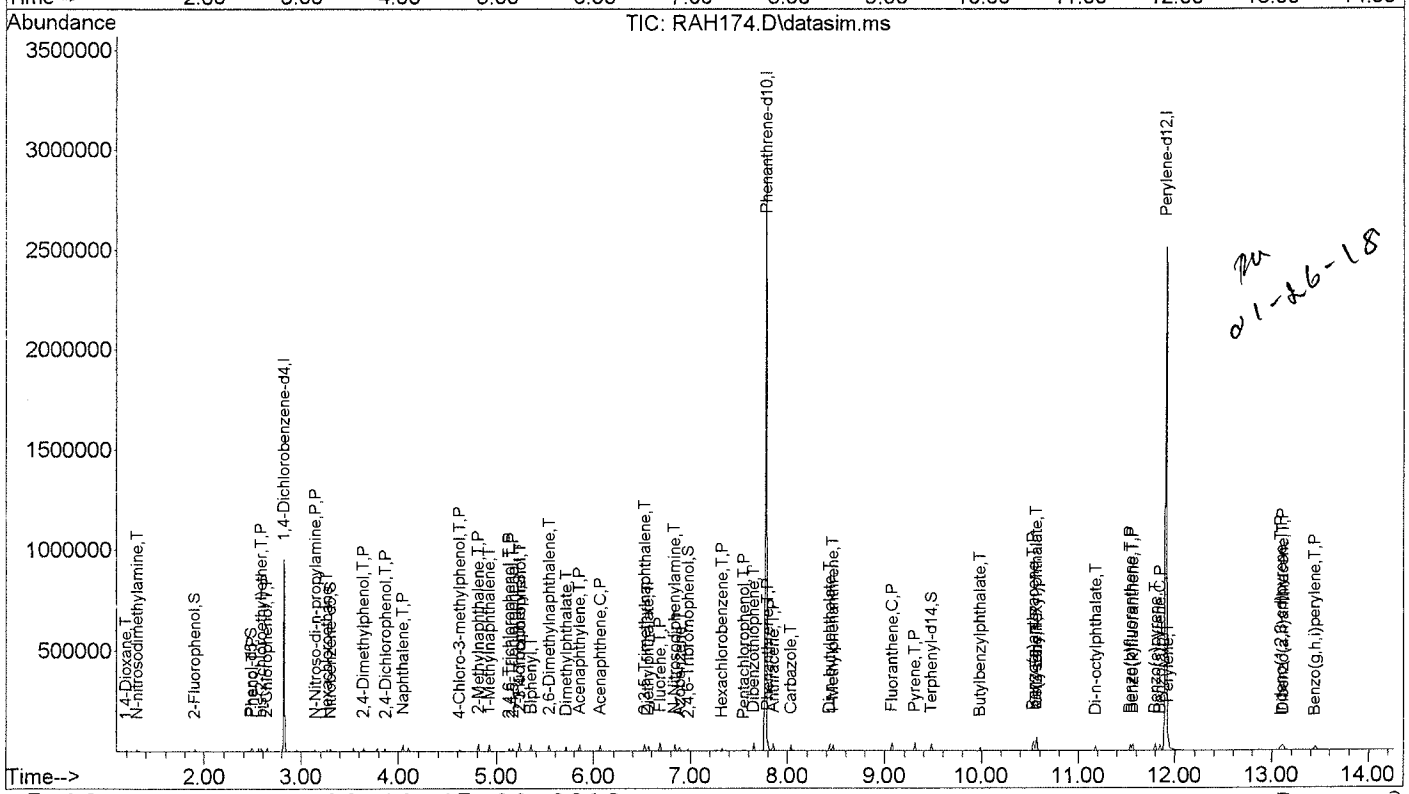
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH174.D Vial: 12
Acq On : 22 Jan 2018 17:20 Operator: KVu
Sample : SVE7A2210 Inst : E7
Misc : 0.5PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:21 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH173.D Vial: 11
Acq On : 22 Jan 2018 17:01 Operator: KVu
Sample : SVE7A229 Inst : E7
Misc : 2PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.819	152	545319	40.00	ppm	0.00
30) Phenanthrene-d10	7.773	188	2585223	40.00	ppm	0.00
49) Perylene-d12	11.907	264	3143542	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.904	112	27087	1.85	ppm	0.00
Spiked Amount 30.000			Recovery =	6.17%		
5) Phenol-d5	2.479	99	33820	1.84	ppm	0.00
Spiked Amount 30.000			Recovery =	6.13%		
11) Nitrobenzene-d5	3.298	82	34227	1.84	ppm	0.00
Spiked Amount 10.000			Recovery =	18.40%		
21) 2-Fluorobiphenyl	5.232	172	89716	1.82	ppm	0.00
Spiked Amount 10.000			Recovery =	18.20%		
33) 2,4,6-Tribromophenol	6.971	330	17755	1.75	ppm	0.00
Spiked Amount 30.000			Recovery =	5.83%		
44) Terphenyl-d14	9.477	244	116127	1.87	ppm	0.00
Spiked Amount 10.000			Recovery =	18.70%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	9603	1.87	ppm	100
3] N-nitrosodimethylamine	1.305	74	14753	1.86	ppm	100
6] Phenol	2.489	94	33329	1.90	ppm	100
7] bis(2-chloroethyl)ether	2.583	93	25457	1.83	ppm	99
8] 2-Chlorophenol	2.645	128	30270	1.83	ppm	99
9] N-Nitroso-di-n-propyla...	3.145	70	20479	1.95	ppm	97
10] Hexachloroethane	3.267	117	13326	1.85	ppm	99
12] 2,4-Dimethylphenol	3.644	107	31776	1.88	ppm	67
13] 2,4-Dichlorophenol	3.860	162	29284	1.83	ppm	99
14] Naphthalene	4.048	128	92379	1.86	ppm	99
15] 4-Chloro-3-methylphenol	4.617	107	24202	1.77	ppm	93
16] 2-Methylnaphthalene	4.809	142	66475	1.85	ppm	99
17] 1-Methylnaphthalene	4.919	142	63387	1.86	ppm	100
18] 2,4,6-Trichlorophenol	5.126	196	24950	1.77	ppm	99
19] 2,4,5-Trichlorophenol	5.164	196	25590	1.81	ppm	100
20] 2,3,4-Trichlorophenol	5.237	196	22792	1.82	ppm	98
22] Biphenyl	5.352	154	86914	1.86	ppm	99
23] 2,6-Dimethylnaphthalene	5.534	156	61448	1.84	ppm	100
24] Dimethylphthalate	5.712	163	78530	1.80	ppm	100
25] Acenaphthylene	5.857	152	97355	1.82	ppm	100
26] Acenaphthene	6.068	153	69704	1.81	ppm	100
27] 2,3,5-Trimethylnaphtha...	6.528	170	59075	1.78	ppm	99
28] Diethylphthalate	6.565	149	75501	1.78	ppm	100
29] Fluorene	6.687	166	76226	1.78	ppm	100
31] N-Nitrosodiphenylamine	6.838	169	65538	1.79	ppm	100
32] Azobenzene	6.885	77	64232	1.81	ppm	99
34] Hexachlorobenzene	7.326	284	36620	1.76	ppm	100
35] Pentachlorophenol	7.553	266	16407	1.53	ppm	98
36] Dibenzothiophene	7.652	184	118310	1.78	ppm	100
37] Phenanthrene	7.795	178	126927	1.80	ppm	99
38] Anthracene	7.854	178	125074	1.83	ppm	100
39] Carbazole	8.036	167	102671	1.91	ppm	100
40] Di-n-butylphthalate	8.432	149	113160	1.77	ppm	100
41] 1-Methylphenanthrene	8.466	192	92901	1.85	ppm	100
42] Fluoranthene	9.075	202	146238	1.85	ppm	100

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH173.D Vial: 11
Acq On : 22 Jan 2018 17:01 Operator: KVu
Sample : SVE7A229 Inst : E7
Misc : 2PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

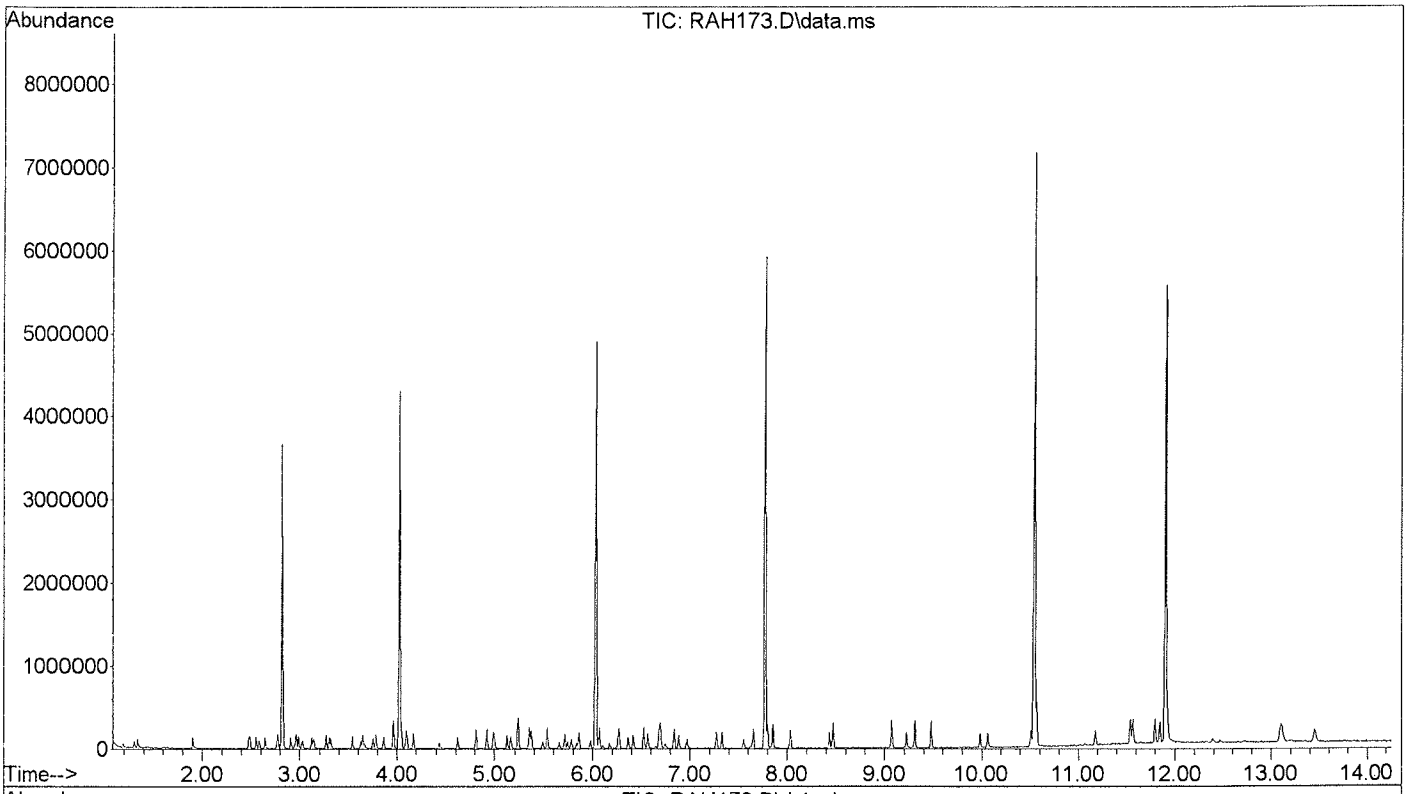
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.306	202	156352	1.87	ppm	99
45] Butylbenzylphthalate	9.983	149	43863	1.57	ppm	99
46] Benzo(a)anthracene	10.536	228	164410	1.91	ppm	99
47] Chrysene	10.570	228	157250	1.97	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.560	149	69446	1.60	ppm	98
50] Di-n-octylphthalate	11.176	149	105320	1.40	ppm	99
51] Benzo(b)fluoranthene	11.541	252	143357	1.71	ppm	99
52] Benzo(k)fluoranthene	11.565	252	158591	1.89	ppm	100
53] Benzo(e)pyrene	11.799	252	145691	1.79	ppm	99
54] Benzo(a)pyrene	11.846	252	135152	1.77	ppm	99
55] Perylene	11.931	252	154710	1.81	ppm	97
56] Indeno(1,2,3-cd)pyrene	13.097	276	167286	1.76	ppm	98
57] Dibenzo(a,h)anthracene	13.112	278	140063	1.79	ppm	99
58] Benzo(g,h,i)perylene	13.451	276	137422	1.78	ppm	98

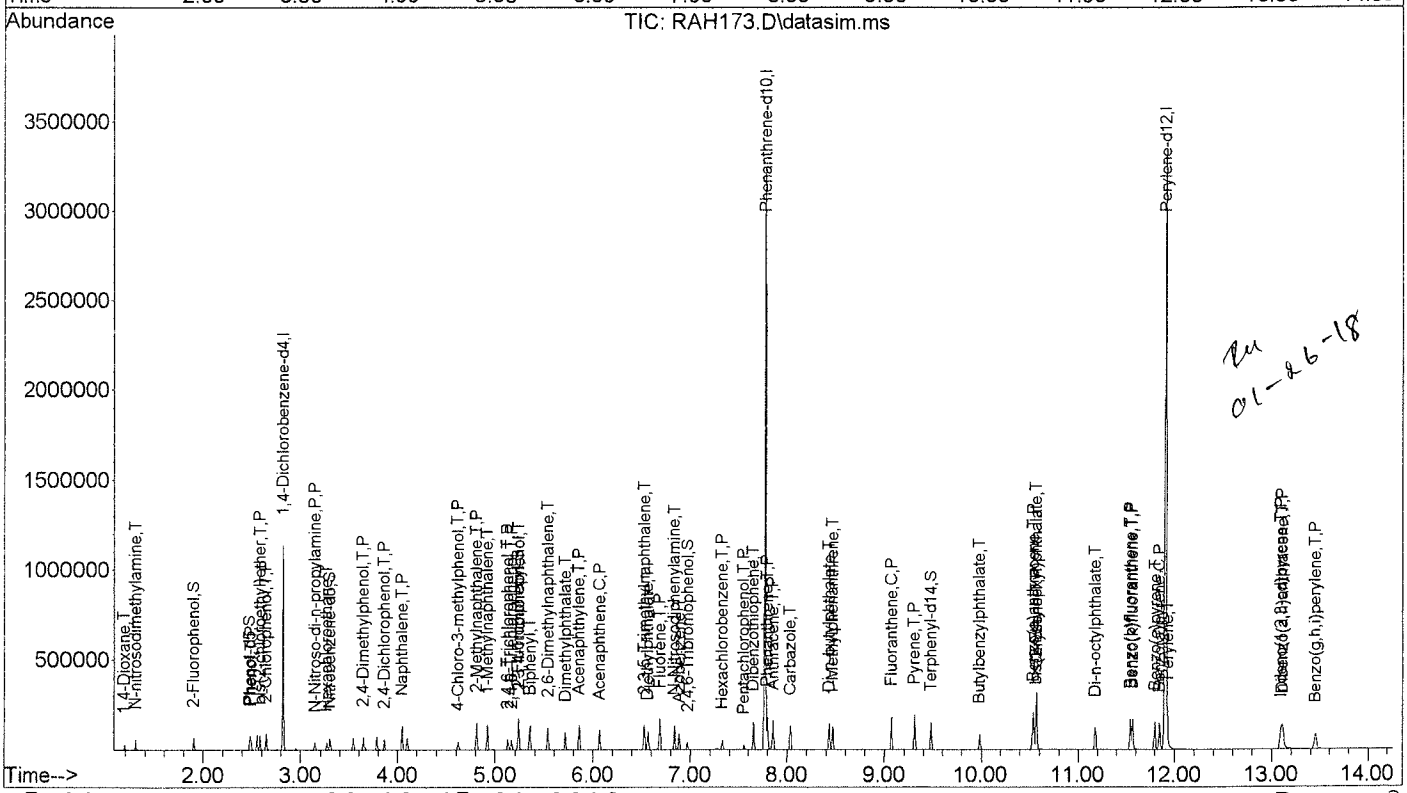
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH173.D Vial: 11
Acq On : 22 Jan 2018 17:01 Operator: KVu
Sample : SVE7A229 Inst : E7
Misc : 2PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH172.D Vial: 10
Acq On : 22 Jan 2018 16:43 Operator: KVu
Sample : SVE7A228 Inst : E7
Misc : 4PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:17 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.824	152	493692	40.00	ppm	0.00
30) Phenanthrene-d10	7.773	188	2396084	40.00	ppm	0.00
49) Perylene-d12	11.908	264	2462170	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.904	112	52394	3.94	ppm	0.00
Spiked Amount 30.000			Recovery =	13.13%		
5) Phenol-d5	2.479	99	65690	3.94	ppm	0.00
Spiked Amount 30.000			Recovery =	13.13%		
11) Nitrobenzene-d5	3.298	82	67019	3.97	ppm	0.00
Spiked Amount 10.000			Recovery =	39.70%		
21) 2-Fluorobiphenyl	5.232	172	174206	3.91	ppm	0.00
Spiked Amount 10.000			Recovery =	39.10%		
33) 2,4,6-Tribromophenol	6.971	330	36432	3.87	ppm	0.00
Spiked Amount 30.000			Recovery =	12.90%		
44) Terphenyl-d14	9.477	244	215293	3.75	ppm	0.00
Spiked Amount 10.000			Recovery =	37.50%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	18131	3.93	ppm	100
3] N-nitrosodimethylamine	1.306	74	29151	4.06	ppm	99
6] Phenol	2.489	94	64802	4.08	ppm	100
7] bis(2-chloroethyl)ether	2.583	93	48557	3.85	ppm	99
8] 2-Chlorophenol	2.645	128	58219	3.89	ppm	100
9] N-Nitroso-di-n-propyla...	3.145	70	39994	4.21	ppm	99
10] Hexachloroethane	3.267	117	26142	4.02	ppm	97
12] 2,4-Dimethylphenol	3.644	107	62762	4.11	ppm	97
13] 2,4-Dichlorophenol	3.860	162	58001	4.00	ppm	99
14] Naphthalene	4.048	128	176381	3.92	ppm	100
15] 4-Chloro-3-methylphenol	4.617	107	51424	4.15	ppm	99
16] 2-Methylnaphthalene	4.809	142	128170	3.94	ppm	99
17] 1-Methylnaphthalene	4.919	142	122913	3.97	ppm	100
18] 2,4,6-Trichlorophenol	5.126	196	52273	4.09	ppm	100
19] 2,4,5-Trichlorophenol	5.164	196	53684	4.20	ppm	99
20] 2,3,4-Trichlorophenol	5.237	196	47597	4.19	ppm	99
22] Biphenyl	5.352	154	169255	3.99	ppm	100
23] 2,6-Dimethylnaphthalene	5.535	156	121523	4.01	ppm	100
24] Dimethylphthalate	5.712	163	160879	4.06	ppm	100
25] Acenaphthylene	5.857	152	196232	4.05	ppm	100
26] Acenaphthene	6.068	153	138043	3.97	ppm	100
27] 2,3,5-Trimethylnaphtha...	6.528	170	119121	3.96	ppm	99
28] Diethylphthalate	6.565	149	155637	4.06	ppm	99
29] Fluorene	6.687	166	155378	4.01	ppm	100
31] N-Nitrosodiphenylamine	6.838	169	132063	3.92	ppm	100
32] Azobenzene	6.885	77	133544	4.06	ppm	100
34] Hexachlorobenzene	7.326	284	74121	3.84	ppm	99
35] Pentachlorophenol	7.553	266	32899	3.27	ppm	100
36] Dibenzothiophene	7.652	184	235368	3.83	ppm	100
37] Phenanthrene	7.795	178	249207	3.82	ppm	100
38] Anthracene	7.854	178	247216	3.90	ppm	100
39] Carbazole	8.036	167	195080	3.92	ppm	99
40] Di-n-butylphthalate	8.432	149	224411	3.79	ppm	100
41] 1-Methylphenanthrene	8.466	192	181016	3.88	ppm	100
42] Fluoranthene	9.075	202	275018	3.75	ppm	100

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH172.D
Acq On : 22 Jan 2018 16:43
Sample : SVE7A228
Misc : 4PPM
Integrator: RTE
Quant Time: Jan 23 12:45:17 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 10
Operator: KVu
Inst : E7
Multiplr: 1.00

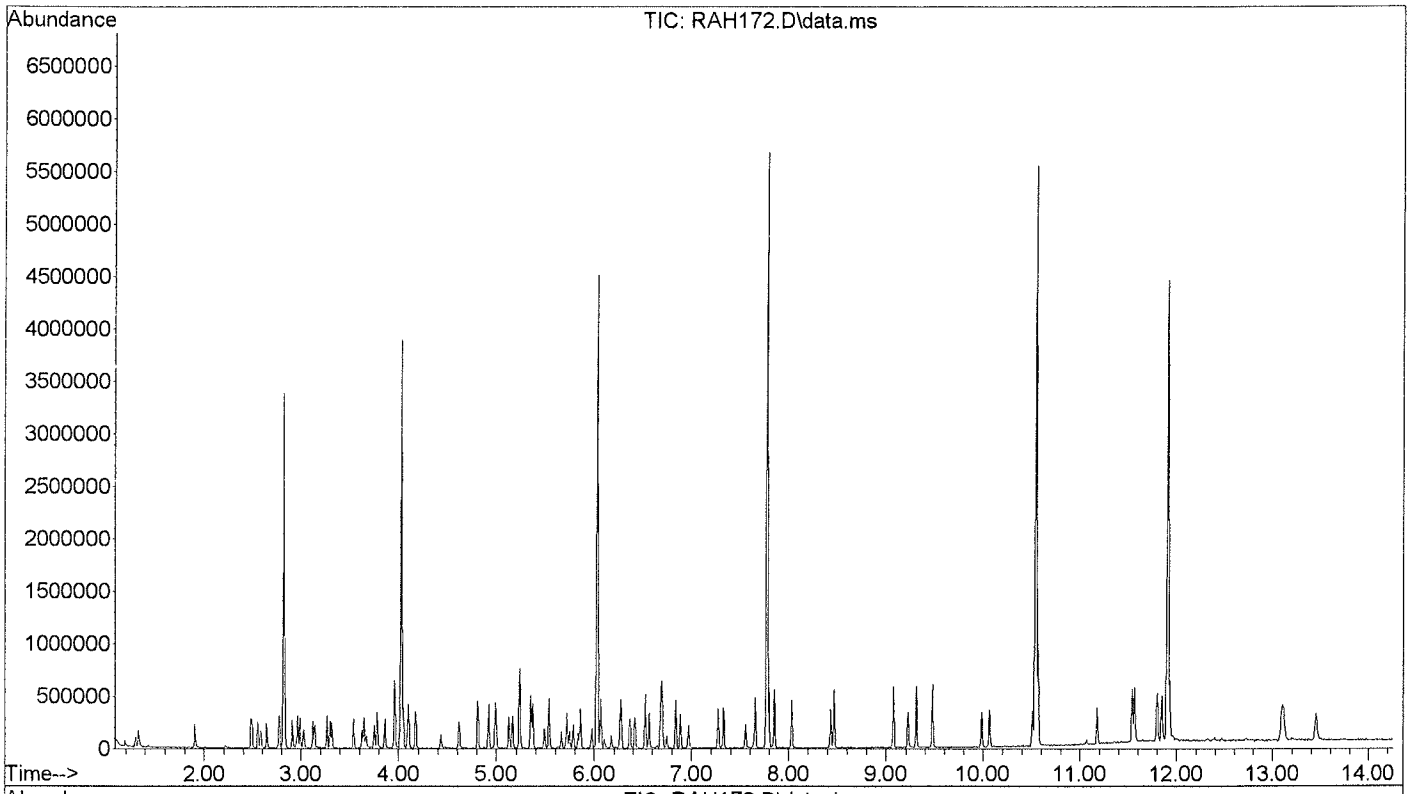
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.311	202	289677	3.74	ppm	100
45] Butylbenzylphthalate	9.987	149	83673	3.19	ppm	100
46] Benzo(a)anthracene	10.531	228	281231	3.57	ppm	100
47] Chrysene	10.565	228	269913	3.66	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.560	149	134032	3.30	ppm	100
50] Di-n-octylphthalate	11.177	149	198956	3.32	ppm	100
51] Benzo(b)fluoranthene	11.542	252	249171	3.80	ppm	100
52] Benzo(k)fluoranthene	11.566	252	265450	4.05	ppm	100
53] Benzo(e)pyrene	11.795	252	246151	3.86	ppm	100
54] Benzo(a)pyrene	11.847	252	234701	3.92	ppm	99
55] Perylene	11.926	252	256199	3.82	ppm	99
56] Indeno(1,2,3-cd)pyrene	13.093	276	280613	3.77	ppm	98
57] Dibenzo(a,h)anthracene	13.112	278	235286	3.84	ppm	99
58] Benzo(g,h,i)perylene	13.452	276	229680	3.80	ppm	99

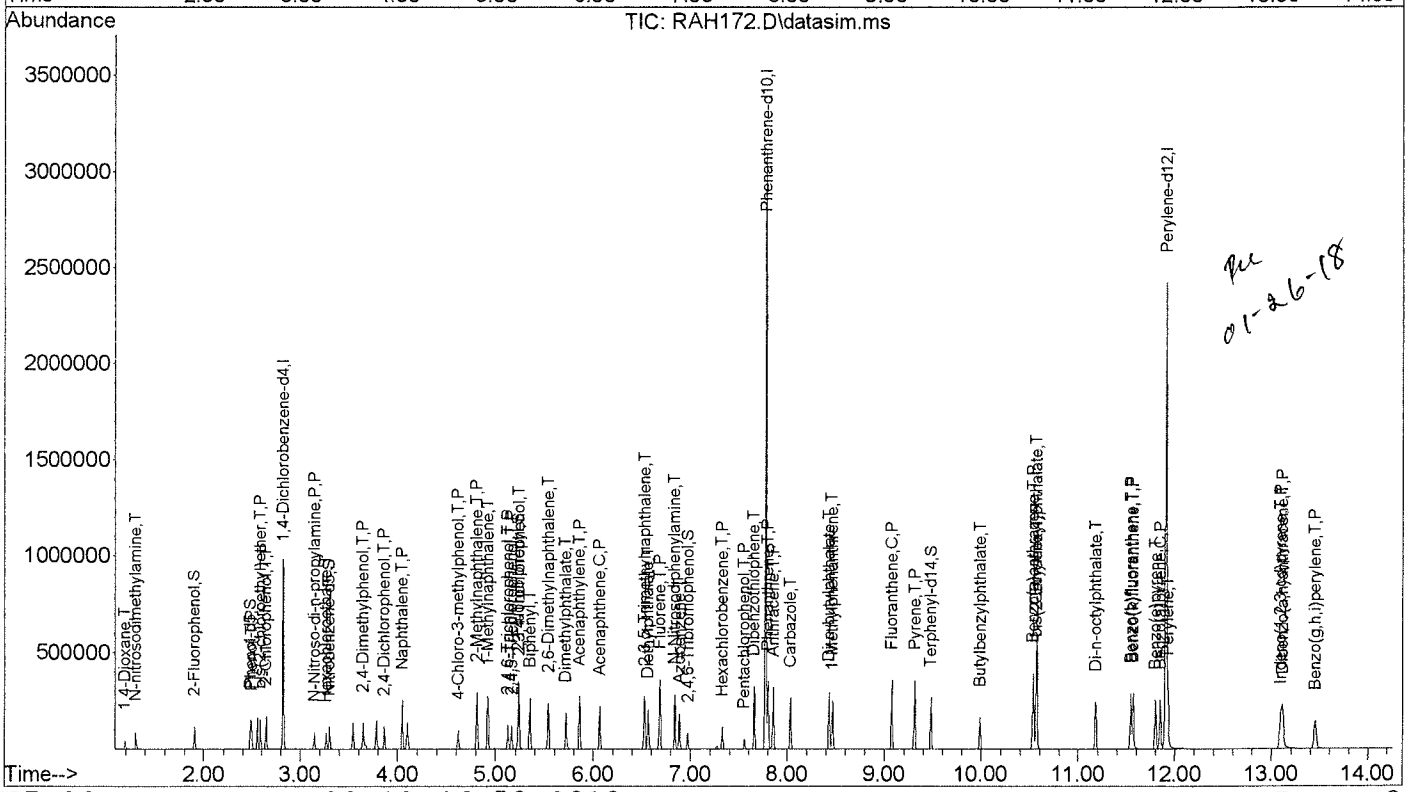
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH172.D Vial: 10
Acq On : 22 Jan 2018 16:43 Operator: KVu
Sample : SVE7A228 Inst : E7
Misc : 4PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:17 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





pc 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH171.D Vial: 9
Acq On : 22 Jan 2018 16:24 Operator: KVu
Sample : SVE7A227 Inst : E7
Misc : 10PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:46:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.823	152	506334	40.00	ppm	0.00
30) Phenanthrene-d10	7.773	188	2504784	40.00	ppm	0.00
49) Perylene-d12	11.903	264	2523496	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.904	112	135916	9.97	ppm	0.00
Spiked Amount 30.000			Recovery =	33.23%		
5) Phenol-d5	2.478	99	174291	10.20	ppm	0.00
Spiked Amount 30.000			Recovery =	34.00%		
11) Nitrobenzene-d5	3.303	82	176869	10.22	ppm	0.00
Spiked Amount 10.000			Recovery =	102.20%		
21) 2-Fluorobiphenyl	5.232	172	453263	9.91	ppm	0.00
Spiked Amount 10.000			Recovery =	99.10%		
33) 2,4,6-Tribromophenol	6.971	330	101171	10.27	ppm	0.00
Spiked Amount 30.000			Recovery =	34.23%		
44) Terphenyl-d14	9.477	244	577465	9.62	ppm	0.00
Spiked Amount 10.000			Recovery =	96.20%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	46836	9.93	ppm	100
3] N-nitrosodimethylamine	1.305	74	75643	10.28	ppm	99
6] Phenol	2.489	94	169376	10.39	ppm	100
7] bis(2-chloroethyl)ether	2.583	93	125872	9.73	ppm	100
8] 2-Chlorophenol	2.645	128	151137	9.84	ppm	99
9] N-Nitroso-di-n-propyla...	3.145	70	104864	10.76	ppm	99
10] Hexachloroethane	3.271	117	67800	10.16	ppm	98
12] 2,4-Dimethylphenol	3.644	107	165876	10.60	ppm	100
13] 2,4-Dichlorophenol	3.865	162	155635	10.47	ppm	100
14] Naphthalene	4.048	128	458016	9.92	ppm	100
15] 4-Chloro-3-methylphenol	4.617	107	137435	10.81	ppm	99
16] 2-Methylnaphthalene	4.809	142	334977	10.04	ppm	100
17] 1-Methylnaphthalene	4.924	142	318705	10.05	ppm	100
18] 2,4,6-Trichlorophenol	5.126	196	140014	10.69	ppm	100
19] 2,4,5-Trichlorophenol	5.164	196	146048	11.14	ppm	100
20] 2,3,4-Trichlorophenol	5.237	196	128553	11.04	ppm	100
22] Biphenyl	5.352	154	439393	10.10	ppm	100
23] 2,6-Dimethylnaphthalene	5.534	156	316043	10.18	ppm	100
24] Dimethylphthalate	5.717	163	421679	10.39	ppm	100
25] Acenaphthylene	5.857	152	515283	10.37	ppm	100
26] Acenaphthene	6.068	153	357899	10.03	ppm	100
27] 2,3,5-Trimethylnaphtha...	6.528	170	314307	10.19	ppm	100
28] Diethylphthalate	6.570	149	411274	10.47	ppm	100
29] Fluorene	6.687	166	408942	10.30	ppm	100
31] N-Nitrosodiphenylamine	6.838	169	349555	9.99	ppm	100
32] Azobenzene	6.885	77	355925	10.35	ppm	100
34] Hexachlorobenzene	7.331	284	191856	9.51	ppm	100
35] Pentachlorophenol	7.553	266	95317	9.01	ppm	100
36] Dibenzothiophene	7.657	184	619339	9.64	ppm	100
37] Phenanthrene	7.795	178	648760	9.50	ppm	100
38] Anthracene	7.854	178	655462	9.89	ppm	100
39] Carbazole	8.035	167	518658	9.98	ppm	100
40] Di-n-butylphthalate	8.432	149	621934	10.05	ppm	100
41] 1-Methylphenanthrene	8.466	192	479065	9.83	ppm	100
42] Fluoranthene	9.075	202	735188	9.58	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH171.D Vial: 9
Acq On : 22 Jan 2018 16:24 Operator: KVu
Sample : SVE7A227 Inst : E7
Misc : 10PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:46:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

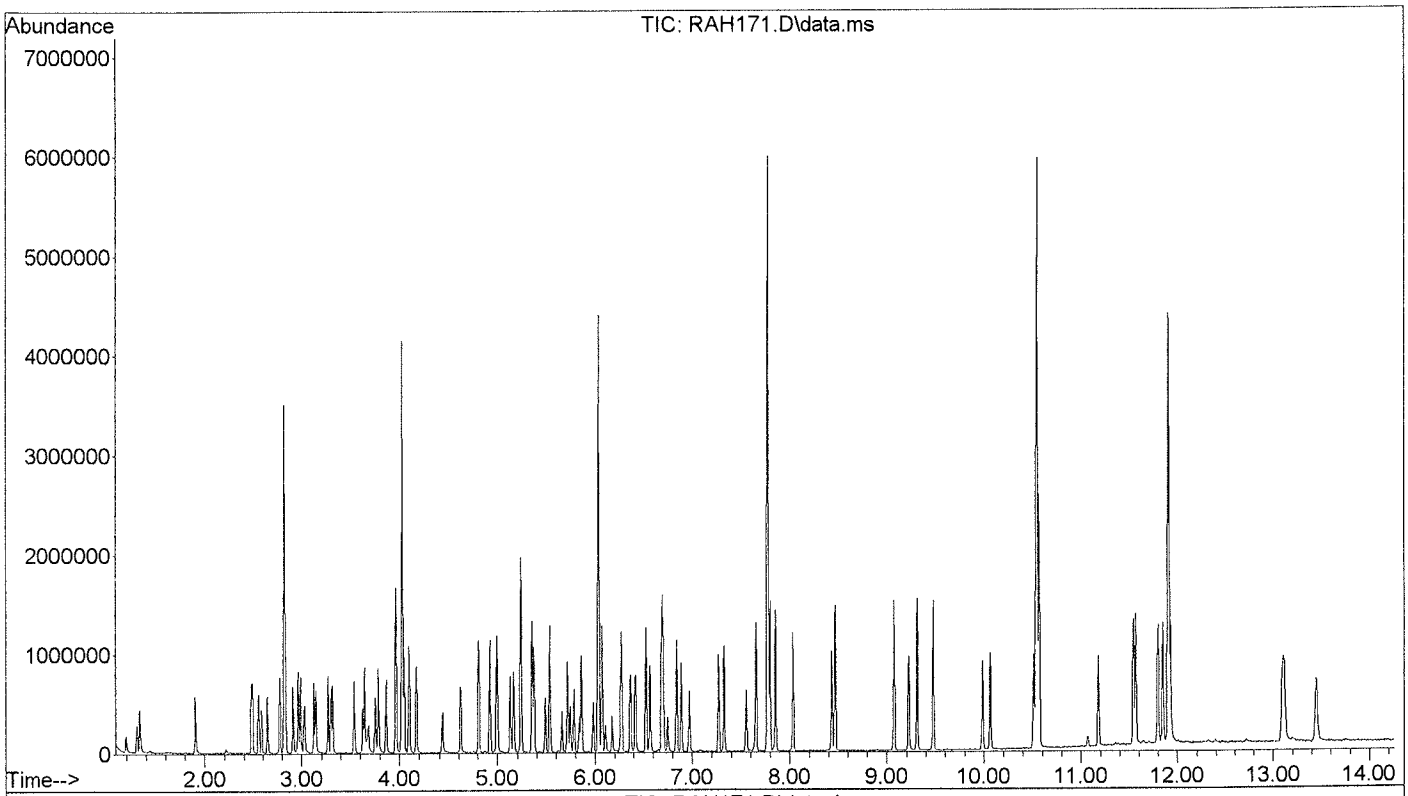
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.311	202	771206	9.52	ppm	100
45] Butylbenzylphthalate	9.983	149	245090	8.88	ppm	100
46] Benzo(a)anthracene	10.531	228	740488	9.11	ppm	100
47] Chrysene	10.565	228	700980	9.08	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.560	149	380747	8.92	ppm	100
50] Di-n-octylphthalate	11.177	149	586978	9.47	ppm	100
51] Benzo(b)fluoranthene	11.537	252	678853	10.10	ppm	100
52] Benzo(k)fluoranthene	11.566	252	686406	10.21	ppm	100
53] Benzo(e)pyrene	11.795	252	650318	9.95	ppm	100
54] Benzo(a)pyrene	11.847	252	636223	10.37	ppm	100
55] Perylene	11.926	252	664295	9.66	ppm	100
56] Indeno(1,2,3-cd)pyrene	13.092	276	751290	9.86	ppm	100
57] Dibenzo(a,h)anthracene	13.112	278	627913	9.99	ppm	100
58] Benzo(g,h,i)perylene	13.451	276	608478	9.82	ppm	99

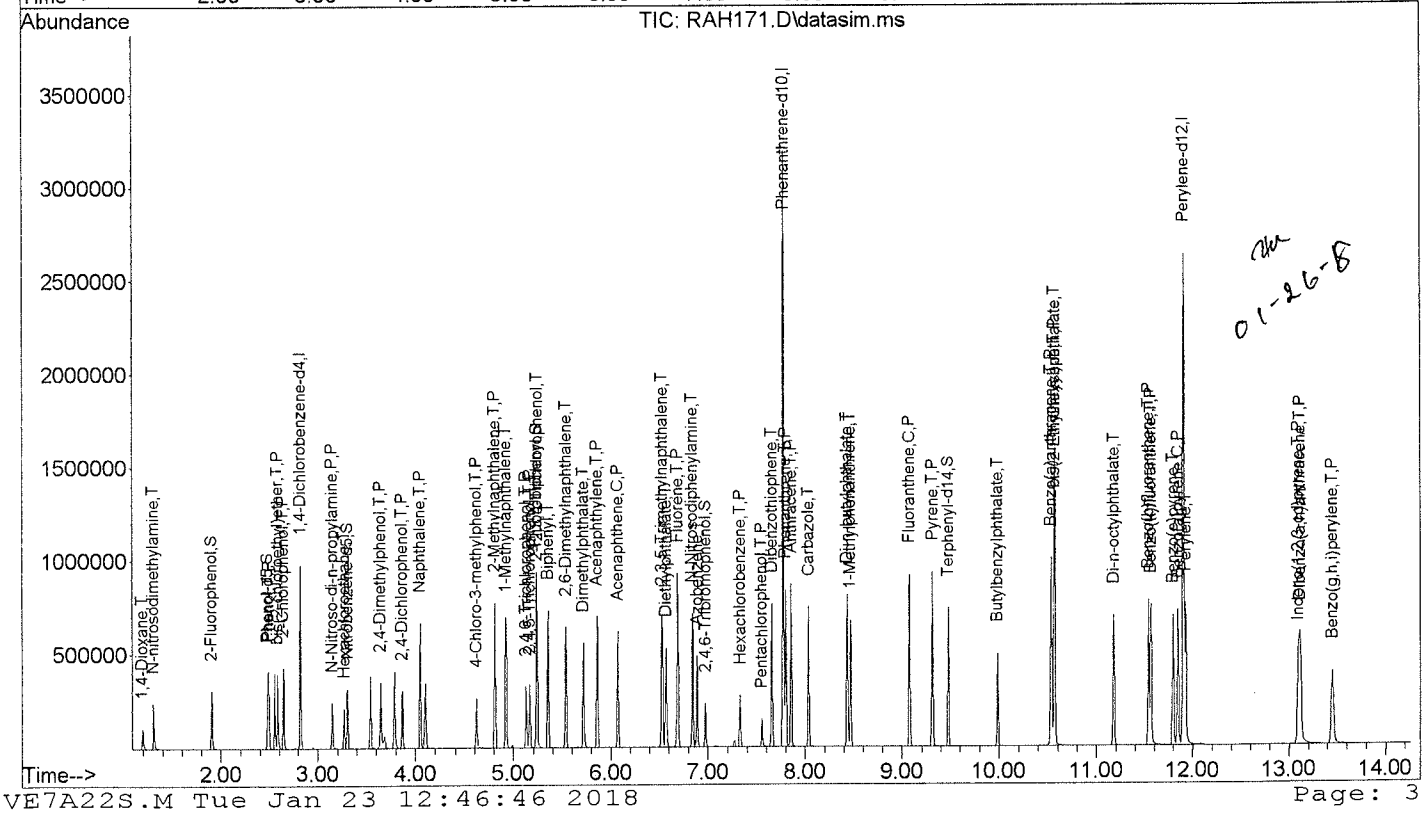
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH171.D Vial: 9
Acq On : 22 Jan 2018 16:24 Operator: KVu
Sample : SVE7A227 Inst : E7
Misc : 10PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:46:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH170.D Vial: 8
Acq On : 22 Jan 2018 16:05 Operator: KVu
Sample : SVE7A226 Inst : E7
Misc : 20PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:13 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.823	152	512078	40.00	ppm	0.00
30) Phenanthrene-d10	7.772	188	2479503	40.00	ppm	0.00
49) Perylene-d12	11.907	264	2562171	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.904	112	279824	20.30	ppm	0.00
Spiked Amount 30.000			Recovery =	67.67%		
5) Phenol-d5	2.478	99	356102	20.60	ppm	0.00
Spiked Amount 30.000			Recovery =	68.67%		
11) Nitrobenzene-d5	3.303	82	364011	20.80	ppm	0.00
Spiked Amount 10.000			Recovery =	208.00%		
21) 2-Fluorobiphenyl	5.237	172	915034	19.78	ppm	0.00
Spiked Amount 10.000			Recovery =	197.80%		
33) 2,4,6-Tribromophenol	6.971	330	208351	21.37	ppm	0.00
Spiked Amount 30.000			Recovery =	71.23%		
44) Terphenyl-d14	9.482	244	1167038	19.65	ppm	0.00
Spiked Amount 10.000			Recovery =	196.50%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	95762	20.10	ppm	100
3] N-nitrosodimethylamine	1.305	74	155285	20.86	ppm	100
6] Phenol	2.489	94	350290	21.24	ppm	100
7] bis(2-chloroethyl)ether	2.583	93	255097	19.49	ppm	100
8] 2-Chlorophenol	2.645	128	309508	19.92	ppm	100
9] N-Nitroso-di-n-propyla...	3.145	70	213458	21.67	ppm	100
10] Hexachloroethane	3.267	117	139448	20.67	ppm	97
12] 2,4-Dimethylphenol	3.649	107	335939	21.22	ppm	99
13] 2,4-Dichlorophenol	3.865	162	316139	21.02	ppm	100
14] Naphthalene	4.048	128	930980	19.94	ppm	100
15] 4-Chloro-3-methylphenol	4.617	107	282527	21.97	ppm	99
16] 2-Methylnaphthalene	4.809	142	679511	20.13	ppm	99
17] 1-Methylnaphthalene	4.924	142	645784	20.13	ppm	100
18] 2,4,6-Trichlorophenol	5.126	196	287559	21.71	ppm	100
19] 2,4,5-Trichlorophenol	5.164	196	301654	22.74	ppm	100
20] 2,3,4-Trichlorophenol	5.237	196	263653	22.39	ppm	100
22] Biphenyl	5.352	154	889119	20.21	ppm	100
23] 2,6-Dimethylnaphthalene	5.534	156	643018	20.48	ppm	100
24] Dimethylphthalate	5.717	163	847893	20.65	ppm	100
25] Acenaphthylene	5.862	152	1041804	20.73	ppm	100
26] Acenaphthene	6.068	153	720599	19.96	ppm	100
27] 2,3,5-Trimethylnaphtha...	6.532	170	635041	20.36	ppm	100
28] Diethylphthalate	6.570	149	822773	20.71	ppm	100
29] Fluorene	6.687	166	822588	20.49	ppm	100
31] N-Nitrosodiphenylamine	6.838	169	696811	20.15	ppm	100
32] Azobenzene	6.885	77	714644	20.99	ppm	100
34] Hexachlorobenzene	7.331	284	385153	19.28	ppm	99
35] Pentachlorophenol	7.553	266	203056	19.36	ppm	99
36] Dibenzothiophene	7.657	184	1237178	19.46	ppm	100
37] Phenanthrene	7.800	178	1287616	19.05	ppm	100
38] Anthracene	7.854	178	1314636	20.04	ppm	100
39] Carbazole	8.035	167	1057695	20.55	ppm	100
40] Di-n-butylphthalate	8.432	149	1273809	20.80	ppm	100
41] 1-Methylphenanthrene	8.471	192	959520	19.90	ppm	100
42] Fluoranthene	9.075	202	1488777	19.60	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH170.D Vial: 8
Acq On : 22 Jan 2018 16:05 Operator: KVu
Sample : SVE7A226 Inst : E7
Misc : 20PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:13 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

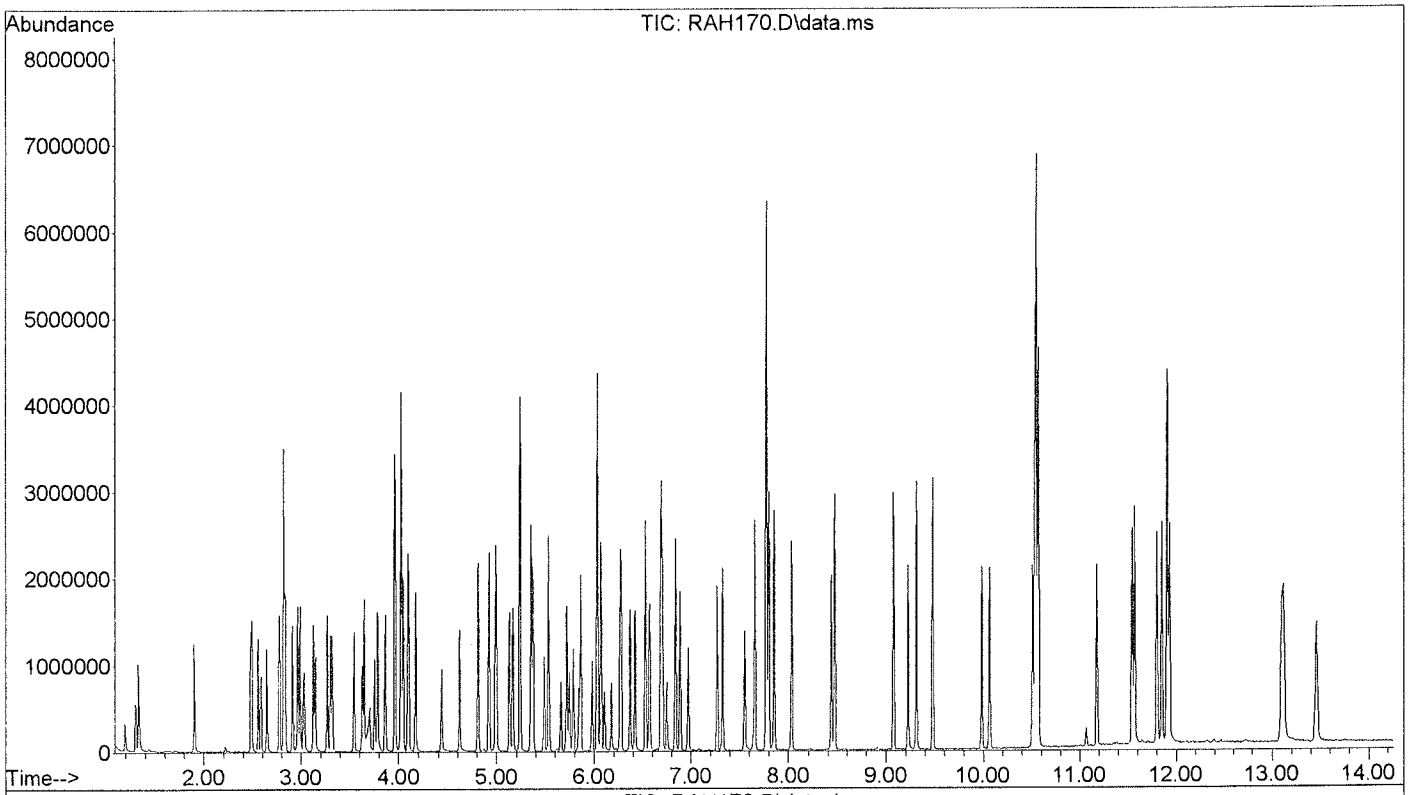
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.311	202	1556944	19.41	ppm	100
45] Butylbenzylphthalate	9.987	149	517803	18.90	ppm	99
46] Benzo(a)anthracene	10.535	228	1501572	18.73	ppm	100
47] Chrysene	10.569	228	1424681	18.65	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.560	149	794644	18.78	ppm	100
50] Di-n-octylphthalate	11.176	149	1266255	20.08	ppm	100
51] Benzo(b)fluoranthene	11.541	252	1446528	21.19	ppm	100
52] Benzo(k)fluoranthene	11.565	252	1390494	20.37	ppm	100
53] Benzo(e)pyrene	11.799	252	1353162	20.40	ppm	100
54] Benzo(a)pyrene	11.851	252	1339769	21.51	ppm	100
55] Perylene	11.931	252	1370036	19.63	ppm	100
56] Indeno(1,2,3-cd)pyrene	13.097	276	1593456	20.59	ppm	100
57] Dibenzo(a,h)anthracene	13.121	278	1331182	20.86	ppm	100
58] Benzo(g,h,i)perylene	13.461	276	1283449	20.41	ppm	100

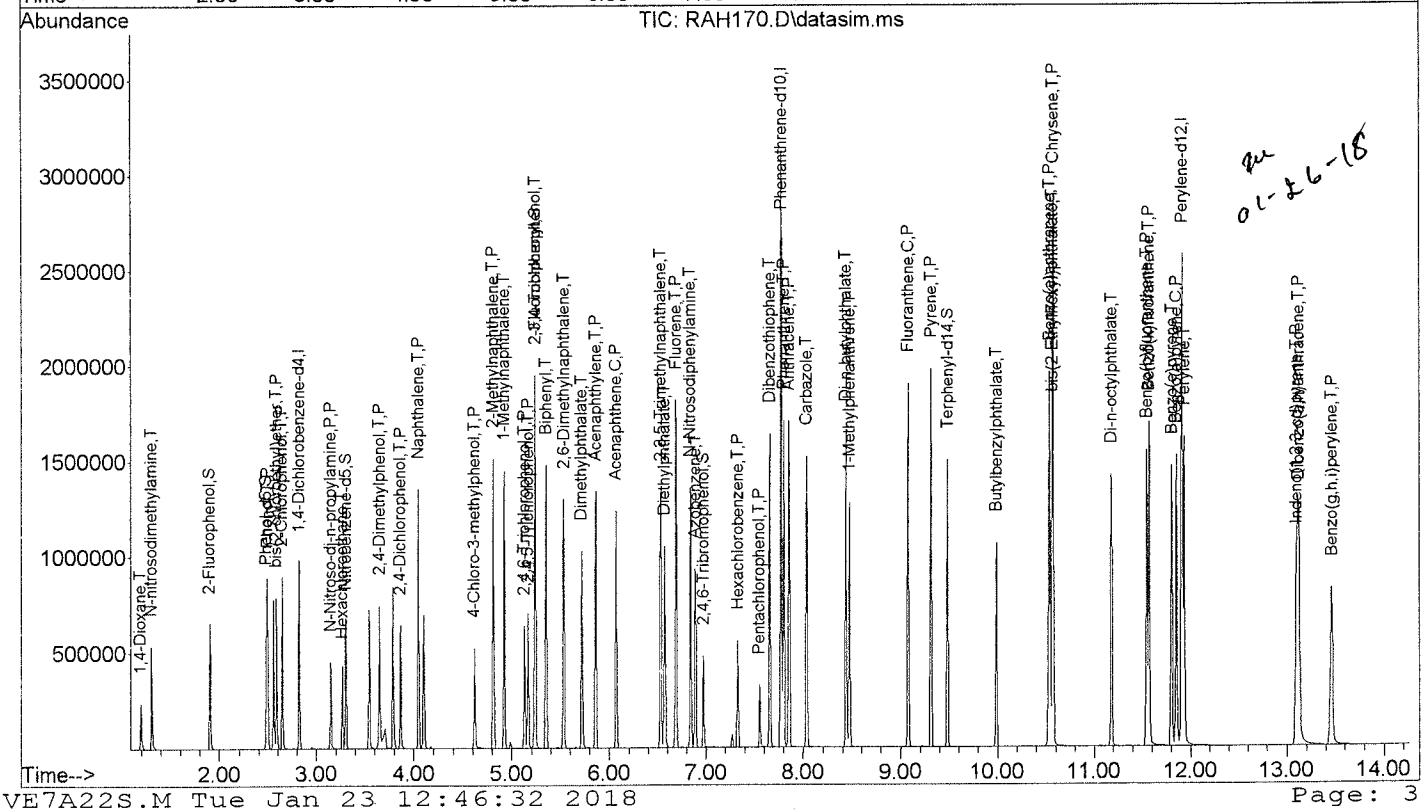
(#) = qualifier out of range (m) = manual integration (+) = signals summed

JM 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH170.D Vial: 8
Acq On : 22 Jan 2018 16:05 Operator: KVu
Sample : SVE7A226 Inst : E7
Misc : 20PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:13 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH169.D Vial: 7
Acq On : 22 Jan 2018 15:46 Operator: KVu
Sample : SVE7A225 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:11 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.824	152	562576	40.00	ppm	0.00
30) Phenanthrene-d10	7.773	188	2636875	40.00	ppm	0.00
49) Perylene-d12	11.908	264	3203576	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.904	112	387677	25.61	ppm	0.00
Spiked Amount 30.000			Recovery =	85.37%		
5) Phenol-d5	2.479	99	482320	25.40	ppm	0.00
Spiked Amount 30.000			Recovery =	84.67%		
11) Nitrobenzene-d5	3.303	82	498171	25.91	ppm	0.00
Spiked Amount 10.000			Recovery =	259.10%		
21) 2-Fluorobiphenyl	5.237	172	1227607	24.15	ppm	0.00
Spiked Amount 10.000			Recovery =	241.50%		
33) 2,4,6-Tribromophenol	6.971	330	278411	26.85	ppm	0.00
Spiked Amount 30.000			Recovery =	89.50%		
44) Terphenyl-d14	9.482	244	1677326	26.55	ppm	0.00
Spiked Amount 10.000			Recovery =	265.50%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	131900	25.21	ppm	100
3] N-nitrosodimethylamine	1.306	74	215282	26.33	ppm	100
6] Phenol	2.489	94	481716	26.59	ppm	100
7] bis(2-chloroethyl)ether	2.583	93	352140	24.49	ppm	100
8] 2-Chlorophenol	2.645	128	427463	25.04	ppm	100
9] N-Nitroso-di-n-propyla...	3.150	70	290784	26.87	ppm	100
10] Hexachloroethane	3.271	117	188672	25.45	ppm	100
12] 2,4-Dimethylphenol	3.649	107	457978	26.33	ppm	100
13] 2,4-Dichlorophenol	3.865	162	430492	26.06	ppm	100
14] Naphthalene	4.048	128	1268837	24.74	ppm	100
15] 4-Chloro-3-methylphenol	4.622	107	372993	26.40	ppm	100
16] 2-Methylnaphthalene	4.809	142	919338	24.79	ppm	100
17] 1-Methylnaphthalene	4.924	142	869838	24.68	ppm	100
18] 2,4,6-Trichlorophenol	5.126	196	383186	26.33	ppm	100
19] 2,4,5-Trichlorophenol	5.164	196	394752	27.09	ppm	100
20] 2,3,4-Trichlorophenol	5.237	196	346057	26.74	ppm	100
22] Biphenyl	5.352	154	1182964	24.48	ppm	100
23] 2,6-Dimethylnaphthalene	5.535	156	862035	24.99	ppm	100
24] Dimethylphthalate	5.722	163	1090943	24.19	ppm	100
25] Acenaphthylene	5.862	152	1375131	24.90	ppm	100
26] Acenaphthene	6.068	153	951829	24.00	ppm	100
27] 2,3,5-Trimethylnaphtha...	6.533	170	834021	24.34	ppm	100
28] Diethylphthalate	6.570	149	1065470	24.42	ppm	100
29] Fluorene	6.687	166	1071173	24.29	ppm	100
31] N-Nitrosodiphenylamine	6.843	169	908574	24.71	ppm	100
32] Azobenzene	6.890	77	930145	25.69	ppm	100
34] Hexachlorobenzene	7.331	284	504009	23.72	ppm	100
35] Pentachlorophenol	7.558	266	286380	25.66	ppm	100
36] Dibenzothiophene	7.657	184	1641367	24.28	ppm	100
37] Phenanthrene	7.800	178	1730270	24.07	ppm	100
38] Anthracene	7.854	178	1764078	25.28	ppm	100
39] Carbazole	8.036	167	1472347	26.90	ppm	100
40] Di-n-butylphthalate	8.432	149	1757175	26.98	ppm	100
41] 1-Methylphenanthrene	8.471	192	1320222	25.74	ppm	100
42] Fluoranthene	9.075	202	2124367	26.30	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH169.D Vial: 7
Acq On : 22 Jan 2018 15:46 Operator: KVu
Sample : SVE7A225 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:11 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

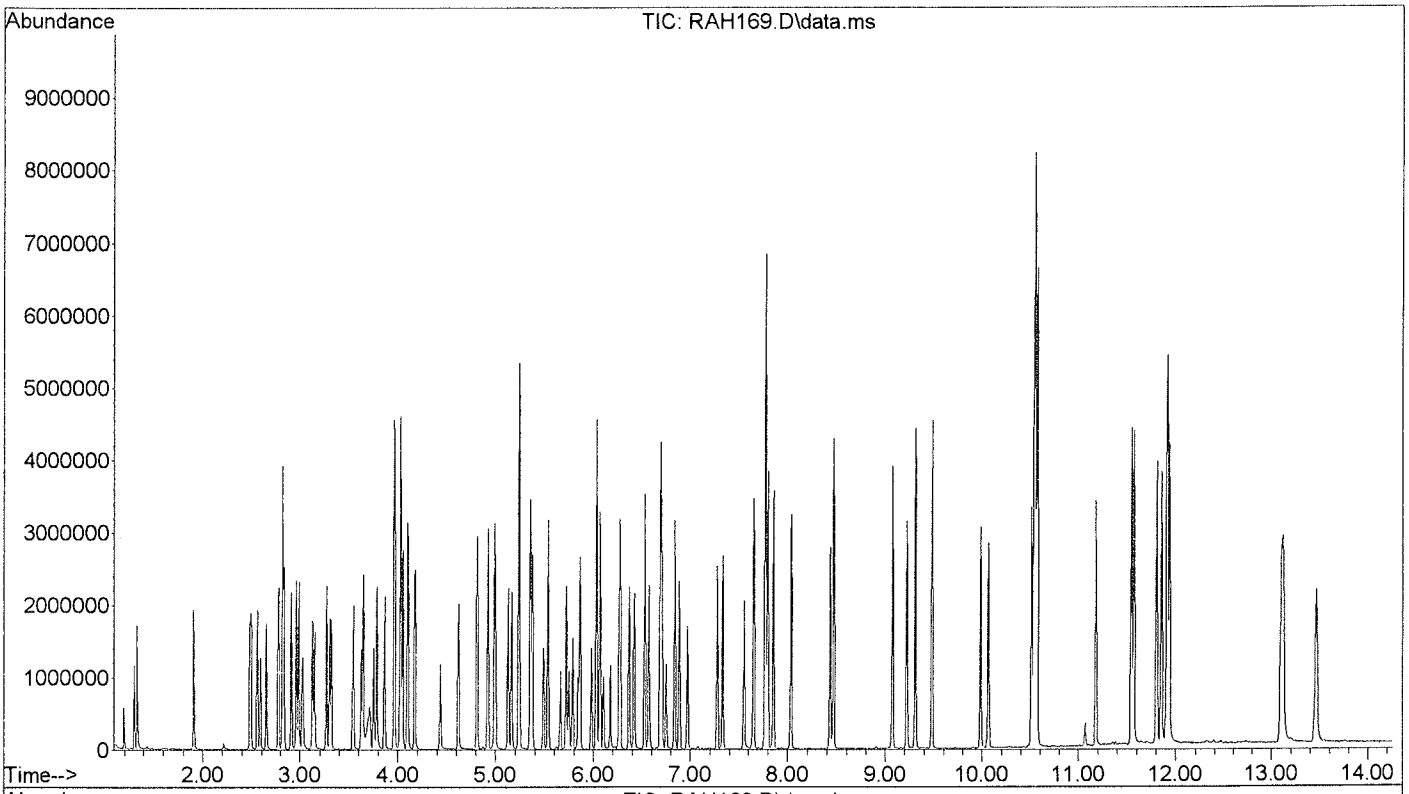
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.311	202	2216201	25.99	ppm	100
45] Butylbenzylphthalate	9.987	149	764604	26.23	ppm	100
46] Benzo(a)anthracene	10.536	228	2264380	26.58	ppm	100
47] Chrysene	10.570	228	2112468	26.00	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.560	149	1190408	26.44	ppm	100
50] Di-n-octylphthalate	11.182	149	1949060	24.71	ppm	100
51] Benzo(b)fluoranthene	11.547	252	2202527	25.81	ppm	100
52] Benzo(k)fluoranthene	11.571	252	2192566	25.69	ppm	100
53] Benzo(e)pyrene	11.800	252	2102049	25.34	ppm	100
54] Benzo(a)pyrene	11.851	252	2102272	26.99	ppm	100
55] Perylene	11.936	252	2129423	24.40	ppm	100
56] Indeno(1,2,3-cd)pyrene	13.102	276	2526455	26.11	ppm	100
57] Dibenzo(a,h)anthracene	13.122	278	2107067	26.41	ppm	100
58] Benzo(g,h,i)perylene	13.461	276	2026631	25.77	ppm	100

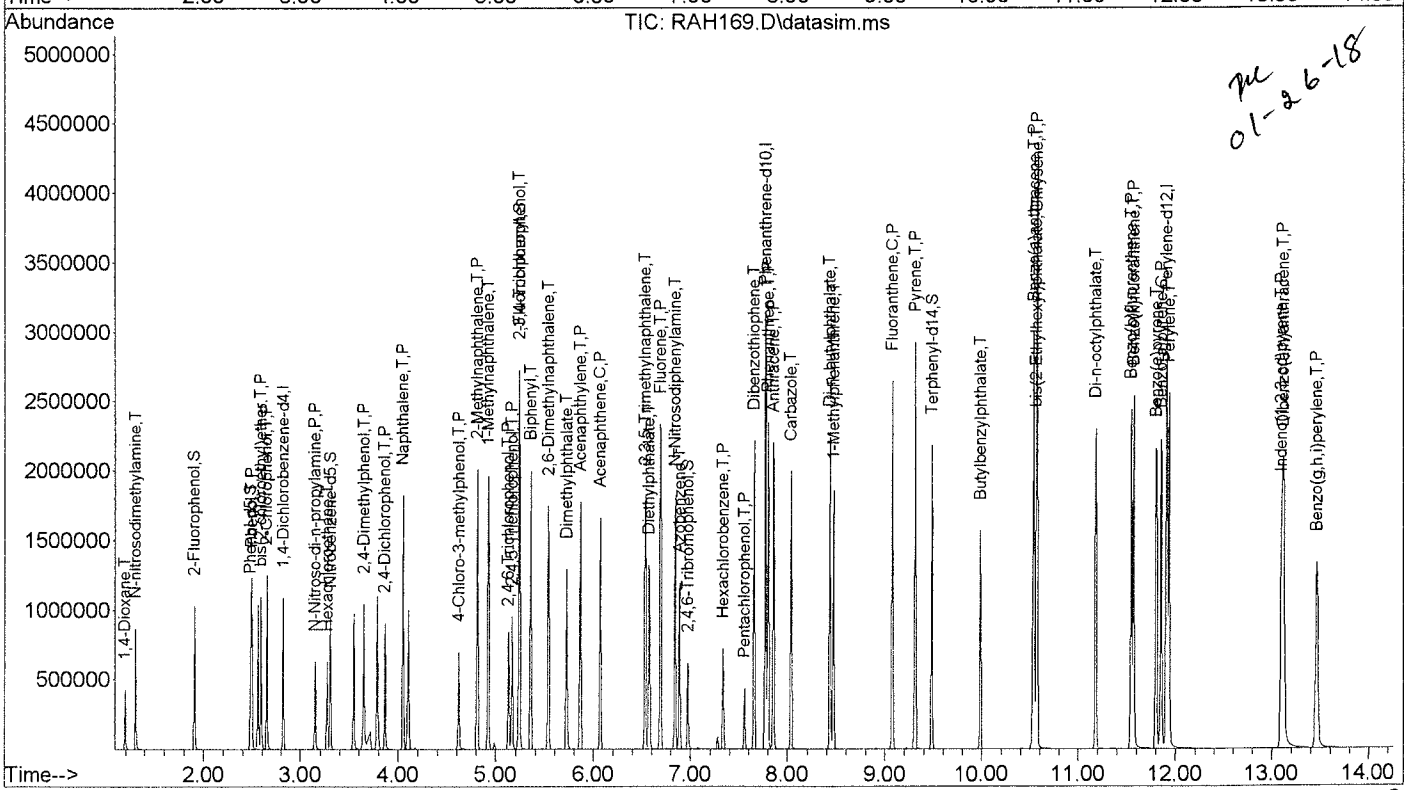
(#) = qualifier out of range (m) = manual integration (+) = signals summed

RW 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH169.D Vial: 7
Acq On : 22 Jan 2018 15:46 Operator: KVu
Sample : SVE7A225 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:11 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





PC 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH168.D Vial: 6
Acq On : 22 Jan 2018 15:27 Operator: KVu
Sample : SVE7A224 Inst : E7
Misc : 40PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:09 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.824	152	511501	40.00	ppm	0.00
30) Phenanthrene-d10	7.773	188	2381210	40.00	ppm	0.00
49) Perylene-d12	11.907	264	2509761	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.904	112	556794	40.45	ppm	0.00
Spiked Amount 30.000			Recovery =	134.83%		
5) Phenol-d5	2.479	99	702652	40.70	ppm	0.00
Spiked Amount 30.000			Recovery =	135.67%		
11) Nitrobenzene-d5	3.303	82	726911	41.58	ppm	0.00
Spiked Amount 10.000			Recovery =	415.80%		
21) 2-Fluorobiphenyl	5.237	172	1828274	39.57	ppm	0.00
Spiked Amount 10.000			Recovery =	395.70%		
33) 2,4,6-Tribromophenol	6.976	330	407979	43.57	ppm	0.00
Spiked Amount 30.000			Recovery =	145.23%		
44) Terphenyl-d14	9.482	244	2272422	39.83	ppm	0.00
Spiked Amount 10.000			Recovery =	398.30%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	188463	39.63	ppm	100
3] N-nitrosodimethylamine	1.305	74	308026	41.43	ppm	99
6] Phenol	2.494	94	693125	42.08	ppm	100
7] bis(2-chloroethyl)ether	2.588	93	510942	39.08	ppm	100
8] 2-Chlorophenol	2.651	128	616407	39.72	ppm	99
9] N-Nitroso-di-n-propyla...	3.150	70	409018	41.56	ppm	96
10] Hexachloroethane	3.271	117	276931	41.09	ppm	98
12] 2,4-Dimethylphenol	3.649	107	674247	42.64	ppm	99
13] 2,4-Dichlorophenol	3.865	162	634901	42.27	ppm	100
14] Naphthalene	4.048	128	1844829	39.56	ppm	100
15] 4-Chloro-3-methylphenol	4.622	107	566892	44.13	ppm	100
16] 2-Methylnaphthalene	4.809	142	1352783	40.12	ppm	99
17] 1-Methylnaphthalene	4.924	142	1284128	40.07	ppm	100
18] 2,4,6-Trichlorophenol	5.131	196	577540	43.64	ppm	99
19] 2,4,5-Trichlorophenol	5.165	196	603093	45.52	ppm	99
20] 2,3,4-Trichlorophenol	5.237	196	528401	44.91	ppm	100
22] Biphenyl	5.353	154	1753572	39.91	ppm	100
23] 2,6-Dimethylnaphthalene	5.535	156	1276121	40.69	ppm	100
24] Dimethylphthalate	5.722	163	1642255	40.05	ppm	100
25] Acenaphthylene	5.862	152	2060149	41.04	ppm	100
26] Acenaphthene	6.069	153	1420276	39.39	ppm	100
27] 2,3,5-Trimethylnaphtha...	6.533	170	1251704	40.17	ppm	100
28] Diethylphthalate	6.575	149	1573506	39.66	ppm	100
29] Fluorene	6.692	166	1614555	40.26	ppm	100
31] N-Nitrosodiphenylamine	6.843	169	1351292	40.72	ppm	100
32] Azobenzene	6.890	77	1387590	42.44	ppm	100
34] Hexachlorobenzene	7.331	284	739095	38.52	ppm	100
35] Pentachlorophenol	7.558	266	407171	40.38	ppm	100
36] Dibenzothiophene	7.657	184	2375068	38.90	ppm	100
37] Phenanthrene	7.800	178	2468050	38.03	ppm	100
38] Anthracene	7.854	178	2520194	39.99	ppm	100
39] Carbazole	8.036	167	2053104	41.54	ppm	100
40] Di-n-butylphthalate	8.433	149	2461269	41.84	ppm	100
41] 1-Methylphenanthrene	8.471	192	1844659	39.83	ppm	100
42] Fluoranthene	9.075	202	2909581	39.89	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH168.D Vial: 6
Acq On : 22 Jan 2018 15:27 Operator: KVu
Sample : SVE7A224 Inst : E7
Misc : 40PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:09 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

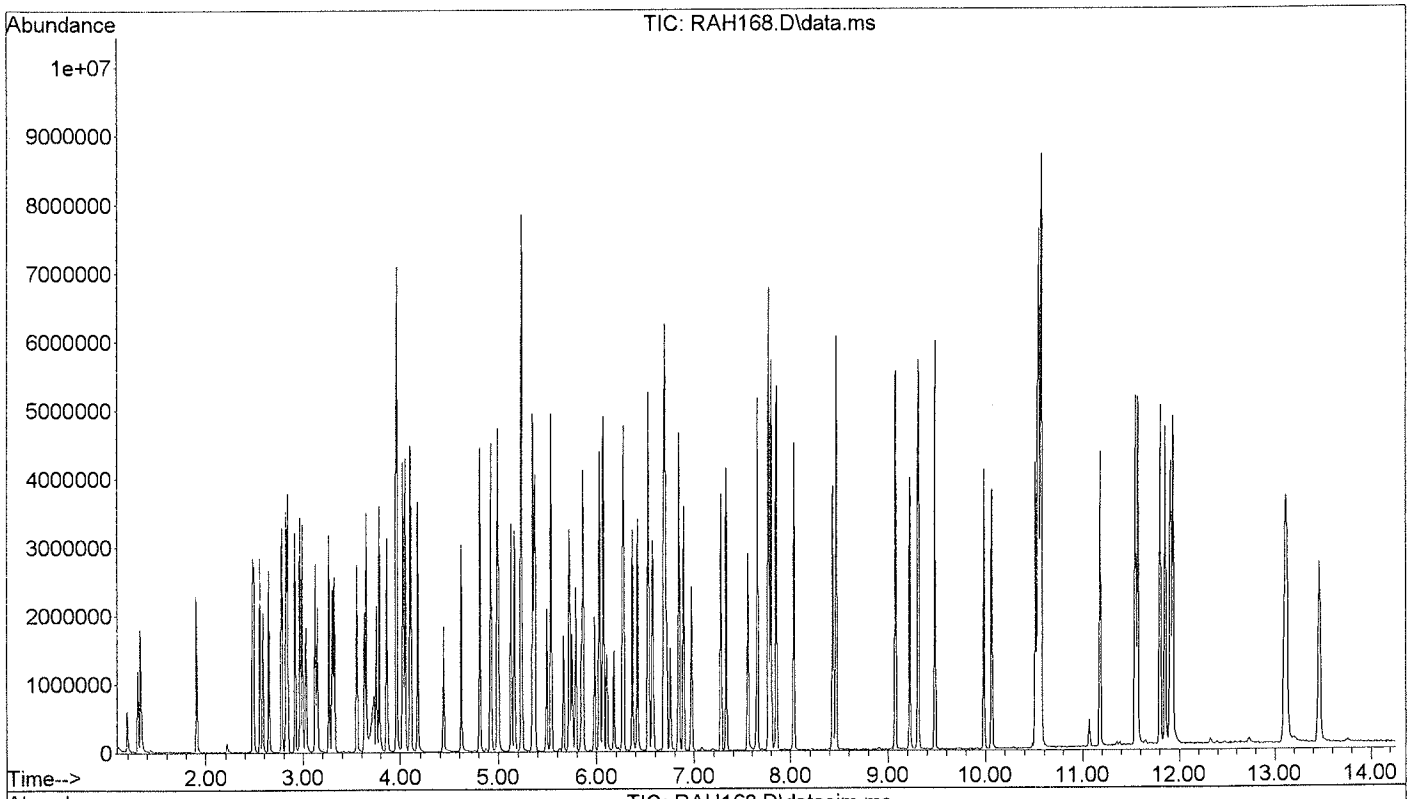
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.311	202	3008785	39.07	ppm	100
45] Butylbenzylphthalate	9.987	149	1017753	38.65	ppm	100
46] Benzo(a)anthracene	10.536	228	2925877	38.07	ppm	100
47] Chrysene	10.570	228	2740504	37.35	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.565	149	1564314	38.45	ppm	100
50] Di-n-octylphthalate	11.181	149	2523139	40.80	ppm	100
51] Benzo(b)fluoranthene	11.546	252	2739609	40.98	ppm	100
52] Benzo(k)fluoranthene	11.570	252	2829089	42.32	ppm	100
53] Benzo(e)pyrene	11.804	252	2655797	40.87	ppm	100
54] Benzo(a)pyrene	11.856	252	2637431	43.22	ppm	100
55] Perylene	11.936	252	2652224	38.79	ppm	100
56] Indeno(1,2,3-cd)pyrene	13.107	276	3168157	41.80	ppm	99
57] Dibenzo(a,h)anthracene	13.126	278	2646011	42.34	ppm	100
58] Benzo(g,h,i)perylene	13.466	276	2522938	40.95	ppm	100

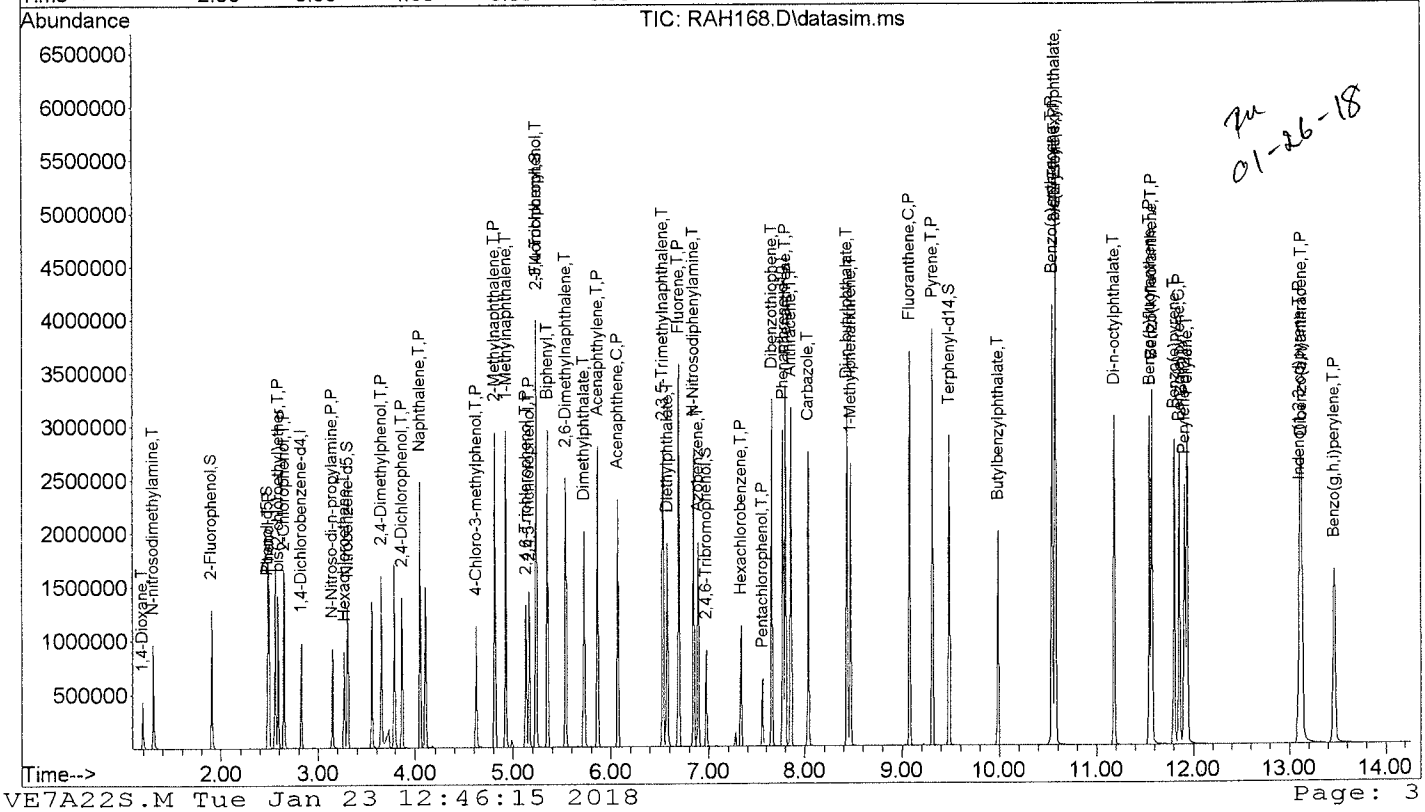
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH168.D Vial: 6
Acq On : 22 Jan 2018 15:27 Operator: KVu
Sample : SVE7A224 Inst : E7
Misc : 40PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:09 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH167.D Vial: 5
Acq On : 22 Jan 2018 15:09 Operator: KVu
Sample : SVE7A223 Inst : E7
Misc : 50PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:07 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.823	152	537950	40.00	ppm	0.00
30) Phenanthrene-d10	7.773	188	2468537	40.00	ppm	0.00
49) Perylene-d12	11.913	264	2957603	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.904	112	741630	51.23	ppm	0.00
Spiked Amount 30.000			Recovery =	170.77%		
5) Phenol-d5	2.484	99	925532	50.97	ppm	0.00
Spiked Amount 30.000			Recovery =	169.90%		
11) Nitrobenzene-d5	3.303	82	945844	51.44	ppm	0.00
Spiked Amount 10.000			Recovery =	514.40%		
21) 2-Fluorobiphenyl	5.237	172	2372449	48.82	ppm	0.00
Spiked Amount 10.000			Recovery =	488.20%		
33) 2,4,6-Tribromophenol	6.976	330	527789	54.37	ppm	0.00
Spiked Amount 30.000			Recovery =	181.23%		
44) Terphenyl-d14	9.482	244	3171904	53.63	ppm	0.00
Spiked Amount 10.000			Recovery =	536.30%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	251664	50.33	ppm	100
3] N-nitrosodimethylamine	1.305	74	407156	52.08	ppm	100
6] Phenol	2.494	94	913221	52.72	ppm	99
7] bis(2-chloroethyl)ether	2.588	93	679277	49.40	ppm	100
8] 2-Chlorophenol	2.650	128	816729	50.04	ppm	100
9] N-Nitroso-di-n-propyla...	3.154	70	527729	50.99	ppm	95
10] Hexachloroethane	3.271	117	360228	50.82	ppm	99
12] 2,4-Dimethylphenol	3.649	107	881765	53.02	ppm	100
13] 2,4-Dichlorophenol	3.865	162	827164	52.36	ppm	100
14] Naphthalene	4.053	128	2415459	49.25	ppm	100
15] 4-Chloro-3-methylphenol	4.622	107	728474	53.91	ppm	99
16] 2-Methylnaphthalene	4.814	142	1766393	49.81	ppm	100
17] 1-Methylnaphthalene	4.924	142	1667298	49.47	ppm	100
18] 2,4,6-Trichlorophenol	5.131	196	750323	53.91	ppm	100
19] 2,4,5-Trichlorophenol	5.164	196	769908	55.25	ppm	99
20] 2,3,4-Trichlorophenol	5.242	196	684059	55.29	ppm	100
22] Biphenyl	5.352	154	2266793	49.05	ppm	100
23] 2,6-Dimethylnaphthalene	5.539	156	1655070	50.18	ppm	100
24] Dimethylphthalate	5.727	163	2073819	48.09	ppm	100
25] Acenaphthylene	5.862	152	2645688	50.11	ppm	100
26] Acenaphthene	6.073	153	1824418	48.12	ppm	100
27] 2,3,5-Trimethylnaphtha...	6.533	170	1602948	48.92	ppm	100
28] Diethylphthalate	6.575	149	2007930	48.12	ppm	100
29] Fluorene	6.692	166	2068143	49.04	ppm	100
31] N-Nitrosodiphenylamine	6.843	169	1711514	49.75	ppm	100
32] Azobenzene	6.890	77	1776304	52.41	ppm	100
34] Hexachlorobenzene	7.331	284	956188	48.08	ppm	100
35] Pentachlorophenol	7.558	266	542264	51.87	ppm	100
36] Dibenzothiophene	7.657	184	3101529	49.00	ppm	100
37] Phenanthrene	7.800	178	3242443	48.19	ppm	100
38] Anthracene	7.859	178	3314148	50.73	ppm	100
39] Carbazole	8.040	167	2759419	53.85	ppm	100
40] Di-n-butylphthalate	8.437	149	3314888	54.36	ppm	100
41] 1-Methylphenanthrene	8.471	192	2480342	51.66	ppm	100
42] Fluoranthene	9.080	202	3970596	52.51	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH167.D Vial: 5
Acq On : 22 Jan 2018 15:09 Operator: KVu
Sample : SVE7A223 Inst : E7
Misc : 50PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:07 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

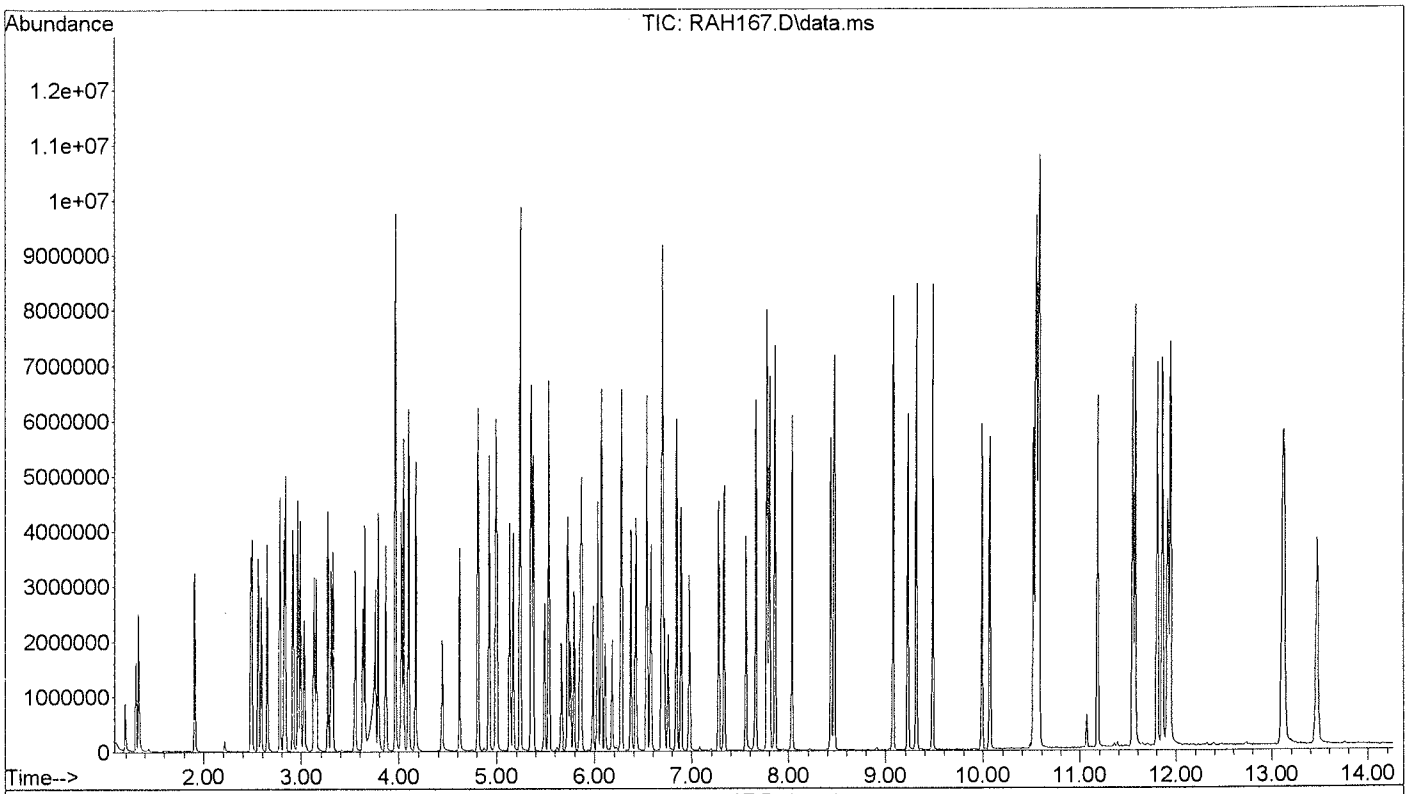
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.316	202	4145657	51.92	ppm	100
45] Butylbenzylphthalate	9.987	149	1465588	53.67	ppm	100
46] Benzo(a)anthracene	10.536	228	4227210	53.08	ppm	100
47] Chrysene	10.575	228	3970264	52.20	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.560	149	2261063	53.60	ppm	100
50] Di-n-octylphthalate	11.182	149	3742180	51.33	ppm	100
51] Benzo(b)fluoranthene	11.547	252	4336353	55.04	ppm	98
52] Benzo(k)fluoranthene	11.571	252	3917932	49.73	ppm	98
53] Benzo(e)pyrene	11.805	252	3961297	51.73	ppm	100
54] Benzo(a)pyrene	11.856	252	3984815	55.42	ppm	100
55] Perylene	11.941	252	3976780	49.35	ppm	100
56] Indeno(1,2,3-cd)pyrene	13.112	276	4809859	53.85	ppm	99
57] Dibenzo(a,h)anthracene	13.127	278	4010281	54.45	ppm	100
58] Benzo(g,h,i)perylene	13.471	276	3822542	52.65	ppm	100

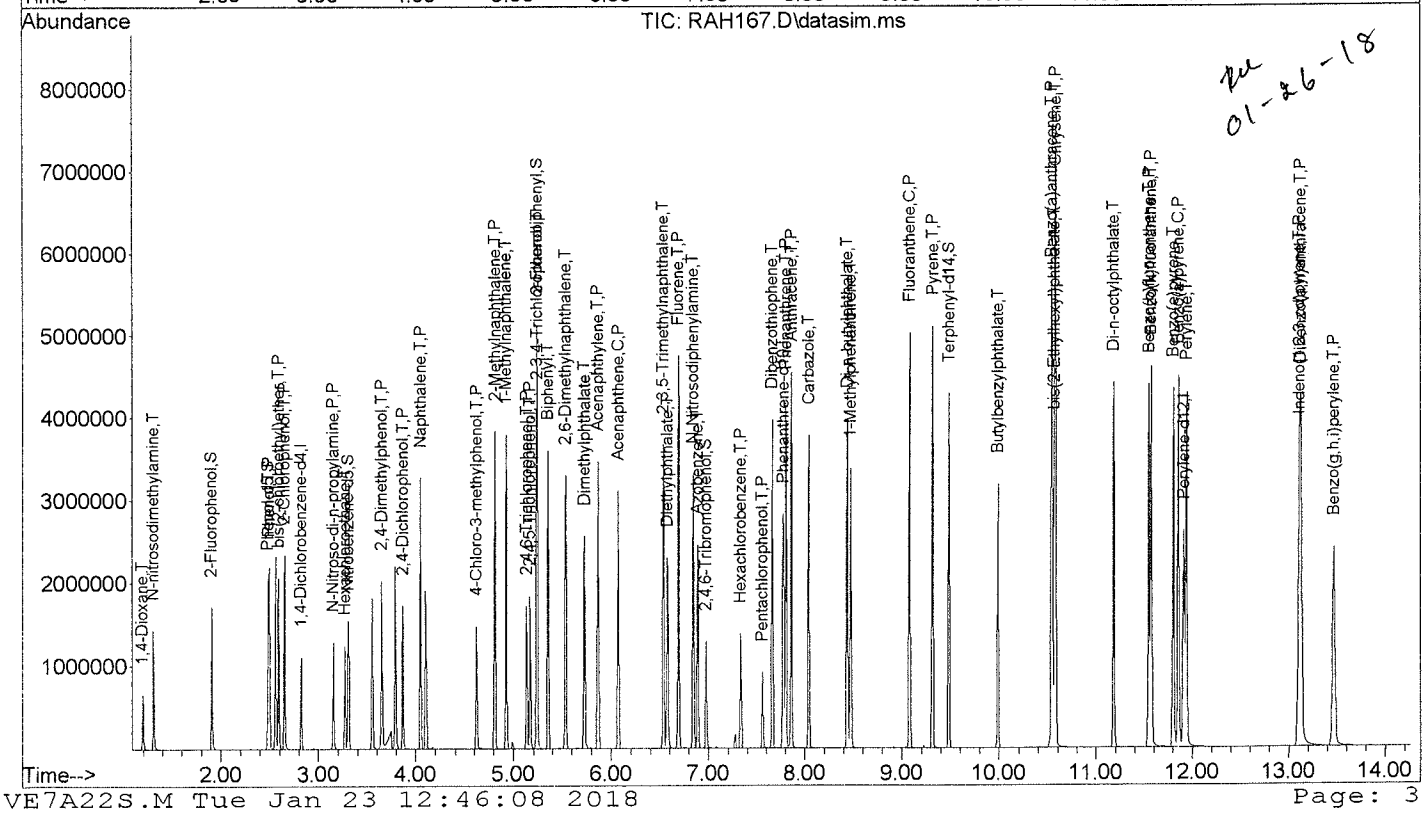
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH167.D Vial: 5
Acq On : 22 Jan 2018 15:09 Operator: KVu
Sample : SVE7A223 Inst : E7
Misc : 50PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:45:07 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





ZE 01-26-18

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC_Beginning DateTime :01/22/18 15:09
Spike Amount :25 PPM
CC/CV File :RAH178
IC File :RAH169

Column Spec :ZB-SemiVoa ID :0.18MM
IC_Ending DateTime :01/22/18 18:16
HPChem Method :SVE7A22S
Date_Time :01/22/18 18:35

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-Dichlorobenzene-d4	40.000	0	533529	1	1	2.823	2.822	0				
	2	1,4-Dioxane	26.549	6.2	131726	0.395	0.413	1.195	1.196	18.80	0.0003	0.3716		0.9999
	3	N-nitrosodimethylamine	23.140	-7.4	179438	0.538	0.581	1.305	1.308	4.50				
	4	2-Fluorophenol	25.872	3.5	371491	1.114	1.077	1.904	1.905	3.48				
	5	Phenol-d5	23.530	-5.9	423708	1.271	1.350	2.478	2.479	3.81				
	6	Phenol	27.684	10.7	475622	1.426	1.288	2.489	2.490	6.90				
	7	bis(2-chloroethyl)ether	25.519	2.1	348026	1.044	1.022	2.583	2.584	5.54				
	8	2-Chlorophenol	26.251	5.0	424926	1.274	1.214	2.651	2.647	8.94				
	9	N-Nitroso-di-n-propylamine	26.961	7.8	276754	0.830	0.770	3.149	3.147	7.82				
	10	Hexachloroethane	25.668	2.7	180462	0.541	0.527	3.271	3.269	3.85				
#	11	Nitrobenzene-d5	7.970	-4.4	145336	1.308	1.367	3.303	3.302	5.63				
	12	2,4-Dimethylphenol	27.831	11.3	459049	1.377	1.237	3.649	3.646	6.89				
	13	2,4-Dichlorophenol	27.116	8.5	424850	1.274	1.175	3.865	3.864	5.31				
	14	Naphthalene	25.393	1.6	1235053	3.704	3.646	4.048	4.049	3.92				
	15	4-Chloro-3-methylphenol	27.249	9.0	365148	1.095	1.005	4.622	4.620	9.01				
	16	2-Methylnaphthalene	25.062	0.2	881451	2.643	2.637	4.809	4.810	3.46				
	17	1-Methylnaphthalene	25.103	0.4	839088	2.516	2.506	4.924	4.922	3.30				
	18	2,4,6-Trichlorophenol	27.662	10.6	381817	1.145	1.035	5.126	5.127	8.18				
	19	2,4,5-Trichlorophenol	28.570	14.3	394819	1.184	1.036	5.164	5.164	12.69				
	20	2,3,4-Trichlorophenol	26.375	5.5	323664	0.971	0.920	5.237	5.237	11.32				
#	21	2-Fluorobiphenyl	7.688	-7.7	370543	3.334	3.614	5.232	5.234	5.79				
	22	Biphenyl	24.808	-0.8	1136970	3.410	3.436	5.352	5.352	3.45				
	23	2,6-Dimethylnaphthalene	25.408	1.6	831184	2.493	2.453	5.535	5.535	3.43				
	24	Dimethylphthalate	25.633	2.5	1096395	3.288	3.207	5.722	5.716	4.48				
	25	Acenaphthylene	28.028	12.1	1467664	4.401	3.926	5.862	5.859	3.78				
	26	Acenaphthene	26.393	5.6	992506	2.976	2.819	6.069	6.068	5.05				
	27	2,3,5-Trimethylnaphthalene	25.261	1.0	820933	2.462	2.436	6.533	6.530	4.96				
	28	Diethylphthalate	25.869	3.5	1070548	3.210	3.103	6.575	6.568	5.72				
	29	Fluorene	25.891	3.6	1082983	3.248	3.136	6.692	6.688	4.37				
	30	Phenanthrene-d10	40.000	0	2565746	1	1	7.773	7.773	0				
	31	N-Nitrosodiphenylamine	26.347	5.4	942596	0.588	0.633	6.843	6.839	25.77	0.0005	0.5570		0.9998
	32	Azobenzene	26.846	7.4	945771	0.590	0.549	6.890	6.887	5.78				
	33	2,4,6-Tribromophenol	25.748	3.0	259770	0.162	0.157	6.971	6.972	10.63				
	34	Hexachlorobenzene	24.830	-0.7	513304	0.320	0.322	7.331	7.328	9.16				
	35	Pentachlorophenol	29.944	19.8	325233	0.203	0.146	7.558	7.555	15.31	-0.0002	0.1695		0.9983
	36	Dibenzothiophene	24.962	-0.2	1642158	1.024	1.026	7.657	7.654	8.72				
	37	Phenanthrene	24.799	-0.8	1734212	1.081	1.090	7.800	7.797	9.04				
	38	Anthracene	25.787	3.1	1750874	1.092	1.059	7.854	7.855	5.60				
	39	Carbazole	28.332	13.3	1508962	0.941	0.830	8.036	8.036	6.54				
	40	Di-n-butylphthalate	28.211	12.8	1787988	1.115	0.988	8.432	8.433	9.74				
	41	1-Methylphenanthrene	25.793	3.2	1287069	0.803	0.778	8.471	8.468	5.87				
	42	Fluoranthene	27.136	8.5	2132872	1.330	1.225	9.075	9.075	9.45				
	43	Pyrene	26.718	6.9	2217184	1.383	1.294	9.311	9.309	8.67				
#	44	Terphenyl-d14	8.703	4.4	534974	1.001	0.958	9.477	9.479	7.71				
	45	Butylbenzylphthalate	27.095	8.4	768496	0.479	0.376	9.983	9.985	16.91	-0.0004	0.4428		0.9971
	46	Benzo(a)anthracene	27.469	9.9	2276434	1.420	1.635	10.531	10.535	44.36	0.0022	1.2888		0.9980
	47	Chrysene	27.873	11.5	2203462	1.374	1.232	10.570	10.568	9.18				
	48	bis(2-Ethylhexyl)phthalate	27.707	10.8	1214089	0.757	0.596	10.560	10.560	15.30	-0.0006	0.6839		0.9972
	49	Perylene-d12	40.000	0	3138798	1	1	11.903	11.906	0				
	50	Di-n-octylphthalate	23.649	-5.4	1827790	0.932	0.822	11.177	11.177	19.86	-0.0010	0.9867		0.9985
	51	Benzo(b)fluoranthene	26.730	6.9	2234887	1.139	1.066	11.536	11.541	7.71				
	52	Benzo(k)fluoranthene	26.650	6.6	2228139	1.136	1.065	11.566	11.566	7.35				
	53	Benzo(e)pyrene	25.588	2.4	2079443	1.060	1.036	11.795	11.797	7.44				
	54	Benzo(a)pyrene	26.853	7.4	2049116	1.045	0.972	11.846	11.848	9.15				
	55	Perylene	25.490	2.0	2179760	1.111	1.090	11.931	11.930	9.18				
	56	Indeno(1,2,3-cd)pyrene	26.748	7.0	2535526	1.292	1.208	13.097	13.097	7.87				
	57	Dibenzo(a,h)anthracene	27.066	8.3	2115535	1.078	0.996	13.116	13.116	7.95				
	58	Benzo(g,h,i)perylene	25.952	3.8	1999567	1.019	0.982	13.456	13.455	7.76				

#: Verified at 8.333ppm

RM 01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A22\RAH178.D Vial: 16
Acq On : 22 Jan 2018 18:35 Operator: KVu
Sample : ISVE7A221 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:48:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	95	0.00
2	T	1,4-Dioxane	25.000	26.549	-6.2	100	0.00
3	T	N-nitrosodimethylamine	25.000	23.140	7.4	83	0.00
4	S	2-Fluorophenol	25.000	25.872	-3.5	96	0.00
5	S	Phenol-d5	25.000	23.530	5.9	88	0.00
6	T,P	Phenol	25.000	27.684	-10.7	99	0.00
7	T,P	bis(2-chloroethyl)ether	25.000	25.519	-2.1	99	0.00
8	T,P	2-Chlorophenol	25.000	26.252	-5.0	99	0.00
9	P,P	N-Nitroso-di-n-propylamine	25.000	26.961	-7.8	95	0.00
10	T	Hexachloroethane	25.000	25.668	-2.7	96	0.00
11	S	Nitrobenzene-d5	25.000	7.970	68.1#	29	0.00
12	T,P	2,4-Dimethylphenol	25.000	27.831	-11.3	100	0.00
13	T,P	2,4-Dichlorophenol	25.000	27.116	-8.5	99	0.00
14	T,P	Naphthalene	25.000	25.393	-1.6	97	0.00
15	T,P	4-Chloro-3-methylphenol	25.000	27.249	-9.0	98	0.00
16	T,P	2-Methylnaphthalene	25.000	25.062	-0.2	96	0.00
17	T	1-Methylnaphthalene	25.000	25.103	-0.4	96	0.00
18	T,P	2,4,6-Trichlorophenol	25.000	27.662	-10.6	100	0.00
19	T,P	2,4,5-Trichlorophenol	25.000	28.570	-14.3	100	0.00
20	T	2,3,4-Trichlorophenol	25.000	26.375	-5.5	94	0.00
21	S	2-Fluorobiphenyl	25.000	7.688	69.2#	30	0.00
22	T	Biphenyl	25.000	24.808	0.8	96	0.00
23	T	2,6-Dimethylnaphthalene	25.000	25.408	-1.6	96	0.00
24	T	Dimethylphthalate	25.000	25.633	-2.5	100	0.00
25	T,P	Acenaphthylene	25.000	28.028	-12.1	107	0.00
26	C,P	Acenaphthene	25.000	26.393	-5.6	104	0.00
27	T	2,3,5-Trimethylnaphthalene	25.000	25.261	-1.0	98	0.00
28	T	Diethylphthalate	25.000	25.869	-3.5	100	0.00
29	T,P	Fluorene	25.000	25.891	-3.6	101	0.00
30	I	Phenanthrene-d10	40.000	40.000	0.0	97	0.00
31	T	N-Nitrosodiphenylamine	25.000	26.346	-5.4	104	0.00
32	T	Azobenzene	25.000	26.846	-7.4	102	0.00
33	S	2,4,6-Tribromophenol	25.000	25.748	-3.0	93	0.00
34	T,P	Hexachlorobenzene	25.000	24.830	0.7	102	0.00
35	T,P	Pentachlorophenol	25.000	29.944	-19.8	114	0.00
36	T	Dibenzothiophene	25.000	24.962	0.2	100	0.00
37	T,P	Phenanthrene	25.000	24.799	0.8	100	0.00
38	T,P	Anthracene	25.000	25.787	-3.1	99	0.00
39	T	Carbazole	25.000	28.332	-13.3	102	0.00
40	T	Di-n-butylphthalate	25.000	28.211	-12.8	102	0.00
41	T	1-Methylphenanthrene	25.000	25.793	-3.2	97	0.00
42	C,P	Fluoranthene	25.000	27.136	-8.5	100	0.00
43	T,P	Pyrene	25.000	26.718	-6.9	100	0.00
44	S	Terphenyl-d14	25.000	8.703	65.2#	32	0.00
45	T	Butylbenzylphthalate	25.000	27.095	-8.4	101	0.00
46	T,P	Benzo(a)anthracene	25.000	27.469	-9.9	101	0.00
47	T,P	Chrysene	25.000	27.873	-11.5	104	0.00
48	T	bis(2-Ethylhexyl)phthalate	25.000	27.707	-10.8	102	0.00
49	I	Perylene-d12	40.000	40.000	0.0	98	0.00

01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A22\RAH178.D Vial: 16
Acq On : 22 Jan 2018 18:35 Operator: KVu
Sample : ISVE7A221 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:48:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	25.000	23.649	5.4	94	0.00
51	T,P	Benzo(b)fluoranthene	25.000	26.730	-6.9	101	-0.01
52	T,P	Benzo(k)fluoranthene	25.000	26.650	-6.6	102	0.00
53	T	Benzo(e)pyrene	25.000	25.588	-2.4	99	0.00
54	C,P	Benzo(a)pyrene	25.000	26.853	-7.4	97	0.00
55	T	Perylene	25.000	25.490	-2.0	102	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	25.000	26.748	-7.0	100	0.00
57	T,P	Dibenzo(a,h)anthracene	25.000	27.066	-8.3	100	0.00
58	T,P	Benzo(g,h,i)perylene	25.000	25.952	-3.8	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

RW 01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A22\RAH178.D Vial: 16
Acq On : 22 Jan 2018 18:35 Operator: KVu
Sample : ISVE7A221 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:48:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	95	0.00
2	T	1,4-Dioxane	0.413	0.395	4.4	100	0.00
3	T	N-nitrosodimethylamine	0.581	0.538	7.4	83	0.00
4	S	2-Fluorophenol	1.077	1.114	-3.4	96	0.00
5	S	Phenol-d5	1.350	1.271	5.9	88	0.00
6	T,P	Phenol	1.288	1.426	-10.7	99	0.00
7	T,P	bis(2-chloroethyl)ether	1.022	1.044	-2.2	99	0.00
8	T,P	2-Chlorophenol	1.214	1.274	-4.9	99	0.00
9	P,P	N-Nitroso-di-n-propylamine	0.770	0.830	-7.8	95	0.00
10	T	Hexachloroethane	0.527	0.541	-2.7	96	0.00
11	S	Nitrobenzene-d5	1.367	0.436	68.1#	29#	0.00
12	T,P	2,4-Dimethylphenol	1.237	1.377	-11.3	100	0.00
13	T,P	2,4-Dichlorophenol	1.175	1.274	-8.4	99	0.00
14	T,P	Naphthalene	3.646	3.704	-1.6	97	0.00
15	T,P	4-Chloro-3-methylphenol	1.005	1.095	-9.0	98	0.00
16	T,P	2-Methylnaphthalene	2.637	2.643	-0.2	96	0.00
17	T	1-Methylnaphthalene	2.506	2.516	-0.4	96	0.00
18	T,P	2,4,6-Trichlorophenol	1.035	1.145	-10.6	100	0.00
19	T,P	2,4,5-Trichlorophenol	1.036	1.184	-14.3	100	0.00
20	T	2,3,4-Trichlorophenol	0.920	0.971	-5.5	94	0.00
21	S	2-Fluorobiphenyl	3.614	1.111	69.3#	30#	0.00
22	T	Biphenyl	3.436	3.410	0.8	96	0.00
23	T	2,6-Dimethylnaphthalene	2.453	2.493	-1.6	96	0.00
24	T	Dimethylphthalate	3.207	3.288	-2.5	100	0.00
25	T,P	Acenaphthylene	3.926	4.401	-12.1	107	0.00
26	C,P	Acenaphthene	2.819	2.976	-5.6	104	0.00
27	T	2,3,5-Trimethylnaphthalene	2.436	2.462	-1.1	98	0.00
28	T	Diethylphthalate	3.103	3.210	-3.4	100	0.00
29	T,P	Fluorene	3.136	3.248	-3.6	101	0.00
30	I	Phenanthrene-d10	1.000	1.000	0.0	97	0.00
31	T	N-Nitrosodiphenylamine	0.633	0.588	7.1	104	0.00
32	T	Azobenzene	0.549	0.590	-7.5	102	0.00
33	S	2,4,6-Tribromophenol	0.157	0.162	-3.2	93	0.00
34	T,P	Hexachlorobenzene	0.322	0.320	0.6	102	0.00
35	T,P	Pentachlorophenol	0.146	0.203	-39.0#	114	0.00
36	T	Dibenzothiophene	1.026	1.024	0.2	100	0.00
37	T,P	Phenanthrene	1.090	1.081	0.8	100	0.00
38	T,P	Anthracene	1.059	1.092	-3.1	99	0.00
39	T	Carbazole	0.830	0.941	-13.4	102	0.00
40	T	Di-n-butylphthalate	0.988	1.115	-12.9	102	0.00
41	T	1-Methylphenanthrene	0.778	0.803	-3.2	97	0.00
42	C,P	Fluoranthene	1.225	1.330	-8.6	100	0.00
43	T,P	Pyrene	1.294	1.383	-6.9	100	0.00
44	S	Terphenyl-d14	0.958	0.334	65.1#	32#	0.00
45	T	Butylbenzylphthalate	0.376	0.479	-27.4#	101	0.00
46	T,P	Benzo(a)anthracene	1.635	1.420	13.1	101	0.00
47	T,P	Chrysene	1.232	1.374	-11.5	104	0.00
48	T	bis(2-Ethylhexyl)phthalate	0.596	0.757	-27.0#	102	0.00
49	I	Perylene-d12	1.000	1.000	0.0	98	0.00

01-26-18

Evaluate Continuing Calibration Report

Data File : D:\DATA\18A22\RAH178.D Vial: 16
Acq On : 22 Jan 2018 18:35 Operator: KVu
Sample : ISVE7A221 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:48:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	0.822	0.932	-13.4	94	0.00
51	T,P	Benzo(b)fluoranthene	1.066	1.139	-6.8	101	-0.01
52	T,P	Benzo(k)fluoranthene	1.065	1.136	-6.7	102	0.00
53	T	Benzo(e)pyrene	1.036	1.060	-2.3	99	0.00
54	C,P	Benzo(a)pyrene	0.972	1.045	-7.5	97	0.00
55	T	Perylene	1.090	1.111	-1.9	102	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	1.208	1.292	-7.0	100	0.00
57	T,P	Dibenzo(a,h)anthracene	0.996	1.078	-8.2	100	0.00
58	T,P	Benzo(g,h,i)perylene	0.982	1.019	-3.8	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH178.D
Acq On : 22 Jan 2018 18:35
Sample : ISVE7A221
Misc : ICV
Integrator: RTE
Quant Time: Jan 23 12:48:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Vial: 16
Operator: KVu
Inst : E7
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.823	152	533529	40.00	ppm	0.00
30) Phenanthrene-d10	7.773	188	2565746	40.00	ppm	0.00
49) Perylene-d12	11.903	264	3138798	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.904	112	371491	25.87	ppm	0.00
Spiked Amount 30.000			Recovery =	86.23%		
5) Phenol-d5	2.478	99	423708	23.53	ppm	0.00
Spiked Amount 30.000			Recovery =	78.43%		
11) Nitrobenzene-d5	3.303	82	145336	7.97	ppm	0.00
Spiked Amount 10.000			Recovery =	79.70%		
21) 2-Fluorobiphenyl	5.232	172	370543	7.69	ppm	0.00
Spiked Amount 10.000			Recovery =	76.90%		
33) 2,4,6-Tribromophenol	6.971	330	259770	25.75	ppm	0.00
Spiked Amount 30.000			Recovery =	85.83%		
44) Terphenyl-d14	9.477	244	534974	8.70	ppm	0.00
Spiked Amount 10.000			Recovery =	87.00%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.195	88	131726	26.55	ppm	99
3] N-nitrosodimethylamine	1.305	74	179438	23.14	ppm	98
6] Phenol	2.489	94	475622	27.68	ppm	100
7] bis(2-chloroethyl)ether	2.583	93	348026	25.52	ppm	100
8] 2-Chlorophenol	2.650	128	424926	26.25	ppm	100
9] N-Nitroso-di-n-propyla...	3.149	70	276754	26.96	ppm	97
10] Hexachloroethane	3.271	117	180462	25.67	ppm	100
12] 2,4-Dimethylphenol	3.649	107	459049	27.83	ppm	100
13] 2,4-Dichlorophenol	3.865	162	424850	27.12	ppm	100
14] Naphthalene	4.048	128	1235053	25.39	ppm	100
15] 4-Chloro-3-methylphenol	4.622	107	365148	27.25	ppm	99
16] 2-Methylnaphthalene	4.809	142	881451	25.06	ppm	100
17] 1-Methylnaphthalene	4.924	142	839088	25.10	ppm	100
18] 2,4,6-Trichlorophenol	5.126	196	381817	27.66	ppm	100
19] 2,4,5-Trichlorophenol	5.164	196	394819	28.57	ppm	100
20] 2,3,4-Trichlorophenol	5.237	196	323664	26.38	ppm	99
22] Biphenyl	5.352	154	1136970	24.81	ppm	100
23] 2,6-Dimethylnaphthalene	5.535	156	831184	25.41	ppm	100
24] Dimethylphthalate	5.722	163	1096395	25.63	ppm	100
25] Acenaphthylene	5.862	152	1467664	28.03	ppm	100
26] Acenaphthene	6.069	153	992506	26.39	ppm	100
27] 2,3,5-Trimethylnaphtha...	6.533	170	820933	25.26	ppm	100
28] Diethylphthalate	6.575	149	1070548	25.87	ppm	100
29] Fluorene	6.692	166	1082983	25.89	ppm	100
31] N-Nitrosodiphenylamine	6.843	169	942596	26.35	ppm	99
32] Azobenzene	6.890	77	945771	26.85	ppm	100
34] Hexachlorobenzene	7.331	284	513304	24.83	ppm	100
35] Pentachlorophenol	7.558	266	325233	29.94	ppm	98
36] Dibenzothiophene	7.657	184	1642158	24.96	ppm	100
37] Phenanthrene	7.800	178	1734212	24.80	ppm	100
38] Anthracene	7.854	178	1750874	25.79	ppm	100
39] Carbazole	8.036	167	1508962	28.33	ppm	100
40] Di-n-butylphthalate	8.432	149	1787988	28.21	ppm	100
41] 1-Methylphenanthrene	8.471	192	1287069	25.79	ppm	100
42] Fluoranthene	9.075	202	2132872	27.14	ppm	100

DM 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH178.D Vial: 16
Acq On : 22 Jan 2018 18:35 Operator: KVu
Sample : ISVE7A221 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:48:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

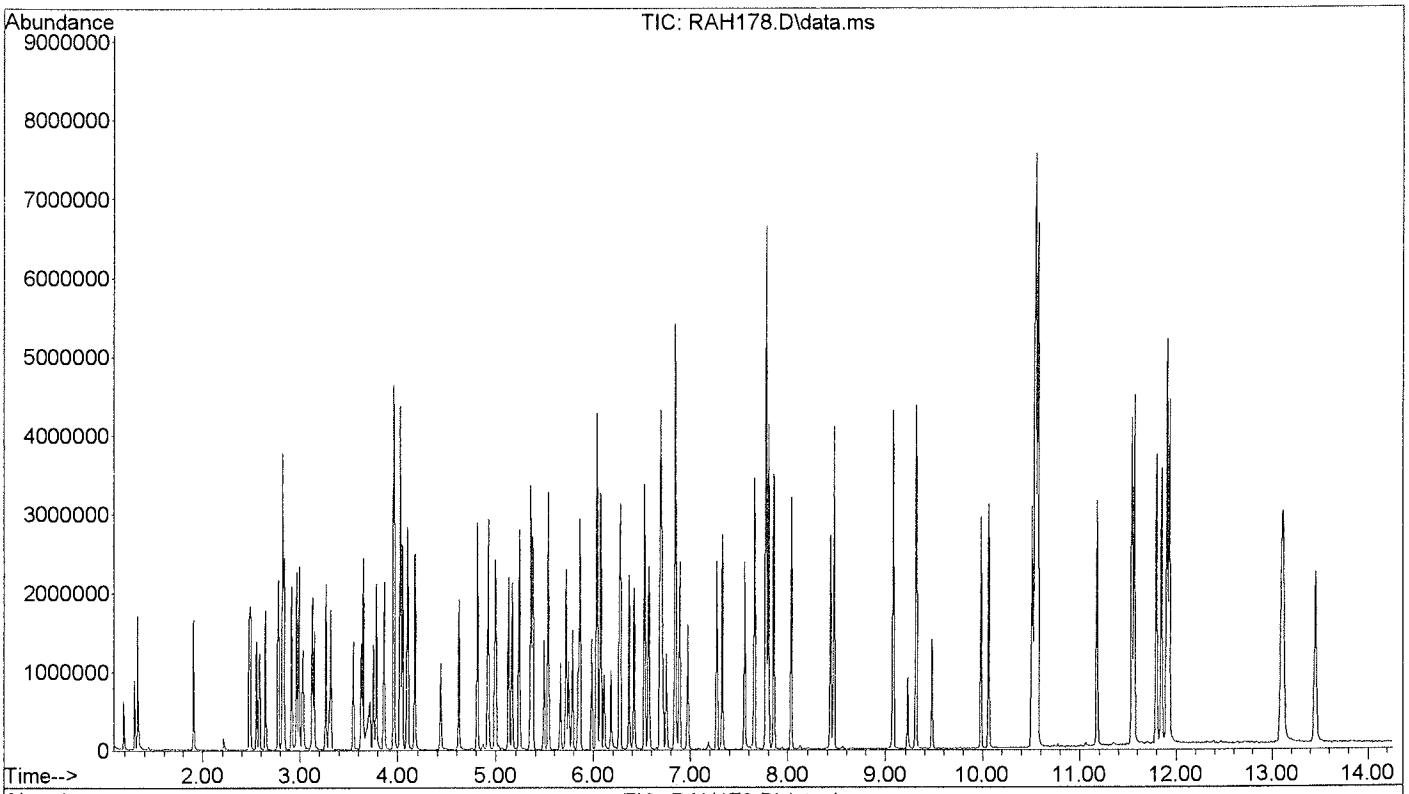
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.311	202	2217184	26.72	ppm	100
45] Butylbenzylphthalate	9.983	149	768496	27.09	ppm	100
46] Benzo(a)anthracene	10.531	228	2276434	27.47	ppm	100
47] Chrysene	10.570	228	2203462	27.87	ppm	100
48] bis(2-Ethylhexyl)phtha...	10.560	149	1214089	27.71	ppm	100
50] Di-n-octylphthalate	11.176	149	1827790	23.65	ppm	100
51] Benzo(b)fluoranthene	11.537	252	2234887	26.73	ppm	100
52] Benzo(k)fluoranthene	11.565	252	2228139	26.65	ppm	100
53] Benzo(e)pyrene	11.795	252	2079443	25.59	ppm	100
54] Benzo(a)pyrene	11.846	252	2049116	26.85	ppm	100
55] Perylene	11.931	252	2179760	25.49	ppm	100
56] Indeno(1,2,3-cd)pyrene	13.097	276	2535526	26.75	ppm	100
57] Dibenzo(a,h)anthracene	13.116	278	2115535	27.07	ppm	100
58] Benzo(g,h,i)perylene	13.456	276	1999567	25.95	ppm	100

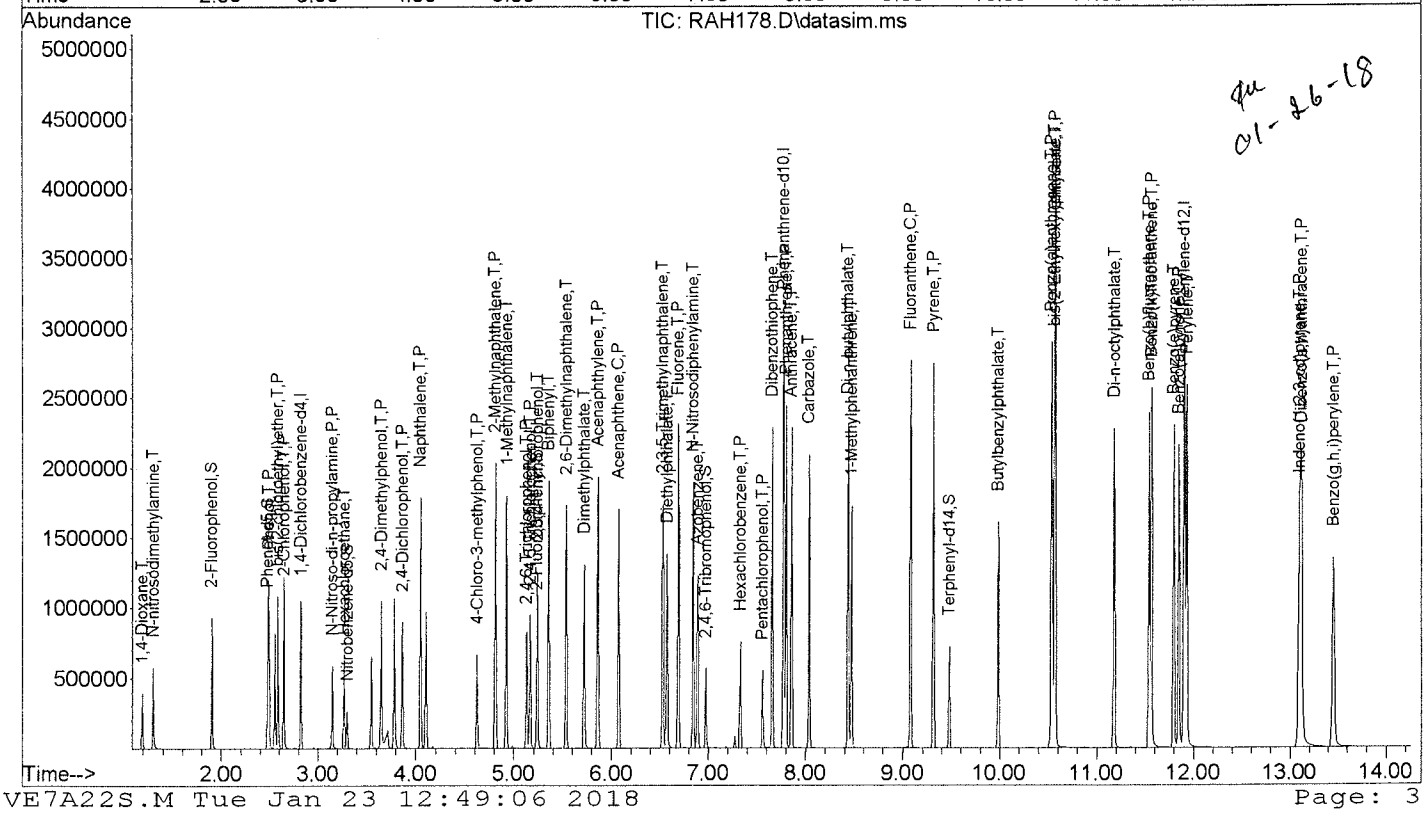
(#) = qualifier out of range (m) = manual integration (+) = signals summed

pw 01-26-18

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18A22\RAH178.D Vial: 16
Acq On : 22 Jan 2018 18:35 Operator: KVu
Sample : ISVE7A221 Inst : E7
Misc : ICV Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 23 12:48:28 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





01-26-18

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc.

Project: JBER TO075

Lab Code: EMAX
SDG No: 18F187

Lab File ID: RFH622
DFPTT Injection Date: 06/29/18

Instrument ID: E7
DFPTT Injection Time: 12:30

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30 - 60% of mass 198	40.778
68	Less than 2% of mass 69	0.724(1.68)1
69	Present(Relative Abundance of mass 69)	43.110
70	Less than 2% of mass 69	0.155(.36)1
127	30 - 60% of mass 198	45.024
197	Less than 1% of mass 198	0.323
198	Base Peak, 100% relative abundance	100.000
199	5 - 9% of mass 198	7.213
275	10 - 30% of mass 198	25.419
365	Greater than 1% of mass 198	2.828
441	Present but less than mass 443	11.977(87.49)3
442	Greater than 40% of mass 198	70.971
443	17 - 23% of mass 442	13.689(19.29)2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD025	CSVE7A2278	RFH623	06/29/18	12:57
2	MBLK1S	SVF043SB	RFH625	06/29/18	13:37
3	LCS1S	SVF043SL	RFH626	06/29/18	13:56
4	LCD1S	SVF043SC	RFH627	06/29/18	14:15
5	18Q2DP009-SB0501-SO-0MS	18F187-07M	RFH628	06/29/18	14:34
6	18Q2DP009-SB0501-SO-0MSD	18F187-07S	RFH629	06/29/18	14:53
7	18Q2DP009-SB0401-SO-0	18F187-01	RFH630	06/29/18	15:12
8	18Q2DP009-SB0401-SO-1	18F187-02	RFH631	06/29/18	15:31
9	18Q2DP009-SB0402-SO-0	18F187-03	RFH632	06/29/18	15:50
10	18Q2DP009-SB0801-SO-0	18F187-04	RFH633	06/29/18	16:09
11	18Q2DP009-SB0802-SO-0	18F187-05	RFH634	06/29/18	16:28
12	18Q2DP009-SB0501-SO-0	18F187-07	RFH635	06/29/18	16:47
13	18Q2DP009-SB0502-SO-0	18F187-08	RFH636	06/29/18	17:06
14	18Q2DP009-SB0701-SO-0	18F187-10	RFH637	06/29/18	17:25
15	18Q2DP009-SB0702-SO-0	18F187-11	RFH638	06/29/18	17:44
16	18Q2DP009-SB0301-SO-0	18F187-12	RFH639	06/29/18	18:03
17	18Q2DP009-SB0302-SO-0	18F187-13	RFH640	06/29/18	18:22
18	18Q2DP009-SB0602-SO-0	18F187-14	RFH641	06/29/18	18:42
19	18Q2DP009-SB0601-SO-0	18F187-15	RFH642	06/29/18	19:01
20	18Q2DP009-SB0601-SO-1	18F187-16	RFH643	06/29/18	19:20
21	18Q2DP009-IDW-SO01	18F187-17	RFH644	06/29/18	19:39
22	SSTD025	ESVE7A2279	RFH645	06/29/18	19:58

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.
Lab Code: EMAX
Lab File ID: RAH169
Instrument ID: E7

Project: JBER TO075
SDG No: 18F187
Date Analyzed: 01/22/18
Time Analyzed: 15:46

	INTERNAL STANDARD (IS)	1,4-Dichlorobenzene-d4		Phenanthrene-d10		Perylene-d12	
		Area #	RT #	Area #	RT #	Area #	RT #
	12 HOUR STD	562576	2.82	2636875	7.77	3203576	11.91
	UPPER LIMIT	1125152	2.99	5273750	7.94	6407152	12.08
	LOWER LIMIT	281288	2.65	1318438	7.60	1601788	11.74
		Area #	RT #	Area #	RT #	Area #	RT #
1	SSTD025	945953	2.81	4141993	7.77	4707583	11.92
2	MBLK1S	608103	2.81	2726876	7.76	3321144	11.90
3	LCS1S	559948	2.81	2433203	7.76	2674646	11.90
4	LCD1S	586839	2.81	2554347	7.76	2944494	11.90
5	18Q2DP009-SB0501-SO-0MS	612988	2.81	2826453	7.76	3448792	11.90
6	18Q2DP009-SB0501-SO-0MSD	598340	2.81	2822018	7.76	3397959	11.90
7	18Q2DP009-SB0401-SO-0	538432	2.81	2219021	7.76	2433643	11.90
8	18Q2DP009-SB0401-SO-1	486501	2.81	2257485	7.76	2731978	11.90
9	18Q2DP009-SB0402-SO-0	588897	2.81	2661663	7.76	3018453	11.90
10	18Q2DP009-SB0801-SO-0	588544	2.81	2416537	7.76	3026059	11.90
11	18Q2DP009-SB0802-SO-0	529367	2.81	2317173	7.76	2274203	11.90
12	18Q2DP009-SB0501-SO-0	561597	2.81	2779988	7.76	3008347	11.90
13	18Q2DP009-SB0502-SO-0	553784	2.81	2424247	7.76	2737956	11.90
14	18Q2DP009-SB0701-SO-0	519331	2.81	2319597	7.76	2280339	11.90
15	18Q2DP009-SB0702-SO-0	585289	2.81	2734633	7.76	3356402	11.90
16	18Q2DP009-SB0301-SO-0	495484	2.81	2036261	7.76	2447950	11.90
17	18Q2DP009-SB0302-SO-0	346854	2.81	1433700	7.76	1592627*	11.89
18	18Q2DP009-SB0602-SO-0	521093	2.81	2171667	7.76	2216383	11.90
19	18Q2DP009-SB0601-SO-0	491495	2.81	1962191	7.76	2306803	11.90
20	18Q2DP009-SB0601-SO-1	526989	2.81	2160765	7.76	2490251	11.90
21	18Q2DP009-IDW-SO01	488828	2.81	2014170	7.76	2192473	11.90
22	SSTD025	637161	2.81	2976432	7.76	3001040	11.90

Area Upper Limit = +100% of ICAL Midpoint IS Area
Area Lower Limit = -50% of ICAL Midpoint IS Area
Retention Time(RT) Upper Limit = +10 seconds of of ICAL Midpoint IS RT
Retention Time(RT) Lower Limit = -10 seconds of of ICAL Midpoint IS RT

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC_Beginning DateTime :01/22/18 15:09
Spike Amount :25 PPM
CC/CV File :RFH623
IC File :RAH169

Column Spec :ZB-SEMIVOA ID :0.18MM
IC_Ending DateTime :01/22/18 18:16
HPChem Method :SVE7A22S
Date_Time :06/29/18 12:57

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dichlorobenzene-d4	40.000	0	945953	1	1	2.814	2.822	0				
2	1,4-Dioxane	27.811	11.2	244645	0.414	0.413	1.191	1.196	18.80	0.0003	0.3716		0.9999
3	N-nitrosodimethylamine	29.700	18.8	408334	0.691	0.581	1.306	1.308	4.50				
4	2-Fluorophenol	27.646	10.6	703830	1.190	1.077	1.909	1.905	3.48				
5	Phenol-d5	29.367	17.5	937615	1.586	1.350	2.489	2.479	3.81				
6	Phenol	29.350	17.4	894052	1.512	1.288	2.499	2.490	6.90				
7	bis(2-chloroethyl)ether	26.795	7.2	647918	1.096	1.022	2.578	2.584	5.54				
8	2-Chlorophenol	25.219	0.9	723768	1.224	1.214	2.645	2.647	8.94				
9	N-Nitroso-di-n-propylamine	29.148	16.6	530497	0.897	0.770	3.140	3.147	7.82				
10	Hexachloroethane	26.292	5.2	327732	0.554	0.527	3.253	3.269	3.85				
11	Nitrobenzene-d5	27.122	8.5	876890	1.483	1.367	3.294	3.302	5.63				
12	2,4-Dimethylphenol	26.384	5.5	771579	1.305	1.237	3.644	3.646	6.89				
13	2,4-Dichlorophenol	25.314	1.3	703203	1.189	1.175	3.865	3.864	5.31				
14	Naphthalene	24.042	-3.8	2073285	3.507	3.646	4.038	4.049	3.92				
15	4-Chloro-3-methylphenol	27.510	10.0	653632	1.106	1.005	4.622	4.620	9.01				
16	2-Methylnaphthalene	23.383	-6.5	1458152	2.466	2.637	4.795	4.810	3.46				
17	1-Methylnaphthalene	23.193	-7.2	1374510	2.325	2.506	4.910	4.922	3.30				
18	2,4,6-Trichlorophenol	23.039	-7.8	563847	0.954	1.035	5.121	5.127	8.18				
19	2,4,5-Trichlorophenol	23.261	-7.0	569950	0.964	1.036	5.169	5.164	12.69				
20	2,3,4-Trichlorophenol	23.298	-6.8	506902	0.857	0.920	5.237	5.237	11.32				
21	2-Fluorobiphenyl	21.964	-12.1	1876988	3.175	3.614	5.222	5.234	5.79				
22	Biphenyl	22.905	-8.4	1861255	3.148	3.436	5.338	5.352	3.45				
23	2,6-Dimethylnaphthalene	23.117	-7.5	1340774	2.268	2.453	5.520	5.535	3.43				
24	Dimethylphthalate	22.582	-9.7	1712547	2.897	3.207	5.713	5.716	4.48				
25	Acenaphthylene	24.236	-3.1	2250179	3.806	3.926	5.847	5.859	3.78				
26	Acenaphthene	21.979	-12.1	1465480	2.479	2.819	6.059	6.068	5.05				
27	2,3,5-Trimethylnaphthalene	23.303	-6.8	1342753	2.271	2.436	6.518	6.530	4.96				
28	Diethylphthalate	23.679	-5.3	1737381	2.939	3.103	6.561	6.568	5.72				
29	Fluorene	22.985	-8.1	1704676	2.883	3.136	6.678	6.688	4.37				
30	Phenanthrene-d10	40.000	0	4141993	1	1	7.768	7.773	0				
31	N-Nitrosodiphenylamine	25.028	0.1	1445616	0.558	0.633	6.833	6.839	25.77	0.0005	0.5570		0.9998
32	Azobenzene	28.487	13.9	1620099	0.626	0.549	6.876	6.887	5.78				
33	2,4,6-Tribromophenol	25.404	1.6	413753	0.160	0.157	6.966	6.972	10.63				
34	Hexachlorobenzene	22.699	-9.2	757528	0.293	0.322	7.322	7.328	9.16				
35	Pentachlorophenol	22.228	-11.1	389582	0.150	0.146	7.558	7.555	15.31	-0.0002	0.1695		0.9983
36	Dibenzothiophene	24.680	-1.3	2621082	1.012	1.026	7.647	7.654	8.72				
37	Phenanthrene	23.448	-6.2	2647174	1.023	1.090	7.791	7.797	9.04				
38	Anthracene	24.969	-0.1	2736905	1.057	1.059	7.850	7.855	5.60				
39	Carbazole	26.791	7.2	2303431	0.890	0.830	8.036	8.036	6.54				
40	Di-n-butylphthalate	27.602	10.4	2824088	1.091	0.988	8.423	8.433	9.74				
41	1-Methylphenanthrene	26.026	4.1	2096569	0.810	0.778	8.461	8.468	5.87				
42	Fluoranthene	26.495	6.0	3361838	1.299	1.225	9.070	9.075	9.45				
43	Pyrene	25.145	0.6	3368548	1.301	1.294	9.306	9.309	8.67				
44	Terphenyl-d14	25.767	3.1	2556883	0.988	0.958	9.473	9.479	7.71				
45	Butylbenzylphthalate	26.909	7.6	1232115	0.476	0.376	9.978	9.985	16.91	-0.0004	0.4428		0.9971
46	Benzo(a)anthracene	24.476	-2.1	3275483	1.265	1.635	10.536	10.535	44.36	0.0022	1.2888		0.9980
47	Chrysene	23.817	-4.7	3039494	1.174	1.232	10.575	10.568	9.18				
48	bis(2-Ethylhexyl)phthalate	25.430	1.7	1798703	0.695	0.596	10.550	10.560	15.30	-0.0006	0.6839		0.9972
49	Perylene-d12	40.000	0	4707583	1	1	11.917	11.906	0				
50	Di-n-octylphthalate	26.502	6.0	3072618	1.044	0.822	11.172	11.177	19.86	-0.0010	0.9867		0.9985
51	Benzo(b)fluoranthene	27.689	10.8	3472112	1.180	1.066	11.551	11.541	7.71				
52	Benzo(k)fluoranthene	25.165	0.7	3155569	1.073	1.065	11.575	11.566	7.35				
53	Benzo(e)pyrene	25.923	3.7	3159622	1.074	1.036	11.809	11.797	7.44				
54	Benzo(a)pyrene	27.675	10.7	3167339	1.077	0.972	11.860	11.848	9.15				
55	Perylene	23.719	-5.1	3042170	1.034	1.090	11.940	11.930	9.18				
56	Indeno(1,2,3-cd)pyrene	26.598	6.4	3781458	1.285	1.208	13.121	13.097	7.87				
57	Dibenzo(a,h)anthracene	27.085	8.3	3175074	1.079	0.996	13.131	13.116	7.95				
58	Benzo(g,h,i)perylene	24.587	-1.7	2841274	0.966	0.982	13.480	13.455	7.76				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC_Beginning DateTime :01/22/18 15:09
Spike Amount :25 PPM
CC/CV File :RFH645
IC File :RAH169

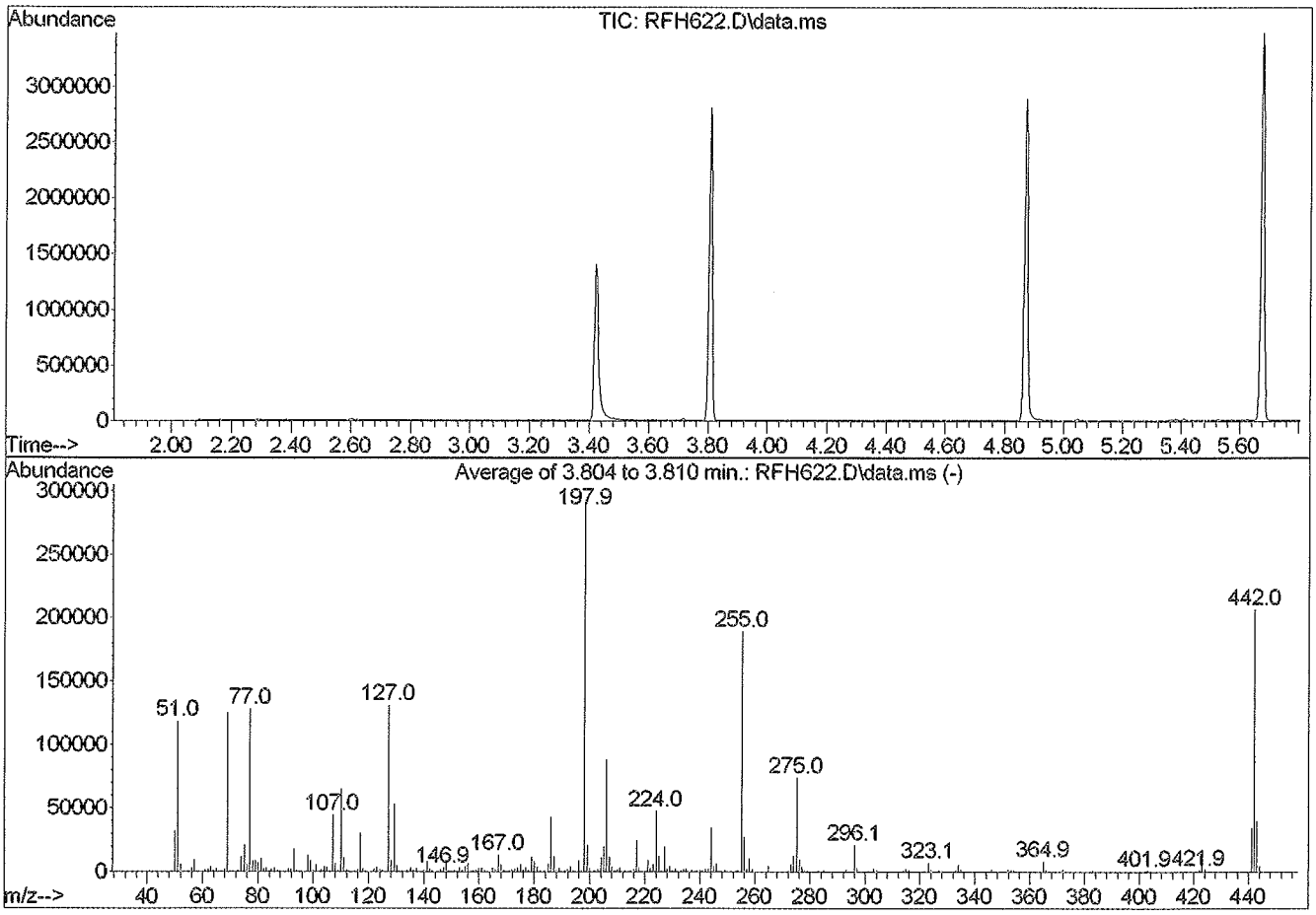
Column Spec :ZB-SEMIVOA ID :0.18MM
IC_Ending DateTime :01/22/18 18:16
HPChem Method :SVE7A22S
Date_Time :06/29/18 19:58

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-Dichlorobenzene-d4	40.000	0	637161	1	1	2.814	2.822	0				
	2	1,4-Dioxane	23.574	-5.7	139705	0.351	0.413	1.191	1.196	18.80	0.0003	0.3716		0.9999
	3	N-nitrosodimethylamine	24.842	-0.6	230047	0.578	0.581	1.306	1.308	4.50				
	4	2-Fluorophenol	24.064	-3.7	412646	1.036	1.077	1.909	1.905	3.48				
	5	Phenol-d5	26.002	4.0	559185	1.404	1.350	2.489	2.479	3.81				
	6	Phenol	25.734	2.9	528009	1.326	1.288	2.499	2.490	6.90				
	7	bis(2-chloroethyl)ether	24.531	-1.9	399535	1.003	1.022	2.583	2.584	5.54				
	8	2-Chlorophenol	22.809	-8.8	440925	1.107	1.214	2.645	2.647	8.94				
	9	N-Nitroso-di-n-propylamine	27.965	11.9	342826	0.861	0.770	3.140	3.147	7.82				
	10	Hexachloroethane	24.702	-1.2	207399	0.521	0.527	3.258	3.269	3.85				
	11	Nitrobenzene-d5	25.999	4.0	566179	1.422	1.367	3.298	3.302	5.63				
	12	2,4-Dimethylphenol	24.845	-0.6	489397	1.229	1.237	3.644	3.646	6.89				
	13	2,4-Dichlorophenol	23.191	-7.2	433940	1.090	1.175	3.865	3.864	5.31				
	14	Naphthalene	22.669	-9.3	1316734	3.307	3.646	4.038	4.049	3.92				
	15	4-Chloro-3-methylphenol	25.385	1.5	406257	1.020	1.005	4.627	4.620	9.01				
	16	2-Methylnaphthalene	22.958	-8.2	964331	2.422	2.637	4.799	4.810	3.46				
	17	1-Methylnaphthalene	22.698	-9.2	906066	2.275	2.506	4.910	4.922	3.30				
	18	2,4,6-Trichlorophenol	22.712	-9.2	374380	0.940	1.035	5.121	5.127	8.18				
	19	2,4,5-Trichlorophenol	22.319	-10.7	368337	0.925	1.036	5.169	5.164	12.69				
	20	2,3,4-Trichlorophenol	22.412	-10.4	328446	0.825	0.920	5.242	5.237	11.32				
	21	2-Fluorobiphenyl	22.179	-11.3	1276621	3.206	3.614	5.222	5.234	5.79				
	22	Biphenyl	23.105	-7.6	1264609	3.176	3.436	5.338	5.352	3.45				
	23	2,6-Dimethylnaphthalene	23.398	-6.4	914084	2.295	2.453	5.525	5.535	3.43				
	24	Dimethylphthalate	22.444	-10.2	1146490	2.879	3.207	5.708	5.716	4.48				
	25	Acenaphthylene	23.214	-7.1	1451691	3.645	3.926	5.848	5.859	3.78				
	26	Acenaphthene	21.812	-12.8	979590	2.460	2.819	6.054	6.068	5.05				
	27	2,3,5-Trimethylnaphthalene	23.410	-6.4	908560	2.282	2.436	6.518	6.530	4.96				
	28	Diethylphthalate	22.646	-9.4	1119222	2.811	3.103	6.556	6.568	5.72				
	29	Fluorene	22.089	-11.6	1103438	2.771	3.136	6.678	6.688	4.37				
	30	Phenanthrene-d10	40.000	0	2976432	1	1	7.764	7.773	0				
	31	N-Nitrosodiphenylamine	22.781	-8.9	945674	0.508	0.633	6.828	6.839	25.77	0.0005	0.5570		0.9998
	32	Azobenzene	27.126	8.5	1108613	0.596	0.549	6.876	6.887	5.78				
	33	2,4,6-Tribromophenol	23.061	-7.8	269903	0.145	0.157	6.966	6.972	10.63				
	34	Hexachlorobenzene	20.882	-16.5	500794	0.269	0.322	7.322	7.328	9.16				
	35	Pentachlorophenol	18.554	-25.8	233614	0.126	0.146	7.553	7.555	15.31	-0.0002	0.1695		0.9983
	36	Dibenzothiophene	22.200	-11.2	1694237	0.911	1.026	7.643	7.654	8.72				
	37	Phenanthrene	21.264	-14.9	1725089	0.927	1.090	7.786	7.797	9.04				
	38	Anthracene	22.240	-11.0	1751793	0.942	1.059	7.845	7.855	5.60				
	39	Carbazole	22.773	-8.9	1407021	0.756	0.830	8.031	8.036	6.54				
	40	Di-n-butylphthalate	24.492	-2.0	1800709	0.968	0.988	8.418	8.433	9.74				
	41	1-Methylphenanthrene	22.530	-9.9	1304216	0.701	0.778	8.461	8.468	5.87				
	42	Fluoranthene	22.007	-12.0	2006549	1.079	1.225	9.065	9.075	9.45				
	43	Pyrene	21.121	-15.5	2033258	1.093	1.294	9.301	9.309	8.67				
	44	Terphenyl-d14	21.808	-12.8	1555067	0.836	0.958	9.469	9.479	7.71				
	45	Butylbenzylphthalate	23.693	-5.2	779414	0.419	0.376	9.970	9.985	16.91	-0.0004	0.4428		0.9971
	46	Benzo(a)anthracene	20.705	-17.2	1992116	1.071	1.635	10.526	10.535	44.36	0.0022	1.2888		0.9980
	47	Chrysene	19.841	-20.6	1819572	0.978	1.232	10.565	10.568	9.18				
	48	bis(2-Ethylhexyl)phthalate	22.761	-9.0	1156694	0.622	0.596	10.546	10.560	15.30	-0.0006	0.6839		0.9972
	49	Perylene-d12	40.000	0	3001040	1	1	11.903	11.906	0				
	50	Di-n-octylphthalate	25.289	1.2	1869015	0.996	0.822	11.163	11.177	19.86	-0.0010	0.9867		0.9985
	51	Benzo(b)fluoranthene	23.094	-7.6	1846113	0.984	1.066	11.537	11.541	7.71				
	52	Benzo(k)fluoranthene	22.833	-8.7	1825182	0.973	1.065	11.566	11.566	7.35				
	53	Benzo(e)pyrene	22.884	-8.5	1778085	0.948	1.036	11.795	11.797	7.44				
	54	Benzo(a)pyrene	24.020	-3.9	1752480	0.934	0.972	11.847	11.848	9.15				
	55	Perylene	21.595	-13.6	1765623	0.941	1.090	11.927	11.930	9.18				
	56	Indeno(1,2,3-cd)pyrene	22.801	-8.8	2066551	1.102	1.208	13.097	13.097	7.87				
	57	Dibenzo(a,h)anthracene	23.161	-7.4	1730847	0.923	0.996	13.107	13.116	7.95				
	58	Benzo(g,h,i)perylene	22.427	-10.3	1652191	0.881	0.982	13.457	13.455	7.76				

Data Path : D:\DATA\18F29\
Data File : RFH622.D
Acq On : 29 Jun 2018 12:30
Operator : RZh
Sample : DFTE7A2278
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPP.M
Title : DFTPP
Last Update : Tue Jan 23 12:56:03 2018



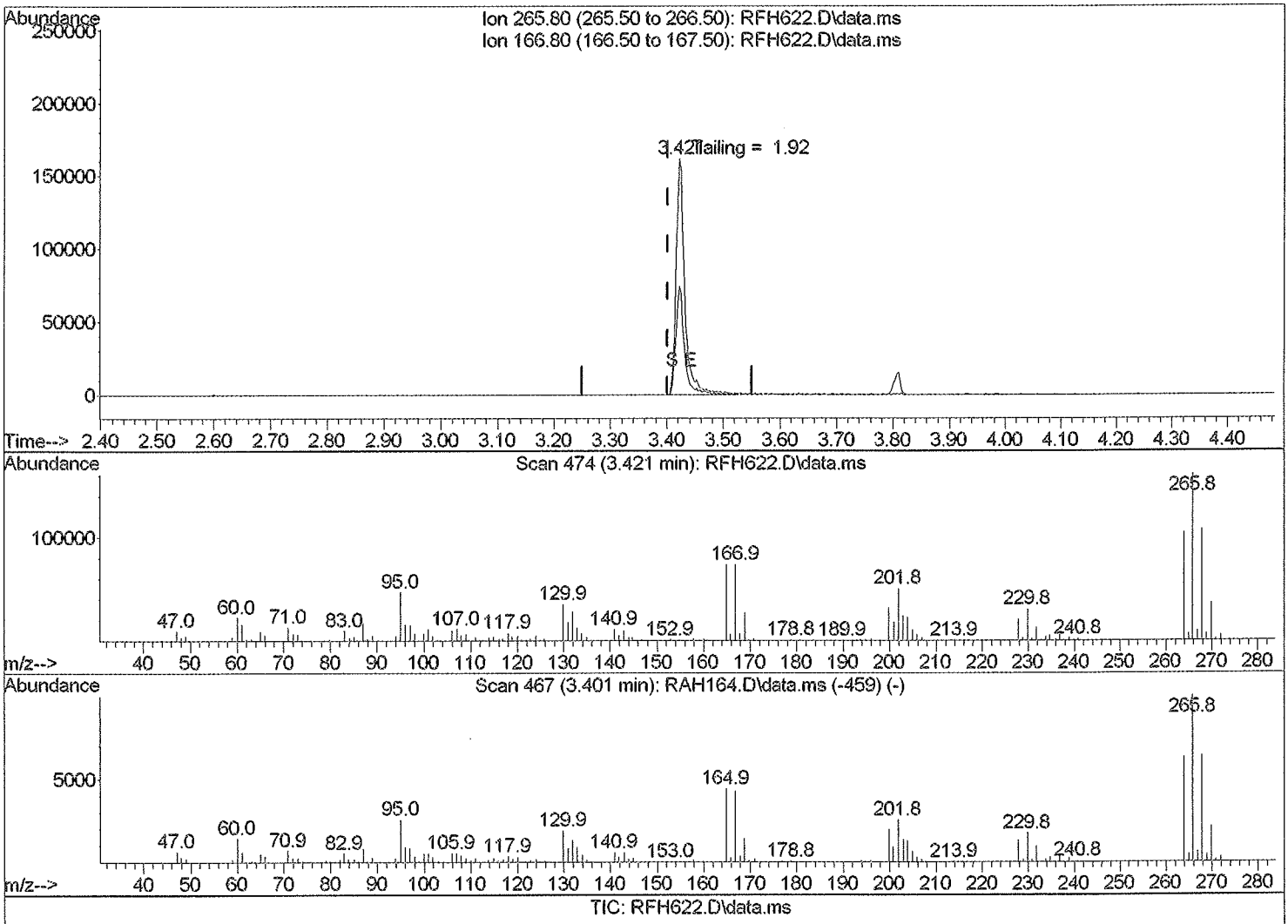
AutoFind: Scans 610, 611, 612; Background Corrected with Scan 601

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	40.8	118433	PASS
68	69	0.00	2	1.7	2103	PASS
69	198	0.00	100	43.1	125205	PASS
70	69	0.00	2	0.4	450	PASS
127	198	40	60	45.0	130765	PASS
197	198	0.00	1	0.3	937	PASS
198	198	100	100	100.0	290432	PASS
199	198	5	9	7.2	20949	PASS
275	198	10	30	25.4	73824	PASS
365	198	1	100	2.8	8213	PASS
441	443	0.01	100	87.5	34784	PASS
442	198	40	100	71.0	206123	PASS
443	442	17	23	19.3	39757	PASS

Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH622.D
Acq On : 29 Jun 2018 12:30
Sample : DFTE7A2278
Misc :
Integrator: RTE
Quant Time: Jul 06 13:50:42 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: RZh
Inst : E7
Multiplr: 1.00



TIC: RFH622.D\data.ms

(1) Pentachlorophenol (T)

3.421min (+0.020) 52.28 ppm

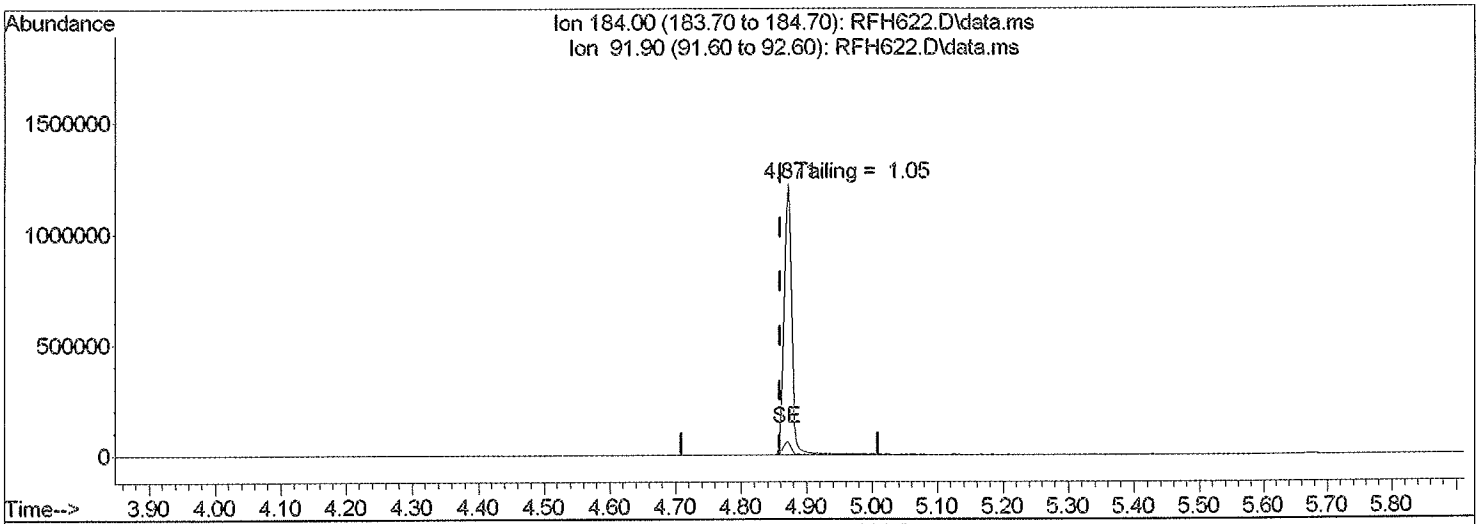
response 170499

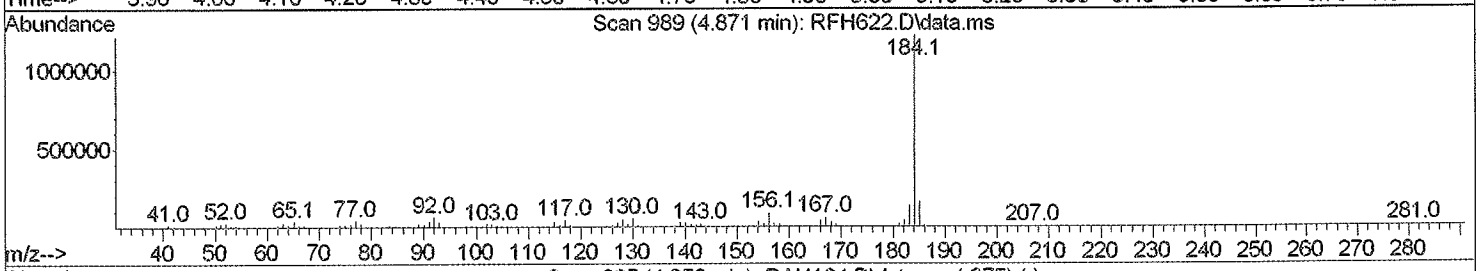
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	45.75
0.00	0.00	0.00
0.00	0.00	0.00

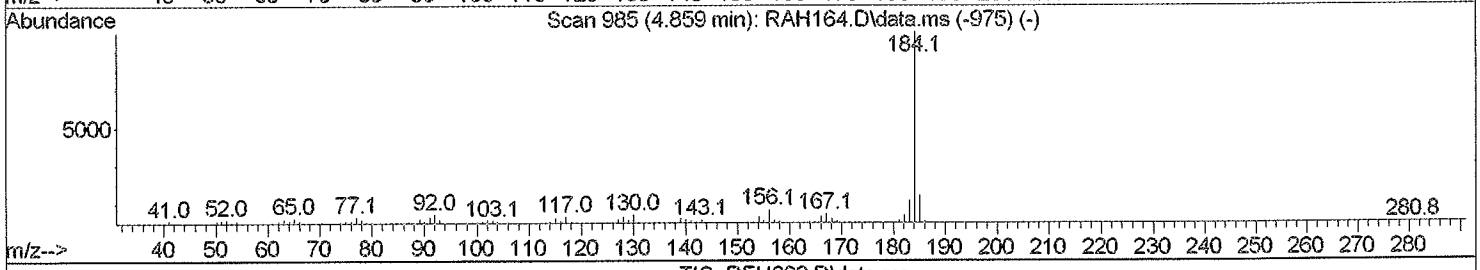
Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH622.D
Acq On : 29 Jun 2018 12:30
Sample : DFTE7A2278
Misc :
Integrator: RTE
Quant Time: Jul 06 13:50:42 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: RZh
Inst : E7
Multiplr: 1.00







TIC: RFH622.D\data.ms

(3) Benzidine (T)

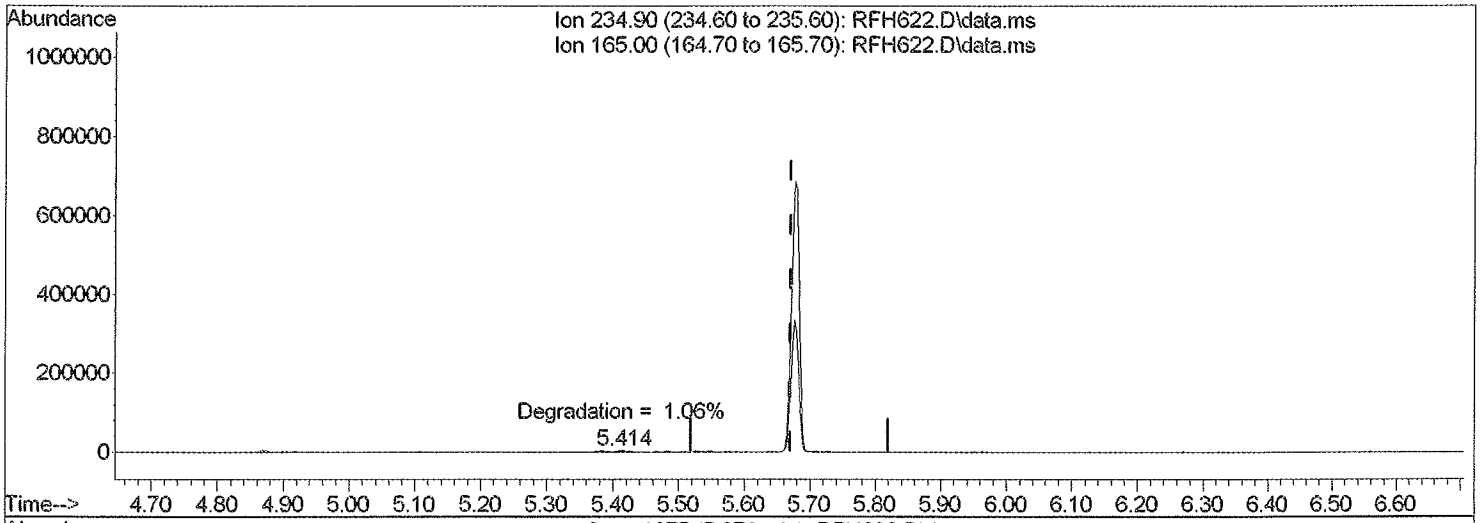
4.871min (+0.011) 63.87 ppm

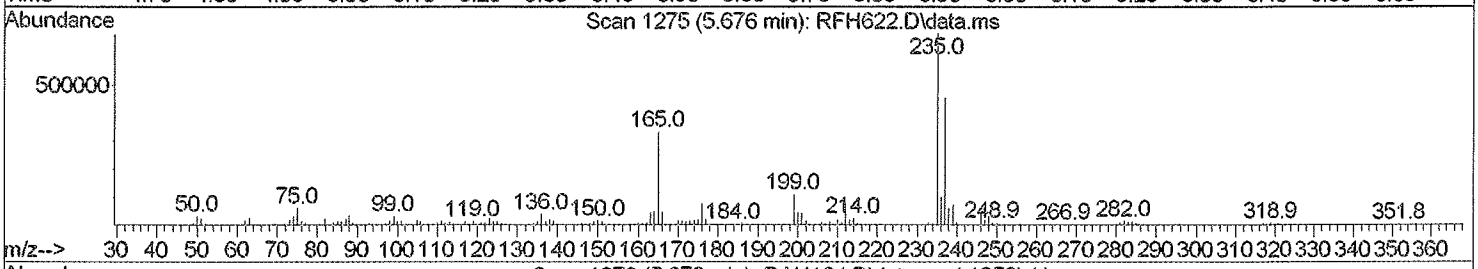
response 973416

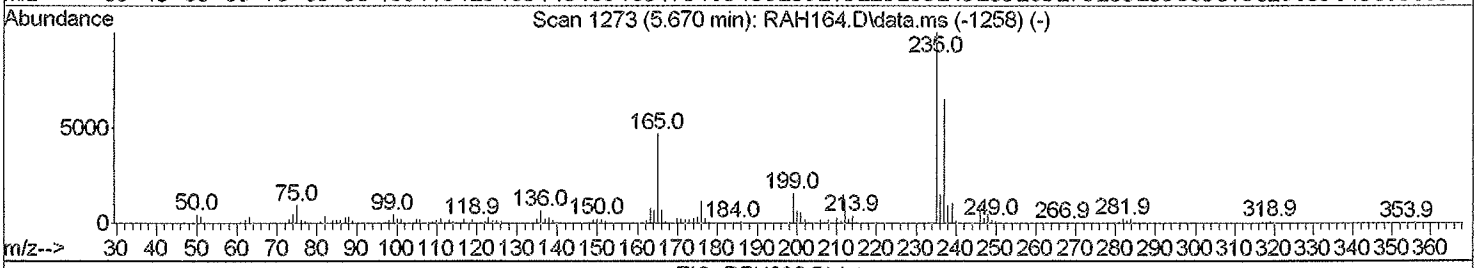
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	4.84
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : D:\DATA\18F29\RFH622.D Vial: 2
Acq On : 29 Jun 2018 12:30 Operator: RZh
Sample : DFTE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 06 13:50:42 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M







TIC: RFH622.D\data.ms

(6) DDT (T)

5.676min (+0.006) 57.73 ppm

response 550214

Ion	Exp%	Act%
234.90	100	100
165.00	47.00	48.38
0.00	0.00	0.00
0.00	0.00	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 14:00:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	168	-0.01
2	T	1,4-Dioxane	25.000	27.811	-11.2	185	0.00
3	T	N-nitrosodimethylamine	25.000	29.700	-18.8	190	0.00
4	S	2-Fluorophenol	25.000	27.646	-10.6	182	0.00
5	S	Phenol-d5	25.000	29.367	-17.5	194	0.00
6	T,P	Phenol	25.000	29.350	-17.4	186	0.01
7	T,P	bis(2-chloroethyl)ether	25.000	26.795	-7.2	184	0.00
8	T,P	2-Chlorophenol	25.000	25.219	-0.9	169	0.00
9	P,P	N-Nitroso-di-n-propylamine	25.000	29.148	-16.6	182	0.00
10	T	Hexachloroethane	25.000	26.292	-5.2	174	-0.02
11	S	Nitrobenzene-d5	25.000	27.122	-8.5	176	0.00
12	T,P	2,4-Dimethylphenol	25.000	26.384	-5.5	168	0.00
13	T,P	2,4-Dichlorophenol	25.000	25.314	-1.3	163	0.00
14	T,P	Naphthalene	25.000	24.042	3.8	163	0.00
15	T,P	4-Chloro-3-methylphenol	25.000	27.510	-10.0	175	0.00
16	T,P	2-Methylnaphthalene	25.000	23.383	6.5	159	-0.01
17	T	1-Methylnaphthalene	25.000	23.193	7.2	158	-0.01
18	T,P	2,4,6-Trichlorophenol	25.000	23.040	7.8	147	0.00
19	T,P	2,4,5-Trichlorophenol	25.000	23.261	7.0	144	0.00
20	T	2,3,4-Trichlorophenol	25.000	23.298	6.8	146	0.00
21	S	2-Fluorobiphenyl	25.000	21.964	12.1	153	-0.01
22	T	Biphenyl	25.000	22.905	8.4	157	-0.01
23	T	2,6-Dimethylnaphthalene	25.000	23.117	7.5	156	-0.01
24	T	Dimethylphthalate	25.000	22.582	9.7	157	0.00
25	T,P	Acenaphthylene	25.000	24.236	3.1	164	-0.01
26	C,P	Acenaphthene	25.000	21.979	12.1	154	0.00
27	T	2,3,5-Trimethylnaphthalene	25.000	23.304	6.8	161	-0.01
28	T	Diethylphthalate	25.000	23.679	5.3	163	0.00
29	T,P	Fluorene	25.000	22.985	8.1	159	0.00
30	I	Phenanthrene-d10	40.000	40.000	0.0	157	0.00
31	T	N-Nitrosodiphenylamine	25.000	25.028	-0.1	159	0.00
32	T	Azobenzene	25.000	28.487	-13.9	174	-0.01
33	S	2,4,6-Tribromophenol	25.000	25.404	-1.6	149	0.00
34	T,P	Hexachlorobenzene	25.000	22.699	9.2	150	0.00
35	T,P	Pentachlorophenol	25.000	22.228	11.1	136	0.00
36	T	Dibenzothiophene	25.000	24.680	1.3	160	0.00
37	T,P	Phenanthrene	25.000	23.448	6.2	153	0.00
38	T,P	Anthracene	25.000	24.969	0.1	155	0.00
39	T	Carbazole	25.000	26.790	-7.2	156	0.00
40	T	Di-n-butylphthalate	25.000	27.602	-10.4	161	0.00
41	T	1-Methylphenanthrene	25.000	26.026	-4.1	159	0.00
42	C,P	Fluoranthene	25.000	26.495	-6.0	158	0.00
43	T,P	Pyrene	25.000	25.145	-0.6	152	0.00
44	S	Terphenyl-d14	25.000	25.767	-3.1	152	0.00
45	T	Butylbenzylphthalate	25.000	26.909	-7.6	161	0.00
46	T,P	Benzo(a)anthracene	25.000	24.476	2.1	145	0.00
47	T,P	Chrysene	25.000	23.817	4.7	144	0.00
48	T	bis(2-Ethylhexyl)phthalate	25.000	25.430	-1.7	151	0.00
49	I	Perylene-d12	40.000	40.000	0.0	147	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 14:00:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	25.000	26.502	-6.0	158	-0.01
51	T,P	Benzo(b)fluoranthene	25.000	27.689	-10.8	158	0.00
52	T,P	Benzo(k)fluoranthene	25.000	25.165	-0.7	144	0.00
53	T	Benzo(e)pyrene	25.000	25.923	-3.7	150	0.00
54	C,P	Benzo(a)pyrene	25.000	27.675	-10.7	151	0.00
55	T	Perylene	25.000	23.720	5.1	143	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	25.000	26.598	-6.4	150	0.02
57	T,P	Dibenzo(a,h)anthracene	25.000	27.085	-8.3	151	0.00
58	T,P	Benzo(g,h,i)perylene	25.000	24.587	1.7	140	0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 14:00:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	168	-0.01
2	T	1,4-Dioxane	0.413	0.414	-0.2	185	0.00
3	T	N-nitrosodimethylamine	0.581	0.691	-18.9	190	0.00
4	S	2-Fluorophenol	1.077	1.190	-10.5	182	0.00
5	S	Phenol-d5	1.350	1.586	-17.5	194	0.00
6	T,P	Phenol	1.288	1.512	-17.4	186	0.01
7	T,P	bis(2-chloroethyl)ether	1.022	1.096	-7.2	184	0.00
8	T,P	2-Chlorophenol	1.214	1.224	-0.8	169	0.00
9	P,P	N-Nitroso-di-n-propylamine	0.770	0.897	-16.5	182	0.00
10	T	Hexachloroethane	0.527	0.554	-5.1	174	-0.02
11	S	Nitrobenzene-d5	1.367	1.483	-8.5	176	0.00
12	T,P	2,4-Dimethylphenol	1.237	1.305	-5.5	168	0.00
13	T,P	2,4-Dichlorophenol	1.175	1.189	-1.2	163	0.00
14	T,P	Naphthalene	3.646	3.507	3.8	163	0.00
15	T,P	4-Chloro-3-methylphenol	1.005	1.106	-10.0	175	0.00
16	T,P	2-Methylnaphthalene	2.637	2.466	6.5	159	-0.01
17	T	1-Methylnaphthalene	2.506	2.325	7.2	158	-0.01
18	T,P	2,4,6-Trichlorophenol	1.035	0.954	7.8	147	0.00
19	T,P	2,4,5-Trichlorophenol	1.036	0.964	6.9	144	0.00
20	T	2,3,4-Trichlorophenol	0.920	0.857	6.8	146	0.00
21	S	2-Fluorobiphenyl	3.614	3.175	12.1	153	-0.01
22	T	Biphenyl	3.436	3.148	8.4	157	-0.01
23	T	2,6-Dimethylnaphthalene	2.453	2.268	7.5	156	-0.01
24	T	Dimethylphthalate	3.207	2.897	9.7	157	0.00
25	T,P	Acenaphthylene	3.926	3.806	3.1	164	-0.01
26	C,P	Acenaphthene	2.819	2.479	12.1	154	0.00
27	T	2,3,5-Trimethylnaphthalene	2.436	2.271	6.8	161	-0.01
28	T	Diethylphthalate	3.103	2.939	5.3	163	0.00
29	T,P	Fluorene	3.136	2.883	8.1	159	0.00
30	I	Phenanthrene-d10	1.000	1.000	0.0	157	0.00
31	T	N-Nitrosodiphenylamine	0.633	0.558	11.8	159	0.00
32	T	Azobenzene	0.549	0.626	-14.0	174	-0.01
33	S	2,4,6-Tribromophenol	0.157	0.160	-1.9	149	0.00
34	T,P	Hexachlorobenzene	0.322	0.293	9.0	150	0.00
35	T,P	Pentachlorophenol	0.146	0.150	-2.7	136	0.00
36	T	Dibenzothiophene	1.026	1.012	1.4	160	0.00
37	T,P	Phenanthrene	1.090	1.023	6.1	153	0.00
38	T,P	Anthracene	1.059	1.057	0.2	155	0.00
39	T	Carbazole	0.830	0.890	-7.2	156	0.00
40	T	Di-n-butylphthalate	0.988	1.091	-10.4	161	0.00
41	T	1-Methylphenanthrene	0.778	0.810	-4.1	159	0.00
42	C,P	Fluoranthene	1.225	1.299	-6.0	158	0.00
43	T,P	Pyrene	1.294	1.301	-0.5	152	0.00
44	S	Terphenyl-d14	0.958	0.988	-3.1	152	0.00
45	T	Butylbenzylphthalate	0.376	0.476	-26.6#	161	0.00
46	T,P	Benzo(a)anthracene	1.635	1.265	22.6#	145	0.00
47	T,P	Chrysene	1.232	1.174	4.7	144	0.00
48	T	bis(2-Ethylhexyl)phthalate	0.596	0.695	-16.6	151	0.00
49	I	Perylene-d12	1.000	1.000	0.0	147	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 14:00:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	0.822	1.044	-27.0#	158	-0.01
51	T,P	Benzo(b)fluoranthene	1.066	1.180	-10.7	158	0.00
52	T,P	Benzo(k)fluoranthene	1.065	1.073	-0.8	144	0.00
53	T	Benzo(e)pyrene	1.036	1.074	-3.7	150	0.00
54	C,P	Benzo(a)pyrene	0.972	1.077	-10.8	151	0.00
55	T	Perylene	1.090	1.034	5.1	143	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	1.208	1.285	-6.4	150	0.02
57	T,P	Dibenzo(a,h)anthracene	0.996	1.079	-8.3	151	0.00
58	T,P	Benzo(g,h,i)perylene	0.982	0.966	1.6	140	0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 14:00:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	945953	40.00	ppm	-0.01
30) Phenanthrene-d10	7.768	188	4141993	40.00	ppm	0.00
49) Perylene-d12	11.917	264	4707583	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.909	112	703830	27.65	ppm	0.00
Spiked Amount 30.000			Recovery = 92.17%			
5) Phenol-d5	2.489	99	937615	29.37	ppm	0.00
Spiked Amount 30.000			Recovery = 97.90%			
11) Nitrobenzene-d5	3.294	82	876890	27.12	ppm	0.00
Spiked Amount 10.000			Recovery = 271.20%			
21) 2-Fluorobiphenyl	5.222	172	1876988	21.96	ppm	-0.01
Spiked Amount 10.000			Recovery = 219.60%			
33) 2,4,6-Tribromophenol	6.966	330	413753	25.40	ppm	0.00
Spiked Amount 30.000			Recovery = 84.67%			
44) Terphenyl-d14	9.473	244	2556883	25.77	ppm	0.00
Spiked Amount 10.000			Recovery = 257.70%			
Target Compounds						Qvalue
2] 1,4-Dioxane	1.191	88	244645	27.81	ppm	100
3] N-nitrosodimethylamine	1.305	74	408334	29.70	ppm	90
6] Phenol	2.499	94	894052	29.35	ppm	98
7] bis(2-chloroethyl)ether	2.578	93	647918	26.80	ppm	99
8] 2-Chlorophenol	2.645	128	723768	25.22	ppm	93
9] N-Nitroso-di-n-propyla...	3.140	70	530497	29.15	ppm	96
10] Hexachloroethane	3.253	117	327732	26.29	ppm	95
12] 2,4-Dimethylphenol	3.644	107	771579	26.38	ppm	90
13] 2,4-Dichlorophenol	3.865	162	703203	25.31	ppm	97
14] Naphthalene	4.039	128	2073285	24.04	ppm	100
15] 4-Chloro-3-methylphenol	4.622	107	653632	27.51	ppm	96
16] 2-Methylnaphthalene	4.795	142	1458152	23.38	ppm	97
17] 1-Methylnaphthalene	4.910	142	1374510	23.19	ppm	97
18] 2,4,6-Trichlorophenol	5.121	196	563847	23.04	ppm	96
19] 2,4,5-Trichlorophenol	5.169	196	569950	23.26	ppm	96
20] 2,3,4-Trichlorophenol	5.237	196	506902	23.30	ppm	95
22] Biphenyl	5.338	154	1861255	22.91	ppm	98
23] 2,6-Dimethylnaphthalene	5.520	156	1340774	23.12	ppm	99
24] Dimethylphthalate	5.712	163	1712547	22.58	ppm	99
25] Acenaphthylene	5.848	152	2250179	24.24	ppm	99
26] Acenaphthene	6.059	153	1465480	21.98	ppm	96
27] 2,3,5-Trimethylnaphtha...	6.518	170	1342753	23.30	ppm	97
28] Diethylphthalate	6.561	149	1737381	23.68	ppm	98
29] Fluorene	6.678	166	1704676	22.99	ppm	97
31] N-Nitrosodiphenylamine	6.833	169	1445616	25.03	ppm	99
32] Azobenzene	6.876	77	1620099	28.49	ppm	100
34] Hexachlorobenzene	7.322	284	757528	22.70	ppm	100
35] Pentachlorophenol	7.558	266	389582	22.23	ppm	100
36] Dibenzothiophene	7.647	184	2621082	24.68	ppm	99
37] Phenanthrene	7.791	178	2647174	23.45	ppm	99
38] Anthracene	7.850	178	2736905	24.97	ppm	99
39] Carbazole	8.036	167	2303431	26.79	ppm	99
40] Di-n-butylphthalate	8.423	149	2824088	27.60	ppm	100
41] 1-Methylphenanthrene	8.461	192	2096569	26.03	ppm	100
42] Fluoranthene	9.070	202	3361838	26.50	ppm	99

Quantitation Report (QT Reviewed)

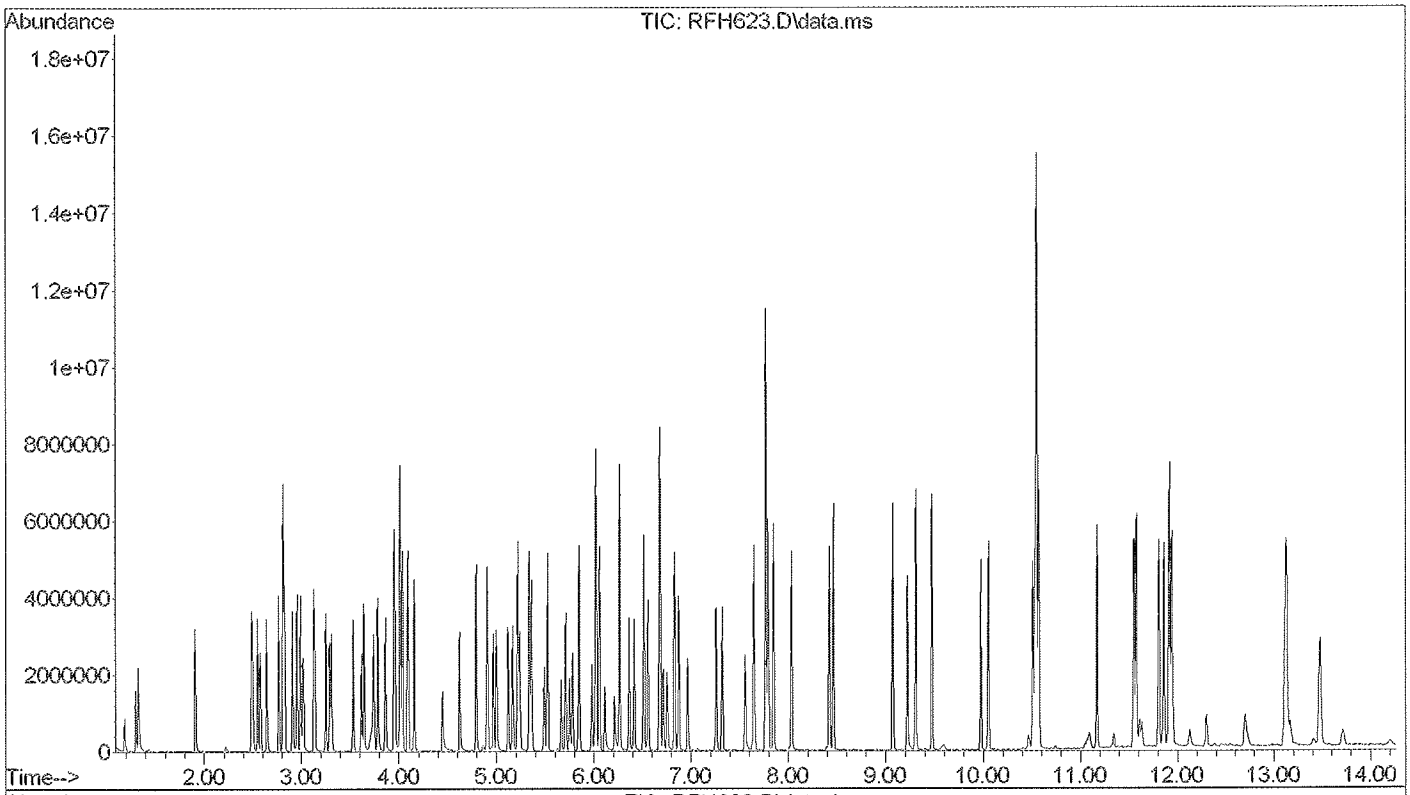
Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 14:00:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

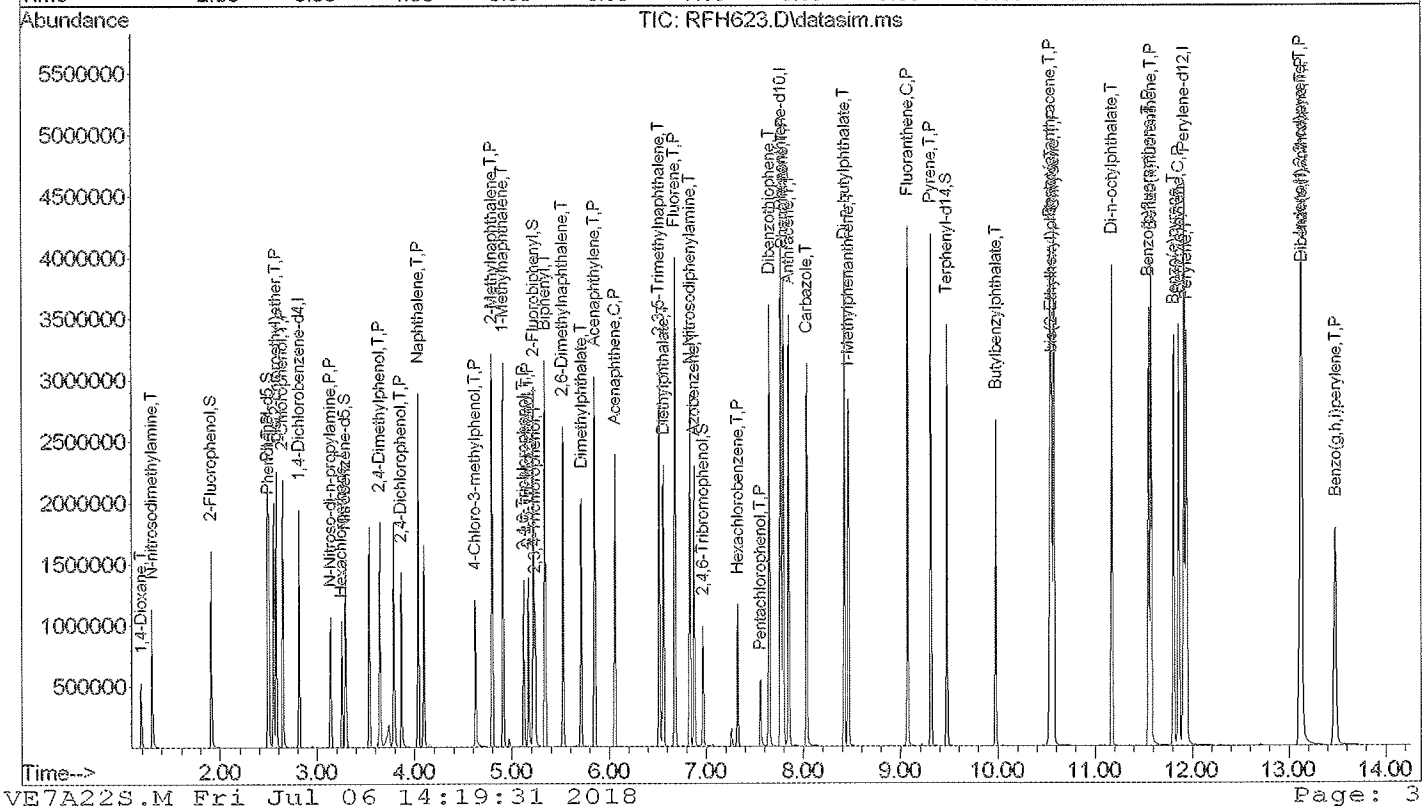
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43]	Pyrene	9.306	202	3368548	25.15	ppm	99
45]	Butylbenzylphthalate	9.978	149	1232115	26.91	ppm	97
46]	Benzo(a)anthracene	10.536	228	3275483	24.48	ppm	94
47]	Chrysene	10.574	228	3039494	23.82	ppm	98
48]	bis(2-Ethylhexyl)phtha...	10.550	149	1798703	25.43	ppm	98
50]	Di-n-octylphthalate	11.172	149	3072618	26.50	ppm	100
51]	Benzo(b)fluoranthene	11.551	252	3472112	27.69	ppm	96
52]	Benzo(k)fluoranthene	11.575	252	3155569	25.17	ppm	99
53]	Benzo(e)pyrene	11.809	252	3159622	25.92	ppm	96
54]	Benzo(a)pyrene	11.860	252	3167339	27.67	ppm	97
55]	Perylene	11.940	252	3042170	23.72	ppm	96
56]	Indeno(1,2,3-cd)pyrene	13.121	276	3781458	26.60	ppm	95
57]	Dibenzo(a,h)anthracene	13.131	278	3175074	27.08	ppm	97
58]	Benzo(g,h,i)perylene	13.480	276	2841274	24.59	ppm	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH623.D Vial: 3
Acq On : 29 Jun 2018 12:57 Operator: RZh
Sample : CSVE7A2278 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 14:00:37 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:18:05 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	113	0.00
2	T	1,4-Dioxane	25.000	23.574	5.7	106	0.00
3	T	N-nitrosodimethylamine	25.000	24.842	0.6	107	0.00
4	S	2-Fluorophenol	25.000	24.064	3.7	106	0.00
5	S	Phenol-d5	25.000	26.002	-4.0	116	0.01
6	T,P	Phenol	25.000	25.734	-2.9	110	0.01
7	T,P	bis(2-chloroethyl)ether	25.000	24.531	1.9	113	0.00
8	T,P	2-Chlorophenol	25.000	22.809	8.8	103	0.00
9	P,P	N-Nitroso-di-n-propylamine	25.000	27.965	-11.9	118	0.00
10	T	Hexachloroethane	25.000	24.702	1.2	110	-0.01
11	S	Nitrobenzene-d5	25.000	25.999	-4.0	114	0.00
12	T,P	2,4-Dimethylphenol	25.000	24.845	0.6	107	0.00
13	T,P	2,4-Dichlorophenol	25.000	23.191	7.2	101	0.00
14	T,P	Naphthalene	25.000	22.669	9.3	104	0.00
15	T,P	4-Chloro-3-methylphenol	25.000	25.385	-1.5	109	0.00
16	T,P	2-Methylnaphthalene	25.000	22.959	8.2	105	0.00
17	T	1-Methylnaphthalene	25.000	22.698	9.2	104	-0.01
18	T,P	2,4,6-Trichlorophenol	25.000	22.711	9.2	98	0.00
19	T,P	2,4,5-Trichlorophenol	25.000	22.318	10.7	93	0.00
20	T	2,3,4-Trichlorophenol	25.000	22.412	10.4	95	0.00
21	S	2-Fluorobiphenyl	25.000	22.179	11.3	104	-0.01
22	T	Biphenyl	25.000	23.105	7.6	107	-0.01
23	T	2,6-Dimethylnaphthalene	25.000	23.398	6.4	106	-0.01
24	T	Dimethylphthalate	25.000	22.444	10.2	105	-0.01
25	T,P	Acenaphthylene	25.000	23.214	7.1	106	-0.01
26	C,P	Acenaphthene	25.000	21.812	12.8	103	-0.01
27	T	2,3,5-Trimethylnaphthalene	25.000	23.410	6.4	109	-0.01
28	T	Diethylphthalate	25.000	22.646	9.4	105	-0.01
29	T,P	Fluorene	25.000	22.089	11.6	103	0.00
30	I	Phenanthrene-d10	40.000	40.000	0.0	113	0.00
31	T	N-Nitrosodiphenylamine	25.000	22.781	8.9	104	-0.01
32	T	Azobenzene	25.000	27.127	-8.5	119	-0.01
33	S	2,4,6-Tribromophenol	25.000	23.061	7.8	97	0.00
34	T,P	Hexachlorobenzene	25.000	20.882	16.5	99	0.00
35	T,P	Pentachlorophenol	25.000	18.554	25.8#	82	0.00
36	T	Dibenzothiophene	25.000	22.200	11.2	103	-0.01
37	T,P	Phenanthrene	25.000	21.264	14.9	100	-0.01
38	T,P	Anthracene	25.000	22.240	11.0	99	0.00
39	T	Carbazole	25.000	22.773	8.9	96	0.00
40	T	Di-n-butylphthalate	25.000	24.492	2.0	102	-0.01
41	T	1-Methylphenanthrene	25.000	22.530	9.9	99	0.00
42	C,P	Fluoranthene	25.000	22.007	12.0	94	0.00
43	T,P	Pyrene	25.000	21.121	15.5	92	0.00
44	S	Terphenyl-d14	25.000	21.808	12.8	93	-0.01
45	T	Butylbenzylphthalate	25.000	23.693	5.2	102	-0.02
46	T,P	Benzo(a)anthracene	25.000	20.704	17.2	88	0.00
47	T,P	Chrysene	25.000	19.841	20.6#	86	0.00
48	T	bis(2-Ethylhexyl)phthalate	25.000	22.761	9.0	97	-0.01
49	I	Perylene-d12	40.000	40.000	0.0	94	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:18:05 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	25.000	25.289	-1.2	96	-0.02
51	T,P	Benzo(b)fluoranthene	25.000	23.094	7.6	84	-0.01
52	T,P	Benzo(k)fluoranthene	25.000	22.833	8.7	83	0.00
53	T	Benzo(e)pyrene	25.000	22.884	8.5	85	0.00
54	C,P	Benzo(a)pyrene	25.000	24.020	3.9	83	0.00
55	T	Perylene	25.000	21.595	13.6	83	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	25.000	22.801	8.8	82	0.00
57	T,P	Dibenzo(a,h)anthracene	25.000	23.161	7.4	82	-0.01
58	T,P	Benzo(g,h,i)perylene	25.000	22.428	10.3	82	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:18:05 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	113	0.00
2	T	1,4-Dioxane	0.413	0.351	15.0	106	0.00
3	T	N-nitrosodimethylamine	0.581	0.578	0.5	107	0.00
4	S	2-Fluorophenol	1.077	1.036	3.8	106	0.00
5	S	Phenol-d5	1.350	1.404	-4.0	116	0.01
6	T,P	Phenol	1.288	1.326	-3.0	110	0.01
7	T,P	bis(2-chloroethyl)ether	1.022	1.003	1.9	113	0.00
8	T,P	2-Chlorophenol	1.214	1.107	8.8	103	0.00
9	P,P	N-Nitroso-di-n-propylamine	0.770	0.861	-11.8	118	0.00
10	T	Hexachloroethane	0.527	0.521	1.1	110	-0.01
11	S	Nitrobenzene-d5	1.367	1.422	-4.0	114	0.00
12	T,P	2,4-Dimethylphenol	1.237	1.229	0.6	107	0.00
13	T,P	2,4-Dichlorophenol	1.175	1.090	7.2	101	0.00
14	T,P	Naphthalene	3.646	3.307	9.3	104	0.00
15	T,P	4-Chloro-3-methylphenol	1.005	1.020	-1.5	109	0.00
16	T,P	2-Methylnaphthalene	2.637	2.422	8.2	105	0.00
17	T	1-Methylnaphthalene	2.506	2.275	9.2	104	-0.01
18	T,P	2,4,6-Trichlorophenol	1.035	0.940	9.2	98	0.00
19	T,P	2,4,5-Trichlorophenol	1.036	0.925	10.7	93	0.00
20	T	2,3,4-Trichlorophenol	0.920	0.825	10.3	95	0.00
21	S	2-Fluorobiphenyl	3.614	3.206	11.3	104	-0.01
22	T	Biphenyl	3.436	3.176	7.6	107	-0.01
23	T	2,6-Dimethylnaphthalene	2.453	2.295	6.4	106	-0.01
24	T	Dimethylphthalate	3.207	2.879	10.2	105	-0.01
25	T,P	Acenaphthylene	3.926	3.645	7.2	106	-0.01
26	C,P	Acenaphthene	2.819	2.460	12.7	103	-0.01
27	T	2,3,5-Trimethylnaphthalene	2.436	2.282	6.3	109	-0.01
28	T	Diethylphthalate	3.103	2.811	9.4	105	-0.01
29	T,P	Fluorene	3.136	2.771	11.6	103	0.00
30	I	Phenanthrene-d10	1.000	1.000	0.0	113	0.00
31	T	N-Nitrosodiphenylamine	0.633	0.508	19.7	104	-0.01
32	T	Azobenzene	0.549	0.596	-8.6	119	-0.01
33	S	2,4,6-Tribromophenol	0.157	0.145	7.6	97	0.00
34	T,P	Hexachlorobenzene	0.322	0.269	16.5	99	0.00
35	T,P	Pentachlorophenol	0.146	0.126	13.7	82	0.00
36	T	Dibenzothiophene	1.026	0.911	11.2	103	-0.01
37	T,P	Phenanthrene	1.090	0.927	15.0	100	-0.01
38	T,P	Anthracene	1.059	0.942	11.0	99	0.00
39	T	Carbazole	0.830	0.756	8.9	96	0.00
40	T	Di-n-butylphthalate	0.988	0.968	2.0	102	-0.01
41	T	1-Methylphenanthrene	0.778	0.701	9.9	99	0.00
42	C,P	Fluoranthene	1.225	1.079	11.9	94	0.00
43	T,P	Pyrene	1.294	1.093	15.5	92	0.00
44	S	Terphenyl-d14	0.958	0.836	12.7	93	-0.01
45	T	Butylbenzylphthalate	0.376	0.419	-11.4	102	-0.02
46	T,P	Benzo(a)anthracene	1.635	1.071	34.5#	88	0.00
47	T,P	Chrysene	1.232	0.978	20.6#	86	0.00
48	T	bis(2-Ethylhexyl)phthalate	0.596	0.622	-4.4	97	-0.01
49	I	Perylene-d12	1.000	1.000	0.0	94	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:18:05 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	0.822	0.996	-21.2#	96	-0.02
51	T,P	Benzo(b)fluoranthene	1.066	0.984	7.7	84	-0.01
52	T,P	Benzo(k)fluoranthene	1.065	0.973	8.6	83	0.00
53	T	Benzo(e)pyrene	1.036	0.948	8.5	85	0.00
54	C,P	Benzo(a)pyrene	0.972	0.934	3.9	83	0.00
55	T	Perylene	1.090	0.941	13.7	83	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	1.208	1.102	8.8	82	0.00
57	T,P	Dibenzo(a,h)anthracene	0.996	0.923	7.3	82	-0.01
58	T,P	Benzo(g,h,i)perylene	0.982	0.881	10.3	82	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:18:05 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.814	152	637161	40.00	ppm	0.00
30) Phenanthrene-d10	7.764	188	2976432	40.00	ppm	0.00
49) Perylene-d12	11.903	264	3001040	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.909	112	412646	24.06	ppm	0.00
Spiked Amount 30.000			Recovery =	80.20%		
5) Phenol-d5	2.489	99	559185	26.00	ppm	0.01
Spiked Amount 30.000			Recovery =	86.67%		
11) Nitrobenzene-d5	3.298	82	566179	26.00	ppm	0.00
Spiked Amount 10.000			Recovery =	260.00%		
21) 2-Fluorobiphenyl	5.222	172	1276621	22.18	ppm	-0.01
Spiked Amount 10.000			Recovery =	221.80%		
33) 2,4,6-Tribromophenol	6.966	330	269903	23.06	ppm	0.00
Spiked Amount 30.000			Recovery =	76.87%		
44) Terphenyl-d14	9.469	244	1555067	21.81	ppm	-0.01
Spiked Amount 10.000			Recovery =	218.10%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.191	88	139705	23.57	ppm	99
3] N-nitrosodimethylamine	1.305	74	230047	24.84	ppm	98
6] Phenol	2.499	94	528009	25.73	ppm	96
7] bis(2-chloroethyl)ether	2.583	93	399535	24.53	ppm	100
8] 2-Chlorophenol	2.645	128	440925	22.81	ppm	91
9] N-Nitroso-di-n-propyla...	3.140	70	342826	27.97	ppm	96
10] Hexachloroethane	3.258	117	207399	24.70	ppm	94
12] 2,4-Dimethylphenol	3.644	107	489397	24.85	ppm	88
13] 2,4-Dichlorophenol	3.865	162	433940	23.19	ppm	98
14] Naphthalene	4.039	128	1316734	22.67	ppm	100
15] 4-Chloro-3-methylphenol	4.627	107	406257	25.39	ppm	96
16] 2-Methylnaphthalene	4.800	142	964331	22.96	ppm	98
17] 1-Methylnaphthalene	4.910	142	906066	22.70	ppm	97
18] 2,4,6-Trichlorophenol	5.121	196	374380	22.71	ppm	96
19] 2,4,5-Trichlorophenol	5.169	196	368337	22.32	ppm	95
20] 2,3,4-Trichlorophenol	5.242	196	328446	22.41	ppm	94
22] Biphenyl	5.338	154	1264609	23.11	ppm	99
23] 2,6-Dimethylnaphthalene	5.525	156	914084	23.40	ppm	100
24] Dimethylphthalate	5.708	163	1146490	22.44	ppm	99
25] Acenaphthylene	5.848	152	1451691	23.21	ppm	99
26] Acenaphthene	6.054	153	979590	21.81	ppm	96
27] 2,3,5-Trimethylnaphtha...	6.519	170	908560	23.41	ppm	98
28] Diethylphthalate	6.556	149	1119222	22.65	ppm	99
29] Fluorene	6.678	166	1103438	22.09	ppm	97
31] N-Nitrosodiphenylamine	6.828	169	945674	22.78	ppm	100
32] Azobenzene	6.876	77	1108613	27.13	ppm	100
34] Hexachlorobenzene	7.322	284	500794	20.88	ppm	100
35] Pentachlorophenol	7.553	266	233614	18.55	ppm	100
36] Dibenzothiophene	7.643	184	1694237	22.20	ppm	99
37] Phenanthrene	7.786	178	1725089	21.26	ppm	99
38] Anthracene	7.845	178	1751793	22.24	ppm	99
39] Carbazole	8.031	167	1407021	22.77	ppm	99
40] Di-n-butylphthalate	8.418	149	1800709	24.49	ppm	99
41] 1-Methylphenanthrene	8.461	192	1304216	22.53	ppm	100
42] Fluoranthene	9.065	202	2006549	22.01	ppm	99

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:18:05 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.301	202	2033258	21.12	ppm	99
45] Butylbenzylphthalate	9.970	149	779414	23.69	ppm	95
46] Benzo(a)anthracene	10.526	228	1992116	20.70	ppm	93
47] Chrysene	10.565	228	1819572	19.84	ppm	98
48] bis(2-Ethylhexyl)phtha...	10.546	149	1156694	22.76	ppm	98
50] Di-n-octylphthalate	11.163	149	1869015	25.29	ppm	99
51] Benzo(b)fluoranthene	11.537	252	1846113	23.09	ppm	98
52] Benzo(k)fluoranthene	11.566	252	1825182	22.83	ppm	98
53] Benzo(e)pyrene	11.795	252	1778085	22.88	ppm	97
54] Benzo(a)pyrene	11.847	252	1752480	24.02	ppm	98
55] Perylene	11.926	252	1765623	21.59	ppm	97
56] Indeno(1,2,3-cd)pyrene	13.097	276	2066551	22.80	ppm	96
57] Dibenzo(a,h)anthracene	13.107	278	1730847	23.16	ppm	98
58] Benzo(g,h,i)perylene	13.457	276	1652191	22.43	ppm	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18F29\RFH645.D Vial: 25
Acq On : 29 Jun 2018 19:58 Operator: RZh
Sample : ESVE7A2279 Inst : E7
Misc : 25PPM Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 08:18:05 2018
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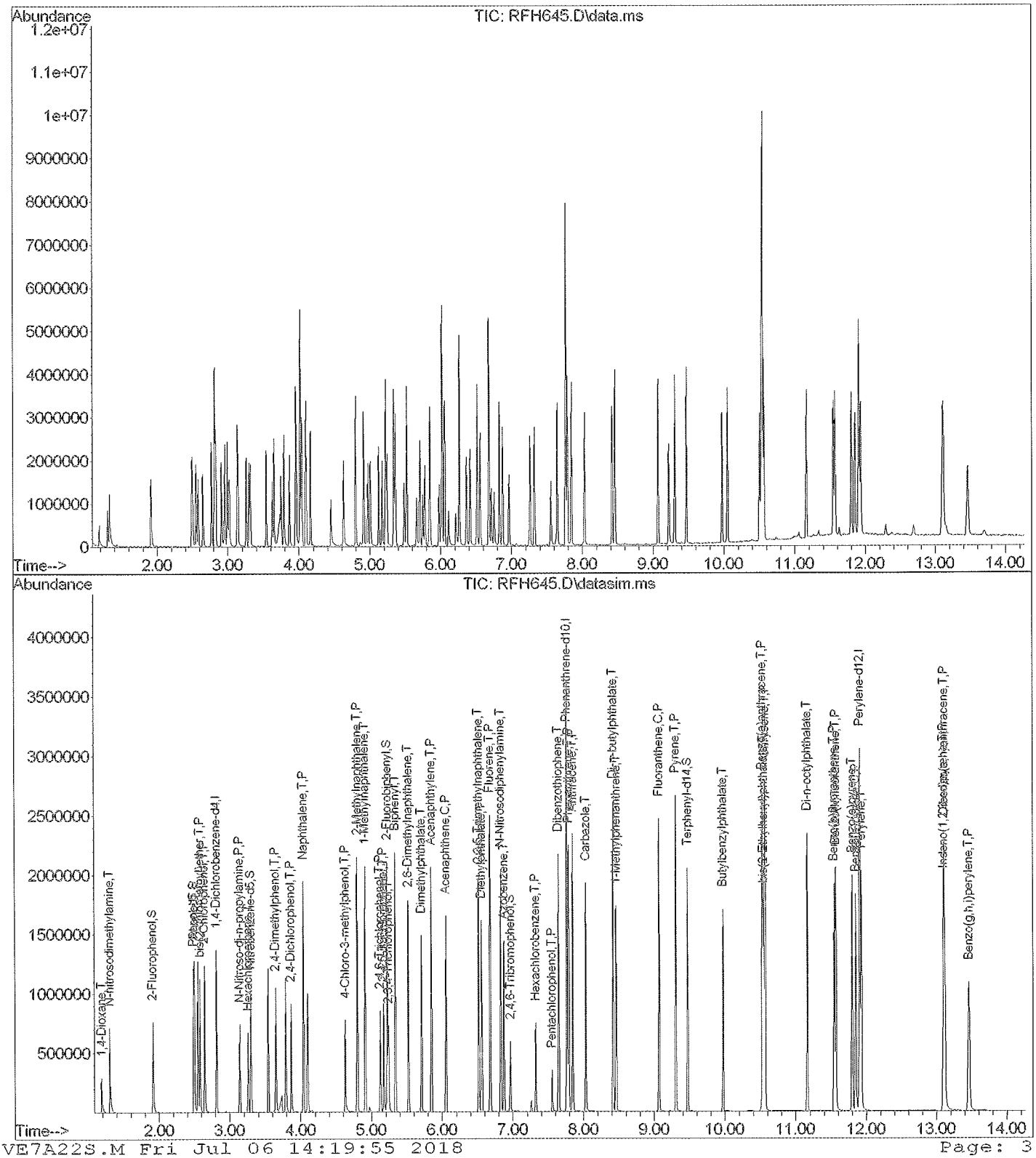
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M



5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc.

Project: JBER T0075

Lab Code: EMAX
SDG No: 18F187

Lab File ID: RGH002
DFPTT Injection Date: 07/03/18

Instrument ID: E7
DFPTT Injection Time: 07:36

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30 - 60% of mass 198	33.653
68	Less than 2% of mass 69	0.671(1.83)1
69	Present(Relative Abundance of mass 69)	36.759
70	Less than 2% of mass 69	0.170(.46)1
127	30 - 60% of mass 198	47.268
197	Less than 1% of mass 198	0.209
198	Base Peak, 100% relative abundance	100.000
199	5 - 9% of mass 198	7.214
275	10 - 30% of mass 198	25.612
365	Greater than 1% of mass 198	2.651
441	Present but less than mass 443	15.432(85.67)3
442	Greater than 40% of mass 198	98.354
443	17 - 23% of mass 442	18.013(18.31)2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD025	CSVE7A2280	RGH003	07/03/18	08:16
2	18Q2DP009-SB0302-SO-0	18F187-13N	RGH005	07/03/18	08:54
3	SSTD025	ESVE7A2281	RGH006	07/03/18	09:21

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.
Lab Code: EMAX
Lab File ID: RAH169
Instrument ID: E7

Project: JBER T0075
SDG No: 18F187
Date Analyzed: 01/22/18
Time Analyzed: 15:46

	INTERNAL STANDARD (IS)	1,4-Dichlorobenzene-d4		Phenanthrene-d10		Perylene-d12	
		Area #	RT #	Area #	RT #	Area #	RT #
	12 HOUR STD	562576	2.82	2636875	7.77	3203576	11.91
	UPPER LIMIT	1125152	2.99	5273750	7.94	6407152	12.08
	LOWER LIMIT	281288	2.65	1318438	7.60	1601788	11.74
		Area #	RT #	Area #	RT #	Area #	RT #
1	SSTD025	868903	2.82	3768401	7.77	4364509	11.92
2	18Q2DP009-SB0302-SO-0	503973	2.83	2191570	7.77	2198273	11.91
3	SSTD025	785136	2.82	3586028	7.78	3972719	11.92

Area Upper Limit = +100% of ICAL Midpoint IS Area
Area Lower Limit = -50% of ICAL Midpoint IS Area
Retention Time(RT) Upper Limit = +10 seconds of of ICAL Midpoint IS RT
Retention Time(RT) Lower Limit = -10 seconds of of ICAL Midpoint IS RT

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC_Beginning DateTime :01/22/18 15:09
Spike Amount :25 PPM
CC/CV File :RGH003
IC File :RAH169

Column Spec :ZB-SEMIVOA ID :0.18MM
IC_Ending DateTime :01/22/18 18:16
HPChem Method :SVE7A22S
Date_Time :07/03/18 08:16

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dichlorobenzene-d4	40.000	0	868903	1	1	2.823	2.822	0				
2	1,4-Dioxane	23.132	-7.5	186948	0.344	0.413	1.214	1.196	18.80	0.0003	0.3716		0.9999
3	N-nitrosodimethylamine	24.359	-2.6	307619	0.566	0.581	1.320	1.308	4.50				
4	2-Fluorophenol	25.834	3.3	604118	1.112	1.077	1.908	1.905	3.48				
5	Phenol-d5	25.522	2.1	748484	1.378	1.350	2.484	2.479	3.81				
6	Phenol	25.823	3.3	722526	1.330	1.288	2.494	2.490	6.90				
7	bis(2-chloroethyl)ether	23.494	-6.0	521810	0.961	1.022	2.593	2.584	5.54				
8	2-Chlorophenol	24.554	-1.8	647294	1.192	1.214	2.651	2.647	8.94				
9	N-Nitroso-di-n-propylamine	24.240	-3.0	405235	0.746	0.770	3.154	3.147	7.82				
10	Hexachloroethane	25.028	0.1	286571	0.528	0.527	3.276	3.269	3.85				
11	Nitrobenzene-d5	23.628	-5.5	701705	1.292	1.367	3.303	3.302	5.63				
12	2,4-Dimethylphenol	24.265	-2.9	651810	1.200	1.237	3.649	3.646	6.89				
13	2,4-Dichlorophenol	24.027	-3.9	613092	1.129	1.175	3.865	3.864	5.31				
14	Naphthalene	23.296	-6.8	1845303	3.398	3.646	4.053	4.049	3.92				
15	4-Chloro-3-methylphenol	24.002	-4.0	523821	0.965	1.005	4.622	4.620	9.01				
16	2-Methylnaphthalene	22.868	-8.5	1309858	2.412	2.637	4.814	4.810	3.46				
17	1-Methylnaphthalene	22.830	-8.7	1242801	2.288	2.506	4.924	4.922	3.30				
18	2,4,6-Trichlorophenol	23.063	-7.7	518457	0.955	1.035	5.126	5.127	8.18				
19	2,4,5-Trichlorophenol	24.082	-3.7	541996	0.998	1.036	5.164	5.164	12.69				
20	2,3,4-Trichlorophenol	23.140	-7.4	462464	0.852	0.920	5.237	5.237	11.32				
21	2-Fluorobiphenyl	21.422	-14.3	1681579	3.096	3.614	5.237	5.234	5.79				
22	Biphenyl	21.562	-13.8	1609351	2.963	3.436	5.357	5.352	3.45				
23	2,6-Dimethylnaphthalene	22.196	-11.2	1182534	2.178	2.453	5.539	5.535	3.43				
24	Dimethylphthalate	21.619	-13.5	1506023	2.773	3.207	5.727	5.716	4.48				
25	Acenaphthylene	22.474	-10.1	1916579	3.529	3.926	5.862	5.859	3.78				
26	Acenaphthene	20.251	-19.0	1240267	2.284	2.819	6.068	6.068	5.05				
27	2,3,5-Trimethylnaphthalene	21.748	-13.0	1151031	2.120	2.436	6.532	6.530	4.96				
28	Diethylphthalate	21.598	-13.6	1455637	2.680	3.103	6.584	6.568	5.72				
29	Fluorene	22.163	-11.3	1509777	2.780	3.136	6.692	6.688	4.37				
30	Phenanthrene-d10	40.000	0	3768401	1	1	7.773	7.773	0				
31	N-Nitrosodiphenylamine	23.316	-6.7	1225405	0.520	0.633	6.843	6.839	25.77	0.0005	0.5570		0.9998
32	Azobenzene	23.088	-7.6	1194630	0.507	0.549	6.890	6.887	5.78				
33	2,4,6-Tribromophenol	23.201	-7.2	343786	0.146	0.157	6.971	6.972	10.63				
34	Hexachlorobenzene	20.720	-17.1	629102	0.267	0.322	7.326	7.328	9.16				
35	Pentachlorophenol	23.203	-7.2	370016	0.157	0.146	7.553	7.555	15.31	-0.0002	0.1695		0.9983
36	Dibenzothiophene	22.971	-8.1	2219559	0.942	1.026	7.657	7.654	8.72				
37	Phenanthrene	23.053	-7.8	2367793	1.005	1.090	7.800	7.797	9.04				
38	Anthracene	23.445	-6.2	2338032	0.993	1.059	7.859	7.855	5.60				
39	Carbazole	26.374	5.5	2063125	0.876	0.830	8.035	8.036	6.54				
40	Di-n-butylphthalate	25.502	2.0	2373839	1.008	0.988	8.447	8.433	9.74				
41	1-Methylphenanthrene	24.352	-2.6	1784729	0.758	0.778	8.471	8.468	5.87				
42	Fluoranthene	24.963	-0.1	2881780	1.224	1.225	9.080	9.075	9.45				
43	Pyrene	24.216	-3.1	2951541	1.253	1.294	9.311	9.309	8.67				
44	Terphenyl-d14	24.007	-4.0	2167397	0.920	0.958	9.490	9.479	7.71				
45	Butylbenzylphthalate	24.524	-1.9	1021468	0.434	0.376	10.004	9.985	16.91	-0.0004	0.4428		0.9971
46	Benzo(a)anthracene	24.609	-1.6	2996276	1.272	1.635	10.541	10.535	44.36	0.0022	1.2888		0.9980
47	Chrysene	23.443	-6.2	2721928	1.156	1.232	10.575	10.568	9.18				
48	bis(2-Ethylhexyl)phthalate	23.432	-6.3	1507730	0.640	0.596	10.589	10.560	15.30	-0.0006	0.6839		0.9972
49	Perylene-d12	40.000	0	4364509	1	1	11.917	11.906	0				
50	Di-n-octylphthalate	24.202	-3.2	2601105	0.954	0.822	11.210	11.177	19.86	-0.0010	0.9867		0.9985
51	Benzo(b)fluoranthene	23.967	-4.1	2786378	1.021	1.066	11.551	11.541	7.71				
52	Benzo(k)fluoranthene	24.914	-0.3	2896388	1.062	1.065	11.575	11.566	7.35				
53	Benzo(e)pyrene	25.033	0.1	2828799	1.037	1.036	11.809	11.797	7.44				
54	Benzo(a)pyrene	26.279	5.1	2788461	1.022	0.972	11.861	11.848	9.15				
55	Perylene	23.688	-5.2	2816760	1.033	1.090	11.940	11.930	9.18				
56	Indeno(1,2,3-cd)pyrene	25.441	1.8	3353349	1.229	1.208	13.107	13.097	7.87				
57	Dibenzo(a,h)anthracene	25.824	3.3	2806651	1.029	0.996	13.127	13.116	7.95				
58	Benzo(g,h,i)perylene	24.490	-2.0	2623839	0.962	0.982	13.461	13.455	7.76				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E7
IC_Beginning DateTime :01/22/18 15:09
Spike Amount :25 PPM
CC/CV File :RGH006
IC File :RAH169

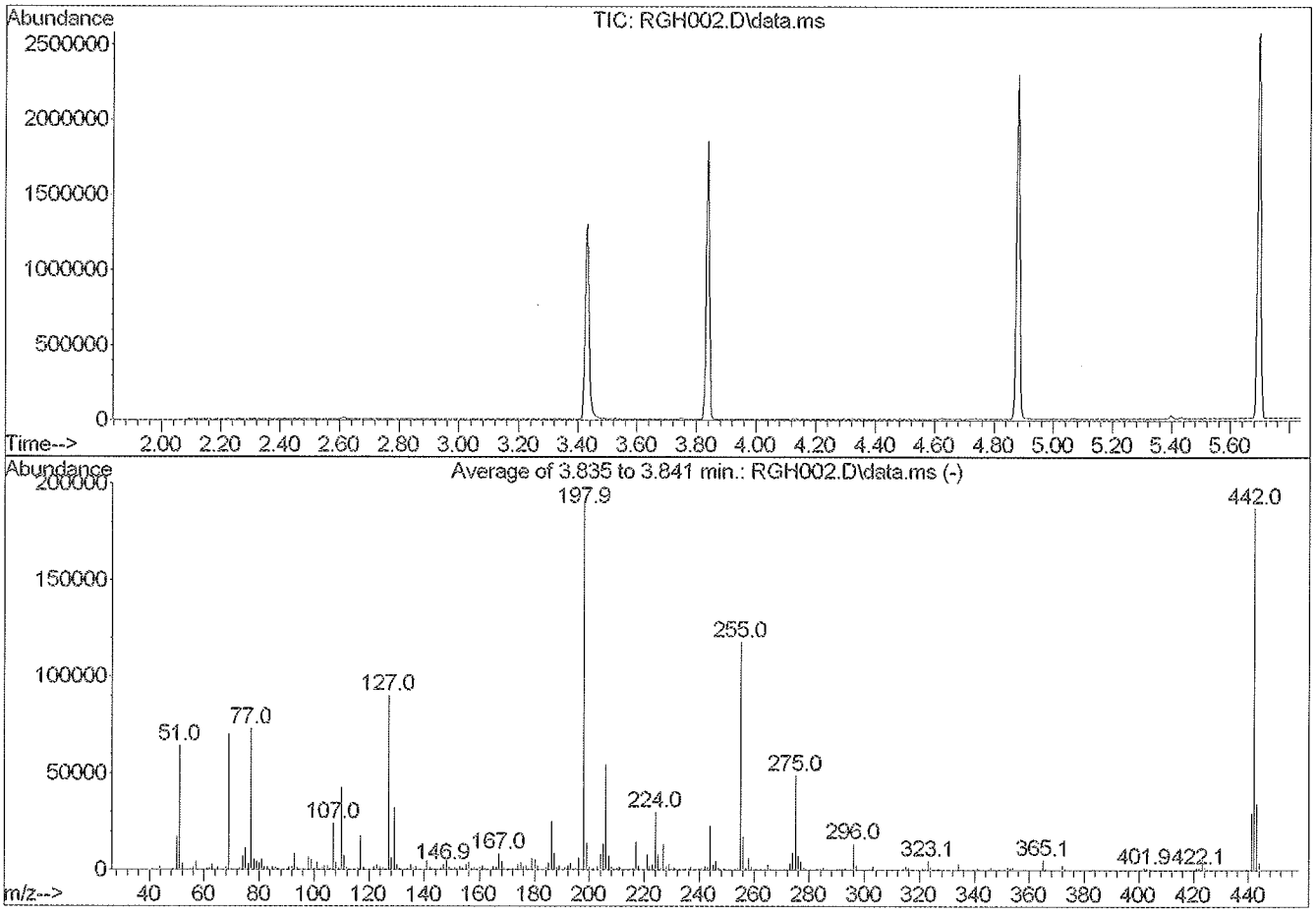
Column Spec :ZB-SEMIVOA ID :0.18MM
IC_Ending DateTime :01/22/18 18:16
HPChem Method :SVE7A22S
Date_Time :07/03/18 09:21

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dichlorobenzene-d4	40.000	0	785136	1	1	2.824	2.822	0				
2	1,4-Dioxane	24.694	-1.2	180315	0.367	0.413	1.210	1.196	18.80	0.0003	0.3716		0.9999
3	N-nitrosodimethylamine	24.869	-0.5	283786	0.578	0.581	1.320	1.308	4.50				
4	2-Fluorophenol	25.876	3.5	546779	1.114	1.077	1.909	1.905	3.48				
5	Phenol-d5	25.385	1.5	672703	1.371	1.350	2.484	2.479	3.81				
6	Phenol	25.512	2.0	645004	1.314	1.288	2.494	2.490	6.90				
7	bis(2-chloroethyl)ether	23.067	-7.7	462937	0.943	1.022	2.593	2.584	5.54				
8	2-Chlorophenol	24.553	-1.8	584849	1.192	1.214	2.651	2.647	8.94				
9	N-Nitroso-di-n-propylamine	23.863	-4.5	360466	0.735	0.770	3.155	3.147	7.82				
10	Hexachloroethane	24.486	-2.1	253330	0.516	0.527	3.276	3.269	3.85				
11	Nitrobenzene-d5	23.088	-7.6	619548	1.263	1.367	3.307	3.302	5.63				
12	2,4-Dimethylphenol	23.570	-5.7	572100	1.166	1.237	3.654	3.646	6.89				
13	2,4-Dichlorophenol	24.237	-3.1	558828	1.139	1.175	3.865	3.864	5.31				
14	Naphthalene	23.271	-6.9	1665595	3.394	3.646	4.053	4.049	3.92				
15	4-Chloro-3-methylphenol	24.377	-2.5	480716	0.980	1.005	4.622	4.620	9.01				
16	2-Methylnaphthalene	23.793	-4.8	1231493	2.510	2.637	4.814	4.810	3.46				
17	1-Methylnaphthalene	23.396	-6.4	1150805	2.345	2.506	4.929	4.922	3.30				
18	2,4,6-Trichlorophenol	23.638	-5.4	480147	0.978	1.035	5.131	5.127	8.18				
19	2,4,5-Trichlorophenol	24.383	-2.5	495873	1.011	1.036	5.164	5.164	12.69				
20	2,3,4-Trichlorophenol	24.063	-3.7	434545	0.886	0.920	5.237	5.237	11.32				
21	2-Fluorobiphenyl	22.058	-11.8	1564559	3.188	3.614	5.242	5.234	5.79				
22	Biphenyl	22.571	-9.7	1522289	3.102	3.436	5.357	5.352	3.45				
23	2,6-Dimethylnaphthalene	23.625	-5.5	1137324	2.318	2.453	5.539	5.535	3.43				
24	Dimethylphthalate	22.615	-9.5	1423512	2.901	3.207	5.727	5.716	4.48				
25	Acenaphthylene	24.076	-3.7	1855282	3.781	3.926	5.862	5.859	3.78				
26	Acenaphthene	21.290	-14.8	1178182	2.401	2.819	6.073	6.068	5.05				
27	2,3,5-Trimethylnaphthalene	22.776	-8.9	1089247	2.220	2.436	6.537	6.530	4.96				
28	Diethylphthalate	22.437	-10.3	1366412	2.785	3.103	6.584	6.568	5.72				
29	Fluorene	22.782	-8.9	1402368	2.858	3.136	6.692	6.688	4.37				
30	Phenanthrene-d10	40.000	0	3586028	1	1	7.777	7.773	0				
31	N-Nitrosodiphenylamine	23.226	-7.1	1161578	0.518	0.633	6.847	6.839	25.77	0.0005	0.5570		0.9998
32	Azobenzene	23.157	-7.4	1140198	0.509	0.549	6.895	6.887	5.78				
33	2,4,6-Tribromophenol	23.360	-6.6	329394	0.147	0.157	6.971	6.972	10.63				
34	Hexachlorobenzene	20.969	-16.1	605856	0.270	0.322	7.331	7.328	9.16				
35	Pentachlorophenol	22.376	-10.5	339544	0.151	0.146	7.553	7.555	15.31	-0.0002	0.1695		0.9983
36	Dibenzothiophene	23.824	-4.7	2190565	0.977	1.026	7.657	7.654	8.72				
37	Phenanthrene	22.671	-9.3	2215921	0.989	1.090	7.800	7.797	9.04				
38	Anthracene	23.923	-4.3	2270191	1.013	1.059	7.859	7.855	5.60				
39	Carbazole	27.175	8.7	2022866	0.903	0.830	8.040	8.036	6.54				
40	Di-n-butylphthalate	25.424	1.7	2252129	1.005	0.988	8.447	8.433	9.74				
41	1-Methylphenanthrene	24.195	-3.2	1687421	0.753	0.778	8.476	8.468	5.87				
42	Fluoranthene	24.167	-3.3	2654867	1.185	1.225	9.080	9.075	9.45				
43	Pyrene	23.421	-6.3	2716424	1.212	1.294	9.316	9.309	8.67				
44	Terphenyl-d14	23.355	-6.6	2006422	0.895	0.958	9.490	9.479	7.71				
45	Butylbenzylphthalate	24.890	-0.4	986553	0.440	0.376	10.004	9.985	16.91	-0.0004	0.4428		0.9971
46	Benzo(a)anthracene	24.199	-3.2	2803927	1.251	1.635	10.541	10.535	44.36	0.0022	1.2888		0.9980
47	Chrysene	23.980	-4.1	2649524	1.182	1.232	10.580	10.568	9.18				
48	bis(2-Ethylhexyl)phthalate	23.826	-4.7	1458897	0.651	0.596	10.590	10.560	15.30	-0.0006	0.6839		0.9972
49	Perylene-d12	40.000	0	3972719	1	1	11.917	11.906	0				
50	Di-n-octylphthalate	23.923	-4.3	2340300	0.943	0.822	11.210	11.177	19.86	-0.0010	0.9867		0.9985
51	Benzo(b)fluoranthene	25.276	1.1	2674813	1.077	1.066	11.551	11.541	7.71				
52	Benzo(k)fluoranthene	24.575	-1.7	2600523	1.047	1.065	11.580	11.566	7.35				
53	Benzo(e)pyrene	24.789	-0.8	2549785	1.027	1.036	11.809	11.797	7.44				
54	Benzo(a)pyrene	26.145	4.6	2525187	1.017	0.972	11.861	11.848	9.15				
55	Perylene	23.440	-6.2	2536971	1.022	1.090	11.941	11.930	9.18				
56	Indeno(1,2,3-cd)pyrene	24.730	-1.1	2967052	1.195	1.208	13.107	13.097	7.87				
57	Dibenzo(a,h)anthracene	25.287	1.1	2501544	1.007	0.996	13.131	13.116	7.95				
58	Benzo(g,h,i)perylene	24.090	-3.6	2349267	0.946	0.982	13.466	13.455	7.76				

Data Path : D:\DATA\18G03\
Data File : RGH002.D
Acq On : 3 Jul 2018 7:36
Operator : KVu
Sample : DFTE7A2280
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPP.M
Title : DFTPP
Last Update : Tue Jan 23 12:56:03 2018

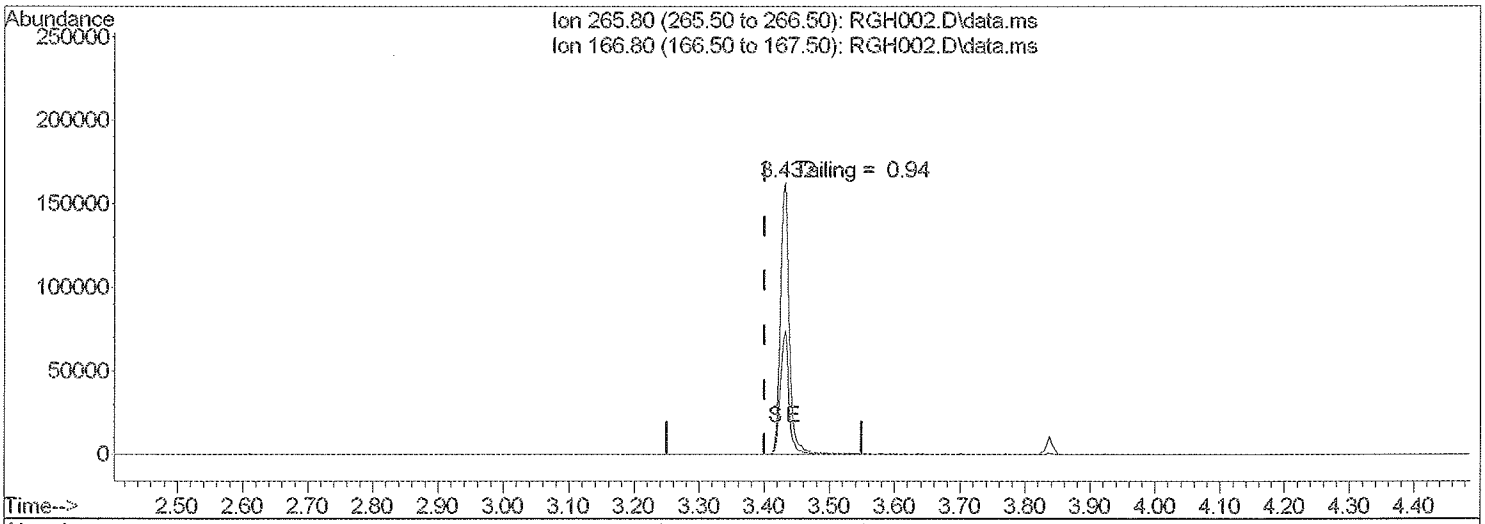


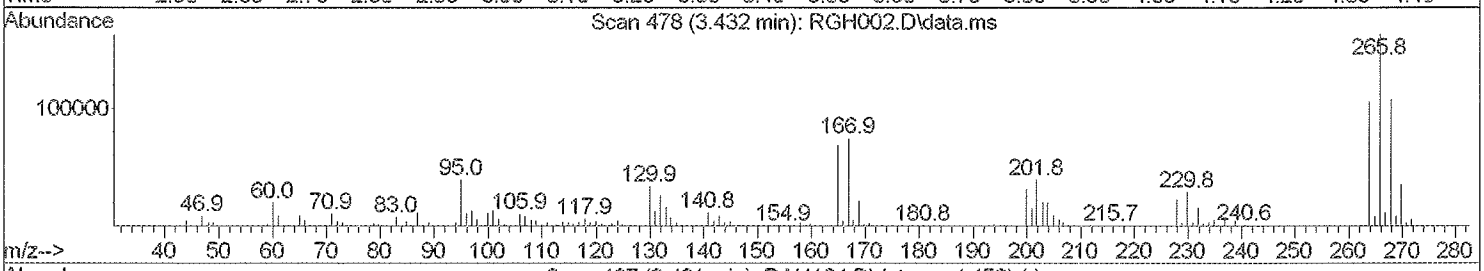
AutoFind: Scans 621, 622, 623; Background Corrected with Scan 613

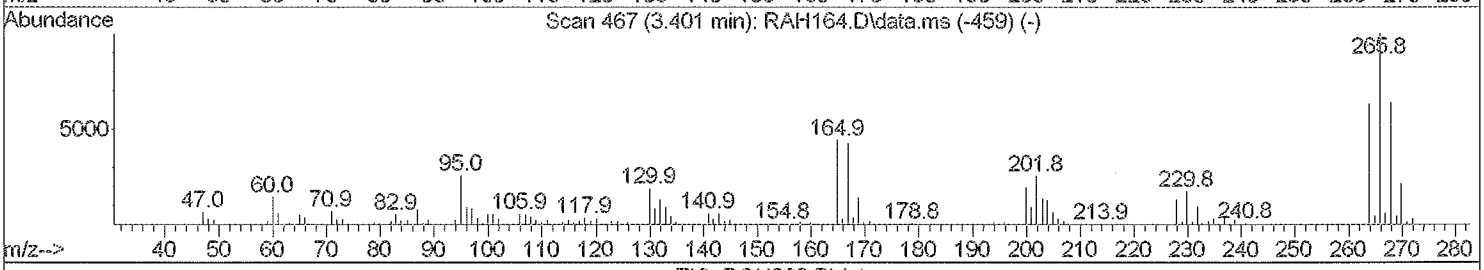
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.7	64125	PASS
68	69	0.00	2	1.8	1279	PASS
69	198	0.00	100	36.8	70043	PASS
70	69	0.00	2	0.5	324	PASS
127	198	40	60	47.3	90069	PASS
197	198	0.00	1	0.2	399	PASS
198	198	100	100	100.0	190549	PASS
199	198	5	9	7.2	13747	PASS
275	198	10	30	25.6	48803	PASS
365	198	1	100	2.7	5052	PASS
441	443	0.01	100	85.7	29405	PASS
442	198	40	100	98.4	187413	PASS
443	442	17	23	18.3	34323	PASS

Quantitation Report (Qedit)

Data File : D:\DATA\18G03\RGH002.D Vial: 2
Acq On : 3 Jul 2018 7:36 Operator: KVu
Sample : DFTE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 07:47:49 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M







TIC: RGH002.D\data.ms

(1) Pentachlorophenol (T)

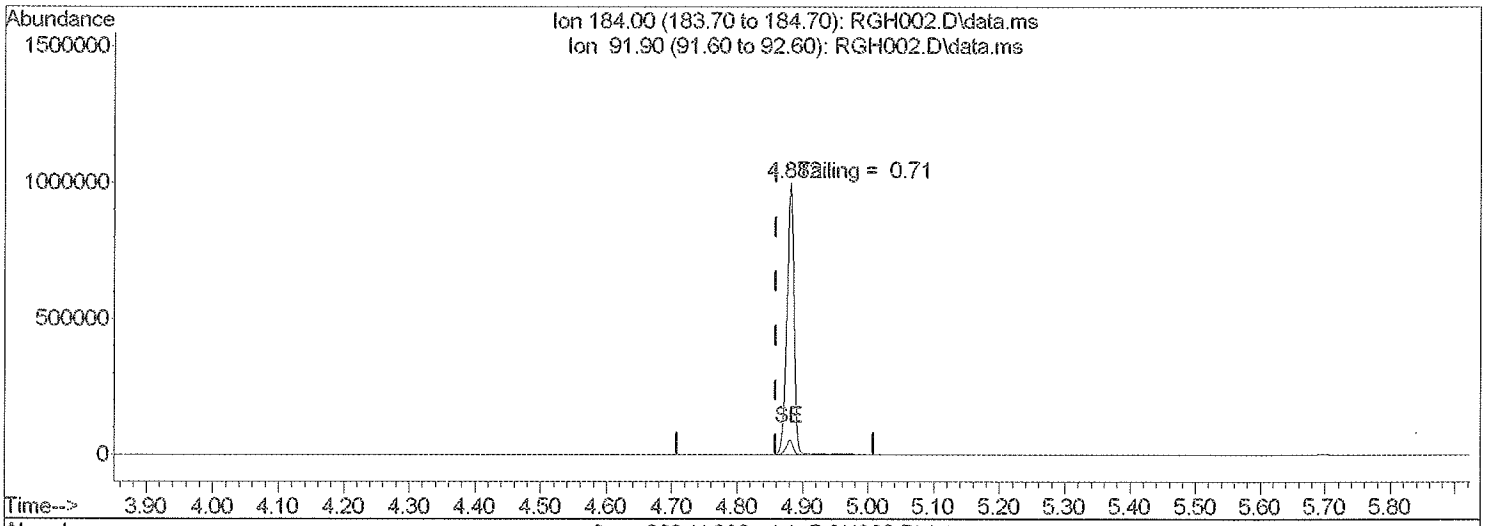
3.432min (+0.031) 46.66 ppm

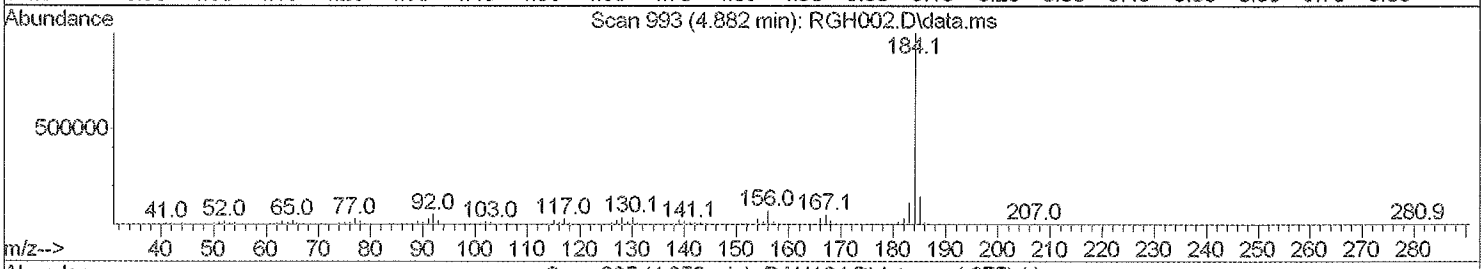
response 152163

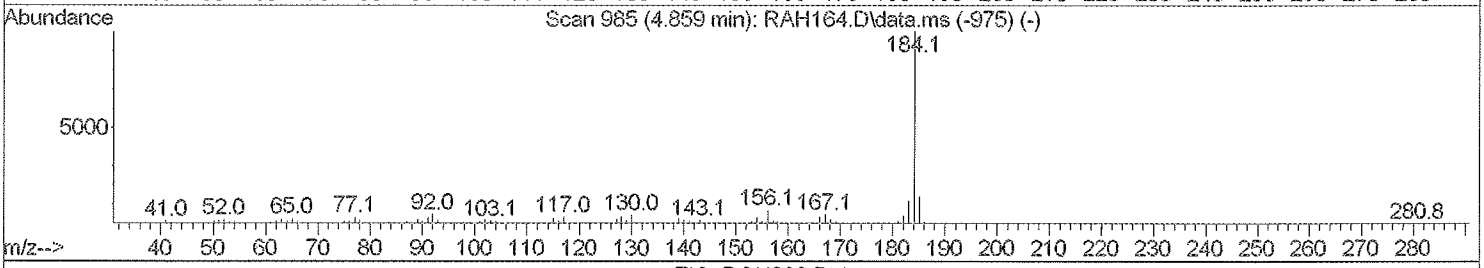
Ion	Exp%	Act%
265.80	100	100
166.80	43.00	44.34
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : D:\DATA\18G03\RGH002.D Vial: 2
Acq On : 3 Jul 2018 7:36 Operator: KVu
Sample : DFTE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 07:47:49 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M







TIC: RGH002.D\data.ms

(3) Benzidine (T)

4.882min (+0.023) 50.00 ppm

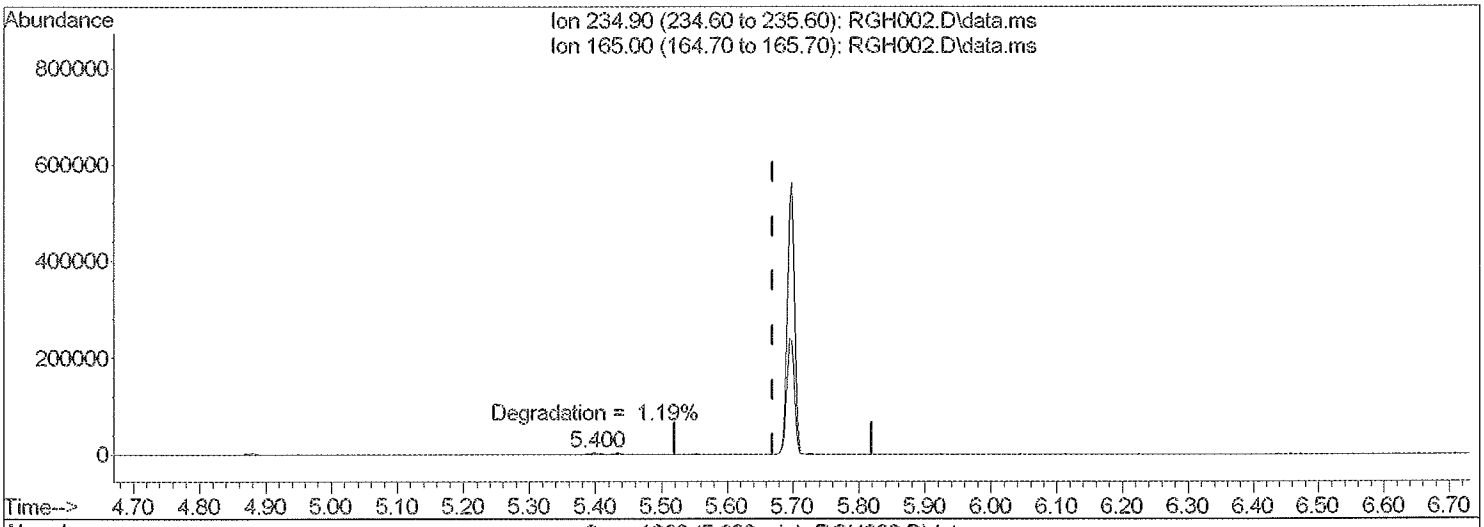
response 762014

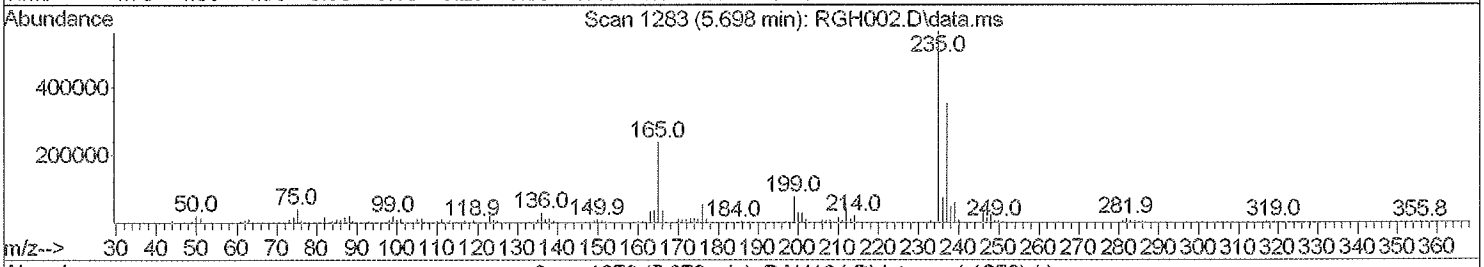
Ion	Exp%	Act%
184.00	100	100
91.90	5.10	5.23
0.00	0.00	0.00
0.00	0.00	0.00

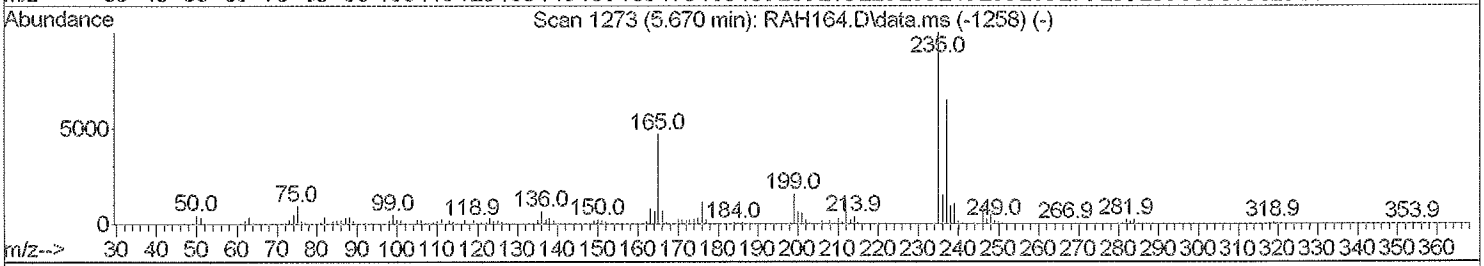
Quantitation Report (Qedit)

Data File : D:\DATA\18G03\RGH002.D
Acq On : 3 Jul 2018 7:36
Sample : DFTE7A2280
Misc :
Integrator: RTE
Quant Time: Jul 03 07:47:49 2018
Quant Results File: DFTPP.RES
Quant Method : C:\msdchem\1\METHODS\DFTPP.M
Quant Title : DFTPP
QLast Update : Tue Jan 23 12:56:03 2018
Response via : Initial Calibration
DataAcq Meth:DFTPP.M

Vial: 2
Operator: KVu
Inst : E7
Multiplr: 1.00







TIC: RGH002.D\data.ms

(6) DDT (T)

5.698min (+0.028) 43.47 ppm

response 414290

Ion	Exp%	Act%
234.90	100	100
165.00	47.00	45.17
0.00	0.00	0.00
0.00	0.00	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:31:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	154	0.00
2	T	1,4-Dioxane	25.000	23.132	7.5	142	0.02
3	T	N-nitrosodimethylamine	25.000	24.359	2.6	143	0.01
4	S	2-Fluorophenol	25.000	25.834	-3.3	156	0.00
5	S	Phenol-d5	25.000	25.522	-2.1	155	0.00
6	T,P	Phenol	25.000	25.823	-3.3	150	0.00
7	T,P	bis(2-chloroethyl)ether	25.000	23.494	6.0	148	0.01
8	T,P	2-Chlorophenol	25.000	24.554	1.8	151	0.00
9	P,P	N-Nitroso-di-n-propylamine	25.000	24.240	3.0	139	0.00
10	T	Hexachloroethane	25.000	25.028	-0.1	152	0.00
11	S	Nitrobenzene-d5	25.000	23.628	5.5	141	0.00
12	T,P	2,4-Dimethylphenol	25.000	24.265	2.9	142	0.00
13	T,P	2,4-Dichlorophenol	25.000	24.027	3.9	142	0.00
14	T,P	Naphthalene	25.000	23.296	6.8	145	0.00
15	T,P	4-Chloro-3-methylphenol	25.000	24.002	4.0	140	0.00
16	T,P	2-Methylnaphthalene	25.000	22.868	8.5	142	0.00
17	T	1-Methylnaphthalene	25.000	22.830	8.7	143	0.00
18	T,P	2,4,6-Trichlorophenol	25.000	23.063	7.7	135	0.00
19	T,P	2,4,5-Trichlorophenol	25.000	24.082	3.7	137	0.00
20	T	2,3,4-Trichlorophenol	25.000	23.140	7.4	134	0.00
21	S	2-Fluorobiphenyl	25.000	21.422	14.3	137	0.00
22	T	Biphenyl	25.000	21.562	13.8	136	0.00
23	T	2,6-Dimethylnaphthalene	25.000	22.196	11.2	137	0.00
24	T	Dimethylphthalate	25.000	21.619	13.5	138	0.00
25	T,P	Acenaphthylene	25.000	22.474	10.1	139	0.00
26	C,P	Acenaphthene	25.000	20.251	19.0	130	0.00
27	T	2,3,5-Trimethylnaphthalene	25.000	21.748	13.0	138	0.00
28	T	Diethylphthalate	25.000	21.598	13.6	137	0.01
29	T,P	Fluorene	25.000	22.163	11.3	141	0.00
30	I	Phenanthrene-d10	40.000	40.000	0.0	143	0.00
31	T	N-Nitrosodiphenylamine	25.000	23.316	6.7	135	0.00
32	T	Azobenzene	25.000	23.088	7.6	128	0.00
33	S	2,4,6-Tribromophenol	25.000	23.201	7.2	123	0.00
34	T,P	Hexachlorobenzene	25.000	20.720	17.1	125	0.00
35	T,P	Pentachlorophenol	25.000	23.203	7.2	129	0.00
36	T	Dibenzothiophene	25.000	22.971	8.1	135	0.00
37	T,P	Phenanthrene	25.000	23.053	7.8	137	0.00
38	T,P	Anthracene	25.000	23.445	6.2	133	0.00
39	T	Carbazole	25.000	26.374	-5.5	140	0.00
40	T	Di-n-butylphthalate	25.000	25.502	-2.0	135	0.01
41	T	1-Methylphenanthrene	25.000	24.352	2.6	135	0.00
42	C,P	Fluoranthene	25.000	24.963	0.1	136	0.00
43	T,P	Pyrene	25.000	24.216	3.1	133	0.00
44	S	Terphenyl-d14	25.000	24.007	4.0	129	0.00
45	T	Butylbenzylphthalate	25.000	24.524	1.9	134	0.02
46	T,P	Benzo(a)anthracene	25.000	24.609	1.6	132	0.00
47	T,P	Chrysene	25.000	23.443	6.2	129	0.00
48	T	bis(2-Ethylhexyl)phthalate	25.000	23.432	6.3	127	0.03
49	I	Perylene-d12	40.000	40.000	0.0	136	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:31:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	25.000	24.202	3.2	133	0.03
51	T,P	Benzo(b)fluoranthene	25.000	23.967	4.1	127	0.00
52	T,P	Benzo(k)fluoranthene	25.000	24.914	0.3	132	0.00
53	T	Benzo(e)pyrene	25.000	25.033	-0.1	135	0.00
54	C,P	Benzo(a)pyrene	25.000	26.279	-5.1	133	0.00
55	T	Perylene	25.000	23.688	5.2	132	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	25.000	25.441	-1.8	133	0.00
57	T,P	Dibenzo(a,h)anthracene	25.000	25.824	-3.3	133	0.00
58	T,P	Benzo(g,h,i)perylene	25.000	24.490	2.0	129	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:31:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	154	0.00
2	T	1,4-Dioxane	0.413	0.344	16.7	142	0.02
3	T	N-nitrosodimethylamine	0.581	0.566	2.6	143	0.01
4	S	2-Fluorophenol	1.077	1.112	-3.2	156	0.00
5	S	Phenol-d5	1.350	1.378	-2.1	155	0.00
6	T,P	Phenol	1.288	1.330	-3.3	150	0.00
7	T,P	bis(2-chloroethyl)ether	1.022	0.961	6.0	148	0.01
8	T,P	2-Chlorophenol	1.214	1.192	1.8	151	0.00
9	P,P	N-Nitroso-di-n-propylamine	0.770	0.746	3.1	139	0.00
10	T	Hexachloroethane	0.527	0.528	-0.2	152	0.00
11	S	Nitrobenzene-d5	1.367	1.292	5.5	141	0.00
12	T,P	2,4-Dimethylphenol	1.237	1.200	3.0	142	0.00
13	T,P	2,4-Dichlorophenol	1.175	1.129	3.9	142	0.00
14	T,P	Naphthalene	3.646	3.398	6.8	145	0.00
15	T,P	4-Chloro-3-methylphenol	1.005	0.965	4.0	140	0.00
16	T,P	2-Methylnaphthalene	2.637	2.412	8.5	142	0.00
17	T	1-Methylnaphthalene	2.506	2.288	8.7	143	0.00
18	T,P	2,4,6-Trichlorophenol	1.035	0.955	7.7	135	0.00
19	T,P	2,4,5-Trichlorophenol	1.036	0.998	3.7	137	0.00
20	T	2,3,4-Trichlorophenol	0.920	0.852	7.4	134	0.00
21	S	2-Fluorobiphenyl	3.614	3.096	14.3	137	0.00
22	T	Biphenyl	3.436	2.963	13.8	136	0.00
23	T	2,6-Dimethylnaphthalene	2.453	2.178	11.2	137	0.00
24	T	Dimethylphthalate	3.207	2.773	13.5	138	0.00
25	T,P	Acenaphthylene	3.926	3.529	10.1	139	0.00
26	C,P	Acenaphthene	2.819	2.284	19.0	130	0.00
27	T	2,3,5-Trimethylnaphthalene	2.436	2.120	13.0	138	0.00
28	T	Diethylphthalate	3.103	2.680	13.6	137	0.01
29	T,P	Fluorene	3.136	2.780	11.4	141	0.00
30	I	Phenanthrene-d10	1.000	1.000	0.0	143	0.00
31	T	N-Nitrosodiphenylamine	0.633	0.520	17.9	135	0.00
32	T	Azobenzene	0.549	0.507	7.7	128	0.00
33	S	2,4,6-Tribromophenol	0.157	0.146	7.0	123	0.00
34	T,P	Hexachlorobenzene	0.322	0.267	17.1	125	0.00
35	T,P	Pentachlorophenol	0.146	0.157	-7.5	129	0.00
36	T	Dibenzothiophene	1.026	0.942	8.2	135	0.00
37	T,P	Phenanthrene	1.090	1.005	7.8	137	0.00
38	T,P	Anthracene	1.059	0.993	6.2	133	0.00
39	T	Carbazole	0.830	0.876	-5.5	140	0.00
40	T	Di-n-butylphthalate	0.988	1.008	-2.0	135	0.01
41	T	1-Methylphenanthrene	0.778	0.758	2.6	135	0.00
42	C,P	Fluoranthene	1.225	1.224	0.1	136	0.00
43	T,P	Pyrene	1.294	1.253	3.2	133	0.00
44	S	Terphenyl-d14	0.958	0.920	4.0	129	0.00
45	T	Butylbenzylphthalate	0.376	0.434	-15.4	134	0.02
46	T,P	Benzo(a)anthracene	1.635	1.272	22.2#	132	0.00
47	T,P	Chrysene	1.232	1.156	6.2	129	0.00
48	T	bis(2-Ethylhexyl)phthalate	0.596	0.640	-7.4	127	0.03
49	I	Perylene-d12	1.000	1.000	0.0	136	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:31:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	0.822	0.954	-16.1	133	0.03
51	T,P	Benzo(b)fluoranthene	1.066	1.021	4.2	127	0.00
52	T,P	Benzo(k)fluoranthene	1.065	1.062	0.3	132	0.00
53	T	Benzo(e)pyrene	1.036	1.037	-0.1	135	0.00
54	C,P	Benzo(a)pyrene	0.972	1.022	-5.1	133	0.00
55	T	Perylene	1.090	1.033	5.2	132	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	1.208	1.229	-1.7	133	0.00
57	T,P	Dibenzo(a,h)anthracene	0.996	1.029	-3.3	133	0.00
58	T,P	Benzo(g,h,i)perylene	0.982	0.962	2.0	129	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:31:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.823	152	868903	40.00	ppm	0.00
30) Phenanthrene-d10	7.773	188	3768401	40.00	ppm	0.00
49) Perylene-d12	11.917	264	4364509	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.909	112	604118	25.83	ppm	0.00
Spiked Amount 30.000			Recovery =	86.10%		
5) Phenol-d5	2.484	99	748484	25.52	ppm	0.00
Spiked Amount 30.000			Recovery =	85.07%		
11) Nitrobenzene-d5	3.303	82	701705	23.63	ppm	0.00
Spiked Amount 10.000			Recovery =	236.30%		
21) 2-Fluorobiphenyl	5.237	172	1681579	21.42	ppm	0.00
Spiked Amount 10.000			Recovery =	214.20%		
33) 2,4,6-Tribromophenol	6.971	330	343786	23.20	ppm	0.00
Spiked Amount 30.000			Recovery =	77.33%		
44) Terphenyl-d14	9.490	244	2167397	24.01	ppm	0.00
Spiked Amount 10.000			Recovery =	240.10%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.214	88	186948	23.13	ppm	93
3] N-nitrosodimethylamine	1.320	74	307619	24.36	ppm	83
6] Phenol	2.494	94	722526	25.82	ppm	95
7] bis(2-chloroethyl)ether	2.593	93	521810	23.49	ppm	97
8] 2-Chlorophenol	2.651	128	647294	24.55	ppm	95
9] N-Nitroso-di-n-propyla...	3.154	70	405235	24.24	ppm	91
10] Hexachloroethane	3.276	117	286571	25.03	ppm	88
12] 2,4-Dimethylphenol	3.649	107	651810	24.26	ppm	93
13] 2,4-Dichlorophenol	3.865	162	613092	24.03	ppm	99
14] Naphthalene	4.053	128	1845303	23.30	ppm	100
15] 4-Chloro-3-methylphenol	4.622	107	523821	24.00	ppm	93
16] 2-Methylnaphthalene	4.814	142	1309858	22.87	ppm	96
17] 1-Methylnaphthalene	4.924	142	1242801	22.83	ppm	96
18] 2,4,6-Trichlorophenol	5.126	196	518457	23.06	ppm	100
19] 2,4,5-Trichlorophenol	5.164	196	541996	24.08	ppm	100
20] 2,3,4-Trichlorophenol	5.237	196	462464	23.14	ppm	100
22] Biphenyl	5.357	154	1609351	21.56	ppm	98
23] 2,6-Dimethylnaphthalene	5.539	156	1182534	22.20	ppm	95
24] Dimethylphthalate	5.727	163	1506023	21.62	ppm	99
25] Acenaphthylene	5.862	152	1916579	22.47	ppm	99
26] Acenaphthene	6.068	153	1240267	20.25	ppm	99
27] 2,3,5-Trimethylnaphtha...	6.532	170	1151031	21.75	ppm	98
28] Diethylphthalate	6.584	149	1455637	21.60	ppm	99
29] Fluorene	6.692	166	1509777	22.16	ppm	96
31] N-Nitrosodiphenylamine	6.842	169	1225405	23.32	ppm	97
32] Azobenzene	6.890	77	1194630	23.09	ppm	97
34] Hexachlorobenzene	7.326	284	629102	20.72	ppm	99
35] Pentachlorophenol	7.553	266	370016	23.20	ppm	98
36] Dibenzothiophene	7.657	184	2219559	22.97	ppm	99
37] Phenanthrene	7.800	178	2367793	23.05	ppm	99
38] Anthracene	7.859	178	2338032	23.45	ppm	99
39] Carbazole	8.035	167	2063125	26.37	ppm	98
40] Di-n-butylphthalate	8.447	149	2373839	25.50	ppm	100
41] 1-Methylphenanthrene	8.471	192	1784729	24.35	ppm	97
42] Fluoranthene	9.080	202	2881780	24.96	ppm	100

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 08:31:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.311	202	2951541	24.22	ppm	100
45] Butylbenzylphthalate	10.004	149	1021468	24.52	ppm	96
46] Benzo(a)anthracene	10.541	228	2996276	24.61	ppm	100
47] Chrysene	10.575	228	2721928	23.44	ppm	97
48] bis(2-Ethylhexyl)phtha...	10.589	149	1507730	23.43	ppm	99
50] Di-n-octylphthalate	11.210	149	2601105	24.20	ppm	99
51] Benzo(b)fluoranthene	11.551	252	2786378	23.97	ppm	99
52] Benzo(k)fluoranthene	11.575	252	2896388	24.91	ppm	100
53] Benzo(e)pyrene	11.809	252	2828799	25.03	ppm	100
54] Benzo(a)pyrene	11.861	252	2788461	26.28	ppm	100
55] Perylene	11.940	252	2816760	23.69	ppm	100
56] Indeno(1,2,3-cd)pyrene	13.107	276	3353349	25.44	ppm	99
57] Dibenzo(a,h)anthracene	13.127	278	2806651	25.82	ppm	99
58] Benzo(g,h,i)perylene	13.461	276	2623839	24.49	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH003.D Vial: 3
Acq On : 3 Jul 2018 8:16 Operator: KVu
Sample : CSVE7A2280 Inst : E7
Misc : Multiplr: 1.00
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Quant Time: Jul 03 08:31:19 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
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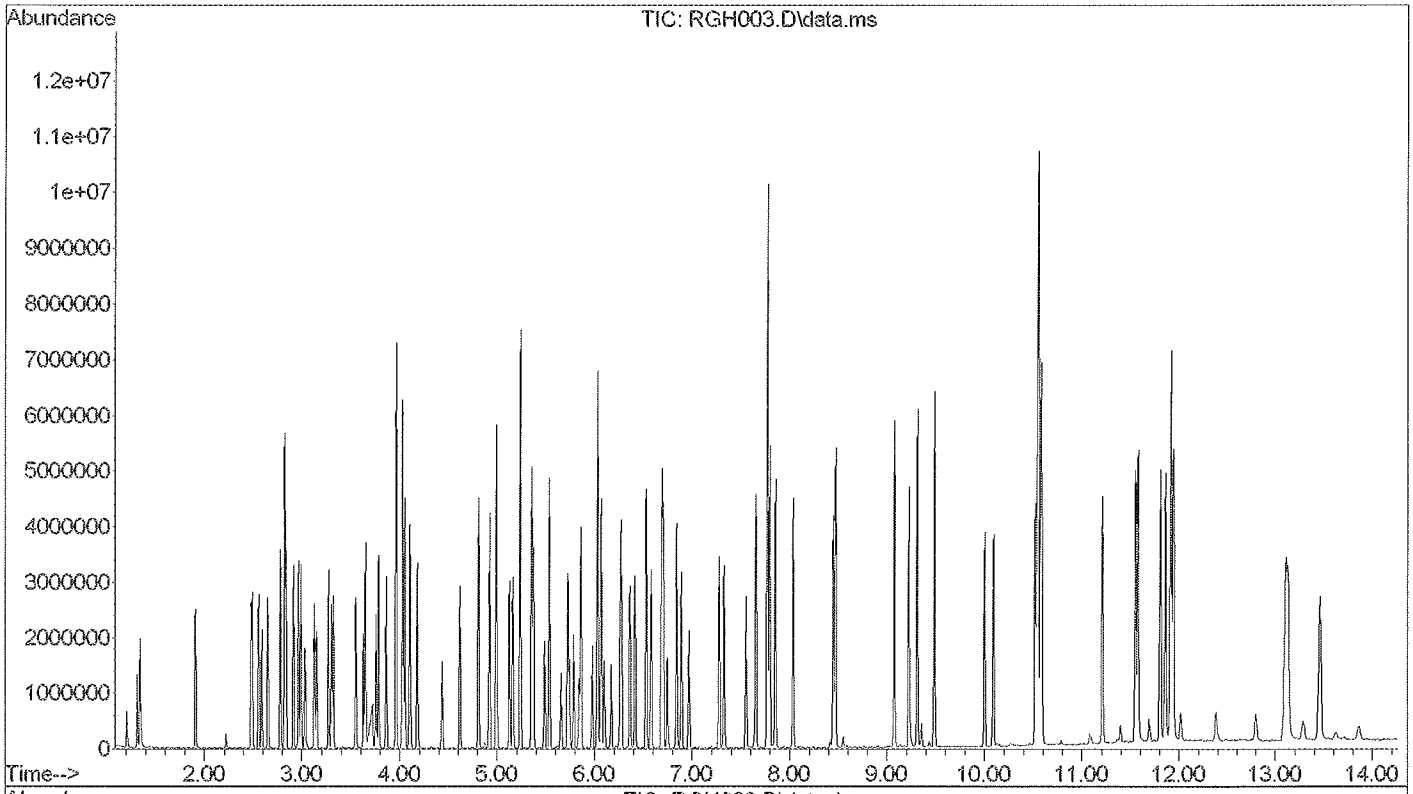
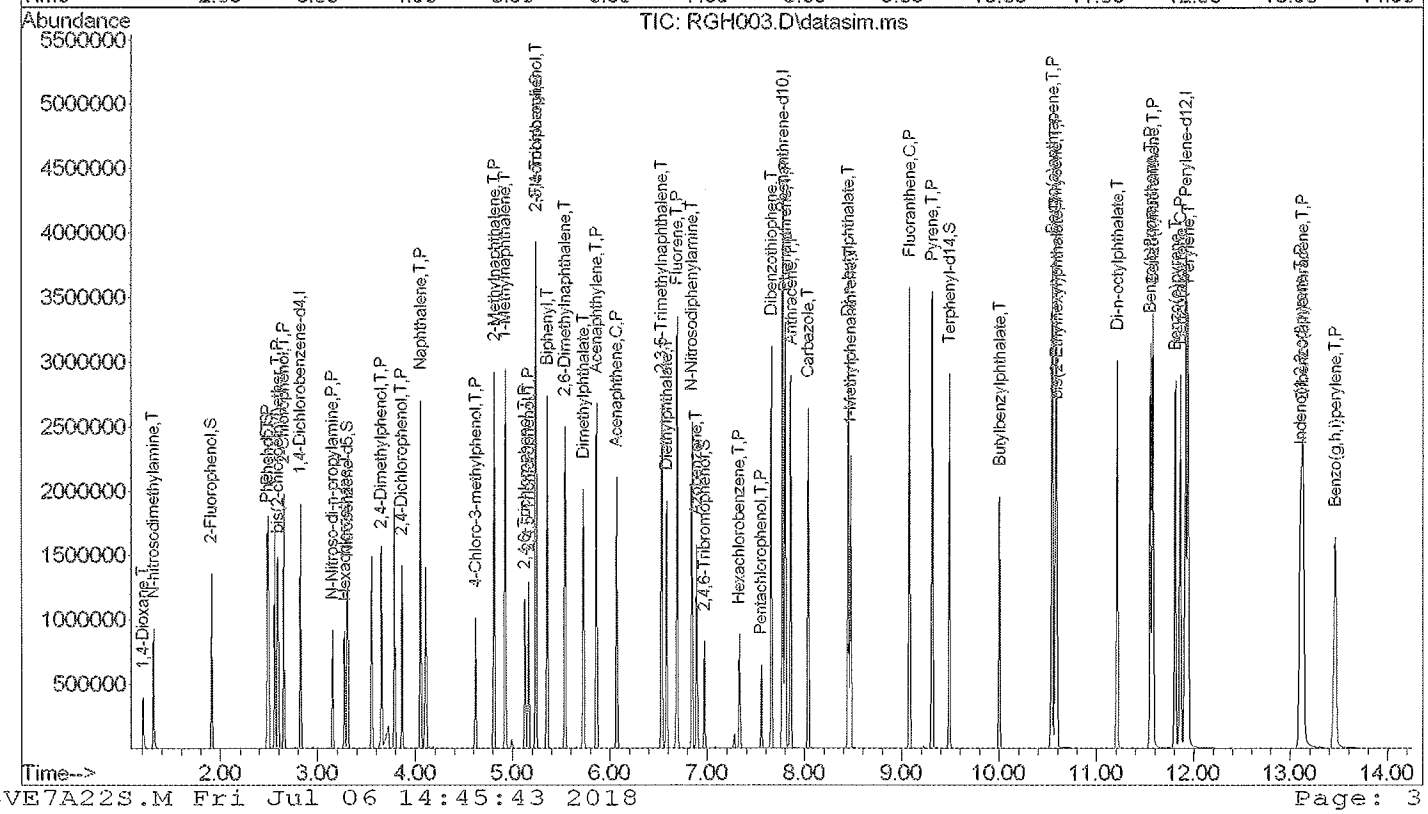




Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 09:41:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	140	0.00
2	T	1,4-Dioxane	0.413	0.367	11.1	137	0.01
3	T	N-nitrosodimethylamine	0.581	0.578	0.5	132	0.01
4	S	2-Fluorophenol	1.077	1.114	-3.4	141	0.00
5	S	Phenol-d5	1.350	1.371	-1.6	139	0.00
6	T,P	Phenol	1.288	1.314	-2.0	134	0.00
7	T,P	bis(2-chloroethyl)ether	1.022	0.943	7.7	131	0.01
8	T,P	2-Chlorophenol	1.214	1.192	1.8	137	0.00
9	P,P	N-Nitroso-di-n-propylamine	0.770	0.735	4.5	124	0.00
10	T	Hexachloroethane	0.527	0.516	2.1	134	0.00
11	S	Nitrobenzene-d5	1.367	1.263	7.6	124	0.00
12	T,P	2,4-Dimethylphenol	1.237	1.166	5.7	125	0.00
13	T,P	2,4-Dichlorophenol	1.175	1.139	3.1	130	0.00
14	T,P	Naphthalene	3.646	3.394	6.9	131	0.00
15	T,P	4-Chloro-3-methylphenol	1.005	0.980	2.5	129	0.00
16	T,P	2-Methylnaphthalene	2.637	2.510	4.8	134	0.00
17	T	1-Methylnaphthalene	2.506	2.345	6.4	132	0.00
18	T,P	2,4,6-Trichlorophenol	1.035	0.978	5.5	125	0.00
19	T,P	2,4,5-Trichlorophenol	1.036	1.011	2.4	126	0.00
20	T	2,3,4-Trichlorophenol	0.920	0.886	3.7	126	0.00
21	S	2-Fluorobiphenyl	3.614	3.188	11.8	127	0.00
22	T	Biphenyl	3.436	3.102	9.7	129	0.00
23	T	2,6-Dimethylnaphthalene	2.453	2.318	5.5	132	0.00
24	T	Dimethylphthalate	3.207	2.901	9.5	130	0.00
25	T,P	Acenaphthylene	3.926	3.781	3.7	135	0.00
26	C,P	Acenaphthene	2.819	2.401	14.8	124	0.00
27	T	2,3,5-Trimethylnaphthalene	2.436	2.220	8.9	131	0.00
28	T	Diethylphthalate	3.103	2.785	10.2	128	0.01
29	T,P	Fluorene	3.136	2.858	8.9	131	0.00
30	I	Phenanthrene-d10	1.000	1.000	0.0	136	0.00
31	T	N-Nitrosodiphenylamine	0.633	0.518	18.2	128	0.00
32	T	Azobenzene	0.549	0.509	7.3	123	0.00
33	S	2,4,6-Tribromophenol	0.157	0.147	6.4	118	0.00
34	T,P	Hexachlorobenzene	0.322	0.270	16.1	120	0.00
35	T,P	Pentachlorophenol	0.146	0.151	-3.4	119	0.00
36	T	Dibenzothiophene	1.026	0.977	4.8	133	0.00
37	T,P	Phenanthrene	1.090	0.989	9.3	128	0.00
38	T,P	Anthracene	1.059	1.013	4.3	129	0.00
39	T	Carbazole	0.830	0.903	-8.8	137	0.00
40	T	Di-n-butylphthalate	0.988	1.005	-1.7	128	0.01
41	T	1-Methylphenanthrene	0.778	0.753	3.2	128	0.00
42	C,P	Fluoranthene	1.225	1.185	3.3	125	0.00
43	T,P	Pyrene	1.294	1.212	6.3	123	0.00
44	S	Terphenyl-d14	0.958	0.895	6.6	120	0.00
45	T	Butylbenzylphthalate	0.376	0.440	-17.0	129	0.02
46	T,P	Benzo(a)anthracene	1.635	1.251	23.5#	124	0.00
47	T,P	Chrysene	1.232	1.182	4.1	125	0.00
48	T	bis(2-Ethylhexyl)phthalate	0.596	0.651	-9.2	123	0.03
49	I	Perylene-d12	1.000	1.000	0.0	124	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 09:41:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	0.822	0.943	-14.7	120	0.03
51	T,P	Benzo(b)fluoranthene	1.066	1.077	-1.0	121	0.00
52	T,P	Benzo(k)fluoranthene	1.065	1.047	1.7	119	0.00
53	T	Benzo(e)pyrene	1.036	1.027	0.9	121	0.00
54	C,P	Benzo(a)pyrene	0.972	1.017	-4.6	120	0.00
55	T	Perylene	1.090	1.022	6.2	119	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	1.208	1.195	1.1	117	0.00
57	T,P	Dibenzo(a,h)anthracene	0.996	1.007	-1.1	119	0.00
58	T,P	Benzo(g,h,i)perylene	0.982	0.946	3.7	116	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 09:41:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	40.000	40.000	0.0	140	0.00
2	T	1,4-Dioxane	25.000	24.694	1.2	137	0.01
3	T	N-nitrosodimethylamine	25.000	24.869	0.5	132	0.01
4	S	2-Fluorophenol	25.000	25.876	-3.5	141	0.00
5	S	Phenol-d5	25.000	25.385	-1.5	139	0.00
6	T,P	Phenol	25.000	25.512	-2.0	134	0.00
7	T,P	bis(2-chloroethyl)ether	25.000	23.067	7.7	131	0.01
8	T,P	2-Chlorophenol	25.000	24.553	1.8	137	0.00
9	P,P	N-Nitroso-di-n-propylamine	25.000	23.863	4.5	124	0.00
10	T	Hexachloroethane	25.000	24.486	2.1	134	0.00
11	S	Nitrobenzene-d5	25.000	23.088	7.6	124	0.00
12	T,P	2,4-Dimethylphenol	25.000	23.570	5.7	125	0.00
13	T,P	2,4-Dichlorophenol	25.000	24.237	3.1	130	0.00
14	T,P	Naphthalene	25.000	23.271	6.9	131	0.00
15	T,P	4-Chloro-3-methylphenol	25.000	24.377	2.5	129	0.00
16	T,P	2-Methylnaphthalene	25.000	23.793	4.8	134	0.00
17	T	1-Methylnaphthalene	25.000	23.396	6.4	132	0.00
18	T,P	2,4,6-Trichlorophenol	25.000	23.638	5.4	125	0.00
19	T,P	2,4,5-Trichlorophenol	25.000	24.383	2.5	126	0.00
20	T	2,3,4-Trichlorophenol	25.000	24.063	3.7	126	0.00
21	S	2-Fluorobiphenyl	25.000	22.058	11.8	127	0.00
22	T	Biphenyl	25.000	22.571	9.7	129	0.00
23	T	2,6-Dimethylnaphthalene	25.000	23.625	5.5	132	0.00
24	T	Dimethylphthalate	25.000	22.615	9.5	130	0.00
25	T,P	Acenaphthylene	25.000	24.076	3.7	135	0.00
26	C,P	Acenaphthene	25.000	21.290	14.8	124	0.00
27	T	2,3,5-Trimethylnaphthalene	25.000	22.776	8.9	131	0.00
28	T	Diethylphthalate	25.000	22.437	10.3	128	0.01
29	T,P	Fluorene	25.000	22.782	8.9	131	0.00
30	I	Phenanthrene-d10	40.000	40.000	0.0	136	0.00
31	T	N-Nitrosodiphenylamine	25.000	23.226	7.1	128	0.00
32	T	Azobenzene	25.000	23.157	7.4	123	0.00
33	S	2,4,6-Tribromophenol	25.000	23.360	6.6	118	0.00
34	T,P	Hexachlorobenzene	25.000	20.969	16.1	120	0.00
35	T,P	Pentachlorophenol	25.000	22.376	10.5	119	0.00
36	T	Dibenzothiophene	25.000	23.824	4.7	133	0.00
37	T,P	Phenanthrene	25.000	22.671	9.3	128	0.00
38	T,P	Anthracene	25.000	23.922	4.3	129	0.00
39	T	Carbazole	25.000	27.175	-8.7	137	0.00
40	T	Di-n-butylphthalate	25.000	25.425	-1.7	128	0.01
41	T	1-Methylphenanthrene	25.000	24.195	3.2	128	0.00
42	C,P	Fluoranthene	25.000	24.167	3.3	125	0.00
43	T,P	Pyrene	25.000	23.421	6.3	123	0.00
44	S	Terphenyl-d14	25.000	23.355	6.6	120	0.00
45	T	Butylbenzylphthalate	25.000	24.890	0.4	129	0.02
46	T,P	Benzo(a)anthracene	25.000	24.200	3.2	124	0.00
47	T,P	Chrysene	25.000	23.980	4.1	125	0.00
48	T	bis(2-Ethylhexyl)phthalate	25.000	23.826	4.7	123	0.03
49	I	Perylene-d12	40.000	40.000	0.0	124	0.00

Evaluate Continuing Calibration Report

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 09:41:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
50	T	Di-n-octylphthalate	25.000	23.923	4.3	120	0.03
51	T,P	Benzo(b)fluoranthene	25.000	25.276	-1.1	121	0.00
52	T,P	Benzo(k)fluoranthene	25.000	24.575	1.7	119	0.00
53	T	Benzo(e)pyrene	25.000	24.789	0.8	121	0.00
54	C,P	Benzo(a)pyrene	25.000	26.145	-4.6	120	0.00
55	T	Perylene	25.000	23.439	6.2	119	0.00
56	T,P	Indeno(1,2,3-cd)pyrene	25.000	24.730	1.1	117	0.00
57	T,P	Dibenzo(a,h)anthracene	25.000	25.287	-1.1	119	0.00
58	T,P	Benzo(g,h,i)perylene	25.000	24.090	3.6	116	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 09:41:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	2.824	152	785136	40.00	ppm	0.00
30) Phenanthrene-d10	7.777	188	3586028	40.00	ppm	0.00
49) Perylene-d12	11.917	264	3972719	40.00	ppm	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	1.909	112	546779	25.88	ppm	0.00
Spiked Amount 30.000			Recovery =	86.27%		
5) Phenol-d5	2.484	99	672703	25.39	ppm	0.00
Spiked Amount 30.000			Recovery =	84.63%		
11) Nitrobenzene-d5	3.307	82	619548	23.09	ppm	0.00
Spiked Amount 10.000			Recovery =	230.90%		
21) 2-Fluorobiphenyl	5.242	172	1564559	22.06	ppm	0.00
Spiked Amount 10.000			Recovery =	220.60%		
33) 2,4,6-Tribromophenol	6.971	330	329394	23.36	ppm	0.00
Spiked Amount 30.000			Recovery =	77.87%		
44) Terphenyl-d14	9.490	244	2006422	23.35	ppm	0.00
Spiked Amount 10.000			Recovery =	233.50%		
Target Compounds						Qvalue
2] 1,4-Dioxane	1.210	88	180315	24.69	ppm	93
3] N-nitrosodimethylamine	1.320	74	283786	24.87	ppm	83
6] Phenol	2.494	94	645004	25.51	ppm	94
7] bis(2-chloroethyl)ether	2.593	93	462937	23.07	ppm	95
8] 2-Chlorophenol	2.651	128	584849	24.55	ppm	93
9] N-Nitroso-di-n-propyla...	3.154	70	360466	23.86	ppm	90
10] Hexachloroethane	3.276	117	253330	24.49	ppm	90
12] 2,4-Dimethylphenol	3.654	107	572100	23.57	ppm	89
13] 2,4-Dichlorophenol	3.865	162	558828	24.24	ppm	99
14] Naphthalene	4.053	128	1665595	23.27	ppm	100
15] 4-Chloro-3-methylphenol	4.622	107	480716	24.38	ppm	91
16] 2-Methylnaphthalene	4.814	142	1231493	23.79	ppm	95
17] 1-Methylnaphthalene	4.929	142	1150805	23.40	ppm	94
18] 2,4,6-Trichlorophenol	5.131	196	480147	23.64	ppm	100
19] 2,4,5-Trichlorophenol	5.164	196	495873	24.38	ppm	99
20] 2,3,4-Trichlorophenol	5.237	196	434545	24.06	ppm	100
22] Biphenyl	5.357	154	1522289	22.57	ppm	98
23] 2,6-Dimethylnaphthalene	5.539	156	1137324	23.63	ppm	95
24] Dimethylphthalate	5.727	163	1423512	22.62	ppm	99
25] Acenaphthylene	5.862	152	1855282	24.08	ppm	99
26] Acenaphthene	6.073	153	1178182	21.29	ppm	98
27] 2,3,5-Trimethylnaphtha...	6.537	170	1089247	22.78	ppm	97
28] Diethylphthalate	6.584	149	1366412	22.44	ppm	99
29] Fluorene	6.692	166	1402368	22.78	ppm	95
31] N-Nitrosodiphenylamine	6.847	169	1161578	23.23	ppm	97
32] Azobenzene	6.895	77	1140198	23.16	ppm	97
34] Hexachlorobenzene	7.331	284	605856	20.97	ppm	99
35] Pentachlorophenol	7.553	266	339544	22.38	ppm	98
36] Dibenzothiophene	7.657	184	2190565	23.82	ppm	100
37] Phenanthrene	7.800	178	2215921	22.67	ppm	99
38] Anthracene	7.859	178	2270191	23.92	ppm	100
39] Carbazole	8.040	167	2022866	27.17	ppm	98
40] Di-n-butylphthalate	8.447	149	2252129	25.42	ppm	100
41] 1-Methylphenanthrene	8.476	192	1687421	24.19	ppm	97
42] Fluoranthene	9.080	202	2654867	24.17	ppm	100

Quantitation Report (QT Reviewed)

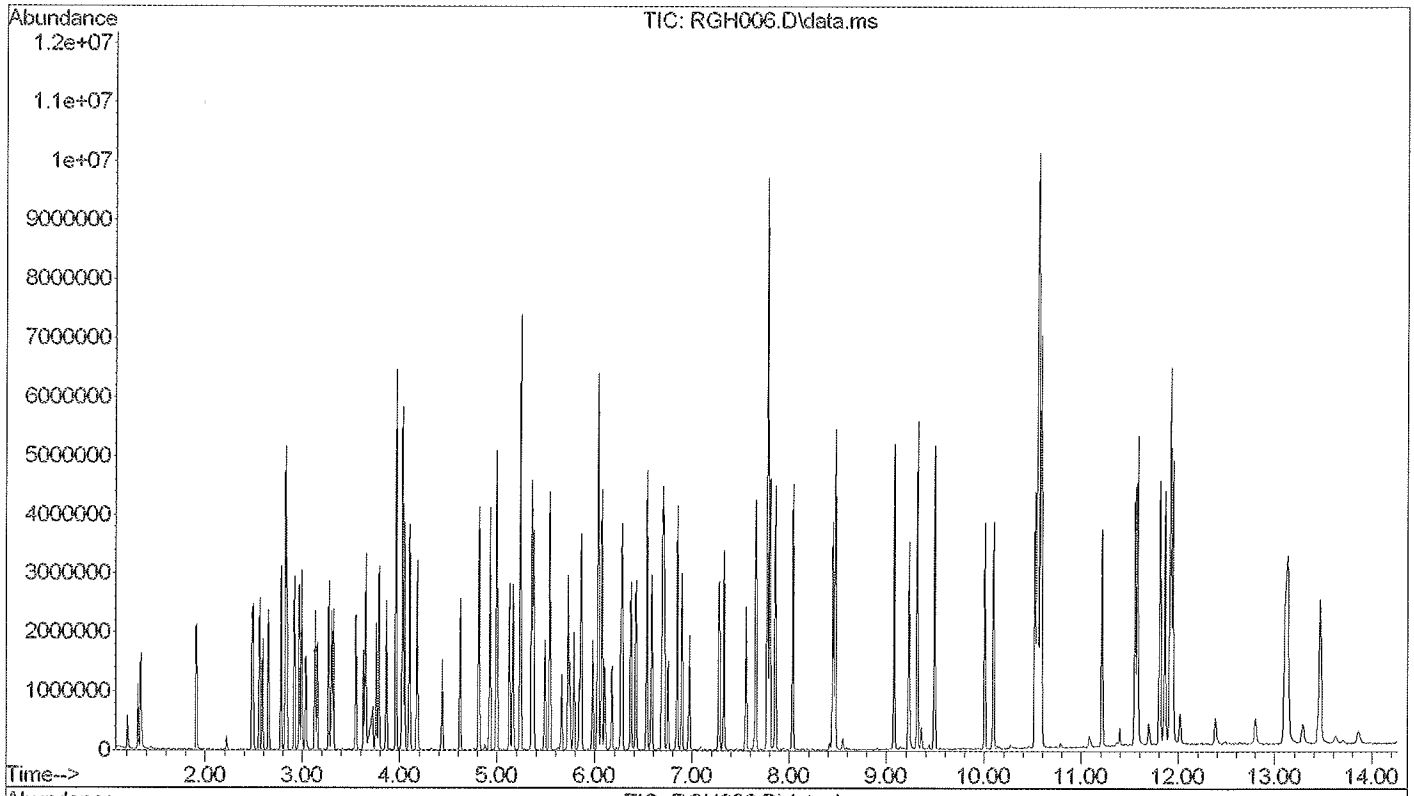
Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 09:41:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M

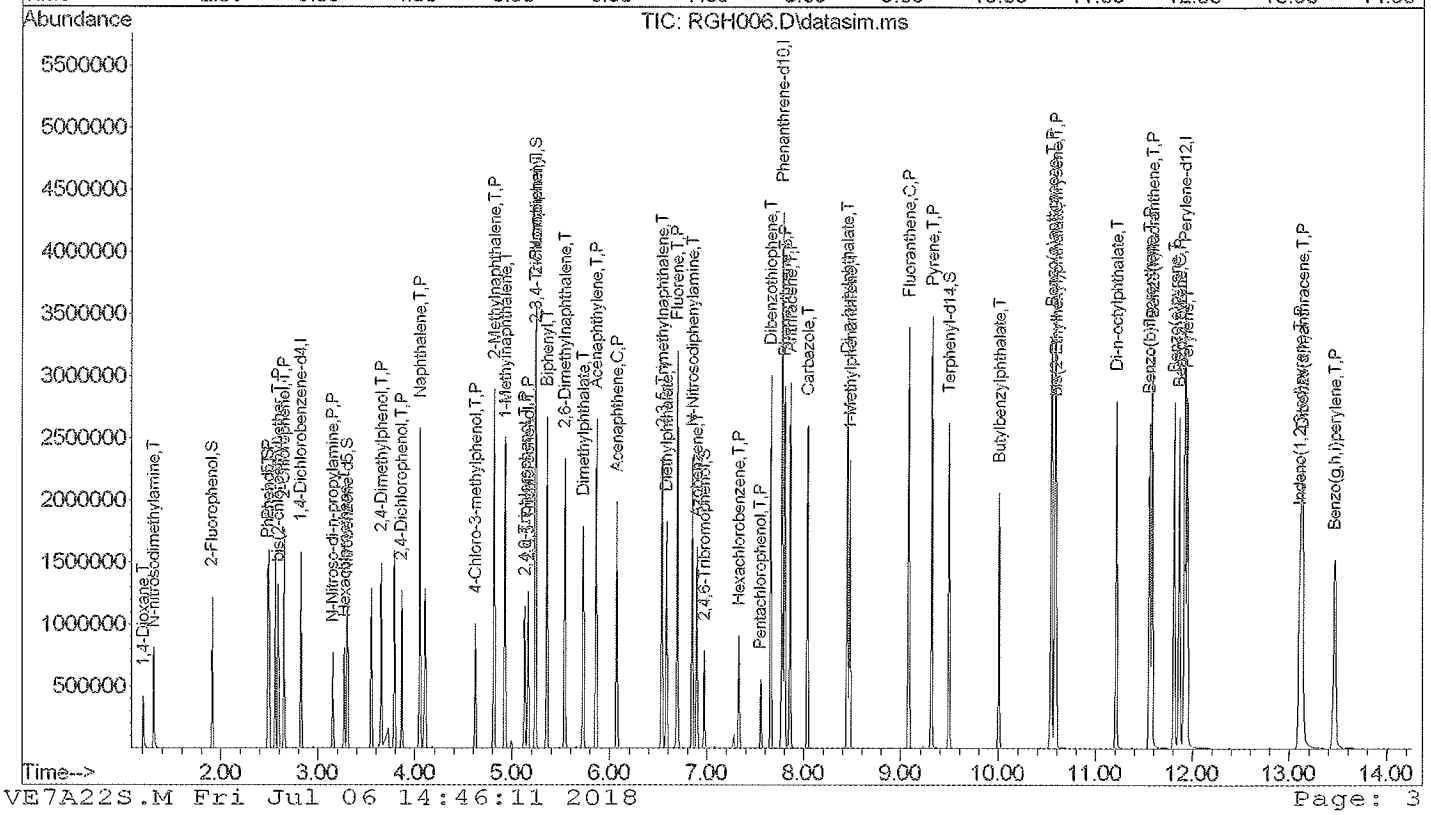
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43] Pyrene	9.316	202	2716424	23.42	ppm	99
45] Butylbenzylphthalate	10.004	149	986553	24.89	ppm	96
46] Benzo(a)anthracene	10.541	228	2803927	24.20	ppm	100
47] Chrysene	10.580	228	2649524	23.98	ppm	97
48] bis(2-Ethylhexyl)phtha...	10.589	149	1458897	23.83	ppm	100
50] Di-n-octylphthalate	11.210	149	2340300	23.92	ppm	99
51] Benzo(b)fluoranthene	11.551	252	2674813	25.28	ppm	99
52] Benzo(k)fluoranthene	11.580	252	2600523	24.57	ppm	100
53] Benzo(e)pyrene	11.809	252	2549785	24.79	ppm	99
54] Benzo(a)pyrene	11.861	252	2525187	26.15	ppm	99
55] Perylene	11.940	252	2536971	23.44	ppm	99
56] Indeno(1,2,3-cd)pyrene	13.107	276	2967052	24.73	ppm	98
57] Dibenzo(a,h)anthracene	13.131	278	2501544	25.29	ppm	100
58] Benzo(g,h,i)perylene	13.466	276	2349267	24.09	ppm	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : D:\DATA\18G03\RGH006.D Vial: 6
Acq On : 3 Jul 2018 9:21 Operator: KVu
Sample : ESVE7A2281 Inst : E7
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 09:41:57 2018
Quant Results File: SVE7A22S.RES
Quant Method : C:\msdchem\1\METHODS\SVE7A22S.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Tue Jan 23 12:44:06 2018
Response via : Initial Calibration
DataAcq Meth:SVE7A22S.M





ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Method File: SVE7A22S Tune File: DFTPP Start Date/Time: 1/22/18 14:21 End Date/Time: 1/23/18 2:06 Book #: AE7-021

ANALYTICAL BATCH: SVE7A22S

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RAH163	IBE7A2201				
	164	DFTE7A2201				
NA	165	SVE7A221	NA	NA	NA	100 ppm
	166	2				80
	167	3				50
	168	4				40
	169	5				25 r = 75.6%
	170	6				20
	171	7				10
	172	8				4
	173	9				2
	174	10				0.5
	175	11				0.15
	176	12				0.075
	177	13				0.05
	178	ISVE7A221				ICV **
	179	SVE7A22A1				100 ppm Ben
	180	2				80
	181	3				50
	182	4				40
	183	5				25
	184	6				10
	185	7				4
	186	ISVE7A22A1				ICV
	187	SVE7A22B1				50ppm App9 *
	188	2				40 ppm
	189	3				30
	190	4				25
	191	5				20
	192	6				10
	193	7				4
	194	ISVE7A22B1				ICV ***

Instrument No:	E7

INITIAL CALIBRATION REFERENCE	
Date	1/22/18
ICAL ID	SVE7A22/22A/22B/22C/S

Standards		
Name	ID	Conc. (mg/L)
DFTPP	SS2C-15-13-03	50
INT. STD.	SS2B-12-44-03	2000
ICV 8270	SS2C-15-16-02	>5
DCC 8270 ICAL	SS2C-15-16-01	0.05-50
BENZIDINE ICAL	↓ -15-02	4-100
APP 9 ICAL	↓ -18-01	4-50
APP 9 ADD		
BENZIDINE ICV	SS2C-15-15-03	>5
APP 9 ICV	↓ -18-03	>5

Solvent	ID
CH_2Cl_2	175771

DATA FILE	18A22

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE7	1/30/18

Comments: 8270 ICAL SS2C-15-17-01 80-100 ppm

*: not used

**: 3 analytes > 20%

***: 2 analytes > 20%

Analyzed By: KV

Date Disposed: NA

Disposed By: NA

This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE7-021

Method File: SVE7A225 Tune File: DFTPP Start Date/Time: 1/22/18 14:21 End Date/Time: 1/23/18 2:06

ANALYTICAL BATCH: SVE7A225

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAH 195	SVE7A22C1	NA	NA	NA	140ppm Add
	196	2				120
	197	3				100
	198	4				80
	199	5				60
	200	6				40
	201	7				20
	202	ISVE7A22C1				ICV
						KV 1/22/18

	Instrument No: E7
INITIAL CALIBRATION REFERENCE	
Date	1/22/18
ICAL ID	SVE7A22C

Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2B-12-44-03	2000
ICV		
DCC		
BENZIDINE		
APP 9		
APP 9 ADD ICAL	SS2C-15-17-02	20-140
APP 9 ADD ICV	↓ -17-03	50

Solvent	ID
CH_2Cl_2	175771

DATA FILE	18A22

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE7	1/30/18

Comments:

Analyzed By: KV
Date Disposed: NA
Disposed By: NA

This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE7-022

Method File: SVE7A225 Tune File: DFTPP Start Date/Time: 6/29/18 12:30 End Date/Time: 6/29/18 20:37

ANALYTICAL BATCH: CSVE7A2278

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RFH 621	ZBE7A2278				
	622	DFTE7A2278				
	623	CSVE7A2278				
	624	CSVE7A22A78				
SVF0435	625	SVF0435B	1	X		
	626	SL				
	627	SC				
	628	18F187-07M				
	629	07S				
	630	01				
	631	02				
	632	03				
	633	04				
	634	05				
	635	07				
	636	08				
	637	10				
	638	11				
	639	12				
	640	13				IS low
	641	14	↓			
	642	15	2			*
	643	16	2			*
	644	17	2	↓		*
	645	ESVE7A2279				25 ppm
	646	79A				25/40 ppm
	647	79B				↓
						6/29/18

Instrument No:	E7
INITIAL CALIBRATION REFERENCE	
Date	1/22/18
ICAL ID	SVE7A22/A/5
Standards	

Name	ID	Conc. (mg/L)
DFTPP	SS2C-15-27-02	50
INT. STD.	SS2B-16-02-03	2000
ICV		
DCC	SS2C-15-28-01	25
BENZIDINE	↓ 27-03	25
APP 9		
APP 9 ADD		
25/40	SS2C-15-28-02	25/40

Solvent	ID
CH_2Cl_2	181159
DATA FILE	18F29

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE7	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01 Syringe ID: ☑ 499766-3 ☐

Comments: * Dark color

Analyzed By:

Date Disposed: 6/30/18

Disposed By:

This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☑ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE7-022

Method File: SVE7A22S Tune File: DFTPP Start Date/Time: 7/3/18 7:36 End Date/Time: 7/3/18 9:21

ANALYTICAL BATCH: CSVE7A2280

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RGH001	IBE7A2280				
	2	DFTE7A2280				
	3	CSVE7A2280				
	4	↓ A&C				Beg
SVF043S	5	18F187-13N	L	X		
	6	ESVE7A2281				
						KV 7/3/18

Instrument No:	E7
INITIAL CALIBRATION REFERENCE	
Date	1/22/18
ICAL ID	SVE7A22/22S
Standards	

Name	ID	Conc. (mg/L)
DFTPP	SS2C-15-27-02	50
INT. STD.	SS2B-16-02-03	2000
ICV		
DCC	SS2C-15-28-01	25
BENZIDINE	↓ 27-03	25
APP 9		
APP 9 ADD		

Solvent	ID
CH_2Cl_2	181159
DATA FILE	17603

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE7	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-5 ☐

Comments:

Analyzed By: KV

Date Disposed: 7/3/18

Disposed By: KV

This page is checked during data review.

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☐ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☑ EMAX-3550	5
☐ EMAX-3580	2
☐ EMAX-625	1

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: fa 6/28/18 **ESV-103**
Preparation Batch: SVE043
Matrix: Soil
Micropipette ID: PE00-01 (1000 µL)
Micropipette ID: PE99A-01 (200 µL)
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2A-13-06-20	0.4
LCS/MS Full List +	SS2A-13-06-14	0.2
LCS/MS 3-comp.+	SS2B-16-02-01	0.2
LCS/MS 1,4 DIOXANE	SS2B-16-06-03	1.0
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	181159
Na_2SO_4	SWIB-003-36-01
H_2SO_4	-
NaOH	-
Silica Sand	-
Silica Gel	-
Reagent Water	-
Residual Chlorine Strip	-
pH Strip	-
Filter Paper	16380254

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVE043-SB	4	N/A	4
-SL	4		4
-SC	4		4
F187-01	6		4
-02	6		4
-03	4		4
-04	6		1
-05	6		1
-07	4		1
-07M	6		1
-07S	6		1
-08	6		1
-10	6		3
-11	4		3
-12	4		3
-13	6		3
-14	6		3
-15	4		3
-16	6		2
-17	6		2

TUNING	
Sonicator #	Reading
4	20%
6	45%

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3	35	35
4	35	35
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: fa — Witnessed By: TW
Standard Added By: fa — Checked By: ML
Extract Received By: TW 6/28/18 — Location: Ext # 12
Disposed By: — Disposed On:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
18SVF043S01	SVF043SB	30	g	6/28/18 10:36	2	30	2	1	
18SVF043S02	SVF043SL	30	g	6/28/18 10:36	2	30	2	1	
18SVF043S03	SVF043SC	30	g	6/28/18 10:36	2	30	2	1	
18SVF043S04	F187-01	30.03	g	6/28/18 10:38	2	30	2	1	slight yellow
18SVF043S05	F187-02	30.03	g	6/28/18 10:39	2	30	2	1	light yellow
18SVF043S06	F187-03	30.03	g	6/28/18 10:40	2	30	2	1	light yellow
18SVF043S07	F187-04	30.01	g	6/28/18 10:42	2	30	2	1	yellow
18SVF043S08	F187-05	30.02	g	6/28/18 10:44	2	30	2	1	
18SVF043S09	F187-07	30	g	6/28/18 10:45	2	30	2	1	
18SVF043S10	F187-07M	30	g	6/28/18 10:46	2	30	2	1	
18SVF043S11	F187-07S	30	g	6/28/18 10:46	2	30	2	1	
18SVF043S12	F187-08	30.02	g	6/28/18 10:48	2	30	2	1	light yellow
18SVF043S13	F187-10	30.01	g	6/28/18 10:50	2	30	2	1	light yellow
18SVF043S14	F187-11	30.02	g	6/28/18 10:52	2	30	2	1	slight yellow
18SVF043S15	F187-12	30.02	g	6/28/18 10:54	2	30	2	1	
18SVF043S16	F187-13	30	g	6/28/18 10:56	2	30	2	1	slight yellow
18SVF043S17	F187-14	30.03	g	6/28/18 10:57	2	30	2	1	light yellow
18SVF043S18	F187-15	30.01	g	6/28/18 10:58	2	30	2	1	orange
18SVF043S19	F187-16	30.01	g	6/28/18 10:59	2	30	2	1	orange
18SVF043S20	F187-17	30	g	6/28/18 11:00	2	30	2	1	orange

Balance ID: 10304418. Calibration check was verified prior to use.

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 6/28/18 15:30 ☐ pHAdj(≤2) @

Prepared By: JVille

☑ Extraction Ended @ 6/28/18 18:02 ☐ pHAdj(≥11) @

Checked By: ML

Comments:

Date 06/28/18

LABORATORY REPORT FOR

CH2M HILL

JBER TO078

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 18F187

CASE NARRATIVE

Client : CH2M HILL

Project: JBER TO075

SDG : 18F187

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of sixteen (16) soil samples were received on 06/26/18 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method AK101 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. GMF019SB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. GMF019SL/GMF019SC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed. GRO was within MS QC limits in F187-07M/F187-07S. Refer to Matrix QC summary form for details.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Dilution was necessary to bring result within calibration range which may result to undetermined surrogate percent recovery. In this SDG, it was noted that for sample F187-04J - 4-Bromofluorobenzene was diluted out, however, an alternate surrogate, 1,1,1-Trifluorotoluene, was within QC limits.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Instrument ID : GCT039

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	GMF019SB	1	NA	06/27/1812:48	06/26/1817:06	EF27004A	EF27003A	18GMF019S	Method Blank
LCS1S	GMF019SL	1	NA	06/27/1813:27	06/26/1817:06	EF27005A	EF27003A	18GMF019S	Lab Control Sample (LCS)
LCD1S	GMF019SC	1	NA	06/27/1814:06	06/26/1817:06	EF27006A	EF27003A	18GMF019S	LCS Duplicate
18Q2DP009-SB0401-SO-0	F187-01I	1	4.8	06/27/1814:45	06/26/1817:06	EF27007A	EF27003A	18GMF019S	Diluted Sample
18Q2DP009-SB0401-SO-1	F187-02I	1	4.6	06/27/1815:24	06/26/1817:06	EF27008A	EF27003A	18GMF019S	Diluted Sample
18Q2DP009-SB0402-SO-0	F187-03I	1	5.3	06/27/1816:03	06/26/1817:06	EF27009A	EF27003A	18GMF019S	Diluted Sample
18Q2DP009-SB0801-SO-0	F187-04J	10	8.6	06/27/1818:02	06/26/1817:06	EF27012A	EF27003A	18GMF019S	Diluted Sample
18Q2DP009-SB0802-SO-0	F187-05I	1	4.9	06/27/1819:21	06/26/1817:06	EF27014A	EF27003A	18GMF019S	Diluted Sample
18Q2DP009-SB0501-SO-0	F187-07I	1	3.9	06/27/1821:18	06/26/1817:06	EF27017A	EF27016A	18GMF019S	Diluted Sample
18Q2DP009-SB0501-SO-0MS	F187-07M	1	3.9	06/27/1821:57	06/26/1817:06	EF27018A	EF27016A	18GMF019S	Matrix Spike Sample (MS)
18Q2DP009-SB0502-SO-0	F187-08I	1	3.5	06/27/1823:15	06/26/1817:06	EF27020A	EF27016A	18GMF019S	Diluted Sample
18Q2DP009-SOTB01M	F187-09I	1	NA	06/27/1823:54	06/26/1817:06	EF27021A	EF27016A	18GMF019S	Diluted Sample
18Q2DP009-SB0701-SO-0	F187-10I	1	5.8	06/28/1800:33	06/26/1817:06	EF27022A	EF27016A	18GMF019S	Diluted Sample
18Q2DP009-SB0702-SO-0	F187-11I	1	4.7	06/28/1801:12	06/26/1817:06	EF27023A	EF27016A	18GMF019S	Diluted Sample
18Q2DP009-SB0301-SO-0	F187-12I	1	4.0	06/28/1801:51	06/26/1817:06	EF27024A	EF27016A	18GMF019S	Diluted Sample
18Q2DP009-SB0302-SO-0	F187-13I	1	6.5	06/28/1802:30	06/26/1817:06	EF27025A	EF27016A	18GMF019S	Diluted Sample
18Q2DP009-SB0602-SO-0	F187-14I	1	5.1	06/28/1803:09	06/26/1817:06	EF27026A	EF27016A	18GMF019S	Diluted Sample
18Q2DP009-SB0601-SO-0	F187-15I	1	7.6	06/28/1805:06	06/26/1817:06	EF27029A	EF27028A	18GMF019S	Diluted Sample
18Q2DP009-SB0601-SO-1	F187-16I	1	6.9	06/28/1805:45	06/26/1817:06	EF27030A	EF27028A	18GMF019S	Diluted Sample
18Q2DP009-IDW-SO01	F187-17I	1	8.1	06/28/1806:24	06/26/1817:06	EF27031A	EF27028A	18GMF019S	Diluted Sample
18Q2DP009-SB0501-SO-0MSD	F187-07S	1	3.9	06/28/1810:04	06/26/1817:06	EF27034A	EF27032A	18GMF019S	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: CH2M HILL	Date Collected:	06/21/18 16:10
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/26/18 17:06
Sample ID	: 18Q2DP009-SB0401-SO-0	Date Analyzed:	06/27/18 14:45
Lab Samp ID:	F187-01I	Dilution Factor:	1
Lab File ID:	EF27007A	Matrix:	SOIL
Ext Btch ID:	18GMF019S	% Moisture:	4.8
Calib. Ref.:	EF27003A	Instrument ID:	39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.1	0.26	0.53

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.57	2.68	96	50-150
1,1,1-Trifluorotoluene	2.49	2.68	93	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

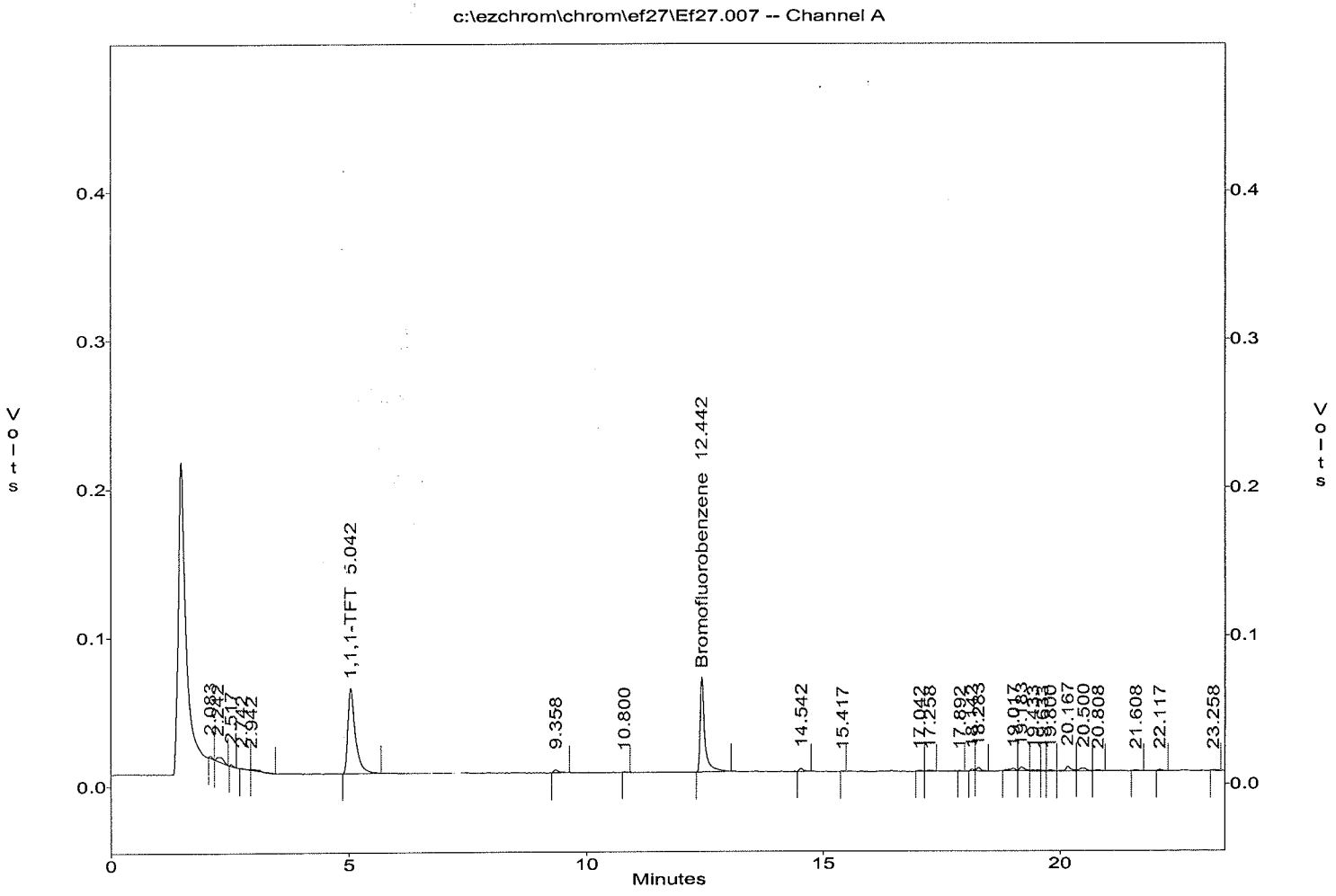
Sample Amount	: 20.33g	Final Volume :	26.0ml (100uL extract)
Prepared by	: RTorra	Analyzed by :	SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.007
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-01I
Acquired : Jun 27, 2018 14:45:22
Printed : Jun 27, 2018 15:08:54
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	5.042	622278.0	16817.6	37.00
9	Bromofluorobenzene	12.442	422352.0	11030.9	38.29
G1	GASOLINE(TOTAL)		234469.0	20153.8	11.63
G2	GRO(C6-C10)		42287.0	16320.2	2.59



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : CH2M HILL	Date Collected: 06/21/18 16:11
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/26/18 17:06
Sample ID : 18Q2DP009-SB0401-SO-1	Date Analyzed: 06/27/18 15:24
Lab Samp ID: F187-02I	Dilution Factor: 1
Lab File ID: EF27008A	Matrix: SOIL
Ext Btch ID: 18GMF019S	% Moisture: 4.6
Calib. Ref.: EF27003A	Instrument ID: 39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.0	0.26	0.52

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.63	2.63	100	50-150
1,1,1-Trifluorotoluene	2.47	2.63	94	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

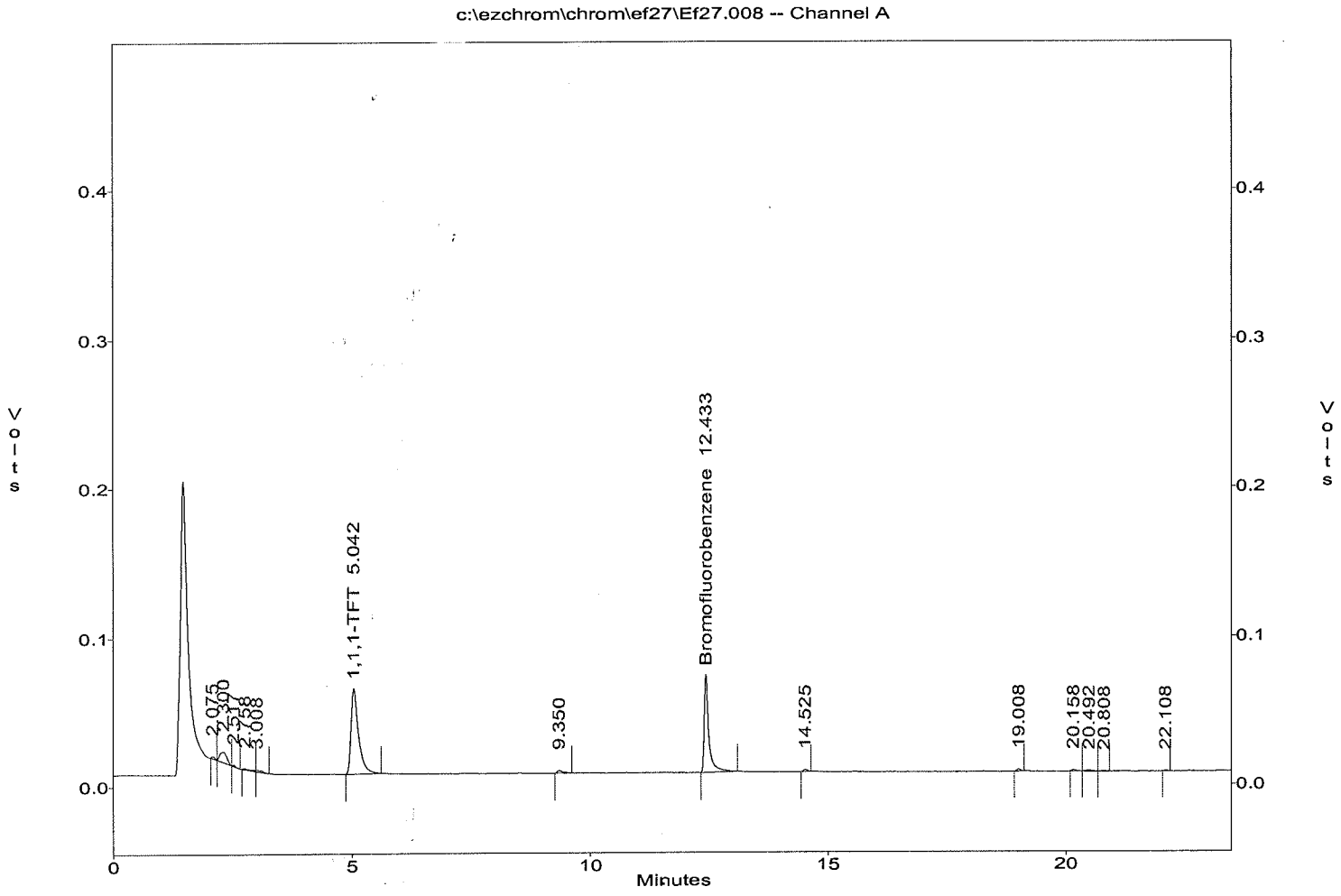
Sample Amount : 20.66g	Final Volume : 26.0ml (100uL extract)
Prepared by : RTorra	Analyzed by : SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.008
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-02I
Acquired : Jun 27, 2018 15:24:20
Printed : Jun 27, 2018 15:47:53
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	5.042	630042.0	16817.6	37.46
8	Bromofluorobenzene	12.433	438543.0	11030.9	39.76
G1	GASOLINE(TOTAL)		146304.0	20153.8	7.26
G2	GRO(C6-C10)		44019.0	16320.2	2.70



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: CH2M HILL	Date Collected:	06/21/18 16:30
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/26/18 17:06
Sample ID	: 18Q2DP009-SB0402-SO-0	Date Analyzed:	06/27/18 16:03
Lab Samp ID:	F187-03I	Dilution Factor:	1
Lab File ID:	EF27009A	Matrix:	SOIL
Ext Btch ID:	18GMF019S	% Moisture:	5.3
Calib. Ref.:	EF27003A	Instrument ID:	39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.1	0.26	0.53

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.48	2.53	98	50-150
1,1,1-Trifluorotoluene	2.36	2.53	93	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

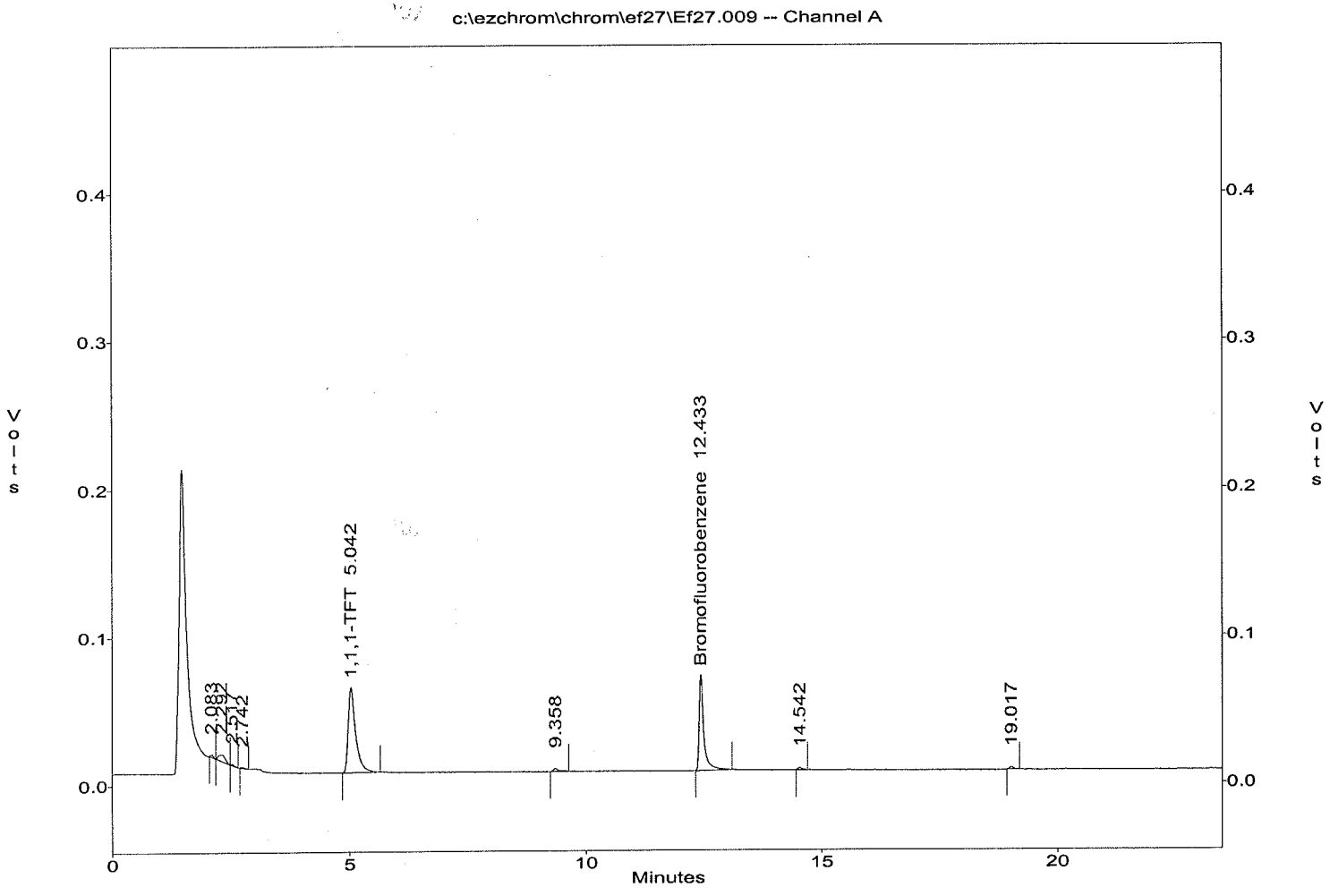
Sample Amount	: 21.79g	Final Volume :	26.2ml (100uL extract)
Prepared by	: RTorra	Analyzed by :	SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.009
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-03I
Acquired : Jun 27, 2018 16:03:03
Printed : Jun 27, 2018 16:26:35
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
5	1,1,1-TFT	5.042	626157.0	16817.6	37.23
7	Bromofluorobenzene	12.433	432365.0	11030.9	39.20
G1	GASOLINE(TOTAL)		85803.0	20153.8	4.26
G2	GRO(C6-C10)		28255.0	16320.2	1.73



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: CH2M HILL	Date Collected:	06/21/18 18:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/26/18 17:06
Sample ID	: 18Q2DP009-SB0801-SO-0	Date Analyzed:	06/27/18 18:02
Lab Samp ID:	F187-04J	Dilution Factor:	10
Lab File ID:	EF27012A	Matrix:	SOIL
Ext Btch ID:	18GMF019S	% Moisture:	8.6
Calib. Ref.:	EF27003A	Instrument ID:	39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	200	11	2.7	5.5

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	ND	2.46	0*	50-150
1,1,1-Trifluorotoluene	22.7	24.6	92	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

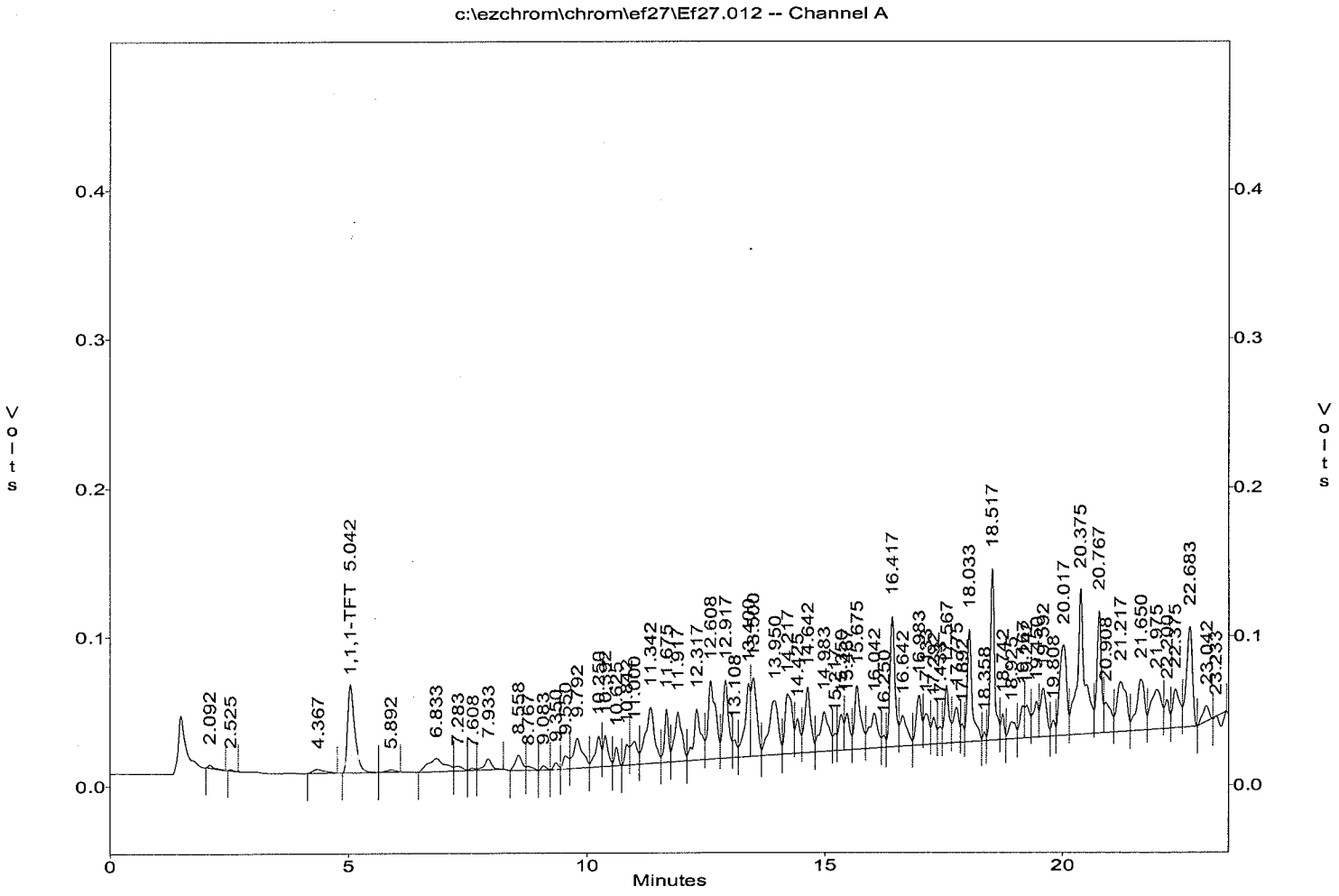
Sample Amount	: 24.1g	Final Volume	: 27.1ml (10uL extract)
Prepared by	: RTorra	Analyzed by	: SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.012
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-04J 10T 1A
Acquired : Jun 27, 2018 18:02:27
Printed : Jun 27, 2018 18:25:58
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	5.042	623882.0	16817.6	37.10
--	Bromofluorobenzene	12.442	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		16500952.0	20153.8	818.75
G2	GRO(C6-C10)		5424259.0	16320.2	332.37



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : CH2M HILL	Date Collected: 06/21/18 19:45
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/26/18 17:06
Sample ID : 18Q2DP009-SB0802-SO-0	Date Analyzed: 06/27/18 19:21
Lab Samp ID: F187-05I	Dilution Factor: 1
Lab File ID: EF27014A	Matrix: SOIL
Ext Btch ID: 18GMF019S	% Moisture: 4.9
Calib. Ref.: EF27003A	Instrument ID: 39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.1	0.26	0.53

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.31	2.38	97	50-150
1,1,1-Trifluorotoluene	2.26	2.38	95	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

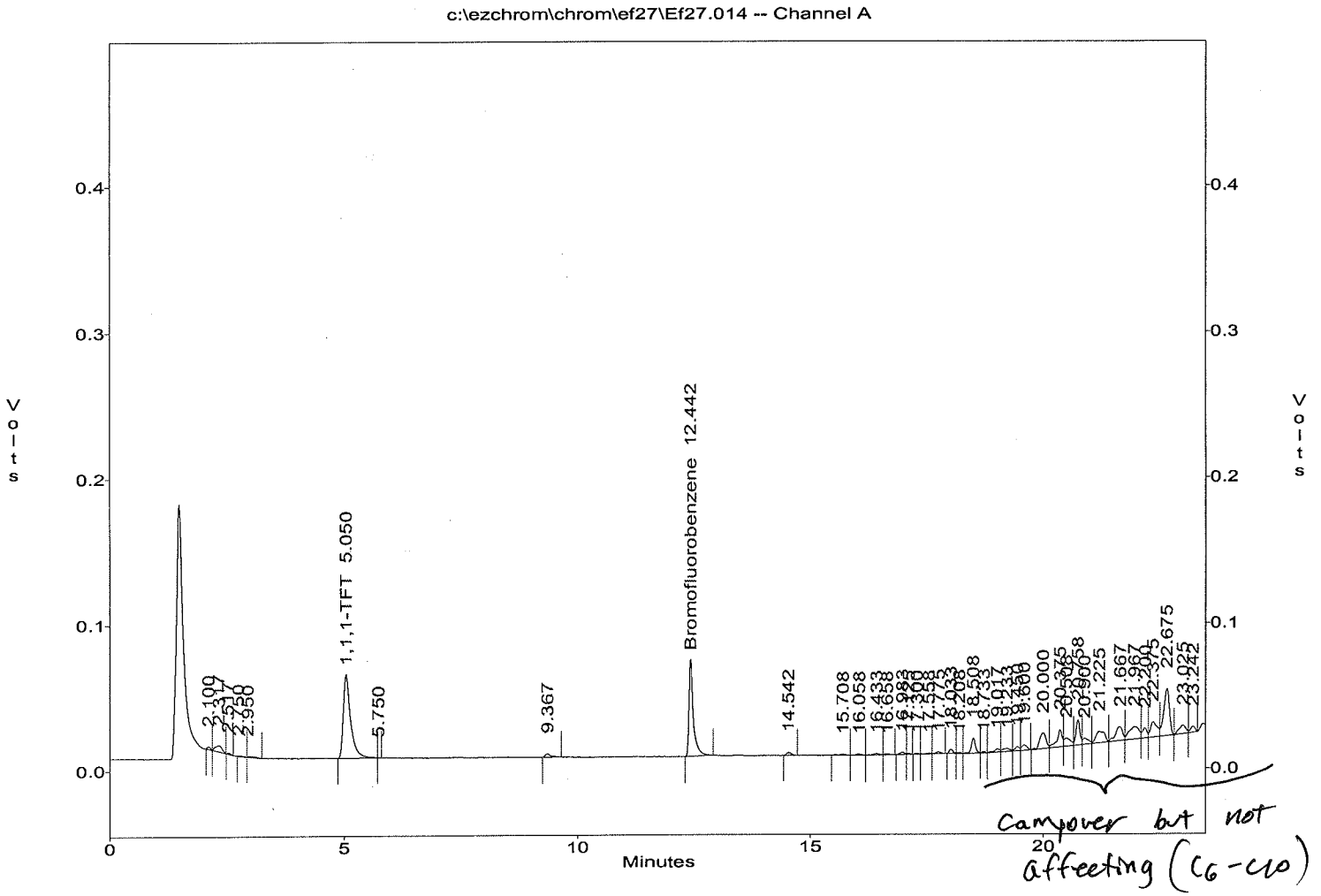
Sample Amount : 23.09g	Final Volume : 26.1ml (100uL extract)
Prepared by : RTorra	Analyzed by : SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.014
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-05I
Acquired : Jun 27, 2018 19:21:05
Printed : Jun 27, 2018 19:44:36
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	5.050	638526.0	16817.6	37.97
9	Bromofluorobenzene	12.442	429745.0	11030.9	38.96
G1	GASOLINE(TOTAL)		1581346.0	20153.8	78.46
G2	GRO(C6-C10)		47920.0	16320.2	2.94



carryover but not affecting (C6-C10)

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: CH2M HILL	Date Collected:	06/22/18 11:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/26/18 17:06
Sample ID	: 18Q2DP009-SB0501-SO-0	Date Analyzed:	06/27/18 21:18
Lab Samp ID:	F187-07I	Dilution Factor:	1
Lab File ID:	EF27017A	Matrix:	SOIL
Ext Btch ID:	18GMF019S	% Moisture:	3.9
Calib. Ref.:	EF27016A	Instrument ID:	39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.0	0.26	0.52

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.47	2.52	98	50-150
1,1,1-Trifluorotoluene	2.31	2.52	91	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

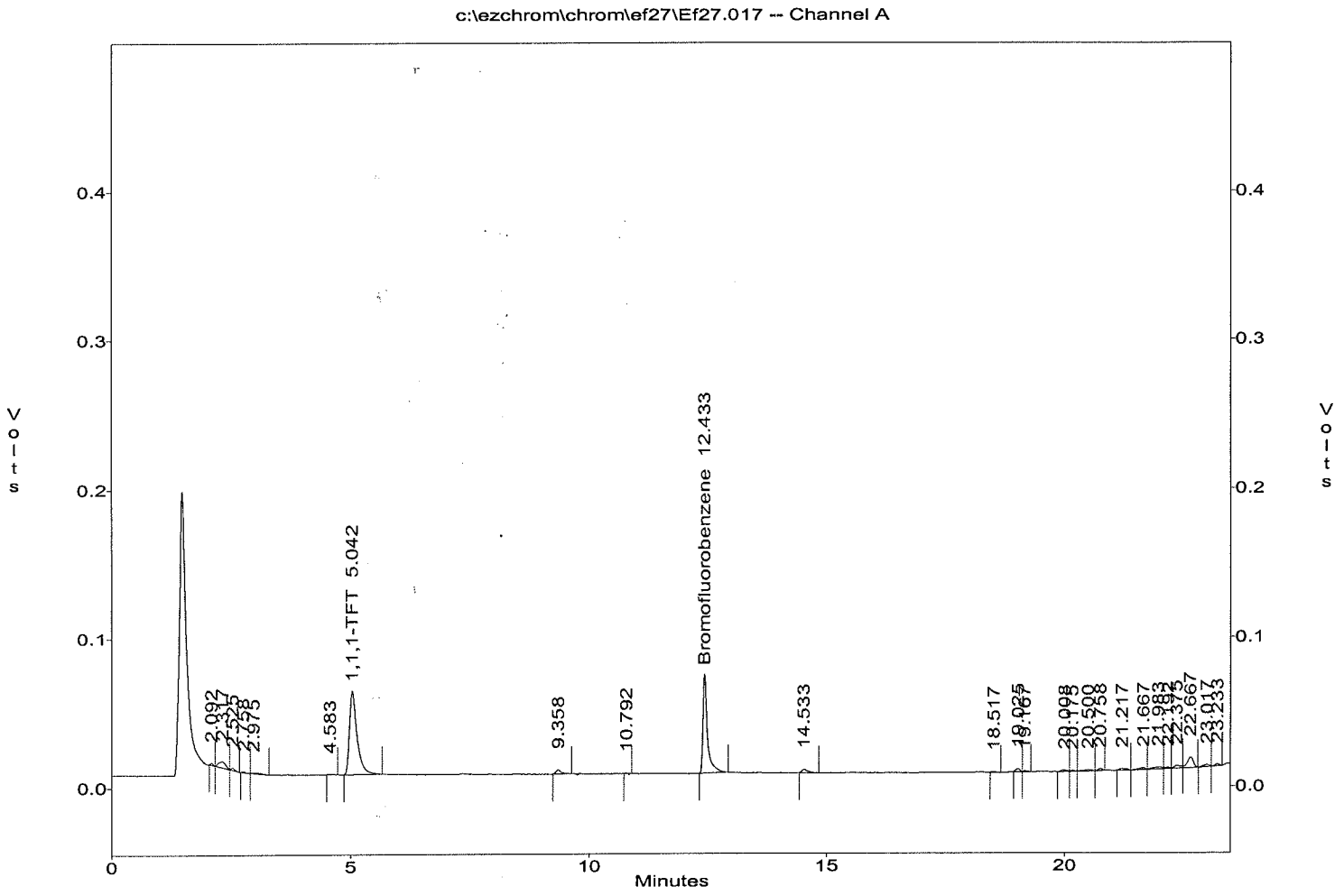
Sample Amount	: 21.32g	Final Volume :	25.8ml (100uL extract)
Prepared by	: RTorra	Analyzed by :	SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.017
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-07I
Acquired : Jun 27, 2018 21:18:17
Printed : Jun 27, 2018 21:41:49
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
7	1,1,1-TFT	5.042	616258.0	16817.6	36.64
10	Bromofluorobenzene	12.433	433448.0	11030.9	39.29
G1	GASOLINE(TOTAL)		311962.0	20153.8	15.48
G2	GRO(C6-C10)		62861.0	16320.2	3.85



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : CH2M HILL	Date Collected: 06/22/18 12:30
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/26/18 17:06
Sample ID : 18Q2DP009-SB0502-SO-0	Date Analyzed: 06/27/18 23:15
Lab Samp ID: F187-08I	Dilution Factor: 1
Lab File ID: EF27020A	Matrix: SOIL
Ext Btch ID: 18GMF019S	% Moisture: 3.5
Calib. Ref.: EF27016A	Instrument ID: 39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.0	0.26	0.52

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.16	2.24	96	50-150
1,1,1-Trifluorotoluene	2.08	2.24	93	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

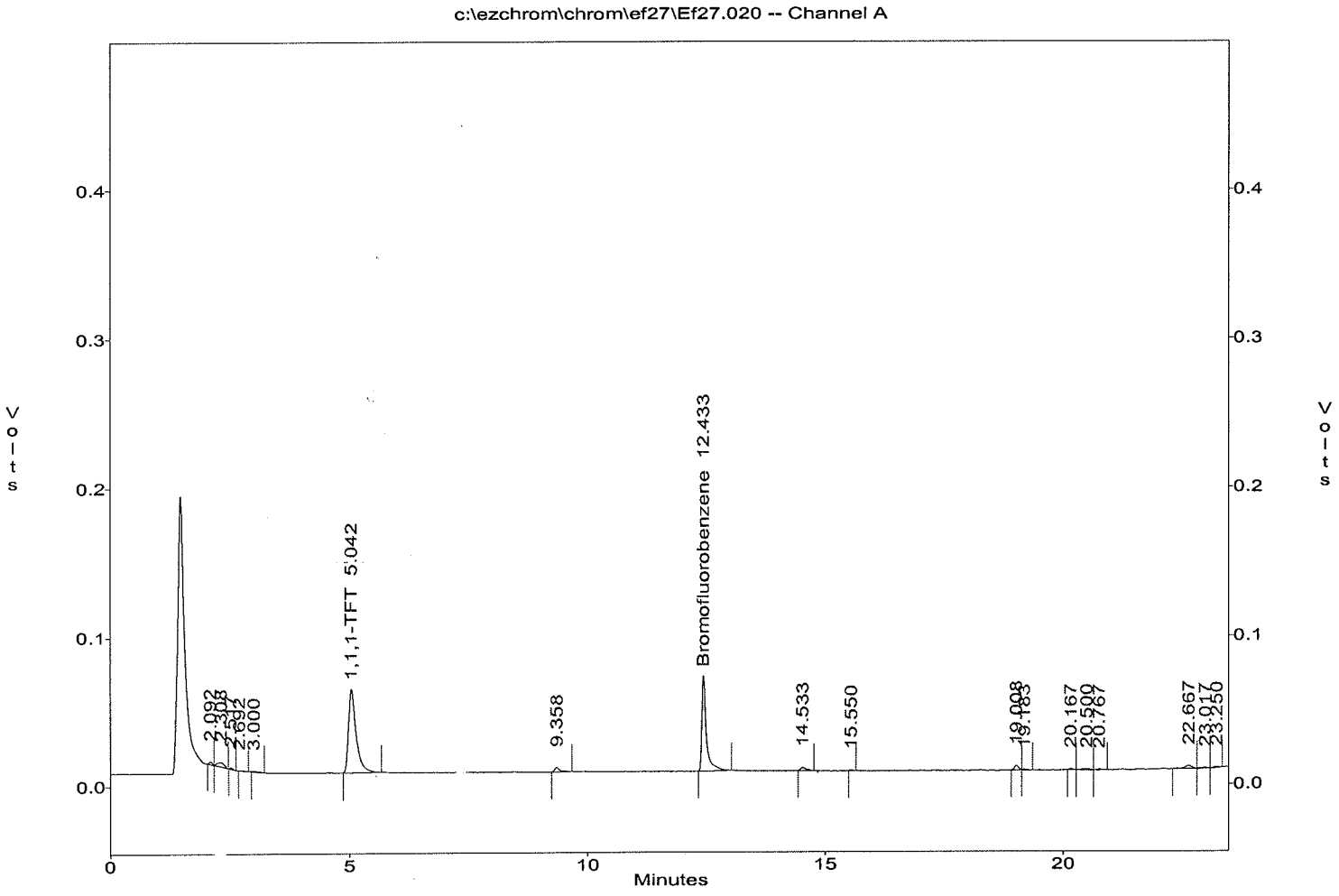
Sample Amount : 23.86g	Final Volume : 25.8ml (100uL extract)
Prepared by : RTorra	Analyzed by : SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.020
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-08I
Acquired : Jun 27, 2018 23:15:15
Printed : Jun 27, 2018 23:38:48
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	5.042	624192.0	16817.6	37.12
8	Bromofluorobenzene	12.433	425192.0	11030.9	38.55
G1	GASOLINE(TOTAL)		154157.0	20153.8	7.65
G2	GRO(C6-C10)		49549.0	16320.2	3.04



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : CH2M HILL	Date Collected: 06/21/18 08:00
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/26/18 17:06
Sample ID : 18Q2DP009-SOTB01M	Date Analyzed: 06/27/18 23:54
Lab Samp ID: F187-09I	Dilution Factor: 1
Lab File ID: EF27021A	Matrix: SOIL
Ext Btch ID: 18GMF019S	% Moisture: NA
Calib. Ref.: EF27016A	Instrument ID: 39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.03	2.00	101	50-150
1,1,1-Trifluorotoluene	1.66	2.00	83	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

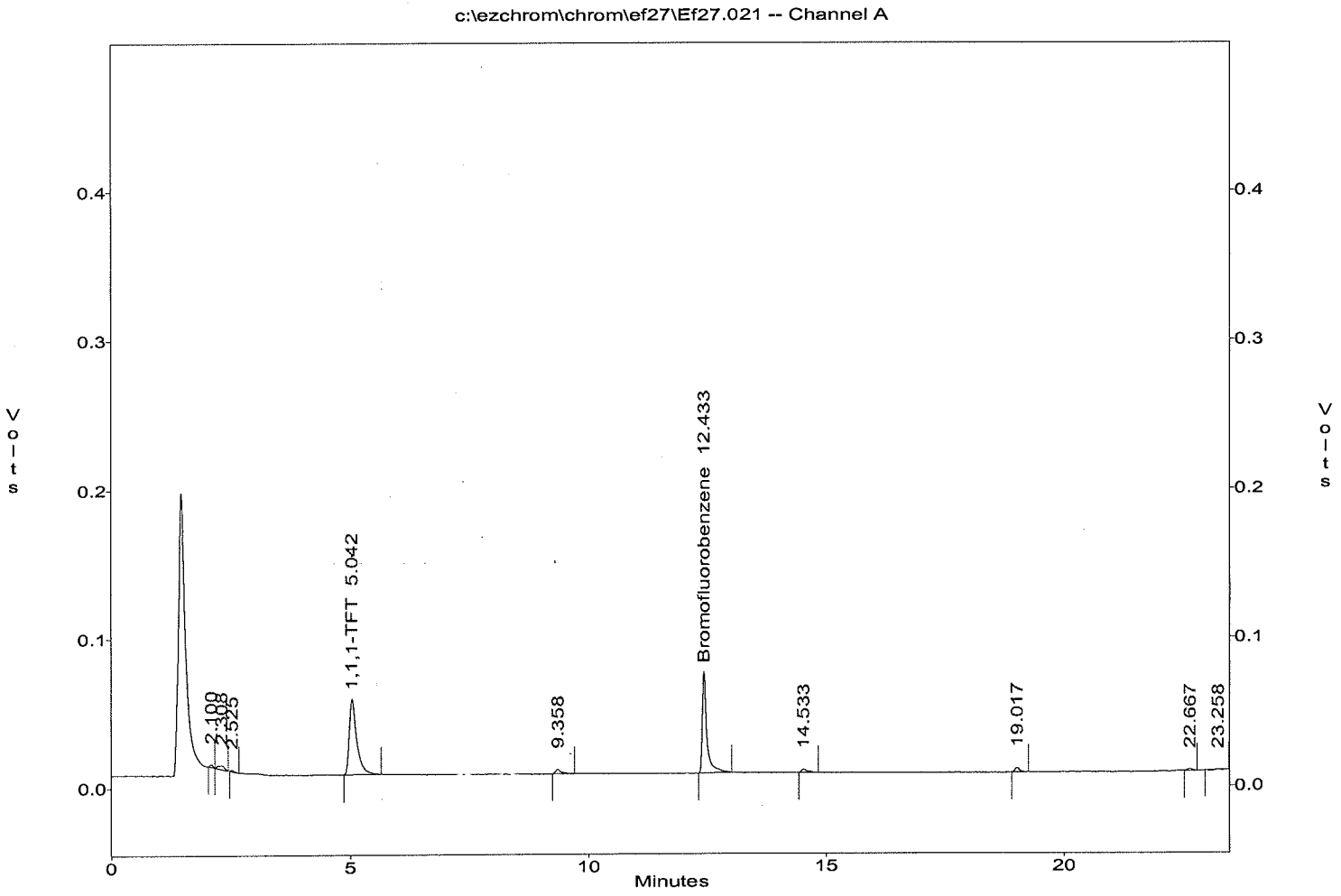
Detection limits are reported relative to sample result significant figures.
Sample Amount : 25g Final Volume : 25.0ml (100uL extract)
Prepared by : RTorra Analyzed by : SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.021
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-09I
Acquired : Jun 27, 2018 23:54:20
Printed : Jun 28, 2018 00:17:52
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	5.042	558458.0	16817.6	33.21
6	Bromofluorobenzene	12.433	446980.0	11030.9	40.52
G1	GASOLINE(TOTAL)		111194.0	20153.8	5.52
G2	GRO(C6-C10)		46350.0	16320.2	2.84



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : CH2M HILL	Date Collected: 06/22/18 13:55
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/26/18 17:06
Sample ID : 18Q2DP009-SB0701-SO-0	Date Analyzed: 06/28/18 00:33
Lab Samp ID: F187-10I	Dilution Factor: 1
Lab File ID: EF27022A	Matrix: SOIL
Ext Btch ID: 18GMF019S	% Moisture: 5.8
Calib. Ref.: EF27016A	Instrument ID: 39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.1	0.27	0.53

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.44	2.52	97	50-150
1,1,1-Trifluorotoluene	2.35	2.52	93	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

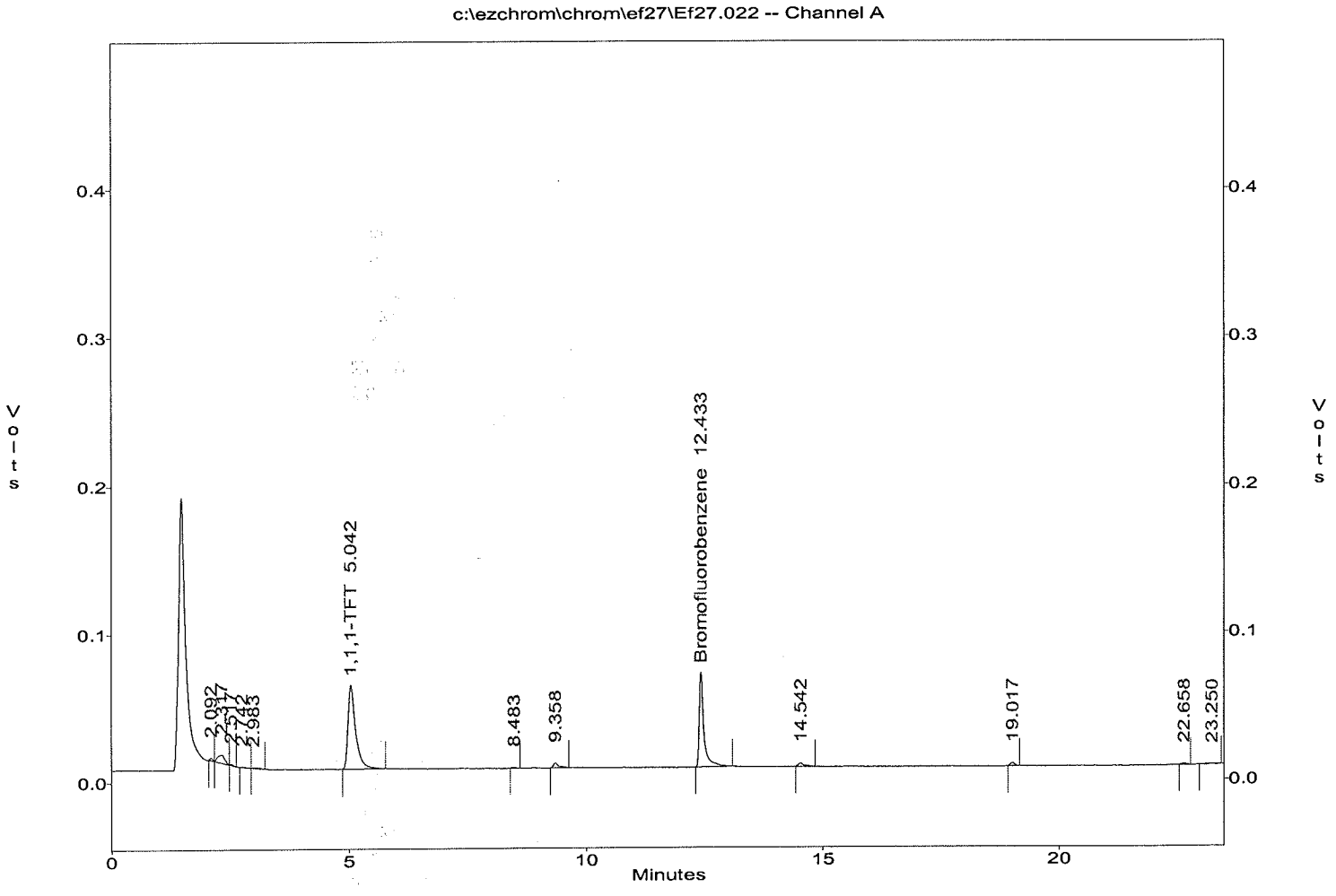
Detection limits are reported relative to sample result significant figures.
Sample Amount : 22.1g Final Volume : 26.3ml (100uL extract)
Prepared by : RTorra Analyzed by : SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.022
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-10I
Acquired : Jun 28, 2018 00:33:16
Printed : Jun 28, 2018 00:56:48
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	5.042	626191.0	16817.6	37.23
9	Bromofluorobenzene	12.433	425912.0	11030.9	38.61
G1	GASOLINE(TOTAL)		142210.0	20153.8	7.06
G2	GRO(C6-C10)		55815.0	16320.2	3.42



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: CH2M HILL	Date Collected:	06/22/18 14:15
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/26/18 17:06
Sample ID	: 18Q2DP009-SB0702-SO-0	Date Analyzed:	06/28/18 01:12
Lab Samp ID:	F187-11I	Dilution Factor:	1
Lab File ID:	EF27023A	Matrix:	SOIL
Ext Btch ID:	18GMF019S	% Moisture:	4.7
Calib. Ref.:	EF27016A	Instrument ID:	39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.0	0.26	0.52

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.01	2.09	96	50-150
1,1,1-Trifluorotoluene	1.91	2.09	91	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

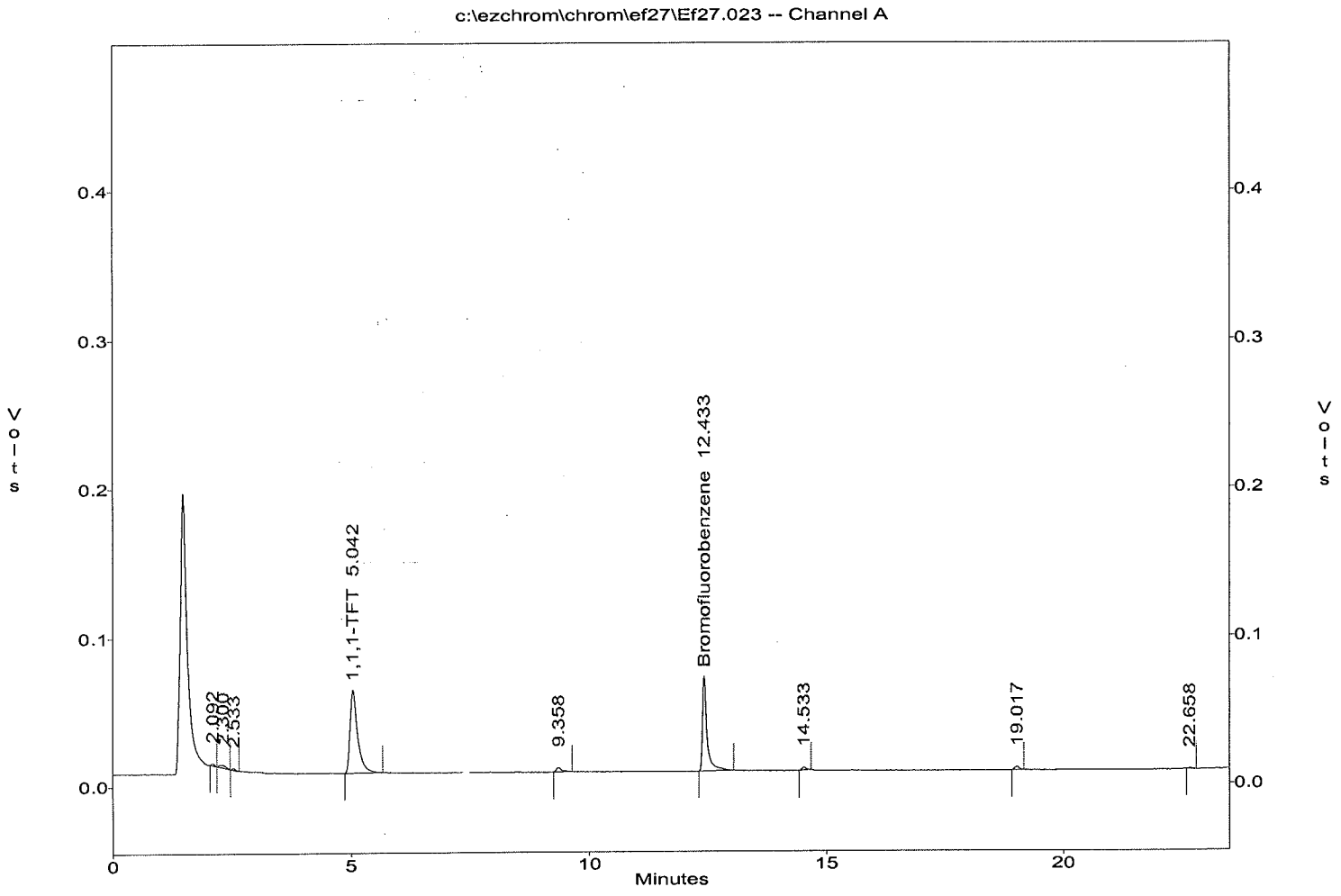
Sample Amount	: 26.29g	Final Volume :	26.2ml (100uL extract)
Prepared by	: RTorra	Analyzed by :	SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.023
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-11I
Acquired : Jun 28, 2018 01:12:21
Printed : Jun 28, 2018 01:35:53
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	5.042	613850.0	16817.6	36.50
6	Bromofluorobenzene	12.433	423489.0	11030.9	38.39
G1	GASOLINE(TOTAL)		80841.0	20153.8	4.01
G2	GRO(C6-C10)		38994.0	16320.2	2.39



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: CH2M HILL	Date Collected:	06/23/18 10:15
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/26/18 17:06
Sample ID	: 18Q2DP009-SB0301-SO-0	Date Analyzed:	06/28/18 01:51
Lab Samp ID:	F187-12I	Dilution Factor:	1
Lab File ID:	EF27024A	Matrix:	SOIL
Ext Btch ID:	18GMF019S	% Moisture:	4.0
Calib. Ref.:	EF27016A	Instrument ID:	39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	0.27J	1.0	0.26	0.52

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	1.98	2.10	94	50-150
1,1,1-Trifluorotoluene	1.82	2.10	87	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

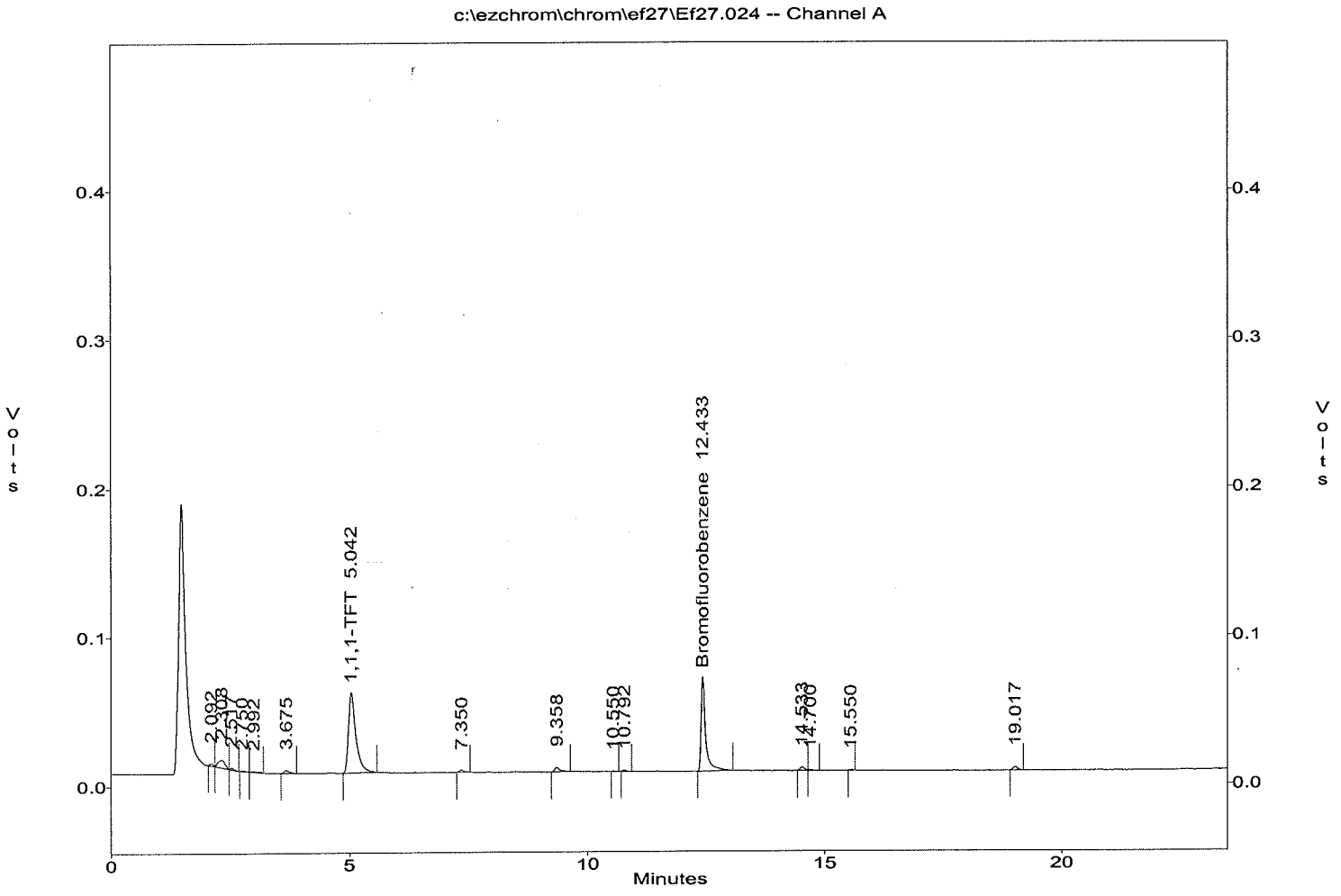
Detection limits are reported relative to sample result significant figures.
Sample Amount : 25.83g Final Volume : 26.0ml (100uL extract)
Prepared by : RTorra Analyzed by : SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.024
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-12I
Acquired : Jun 28, 2018 01:51:26
Printed : Jun 28, 2018 02:14:58
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
7	1,1,1-TFT	5.042	582968.0	16817.6	34.66
12	Bromofluorobenzene	12.433	415339.0	11030.9	37.65
G1	GASOLINE(TOTAL)		164170.0	20153.8	8.15
G2	GRO(C6-C10)		84421.0	16320.2	5.17



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: CH2M HILL	Date Collected:	06/23/18 10:35
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/26/18 17:06
Sample ID	: 18Q2DP009-SB0302-SO-0	Date Analyzed:	06/28/18 02:30
Lab Samp ID:	F187-13I	Dilution Factor:	1
Lab File ID:	EF27025A	Matrix:	SOIL
Ext Btch ID:	18GMF019S	% Moisture:	6.5
Calib. Ref.:	EF27016A	Instrument ID:	39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.1	0.27	0.53

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.26	2.39	95	50-150
1,1,1-Trifluorotoluene	2.21	2.39	92	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

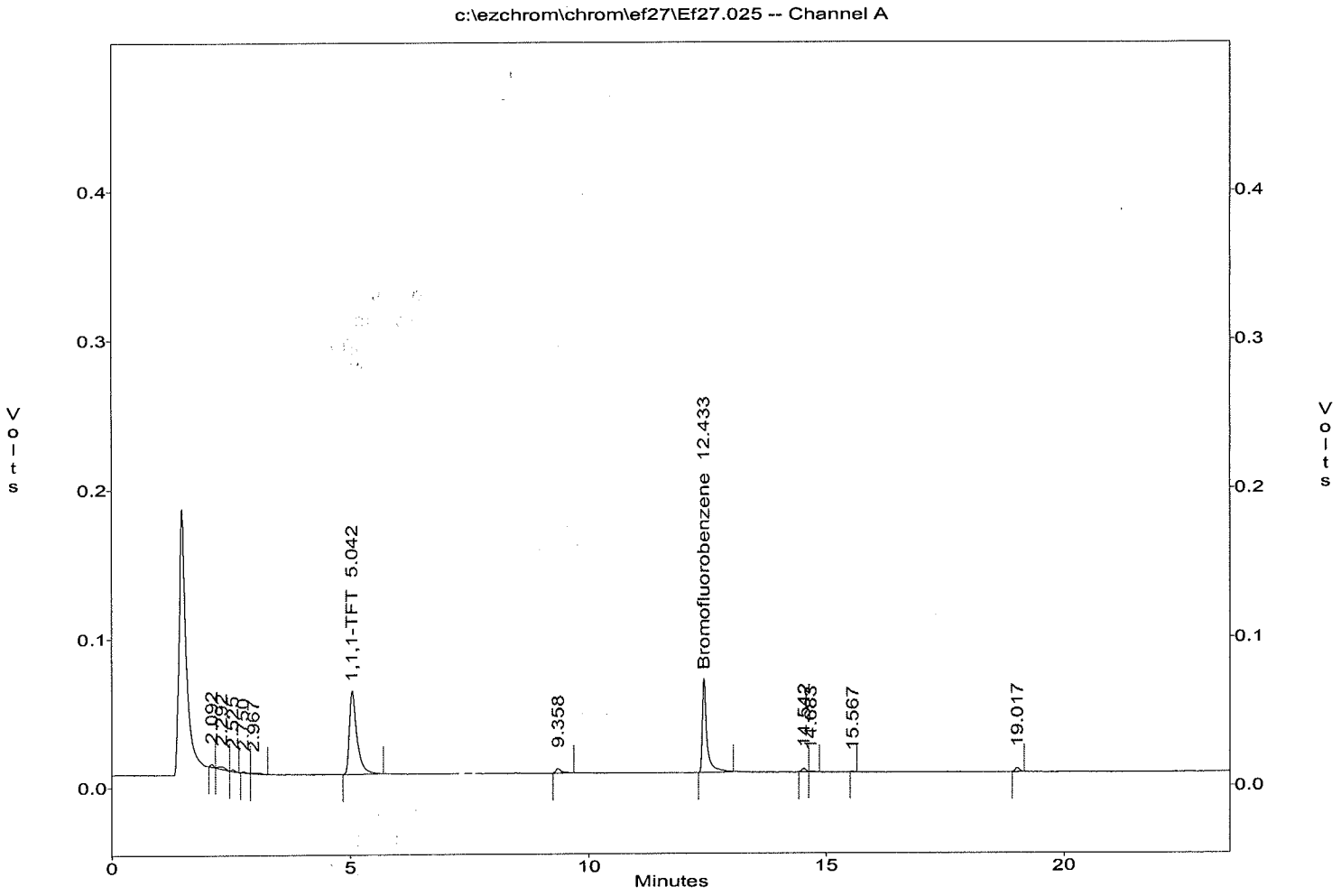
Sample Amount	: 23.73g	Final Volume :	26.5ml (100uL extract)
Prepared by	: RTorra	Analyzed by :	SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.025
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-13I
Acquired : Jun 28, 2018 02:30:27
Printed : Jun 28, 2018 02:53:59
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	5.042	620173.0	16817.6	36.88
8	Bromofluorobenzene	12.433	416859.0	11030.9	37.79
G1	GASOLINE(TOTAL)		102480.0	20153.8	5.08
G2	GRO(C6-C10)		56437.0	16320.2	3.46



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : CH2M HILL	Date Collected: 06/23/18 12:15
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/26/18 17:06
Sample ID : 18Q2DP009-SB0602-SO-0	Date Analyzed: 06/28/18 03:09
Lab Samp ID: F187-14I	Dilution Factor: 1
Lab File ID: EF27026A	Matrix: SOIL
Ext Btch ID: 18GMF019S	% Moisture: 5.1
Calib. Ref.: EF27016A	Instrument ID: 39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.1	0.26	0.53

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.09	2.20	95	50-150
1,1,1-Trifluorotoluene	2.00	2.20	91	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

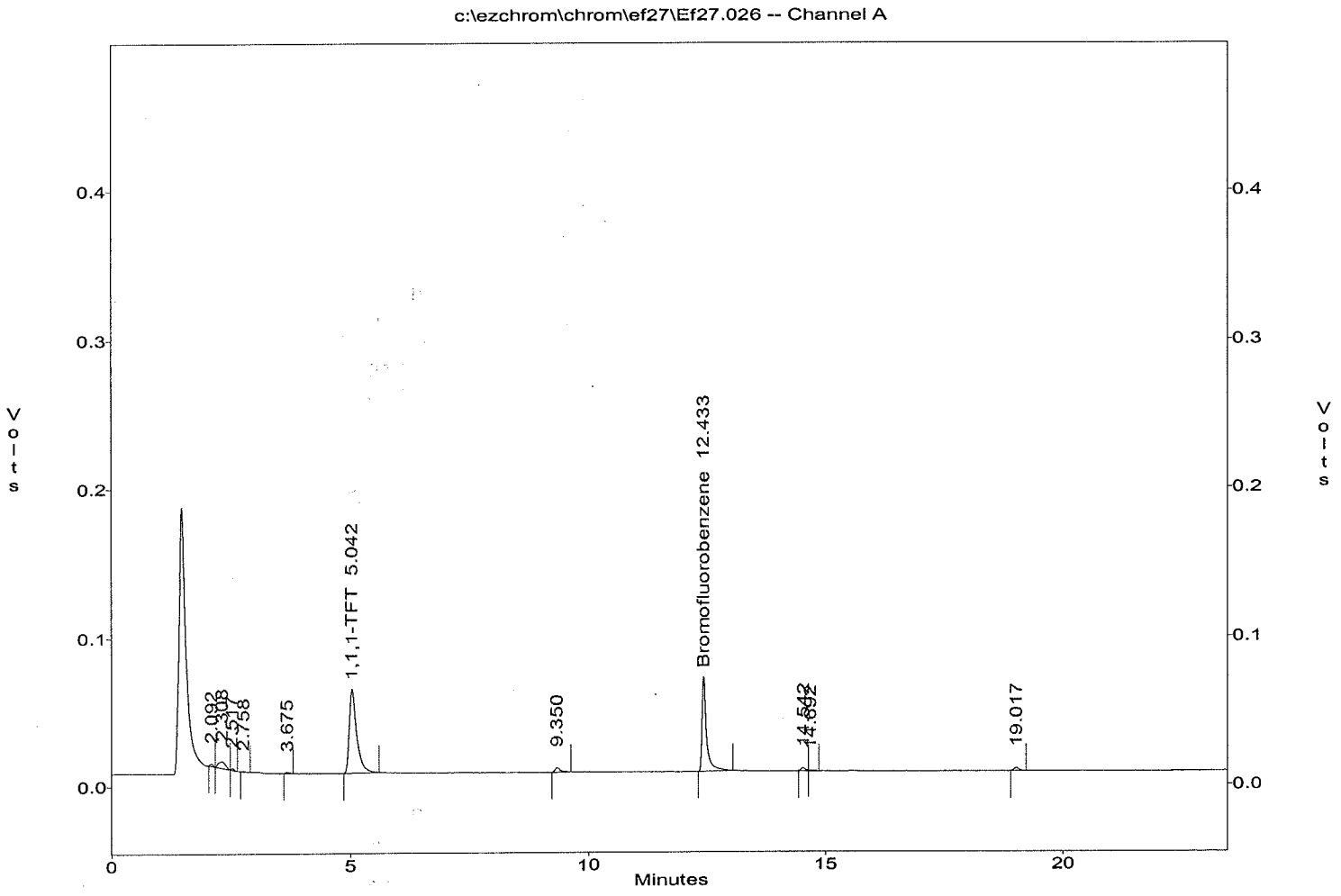
Detection limits are reported relative to sample result significant figures.
Sample Amount : 25.19g Final Volume : 26.3ml (100uL extract)
Prepared by : RTorra Analyzed by : SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.026
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-14I
Acquired : Jun 28, 2018 03:09:30
Printed : Jun 28, 2018 03:33:01
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	5.042	613260.0	16817.6	36.47
8	Bromofluorobenzene	12.433	420774.0	11030.9	38.14
G1	GASOLINE(TOTAL)		119879.0	20153.8	5.95
G2	GRO(C6-C10)		48128.0	16320.2	2.95



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: CH2M HILL	Date Collected:	06/23/18 12:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/26/18 17:06
Sample ID	: 18Q2DP009-SB0601-SO-0	Date Analyzed:	06/28/18 05:06
Lab Samp ID:	F187-15I	Dilution Factor:	1
Lab File ID:	EF27029A	Matrix:	SOIL
Ext Btch ID:	18GMF019S	% Moisture:	7.6
Calib. Ref.:	EF27028A	Instrument ID:	39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	19	1.1	0.27	0.54

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.44	2.30	106	50-150
1,1,1-Trifluorotoluene	2.20	2.30	96	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

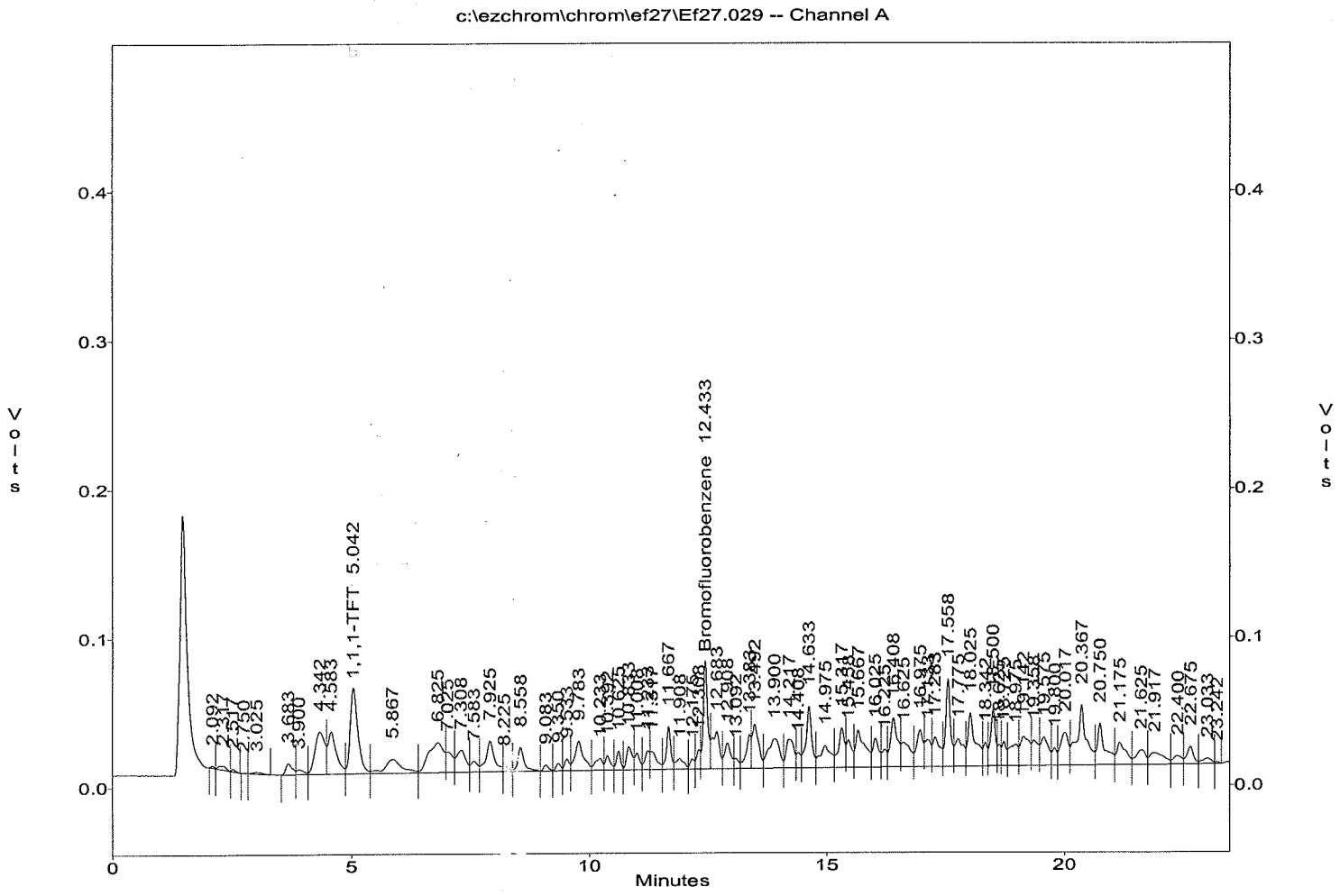
Sample Amount	: 25.36g	Final Volume	: 26.9ml (100uL extract)
Prepared by	: RTorra	Analyzed by	: SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.029
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-15I
Acquired : Jun 28, 2018 05:06:44
Printed : Jun 28, 2018 05:30:16
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
10	1,1,1-TFT	5.042	646296.0	16817.6	38.43
34	Bromofluorobenzene	12.433	469348.0	11030.9	42.55
G1	GASOLINE(TOTAL)		12663613.0	20153.8	628.35
G2	GRO(C6-C10)		5457205.0	16320.2	334.38



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: CH2M HILL	Date Collected:	06/23/18 12:51
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/26/18 17:06
Sample ID	: 18Q2DP009-SB0601-SO-1	Date Analyzed:	06/28/18 05:45
Lab Samp ID:	F187-16I	Dilution Factor:	1
Lab File ID:	EF27030A	Matrix:	SOIL
Ext Btch ID:	18GMF019S	% Moisture:	6.9
Calib. Ref.:	EF27028A	Instrument ID:	39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	26	1.1	0.27	0.54

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.36	2.14	111	50-150
1,1,1-Trifluorotoluene	2.06	2.14	96	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.

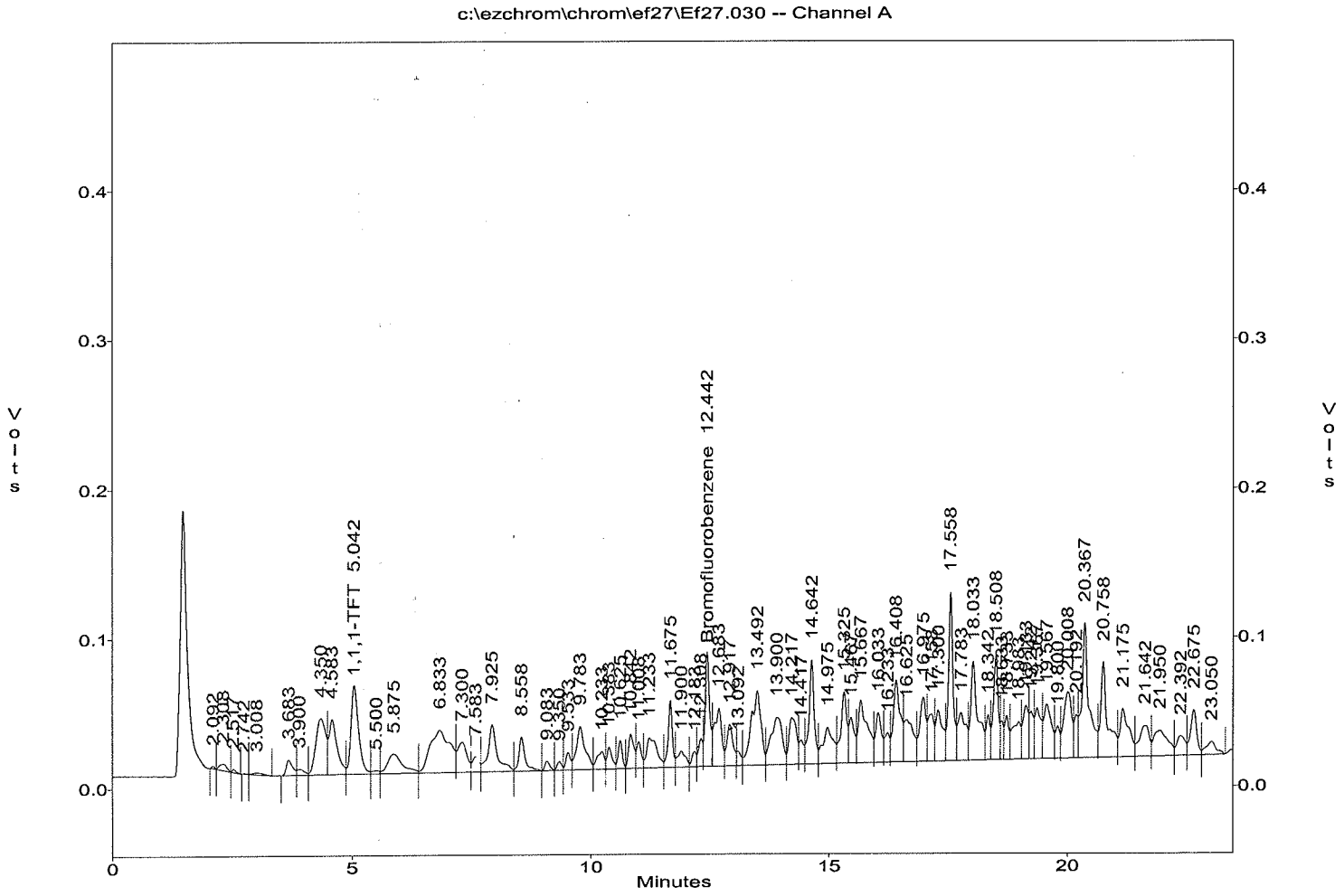
Sample Amount	: 27.02g	Final Volume :	26.9ml (100uL extract)
Prepared by	: RTorra	Analyzed by :	SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.030
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-16I
Acquired : Jun 28, 2018 05:45:44
Printed : Jun 28, 2018 06:09:15
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
10	1,1,1-TFT	5.042	647839.0	16817.6	38.52
32	Bromofluorobenzene	12.442	487727.0	11030.9	44.21
G1	GASOLINE(TOTAL)		20977244.0	20153.8	1040.86
G2	GRO(C6-C10)		7869253.0	16320.2	482.18



METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : CH2M HILL	Date Collected: 06/23/18 13:20
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/26/18 17:06
Sample ID : 18Q2DP009-IDW-S001	Date Analyzed: 06/28/18 06:24
Lab Samp ID: F187-17I	Dilution Factor: 1
Lab File ID: EF27031A	Matrix: SOIL
Ext Btch ID: 18GMF019S	% Moisture: 8.1
Calib. Ref.: EF27028A	Instrument ID: 39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	2.1	1.1	0.27	0.54

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	2.85	2.87	99	50-150
1,1,1-Trifluorotoluene	2.50	2.87	87	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

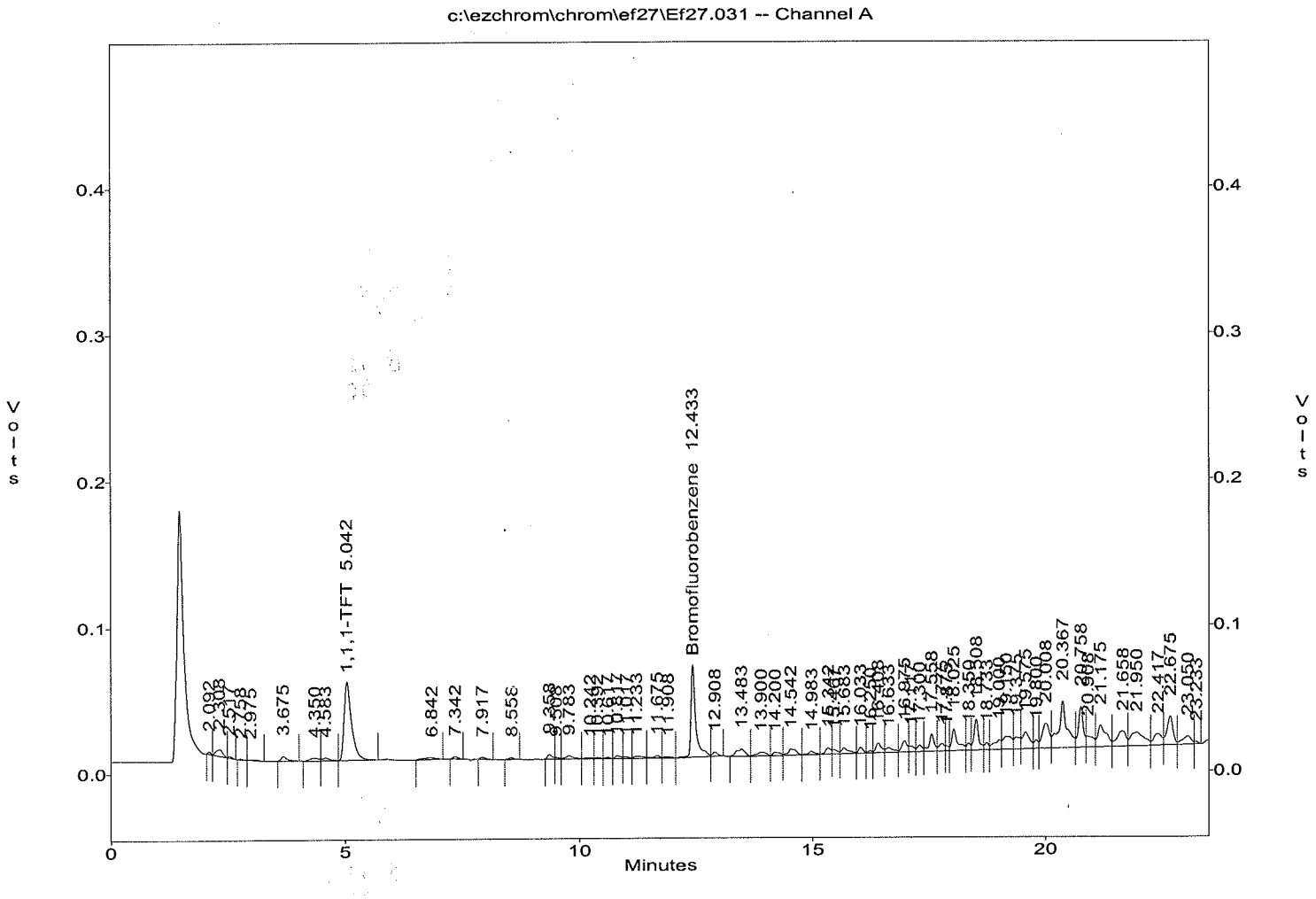
Detection limits are reported relative to sample result significant figures.
Sample Amount : 20.17g Final Volume : 26.6ml (100uL extract)
Prepared by : RTorra Analyzed by : SCerva

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.031
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-17I
Acquired : Jun 28, 2018 06:24:50
Printed : Jun 28, 2018 06:48:22
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
9	1,1,1-TFT	5.042	584442.0	16817.6	34.75
25	Bromofluorobenzene	12.433	437680.0	11030.9	39.68
G1	GASOLINE(TOTAL)		3564782.0	20153.8	176.88
G2	GRO(C6-C10)		482903.0	16320.2	29.59



QC SUMMARIES

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : CH2M HILL	Date Collected: 06/26/18 17:06
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/26/18 17:06
Sample ID : MBLK1S	Date Analyzed: 06/27/18 12:48
Lab Samp ID: GMF019SB	Dilution Factor: 1
Lab File ID: EF27004A	Matrix: SOIL
Ext Btch ID: 18GMF019S	% Moisture: NA
Calib. Ref.: EF27003A	Instrument ID: 39

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
GRO	ND	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
4-Bromofluorobenzene	1.84	2.00	92	50-150
1,1,1-Trifluorotoluene	1.90	2.00	95	50-150

Notes:

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5g Final Volume : 5.00ml (100uL extract)
Prepared by : RTorra Analyzed by : SCerva

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : AK101

MATRIX	: SOIL		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1S	LCS1S	LCD1S
LAB SAMPLE ID	: GMF019SB	GMF019SL	GMF019SC
LAB FILE ID	: EF27004A	EF27005A	EF27006A
DATE PREPARED	: 06/26/18 17:06	06/26/18 17:06	06/26/18 17:06
DATE ANALYZED	: 06/27/18 12:48	06/27/18 13:27	06/27/18 14:06
PREP BATCH	: 18GMF019S	18GMF019S	18GMF019S
CALIBRATION REF	: EF27003A	EF27003A	EF27003A

ACCESSION:

PARAMETERS	MBResult (mg/kg)	SpikeAmt (mg/kg)	LCSResult (mg/kg)	LCSRec (%)	SpikeAmt (mg/kg)	LCDResult (mg/kg)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
GRO	ND	25.0	20.8	83	25.0	20.6	82	1	60-120	20

SURROGATE PARAMETERS	SpikeAmt (mg/kg)	LCSResult (mg/kg)	LCSRec (%)	SpikeAmt (mg/kg)	LCDResult (mg/kg)	LCDRec (%)	QCLimit (%)
4-Bromofluorobenzene	2.00	2.27	114	2.00	2.15	108	60-120
1,1,1-Trifluorotoluene	2.00	1.86	93	2.00	1.82	91	60-120

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER T0075
BATCH NO. : 18F187
METHOD : AK101

MATRIX	: SOIL		% MOISTURE:3.9
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 18Q2DP009-SB0501-SO-0	18Q2DP009-SB0501-SO-0MS	18Q2DP009-SB0501-SO-0MSD
LAB SAMPLE ID	: F187-07I	F187-07M	F187-07S
LAB FILE ID	: EF27017A	EF27018A	EF27034A
DATE PREPARED	: 06/26/18 17:06	06/26/18 17:06	06/26/18 17:06
DATE ANALYZED	: 06/27/18 21:18	06/27/18 21:57	06/28/18 10:04
PREP BATCH	: 18GMF019S	18GMF019S	18GMF019S
CALIBRATION REF	: EF27016A	EF27016A	EF27032A

ACCESSION:

PARAMETERS	PSResult (mg/kg)	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
GRO	ND	29.7	26.0	88	28.4	24.5	86	6	60-120	20

SURROGATE PARAMETERS	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	QCLimit (%)
4-Bromofluorobenzene	2.36	2.84	120	2.27	2.70	119	50-150
1,1,1-Trifluorotoluene	2.36	2.18	92	2.27	2.15	95	50-150

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

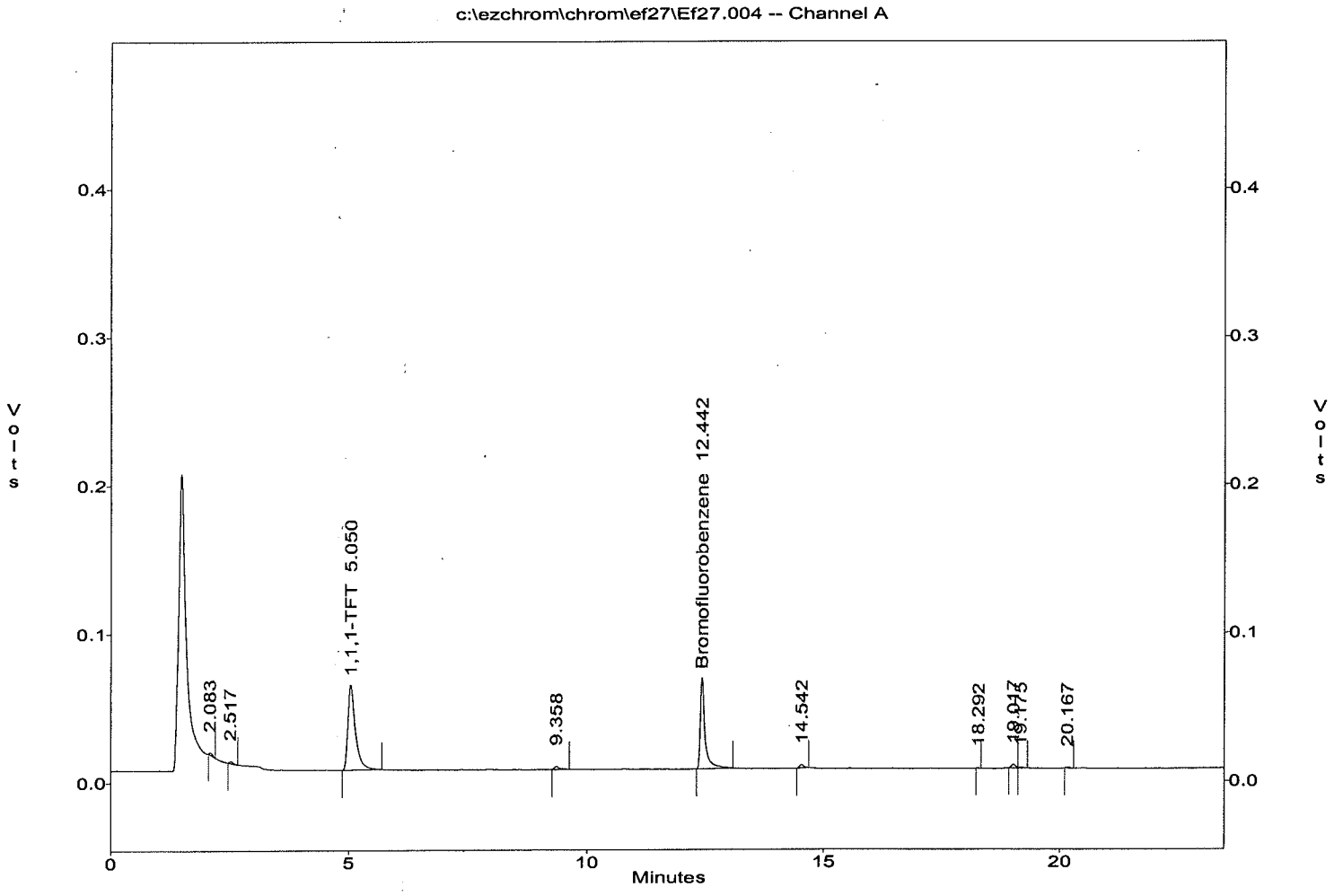
QC DATA

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.004
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : GMF019SB
Acquired : Jun 27, 2018 12:48:43
Printed : Jun 27, 2018 13:12:16
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
3	1,1,1-TFT	5.050	637402.0	16817.6	37.90
5	Bromofluorobenzene	12.442	406122.0	11030.9	36.82
G1	GASOLINE(TOTAL)		61337.0	20153.8	3.04
G2	GRO(C6-C10)		33811.0	16320.2	2.07

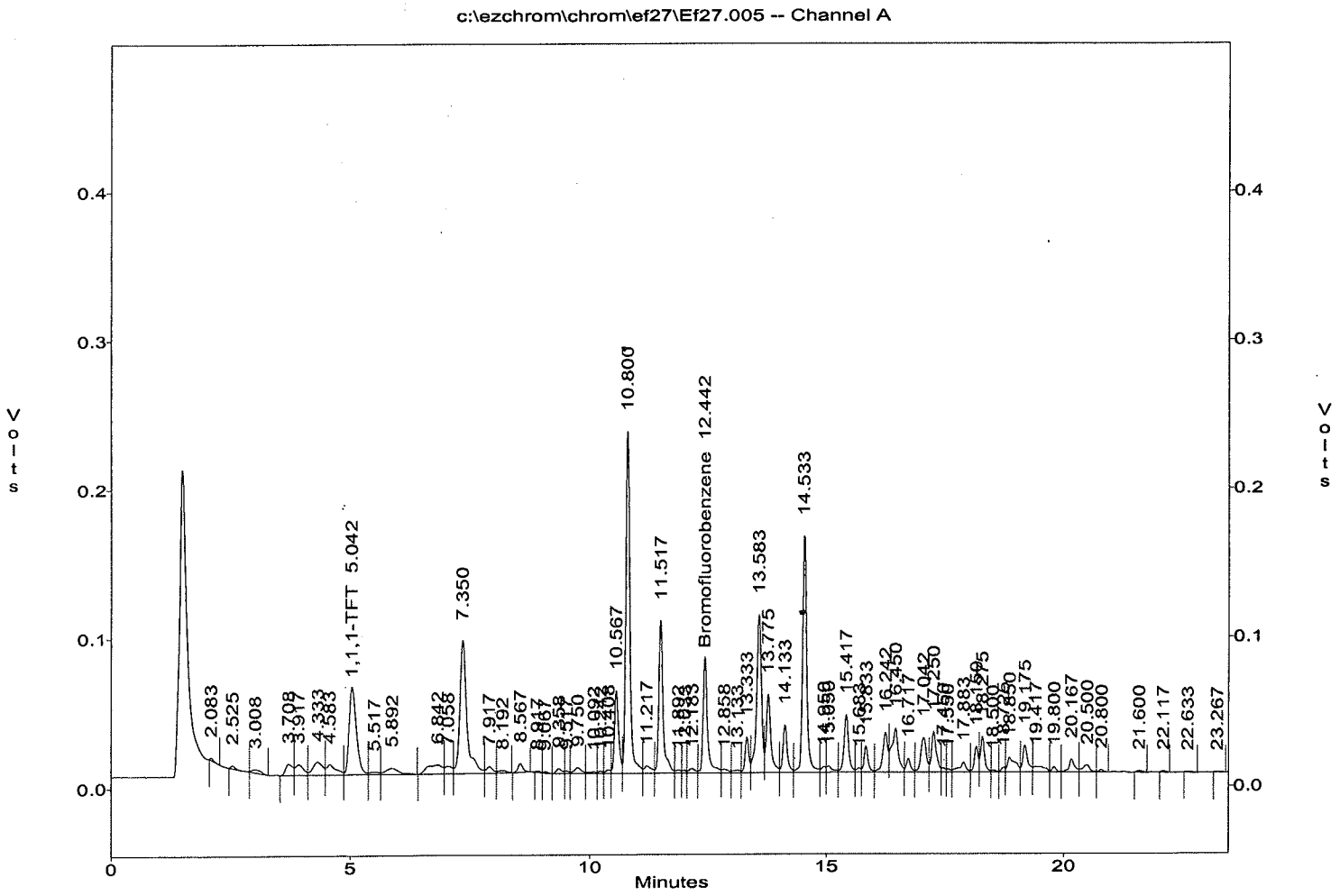


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.005
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : GMF019SL
Acquired : Jun 27, 2018 13:27:37
Printed : Jun 27, 2018 13:51:09
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
8	1,1,1-TFT	5.042	624902.0	16817.6	37.16
32	Bromofluorobenzene	12.442	501098.0	11030.9	45.43
G1	GASOLINE(TOTAL)		9018127.0	20153.8	447.47
G2	GRO(C6-C10)		6791280.0	16320.2	416.13

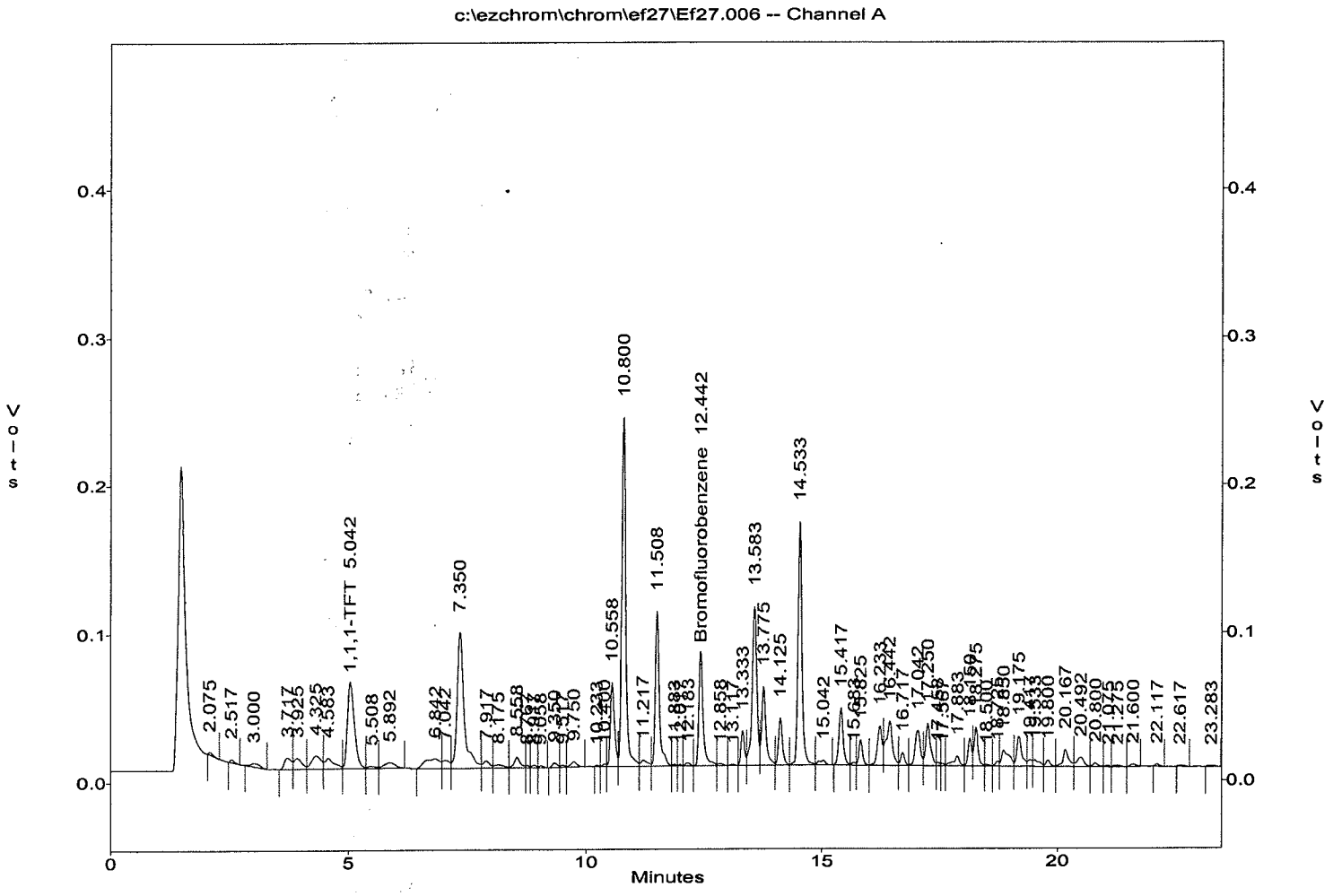


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.006
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : GMF019SC
Acquired : Jun 27, 2018 14:06:32
Printed : Jun 27, 2018 14:30:04
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
8	1,1,1-TFT	5.042	612783.0	16817.6	36.44
32	Bromofluorobenzene	12.442	475089.0	11030.9	43.07
G1	GASOLINE(TOTAL)		8981933.0	20153.8	445.67
G2	GRO(C6-C10)		6733415.0	16320.2	412.58

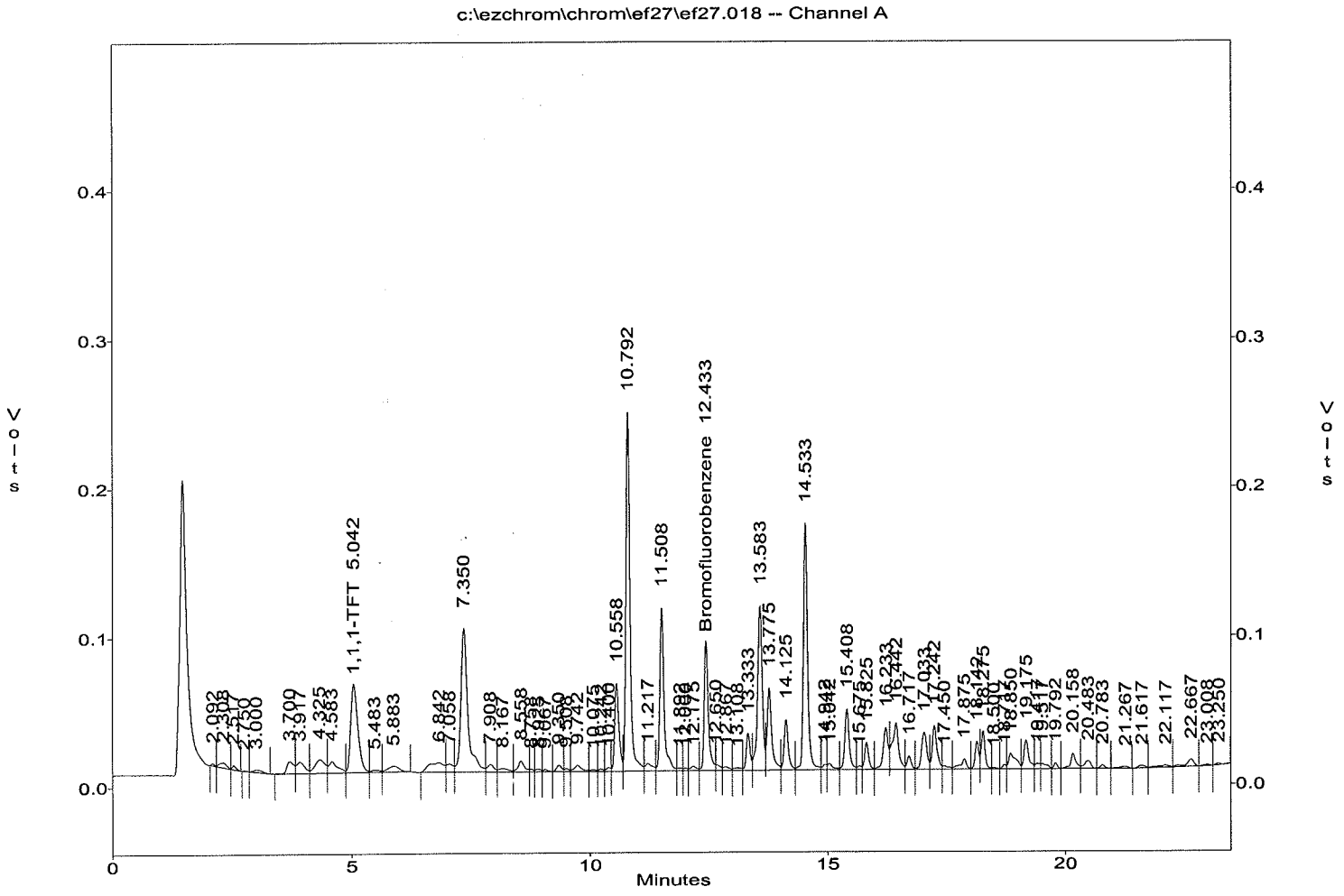


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\ef27.018
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : F187-07M
Acquired : Jun 27, 2018 21:57:14
Printed : Jun 28, 2018 09:55:10
User : JChun

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
10	1,1,1-TFT	5.042	618597.0	16817.6	36.78
35	Bromofluorobenzene	12.433	527996.0	11030.9	47.87
G1	GASOLINE(TOTAL)		9541354.0	20153.8	473.43
G2	GRO(C6-C10)		7154472.0	16320.2	438.38

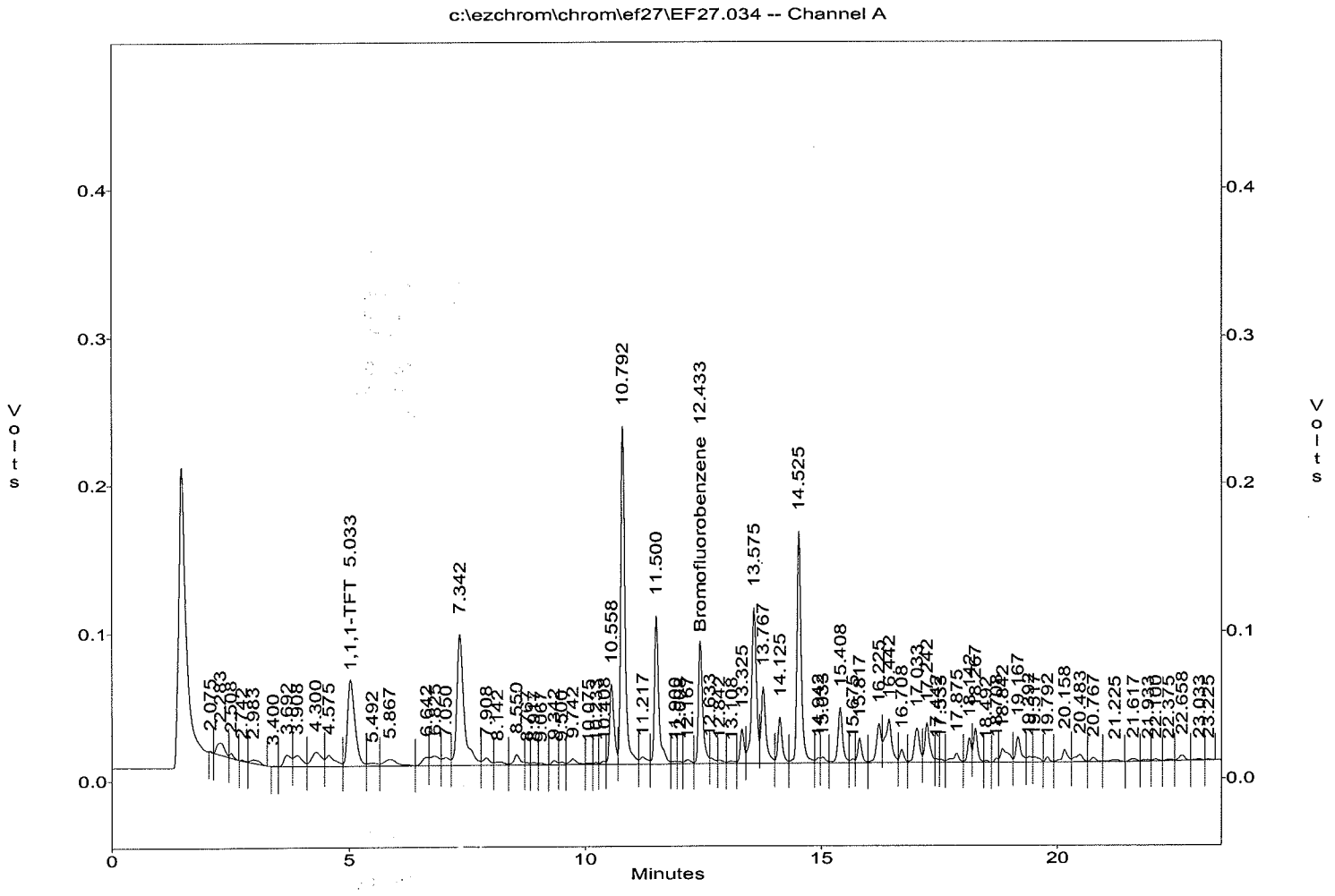


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\EF27.034
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : F187-07S
Acquired : Jun 28, 2018 10:04:23
Printed : Jun 28, 2018 10:45:10
User : JChun

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.033	638269.0	16817.6	37.95
37	Bromofluorobenzene	12.433	525725.0	11030.9	47.66
G1	GASOLINE(TOTAL)		9390423.0	20153.8	465.94
G2	GRO(C6-C10)		7049769.0	16320.2	431.97



INITIAL CALIBRATION

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : RTX-5
Column size ID : 30m X 0.53mm X 1.5um
LFID & Datetime: EA30002A 01/30/18 14:56
LFID & Datetime: EA30003A 01/30/18 15:35
LFID & Datetime: EA30004A 01/30/18 16:14
LFID & Datetime: EA30005A 01/30/18 16:53
LFID & Datetime: EA30006A 01/30/18 17:31
LFID & Datetime: EA30007A 01/30/18 18:10
LFID & Datetime: EA30008A 01/30/18 18:49
CONC UNIT: ppb

	CONC	CALIBRATION FACTORS (AREA)/UNIT								
COMPOUND	X	1.00X	2.50X	5.00X	25.00X	50.00X	75.00X	100.00X	MEAN	%RSD
Gasoline(TOTAL)	20.00	20336	19508	19432	21260	20457	19955	20128	20153.8	3.1
GRO(C6-C10)	20.00	16774	16401	15303	17216	16472	16021	16055	16320.2	3.7
SURROGATE	X	1.00X	2.00X	3.00X	4.00X	5.00X	6.00X	8.00X	MEAN	%RSD
Bromofluorobenzene	10.00	8522	9887	10484	11932	11956	12082	12354	11030.9	13.0
1,1,1-Trifluorotoluene	10.00	16275	16373	15753	17072	17382	17446	17422	16817.6	4.0

VG39A30A.MET

FORM VI 8015P -2 1/96

LEE 5/30/18

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : RTX-5
Column size ID : 30m X 0.53mm X 1.5um
LFID & Datetime: EA30002A 01/30/18 14:56
LFID & Datetime: EA30003A 01/30/18 15:35
LFID & Datetime: EA30004A 01/30/18 16:14
LFID & Datetime: EA30005A 01/30/18 16:53
LFID & Datetime: EA30006A 01/30/18 17:31
LFID & Datetime: EA30007A 01/30/18 18:10
LFID & Datetime: EA30008A 01/30/18 18:49

	RT OF STANDARDS (MIN)							MEAN	RT WINDOW		RTWINDOW
COMPOUND	1.0X	2.5X	5.0X	25.0X	50.0X	75.0X	100.0X	RT	FROM	TO	WIDTH
Gasoline(TOTAL)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO(C6-C10)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SURROGATE	1.0X	2.0X	3.0X	4.0X	5.0X	6.0X	8.0X	RT	FROM	TO	WIDTH
Bromofluorobenzene	12.442	12.442	12.442	12.442	12.442	12.442	12.442	12.442	12.334	12.550	0.108
1,1,1-Trifluorotoluene	5.042	5.050	5.050	5.050	5.050	5.058	5.050	5.050	4.739	5.361	0.311

VG39A30A.MET

FORM VI 8015P -1 1/96

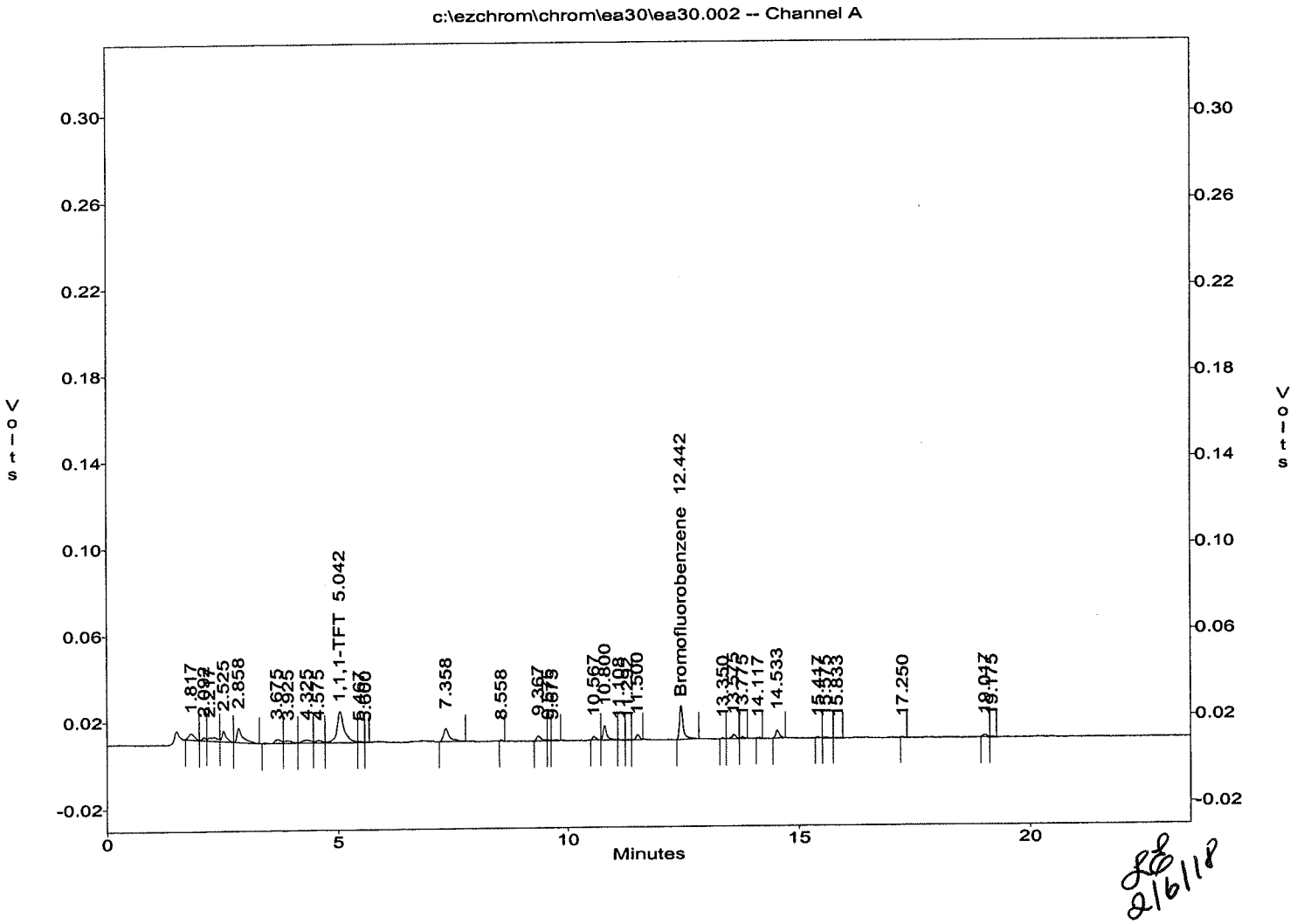
5/30/18

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea30\ea30.002
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : VG39A30A1 20/10
Acquired : Jan 30, 2018 14:56:14
Printed : Jan 31, 2018 10:24:19
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
10	1,1,1-TFT	5.042	162747.0	16817.6	10.00
23	Bromofluorobenzene	12.442	85220.0	11030.9	10.00
G1	GASOLINE(TOTAL)		406721.0	20153.8	20.00
G2	GRO(C6-C10)		335473.0	16320.2	20.00



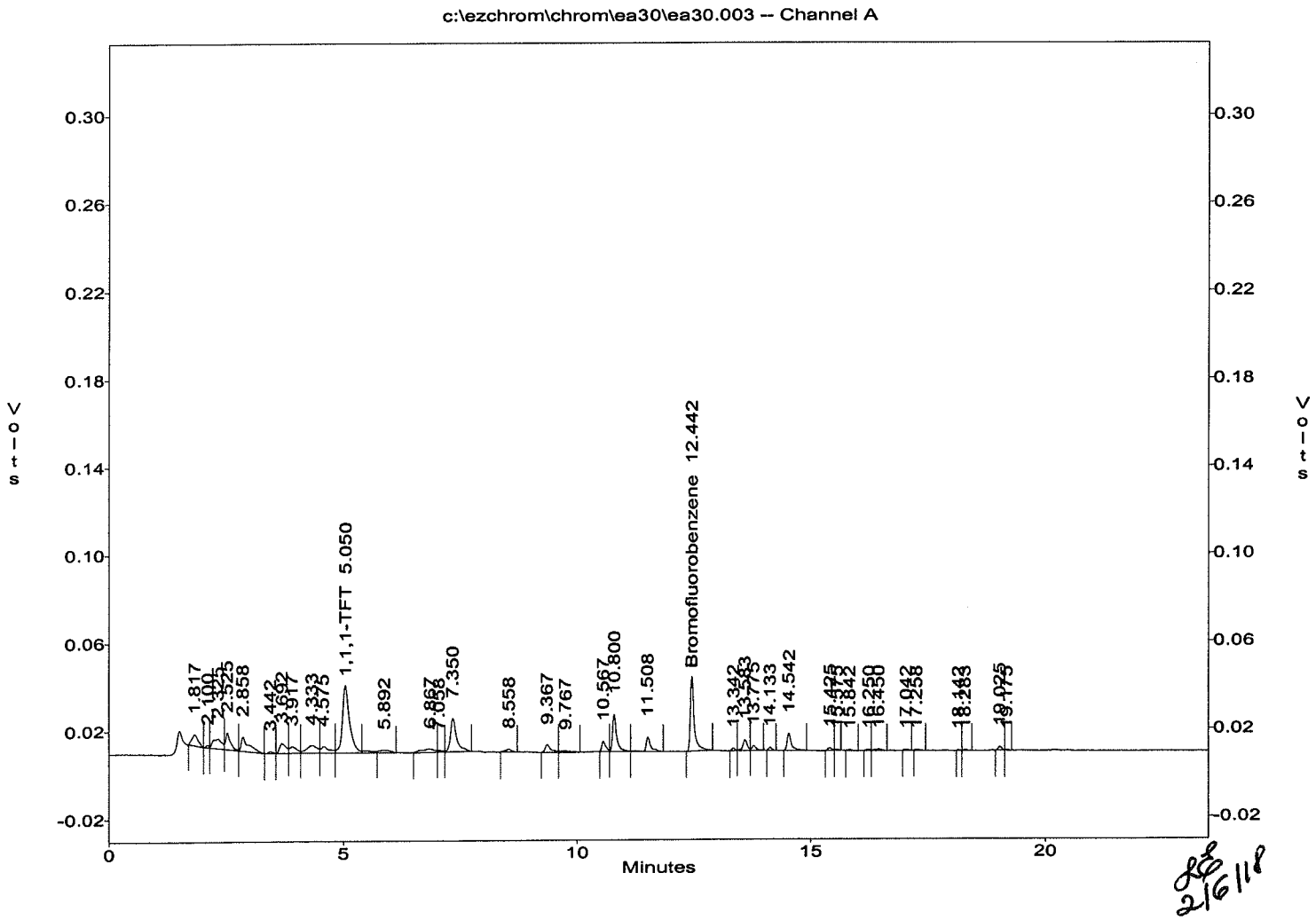
2/6/18

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea30\ea30.003
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : VG39A30A2 50/20
Acquired : Jan 30, 2018 15:35:15
Printed : Jan 31, 2018 10:24:10
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.050	327457.0	16817.6	20.00
22	Bromofluorobenzene	12.442	197736.0	11030.9	20.00
G1	GASOLINE(TOTAL)		975411.0	20153.8	50.00
G2	GRO(C6-C10)		820025.0	16320.2	50.00



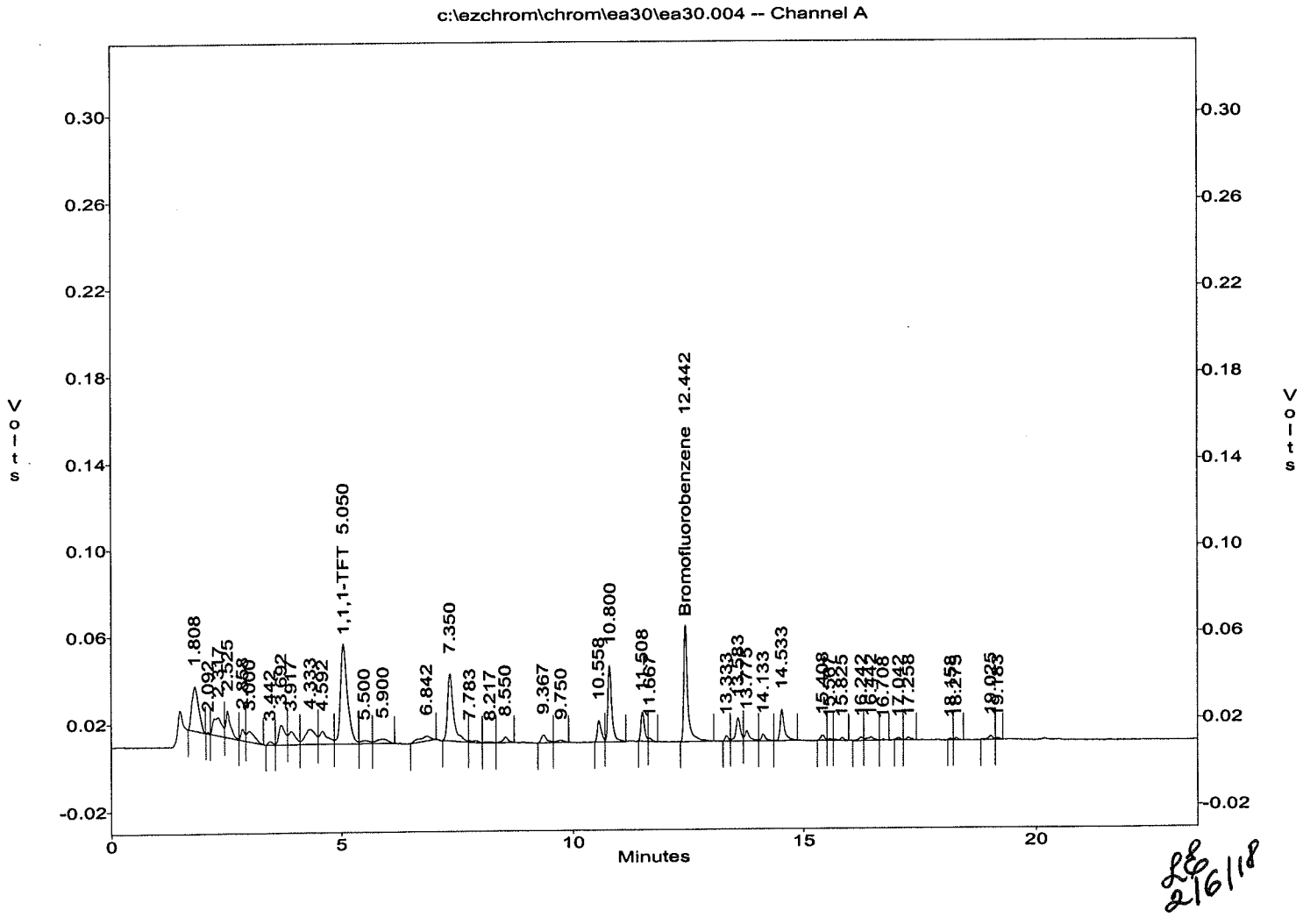
2/6/18

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea30\ea30.004
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : VG39A30A3 100/30
Acquired : Jan 30, 2018 16:14:11
Printed : Jan 31, 2018 10:23:59
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
12	1,1,1-TFT	5.050	472599.0	16817.6 ·	30.00
26	Bromofluorobenzene	12.442	314531.0	11030.9 ·	30.00
G1	GASOLINE(TOTAL)		1943179.0	20153.8 ·	100.00
G2	GRO(C6-C10)		1530348.0	16320.2 ·	100.00



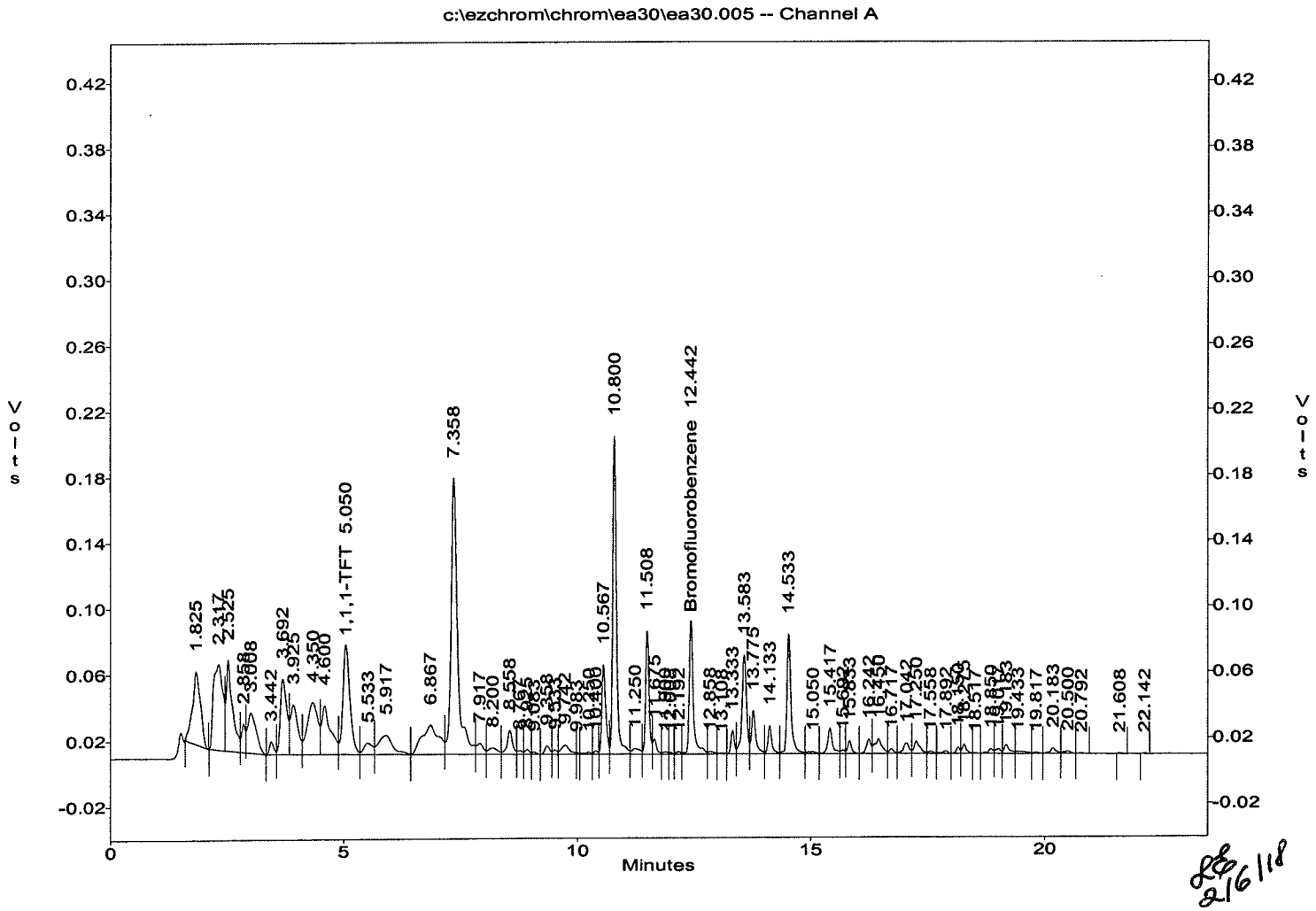
LE 2/6/18

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea30\ea30.005
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : VG39A30A4 500/40
Acquired : Jan 30, 2018 16:53:05
Printed : Jan 31, 2018 10:25:07
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.050	682897.0	16817.6 ·	40.00
36	Bromofluorobenzene	12.442	477277.0	11030.9 ·	40.00
G1	GASOLINE(TOTAL)		10630161.0	20153.8 ·	500.00
G2	GRO(C6-C10)		8607799.0	16320.2 ·	500.00



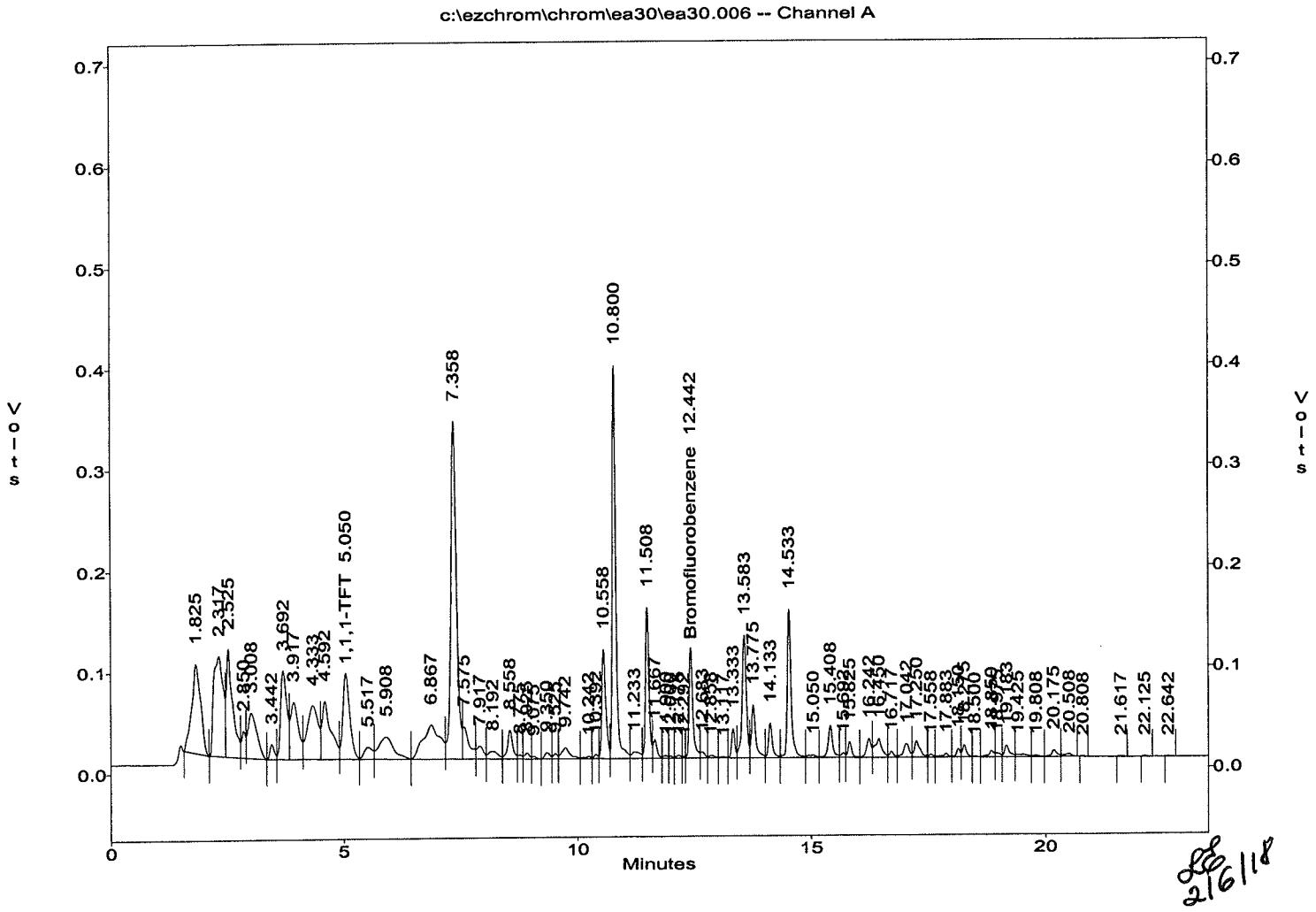
LC 2/6/18

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea30\ea30.006
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : VG39A30A5 1000/50
Acquired : Jan 30, 2018 17:31:55
Printed : Jan 31, 2018 10:33:23
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.050	869077.0	16817.6	50.00
37	Bromofluorobenzene	12.442	597784.0	11030.9	50.00
G1	GASOLINE(TOTAL)		20456772.0	20153.8	1000.00
G2	GRO(C6-C10)		16472080.0	16320.2	1000.00



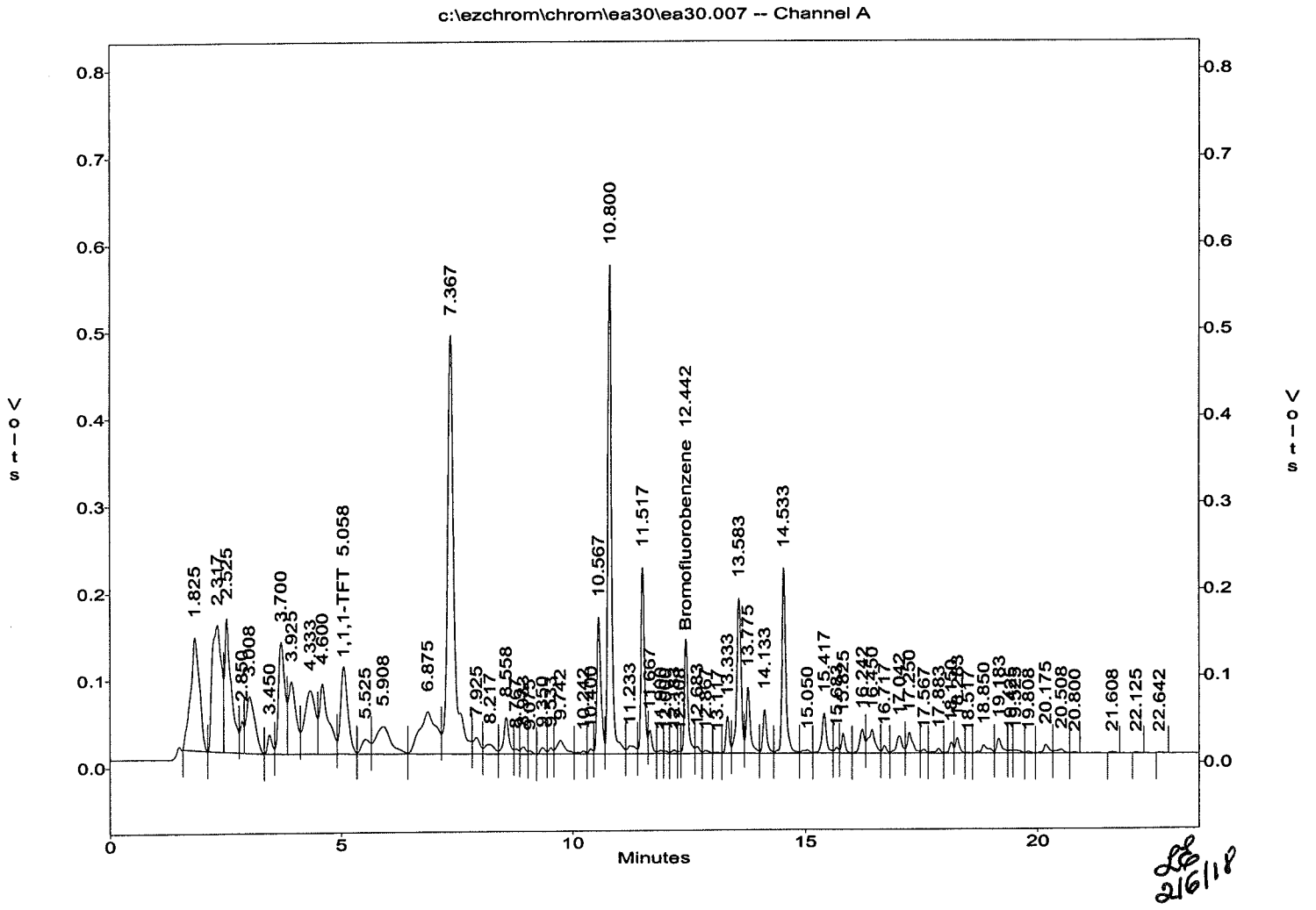
2/6/18

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea30\ea30.007
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : VG39A30A6 1500/60
Acquired : Jan 30, 2018 18:10:39
Printed : Jan 31, 2018 10:30:36
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.058	1046783.0	16817.6	60.00
36	Bromofluorobenzene	12.442	724909.0	11030.9	60.00
G1	GASOLINE(TOTAL)		29932626.0	20153.8	1500.00
G2	GRO(C6-C10)		24031056.0	16320.2	1500.00



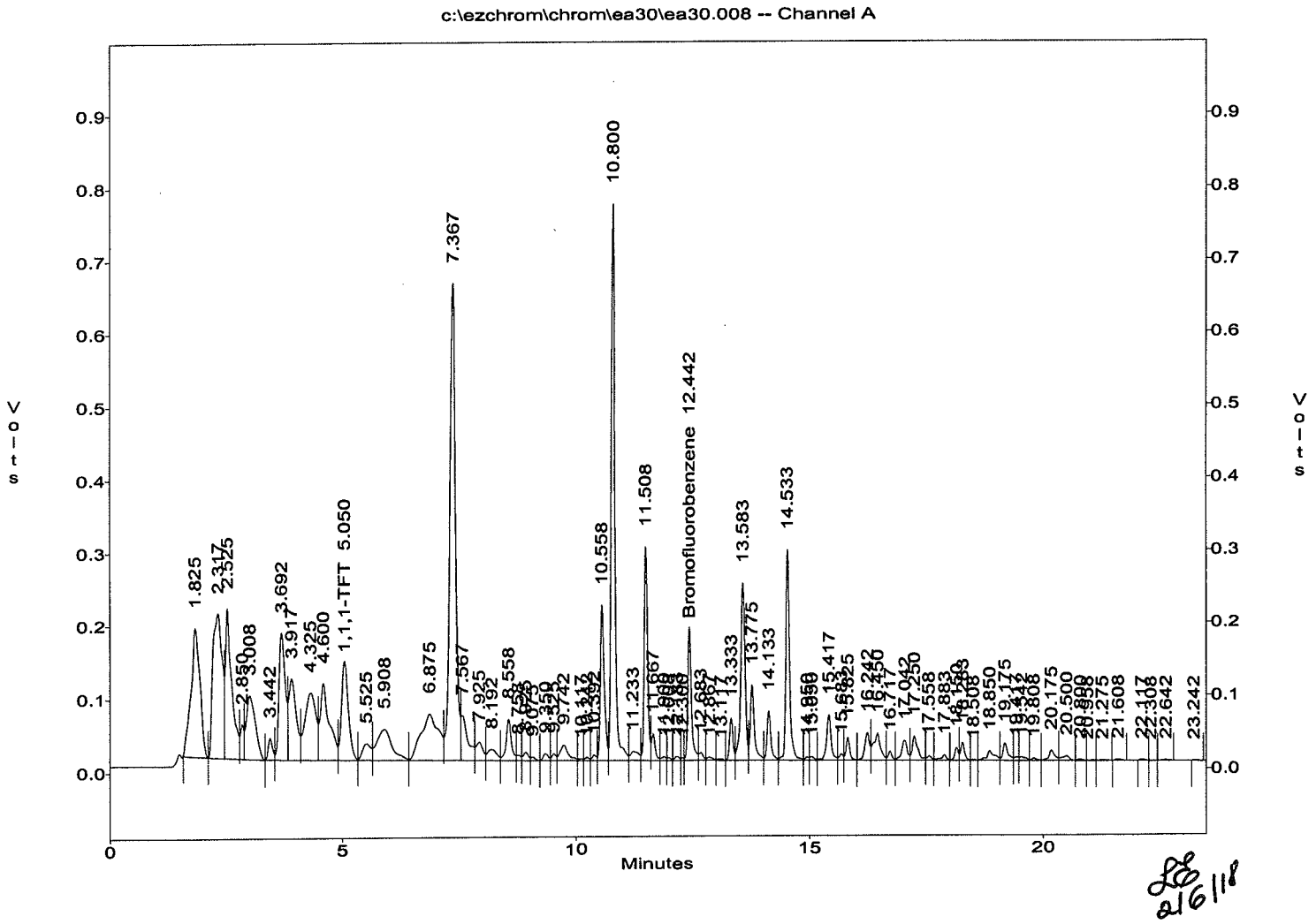
LE 2/6/18

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea30\ea30.008
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : VG39A30A7 2000/80
Acquired : Jan 30, 2018 18:49:36
Printed : Jan 31, 2018 10:29:06
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.050	1393752.0	16817.6	80.00
38	Bromofluorobenzene	12.442	988312.0	11030.9	80.00
G1	GASOLINE(TOTAL)		40256704.0	20153.8	2000.00
G2	GRO(C6-C10)		32110442.0	16320.2	2000.00



2/6/18

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : RTX-5
Column size ID : 30m X 0.53mm X 1.5um
Mid Conc Init LFID & Datetime: EA30006A 01/30/2018 17:31
Conc Cont LFID & Datetime: EA30009A 01/30/2018 19:28
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Gasoline(TOTAL)	NA	NA	NA	1000.0	20153.8	19959040	990.34	-1		20
GRO(C6-C10)	NA	NA	NA	1000.0	16320.2	14901934	913.10	-9		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
Bromofluorobenzene	12.442	12.334	12.550	50.0	11030.9	650922	59.01	18		20
1,1,1-Trifluorotoluene	5.050	4.739	5.361	50.0	16817.6	824156	49.01	-2		20

VG39A30A.MET

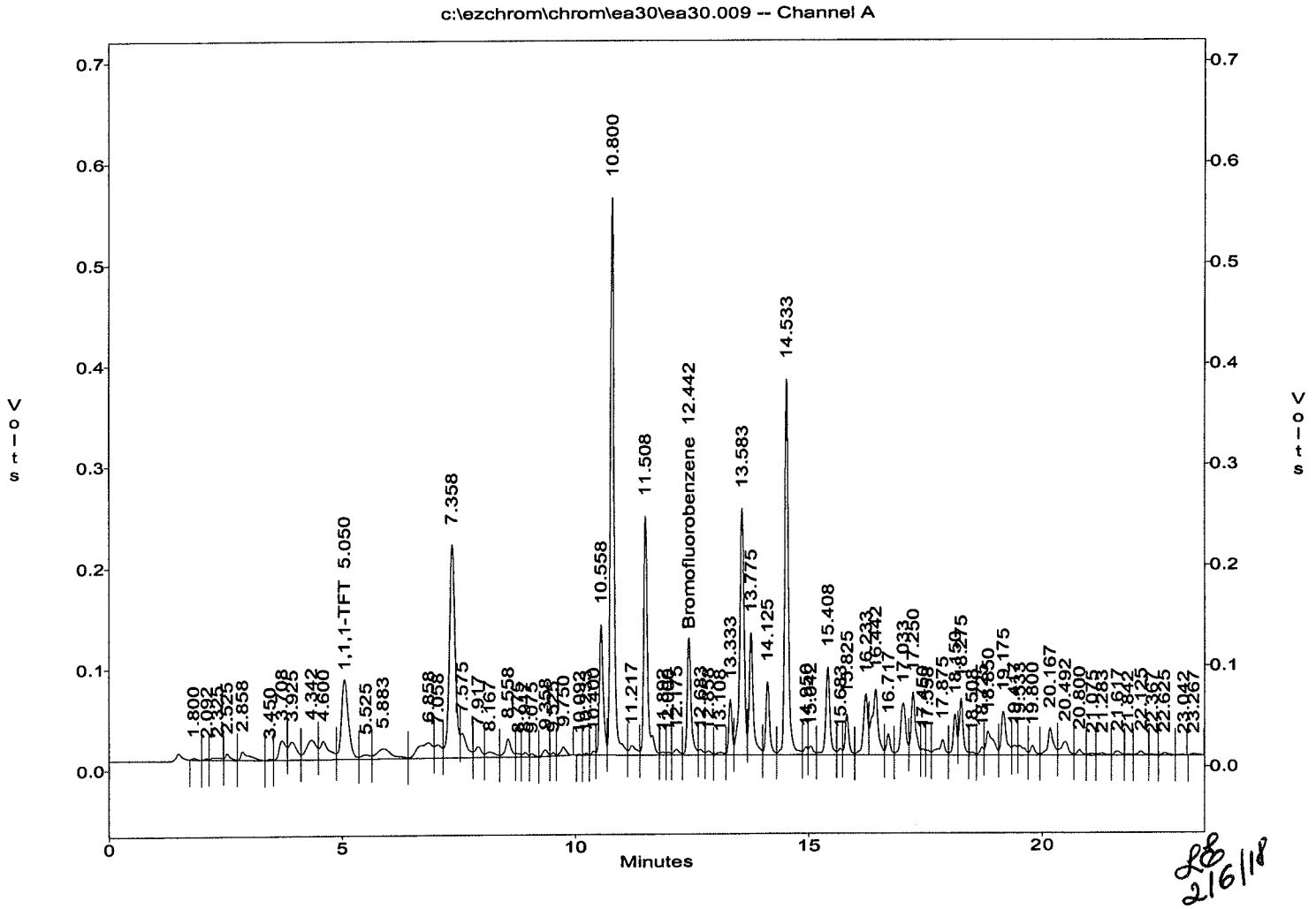
LL 5/30/18

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea30\ea30.009
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : IVG39A30A01 1000/50
Acquired : Jan 30, 2018 19:28:18
Printed : Jan 31, 2018 10:33:59
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.050	824156.0	16817.6	49.01
37	Bromofluorobenzene	12.442	650922.0	11030.9	59.01
G1	GASOLINE(TOTAL)		19959040.0	20153.8	990.34
G2	GRO(C6-C10)		14901934.0	16320.2	913.10



2/6/18

DAILY CALIBRATIONS

CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EA30005A 01/30/2018 16:53
Conc Cont LFID & Datetime: EF27003A 06/27/2018 12:09
CONC UNIT : ppb

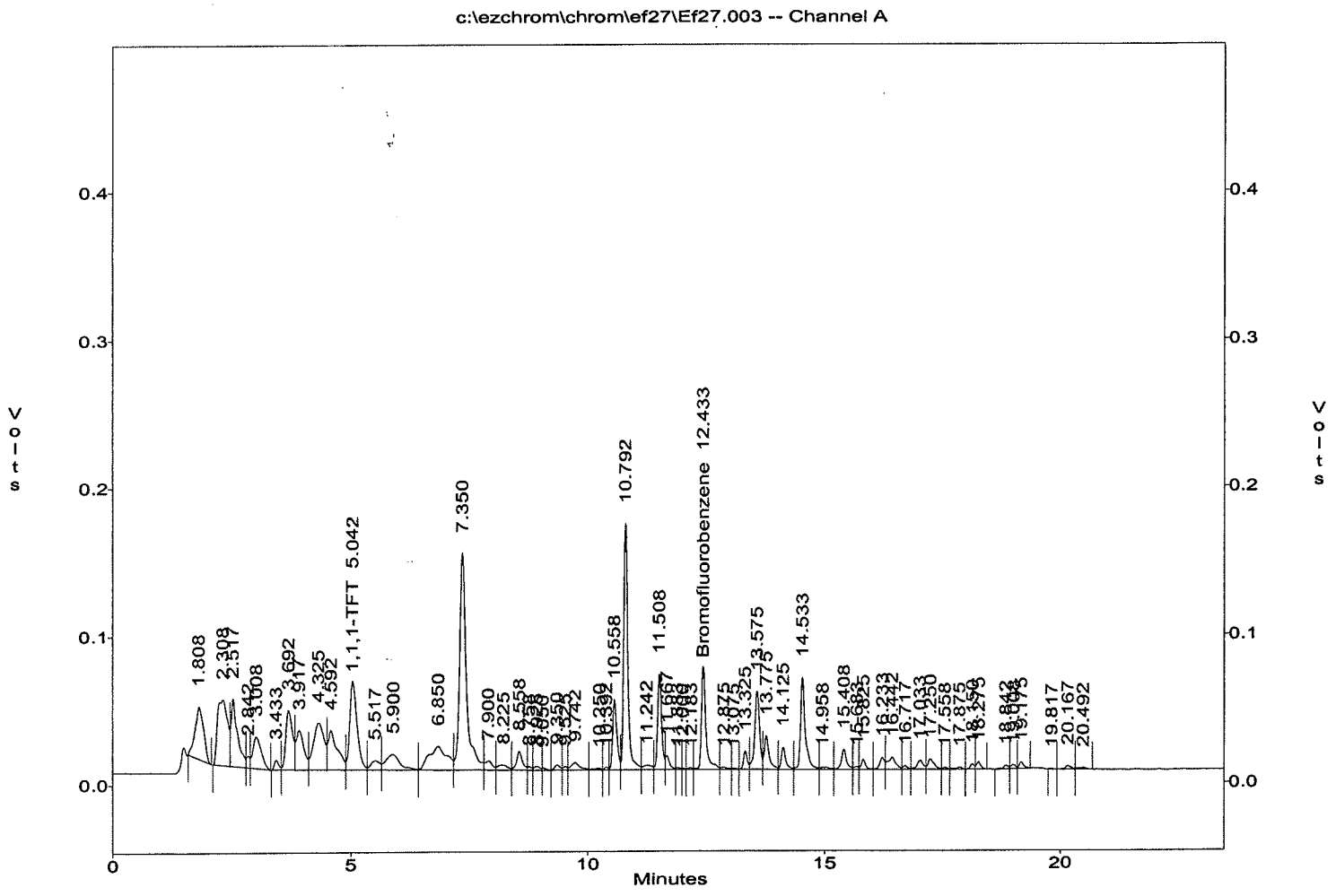
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Gasoline(TOTAL)	NA	NA	NA	500.0	20153.8	9652392	478.94	-4		20
GRO(C6-C10)	NA	NA	NA	500.0	16320.2	7930605	485.94	-3		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
Bromofluorobenzene	12.433	12.325	12.541	40.0	11030.9	446507	40.48	1		20
1,1,1-Trifluorotoluene	5.042	4.731	5.353	40.0	16817.6	637936	37.93	-5		20

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.003
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : CVG39A30296 500/40
Acquired : Jun 27, 2018 12:09:58
Printed : Jun 27, 2018 12:33:30
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.042	637936.0	16817.6	37.93
35	Bromofluorobenzene	12.433	446507.0	11030.9	40.48
G1	GASOLINE(TOTAL)		9652392.0	20153.8	478.94
G2	GRO(C6-C10)		7930605.0	16320.2	485.94



CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EA30005A 01/30/2018 16:53
Conc Cont LFID & Datetime: EF27016A 06/27/2018 20:39
CONC UNIT : ppb

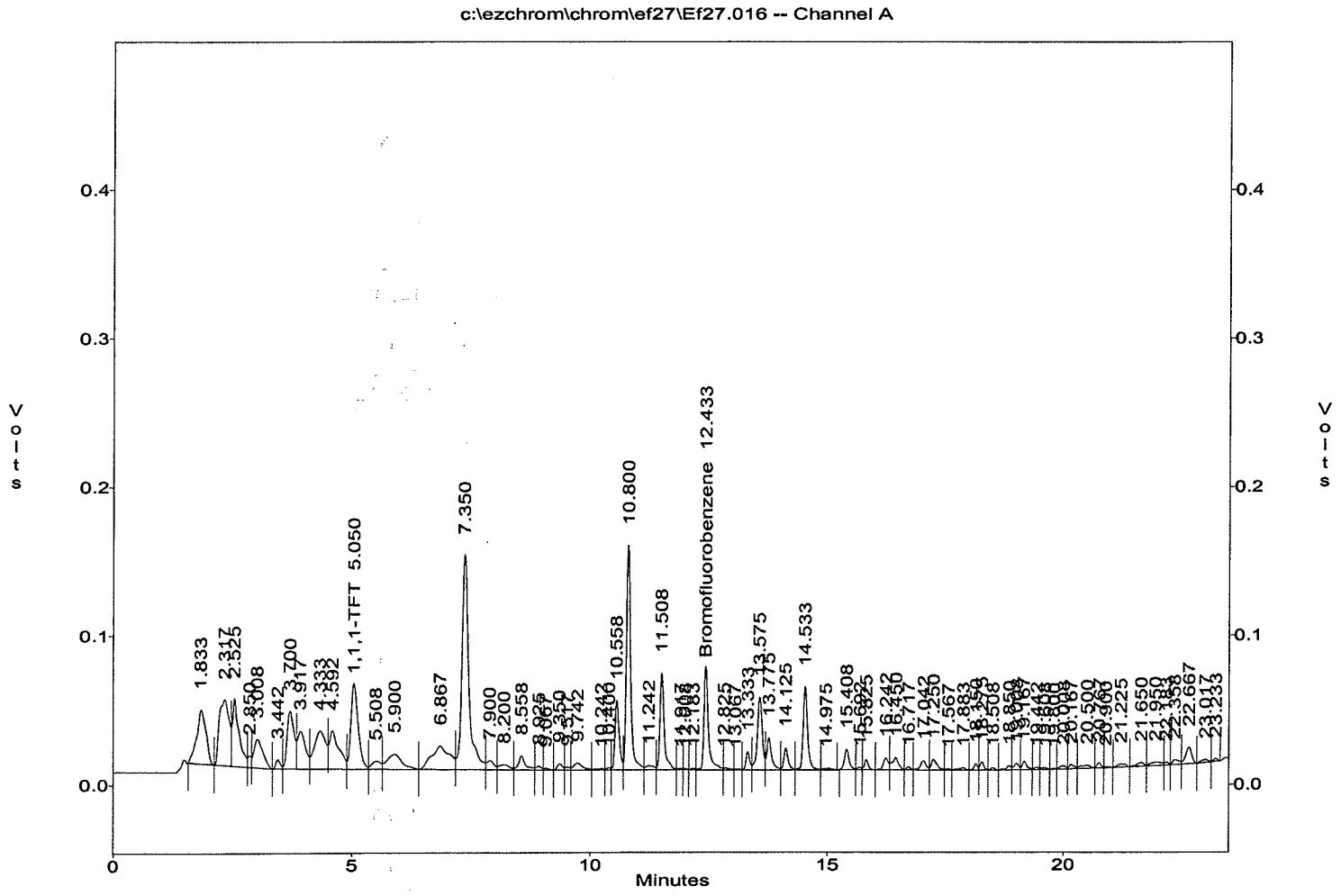
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Gasoline(TOTAL)	NA	NA	NA	500.0	20153.8	9576967	475.19	-5		20
GRO(C6-C10)	NA	NA	NA	500.0	16320.2	7521078	460.85	-8		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
Bromofluorobenzene	12.433	12.325	12.541	40.0	11030.9	441301	40.01	0		20
1,1,1-Trifluorotoluene	5.050	4.739	5.361	40.0	16817.6	627405	37.31	-7		20

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.016
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : CVG39A30297 500/40
Acquired : Jun 27, 2018 20:39:22
Printed : Jun 27, 2018 21:02:54
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.050	627405.0	16817.6	37.31
33	Bromofluorobenzene	12.433	441301.0	11030.9	40.01
G1	GASOLINE(TOTAL)		9576967.0	20153.8	475.19
G2	GRO(C6-C10)		7521078.0	16320.2	460.85



CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EA30005A 01/30/2018 16:53
Conc Cont LFID & Datetime: EF27028A 06/28/2018 04:27
CONC UNIT : ppb

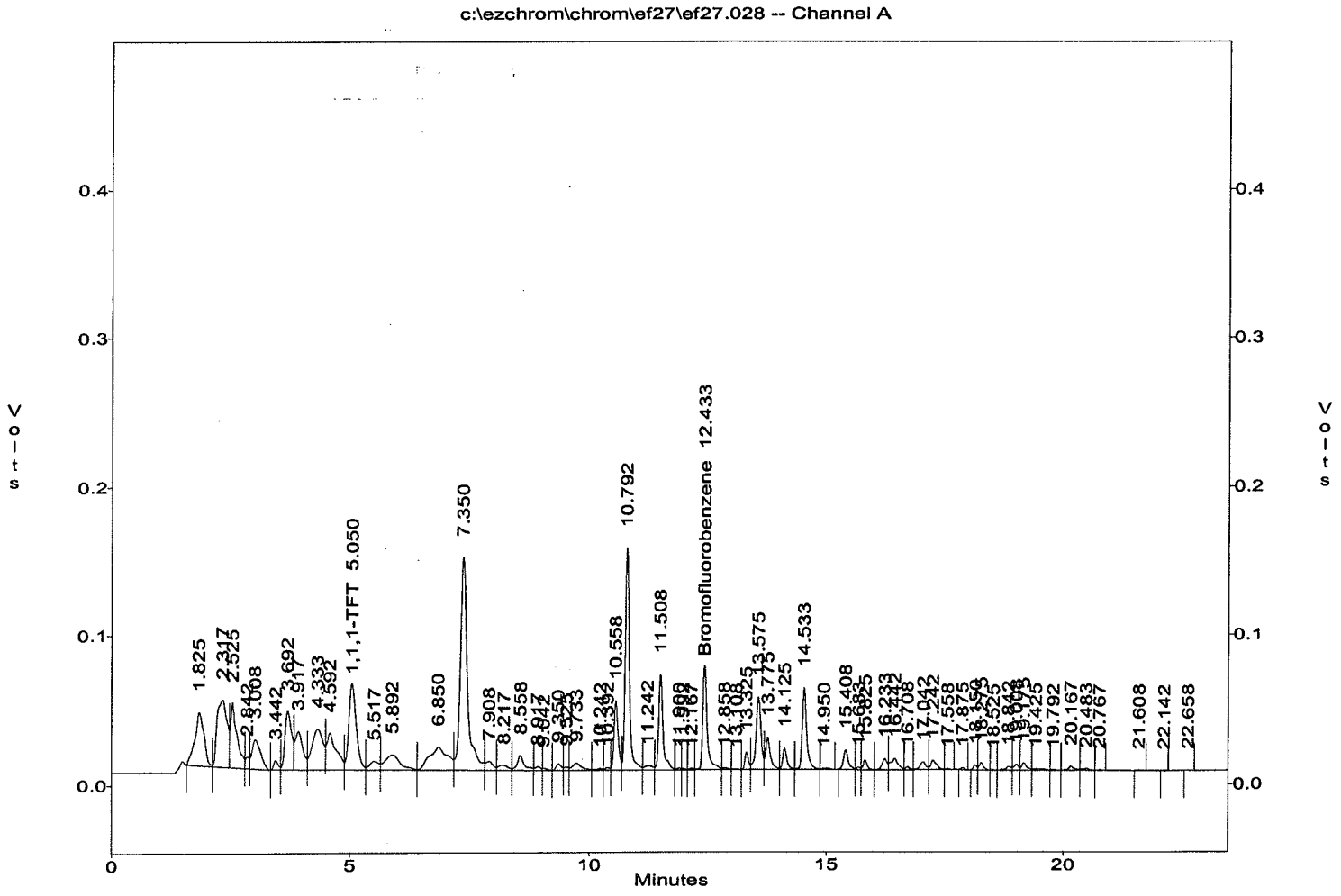
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Gasoline(TOTAL)	NA	NA	NA	500.0	20153.8	9194986	456.24	-9		20
GRO(C6-C10)	NA	NA	NA	500.0	16320.2	7467646	457.57	-8		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
Bromofluorobenzene	12.433	12.325	12.541	40.0	11030.9	446437	40.47	1		20
1,1,1-Trifluorotoluene	5.050	4.739	5.361	40.0	16817.6	623413	37.07	-7		20

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\ef27.028
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : CVG39A30298 500/40
Acquired : Jun 28, 2018 04:27:44
Printed : Jun 28, 2018 09:36:41
User : JChun

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.050	623413.0	16817.6	37.07
33	Bromofluorobenzene	12.433	446437.0	11030.9	40.47
G1	GASOLINE(TOTAL)		9194986.0	20153.8	456.24
G2	GRO(C6-C10)		7467646.0	16320.2	457.57



CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EA30005A 01/30/2018 16:53
Conc Cont LFID & Datetime: EF27032A 06/28/2018 07:03
CONC UNIT : ppb

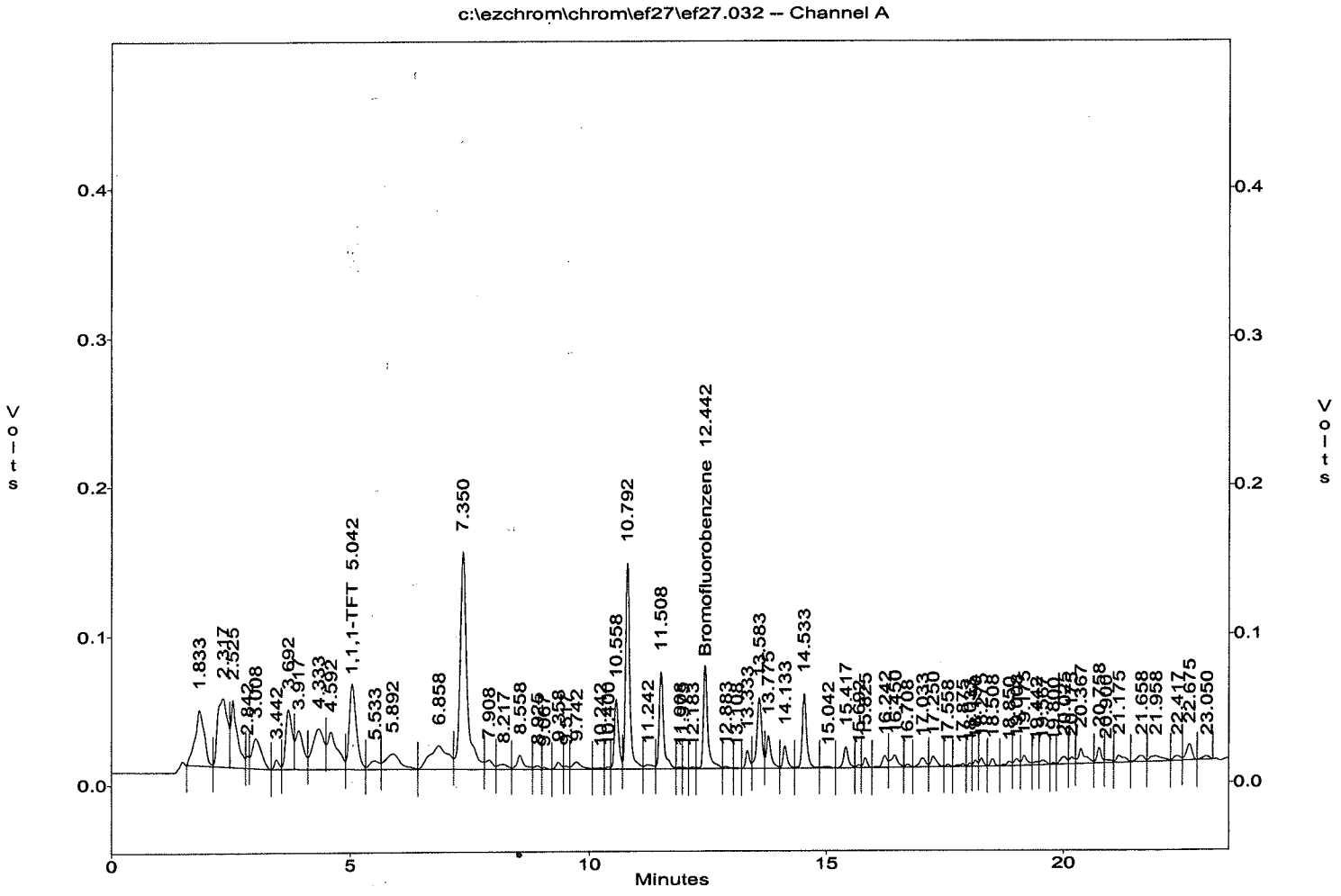
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Gasoline(TOTAL)	NA	NA	NA	500.0	20153.8	9982827	495.33	-1		20
GRO(C6-C10)	NA	NA	NA	500.0	16320.2	7563652	463.45	-7		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
Bromofluorobenzene	12.442	12.334	12.550	40.0	11030.9	449985	40.79	2		20
1,1,1-Trifluorotoluene	5.042	4.731	5.353	40.0	16817.6	623319	37.06	-7		20

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\ef27.032
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : CVG39A30299 500/40
Acquired : Jun 28, 2018 07:03:56
Printed : Jun 28, 2018 09:37:50
User : JChun

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.042	623319.0	16817.6	37.06
33	Bromofluorobenzene	12.442	449985.0	11030.9	40.79
G1	GASOLINE(TOTAL)		9982827.0	20153.8	495.33
G2	GRO(C6-C10)		7563652.0	16320.2	463.45



CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EA30005A 01/30/2018 16:53
Conc Cont LFID & Datetime: EF27035A 06/28/2018 10:43
CONC UNIT : ppb

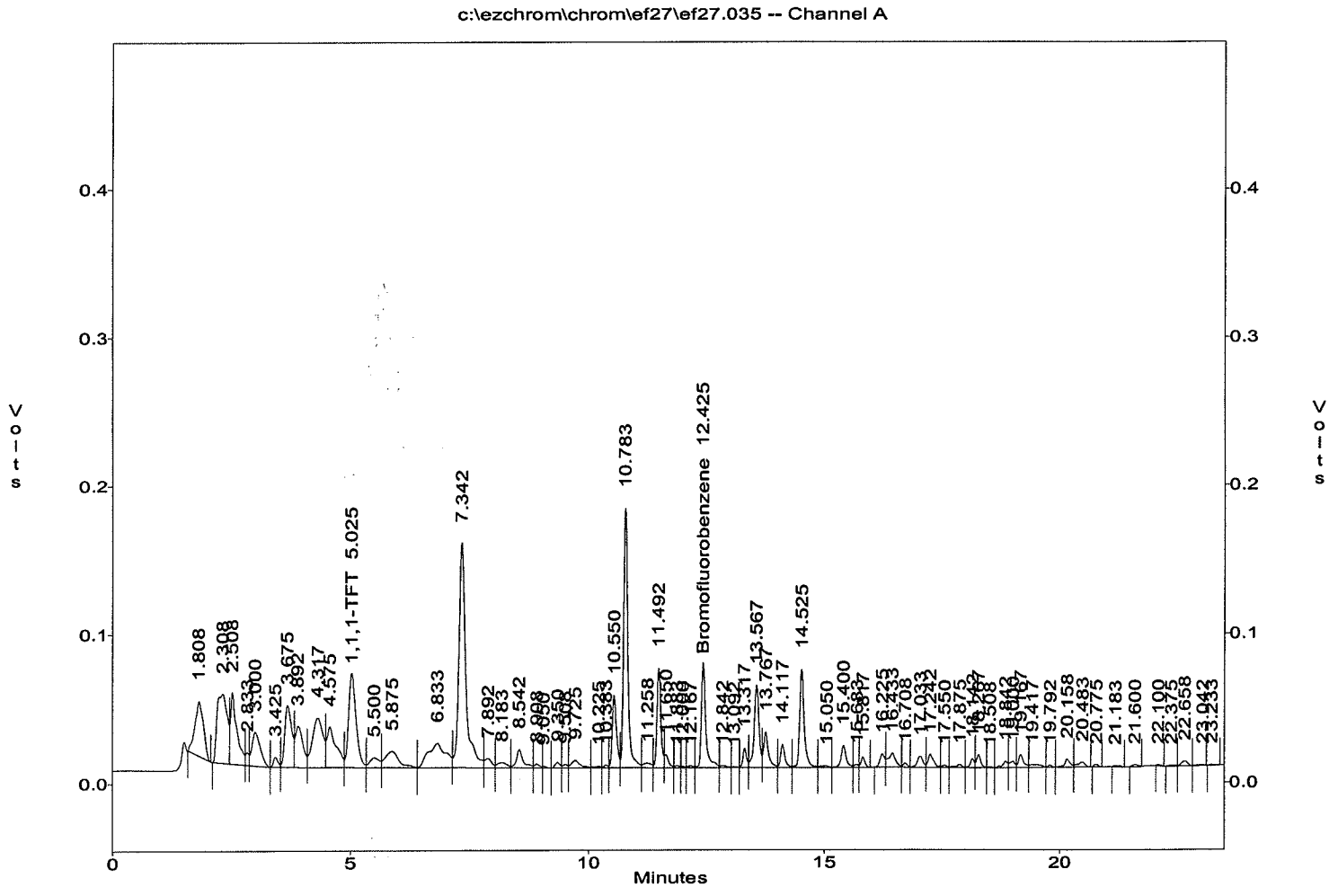
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Gasoline(TOTAL)	NA	NA	NA	500.0	20153.8	10304150	511.28	2		20
GRO(C6-C10)	NA	NA	NA	500.0	16320.2	8219594	503.65	1		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
Bromofluorobenzene	12.425	12.317	12.533	40.0	11030.9	453611	41.12	3		20
1,1,1-Trifluorotoluene	5.025	4.714	5.336	40.0	16817.6	675275	40.15	0		20

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\ef27.035
Method : c:\ezchrom\methods\vg39a30a.met
Sample ID : CVG39A30300 500/40
Acquired : Jun 28, 2018 10:43:01
Printed : Jun 28, 2018 11:07:27
User : JChun

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	5.025	675275.0	16817.6	40.15
34	Bromofluorobenzene	12.425	453611.0	11030.9	41.12
G1	GASOLINE(TOTAL)		10304150.0	20153.8	511.28
G2	GRO(C6-C10)		8219594.0	16320.2	503.65



ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PURGEABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Purge Volume = 5 ml

ALASKA GASOLINE ICAL

GRO (SV2-07-03-23)

Book #: A39-061

Instrument No.: 39

Analytical Sequence: EA30

Method File: ☑ V689A30A ☐ ☐

Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-5030B	3
☐ EMAX-8015G	5
☑ EMAX-AK101	2
☐ EMAX-	

STANDARDS ID	Amt Added (µL)	Conc. (mg/L)
ICAL SV2B-12-01-03	See Analysis Run Log	5000
ICV SV2-07-04-09	1ul	5000
DCC GAS		
DCC		
DCC	SC 1/31/18	
BFB/TFT SV2B-12-01-01 (Sample)	See Analysis Run Log	100
(DCC)		SC 1/30/18
LCS/LCSD		
MS/MSD	SC 1/31/18	
GRO (HC-Chain) SV2-07-03-23	1ul	2000

Solvent	ID/Lot #
Methanol	
Reagent Water	RW2-12-001
	Lot #
pH strip	N/A

SYRINGES
☑ 5 mL - MSF-01-01-12
☐ 5 mL - MSF-01-03-06
☐ 1 mL - MSF-01-01-20
☐ 500 µL - MSF-01-01-21
☐ 250 µL - MSF-01-01-22
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-13
☐ 50 µL - MSF-01-01-17
☑ 10 µL - MSF-01-03-03
☑ 10 µL - MSF-01-03-04
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZC-3-BTEX	

Analyzed By: SC

Date: 1/30/18

Run	Sample ID	Method	Filename	Description
1	IB39A3001	vg39a30a.met	EA30.001	
2	VG39A30A1 20/10 0.02ul AK ICAL STD + 0.5ul surrogate	vg39a30a.met	EA30.002	
3	VG39A30A2 50/20 0.05ul + 1ul	vg39a30a.met	EA30.003	
4	VG39A30A3 100/30 0.1ul + 1.5ul	vg39a30a.met	EA30.004	
5	VG39A30A4 500/40 0.5ul + 2ul	vg39a30a.met	EA30.005	ALASKA
6	VG39A30A5 1000/50 1ul + 2.5ul	vg39a30a.met	EA30.006	GASOLINE ICAL
7	VG39A30A6 1500/60 1.5ul + 3.0ul	vg39a30a.met	EA30.007	
8	VG39A30A7 2000/80 2.0ul + 4.0ul	vg39a30a.met	EA30.008	
9	IVG39A30A01 1000/50 1ul GAS ICV STD + 2.5ul	vg39a30a.met	EA30.009	AK GAS ICV
10	TEST	vg39a30a.met	EA30.010	
11	GRO-1	vg39a30a.met	EA30.011	SV2-07-03-23
12	RINSE	vg39a30a.met	EA30.012	

FINAL

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
PURGEABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Purge Volume = 5 ml

6MF019(Soil): F187

NOTE: 2µl surrogate TFT ONLY (SV2B-12-06-02) was added prior to Analysis

Book #: A39-062
Instrument No.: 39
Analytical Sequence: EF27
Method File: ☑ V639A30A
☐
☐
Analytical Batch: CV639A30296

SOP #	Rev. #
☑ EMAX-5030B	4
☐ EMAX-8015G	5
☑ EMAX-AK101	2
☐ EMAX-	

STANDARDS ID	Amt Added (µL)	Conc. (mg/L)
ICAL		
ICV		
~~DCC GAS SV2B-07~~	SC 6/28/18	
AK DCC GAS SV2B-12-09-03	0.5µl	5000
DCC —	—	—
BFB/TFT SV2B-12-09-02 (Sample)	2µl	100
(DCC)	2µl	100
LCS/LCSD SV2-07-03-25	0.5µl	5000
MS/MSD ↓	↓	↓
GRO (HC-Chain) SV2-07-03-23	1µl	2000

Solvent	ID/Lot #
Methanol	
Reagent Water	RW3-18-001
	Lot #
pH strip	N/A

SYRINGES
☑ 5 mL - MSF-01-01-12
☐ 5 mL - MSF-01-03-06
☐ 1 mL - MSF-01-02-11
☐ 1 mL - MSF-01-03-14
☐ 500 µL - MSF-01-02-12
☐ 250 µL - MSF-01-01-22
☑ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-13
☐ 50 µL - MSF-01-01-17
☑ 10 µL - MSF-01-03-03
☑ 10 µL - MSF-01-03-04
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZC-3-BTEX	

Analyzed By: SC
Date: 6/27/18

Batch: ef27.seq

Run	Sample ID	Method	Filename	Description
1	IB39F2701	vg39a30a.met	EF27.001	
2	GRO-1	vg39a30a.met	EF27.002	SV2-07-03-23
3	CVG39A30296 500/40	vg39a30a.met	EF27.003	
4	GMF019SB	vg39a30a.met	EF27.004	
5	GMF019SL	vg39a30a.met	EF27.005	} Conc. 500/40
6	GMF019SC	vg39a30a.met	EF27.006	
7	F187-01I	vg39a30a.met	EF27.007	
8	F187-02I	vg39a30a.met	EF27.008	
9	F187-03I	vg39a30a.met	EF27.009	
10	F187-04I over range	vg39a30a.met	EF27.010	
11	RINSE	vg39a30a.met	EF27.011	
12	F187-04J 10T 1A	vg39a30a.met	EF27.012	
13	RINSE	vg39a30a.met	EF27.013	
14	F187-05I	vg39a30a.met	EF27.014	
15	RINSE	vg39a30a.met	EF27.015	
16	CVG39A30297 500/40	vg39a30a.met	EF27.016	
17	F187-07I	vg39a30a.met	EF27.017	
18	F187-07M	vg39a30a.met	EF27.018	
19	F187-07S Bad Injection	vg39a30a.met	EF27.019	Not evaluated
20	F187-08I	vg39a30a.met	EF27.020	
21	F187-09I	vg39a30a.met	EF27.021	
22	F187-10I	vg39a30a.met	EF27.022	
23	F187-11I	vg39a30a.met	EF27.023	
24	F187-12I	vg39a30a.met	EF27.024	
25	F187-13I	vg39a30a.met	EF27.025	
26	F187-14I	vg39a30a.met	EF27.026	
27	RINSE	vg39a30a.met	EF27.027	
28	CVG39A30298 500/40	vg39a30a.met	EF27.028	
29	F187-15I	vg39a30a.met	EF27.029	
30	F187-16I	vg39a30a.met	EF27.030	
31	F187-17I	vg39a30a.met	EF27.031	
32	CVG39A30299 500/40	vg39a30a.met	EF27.032	

FINAL

Batch: ef27.seq

Run	Sample ID	Method	Filename	Description
33	BLANK	vg39a30a.met	EF27.033	
34	F187-07S	vg39a30a.met	EF27.034	
35	CVG39A30300 500/40	vg39a30a.met	EF27.035	

FINAL
sc 6/28/18

EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
PURGEABLE TPH

Note: For samples, relevant QCs/Standards extracted, refer to attached extraction sequence.

Book #.: E39-056

Preparation Batch: GMF019

Matrix Soil

Comments:

SDG # F187

GMF019SB, L, C } Prepares prior to Analysis; Refer to Analysis Runlog

SOP	Rev. #
☑ EMAX-5035	4
☑ EMAX-AK101	2
☐ EMAX-	

Standards	ID	Amount Added (ml)
Surrogate		
LCS/MS		
Methanol MB, LCS/LCSD	SW1A-006-08-06	5.0ml
Methanol w/ Surrogate		

Reagent	Lot # / ID
Silica Sand	SW1B-004-01-19

SYRINGES

- ☐ 50 µL - MSF-01-01-17
- ☐ 10 µL - MSF-01-03-03
- ☐ 10 µL - MSF-01-03-04
- ☐

Prepared By: SC

Standard Added By: Checked By: LE

Extract Location:

Disposal By: Disposal Date:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR VOLATILES

FileID: 18GMF019S.xls

PrepBatchID	Lab Sample ID	W1 (g)	DateTime	Wf (g)	DateTime	ExpWs(g)	Ws(g)	%Moisture	CorrExt Vol(ml)	PrepFactor	PFx50 df(I)	df(J)	df(K)	Comments
18GMF019S01	18F187-01I	124.24	6/26/18 17:06	164.18	6/26/18 17:06	25	20.330	4.8	25.97584	1.28	64			
18GMF019S02	18F187-02I	124.29	6/26/18 17:06	164.56	6/26/18 17:06	25	20.660	4.6	25.95036	1.26	63			
18GMF019S03	18F187-03I	124.69	6/26/18 17:07	166.09	6/26/18 17:07	25	21.790	5.3	26.15487	1.2	60			
18GMF019S04	18F187-04I	124.62	6/26/18 17:07	168.33	6/26/18 17:07	25	24.100	8.6	27.0726	1.12	56			
18GMF019S05	18F187-05I	124.86	6/26/18 17:07	167.56	6/26/18 17:07	25	23.090	4.9	26.13141	1.13	56.5			
18GMF019S06	18F187-07I	124.74	6/26/18 17:07	165.67	6/26/18 17:07	25	21.320	3.9	25.83148	1.21	60.5			
18GMF019S07	18F187-07M	124.70	6/26/18 17:07	167.09	6/26/18 17:07	25	22.780	3.9	25.88842	1.14	57			
18GMF019S08	18F187-07S	124.56	6/26/18 17:08	167.94	6/26/18 17:08	25	23.770	3.9	25.92703	1.09	54.5			
18GMF019S09	18F187-08I	124.96	6/26/18 17:08	168.43	6/26/18 17:08	25	23.860	3.5	25.8351	1.08	54			
18GMF019S10	18F187-09I	143.72	6/26/18 17:08	142.90	6/26/18 17:08	25	25.000		25	1	50			TRIP BLANK
18GMF019S11	18F187-10I	124.54	6/26/18 17:08	166.25	6/26/18 17:08	25	22.100	5.8	26.2818	1.19	59.5			
18GMF019S12	18F187-11I	124.68	6/26/18 17:09	170.58	6/26/18 17:09	25	26.290	4.7	26.23563	0.998	49.9			
18GMF019S13	18F187-12I	124.33	6/26/18 17:09	169.77	6/26/18 17:09	25	25.830	4	26.0332	1.01	50.5			
18GMF019S14	18F187-13I	124.38	6/26/18 17:09	167.72	6/26/18 17:09	25	23.730	6.5	26.54245	1.12	56			
18GMF019S15	18F187-14I	124.84	6/26/18 17:09	169.64	6/26/18 17:09	25	25.190	5.1	26.28469	1.04	52			
18GMF019S16	18F187-15I	124.62	6/26/18 17:09	169.59	6/26/18 17:10	25	25.360	7.6	26.92736	1.06	53			
18GMF019S17	18F187-16I	124.78	6/26/18 17:10	171.41	6/26/18 17:10	25	27.020	6.9	26.86438	0.994	49.7			
18GMF019S18	18F187-17I	124.48	6/26/18 17:10	164.26	6/26/18 17:10	25	20.170	8.1	26.63377	1.32	66			
18GMF019S19	GMF019SB	23.28	6/26/18 17:44	28.28	6/26/18 17:44	25	5.000		5	1	50			
18GMF019S20	GMF019SL	23.58	6/26/18 17:45	28.58	6/26/18 17:45	25	5.000		5	1	50			
18GMF019S21	GMF019SC	23.49	6/26/18 17:46	28.49	6/26/18 17:46	25	5.000		5	1	50			

☑ EMAX-5035 Rev.4 ☑ Balance Calibration Check performed prior to use BlankSoil Lot#: Prepared By: RTorra

☐ Encore ☐ Balance ID 25650797 MeOH/Surr. ID: LOT # SV2B-12-07-01 Standard Added By: N/A

☐ Frozen Sample ☑ Balance ID 25451062 Weight MeOH(g): 19.61 Witnessed By: ODinh

☑ Pre-weighed vial / jar LOT # PV-002-06-25 Vol MeOH(ml): 25 Extract Rcvd By: ***NA***

☐ Volumetric dispenser was checked with 5-ml volumetric flask Expected Ws(g) 25 Extract Location: ***VW01***

COMMENTS: Weights based on 18VMF039.

W1=Weight of Vial+Solvent Wf=W1 + Sample

APPENDIX

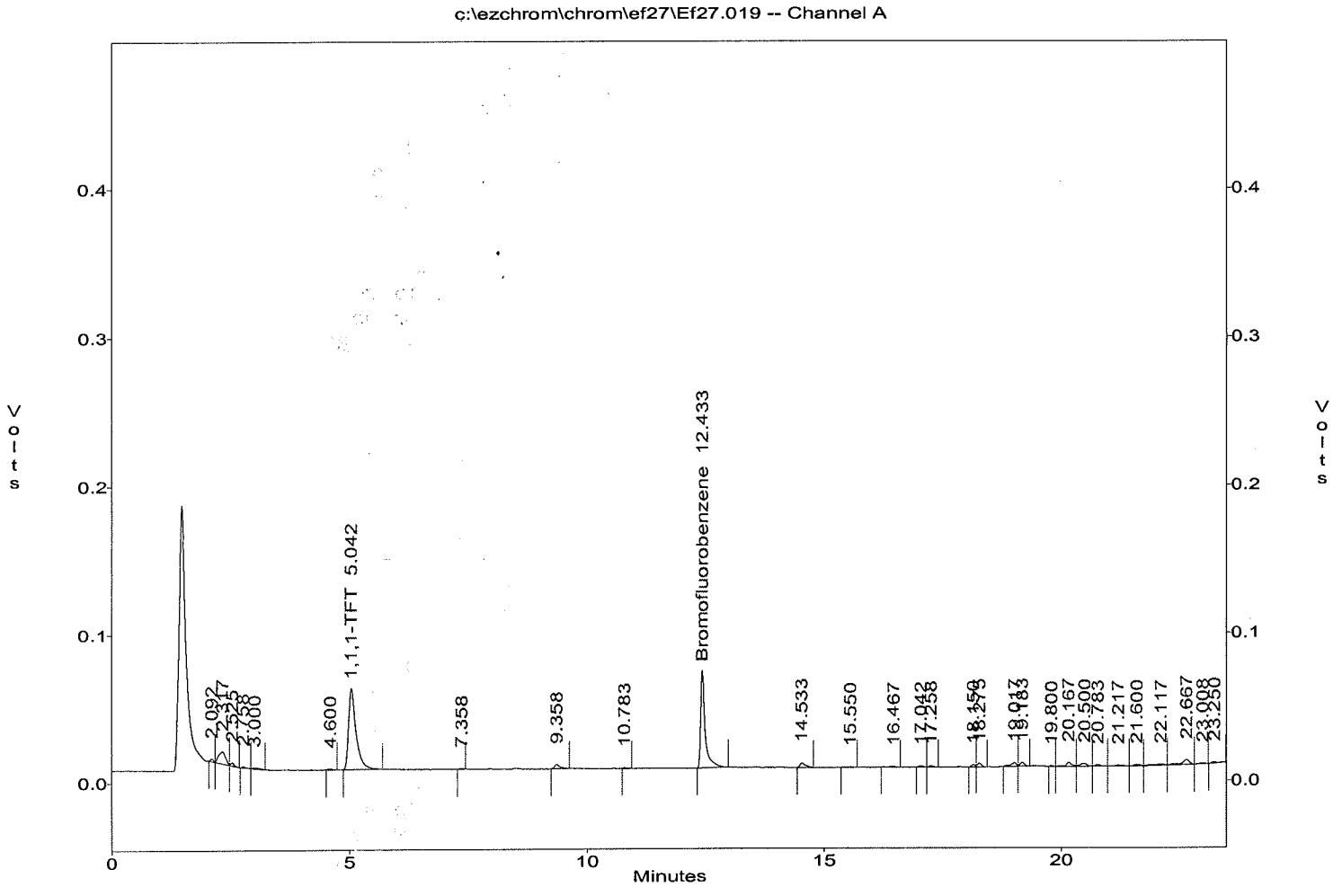
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef27\Ef27.019
Method : c:\ezchrom\methods\Vg39a30a.met
Sample ID : F187-07S
Acquired : Jun 27, 2018 22:36:10
Printed : Jun 27, 2018 22:59:42
User : SCerva

Bad Inj.

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
7	1,1,1-TFT	5.042	596805.0	16817.6	35.49
11	Bromofluorobenzene	12.433	432137.0	11030.9	39.18
G1	GASOLINE(TOTAL)		386410.0	20153.8	19.17
G2	GRO(C6-C10)		76748.0	16320.2	4.70



LABORATORY REPORT FOR

CH2M HILL

JBER TO078

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 18F187

CASE NARRATIVE

Client : CH2M HILL

Project: JBER TO075

SDG : 18F187

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

A total of fifteen (15) soil samples were received on 06/26/18 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method AK102/AK103 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. DSF043SB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. DSF043SL/DSF043SC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed. 18F187-07M/18F187-07S - all analytes were within MS QC limits. Refer to Matrix QC summary form for details.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Instrument ID : D5

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	DSF043SB	1	NA	06/29/1801:57	06/28/1811:51	LF28059A	LF28058A	18DSF043S	Method Blank
LCS1S	DSF043SL	1	NA	06/29/1802:14	06/28/1811:51	LF28060A	LF28058A	18DSF043S	Lab Control Sample (LCS)
LCD1S	DSF043SC	1	NA	06/29/1802:31	06/28/1811:51	LF28061A	LF28058A	18DSF043S	LCS Duplicate
18Q2DP009-SB0401-SO-0	F187-01	1	4.8	06/29/1802:47	06/28/1811:51	LF28062A	LF28058A	18DSF043S	Field Sample
18Q2DP009-SB0401-SO-1	F187-02	1	4.6	06/29/1803:04	06/28/1811:51	LF28063A	LF28058A	18DSF043S	Field Sample
18Q2DP009-SB0402-SO-0	F187-03	1	5.3	06/29/1803:22	06/28/1811:51	LF28064A	LF28058A	18DSF043S	Field Sample
18Q2DP009-SB0801-SO-0	F187-04	1	8.6	06/29/1803:39	06/28/1811:51	LF28065A	LF28058A	18DSF043S	Field Sample
18Q2DP009-SB0802-SO-0	F187-05	1	4.9	06/29/1803:55	06/28/1811:51	LF28066A	LF28058A	18DSF043S	Field Sample
18Q2DP009-SB0501-SO-0	F187-07	1	3.9	06/29/1804:13	06/28/1811:51	LF28067A	LF28058A	18DSF043S	Field Sample
18Q2DP009-SB0501-SO-0MS	F187-07M	1	3.9	06/29/1804:29	06/28/1811:51	LF28068A	LF28058A	18DSF043S	Matrix Spike Sample (MS)
18Q2DP009-SB0501-SO-0MSD	F187-07S	1	3.9	06/29/1804:46	06/28/1811:51	LF28069A	LF28058A	18DSF043S	MS Duplicate (MSD)
18Q2DP009-SB0502-SO-0	F187-08	1	3.5	06/29/1805:03	06/28/1811:51	LF28070A	LF28058A	18DSF043S	Field Sample
18Q2DP009-SB0701-SO-0	F187-10	1	5.8	06/29/1805:21	06/28/1811:51	LF28071A	LF28058A	18DSF043S	Field Sample
18Q2DP009-SB0702-SO-0	F187-11	1	4.7	06/29/1805:55	06/28/1811:51	LF28073A	LF28072A	18DSF043S	Field Sample
18Q2DP009-SB0301-SO-0	F187-12	1	4.0	06/29/1806:12	06/28/1811:51	LF28074A	LF28072A	18DSF043S	Field Sample
18Q2DP009-SB0302-SO-0	F187-13	1	6.5	06/29/1806:29	06/28/1811:51	LF28075A	LF28072A	18DSF043S	Field Sample
18Q2DP009-SB0602-SO-0	F187-14	1	5.1	06/29/1806:46	06/28/1811:51	LF28076A	LF28072A	18DSF043S	Field Sample
18Q2DP009-SB0601-SO-0	F187-15	1	7.6	06/29/1807:03	06/28/1811:51	LF28077A	LF28072A	18DSF043S	Field Sample
18Q2DP009-SB0601-SO-1	F187-16	1	6.9	06/29/1807:19	06/28/1811:51	LF28078A	LF28072A	18DSF043S	Field Sample
18Q2DP009-IDW-SO01	F187-17	1	8.1	06/29/1807:36	06/28/1811:51	LF28079A	LF28072A	18DSF043S	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : CH2M HILL	Date Collected: 06/21/18 16:10
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 11:51
Sample ID : 18Q2DP009-SB0401-SO-0	Date Analyzed: 06/29/18 02:47
Lab Samp ID: 18F187-01	Dilution Factor: 1
Lab File ID: LF28062A	Matrix: SOIL
Ext Btch ID: 18DSF043S	% Moisture: 4.8
Calib. Ref.: LF28058A	Instrument ID: D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	11	2.6	5.3
RRO	ND	21	5.1	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	11.5	10.5	110	50-150
n-Triacontane	45.6	42.0	108	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

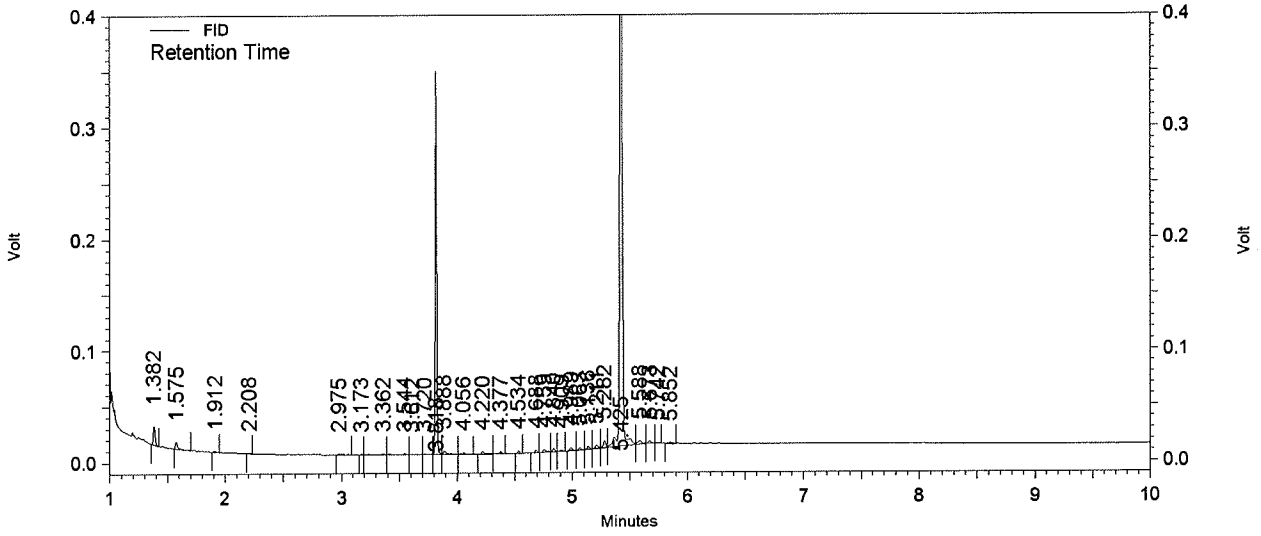
Sample Amount : 10.03g	Final Volume : 10ml
Prepared by : JVille	Analyzed by : SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28062.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-01
Acquired : 06/29/18 02:47:56
Printed : 07/05/18 13:06:19
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.818	315343	28632.19571	11.014
N-TRIACONTANE	5.425	814469	18711.74318	43.527
TPH(C8-C40)		99147	18626.23247	5.323
DIESEL(C10-C25)		38015	23801.85833	1.597
M.OIL(C25-C36)		46295	11786.61389	3.928
Totals		1313269		65.389



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : CH2M HILL	Date Collected: 06/21/18 16:11
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 11:51
Sample ID : 18Q2DP009-SB0401-SO-1	Date Analyzed: 06/29/18 03:04
Lab Samp ID: 18F187-02	Dilution Factor: 1
Lab File ID: LF28063A	Matrix: SOIL
Ext Btch ID: 18DSF043S	% Moisture: 4.6
Calib. Ref.: LF28058A	Instrument ID: D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	10	2.6	5.2
RRO	ND	21	5.1	10

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	11.5	10.5	110	50-150
n-Triacontane	44.4	41.9	106	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

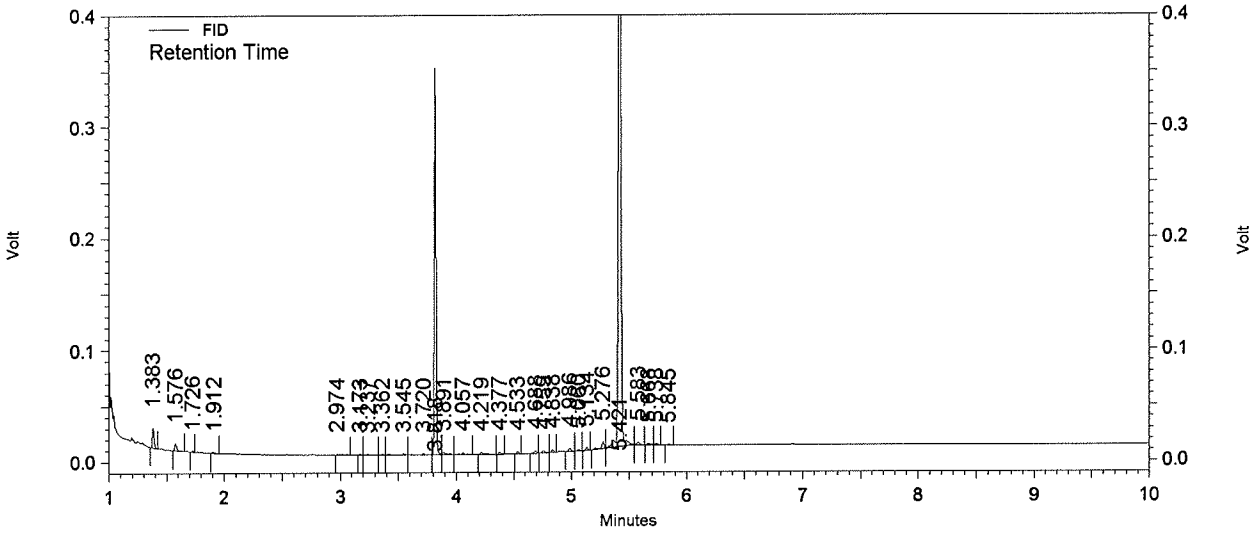
Detection limits are reported relative to sample result significant figures.
Sample Amount : 10g Final Volume : 10ml
Prepared by : JVille Analyzed by : SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28063.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-02
Acquired : 06/29/18 03:04:58
Printed : 07/05/18 13:06:29
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.818	315439	28632.19571	11.017
N-TRIACONTANE	5.421	792241	18711.74318	42.339
TPH(C8-C40)		84336	18626.23247	4.528
DIESEL(C10-C25)		37153	23801.85833	1.561
M.OIL(C25-C36)		34252	11786.61389	2.906
Totals		1263421		62.351



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: CH2M HILL	Date Collected:	06/21/18 16:30
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 11:51
Sample ID	: 18Q2DP009-SB0402-SO-0	Date Analyzed:	06/29/18 03:22
Lab Samp ID:	18F187-03	Dilution Factor:	1
Lab File ID:	LF28064A	Matrix:	SOIL
Ext Btch ID:	18DSF043S	% Moisture:	5.3
Calib. Ref.:	LF28058A	Instrument ID:	D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	3.6J	11	2.6	5.3
RRO	5.4J	21	5.2	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	12.1	10.6	115	50-150
n-Triacontane	44.2	42.2	105	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

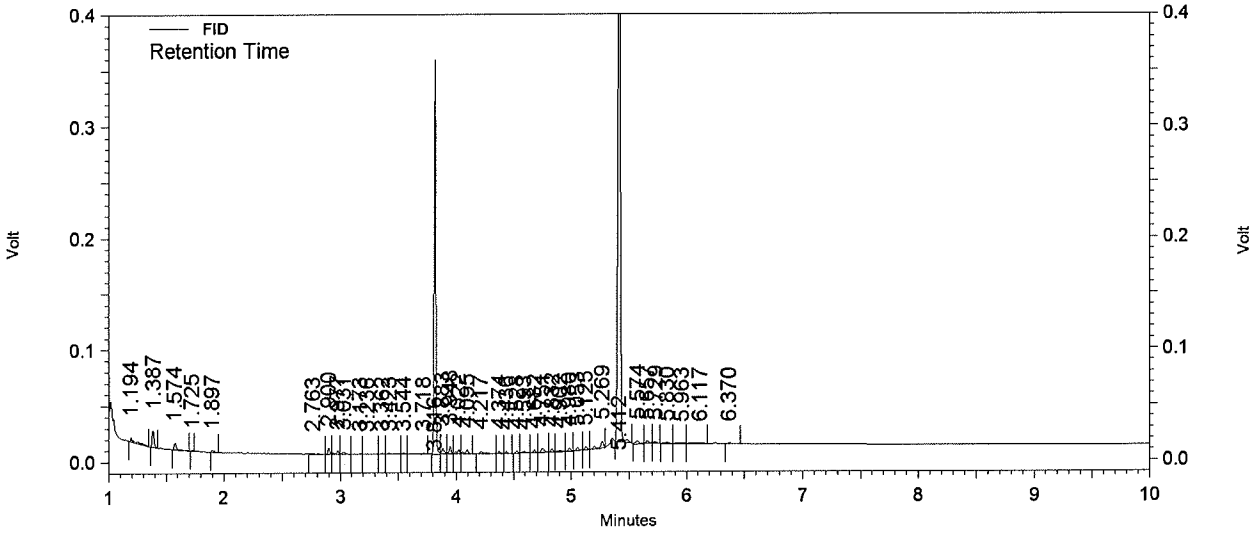
Sample Amount	: 10g	Final Volume	: 10ml
Prepared by	: JVille	Analyzed by	: SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28064.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-03
Acquired : 06/29/18 03:22:00
Printed : 07/05/18 13:06:39
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.816	328585	28632.19571	11.476
N-TRIACONTANE	5.412	782394	18711.74318	41.813
TPH(C8-C40)		151168	18626.23247	8.116
DIESEL(C10-C25)		81463	23801.85833	3.423
M.OIL(C25-C36)		59808	11786.61389	5.074
Totals		1403418		69.902



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: CH2M HILL	Date Collected:	06/21/18 18:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 11:51
Sample ID	: 18Q2DP009-SB0801-SO-0	Date Analyzed:	06/29/18 03:39
Lab Samp ID:	18F187-04	Dilution Factor:	1
Lab File ID:	LF28065A	Matrix:	SOIL
Ext Btch ID:	18DSF043S	% Moisture:	8.6
Calib. Ref.:	LF28058A	Instrument ID:	D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	1000	11	2.7	5.5
RRO	80	22	5.4	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	12.2	10.9	112	50-150
n-Triacontane	43.2	43.8	99	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

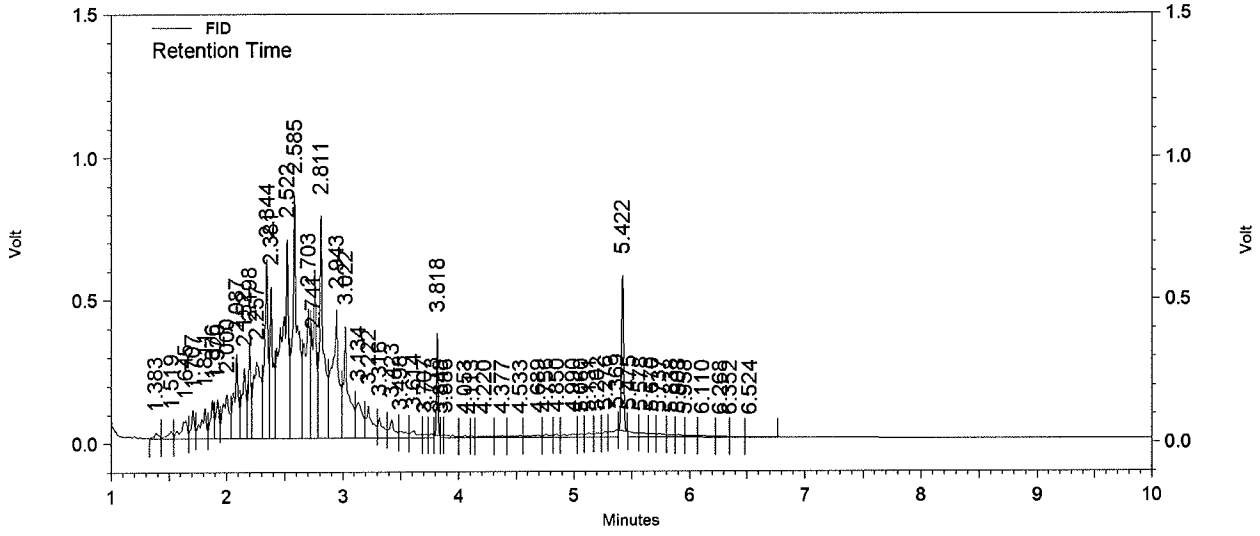
Sample Amount	: 10.02g	Final Volume	: 10ml
Prepared by	: JVille	Analyzed by	: SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28065.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-04
Acquired : 06/29/18 03:39:01
Printed : 07/05/18 13:06:55
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.818	319994	28632.19571	11.176
N-TRIACONTANE	5.422	739637	18711.74318	39.528
TPH(C8-C40)		22966369	18626.23247	1233.012
DIESEL(C10-C25)		21733579	23801.85833	913.104
M.OIL(C25-C36)		865066	11786.61389	73.394
Totals		46624645		2270.214



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : CH2M HILL	Date Collected: 06/21/18 19:45
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 11:51
Sample ID : 18Q2DP009-SB0802-SO-0	Date Analyzed: 06/29/18 03:55
Lab Samp ID: 18F187-05	Dilution Factor: 1
Lab File ID: LF28066A	Matrix: SOIL
Ext Btch ID: 18DSF043S	% Moisture: 4.9
Calib. Ref.: LF28058A	Instrument ID: D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	11	2.6	5.3
RRO	ND	21	5.2	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	12.0	10.5	114	50-150
n-Triacontane	46.2	42.1	110	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

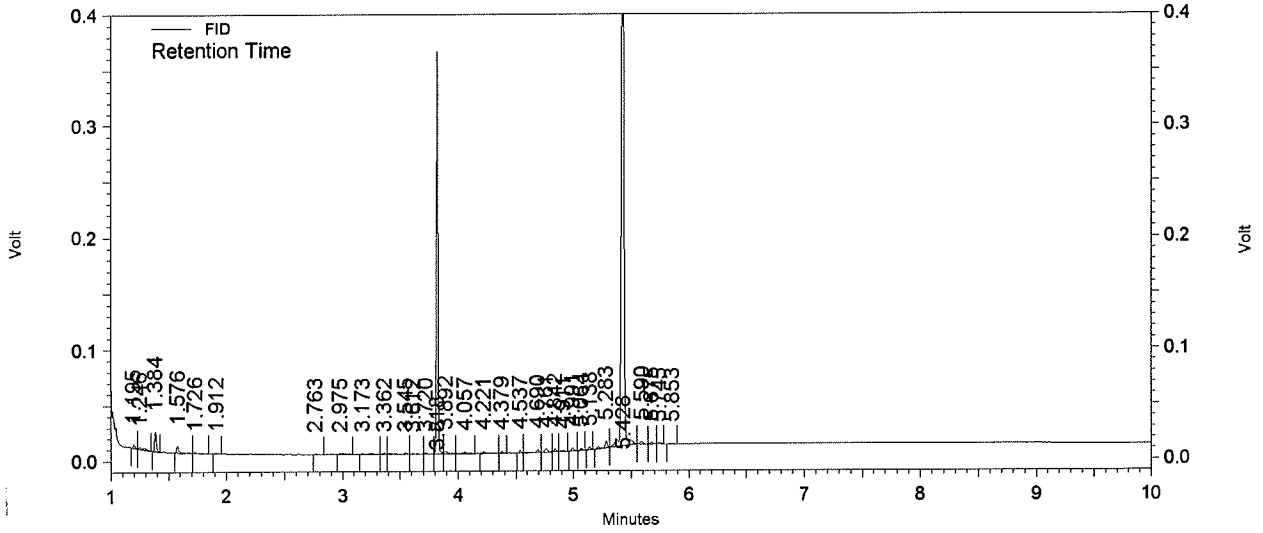
Detection limits are reported relative to sample result significant figures.
Sample Amount : 10.03g Final Volume : 10ml
Prepared by : JVille Analyzed by : SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28066.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-05
Acquired : 06/29/18 03:55:56
Printed : 07/05/18 13:07:05
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.818	326599	28632.19571	11.407
N-TRIACONTANE	5.428	823788	18711.74318	44.025
TPH(C8-C40)		104659	18626.23247	5.619
DIESEL(C10-C25)		46205	23801.85833	1.941
M.OIL(C25-C36)		42206	11786.61389	3.581
Totals		1343457		66.573



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: CH2M HILL	Date Collected:	06/22/18 11:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 11:51
Sample ID	: 18Q2DP009-SB0501-SO-0	Date Analyzed:	06/29/18 04:13
Lab Samp ID:	18F187-07	Dilution Factor:	1
Lab File ID:	LF28067A	Matrix:	SOIL
Ext Btch ID:	18DSF043S	% Moisture:	3.9
Calib. Ref.:	LF28058A	Instrument ID:	D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	10	2.6	5.2
RRO	ND	21	5.1	10

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	11.9	10.4	114	50-150
n-Triacontane	45.3	41.6	109	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

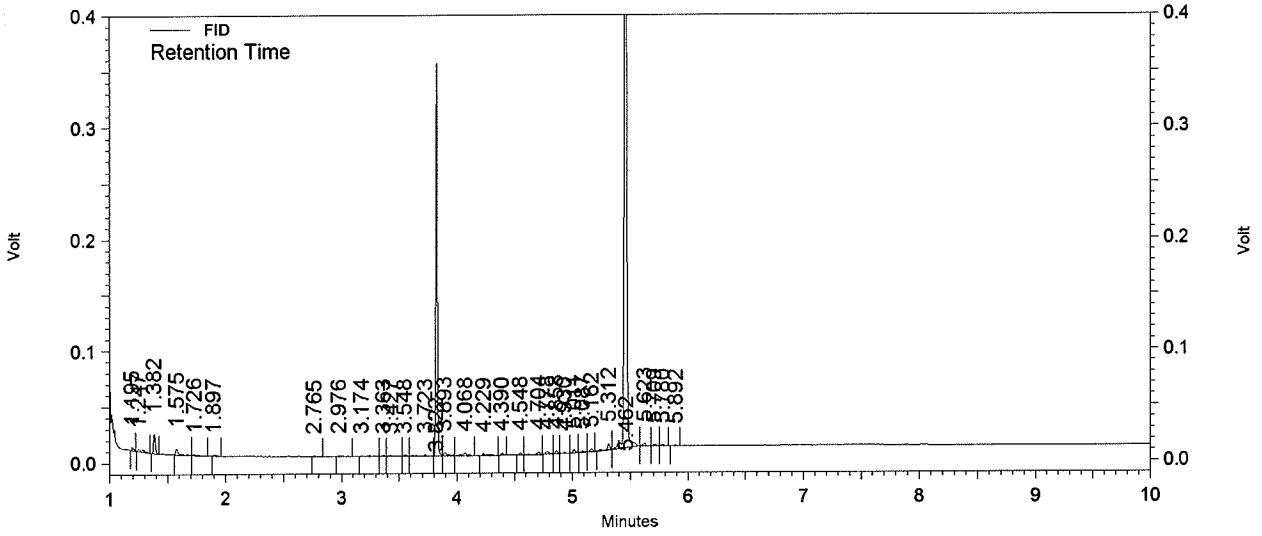
Sample Amount	: 10g	Final Volume	: 10ml
Prepared by	: JVille	Analyzed by	: SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28067.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-07
Acquired : 06/29/18 04:13:02
Printed : 07/05/18 13:07:16
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.822	326608	28632.19571	11.407
N-TRIACONTANE	5.462	814793	18711.74318	43.544
TPH(C8-C40)		109474	18626.23247	5.877
DIESEL(C10-C25)		50767	23801.85833	2.133
M.OIL(C25-C36)		43891	11786.61389	3.724
Totals		1345533		66.686



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: CH2M HILL	Date Collected:	06/22/18 12:30
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 11:51
Sample ID	: 18Q2DP009-SB0502-SO-0	Date Analyzed:	06/29/18 05:03
Lab Samp ID:	18F187-08	Dilution Factor:	1
Lab File ID:	LF28070A	Matrix:	SOIL
Ext Btch ID:	18DSF043S	% Moisture:	3.5
Calib. Ref.:	LF28058A	Instrument ID:	D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	10	2.6	5.2
RRO	5.1J	21	5.1	10

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	11.5	10.4	111	50-150
n-Triacontane	43.0	41.5	104	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

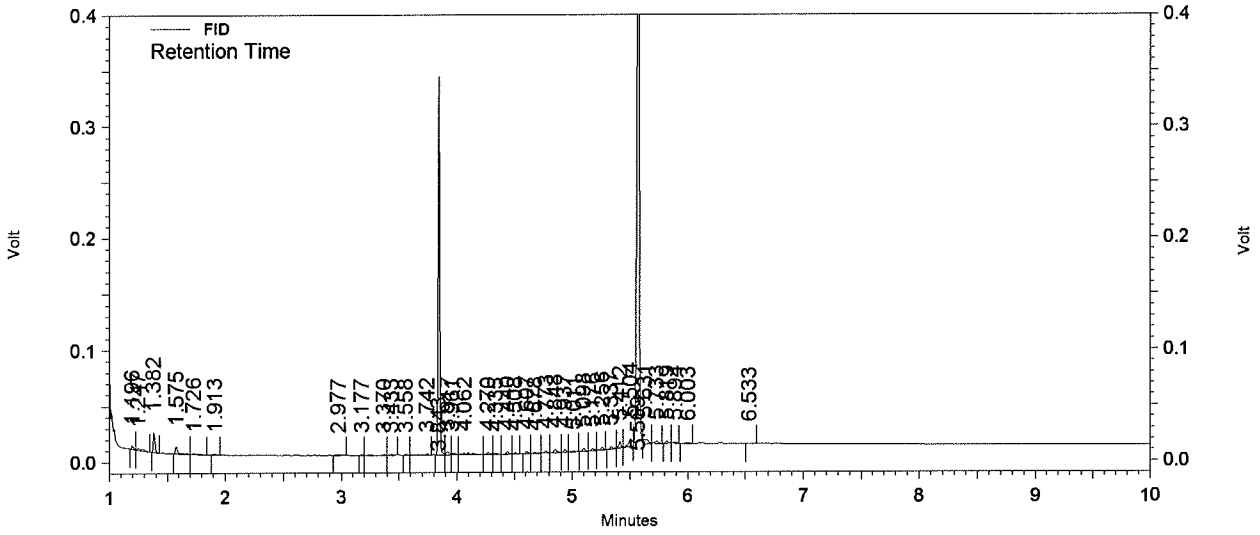
Detection limits are reported relative to sample result significant figures.
Sample Amount : 10g Final Volume : 10ml
Prepared by : JVille Analyzed by : SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28070.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-08
Acquired : 06/29/18 05:03:53
Printed : 07/05/18 13:07:39
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.843	318833	28632.19571	11.135
N-TRIACONTANE	5.569	776560	18711.74318	41.501
TPH(C8-C40)		129472	18626.23247	6.951
DIESEL(C10-C25)		47825	23801.85833	2.009
M.OIL(C25-C36)		58397	11786.61389	4.955
Totals		1331087		66.552



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: CH2M HILL	Date Collected:	06/22/18 13:55
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 11:51
Sample ID	: 18Q2DP009-SB0701-SO-0	Date Analyzed:	06/29/18 05:21
Lab Samp ID:	18F187-10	Dilution Factor:	1
Lab File ID:	LF28071A	Matrix:	SOIL
Ext Btch ID:	18DSF043S	% Moisture:	5.8
Calib. Ref.:	LF28058A	Instrument ID:	D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	11	2.7	5.3
RRO	ND	21	5.2	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	11.9	10.6	112	50-150
n-Triacontane	46.2	42.5	109	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

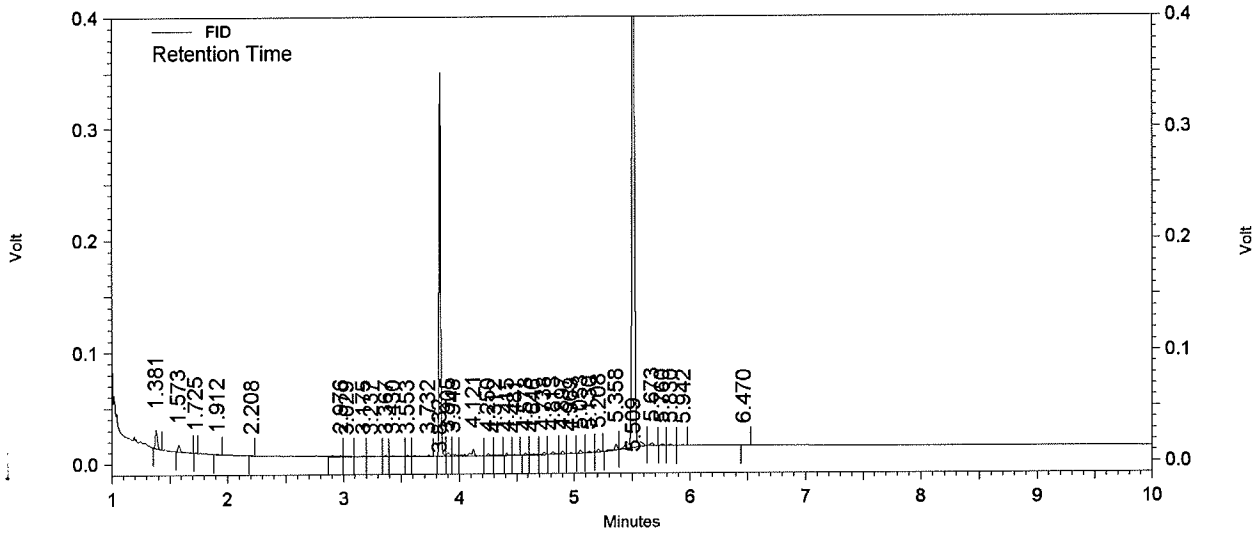
Sample Amount	: 10.02g	Final Volume	: 10ml
Prepared by	: JVille	Analyzed by	: SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28071.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-10
Acquired : 06/29/18 05:21:01
Printed : 07/05/18 13:07:47
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.832	322358	28632.19571	11.259
N-TRIACONTANE	5.509	816458	18711.74318	43.633
TPH(C8-C40)		124033	18626.23247	6.659
DIESEL(C10-C25)		59395	23801.85833	2.495
M.OIL(C25-C36)		47571	11786.61389	4.036
Totals		1369815		68.083



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : CH2M HILL	Date Collected: 06/22/18 14:15
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 11:51
Sample ID : 18Q2DP009-SB0702-SO-0	Date Analyzed: 06/29/18 05:55
Lab Samp ID: 18F187-11	Dilution Factor: 1
Lab File ID: LF28073A	Matrix: SOIL
Ext Btch ID: 18DSF043S	% Moisture: 4.7
Calib. Ref.: LF28072A	Instrument ID: D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	10	2.6	5.2
RRO	ND	21	5.1	10

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	12.2	10.5	116	50-150
n-Triacontane	46.4	42.0	111	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

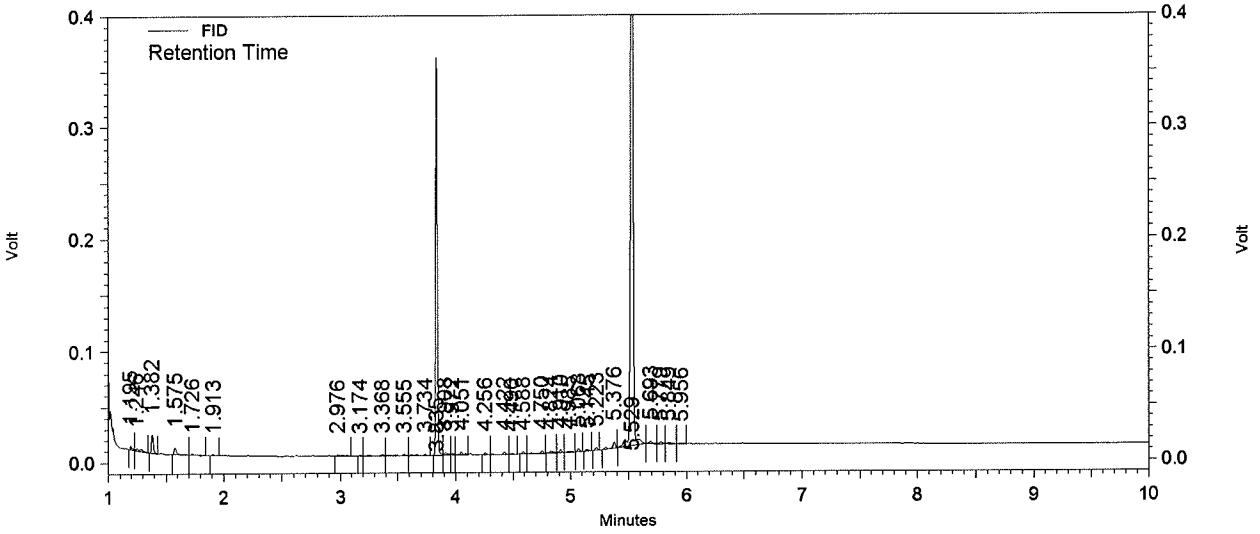
Detection limits are reported relative to sample result significant figures.
Sample Amount : 10.03g Final Volume : 10ml
Prepared by : JVille Analyzed by : SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28073.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-11
Acquired : 06/29/18 05:55:00
Printed : 07/05/18 13:08:00
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.835	334210	28632.19571	11.673
N-TRIACONTANE	5.529	830229	18711.74318	44.369
TPH(C8-C40)		114049	18626.23247	6.123
DIESEL(C10-C25)		40708	23801.85833	1.710
M.OIL(C25-C36)		44896	11786.61389	3.809
Totals		1364092		67.684



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : CH2M HILL	Date Collected: 06/23/18 10:15
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 11:51
Sample ID : 18Q2DP009-SB0301-SO-0	Date Analyzed: 06/29/18 06:12
Lab Samp ID: 18F187-12	Dilution Factor: 1
Lab File ID: LF28074A	Matrix: SOIL
Ext Btch ID: 18DSF043S	% Moisture: 4.0
Calib. Ref.: LF28072A	Instrument ID: D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	10	2.6	5.2
RRO	ND	21	5.1	10

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	12.1	10.4	116	50-150
n-Triacontane	46.1	41.7	111	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

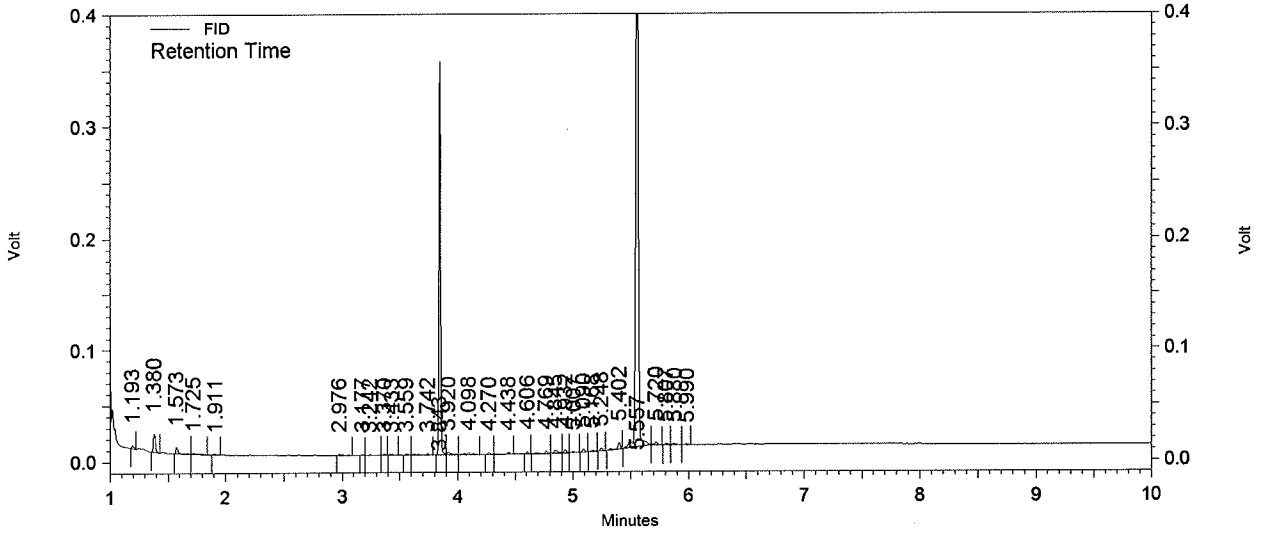
Detection limits are reported relative to sample result significant figures.
Sample Amount : 10g Final Volume : 10ml
Prepared by : JVille Analyzed by : SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28074.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-12
Acquired : 06/29/18 06:12:01
Printed : 07/05/18 13:08:08
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.843	332969	28632.19571	11.629
N-TRIACONTANE	5.557	828420	18711.74318	44.273
TPH(C8-C40)		96364	18626.23247	5.174
DIESEL(C10-C25)		41186	23801.85833	1.730
M.OIL(C25-C36)		35319	11786.61389	2.997
Totals		1334258		65.802



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: CH2M HILL	Date Collected:	06/23/18 10:35
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 11:51
Sample ID	: 18Q2DP009-SB0302-SO-0	Date Analyzed:	06/29/18 06:29
Lab Samp ID:	18F187-13	Dilution Factor:	1
Lab File ID:	LF28075A	Matrix:	SOIL
Ext Btch ID:	18DSF043S	% Moisture:	6.5
Calib. Ref.:	LF28072A	Instrument ID:	D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	11	2.7	5.3
RRO	ND	21	5.2	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	12.3	10.7	115	50-150
n-Triacontane	46.6	42.8	109	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

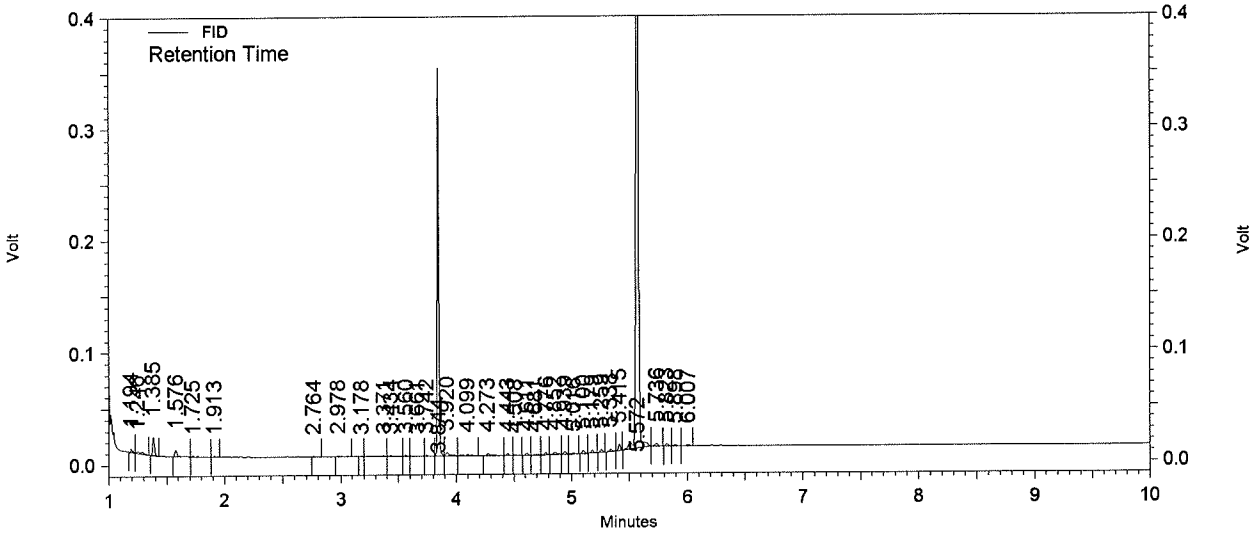
Sample Amount	: 10.01g	Final Volume	: 10ml
Prepared by	: JVille	Analyzed by	: SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28075.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-13
Acquired : 06/29/18 06:29:01
Printed : 07/05/18 13:08:16
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.844	329270	28632.19571	11.500
N-TRIACONTANE	5.572	815334	18711.74318	43.573
TPH(C8-C40)		116242	18626.23247	6.241
DIESEL(C10-C25)		49541	23801.85833	2.081
M.OIL(C25-C36)		41251	11786.61389	3.500
Totals		1351638		66.895



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: CH2M HILL	Date Collected:	06/23/18 12:15
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 11:51
Sample ID	: 18Q2DP009-SB0602-SO-0	Date Analyzed:	06/29/18 06:46
Lab Samp ID:	18F187-14	Dilution Factor:	1
Lab File ID:	LF28076A	Matrix:	SOIL
Ext Btch ID:	18DSF043S	% Moisture:	5.1
Calib. Ref.:	LF28072A	Instrument ID:	D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	4.4J	11	2.6	5.3
RRO	ND	21	5.2	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	11.5	10.5	109	50-150
n-Triacontane	43.6	42.1	103	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

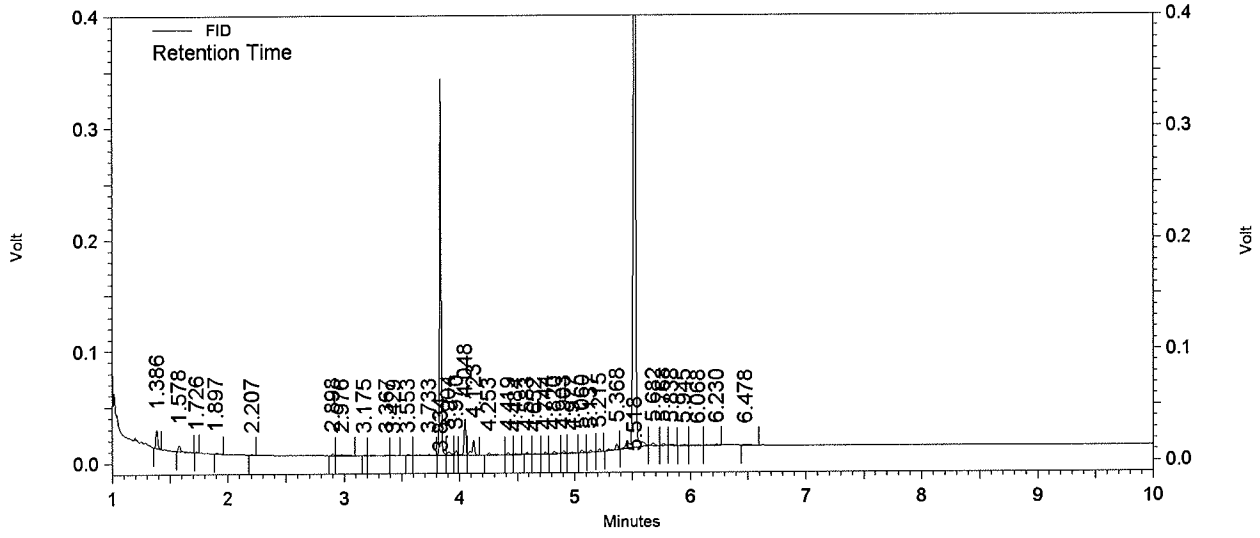
Sample Amount	: 10.01g	Final Volume	: 10ml
Prepared by	: JVille	Analyzed by	: SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28076.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-14
Acquired : 06/29/18 06:46:03
Printed : 07/05/18 13:10:57
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.834	313349	28632.19571	10.944
N-TRIACONTANE	5.518	775269	18711.74318	41.432
TPH(C8-C40)		168211	18626.23247	9.031
DIESEL(C10-C25)		100606	23801.85833	4.227
M.OIL(C25-C36)		49206	11786.61389	4.175
Totals		1406641		69.809



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: CH2M HILL	Date Collected:	06/23/18 12:50
Project	: JBER TO075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 11:51
Sample ID	: 18Q2DP009-SB0601-SO-0	Date Analyzed:	06/29/18 07:03
Lab Samp ID:	18F187-15	Dilution Factor:	1
Lab File ID:	LF28077A	Matrix:	SOIL
Ext Btch ID:	18DSF043S	% Moisture:	7.6
Calib. Ref.:	LF28072A	Instrument ID:	D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	440	11	2.7	5.4
RRO	450	22	5.3	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	12.0	10.8	111	50-150
n-Triacontane	39.7	43.3	92	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

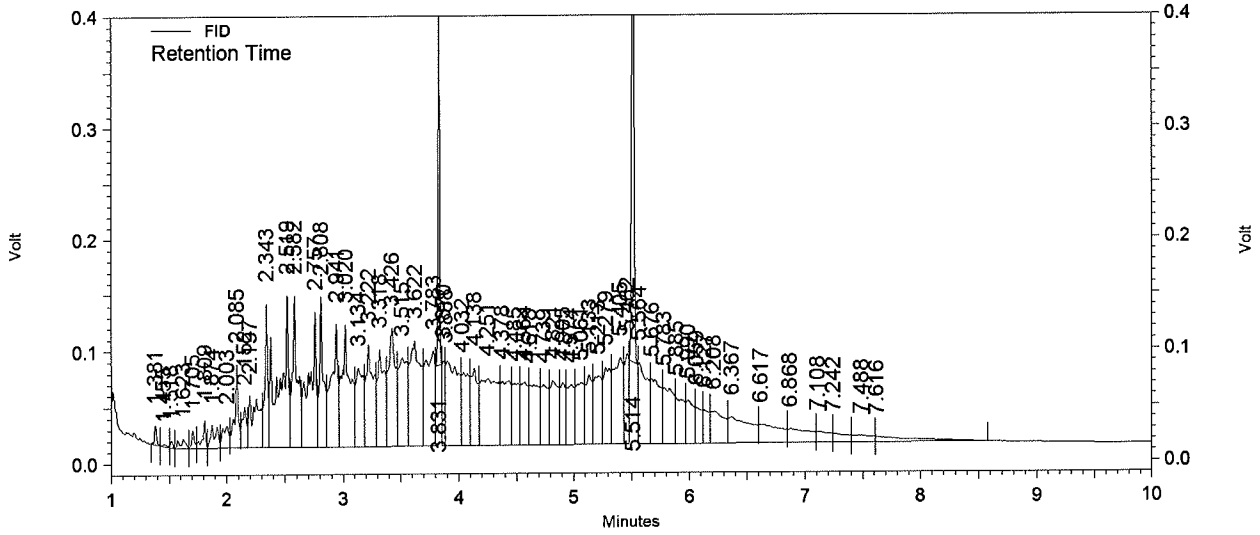
Sample Amount	: 10.03g	Final Volume	: 10ml
Prepared by	: JVille	Analyzed by	: SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28077.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-15
Acquired : 06/29/18 07:03:05
Printed : 07/05/18 13:11:04
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.831	318351	28632.19571	11.119
N-TRIACONTANE	5.514	689189	18711.74318	36.832
TPH(C8-C40)		13760946	18626.23247	738.794
DIESEL(C10-C25)		9669640	23801.85833	406.256
M.OIL(C25-C36)		4923362	11786.61389	417.708
Totals		29361488		1610.708



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: CH2M HILL	Date Collected:	06/23/18 12:51
Project	: JBER T0075	Date Received:	06/26/18
Batch No.	: 18F187	Date Extracted:	06/28/18 11:51
Sample ID	: 18Q2DP009-SB0601-SO-1	Date Analyzed:	06/29/18 07:19
Lab Samp ID:	18F187-16	Dilution Factor:	1
Lab File ID:	LF28078A	Matrix:	SOIL
Ext Btch ID:	18DSF043S	% Moisture:	6.9
Calib. Ref.:	LF28072A	Instrument ID:	D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	520	11	2.7	5.4
RRO	520	21	5.3	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	11.5	10.7	107	50-150
n-Triacontane	40.6	43.0	95	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

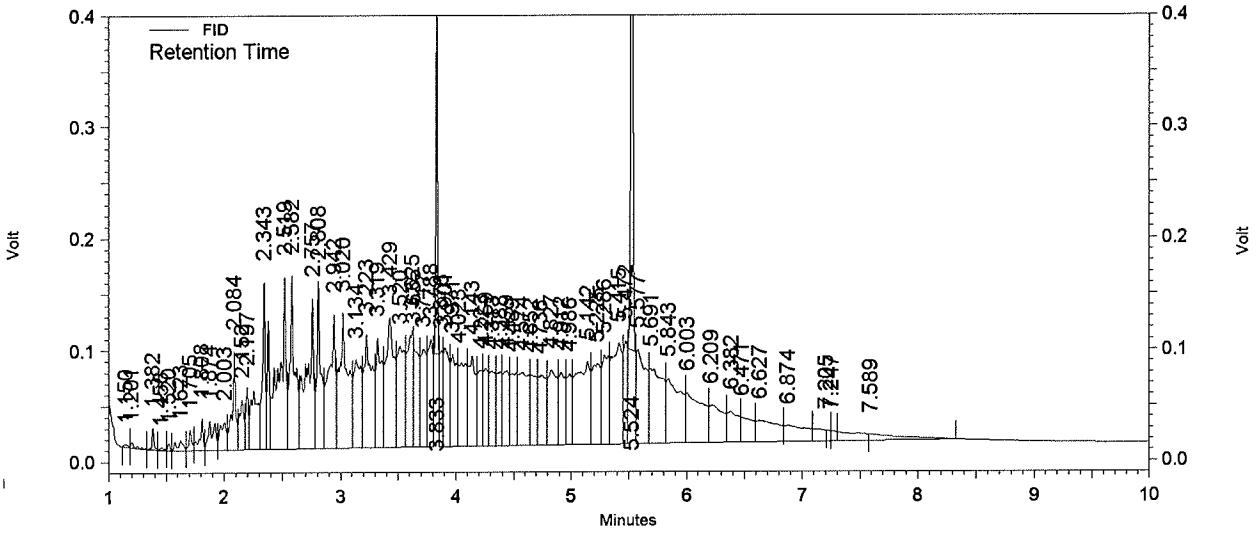
Sample Amount	: 10g	Final Volume	: 10ml
Prepared by	: JVille	Analyzed by	: SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28078.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-16
Acquired : 06/29/18 07:19:56
Printed : 07/05/18 13:11:12
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.833	306705	28632.19571	10.712
N-TRIACONTANE	5.524	707337	18711.74318	37.802
TPH(C8-C40)		16239313	18626.23247	871.852
DIESEL(C10-C25)		11586214	23801.85833	486.778
M.OIL(C25-C36)		5720315	11786.61389	485.323
Totals		34559884		1892.466



Software Version: Version 3.3.1

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : CH2M HILL	Date Collected: 06/23/18 13:20
Project : JBER TO075	Date Received: 06/26/18
Batch No. : 18F187	Date Extracted: 06/28/18 11:51
Sample ID : 18Q2DP009-IDW-S001	Date Analyzed: 06/29/18 07:36
Lab Samp ID: 18F187-17	Dilution Factor: 1
Lab File ID: LF28079A	Matrix: SOIL
Ext Btch ID: 18DSF043S	% Moisture: 8.1
Calib. Ref.: LF28072A	Instrument ID: D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	67	11	2.7	5.4
RRO	190	22	5.3	11

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	12.5	10.9	115	50-150
n-Triacontane	46.0	43.5	106	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.

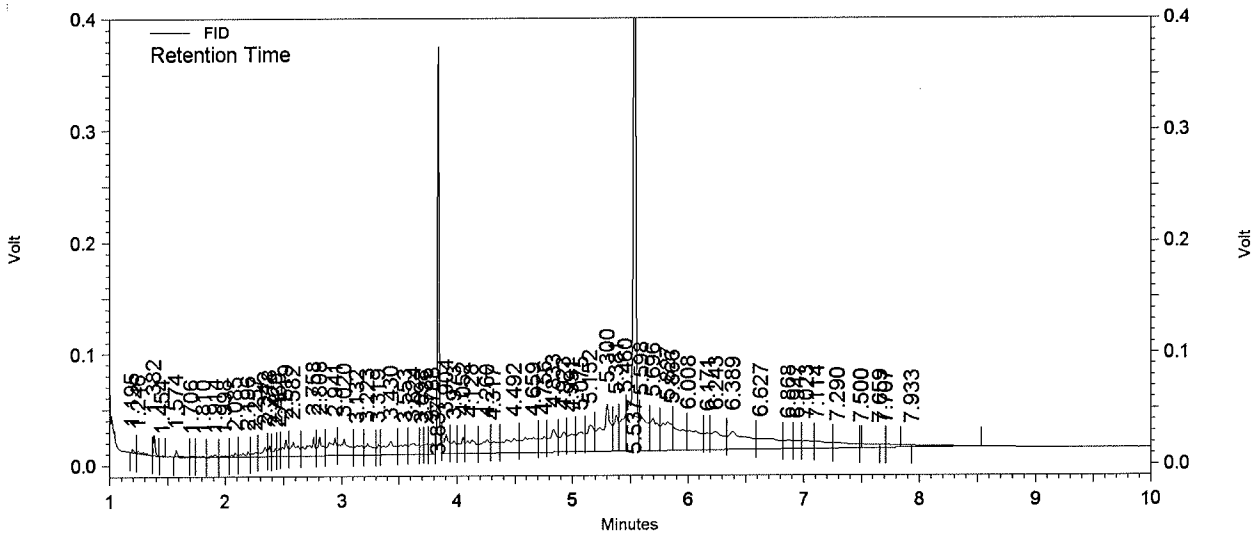
Sample Amount : 10g	Final Volume : 10ml
Prepared by : JVille	Analyzed by : SDeeso

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28079.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-17
Acquired : 06/29/18 07:36:40
Printed : 07/05/18 13:11:19
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.837	328355	28632.19571	11.468
N-TRIACONTANE	5.537	790221	18711.74318	42.231
TPH(C8-C40)		3439912	18626.23247	184.681
DIESEL(C10-C25)		1471567	23801.85833	61.826
M.OIL(C25-C36)		2080103	11786.61389	176.480
Totals		8110158		476.686



Software Version: Version 3.3.1

QC SUMMARIES

METHOD AK102/AK103
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : CH2M HILL	Date Collected: 06/28/18 11:51
Project : JBER TO075	Date Received: 06/28/18
Batch No. : 18F187	Date Extracted: 06/28/18 11:51
Sample ID : MBLK1S	Date Analyzed: 06/29/18 01:57
Lab Samp ID: DSF043SB	Dilution Factor: 1
Lab File ID: LF28059A	Matrix: SOIL
Ext Btch ID: 18DSF043S	% Moisture: NA
Calib. Ref.: LF28058A	Instrument ID: D5

PARAMETER	RESULTS (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
DRO	ND	10	2.5	5.0
RRO	ND	20	4.9	10

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
O-Terphenyl	11.5	10.0	115	50-150
n-Triacontane	44.2	40.0	111	50-150

Notes:

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25
RRO: Motor Oil Range Organics	C25-C36

Detection limits are reported relative to sample result significant figures.
Sample Amount : 10g Final Volume : 10ml
Prepared by : JVille Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : AK102/AK103

MATRIX	: SOIL		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1S	LCS1S	LCD1S
LAB SAMPLE ID	: DSF043SB	DSF043SL	DSF043SC
LAB FILE ID	: LF28059A	LF28060A	LF28061A
DATE PREPARED	: 06/28/18 11:51	06/28/18 11:51	06/28/18 11:51
DATE ANALYZED	: 06/29/18 01:57	06/29/18 02:14	06/29/18 02:31
PREP BATCH	: 18DSF043S	18DSF043S	18DSF043S
CALIBRATION REF	: LF28058A	LF28058A	LF28058A

ACCESSION:

PARAMETERS	MBResult (mg/kg)	SpikeAmt (mg/kg)	LCSResult (mg/kg)	LCSRec (%)	SpikeAmt (mg/kg)	LCDResult (mg/kg)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
DRO	ND	500	623	125	500	567	113	9	75-125	20
RRO	ND	500	565	113	500	553	111	2	60-120	20

SURROGATE PARAMETERS	SpikeAmt (mg/kg)	LCSResult (mg/kg)	LCSRec (%)	SpikeAmt (mg/kg)	LCDResult (mg/kg)	LCDRec (%)	QCLimit (%)
O-Terphenyl	10.0	11.4	114	10.0	10.5	105	60-120
n-Triacontane	40.0	42.1	105	40.0	35.7	89	60-120

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : AK102/AK103

MATRIX	: SOIL		% MOISTURE:3.9
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 18Q2DP009-SB0501-SO-0	18Q2DP009-SB0501-SO-0MS	18Q2DP009-SB0501-SO-0MSD
LAB SAMPLE ID	: 18F187-07	18F187-07M	18F187-07S
LAB FILE ID	: LF28067A	LF28068A	LF28069A
DATE PREPARED	: 06/28/18 11:51	06/28/18 11:51	06/28/18 11:51
DATE ANALYZED	: 06/29/18 04:13	06/29/18 04:29	06/29/18 04:46
PREP BATCH	: 18DSF043S	18DSF043S	18DSF043S
CALIBRATION REF	: LF28058A	LF28058A	LF28058A

ACCESSION:

PARAMETERS	PSResult (mg/kg)	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
DRO	ND	520	576	111	520	591	114	3	75-125	20
RRO	ND	520	562	108	520	559	107	1	60-120	20

SURROGATE PARAMETERS	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	QCLimit (%)
O-Terphenyl	10.4	11.3	109	10.4	11.2	108	50-150
n-Triacontane	41.6	37.5	90	41.6	38.3	92	50-150

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

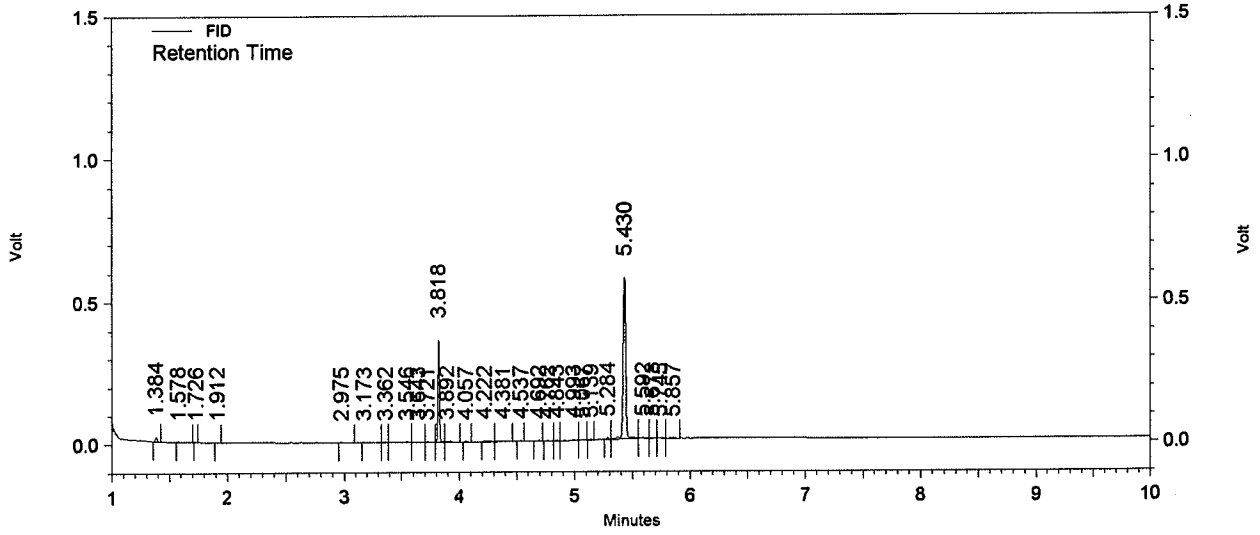
QC DATA

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28059.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : DSF043SB
Acquired : 06/29/18 01:57:11
Printed : 07/05/18 13:05:48
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.818	327860	28632.19571	11.451
N-TRIACONTANE	5.430	827307	18711.74318	44.213
TPH(C8-C40)		79503	18626.23247	4.268
DIESEL(C10-C25)		37914	23801.85833	1.593
M.OIL(C25-C36)		36157	11786.61389	3.068
Totals		1308741		64.593



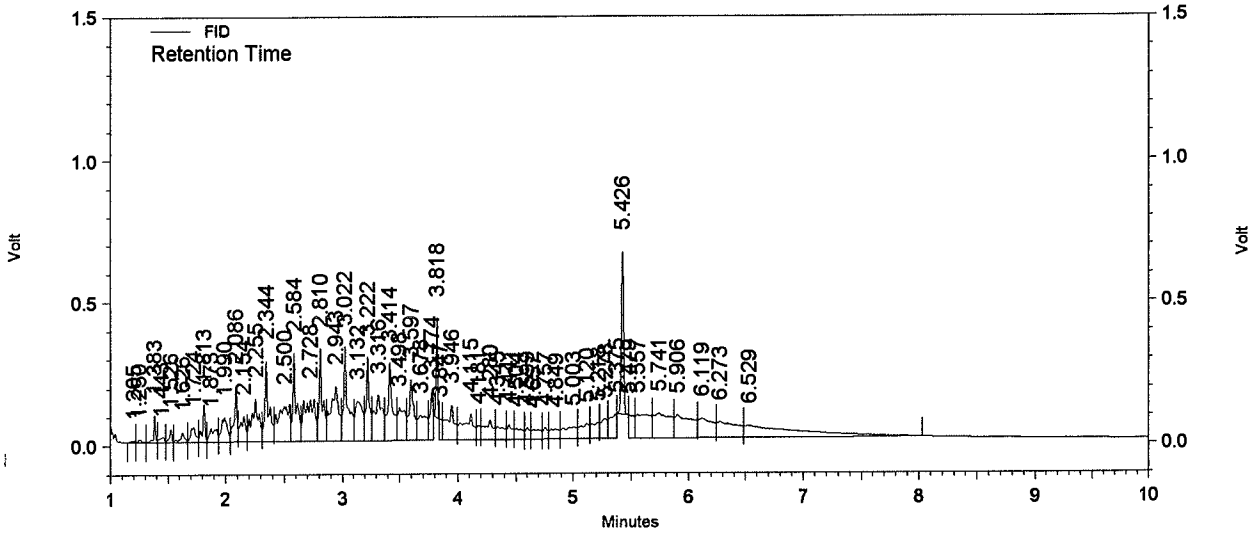
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28060.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : DSF043SL
Acquired : 06/29/18 02:14:11
Printed : 07/05/18 13:05:58
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.818	325824	28632.19571	11.380
N-TRIACONTANE	5.426	787047	18711.74318	42.062
TPH(C8-C40)		21240915	18626.23247	1140.376
DIESEL(C10-C25)		14838667	23801.85833	623.425 ✓
M.OIL(C25-C36)		6657582	11786.61389	564.843 ✓
Totals		43850035		2382.085



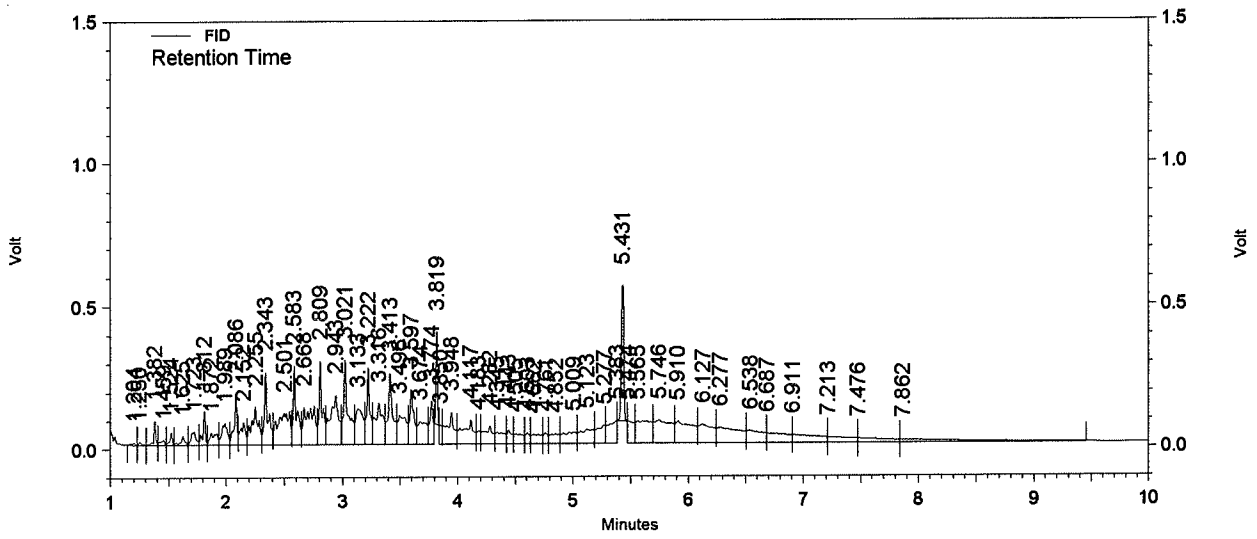
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28061.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : DSF043SC
Acquired : 06/29/18 02:31:03
Printed : 07/05/18 13:06:08
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.819	299923	28632.19571	10.475
N-TRIACONTANE	5.431	668920	18711.74318	35.749
TPH(C8-C40)		20315288	18626.23247	1090.682
DIESEL(C10-C25)		13488315	23801.85833	566.692
M.OIL(C25-C36)		6518988	11786.61389	553.084
Totals		41291434		2256.681



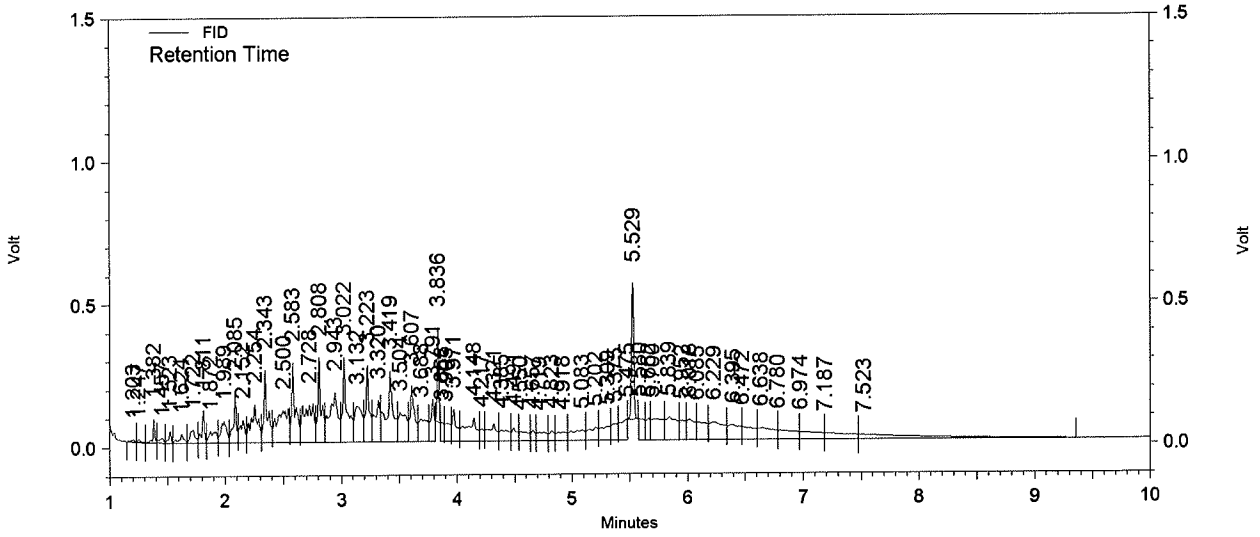
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28068.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-07M
Acquired : 06/29/18 04:29:55
Printed : 07/05/18 13:07:24
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.836	312048	28632.19571	10.899
N-TRIACONTANE	5.529	674769	18711.74318	36.061
TPH(C8-C40)		20029908	18626.23247	1075.360
DIESEL(C10-C25)		13183237	23801.85833	553.874
M.OIL(C25-C36)		6368140	11786.61389	540.286
Totals		40568102		2216.480



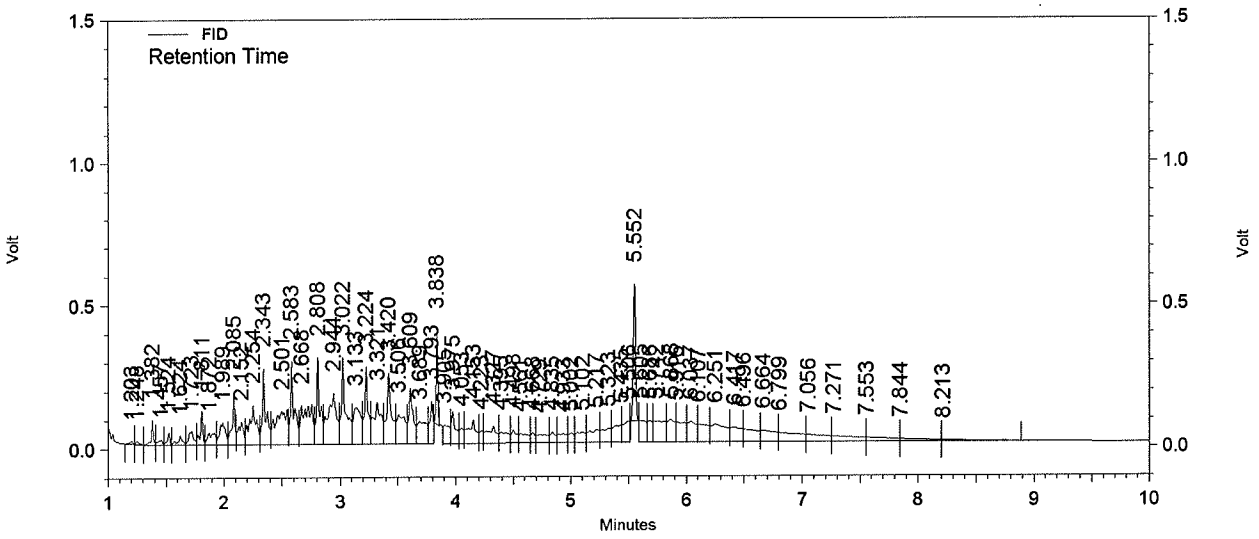
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28069.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : 18F187-07S
Acquired : 06/29/18 04:46:53
Printed : 07/05/18 13:07:32
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.838	307516	28632.19571	10.740
N-TRIACONTANE	5.552	689050	18711.74318	36.824
TPH(C8-C40)		20457021	18626.23247	1098.291
DIESEL(C10-C25)		13526072	23801.85833	568.278
M.OIL(C25-C36)		6328836	11786.61389	536.951
Totals		41308495		2251.085



Software Version: Version 3.3.1

INITIAL CALIBRATIONS

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI27005A 09/27/17 12:58
LFID & Datetime: LI27006A 09/27/17 13:15
LFID & Datetime: LI27007A 09/27/17 13:31
LFID & Datetime: LI27008A 09/27/17 13:48
LFID & Datetime: LI27009A 09/27/17 14:22
LFID & Datetime: LI27010A 09/27/17 14:39
CONC UNIT: ppm

	CONC	CALIBRATION FACTORS (AREA)/UNIT							
COMPOUND	X	2.00X	10.00X	20.00X	100.00X	300.00X	600.00X	MEAN	%RSD
TPH(C8-C40)	10.00	15587	15345	20006	20226	20112	20482	18626.2	13.2
DIESEL(C10-C25)	5.00	16989	19296	26579	26176	26611	27160	23801.9	18.7
M.Oil(C25-C36)	5.00	12807	10075	11514	12141	11981	12202	11786.6	7.9
SURROGATE	X	1.00X	2.00X	3.00X	4.00X	5.00X	11.00X	MEAN	%RSD
O-TERPHENYL	5.00	29376	28646	29308	29605	28914	25944	28632.2	4.8
N-TRIACONTANE	20.00	20143	18916	19505	17825	17892	17988	18711.7	5.2

AKD5I27.MET

FORM VI DIESEL -2 1/96 Rev 2/2006

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI27005A 09/27/17 12:58
LFID & Datetime: LI27006A 09/27/17 13:15
LFID & Datetime: LI27007A 09/27/17 13:31
LFID & Datetime: LI27008A 09/27/17 13:48
LFID & Datetime: LI27009A 09/27/17 14:22
LFID & Datetime: LI27010A 09/27/17 14:39

	RT OF STANDARDS (MIN)						MEAN	RT WINDOW		RTWINDOW
COMPOUND	2.0X	10.0X	20.0X	100.0X	300.0X	600.0X	RT	FROM	TO	WIDTH
TPH(C8-C40)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIESEL(C10-C25)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M.Oil(C25-C36)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SURROGATE	1.0X	2.0X	3.0X	4.0X	5.0X	11.0X	RT	FROM	TO	WIDTH
O-TERPHENYL	3.893	3.896	3.894	3.898	3.898	3.902	3.897	3.877	3.917	0.020
N-TRIACONTANE	5.455	5.464	5.459	5.478	5.484	5.488	5.471	5.376	5.566	0.095

AKD5I27.MET

FORM VI DIESEL -1 1/96 Rev 2/2006

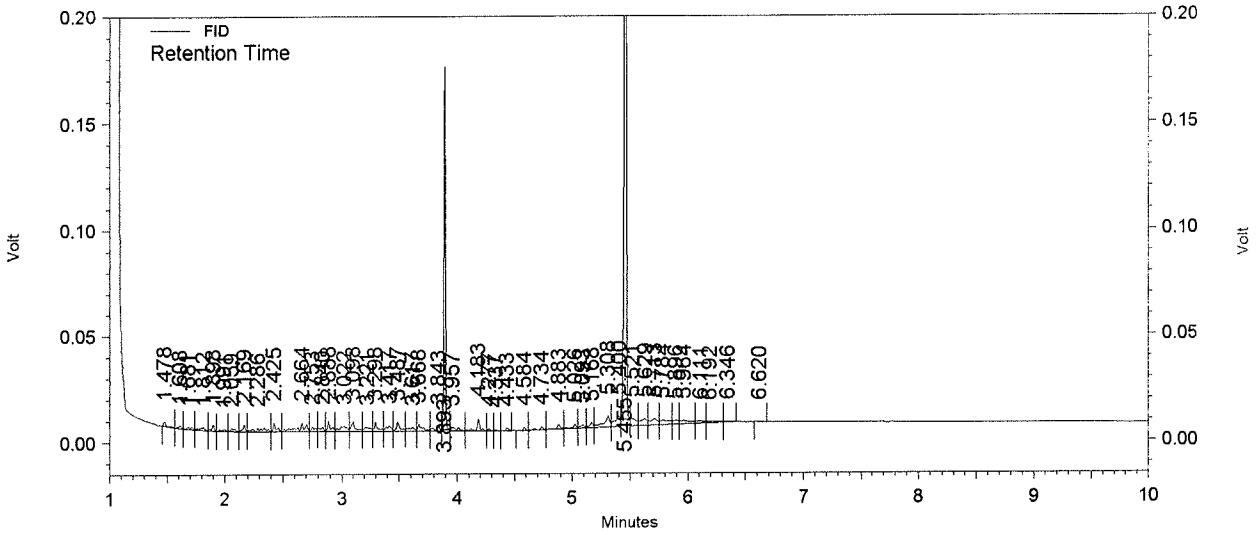
LC 9/28/17

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LI27\LI27005.dat
Method : D:\Projects\EZC331\Method\2017 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LI27.seq
Sample ID : AKD5I27001 10/10/5/20 PPM
Acquired : 09/27/17 12:58:11
Printed : 09/27/17 15:04:16
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.893	146879	28632.19571	5.000 CAL
N-TRIACONTANE	5.455	402862	18711.74318	20.000 CAL
TPH(C8-C40)		311739	18626.23247	20.000 CAL
DIESEL(C10-C25)		169887	23801.85833	10.000 CAL
M.OIL(C25-C36)		128070	11786.61389	10.000 CAL
Totals		1159437		65.000 CAL



9/28/17

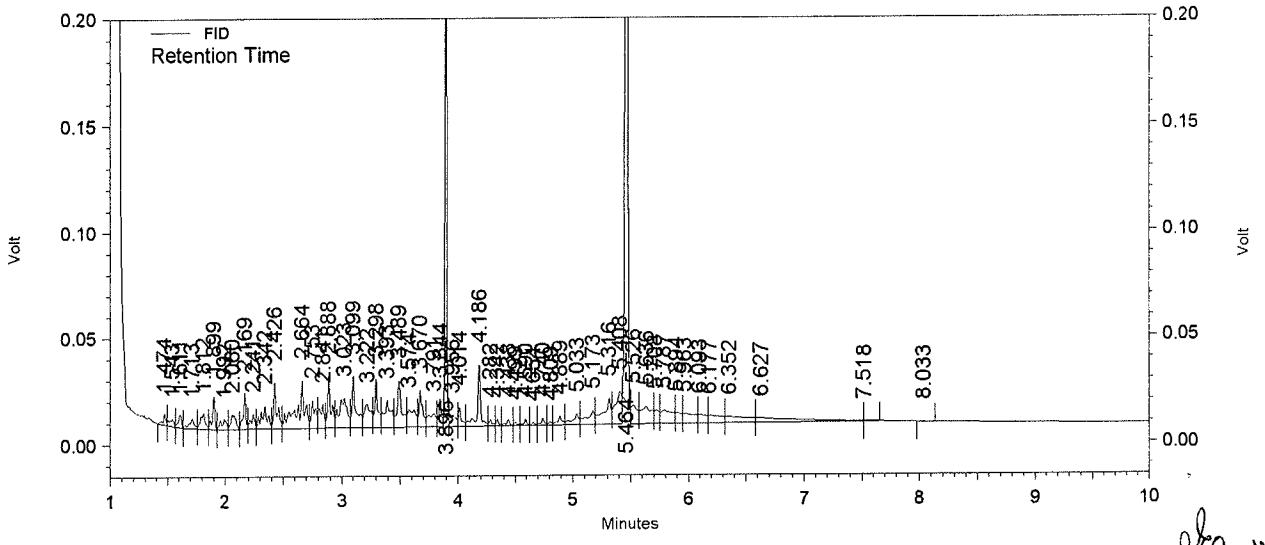
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LI27\LI27006.dat
Method : D:\Projects\EZC331\Method\2017 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LI27.seq
Sample ID : AKD5I27002 50/50/10/40 PPM
Acquired : 09/27/17 13:15:05
Printed : 09/27/17 15:04:52
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.896	286458	28632.19571	10.000 CAL
N-TRIACONTANE	5.464	756649	18711.74318	40.000 CAL
TPH(C8-C40)		1534459	18626.23247	100.000 CAL
DIESEL(C10-C25)		964824	23801.85833	50.000 CAL
M.OIL(C25-C36)		503734	11786.61389	50.000 CAL
Totals		4046124		250.000 CAL



9/28/17

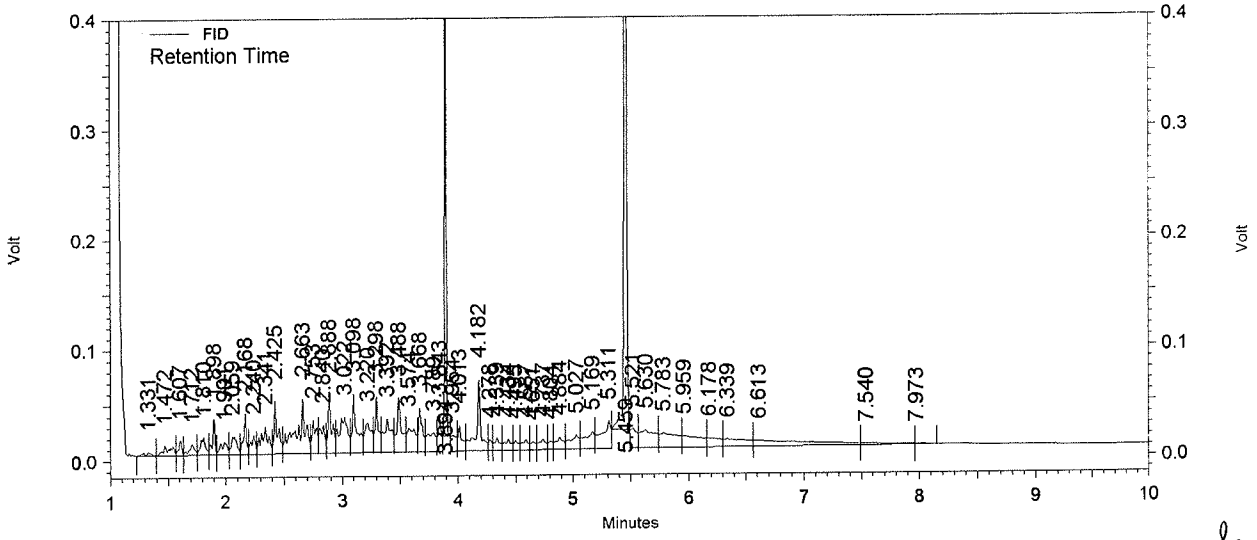
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LI27\LI27007.dat
Method : D:\Projects\EZC331\Method\2017 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LI27.seq
Sample ID : AKD5I27003 100/100/15/60 PPM
Acquired : 09/27/17 13:31:47
Printed : 09/27/17 15:05:17
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.894	439625	28632.19571	15.000 CAL
N-TRIACONTANE	5.459	1170312	18711.74318	60.000 CAL
TPH(C8-C40)		4001114	18626.23247	200.000 CAL
DIESEL(C10-C25)		2657923	23801.85833	100.000 CAL
M.OIL(C25-C36)		1151400	11786.61389	100.000 CAL
Totals		9420374		475.000 CAL



9/28/17

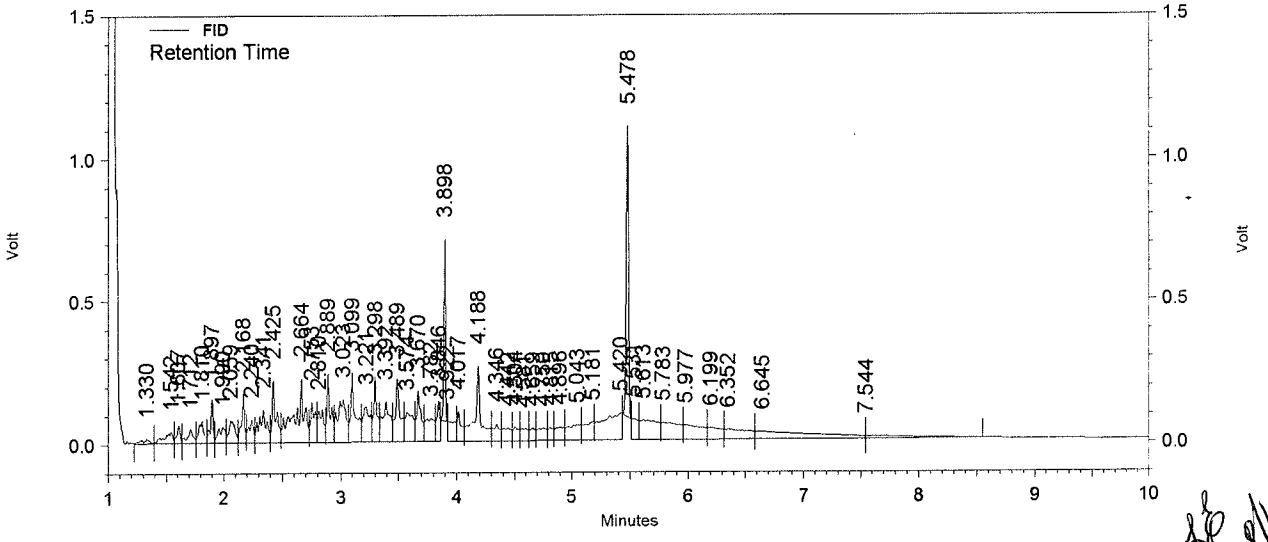
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LI27\LI27008.dat
Method : D:\Projects\EZC331\Method\2017 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LI27.seq
Sample ID : AKD5I27004 500/500/20/80 PPM
Acquired : 09/27/17 13:48:35
Printed : 09/27/17 15:05:39
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.898	592103	28632.19571	20.000 CAL
N-TRIACONTANE	5.478	1426018	18711.74318	80.000 CAL
TPH(C8-C40)		20225888	18626.23247	1000.000 CAL
DIESEL(C10-C25)		13087847	23801.85833	500.000 CAL
M.OIL(C25-C36)		6070409	11786.61389	500.000 CAL
Totals		41402265		2100.000 CAL



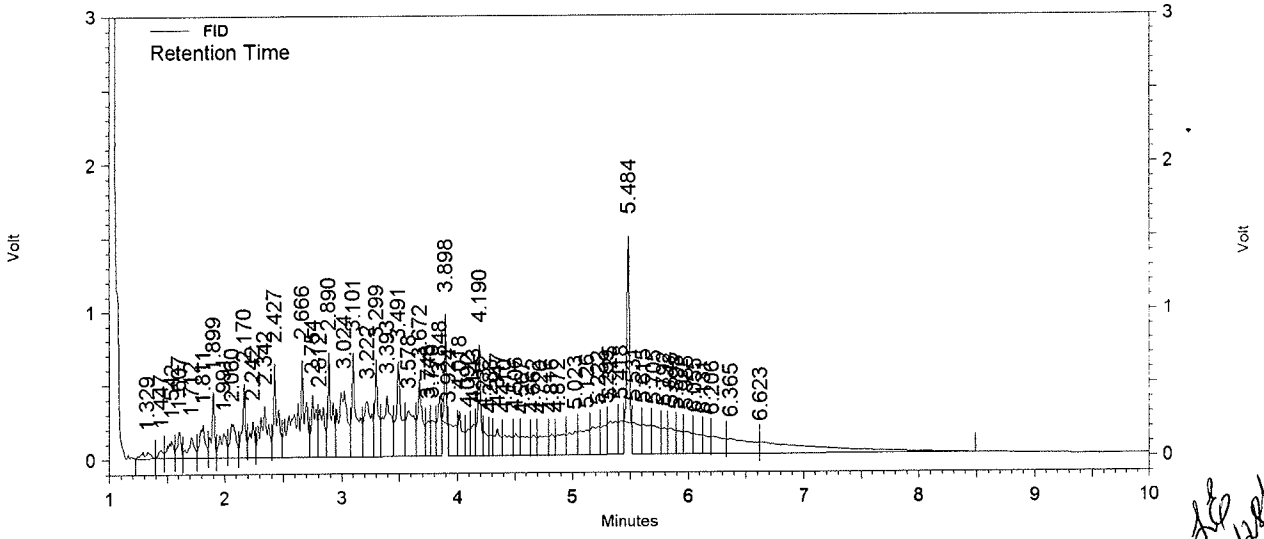
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LI27\LI27009.dat
Method : D:\Projects\EZC331\Method\2017 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LI27.seq
Sample ID : AKD5I27005 1500/1500/25/100 PPM
Acquired : 09/27/17 14:22:20
Printed : 09/27/17 15:05:52
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.898	722845	28632.19571	25.000 CAL
N-TRIACONTANE	5.484	1789225	18711.74318	100.000 CAL
TPH(C8-C40)		60336866	18626.23247	3000.000 CAL
DIESEL(C10-C25)		39917181	23801.85833	1500.000 CAL
M.OIL(C25-C36)		17971909	11786.61389	1500.000 CAL
Totals		120738026		6125.000 CAL



9/28/17

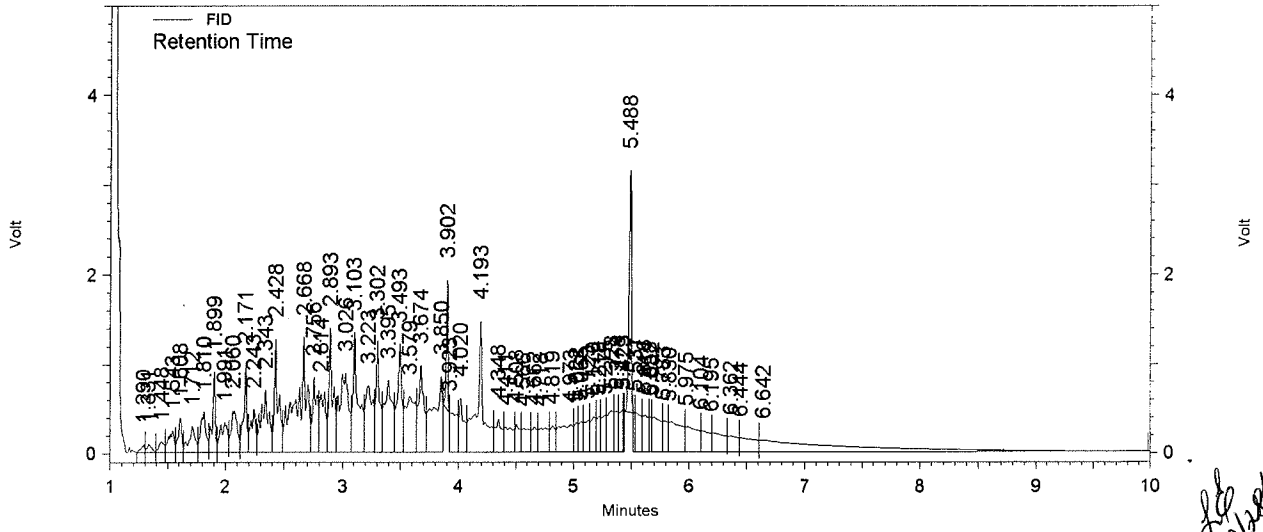
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LI27\LI27010.dat
Method : D:\Projects\EZC331\Method\2017 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LI27.seq
Sample ID : AKD5I27006 3000/3000/55/220 PPM
Acquired : 09/27/17 14:39:12
Printed : 09/27/17 15:06:12
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.902	1426936	28632.19571	55.000 CAL
N-TRIACONTANE	5.488	3957461	18711.74318	220.000 CAL
TPH(C8-C40)		122892649	18626.23247	6000.000 CAL
DIESEL(C10-C25)		81478776	23801.85833	3000.000 CAL
M.OIL(C25-C36)		36605738	11786.61389	3000.000 CAL
Totals		246361560		12275.000 CAL



9/28/17

Software Version: Version 3.3.1

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI27008A 09/27/2017 13:48
Conc Cont LFID & Datetime: LI27011A 09/27/2017 15:00
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
TPH(C8-C40)	NA	NA	NA	1000.0	18626.2	19365984	1039.72	4		20
DIESEL(C10-C25)	NA	NA	NA	500.0	23801.9	12735185	535.05	7		20
M.Oil(C25-C36)	NA	NA	NA	500.0	11786.6	6166719	523.20	5		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
O-TERPHENYL	3.901	3.881	3.921	20.0	28632.2	511472	17.86	-11		20
N-TRIACONTANE	5.486	5.391	5.581	80.0	18711.7	1351564	72.23	-10		20

AKD5127.MET

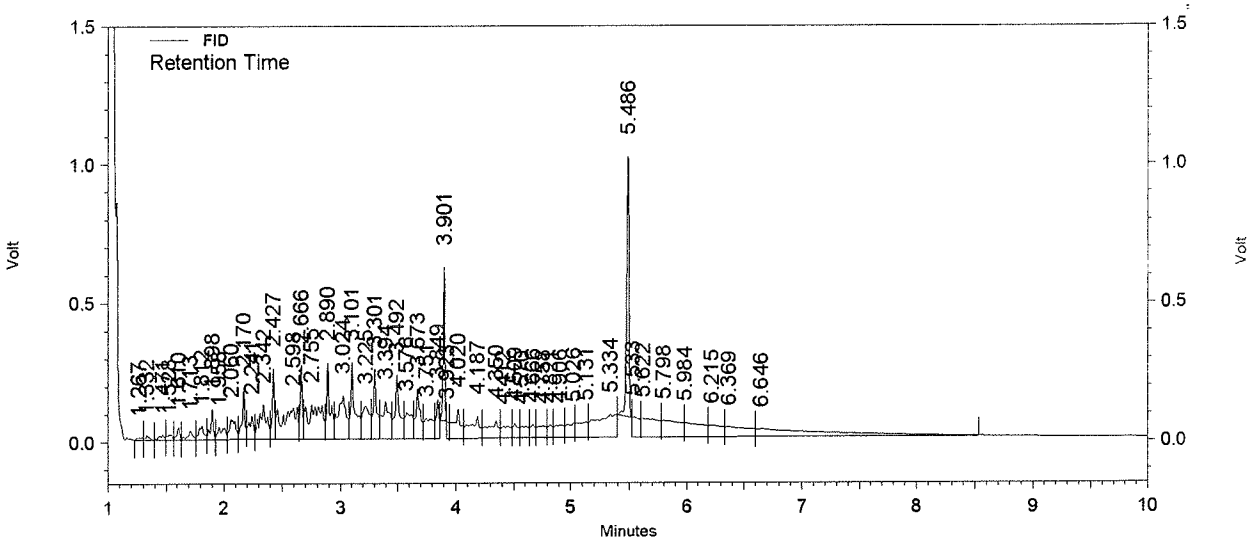
LE 9/28/17

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LI27\LI27011.dat
Method : D:\Projects\EZC331\Method\2017 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LI27.seq
Sample ID : IAKD5I27001 500/500/20/80 PPM
Acquired : 09/27/17 15:00:52
Printed : 09/27/17 15:22:23
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.901	511472	28632.19571	17.864
N-TRIACONTANE	5.486	1351564	18711.74318	72.231
TPH(C8-C40)		19365984	18626.23247	1039.716
DIESEL(C10-C25)		12735185	23801.85833	535.050
M.OIL(C25-C36)		6166719	11786.61389	523.197
Totals		40130924		2188.057



9/28/17

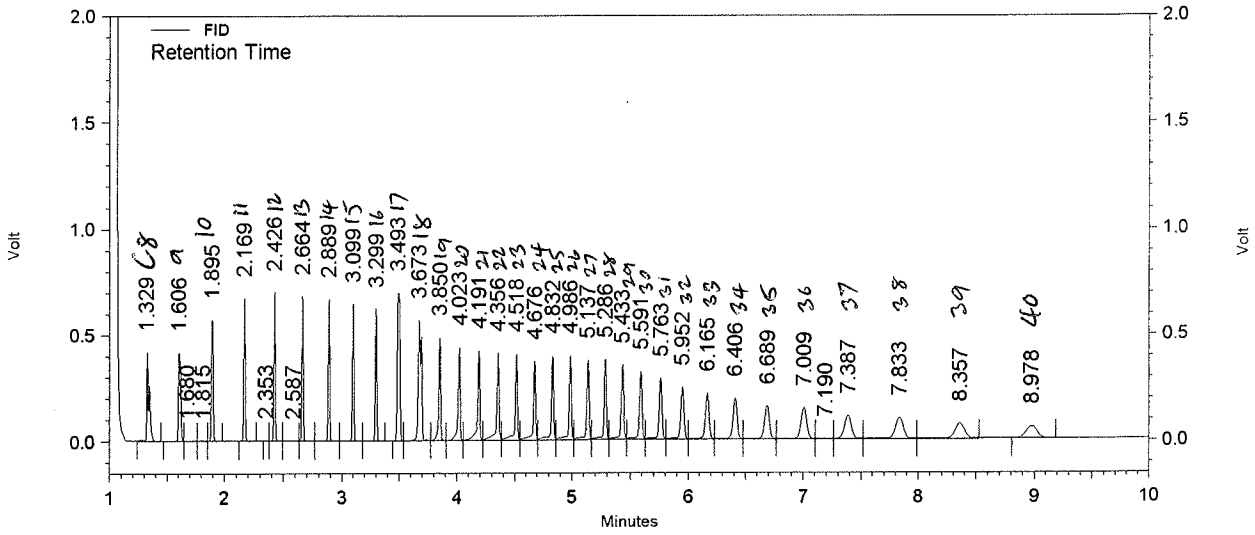
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LI27\LI27003.dat
Method : D:\Projects\EZC331\Method\2017 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LI27.seq
Sample ID : DRO-01
Acquired : 09/27/17 12:24:33
Printed : 09/27/17 15:25:23
User : CZhao

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL				0.000 BDL
N-TRIACONTANE	5.433	521519	18711.74318	27.871
TPH(C8-C40)		17965763	18626.23247	964.541
DIESEL(C10-C25)		9841745	23801.85833	413.486
M.OIL(C25-C36)		4647577	11786.61389	394.310
Totals		32976604		1800.208



9/28/17

Software Version: Version 3.3.1

DAILY CALIBRATIONS

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI27008A 09/27/2017 13:48
Conc Cont LFID & Datetime: LF28058A 06/29/2018 01:40
CONC UNIT : ppm

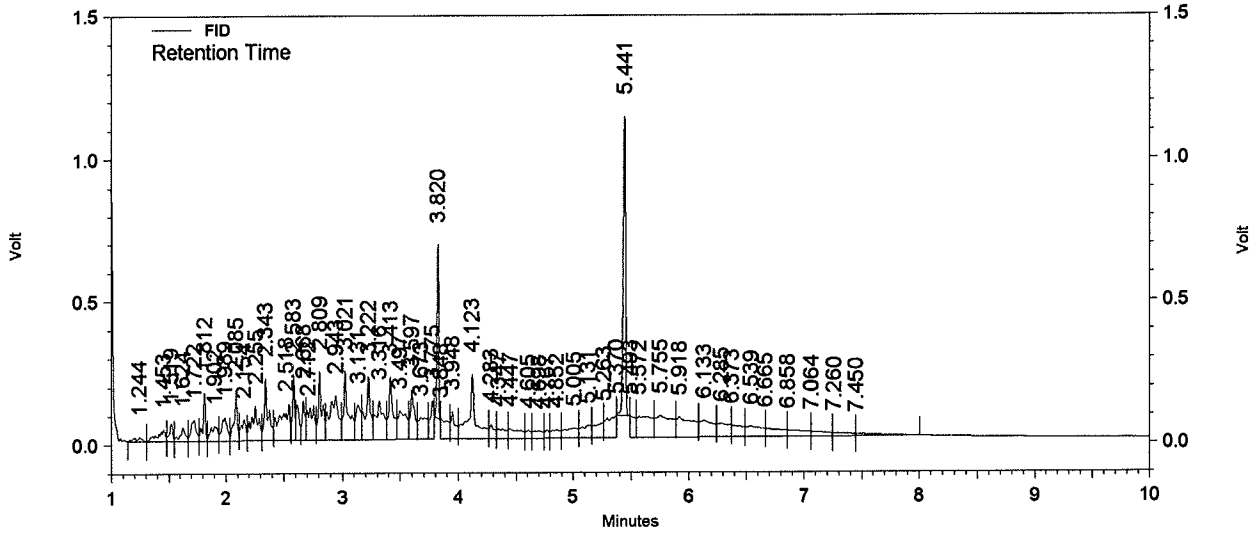
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
TPH(C8-C40)	NA	NA	NA	1000.0	18626.2	17870068	959.40	-4		20
DIESEL(C10-C25)	NA	NA	NA	500.0	23801.9	12073799	507.26	1		20
M.Oil(C25-C36)	NA	NA	NA	500.0	11786.6	5277266	447.73	-10		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
O-TERPHENYL	3.820	3.800	3.840	20.0	28632.2	588132	20.54	3		20
N-TRIACONTANE	5.441	5.346	5.536	80.0	18711.7	1504762	80.42	1		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28058.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : CAKD5I2701732 DSL/30W40 500/500/20/80 PPM
Acquired : 06/29/18 01:40:10
Printed : 07/05/18 13:05:37
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.820	588132	28632.19571	20.541
N-TRIACONTANE	5.441	1504762	18711.74318	80.418
TPH(C8-C40)		17870067	18626.23247	959.403
DIESEL(C10-C25)		12073799	23801.85833	507.263
M.OIL(C25-C36)		5277266	11786.61389	447.734
Totals		37314026		2015.359



Software Version: Version 3.3.1

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI27008A 09/27/2017 13:48
Conc Cont LFID & Datetime: LF28072A 06/29/2018 05:38
CONC UNIT : ppm

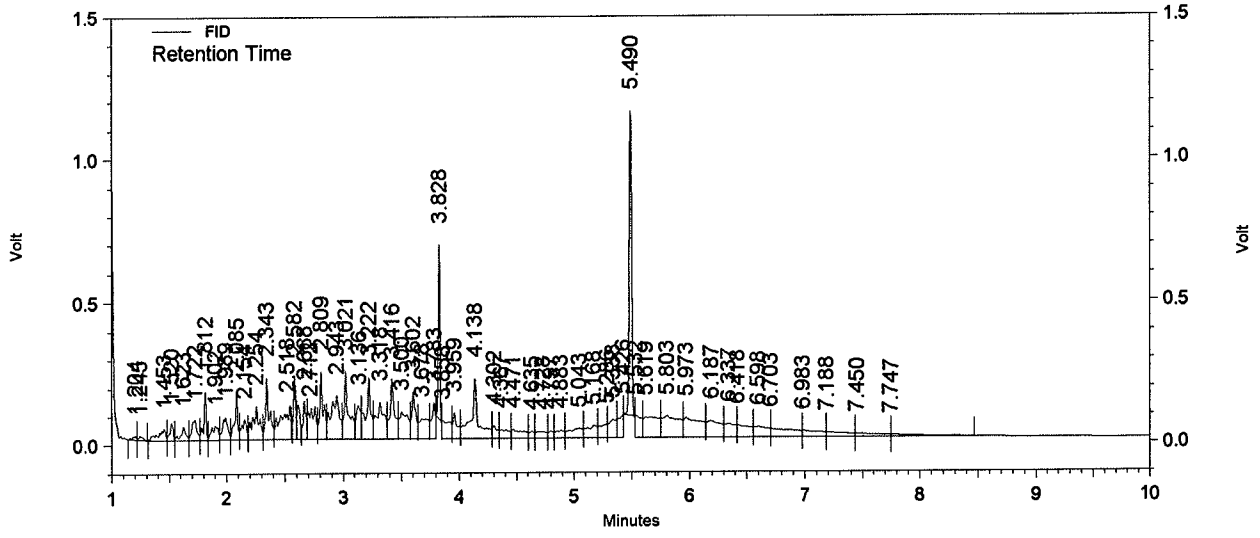
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
TPH(C8-C40)	NA	NA	NA	1000.0	18626.2	18161868	975.07	-2		20
DIESEL(C10-C25)	NA	NA	NA	500.0	23801.9	11558342	485.61	-3		20
M.Oil(C25-C36)	NA	NA	NA	500.0	11786.6	5898972	500.48	0		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
O-TERPHENYL	3.828	3.808	3.848	20.0	28632.2	580126	20.26	1		20
N-TRIACONTANE	5.490	5.395	5.585	80.0	18711.7	1497473	80.03	0		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28072.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : CAKD5I2701733 DSL/30W40 500/500/20/80 PPM
Acquired : 06/29/18 05:38:02
Printed : 07/05/18 13:07:53
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.828	580126	28632.19571	20.261
N-TRIACONTANE	5.490	1497473	18711.74318	80.029
TPH(C8-C40)		18161869	18626.23247	975.069
DIESEL(C10-C25)		11558342	23801.85833	485.607
M.OIL(C25-C36)		5898972	11786.61389	500.481
Totals		37696782		2061.447



Software Version: Version 3.3.1

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI27008A 09/27/2017 13:48
Conc Cont LFID & Datetime: LF28080A 06/29/2018 07:53
CONC UNIT : ppm

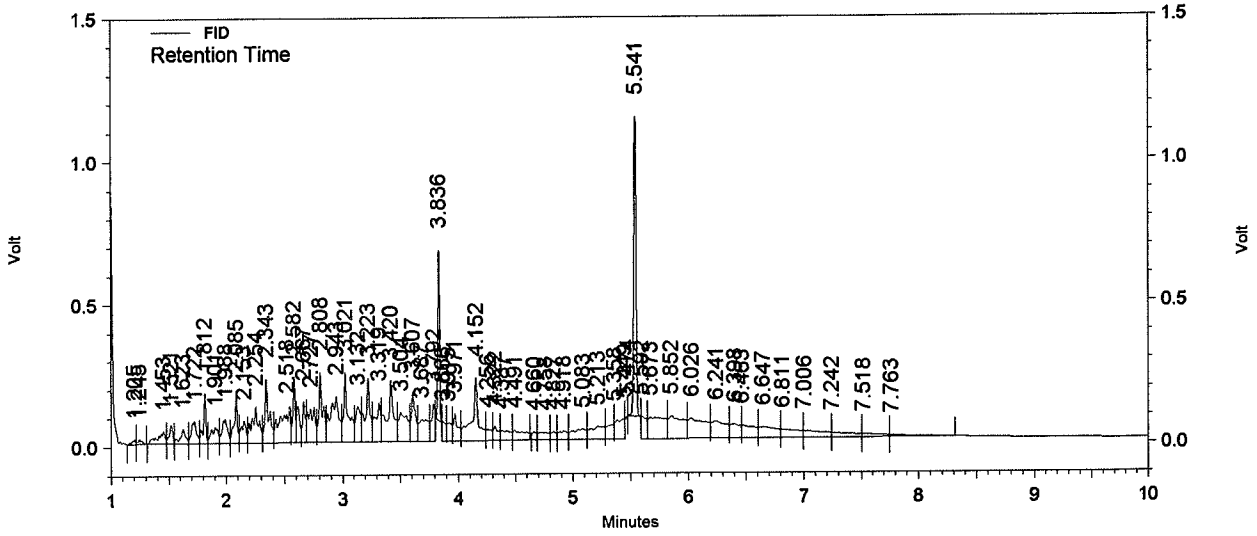
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
TPH(C8-C40)	NA	NA	NA	1000.0	18626.2	19042760	1022.36	2		20
DIESEL(C10-C25)	NA	NA	NA	500.0	23801.9	12487147	524.63	5		20
M.Oil(C25-C36)	NA	NA	NA	500.0	11786.6	5869500	497.98	-0		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
O-TERPHENYL	3.836	3.816	3.856	20.0	28632.2	596155	20.82	4		20
N-TRIACONTANE	5.541	5.446	5.636	80.0	18711.7	1512303	80.82	1		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : D5 (Offline)
File : D:\Projects\EZC331\Data\LF28\LF28080.dat
Method : D:\Projects\EZC331\Method\2018 METHODS\AKD5I27.met
Sequence: : D:\Projects\EZC331\Sequence\LF28.seq
Sample ID : CAKD5I2701734 DSL/30W40 500/500/20/80 PPM
Acquired : 06/29/18 07:53:29
Printed : 07/05/18 13:11:26
User : SDEESO

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
O-TERPHENYL	3.836	596155	28632.19571	20.821
N-TRIACONTANE	5.541	1512303	18711.74318	80.821
TPH(C8-C40)		19042761	18626.23247	1022.362
DIESEL(C10-C25)		12487147	23801.85833	524.629
M.OIL(C25-C36)		5869500	11786.61389	497.980
Totals		39507866		2146.614



Software Version: Version 3.3.1

ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
EXTRACTABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

AK ICAL

DSL0305 - I152

Book #: AD5-042

Instrument No.: D5

Analytical Sequence: L127

Method File: AKD5I27

Analytical Batch: CAKD5I270315

SOP #	Rev. #
☐ EMAX-8015D	6
☑ EMAX-AK102/AK103	4
☐ EMAX-	

STANDARDS ID	Conc (mg/L)
AK ICAL SS 3B-21-49-01	10-3000 5-55 20-220
☐ Diesel	
☐ Motor Oil ☐ JP5	
CH_2Cl_2	
DSL DCC	
JP5/5W30 DCC	
Alaska DCC SS3B-22-30-02	500/500/20/80
Arizona DCC	
AK ICV SS3B-21-49-03	500/500/20/80
DRO SS3B-21-42-01	20

SYRINGES
☑ 1 mL - MSF-01-01-05
☑ 500 µL - MSF-01-01-06
☑ 250 µL - MSF-01-01-09
☑ 100 µL - MSF-01-01-07
☑ 50 µL - MSF-01-01-08
☐ 10 µL - MSF-01-01-10
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZCHROM_GC6890N	
☐ External Hard Drive	

Analyzed By: SD

Date: 9/27/17

Run #	Run Type	Vial	Volume	Sample ID	Method	Filename	Action	Description
1	Unknow	100	2	MECL2	AKD5I27.met	LI27001.dat		
2	Unknown	99	2	IBD5I27001	AKD5I27.met	LI27002.dat		
3	Unknown	98	2	DRO-01	AKD5I27.met	LI27003.dat		
4	Unknown	1	2	AKD5I27001 10/10/5/20 PPM	AKD5I27.met	LI27004.dat		Bad injection
5	Unknown	1	2	AKD5I27001 10/10/5/20 PPM	AKD5I27.met	LI27005.dat		
6	Unknown	2	2	AKD5I27002 50/50/10/40 PPM	AKD5I27.met	LI27006.dat		
7	Unknown	3	2	AKD5I27003 100/100/15/60 PPM	AKD5I27.met	LI27007.dat		
8	Unknown	4	2	AKD5I27004 500/500/20/80 PPM	AKD5I27.met	LI27008.dat		
9	Unknown	5	2	AKD5I27005 1500/1500/25/100 PPM	AKD5I27.met	LI27009.dat		
10	Unknown	6	2	AKD5I27006 3000/3000/55/220 PPM	AKD5I27.met	LI27010.dat		
11	Unknown	7	2	IAKD5I27001 500/500/20/80 PPM	AKD5I27.met	LI27011.dat		
12	Unknown	95	2	CAKD5I270315 500/500/20/80 PPM	AKD5I27.met	LI27012.dat		
13	Unknown	8	2	DSI030SB	AKD5I27.met	LI27013.dat		
14	Unknown	9	2	DSI030SL	AKD5I27.met	LI27014.dat		
15	Unknown	10	2	DSI030SC	AKD5I27.met	LI27015.dat		
16	Unknown	11	2	17I152-05	AKD5I27.met	LI27016.dat		YELLOW
17	Unknown	12	2	17I152-06	AKD5I27.met	LI27017.dat		YELLOW
18	Unknown	13	2	17I152-07	AKD5I27.met	LI27018.dat		YELLOW
19	Unknown	14	2	17I152-08	AKD5I27.met	LI27019.dat		YELLOWISH
20	Unknown	15	2	17I152-09	AKD5I27.met	LI27020.dat		YELLOW
21	Unknown	16	2	17I152-09M	AKD5I27.met	LI27021.dat		YELLOW
22	Unknown	17	2	17I152-09S	AKD5I27.met	LI27022.dat		YELLOW
23	Unknown	95	2	CAKD5I270316 500/500/20/80 PPM	AKD5I27.met	LI27023.dat		
24	Unknown		2	B	AKD5I27.met	LI27024.dat		

FINAL

9/27/17.

ANALYSIS RUN LOG
for
EXTRACTABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DSF041S - 18F185
DSF042W - 18F182
- 18F183
- 18F192
- 18F173
DSF045S - 18F211
DSF043S - 18F187

Book #:	AD5-045
Instrument No.:	D5
Analytical Sequence:	LF28
Method File:	DSD5331, AKD5127
Analytical Batch:	CDSD653101722

SOP #	Rev. #
☑ EMAX-8015D	7
☑ EMAX-AK102/AK103	4
☐ EMAX-	

STANDARDS ID	Conc (mg/L)
ICAL	
☐ Diesel	
☐ Motor Oil ☐ JP5	
CH_2Cl_2 181159	pure
DSL DCC 553B-24-13-01	800/800/20
JP5/5W30 DCC 553B-24-13-02	800/500
Alaska DCC 553B-24-09-01	800/800/20/800
Arizona DCC	
DRO 553B-24-07-02	20 ppm

SYRINGES
☐ 1 mL - MSF-01-01-05
☐ 500 µL - MSF-01-01-06
☐ 250 µL - MSF-01-01-09
☐ 100 µL - MSF-01-01-07
☐ 50 µL - MSF-01-01-08
☐ 10 µL - MSF-01-01-10
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZCHROM_GC6890N	
☐ External Hard Drive	

Analyzed By: SD

Date: 6/28/18

Run #	Run Type	Vial	Volume	Sample ID	Method	Filename	Multiplier	Action	Description
48	Unknown	39	2	18F211-10	DSD5J31.met	LF28048.dat	1		
49	Unknown	40	2	18F211-11	DSD5J31.met	LF28049.dat	1		YELLOWISH
50	Unknown	41	2	18F211-12	DSD5J31.met	LF28050.dat	1		
51	Unknown	42	2	18F211-13	DSD5J31.met	LF28051.dat	1		
52	Unknown	43	2	18F211-14	DSD5J31.met	LF28052.dat	1		YELLOWISH
53	Unknown	44	2	18F211-15	DSD5J31.met	LF28053.dat	1		YELLOW
54	Unknown	37	2	CDSD5J3101730 DSL 500/80/20 PPM	DSD5J31.met	LF28054.dat	1		
55	Unknown	38	2	CDSD5J3101731 JP5/5W30 500/500 PPM	DSD5J31.met	LF28055.dat	1		
56	Unknown	100	2	IBD5LF28002	AKD5I27.met	LF28056.dat	1		
57	Unknown	98	2	DRO-02	AKD5I27.met	LF28057.dat	1		
58	Unknown	95	2	CAKD5I2701732 DSL/30W40 500/500/20/80 PPM	AKD5I27.met	LF28058.dat	1		
59	Unknown	45	2	DSF043SB	AKD5I27.met	LF28059.dat	1		
60	Unknown	46	2	DSF043SL	AKD5I27.met	LF28060.dat	1		
61	Unknown	47	2	DSF043SC	AKD5I27.met	LF28061.dat	1		
62	Unknown	48	2	18F187-01	AKD5I27.met	LF28062.dat	1		
63	Unknown	49	2	18F187-02	AKD5I27.met	LF28063.dat	1		
64	Unknown	50	2	18F187-03	AKD5I27.met	LF28064.dat	1		
65	Unknown	51	2	18F187-04	AKD5I27.met	LF28065.dat	1		
66	Unknown	52	2	18F187-05	AKD5I27.met	LF28066.dat	1		
67	Unknown	53	2	18F187-07	AKD5I27.met	LF28067.dat	1		
68	Unknown	54	2	18F187-07M	AKD5I27.met	LF28068.dat	1		
69	Unknown	55	2	18F187-07S	AKD5I27.met	LF28069.dat	1		
70	Unknown	56	2	18F187-08	AKD5I27.met	LF28070.dat	1		
71	Unknown	57	2	18F187-10	AKD5I27.met	LF28071.dat	1		
72	Unknown	95	2	CAKD5I2701733 DSL/30W40 500/500/20/80 PPM	AKD5I27.met	LF28072.dat	1		
73	Unknown	58	2	18F187-11	AKD5I27.met	LF28073.dat	1		
74	Unknown	59	2	18F187-12	AKD5I27.met	LF28074.dat	1		
75	Unknown	60	2	18F187-13	AKD5I27.met	LF28075.dat	1		
76	Unknown	61	2	18F187-14	AKD5I27.met	LF28076.dat	1		
77	Unknown	62	2	18F187-15	AKD5I27.met	LF28077.dat	1		YELLOWISH
78	Unknown	63	2	18F187-16	AKD5I27.met	LF28078.dat	1		YELLOWISH
79	Unknown	64	2	18F187-17	AKD5I27.met	LF28079.dat	1		YELLOWISH
80	Unknown	95	2	CAKD5I2701734 DSL/30W40 500/500/20/80 PPM	AKD5I27.met	LF28080.dat	1		

FINAL
06/28/18

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
TPH

SOP	Rev. #
☐ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3550	5
☐ EMAX-3580	2
☐ EMAX-8015AZ	2
☑ EMAX-AK 102/103	4
☐ EMAX-AKSGC	0

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Book #: Jul d28/18 EDS-086
Preparation Batch: DSF043S
Matrix: Soil
Micropipette ID: PE00-01 (1000 µL)
Micropipette ID: PE9C-03 (100 µL)

Standards	ID	Amount Added (ml)
Surrogate (N-Triacontane)	SS3B-14-13-03	0.4
Surrogate (O-Terphenyl)	SS3-009-12-15	0.05
LCS/MS (Diesel)	SS3-009-12-24	0.10
LCS/MS (30W40)	SS3B-14-10-02	1.0

Reagent	Lot # / ID
CH_2Cl_2	181159
Na_2SO_4	SWB-003-37-15
HCl	-
Silica Sand	SWB-004-01-23
Silica Gel	-
Reagent Water	-
pH strip	-
Filter Paper	16380254

TUNING

Sonicator #	Reading
4	20%
6	40%

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3	35	35
4	35	35
5		
6		

Lab Sample ID	Sonicator #	Concentrator #
DSF043-SB	4	1
-SL	4	1
-SC	4	1
F187-01	6	1
-02	6	1
-03	4	1
-04	6	2
-05	6	2
-07	4	2
-07M	6	2
-07S	6	2
-08	4	2
-10	4	3
-11	6	3
-12	6	3
-13	4	3
-14	6	3
-15	6	3
-16	4	4
-17	4	4

Comments:

Test thermometer = SVOC-T1

Prepared By: Jce Standard Added By: Jce

Witnessed By: KKV Checked By: ML

Extract Received By: SO 6/28/18 Extraction Location: SE03 #01

Disposal Date: Disposed By:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR EXTRACTABLE TPH

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments: AK102/103
18DSF043S01	DSF043SB	10	g	6/28/18 11:30	10	10	10	1	
18DSF043S02	DSF043SL	10	g	6/28/18 11:30	10	10	10	1	
18DSF043S03	DSF043SC	10	g	6/28/18 11:30	10	10	10	1	
18DSF043S04	F187-01	10.03	g	6/28/18 11:31	10	10	10	1	
18DSF043S05	F187-02	10	g	6/28/18 11:31	10	10	10	1	
18DSF043S06	F187-03	10	g	6/28/18 11:33	10	10	10	1	
18DSF043S07	F187-04	10.02	g	6/28/18 11:34	10	10	10	1	
18DSF043S08	F187-05	10.03	g	6/28/18 11:35	10	10	10	1	
18DSF043S09	F187-07	10	g	6/28/18 11:36	10	10	10	1	
18DSF043S10	F187-07M	10	g	6/28/18 11:37	10	10	10	1	
18DSF043S11	F187-07S	10	g	6/28/18 11:37	10	10	10	1	
18DSF043S12	F187-08	10	g	6/28/18 11:38	10	10	10	1	
18DSF043S13	F187-10	10.02	g	6/28/18 11:40	10	10	10	1	
18DSF043S14	F187-11	10.03	g	6/28/18 11:41	10	10	10	1	
18DSF043S15	F187-12	10	g	6/28/18 11:42	10	10	10	1	
18DSF043S16	F187-13	10.01	g	6/28/18 11:43	10	10	10	1	
18DSF043S17	F187-14	10.01	g	6/28/18 11:44	10	10	10	1	
18DSF043S18	F187-15	10.03	g	6/28/18 11:45	10	10	10	1	
18DSF043S19	F187-16	10	g	6/28/18 11:46	10	10	10	1	
18DSF043S20	F187-17	10	g	6/28/18 11:47	10	10	10	1	

Balance ID: 10304418. Calibration check was verified prior to use.

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 6/28/18 11:51

Prepared By: JVille

☑ Extraction Ended @ 6/28/18 14:02

Checked By: ML

Comments:

Date 06/28/18

SOP EMAX-AK102/103 Rev. 3

LABORATORY REPORT FOR

CH2M HILL

JBER TO078

METALS / MERCURY

SDG#: 18F187

CASE NARRATIVE

Client : CH2M HILL

Project: JBER TO075

SDG : 18F187

METHOD SW6020A
METALS BY ICP-MS

A total of fifteen (15) soil samples were received on 06/26/18 to be analyzed for Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. Arsenic(0.134J <1/2 LOQ), Chromium(0.117J <1/2 LOQ) and Vanadium(0.329J >1/2 LOQ) were detected at trace level in IMF045SB. However, Vanadium was detected greater than 10X the method blank concentration level in all samples. Hence, no corrective action was taken. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IMF045SL/IMF045SC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, two (2) sets of MS/MSD were analyzed and the following were noted: F187-07M/F187-07S - Percent recoveries for Barium, Chromium, Copper, Iron(16X), Manganese(30X) and Potassium were not within MS/MSD QC limits. Percent recovery for Magnesium(5X) was not within MS. The enclosed value(#X) is the ratio of parent sample result and spike amount. Presence of matrix interference was suspected. The rest of the analytes were in control. Analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

LAB CHRONICLE
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Instrument ID : T-IF6

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	IMF045SB	1.00	NA	07/03/1812:14	06/27/1815:02	F6G02032	F6G02028	IMF045S	Method Blank
LCS1S	IMF045SL	1.00	NA	07/03/1812:19	06/27/1815:02	F6G02033	F6G02028	IMF045S	Lab Control Sample (LCS)
LCD1S	IMF045SC	1.00	NA	07/03/1812:23	06/27/1815:02	F6G02034	F6G02028	IMF045S	LCS Duplicate
18Q2DP009-SB0401-SO-0	F187-01	1.00	4.8	07/03/1812:28	06/27/1815:02	F6G02035	F6G02028	IMF045S	Field Sample
18Q2DP009-SB0401-SO-1	F187-02	1.00	4.6	07/03/1812:32	06/27/1815:02	F6G02036	F6G02028	IMF045S	Field Sample
18Q2DP009-SB0402-SO-0	F187-03	1.00	5.3	07/03/1812:37	06/27/1815:02	F6G02037	F6G02028	IMF045S	Field Sample
18Q2DP009-SB0801-SO-0	F187-04	1.00	8.6	07/03/1812:41	06/27/1815:02	F6G02038	F6G02028	IMF045S	Field Sample
18Q2DP009-SB0802-SO-0	F187-05	1.00	4.9	07/03/1812:46	06/27/1815:02	F6G02039	F6G02028	IMF045S	Field Sample
18Q2DP009-SB0501-SO-0MS	F187-07M	1.00	3.9	07/03/1812:59	06/27/1815:02	F6G02042	F6G02040	IMF045S	Matrix Spike Sample (MS)
18Q2DP009-SB0501-SO-0MSD	F187-07S	1.00	3.9	07/03/1813:04	06/27/1815:02	F6G02043	F6G02040	IMF045S	MS Duplicate (MSD)
18Q2DP009-SB0501-SO-0	F187-07A	1.00	3.9	07/03/1813:08	06/27/1815:02	F6G02044	F6G02040	IMF045S	Analytical Spike Sample
18Q2DP009-SB0501-SO-0	F187-07	1.00	3.9	07/03/1813:13	06/27/1815:02	F6G02045	F6G02040	IMF045S	Field Sample
18Q2DP009-SB0501-SO-0	F187-07J	5.00	3.9	07/03/1813:17	06/27/1815:02	F6G02046	F6G02040	IMF045S	Diluted Sample
18Q2DP009-SB0502-SO-0	F187-08	1.00	3.5	07/03/1813:22	06/27/1815:02	F6G02047	F6G02040	IMF045S	Field Sample
18Q2DP009-SB0701-SO-0	F187-10	1.00	5.8	07/03/1813:26	06/27/1815:02	F6G02048	F6G02040	IMF045S	Field Sample
18Q2DP009-SB0702-SO-0	F187-11	1.00	4.7	07/03/1813:31	06/27/1815:02	F6G02049	F6G02040	IMF045S	Field Sample
18Q2DP009-SB0301-SO-0	F187-12	1.00	4.0	07/03/1813:35	06/27/1815:02	F6G02050	F6G02040	IMF045S	Field Sample
18Q2DP009-SB0302-SO-0	F187-13	1.00	6.5	07/03/1813:39	06/27/1815:02	F6G02051	F6G02040	IMF045S	Field Sample
18Q2DP009-SB0602-SO-0	F187-14	1.00	5.1	07/03/1813:53	06/27/1815:02	F6G02054	F6G02052	IMF045S	Field Sample
18Q2DP009-SB0601-SO-0	F187-15	1.00	7.6	07/03/1813:57	06/27/1815:02	F6G02055	F6G02052	IMF045S	Field Sample
18Q2DP009-SB0601-SO-1	F187-16	1.00	6.9	07/03/1814:02	06/27/1815:02	F6G02056	F6G02052	IMF045S	Field Sample
18Q2DP009-IDW-SO01	F187-17	1.00	8.1	07/03/1814:06	06/27/1815:02	F6G02057	F6G02052	IMF045S	Field Sample
18Q2DP009-SB0401-SO-0	F187-01G	5.00	4.8	07/03/1814:11	06/27/1815:02	F6G02058	F6G02052	IMF045S	Diluted Sample
18Q2DP009-SB0401-SO-1	F187-02G	5.00	4.6	07/03/1814:15	06/27/1815:02	F6G02059	F6G02052	IMF045S	Diluted Sample
18Q2DP009-SB0501-SO-0MS	F187-07M	5.00	3.9	07/03/1814:42	06/27/1815:02	F6G02065	F6G02063	IMF045S	Matrix Spike Sample (MS)
18Q2DP009-SB0501-SO-0MSD	F187-07S	5.00	3.9	07/03/1814:47	06/27/1815:02	F6G02066	F6G02063	IMF045S	MS Duplicate (MSD)
18Q2DP009-SB0501-SO-0	F187-07A	5.00	3.9	07/03/1814:51	06/27/1815:02	F6G02067	F6G02063	IMF045S	Analytical Spike Sample
18Q2DP009-SB0501-SO-0	F187-07G	5.00	3.9	07/03/1814:56	06/27/1815:02	F6G02068	F6G02063	IMF045S	Diluted Sample
18Q2DP009-SB0501-SO-0	F187-07J	25.00	3.9	07/03/1815:00	06/27/1815:02	F6G02069	F6G02063	IMF045S	Diluted Sample
18Q2DP009-SB0502-SO-0	F187-08G	5.00	3.5	07/03/1815:05	06/27/1815:02	F6G02070	F6G02063	IMF045S	Diluted Sample
18Q2DP009-SB0701-SO-0	F187-10G	5.00	5.8	07/03/1815:09	06/27/1815:02	F6G02071	F6G02063	IMF045S	Diluted Sample
18Q2DP009-SB0702-SO-0	F187-11G	5.00	4.7	07/03/1815:14	06/27/1815:02	F6G02072	F6G02063	IMF045S	Diluted Sample
18Q2DP009-SB0301-SO-0	F187-12G	5.00	4.0	07/03/1815:18	06/27/1815:02	F6G02073	F6G02063	IMF045S	Diluted Sample
18Q2DP009-SB0602-SO-0	F187-14G	5.00	5.1	07/03/1815:36	06/27/1815:02	F6G02077	F6G02075	IMF045S	Diluted Sample
18Q2DP009-SB0601-SO-0	F187-15G	5.00	7.6	07/03/1815:41	06/27/1815:02	F6G02078	F6G02075	IMF045S	Diluted Sample
18Q2DP009-SB0601-SO-1	F187-16G	5.00	6.9	07/03/1815:45	06/27/1815:02	F6G02079	F6G02075	IMF045S	Diluted Sample
18Q2DP009-IDW-SO01	F187-17G	5.00	8.1	07/03/1815:50	06/27/1815:02	F6G02080	F6G02075	IMF045S	Diluted Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Sample ID: 18Q2DP009-SB0401-SO-0
Lab Samp ID: F187-01
Lab File ID: F6G02035
Ext Btch ID: IMF045S
Calib. Ref.: F6G02028

Date Collected: 06/21/18 16:10
Date Received: 06/26/18
Date Extracted: 06/27/18 15:02
Date Analyzed: 07/03/18 12:28
Dilution Factor: 1
Matrix: SOIL
% Moisture: 4.8
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14100	103	10.3	20.5
Antimony	0.211J	0.513	0.103	0.205
Arsenic	6.41	0.513	0.0513	0.103
Barium	33.4	0.513	0.0738	0.103
Beryllium	0.326J	0.513	0.0513	0.103
Cadmium	0.207J	0.513	0.0584	0.103
Calcium	5330	103	17.4	20.5
Chromium	35.2	0.513	0.0513	0.103
Cobalt	11.7	0.513	0.0513	0.103
Copper	25.4	0.513	0.103	0.205
Lead	6.35	0.513	0.0513	0.103
Magnesium	13300	103	10.3	20.5
Manganese	552	0.513	0.157	0.205
Molybdenum	0.309J	0.513	0.103	0.205
Nickel	68.7	0.513	0.0646	0.103
Potassium	649	103	10.3	20.5
Selenium	0.119J	0.513	0.0513	0.103
Silver	0.0802J	0.513	0.0513	0.103
Sodium	87.3J	103	10.3	20.5
Thallium	ND	0.513	0.0513	0.103
Vanadium	49.1	0.513	0.195	0.256
Zinc	57.7	2.05	0.700	1.03

Sample ID: 18Q2DP009-SB0401-SO-0
Lab Samp ID: F187-01G
Lab File ID: F6G02058
Ext Btch ID: IMF045S
Calib. Ref.: F6G02052

Date Analyzed: 07/03/18 14:11
Dilution Factor: 5
Matrix: SOIL
% Moisture: 4.8
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Iron	29400	513	25.6	51.3

Sample Amount : 2.05g
Prepared by : MCande

Final Volume:100ml
Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/21/18 16:10
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0401-SO-0	Date Analyzed:	07/03/18 12:28
Lab Samp ID:	F187-01	Dilution Factor:	1
Lab File ID:	F6G02035	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	4.8
Calib. Ref.:	F6G02028	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14100	103	10.3	20.5
Antimony	0.211J	0.513	0.103	0.205
Arsenic	6.41	0.513	0.0513	0.103
Barium	33.4	0.513	0.0738	0.103
Beryllium	0.326J	0.513	0.0513	0.103
Cadmium	0.207J	0.513	0.0584	0.103
Calcium	5330	103	17.4	20.5
Chromium	35.2	0.513	0.0513	0.103
Cobalt	11.7	0.513	0.0513	0.103
Copper	25.4	0.513	0.103	0.205
Iron	27600E	103	5.13	10.3
Lead	6.35	0.513	0.0513	0.103
Magnesium	13300	103	10.3	20.5
Manganese	552	0.513	0.157	0.205
Molybdenum	0.309J	0.513	0.103	0.205
Nickel	68.7	0.513	0.0646	0.103
Potassium	649	103	10.3	20.5
Selenium	0.119J	0.513	0.0513	0.103
Silver	0.0802J	0.513	0.0513	0.103
Sodium	87.3J	103	10.3	20.5
Thallium	ND	0.513	0.0513	0.103
Vanadium	49.1	0.513	0.195	0.256
Zinc	57.7	2.05	0.700	1.03

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.05g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/21/18 16:10
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0401-SO-0	Date Analyzed:	07/03/18 14:11
Lab Samp ID:	F187-01G	Dilution Factor:	5
Lab File ID:	F6G02058	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	4.8
Calib. Ref.:	F6G02052	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	15100	513	51.3	103
Antimony	ND	2.56	0.513	1.03
Arsenic	6.87	2.56	0.256	0.513
Barium	32.7	2.56	0.369	0.513
Beryllium	0.327J	2.56	0.256	0.513
Cadmium	ND	2.56	0.292	0.513
Calcium	5760	513	87.1	103
Chromium	37.2	2.56	0.256	0.513
Cobalt	12.9	2.56	0.256	0.513
Copper	27.3	2.56	0.513	1.03
Iron	29400	513	25.6	51.3
Lead	6.04	2.56	0.256	0.513
Magnesium	14400	513	51.3	103
Manganese	604	2.56	0.784	1.03
Molybdenum	ND	2.56	0.513	1.03
Nickel	73.3	2.56	0.323	0.513
Potassium	685	513	51.3	103
Selenium	ND	2.56	0.256	0.513
Silver	ND	2.56	0.256	0.513
Sodium	103J	513	51.3	103
Thallium	ND	2.56	0.256	0.513
Vanadium	52.3	2.56	0.974	1.28
Zinc	58.8	10.3	3.50	5.13

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.05g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Sample ID: 18Q2DP009-SB0401-SO-1
Lab Samp ID: F187-02
Lab File ID: F6G02036
Ext Btch ID: IMF045S
Calib. Ref.: F6G02028

Date Collected: 06/21/18 16:11
Date Received: 06/26/18
Date Extracted: 06/27/18 15:02
Date Analyzed: 07/03/18 12:32
Dilution Factor: 1
Matrix: SOIL
% Moisture: 4.6
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14400	104	10.4	20.8
Antimony	0.180J	0.519	0.104	0.208
Arsenic	5.94	0.519	0.0519	0.104
Barium	37.7	0.519	0.0747	0.104
Beryllium	0.359J	0.519	0.0519	0.104
Cadmium	0.248J	0.519	0.0592	0.104
Calcium	6750	104	17.6	20.8
Chromium	35.0	0.519	0.0519	0.104
Cobalt	11.6	0.519	0.0519	0.104
Copper	22.7	0.519	0.104	0.208
Lead	5.50	0.519	0.0519	0.104
Magnesium	12000	104	10.4	20.8
Manganese	551	0.519	0.159	0.208
Molybdenum	0.393J	0.519	0.104	0.208
Nickel	53.5	0.519	0.0654	0.104
Potassium	741	104	10.4	20.8
Selenium	0.141J	0.519	0.0519	0.104
Silver	0.0939J	0.519	0.0519	0.104
Sodium	109	104	10.4	20.8
Thallium	ND	0.519	0.0519	0.104
Vanadium	50.7	0.519	0.197	0.259
Zinc	58.7	2.08	0.709	1.04

Sample ID: 18Q2DP009-SB0401-SO-1
Lab Samp ID: F187-02G
Lab File ID: F6G02059
Ext Btch ID: IMF045S
Calib. Ref.: F6G02052

Date Analyzed: 07/03/18 14:15
Dilution Factor: 5
Matrix: SOIL
% Moisture: 4.6
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Iron	28600	519	25.9	51.9

Sample Amount : 2.02g
Prepared by : MCande

Final Volume:100ml
Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/21/18 16:11
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0401-SO-1	Date Analyzed:	07/03/18 12:32
Lab Samp ID:	F187-02	Dilution Factor:	1
Lab File ID:	F6G02036	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	4.6
Calib. Ref.:	F6G02028	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14400	104	10.4	20.8
Antimony	0.180J	0.519	0.104	0.208
Arsenic	5.94	0.519	0.0519	0.104
Barium	37.7	0.519	0.0747	0.104
Beryllium	0.359J	0.519	0.0519	0.104
Cadmium	0.248J	0.519	0.0592	0.104
Calcium	6750	104	17.6	20.8
Chromium	35.0	0.519	0.0519	0.104
Cobalt	11.6	0.519	0.0519	0.104
Copper	22.7	0.519	0.104	0.208
Iron	27800E	104	5.19	10.4
Lead	5.50	0.519	0.0519	0.104
Magnesium	12000	104	10.4	20.8
Manganese	551	0.519	0.159	0.208
Molybdenum	0.393J	0.519	0.104	0.208
Nickel	53.5	0.519	0.0654	0.104
Potassium	741	104	10.4	20.8
Selenium	0.141J	0.519	0.0519	0.104
Silver	0.0939J	0.519	0.0519	0.104
Sodium	109	104	10.4	20.8
Thallium	ND	0.519	0.0519	0.104
Vanadium	50.7	0.519	0.197	0.259
Zinc	58.7	2.08	0.709	1.04

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.02g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 06/21/18 16:11
Project : JBER TO075	Date Received: 06/26/18
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: 18Q2DP009-SB0401-SO-1	Date Analyzed: 07/03/18 14:15
Lab Samp ID: F187-02G	Dilution Factor: 5
Lab File ID: F6G02059	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 4.6
Calib. Ref.: F6G02052	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	15000	519	51.9	104
Antimony	ND	2.59	0.519	1.04
Arsenic	6.17	2.59	0.259	0.519
Barium	36.2	2.59	0.374	0.519
Beryllium	0.288J	2.59	0.259	0.519
Cadmium	ND	2.59	0.296	0.519
Calcium	6930	519	88.2	104
Chromium	36.2	2.59	0.259	0.519
Cobalt	12.4	2.59	0.259	0.519
Copper	24.0	2.59	0.519	1.04
Iron	28600	519	25.9	51.9
Lead	5.13	2.59	0.259	0.519
Magnesium	12600	519	51.9	104
Manganese	582	2.59	0.794	1.04
Molybdenum	ND	2.59	0.519	1.04
Nickel	56.0	2.59	0.327	0.519
Potassium	787	519	51.9	104
Selenium	ND	2.59	0.259	0.519
Silver	ND	2.59	0.259	0.519
Sodium	126J	519	51.9	104
Thallium	ND	2.59	0.259	0.519
Vanadium	53.2	2.59	0.986	1.30
Zinc	58.9	10.4	3.54	5.19

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 2.02g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 06/21/18 16:30
Project : JBER TO075	Date Received: 06/26/18
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: 18Q2DP009-SB0402-SO-0	Date Analyzed: 07/03/18 12:37
Lab Samp ID: F187-03	Dilution Factor: 1
Lab File ID: F6G02037	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 5.3
Calib. Ref.: F6G02028	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	12700	102	10.2	20.4
Antimony	0.208J	0.510	0.102	0.204
Arsenic	4.88	0.510	0.0510	0.102
Barium	50.9	0.510	0.0734	0.102
Beryllium	0.291J	0.510	0.0510	0.102
Cadmium	0.207J	0.510	0.0581	0.102
Calcium	8910	102	17.3	20.4
Chromium	29.8	0.510	0.0510	0.102
Cobalt	9.93	0.510	0.0510	0.102
Copper	24.5	0.510	0.102	0.204
Iron	24800	102	5.10	10.2
Lead	4.38	0.510	0.0510	0.102
Magnesium	8300	102	10.2	20.4
Manganese	499	0.510	0.156	0.204
Molybdenum	0.914	0.510	0.102	0.204
Nickel	28.2	0.510	0.0643	0.102
Potassium	779	102	10.2	20.4
Selenium	0.0759J	0.510	0.0510	0.102
Silver	0.0577J	0.510	0.0510	0.102
Sodium	184	102	10.2	20.4
Thallium	ND	0.510	0.0510	0.102
Vanadium	51.1	0.510	0.194	0.255
Zinc	52.2	2.04	0.697	1.02

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 2.07g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 06/21/18 18:50
Project : JBER TO075	Date Received: 06/26/18
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: 18Q2DP009-SB0801-SO-0	Date Analyzed: 07/03/18 12:41
Lab Samp ID: F187-04	Dilution Factor: 1
Lab File ID: F6G02038	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 8.6
Calib. Ref.: F6G02028	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	13200	107	10.7	21.4
Antimony	0.233J	0.534	0.107	0.214
Arsenic	5.39	0.534	0.0534	0.107
Barium	60.3	0.534	0.0769	0.107
Beryllium	0.321J	0.534	0.0534	0.107
Cadmium	0.249J	0.534	0.0609	0.107
Calcium	6430	107	18.2	21.4
Chromium	30.1	0.534	0.0534	0.107
Cobalt	10.8	0.534	0.0534	0.107
Copper	23.0	0.534	0.107	0.214
Iron	25700	107	5.34	10.7
Lead	5.61	0.534	0.0534	0.107
Magnesium	9030	107	10.7	21.4
Manganese	469	0.534	0.163	0.214
Molybdenum	0.478J	0.534	0.107	0.214
Nickel	34.1	0.534	0.0673	0.107
Potassium	813	107	10.7	21.4
Selenium	0.0915J	0.534	0.0534	0.107
Silver	0.0717J	0.534	0.0534	0.107
Sodium	105J	107	10.7	21.4
Thallium	ND	0.534	0.0534	0.107
Vanadium	54.4	0.534	0.203	0.267
Zinc	60.3	2.14	0.729	1.07

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 2.05g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/21/18 19:45
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0802-SO-0	Date Analyzed:	07/03/18 12:46
Lab Samp ID:	F187-05	Dilution Factor:	1
Lab File ID:	F6G02039	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	4.9
Calib. Ref.:	F6G02028	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	12000	104	10.4	20.7
Antimony	0.134J	0.518	0.104	0.207
Arsenic	5.21	0.518	0.0518	0.104
Barium	47.6	0.518	0.0746	0.104
Beryllium	0.269J	0.518	0.0518	0.104
Cadmium	0.194J	0.518	0.0590	0.104
Calcium	7510	104	17.6	20.7
Chromium	32.8	0.518	0.0518	0.104
Cobalt	8.30	0.518	0.0518	0.104
Copper	20.6	0.518	0.104	0.207
Iron	23300	104	5.18	10.4
Lead	3.98	0.518	0.0518	0.104
Magnesium	7620	104	10.4	20.7
Manganese	467	0.518	0.158	0.207
Molybdenum	0.485J	0.518	0.104	0.207
Nickel	24.0	0.518	0.0653	0.104
Potassium	644	104	10.4	20.7
Selenium	0.0779J	0.518	0.0518	0.104
Silver	0.0563J	0.518	0.0518	0.104
Sodium	140	104	10.4	20.7
Thallium	ND	0.518	0.0518	0.104
Vanadium	49.4	0.518	0.197	0.259
Zinc	50.0	2.07	0.707	1.04

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.03g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Sample ID: 18Q2DP009-SB0501-SO-0
Lab Samp ID: F187-07
Lab File ID: F6G02045
Ext Btch ID: IMF045S
Calib. Ref.: F6G02040

Date Collected: 06/22/18 11:50
Date Received: 06/26/18
Date Extracted: 06/27/18 15:02
Date Analyzed: 07/03/18 13:13
Dilution Factor: 1
Matrix: SOIL
% Moisture: 3.9
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	15800	102	10.2	20.4
Antimony	0.387J	0.510	0.102	0.204
Arsenic	7.91	0.510	0.0510	0.102
Barium	49.2	0.510	0.0734	0.102
Beryllium	0.418J	0.510	0.0510	0.102
Cadmium	0.282J	0.510	0.0581	0.102
Calcium	7140	102	17.3	20.4
Chromium	41.0	0.510	0.0510	0.102
Cobalt	11.7	0.510	0.0510	0.102
Copper	32.4	0.510	0.102	0.204
Lead	6.05	0.510	0.0510	0.102
Magnesium	11000	102	10.2	20.4
Manganese	613	0.510	0.156	0.204
Molybdenum	0.438J	0.510	0.102	0.204
Nickel	42.7	0.510	0.0642	0.102
Potassium	814	102	10.2	20.4
Selenium	0.171J	0.510	0.0510	0.102
Silver	0.0934J	0.510	0.0510	0.102
Sodium	129	102	10.2	20.4
Thallium	ND	0.510	0.0510	0.102
Vanadium	61.2	0.510	0.194	0.255
Zinc	64.5	2.04	0.697	1.02

Sample ID: 18Q2DP009-SB0501-SO-0
Lab Samp ID: F187-07G
Lab File ID: F6G02068
Ext Btch ID: IMF045S
Calib. Ref.: F6G02063

Date Analyzed: 07/03/18 14:56
Dilution Factor: 5
Matrix: SOIL
% Moisture: 3.9
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Iron	33000	510	25.5	51.0

Sample Amount : 2.04g
Prepared by : MCande

Final Volume:100ml
Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 06/22/18 11:50
Project : JBER TO075	Date Received: 06/26/18
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: 18Q2DP009-SB0501-SO-0	Date Analyzed: 07/03/18 13:13
Lab Samp ID: F187-07	Dilution Factor: 1
Lab File ID: F6G02045	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 3.9
Calib. Ref.: F6G02040	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	15800	102	10.2	20.4
Antimony	0.387J	0.510	0.102	0.204
Arsenic	7.91	0.510	0.0510	0.102
Barium	49.2	0.510	0.0734	0.102
Beryllium	0.418J	0.510	0.0510	0.102
Cadmium	0.282J	0.510	0.0581	0.102
Calcium	7140	102	17.3	20.4
Chromium	41.0	0.510	0.0510	0.102
Cobalt	11.7	0.510	0.0510	0.102
Copper	32.4	0.510	0.102	0.204
Iron	29900E	102	5.10	10.2
Lead	6.05	0.510	0.0510	0.102
Magnesium	11000	102	10.2	20.4
Manganese	613	0.510	0.156	0.204
Molybdenum	0.438J	0.510	0.102	0.204
Nickel	42.7	0.510	0.0642	0.102
Potassium	814	102	10.2	20.4
Selenium	0.171J	0.510	0.0510	0.102
Silver	0.0934J	0.510	0.0510	0.102
Sodium	129	102	10.2	20.4
Thallium	ND	0.510	0.0510	0.102
Vanadium	61.2	0.510	0.194	0.255
Zinc	64.5	2.04	0.697	1.02

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 2.04g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/22/18 11:50
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0501-SO-0	Date Analyzed:	07/03/18 14:56
Lab Samp ID:	F187-07G	Dilution Factor:	5
Lab File ID:	F6G02068	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	3.9
Calib. Ref.:	F6G02063	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	17100	510	51.0	102
Antimony	0.929J	2.55	0.510	1.02
Arsenic	8.39	2.55	0.255	0.510
Barium	48.3	2.55	0.367	0.510
Beryllium	0.367J	2.55	0.255	0.510
Cadmium	ND	2.55	0.291	0.510
Calcium	7870	510	86.7	102
Chromium	43.4	2.55	0.255	0.510
Cobalt	12.9	2.55	0.255	0.510
Copper	35.2	2.55	0.510	1.02
Iron	33000	510	25.5	51.0
Lead	5.85	2.55	0.255	0.510
Magnesium	12000	510	51.0	102
Manganese	673	2.55	0.780	1.02
Molybdenum	ND	2.55	0.510	1.02
Nickel	45.8	2.55	0.321	0.510
Potassium	886	510	51.0	102
Selenium	ND	2.55	0.255	0.510
Silver	ND	2.55	0.255	0.510
Sodium	142J	510	51.0	102
Thallium	ND	2.55	0.255	0.510
Vanadium	65.6	2.55	0.969	1.27
Zinc	66.4	10.2	3.48	5.10

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.04g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/22/18 12:30
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0502-SO-0	Date Analyzed:	07/03/18 13:22
Lab Samp ID:	F187-08	Dilution Factor:	1
Lab File ID:	F6G02047	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	3.5
Calib. Ref.:	F6G02040	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14600	103	10.3	20.5
Antimony	0.190J	0.513	0.103	0.205
Arsenic	5.79	0.513	0.0513	0.103
Barium	58.5	0.513	0.0739	0.103
Beryllium	0.359J	0.513	0.0513	0.103
Cadmium	0.226J	0.513	0.0585	0.103
Calcium	12500	103	17.4	20.5
Chromium	39.0	0.513	0.0513	0.103
Cobalt	10.9	0.513	0.0513	0.103
Copper	21.8	0.513	0.103	0.205
Lead	4.64	0.513	0.0513	0.103
Magnesium	9400	103	10.3	20.5
Manganese	501	0.513	0.157	0.205
Molybdenum	0.511J	0.513	0.103	0.205
Nickel	30.6	0.513	0.0646	0.103
Potassium	714	103	10.3	20.5
Selenium	0.0986J	0.513	0.0513	0.103
Silver	0.0716J	0.513	0.0513	0.103
Sodium	135	103	10.3	20.5
Thallium	ND	0.513	0.0513	0.103
Vanadium	62.0	0.513	0.195	0.256
Zinc	56.4	2.05	0.701	1.03

Sample ID:	18Q2DP009-SB0502-SO-0	Date Analyzed:	07/03/18 15:05
Lab Samp ID:	F187-08G	Dilution Factor:	5
Lab File ID:	F6G02070	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	3.5
Calib. Ref.:	F6G02063	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Iron	30200	513	25.6	51.3

Sample Amount	: 2.02g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/22/18 12:30
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0502-SO-0	Date Analyzed:	07/03/18 13:22
Lab Samp ID:	F187-08	Dilution Factor:	1
Lab File ID:	F6G02047	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	3.5
Calib. Ref.:	F6G02040	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14600	103	10.3	20.5
Antimony	0.190J	0.513	0.103	0.205
Arsenic	5.79	0.513	0.0513	0.103
Barium	58.5	0.513	0.0739	0.103
Beryllium	0.359J	0.513	0.0513	0.103
Cadmium	0.226J	0.513	0.0585	0.103
Calcium	12500	103	17.4	20.5
Chromium	39.0	0.513	0.0513	0.103
Cobalt	10.9	0.513	0.0513	0.103
Copper	21.8	0.513	0.103	0.205
Iron	26800E	103	5.13	10.3
Lead	4.64	0.513	0.0513	0.103
Magnesium	9400	103	10.3	20.5
Manganese	501	0.513	0.157	0.205
Molybdenum	0.511J	0.513	0.103	0.205
Nickel	30.6	0.513	0.0646	0.103
Potassium	714	103	10.3	20.5
Selenium	0.0986J	0.513	0.0513	0.103
Silver	0.0716J	0.513	0.0513	0.103
Sodium	135	103	10.3	20.5
Thallium	ND	0.513	0.0513	0.103
Vanadium	62.0	0.513	0.195	0.256
Zinc	56.4	2.05	0.701	1.03

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.02g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/22/18 12:30
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0502-SO-0	Date Analyzed:	07/03/18 15:05
Lab Samp ID:	F187-08G	Dilution Factor:	5
Lab File ID:	F6G02070	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	3.5
Calib. Ref.:	F6G02063	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	16300	513	51.3	103
Antimony	ND	2.56	0.513	1.03
Arsenic	6.26	2.56	0.256	0.513
Barium	59.8	2.56	0.369	0.513
Beryllium	0.336J	2.56	0.256	0.513
Cadmium	ND	2.56	0.292	0.513
Calcium	14000	513	87.2	103
Chromium	42.9	2.56	0.256	0.513
Cobalt	12.5	2.56	0.256	0.513
Copper	24.4	2.56	0.513	1.03
Iron	30200	513	25.6	51.3
Lead	4.66	2.56	0.256	0.513
Magnesium	10600	513	51.3	103
Manganese	565	2.56	0.785	1.03
Molybdenum	ND	2.56	0.513	1.03
Nickel	34.2	2.56	0.323	0.513
Potassium	858	513	51.3	103
Selenium	ND	2.56	0.256	0.513
Silver	ND	2.56	0.256	0.513
Sodium	161J	513	51.3	103
Thallium	ND	2.56	0.256	0.513
Vanadium	68.8	2.56	0.975	1.28
Zinc	60.0	10.3	3.50	5.13

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.02g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 06/22/18 13:55
Project : JBER TO075	Date Received: 06/26/18
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: 18Q2DP009-SB0701-SO-0	Date Analyzed: 07/03/18 13:26
Lab Samp ID: F187-10	Dilution Factor: 1
Lab File ID: F6G02048	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 5.8
Calib. Ref.: F6G02040	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14200	103	10.3	20.5
Antimony	0.302J	0.513	0.103	0.205
Arsenic	8.32	0.513	0.0513	0.103
Barium	51.2	0.513	0.0738	0.103
Beryllium	0.344J	0.513	0.0513	0.103
Cadmium	0.232J	0.513	0.0585	0.103
Calcium	6620	103	17.4	20.5
Chromium	33.9	0.513	0.0513	0.103
Cobalt	10.5	0.513	0.0513	0.103
Copper	38.3	0.513	0.103	0.205
Lead	4.51	0.513	0.0513	0.103
Magnesium	9240	103	10.3	20.5
Manganese	503	0.513	0.157	0.205
Molybdenum	0.680	0.513	0.103	0.205
Nickel	33.1	0.513	0.0646	0.103
Potassium	991	103	10.3	20.5
Selenium	0.120J	0.513	0.0513	0.103
Silver	0.125J	0.513	0.0513	0.103
Sodium	190	103	10.3	20.5
Thallium	ND	0.513	0.0513	0.103
Vanadium	53.0	0.513	0.195	0.256
Zinc	56.0	2.05	0.700	1.03

Sample ID: 18Q2DP009-SB0701-SO-0	Date Analyzed: 07/03/18 15:09
Lab Samp ID: F187-10G	Dilution Factor: 5
Lab File ID: F6G02071	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 5.8
Calib. Ref.: F6G02063	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Iron	28600	513	25.6	51.3

Sample Amount : 2.07g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 06/22/18 13:55
Project : JBER TO075	Date Received: 06/26/18
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: 18Q2DP009-SB0701-SO-0	Date Analyzed: 07/03/18 13:26
Lab Samp ID: F187-10	Dilution Factor: 1
Lab File ID: F6G02048	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 5.8
Calib. Ref.: F6G02040	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14200	103	10.3	20.5
Antimony	0.302J	0.513	0.103	0.205
Arsenic	8.32	0.513	0.0513	0.103
Barium	51.2	0.513	0.0738	0.103
Beryllium	0.344J	0.513	0.0513	0.103
Cadmium	0.232J	0.513	0.0585	0.103
Calcium	6620	103	17.4	20.5
Chromium	33.9	0.513	0.0513	0.103
Cobalt	10.5	0.513	0.0513	0.103
Copper	38.3	0.513	0.103	0.205
Iron	27400E	103	5.13	10.3
Lead	4.51	0.513	0.0513	0.103
Magnesium	9240	103	10.3	20.5
Manganese	503	0.513	0.157	0.205
Molybdenum	0.680	0.513	0.103	0.205
Nickel	33.1	0.513	0.0646	0.103
Potassium	991	103	10.3	20.5
Selenium	0.120J	0.513	0.0513	0.103
Silver	0.125J	0.513	0.0513	0.103
Sodium	190	103	10.3	20.5
Thallium	ND	0.513	0.0513	0.103
Vanadium	53.0	0.513	0.195	0.256
Zinc	56.0	2.05	0.700	1.03

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 2.07g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/22/18 13:55
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0701-SO-0	Date Analyzed:	07/03/18 15:09
Lab Samp ID:	F187-10G	Dilution Factor:	5
Lab File ID:	F6G02071	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	5.8
Calib. Ref.:	F6G02063	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14900	513	51.3	103
Antimony	ND	2.56	0.513	1.03
Arsenic	8.35	2.56	0.256	0.513
Barium	48.9	2.56	0.369	0.513
Beryllium	0.266J	2.56	0.256	0.513
Cadmium	ND	2.56	0.292	0.513
Calcium	6930	513	87.2	103
Chromium	34.9	2.56	0.256	0.513
Cobalt	11.1	2.56	0.256	0.513
Copper	40.4	2.56	0.513	1.03
Iron	28600	513	25.6	51.3
Lead	4.26	2.56	0.256	0.513
Magnesium	9670	513	51.3	103
Manganese	531	2.56	0.784	1.03
Molybdenum	0.636J	2.56	0.513	1.03
Nickel	34.5	2.56	0.323	0.513
Potassium	985	513	51.3	103
Selenium	ND	2.56	0.256	0.513
Silver	ND	2.56	0.256	0.513
Sodium	181J	513	51.3	103
Thallium	ND	2.56	0.256	0.513
Vanadium	54.9	2.56	0.974	1.28
Zinc	55.4	10.3	3.50	5.13

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.07g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/22/18 14:15
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0702-SO-0	Date Analyzed:	07/03/18 13:31
Lab Samp ID:	F187-11	Dilution Factor:	1
Lab File ID:	F6G02049	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	4.7
Calib. Ref.:	F6G02040	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	13700	101	10.1	20.2
Antimony	0.214J	0.505	0.101	0.202
Arsenic	5.57	0.505	0.0505	0.101
Barium	62.6	0.505	0.0727	0.101
Beryllium	0.304J	0.505	0.0505	0.101
Cadmium	0.236J	0.505	0.0575	0.101
Calcium	8390	101	17.2	20.2
Cobalt	10.3	0.505	0.0505	0.101
Lead	4.80	0.505	0.0505	0.101
Magnesium	9250	101	10.1	20.2
Manganese	521	0.505	0.154	0.202
Molybdenum	0.504J	0.505	0.101	0.202
Selenium	0.0892J	0.505	0.0505	0.101
Silver	0.0677J	0.505	0.0505	0.101
Sodium	129	101	10.1	20.2
Thallium	ND	0.505	0.0505	0.101
Zinc	60.0	2.02	0.689	1.01

Sample ID:	18Q2DP009-SB0702-SO-0	Date Analyzed:	07/03/18 15:14
Lab Samp ID:	F187-11G	Dilution Factor:	5
Lab File ID:	F6G02072	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	4.7
Calib. Ref.:	F6G02063	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Chromium	30.4	2.52	0.252	0.505
Copper	26.0	2.52	0.505	1.01
Iron	29800	505	25.2	50.5
Nickel	30.9	2.52	0.318	0.505
Potassium	803	505	50.5	101
Vanadium	59.8	2.52	0.959	1.26

Sample Amount	: 2.08g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 06/22/18 14:15
Project : JBER TO075	Date Received: 06/26/18
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: 18Q2DP009-SB0702-SO-0	Date Analyzed: 07/03/18 13:31
Lab Samp ID: F187-11	Dilution Factor: 1
Lab File ID: F6G02049	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 4.7
Calib. Ref.: F6G02040	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	13700	101	10.1	20.2
Antimony	0.214J	0.505	0.101	0.202
Arsenic	5.57	0.505	0.0505	0.101
Barium	62.6	0.505	0.0727	0.101
Beryllium	0.304J	0.505	0.0505	0.101
Cadmium	0.236J	0.505	0.0575	0.101
Calcium	8390	101	17.2	20.2
Chromium	28.2E	0.505	0.0505	0.101
Cobalt	10.3	0.505	0.0505	0.101
Copper	23.7E	0.505	0.101	0.202
Iron	27100E	101	5.05	10.1
Lead	4.80	0.505	0.0505	0.101
Magnesium	9250	101	10.1	20.2
Manganese	521	0.505	0.154	0.202
Molybdenum	0.504J	0.505	0.101	0.202
Nickel	28.3E	0.505	0.0636	0.101
Potassium	734E	101	10.1	20.2
Selenium	0.0892J	0.505	0.0505	0.101
Silver	0.0677J	0.505	0.0505	0.101
Sodium	129	101	10.1	20.2
Thallium	ND	0.505	0.0505	0.101
Vanadium	55.0E	0.505	0.192	0.252
Zinc	60.0	2.02	0.689	1.01

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 2.08g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/22/18 14:15
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0702-SO-0	Date Analyzed:	07/03/18 15:14
Lab Samp ID:	F187-11G	Dilution Factor:	5
Lab File ID:	F6G02072	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	4.7
Calib. Ref.:	F6G02063	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	15000	505	50.5	101
Antimony	ND	2.52	0.505	1.01
Arsenic	6.02	2.52	0.252	0.505
Barium	61.9	2.52	0.363	0.505
Beryllium	0.275J	2.52	0.252	0.505
Cadmium	ND	2.52	0.288	0.505
Calcium	9150	505	85.8	101
Chromium	30.4	2.52	0.252	0.505
Cobalt	11.4	2.52	0.252	0.505
Copper	26.0	2.52	0.505	1.01
Iron	29800	505	25.2	50.5
Lead	4.68	2.52	0.252	0.505
Magnesium	10100	505	50.5	101
Manganese	572	2.52	0.772	1.01
Molybdenum	ND	2.52	0.505	1.01
Nickel	30.9	2.52	0.318	0.505
Potassium	803	505	50.5	101
Selenium	ND	2.52	0.252	0.505
Silver	ND	2.52	0.252	0.505
Sodium	139J	505	50.5	101
Thallium	ND	2.52	0.252	0.505
Vanadium	59.8	2.52	0.959	1.26
Zinc	61.8	10.1	3.45	5.05

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.08g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Sample ID: 18Q2DP009-SB0301-SO-0
Lab Samp ID: F187-12
Lab File ID: F6G02050
Ext Btch ID: IMF045S
Calib. Ref.: F6G02040

Date Collected: 06/23/18 10:15
Date Received: 06/26/18
Date Extracted: 06/27/18 15:02
Date Analyzed: 07/03/18 13:35
Dilution Factor: 1
Matrix: SOIL
% Moisture: 4.0
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	13900	103	10.3	20.5
Antimony	0.167J	0.513	0.103	0.205
Arsenic	6.64	0.513	0.0513	0.103
Barium	41.9	0.513	0.0739	0.103
Beryllium	0.323J	0.513	0.0513	0.103
Cadmium	0.215J	0.513	0.0585	0.103
Calcium	5780	103	17.4	20.5
Chromium	31.2	0.513	0.0513	0.103
Cobalt	11.0	0.513	0.0513	0.103
Copper	23.0	0.513	0.103	0.205
Lead	5.60	0.513	0.0513	0.103
Magnesium	9500	103	10.3	20.5
Manganese	635	0.513	0.157	0.205
Molybdenum	0.363J	0.513	0.103	0.205
Nickel	34.3	0.513	0.0646	0.103
Potassium	800	103	10.3	20.5
Selenium	0.131J	0.513	0.0513	0.103
Silver	0.0875J	0.513	0.0513	0.103
Sodium	115	103	10.3	20.5
Thallium	ND	0.513	0.0513	0.103
Vanadium	53.4	0.513	0.195	0.257
Zinc	56.7	2.05	0.701	1.03

Sample ID: 18Q2DP009-SB0301-SO-0
Lab Samp ID: F187-12G
Lab File ID: F6G02073
Ext Btch ID: IMF045S
Calib. Ref.: F6G02063

Date Analyzed: 07/03/18 15:18
Dilution Factor: 5
Matrix: SOIL
% Moisture: 4.0
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Iron	28700	513	25.7	51.3

Sample Amount : 2.03g
Prepared by : MCande

Final Volume:100ml
Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/23/18 10:15
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0301-SO-0	Date Analyzed:	07/03/18 13:35
Lab Samp ID:	F187-12	Dilution Factor:	1
Lab File ID:	F6G02050	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	4.0
Calib. Ref.:	F6G02040	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	13900	103	10.3	20.5
Antimony	0.167J	0.513	0.103	0.205
Arsenic	6.64	0.513	0.0513	0.103
Barium	41.9	0.513	0.0739	0.103
Beryllium	0.323J	0.513	0.0513	0.103
Cadmium	0.215J	0.513	0.0585	0.103
Calcium	5780	103	17.4	20.5
Chromium	31.2	0.513	0.0513	0.103
Cobalt	11.0	0.513	0.0513	0.103
Copper	23.0	0.513	0.103	0.205
Iron	26700E	103	5.13	10.3
Lead	5.60	0.513	0.0513	0.103
Magnesium	9500	103	10.3	20.5
Manganese	635	0.513	0.157	0.205
Molybdenum	0.363J	0.513	0.103	0.205
Nickel	34.3	0.513	0.0646	0.103
Potassium	800	103	10.3	20.5
Selenium	0.131J	0.513	0.0513	0.103
Silver	0.0875J	0.513	0.0513	0.103
Sodium	115	103	10.3	20.5
Thallium	ND	0.513	0.0513	0.103
Vanadium	53.4	0.513	0.195	0.257
Zinc	56.7	2.05	0.701	1.03

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.03g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Sample ID: 18Q2DP009-SB0301-SO-0
Lab Samp ID: F187-12G
Lab File ID: F6G02073
Ext Btch ID: IMF045S
Calib. Ref.: F6G02063

Date Collected: 06/23/18 10:15
Date Received: 06/26/18
Date Extracted: 06/27/18 15:02
Date Analyzed: 07/03/18 15:18
Dilution Factor: 5
Matrix: SOIL
% Moisture: 4.0
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14800	513	51.3	103
Antimony	ND	2.57	0.513	1.03
Arsenic	6.91	2.57	0.257	0.513
Barium	41.1	2.57	0.369	0.513
Beryllium	0.290J	2.57	0.257	0.513
Cadmium	ND	2.57	0.292	0.513
Calcium	6140	513	87.2	103
Chromium	32.8	2.57	0.257	0.513
Cobalt	11.9	2.57	0.257	0.513
Copper	24.6	2.57	0.513	1.03
Iron	28700	513	25.7	51.3
Lead	5.50	2.57	0.257	0.513
Magnesium	10200	513	51.3	103
Manganese	684	2.57	0.785	1.03
Molybdenum	ND	2.57	0.513	1.03
Nickel	36.4	2.57	0.323	0.513
Potassium	882	513	51.3	103
Selenium	ND	2.57	0.257	0.513
Silver	ND	2.57	0.257	0.513
Sodium	136J	513	51.3	103
Thallium	ND	2.57	0.257	0.513
Vanadium	56.8	2.57	0.975	1.28
Zinc	58.0	10.3	3.50	5.13

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 2.03g
Prepared by : MCande

Final Volume:100ml
Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 06/23/18 10:35
Project : JBER TO075	Date Received: 06/26/18
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: 18Q2DP009-SB0302-SO-0	Date Analyzed: 07/03/18 13:39
Lab Samp ID: F187-13	Dilution Factor: 1
Lab File ID: F6G02051	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 6.5
Calib. Ref.: F6G02040	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	13000	106	10.6	21.3
Antimony	0.169J	0.532	0.106	0.213
Arsenic	5.02	0.532	0.0532	0.106
Barium	59.3	0.532	0.0766	0.106
Beryllium	0.257J	0.532	0.0532	0.106
Cadmium	0.268J	0.532	0.0607	0.106
Calcium	7070	106	18.1	21.3
Chromium	25.3	0.532	0.0532	0.106
Cobalt	10.4	0.532	0.0532	0.106
Copper	22.4	0.532	0.106	0.213
Iron	25500	106	5.32	10.6
Lead	4.46	0.532	0.0532	0.106
Magnesium	8280	106	10.6	21.3
Manganese	989	0.532	0.163	0.213
Molybdenum	0.400J	0.532	0.106	0.213
Nickel	31.0	0.532	0.0670	0.106
Potassium	756	106	10.6	21.3
Selenium	0.0753J	0.532	0.0532	0.106
Silver	0.0634J	0.532	0.0532	0.106
Sodium	140	106	10.6	21.3
Thallium	ND	0.532	0.0532	0.106
Vanadium	51.4	0.532	0.202	0.266
Zinc	58.8	2.13	0.727	1.06

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 2.01g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Sample ID: 18Q2DP009-SB0602-SO-0
Lab Samp ID: F187-14
Lab File ID: F6G02054
Ext Btch ID: IMF045S
Calib. Ref.: F6G02052

Date Collected: 06/23/18 12:15
Date Received: 06/26/18
Date Extracted: 06/27/18 15:02
Date Analyzed: 07/03/18 13:53
Dilution Factor: 1
Matrix: SOIL
% Moisture: 5.1
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	12500	101	10.1	20.3
Antimony	0.257J	0.507	0.101	0.203
Arsenic	7.65	0.507	0.0507	0.101
Barium	44.0	0.507	0.0730	0.101
Beryllium	0.304J	0.507	0.0507	0.101
Cadmium	0.226J	0.507	0.0578	0.101
Calcium	8370	101	17.2	20.3
Chromium	26.7	0.507	0.0507	0.101
Cobalt	10.0	0.507	0.0507	0.101
Copper	27.9	0.507	0.101	0.203
Lead	5.48	0.507	0.0507	0.101
Magnesium	8000	101	10.1	20.3
Manganese	502	0.507	0.155	0.203
Molybdenum	0.339J	0.507	0.101	0.203
Nickel	29.8	0.507	0.0639	0.101
Potassium	658	101	10.1	20.3
Selenium	0.0988J	0.507	0.0507	0.101
Silver	0.0702J	0.507	0.0507	0.101
Sodium	124	101	10.1	20.3
Thallium	ND	0.507	0.0507	0.101
Vanadium	48.0	0.507	0.193	0.253
Zinc	59.6	2.03	0.692	1.01

Sample ID: 18Q2DP009-SB0602-SO-0
Lab Samp ID: F187-14G
Lab File ID: F6G02077
Ext Btch ID: IMF045S
Calib. Ref.: F6G02075

Date Analyzed: 07/03/18 15:36
Dilution Factor: 5
Matrix: SOIL
% Moisture: 5.1
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Iron	27700	507	25.3	50.7

Sample Amount : 2.08g
Prepared by : MCande

Final Volume:100ml
Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/23/18 12:15
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0602-SO-0	Date Analyzed:	07/03/18 13:53
Lab Samp ID:	F187-14	Dilution Factor:	1
Lab File ID:	F6G02054	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	5.1
Calib. Ref.:	F6G02052	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	12500	101	10.1	20.3
Antimony	0.257J	0.507	0.101	0.203
Arsenic	7.65	0.507	0.0507	0.101
Barium	44.0	0.507	0.0730	0.101
Beryllium	0.304J	0.507	0.0507	0.101
Cadmium	0.226J	0.507	0.0578	0.101
Calcium	8370	101	17.2	20.3
Chromium	26.7	0.507	0.0507	0.101
Cobalt	10.0	0.507	0.0507	0.101
Copper	27.9	0.507	0.101	0.203
Iron	25700E	101	5.07	10.1
Lead	5.48	0.507	0.0507	0.101
Magnesium	8000	101	10.1	20.3
Manganese	502	0.507	0.155	0.203
Molybdenum	0.339J	0.507	0.101	0.203
Nickel	29.8	0.507	0.0639	0.101
Potassium	658	101	10.1	20.3
Selenium	0.0988J	0.507	0.0507	0.101
Silver	0.0702J	0.507	0.0507	0.101
Sodium	124	101	10.1	20.3
Thallium	ND	0.507	0.0507	0.101
Vanadium	48.0	0.507	0.193	0.253
Zinc	59.6	2.03	0.692	1.01

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.08g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: 06/23/18 12:15
Project : JBER TO075	Date Received: 06/26/18
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: 18Q2DP009-SB0602-SO-0	Date Analyzed: 07/03/18 15:36
Lab Samp ID: F187-14G	Dilution Factor: 5
Lab File ID: F6G02077	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: 5.1
Calib. Ref.: F6G02075	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	13500	507	50.7	101
Antimony	ND	2.53	0.507	1.01
Arsenic	8.09	2.53	0.253	0.507
Barium	43.6	2.53	0.365	0.507
Beryllium	0.281J	2.53	0.253	0.507
Cadmium	ND	2.53	0.289	0.507
Calcium	9010	507	86.2	101
Chromium	28.3	2.53	0.253	0.507
Cobalt	10.9	2.53	0.253	0.507
Copper	30.1	2.53	0.507	1.01
Iron	27700	507	25.3	50.7
Lead	5.25	2.53	0.253	0.507
Magnesium	8650	507	50.7	101
Manganese	548	2.53	0.775	1.01
Molybdenum	ND	2.53	0.507	1.01
Nickel	32.1	2.53	0.319	0.507
Potassium	696	507	50.7	101
Selenium	ND	2.53	0.253	0.507
Silver	ND	2.53	0.253	0.507
Sodium	128J	507	50.7	101
Thallium	ND	2.53	0.253	0.507
Vanadium	51.1	2.53	0.963	1.27
Zinc	61.2	10.1	3.46	5.07

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 2.08g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Sample ID: 18Q2DP009-SB0601-SO-0
Lab Samp ID: F187-15
Lab File ID: F6G02055
Ext Btch ID: IMF045S
Calib. Ref.: F6G02052

Date Collected: 06/23/18 12:50
Date Received: 06/26/18
Date Extracted: 06/27/18 15:02
Date Analyzed: 07/03/18 13:57
Dilution Factor: 1
Matrix: SOIL
% Moisture: 7.6
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14500	106	10.6	21.1
Antimony	0.280J	0.528	0.106	0.211
Arsenic	6.76	0.528	0.0528	0.106
Barium	48.5	0.528	0.0761	0.106
Beryllium	0.272J	0.528	0.0528	0.106
Cadmium	0.278J	0.528	0.0602	0.106
Calcium	5660	106	18.0	21.1
Chromium	227	0.528	0.0528	0.106
Cobalt	7.79	0.528	0.0528	0.106
Copper	34.4	0.528	0.106	0.211
Lead	16.5	0.528	0.0528	0.106
Magnesium	8640	106	10.6	21.1
Manganese	376	0.528	0.162	0.211
Molybdenum	0.422J	0.528	0.106	0.211
Nickel	34.0	0.528	0.0665	0.106
Potassium	745	106	10.6	21.1
Selenium	0.110J	0.528	0.0528	0.106
Silver	0.189J	0.528	0.0528	0.106
Sodium	116	106	10.6	21.1
Thallium	ND	0.528	0.0528	0.106
Vanadium	56.3	0.528	0.201	0.264
Zinc	55.6	2.11	0.721	1.06

Sample ID: 18Q2DP009-SB0601-SO-0
Lab Samp ID: F187-15G
Lab File ID: F6G02078
Ext Btch ID: IMF045S
Calib. Ref.: F6G02075

Date Analyzed: 07/03/18 15:41
Dilution Factor: 5
Matrix: SOIL
% Moisture: 7.6
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Iron	30100	528	26.4	52.8

Sample Amount : 2.05g
Prepared by : MCande

Final Volume:100ml
Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/23/18 12:50
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0601-SO-0	Date Analyzed:	07/03/18 13:57
Lab Samp ID:	F187-15	Dilution Factor:	1
Lab File ID:	F6G02055	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	7.6
Calib. Ref.:	F6G02052	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14500	106	10.6	21.1
Antimony	0.280J	0.528	0.106	0.211
Arsenic	6.76	0.528	0.0528	0.106
Barium	48.5	0.528	0.0761	0.106
Beryllium	0.272J	0.528	0.0528	0.106
Cadmium	0.278J	0.528	0.0602	0.106
Calcium	5660	106	18.0	21.1
Chromium	227	0.528	0.0528	0.106
Cobalt	7.79	0.528	0.0528	0.106
Copper	34.4	0.528	0.106	0.211
Iron	27400E	106	5.28	10.6
Lead	16.5	0.528	0.0528	0.106
Magnesium	8640	106	10.6	21.1
Manganese	376	0.528	0.162	0.211
Molybdenum	0.422J	0.528	0.106	0.211
Nickel	34.0	0.528	0.0665	0.106
Potassium	745	106	10.6	21.1
Selenium	0.110J	0.528	0.0528	0.106
Silver	0.189J	0.528	0.0528	0.106
Sodium	116	106	10.6	21.1
Thallium	ND	0.528	0.0528	0.106
Vanadium	56.3	0.528	0.201	0.264
Zinc	55.6	2.11	0.721	1.06

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.05g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/23/18 12:50
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0601-SO-0	Date Analyzed:	07/03/18 15:41
Lab Samp ID:	F187-15G	Dilution Factor:	5
Lab File ID:	F6G02078	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	7.6
Calib. Ref.:	F6G02075	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	15800	528	52.8	106
Antimony	ND	2.64	0.528	1.06
Arsenic	6.83	2.64	0.264	0.528
Barium	47.7	2.64	0.380	0.528
Beryllium	ND	2.64	0.264	0.528
Cadmium	ND	2.64	0.301	0.528
Calcium	6200	528	89.8	106
Chromium	243	2.64	0.264	0.528
Cobalt	8.61	2.64	0.264	0.528
Copper	37.7	2.64	0.528	1.06
Iron	30100	528	26.4	52.8
Lead	16.0	2.64	0.264	0.528
Magnesium	9420	528	52.8	106
Manganese	416	2.64	0.808	1.06
Molybdenum	ND	2.64	0.528	1.06
Nickel	36.8	2.64	0.333	0.528
Potassium	815	528	52.8	106
Selenium	ND	2.64	0.264	0.528
Silver	ND	2.64	0.264	0.528
Sodium	124J	528	52.8	106
Thallium	ND	2.64	0.264	0.528
Vanadium	60.4	2.64	1.00	1.32
Zinc	57.2	10.6	3.61	5.28

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.05g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Sample ID: 18Q2DP009-SB0601-SO-1
Lab Samp ID: F187-16
Lab File ID: F6G02056
Ext Btch ID: IMF045S
Calib. Ref.: F6G02052

Date Collected: 06/23/18 12:51
Date Received: 06/26/18
Date Extracted: 06/27/18 15:02
Date Analyzed: 07/03/18 14:02
Dilution Factor: 1
Matrix: SOIL
% Moisture: 6.9
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	13000	105	10.5	21.0
Antimony	0.318J	0.524	0.105	0.210
Arsenic	7.67	0.524	0.0524	0.105
Barium	58.9	0.524	0.0755	0.105
Beryllium	0.294J	0.524	0.0524	0.105
Cadmium	0.245J	0.524	0.0598	0.105
Calcium	4860	105	17.8	21.0
Cobalt	7.12	0.524	0.0524	0.105
Copper	36.2	0.524	0.105	0.210
Iron	25800	105	5.24	10.5
Lead	15.0	0.524	0.0524	0.105
Magnesium	7040	105	10.5	21.0
Manganese	315	0.524	0.160	0.210
Molybdenum	0.517J	0.524	0.105	0.210
Nickel	31.3	0.524	0.0660	0.105
Potassium	852	105	10.5	21.0
Selenium	0.0967J	0.524	0.0524	0.105
Silver	0.474J	0.524	0.0524	0.105
Sodium	112	105	10.5	21.0
Thallium	ND	0.524	0.0524	0.105
Vanadium	50.6	0.524	0.199	0.262
Zinc	57.1	2.10	0.716	1.05

Sample ID: 18Q2DP009-SB0601-SO-1
Lab Samp ID: F187-16G
Lab File ID: F6G02079
Ext Btch ID: IMF045S
Calib. Ref.: F6G02075

Date Analyzed: 07/03/18 15:45
Dilution Factor: 5
Matrix: SOIL
% Moisture: 6.9
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Chromium	302	2.62	0.262	0.524

Sample Amount : 2.05g
Prepared by : MCande

Final Volume:100ml
Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/23/18 12:51
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0601-SO-1	Date Analyzed:	07/03/18 14:02
Lab Samp ID:	F187-16	Dilution Factor:	1
Lab File ID:	F6G02056	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	6.9
Calib. Ref.:	F6G02052	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	13000	105	10.5	21.0
Antimony	0.318J	0.524	0.105	0.210
Arsenic	7.67	0.524	0.0524	0.105
Barium	58.9	0.524	0.0755	0.105
Beryllium	0.294J	0.524	0.0524	0.105
Cadmium	0.245J	0.524	0.0598	0.105
Calcium	4860	105	17.8	21.0
Chromium	278E	0.524	0.0524	0.105
Cobalt	7.12	0.524	0.0524	0.105
Copper	36.2	0.524	0.105	0.210
Iron	25800	105	5.24	10.5
Lead	15.0	0.524	0.0524	0.105
Magnesium	7040	105	10.5	21.0
Manganese	315	0.524	0.160	0.210
Molybdenum	0.517J	0.524	0.105	0.210
Nickel	31.3	0.524	0.0660	0.105
Potassium	852	105	10.5	21.0
Selenium	0.0967J	0.524	0.0524	0.105
Silver	0.474J	0.524	0.0524	0.105
Sodium	112	105	10.5	21.0
Thallium	ND	0.524	0.0524	0.105
Vanadium	50.6	0.524	0.199	0.262
Zinc	57.1	2.10	0.716	1.05

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.05g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/23/18 12:51
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-SB0601-SO-1	Date Analyzed:	07/03/18 15:45
Lab Samp ID:	F187-16G	Dilution Factor:	5
Lab File ID:	F6G02079	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	6.9
Calib. Ref.:	F6G02075	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	14200	524	52.4	105
Antimony	ND	2.62	0.524	1.05
Arsenic	7.86	2.62	0.262	0.524
Barium	59.2	2.62	0.377	0.524
Beryllium	0.277J	2.62	0.262	0.524
Cadmium	ND	2.62	0.299	0.524
Calcium	5290	524	89.1	105
Chromium	302	2.62	0.262	0.524
Cobalt	7.79	2.62	0.262	0.524
Copper	39.6	2.62	0.524	1.05
Iron	27800	524	26.2	52.4
Lead	14.6	2.62	0.262	0.524
Magnesium	7600	524	52.4	105
Manganese	347	2.62	0.802	1.05
Molybdenum	ND	2.62	0.524	1.05
Nickel	34.2	2.62	0.330	0.524
Potassium	917	524	52.4	105
Selenium	ND	2.62	0.262	0.524
Silver	0.494J	2.62	0.262	0.524
Sodium	116J	524	52.4	105
Thallium	ND	2.62	0.262	0.524
Vanadium	54.8	2.62	0.996	1.31
Zinc	59.0	10.5	3.58	5.24

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.05g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Sample ID: 18Q2DP009-IDW-SO01
Lab Samp ID: F187-17
Lab File ID: F6G02057
Ext Btch ID: IMF045S
Calib. Ref.: F6G02052

Date Collected: 06/23/18 13:20
Date Received: 06/26/18
Date Extracted: 06/27/18 15:02
Date Analyzed: 07/03/18 14:06
Dilution Factor: 1
Matrix: SOIL
% Moisture: 8.1
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	16400	106	10.6	21.2
Antimony	0.395J	0.531	0.106	0.212
Arsenic	7.43	0.531	0.0531	0.106
Barium	78.8	0.531	0.0765	0.106
Beryllium	0.401J	0.531	0.0531	0.106
Cadmium	0.264J	0.531	0.0605	0.106
Calcium	7170	106	18.1	21.2
Chromium	55.6	0.531	0.0531	0.106
Cobalt	12.3	0.531	0.0531	0.106
Copper	31.1	0.531	0.106	0.212
Lead	27.5	0.531	0.0531	0.106
Magnesium	9780	106	10.6	21.2
Manganese	661	0.531	0.162	0.212
Molybdenum	1.38	0.531	0.106	0.212
Nickel	39.6	0.531	0.0669	0.106
Potassium	839	106	10.6	21.2
Selenium	0.168J	0.531	0.0531	0.106
Silver	0.902	0.531	0.0531	0.106
Sodium	157	106	10.6	21.2
Thallium	ND	0.531	0.0531	0.106
Vanadium	63.0	0.531	0.202	0.266
Zinc	74.3	2.12	0.725	1.06

Sample ID: 18Q2DP009-IDW-SO01
Lab Samp ID: F187-17G
Lab File ID: F6G02080
Ext Btch ID: IMF045S
Calib. Ref.: F6G02075

Date Analyzed: 07/03/18 15:50
Dilution Factor: 5
Matrix: SOIL
% Moisture: 8.1
Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Iron	35200	531	26.6	53.1

Sample Amount : 2.05g
Prepared by : MCande

Final Volume:100ml
Analyzed by:LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/23/18 13:20
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-IDW-SO01	Date Analyzed:	07/03/18 14:06
Lab Samp ID:	F187-17	Dilution Factor:	1
Lab File ID:	F6G02057	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	8.1
Calib. Ref.:	F6G02052	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	16400	106	10.6	21.2
Antimony	0.395J	0.531	0.106	0.212
Arsenic	7.43	0.531	0.0531	0.106
Barium	78.8	0.531	0.0765	0.106
Beryllium	0.401J	0.531	0.0531	0.106
Cadmium	0.264J	0.531	0.0605	0.106
Calcium	7170	106	18.1	21.2
Chromium	55.6	0.531	0.0531	0.106
Cobalt	12.3	0.531	0.0531	0.106
Copper	31.1	0.531	0.106	0.212
Iron	32300E	106	5.31	10.6
Lead	27.5	0.531	0.0531	0.106
Magnesium	9780	106	10.6	21.2
Manganese	661	0.531	0.162	0.212
Molybdenum	1.38	0.531	0.106	0.212
Nickel	39.6	0.531	0.0669	0.106
Potassium	839	106	10.6	21.2
Selenium	0.168J	0.531	0.0531	0.106
Silver	0.902	0.531	0.0531	0.106
Sodium	157	106	10.6	21.2
Thallium	ND	0.531	0.0531	0.106
Vanadium	63.0	0.531	0.202	0.266
Zinc	74.3	2.12	0.725	1.06

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.05g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client	: CH2M HILL	Date Collected:	06/23/18 13:20
Project	: JBER TO075	Date Received:	06/26/18
SDG NO.	: 18F187	Date Extracted:	06/27/18 15:02
Sample ID:	18Q2DP009-IDW-SO01	Date Analyzed:	07/03/18 15:50
Lab Samp ID:	F187-17G	Dilution Factor:	5
Lab File ID:	F6G02080	Matrix:	SOIL
Ext Btch ID:	IMF045S	% Moisture:	8.1
Calib. Ref.:	F6G02075	Instrument ID:	F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	17900	531	53.1	106
Antimony	ND	2.66	0.531	1.06
Arsenic	7.87	2.66	0.266	0.531
Barium	78.4	2.66	0.382	0.531
Beryllium	0.341J	2.66	0.266	0.531
Cadmium	ND	2.66	0.303	0.531
Calcium	7790	531	90.3	106
Chromium	59.5	2.66	0.266	0.531
Cobalt	13.7	2.66	0.266	0.531
Copper	34.1	2.66	0.531	1.06
Iron	35200	531	26.6	53.1
Lead	26.6	2.66	0.266	0.531
Magnesium	10700	531	53.1	106
Manganese	729	2.66	0.812	1.06
Molybdenum	1.29J	2.66	0.531	1.06
Nickel	42.8	2.66	0.335	0.531
Potassium	912	531	53.1	106
Selenium	ND	2.66	0.266	0.531
Silver	0.923J	2.66	0.266	0.531
Sodium	161J	531	53.1	106
Thallium	ND	2.66	0.266	0.531
Vanadium	68.0	2.66	1.01	1.33
Zinc	77.6	10.6	3.63	5.31

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 2.05g	Final Volume:	100ml
Prepared by	: MCande	Analyzed by:	LVicto

METHOD SW6020A
METALS BY ICP-MS

Client : CH2M HILL	Date Collected: NA
Project : JBER TO075	Date Received: NA
SDG NO. : 18F187	Date Extracted: 06/27/18 15:02
Sample ID: MBLK1S	Date Analyzed: 07/03/18 12:14
Lab Samp ID: IMF045SB	Dilution Factor: 1
Lab File ID: F6G02032	Matrix: SOIL
Ext Btch ID: IMF045S	% Moisture: NA
Calib. Ref.: F6G02028	Instrument ID: F6

PARAMETERS	Result (mg/kg)	LOQ (mg/kg)	DL (mg/kg)	LOD (mg/kg)
Aluminum	ND	100	10.0	20.0
Antimony	ND	0.500	0.100	0.200
Arsenic	0.134J	0.500	0.0500	0.100
Barium	ND	0.500	0.0720	0.100
Beryllium	ND	0.500	0.0500	0.100
Cadmium	ND	0.500	0.0570	0.100
Calcium	ND	100	17.0	20.0
Chromium	0.117J	0.500	0.0500	0.100
Cobalt	ND	0.500	0.0500	0.100
Copper	ND	0.500	0.100	0.200
Iron	ND	100	5.00	10.0
Lead	ND	0.500	0.0500	0.100
Magnesium	ND	100	10.0	20.0
Manganese	ND	0.500	0.153	0.200
Molybdenum	ND	0.500	0.100	0.200
Nickel	ND	0.500	0.0630	0.100
Potassium	ND	100	10.0	20.0
Selenium	ND	0.500	0.0500	0.100
Silver	ND	0.500	0.0500	0.100
Sodium	ND	100	10.0	20.0
Thallium	ND	0.500	0.0500	0.100
Vanadium	0.329J	0.500	0.190	0.250
Zinc	ND	2.00	0.683	1.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 2g	Final Volume:100ml
Prepared by : MCande	Analyzed by:LVicto

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : SW6020A

MATRIX	: SOIL		% MOISTURE:NA
DILUTION FACTOR	: 1.00	1.00	1.00
SAMPLE ID	: MBLK1S	LCS1S	LCD1S
LAB SAMPLE ID	: IMF045SB	IMF045SL	IMF045SC
LAB FILE ID	: F6G02032	F6G02033	F6G02034
DATE PREPARED	: 06/27/18 15:02	06/27/18 15:02	06/27/18 15:02
DATE ANALYZED	: 07/03/18 12:14	07/03/18 12:19	07/03/18 12:23
PREP BATCH	: IMF045S	IMF045S	IMF045S
CALIBRATION REF	: F6G02028	F6G02028	F6G02028

ACCESSION:

PARAMETERS	MBResult (mg/kg)	SpikeAmt (mg/kg)	LCSResult (mg/kg)	LCSRec (%)	SpikeAmt (mg/kg)	LCDResult (mg/kg)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	2000	1920	96	2000	1910	96	1	78-124	20
Antimony	ND	20	20.1	101	20	19.9	99	1	72-124	20
Arsenic	0.134J	20	19.8	99	20	20.0	100	1	82-118	20
Barium	ND	20	20.0	100	20	19.8	99	1	86-116	20
Beryllium	ND	20	19.3	96	20	19.3	96	0	80-120	20
Cadmium	ND	20	19.7	99	20	19.9	99	1	84-116	20
Calcium	ND	2000	2010	100	2000	2020	101	0	86-118	20
Chromium	0.117J	20	20.2	101	20	20.1	101	0	83-119	20
Cobalt	ND	20	19.8	99	20	19.8	99	0	84-115	20
Copper	ND	20	20.1	101	20	20.1	101	0	84-119	20
Iron	ND	2000	1930	96	2000	1930	96	0	81-124	20
Lead	ND	20	19.2	96	20	19.1	96	1	84-118	20
Magnesium	ND	2000	1950	98	2000	1970	98	1	80-123	20
Manganese	ND	20	20.5	102	20	20.5	102	0	85-116	20
Molybdenum	ND	20	19.9	99	20	19.8	99	1	83-114	20
Nickel	ND	20	20.0	100	20	19.8	99	1	84-119	20
Potassium	ND	2000	2100	105	2000	2130	106	1	85-119	20
Selenium	ND	20	19.9	99	20	20.2	101	1	80-119	20
Silver	ND	20	20.2	101	20	20.1	101	0	83-118	20
Sodium	ND	2000	2030	102	2000	2040	102	0	79-125	20
Thallium	ND	20	19.9	99	20	19.8	99	1	83-118	20
Vanadium	0.329J	20	20.2	101	20	20.2	101	0	82-116	20
Zinc	ND	40	40.6	101	40	40.5	101	0	82-119	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : SW6020A

MATRIX	SOIL		% MOISTURE: 3.9
DILUTION FACTOR	1	1	1
SAMPLE ID	18Q2DP009-SB0501-SO-01	8Q2DP009-SB0501-SO-0MS	18Q2DP009-SB0501-SO-0MSD
LAB SAMPLE ID	F187-07	F187-07M	F187-07S
LAB FILE ID	F6G02045	F6G02042	F6G02043
DATE PREPARED	06/27/18 15:02	06/27/18 15:02	06/27/18 15:02
DATE ANALYZED	07/03/18 13:13	07/03/18 12:59	07/03/18 13:04
PREP BATCH	IMF045S	IMF045S	IMF045S
CALIBRATION REF	F6G02040	F6G02040	F6G02040

ACCESSION:

PARAMETERS	PSResult (mg/kg)	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	15800	2040	17900	103	2050	18000	107	1	78-124	20
Antimony	0.387J	20.4	15.7	75.1	20.5	16.1	76.6	3	72-124	20
Arsenic	7.91	20.4	26.7	92.1	20.5	26.7	91.7	0	82-118	20
Barium	49.2	20.4	66.7	85.8*	20.5	63.5	69.8*	5	86-116	20
Beryllium	0.418J	20.4	20.3	97.5	20.5	20.6	98.4	1	80-120	20
Cadmium	0.282J	20.4	20.4	98.6	20.5	20.6	99.1	1	84-116	20
Calcium	7140	2040	9360	109	2050	9530	117	2	86-118	20
Chromium	41.0	20.4	55.7	72.1*	20.5	56.6	76.1*	2	83-119	20
Cobalt	11.7	20.4	29.6	87.7	20.5	29.2	85.4	1	84-115	20
Copper	32.4	20.4	48.6	79.4*	20.5	47.3	72.7*	3	84-119	20
Lead	6.05	20.4	24.0	88.0	20.5	23.8	86.6	1	84-118	20
Magnesium	11000	2040	13700	132*	2050	12900	92.7	6	80-123	20
Manganese	613	20.4	655	206*	20.5	651	185*	1	85-116	20
Molybdenum	0.438J	20.4	20.4	97.9	20.5	20.6	98.4	1	83-114	20
Nickel	42.7	20.4	63.0	99.5	20.5	60.1	84.9	5	84-119	20
Potassium	814	2040	2470	81.2*	2050	2500	82.2*	1	85-119	20
Selenium	0.171J	20.4	20.1	97.7	20.5	20.0	96.7	0	80-119	20
Silver	0.0934J	20.4	20.1	98.1	20.5	20.4	99.1	1	83-118	20
Sodium	129	2040	1950	89.3	2050	1960	89.3	1	79-125	20
Thallium	ND	20.4	19.2	94.1	20.5	19.5	95.1	2	83-118	20
Vanadium	61.2	20.4	81.6	100	20.5	78.9	86.3	3	82-116	20
Zinc	64.5	40.8	104	96.8	41	103	93.9	1	82-119	20

PSResult - Parent Sample Result
* Out of QC limit

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : SW6020A

MATRIX	SOIL		% MOISTURE: 3.9
DILUTION FACTOR	5	5	5
SAMPLE ID	18Q2DP009-SB0501-SO-01	8Q2DP009-SB0501-SO-0MS	18Q2DP009-SB0501-SO-0MSD
LAB SAMPLE ID	F187-07G	F187-07M	F187-07S
LAB FILE ID	F6G02068	F6G02065	F6G02066
DATE PREPARED	06/27/18 15:02	06/27/18 15:02	06/27/18 15:02
DATE ANALYZED	07/03/18 14:56	07/03/18 14:42	07/03/18 14:47
PREP BATCH	IMF045S	IMF045S	IMF045S
CALIBRATION REF	F6G02063	F6G02063	F6G02063

ACCESSION:

PARAMETERS	PSResult (mg/kg)	SpikeAmt (mg/kg)	MSResult (mg/kg)	MSRec (%)	SpikeAmt (mg/kg)	MSDResult (mg/kg)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Iron	33000	2040	36500	172*	2050	36100	151*	1	81-124	20

PSResult - Parent Sample Result
* Out of QC limit

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : SW6020A

MATRIX	: SOIL	% MOISTURE: 3.9
DILUTION FACTOR	: 1	5
SAMPLE ID	: 18Q2DP009-SB0501-SO-0	18Q2DP009-SB0501-SO-0
LAB SAMPLE ID	: F187-07	F187-07J
LAB FILE ID	: F6G02045	F6G02046
DATE PREPARED	: 06/27/18 15:02	06/27/18 15:02
DATE ANALYZED	: 07/03/18 13:13	07/03/18 13:17
PREP BATCH	: IMF045S	IMF045S
CALIBRATION REF	: F6G02040	F6G02040

ACCESSION:

PARAMETERS	Sample Result (mg/kg)	SD Result (mg/kg)	%Difference (%)	Max %D (%)
Aluminum	15800	17200	9	10
Antimony	0.387J	ND	NA	10
Arsenic	7.91	8.40	6	10
Barium	49.2	48.4	2	10
Beryllium	0.418J	0.378J	NA	10
Cadmium	0.282J	ND	NA	10
Calcium	7140	7840	10	10
Chromium	41.0	43.8	7	10
Cobalt	11.7	13.1	12*	10
Copper	32.4	35.6	10	10
Lead	6.05	6.08	0	10
Magnesium	11000	12000	9	10
Manganese	613	675	10	10
Molybdenum	0.438J	ND	NA	10
Nickel	42.7	46.5	9	10
Potassium	814	851	5	10
Selenium	0.171J	ND	NA	10
Silver	0.0934J	ND	NA	10
Sodium	129	150J	NA	10
Thallium	ND	ND	0	10
Vanadium	61.2	65.6	7	10
Zinc	64.5	66.9	4	10

SD - Serial Dilution
* Out of QC limit

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : SW6020A

MATRIX	: SOIL	% MOISTURE: 3.9
DILUTION FACTOR	: 5	25
SAMPLE ID	: 18Q2DP009-SB0501-SO-0	18Q2DP009-SB0501-SO-0
LAB SAMPLE ID	: F187-07G	F187-07J
LAB FILE ID	: F6G02068	F6G02069
DATE PREPARED	: 06/27/18 15:02	06/27/18 15:02
DATE ANALYZED	: 07/03/18 14:56	07/03/18 15:00
PREP BATCH	: IMF045S	IMF045S
CALIBRATION REF	: F6G02063	F6G02063

ACCESSION:

PARAMETERS	Sample Result (mg/kg)	SD Result (mg/kg)	%Difference (%)	Max %D (%)
Iron	33000	34400	4	10

SD - Serial Dilution

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : SW6020A

MATRIX	: SOIL	% MOISTURE: 3.9
DILUTION FACTOR	: 1	1
SAMPLE ID	: 18Q2DP009-SB0501-SO-0	18Q2DP009-SB0501-SO-0
LAB SAMPLE ID	: F187-07	F187-07A
LAB FILE ID	: F6G02045	F6G02044
DATE PREPARED	: 06/27/18 15:02	06/27/18 15:02
DATE ANALYZED	: 07/03/18 13:13	07/03/18 13:08
PREP BATCH	: IMF045S	IMF045S
CALIBRATION REF	: F6G02040	F6G02040

ACCESSION:

PARAMETERS	Sample Result (mg/kg)	Spike Amt (mg/kg)	AS Result (mg/kg)	AS Rec (%)	QC Limit (%)
Aluminum	15800	2040	17300	74*	80-120
Antimony	0.387J	20.4	20.9	101	80-120
Arsenic	7.91	20.4	27.8	98	80-120
Barium	49.2	20.4	69.6	100	80-120
Beryllium	0.418J	20.4	20.8	100	80-120
Cadmium	0.282J	20.4	20.9	101	80-120
Calcium	7140	2040	8990	91	80-120
Chromium	41.0	20.4	58.8	87	80-120
Cobalt	11.7	20.4	29.3	86	80-120
Copper	32.4	20.4	49.7	85	80-120
Lead	6.05	20.4	24.4	90	80-120
Magnesium	11000	2040	12600	78*	80-120
Manganese	613	20.4	621	39*	80-120
Molybdenum	0.438J	20.4	21.2	102	80-120
Nickel	42.7	20.4	59.9	84	80-120
Potassium	814	2040	2770	96	80-120
Selenium	0.171J	20.4	20.8	101	80-120
Silver	0.0934J	20.4	20.8	102	80-120
Sodium	129	2040	2020	93	80-120
Thallium	ND	20.4	19.7	97	80-120
Vanadium	61.2	20.4	79.1	88	80-120
Zinc	64.5	40.8	102	92	80-120

AS - Analytical Spike
* Out of QC limit

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : SW6020A

MATRIX	: SOIL	% MOISTURE: 3.9
DILUTION FACTOR	: 5	5
SAMPLE ID	: 18Q2DP009-SB0501-SO-0	18Q2DP009-SB0501-SO-0
LAB SAMPLE ID	: F187-07G	F187-07A
LAB FILE ID	: F6G02068	F6G02067
DATE PREPARED	: 06/27/18 15:02	06/27/18 15:02
DATE ANALYZED	: 07/03/18 14:56	07/03/18 14:51
PREP BATCH	: IMF045S	IMF045S
CALIBRATION REF	: F6G02063	F6G02063

ACCESSION:

PARAMETERS	Sample Result (mg/kg)	Spike Amt (mg/kg)	AS Result (mg/kg)	AS Rec (%)	QC Limit (%)
Iron	33000	10200	42600	94	80-120

AS - Analytical Spike

ICP-MS QC CHECK TABLE

QC	S4	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 07/03/18 10:08

End Date: 07/03/18 15:59

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

Book #:	AF6-022
Instrument No.:	F6
Analytical Batch:	IF6G02
Analytical Sequence:	F6G02
Method File:	EM6020R2
Micropipette ID:	☐ 142781004
Micropipette ID:	☐ ICP-06
Micropipette ID:	☐ 339362028
Micropipette ID:	☒ GFAA-07
Micropipette ID:	☒ 339342032
Micropipette ID:	☒ 542780515
Micropipette ID:	☒ 542761827
Micropipette ID:	☐

SOP #	Rev. #
☒ EMAX-6020	9
☐ EMAX-200.8	5
☐ EMAX-	
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-14-39-02	MRL1(1)	SM6B-13-49-02
S1	40-01	MRL2(0.5)	SM6B-14-09-02
S2	04-01	MRL3(CAT)	↓ 10-01
S3	40-02	MRL4	NA
S4	↓ 04-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-14-49-01
S7	↓	Post-Spike 1	SM6A-007-05-08
ICV	SM6B-14-50-01	Post-Spike 2	↓ 05-09
CCV	49-02	Post-Spike 3	NA
ICSA	41-02	Post-Spike 4	↓
ICSAB	42-01		
6020 TUNE SOLN.	34-01		
200.8 TUNE SOLN.	↓ 34-02		

Analyzed By: LV

Date: 07/03/18

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Method : METHOD SW6020A
Sequence : IF6G02
InstrumentID: F6

		ICV				ICSA			ICSAB		
Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		F6G02009				F6G02013			F6G02014		
DateAnalyed :		07/03/1810:30				07/03/1810:48			07/03/1810:53		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		30.53	30	0.39	102	.3384	0	>0	20.78	20	104
Beryllium	T	30.03	30	0.42	100	-.002827	0	<0.1	19.59	20	98
Boron		30.5	30	1.11	102	.5621	0	<5.0	19.21	20	96
Sodium	T	30010	30000	0.74	100	102600	100000	103	100200	100000	100
Magnesium	T	28580	30000	0.48	95	98310	100000	98	95680	100000	96
Aluminum	T	28140	30000	0.70	94	96330	100000	96	94610	100000	95
Silicon		3002	3000	0.71	100	6.99	0	<20	200.9	200	100
Phosphorus		292.6	300	1.25	98	106100	100000	106	103300	100000	103
Potassium	T	30130	30000	1.05	100	103300	100000	103	101500	100000	102
Calcium	T	30370	30000	0.09	101	101800	100000	102	100300	100000	100
Titanium		300.4	300	0.31	100	2230	2000	112	2202	2000	110
Vanadium	T	299.2	300	0.54	100	-.03048	0	<0.5	19.83	20	99
Chromium	T	292.7	300	0.21	98	.1993	0	<0.2	19.93	20	100
Manganese	T	1948	2000	0.25	97	.3016	0	>0.2	19.99	20	100
Iron	T	28840	30000	0.26	96	96870	100000	97	95250	100000	95
Cobalt	T	295.4	300	0.56	98	.2081	0	>0.2	19.25	20	96
Nickel	T	296.9	300	0.86	99	.2405	0	>0.2	19.34	20	97
Copper	T	292.9	300	0.48	98	.3328	0	<0.5	19.25	20	96
Zinc	T	303	300	0.43	101	4.151	0	<10	22.25	20	111
Arsenic	T	297.9	300	1.22	99	.255	0	>0.2	19.76	20	99
Selenium	T	303.7	300	1.35	101	.1336	0	<0.3	21.13	20	106
Strontium		306.9	300	0.61	102	.9241	0	<1.0	20.33	20	102
Zirconium		27.04	30	0.54	90	.2239	0	<2.0	5.928	20	30*
Molybdenum	T	308.6	300	0.49	103	2094	2000	105	2083	2000	104
Silver	T	29.2	30	1.71	97	.0257	0	<0.2	19.53	20	98
Cadmium	T	310.1	300	1.29	103	.2376	0	>0.2	20.47	20	102
Tin		309.6	300	0.80	103	.07814	0	<0.2	20.16	20	101
Antimony	T	59.49	60	0.92	99	.05681	0	<0.5	20.58	20	103
Barium	T	310.8	300	1.64	104	.09715	0	<0.5	20.6	20	103
Tungsten		49.03	30	0.63	163*	.2106	0	<1.0	20.36	20	102
Thallium	T	300.5	300	1.06	100	.007194	0	<0.2	19.47	20	97
Lead	T	300.5	300	0.62	100	.1014	0	>0.1	19.4	20	97
Uranium		302.4	300	0.77	101	.01196	0	<0.1	18.94	20	95

| Unit: ug/L
| T: Target analyte
| EV: Expected Value
| Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Method : METHOD SW6020A
Sequence : IF6G02
Instrument ID: F6

CCV SampleID			CCV1			CCV2			CCV3			CCV4			CCV5		
CCV DataFileID			F6G02016			F6G02028			F6G02040			F6G02052			F6G02063		
CCV DateTime			07/03/18 11:02			07/03/18 11:56			07/03/18 12:50			07/03/18 13:44			07/03/18 14:33		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	25.1	100	1.02	25.3	101	0.25	26.5	106	0.45	26.0	104	1.79	25.5	102	0.46
Beryllium	T	25	24.2	97	1.42	24.7	99	0.90	25.4	102	0.96	25.2	101	0.88	24.8	99	0.58
Boron		50	48.8	98	1.08	49.5	99	0.57	51.8	104	0.59	50.6	101	1.01	49.3	99	1.33
Sodium	T	25000	24800	99	0.22	25000	100	0.89	25800	103	0.54	26000	104	0.81	25900	104	0.85
Magnesium	T	25000	23800	95	0.81	23800	95	0.30	24200	97	0.46	24500	98	1.47	23900	96	0.21
Aluminum	T	25000	23500	94	0.97	23500	94	0.21	24000	96	0.29	24300	97	1.78	23600	94	0.30
Silicon		2500	2410	96	0.27	2490	100	0.86	2560	102	0.70	2610	104	1.55	2600	104	0.61
Phosphorus		250	230	92	0.81	238	95	0.62	237	95	0.60	242	97	1.15	234	94	0.73
Potassium	T	25000	25200	101	1.15	25500	102	1.48	26500	106	1.35	26400	105	2.47	26500	106	0.39
Calcium	T	25000	24900	99	0.49	25000	100	0.40	25700	103	0.07	25900	104	1.06	25400	102	0.64
Titanium		250	250	100	0.68	252	101	0.14	254	102	1.00	256	102	0.77	251	100	0.97
Vanadium	T	250	253	101	0.87	249	100	1.08	254	101	1.63	253	101	0.23	249	100	0.88
Chromium	T	250	245	98	1.87	245	98	0.60	253	101	1.19	249	99	1.22	244	98	1.29
Manganese	T	1500	1460	98	0.78	1470	98	0.62	1490	99	0.93	1500	100	1.33	1460	98	0.79
Iron	T	25000	24000	96	0.34	23900	96	0.41	24300	97	0.30	24700	99	0.50	24000	96	1.28
Cobalt	T	250	237	95	0.68	239	96	0.58	243	97	1.06	244	97	1.11	240	96	0.26
Nickel	T	250	243	97	0.60	240	96	1.47	246	98	1.24	243	97	0.30	238	95	0.77
Copper	T	250	245	98	0.46	240	96	0.56	247	99	0.78	243	97	0.58	238	95	0.45
Zinc	T	250	251	100	0.52	250	100	0.84	256	102	0.14	254	102	0.42	250	100	0.11
Arsenic	T	250	249	100	0.48	248	99	0.90	254	102	0.56	255	102	0.30	251	100	0.33
Selenium	T	250	253	101	1.06	251	100	1.05	257	103	0.47	255	102	0.53	251	100	0.51
Strontium		250	254	102	0.55	255	102	0.84	260	104	0.51	257	103	1.31	256	102	0.25
Zirconium		25	23.9	96	0.70	23.7	95	0.37	23.6	94	1.28	24.1	96	1.09	24.8	99	0.53
Molybdenum	T	250	254	102	1.76	252	101	0.29	263	105	0.69	262	105	0.14	258	103	0.52
Silver	T	25	25.2	101	0.27	25.2	101	0.29	25.8	103	0.42	25.6	103	0.62	25.5	102	0.75
Cadmium	T	250	251	101	0.70	251	101	0.91	259	104	1.09	257	103	0.53	255	102	0.32
Tin		250	255	102	1.09	255	102	0.46	259	103	0.68	258	103	0.23	256	102	0.61
Antimony	T	50	51.1	102	0.83	50.8	102	0.20	51.0	102	0.62	50.9	102	0.29	51.0	102	0.39
Barium	T	500	512	102	1.52	512	102	0.54	526	105	0.36	524	105	0.14	516	103	0.55
Tungsten		25	25.4	102	1.04	25.3	101	0.54	25.1	101	0.27	24.7	99	0.04	24.9	99	0.25
Thallium	T	250	245	98	1.04	242	97	0.25	248	99	0.61	241	97	0.93	236	94	0.47
Lead	T	250	246	98	0.96	243	97	0.22	245	98	0.46	236	95	1.06	232	93	0.18
Uranium		250	241	96	2.08	229	91	1.12	216	86*	0.54	200	80*	0.39	193	77*	0.21

CCV SampleID			CCV6			CCV7		
CCV DataFileID			F6G02075			F6G02081		
CCV DateTime			07/03/18 15:28			07/03/18 15:54		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	25.2	101	1.87	25.4	102	1.01
Beryllium	T	25	24.4	98	1.64	24.5	98	1.09
Boron		50	49.1	98	2.12	49.5	99	1.36
Sodium	T	25000	25900	104	0.63	25800	103	0.91
Magnesium	T	25000	24100	96	1.08	24200	97	1.17
Aluminum	T	25000	23800	95	0.99	24000	96	0.59
Silicon		2500	2600	104	0.23	2590	104	0.65
Phosphorus		250	235	94	1.32	236	95	0.06
Potassium	T	25000	26400	106	1.92	26700	107	0.71
Calcium	T	25000	25600	102	0.33	25400	102	0.56

Titanium		250	251	101	0.08	250	100	0.73
Vanadium	T	250	247	99	1.76	249	100	1.08
Chromium	T	250	245	98	0.55	246	98	1.28
Manganese	T	1500	1460	97	0.29	1470	98	1.26
Iron	T	25000	23900	96	0.63	24000	96	0.69
Cobalt	T	250	238	95	0.85	240	96	1.38
Nickel	T	250	236	94	0.83	237	95	0.53
Copper	T	250	236	94	0.12	237	95	0.56
Zinc	T	250	249	100	0.28	250	100	0.39
Arsenic	T	250	250	100	0.82	253	101	0.35
Selenium	T	250	251	100	0.50	252	101	0.77
Strontium		250	253	101	0.55	253	101	0.64
Zirconium		25	25.0	100	1.30	24.1	96	1.28
Molybdenum	T	250	262	105	1.16	263	105	1.36
Silver	T	25	25.7	103	0.85	25.4	102	0.84
Cadmium	T	250	256	102	0.29	255	102	0.61
Tin		250	257	103	0.59	257	103	0.32
Antimony	T	50	51.1	102	0.14	51.0	102	0.32
Barium	T	500	520	104	0.68	518	104	0.54
Tungsten		25	24.7	99	0.67	24.6	98	0.95
Thallium	T	250	233	93	0.69	232	93	0.95
Lead	T	250	230	92	0.70	227	91	0.48
Uranium		250	184	74*	0.85	180	72*	1.35

Unit:	ug/L
T:	Target analyte
%Rec QC Limit:	90-110
RSD QC Limit:	<5
CCV EV:	CCV Expected Value ug/L
Comment:	* Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CH2M HILL
Project : JBER TO075
SDG NO. : 18F187
Method : SW6020A
Sequence : IF6G02
Instrument ID: F6

CB SampleID		: ICB		CCB1		CCB2		CCB3		CCB4	
CB DataFileID		: F6G02010		F6G02017		F6G02029		F6G02041		F6G02053	
CB DateTime		: 07/03/1810:34		07/03/1811:06		07/03/1812:01		07/03/1812:55		07/03/1813:48	
PARAMETER	LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium	0	0.02	>0	0.2	>0	0.2	>0	0.2	>0	0.1	>0
Beryllium T	0.1	0.00005	<0.1	0.009	<0.1	0.006	<0.1	0.008	<0.1	0.008	<0.1
Boron	5.0	0.1	<5.0	0.1	<5.0	0.2	<5.0	0.2	<5.0	0.3	<5.0
Sodium T	50	10	<50	20	<50	10	<50	9	<50	7	<50
Magnesium T	10	0.3	<10	0.5	<10	0.4	<10	0.5	<10	0.6	<10
Aluminum T	20	0.3	<20	0.2	<20	0.3	<20	0.3	<20	0.3	<20
Silicon	20	0.8	<20	0.04	<20	0.06	<20	4	<20	5	<20
Phosphorus	25	9	<25	20	<25	10	<25	20	<25	20	<25
Potassium T	20	2	<20	3	<20	3	<20	0.9	<20	8	<20
Calcium T	25	1.0	<25	0.7	<25	1	<25	2	<25	2	<25
Titanium	0.5	0.02	<0.5	0.02	<0.5	0.002	<0.5	0.02	<0.5	0.06	<0.5
Vanadium T	0.5	0.03	<0.5	0.03	<0.5	0.1	<0.5	0.2	<0.5	0.2	<0.5
Chromium T	0.2	0.03	<0.2	0.04	<0.2	0.03	<0.2	0.03	<0.2	0.02	<0.2
Manganese T	0.2	0.008	<0.2	0.05	<0.2	0.05	<0.2	0.07	<0.2	0.06	<0.2
Iron T	10	2	<10	1	<10	1	<10	2	<10	2	<10
Cobalt T	0.2	0.007	<0.2	0.008	<0.2	0.006	<0.2	0.008	<0.2	0.008	<0.2
Nickel T	0.2	0.01	<0.2	0.03	<0.2	0.03	<0.2	0.04	<0.2	0.04	<0.2
Copper T	0.5	0.07	<0.5	0.03	<0.5	0.008	<0.5	0.0007	<0.5	0.02	<0.5
Zinc T	10	0.3	<10	0.3	<10	0.2	<10	0.2	<10	0.3	<10
Arsenic T	0.2	0.03	<0.2	0.06	<0.2	0.08	<0.2	0.09	<0.2	0.1	<0.2
Selenium T	0.3	0.09	<0.3	0.05	<0.3	0.06	<0.3	0.08	<0.3	0.07	<0.3
Strontium	1.0	0.0008	<1.0	0.0002	<1.0	0.002	<1.0	0.0008	<1.0	0.002	<1.0
Zirconium	2.0	0.0007	<2.0	0.01	<2.0	0.009	<2.0	0.009	<2.0	0.008	<2.0
Molybdenum T	1	0.2	<1	0.2	<1	0.1	<1	0.1	<1	0.1	<1
Silver T	0.2	0.004	<0.2	0.0008	<0.2	0.001	<0.2	0.0007	<0.2	0.0003	<0.2
Cadmium T	0.2	0.01	<0.2	0.007	<0.2	0.004	<0.2	0.009	<0.2	0.004	<0.2
Tin	0.2	0.4	>0.2	0.2	>0.2	0.2	>0.2	0.2	>0.2	0.2	>0.2
Antimony T	0.5	0.04	<0.5	0.01	<0.5	0.007	<0.5	0.09	<0.5	0.08	<0.5
Barium T	0.5	0.01	<0.5	0.01	<0.5	0.01	<0.5	0.02	<0.5	0.02	<0.5
Tungsten	1.0	0.08	<1.0	0.02	<1.0	0.02	<1.0	0.02	<1.0	0.01	<1.0
Thallium T	0.2	0.04	<0.2	0.02	<0.2	0.02	<0.2	0.02	<0.2	0.02	<0.2
Lead T	0.1	0.02	<0.1	0.01	<0.1	0.03	<0.1	0.01	<0.1	0.006	<0.1
Uranium	0.1	0.07	<0.1	0.05	<0.1	0.05	<0.1	0.04	<0.1	0.03	<0.1

CB SampleID		: CCB5		CCB6		CCB7	
CB DataFileID		: F6G02064		F6G02076		F6G02082	
CB DateTime		: 07/03/1814:37		07/03/1815:32		07/03/1815:59	
PARAMETER	LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium	0	0.2	>0	0.1	>0	0.1	>0
Beryllium T	0.1	0.009	<0.1	0.009	<0.1	0.008	<0.1
Boron	5.0	0.4	<5.0	0.3	<5.0	0.3	<5.0
Sodium T	50	5	<50	9	<50	6	<50
Magnesium T	10	0.7	<10	0.8	<10	1.0	<10
Aluminum T	20	0.4	<20	0.5	<20	0.7	<20
Silicon	20	3	<20	2	<20	2	<20
Phosphorus	25	20	<25	10	<25	20	<25

Potassium	T	20	1	<20	5	<20	2	<20
Calcium	T	25	2	<25	2	<25	2	<25
Titanium		0.5	0.04	<0.5	0.03	<0.5	0.003	<0.5
Vanadium	T	0.5	0.3	<0.5	0.2	<0.5	0.2	<0.5
Chromium	T	0.2	0.03	<0.2	0.04	<0.2	0.03	<0.2
Manganese	T	0.2	0.06	<0.2	0.07	<0.2	0.06	<0.2
Iron	T	10	2	<10	2	<10	2	<10
Cobalt	T	0.2	0.006	<0.2	0.005	<0.2	0.003	<0.2
Nickel	T	0.2	0.04	<0.2	0.04	<0.2	0.04	<0.2
Copper	T	0.5	0.02	<0.5	0.02	<0.5	0.02	<0.5
Zinc	T	10	0.3	<10	0.2	<10	0.2	<10
Arsenic	T	0.2	0.2	<0.2	0.2	<0.2	0.1	<0.2
Selenium	T	0.3	0.03	<0.3	0.06	<0.3	0.07	<0.3
Strontium		1.0	0.002	<1.0	0.002	<1.0	0.002	<1.0
Zirconium		2.0	0.009	<2.0	0.01	<2.0	0.010	<2.0
Molybdenum	T	1	0.1	<1	0.1	<1	0.1	<1
Silver	T	0.2	0.0001	<0.2	0.0008	<0.2	0.0006	<0.2
Cadmium	T	0.2	0.003	<0.2	0.002	<0.2	0.004	<0.2
Tin		0.2	0.2	>0.2	0.2	>0.2	0.2	>0.2
Antimony	T	0.5	0.03	<0.5	0.04	<0.5	0.03	<0.5
Barium	T	0.5	0.02	<0.5	0.02	<0.5	0.02	<0.5
Tungsten		1.0	0.02	<1.0	0.01	<1.0	0.02	<1.0
Thallium	T	0.2	0.02	<0.2	0.02	<0.2	0.02	<0.2
Lead	T	0.1	0.005	<0.1	0.002	<0.1	0.004	<0.1
Uranium		0.1	0.04	<0.1	0.03	<0.1	0.03	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

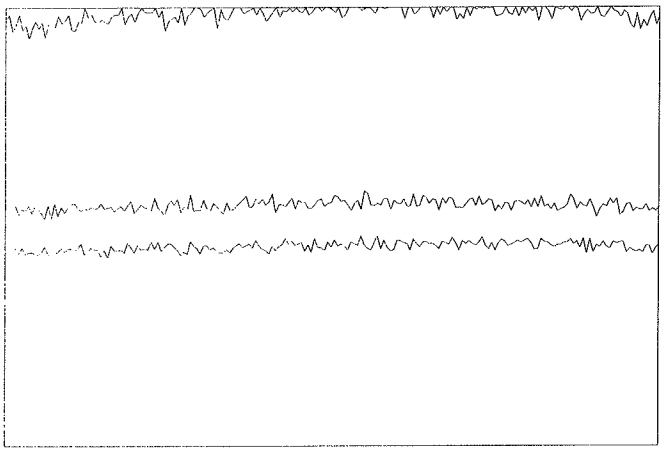
	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6G02001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6G02002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1101	F6G02003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1201	F6G02004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1104	F6G02005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1105	F6G02006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1106	F6G02007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1107	F6G02008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICV1	1204	F6G02009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICB	1201	F6G02010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1305	F6G02011	MRLG0301	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1306	F6G02012	MRLG0302	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6G02013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6G02014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1207	F6G02015	MRLG0303	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6G02016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6G02017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2101	F6G02018	F138-07G		5.000				
24	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2102	F6G02019	F138-08G		5.000				
25	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2103	F6G02020	F138-09G		5.000				
26	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2104	F6G02021	F138-10G		5.000				
27	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2105	F6G02022	F138-12G		5.000				
28	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2106	F6G02023	F138-14G		5.000				
29	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2107	F6G02024	F138-15I		10.00				
30	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2108	F6G02025	F138-16K		50.00				
31	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2109	F6G02026	F138-17G		5.000				
32	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2110	F6G02027	F138-26I		10.00				
33	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6G02028	CCV2		1.000				
34	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6G02029	CCB2		1.000				
35	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2111	F6G02030	F138-36		1.000				
36	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1305	F6G02031	MRLG0304	1/100/10 ppb	1.000				
37	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBS	2112	F6G02032	IMF045SB V(0.6582)		1.000				
38	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCSS	2201	F6G02033	IMF045SL		1.000				
39	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCSS	2202	F6G02034	IMF045SC		1.000				
40	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2203	F6G02035	F187-01 Fe↑		1.000				
41	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2204	F6G02036	F187-02 Fe↑		1.000				
42	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2205	F6G02037	F187-03		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
43	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2206	F6G02038	F187-04		1.000				
44	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2207	F6G02039	F187-05		1.000				
45	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6G02040	CCV3		1.000				
46	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6G02041	CCB3		1.000				
47	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2208	F6G02042	F187-07M	Fe↑ mg cr mn cu Ba	1.000				
48	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2209	F6G02043	F187-07S		1.000				
49	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2210	F6G02044	F187-07A	mnx mgx	1.000				
50	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2211	F6G02045	F187-07		1.000				
51	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2212	F6G02046	F187-07J	✓	5.000				
52	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2301	F6G02047	F187-08	Fe↑	1.000				
53	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2302	F6G02048	F187-10	Fe↑	1.000				
54	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2303	F6G02049	F187-11	Fe↑ K V Cr Ni Cu IS>120%	1.000				
55	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2304	F6G02050	F187-12	Fe↑	1.000				
56	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2305	F6G02051	F187-13		1.000				
57	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6G02052	CCV4		1.000				
58	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6G02053	CCB4		1.000				
59	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2306	F6G02054	F187-14	Fe↑	1.000				
60	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2307	F6G02055	F187-15	Fe↑	1.000				
61	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2308	F6G02056	F187-16	Cr↑	1.000				
62	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2309	F6G02057	F187-17	Fe↑	1.000				
63	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2310	F6G02058	F187-01G		5.000				
64	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2311	F6G02059	F187-02G		5.000				
65	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2312	F6G02060	F187-03G		5.000				
66	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2401	F6G02061	F187-04G		5.000				
67	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2402	F6G02062	F187-05G		5.000				
68	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6G02063	CCV5		1.000				
69	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6G02064	CCB5		1.000				
70	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2403	F6G02065	F187-07M		5.000				
71	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2404	F6G02066	F187-07S		5.000				
72	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2405	F6G02067	F187-07A		5.000				
73	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2406	F6G02068	F187-07G		5.000				
74	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2407	F6G02069	F187-07J		25.00				
75	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2408	F6G02070	F187-08G		5.000				
76	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2409	F6G02071	F187-10G		5.000				
77	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2410	F6G02072	F187-11G		5.000				
78	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2411	F6G02073	F187-12G		5.000				
79	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2412	F6G02074	F187-13G		5.000				
80	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6G02075	CCV6		1.000				
81	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6G02076	CCB6		1.000				
82	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2501	F6G02077	F187-14G		5.000				
83	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2502	F6G02078	F187-15G		5.000				
84	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2503	F6G02079	F187-16G		5.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
85	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2504	F6G02080	F187-17G		5.000				
86	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6G02081	CCV7		1.000				
87	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6G02082	CCB7		1.000				
88		Keyword		StandBy							
89		Keyword		SMPLEND	End of SMPL						
90		Keyword		End	End of Sequence						
91		Keyword		BLKBEG	Start of BLANK						
92		Keyword		BLKEND	End of BLANK						
93		Keyword		ERRBEG	Start of ERRTERM						
94		Keyword		ERREND	End of ERRTERM						

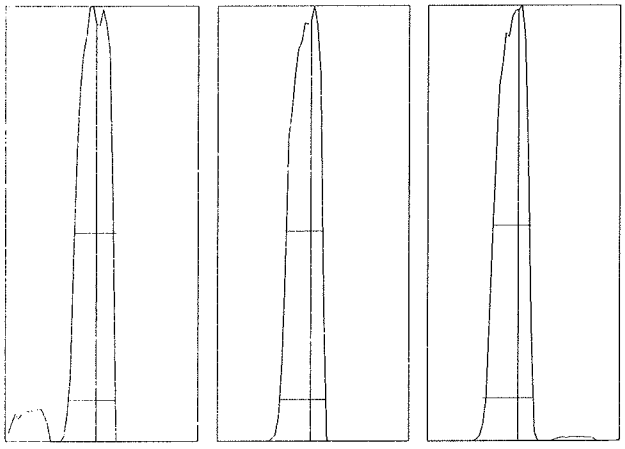
Tune Report

Tune File : NORM.U
Comment : IF6G02



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.503%
Doubly Charged:	70/140	1.915%

m/z	Range	Count	Mean	RSD%	Background
7	10,000	9817.0	9881.5	2.06	4.20
89	50,000	27192.0	27461.7	2.12	4.00
205	50,000	23029.0	22788.8	2.28	10.20
156/140	5	1.457%	1.539%	5.92	
70/140	2	1.292%	1.298%	6.07	



m/z:	7	89	205
Height:	2,840	7,953	6,722
Axis:	6.95	89.00	204.95
W-50%:	0.65	0.60	0.60
W-10%:	0.7500	0.7500	0.800

Integration Time: 0.0300 sec
Acquisition Time: 10.1600 sec

Y axis : Linear

Generated : Jul 03, 2018 09:44:22
Printed : Jul 03, 2018 09:44:24

Tune Report

Tune File : NORM.U
Comment : IF6G02

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	129
RF Matching	:	1.74 V	Extract 2	:	-145 V	AMU Offset	:	125
Smpl Depth	:	8 mm	Omega Bias-ce	:	-24 V	Axis Gain	:	0.9993
Torch-H	:	-1 mm	Omega Lens-ce	:	-1 V	Axis Offset	:	-0.08
Torch-V	:	-0.2 mm	Cell Entrance	:	-30 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	2 V			
Makeup Gas	:	0.14 L/min	Cell Exit	:	-36 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2080 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1480 V
S/C Temp	:	2 degC	OctP Bias	:	-6 V			

===Reaction Cell===								
Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

Generated : Jul 03, 2018 09:44:22
Printed : Jul 03, 2018 09:44:27

Last Calib: Jul 03, 2018 10:28 am
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	c:\data\if62018\g\if6g02.b\f6g02004.d\f6g02004.d#	S0	Jul 3 2018 10:08 am
2	c:\data\if62018\g\if6g02.b\f6g02005.d\f6g02005.d#	S1 0.5	Jul 3 2018 10:12 am
3	c:\data\if62018\g\if6g02.b\f6g02006.d\f6g02006.d#	S2 50	Jul 3 2018 10:17 am
4	c:\data\if62018\g\if6g02.b\f6g02007.d\f6g02007.d#	S3 250	Jul 3 2018 10:21 am
5	c:\data\if62018\g\if6g02.b\f6g02008.d\f6g02008.d#	S4 500	Jul 3 2018 10:26 am
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - C:\DATA\IF62018\G\IF6G02.B\EM6020R2.C

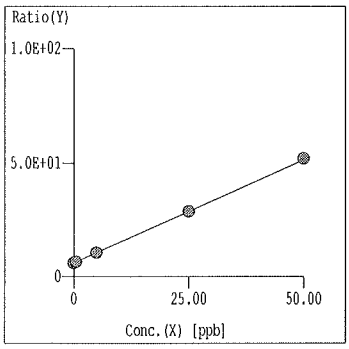
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

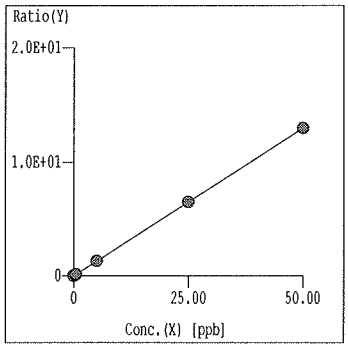
=== Graph Detail ===

Step Mass Element (3) 7 Li | ISTD 6 | Unit ppb



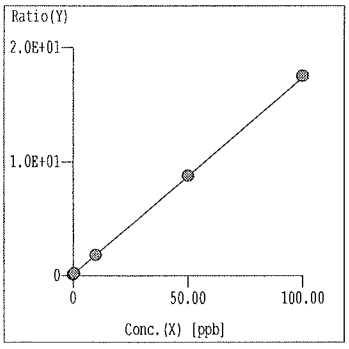
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.043E-001*X +6.137E+000
X = 1.106E+000*Y -6.786E+000
DL = 1.699E-01 ppb
BEC = 6.786 ppb

Step Mass Element (3) 9 Be | ISTD 6 | Unit ppb



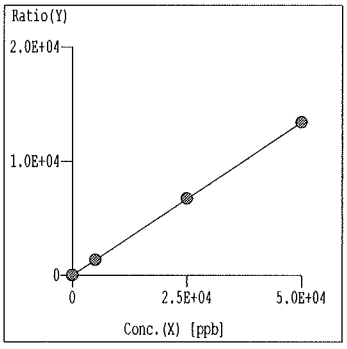
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.595E-001*X +4.790E-003
X = 3.854E+000*Y -1.846E-002
DL = 1.769E-02 ppb
BEC = 1.846E-02 ppb

Step Mass Element (3) 11 B | ISTD 6 | Unit ppb



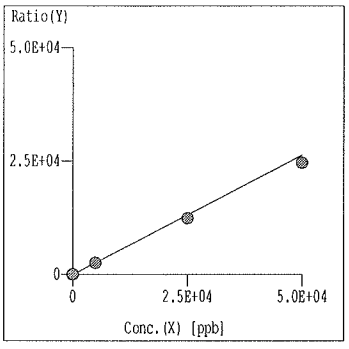
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.723E-001*X +1.275E-001
X = 5.805E+000*Y -7.403E-001
DL = 7.239E-02 ppb
BEC = 7.403E-01 ppb

Step Mass Element (1) 23 Na | ISTD 45 | Unit ppb



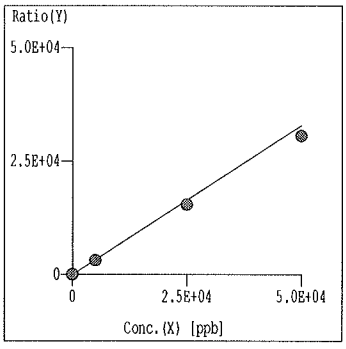
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.677E-001*X +3.224E+001
X = 3.735E+000*Y -1.204E+002
DL = 2.958 ppb
BEC = 120.4 ppb

Step Mass Element (3) 24 Mg | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.260E-001*X +3.912E-001
X = 1.901E+000*Y -7.436E-001
DL = 1.049E-01 ppb
BEC = 7.436E-01 ppb

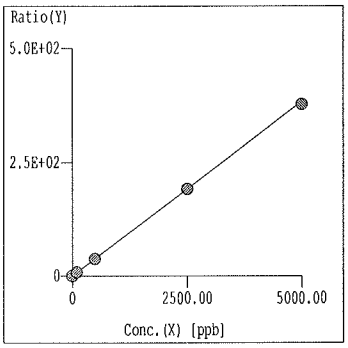
Step Mass Element (3) 27 Al | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.562E-001*X +1.112E-001
X = 1.524E+000*Y -1.694E-001
DL = 1.443E-02 ppb
BEC = 1.694E-01 ppb

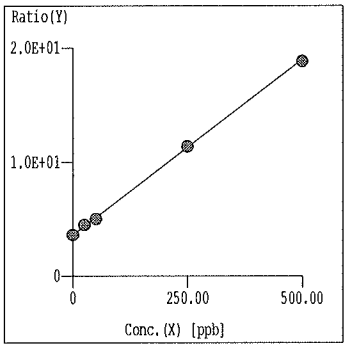
=== Graph Detail ===

Step Mass Element (1) 28 Si | ISTD 45 | Unit ppb



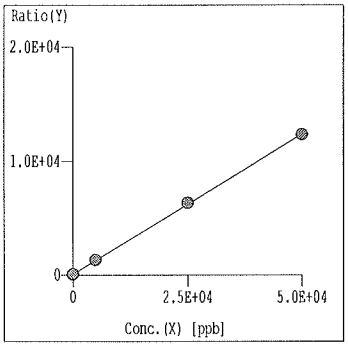
Curve Fit: Y=aX+b
r = 1.0000
Y = 7.671E-002*X +3.035E-001
X = 1.304E+001*Y -3.957E+000
DL = 4.654E-01 ppb
BEC = 3.957 ppb

Step Mass Element (3) 31 P | ISTD 45 | Unit ppb



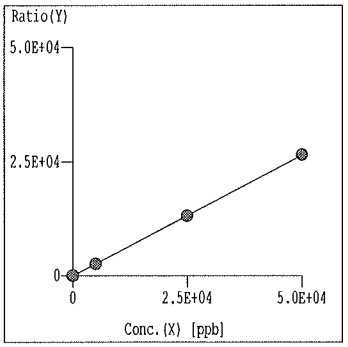
Curve Fit: Y=aX+b
r = 0.9999
Y = 3.079E-002*X +3.628E+000
X = 3.248E+001*Y -1.178E+002
DL = 9.411 ppb
BEC = 117.8 ppb

Step Mass Element (2) 39 K | ISTD 45 | Unit ppb



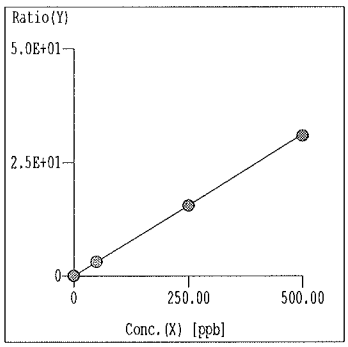
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.463E-001*X +7.323E+001
X = 4.060E+000*Y -2.973E+002
DL = 17.29 ppb
BEC = 297.3 ppb

Step Mass Element (1) 40 Ca | ISTD 45 | Unit ppb



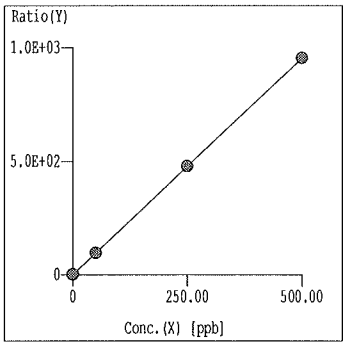
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.293E-001*X +1.905E+000
X = 1.889E+000*Y -3.599E+000
DL = 6.256E-02 ppb
BEC = 3.599 ppb

Step Mass Element (3) 47 Ti | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.242E-002*X +1.336E-002
X = 1.602E+001*Y -2.141E-001
DL = 7.694E-02 ppb
BEC = 2.141E-01 ppb

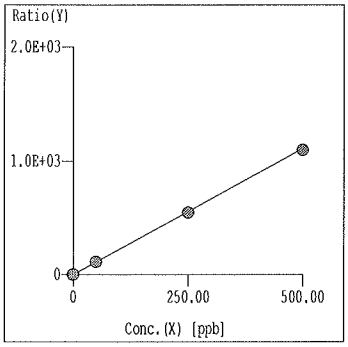
Step Mass Element (2) 51 V | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.906E+000*X +1.250E+000
X = 5.246E-001*Y -6.559E-001
DL = 5.462E-02 ppb
BEC = 6.559E-01 ppb

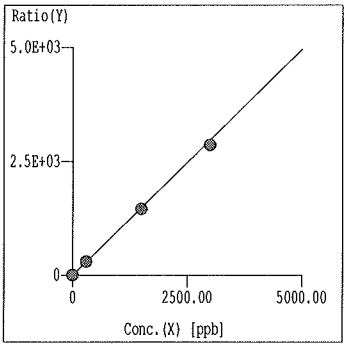
=== Graph Detail ===

Step Mass Element (2) 52 Cr | ISTD 45 | Unit ppb



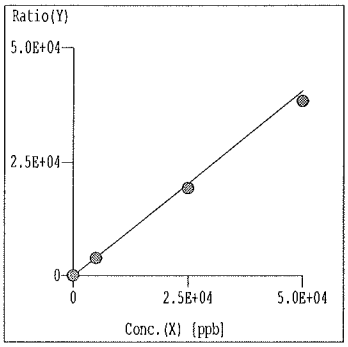
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.221E+000*X +6.520E-001
X = 4.503E-001*Y -2.936E-001
DL = 1.008E-02 ppb
BEC = 2.936E-01 ppb

Step Mass Element (3) 55 Mn | ISTD 45 | Unit ppb



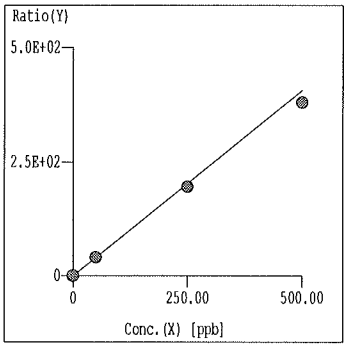
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.904E-001*X +3.541E-001
X = 1.010E+000*Y -3.575E-001
DL = 3.692E-02 ppb
BEC = 3.575E-01 ppb

Step Mass Element (1) 56 Fe | ISTD 45 | Unit ppb



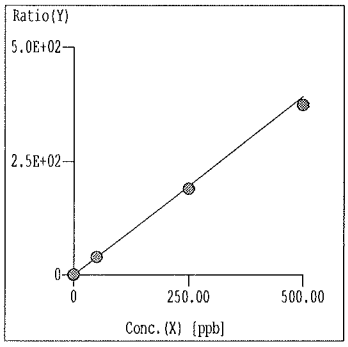
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.119E-001*X +9.162E-001
X = 1.232E+000*Y -1.129E+000
DL = 1.089E-01 ppb
BEC = 1.129 ppb

Step Mass Element (3) 59 Co | ISTD 45 | Unit ppb



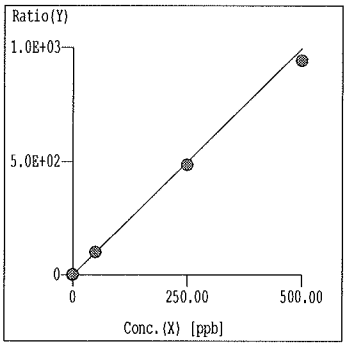
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.127E-001*X +2.347E-002
X = 1.230E+000*Y -2.888E-002
DL = 4.346E-03 ppb
BEC = 2.888E-02 ppb

Step Mass Element (2) 60 Ni | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 7.835E-001*X +7.959E-002
X = 1.276E+000*Y -1.016E-001
DL = 1.521E-02 ppb
BEC = 1.016E-01 ppb

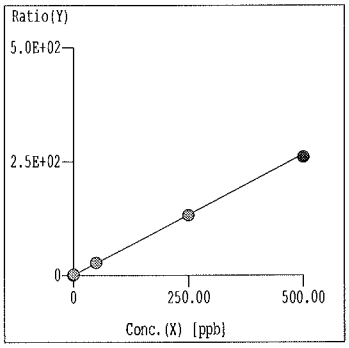
Step Mass Element (2) 63 Cu | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.989E+000*X +2.548E-001
X = 5.027E-001*Y -1.281E-001
DL = 8.627E-03 ppb
BEC = 1.281E-01 ppb

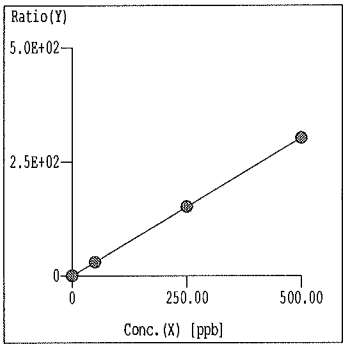
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 66 Zn	72	ppb



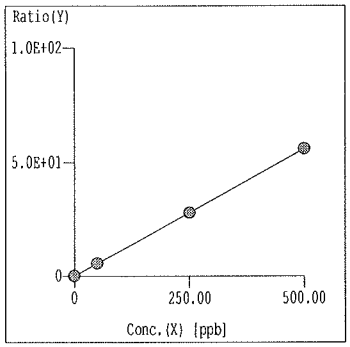
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.319E-001*X +2.489E-001
X = 1.880E+000*Y -4.678E-001
DL = 6.667E-02 ppb
BEC = 4.678E-01 ppb

Step Mass Element	ISTD	Unit
(2) 75 As	72	ppb



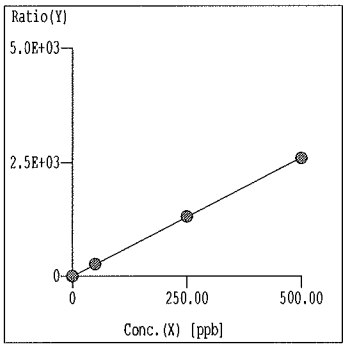
Curve Fit: Y=aX+b
r = 1.0000
Y = 6.055E-001*X +1.510E-001
X = 1.652E+000*Y -2.494E-001
DL = 1.888E-02 ppb
BEC = 2.494E-01 ppb

Step Mass Element	ISTD	Unit
(1) 78 Se	72	ppb



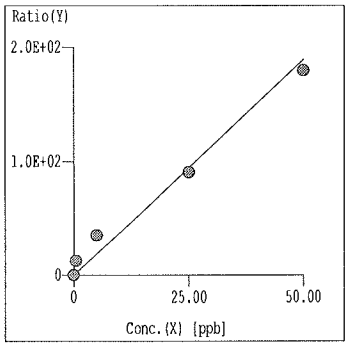
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.121E-001*X +3.798E-003
X = 8.922E+000*Y -3.388E-002
DL = 3.467E-02 ppb
BEC = 3.388E-02 ppb

Step Mass Element	ISTD	Unit
(3) 88 Sr	72	ppb



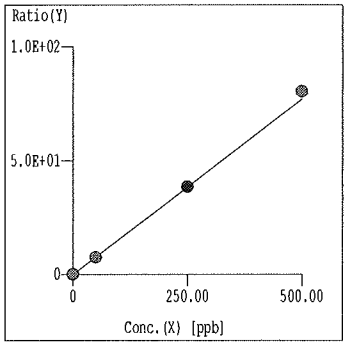
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.211E+000*X +1.251E-001
X = 1.919E-001*Y -2.401E-002
DL = 9.564E-03 ppb
BEC = 2.401E-02 ppb

Step Mass Element	ISTD	Unit
(3) 90 Zr	72	ppb



Curve Fit: Y=aX+b
r = 0.9958
Y = 3.782E+000*X +7.999E-002
X = 2.644E-001*Y -2.115E-002
DL = 3.356E-03 ppb
BEC = 2.115E-02 ppb

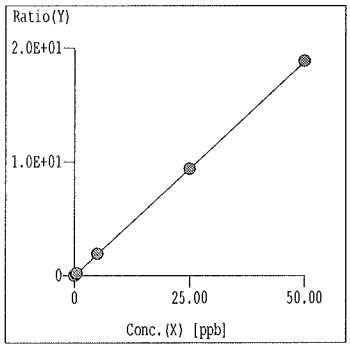
Step Mass Element	ISTD	Unit
(3) 95 Mo	115	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 1.539E-001*X +2.265E-003
X = 6.497E+000*Y -1.472E-002
DL = 1.664E-02 ppb
BEC = 1.472E-02 ppb

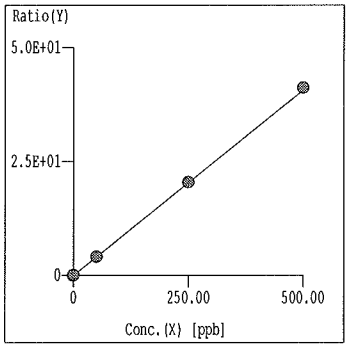
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 107 Ag	115	ppb



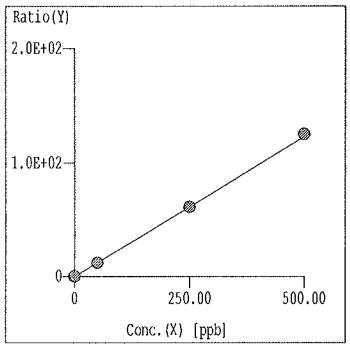
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.757E-001*X +1.194E-003
X = 2.662E+000*Y -3.180E-003
DL = 2.016E-03 ppb
BEC = 3.180E-03 ppb

Step Mass Element	ISTD	Unit
(3) 111 Cd	115	ppb



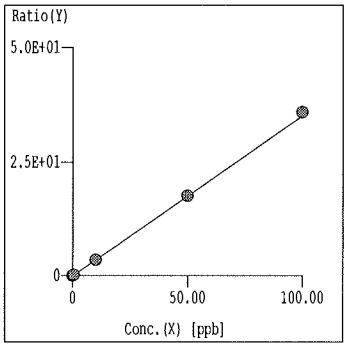
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.138E-002*X +1.065E-003
X = 1.229E+001*Y -1.309E-002
DL = 7.326E-03 ppb
BEC = 1.309E-02 ppb

Step Mass Element	ISTD	Unit
(3) 118 Sn	115	ppb



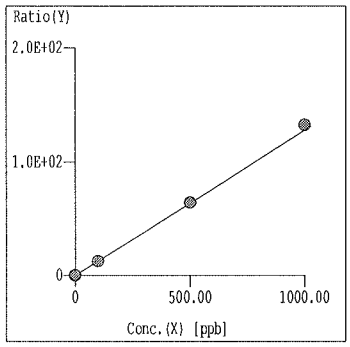
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.458E-001*X +8.845E-003
X = 4.068E+000*Y -3.598E-002
DL = 1.080E-02 ppb
BEC = 3.598E-02 ppb

Step Mass Element	ISTD	Unit
(3) 121 Sb	115	ppb



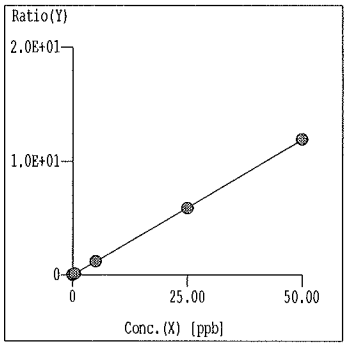
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.507E-001*X +6.176E-003
X = 2.851E+000*Y -1.761E-002
DL = 8.537E-03 ppb
BEC = 1.761E-02 ppb

Step Mass Element	ISTD	Unit
(3) 137 Ba	115	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.277E-001*X +1.521E-003
X = 7.834E+000*Y -1.192E-002
DL = 8.088E-03 ppb
BEC = 1.192E-02 ppb

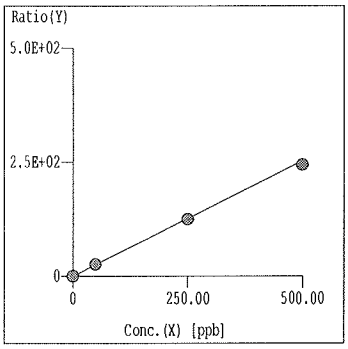
Step Mass Element	ISTD	Unit
(3) 182 W	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 2.377E-001*X +2.988E-003
X = 4.207E+000*Y -1.257E-002
DL = 3.952E-03 ppb
BEC = 1.257E-02 ppb

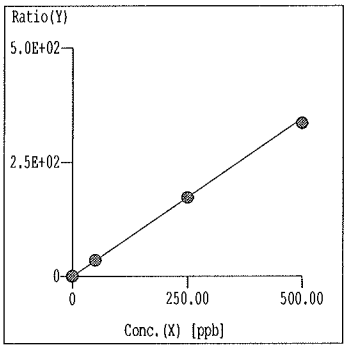
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 205 Tl	159	ppb



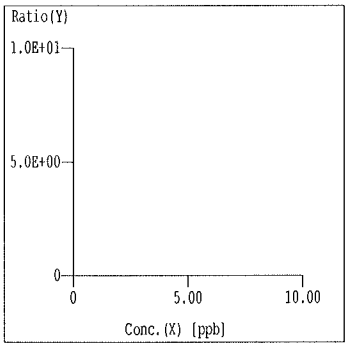
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.040E-001*X +3.990E-003
X = 1.984E+000*Y -7.915E-003
DL = 5.441E-03 ppb
BEC = 7.915E-03 ppb

Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.917E-001*X +2.413E-002
X = 1.446E+000*Y -3.489E-002
DL = 2.981E-03 ppb
BEC = 3.489E-02 ppb

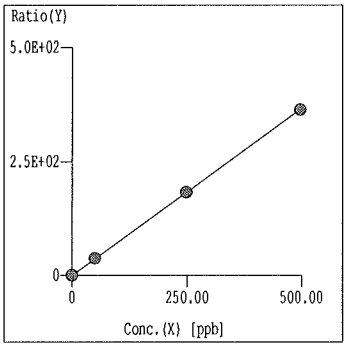
Step Mass Element	ISTD	Unit
(3) 232 Th	209	ppb



Curve Fit: Excluded
r = 0.0000

DL = --- ppb
BEC = --- ppb

Step Mass Element	ISTD	Unit
(3) 238 U	159	ppb



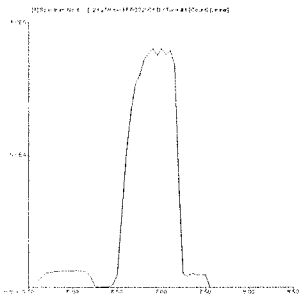
Curve Fit: Y=aX+b
r = 1.0000
Y = 7.339E-001*X +1.158E-003
X = 1.363E+000*Y -1.577E-003
DL = 1.982E-03 ppb
BEC = 1.577E-03 ppb

6020 QC Tune Report

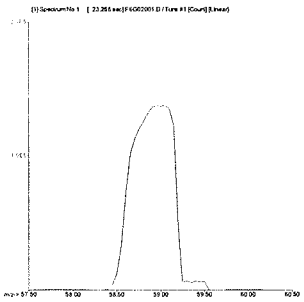
Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02001.D
Date Acquired: Jul 3 2018 09:54 am
Acq. Method: TN6020_C.M
Operator: LVicto
Sample Name: 6020tunchk
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

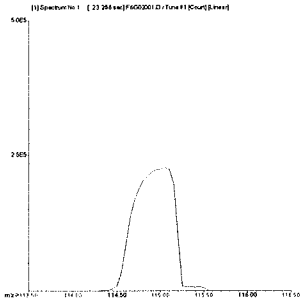
Element	Actual	Required	Flag
7 Li	4.46	5.00	
59 Co	3.19	5.00	
115 In	2.00	5.00	
205 Tl	4.76	5.00	



7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width-10%
Actual: 0.65
Limit 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width-10%
Actual: 0.65
Limit 0.90
Flag:



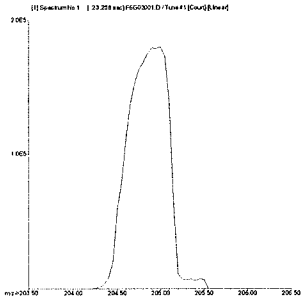
115 In

Mass Calib.

Actual:	115.00	
Required:	114.90 -	115.10
Flag:		

Peak Width-10%

Actual:	0.60
Limit	0.90
Flag:	



205 Tl

Mass Calib.

Actual:	204.95	
Required:	204.90 -	205.10
Flag:		

Peak Width-10%

Actual:	0.60
Limit	0.90
Flag:	

Calibration Blank QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02003
Date Acquired:	Jul 3 2018 10:03 am
Operator:	LVicto
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	Jul 03 2018 10:06 am
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1072583.00	A	13090.00	1.22
7	Li	65158.49	P	240.10	0.37
9	Be	77.78	P	23.65	30.41
11	B	1387.89	P	25.46	1.83
23	Na	264784.69	P	1757.00	0.66
24	Mg	7115.19	P	205.40	2.89
27	Al	4232.94	P	133.80	3.16
28	Si	2236.91	P	129.20	5.78
31	P	66974.71	P	732.40	1.09
39	K	130272.40	P	679.00	0.52
40	Ca	18602.00	P	110.40	0.59
45	Sc	819699.13	P	5682.00	0.69
45	Sc	176939.30	P	3155.00	1.78
45	Sc	1839589.00	A	43180.00	2.35
47	Ti	187.79	P	5.09	2.71
51	V	2221.96	P	30.24	1.36
52	Cr	1262.06	P	40.36	3.20
55	Mn	6082.57	P	80.75	1.33
56	Fe	8390.43	P	59.34	0.71
59	Co	503.36	P	28.48	5.66
60	Ni	142.00	P	4.67	3.29
63	Cu	397.12	P	15.00	3.78
66	Zn	503.36	P	45.10	8.96
72	Ge	181469.91	P	2388.00	1.32
72	Ge	87354.12	P	1783.00	2.04
72	Ge	391623.00	P	7869.00	2.01
75	As	120.45	P	5.35	4.44
78	Se	6.00	P	2.91	48.43
88	Sr	416.69	P	24.04	5.77
90	Zr	325.57	P	22.20	6.82
95	Mo	66.67	P	11.55	17.32
107	Ag	22.22	P	7.70	34.64
111	Cd	14.26	P	17.44	122.27
115	In	2634748.00	A	46380.00	1.76
118	Sn	220.01	P	20.00	9.09
121	Sb	237.79	P	19.53	8.21
137	Ba	62.22	P	10.71	17.21
159	Tb	3899760.00	A	56630.00	1.45
182	W	138.89	P	8.39	6.04
205	Tl	178.90	P	19.53	10.92
208	Pb	961.16	P	81.68	8.50
209	Bi	2457603.00	A	23610.00	0.96
235	U	8.89	P	3.85	43.30
238	U	73.34	P	23.09	31.49

Calibration Blank QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02004
Date Acquired:	Jul 3 2018 10:08 am
Operator:	LVicto
Sample Name:	S0
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	Jul 03 2018 10:06 am
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1072678.00	A	17410.00	1.62
7	Li	64918.61	P	661.10	1.02
9	Be	51.11	P	15.75	30.81
11	B	1236.76	P	32.15	2.60
23	Na	269088.91	P	465.40	0.17
24	Mg	6120.31	P	218.80	3.58
27	Al	1890.19	P	58.61	3.10
28	Si	1832.40	P	114.00	6.22
31	P	66790.34	P	693.70	1.04
39	K	129551.30	P	1073.00	0.83
40	Ca	15847.70	P	245.50	1.55
45	Sc	836329.63	P	8304.00	0.99
45	Sc	181090.41	P	2115.00	1.17
45	Sc	1845775.00	A	35840.00	1.94
47	Ti	218.90	P	26.94	12.31
51	V	2220.85	P	40.85	1.84
52	Cr	1175.83	P	0.39	0.03
55	Mn	5955.83	P	177.20	2.98
56	Fe	6207.04	P	289.30	4.66
59	Co	428.91	P	13.88	3.24
60	Ni	134.00	P	8.33	6.21
63	Cu	392.01	P	6.93	1.77
66	Zn	274.46	P	45.01	16.40
72	Ge	188193.41	P	1100.00	0.58
72	Ge	89698.19	P	1548.00	1.73
72	Ge	391012.69	P	8405.00	2.15
75	As	135.34	P	5.77	4.27
78	Se	6.67	P	2.40	36.06
88	Sr	378.91	P	63.37	16.72
90	Zr	266.68	P	20.00	7.50
95	Mo	55.56	P	22.20	39.96
107	Ag	31.11	P	6.94	22.30
111	Cd	27.44	P	5.38	19.61
115	In	2621431.00	A	43930.00	1.68
118	Sn	190.01	P	20.00	10.53
121	Sb	160.01	P	26.46	16.54
137	Ba	38.89	P	8.39	21.57
159	Tb	3903100.00	A	105000.00	2.69
182	W	124.45	P	10.71	8.61
205	Tl	96.67	P	35.28	36.50
208	Pb	808.93	P	35.02	4.33
209	Bi	2447902.00	A	42190.00	1.72
235	U	14.44	P	1.93	13.33
238	U	43.34	P	20.28	46.80

Calibration Standard QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02005.D\F6G02005.D#
Date Acquired: Jul 3 2018 10:12 am
Operator: LVicto
Sample Name: S1 0.5
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:11 am
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1054160.00	A	23130.00	2.19
7 Li	69560.04	P	1642.00	2.36
9 Be	1415.67	P	30.79	2.17
11 B	2406.93	P	55.69	2.31
23 Na	395389.59	P	1734.00	0.44
24 Mg	500798.69	P	8725.00	1.74
27 Al	604952.69	P	11890.00	1.97
28 Si	71187.26	P	1028.00	1.44
31 P	81654.82	P	104.70	0.13
39 K	156178.00	P	1116.00	0.71
40 Ca	390114.00	P	5572.00	1.43
45 Sc	854178.00	M	14320.00	1.68
45 Sc	180909.30	P	1501.00	0.83
45 Sc	1816424.00	A	36020.00	1.98
47 Ti	924.51	P	45.99	4.97
51 V	4071.47	P	81.83	2.01
52 Cr	3333.95	P	50.01	1.50
55 Mn	16373.88	P	286.00	1.75
56 Fe	397454.59	P	6471.00	1.63
59 Co	8410.43	P	408.90	4.86
60 Ni	937.59	P	28.17	3.00
63 Cu	2448.88	P	14.35	0.59
66 Zn	5462.29	P	40.18	0.74
72 Ge	191161.80	P	2271.00	1.19
72 Ge	88907.99	P	782.50	0.88
72 Ge	387079.91	P	7477.00	1.93
75 As	416.45	P	25.03	6.01
78 Se	118.00	P	7.69	6.52
88 Sr	11322.56	P	386.90	3.42
90 Zr	48890.72	P	401.40	0.82
95 Mo	2081.33	P	53.16	2.55
107 Ag	5190.00	P	239.60	4.62
111 Cd	1169.18	P	55.52	4.75
115 In	2581123.00	A	50370.00	1.95
118 Sn	3506.11	P	91.02	2.60
121 Sb	4957.70	P	233.40	4.71
137 Ba	1792.40	P	59.67	3.33
159 Tb	3840889.00	A	32550.00	0.85
182 W	4255.27	P	119.00	2.80
205 Tl	10636.76	P	57.09	0.54
208 Pb	15316.22	P	155.70	1.02
209 Bi	2406086.00	A	27230.00	1.13
235 U	112.23	P	24.11	21.48
238 U	14694.46	P	443.90	3.02

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1054159.80	2.19	1072677.80	98.3	60 - 125	
45 Sc	854177.94	1.68	836329.63	102.1	60 - 125	
45 Sc	180909.25	0.83	181090.36	99.9	60 - 125	
45 Sc	1816423.90	1.98	1845775.40	98.4	60 - 125	
72 Ge	191161.78	1.19	188193.44	101.6	60 - 125	
72 Ge	88907.99	0.88	89698.20	99.1	60 - 125	
72 Ge	387079.91	1.93	391012.72	99.0	60 - 125	
115 In	2581123.30	1.95	2621431.00	98.5	60 - 125	
159 Tb	3840889.00	0.85	3903099.50	98.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02006.D\F6G02006.D#
Date Acquired: Jul 3 2018 10:17 am
Operator: LVicto
Sample Name: S2 50
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:15 am
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1070796.00	A	24480.00	2.29
7 Li	113202.10	P	1857.00	1.64
9 Be	14021.22	P	53.49	0.38
11 B	19662.05	P	441.20	2.24
23 Na	11802800.00	A	175500.00	1.49
24 Mg	47519312.00	A	958900.00	2.02
27 Al	58138728.00	A	830200.00	1.43
28 Si	324147.09	P	3039.00	0.94
31 P	93693.72	P	1255.00	1.34
39 K	2472214.00	A	43800.00	1.77
40 Ca	22563980.00	A	182700.00	0.81
45 Sc	861157.69	P	5559.00	0.65
45 Sc	184126.20	P	2166.00	1.18
45 Sc	1868779.00	A	28130.00	1.51
47 Ti	58949.82	P	802.10	1.36
51 V	177658.70	P	2049.00	1.15
52 Cr	206572.41	P	2113.00	1.02
55 Mn	5560772.00	A	86520.00	1.56
56 Fe	33567220.00	A	168900.00	0.50
59 Co	761048.50	P	10860.00	1.43
60 Ni	72300.52	P	848.20	1.17
63 Cu	184144.41	P	1869.00	1.02
66 Zn	107628.10	P	1763.00	1.64
72 Ge	190100.50	P	1551.00	0.82
72 Ge	89712.84	P	1685.00	1.88
72 Ge	393511.50	P	4634.00	1.18
75 As	27097.51	P	471.00	1.74
78 Se	10665.68	P	92.13	0.86
88 Sr	1042932.00	A	20170.00	1.93
90 Zr	138317.59	P	2418.00	1.75
95 Mo	194973.50	P	2202.00	1.13
107 Ag	49704.34	P	1249.00	2.51
111 Cd	105487.00	P	1920.00	1.82
115 In	2598429.00	A	46840.00	1.80
118 Sn	312001.41	P	2954.00	0.95
121 Sb	90311.87	P	1886.00	2.09
137 Ba	328828.09	P	6117.00	1.86
159 Tb	3906985.00	A	70050.00	1.79
182 W	46885.58	P	1061.00	2.26
205 Tl	996661.13	P	16450.00	1.65
208 Pb	1356112.00	P	22280.00	1.64
209 Bi	2393251.00	A	31300.00	1.31
235 U	10047.59	P	321.60	3.20
238 U	1465862.00	A	31910.00	2.18

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1070796.30	2.29	1072677.80	99.8	60 - 125	
45 Sc	861157.75	0.65	836329.63	103.0	60 - 125	
45 Sc	184126.19	1.18	181090.36	101.7	60 - 125	
45 Sc	1868778.90	1.51	1845775.40	101.2	60 - 125	
72 Ge	190100.48	0.82	188193.44	101.0	60 - 125	
72 Ge	89712.84	1.88	89698.20	100.0	60 - 125	
72 Ge	393511.53	1.18	391012.72	100.6	60 - 125	
115 In	2598429.30	1.80	2621431.00	99.1	60 - 125	
159 Tb	3906985.00	1.79	3903099.50	100.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02007.D\F6G02007.D#
Date Acquired: Jul 3 2018 10:21 am
Operator: LVicto
Sample Name: S3 250
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:20 am
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1031050.00	A	24290.00	2.36
7 Li	296302.19	P	5553.00	1.87
9 Be	66854.43	P	585.70	0.88
11 B	90596.55	P	1229.00	1.36
23 Na	57504340.00	A	679500.00	1.18
24 Mg	226479300.00	A	3574000.00	1.58
27 Al	281442500.00	A	4348000.00	1.54
28 Si	1629235.00	A	22230.00	1.36
31 P	208197.00	P	2547.00	1.22
39 K	11468980.00	A	191900.00	1.67
40 Ca	112065600.00	A	1204000.00	1.07
45 Sc	851525.13	M	10690.00	1.26
45 Sc	180408.00	P	1393.00	0.77
45 Sc	1830701.00	A	20150.00	1.10
47 Ti	284773.09	P	4244.00	1.49
51 V	862075.13	P	5829.00	0.68
52 Cr	984351.63	A	13220.00	1.34
55 Mn	26581950.00	A	428600.00	1.61
56 Fe	164369410.00	A	828500.00	0.50
59 Co	3583763.00	A	58590.00	1.63
60 Ni	342523.41	P	2300.00	0.67
63 Cu	873758.31	P	3041.00	0.35
66 Zn	502846.50	P	9840.00	1.96
72 Ge	187118.59	P	2779.00	1.49
72 Ge	87488.60	P	483.10	0.55
72 Ge	381500.00	P	8492.00	2.23
75 As	132696.59	P	902.20	0.68
78 Se	52266.26	P	470.60	0.90
88 Sr	4994977.00	A	92030.00	1.84
90 Zr	345256.81	P	3431.00	0.99
95 Mo	955773.69	M	13880.00	1.45
107 Ag	232013.00	P	4395.00	1.89
111 Cd	505371.41	P	8146.00	1.61
115 In	2474435.00	A	45190.00	1.83
118 Sn	1516203.00	A	21600.00	1.42
121 Sb	435403.00	P	6965.00	1.60
137 Ba	1592952.00	A	37280.00	2.34
159 Tb	3792114.00	A	79780.00	2.10
182 W	223250.20	P	2511.00	1.12
205 Tl	4707975.00	A	71800.00	1.53
208 Pb	6521591.00	A	83960.00	1.29
209 Bi	2260542.00	A	23440.00	1.04
235 U	48356.06	P	650.50	1.35
238 U	6918721.00	A	204200.00	2.95

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1031050.40	2.36	1072677.80	96.1	60 - 125	
45 Sc	851525.06	1.26	836329.63	101.8	60 - 125	
45 Sc	180407.98	0.77	181090.36	99.6	60 - 125	
45 Sc	1830700.80	1.10	1845775.40	99.2	60 - 125	
72 Ge	187118.63	1.49	188193.44	99.4	60 - 125	
72 Ge	87488.60	0.55	89698.20	97.5	60 - 125	
72 Ge	381499.97	2.23	391012.72	97.6	60 - 125	
115 In	2474435.30	1.83	2621431.00	94.4	60 - 125	
159 Tb	3792114.50	2.10	3903099.50	97.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02008.D\F6G02008.D#
Date Acquired:	Jul 3 2018 10:26 am
Operator:	LVicto
Sample Name:	S4 500
Misc Info:	
Vial Number:	1107
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Jul 03 2018 10:24 am
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	977667.13	A	27760.00	2.84
7 Li	507579.81	P	8845.00	1.74
9 Be	126681.80	P	2842.00	2.24
11 B	171090.59	P	3816.00	2.23
23 Na	112205700.00	A	1093000.00	0.97
24 Mg	440443710.00	A	7952000.00	1.81
27 Al	546667330.00	A	12310000.00	2.25
28 Si	3155385.00	A	19710.00	0.62
31 P	337353.41	P	4948.00	1.47
39 K	21781140.00	A	287500.00	1.32
40 Ca	221803810.00	A	2022000.00	0.91
45 Sc	836751.88	P	6374.00	0.76
45 Sc	176365.91	P	1909.00	1.08
45 Sc	1793271.00	A	23270.00	1.30
47 Ti	552894.88	P	12080.00	2.18
51 V	1682861.00	A	14880.00	0.88
52 Cr	1934396.00	A	13600.00	0.70
55 Mn	51238980.00	A	1012000.00	1.98
56 Fe	320647010.00	A	3238000.00	1.01
59 Co	6808076.00	A	106000.00	1.56
60 Ni	657877.38	P	2052.00	0.31
63 Cu	1660314.00	A	19310.00	1.16
66 Zn	966184.81	M	25610.00	2.65
72 Ge	181951.80	P	615.20	0.34
72 Ge	85490.17	P	357.90	0.42
72 Ge	372079.00	P	6828.00	1.84
75 As	258161.41	P	865.40	0.34
78 Se	102027.70	P	780.10	0.76
88 Sr	9628891.00	A	180500.00	1.87
90 Zr	667948.81	P	10640.00	1.59
95 Mo	1878491.00	A	21920.00	1.17
107 Ag	440768.09	P	5554.00	1.26
111 Cd	961482.19	P	13610.00	1.42
115 In	2337038.00	A	40030.00	1.71
118 Sn	2923830.00	A	41840.00	1.43
121 Sb	838052.63	P	11550.00	1.38
137 Ba	3088290.00	A	55660.00	1.80
159 Tb	3667102.00	A	53010.00	1.45
182 W	436318.19	P	6719.00	1.54
205 Tl	8922317.00	A	156400.00	1.75
208 Pb	12290740.00	A	147400.00	1.20
209 Bi	2138565.00	A	36990.00	1.73
235 U	92700.13	P	605.10	0.65
238 U	13330010.00	A	163400.00	1.23

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	977667.06	2.84	1072677.80	91.1	60 - 125	
45 Sc	836751.94	0.76	836329.63	100.1	60 - 125	
45 Sc	176365.88	1.08	181090.36	97.4	60 - 125	
45 Sc	1793270.80	1.30	1845775.40	97.2	60 - 125	
72 Ge	181951.78	0.34	188193.44	96.7	60 - 125	
72 Ge	85490.17	0.42	89698.20	95.3	60 - 125	
72 Ge	372078.97	1.84	391012.72	95.2	60 - 125	
115 In	2337037.80	1.71	2621431.00	89.2	60 - 125	
159 Tb	3667102.00	1.45	3903099.50	94.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICV QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02009.D\F6G02009.D#
Date Acquired:	Jul 3 2018 10:30 am
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Jul 03 2018 10:28 am
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	30.53	ppb	332258.3	0.39	30.00	90 - 110	
9 Be	30.03	ppb	76761.5	0.42	30.00	90 - 110	
11 B	30.50	ppb	52977.4	1.11	30.00	90 - 110	
23 Na	30010.00	ppb	67330144.0	0.74	30000.00	90 - 110	
24 Mg	28580.00	ppb	267039500.0	0.48	30000.00	90 - 110	
27 Al	28140.00	ppb	328058690.0	0.70	30000.00	90 - 110	
28 Si	3002.00	ppb	1924692.0	0.71	3000.00	90 - 110	
31 P	292.60	ppb	224442.4	1.26	300.00	90 - 110	
39 K	30130.00	ppb	13322300.0	1.05	30000.00	90 - 110	
40 Ca	30370.00	ppb	134183500.0	0.09	30000.00	90 - 110	
47 Ti	300.40	ppb	333280.5	0.31	300.00	90 - 110	
51 V	299.20	ppb	1015816.0	0.54	300.00	90 - 110	
52 Cr	292.70	ppb	1156664.0	0.21	300.00	90 - 110	
55 Mn	1948.00	ppb	34284200.0	0.25	2000.00	90 - 110	
56 Fe	28840.00	ppb	195441900.0	0.26	30000.00	90 - 110	
59 Co	295.40	ppb	4264965.0	0.56	300.00	90 - 110	
60 Ni	296.90	ppb	413557.9	0.86	300.00	90 - 110	
63 Cu	292.90	ppb	1036348.0	0.48	300.00	90 - 110	
66 Zn	303.00	ppb	595235.8	0.43	300.00	90 - 110	
75 As	297.90	ppb	155280.0	1.22	300.00	90 - 110	
78 Se	303.70	ppb	61598.7	1.35	300.00	90 - 110	
88 Sr	306.90	ppb	5898400.0	0.61	300.00	90 - 110	
90 Zr	27.04	ppb	377447.8	0.54	30.00	90 - 110	
95 Mo	308.60	ppb	1127613.0	0.49	300.00	90 - 110	
107 Ag	29.20	ppb	260385.8	1.71	30.00	90 - 110	
111 Cd	310.10	ppb	598977.1	1.29	300.00	90 - 110	
118 Sn	309.60	ppb	1806819.0	0.80	300.00	90 - 110	
121 Sb	59.49	ppb	495342.2	0.92	60.00	90 - 110	
137 Ba	310.80	ppb	941729.9	1.64	300.00	90 - 110	
182 W	49.03	ppb	429647.5	0.63	30.00	90 - 110	Fail
205 Tl	300.50	ppb	5582821.0	1.06	300.00	90 - 110	
208 Pb	300.50	ppb	7661749.0	0.62	300.00	90 - 110	
235 U	0.56	ppb	15681.2	1.46	2.20	90 - 110	Fail
238 U	302.40	ppb	8182135.0	0.77	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	984584.1	1.84	1072677.80	91.8	60 - 125	
45 Sc	834708.1	1.38	836329.63	99.8	60 - 125	
45 Sc	177746.9	0.44	181090.36	98.2	60 - 125	
45 Sc	1776299.8	1.68	1845775.40	96.2	60 - 125	
72 Ge	180948.7	0.98	188193.44	96.2	60 - 125	
72 Ge	86013.2	1.56	89698.20	95.9	60 - 125	
72 Ge	368752.7	1.15	391012.72	94.3	60 - 125	
115 In	2373822.5	2.74	2621431.00	90.6	60 - 125	
159 Tb	3686087.0	1.18	3903099.50	94.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

ICB QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02010.D\F6G02010.D#
Date Acquired:	Jul 3 2018 10:34 am
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Jul 03 2018 10:28 am
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0163	ppb	65574.9	192.11	0.20	
9 Be	0.0000	ppb	51.1	6640.00	0.10	
11 B	-0.1328	ppb	1114.5	37.81	5.00	
23 Na	12.2700	ppb	294720.0	8.11	40.00	
24 Mg	0.2534	ppb	9526.6	42.94	10.00	
27 Al	0.3490	ppb	6179.3	17.78	20.00	
28 Si	0.7587	ppb	3001.7	29.09	20.00	
31 P	-8.9540	ppb	60944.6	24.24	10.00	
39 K	-2.2990	ppb	129993.4	266.77	20.00	
40 Ca	0.9559	ppb	20002.7	4.15	25.00	
47 Ti	0.0159	ppb	261.1	92.18	0.50	
51 V	-0.0286	ppb	2138.8	48.15	0.50	
52 Cr	-0.0255	ppb	1065.2	32.19	0.20	
55 Mn	-0.0083	ppb	6286.0	177.93	0.20	
56 Fe	1.5530	ppb	18062.6	1.55	10.00	
59 Co	0.0070	ppb	531.1	17.19	0.20	
60 Ni	-0.0145	ppb	122.0	39.39	0.20	
63 Cu	0.0734	ppb	716.9	9.33	0.40	
66 Zn	-0.2949	ppb	351.1	8.51	2.00	
75 As	0.0306	ppb	147.3	14.31	0.20	
78 Se	0.0901	ppb	25.6	16.45	0.20	
90 Zr	0.0007	ppb	316.7	612.03	2.00	
95 Mo	0.1920	ppb	820.1	2.17	0.40	
107 Ag	0.0044	ppb	73.3	66.95	0.20	
111 Cd	0.0130	ppb	54.5	69.25	0.20	
118 Sn	0.3866	ppb	2678.1	4.24	0.20	Fail
121 Sb	0.0400	ppb	521.1	21.60	0.40	
137 Ba	0.0112	ppb	75.6	77.09	0.20	
182 W	0.0772	ppb	820.1	5.66	1.00	
205 Tl	0.0389	ppb	904.5	12.16	0.20	
208 Pb	0.0233	ppb	1544.5	12.22	0.10	
235 U	-0.0001	ppb	12.2	339.40	1.00	
238 U	0.0677	ppb	1952.4	5.31	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1065952.4	1.46	1072677.80	99.4	60 - 125	
45 Sc	829656.9	0.64	836329.63	99.2	60 - 125	
45 Sc	178937.3	1.81	181090.36	98.8	60 - 125	
45 Sc	1818551.3	1.61	1845775.40	98.5	60 - 125	
72 Ge	183995.7	0.26	188193.44	97.8	60 - 125	
72 Ge	86873.8	1.96	89698.20	96.9	60 - 125	
72 Ge	382358.7	1.71	391012.72	97.8	60 - 125	
115 In	2576696.3	1.92	2621431.00	98.3	60 - 125	
159 Tb	3840537.0	1.50	3903099.50	98.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02011.D\F6G02011.D#
Date Acquired: Jul 3 2018 10:39 am
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: MRLG0301
Misc Info: 1/100/10 ppb
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	75744.4	0.0000	0.9658	ppb	7.07	50.00	
9 Be	# 3	6	2804.8	0.0000	0.9821	ppb	2.93	50.00	
11 B	# 3	6	19724.3	0.0000	9.8580	ppb	0.62	100.00	
23 Na	# 1	45	516875.4	0.0000	108.9000	ppb	1.03	50000.00	
24 Mg	# 3	45	974388.0	0.0000	100.4000	ppb	0.72	50000.00	
27 Al	# 3	45	1190402.0	0.0000	98.8900	ppb	0.08	50000.00	
28 Si	# 1	45	64454.2	0.0000	95.8400	ppb	2.20	5000.00	
31 P	# 3	45	90876.3	0.0000	43.3800	ppb	6.47	500.00	
39 K	# 2	45	178634.7	0.0000	104.8000	ppb	4.03	50000.00	
40 Ca	# 1	45	485481.7	0.0000	105.3000	ppb	0.47	50000.00	
47 Ti	# 3	45	1543.5	0.0000	1.1370	ppb	9.02	500.00	
51 V	# 2	45	5835.2	0.0000	1.0420	ppb	2.25	500.00	
52 Cr	# 2	45	5268.3	0.0000	1.0220	ppb	0.94	500.00	
55 Mn	# 3	45	25238.7	0.0000	1.0340	ppb	1.72	3000.00	
56 Fe	# 1	45	727645.9	0.0000	105.3000	ppb	1.17	50000.00	
59 Co	# 3	45	15652.0	0.0000	1.0230	ppb	0.96	500.00	
60 Ni	# 2	45	1607.7	0.0000	1.0360	ppb	3.32	500.00	
63 Cu	# 2	45	4372.4	0.0000	1.0910	ppb	1.43	500.00	
66 Zn	# 3	72	21581.9	0.0000	10.0600	ppb	0.73	500.00	
75 As	# 2	72	694.0	0.0000	1.0420	ppb	4.04	500.00	
78 Se	# 1	72	218.2	0.0000	1.0030	ppb	5.06	500.00	
88 Sr	# 3	72	42853.0	0.0000	2.1110	ppb	1.09	500.00	
90 Zr	# 3	72	46699.9	0.0000	3.1840	ppb	0.67	50.00	
95 Mo	# 3	115	4218.5	0.0000	1.0410	ppb	1.97	500.00	
107 Ag	# 3	115	10331.9	0.0000	1.0560	ppb	1.96	50.00	
111 Cd	# 3	115	2212.9	0.0000	1.0350	ppb	4.54	500.00	
118 Sn	# 3	115	7408.8	0.0000	1.1250	ppb	1.63	500.00	
121 Sb	# 3	115	9242.2	0.0000	0.9978	ppb	2.56	500.00	
137 Ba	# 3	115	3471.7	0.0000	1.0360	ppb	3.06	1000.00	
182 W	# 3	159	17200.3	0.0000	1.8670	ppb	1.19	50.00	
205 Tl	# 3	159	20594.2	0.0000	1.0540	ppb	2.18	500.00	
208 Pb	# 3	159	29470.4	0.0000	1.0720	ppb	1.24	500.00	
235 U	# 3	159	198.9	0.0000	0.0063	ppb	1.62	30.00	
238 U	# 3	159	28123.0	0.0000	0.9941	ppb	1.26	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1080395.30	2.37	1072677.80	100.7	60 - 125	
45 Sc # 1	841904.75	0.44	836329.63	100.7	60 - 125	
45 Sc # 2	180358.28	1.60	181090.36	99.6	60 - 125	
45 Sc # 3	1831287.30	1.85	1845775.40	99.2	60 - 125	
72 Ge # 1	187728.64	0.88	188193.44	99.8	60 - 125	
72 Ge # 2	88767.59	1.54	89698.20	99.0	60 - 125	
72 Ge # 3	385265.78	1.63	391012.72	98.5	60 - 125	
115 In # 3	2595699.00	2.28	2621431.00	99.0	60 - 125	
159 Tb # 3	3848698.80	1.44	3903099.50	98.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02012.D\F6G02012.D#
Date Acquired: Jul 3 2018 10:43 am
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: MRLG0302
Misc Info: 0.5/50/4 ppb
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	68604.5	0.0000	0.3619	ppb	20.19	50.00	
9 Be	# 3	6	1266.8	0.0000	0.4416	ppb	6.82	50.00	
11 B	# 3	6	1834.6	0.0000	0.2633	ppb	20.59	100.00	
23 Na	# 1	45	392394.8	0.0000	57.1900	ppb	1.75	50000.00	
24 Mg	# 3	45	469369.4	0.0000	49.1900	ppb	0.47	50000.00	
27 Al	# 3	45	567681.3	0.0000	48.2400	ppb	0.78	50000.00	
28 Si	# 1	45	1742.4	0.0000	-1.2040	ppb	1.45	5000.00	
31 P	# 3	45	61731.6	0.0000	-5.6010	ppb	28.03	500.00	
39 K	# 2	45	153438.0	0.0000	55.6000	ppb	11.64	50000.00	
40 Ca	# 1	45	242376.2	0.0000	51.8900	ppb	0.58	50000.00	
47 Ti	# 3	45	766.7	0.0000	0.4740	ppb	10.12	500.00	
51 V	# 2	45	4047.9	0.0000	0.5469	ppb	1.79	500.00	
52 Cr	# 2	45	3083.0	0.0000	0.4928	ppb	3.58	500.00	
55 Mn	# 3	45	15032.4	0.0000	0.4920	ppb	2.27	3000.00	
56 Fe	# 1	45	356697.7	0.0000	52.1100	ppb	0.10	50000.00	
59 Co	# 3	45	7835.7	0.0000	0.5106	ppb	0.87	500.00	
60 Ni	# 2	45	826.0	0.0000	0.4956	ppb	5.10	500.00	
63 Cu	# 2	45	2324.6	0.0000	0.5340	ppb	3.04	500.00	
66 Zn	# 3	72	9026.4	0.0000	4.0560	ppb	2.17	500.00	
75 As	# 2	72	414.5	0.0000	0.5377	ppb	7.91	500.00	
78 Se	# 1	72	105.6	0.0000	0.4824	ppb	6.09	500.00	
88 Sr	# 3	72	10279.5	0.0000	0.5019	ppb	0.78	500.00	
90 Zr	# 3	72	917.8	0.0000	0.0435	ppb	13.71	50.00	
95 Mo	# 3	115	2020.2	0.0000	0.4980	ppb	6.15	500.00	
107 Ag	# 3	115	1095.6	0.0000	0.1109	ppb	4.40	50.00	
111 Cd	# 3	115	1063.9	0.0000	0.4977	ppb	5.41	500.00	
118 Sn	# 3	115	3703.9	0.0000	0.5531	ppb	0.83	500.00	
121 Sb	# 3	115	4618.7	0.0000	0.4974	ppb	1.86	500.00	
137 Ba	# 3	115	1679.0	0.0000	0.5025	ppb	1.38	1000.00	
182 W	# 3	159	210.0	0.0000	0.0110	ppb	34.24	50.00	
205 Tl	# 3	159	9847.3	0.0000	0.5127	ppb	2.22	500.00	
208 Pb	# 3	159	14675.9	0.0000	0.5305	ppb	1.02	500.00	
235 U	# 3	159	102.2	0.0000	0.0031	ppb	15.11	30.00	
238 U	# 3	159	13473.2	0.0000	0.4877	ppb	1.61	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1061346.50	1.98	1072677.80	98.9	60 - 125	
45 Sc # 1	825229.75	0.85	836329.63	98.7	60 - 125	
45 Sc # 2	176545.39	1.61	181090.36	97.5	60 - 125	
45 Sc # 3	1786953.80	2.19	1845775.40	96.8	60 - 125	
72 Ge # 1	182422.13	0.72	188193.44	96.9	60 - 125	
72 Ge # 2	86900.50	1.89	89698.20	96.9	60 - 125	
72 Ge # 3	375088.78	1.66	391012.72	95.9	60 - 125	
115 In # 3	2557503.00	2.67	2621431.00	97.6	60 - 125	
159 Tb # 3	3753044.00	1.80	3903099.50	96.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02013.D\F6G02013.D#
Date Acquired:	Jul 3 2018 10:48 am
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Jul 03 2018 10:28 am
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.34	ppb	65287.8	28.48	---	
9 Be	0.00	ppb	41.1	22.52	---	
11 B	0.56	ppb	2272.5	9.18	---	
23 Na	102600.00	ppb	224744300.0	1.10	120000.00	
24 Mg	98310.00	ppb	940709630.0	0.48	120000.00	
27 Al	96330.00	ppb	1149714000.0	0.94	120000.00	
28 Si	6.99	ppb	6858.4	3.76	---	
31 P	106100.00	ppb	59457860.0	1.50	---	
39 K	103300.00	ppb	46249992.0	1.59	120000.00	
40 Ca	101800.00	ppb	440366210.0	0.76	120000.00	
47 Ti	2230.00	ppb	2531474.0	1.29	2400.00	
51 V	-0.03	ppb	2159.9	40.16	---	
52 Cr	0.20	ppb	1983.5	3.28	---	
55 Mn	0.30	ppb	11866.2	7.03	---	
56 Fe	96870.00	ppb	642456700.0	0.40	120000.00	
59 Co	0.21	ppb	3501.7	4.03	---	
60 Ni	0.24	ppb	485.8	5.19	---	
63 Cu	0.33	ppb	1661.7	3.19	---	
66 Zn	4.15	ppb	9711.3	1.25	---	
75 As	0.26	ppb	275.1	7.72	---	
78 Se	0.13	ppb	33.3	26.30	---	
88 Sr	0.92	ppb	19522.4	1.29	---	
90 Zr	0.22	ppb	3666.3	6.29	---	
95 Mo	2094.00	ppb	7818414.0	0.85	2400.00	
107 Ag	0.03	ppb	263.3	5.20	---	
111 Cd	0.24	ppb	490.7	85.77	---	
118 Sn	0.08	ppb	680.0	5.67	---	
121 Sb	0.06	ppb	633.4	4.89	---	
137 Ba	0.10	ppb	337.8	15.62	---	
182 W	0.21	ppb	1990.2	4.57	---	
205 Tl	0.01	ppb	285.6	11.57	---	
208 Pb	0.10	ppb	3532.5	4.93	---	
235 U	0.00	ppb	14.4	806.65	---	
238 U	0.01	ppb	372.2	6.14	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1013359.9	1.95	1072677.80	94.5	60 - 125	
45 Sc	816924.9	1.98	836329.63	97.7	60 - 125	
45 Sc	181212.0	0.73	181090.36	100.1	60 - 125	
45 Sc	1819026.0	3.03	1845775.40	98.6	60 - 125	
72 Ge	177568.5	1.48	188193.44	94.4	60 - 125	
72 Ge	90119.8	2.06	89698.20	100.5	60 - 125	
72 Ge	395226.3	2.22	391012.72	101.1	60 - 125	
115 In	2425541.0	2.18	2621431.00	92.5	60 - 125	
159 Tb	3749495.8	1.89	3903099.50	96.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02014.D\F6G02014.D#
Date Acquired:	Jul 3 2018 10:53 am
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Jul 03 2018 10:28 am
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	20.78	ppb	264839.8	0.76	20.00	80 - 120	
9 Be	19.59	ppb	54041.0	1.37	20.00	80 - 120	
11 B	19.21	ppb	36504.1	1.46	20.00	80 - 120	
23 Na	100200.00	ppb	228335200.0	1.83	100000.00	80 - 120	
24 Mg	95680.00	ppb	958979580.0	0.78	100000.00	80 - 120	
27 Al	94610.00	ppb	1182882900.0	0.76	100000.00	80 - 120	
28 Si	200.90	ppb	133550.5	1.67	200.00	80 - 120	
31 P	103300.00	ppb	60693768.0	1.29	100000.00	80 - 120	
39 K	101500.00	ppb	47136408.0	1.46	100000.00	80 - 120	
40 Ca	100300.00	ppb	451394590.0	0.96	100000.00	80 - 120	
47 Ti	2202.00	ppb	2619220.0	0.46	2000.00	80 - 120	
51 V	19.83	ppb	73373.5	0.68	20.00	80 - 120	
52 Cr	19.93	ppb	84385.6	0.23	20.00	80 - 120	
55 Mn	19.99	ppb	383979.7	1.14	20.00	80 - 120	
56 Fe	95250.00	ppb	657319100.0	1.47	100000.00	80 - 120	
59 Co	19.25	ppb	298540.8	1.20	20.00	80 - 120	
60 Ni	19.34	ppb	28621.4	0.46	20.00	80 - 120	
63 Cu	19.25	ppb	72416.9	0.44	20.00	80 - 120	
66 Zn	22.25	ppb	49126.8	1.30	20.00	80 - 120	
75 As	19.76	ppb	11281.7	0.53	20.00	80 - 120	
78 Se	21.13	ppb	4331.6	0.67	20.00	80 - 120	
88 Sr	20.33	ppb	431079.7	0.36	20.00	80 - 120	
90 Zr	5.93	ppb	91453.6	0.86	20.00	80 - 120	Fail
95 Mo	2083.00	ppb	8063282.0	0.05	2000.00	80 - 120	
107 Ag	19.53	ppb	184512.0	0.70	20.00	80 - 120	
111 Cd	20.47	ppb	41907.6	1.20	20.00	80 - 120	
118 Sn	20.16	ppb	124836.9	0.62	20.00	80 - 120	
121 Sb	20.58	ppb	181618.7	0.61	20.00	80 - 120	
137 Ba	20.60	ppb	66156.7	0.52	20.00	80 - 120	
182 W	20.36	ppb	186987.4	1.46	20.00	80 - 120	
205 Tl	19.47	ppb	379255.1	0.16	20.00	80 - 120	
208 Pb	19.40	ppb	519030.1	0.70	20.00	80 - 120	
235 U	0.13	ppb	3886.3	1.79	0.14	80 - 120	
238 U	18.94	ppb	536699.4	0.98	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1062300.8	1.76	1072677.80	99.0	60 - 125	
45 Sc	850081.1	1.71	836329.63	101.6	60 - 125	
45 Sc	187882.3	1.06	181090.36	103.8	60 - 125	
45 Sc	1905443.9	2.60	1845775.40	103.2	60 - 125	
72 Ge	182573.6	1.03	188193.44	97.0	60 - 125	
72 Ge	93095.9	1.50	89698.20	103.8	60 - 125	
72 Ge	406453.4	1.48	391012.72	103.9	60 - 125	
115 In	2514406.5	1.60	2621431.00	95.9	60 - 125	
159 Tb	3862011.5	1.83	3903099.50	98.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02015.D\F6G02015.D#
Date Acquired: Jul 3 2018 10:57 am
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: MRLG0303
Misc Info: 500 ppb CAT
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	69283.2	0.0000	-0.0887	ppb	20.42	50.00	
9 Be	# 3	6	37.8	0.0000	-0.0057	ppb	26.50	50.00	
11 B	# 3	6	1810.2	0.0000	0.1786	ppb	16.21	100.00	
23 Na	# 1	45	1642889.0	0.0000	563.0000	ppb	1.45	50000.00	
24 Mg	# 3	45	5227912.0	0.0000	503.6000	ppb	0.21	50000.00	
27 Al	# 3	45	6337272.0	0.0000	489.9000	ppb	0.55	50000.00	
28 Si	# 1	45	4177.4	0.0000	2.1090	ppb	11.66	5000.00	
31 P	# 3	45	59825.6	0.0000	-19.1900	ppb	8.83	500.00	
39 K	# 2	45	389178.4	0.0000	520.5000	ppb	0.17	50000.00	
40 Ca	# 1	45	2615270.0	0.0000	546.7000	ppb	0.86	50000.00	
47 Ti	# 3	45	820.0	0.0000	0.4522	ppb	12.55	500.00	
51 V	# 2	45	2509.3	0.0000	0.0255	ppb	55.38	500.00	
52 Cr	# 2	45	1132.5	0.0000	-0.0296	ppb	33.63	500.00	
55 Mn	# 3	45	7421.0	0.0000	0.0227	ppb	38.36	3000.00	
56 Fe	# 1	45	3749477.0	0.0000	513.3000	ppb	1.02	50000.00	
59 Co	# 3	45	463.4	0.0000	0.0001	ppb	1875.40	500.00	
60 Ni	# 2	45	160.0	0.0000	0.0042	ppb	167.57	500.00	
63 Cu	# 2	45	826.3	0.0000	0.0870	ppb	11.68	500.00	
66 Zn	# 3	72	2885.9	0.0000	0.8743	ppb	2.49	500.00	
75 As	# 2	72	172.0	0.0000	0.0518	ppb	30.89	500.00	
78 Se	# 1	72	14.7	0.0000	0.0315	ppb	17.53	500.00	
88 Sr	# 3	72	1212.3	0.0000	0.0335	ppb	5.30	500.00	
90 Zr	# 3	72	694.5	0.0000	0.0242	ppb	19.94	50.00	
95 Mo	# 3	115	2843.7	0.0000	0.6636	ppb	1.58	500.00	
107 Ag	# 3	115	74.4	0.0000	0.0041	ppb	42.49	50.00	
111 Cd	# 3	115	36.3	0.0000	0.0033	ppb	201.14	500.00	
118 Sn	# 3	115	718.9	0.0000	0.0714	ppb	15.83	500.00	
121 Sb	# 3	115	413.4	0.0000	0.0257	ppb	28.85	500.00	
137 Ba	# 3	115	157.8	0.0000	0.0335	ppb	33.56	1000.00	
182 W	# 3	159	308.9	0.0000	0.0195	ppb	17.12	50.00	
205 Tl	# 3	159	438.9	0.0000	0.0136	ppb	31.51	500.00	
208 Pb	# 3	159	1424.5	0.0000	0.0158	ppb	10.64	500.00	
235 U	# 3	159	17.8	0.0000	0.0001	ppb	273.31	30.00	
238 U	# 3	159	510.0	0.0000	0.0155	ppb	6.80	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1143885.90	1.76	1072677.80	106.6	60 - 125	
45 Sc # 1	897839.75	0.95	836329.63	107.4	60 - 125	
45 Sc # 2	193200.02	1.34	181090.36	106.7	60 - 125	
45 Sc # 3	1970563.30	1.68	1845775.40	106.8	60 - 125	
72 Ge # 1	199984.63	0.82	188193.44	106.3	60 - 125	
72 Ge # 2	94324.58	1.79	89698.20	105.2	60 - 125	
72 Ge # 3	404174.94	1.65	391012.72	103.4	60 - 125	
115 In # 3	2723884.80	1.57	2621431.00	103.9	60 - 125	
159 Tb # 3	4059872.80	1.22	3903099.50	104.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02016.D\F6G02016.D#
Date Acquired: Jul 3 2018 11:02 am
Operator: LVicto
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:28 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.10 ppb	1.02	25.00	90 - 110	
9 Be	24.20 ppb	1.42	25.00	90 - 110	
11 B	48.81 ppb	1.08	50.00	90 - 110	
23 Na	24760.00 ppb	0.22	25000.00	90 - 110	
24 Mg	23820.00 ppb	0.81	25000.00	90 - 110	
27 Al	23470.00 ppb	0.97	25000.00	90 - 110	
28 Si	2408.00 ppb	0.27	2500.00	90 - 110	
31 P	229.80 ppb	0.81	250.00	90 - 110	
39 K	25240.00 ppb	1.15	25000.00	90 - 110	
40 Ca	24860.00 ppb	0.49	25000.00	90 - 110	
47 Ti	249.70 ppb	0.68	250.00	90 - 110	
51 V	253.40 ppb	0.87	250.00	90 - 110	
52 Cr	244.60 ppb	1.87	250.00	90 - 110	
55 Mn	1464.00 ppb	0.78	1500.00	90 - 110	
56 Fe	23960.00 ppb	0.34	25000.00	90 - 110	
59 Co	237.30 ppb	0.68	250.00	90 - 110	
60 Ni	242.60 ppb	0.60	250.00	90 - 110	
63 Cu	244.70 ppb	0.46	250.00	90 - 110	
66 Zn	250.50 ppb	0.52	250.00	90 - 110	
75 As	248.80 ppb	0.48	250.00	90 - 110	
78 Se	252.60 ppb	1.06	250.00	90 - 110	
88 Sr	253.80 ppb	0.55	250.00	90 - 110	
90 Zr	23.92 ppb	0.70	25.00	90 - 110	
95 Mo	253.90 ppb	1.76	250.00	90 - 110	
107 Ag	25.17 ppb	0.27	25.00	90 - 110	
111 Cd	251.50 ppb	0.70	250.00	90 - 110	
118 Sn	255.50 ppb	1.09	250.00	90 - 110	
121 Sb	51.05 ppb	0.83	50.00	90 - 110	
137 Ba	512.20 ppb	1.52	500.00	90 - 110	
182 W	25.42 ppb	1.04	25.00	90 - 110	
205 Tl	244.60 ppb	1.04	250.00	90 - 110	
208 Pb	245.90 ppb	0.96	250.00	90 - 110	
235 U	1.59 ppb	0.88	1.80	90 - 110	Fail
238 U	241.10 ppb	2.08	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1055890.30	2.16	1072677.80	98.4	60 - 125	
45 Sc	844770.69	1.33	836329.63	101.0	60 - 125	
45 Sc	179766.63	0.66	181090.36	99.3	60 - 125	
45 Sc	1879666.40	1.05	1845775.40	101.8	60 - 125	
72 Ge	183573.63	1.56	188193.44	97.5	60 - 125	
72 Ge	87672.69	1.87	89698.20	97.7	60 - 125	
72 Ge	384244.50	1.43	391012.72	98.3	60 - 125	
115 In	2491448.80	1.29	2621431.00	95.0	60 - 125	
159 Tb	3837589.00	2.40	3903099.50	98.3	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02017.D\F6G02017.D#
Date Acquired:	Jul 3 2018 11:06 am
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB1
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Jul 03 2018 10:28 am
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1782	ppb	67278.7	20.80	0.20	
9 Be	-0.0093	ppb	26.7	23.27	0.10	
11 B	-0.1365	ppb	1170.1	17.68	5.00	
23 Na	20.5500	ppb	322647.2	6.45	40.00	
24 Mg	0.4867	ppb	12248.7	16.90	10.00	
27 Al	0.2453	ppb	5147.7	21.23	20.00	
28 Si	-0.0423	ppb	2567.0	420.39	20.00	
31 P	-18.6000	ppb	57851.5	9.46	10.00	Fail
39 K	-2.8220	ppb	132513.2	113.04	20.00	
40 Ca	0.6854	ppb	19386.3	4.82	25.00	
47 Ti	0.0209	ppb	277.8	218.19	0.50	
51 V	0.0341	ppb	2402.4	33.00	0.50	
52 Cr	-0.0446	ppb	1010.0	8.26	0.20	
55 Mn	-0.0527	ppb	5715.7	26.34	0.20	
56 Fe	1.2530	ppb	16528.6	3.71	10.00	
59 Co	-0.0077	ppb	326.7	26.65	0.20	
60 Ni	-0.0295	ppb	103.1	18.02	0.20	
63 Cu	0.0308	ppb	577.6	13.25	0.40	
66 Zn	-0.2953	ppb	361.1	9.63	2.00	
75 As	0.0615	ppb	169.6	20.31	0.20	
78 Se	0.0491	ppb	17.6	36.75	0.20	
88 Sr	-0.0002	ppb	490.0	904.86	0.20	
90 Zr	-0.0103	ppb	161.1	3.50	2.00	
95 Mo	0.1850	ppb	814.5	0.89	0.40	
107 Ag	0.0008	ppb	40.0	124.88	0.20	
111 Cd	0.0068	ppb	42.9	56.04	0.20	
118 Sn	0.2364	ppb	1774.6	8.42	0.20	Fail
121 Sb	0.0144	ppb	297.8	16.49	0.40	
137 Ba	0.0101	ppb	74.4	43.39	0.20	
182 W	0.0242	ppb	345.6	14.91	1.00	
205 Tl	0.0219	ppb	593.4	4.00	0.20	
208 Pb	0.0116	ppb	1269.0	34.54	0.10	
235 U	0.0001	ppb	18.9	487.49	1.00	
238 U	0.0472	ppb	1414.6	8.75	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1125891.6	2.57	1072677.80	105.0	60 - 125	
45 Sc	854894.3	0.37	836329.63	102.2	60 - 125	
45 Sc	182698.3	1.03	181090.36	100.9	60 - 125	
45 Sc	1894201.4	1.85	1845775.40	102.6	60 - 125	
72 Ge	189078.5	0.83	188193.44	100.5	60 - 125	
72 Ge	90081.8	1.40	89698.20	100.4	60 - 125	
72 Ge	394641.6	2.19	391012.72	100.9	60 - 125	
115 In	2649461.0	1.36	2621431.00	101.1	60 - 125	
159 Tb	3947435.3	1.51	3903099.50	101.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02028.D\F6G02028.D#
Date Acquired: Jul 3 2018 11:56 am
Operator: LVicto
Sample Name: CCV2
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:28 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.32 ppb	0.25	25.00	90 - 110	
9 Be	24.67 ppb	0.90	25.00	90 - 110	
11 B	49.48 ppb	0.57	50.00	90 - 110	
23 Na	25020.00 ppb	0.89	25000.00	90 - 110	
24 Mg	23770.00 ppb	0.30	25000.00	90 - 110	
27 Al	23520.00 ppb	0.21	25000.00	90 - 110	
28 Si	2495.00 ppb	0.86	2500.00	90 - 110	
31 P	237.70 ppb	0.62	250.00	90 - 110	
39 K	25520.00 ppb	1.48	25000.00	90 - 110	
40 Ca	25040.00 ppb	0.40	25000.00	90 - 110	
47 Ti	252.10 ppb	0.14	250.00	90 - 110	
51 V	249.00 ppb	1.08	250.00	90 - 110	
52 Cr	245.00 ppb	0.60	250.00	90 - 110	
55 Mn	1471.00 ppb	0.62	1500.00	90 - 110	
56 Fe	23940.00 ppb	0.41	25000.00	90 - 110	
59 Co	239.20 ppb	0.58	250.00	90 - 110	
60 Ni	239.70 ppb	1.47	250.00	90 - 110	
63 Cu	240.50 ppb	0.56	250.00	90 - 110	
66 Zn	249.90 ppb	0.84	250.00	90 - 110	
75 As	248.20 ppb	0.90	250.00	90 - 110	
78 Se	250.90 ppb	1.05	250.00	90 - 110	
88 Sr	255.20 ppb	0.84	250.00	90 - 110	
90 Zr	23.70 ppb	0.37	25.00	90 - 110	
95 Mo	252.00 ppb	0.29	250.00	90 - 110	
107 Ag	25.17 ppb	0.29	25.00	90 - 110	
111 Cd	251.50 ppb	0.91	250.00	90 - 110	
118 Sn	255.10 ppb	0.46	250.00	90 - 110	
121 Sb	50.80 ppb	0.20	50.00	90 - 110	
137 Ba	511.70 ppb	0.54	500.00	90 - 110	
182 W	25.33 ppb	0.54	25.00	90 - 110	
205 Tl	242.10 ppb	0.25	250.00	90 - 110	
208 Pb	243.50 ppb	0.22	250.00	90 - 110	
235 U	1.49 ppb	0.90	1.80	90 - 110	Fail
238 U	228.50 ppb	1.12	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1024789.90	2.02	1072677.80	95.5	60 - 125	
45 Sc	844645.56	0.49	836329.63	101.0	60 - 125	
45 Sc	182326.77	1.15	181090.36	100.7	60 - 125	
45 Sc	1844252.90	1.92	1845775.40	99.9	60 - 125	
72 Ge	183444.88	0.93	188193.44	97.5	60 - 125	
72 Ge	87663.90	0.77	89698.20	97.7	60 - 125	
72 Ge	378309.09	1.38	391012.72	96.8	60 - 125	
115 In	2456695.50	1.52	2621431.00	93.7	60 - 125	
159 Tb	3753509.50	1.62	3903099.50	96.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02029.D\F6G02029.D#
Date Acquired:	Jul 3 2018 12:01 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB2
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Jul 03 2018 10:28 am
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1937	ppb	65986.4	49.94	0.20	
9 Be	-0.0056	ppb	36.7	96.22	0.10	
11 B	-0.2277	ppb	975.6	19.39	5.00	
23 Na	11.4600	ppb	296113.7	23.58	40.00	
24 Mg	0.3784	ppb	10960.9	19.40	10.00	
27 Al	0.2726	ppb	5385.7	14.80	20.00	
28 Si	-0.0561	ppb	2510.3	73.34	20.00	
31 P	-12.8900	ppb	60036.6	7.14	10.00	Fail
39 K	2.9650	ppb	134795.3	144.99	20.00	
40 Ca	1.3800	ppb	22110.3	6.08	25.00	
47 Ti	-0.0016	ppb	246.7	645.55	0.50	
51 V	0.1256	ppb	2715.4	9.75	0.50	
52 Cr	-0.0318	ppb	1059.6	15.35	0.20	
55 Mn	-0.0527	ppb	5607.9	15.47	0.20	
56 Fe	1.1210	ppb	15323.9	3.28	10.00	
59 Co	-0.0062	ppb	342.2	48.50	0.20	
60 Ni	-0.0319	ppb	99.6	24.96	0.20	
63 Cu	0.0080	ppb	493.3	96.10	0.40	
66 Zn	-0.2421	ppb	466.7	3.51	2.00	
75 As	0.0842	ppb	178.4	20.85	0.20	
78 Se	0.0616	ppb	19.8	19.56	0.20	
88 Sr	0.0017	ppb	520.0	82.99	0.20	
90 Zr	-0.0090	ppb	178.9	25.19	2.00	
95 Mo	0.1240	ppb	558.9	9.77	0.40	
107 Ag	0.0014	ppb	44.4	79.63	0.20	
111 Cd	0.0040	ppb	36.6	266.98	0.20	
118 Sn	0.2205	ppb	1650.1	8.77	0.20	Fail
121 Sb	0.0075	ppb	230.0	16.38	0.40	
137 Ba	0.0143	ppb	87.8	10.24	0.20	
182 W	0.0197	ppb	295.6	20.89	1.00	
205 Tl	0.0168	ppb	481.1	5.07	0.20	
208 Pb	0.0280	ppb	1674.5	13.36	0.10	
235 U	0.0000	ppb	13.3	1021.30	1.00	
238 U	0.0469	ppb	1369.0	5.33	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1107227.9	3.53	1072677.80	103.2	60 - 125	
45 Sc	838842.8	1.36	836329.63	100.3	60 - 125	
45 Sc	182274.4	1.43	181090.36	100.7	60 - 125	
45 Sc	1858633.1	1.94	1845775.40	100.7	60 - 125	
72 Ge	184899.1	0.92	188193.44	98.2	60 - 125	
72 Ge	88388.3	2.68	89698.20	98.5	60 - 125	
72 Ge	388819.3	2.30	391012.72	99.4	60 - 125	
115 In	2617410.5	2.80	2621431.00	99.8	60 - 125	
159 Tb	3853831.5	1.86	3903099.50	98.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures	0 :Max. Number of Failures Allowed
0 :ISTD Failures	0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

CCB QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02032.D\F6G02032.D#
Date Acquired: Jul 3 2018 12:14 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: IMF045SB
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: MBS
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0185	ppb	67029.6	222.74	0.50	
9 Be	-0.0086	ppb	27.8	57.90	0.50	
11 B	-0.2653	ppb	891.2	12.18	10.00	
23 Na	11.1300	ppb	297718.0	21.96	100.00	
24 Mg	1.4800	ppb	21492.4	1.81	100.00	
27 Al	1.8270	ppb	24056.3	2.38	100.00	
28 Si	2.4310	ppb	4143.0	3.00	50.00	
31 P	6.6590	ppb	70397.5	25.67	10.00	
39 K	9.5890	ppb	138365.6	64.80	100.00	
40 Ca	16.4600	ppb	89772.5	0.65	100.00	
47 Ti	0.0553	ppb	308.9	70.04	0.50	
51 V	0.6582	ppb	4585.4	4.83	0.50	Fail
52 Cr	0.2348	ppb	2148.4	2.08	0.50	
55 Mn	0.0083	ppb	6656.2	98.41	0.50	
56 Fe	1.6850	ppb	19312.0	0.98	100.00	
59 Co	-0.0057	ppb	346.7	16.62	0.50	
60 Ni	0.0147	ppb	166.7	34.56	0.50	
63 Cu	0.0654	ppb	704.5	6.51	0.50	
66 Zn	0.5998	ppb	2179.1	6.24	2.00	
75 As	0.2687	ppb	281.1	6.39	0.50	
78 Se	0.0243	ppb	12.0	40.83	0.50	
88 Sr	0.0137	ppb	754.5	16.91	0.50	
90 Zr	0.0733	ppb	1370.1	3.80	5.00	
95 Mo	0.0214	ppb	143.3	21.40	0.50	
107 Ag	0.0008	ppb	38.9	154.74	0.50	
111 Cd	-0.0090	ppb	8.7	141.80	0.50	
118 Sn	3.2970	ppb	21130.7	2.48	20.00	
121 Sb	0.0008	ppb	166.7	602.52	0.50	
137 Ba	0.0434	ppb	182.2	12.16	0.50	
182 W	0.0148	ppb	248.9	24.66	2.00	
205 Tl	-0.0006	ppb	140.0	158.39	0.50	
208 Pb	0.0186	ppb	1414.5	10.06	0.50	
235 U	-0.0001	ppb	12.2	205.45	---	
238 U	0.0037	ppb	148.9	25.85	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1089213.3	1.89	1072677.80	101.5	60 - 125	
45 Sc	845441.2	1.42	836329.63	101.1	60 - 125	
45 Sc	183079.6	1.67	181090.36	101.1	60 - 125	
45 Sc	1837043.9	1.87	1845775.40	99.5	60 - 125	
72 Ge	184239.5	1.18	188193.44	97.9	60 - 125	
72 Ge	89586.4	1.42	89698.20	99.9	60 - 125	
72 Ge	383539.5	2.12	391012.72	98.1	60 - 125	
115 In	2578980.5	1.39	2621431.00	98.4	60 - 125	
159 Tb	3824402.5	1.55	3903099.50	98.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

LCS QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02033.D\F6G02033.D#
Date Acquired: Jul 3 2018 12:19 pm
Operator: LVicto
Sample Name: IMF045SL
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: LCSS
Final Dil Factor: 1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	468794.59	40.23	ppb	1.48	40.00	80 - 120	
9 Be	110535.10	38.61	ppb	1.54	40.00	80 - 120	
11 B	73662.57	38.04	ppb	2.04	40.00	80 - 120	
23 Na	9300430.00	4061.00	ppb	0.88	4000.00	80 - 120	
24 Mg	38282160.00	3901.00	ppb	1.57	4000.00	80 - 120	
27 Al	47052352.00	3844.00	ppb	1.24	4000.00	80 - 120	
28 Si	2444.72	-0.12	ppb	98.75	4000.00	80 - 120	Fail
31 P	70869.69	5.57	ppb	29.48	400.00	80 - 120	Fail
39 K	2040711.00	4209.00	ppb	0.71	4000.00	80 - 120	
40 Ca	17669500.00	4015.00	ppb	0.87	4000.00	80 - 120	
47 Ti	47086.95	40.23	ppb	1.15	40.00	80 - 120	
51 V	143693.00	40.36	ppb	0.62	40.00	80 - 120	
52 Cr	165723.59	40.31	ppb	1.00	40.00	80 - 120	
55 Mn	764973.19	41.05	ppb	0.69	40.00	80 - 120	
56 Fe	26094740.00	3868.00	ppb	0.48	4000.00	80 - 120	
59 Co	601531.13	39.65	ppb	0.98	40.00	80 - 120	
60 Ni	57626.31	39.92	ppb	1.41	40.00	80 - 120	
63 Cu	147428.91	40.19	ppb	0.91	40.00	80 - 120	
66 Zn	166386.70	81.10	ppb	0.70	80.00	80 - 120	
75 As	21429.14	39.56	ppb	0.36	40.00	80 - 120	
78 Se	8080.70	39.80	ppb	1.56	40.00	80 - 120	
88 Sr	830782.31	41.55	ppb	0.42	40.00	80 - 120	
90 Zr	3827.30	0.24	ppb	2.92	30.00	80 - 120	Fail
95 Mo	156434.20	39.77	ppb	0.75	40.00	80 - 120	
107 Ag	388520.09	40.48	ppb	0.83	40.00	80 - 120	
111 Cd	82028.33	39.45	ppb	0.70	40.00	80 - 120	
118 Sn	271857.31	43.26	ppb	0.44	40.00	80 - 120	
121 Sb	361097.31	40.29	ppb	0.14	40.00	80 - 120	
137 Ba	130284.20	39.94	ppb	0.64	40.00	80 - 120	
182 W	207.79	0.01	ppb	35.05	40.00	80 - 120	Fail
205 Tl	772010.38	39.81	ppb	1.17	40.00	80 - 120	
208 Pb	1020691.00	38.33	ppb	0.96	40.00	80 - 120	
235 U	1970.23	0.07	ppb	5.31	0.28	80 - 120	Fail
238 U	1036063.00	36.70	ppb	1.02	39.72	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1102878.80	2.83	1072677.80	102.8	60 - 125	
45 Sc	830769.38	2.13	836329.63	99.3	60 - 125	
45 Sc	183816.34	2.25	181090.36	101.5	60 - 125	
45 Sc	1865689.80	2.33	1845775.40	101.1	60 - 125	
72 Ge	180958.61	1.05	188193.44	96.2	60 - 125	
72 Ge	88894.62	1.68	89698.20	99.1	60 - 125	
72 Ge	383513.50	1.56	391012.72	98.1	60 - 125	
115 In	2554478.50	1.36	2621431.00	97.4	60 - 125	
159 Tb	3846839.00	1.74	3903099.50	98.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

5 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02034.D\F6G02034.D#
Date Acquired:	Jul 3 2018 12:23 pm
Operator:	LVicto
Sample Name:	IMF045SC
Misc Info:	
Vial Number:	2202
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Jul 03 2018 10:28 am
Sample Type:	LCSS
Final Dil Factor:	1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	470501.19	40.07	ppb	1.12	40.00	80 - 120	
9 Be	111386.80	38.64	ppb	1.42	40.00	80 - 120	
11 B	74912.83	38.42	ppb	1.48	40.00	80 - 120	
23 Na	9377969.00	4087.00	ppb	0.52	4000.00	80 - 120	
24 Mg	38983808.00	3934.00	ppb	0.50	4000.00	80 - 120	
27 Al	47327448.00	3829.00	ppb	0.99	4000.00	80 - 120	
28 Si	2304.70	-0.35	ppb	16.16	4000.00	80 - 120	Fail
31 P	71596.50	5.67	ppb	54.22	400.00	80 - 120	Fail
39 K	2092369.00	4260.00	ppb	0.53	4000.00	80 - 120	
40 Ca	17819670.00	4040.00	ppb	0.43	4000.00	80 - 120	
47 Ti	47812.54	40.45	ppb	0.54	40.00	80 - 120	
51 V	145549.91	40.31	ppb	0.45	40.00	80 - 120	
52 Cr	167976.70	40.29	ppb	0.52	40.00	80 - 120	
55 Mn	771738.81	41.02	ppb	0.93	40.00	80 - 120	
56 Fe	26111630.00	3862.00	ppb	0.30	4000.00	80 - 120	
59 Co	606779.63	39.61	ppb	0.62	40.00	80 - 120	
60 Ni	58097.85	39.68	ppb	0.98	40.00	80 - 120	
63 Cu	149633.80	40.23	ppb	0.59	40.00	80 - 120	
66 Zn	168783.80	81.03	ppb	0.98	80.00	80 - 120	
75 As	21937.00	39.96	ppb	1.61	40.00	80 - 120	
78 Se	8210.55	40.33	ppb	0.19	40.00	80 - 120	
88 Sr	840611.69	41.41	ppb	0.48	40.00	80 - 120	
90 Zr	964.51	0.04	ppb	13.79	30.00	80 - 120	Fail
95 Mo	158486.70	39.52	ppb	0.67	40.00	80 - 120	
107 Ag	394326.00	40.30	ppb	0.90	40.00	80 - 120	
111 Cd	84185.47	39.71	ppb	0.47	40.00	80 - 120	
118 Sn	273379.41	42.67	ppb	1.19	40.00	80 - 120	
121 Sb	364170.59	39.86	ppb	0.97	40.00	80 - 120	
137 Ba	131972.09	39.68	ppb	0.41	40.00	80 - 120	
182 W	212.23	0.01	ppb	36.73	40.00	80 - 120	Fail
205 Tl	779615.50	39.66	ppb	0.66	40.00	80 - 120	
208 Pb	1031065.00	38.19	ppb	0.42	40.00	80 - 120	
235 U	1978.01	0.07	ppb	1.25	0.28	80 - 120	Fail
238 U	1043710.00	36.47	ppb	0.96	39.72	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1110479.90	1.44	1072677.80	103.5	60 - 125	
45 Sc	832548.81	0.88	836329.63	99.5	60 - 125	
45 Sc	186372.72	1.06	181090.36	102.9	60 - 125	
45 Sc	1883550.10	1.62	1845775.40	102.0	60 - 125	
72 Ge	181477.05	1.00	188193.44	96.4	60 - 125	
72 Ge	90136.47	3.10	89698.20	100.5	60 - 125	
72 Ge	389316.94	1.14	391012.72	99.6	60 - 125	
115 In	2604341.50	1.43	2621431.00	99.3	60 - 125	
159 Tb	3899567.50	0.92	3903099.50	99.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

5 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02035.D\F6G02035.D#
Date Acquired: Jul 3 2018 12:28 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-01
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	537986.3	0.0000	46.4500	ppb	1.85	50.00	
9 Be	# 3	6	1899.1	0.0000	0.6363	ppb	6.99	50.00	
11 B	# 3	6	14360.4	0.0000	6.7180	ppb	0.36	100.00	
23 Na	# 1	45	715581.3	0.0000	170.4000	ppb	1.75	50000.00	
24 Mg	# 3	45	286797180.0	0.0000	26020.0000	ppb	0.57	50000.00	
27 Al	# 3	45	377210400.0	0.0000	27430.0000	ppb	0.62	50000.00	
28 Si	# 1	45	3165882.0	0.0000	4486.0000	ppb	1.02	5000.00	
31 P	# 3	45	1021095.0	0.0000	1465.0000	ppb	0.91	500.00	>LRS
39 K	# 2	45	768736.2	0.0000	1266.0000	ppb	0.34	50000.00	
40 Ca	# 1	45	50681860.0	0.0000	10410.0000	ppb	0.84	50000.00	
47 Ti	# 3	45	1980575.0	0.0000	1514.0000	ppb	1.00	500.00	>LRS
51 V	# 2	45	367290.6	0.0000	95.8500	ppb	0.46	500.00	
52 Cr	# 2	45	305822.2	0.0000	68.6800	ppb	0.56	500.00	
55 Mn	# 3	45	22362520.0	0.0000	1077.0000	ppb	0.58	3000.00	
56 Fe	# 1	45	401401220.0	0.0000	53790.0000	ppb	1.29	50000.00	>LRS
59 Co	# 3	45	388967.7	0.0000	22.8100	ppb	1.03	500.00	
60 Ni	# 2	45	209849.1	0.0000	134.0000	ppb	0.64	500.00	
63 Cu	# 2	45	197123.6	0.0000	49.5000	ppb	0.31	500.00	
66 Zn	# 3	72	243210.5	0.0000	112.6000	ppb	0.49	500.00	
75 As	# 2	72	7005.7	0.0000	12.5000	ppb	1.86	500.00	
78 Se	# 1	72	54.7	0.0000	0.2327	ppb	17.83	500.00	
88 Sr	# 3	72	764530.2	0.0000	36.2500	ppb	0.75	500.00	
90 Zr	# 3	72	86692.1	0.0000	5.6470	ppb	1.92	50.00	
95 Mo	# 3	115	2418.1	0.0000	0.6026	ppb	1.09	500.00	
107 Ag	# 3	115	1527.9	0.0000	0.1566	ppb	1.09	50.00	
111 Cd	# 3	115	863.9	0.0000	0.4043	ppb	8.65	500.00	
118 Sn	# 3	115	23877.3	0.0000	3.7810	ppb	0.89	500.00	
121 Sb	# 3	115	3837.3	0.0000	0.4123	ppb	2.75	500.00	
137 Ba	# 3	115	211494.8	0.0000	65.0900	ppb	0.01	1000.00	
182 W	# 3	159	1963.5	0.0000	0.2013	ppb	4.74	50.00	
205 Tl	# 3	159	1469.0	0.0000	0.0675	ppb	3.25	500.00	
208 Pb	# 3	159	332495.7	0.0000	12.4000	ppb	0.45	500.00	
235 U	# 3	159	83.3	0.0000	0.0023	ppb	30.70	30.00	
238 U	# 3	159	10850.9	0.0000	0.3810	ppb	1.33	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1117792.40	2.66	1072677.80	104.2	60 - 125	
45 Sc # 1	919149.75	0.80	836329.63	109.9	60 - 125	
45 Sc # 2	199665.89	1.70	181090.36	110.3	60 - 125	
45 Sc # 3	2095627.30	2.18	1845775.40	113.5	60 - 125	
72 Ge # 1	183029.31	1.29	188193.44	97.3	60 - 125	
72 Ge # 2	90777.09	2.91	89698.20	101.2	60 - 125	
72 Ge # 3	404485.47	1.81	391012.72	103.4	60 - 125	
115 In # 3	2544805.00	1.14	2621431.00	97.1	60 - 125	
159 Tb # 3	3864533.80	1.59	3903099.50	99.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02036.D\F6G02036.D#
Date Acquired: Jul 3 2018 12:32 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-02
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	496778.3	0.0000	43.2000	ppb	0.66	50.00	
9 Be	# 3	6	2024.6	0.0000	0.6915	ppb	1.27	50.00	
11 B	# 3	6	15331.4	0.0000	7.3590	ppb	2.35	100.00	
23 Na	# 1	45	784458.0	0.0000	210.6000	ppb	1.99	50000.00	
24 Mg	# 3	45	252154500.0	0.0000	23180.0000	ppb	1.14	50000.00	
27 Al	# 3	45	376035900.0	0.0000	27710.0000	ppb	0.68	50000.00	
28 Si	# 1	45	2691309.0	0.0000	3959.0000	ppb	0.28	5000.00	
31 P	# 3	45	1468842.0	0.0000	2189.0000	ppb	1.11	500.00	>LRS
39 K	# 2	45	846034.0	0.0000	1428.0000	ppb	1.04	50000.00	
40 Ca	# 1	45	60996760.0	0.0000	13010.0000	ppb	0.76	50000.00	
47 Ti	# 3	45	2135048.0	0.0000	1654.0000	ppb	0.33	500.00	>LRS
51 V	# 2	45	372852.8	0.0000	97.6100	ppb	0.69	500.00	
52 Cr	# 2	45	299714.1	0.0000	67.5000	ppb	0.28	500.00	
55 Mn	# 3	45	21745920.0	0.0000	1062.0000	ppb	0.61	3000.00	
56 Fe	# 1	45	385235200.0	0.0000	53600.0000	ppb	0.10	50000.00	>LRS
59 Co	# 3	45	377532.3	0.0000	22.4400	ppb	0.10	500.00	
60 Ni	# 2	45	161014.6	0.0000	103.1000	ppb	0.48	500.00	
63 Cu	# 2	45	173792.7	0.0000	43.7600	ppb	0.49	500.00	
66 Zn	# 3	72	242446.0	0.0000	113.2000	ppb	0.16	500.00	
75 As	# 2	72	6356.1	0.0000	11.4400	ppb	0.33	500.00	
78 Se	# 1	72	60.9	0.0000	0.2716	ppb	13.61	500.00	
88 Sr	# 3	72	1057807.0	0.0000	50.5900	ppb	0.27	500.00	
90 Zr	# 3	72	113021.3	0.0000	7.4290	ppb	0.85	50.00	
95 Mo	# 3	115	2977.1	0.0000	0.7567	ppb	2.91	500.00	
107 Ag	# 3	115	1733.5	0.0000	0.1809	ppb	2.98	50.00	
111 Cd	# 3	115	1001.0	0.0000	0.4775	ppb	5.23	500.00	
118 Sn	# 3	115	24379.2	0.0000	3.9190	ppb	0.44	500.00	
121 Sb	# 3	115	3200.5	0.0000	0.3463	ppb	5.82	500.00	
137 Ba	# 3	115	232349.2	0.0000	72.5800	ppb	1.22	1000.00	
182 W	# 3	159	2769.3	0.0000	0.2916	ppb	2.98	50.00	
205 Tl	# 3	159	1256.8	0.0000	0.0572	ppb	5.37	500.00	
208 Pb	# 3	159	281794.1	0.0000	10.6000	ppb	1.11	500.00	
235 U	# 3	159	97.8	0.0000	0.0029	ppb	21.94	30.00	
238 U	# 3	159	13238.9	0.0000	0.4693	ppb	1.38	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1098994.40	1.65	1072677.80	102.5	60 - 125	
45 Sc # 1	885191.63	1.62	836329.63	105.8	60 - 125	
45 Sc # 2	199057.72	1.47	181090.36	109.9	60 - 125	
45 Sc # 3	2067777.50	1.48	1845775.40	112.0	60 - 125	
72 Ge # 1	177826.64	0.66	188193.44	94.5	60 - 125	
72 Ge # 2	89818.91	2.24	89698.20	100.1	60 - 125	
72 Ge # 3	401123.75	1.38	391012.72	102.6	60 - 125	
115 In # 3	2507401.80	0.66	2621431.00	95.7	60 - 125	
159 Tb # 3	3831063.30	1.89	3903099.50	98.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02037.D\F6G02037.D#
Date Acquired: Jul 3 2018 12:37 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-03
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	401466.8	0.0000	32.8000	ppb	0.66	50.00	
9 Be	# 3	6	1715.7	0.0000	0.5711	ppb	1.08	50.00	
11 B	# 3	6	16081.1	0.0000	7.5850	ppb	1.89	100.00	
23 Na	# 1	45	1234414.0	0.0000	361.4000	ppb	1.39	50000.00	
24 Mg	# 3	45	180998500.0	0.0000	16270.0000	ppb	0.26	50000.00	
27 Al	# 3	45	346772100.0	0.0000	24980.0000	ppb	0.59	50000.00	
28 Si	# 1	45	2136039.0	0.0000	2906.0000	ppb	1.35	5000.00	
31 P	# 3	45	830279.4	0.0000	1157.0000	ppb	3.63	500.00	>LRS
39 K	# 2	45	935190.8	0.0000	1527.0000	ppb	0.54	50000.00	
40 Ca	# 1	45	88520128.0	0.0000	17470.0000	ppb	0.53	50000.00	
47 Ti	# 3	45	1975839.0	0.0000	1496.0000	ppb	0.34	500.00	>LRS
51 V	# 2	45	399819.4	0.0000	100.2000	ppb	0.14	500.00	
52 Cr	# 2	45	271202.2	0.0000	58.4100	ppb	0.40	500.00	
55 Mn	# 3	45	20489450.0	0.0000	977.8000	ppb	0.32	3000.00	
56 Fe	# 1	45	377729500.0	0.0000	48620.0000	ppb	0.36	50000.00	
59 Co	# 3	45	334978.7	0.0000	19.4600	ppb	0.50	500.00	
60 Ni	# 2	45	90413.7	0.0000	55.3700	ppb	0.40	500.00	
63 Cu	# 2	45	198905.3	0.0000	47.9300	ppb	0.36	500.00	
66 Zn	# 3	72	225418.5	0.0000	102.4000	ppb	0.83	500.00	
75 As	# 2	72	5617.5	0.0000	9.5730	ppb	1.98	500.00	
78 Se	# 1	72	39.1	0.0000	0.1488	ppb	8.88	500.00	
88 Sr	# 3	72	1546966.0	0.0000	72.0600	ppb	1.28	500.00	
90 Zr	# 3	72	115848.7	0.0000	7.4170	ppb	0.88	50.00	
95 Mo	# 3	115	7198.7	0.0000	1.7910	ppb	2.05	500.00	
107 Ag	# 3	115	1132.3	0.0000	0.1132	ppb	4.49	50.00	
111 Cd	# 3	115	881.3	0.0000	0.4052	ppb	5.60	500.00	
118 Sn	# 3	115	24845.6	0.0000	3.8660	ppb	0.97	500.00	
121 Sb	# 3	115	3862.9	0.0000	0.4076	ppb	1.94	500.00	
137 Ba	# 3	115	329872.0	0.0000	99.7600	ppb	0.23	1000.00	
182 W	# 3	159	1828.0	0.0000	0.1841	ppb	3.63	50.00	
205 Tl	# 3	159	1546.8	0.0000	0.0706	ppb	3.80	500.00	
208 Pb	# 3	159	233322.6	0.0000	8.5910	ppb	0.77	500.00	
235 U	# 3	159	65.6	0.0000	0.0017	ppb	32.75	30.00	
238 U	# 3	159	9301.7	0.0000	0.3225	ppb	1.26	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1121419.00	1.80	1072677.80	104.5	60 - 125	
45 Sc # 1	956865.00	0.95	836329.63	114.4	60 - 125	
45 Sc # 2	208043.61	1.48	181090.36	114.9	60 - 125	
45 Sc # 3	2115173.80	1.69	1845775.40	114.6	60 - 125	
72 Ge # 1	190928.30	1.04	188193.44	101.5	60 - 125	
72 Ge # 2	94483.38	2.81	89698.20	105.3	60 - 125	
72 Ge # 3	411878.72	1.81	391012.72	105.3	60 - 125	
115 In # 3	2589980.80	1.28	2621431.00	98.8	60 - 125	
159 Tb # 3	3910760.30	1.59	3903099.50	100.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02038.D\F6G02038.D#
Date Acquired: Jul 3 2018 12:41 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-04
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	394565.6	0.0000	32.9300	ppb	1.33	50.00	
9 Be	# 3	6	1770.2	0.0000	0.6023	ppb	3.95	50.00	
11 B	# 3	6	17739.7	0.0000	8.6330	ppb	0.67	100.00	
23 Na	# 1	45	789055.7	0.0000	196.7000	ppb	1.96	50000.00	
24 Mg	# 3	45	185032900.0	0.0000	16920.0000	ppb	0.09	50000.00	
27 Al	# 3	45	337657500.0	0.0000	24750.0000	ppb	0.30	50000.00	
28 Si	# 1	45	2041388.0	0.0000	2859.0000	ppb	1.27	5000.00	
31 P	# 3	45	786381.3	0.0000	1111.0000	ppb	0.57	500.00	>LRS
39 K	# 2	45	907896.6	0.0000	1523.0000	ppb	1.22	50000.00	
40 Ca	# 1	45	59291760.0	0.0000	12050.0000	ppb	0.50	50000.00	
47 Ti	# 3	45	2055944.0	0.0000	1584.0000	ppb	0.22	500.00	>LRS
51 V	# 2	45	396084.3	0.0000	102.0000	ppb	0.66	500.00	
52 Cr	# 2	45	254665.6	0.0000	56.3500	ppb	0.62	500.00	
55 Mn	# 3	45	18110040.0	0.0000	879.1000	ppb	0.58	3000.00	
56 Fe	# 1	45	362975300.0	0.0000	48100.0000	ppb	1.21	50000.00	
59 Co	# 3	45	341726.7	0.0000	20.1900	ppb	0.30	500.00	
60 Ni	# 2	45	101487.7	0.0000	63.8800	ppb	0.67	500.00	
63 Cu	# 2	45	174038.2	0.0000	43.0900	ppb	0.63	500.00	
66 Zn	# 3	72	241250.3	0.0000	113.0000	ppb	0.51	500.00	
75 As	# 2	72	5694.9	0.0000	10.1000	ppb	0.57	500.00	
78 Se	# 1	72	42.2	0.0000	0.1714	ppb	35.37	500.00	
88 Sr	# 3	72	971152.3	0.0000	46.6000	ppb	0.81	500.00	
90 Zr	# 3	72	102528.9	0.0000	6.7600	ppb	2.01	50.00	
95 Mo	# 3	115	3510.5	0.0000	0.8958	ppb	1.74	500.00	
107 Ag	# 3	115	1294.5	0.0000	0.1344	ppb	2.65	50.00	
111 Cd	# 3	115	976.4	0.0000	0.4662	ppb	6.96	500.00	
118 Sn	# 3	115	24416.0	0.0000	3.9300	ppb	2.77	500.00	
121 Sb	# 3	115	3986.3	0.0000	0.4359	ppb	5.25	500.00	
137 Ba	# 3	115	361247.5	0.0000	113.0000	ppb	0.59	1000.00	
182 W	# 3	159	1732.4	0.0000	0.1792	ppb	2.73	50.00	
205 Tl	# 3	159	1591.3	0.0000	0.0752	ppb	2.68	500.00	
208 Pb	# 3	159	277106.2	0.0000	10.5100	ppb	0.38	500.00	
235 U	# 3	159	72.2	0.0000	0.0020	ppb	34.31	30.00	
238 U	# 3	159	9474.2	0.0000	0.3382	ppb	2.29	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1098719.60	0.99	1072677.80	102.4	60 - 125	
45 Sc # 1	929563.13	1.64	836329.63	111.1	60 - 125	
45 Sc # 2	202432.66	0.87	181090.36	111.8	60 - 125	
45 Sc # 3	2079086.60	1.13	1845775.40	112.6	60 - 125	
72 Ge # 1	183630.02	0.60	188193.44	97.6	60 - 125	
72 Ge # 2	90894.27	1.20	89698.20	101.3	60 - 125	
72 Ge # 3	399828.78	1.86	391012.72	102.3	60 - 125	
115 In # 3	2505095.30	1.70	2621431.00	95.6	60 - 125	
159 Tb # 3	3799757.50	1.59	3903099.50	97.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02039.D\F6G02039.D#
Date Acquired: Jul 3 2018 12:46 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-05
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	379919.7	0.0000	29.9900	ppb	0.86	50.00	
9 Be	# 3	6	1593.5	0.0000	0.5189	ppb	3.12	50.00	
11 B	# 3	6	15420.4	0.0000	7.0950	ppb	0.89	100.00	
23 Na	# 1	45	1013271.0	0.0000	270.6000	ppb	1.92	50000.00	
24 Mg	# 3	45	166230590.0	0.0000	14720.0000	ppb	0.31	50000.00	
27 Al	# 3	45	325268900.0	0.0000	23090.0000	ppb	1.42	50000.00	
28 Si	# 1	45	1983380.0	0.0000	2667.0000	ppb	0.27	5000.00	
31 P	# 3	45	765263.9	0.0000	1040.0000	ppb	0.39	500.00	>LRS
39 K	# 2	45	795955.5	0.0000	1243.0000	ppb	0.88	50000.00	
40 Ca	# 1	45	74251912.0	0.0000	14490.0000	ppb	0.99	50000.00	
47 Ti	# 3	45	2329633.0	0.0000	1738.0000	ppb	1.01	500.00	>LRS
51 V	# 2	45	384194.4	0.0000	95.4400	ppb	0.70	500.00	
52 Cr	# 2	45	296736.4	0.0000	63.4100	ppb	0.59	500.00	
55 Mn	# 3	45	19195490.0	0.0000	902.4000	ppb	0.35	3000.00	
56 Fe	# 1	45	352867010.0	0.0000	44900.0000	ppb	0.30	50000.00	
59 Co	# 3	45	280264.5	0.0000	16.0300	ppb	0.59	500.00	
60 Ni	# 2	45	76239.7	0.0000	46.2900	ppb	0.32	500.00	
63 Cu	# 2	45	166262.1	0.0000	39.7200	ppb	0.40	500.00	
66 Zn	# 3	72	215246.8	0.0000	96.4400	ppb	0.62	500.00	
75 As	# 2	72	5898.1	0.0000	10.0500	ppb	2.30	500.00	
78 Se	# 1	72	39.8	0.0000	0.1504	ppb	21.79	500.00	
88 Sr	# 3	72	1210818.0	0.0000	55.6300	ppb	0.82	500.00	
90 Zr	# 3	72	121105.7	0.0000	7.6480	ppb	0.38	50.00	
95 Mo	# 3	115	3866.2	0.0000	0.9369	ppb	2.44	500.00	
107 Ag	# 3	115	1109.0	0.0000	0.1087	ppb	5.99	50.00	
111 Cd	# 3	115	830.9	0.0000	0.3739	ppb	3.02	500.00	
118 Sn	# 3	115	24377.1	0.0000	3.7220	ppb	0.99	500.00	
121 Sb	# 3	115	2549.2	0.0000	0.2578	ppb	1.91	500.00	
137 Ba	# 3	115	309368.7	0.0000	91.8100	ppb	0.50	1000.00	
182 W	# 3	159	1581.3	0.0000	0.1535	ppb	7.60	50.00	
205 Tl	# 3	159	1236.8	0.0000	0.0533	ppb	1.19	500.00	
208 Pb	# 3	159	213945.7	0.0000	7.6840	ppb	0.44	500.00	
235 U	# 3	159	87.8	0.0000	0.0024	ppb	12.98	30.00	
238 U	# 3	159	8551.2	0.0000	0.2892	ppb	1.64	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1142427.80	1.95	1072677.80	106.5	60 - 125	
45 Sc # 1	968088.63	2.06	836329.63	115.8	60 - 125	
45 Sc # 2	209750.39	1.41	181090.36	115.8	60 - 125	
45 Sc # 3	2147064.80	2.13	1845775.40	116.3	60 - 125	
72 Ge # 1	192401.61	1.99	188193.44	102.2	60 - 125	
72 Ge # 2	94550.68	0.76	89698.20	105.4	60 - 125	
72 Ge # 3	417535.28	1.12	391012.72	106.8	60 - 125	
115 In # 3	2639285.30	1.52	2621431.00	100.7	60 - 125	
159 Tb # 3	4007316.30	0.94	3903099.50	102.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02040.D\F6G02040.D#
Date Acquired: Jul 3 2018 12:50 pm
Operator: LVicto
Sample Name: CCV3
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:28 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.55	ppb	0.45	25.00	90 - 110	
9 Be	25.43	ppb	0.96	25.00	90 - 110	
11 B	51.81	ppb	0.59	50.00	90 - 110	
23 Na	25810.00	ppb	0.54	25000.00	90 - 110	
24 Mg	24160.00	ppb	0.46	25000.00	90 - 110	
27 Al	23990.00	ppb	0.29	25000.00	90 - 110	
28 Si	2561.00	ppb	0.70	2500.00	90 - 110	
31 P	236.80	ppb	0.60	250.00	90 - 110	
39 K	26530.00	ppb	1.35	25000.00	90 - 110	
40 Ca	25750.00	ppb	0.07	25000.00	90 - 110	
47 Ti	254.00	ppb	1.00	250.00	90 - 110	
51 V	253.70	ppb	1.63	250.00	90 - 110	
52 Cr	253.30	ppb	1.19	250.00	90 - 110	
55 Mn	1491.00	ppb	0.93	1500.00	90 - 110	
56 Fe	24340.00	ppb	0.30	25000.00	90 - 110	
59 Co	242.90	ppb	1.06	250.00	90 - 110	
60 Ni	246.10	ppb	1.24	250.00	90 - 110	
63 Cu	246.60	ppb	0.78	250.00	90 - 110	
66 Zn	255.80	ppb	0.14	250.00	90 - 110	
75 As	254.00	ppb	0.56	250.00	90 - 110	
78 Se	256.70	ppb	0.47	250.00	90 - 110	
88 Sr	259.80	ppb	0.51	250.00	90 - 110	
90 Zr	23.59	ppb	1.28	25.00	90 - 110	
95 Mo	263.20	ppb	0.69	250.00	90 - 110	
107 Ag	25.84	ppb	0.42	25.00	90 - 110	
111 Cd	259.30	ppb	1.09	250.00	90 - 110	
118 Sn	258.50	ppb	0.68	250.00	90 - 110	
121 Sb	50.98	ppb	0.62	50.00	90 - 110	
137 Ba	526.20	ppb	0.36	500.00	90 - 110	
182 W	25.13	ppb	0.27	25.00	90 - 110	
205 Tl	247.90	ppb	0.61	250.00	90 - 110	
208 Pb	245.00	ppb	0.46	250.00	90 - 110	
235 U	1.40	ppb	1.31	1.80	90 - 110	Fail
238 U	216.00	ppb	0.54	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1064115.10	1.96	1072677.80	99.2	60 - 125	
45 Sc	914160.63	0.63	836329.63	109.3	60 - 125	
45 Sc	192442.30	0.85	181090.36	106.3	60 - 125	
45 Sc	1950457.00	0.85	1845775.40	105.7	60 - 125	
72 Ge	197748.66	0.68	188193.44	105.1	60 - 125	
72 Ge	93551.81	0.28	89698.20	104.3	60 - 125	
72 Ge	397324.59	1.55	391012.72	101.6	60 - 125	
115 In	2554011.50	1.40	2621431.00	97.4	60 - 125	
159 Tb	3889148.30	1.05	3903099.50	99.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02041.D\F6G02041.D#
Date Acquired: Jul 3 2018 12:55 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: CCB3
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1687	ppb	67348.1	37.27	0.20	
9 Be	-0.0078	ppb	31.1	32.03	0.10	
11 B	-0.2408	ppb	966.7	24.10	5.00	
23 Na	9.1730	ppb	294467.5	10.12	40.00	
24 Mg	0.4731	ppb	12234.2	19.71	10.00	
27 Al	0.2971	ppb	5852.4	10.71	20.00	
28 Si	4.0320	ppb	5201.1	5.64	20.00	
31 P	-16.6000	ppb	59613.0	15.66	10.00	Fail
39 K	-0.9086	ppb	136805.5	421.31	20.00	
40 Ca	1.5090	ppb	22948.1	1.70	25.00	
47 Ti	0.0181	ppb	277.8	220.60	0.50	
51 V	0.1531	ppb	2889.6	3.80	0.50	
52 Cr	-0.0345	ppb	1078.3	13.34	0.20	
55 Mn	-0.0655	ppb	5532.3	9.00	0.20	
56 Fe	1.6190	ppb	18931.4	3.01	10.00	
59 Co	-0.0076	ppb	330.0	43.54	0.20	
60 Ni	-0.0359	ppb	96.4	12.24	0.20	
63 Cu	-0.0007	ppb	474.7	615.99	0.40	
66 Zn	-0.2389	ppb	485.6	10.62	2.00	
75 As	0.0932	ppb	189.8	11.92	0.20	
78 Se	0.0758	ppb	23.1	5.95	0.20	
88 Sr	-0.0008	ppb	483.4	261.47	0.20	
90 Zr	-0.0087	ppb	187.8	27.43	2.00	
95 Mo	0.1271	ppb	582.3	6.57	0.40	
107 Ag	0.0007	ppb	38.9	124.53	0.20	
111 Cd	0.0091	ppb	48.3	72.39	0.20	
118 Sn	0.2089	ppb	1604.6	3.47	0.20	Fail
121 Sb	0.0910	ppb	1015.6	2.31	0.40	
137 Ba	0.0178	ppb	101.1	24.57	0.20	
182 W	0.0196	ppb	297.8	8.23	1.00	
205 Tl	0.0162	ppb	473.4	12.63	0.20	
208 Pb	0.0126	ppb	1279.0	29.97	0.10	
235 U	0.0001	ppb	16.7	622.69	1.00	
238 U	0.0372	ppb	1107.9	2.11	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1125282.5	1.95	1072677.80	104.9	60 - 125	
45 Sc	848752.9	0.73	836329.63	101.5	60 - 125	
45 Sc	187403.6	1.23	181090.36	103.5	60 - 125	
45 Sc	1913681.9	2.40	1845775.40	103.7	60 - 125	
72 Ge	187985.9	0.40	188193.44	99.9	60 - 125	
72 Ge	91511.6	1.83	89698.20	102.0	60 - 125	
72 Ge	399243.3	1.46	391012.72	102.1	60 - 125	
115 In	2666533.8	1.87	2621431.00	101.7	60 - 125	
159 Tb	3898401.5	2.11	3903099.50	99.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02042.D\F6G02042.D#
Date Acquired: Jul 3 2018 12:59 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07M
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	965491.4	0.0000	92.0700	ppb	0.25	50.00	>LRS
9 Be	# 3	6	111479.9	0.0000	39.7600	ppb	1.02	50.00	
11 B	# 3	6	89432.2	0.0000	47.3300	ppb	0.37	100.00	
23 Na	# 1	45	9309498.0	0.0000	3816.0000	ppb	0.73	50000.00	
24 Mg	# 3	45	303235390.0	0.0000	26950.0000	ppb	0.09	50000.00	
27 Al	# 3	45	492719300.0	0.0000	35100.0000	ppb	0.42	50000.00	
28 Si	# 1	45	2158338.0	0.0000	3181.0000	ppb	0.34	5000.00	
31 P	# 3	45	1057826.0	0.0000	1488.0000	ppb	0.59	500.00	>LRS
39 K	# 2	45	2625702.0	0.0000	4835.0000	ppb	1.66	50000.00	
40 Ca	# 1	45	85822248.0	0.0000	18350.0000	ppb	0.45	50000.00	
47 Ti	# 3	45	3230649.0	0.0000	2419.0000	ppb	0.53	500.00	>LRS
51 V	# 2	45	635706.8	0.0000	159.9000	ppb	0.42	500.00	
52 Cr	# 2	45	504345.5	0.0000	109.1000	ppb	0.75	500.00	
55 Mn	# 3	45	27236910.0	0.0000	1285.0000	ppb	0.09	3000.00	
56 Fe	# 1	45	465432380.0	0.0000	64900.0000	ppb	0.67	50000.00	>LRS
59 Co	# 3	45	1009815.0	0.0000	58.0500	ppb	0.92	500.00	
60 Ni	# 2	45	201252.4	0.0000	123.6000	ppb	1.04	500.00	
63 Cu	# 2	45	394045.0	0.0000	95.2600	ppb	0.56	500.00	
66 Zn	# 3	72	437685.2	0.0000	203.5000	ppb	0.61	500.00	
75 As	# 2	72	29685.2	0.0000	52.4200	ppb	0.58	500.00	
78 Se	# 1	72	7589.1	0.0000	39.4100	ppb	0.73	500.00	
88 Sr	# 3	72	1873019.0	0.0000	89.0600	ppb	0.99	500.00	
90 Zr	# 3	72	192197.5	0.0000	12.5700	ppb	0.23	50.00	
95 Mo	# 3	115	154141.9	0.0000	39.9200	ppb	0.21	500.00	
107 Ag	# 3	115	371209.3	0.0000	39.4000	ppb	1.55	50.00	
111 Cd	# 3	115	81497.6	0.0000	39.9300	ppb	0.45	500.00	
118 Sn	# 3	115	270013.4	0.0000	43.7700	ppb	0.72	500.00	
121 Sb	# 3	115	271064.2	0.0000	30.8000	ppb	0.47	500.00	
137 Ba	# 3	115	418821.7	0.0000	130.8000	ppb	1.02	1000.00	
182 W	# 3	159	2510.3	0.0000	0.2611	ppb	2.70	50.00	
205 Tl	# 3	159	731721.2	0.0000	37.6100	ppb	1.21	500.00	
208 Pb	# 3	159	1259098.0	0.0000	47.1400	ppb	0.92	500.00	
235 U	# 3	159	1798.0	0.0000	0.0605	ppb	1.74	30.00	
238 U	# 3	159	958259.0	0.0000	33.8400	ppb	1.43	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1080064.50	0.75	1072677.80	100.7	60 - 125	
45 Sc # 1	883276.13	2.50	836329.63	105.6	60 - 125	
45 Sc # 2	207663.31	1.42	181090.36	114.7	60 - 125	
45 Sc # 3	2139081.80	1.39	1845775.40	115.9	60 - 125	
72 Ge # 1	171662.69	2.34	188193.44	91.2	60 - 125	
72 Ge # 2	93090.34	1.46	89698.20	103.8	60 - 125	
72 Ge # 3	403456.06	1.51	391012.72	103.2	60 - 125	
115 In # 3	2507624.00	1.43	2621431.00	95.7	60 - 125	
159 Tb # 3	3859156.50	1.86	3903099.50	98.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

4 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02043.D\F6G02043.D#
Date Acquired: Jul 3 2018 01:04 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07S
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	952351.0	0.0000	89.6400	ppb	1.54	50.00	>LRS
9 Be	# 3	6	113803.3	0.0000	40.1400	ppb	1.91	50.00	
11 B	# 3	6	92633.1	0.0000	48.5000	ppb	1.08	100.00	
23 Na	# 1	45	10269380.0	0.0000	3815.0000	ppb	0.40	50000.00	
24 Mg	# 3	45	285260700.0	0.0000	25160.0000	ppb	0.92	50000.00	
27 Al	# 3	45	496716100.0	0.0000	35130.0000	ppb	0.36	50000.00	
28 Si	# 1	45	2366186.0	0.0000	3161.0000	ppb	0.98	5000.00	
31 P	# 3	45	1144648.0	0.0000	1607.0000	ppb	1.78	500.00	>LRS
39 K	# 2	45	2666662.0	0.0000	4872.0000	ppb	0.81	50000.00	
40 Ca	# 1	45	95970040.0	0.0000	18600.0000	ppb	0.56	50000.00	
47 Ti	# 3	45	3258391.0	0.0000	2422.0000	ppb	0.21	500.00	>LRS
51 V	# 2	45	617158.8	0.0000	154.0000	ppb	0.31	500.00	
52 Cr	# 2	45	514647.2	0.0000	110.4000	ppb	0.70	500.00	
55 Mn	# 3	45	27109410.0	0.0000	1270.0000	ppb	0.71	3000.00	
56 Fe	# 1	45	501610910.0	0.0000	63390.0000	ppb	0.31	50000.00	>LRS
59 Co	# 3	45	998728.4	0.0000	57.0000	ppb	0.74	500.00	
60 Ni	# 2	45	192610.3	0.0000	117.3000	ppb	0.63	500.00	
63 Cu	# 2	45	384570.2	0.0000	92.2000	ppb	0.88	500.00	
66 Zn	# 3	72	443302.3	0.0000	200.9000	ppb	0.06	500.00	
75 As	# 2	72	29699.4	0.0000	52.0700	ppb	0.77	500.00	
78 Se	# 1	72	8323.1	0.0000	39.1000	ppb	0.99	500.00	
88 Sr	# 3	72	1963012.0	0.0000	90.9900	ppb	0.46	500.00	
90 Zr	# 3	72	200231.6	0.0000	12.7700	ppb	1.17	50.00	
95 Mo	# 3	115	158270.5	0.0000	40.1100	ppb	0.23	500.00	
107 Ag	# 3	115	382891.7	0.0000	39.7600	ppb	0.35	50.00	
111 Cd	# 3	115	83784.6	0.0000	40.1600	ppb	0.04	500.00	
118 Sn	# 3	115	277253.1	0.0000	43.9700	ppb	0.12	500.00	
121 Sb	# 3	115	283318.4	0.0000	31.5000	ppb	0.55	500.00	
137 Ba	# 3	115	405546.5	0.0000	123.9000	ppb	0.15	1000.00	
182 W	# 3	159	2432.5	0.0000	0.2498	ppb	3.91	50.00	
205 Tl	# 3	159	746262.9	0.0000	37.9600	ppb	0.45	500.00	
208 Pb	# 3	159	1253769.0	0.0000	46.4500	ppb	1.04	500.00	
235 U	# 3	159	1846.9	0.0000	0.0616	ppb	3.91	30.00	
238 U	# 3	159	972764.9	0.0000	33.9800	ppb	0.73	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1092277.80	2.35	1072677.80	101.8	60 - 125	
45 Sc # 1	974685.19	1.60	836329.63	116.5	60 - 125	
45 Sc # 2	209393.22	1.13	181090.36	115.6	60 - 125	
45 Sc # 3	2154813.80	1.45	1845775.40	116.7	60 - 125	
72 Ge # 1	189765.95	0.69	188193.44	100.8	60 - 125	
72 Ge # 2	93754.44	1.10	89698.20	104.5	60 - 125	
72 Ge # 3	413925.44	1.77	391012.72	105.9	60 - 125	
115 In # 3	2563042.00	1.64	2621431.00	97.8	60 - 125	
159 Tb # 3	3899980.00	1.53	3903099.50	99.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

4 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02044.D\F6G02044.D#
Date Acquired: Jul 3 2018 01:08 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07A
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	993861.5	0.0000	93.0700	ppb	0.42	50.00	>LRS
9 Be	# 3	6	116697.7	0.0000	40.8500	ppb	1.33	50.00	
11 B	# 3	6	94090.9	0.0000	48.8900	ppb	0.43	100.00	
23 Na	# 1	45	10234670.0	0.0000	3952.0000	ppb	0.44	50000.00	
24 Mg	# 3	45	284777790.0	0.0000	24690.0000	ppb	0.37	50000.00	
27 Al	# 3	45	489020800.0	0.0000	33990.0000	ppb	0.57	50000.00	
28 Si	# 1	45	2000671.0	0.0000	2774.0000	ppb	0.52	5000.00	
31 P	# 3	45	1069701.0	0.0000	1466.0000	ppb	0.84	500.00	>LRS
39 K	# 2	45	3007294.0	0.0000	5435.0000	ppb	1.04	50000.00	
40 Ca	# 1	45	87626256.0	0.0000	17630.0000	ppb	0.82	50000.00	
47 Ti	# 3	45	3056608.0	0.0000	2233.0000	ppb	0.57	500.00	>LRS
51 V	# 2	45	631950.2	0.0000	155.0000	ppb	0.70	500.00	
52 Cr	# 2	45	546894.2	0.0000	115.3000	ppb	0.23	500.00	
55 Mn	# 3	45	26451350.0	0.0000	1218.0000	ppb	0.29	3000.00	
56 Fe	# 1	45	471868800.0	0.0000	61920.0000	ppb	0.45	50000.00	>LRS
59 Co	# 3	45	1024558.0	0.0000	57.4700	ppb	0.50	500.00	
60 Ni	# 2	45	196257.9	0.0000	117.5000	ppb	0.49	500.00	
63 Cu	# 2	45	413040.2	0.0000	97.3600	ppb	0.23	500.00	
66 Zn	# 3	72	442629.0	0.0000	200.6000	ppb	0.96	500.00	
75 As	# 2	72	31423.4	0.0000	54.5300	ppb	0.52	500.00	
78 Se	# 1	72	8318.0	0.0000	40.7200	ppb	1.72	500.00	
88 Sr	# 3	72	1930022.0	0.0000	89.4700	ppb	1.02	500.00	
90 Zr	# 3	72	178017.5	0.0000	11.3500	ppb	1.13	50.00	
95 Mo	# 3	115	164818.7	0.0000	41.5700	ppb	1.33	500.00	
107 Ag	# 3	115	394072.5	0.0000	40.7200	ppb	0.98	50.00	
111 Cd	# 3	115	86003.0	0.0000	41.0200	ppb	1.61	500.00	
118 Sn	# 3	115	281202.3	0.0000	44.3800	ppb	1.53	500.00	
121 Sb	# 3	115	369363.0	0.0000	40.8800	ppb	1.39	500.00	
137 Ba	# 3	115	448987.6	0.0000	136.5000	ppb	1.06	1000.00	
182 W	# 3	159	2331.4	0.0000	0.2363	ppb	5.97	50.00	
205 Tl	# 3	159	768632.7	0.0000	38.6800	ppb	1.34	500.00	
208 Pb	# 3	159	1303279.0	0.0000	47.7700	ppb	1.83	500.00	
235 U	# 3	159	1854.7	0.0000	0.0611	ppb	4.81	30.00	
238 U	# 3	159	977453.5	0.0000	33.7800	ppb	0.84	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1100631.30	1.80	1072677.80	102.6	60 - 125	
45 Sc # 1	938715.31	2.24	836329.63	112.2	60 - 125	
45 Sc # 2	212967.55	0.97	181090.36	117.6	60 - 125	
45 Sc # 3	2192614.00	0.88	1845775.40	118.8	60 - 125	
72 Ge # 1	182064.52	1.46	188193.44	96.7	60 - 125	
72 Ge # 2	94742.40	1.87	89698.20	105.6	60 - 125	
72 Ge # 3	413853.63	1.07	391012.72	105.8	60 - 125	
115 In # 3	2575749.80	1.85	2621431.00	98.3	60 - 125	
159 Tb # 3	3942557.80	1.75	3903099.50	101.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

4 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02045.D\F6G02045.D#
Date Acquired: Jul 3 2018 01:13 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	541037.7	0.0000	47.6800	ppb	1.48	50.00	
9 Be	# 3	6	2385.8	0.0000	0.8186	ppb	2.52	50.00	
11 B	# 3	6	19259.2	0.0000	9.4380	ppb	1.08	100.00	
23 Na	# 1	45	969448.6	0.0000	253.0000	ppb	1.22	50000.00	
24 Mg	# 3	45	244804990.0	0.0000	21600.0000	ppb	1.01	50000.00	
27 Al	# 3	45	438427490.0	0.0000	31010.0000	ppb	1.52	50000.00	
28 Si	# 1	45	2058518.0	0.0000	2763.0000	ppb	0.90	5000.00	
31 P	# 3	45	1059274.0	0.0000	1479.0000	ppb	1.47	500.00	>LRS
39 K	# 2	45	975946.9	0.0000	1596.0000	ppb	0.61	50000.00	
40 Ca	# 1	45	71875112.0	0.0000	14000.0000	ppb	0.59	50000.00	
47 Ti	# 3	45	2988382.0	0.0000	2222.0000	ppb	0.30	500.00	>LRS
51 V	# 2	45	481164.0	0.0000	120.0000	ppb	0.53	500.00	
52 Cr	# 2	45	374605.3	0.0000	80.3000	ppb	0.41	500.00	
55 Mn	# 3	45	25631820.0	0.0000	1201.0000	ppb	0.49	3000.00	
56 Fe	# 1	45	461728100.0	0.0000	58650.0000	ppb	0.25	50000.00	>LRS
59 Co	# 3	45	401108.9	0.0000	22.8800	ppb	0.83	500.00	
60 Ni	# 2	45	137440.5	0.0000	83.7100	ppb	0.88	500.00	
63 Cu	# 2	45	264968.5	0.0000	63.5100	ppb	0.32	500.00	
66 Zn	# 3	72	277484.9	0.0000	126.5000	ppb	0.18	500.00	
75 As	# 2	72	8973.9	0.0000	15.5000	ppb	1.02	500.00	
78 Se	# 1	72	77.3	0.0000	0.3348	ppb	15.81	500.00	
88 Sr	# 3	72	1053459.0	0.0000	49.1800	ppb	0.57	500.00	
90 Zr	# 3	72	158702.4	0.0000	10.1900	ppb	0.50	50.00	
95 Mo	# 3	115	3441.6	0.0000	0.8591	ppb	2.85	500.00	
107 Ag	# 3	115	1791.3	0.0000	0.1831	ppb	4.33	50.00	
111 Cd	# 3	115	1179.9	0.0000	0.5533	ppb	8.81	500.00	
118 Sn	# 3	115	25923.1	0.0000	4.0850	ppb	0.88	500.00	
121 Sb	# 3	115	6959.7	0.0000	0.7578	ppb	2.27	500.00	
137 Ba	# 3	115	314848.8	0.0000	96.3700	ppb	0.80	1000.00	
182 W	# 3	159	2234.7	0.0000	0.2304	ppb	0.57	50.00	
205 Tl	# 3	159	1882.4	0.0000	0.0886	ppb	3.29	500.00	
208 Pb	# 3	159	318623.6	0.0000	11.8700	ppb	1.06	500.00	
235 U	# 3	159	118.9	0.0000	0.0036	ppb	19.59	30.00	
238 U	# 3	159	14245.0	0.0000	0.5001	ppb	0.78	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1098513.40	1.75	1072677.80	102.4	60 - 125	
45 Sc # 1	969618.94	1.07	836329.63	115.9	60 - 125	
45 Sc # 2	209296.39	0.67	181090.36	115.6	60 - 125	
45 Sc # 3	2154430.80	1.51	1845775.40	116.7	60 - 125	
72 Ge # 1	187304.22	1.68	188193.44	99.5	60 - 125	
72 Ge # 2	94087.36	0.96	89698.20	104.9	60 - 125	
72 Ge # 3	410885.91	1.33	391012.72	105.1	60 - 125	
115 In # 3	2558781.80	0.68	2621431.00	97.6	60 - 125	
159 Tb # 3	3869512.50	1.89	3903099.50	99.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02046.D\F6G02046.D#
Date Acquired: Jul 3 2018 01:17 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07J
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	168446.6	0.0000	9.1110	ppb	1.22	50.00	
9 Be	# 3	6	506.7	0.0000	0.1483	ppb	6.42	50.00	
11 B	# 3	6	4563.1	0.0000	1.5210	ppb	3.59	100.00	
23 Na	# 1	45	426480.1	0.0000	58.8200	ppb	3.48	50000.00	
24 Mg	# 3	45	50323800.0	0.0000	4712.0000	ppb	0.94	50000.00	
27 Al	# 3	45	89960560.0	0.0000	6753.0000	ppb	1.28	50000.00	
28 Si	# 1	45	414424.5	0.0000	603.8000	ppb	1.18	5000.00	
31 P	# 3	45	251423.3	0.0000	284.4000	ppb	0.58	500.00	
39 K	# 2	45	312885.2	0.0000	333.5000	ppb	2.40	50000.00	
40 Ca	# 1	45	14482050.0	0.0000	3075.0000	ppb	0.40	50000.00	
47 Ti	# 3	45	608445.3	0.0000	480.0000	ppb	0.46	500.00	
51 V	# 2	45	101241.2	0.0000	25.7200	ppb	1.12	500.00	
52 Cr	# 2	45	78064.6	0.0000	17.1600	ppb	1.50	500.00	
55 Mn	# 3	45	5324132.0	0.0000	264.5000	ppb	0.59	3000.00	
56 Fe	# 1	45	93724896.0	0.0000	12990.0000	ppb	0.58	50000.00	
59 Co	# 3	45	84875.5	0.0000	5.1170	ppb	0.77	500.00	
60 Ni	# 2	45	28948.1	0.0000	18.2500	ppb	0.71	500.00	
63 Cu	# 2	45	56386.0	0.0000	13.9500	ppb	0.66	500.00	
66 Zn	# 3	72	58616.7	0.0000	26.2300	ppb	0.76	500.00	
75 As	# 2	72	2039.0	0.0000	3.2950	ppb	2.37	500.00	
78 Se	# 1	72	22.2	0.0000	0.0688	ppb	20.71	500.00	
88 Sr	# 3	72	214139.6	0.0000	9.9340	ppb	1.04	500.00	
90 Zr	# 3	72	32957.0	0.0000	2.0900	ppb	1.12	50.00	
95 Mo	# 3	115	793.4	0.0000	0.1769	ppb	9.45	500.00	
107 Ag	# 3	115	415.6	0.0000	0.0380	ppb	9.25	50.00	
111 Cd	# 3	115	267.8	0.0000	0.1091	ppb	24.57	500.00	
118 Sn	# 3	115	5457.9	0.0000	0.7897	ppb	0.41	500.00	
121 Sb	# 3	115	1547.9	0.0000	0.1465	ppb	2.43	500.00	
137 Ba	# 3	115	65135.3	0.0000	18.9600	ppb	0.97	1000.00	
182 W	# 3	159	488.9	0.0000	0.0394	ppb	10.12	50.00	
205 Tl	# 3	159	474.5	0.0000	0.0159	ppb	5.08	500.00	
208 Pb	# 3	159	66206.7	0.0000	2.3850	ppb	1.23	500.00	
235 U	# 3	159	41.1	0.0000	0.0009	ppb	29.67	30.00	
238 U	# 3	159	2953.8	0.0000	0.1001	ppb	1.84	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1171746.00	1.65	1072677.80	109.2	60 - 125	
45 Sc # 1	888782.38	1.01	836329.63	106.3	60 - 125	
45 Sc # 2	201388.00	1.45	181090.36	111.2	60 - 125	
45 Sc # 3	2029898.90	2.04	1845775.40	110.0	60 - 125	
72 Ge # 1	192897.59	1.50	188193.44	102.5	60 - 125	
72 Ge # 2	95016.66	0.87	89698.20	105.9	60 - 125	
72 Ge # 3	412745.19	2.47	391012.72	105.6	60 - 125	
115 In # 3	2689077.30	1.33	2621431.00	102.6	60 - 125	
159 Tb # 3	3956480.80	2.02	3903099.50	101.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02047.D\F6G02047.D#
Date Acquired: Jul 3 2018 01:22 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-08
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	403213.9	0.0000	32.1700	ppb	1.49	50.00	
9 Be	# 3	6	2131.3	0.0000	0.6991	ppb	1.11	50.00	
11 B	# 3	6	24525.8	0.0000	11.7000	ppb	0.53	100.00	
23 Na	# 1	45	997986.5	0.0000	263.4000	ppb	1.70	50000.00	
24 Mg	# 3	45	211100900.0	0.0000	18320.0000	ppb	1.13	50000.00	
27 Al	# 3	45	409973180.0	0.0000	28510.0000	ppb	0.48	50000.00	
28 Si	# 1	45	2352494.0	0.0000	3154.0000	ppb	0.67	5000.00	
31 P	# 3	45	1016899.0	0.0000	1390.0000	ppb	1.83	500.00	>LRS
39 K	# 2	45	891655.5	0.0000	1391.0000	ppb	1.11	50000.00	
40 Ca	# 1	45	125680300.0	0.0000	24450.0000	ppb	0.76	50000.00	
47 Ti	# 3	45	2965564.0	0.0000	2168.0000	ppb	0.66	500.00	>LRS
51 V	# 2	45	496380.3	0.0000	120.8000	ppb	0.29	500.00	
52 Cr	# 2	45	363454.6	0.0000	76.0600	ppb	0.24	500.00	
55 Mn	# 3	45	21204790.0	0.0000	976.9000	ppb	1.10	3000.00	
56 Fe	# 1	45	412072990.0	0.0000	52270.0000	ppb	1.07	50000.00	>LRS
59 Co	# 3	45	380440.2	0.0000	21.3400	ppb	1.68	500.00	
60 Ni	# 2	45	100376.5	0.0000	59.6700	ppb	0.13	500.00	
63 Cu	# 2	45	181513.5	0.0000	42.4400	ppb	0.28	500.00	
66 Zn	# 3	72	246945.7	0.0000	110.0000	ppb	0.56	500.00	
75 As	# 2	72	6697.8	0.0000	11.2800	ppb	0.27	500.00	
78 Se	# 1	72	48.4	0.0000	0.1922	ppb	11.23	500.00	
88 Sr	# 3	72	1817516.0	0.0000	82.9700	ppb	0.71	500.00	
90 Zr	# 3	72	165601.7	0.0000	10.4000	ppb	1.11	50.00	
95 Mo	# 3	115	4104.1	0.0000	0.9966	ppb	1.28	500.00	
107 Ag	# 3	115	1414.6	0.0000	0.1396	ppb	8.83	50.00	
111 Cd	# 3	115	974.2	0.0000	0.4410	ppb	6.36	500.00	
118 Sn	# 3	115	25091.6	0.0000	3.8350	ppb	0.72	500.00	
121 Sb	# 3	115	3590.6	0.0000	0.3706	ppb	3.26	500.00	
137 Ba	# 3	115	384091.4	0.0000	114.1000	ppb	1.34	1000.00	
182 W	# 3	159	2218.0	0.0000	0.2237	ppb	1.59	50.00	
205 Tl	# 3	159	1580.2	0.0000	0.0715	ppb	3.87	500.00	
208 Pb	# 3	159	247864.2	0.0000	9.0390	ppb	0.47	500.00	
235 U	# 3	159	98.9	0.0000	0.0028	ppb	2.96	30.00	
238 U	# 3	159	9946.9	0.0000	0.3416	ppb	1.05	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1144515.10	1.70	1072677.80	106.7	60 - 125	
45 Sc # 1	971019.75	0.58	836329.63	116.1	60 - 125	
45 Sc # 2	214341.58	1.30	181090.36	118.4	60 - 125	
45 Sc # 3	2191119.80	2.26	1845775.40	118.7	60 - 125	
72 Ge # 1	191424.00	1.93	188193.44	101.7	60 - 125	
72 Ge # 2	95955.01	1.17	89698.20	107.0	60 - 125	
72 Ge # 3	420287.97	1.56	391012.72	107.5	60 - 125	
115 In # 3	2636872.80	0.80	2621431.00	100.6	60 - 125	
159 Tb # 3	3949595.30	1.54	3903099.50	101.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02048.D\F6G02048.D#
Date Acquired: Jul 3 2018 01:26 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-10
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	471476.4	0.0000	39.3400	ppb	1.34	50.00	
9 Be	# 3	6	2018.0	0.0000	0.6702	ppb	5.90	50.00	
11 B	# 3	6	17986.6	0.0000	8.4990	ppb	1.51	100.00	
23 Na	# 1	45	1176090.0	0.0000	370.3000	ppb	1.28	50000.00	
24 Mg	# 3	45	206208700.0	0.0000	18010.0000	ppb	0.71	50000.00	
27 Al	# 3	45	395891300.0	0.0000	27710.0000	ppb	1.04	50000.00	
28 Si	# 1	45	1956379.0	0.0000	2845.0000	ppb	1.16	5000.00	
31 P	# 3	45	817566.4	0.0000	1102.0000	ppb	1.28	500.00	>LRS
39 K	# 2	45	1114765.0	0.0000	1932.0000	ppb	0.84	50000.00	
40 Ca	# 1	45	61141980.0	0.0000	12900.0000	ppb	0.89	50000.00	
47 Ti	# 3	45	2615777.0	0.0000	1925.0000	ppb	1.17	500.00	>LRS
51 V	# 2	45	402715.5	0.0000	103.4000	ppb	0.23	500.00	
52 Cr	# 2	45	299494.4	0.0000	66.1500	ppb	0.37	500.00	
55 Mn	# 3	45	21159140.0	0.0000	981.0000	ppb	0.96	3000.00	
56 Fe	# 1	45	387991490.0	0.0000	53380.0000	ppb	1.13	50000.00	>LRS
59 Co	# 3	45	361210.8	0.0000	20.3900	ppb	1.34	500.00	
60 Ni	# 2	45	102835.4	0.0000	64.5600	ppb	0.44	500.00	
63 Cu	# 2	45	302462.5	0.0000	74.7700	ppb	0.26	500.00	
66 Zn	# 3	72	243905.1	0.0000	109.1000	ppb	0.35	500.00	
75 As	# 2	72	9089.3	0.0000	16.2200	ppb	1.26	500.00	
78 Se	# 1	72	53.1	0.0000	0.2334	ppb	19.00	500.00	
88 Sr	# 3	72	1012597.0	0.0000	46.4000	ppb	0.96	500.00	
90 Zr	# 3	72	146543.0	0.0000	9.2360	ppb	0.72	50.00	
95 Mo	# 3	115	5395.6	0.0000	1.3250	ppb	3.19	500.00	
107 Ag	# 3	115	2429.2	0.0000	0.2438	ppb	3.74	50.00	
111 Cd	# 3	115	992.2	0.0000	0.4527	ppb	2.29	500.00	
118 Sn	# 3	115	25303.1	0.0000	3.8970	ppb	0.82	500.00	
121 Sb	# 3	115	5560.2	0.0000	0.5882	ppb	3.24	500.00	
137 Ba	# 3	115	333419.4	0.0000	99.8000	ppb	0.45	1000.00	
182 W	# 3	159	1893.5	0.0000	0.1882	ppb	6.69	50.00	
205 Tl	# 3	159	2102.5	0.0000	0.0972	ppb	3.35	500.00	
208 Pb	# 3	159	242492.2	0.0000	8.8000	ppb	0.59	500.00	
235 U	# 3	159	103.3	0.0000	0.0029	ppb	32.96	30.00	
238 U	# 3	159	11298.2	0.0000	0.3864	ppb	1.33	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1130457.50	3.01	1072677.80	105.4	60 - 125	
45 Sc # 1	895302.25	1.91	836329.63	107.1	60 - 125	
45 Sc # 2	202986.25	2.48	181090.36	112.1	60 - 125	
45 Sc # 3	2176968.30	1.21	1845775.40	117.9	60 - 125	
72 Ge # 1	177366.75	0.63	188193.44	94.2	60 - 125	
72 Ge # 2	91137.14	1.70	89698.20	101.6	60 - 125	
72 Ge # 3	418545.72	1.34	391012.72	107.0	60 - 125	
115 In # 3	2616961.50	1.47	2621431.00	99.8	60 - 125	
159 Tb # 3	3968442.50	1.51	3903099.50	101.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02049.D\F6G02049.D#
Date Acquired: Jul 3 2018 01:31 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-11
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	477579.5	0.0000	39.0700	ppb	1.47	50.00	
9 Be	# 3	6	1854.6	0.0000	0.6022	ppb	5.49	50.00	
11 B	# 3	6	19327.1	0.0000	9.0050	ppb	3.26	100.00	
23 Na	# 1	45	990074.7	0.0000	255.5000	ppb	0.37	50000.00	
24 Mg	# 3	45	212982590.0	0.0000	18330.0000	ppb	0.34	50000.00	
27 Al	# 3	45	392599710.0	0.0000	27080.0000	ppb	0.64	50000.00	
28 Si	# 1	45	2264510.0	0.0000	2997.0000	ppb	0.55	5000.00	
31 P	# 3	45	998125.8	0.0000	1350.0000	ppb	0.20	500.00	>LRS
39 K	# 2	45	943299.7	0.0000	1455.0000	ppb	1.77	50000.00	
40 Ca	# 1	45	86598656.0	0.0000	16630.0000	ppb	0.28	50000.00	
47 Ti	# 3	45	2489264.0	0.0000	1805.0000	ppb	0.84	500.00	>LRS
51 V	# 2	45	456992.1	0.0000	109.1000	ppb	0.08	500.00	
52 Cr	# 2	45	272552.4	0.0000	55.8800	ppb	0.49	500.00	
55 Mn	# 3	45	22587280.0	0.0000	1032.0000	ppb	0.54	3000.00	
56 Fe	# 1	45	429487390.0	0.0000	53780.0000	ppb	0.86	50000.00	>LRS
59 Co	# 3	45	366373.6	0.0000	20.3800	ppb	0.64	500.00	
60 Ni	# 2	45	96178.3	0.0000	56.0800	ppb	0.38	500.00	
63 Cu	# 2	45	204490.0	0.0000	46.9200	ppb	0.61	500.00	
66 Zn	# 3	72	268608.7	0.0000	119.0000	ppb	0.09	500.00	
75 As	# 2	72	6713.1	0.0000	11.0400	ppb	1.93	500.00	
78 Se	# 1	72	46.0	0.0000	0.1769	ppb	16.88	500.00	
88 Sr	# 3	72	1440246.0	0.0000	65.3600	ppb	0.79	500.00	
90 Zr	# 3	72	124474.8	0.0000	7.7630	ppb	0.56	50.00	
95 Mo	# 3	115	4119.6	0.0000	0.9983	ppb	4.58	500.00	
107 Ag	# 3	115	1363.4	0.0000	0.1341	ppb	6.68	50.00	
111 Cd	# 3	115	1035.9	0.0000	0.4686	ppb	5.05	500.00	
118 Sn	# 3	115	24600.7	0.0000	3.7500	ppb	0.55	500.00	
121 Sb	# 3	115	4099.6	0.0000	0.4246	ppb	0.96	500.00	
137 Ba	# 3	115	418528.8	0.0000	124.0000	ppb	0.86	1000.00	
182 W	# 3	159	1896.9	0.0000	0.1878	ppb	7.90	50.00	
205 Tl	# 3	159	1221.2	0.0000	0.0530	ppb	9.35	500.00	
208 Pb	# 3	159	262881.5	0.0000	9.5110	ppb	0.98	500.00	
235 U	# 3	159	83.3	0.0000	0.0023	ppb	9.41	30.00	
238 U	# 3	159	8791.5	0.0000	0.2993	ppb	1.46	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1151851.50	2.39	1072677.80	107.4	60 - 125	
45 Sc # 1	983776.56	1.70	836329.63	117.6	60 - 125	
45 Sc # 2	218476.42	0.91	181090.36	120.6	60 - 125	ISFail LV 07/05/18
45 Sc # 3	2208781.50	0.97	1845775.40	119.7	60 - 125	
72 Ge # 1	194461.00	1.38	188193.44	103.3	60 - 125	
72 Ge # 2	98222.08	1.01	89698.20	109.5	60 - 125	
72 Ge # 3	422787.16	1.28	391012.72	108.1	60 - 125	
115 In # 3	2643351.00	1.91	2621431.00	100.8	60 - 125	
159 Tb # 3	3981398.80	0.53	3903099.50	102.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02050.D\F6G02050.D#
Date Acquired: Jul 3 2018 01:35 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-12
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	467323.2	0.0000	38.6100	ppb	1.22	50.00	
9 Be	# 3	6	1912.4	0.0000	0.6287	ppb	2.67	50.00	
11 B	# 3	6	14684.1	0.0000	6.7490	ppb	2.25	100.00	
23 Na	# 1	45	878274.9	0.0000	223.8000	ppb	1.86	50000.00	
24 Mg	# 3	45	208855600.0	0.0000	18510.0000	ppb	0.96	50000.00	
27 Al	# 3	45	382672700.0	0.0000	27180.0000	ppb	0.70	50000.00	
28 Si	# 1	45	1930480.0	0.0000	2637.0000	ppb	0.18	5000.00	
31 P	# 3	45	1025354.0	0.0000	1434.0000	ppb	0.30	500.00	>LRS
39 K	# 2	45	953810.3	0.0000	1560.0000	ppb	1.21	50000.00	
40 Ca	# 1	45	56847592.0	0.0000	11270.0000	ppb	0.94	50000.00	
47 Ti	# 3	45	2205039.0	0.0000	1646.0000	ppb	0.30	500.00	>LRS
51 V	# 2	45	416314.7	0.0000	104.1000	ppb	0.55	500.00	
52 Cr	# 2	45	282783.7	0.0000	60.8000	ppb	0.10	500.00	
55 Mn	# 3	45	26307640.0	0.0000	1238.0000	ppb	0.33	3000.00	
56 Fe	# 1	45	401990020.0	0.0000	51960.0000	ppb	0.56	50000.00	>LRS
59 Co	# 3	45	374242.2	0.0000	21.4400	ppb	0.88	500.00	
60 Ni	# 2	45	109315.8	0.0000	66.8400	ppb	0.56	500.00	
63 Cu	# 2	45	186280.2	0.0000	44.8000	ppb	0.84	500.00	
66 Zn	# 3	72	247905.9	0.0000	110.5000	ppb	1.10	500.00	
75 As	# 2	72	7578.2	0.0000	12.9400	ppb	0.40	500.00	
78 Se	# 1	72	61.8	0.0000	0.2561	ppb	5.76	500.00	
88 Sr	# 3	72	810249.8	0.0000	37.0100	ppb	0.31	500.00	
90 Zr	# 3	72	116966.7	0.0000	7.3440	ppb	0.11	50.00	
95 Mo	# 3	115	2915.9	0.0000	0.7080	ppb	1.39	500.00	
107 Ag	# 3	115	1712.4	0.0000	0.1706	ppb	1.50	50.00	
111 Cd	# 3	115	920.8	0.0000	0.4181	ppb	6.58	500.00	
118 Sn	# 3	115	23591.3	0.0000	3.6240	ppb	0.82	500.00	
121 Sb	# 3	115	3150.5	0.0000	0.3250	ppb	2.86	500.00	
137 Ba	# 3	115	273116.1	0.0000	81.5900	ppb	0.89	1000.00	
182 W	# 3	159	1933.5	0.0000	0.1938	ppb	2.86	50.00	
205 Tl	# 3	159	1699.1	0.0000	0.0776	ppb	6.12	500.00	
208 Pb	# 3	159	298235.4	0.0000	10.9100	ppb	0.38	500.00	
235 U	# 3	159	98.9	0.0000	0.0028	ppb	9.97	30.00	
238 U	# 3	159	9819.1	0.0000	0.3379	ppb	1.10	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1138425.80	2.08	1072677.80	106.1	60 - 125	
45 Sc # 1	952936.56	0.39	836329.63	113.9	60 - 125	
45 Sc # 2	208421.94	0.73	181090.36	115.1	60 - 125	
45 Sc # 3	2145349.00	2.78	1845775.40	116.2	60 - 125	
72 Ge # 1	190112.17	0.93	188193.44	101.0	60 - 125	
72 Ge # 2	94861.35	1.69	89698.20	105.8	60 - 125	
72 Ge # 3	419907.06	1.63	391012.72	107.4	60 - 125	
115 In # 3	2621878.80	1.69	2621431.00	100.0	60 - 125	
159 Tb # 3	3940475.30	0.86	3903099.50	101.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02051.D\F6G02051.D#
Date Acquired: Jul 3 2018 01:39 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-13
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	409088.6	0.0000	32.2000	ppb	0.51	50.00	
9 Be	# 3	6	1510.1	0.0000	0.4831	ppb	5.29	50.00	
11 B	# 3	6	16552.8	0.0000	7.5400	ppb	3.30	100.00	
23 Na	# 1	45	977564.0	0.0000	262.5000	ppb	0.95	50000.00	
24 Mg	# 3	45	177265600.0	0.0000	15560.0000	ppb	0.59	50000.00	
27 Al	# 3	45	346198400.0	0.0000	24360.0000	ppb	0.87	50000.00	
28 Si	# 1	45	2247542.0	0.0000	3069.0000	ppb	0.81	5000.00	
31 P	# 3	45	771143.8	0.0000	1039.0000	ppb	1.39	500.00	>LRS
39 K	# 2	45	892870.5	0.0000	1421.0000	ppb	1.05	50000.00	
40 Ca	# 1	45	67060880.0	0.0000	13280.0000	ppb	0.59	50000.00	
47 Ti	# 3	45	2227257.0	0.0000	1647.0000	ppb	0.30	500.00	>LRS
51 V	# 2	45	390753.5	0.0000	96.5500	ppb	0.29	500.00	
52 Cr	# 2	45	223986.4	0.0000	47.5300	ppb	0.37	500.00	
55 Mn	# 3	45	39864020.0	0.0000	1858.0000	ppb	0.55	3000.00	
56 Fe	# 1	45	370984800.0	0.0000	47920.0000	ppb	0.79	50000.00	
59 Co	# 3	45	345706.6	0.0000	19.6100	ppb	1.03	500.00	
60 Ni	# 2	45	96546.0	0.0000	58.3200	ppb	0.40	500.00	
63 Cu	# 2	45	177317.0	0.0000	42.1400	ppb	0.58	500.00	
66 Zn	# 3	72	248366.1	0.0000	110.5000	ppb	0.83	500.00	
75 As	# 2	72	5568.2	0.0000	9.4260	ppb	2.64	500.00	
78 Se	# 1	72	37.6	0.0000	0.1416	ppb	4.84	500.00	
88 Sr	# 3	72	1213967.0	0.0000	55.3200	ppb	0.15	500.00	
90 Zr	# 3	72	124306.7	0.0000	7.7870	ppb	0.46	50.00	
95 Mo	# 3	115	3111.5	0.0000	0.7524	ppb	4.95	500.00	
107 Ag	# 3	115	1211.2	0.0000	0.1191	ppb	1.14	50.00	
111 Cd	# 3	115	1107.7	0.0000	0.5028	ppb	6.01	500.00	
118 Sn	# 3	115	23796.1	0.0000	3.6350	ppb	1.08	500.00	
121 Sb	# 3	115	3102.7	0.0000	0.3177	ppb	3.40	500.00	
137 Ba	# 3	115	375364.8	0.0000	111.5000	ppb	0.85	1000.00	
182 W	# 3	159	1509.0	0.0000	0.1480	ppb	3.84	50.00	
205 Tl	# 3	159	1410.1	0.0000	0.0628	ppb	3.20	500.00	
208 Pb	# 3	159	230305.7	0.0000	8.3870	ppb	0.49	500.00	
235 U	# 3	159	63.3	0.0000	0.0016	ppb	19.54	30.00	
238 U	# 3	159	7849.7	0.0000	0.2690	ppb	3.30	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1160350.40	0.96	1072677.80	108.2	60 - 125	
45 Sc # 1	953473.81	0.96	836329.63	114.0	60 - 125	
45 Sc # 2	210901.81	1.84	181090.36	116.5	60 - 125	
45 Sc # 3	2166060.80	2.45	1845775.40	117.4	60 - 125	
72 Ge # 1	190962.52	0.97	188193.44	101.5	60 - 125	
72 Ge # 2	95085.24	2.28	89698.20	106.0	60 - 125	
72 Ge # 3	420926.13	1.55	391012.72	107.7	60 - 125	
115 In # 3	2636966.80	1.99	2621431.00	100.6	60 - 125	
159 Tb # 3	3953608.30	1.25	3903099.50	101.3	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02052.D\F6G02052.D#
Date Acquired: Jul 3 2018 01:44 pm
Operator: LVicto
Sample Name: CCV4
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:28 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.03	ppb	1.79	25.00	90 - 110	
9 Be	25.22	ppb	0.88	25.00	90 - 110	
11 B	50.55	ppb	1.01	50.00	90 - 110	
23 Na	25990.00	ppb	0.81	25000.00	90 - 110	
24 Mg	24540.00	ppb	1.47	25000.00	90 - 110	
27 Al	24270.00	ppb	1.78	25000.00	90 - 110	
28 Si	2608.00	ppb	1.55	2500.00	90 - 110	
31 P	242.10	ppb	1.15	250.00	90 - 110	
39 K	26370.00	ppb	2.47	25000.00	90 - 110	
40 Ca	25910.00	ppb	1.06	25000.00	90 - 110	
47 Ti	256.00	ppb	0.77	250.00	90 - 110	
51 V	253.50	ppb	0.23	250.00	90 - 110	
52 Cr	248.70	ppb	1.22	250.00	90 - 110	
55 Mn	1497.00	ppb	1.33	1500.00	90 - 110	
56 Fe	24660.00	ppb	0.50	25000.00	90 - 110	
59 Co	243.70	ppb	1.11	250.00	90 - 110	
60 Ni	243.30	ppb	0.30	250.00	90 - 110	
63 Cu	243.20	ppb	0.58	250.00	90 - 110	
66 Zn	253.90	ppb	0.42	250.00	90 - 110	
75 As	254.70	ppb	0.30	250.00	90 - 110	
78 Se	254.70	ppb	0.53	250.00	90 - 110	
88 Sr	257.40	ppb	1.31	250.00	90 - 110	
90 Zr	24.12	ppb	1.09	25.00	90 - 110	
95 Mo	261.60	ppb	0.14	250.00	90 - 110	
107 Ag	25.63	ppb	0.62	25.00	90 - 110	
111 Cd	257.20	ppb	0.53	250.00	90 - 110	
118 Sn	257.70	ppb	0.23	250.00	90 - 110	
121 Sb	50.87	ppb	0.29	50.00	90 - 110	
137 Ba	524.30	ppb	0.14	500.00	90 - 110	
182 W	24.66	ppb	0.04	25.00	90 - 110	
205 Tl	241.40	ppb	0.93	250.00	90 - 110	
208 Pb	236.50	ppb	1.06	250.00	90 - 110	
235 U	1.27	ppb	0.34	1.80	90 - 110	Fail
238 U	200.00	ppb	0.39	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1087042.60	2.38	1072677.80	101.3	60 - 125	
45 Sc	876028.63	1.29	836329.63	104.7	60 - 125	
45 Sc	189524.86	0.32	181090.36	104.7	60 - 125	
45 Sc	1939683.80	1.58	1845775.40	105.1	60 - 125	
72 Ge	190113.41	0.88	188193.44	101.0	60 - 125	
72 Ge	90419.21	0.76	89698.20	100.8	60 - 125	
72 Ge	397743.44	1.88	391012.72	101.7	60 - 125	
115 In	2556249.30	1.81	2621431.00	97.5	60 - 125	
159 Tb	3840317.00	1.74	3903099.50	98.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02053.D\F6G02053.D#
Date Acquired:	Jul 3 2018 01:48 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB4
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Jul 03 2018 10:28 am
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1209	ppb	70429.6	54.51	0.20	
9 Be	-0.0082	ppb	31.1	26.67	0.10	
11 B	-0.2894	ppb	906.7	12.38	5.00	
23 Na	6.5570	ppb	299527.6	20.22	40.00	
24 Mg	0.6297	ppb	14356.1	15.21	10.00	
27 Al	0.2937	ppb	6033.6	18.76	20.00	
28 Si	5.0870	ppb	6113.8	4.27	20.00	
31 P	-17.5700	ppb	61381.0	17.68	10.00	Fail
39 K	7.7670	ppb	146162.1	82.62	20.00	
40 Ca	1.6630	ppb	24545.1	2.60	25.00	
47 Ti	0.0585	ppb	337.8	52.70	0.50	
51 V	0.2369	ppb	3310.2	4.74	0.50	
52 Cr	-0.0180	ppb	1190.3	44.72	0.20	
55 Mn	-0.0582	ppb	5895.8	15.43	0.20	
56 Fe	1.8000	ppb	20948.0	1.68	10.00	
59 Co	-0.0075	ppb	345.6	16.08	0.20	
60 Ni	-0.0362	ppb	99.8	19.55	0.20	
63 Cu	-0.0184	ppb	424.2	45.43	0.40	
66 Zn	-0.2589	ppb	458.9	1.17	2.00	
75 As	0.1130	ppb	209.1	41.73	0.20	
78 Se	0.0666	ppb	22.0	13.93	0.20	
88 Sr	-0.0016	ppb	483.4	127.19	0.20	
90 Zr	-0.0079	ppb	206.7	30.92	2.00	
95 Mo	0.1127	ppb	532.3	12.72	0.40	
107 Ag	0.0003	ppb	35.6	402.65	0.20	
111 Cd	0.0041	ppb	38.2	88.80	0.20	
118 Sn	0.2103	ppb	1644.6	3.29	0.20	Fail
121 Sb	0.0762	ppb	894.5	4.00	0.40	
137 Ba	0.0218	ppb	116.7	18.46	0.20	
182 W	0.0148	ppb	257.8	19.84	1.00	
205 Tl	0.0204	ppb	563.4	25.05	0.20	
208 Pb	0.0063	ppb	1129.0	37.31	0.10	
235 U	0.0005	ppb	28.9	94.95	1.00	
238 U	0.0325	ppb	991.2	4.08	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1168657.8	2.38	1072677.80	108.9	60 - 125	
45 Sc	881146.9	0.91	836329.63	105.4	60 - 125	
45 Sc	194566.9	2.22	181090.36	107.4	60 - 125	
45 Sc	1989999.5	3.09	1845775.40	107.8	60 - 125	
72 Ge	195497.1	1.17	188193.44	103.9	60 - 125	
72 Ge	95450.7	2.08	89698.20	106.4	60 - 125	
72 Ge	412995.7	1.53	391012.72	105.6	60 - 125	
115 In	2717732.8	1.95	2621431.00	103.7	60 - 125	
159 Tb	3958808.3	1.87	3903099.50	101.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02054.D\F6G02054.D#
Date Acquired: Jul 3 2018 01:53 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-14
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	428516.2	0.0000	34.3200	ppb	0.25	50.00	
9 Be	# 3	6	1851.3	0.0000	0.6004	ppb	2.85	50.00	
11 B	# 3	6	14964.4	0.0000	6.7950	ppb	0.66	100.00	
23 Na	# 1	45	953123.4	0.0000	244.7000	ppb	1.58	50000.00	
24 Mg	# 3	45	181186100.0	0.0000	15790.0000	ppb	0.16	50000.00	
27 Al	# 3	45	354451010.0	0.0000	24760.0000	ppb	0.32	50000.00	
28 Si	# 1	45	2320402.0	0.0000	3098.0000	ppb	1.14	5000.00	
31 P	# 3	45	940338.9	0.0000	1282.0000	ppb	0.88	500.00	>LRS
39 K	# 2	45	840753.5	0.0000	1299.0000	ppb	1.33	50000.00	
40 Ca	# 1	45	85362976.0	0.0000	16530.0000	ppb	0.91	50000.00	
47 Ti	# 3	45	1936316.0	0.0000	1422.0000	ppb	0.36	500.00	>LRS
51 V	# 2	45	388631.7	0.0000	94.7300	ppb	0.75	500.00	
52 Cr	# 2	45	251766.1	0.0000	52.7500	ppb	0.90	500.00	
55 Mn	# 3	45	21400190.0	0.0000	990.1000	ppb	0.22	3000.00	
56 Fe	# 1	45	401157500.0	0.0000	50670.0000	ppb	0.67	50000.00	>LRS
59 Co	# 3	45	351475.4	0.0000	19.8000	ppb	0.69	500.00	
60 Ni	# 2	45	98638.3	0.0000	58.8000	ppb	1.35	500.00	
63 Cu	# 2	45	234397.4	0.0000	55.0000	ppb	1.06	500.00	
66 Zn	# 3	72	264513.3	0.0000	117.7000	ppb	0.39	500.00	
75 As	# 2	72	9004.8	0.0000	15.1000	ppb	0.76	500.00	
78 Se	# 1	72	49.6	0.0000	0.1950	ppb	15.43	500.00	
88 Sr	# 3	72	1524961.0	0.0000	69.5200	ppb	0.43	500.00	
90 Zr	# 3	72	107137.2	0.0000	6.7110	ppb	1.02	50.00	
95 Mo	# 3	115	2788.1	0.0000	0.6698	ppb	3.34	500.00	
107 Ag	# 3	115	1409.0	0.0000	0.1385	ppb	6.79	50.00	
111 Cd	# 3	115	986.9	0.0000	0.4452	ppb	3.76	500.00	
118 Sn	# 3	115	24256.8	0.0000	3.6920	ppb	1.14	500.00	
121 Sb	# 3	115	4881.0	0.0000	0.5082	ppb	2.44	500.00	
137 Ba	# 3	115	293303.8	0.0000	86.7900	ppb	0.33	1000.00	
182 W	# 3	159	1483.5	0.0000	0.1458	ppb	4.35	50.00	
205 Tl	# 3	159	1671.3	0.0000	0.0762	ppb	4.50	500.00	
208 Pb	# 3	159	295511.4	0.0000	10.8100	ppb	0.78	500.00	
235 U	# 3	159	60.0	0.0000	0.0015	ppb	23.37	30.00	
238 U	# 3	159	7939.7	0.0000	0.2730	ppb	2.79	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1152936.60	1.30	1072677.80	107.5	60 - 125	
45 Sc # 1	975245.63	2.02	836329.63	116.6	60 - 125	
45 Sc # 2	213753.34	1.68	181090.36	118.0	60 - 125	
45 Sc # 3	2181554.30	1.18	1845775.40	118.2	60 - 125	
72 Ge # 1	193352.59	1.20	188193.44	102.7	60 - 125	
72 Ge # 2	96869.94	2.00	89698.20	108.0	60 - 125	
72 Ge # 3	420823.47	1.43	391012.72	107.6	60 - 125	
115 In # 3	2646974.30	1.10	2621431.00	101.0	60 - 125	
159 Tb # 3	3941566.50	1.70	3903099.50	101.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02055.D\F6G02055.D#
Date Acquired: Jul 3 2018 01:57 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-15
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	461810.7	0.0000	38.9900	ppb	0.65	50.00	
9 Be	# 3	6	1543.5	0.0000	0.5153	ppb	8.51	50.00	
11 B	# 3	6	17770.8	0.0000	8.5070	ppb	0.63	100.00	
23 Na	# 1	45	872722.5	0.0000	219.8000	ppb	0.37	50000.00	
24 Mg	# 3	45	182696100.0	0.0000	16360.0000	ppb	1.03	50000.00	
27 Al	# 3	45	383328700.0	0.0000	27520.0000	ppb	0.73	50000.00	
28 Si	# 1	45	1889022.0	0.0000	2566.0000	ppb	0.70	5000.00	
31 P	# 3	45	1506653.0	0.0000	2187.0000	ppb	1.41	500.00	>LRS
39 K	# 2	45	870703.9	0.0000	1411.0000	ppb	0.90	50000.00	
40 Ca	# 1	45	54451940.0	0.0000	10730.0000	ppb	0.54	50000.00	
47 Ti	# 3	45	2030986.0	0.0000	1533.0000	ppb	0.33	500.00	>LRS
51 V	# 2	45	423528.0	0.0000	106.7000	ppb	0.40	500.00	
52 Cr	# 2	45	1980439.0	0.0000	430.8000	ppb	1.06	500.00	
55 Mn	# 3	45	14996620.0	0.0000	713.0000	ppb	0.73	3000.00	
56 Fe	# 1	45	403349790.0	0.0000	51850.0000	ppb	0.86	50000.00	>LRS
59 Co	# 3	45	255028.1	0.0000	14.7500	ppb	0.83	500.00	
60 Ni	# 2	45	104406.1	0.0000	64.3100	ppb	0.28	500.00	
63 Cu	# 2	45	268438.5	0.0000	65.0900	ppb	0.12	500.00	
66 Zn	# 3	72	229258.8	0.0000	105.3000	ppb	0.23	500.00	
75 As	# 2	72	7309.2	0.0000	12.8000	ppb	1.04	500.00	
78 Se	# 1	72	51.1	0.0000	0.2079	ppb	11.48	500.00	
88 Sr	# 3	72	731663.4	0.0000	34.4300	ppb	0.39	500.00	
90 Zr	# 3	72	111714.4	0.0000	7.2270	ppb	1.30	50.00	
95 Mo	# 3	115	3207.1	0.0000	0.7993	ppb	1.74	500.00	
107 Ag	# 3	115	3467.2	0.0000	0.3574	ppb	1.12	50.00	
111 Cd	# 3	115	1122.9	0.0000	0.5258	ppb	3.56	500.00	
118 Sn	# 3	115	23855.0	0.0000	3.7550	ppb	0.54	500.00	
121 Sb	# 3	115	4913.2	0.0000	0.5297	ppb	0.96	500.00	
137 Ba	# 3	115	300193.3	0.0000	91.8600	ppb	0.14	1000.00	
182 W	# 3	159	1724.6	0.0000	0.1752	ppb	7.24	50.00	
205 Tl	# 3	159	1285.7	0.0000	0.0581	ppb	7.21	500.00	
208 Pb	# 3	159	837926.9	0.0000	31.3000	ppb	0.20	500.00	
235 U	# 3	159	104.4	0.0000	0.0031	ppb	27.03	30.00	
238 U	# 3	159	12984.6	0.0000	0.4561	ppb	1.34	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1115585.10	1.93	1072677.80	104.0	60 - 125	
45 Sc # 1	958064.69	1.38	836329.63	114.6	60 - 125	
45 Sc # 2	206896.77	1.10	181090.36	114.3	60 - 125	
45 Sc # 3	2122719.30	1.56	1845775.40	115.0	60 - 125	
72 Ge # 1	188540.02	1.54	188193.44	100.2	60 - 125	
72 Ge # 2	92484.23	1.02	89698.20	103.1	60 - 125	
72 Ge # 3	407572.84	1.77	391012.72	104.2	60 - 125	
115 In # 3	2559603.30	1.25	2621431.00	97.6	60 - 125	
159 Tb # 3	3865888.30	1.49	3903099.50	99.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02056.D\F6G02056.D#
Date Acquired: Jul 3 2018 02:02 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-16
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	405924.5	0.0000	33.2100	ppb	1.85	50.00	
9 Be	# 3	6	1686.8	0.0000	0.5604	ppb	7.99	50.00	
11 B	# 3	6	14736.4	0.0000	6.8820	ppb	0.74	100.00	
23 Na	# 1	45	846079.6	0.0000	214.4000	ppb	1.16	50000.00	
24 Mg	# 3	45	149663200.0	0.0000	13440.0000	ppb	0.97	50000.00	
27 Al	# 3	45	345780510.0	0.0000	24900.0000	ppb	0.34	50000.00	
28 Si	# 1	45	1795659.0	0.0000	2475.0000	ppb	1.91	5000.00	
31 P	# 3	45	1642422.0	0.0000	2403.0000	ppb	0.93	500.00	>LRS
39 K	# 2	45	1007219.0	0.0000	1627.0000	ppb	1.71	50000.00	
40 Ca	# 1	45	46412528.0	0.0000	9284.0000	ppb	0.84	50000.00	
47 Ti	# 3	45	1744077.0	0.0000	1320.0000	ppb	0.39	500.00	>LRS
51 V	# 2	45	393891.3	0.0000	96.6100	ppb	0.54	500.00	
52 Cr	# 2	45	2502547.0	0.0000	530.1000	ppb	1.01	500.00	>LRS
55 Mn	# 3	45	12604650.0	0.0000	601.0000	ppb	0.86	3000.00	
56 Fe	# 1	45	376993310.0	0.0000	49190.0000	ppb	0.36	50000.00	
59 Co	# 3	45	234233.4	0.0000	13.5900	ppb	0.34	500.00	
60 Ni	# 2	45	99727.5	0.0000	59.8100	ppb	0.56	500.00	
63 Cu	# 2	45	292208.1	0.0000	69.0000	ppb	0.36	500.00	
66 Zn	# 3	72	238053.2	0.0000	109.0000	ppb	1.01	500.00	
75 As	# 2	72	8553.4	0.0000	14.6400	ppb	0.83	500.00	
78 Se	# 1	72	45.6	0.0000	0.1845	ppb	5.99	500.00	
88 Sr	# 3	72	733814.6	0.0000	34.4200	ppb	0.07	500.00	
90 Zr	# 3	72	117445.9	0.0000	7.5740	ppb	1.42	50.00	
95 Mo	# 3	115	3992.9	0.0000	0.9872	ppb	1.23	500.00	
107 Ag	# 3	115	8837.5	0.0000	0.9050	ppb	3.65	50.00	
111 Cd	# 3	115	1012.1	0.0000	0.4669	ppb	9.25	500.00	
118 Sn	# 3	115	24329.1	0.0000	3.7860	ppb	1.21	500.00	
121 Sb	# 3	115	5675.8	0.0000	0.6074	ppb	3.33	500.00	
137 Ba	# 3	115	371812.8	0.0000	112.5000	ppb	1.00	1000.00	
182 W	# 3	159	1822.4	0.0000	0.1843	ppb	8.43	50.00	
205 Tl	# 3	159	1731.3	0.0000	0.0804	ppb	9.31	500.00	
208 Pb	# 3	159	770939.7	0.0000	28.6000	ppb	0.54	500.00	
235 U	# 3	159	108.9	0.0000	0.0032	ppb	16.66	30.00	
238 U	# 3	159	14415.1	0.0000	0.5032	ppb	1.90	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1122309.60	1.28	1072677.80	104.6	60 - 125	
45 Sc # 1	944011.13	1.01	836329.63	112.9	60 - 125	
45 Sc # 2	212462.33	0.40	181090.36	117.3	60 - 125	
45 Sc # 3	2116326.80	1.12	1845775.40	114.7	60 - 125	
72 Ge # 1	186117.64	1.00	188193.44	98.9	60 - 125	
72 Ge # 2	94875.13	0.98	89698.20	105.8	60 - 125	
72 Ge # 3	408897.34	1.52	391012.72	104.6	60 - 125	
115 In # 3	2589282.50	2.02	2621431.00	98.8	60 - 125	
159 Tb # 3	3892116.30	1.40	3903099.50	99.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02057.D\F6G02057.D#
Date Acquired: Jul 3 2018 02:06 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-17
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	491227.9	0.0000	40.9100	ppb	0.94	50.00	
9 Be	# 3	6	2286.9	0.0000	0.7555	ppb	4.71	50.00	
11 B	# 3	6	18165.8	0.0000	8.5180	ppb	0.55	100.00	
23 Na	# 1	45	1087924.0	0.0000	295.8000	ppb	0.37	50000.00	
24 Mg	# 3	45	211916190.0	0.0000	18420.0000	ppb	0.29	50000.00	
27 Al	# 3	45	442663390.0	0.0000	30850.0000	ppb	0.47	50000.00	
28 Si	# 1	45	2637197.0	0.0000	3517.0000	ppb	0.57	5000.00	
31 P	# 3	45	1117134.0	0.0000	1541.0000	ppb	0.52	500.00	>LRS
39 K	# 2	45	986075.6	0.0000	1581.0000	ppb	1.52	50000.00	
40 Ca	# 1	45	69851000.0	0.0000	13510.0000	ppb	0.39	50000.00	
47 Ti	# 3	45	2499969.0	0.0000	1831.0000	ppb	0.21	500.00	>LRS
51 V	# 2	45	484451.9	0.0000	118.6000	ppb	0.46	500.00	
52 Cr	# 2	45	496912.9	0.0000	104.7000	ppb	0.54	500.00	
55 Mn	# 3	45	27000410.0	0.0000	1246.0000	ppb	0.73	3000.00	
56 Fe	# 1	45	482328900.0	0.0000	60850.0000	ppb	0.58	50000.00	>LRS
59 Co	# 3	45	412359.9	0.0000	23.1700	ppb	1.05	500.00	
60 Ni	# 2	45	124666.2	0.0000	74.5400	ppb	0.44	500.00	
63 Cu	# 2	45	248764.4	0.0000	58.5300	ppb	0.72	500.00	
66 Zn	# 3	72	313036.9	0.0000	139.9000	ppb	0.70	500.00	
75 As	# 2	72	8229.4	0.0000	13.9900	ppb	1.66	500.00	
78 Se	# 1	72	74.4	0.0000	0.3158	ppb	10.31	500.00	
88 Sr	# 3	72	1247314.0	0.0000	57.0600	ppb	0.49	500.00	
90 Zr	# 3	72	71937.0	0.0000	4.5140	ppb	1.11	50.00	
95 Mo	# 3	115	10443.0	0.0000	2.5960	ppb	2.42	500.00	
107 Ag	# 3	115	16620.1	0.0000	1.6990	ppb	1.05	50.00	
111 Cd	# 3	115	1077.2	0.0000	0.4966	ppb	7.47	500.00	
118 Sn	# 3	115	27222.3	0.0000	4.2250	ppb	0.98	500.00	
121 Sb	# 3	115	6946.4	0.0000	0.7443	ppb	1.19	500.00	
137 Ba	# 3	115	492421.4	0.0000	148.4000	ppb	0.36	1000.00	
182 W	# 3	159	2135.8	0.0000	0.2160	ppb	2.65	50.00	
205 Tl	# 3	159	2060.2	0.0000	0.0960	ppb	5.30	500.00	
208 Pb	# 3	159	1409951.0	0.0000	51.8200	ppb	0.32	500.00	
235 U	# 3	159	102.2	0.0000	0.0029	ppb	13.22	30.00	
238 U	# 3	159	12965.6	0.0000	0.4479	ppb	1.19	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1138959.60	0.99	1072677.80	106.2	60 - 125	
45 Sc # 1	976350.81	1.56	836329.63	116.7	60 - 125	
45 Sc # 2	213157.83	0.74	181090.36	117.7	60 - 125	
45 Sc # 3	2186755.50	1.15	1845775.40	118.5	60 - 125	
72 Ge # 1	189919.31	0.91	188193.44	100.9	60 - 125	
72 Ge # 2	95500.00	1.87	89698.20	106.5	60 - 125	
72 Ge # 3	419348.41	1.33	391012.72	107.2	60 - 125	
115 In # 3	2599265.80	1.72	2621431.00	99.2	60 - 125	
159 Tb # 3	3930752.80	0.98	3903099.50	100.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

3 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02058.D\F6G02058.D#
Date Acquired: Jul 3 2018 02:11 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-01G
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	167368.5	0.0000	9.0380	ppb	1.17	50.00	
9 Be	# 3	6	443.4	0.0000	0.1275	ppb	6.45	50.00	
11 B	# 3	6	3192.7	0.0000	0.8445	ppb	3.15	100.00	
23 Na	# 1	45	385586.3	0.0000	40.3400	ppb	8.41	50000.00	
24 Mg	# 3	45	60219792.0	0.0000	5627.0000	ppb	0.80	50000.00	
27 Al	# 3	45	78579912.0	0.0000	5887.0000	ppb	0.26	50000.00	
28 Si	# 1	45	685827.8	0.0000	993.7000	ppb	1.49	5000.00	
31 P	# 3	45	248234.4	0.0000	278.5000	ppb	0.75	500.00	
39 K	# 2	45	282755.2	0.0000	267.5000	ppb	1.36	50000.00	
40 Ca	# 1	45	10675030.0	0.0000	2247.0000	ppb	0.83	50000.00	
47 Ti	# 3	45	405335.6	0.0000	319.0000	ppb	0.66	500.00	
51 V	# 2	45	81595.1	0.0000	20.4100	ppb	0.76	500.00	
52 Cr	# 2	45	66921.5	0.0000	14.5300	ppb	1.19	500.00	
55 Mn	# 3	45	4759446.0	0.0000	235.9000	ppb	0.63	3000.00	
56 Fe	# 1	45	83599248.0	0.0000	11490.0000	ppb	0.35	50000.00	
59 Co	# 3	45	83492.1	0.0000	5.0220	ppb	1.11	500.00	
60 Ni	# 2	45	45733.7	0.0000	28.6200	ppb	0.89	500.00	
63 Cu	# 2	45	43638.2	0.0000	10.6600	ppb	1.07	500.00	
66 Zn	# 3	72	51872.9	0.0000	22.9400	ppb	0.64	500.00	
75 As	# 2	72	1725.7	0.0000	2.6810	ppb	2.48	500.00	
78 Se	# 1	72	19.8	0.0000	0.0570	ppb	48.13	500.00	
88 Sr	# 3	72	160530.0	0.0000	7.3720	ppb	0.51	500.00	
90 Zr	# 3	72	16370.9	0.0000	1.0190	ppb	3.28	50.00	
95 Mo	# 3	115	590.0	0.0000	0.1278	ppb	6.49	500.00	
107 Ag	# 3	115	317.8	0.0000	0.0283	ppb	10.97	50.00	
111 Cd	# 3	115	190.1	0.0000	0.0735	ppb	42.43	500.00	
118 Sn	# 3	115	5120.0	0.0000	0.7388	ppb	1.32	500.00	
121 Sb	# 3	115	734.5	0.0000	0.0602	ppb	15.26	500.00	
137 Ba	# 3	115	43816.7	0.0000	12.7600	ppb	0.70	1000.00	
182 W	# 3	159	463.4	0.0000	0.0366	ppb	8.48	50.00	
205 Tl	# 3	159	355.6	0.0000	0.0099	ppb	32.30	500.00	
208 Pb	# 3	159	65528.9	0.0000	2.3580	ppb	0.16	500.00	
235 U	# 3	159	20.0	0.0000	0.0002	ppb	220.89	30.00	
238 U	# 3	159	1909.1	0.0000	0.0641	ppb	0.59	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1169689.30	1.73	1072677.80	109.0	60 - 125	
45 Sc # 1	896094.56	1.86	836329.63	107.1	60 - 125	
45 Sc # 2	203258.84	1.52	181090.36	112.2	60 - 125	
45 Sc # 3	2033952.90	1.18	1845775.40	110.2	60 - 125	
72 Ge # 1	193701.20	1.48	188193.44	102.9	60 - 125	
72 Ge # 2	97266.84	1.80	89698.20	108.4	60 - 125	
72 Ge # 3	416533.50	2.23	391012.72	106.5	60 - 125	
115 In # 3	2687807.30	1.81	2621431.00	102.5	60 - 125	
159 Tb # 3	3959524.00	1.28	3903099.50	101.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02059.D\F6G02059.D#
Date Acquired: Jul 3 2018 02:15 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-02G
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	156533.9	0.0000	8.2700	ppb	2.44	50.00	
9 Be	# 3	6	386.7	0.0000	0.1110	ppb	9.68	50.00	
11 B	# 3	6	3518.3	0.0000	1.0350	ppb	7.17	100.00	
23 Na	# 1	45	399888.1	0.0000	48.4600	ppb	7.39	50000.00	
24 Mg	# 3	45	51065352.0	0.0000	4854.0000	ppb	0.61	50000.00	
27 Al	# 3	45	75975536.0	0.0000	5790.0000	ppb	0.20	50000.00	
28 Si	# 1	45	567017.6	0.0000	831.6000	ppb	0.79	5000.00	
31 P	# 3	45	331171.2	0.0000	420.1000	ppb	0.09	500.00	
39 K	# 2	45	291812.5	0.0000	303.4000	ppb	1.02	50000.00	
40 Ca	# 1	45	12531180.0	0.0000	2672.0000	ppb	0.32	50000.00	
47 Ti	# 3	45	421091.7	0.0000	337.1000	ppb	0.57	500.00	
51 V	# 2	45	79565.2	0.0000	20.5100	ppb	0.40	500.00	
52 Cr	# 2	45	62394.8	0.0000	13.9500	ppb	0.18	500.00	
55 Mn	# 3	45	4450979.0	0.0000	224.4000	ppb	1.30	3000.00	
56 Fe	# 1	45	79054512.0	0.0000	11010.0000	ppb	0.22	50000.00	
59 Co	# 3	45	77971.5	0.0000	4.7690	ppb	0.79	500.00	
60 Ni	# 2	45	33492.6	0.0000	21.5700	ppb	0.29	500.00	
63 Cu	# 2	45	36737.6	0.0000	9.2350	ppb	0.33	500.00	
66 Zn	# 3	72	50222.7	0.0000	22.6900	ppb	1.27	500.00	
75 As	# 2	72	1492.3	0.0000	2.3770	ppb	1.83	500.00	
78 Se	# 1	72	20.2	0.0000	0.0622	ppb	28.76	500.00	
88 Sr	# 3	72	214304.9	0.0000	10.0600	ppb	0.71	500.00	
90 Zr	# 3	72	19860.9	0.0000	1.2670	ppb	2.58	50.00	
95 Mo	# 3	115	665.6	0.0000	0.1494	ppb	9.45	500.00	
107 Ag	# 3	115	345.6	0.0000	0.0318	ppb	5.99	50.00	
111 Cd	# 3	115	189.0	0.0000	0.0751	ppb	6.63	500.00	
118 Sn	# 3	115	4907.7	0.0000	0.7218	ppb	1.58	500.00	
121 Sb	# 3	115	738.9	0.0000	0.0625	ppb	13.67	500.00	
137 Ba	# 3	115	46932.3	0.0000	13.9500	ppb	1.76	1000.00	
182 W	# 3	159	644.5	0.0000	0.0567	ppb	2.90	50.00	
205 Tl	# 3	159	318.9	0.0000	0.0083	ppb	14.51	500.00	
208 Pb	# 3	159	54457.0	0.0000	1.9780	ppb	1.08	500.00	
235 U	# 3	159	28.9	0.0000	0.0005	ppb	43.61	30.00	
238 U	# 3	159	2333.7	0.0000	0.0797	ppb	2.51	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1149673.60	2.39	1072677.80	107.2	60 - 125	
45 Sc # 1	884724.75	2.25	836329.63	105.8	60 - 125	
45 Sc # 2	197219.14	1.13	181090.36	108.9	60 - 125	
45 Sc # 3	1999517.00	1.71	1845775.40	108.3	60 - 125	
72 Ge # 1	187369.66	1.69	188193.44	99.6	60 - 125	
72 Ge # 2	93821.75	1.53	89698.20	104.6	60 - 125	
72 Ge # 3	407780.34	1.95	391012.72	104.3	60 - 125	
115 In # 3	2634132.50	1.97	2621431.00	100.5	60 - 125	
159 Tb # 3	3911593.80	2.19	3903099.50	100.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02063.D\F6G02063.D#
Date Acquired: Jul 3 2018 02:33 pm
Operator: LVicto
Sample Name: CCV5
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:28 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.49 ppb	0.46	25.00	90 - 110	
9 Be	24.78 ppb	0.58	25.00	90 - 110	
11 B	49.28 ppb	1.33	50.00	90 - 110	
23 Na	25940.00 ppb	0.85	25000.00	90 - 110	
24 Mg	23890.00 ppb	0.21	25000.00	90 - 110	
27 Al	23610.00 ppb	0.30	25000.00	90 - 110	
28 Si	2604.00 ppb	0.61	2500.00	90 - 110	
31 P	234.30 ppb	0.73	250.00	90 - 110	
39 K	26500.00 ppb	0.39	25000.00	90 - 110	
40 Ca	25430.00 ppb	0.64	25000.00	90 - 110	
47 Ti	250.80 ppb	0.97	250.00	90 - 110	
51 V	249.00 ppb	0.88	250.00	90 - 110	
52 Cr	244.10 ppb	1.29	250.00	90 - 110	
55 Mn	1464.00 ppb	0.79	1500.00	90 - 110	
56 Fe	24040.00 ppb	1.28	25000.00	90 - 110	
59 Co	240.10 ppb	0.26	250.00	90 - 110	
60 Ni	237.60 ppb	0.77	250.00	90 - 110	
63 Cu	237.90 ppb	0.45	250.00	90 - 110	
66 Zn	250.00 ppb	0.11	250.00	90 - 110	
75 As	250.50 ppb	0.33	250.00	90 - 110	
78 Se	250.80 ppb	0.51	250.00	90 - 110	
88 Sr	255.80 ppb	0.25	250.00	90 - 110	
90 Zr	24.85 ppb	0.53	25.00	90 - 110	
95 Mo	258.20 ppb	0.52	250.00	90 - 110	
107 Ag	25.46 ppb	0.75	25.00	90 - 110	
111 Cd	255.10 ppb	0.32	250.00	90 - 110	
118 Sn	255.80 ppb	0.61	250.00	90 - 110	
121 Sb	51.00 ppb	0.39	50.00	90 - 110	
137 Ba	515.80 ppb	0.55	500.00	90 - 110	
182 W	24.87 ppb	0.25	25.00	90 - 110	
205 Tl	236.20 ppb	0.47	250.00	90 - 110	
208 Pb	232.10 ppb	0.18	250.00	90 - 110	
235 U	1.23 ppb	1.13	1.80	90 - 110	Fail
238 U	192.50 ppb	0.21	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1118063.80	1.18	1072677.80	104.2	60 - 125	
45 Sc	945635.69	1.66	836329.63	113.1	60 - 125	
45 Sc	204549.05	0.97	181090.36	113.0	60 - 125	
45 Sc	2006165.40	2.04	1845775.40	108.7	60 - 125	
72 Ge	207535.72	0.99	188193.44	110.3	60 - 125	
72 Ge	98192.82	0.47	89698.20	109.5	60 - 125	
72 Ge	409272.72	1.41	391012.72	104.7	60 - 125	
115 In	2614195.00	1.74	2621431.00	99.7	60 - 125	
159 Tb	3937008.80	1.37	3903099.50	100.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02064.D\F6G02064.D#
Date Acquired: Jul 3 2018 02:37 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: CCB5
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1631	ppb	70504.0	46.92	0.20	
9 Be	-0.0086	ppb	30.0	15.41	0.10	
11 B	-0.3641	ppb	761.2	15.70	5.00	
23 Na	5.1440	ppb	300637.7	36.26	40.00	
24 Mg	0.6783	ppb	14811.0	14.47	10.00	
27 Al	0.3580	ppb	6849.7	15.62	20.00	
28 Si	2.9860	ppb	4763.1	5.63	20.00	
31 P	-15.6200	ppb	62347.0	17.60	10.00	Fail
39 K	-1.1310	ppb	145821.5	556.14	20.00	
40 Ca	1.6340	ppb	24772.2	2.04	25.00	
47 Ti	0.0366	ppb	310.0	26.05	0.50	
51 V	0.2775	ppb	3556.4	5.77	0.50	
52 Cr	-0.0310	ppb	1165.6	8.58	0.20	
55 Mn	-0.0602	ppb	5834.7	10.69	0.20	
56 Fe	1.6790	ppb	20387.9	1.74	10.00	
59 Co	-0.0060	ppb	368.9	30.30	0.20	
60 Ni	-0.0419	ppb	93.3	24.30	0.20	
63 Cu	-0.0186	ppb	434.9	55.15	0.40	
66 Zn	-0.2512	ppb	475.6	5.94	2.00	
75 As	0.1640	ppb	242.4	12.70	0.20	
78 Se	0.0329	ppb	14.9	46.90	0.20	
88 Sr	-0.0022	ppb	468.9	50.81	0.20	
90 Zr	-0.0090	ppb	190.0	0.47	2.00	
95 Mo	0.1269	ppb	601.1	13.06	0.40	
107 Ag	0.0001	ppb	34.4	709.22	0.20	
111 Cd	0.0026	ppb	35.2	170.11	0.20	
118 Sn	0.2274	ppb	1785.7	4.18	0.20	Fail
121 Sb	0.0337	ppb	495.6	7.22	0.40	
137 Ba	0.0158	ppb	97.8	26.67	0.20	
182 W	0.0173	ppb	282.2	15.13	1.00	
205 Tl	0.0211	ppb	580.0	19.29	0.20	
208 Pb	0.0045	ppb	1081.2	103.15	0.10	
235 U	0.0001	ppb	17.8	268.45	1.00	
238 U	0.0358	ppb	1089.0	2.06	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1177379.8	2.45	1072677.80	109.8	60 - 125	
45 Sc	894403.9	1.04	836329.63	106.9	60 - 125	
45 Sc	199925.5	1.44	181090.36	110.4	60 - 125	
45 Sc	1982022.6	2.20	1845775.40	107.4	60 - 125	
72 Ge	199743.9	2.51	188193.44	106.1	60 - 125	
72 Ge	96890.1	1.46	89698.20	108.0	60 - 125	
72 Ge	413077.4	1.90	391012.72	105.6	60 - 125	
115 In	2757794.5	1.50	2621431.00	105.2	60 - 125	
159 Tb	3972653.8	1.84	3903099.50	101.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02065.D\F6G02065.D#
Date Acquired: Jul 3 2018 02:42 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07M
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	255208.9	0.0000	17.4800	ppb	1.79	50.00	
9 Be	# 3	6	23574.2	0.0000	7.7920	ppb	1.01	50.00	
11 B	# 3	6	18988.8	0.0000	8.7400	ppb	2.75	100.00	
23 Na	# 1	45	2397988.0	0.0000	857.4000	ppb	0.66	50000.00	
24 Mg	# 3	45	65097008.0	0.0000	6012.0000	ppb	0.41	50000.00	
27 Al	# 3	45	104825600.0	0.0000	7761.0000	ppb	0.62	50000.00	
28 Si	# 1	45	497473.4	0.0000	704.0000	ppb	1.19	5000.00	
31 P	# 3	45	260997.4	0.0000	294.1000	ppb	0.87	500.00	
39 K	# 2	45	697671.6	0.0000	1073.0000	ppb	1.66	50000.00	
40 Ca	# 1	45	19647970.0	0.0000	4049.0000	ppb	0.49	50000.00	
47 Ti	# 3	45	682450.3	0.0000	531.0000	ppb	0.39	500.00	>LRS
51 V	# 2	45	139908.3	0.0000	34.8500	ppb	1.05	500.00	
52 Cr	# 2	45	109945.2	0.0000	23.6600	ppb	1.36	500.00	
55 Mn	# 3	45	5896714.0	0.0000	288.9000	ppb	0.55	3000.00	
56 Fe	# 1	45	106339000.0	0.0000	14300.0000	ppb	0.41	50000.00	
59 Co	# 3	45	216708.6	0.0000	12.9300	ppb	1.31	500.00	
60 Ni	# 2	45	44353.4	0.0000	27.2900	ppb	1.11	500.00	
63 Cu	# 2	45	87427.7	0.0000	21.1300	ppb	1.15	500.00	
66 Zn	# 3	72	95856.5	0.0000	42.4900	ppb	0.50	500.00	
75 As	# 2	72	6666.0	0.0000	10.9800	ppb	0.87	500.00	
78 Se	# 1	72	1717.9	0.0000	7.7110	ppb	1.72	500.00	
88 Sr	# 3	72	395937.2	0.0000	18.0900	ppb	0.60	500.00	
90 Zr	# 3	72	33624.0	0.0000	2.0990	ppb	0.83	50.00	
95 Mo	# 3	115	32828.0	0.0000	7.8830	ppb	1.31	500.00	
107 Ag	# 3	115	81337.9	0.0000	8.0140	ppb	1.38	50.00	
111 Cd	# 3	115	17215.1	0.0000	7.8200	ppb	1.61	500.00	
118 Sn	# 3	115	57717.4	0.0000	8.6590	ppb	0.33	500.00	
121 Sb	# 3	115	57552.4	0.0000	6.0590	ppb	1.54	500.00	
137 Ba	# 3	115	88226.5	0.0000	25.5800	ppb	0.39	1000.00	
182 W	# 3	159	535.6	0.0000	0.0443	ppb	11.94	50.00	
205 Tl	# 3	159	150273.5	0.0000	7.5070	ppb	0.24	500.00	
208 Pb	# 3	159	256000.1	0.0000	9.2940	ppb	0.77	500.00	
235 U	# 3	159	340.0	0.0000	0.0108	ppb	1.63	30.00	
238 U	# 3	159	162865.7	0.0000	5.5930	ppb	2.07	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1163187.50	2.30	1072677.80	108.4	60 - 125	
45 Sc # 1	915944.38	1.62	836329.63	109.5	60 - 125	
45 Sc # 2	206712.00	1.60	181090.36	114.1	60 - 125	
45 Sc # 3	2058150.60	1.74	1845775.40	111.5	60 - 125	
72 Ge # 1	197914.64	1.58	188193.44	105.2	60 - 125	
72 Ge # 2	98005.09	0.92	89698.20	109.3	60 - 125	
72 Ge # 3	419450.63	1.25	391012.72	107.3	60 - 125	
115 In # 3	2700470.30	1.26	2621431.00	103.0	60 - 125	
159 Tb # 3	3967452.50	1.58	3903099.50	101.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

1 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02066.D\F6G02066.D#
Date Acquired: Jul 3 2018 02:47 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07S
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	253867.6	0.0000	16.9300	ppb	1.31	50.00	
9 Be	# 3	6	23976.0	0.0000	7.7870	ppb	1.77	50.00	
11 B	# 3	6	19095.7	0.0000	8.6240	ppb	1.69	100.00	
23 Na	# 1	45	2441753.0	0.0000	875.5000	ppb	1.50	50000.00	
24 Mg	# 3	45	59851088.0	0.0000	5489.0000	ppb	0.93	50000.00	
27 Al	# 3	45	104005800.0	0.0000	7647.0000	ppb	1.16	50000.00	
28 Si	# 1	45	496874.3	0.0000	703.4000	ppb	1.58	5000.00	
31 P	# 3	45	280483.4	0.0000	321.8000	ppb	2.48	500.00	
39 K	# 2	45	699920.5	0.0000	1082.0000	ppb	0.05	50000.00	
40 Ca	# 1	45	19931000.0	0.0000	4108.0000	ppb	1.11	50000.00	
47 Ti	# 3	45	672770.1	0.0000	519.8000	ppb	0.98	500.00	>LRS
51 V	# 2	45	134200.0	0.0000	33.5300	ppb	0.29	500.00	
52 Cr	# 2	45	109714.5	0.0000	23.6900	ppb	0.31	500.00	
55 Mn	# 3	45	5740844.0	0.0000	279.3000	ppb	0.61	3000.00	
56 Fe	# 1	45	104780800.0	0.0000	14090.0000	ppb	1.08	50000.00	
59 Co	# 3	45	212756.8	0.0000	12.6000	ppb	0.70	500.00	
60 Ni	# 2	45	41502.9	0.0000	25.6200	ppb	0.49	500.00	
63 Cu	# 2	45	84156.5	0.0000	20.4100	ppb	0.17	500.00	
66 Zn	# 3	72	95441.5	0.0000	42.5800	ppb	0.82	500.00	
75 As	# 2	72	6466.8	0.0000	10.7200	ppb	0.59	500.00	
78 Se	# 1	72	1722.1	0.0000	7.6970	ppb	3.85	500.00	
88 Sr	# 3	72	406247.6	0.0000	18.6800	ppb	0.20	500.00	
90 Zr	# 3	72	37137.0	0.0000	2.3350	ppb	0.83	50.00	
95 Mo	# 3	115	33090.8	0.0000	7.9120	ppb	0.27	500.00	
107 Ag	# 3	115	81824.8	0.0000	8.0270	ppb	0.65	50.00	
111 Cd	# 3	115	17311.5	0.0000	7.8300	ppb	0.96	500.00	
118 Sn	# 3	115	57427.3	0.0000	8.5760	ppb	0.11	500.00	
121 Sb	# 3	115	59042.9	0.0000	6.1890	ppb	0.75	500.00	
137 Ba	# 3	115	84809.7	0.0000	24.4800	ppb	0.58	1000.00	
182 W	# 3	159	570.0	0.0000	0.0480	ppb	4.98	50.00	
205 Tl	# 3	159	150887.9	0.0000	7.5520	ppb	0.58	500.00	
208 Pb	# 3	159	251981.9	0.0000	9.1660	ppb	1.22	500.00	
235 U	# 3	159	325.6	0.0000	0.0103	ppb	3.94	30.00	
238 U	# 3	159	164355.0	0.0000	5.6550	ppb	2.22	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1183635.10	1.08	1072677.80	110.3	60 - 125	
45 Sc # 1	915895.19	2.55	836329.63	109.5	60 - 125	
45 Sc # 2	205955.61	0.93	181090.36	113.7	60 - 125	
45 Sc # 3	2072860.60	2.50	1845775.40	112.3	60 - 125	
72 Ge # 1	198672.30	1.53	188193.44	105.6	60 - 125	
72 Ge # 2	97375.59	1.25	89698.20	108.6	60 - 125	
72 Ge # 3	416781.03	1.49	391012.72	106.6	60 - 125	
115 In # 3	2712551.00	2.03	2621431.00	103.5	60 - 125	
159 Tb # 3	3959867.80	1.66	3903099.50	101.5	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

1 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02067.D\F6G02067.D#
Date Acquired: Jul 3 2018 02:51 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07A
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	597251.7	0.0000	49.9600	ppb	1.66	50.00	
9 Be	# 3	6	119771.2	0.0000	39.6300	ppb	0.54	50.00	
11 B	# 3	6	81510.7	0.0000	39.9100	ppb	0.19	100.00	
23 Na	# 1	45	10699110.0	0.0000	4160.0000	ppb	0.32	50000.00	
24 Mg	# 3	45	92737888.0	0.0000	8556.0000	ppb	0.51	50000.00	
27 Al	# 3	45	142681900.0	0.0000	10550.0000	ppb	0.61	50000.00	
28 Si	# 1	45	439362.1	0.0000	609.5000	ppb	0.03	5000.00	
31 P	# 3	45	256758.0	0.0000	286.9000	ppb	1.66	500.00	
39 K	# 2	45	2511085.0	0.0000	4611.0000	ppb	1.73	50000.00	
40 Ca	# 1	45	35191800.0	0.0000	7117.0000	ppb	0.79	50000.00	
47 Ti	# 3	45	664292.3	0.0000	516.4000	ppb	0.71	500.00	>LRS
51 V	# 2	45	260055.3	0.0000	65.0400	ppb	0.55	500.00	
52 Cr	# 2	45	260880.2	0.0000	56.2700	ppb	0.51	500.00	
55 Mn	# 3	45	6153916.0	0.0000	301.2000	ppb	0.56	3000.00	
56 Fe	# 1	45	126762100.0	0.0000	16720.0000	ppb	1.20	50000.00	
59 Co	# 3	45	731695.0	0.0000	43.6700	ppb	0.70	500.00	
60 Ni	# 2	45	91860.6	0.0000	56.3500	ppb	0.41	500.00	
63 Cu	# 2	45	217350.2	0.0000	52.4800	ppb	0.44	500.00	
66 Zn	# 3	72	236191.0	0.0000	107.0000	ppb	0.34	500.00	
75 As	# 2	72	25629.1	0.0000	43.0800	ppb	0.71	500.00	
78 Se	# 1	72	9124.0	0.0000	40.7500	ppb	1.20	500.00	
88 Sr	# 3	72	1125311.0	0.0000	52.2400	ppb	1.29	500.00	
90 Zr	# 3	72	41871.1	0.0000	2.6580	ppb	1.16	50.00	
95 Mo	# 3	115	166938.3	0.0000	40.2200	ppb	0.18	500.00	
107 Ag	# 3	115	415686.9	0.0000	41.0500	ppb	0.39	50.00	
111 Cd	# 3	115	88793.9	0.0000	40.4700	ppb	0.75	500.00	
118 Sn	# 3	115	271996.9	0.0000	41.0100	ppb	0.25	500.00	
121 Sb	# 3	115	368313.2	0.0000	38.9400	ppb	0.29	500.00	
137 Ba	# 3	115	204886.7	0.0000	59.5300	ppb	0.38	1000.00	
182 W	# 3	159	552.3	0.0000	0.0457	ppb	7.94	50.00	
205 Tl	# 3	159	778486.4	0.0000	38.7500	ppb	0.52	500.00	
208 Pb	# 3	159	1044595.0	0.0000	37.8700	ppb	0.51	500.00	
235 U	# 3	159	1619.1	0.0000	0.0527	ppb	1.57	30.00	
238 U	# 3	159	911977.0	0.0000	31.1800	ppb	0.99	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1164117.10	2.04	1072677.80	108.5	60 - 125	
45 Sc # 1	933530.00	1.52	836329.63	111.6	60 - 125	
45 Sc # 2	207674.67	0.54	181090.36	114.7	60 - 125	
45 Sc # 3	2060326.60	1.72	1845775.40	111.6	60 - 125	
72 Ge # 1	199631.73	2.56	188193.44	106.1	60 - 125	
72 Ge # 2	97703.23	2.24	89698.20	108.9	60 - 125	
72 Ge # 3	413231.72	1.59	391012.72	105.7	60 - 125	
115 In # 3	2695434.30	1.18	2621431.00	102.8	60 - 125	
159 Tb # 3	3984878.80	1.08	3903099.50	102.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

1 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02068.D\F6G02068.D#
Date Acquired: Jul 3 2018 02:56 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07G
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	169610.2	0.0000	9.1860	ppb	1.57	50.00	
9 Be	# 3	6	494.5	0.0000	0.1438	ppb	10.50	50.00	
11 B	# 3	6	4474.1	0.0000	1.4720	ppb	3.15	100.00	
23 Na	# 1	45	443797.7	0.0000	55.8300	ppb	3.09	50000.00	
24 Mg	# 3	45	51020540.0	0.0000	4698.0000	ppb	0.25	50000.00	
27 Al	# 3	45	90982080.0	0.0000	6716.0000	ppb	0.36	50000.00	
28 Si	# 1	45	444957.8	0.0000	612.7000	ppb	0.68	5000.00	
31 P	# 3	45	259093.0	0.0000	289.8000	ppb	0.75	500.00	
39 K	# 2	45	329495.8	0.0000	347.2000	ppb	0.92	50000.00	
40 Ca	# 1	45	15388920.0	0.0000	3087.0000	ppb	0.20	50000.00	
47 Ti	# 3	45	615955.4	0.0000	477.8000	ppb	0.47	500.00	
51 V	# 2	45	104347.5	0.0000	25.7200	ppb	0.08	500.00	
52 Cr	# 2	45	79817.8	0.0000	17.0200	ppb	0.28	500.00	
55 Mn	# 3	45	5402826.0	0.0000	263.9000	ppb	0.85	3000.00	
56 Fe	# 1	45	98792256.0	0.0000	12940.0000	ppb	0.84	50000.00	
59 Co	# 3	45	85530.6	0.0000	5.0690	ppb	0.32	500.00	
60 Ni	# 2	45	29389.8	0.0000	17.9700	ppb	0.93	500.00	
63 Cu	# 2	45	57541.5	0.0000	13.8100	ppb	0.35	500.00	
66 Zn	# 3	72	58710.3	0.0000	26.0400	ppb	0.16	500.00	
75 As	# 2	72	2094.6	0.0000	3.2910	ppb	1.82	500.00	
78 Se	# 1	72	29.6	0.0000	0.0970	ppb	31.85	500.00	
88 Sr	# 3	72	217124.2	0.0000	9.9830	ppb	0.55	500.00	
90 Zr	# 3	72	26654.0	0.0000	1.6720	ppb	2.14	50.00	
95 Mo	# 3	115	878.9	0.0000	0.1971	ppb	1.89	500.00	
107 Ag	# 3	115	363.4	0.0000	0.0327	ppb	9.97	50.00	
111 Cd	# 3	115	245.8	0.0000	0.0991	ppb	6.74	500.00	
118 Sn	# 3	115	5877.0	0.0000	0.8510	ppb	1.15	500.00	
121 Sb	# 3	115	3609.5	0.0000	0.3641	ppb	1.40	500.00	
137 Ba	# 3	115	65223.7	0.0000	18.9500	ppb	1.60	1000.00	
182 W	# 3	159	470.0	0.0000	0.0372	ppb	15.64	50.00	
205 Tl	# 3	159	502.3	0.0000	0.0172	ppb	16.80	500.00	
208 Pb	# 3	159	63929.4	0.0000	2.2920	ppb	0.92	500.00	
235 U	# 3	159	24.4	0.0000	0.0003	ppb	120.06	30.00	
238 U	# 3	159	2812.7	0.0000	0.0949	ppb	4.33	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1174283.50	0.51	1072677.80	109.5	60 - 125	
45 Sc # 1	940568.50	1.28	836329.63	112.5	60 - 125	
45 Sc # 2	207546.31	1.17	181090.36	114.6	60 - 125	
45 Sc # 3	2064266.40	1.42	1845775.40	111.8	60 - 125	
72 Ge # 1	202038.47	1.81	188193.44	107.4	60 - 125	
72 Ge # 2	97706.18	1.74	89698.20	108.9	60 - 125	
72 Ge # 3	416356.66	1.53	391012.72	106.5	60 - 125	
115 In # 3	2695771.00	2.07	2621431.00	102.8	60 - 125	
159 Tb # 3	3972567.00	1.36	3903099.50	101.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02069.D\F6G02069.D#
Date Acquired: Jul 3 2018 03:00 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-07J
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	93862.4	0.0000	1.8760	ppb	1.39	50.00	
9 Be	# 3	6	151.1	0.0000	0.0300	ppb	26.58	50.00	
11 B	# 3	6	1436.8	0.0000	-0.0437	ppb	91.26	100.00	
23 Na	# 1	45	328639.5	0.0000	7.3470	ppb	7.20	50000.00	
24 Mg	# 3	45	10634950.0	0.0000	984.9000	ppb	0.55	50000.00	
27 Al	# 3	45	19059050.0	0.0000	1416.0000	ppb	0.71	50000.00	
28 Si	# 1	45	96618.1	0.0000	127.1000	ppb	0.68	5000.00	
31 P	# 3	45	105177.5	0.0000	48.7300	ppb	3.35	500.00	
39 K	# 2	45	187752.1	0.0000	60.1800	ppb	6.92	50000.00	
40 Ca	# 1	45	3375900.0	0.0000	660.2000	ppb	1.08	50000.00	
47 Ti	# 3	45	128860.7	0.0000	100.4000	ppb	1.01	500.00	
51 V	# 2	45	25471.4	0.0000	5.6120	ppb	1.67	500.00	
52 Cr	# 2	45	18117.2	0.0000	3.5320	ppb	0.82	500.00	
55 Mn	# 3	45	1148220.0	0.0000	56.1700	ppb	0.14	3000.00	
56 Fe	# 1	45	21063750.0	0.0000	2699.0000	ppb	0.69	50000.00	
59 Co	# 3	45	18228.3	0.0000	1.0650	ppb	0.99	500.00	
60 Ni	# 2	45	6490.8	0.0000	3.7830	ppb	0.78	500.00	
63 Cu	# 2	45	12726.2	0.0000	2.8720	ppb	1.44	500.00	
66 Zn	# 3	72	12806.0	0.0000	5.2150	ppb	1.68	500.00	
75 As	# 2	72	654.9	0.0000	0.8067	ppb	4.32	500.00	
78 Se	# 1	72	18.0	0.0000	0.0411	ppb	50.91	500.00	
88 Sr	# 3	72	46170.6	0.0000	2.0670	ppb	1.35	500.00	
90 Zr	# 3	72	6767.3	0.0000	0.4012	ppb	1.67	50.00	
95 Mo	# 3	115	252.2	0.0000	0.0442	ppb	6.25	500.00	
107 Ag	# 3	115	78.9	0.0000	0.0044	ppb	63.03	50.00	
111 Cd	# 3	115	62.6	0.0000	0.0146	ppb	43.50	500.00	
118 Sn	# 3	115	1477.9	0.0000	0.1802	ppb	4.24	500.00	
121 Sb	# 3	115	891.2	0.0000	0.0737	ppb	11.37	500.00	
137 Ba	# 3	115	13910.6	0.0000	3.9050	ppb	1.00	1000.00	
182 W	# 3	159	161.1	0.0000	0.0042	ppb	30.24	50.00	
205 Tl	# 3	159	195.6	0.0000	0.0017	ppb	66.55	500.00	
208 Pb	# 3	159	14245.8	0.0000	0.4735	ppb	1.53	500.00	
235 U	# 3	159	20.0	0.0000	0.0002	ppb	194.58	30.00	
238 U	# 3	159	712.3	0.0000	0.0224	ppb	3.92	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1198333.50	2.11	1072677.80	111.7	60 - 125	
45 Sc # 1	960764.56	0.73	836329.63	114.9	60 - 125	
45 Sc # 2	213253.11	1.90	181090.36	117.8	60 - 125	
45 Sc # 3	2051077.30	1.27	1845775.40	111.1	60 - 125	
72 Ge # 1	214297.05	0.85	188193.44	113.9	60 - 125	
72 Ge # 2	102387.53	1.16	89698.20	114.1	60 - 125	
72 Ge # 3	423714.44	1.45	391012.72	108.4	60 - 125	
115 In # 3	2781671.50	0.83	2621431.00	106.1	60 - 125	
159 Tb # 3	4051277.50	1.25	3903099.50	103.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02070.D\F6G02070.D#
Date Acquired: Jul 3 2018 03:05 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-08G
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	135214.8	0.0000	6.4630	ppb	4.14	50.00	
9 Be	# 3	6	437.8	0.0000	0.1310	ppb	3.65	50.00	
11 B	# 3	6	5438.9	0.0000	2.0580	ppb	5.31	100.00	
23 Na	# 1	45	440213.1	0.0000	62.7400	ppb	2.96	50000.00	
24 Mg	# 3	45	43137460.0	0.0000	4129.0000	ppb	0.33	50000.00	
27 Al	# 3	45	82824048.0	0.0000	6357.0000	ppb	0.36	50000.00	
28 Si	# 1	45	492322.1	0.0000	710.8000	ppb	0.20	5000.00	
31 P	# 3	45	245074.1	0.0000	283.1000	ppb	1.03	500.00	
39 K	# 2	45	309120.3	0.0000	334.4000	ppb	1.17	50000.00	
40 Ca	# 1	45	26013410.0	0.0000	5470.0000	ppb	0.30	50000.00	
47 Ti	# 3	45	589671.2	0.0000	475.6000	ppb	0.31	500.00	
51 V	# 2	45	103997.7	0.0000	26.8100	ppb	1.04	500.00	
52 Cr	# 2	45	75074.4	0.0000	16.7200	ppb	1.08	500.00	
55 Mn	# 3	45	4340951.0	0.0000	220.4000	ppb	0.39	3000.00	
56 Fe	# 1	45	85939920.0	0.0000	11790.0000	ppb	0.14	50000.00	
59 Co	# 3	45	78956.5	0.0000	4.8640	ppb	0.16	500.00	
60 Ni	# 2	45	20909.6	0.0000	13.3300	ppb	1.66	500.00	
63 Cu	# 2	45	38076.6	0.0000	9.5050	ppb	1.25	500.00	
66 Zn	# 3	72	51375.5	0.0000	23.4000	ppb	1.18	500.00	
75 As	# 2	72	1536.1	0.0000	2.4420	ppb	1.51	500.00	
78 Se	# 1	72	17.3	0.0000	0.0456	ppb	51.90	500.00	
88 Sr	# 3	72	366638.6	0.0000	17.3600	ppb	0.63	500.00	
90 Zr	# 3	72	28092.3	0.0000	1.8150	ppb	2.53	50.00	
95 Mo	# 3	115	858.9	0.0000	0.1983	ppb	5.44	500.00	
107 Ag	# 3	115	306.7	0.0000	0.0280	ppb	7.09	50.00	
111 Cd	# 3	115	186.6	0.0000	0.0745	ppb	11.53	500.00	
118 Sn	# 3	115	5244.5	0.0000	0.7778	ppb	3.30	500.00	
121 Sb	# 3	115	961.2	0.0000	0.0868	ppb	15.22	500.00	
137 Ba	# 3	115	78022.7	0.0000	23.3200	ppb	0.54	1000.00	
182 W	# 3	159	472.2	0.0000	0.0391	ppb	15.71	50.00	
205 Tl	# 3	159	376.7	0.0000	0.0115	ppb	28.56	500.00	
208 Pb	# 3	159	49219.1	0.0000	1.8160	ppb	0.81	500.00	
235 U	# 3	159	30.0	0.0000	0.0005	ppb	75.12	30.00	
238 U	# 3	159	1925.8	0.0000	0.0667	ppb	5.68	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1129022.10	3.54	1072677.80	105.3	60 - 125	
45 Sc # 1	897800.94	1.48	836329.63	107.4	60 - 125	
45 Sc # 2	198677.88	1.16	181090.36	109.7	60 - 125	
45 Sc # 3	1985451.60	1.78	1845775.40	107.6	60 - 125	
72 Ge # 1	194979.39	0.80	188193.44	103.6	60 - 125	
72 Ge # 2	94251.84	1.13	89698.20	105.1	60 - 125	
72 Ge # 3	404760.97	2.24	391012.72	103.5	60 - 125	
115 In # 3	2620256.50	2.61	2621431.00	100.0	60 - 125	
159 Tb # 3	3844465.30	2.30	3903099.50	98.5	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02071.D\F6G02071.D#
Date Acquired: Jul 3 2018 03:09 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-10G
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	158250.0	0.0000	7.4640	ppb	0.50	50.00	
9 Be	# 3	6	390.0	0.0000	0.1039	ppb	9.88	50.00	
11 B	# 3	6	4022.9	0.0000	1.1620	ppb	2.03	100.00	
23 Na	# 1	45	499315.8	0.0000	70.4100	ppb	3.68	50000.00	
24 Mg	# 3	45	42857420.0	0.0000	3771.0000	ppb	0.95	50000.00	
27 Al	# 3	45	82641880.0	0.0000	5830.0000	ppb	0.89	50000.00	
28 Si	# 1	45	447341.0	0.0000	592.7000	ppb	0.65	5000.00	
31 P	# 3	45	223722.5	0.0000	218.6000	ppb	2.14	500.00	
39 K	# 2	45	367115.5	0.0000	384.0000	ppb	0.77	50000.00	
40 Ca	# 1	45	14003290.0	0.0000	2703.0000	ppb	1.06	50000.00	
47 Ti	# 3	45	535160.3	0.0000	396.7000	ppb	0.82	500.00	
51 V	# 2	45	91954.3	0.0000	21.4000	ppb	1.22	500.00	
52 Cr	# 2	45	67622.8	0.0000	13.6300	ppb	1.55	500.00	
55 Mn	# 3	45	4433917.0	0.0000	206.9000	ppb	0.74	3000.00	
56 Fe	# 1	45	88474392.0	0.0000	11150.0000	ppb	0.77	50000.00	
59 Co	# 3	45	76432.2	0.0000	4.3260	ppb	1.99	500.00	
60 Ni	# 2	45	23240.1	0.0000	13.4600	ppb	1.85	500.00	
63 Cu	# 2	45	69106.3	0.0000	15.7500	ppb	1.60	500.00	
66 Zn	# 3	72	51406.9	0.0000	21.5900	ppb	0.49	500.00	
75 As	# 2	72	2194.0	0.0000	3.2570	ppb	1.26	500.00	
78 Se	# 1	72	23.6	0.0000	0.0655	ppb	7.30	500.00	
88 Sr	# 3	72	207614.1	0.0000	9.0720	ppb	0.90	500.00	
90 Zr	# 3	72	27437.6	0.0000	1.6350	ppb	1.38	50.00	
95 Mo	# 3	115	1151.2	0.0000	0.2481	ppb	4.22	500.00	
107 Ag	# 3	115	527.8	0.0000	0.0462	ppb	10.87	50.00	
111 Cd	# 3	115	242.6	0.0000	0.0917	ppb	1.78	500.00	
118 Sn	# 3	115	5419.0	0.0000	0.7386	ppb	1.59	500.00	
121 Sb	# 3	115	1394.6	0.0000	0.1221	ppb	4.76	500.00	
137 Ba	# 3	115	69284.0	0.0000	19.0600	ppb	1.17	1000.00	
182 W	# 3	159	451.1	0.0000	0.0327	ppb	5.38	50.00	
205 Tl	# 3	159	491.1	0.0000	0.0153	ppb	16.42	500.00	
208 Pb	# 3	159	49192.2	0.0000	1.6620	ppb	1.66	500.00	
235 U	# 3	159	20.0	0.0000	0.0001	ppb	216.81	30.00	
238 U	# 3	159	2142.5	0.0000	0.0680	ppb	1.44	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1228088.30	1.65	1072677.80	114.5	60 - 125	
45 Sc # 1	977380.31	1.21	836329.63	116.9	60 - 125	
45 Sc # 2	218764.31	0.10	181090.36	120.8	60 - 125	ISFail LV 07/05/18
45 Sc # 3	2160019.50	1.97	1845775.40	117.0	60 - 125	
72 Ge # 1	211409.59	1.04	188193.44	112.3	60 - 125	
72 Ge # 2	103334.27	1.68	89698.20	115.2	60 - 125	
72 Ge # 3	438051.66	1.87	391012.72	112.0	60 - 125	
115 In # 3	2846066.00	0.96	2621431.00	108.6	60 - 125	
159 Tb # 3	4193088.80	1.88	3903099.50	107.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02072.D\F6G02072.D#
Date Acquired: Jul 3 2018 03:14 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-11G
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	156062.1	0.0000	7.6420	ppb	1.75	50.00	
9 Be	# 3	6	395.6	0.0000	0.1091	ppb	13.16	50.00	
11 B	# 3	6	4349.6	0.0000	1.3720	ppb	8.51	100.00	
23 Na	# 1	45	443229.6	0.0000	55.0300	ppb	2.63	50000.00	
24 Mg	# 3	45	43644600.0	0.0000	4007.0000	ppb	0.45	50000.00	
27 Al	# 3	45	80625512.0	0.0000	5934.0000	ppb	0.69	50000.00	
28 Si	# 1	45	480547.2	0.0000	659.8000	ppb	0.62	5000.00	
31 P	# 3	45	243028.9	0.0000	263.5000	ppb	1.97	500.00	
39 K	# 2	45	317549.9	0.0000	318.5000	ppb	1.26	50000.00	
40 Ca	# 1	45	18133590.0	0.0000	3627.0000	ppb	0.20	50000.00	
47 Ti	# 3	45	500378.3	0.0000	387.0000	ppb	0.60	500.00	
51 V	# 2	45	97134.9	0.0000	23.6900	ppb	0.93	500.00	
52 Cr	# 2	45	57374.8	0.0000	12.0500	ppb	0.57	500.00	
55 Mn	# 3	45	4653988.0	0.0000	226.6000	ppb	0.75	3000.00	
56 Fe	# 1	45	90675344.0	0.0000	11830.0000	ppb	0.17	50000.00	
59 Co	# 3	45	76594.3	0.0000	4.5230	ppb	0.93	500.00	
60 Ni	# 2	45	20243.3	0.0000	12.2400	ppb	0.74	500.00	
63 Cu	# 2	45	43476.8	0.0000	10.3100	ppb	0.58	500.00	
66 Zn	# 3	72	56099.3	0.0000	24.5200	ppb	1.36	500.00	
75 As	# 2	72	1579.0	0.0000	2.3860	ppb	3.72	500.00	
78 Se	# 1	72	14.4	0.0000	0.0292	ppb	51.41	500.00	
88 Sr	# 3	72	290726.7	0.0000	13.2000	ppb	0.86	500.00	
90 Zr	# 3	72	22393.4	0.0000	1.3820	ppb	2.18	50.00	
95 Mo	# 3	115	874.5	0.0000	0.1932	ppb	12.92	500.00	
107 Ag	# 3	115	296.7	0.0000	0.0256	ppb	13.35	50.00	
111 Cd	# 3	115	219.6	0.0000	0.0855	ppb	10.49	500.00	
118 Sn	# 3	115	5276.7	0.0000	0.7485	ppb	0.91	500.00	
121 Sb	# 3	115	971.2	0.0000	0.0836	ppb	9.70	500.00	
137 Ba	# 3	115	85765.3	0.0000	24.5400	ppb	1.42	1000.00	
182 W	# 3	159	422.2	0.0000	0.0318	ppb	23.64	50.00	
205 Tl	# 3	159	295.6	0.0000	0.0067	ppb	24.63	500.00	
208 Pb	# 3	159	52502.0	0.0000	1.8560	ppb	0.46	500.00	
235 U	# 3	159	22.2	0.0000	0.0002	ppb	47.60	30.00	
238 U	# 3	159	1708.0	0.0000	0.0564	ppb	1.04	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1196248.00	2.03	1072677.80	111.5	60 - 125	
45 Sc # 1	943655.38	1.23	836329.63	112.8	60 - 125	
45 Sc # 2	209354.83	1.34	181090.36	115.6	60 - 125	
45 Sc # 3	2070552.60	2.54	1845775.40	112.2	60 - 125	
72 Ge # 1	204745.70	1.39	188193.44	108.8	60 - 125	
72 Ge # 2	98959.49	1.36	89698.20	110.3	60 - 125	
72 Ge # 3	422040.81	1.86	391012.72	107.9	60 - 125	
115 In # 3	2736216.30	1.93	2621431.00	104.4	60 - 125	
159 Tb # 3	4014592.00	1.38	3903099.50	102.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02073.D\F6G02073.D#
Date Acquired: Jul 3 2018 03:18 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-12G
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	152044.5	0.0000	7.5990	ppb	2.15	50.00	
9 Be	# 3	6	398.9	0.0000	0.1129	ppb	9.14	50.00	
11 B	# 3	6	3379.4	0.0000	0.9386	ppb	5.67	100.00	
23 Na	# 1	45	410696.5	0.0000	53.0500	ppb	8.62	50000.00	
24 Mg	# 3	45	42317920.0	0.0000	3960.0000	ppb	1.54	50000.00	
27 Al	# 3	45	76922912.0	0.0000	5772.0000	ppb	1.36	50000.00	
28 Si	# 1	45	384322.3	0.0000	562.3000	ppb	1.03	5000.00	
31 P	# 3	45	246137.1	0.0000	275.8000	ppb	1.59	500.00	
39 K	# 2	45	316745.6	0.0000	343.7000	ppb	1.58	50000.00	
40 Ca	# 1	45	11221630.0	0.0000	2393.0000	ppb	0.66	50000.00	
47 Ti	# 3	45	433670.2	0.0000	341.9000	ppb	0.94	500.00	
51 V	# 2	45	87209.1	0.0000	22.1500	ppb	1.13	500.00	
52 Cr	# 2	45	58327.0	0.0000	12.8000	ppb	0.47	500.00	
55 Mn	# 3	45	5368620.0	0.0000	266.6000	ppb	0.87	3000.00	
56 Fe	# 1	45	80257376.0	0.0000	11170.0000	ppb	0.96	50000.00	
59 Co	# 3	45	77217.9	0.0000	4.6490	ppb	0.47	500.00	
60 Ni	# 2	45	22483.2	0.0000	14.2000	ppb	0.83	500.00	
63 Cu	# 2	45	38821.6	0.0000	9.5980	ppb	0.46	500.00	
66 Zn	# 3	72	50945.1	0.0000	22.5900	ppb	0.72	500.00	
75 As	# 2	72	1692.8	0.0000	2.6950	ppb	0.79	500.00	
78 Se	# 1	72	18.9	0.0000	0.0537	ppb	22.77	500.00	
88 Sr	# 3	72	165672.3	0.0000	7.6320	ppb	0.82	500.00	
90 Zr	# 3	72	20683.1	0.0000	1.2960	ppb	2.58	50.00	
95 Mo	# 3	115	645.6	0.0000	0.1410	ppb	7.87	500.00	
107 Ag	# 3	115	386.7	0.0000	0.0350	ppb	6.74	50.00	
111 Cd	# 3	115	203.2	0.0000	0.0793	ppb	29.33	500.00	
118 Sn	# 3	115	4937.7	0.0000	0.7091	ppb	1.57	500.00	
121 Sb	# 3	115	714.5	0.0000	0.0580	ppb	4.30	500.00	
137 Ba	# 3	115	55078.3	0.0000	16.0000	ppb	1.22	1000.00	
182 W	# 3	159	431.1	0.0000	0.0338	ppb	8.97	50.00	
205 Tl	# 3	159	331.1	0.0000	0.0088	ppb	7.25	500.00	
208 Pb	# 3	159	59003.9	0.0000	2.1430	ppb	1.05	500.00	
235 U	# 3	159	27.8	0.0000	0.0004	ppb	29.93	30.00	
238 U	# 3	159	1829.1	0.0000	0.0620	ppb	1.15	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1168939.60	1.93	1072677.80	109.0	60 - 125	
45 Sc # 1	884761.31	2.89	836329.63	105.8	60 - 125	
45 Sc # 2	200636.09	2.40	181090.36	110.8	60 - 125	
45 Sc # 3	2030883.90	2.08	1845775.40	110.0	60 - 125	
72 Ge # 1	192474.98	1.91	188193.44	102.3	60 - 125	
72 Ge # 2	94958.77	2.51	89698.20	105.9	60 - 125	
72 Ge # 3	415354.88	2.52	391012.72	106.2	60 - 125	
115 In # 3	2695547.50	2.18	2621431.00	102.8	60 - 125	
159 Tb # 3	3917964.00	2.74	3903099.50	100.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02074.D\F6G02074.D#
Date Acquired: Jul 3 2018 03:23 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-13G
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	141961.7	0.0000	6.2600	ppb	2.33	50.00	
9 Be	# 3	6	330.0	0.0000	0.0872	ppb	1.90	50.00	
11 B	# 3	6	3765.0	0.0000	1.0760	ppb	5.72	100.00	
23 Na	# 1	45	441365.7	0.0000	55.2400	ppb	4.34	50000.00	
24 Mg	# 3	45	35754232.0	0.0000	3272.0000	ppb	0.50	50000.00	
27 Al	# 3	45	69544192.0	0.0000	5104.0000	ppb	0.81	50000.00	
28 Si	# 1	45	471776.6	0.0000	651.2000	ppb	0.07	5000.00	
31 P	# 3	45	207545.1	0.0000	206.8000	ppb	1.08	500.00	
39 K	# 2	45	307719.3	0.0000	301.0000	ppb	0.62	50000.00	
40 Ca	# 1	45	14159460.0	0.0000	2846.0000	ppb	0.34	50000.00	
47 Ti	# 3	45	439939.1	0.0000	339.2000	ppb	0.81	500.00	
51 V	# 2	45	83826.4	0.0000	20.4100	ppb	0.43	500.00	
52 Cr	# 2	45	47519.2	0.0000	9.9540	ppb	0.43	500.00	
55 Mn	# 3	45	8068832.0	0.0000	392.0000	ppb	0.62	3000.00	
56 Fe	# 1	45	77299368.0	0.0000	10140.0000	ppb	0.16	50000.00	
59 Co	# 3	45	70792.6	0.0000	4.1660	ppb	0.30	500.00	
60 Ni	# 2	45	20355.9	0.0000	12.3400	ppb	0.72	500.00	
63 Cu	# 2	45	37938.2	0.0000	9.0050	ppb	0.25	500.00	
66 Zn	# 3	72	51785.7	0.0000	22.7300	ppb	0.32	500.00	
75 As	# 2	72	1364.3	0.0000	2.0260	ppb	1.25	500.00	
78 Se	# 1	72	18.7	0.0000	0.0485	ppb	29.95	500.00	
88 Sr	# 3	72	244319.9	0.0000	11.1500	ppb	0.35	500.00	
90 Zr	# 3	72	22474.7	0.0000	1.3950	ppb	1.33	50.00	
95 Mo	# 3	115	706.7	0.0000	0.1531	ppb	10.22	500.00	
107 Ag	# 3	115	283.3	0.0000	0.0244	ppb	9.25	50.00	
111 Cd	# 3	115	209.5	0.0000	0.0809	ppb	13.32	500.00	
118 Sn	# 3	115	4954.4	0.0000	0.7003	ppb	1.03	500.00	
121 Sb	# 3	115	712.3	0.0000	0.0566	ppb	5.65	500.00	
137 Ba	# 3	115	76437.5	0.0000	21.8600	ppb	0.96	1000.00	
182 W	# 3	159	335.6	0.0000	0.0228	ppb	11.51	50.00	
205 Tl	# 3	159	328.9	0.0000	0.0084	ppb	15.82	500.00	
208 Pb	# 3	159	45551.6	0.0000	1.6150	ppb	1.80	500.00	
235 U	# 3	159	24.4	0.0000	0.0003	ppb	110.48	30.00	
238 U	# 3	159	1535.7	0.0000	0.0508	ppb	2.89	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1203484.50	1.82	1072677.80	112.2	60 - 125	
45 Sc # 1	938632.25	1.75	836329.63	112.2	60 - 125	
45 Sc # 2	208801.19	1.13	181090.36	115.3	60 - 125	
45 Sc # 3	2076533.90	1.96	1845775.40	112.5	60 - 125	
72 Ge # 1	201764.89	1.45	188193.44	107.2	60 - 125	
72 Ge # 2	98998.36	0.90	89698.20	110.4	60 - 125	
72 Ge # 3	419734.56	1.82	391012.72	107.3	60 - 125	
115 In # 3	2737248.30	1.19	2621431.00	104.4	60 - 125	
159 Tb # 3	3992664.50	1.51	3903099.50	102.3	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02075.D\F6G02075.D#
Date Acquired: Jul 3 2018 03:28 pm
Operator: LVicto
Sample Name: CCV6
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:28 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.17 ppb	1.87	25.00	90 - 110	
9 Be	24.43 ppb	1.64	25.00	90 - 110	
11 B	49.10 ppb	2.12	50.00	90 - 110	
23 Na	25880.00 ppb	0.63	25000.00	90 - 110	
24 Mg	24090.00 ppb	1.08	25000.00	90 - 110	
27 Al	23810.00 ppb	0.99	25000.00	90 - 110	
28 Si	2595.00 ppb	0.23	2500.00	90 - 110	
31 P	235.40 ppb	1.32	250.00	90 - 110	
39 K	26420.00 ppb	1.92	25000.00	90 - 110	
40 Ca	25560.00 ppb	0.33	25000.00	90 - 110	
47 Ti	251.40 ppb	0.08	250.00	90 - 110	
51 V	246.80 ppb	1.76	250.00	90 - 110	
52 Cr	245.30 ppb	0.55	250.00	90 - 110	
55 Mn	1462.00 ppb	0.29	1500.00	90 - 110	
56 Fe	23910.00 ppb	0.63	25000.00	90 - 110	
59 Co	238.30 ppb	0.85	250.00	90 - 110	
60 Ni	236.00 ppb	0.83	250.00	90 - 110	
63 Cu	236.20 ppb	0.12	250.00	90 - 110	
66 Zn	249.20 ppb	0.28	250.00	90 - 110	
75 As	249.90 ppb	0.82	250.00	90 - 110	
78 Se	250.70 ppb	0.50	250.00	90 - 110	
88 Sr	253.50 ppb	0.55	250.00	90 - 110	
90 Zr	25.03 ppb	1.30	25.00	90 - 110	
95 Mo	261.80 ppb	1.16	250.00	90 - 110	
107 Ag	25.73 ppb	0.85	25.00	90 - 110	
111 Cd	256.10 ppb	0.29	250.00	90 - 110	
118 Sn	257.50 ppb	0.59	250.00	90 - 110	
121 Sb	51.09 ppb	0.14	50.00	90 - 110	
137 Ba	519.90 ppb	0.68	500.00	90 - 110	
182 W	24.67 ppb	0.67	25.00	90 - 110	
205 Tl	233.20 ppb	0.69	250.00	90 - 110	
208 Pb	230.00 ppb	0.70	250.00	90 - 110	
235 U	1.15 ppb	1.35	1.80	90 - 110	Fail
238 U	184.00 ppb	0.85	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1144827.50	2.89	1072677.80	106.7	60 - 125	
45 Sc	929768.31	0.62	836329.63	111.2	60 - 125	
45 Sc	202205.75	0.21	181090.36	111.7	60 - 125	
45 Sc	2009520.80	1.69	1845775.40	108.9	60 - 125	
72 Ge	203002.80	0.64	188193.44	107.9	60 - 125	
72 Ge	96654.24	0.54	89698.20	107.8	60 - 125	
72 Ge	411230.34	1.55	391012.72	105.2	60 - 125	
115 In	2610572.00	1.69	2621431.00	99.6	60 - 125	
159 Tb	3934075.00	1.71	3903099.50	100.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02076.D\F6G02076.D#
Date Acquired: Jul 3 2018 03:32 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: CCB6
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1481	ppb	71495.7	60.13	0.20	
9 Be	-0.0092	ppb	28.9	41.45	0.10	
11 B	-0.3453	ppb	810.0	13.51	5.00	
23 Na	8.6360	ppb	305181.8	19.49	40.00	
24 Mg	0.8155	ppb	16231.3	10.86	10.00	
27 Al	0.4748	ppb	8361.5	19.01	20.00	
28 Si	2.4020	ppb	4307.4	14.91	20.00	
31 P	-14.9000	ppb	62727.4	9.11	10.00	Fail
39 K	5.4020	ppb	148307.6	79.53	20.00	
40 Ca	2.2220	ppb	27215.3	4.82	25.00	
47 Ti	0.0342	ppb	306.7	69.83	0.50	
51 V	0.2471	ppb	3423.3	9.92	0.50	
52 Cr	-0.0373	ppb	1131.6	32.31	0.20	
55 Mn	-0.0661	ppb	5711.3	19.90	0.20	
56 Fe	1.8830	ppb	21595.2	0.56	10.00	
59 Co	-0.0048	ppb	387.8	106.74	0.20	
60 Ni	-0.0448	ppb	88.4	15.04	0.20	
63 Cu	-0.0170	ppb	439.3	11.34	0.40	
66 Zn	-0.2326	ppb	517.8	3.93	2.00	
75 As	0.1529	ppb	234.2	10.98	0.20	
78 Se	0.0590	ppb	20.4	38.29	0.20	
88 Sr	0.0017	ppb	554.5	197.83	0.20	
90 Zr	-0.0114	ppb	153.3	6.69	2.00	
95 Mo	0.1130	ppb	538.9	6.49	0.40	
107 Ag	0.0008	ppb	41.1	154.32	0.20	
111 Cd	0.0018	ppb	33.3	183.23	0.20	
118 Sn	0.2173	ppb	1707.9	3.10	0.20	Fail
121 Sb	0.0376	ppb	531.1	0.97	0.40	
137 Ba	0.0183	ppb	105.6	20.64	0.20	
182 W	0.0146	ppb	256.7	17.77	1.00	
205 Tl	0.0231	ppb	621.2	19.53	0.20	
208 Pb	0.0018	ppb	1010.1	71.71	0.10	
235 U	0.0004	ppb	25.6	50.62	1.00	
238 U	0.0335	ppb	1023.4	3.02	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1191252.4	2.94	1072677.80	111.1	60 - 125	
45 Sc	883354.1	1.13	836329.63	105.6	60 - 125	
45 Sc	198922.9	1.05	181090.36	109.8	60 - 125	
45 Sc	1979811.0	1.18	1845775.40	107.3	60 - 125	
72 Ge	196920.1	1.43	188193.44	104.6	60 - 125	
72 Ge	96176.6	1.44	89698.20	107.2	60 - 125	
72 Ge	413748.6	2.25	391012.72	105.8	60 - 125	
115 In	2742321.5	1.49	2621431.00	104.6	60 - 125	
159 Tb	3978444.0	1.92	3903099.50	101.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02077.D\F6G02077.D#
Date Acquired: Jul 3 2018 03:36 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-14G
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	147459.1	0.0000	6.5880	ppb	2.63	50.00	
9 Be	# 3	6	410.0	0.0000	0.1111	ppb	10.93	50.00	
11 B	# 3	6	3540.5	0.0000	0.9457	ppb	4.80	100.00	
23 Na	# 1	45	434834.4	0.0000	50.7200	ppb	4.27	50000.00	
24 Mg	# 3	45	37618832.0	0.0000	3414.0000	ppb	1.18	50000.00	
27 Al	# 3	45	72994432.0	0.0000	5311.0000	ppb	1.06	50000.00	
28 Si	# 1	45	489993.6	0.0000	669.0000	ppb	0.63	5000.00	
31 P	# 3	45	234219.8	0.0000	245.5000	ppb	3.56	500.00	
39 K	# 2	45	299533.1	0.0000	274.6000	ppb	1.72	50000.00	
40 Ca	# 1	45	17883100.0	0.0000	3556.0000	ppb	0.50	50000.00	
47 Ti	# 3	45	395124.7	0.0000	302.0000	ppb	0.89	500.00	
51 V	# 2	45	84368.6	0.0000	20.1600	ppb	0.71	500.00	
52 Cr	# 2	45	54122.7	0.0000	11.1700	ppb	0.66	500.00	
55 Mn	# 3	45	4495209.0	0.0000	216.3000	ppb	0.79	3000.00	
56 Fe	# 1	45	84214192.0	0.0000	10930.0000	ppb	0.53	50000.00	
59 Co	# 3	45	73995.8	0.0000	4.3180	ppb	1.23	500.00	
60 Ni	# 2	45	21283.4	0.0000	12.6700	ppb	0.43	500.00	
63 Cu	# 2	45	50812.8	0.0000	11.8800	ppb	0.53	500.00	
66 Zn	# 3	72	55625.2	0.0000	24.1500	ppb	0.78	500.00	
75 As	# 2	72	2096.6	0.0000	3.1920	ppb	0.95	500.00	
78 Se	# 1	72	20.9	0.0000	0.0572	ppb	14.36	500.00	
88 Sr	# 3	72	315258.0	0.0000	14.2200	ppb	0.22	500.00	
90 Zr	# 3	72	19600.4	0.0000	1.1990	ppb	2.78	50.00	
95 Mo	# 3	115	727.8	0.0000	0.1561	ppb	12.48	500.00	
107 Ag	# 3	115	301.1	0.0000	0.0258	ppb	2.37	50.00	
111 Cd	# 3	115	184.3	0.0000	0.0687	ppb	19.63	500.00	
118 Sn	# 3	115	5662.4	0.0000	0.7960	ppb	1.60	500.00	
121 Sb	# 3	115	1131.2	0.0000	0.0989	ppb	4.14	500.00	
137 Ba	# 3	115	60912.2	0.0000	17.2200	ppb	1.23	1000.00	
182 W	# 3	159	417.8	0.0000	0.0310	ppb	6.36	50.00	
205 Tl	# 3	159	472.2	0.0000	0.0153	ppb	6.13	500.00	
208 Pb	# 3	159	58806.2	0.0000	2.0720	ppb	1.59	500.00	
235 U	# 3	159	18.9	0.0000	0.0001	ppb	252.44	30.00	
238 U	# 3	159	1779.1	0.0000	0.0585	ppb	4.19	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1219311.40	1.86	1072677.80	113.7	60 - 125	
45 Sc # 1	949181.56	1.84	836329.63	113.5	60 - 125	
45 Sc # 2	212623.02	1.30	181090.36	117.4	60 - 125	
45 Sc # 3	2094936.30	3.16	1845775.40	113.5	60 - 125	
72 Ge # 1	204423.14	1.24	188193.44	108.6	60 - 125	
72 Ge # 2	100599.09	1.42	89698.20	112.2	60 - 125	
72 Ge # 3	424798.78	2.07	391012.72	108.6	60 - 125	
115 In # 3	2768643.50	1.49	2621431.00	105.6	60 - 125	
159 Tb # 3	4036285.80	1.96	3903099.50	103.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02078.D\F6G02078.D#
Date Acquired: Jul 3 2018 03:41 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-15G
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	158359.1	0.0000	7.6170	ppb	1.44	50.00	
9 Be	# 3	6	351.1	0.0000	0.0928	ppb	3.18	50.00	
11 B	# 3	6	4383.0	0.0000	1.3520	ppb	2.88	100.00	
23 Na	# 1	45	423462.8	0.0000	47.0900	ppb	2.06	50000.00	
24 Mg	# 3	45	39123420.0	0.0000	3567.0000	ppb	0.87	50000.00	
27 Al	# 3	45	82015880.0	0.0000	5994.0000	ppb	1.13	50000.00	
28 Si	# 1	45	409018.2	0.0000	560.6000	ppb	1.19	5000.00	
31 P	# 3	45	354722.6	0.0000	434.8000	ppb	1.53	500.00	
39 K	# 2	45	314893.6	0.0000	308.9000	ppb	1.78	50000.00	
40 Ca	# 1	45	11751270.0	0.0000	2347.0000	ppb	1.30	50000.00	
47 Ti	# 3	45	425789.4	0.0000	326.9000	ppb	0.49	500.00	
51 V	# 2	45	94614.0	0.0000	22.8800	ppb	0.38	500.00	
52 Cr	# 2	45	432648.8	0.0000	92.0800	ppb	0.64	500.00	
55 Mn	# 3	45	3260655.0	0.0000	157.6000	ppb	1.04	3000.00	
56 Fe	# 1	45	87467992.0	0.0000	11410.0000	ppb	0.62	50000.00	
59 Co	# 3	45	55758.6	0.0000	3.2620	ppb	0.61	500.00	
60 Ni	# 2	45	23188.3	0.0000	13.9300	ppb	0.19	500.00	
63 Cu	# 2	45	60493.1	0.0000	14.2900	ppb	0.62	500.00	
66 Zn	# 3	72	49977.4	0.0000	21.6800	ppb	1.66	500.00	
75 As	# 2	72	1715.9	0.0000	2.5890	ppb	1.67	500.00	
78 Se	# 1	72	18.9	0.0000	0.0482	ppb	68.90	500.00	
88 Sr	# 3	72	156961.7	0.0000	7.0760	ppb	0.63	500.00	
90 Zr	# 3	72	19575.9	0.0000	1.1990	ppb	1.92	50.00	
95 Mo	# 3	115	752.3	0.0000	0.1627	ppb	5.64	500.00	
107 Ag	# 3	115	765.6	0.0000	0.0708	ppb	10.74	50.00	
111 Cd	# 3	115	231.4	0.0000	0.0900	ppb	20.90	500.00	
118 Sn	# 3	115	5242.2	0.0000	0.7378	ppb	3.21	500.00	
121 Sb	# 3	115	1137.9	0.0000	0.1001	ppb	8.80	500.00	
137 Ba	# 3	115	63650.7	0.0000	18.0800	ppb	0.78	1000.00	
182 W	# 3	159	393.4	0.0000	0.0286	ppb	9.20	50.00	
205 Tl	# 3	159	380.0	0.0000	0.0108	ppb	25.73	500.00	
208 Pb	# 3	159	169688.6	0.0000	6.0670	ppb	1.36	500.00	
235 U	# 3	159	32.2	0.0000	0.0006	ppb	21.11	30.00	
238 U	# 3	159	2549.3	0.0000	0.0848	ppb	1.11	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1216000.90	2.01	1072677.80	113.4	60 - 125	
45 Sc # 1	944267.25	0.84	836329.63	112.9	60 - 125	
45 Sc # 2	210900.09	0.76	181090.36	116.5	60 - 125	
45 Sc # 3	2085111.90	2.41	1845775.40	113.0	60 - 125	
72 Ge # 1	205660.38	1.18	188193.44	109.3	60 - 125	
72 Ge # 2	99813.75	1.48	89698.20	111.3	60 - 125	
72 Ge # 3	424322.06	1.62	391012.72	108.5	60 - 125	
115 In # 3	2756214.50	1.46	2621431.00	105.1	60 - 125	
159 Tb # 3	4020303.80	1.20	3903099.50	103.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02079.D\F6G02079.D#
Date Acquired: Jul 3 2018 03:45 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-16G
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	146992.9	0.0000	6.4160	ppb	0.28	50.00	
9 Be	# 3	6	396.7	0.0000	0.1058	ppb	6.43	50.00	
11 B	# 3	6	3521.6	0.0000	0.9211	ppb	8.82	100.00	
23 Na	# 1	45	421244.7	0.0000	44.3000	ppb	6.57	50000.00	
24 Mg	# 3	45	32116770.0	0.0000	2901.0000	ppb	0.49	50000.00	
27 Al	# 3	45	74897152.0	0.0000	5424.0000	ppb	0.35	50000.00	
28 Si	# 1	45	401835.0	0.0000	544.3000	ppb	1.05	5000.00	
31 P	# 3	45	389099.4	0.0000	482.8000	ppb	1.00	500.00	
39 K	# 2	45	338473.3	0.0000	350.0000	ppb	0.41	50000.00	
40 Ca	# 1	45	10235760.0	0.0000	2020.0000	ppb	0.36	50000.00	
47 Ti	# 3	45	368154.5	0.0000	280.1000	ppb	0.39	500.00	
51 V	# 2	45	87221.1	0.0000	20.9000	ppb	0.16	500.00	
52 Cr	# 2	45	544299.9	0.0000	115.2000	ppb	0.38	500.00	
55 Mn	# 3	45	2763858.0	0.0000	132.3000	ppb	0.04	3000.00	
56 Fe	# 1	45	82364920.0	0.0000	10620.0000	ppb	0.41	50000.00	
59 Co	# 3	45	51377.5	0.0000	2.9750	ppb	0.95	500.00	
60 Ni	# 2	45	21871.6	0.0000	13.0500	ppb	0.26	500.00	
63 Cu	# 2	45	64295.6	0.0000	15.1000	ppb	0.98	500.00	
66 Zn	# 3	72	51807.0	0.0000	22.5100	ppb	1.61	500.00	
75 As	# 2	72	1980.1	0.0000	2.9990	ppb	3.27	500.00	
78 Se	# 1	72	21.3	0.0000	0.0583	ppb	38.63	500.00	
88 Sr	# 3	72	157315.8	0.0000	7.1000	ppb	1.02	500.00	
90 Zr	# 3	72	20907.1	0.0000	1.2830	ppb	2.12	50.00	
95 Mo	# 3	115	908.9	0.0000	0.1996	ppb	4.22	500.00	
107 Ag	# 3	115	1985.8	0.0000	0.1886	ppb	0.09	50.00	
111 Cd	# 3	115	200.4	0.0000	0.0764	ppb	26.90	500.00	
118 Sn	# 3	115	5320.1	0.0000	0.7494	ppb	2.21	500.00	
121 Sb	# 3	115	1249.0	0.0000	0.1116	ppb	2.10	500.00	
137 Ba	# 3	115	79580.3	0.0000	22.6100	ppb	0.54	1000.00	
182 W	# 3	159	476.7	0.0000	0.0370	ppb	20.76	50.00	
205 Tl	# 3	159	455.6	0.0000	0.0144	ppb	27.39	500.00	
208 Pb	# 3	159	156886.1	0.0000	5.5760	ppb	0.52	500.00	
235 U	# 3	159	25.6	0.0000	0.0003	ppb	33.97	30.00	
238 U	# 3	159	2678.2	0.0000	0.0887	ppb	3.93	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1231237.00	2.05	1072677.80	114.8	60 - 125	
45 Sc # 1	955408.81	1.80	836329.63	114.2	60 - 125	
45 Sc # 2	212267.83	0.62	181090.36	117.2	60 - 125	
45 Sc # 3	2104100.30	1.65	1845775.40	114.0	60 - 125	
72 Ge # 1	206354.59	1.56	188193.44	109.7	60 - 125	
72 Ge # 2	100668.29	1.37	89698.20	112.2	60 - 125	
72 Ge # 3	423844.09	1.65	391012.72	108.4	60 - 125	
115 In # 3	2756172.50	2.06	2621431.00	105.1	60 - 125	
159 Tb # 3	4042684.00	1.15	3903099.50	103.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02080.D\F6G02080.D#
Date Acquired: Jul 3 2018 03:50 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: F187-17G
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Jul 03 2018 10:28 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	162057.3	0.0000	8.0260	ppb	1.68	50.00	
9 Be	# 3	6	461.1	0.0000	0.1284	ppb	4.54	50.00	
11 B	# 3	6	4180.7	0.0000	1.2660	ppb	1.35	100.00	
23 Na	# 1	45	467916.4	0.0000	60.6900	ppb	2.64	50000.00	
24 Mg	# 3	45	44160380.0	0.0000	4019.0000	ppb	0.43	50000.00	
27 Al	# 3	45	92299744.0	0.0000	6736.0000	ppb	0.52	50000.00	
28 Si	# 1	45	573355.7	0.0000	770.5000	ppb	0.43	5000.00	
31 P	# 3	45	266036.5	0.0000	295.9000	ppb	0.69	500.00	
39 K	# 2	45	331662.7	0.0000	343.6000	ppb	0.28	50000.00	
40 Ca	# 1	45	15012260.0	0.0000	2935.0000	ppb	0.66	50000.00	
47 Ti	# 3	45	513076.2	0.0000	393.4000	ppb	0.37	500.00	
51 V	# 2	45	105239.3	0.0000	25.6200	ppb	0.18	500.00	
52 Cr	# 2	45	106034.7	0.0000	22.4300	ppb	0.27	500.00	
55 Mn	# 3	45	5689148.0	0.0000	274.7000	ppb	0.58	3000.00	
56 Fe	# 1	45	104013800.0	0.0000	13270.0000	ppb	0.66	50000.00	
59 Co	# 3	45	88119.1	0.0000	5.1630	ppb	1.06	500.00	
60 Ni	# 2	45	26737.8	0.0000	16.1400	ppb	0.56	500.00	
63 Cu	# 2	45	54251.0	0.0000	12.8500	ppb	0.45	500.00	
66 Zn	# 3	72	66500.0	0.0000	29.2500	ppb	0.28	500.00	
75 As	# 2	72	1929.7	0.0000	2.9650	ppb	2.18	500.00	
78 Se	# 1	72	27.1	0.0000	0.0828	ppb	13.40	500.00	
88 Sr	# 3	72	255977.2	0.0000	11.6500	ppb	0.18	500.00	
90 Zr	# 3	72	16006.3	0.0000	0.9845	ppb	3.35	50.00	
95 Mo	# 3	115	2106.9	0.0000	0.4863	ppb	3.96	500.00	
107 Ag	# 3	115	3603.9	0.0000	0.3478	ppb	0.28	50.00	
111 Cd	# 3	115	228.2	0.0000	0.0896	ppb	14.16	500.00	
118 Sn	# 3	115	5825.8	0.0000	0.8312	ppb	1.65	500.00	
121 Sb	# 3	115	1460.1	0.0000	0.1347	ppb	4.36	500.00	
137 Ba	# 3	115	103102.0	0.0000	29.5400	ppb	0.43	1000.00	
182 W	# 3	159	544.5	0.0000	0.0447	ppb	3.82	50.00	
205 Tl	# 3	159	473.4	0.0000	0.0155	ppb	20.91	500.00	
208 Pb	# 3	159	278477.1	0.0000	10.0300	ppb	0.65	500.00	
235 U	# 3	159	23.3	0.0000	0.0003	ppb	78.23	30.00	
238 U	# 3	159	2329.2	0.0000	0.0778	ppb	2.91	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1210053.00	2.24	1072677.80	112.8	60 - 125	
45 Sc # 1	965080.94	1.20	836329.63	115.4	60 - 125	
45 Sc # 2	210084.00	0.58	181090.36	116.0	60 - 125	
45 Sc # 3	2088052.90	1.18	1845775.40	113.1	60 - 125	
72 Ge # 1	207124.48	1.48	188193.44	110.1	60 - 125	
72 Ge # 2	99171.57	1.82	89698.20	110.6	60 - 125	
72 Ge # 3	420724.06	1.95	391012.72	107.6	60 - 125	
115 In # 3	2733105.00	1.97	2621431.00	104.3	60 - 125	
159 Tb # 3	3999497.00	1.14	3903099.50	102.5	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62018\G\IF6G02.B\F6G02081.D\F6G02081.D#
Date Acquired: Jul 3 2018 03:54 pm
Operator: LVicto
Sample Name: CCV7
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Jul 03 2018 10:28 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.43 ppb	1.01	25.00	90 - 110	
9 Be	24.52 ppb	1.09	25.00	90 - 110	
11 B	49.52 ppb	1.36	50.00	90 - 110	
23 Na	25840.00 ppb	0.91	25000.00	90 - 110	
24 Mg	24170.00 ppb	1.17	25000.00	90 - 110	
27 Al	23980.00 ppb	0.59	25000.00	90 - 110	
28 Si	2588.00 ppb	0.65	2500.00	90 - 110	
31 P	236.40 ppb	0.06	250.00	90 - 110	
39 K	26660.00 ppb	0.71	25000.00	90 - 110	
40 Ca	25400.00 ppb	0.56	25000.00	90 - 110	
47 Ti	250.40 ppb	0.73	250.00	90 - 110	
51 V	249.40 ppb	1.08	250.00	90 - 110	
52 Cr	245.80 ppb	1.28	250.00	90 - 110	
55 Mn	1470.00 ppb	1.26	1500.00	90 - 110	
56 Fe	24000.00 ppb	0.69	25000.00	90 - 110	
59 Co	240.10 ppb	1.38	250.00	90 - 110	
60 Ni	237.20 ppb	0.53	250.00	90 - 110	
63 Cu	236.70 ppb	0.56	250.00	90 - 110	
66 Zn	249.90 ppb	0.39	250.00	90 - 110	
75 As	253.10 ppb	0.35	250.00	90 - 110	
78 Se	251.70 ppb	0.77	250.00	90 - 110	
88 Sr	253.10 ppb	0.64	250.00	90 - 110	
90 Zr	24.08 ppb	1.28	25.00	90 - 110	
95 Mo	262.70 ppb	1.36	250.00	90 - 110	
107 Ag	25.40 ppb	0.84	25.00	90 - 110	
111 Cd	254.70 ppb	0.61	250.00	90 - 110	
118 Sn	257.30 ppb	0.32	250.00	90 - 110	
121 Sb	51.03 ppb	0.32	50.00	90 - 110	
137 Ba	517.60 ppb	0.54	500.00	90 - 110	
182 W	24.59 ppb	0.95	25.00	90 - 110	
205 Tl	231.50 ppb	0.95	250.00	90 - 110	
208 Pb	227.00 ppb	0.48	250.00	90 - 110	
235 U	1.11 ppb	1.56	1.80	90 - 110	Fail
238 U	179.60 ppb	1.35	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1129126.30	1.99	1072677.80	105.3	60 - 125	
45 Sc	937021.94	0.33	836329.63	112.0	60 - 125	
45 Sc	203657.22	0.69	181090.36	112.5	60 - 125	
45 Sc	2005261.90	1.07	1845775.40	108.6	60 - 125	
72 Ge	203547.59	1.15	188193.44	108.2	60 - 125	
72 Ge	96875.52	0.72	89698.20	108.0	60 - 125	
72 Ge	410012.94	1.32	391012.72	104.9	60 - 125	
115 In	2619017.80	1.84	2621431.00	99.9	60 - 125	
159 Tb	3940153.80	2.15	3903099.50	100.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\G\IF6G02.B\F6G02082.D\F6G02082.D#
Date Acquired:	Jul 3 2018 03:59 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB7
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Jul 03 2018 10:28 am
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1054	ppb	71557.0	95.26	0.20	
9 Be	-0.0084	ppb	31.1	45.33	0.10	
11 B	-0.3314	ppb	833.4	10.61	5.00	
23 Na	6.4200	ppb	306577.5	45.25	40.00	
24 Mg	0.9823	ppb	17963.3	14.61	10.00	
27 Al	0.6536	ppb	10680.8	14.67	20.00	
28 Si	2.1420	ppb	4224.1	5.65	20.00	
31 P	-15.6700	ppb	62272.4	20.73	10.00	Fail
39 K	1.8310	ppb	147039.1	305.30	20.00	
40 Ca	2.4220	ppb	28776.0	3.85	25.00	
47 Ti	0.0030	ppb	268.9	929.48	0.50	
51 V	0.2383	ppb	3401.1	9.23	0.50	
52 Cr	-0.0252	ppb	1189.6	29.60	0.20	
55 Mn	-0.0632	ppb	5769.1	23.78	0.20	
56 Fe	2.0400	ppb	23231.1	0.92	10.00	
59 Co	-0.0030	ppb	416.7	34.72	0.20	
60 Ni	-0.0405	ppb	95.6	0.67	0.20	
63 Cu	-0.0194	ppb	431.3	27.26	0.40	
66 Zn	-0.2480	ppb	482.2	5.52	2.00	
75 As	0.1460	ppb	230.4	15.56	0.20	
78 Se	0.0676	ppb	22.9	24.40	0.20	
88 Sr	0.0024	ppb	567.8	71.87	0.20	
90 Zr	-0.0100	ppb	173.3	28.81	2.00	
95 Mo	0.1218	ppb	582.3	9.89	0.40	
107 Ag	0.0006	ppb	40.0	291.22	0.20	
111 Cd	0.0040	ppb	38.5	292.17	0.20	
118 Sn	0.2328	ppb	1831.3	4.74	0.20	Fail
121 Sb	0.0281	ppb	444.5	13.03	0.40	
137 Ba	0.0196	ppb	111.1	28.19	0.20	
182 W	0.0170	ppb	280.0	9.29	1.00	
205 Tl	0.0234	ppb	626.7	18.59	0.20	
208 Pb	0.0038	ppb	1065.6	53.81	0.10	
235 U	0.0004	ppb	26.7	30.92	1.00	
238 U	0.0339	ppb	1036.8	6.79	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1184558.6	1.86	1072677.80	110.4	60 - 125	
45 Sc	903019.3	1.54	836329.63	108.0	60 - 125	
45 Sc	199592.4	1.42	181090.36	110.2	60 - 125	
45 Sc	1980837.3	2.22	1845775.40	107.3	60 - 125	
72 Ge	201162.4	0.93	188193.44	106.9	60 - 125	
72 Ge	96309.9	2.27	89698.20	107.4	60 - 125	
72 Ge	412767.7	2.47	391012.72	105.6	60 - 125	
115 In	2773038.3	2.16	2621431.00	105.8	60 - 125	
159 Tb	3985103.8	2.52	3903099.50	102.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\G\IF6G02.B\F6G02004.D\F6G02004.D#

2 :Element Failures	0 :Max. Number of Failures Allowed
0 :ISTD Failures	0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 21117007

Book #: EIM-070
Batch: IMF0455
Matrix: soil
Digestor ID: D

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	93.2 °C		93.7 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SMGA-007-05-08	4.0
LCS-2	↓ -05-09	4.0
MS	same spike soln and vol as LCS 1 and 2	
Blank Soil (Bead)	SMSA-03-02-16	2.0g
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA-006-09-20	1D
HCl	SWIA-08-02-01	STS
H_2O_2	SWIA-006-08-25	1D
HNO_3(1:1)	SMSB-03-91-04	1D
pH Strip (0-14)	N/A	N/A
Digestate Location	Metals	
Extract Location	N/A	
☑ Reagent Water ID:	SMSA-04-01-02	
☑ Thermometer ID:	IS16827631D16	
☑ Pipette ID:	1427810104	
☐ Pipette ID:		
☐ Pipette ID:		
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: MC

Standard Added By: MC Witnessed By: LV

Extract Rcvd By: LV Checked By: MC

EMAX LABORATORIES

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
18IMF045S01	IMF045SB	2	g	6/27/18 12:42	100	2	100	1	
18IMF045S02	IMF045SL	2	g	6/27/18 12:42	100	2	100	1	
18IMF045S03	IMF045SC	2	g	6/27/18 12:43	100	2	100	1	
18IMF045S04	F187-01	2.05	g	6/27/18 12:43	100	2	100	0.976	
18IMF045S05	F187-02	2.02	g	6/27/18 12:44	100	2	100	0.99	
18IMF045S06	F187-03	2.07	g	6/27/18 12:44	100	2	100	0.966	
18IMF045S07	F187-04	2.05	g	6/27/18 12:45	100	2	100	0.976	
18IMF045S08	F187-05	2.03	g	6/27/18 12:46	100	2	100	0.985	
18IMF045S09	F187-07	2.04	g	6/27/18 12:46	100	2	100	0.98	
18IMF045S10	F187-07M	2.04	g	6/27/18 12:47	100	2	100	0.98	
18IMF045S11	F187-07S	2.03	g	6/27/18 12:47	100	2	100	0.985	
18IMF045S12	F187-08	2.02	g	6/27/18 12:48	100	2	100	0.99	
18IMF045S13	F187-10	2.07	g	6/27/18 12:48	100	2	100	0.966	
18IMF045S14	F187-11	2.08	g	6/27/18 12:49	100	2	100	0.962	
18IMF045S15	F187-12	2.03	g	6/27/18 12:49	100	2	100	0.985	
18IMF045S16	F187-13	2.01	g	6/27/18 12:50	100	2	100	0.995	
18IMF045S17	F187-14	2.08	g	6/27/18 12:50	100	2	100	0.962	
18IMF045S18	F187-15	2.05	g	6/27/18 12:51	100	2	100	0.976	
18IMF045S19	F187-16	2.05	g	6/27/18 12:52	100	2	100	0.976	
18IMF045S20	F187-17	2.05	g	6/27/18 12:53	100	2	100	0.976	

MC
6/27/18

Balance ID: 10304418. Calibration check was verified prior to use.

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/27/18 15:02

Prepared By: MCande

☑ Digestion Ended @ 6/27/18 16:35

Checked By: LV

Comments:

Date 6/27/18

SOP EMAX-6020 Rev. 9

CASE NARRATIVE

Client : CH2M HILL

Project: JBER TO075

SDG : 18F187

METHOD SW7471B
MERCURY BY COLD VAPOR

A total of fifteen (15) soil samples were received on 06/26/18 to be analyzed for Mercury by Cold Vapor in accordance with Method SW7471B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. Mercury was not detected in HGG005SB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. HGG005SL/HGG005SC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed. Mercury was within MS QC limits in F187-07M/F187-07S. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
MERCURY BY COLD VAPOR

Client : CH2M HILL
Project : JBER TO075

SDG NO. : 18F187
Instrument ID : 47

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	HGG005SB	1	NA	07/13/1810:09	07/12/1818:10	M47G006012	M47G006	18HGG005S	Method Blank
LCS1S	HGG005SL	1	NA	07/13/1810:11	07/12/1818:10	M47G006013	M47G006	18HGG005S	Lab Control Sample (LCS)
LCD1S	HGG005SC	1	NA	07/13/1810:13	07/12/1818:10	M47G006014	M47G006	18HGG005S	LCS Duplicate
18Q2DP009-SB0501-SO-0	F187-07	1	3.9	07/13/1810:17	07/12/1818:10	M47G006016	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0501-SO-0MS	F187-07M	1	3.9	07/13/1810:21	07/12/1818:10	M47G006018	M47G006	18HGG005S	Matrix Spike Sample (MS)
18Q2DP009-SB0501-SO-0MSD	F187-07S	1	3.9	07/13/1810:23	07/12/1818:10	M47G006019	M47G006	18HGG005S	MS Duplicate (MSD)
18Q2DP009-SB0401-SO-0	F187-01	1	4.8	07/13/1810:25	07/12/1818:10	M47G006020	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0401-SO-1	F187-02	1	4.6	07/13/1810:28	07/12/1818:10	M47G006021	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0402-SO-0	F187-03	1	5.3	07/13/1810:34	07/12/1818:10	M47G006024	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0801-SO-0	F187-04	1	8.6	07/13/1810:35	07/12/1818:10	M47G006025	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0802-SO-0	F187-05	1	4.9	07/13/1810:38	07/12/1818:10	M47G006026	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0502-SO-0	F187-08	1	3.5	07/13/1810:39	07/12/1818:10	M47G006027	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0701-SO-0	F187-10	1	5.8	07/13/1810:42	07/12/1818:10	M47G006028	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0702-SO-0	F187-11	1	4.7	07/13/1810:44	07/12/1818:10	M47G006029	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0301-SO-0	F187-12	1	4.0	07/13/1810:46	07/12/1818:10	M47G006030	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0302-SO-0	F187-13	1	6.5	07/13/1810:48	07/12/1818:10	M47G006031	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0602-SO-0	F187-14	1	5.1	07/13/1810:50	07/12/1818:10	M47G006032	M47G006	18HGG005S	Field Sample
18Q2DP009-SB0601-SO-0	F187-15I	2	7.6	07/13/1811:09	07/12/1818:10	M47G006041	M47G006	18HGG005S	Diluted Sample
18Q2DP009-SB0601-SO-1	F187-16I	2	6.9	07/13/1811:11	07/12/1818:10	M47G006042	M47G006	18HGG005S	Diluted Sample
18Q2DP009-IDW-SO01	F187-17I	5	8.1	07/13/1811:13	07/12/1818:10	M47G006043	M47G006	18HGG005S	Diluted Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW7471B
MERCURY BY COLD VAPOR

Client : CH2M HILL
Project : JBER TO075
Batch No. : 18F187

Matrix : SOIL
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/Kg)	DILT'N FACTOR	MOIST (%)	LOQ (mg/Kg)	DL (mg/Kg)	LOD (mg/Kg)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATE
MBLK1S	HGG005SB	ND	1	NA	0.100	0.0100	0.0200	07/13/1810:09	07/12/1818:10	M47G006012	M47G006	18HGG005S	NA	NA
LCS1S	HGG005SL	0.443	1	NA	0.100	0.0100	0.0200	07/13/1810:11	07/12/1818:10	M47G006013	M47G006	18HGG005S	NA	NA
LCD1S	HGG005SC	0.438	1	NA	0.100	0.0100	0.0200	07/13/1810:13	07/12/1818:10	M47G006014	M47G006	18HGG005S	NA	NA
18Q2DP009-SB0501-SO-0	F187-07	0.0650J	1	3.9	0.0964	0.00964	0.0193	07/13/1810:17	07/12/1818:10	M47G006016	M47G006	18HGG005S	06/22/1811:50	06/26/18
18Q2DP009-SB0501-SO-0MS	F187-07M	0.474	1	3.9	0.0968	0.00968	0.0194	07/13/1810:21	07/12/1818:10	M47G006018	M47G006	18HGG005S	06/22/1811:50	06/26/18
18Q2DP009-SB0501-SO-0MSD	F187-07S	0.482	1	3.9	0.0974	0.00974	0.0195	07/13/1810:23	07/12/1818:10	M47G006019	M47G006	18HGG005S	06/22/1811:50	06/26/18
18Q2DP009-SB0401-SO-0	F187-01	0.0347J	1	4.8	0.0987	0.00987	0.0197	07/13/1810:25	07/12/1818:10	M47G006020	M47G006	18HGG005S	06/21/1816:10	06/26/18
18Q2DP009-SB0401-SO-1	F187-02	0.0369J	1	4.6	0.102	0.0102	0.0203	07/13/1810:28	07/12/1818:10	M47G006021	M47G006	18HGG005S	06/21/1816:11	06/26/18
18Q2DP009-SB0402-SO-0	F187-03	0.0647J	1	5.3	0.101	0.0101	0.0201	07/13/1810:34	07/12/1818:10	M47G006024	M47G006	18HGG005S	06/21/1816:30	06/26/18
18Q2DP009-SB0801-SO-0	F187-04	0.0678J	1	8.6	0.104	0.0104	0.0207	07/13/1810:35	07/12/1818:10	M47G006025	M47G006	18HGG005S	06/21/1818:50	06/26/18
18Q2DP009-SB0802-SO-0	F187-05	0.0304J	1	4.9	0.0992	0.00992	0.0198	07/13/1810:38	07/12/1818:10	M47G006026	M47G006	18HGG005S	06/21/1819:45	06/26/18
18Q2DP009-SB0502-SO-0	F187-08	0.0413J	1	3.5	0.103	0.0103	0.0207	07/13/1810:39	07/12/1818:10	M47G006027	M47G006	18HGG005S	06/22/1812:30	06/26/18
18Q2DP009-SB0701-SO-0	F187-10	0.0716J	1	5.8	0.105	0.0105	0.0209	07/13/1810:42	07/12/1818:10	M47G006028	M47G006	18HGG005S	06/22/1813:55	06/26/18
18Q2DP009-SB0702-SO-0	F187-11	0.0519J	1	4.7	0.105	0.0105	0.0210	07/13/1810:44	07/12/1818:10	M47G006029	M47G006	18HGG005S	06/22/1814:15	06/26/18
18Q2DP009-SB0301-SO-0	F187-12	0.0221J	1	4.0	0.0982	0.00982	0.0196	07/13/1810:46	07/12/1818:10	M47G006030	M47G006	18HGG005S	06/23/1810:15	06/26/18
18Q2DP009-SB0302-SO-0	F187-13	0.0419J	1	6.5	0.102	0.0102	0.0204	07/13/1810:48	07/12/1818:10	M47G006031	M47G006	18HGG005S	06/23/1810:35	06/26/18
18Q2DP009-SB0602-SO-0	F187-14	0.0521J	1	5.1	0.101	0.0101	0.0202	07/13/1810:50	07/12/1818:10	M47G006032	M47G006	18HGG005S	06/23/1812:15	06/26/18
18Q2DP009-SB0601-SO-0	F187-15I	1.14	2	7.6	0.203	0.0203	0.0407	07/13/1811:09	07/12/1818:10	M47G006041	M47G006	18HGG005S	06/23/1812:50	06/26/18
18Q2DP009-SB0601-SO-1	F187-16I	1.11	2	6.9	0.213	0.0213	0.0427	07/13/1811:11	07/12/1818:10	M47G006042	M47G006	18HGG005S	06/23/1812:51	06/26/18
18Q2DP009-IDW-SO01	F187-17I	1.82	5	8.1	0.533	0.0533	0.107	07/13/1811:13	07/12/1818:10	M47G006043	M47G006	18HGG005S	06/23/1813:20	06/26/18

Note: Detection limits are reported relative to sample result significant figures.

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : METHOD SW7471B

MATRIX	: SOIL		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1S	LCS1S	LCD1S
LAB SAMPLE ID	: HGG005SB	HGG005SL	HGG005SC
LAB FILE ID	: M47G006012	M47G006013	M47G006014
DATE PREPARED	: 07/12/1818:10	07/12/1818:10	07/12/1818:10
DATE ANALYZED	: 07/13/1810:09	07/13/1810:11	07/13/1810:13
PREP BATCH	: 18HGG005S	18HGG005S	18HGG005S
CALIBRATION REF	: M47G006	M47G006	M47G006

ACCESSION:

PARAMETERS	MBResult (mg/Kg)	SpikeAmt (mg/Kg)	LCSResult (mg/Kg)	LCSRec (%)	SpikeAmt (mg/Kg)	LCDResult (mg/Kg)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	0.417	0.443	106	0.417	0.438	105	1	80-124	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CH2M HILL
PROJECT : JBER TO075
BATCH NO. : 18F187
METHOD : METHOD SW7471B

MATRIX	: SOIL		% MOISTURE:3.9
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 18Q2DP009-SB0501-SO-0	18Q2DP009-SB0501-SO-0MS	18Q2DP009-SB0501-SO-0MSD
LAB SAMPLE ID	: F187-07	F187-07M	F187-07S
LAB FILE ID	: M47G006016	M47G006018	M47G006019
DATE PREPARED	: 07/12/1818:10	07/12/1818:10	07/12/1818:10
DATE ANALYZED	: 07/13/1810:17	07/13/1810:21	07/13/1810:23
PREP BATCH	: 18HGG005S	18HGG005S	18HGG005S
CALIBRATION REF	: M47G006	M47G006	M47G006

ACCESSION:

PARAMETERS	PSResult (mg/Kg)	SpikeAmt (mg/Kg)	MSResult (mg/Kg)	MSRec (%)	SpikeAmt (mg/Kg)	MSDResult (mg/Kg)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	0.0650J	0.404	0.474	101	0.406	0.482	103	2	80-124	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
MERCURY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 7/13/18 **Start Time:** 9:43

End Date: 7/13/18 **End Time:** 11:21

Comments:

QC OK

F187-15 & 16 were overranged, Diluted at 2X 5mL → 10mL = 2X

F187-17 was overranged, Diluted at 5X 2mL → 10mL = 5X

Book #: A47-111

Instrument No.: 47

Analytical Sequence/Batch: H47G006

Method File: HG1

Micropipette ID: ☐ ICP DOE-1

Micropipette ID: ☑ HG-03

Micropipette ID: ☑ HG-05

Micropipette ID: ☐

SOP #	Rev. #
☐ EMAX-7470	8
☑ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

STANDARDS ID	
S1	BLANK
S2	SM3B-16-31-09
S3	
S4	
S5	
S6	
CCV	
ICV	SM3B-16-31-10
LCS	
Analytical Spike	
	SM3B-16-32-01 TV 3ug/L

Analyzed By: NT

Date: 7/13/18

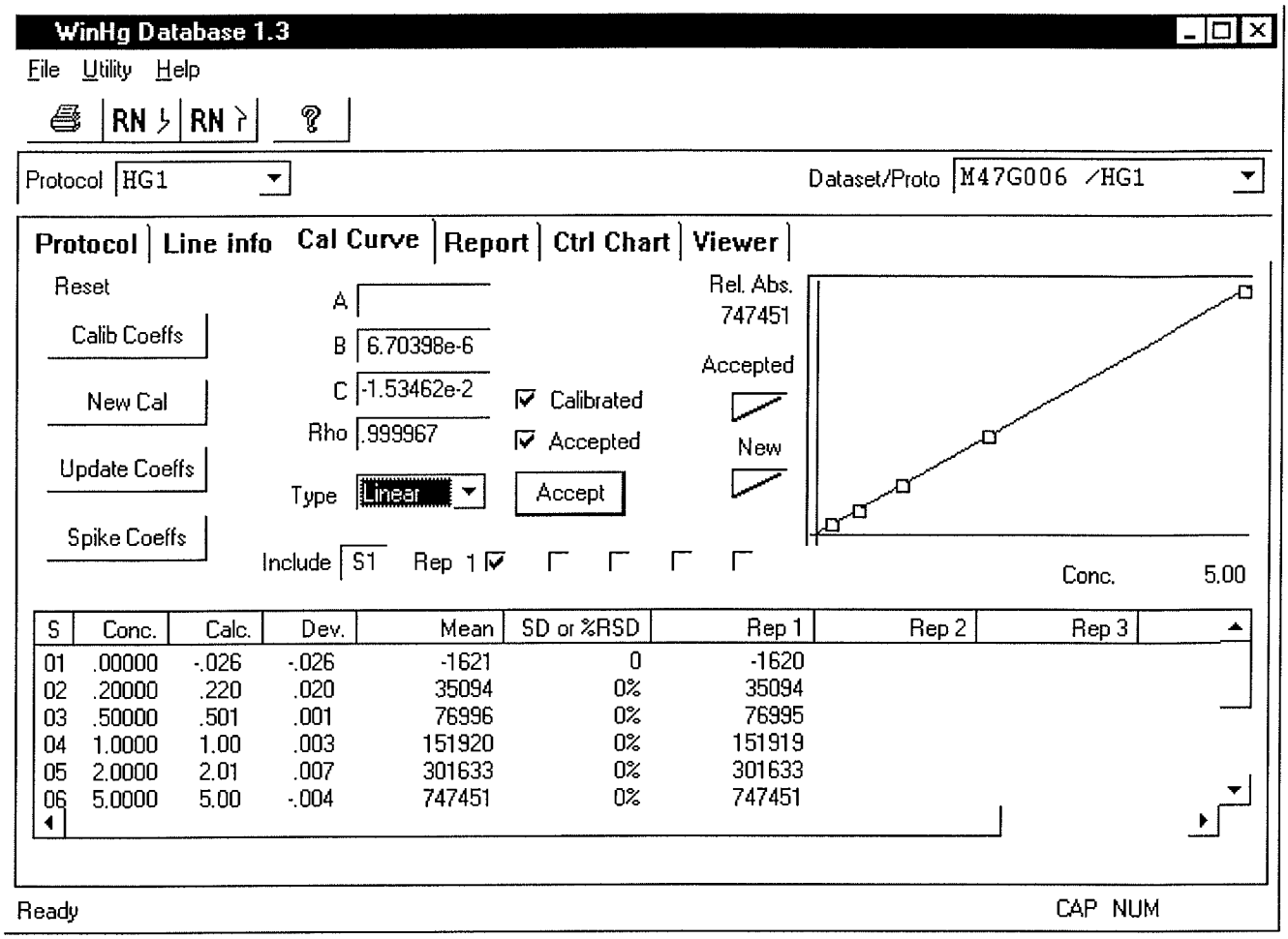
"M47G006"

EMAX1fid	EMAX1sid	conc	Raw_resp	rsd/rf	adatetime	DF
M47G006001	STD01REP1	0	-1620		07/13/1809:43	1
M47G006002	STD02REP1	.2	35094		07/13/1809:46	1
M47G006003	STD03REP1	.5	76995		07/13/1809:48	1
M47G006004	STD04REP1	1	151919		07/13/1809:50	1
M47G006005	STD05REP1	2	301633		07/13/1809:52	1
M47G006006	STD06REP1	5	747451		07/13/1809:55	1
M47G006007	ICV	2.05	308457	0	07/13/1809:59	1
M47G006008	ICB	-.022	-967	0	07/13/1810:01	1
M47G006009	MRLG1301	.508	78054	0	07/13/1810:03	1
M47G006010	CCV1	2.06	309395	0	07/13/1810:05	1
M47G006011	CCB1	.035	7581	0	07/13/1810:07	1
M47G006012	HGG005SB	.004	2905	0	07/13/1810:09	1
M47G006013	HGG005SL	2.66	398561	0	07/13/1810:11	1
M47G006014	HGG005SC	2.63	394651	0	07/13/1810:13	1
M47G006015	F187-07A	3.4	509069	0	07/13/1810:15	1
M47G006016	F187-07	.405	62715	0	07/13/1810:17	1
M47G006017	F187-07J	.032	7085	0	07/13/1810:19	5
M47G006018	F187-07M	2.94	441497	0	07/13/1810:21	1
M47G006019	F187-07S	2.97	444706	0	07/13/1810:23	1
M47G006020	F187-01	.211	33730	0	07/13/1810:25	1
M47G006021	F187-02	.218	34768	0	07/13/1810:28	1
M47G006022	CCV2	2.1	315512	0	07/13/1810:30	1
M47G006023	CCB2	.018	4967	0	07/13/1810:32	1
M47G006024	F187-03	.386	59894	0	07/13/1810:34	1
M47G006025	F187-04	.392	60737	0	07/13/1810:35	1
M47G006026	F187-05	.184	29727	0	07/13/1810:38	1
M47G006027	F187-08	.24	38055	0	07/13/1810:39	1
M47G006028	F187-10	.411	63624	0	07/13/1810:42	1
M47G006029	F187-11	.297	46542	0	07/13/1810:44	1
M47G006030	F187-12	.135	22383	0	07/13/1810:46	1
M47G006031	F187-13	.246	38994	0	07/13/1810:48	1
M47G006032	F187-14	.31	48537	0	07/13/1810:50	1
M47G006033	F187-15	6.72	1005001	0	07/13/1810:52	1
M47G006034	CCV3	2.07	310491	0	07/13/1810:54	1
M47G006035	CCB3	-.014	219	0	07/13/1810:56	1
M47G006036	F187-16	6.33	947220	0	07/13/1810:58	1
M47G006037	F187-17	10.9	1626659	0	07/13/1811:01	1
M47G006038	F230-01	.459	70731	0	07/13/1811:03	1
M47G006039	F230-02	.286	45002	0	07/13/1811:05	1
M47G006040	F578-01	-.001	2137	0	07/13/1811:07	1
M47G006041	F187-15I	3.37	505299	0	07/13/1811:09	2
M47G006042	F187-16I	3.12	467607	0	07/13/1811:11	2
M47G006043	F187-17I	2.05	307991	0	07/13/1811:13	5
M47G006044	F230-01N	.49	75440	0	07/13/1811:16	1
M47G006045	CCV4	2.11	317098	0	07/13/1811:18	1
M47G006046	CCB4	-.005	1485	0	07/13/1811:21	1
**********	**********	**********	**********	**********	**********	***
EMAX1fid	EMAX1sid	Xint	Yint	rrf	adatetime	DF
M47G006000		0	0	0	07/13/1811:21	1
M47G006001	BLANK	-1.904045E-02	2833.031	.9999879	07/13/1811:21	1

M47G006

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	MRLG1301	0.5	1.0000	1.0000	
4	CCV1		1.0000	1.0000	
5	CCB1		1.0000	1.0000	
6	HGG005SB		1.0000	1.0000	
7	HGG005SL		1.0000	1.0000	
8	HGG005SC		1.0000	1.0000	
9	F187-07A		1.0000	1.0000	
10	F187-07		1.0000	1.0000	
11	F187-07J		1.0000	1.0000	
12	F187-07M		1.0000	1.0000	
13	F187-07S		1.0000	1.0000	
14	F187-01		1.0000	1.0000	
15	F187-02		1.0000	1.0000	
16	CCV2		1.0000	1.0000	
17	CCB2		1.0000	1.0000	
18	F187-03		1.0000	1.0000	
19	F187-04		1.0000	1.0000	
20	F187-05		1.0000	1.0000	
21	F187-08		1.0000	1.0000	
22	F187-10		1.0000	1.0000	
23	F187-11		1.0000	1.0000	
24	F187-12		1.0000	1.0000	
25	F187-13		1.0000	1.0000	
26	F187-14		1.0000	1.0000	
27	F187-15		1.0000	1.0000	
28	CCV3		1.0000	1.0000	
29	CCB3		1.0000	1.0000	
30	F187-16		1.0000	1.0000	
31	F187-17		1.0000	1.0000	
32	F230-01		1.0000	1.0000	
33	F230-02		1.0000	1.0000	
34	F578-01		1.0000	1.0000	
35	F187-15I	2X	1.0000	1.0000	
36	F187-16I	2X	1.0000	1.0000	
37	F187-17I	5X	1.0000	1.0000	
38	F230-01N		1.0000	1.0000	
39	CCV4		1.0000	1.0000	
40	CCB4		1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	
43			1.0000	1.0000	
44			1.0000	1.0000	

NT 7/13/18


WinHg Database 1.3
File Utility Help
RN
RN
Protocol HG1
Dataset/Proto M47G006 /HG1
Protocol
Line info
Cal Curve
Report
Ctrl Chart
Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 6.70398e-6
C -1.53462e-2
Rho .999967
Type Linear
Calibrated
Accepted
Accept
Include S1
Rep 1
Rel. Abs.
747451
Accepted
New
Conc. 5.00
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 -.026 -.026 -1621 0 -1620
02 .20000 .220 .020 35094 0% 35094
03 .50000 .501 .001 76996 0% 76995
04 1.0000 1.00 .003 151920 0% 151919
05 2.0000 2.01 .007 301633 0% 301633
06 5.0000 5.00 -.004 747451 0% 747451
Ready
CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1	09:43:36 13 Jul 18	HG		
Hg	.000	ppb	-1620					
*** Standard: 2 Rep: 1				Seq: 2	09:46:03 13 Jul 18	HG		
Hg	.200	ppb	35094					
*** Standard: 3 Rep: 1				Seq: 3	09:48:10 13 Jul 18	HG		
Hg	.500	ppb	76995					
*** Standard: 4 Rep: 1				Seq: 4	09:50:33 13 Jul 18	HG		
Hg	1.00	ppb	151919					
*** Standard: 5 Rep: 1				Seq: 5	09:52:27 13 Jul 18	HG		
Hg	2.00	ppb	301633					
*** Standard: 6 Rep: 1				Seq: 6	09:55:10 13 Jul 18	HG		
Hg	5.00	ppb	747451					
*** Sample ID: ICV				Seq: 7	09:59:19 13 Jul 18	HG		
Hg	2.05	ppb	308457					
*** Sample ID: ICB				Seq: 8	10:01:25 13 Jul 18	HG		
Hg	-.022	ppb	-967					
*** Sample ID: MRLG1301				Seq: 9	10:03:17 13 Jul 18	HG		
Hg	.508	ppb	0.5 78054					
*** Sample ID: CCV1				Seq: 10	10:05:13 13 Jul 18	HG		
Hg	2.06	ppb	309395					
*** Sample ID: CCB1				Seq: 11	10:07:21 13 Jul 18	HG		
Hg	.035	ppb	7581					
*** Sample ID: HGG005SB				Seq: 12	10:09:16 13 Jul 18	HG		
Hg	.004	ppb	2905					
*** Sample ID: HGG005SL				Seq: 13	10:11:11 13 Jul 18	HG		
Hg	2.66	ppb	398561					
*** Sample ID: HGG005SC				Seq: 14	10:13:24 13 Jul 18	HG		
Hg	2.63	ppb	394651					
*** Sample ID: F187-07A				Seq: 15	10:15:30 13 Jul 18	HG		
Hg	3.40	ppb	509069					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F187-07				Seq: 16	10:17:29 13 Jul 18	HG		
Hg	.405	ppb	62715					
*** Sample ID: F187-07J				Seq: 17	10:19:38 13 Jul 18	HG		
Hg	.032	ppb	7085					
*** Sample ID: F187-07M				Seq: 18	10:21:36 13 Jul 18	HG		
Hg	2.94	ppb	441497					
*** Sample ID: F187-07S				Seq: 19	10:23:44 13 Jul 18	HG		
Hg	2.97	ppb	444706					
*** Sample ID: F187-01				Seq: 20	10:25:49 13 Jul 18	HG		
Hg	.211	ppb	33730					
*** Sample ID: F187-02				Seq: 21	10:28:12 13 Jul 18	HG		
Hg	.218	ppb	34768					
*** Sample ID: CCV2				Seq: 22	10:30:09 13 Jul 18	HG		
Hg	2.10	ppb	315512					
*** Sample ID: CCB2				Seq: 23	10:32:08 13 Jul 18	HG		
Hg	.018	ppb	4967					
*** Sample ID: F187-03				Seq: 24	10:34:02 13 Jul 18	HG		
Hg	.386	ppb	59894					
*** Sample ID: F187-04				Seq: 25	10:35:58 13 Jul 18	HG		
Hg	.392	ppb	60737					
*** Sample ID: F187-05				Seq: 26	10:38:04 13 Jul 18	HG		
Hg	.184	ppb	29727					
*** Sample ID: F187-08				Seq: 27	10:39:58 13 Jul 18	HG		
Hg	.240	ppb	38055					
*** Sample ID: F187-10				Seq: 28	10:42:04 13 Jul 18	HG		
Hg	.411	ppb	63624					
*** Sample ID: F187-11				Seq: 29	10:44:03 13 Jul 18	HG		
Hg	.297	ppb	46542					
*** Sample ID: F187-12				Seq: 30	10:46:02 13 Jul 18	HG		
Hg	.135	ppb	22383					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F187-13				Seq: 31	10:48:48 13 Jul 18	HG		
Hg	.246	ppb	38994					
*** Sample ID: F187-14				Seq: 32	10:50:42 13 Jul 18	HG		
Hg	.310	ppb	48537					
*** Sample ID: F187-15				Seq: 33	10:52:49 13 Jul 18	HG		
Hg	6.72	ppb	1005001					
*** Sample ID: CCV3				Seq: 34	10:54:48 13 Jul 18	HG		
Hg	2.07	ppb	310491					
*** Sample ID: CCB3				Seq: 35	10:56:42 13 Jul 18	HG		
Hg	-.014	ppb	219					
*** Sample ID: F187-16				Seq: 36	10:58:48 13 Jul 18	HG		
Hg	6.33	ppb	947220					
*** Sample ID: F187-17				Seq: 37	11:01:36 13 Jul 18	HG		
Hg	10.9	ppb	1626659					
*** Sample ID: F230-01				Seq: 38	11:03:31 13 Jul 18	HG		
Hg	.459	ppb	70731					
*** Sample ID: F230-02				Seq: 39	11:05:26 13 Jul 18	HG		
Hg	.286	ppb	45002					
*** Sample ID: F578-01				Seq: 40	11:07:21 13 Jul 18	HG		
Hg	-.001	ppb	2137					
*** Sample ID: F187-15I			2X	Seq: 41	11:09:39 13 Jul 18	HG		
Hg	3.37	ppb	505299					
*** Sample ID: F187-16I			2X	Seq: 42	11:11:48 13 Jul 18	HG		
Hg	3.12	ppb	467607					
*** Sample ID: F187-17I			5X	Seq: 43	11:13:44 13 Jul 18	HG		
Hg	2.05	ppb	307991					
*** Sample ID: F230-01N				Seq: 44	11:16:11 13 Jul 18	HG		
Hg	.490	ppb	75440					
*** Sample ID: CCV4				Seq: 45	11:18:16 13 Jul 18	HG		
Hg	2.11	ppb	317098					

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: CCB4 Seq: 46 11:21:13 13 Jul 18 HG

Hg	-.005	ppb	1485					

EMAX LABORATORIES, INC.

DIGESTION LOG
for
MERCURY

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 15517006

Aqua regia prep vessel lot # 15517006.

Book #: E47-108
Batch No.: HGG0055
Matrix: SOIL

SOP #	Rev. #
☐ EMAX-7470	8
☑ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SMSB-16-31-09	100	0.2, 0.5, 1, 2.5
CCV	↓	↓	2
ICV	SMSB-16-31-10	↓	2
LCS/MS	↓	↓	2.5

Reagent	ID / Lot #
HNO_3 / aqua	SWA-006-09-20
HCl / regia	SWA-006-08-09
H_2SO_4	N/A
$KMnO_4$	SMSB-03-92-01
$K_2S_2O_8$	N/A
$NH_2OH \cdot HCl \cdot NaCl$	SMSB-03-92-02
$SnCl_2$	SMSB-03-92-03
Silica Sand	SWB-002-43-08
Reagent Water	RW1-IT-001
pH strip 0-14	N/A
Digestor ID/ Temp (°C)	A / 94.8
Thermometer ID/LOC:	111241125 / A24
Thermometer ID/LOC: NT 7/12/18	N/A
Pipette ID:	ICP DOE-1, HG-03, HG-05

☐ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder

☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder

☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder

Prepared By: NT

Standard Added By: NT Witnessed By: LV

EMAX LABORATORIES, INC.

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
18HGG005S01	HGG005SB	0.6	g	7/12/18 16:20	100	0.6	100	1	
18HGG005S02	HGG005SL	0.6	g	7/12/18 16:20	100	0.6	100	1	
18HGG005S03	HGG005SC	0.6	g	7/12/18 16:21	100	0.6	100	1	
18HGG005S04	F187-01	0.638	g	7/12/18 16:21	100	0.6	100	0.94	
18HGG005S05	F187-02	0.619	g	7/12/18 17:32	100	0.6	100	0.969	
18HGG005S06	F187-03	0.63	g	7/12/18 17:33	100	0.6	100	0.952	
18HGG005S07	F187-04	0.633	g	7/12/18 17:34	100	0.6	100	0.948	
18HGG005S08	F187-05	0.636	g	7/12/18 17:34	100	0.6	100	0.943	
18HGG005S09	F187-07	0.648	g	7/12/18 17:35	100	0.6	100	0.926	
18HGG005S10	F187-07M	0.645	g	7/12/18 17:35	100	0.6	100	0.93	
18HGG005S11	F187-07S	0.641	g	7/12/18 17:36	100	0.6	100	0.936	
18HGG005S12	F187-08	0.602	g	7/12/18 17:36	100	0.6	100	0.997	
18HGG005S13	F187-10	0.609	g	7/12/18 17:37	100	0.6	100	0.985	
18HGG005S14	F187-11	0.6	g	7/12/18 17:38	100	0.6	100	1	
18HGG005S15	F187-12	0.636	g	7/12/18 17:38	100	0.6	100	0.943	
18HGG005S16	F187-13	0.628	g	7/12/18 17:38	100	0.6	100	0.955	
18HGG005S17	F187-14	0.627	g	7/12/18 17:39	100	0.6	100	0.957	
18HGG005S18	F187-15	0.638	g	7/12/18 17:40	100	0.6	100	0.94	
18HGG005S19	F187-16	0.604	g	7/12/18 17:41	100	0.6	100	0.993	
18HGG005S20	F187-17	0.612	g	7/12/18 17:41	100	0.6	100	0.98	
18HGG005S21	F230-01	0.628	g	7/12/18 17:42	100	0.6	100	0.955	
18HGG005S22	F230-02	0.607	g	7/12/18 17:43	100	0.6	100	0.988	
18HGG005S23	F578-01	0.616	g	7/12/18 17:44	100	0.6	100	0.974	
18HGG005S24	S-0/CCB/ICB	0.6	g	7/12/18 17:44	100	0.6	100	1	
18HGG005S25	S-0.2	0.6	g	7/12/18 17:44	100	0.6	100	1	
18HGG005S26	S-0.5	0.6	g	7/12/18 17:44	100	0.6	100	1	
18HGG005S27	S-1	0.6	g	7/12/18 17:44	100	0.6	100	1	
18HGG005S28	S-2/CCV	0.6	g	7/12/18 17:44	100	0.6	100	1	
18HGG005S29	S-5	0.6	g	7/12/18 17:44	100	0.6	100	1	
18HGG005S30	ICV	0.6	g	7/12/18 17:44	100	0.6	100	1	
18HGG005S31	PS SOIL	0.6	g	7/12/18 17:44	100	0.6	100	1	
18HGG005S32	MRL-0.5	0.6	g	7/12/18 17:44	100	0.6	100	1	

NT 7/12/18

Balance ID: 10601202. Calibration check was verified prior to use.

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 7/12/18 18:10

Prepared By: NTan

☑ Digestion Ended @ 7/12/18 19:10

Checked By: NT

Comments:

Date 7/12/18

SOP EMAX-7471 Rev. 9

Air TECHNOLOGY
Laboratories, Inc.

August 21, 2018

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Jacobs
ATTN: Corey Schwabenlander
4246 S. Riverboat Rd, Suite 210
Taylorsville, UT 84123

LABORATORY TEST RESULTS

AFCEC Contract No.: FA8903-16-D-0026
Contract Number: 694734.02.02.09.01
Site Location: JBER TO 0075 DP009 Bldg 986
Lab Number: J072607-01/08

Enclosed are **revised** results for sample(s) received 7/26/18 by Air Technology Laboratories, Inc. (ATLI). This revision replaces the report dated 8/20/18 in its entirety and now includes results for 1,2,4-Trimethylbenzene for EPA TO15, per client's request. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

CASE NARRATIVE (attached)
ANALYTICAL RESULTS (attached)
SAMPLE MANAGEMENT RECORDS (attached)
QA/QC INFORMATION (attached)

Preliminary results were e-mailed to Corey Schwabenlander and Quin Bingham on 8/17/18.

Laboratory test results shall not be reproduced, except in full, without the written approval of the laboratory. ATLI appreciates the opportunity to have provided these testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures
Note: The cover letter is an integral part of this analytical report.

CASE NARRATIVE:

1. Sample Receipt Summary (attached)
2. List of data qualifiers (attached)
3. No subcontract laboratories were utilized.
4. All samples received were analyzed.
5. HOLDING TIMES – all samples were analyzed within required holding-times.
6. BFB CRITERIA (if applicable) – all BFB analyses were within required criteria.
7. INITIAL CALIBRATION – initial calibration criteria were met.
8. INITIAL CALIBRATION VERIFICATION – initial calibration verification criteria were met.
9. CONTINUING CALIBRATION VERIFICATION – continuing calibration criteria were met.
10. LABORATORY CONTROL SAMPLE/DUPLICATE – all analytes were within required criteria.
11. METHOD BLANK – all analytes were within required criteria.
12. SURROGATE RECOVERIES (if applicable) – all analytes were within required criteria.
13. INTERNAL STANDARD CRITERIA (if applicable) – all analytes were within required criteria.
14. All samples received in an acceptable condition to proceed with analysis
15. MANUAL INTEGRATIONS – none required.
16. Sample analyses were performed within method performance criteria and in accordance with TNI Standards dated 2009 and DoD QSM version 5.1, unless project-specific requirements are specified by the client.
17. The enclosed results relate only to the sample(s).

SAMPLE RECEIPT

DATE REC'D	TIME REC'D	LAB No.	DATE COLL	TIME COLL	CLIENT ID	ANALYSIS
7/26/18	09:36	J072607-01	7/25/18	11:25	18Q3DP009-OA01-OA-0	TO15 SIM
7/26/18	09:36	J072607-02	7/25/18	11:19	18Q3DP009-IA01-IA-0	TO15 SIM
7/26/18	09:36	J072607-03	7/25/18	11:05	18Q3DP009-IA02-IA-0	TO15 SIM
7/26/18	09:36	J072607-04	7/25/18	11:16	18Q3DP009-IA03-IA-0	TO15 SIM
7/26/18	09:36	J072607-05	7/25/18	11:10	18Q3DP009-IA04-IA-0	TO15 SIM
7/26/18	09:36	J072607-06	7/25/18	11:10	18Q3DP009-IA04-IA-1	TO15 SIM
7/26/18	09:36	J072607-07	7/24/18	11:24	18Q3DP009-SS01-SS-0	TO15 Scan
7/26/18	09:36	J072607-08	7/24/18	10:59	18Q3DP009-SS02-SS-0	TO15 Scan

List of Data Qualifiers	
Qualifier	**Description**
B	Analyte detected in method blank (less than 10x blank level)
D	Analyte reported from secondary dilution
E	Estimated value. Exceeds instrument calibration range.
J	Trace estimated amount less than LOQ but greater or equal to LOD
M	Matrix interference
N	See Case Narrative
Q	QC issue associated with analyte, see Case Narrative
*	Custom footnote, sample specific

J072607a

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

Standard ☑ 48 hours ☐
Same Day ☐ 72 hours ☐
24 hours ☐ 96 hours ☐
Other:

DELIVERABLES

EDD ☑
EDF ☐
LEVEL 3 ☐
LEVEL 4 ☑ Lakspec

PAGE: 1 **OF** 1

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.: 694734.02.02.09.01
Project Name: JBER TO 0075 DP009 Bldg 986
Report To: Corey Schwabenlaender
Company: JACOBS
Street: 4246 S. Riverboat Rd., Suite 210
City/State/Zip: Taylorsville, UT ~~84123~~ 84123
Phone& Fax: 385-474-8554
e-mail: Corey.Schwabenlaender@JACOBS.com

BILLING

P.O. No.:
Bill to:

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	CONTAINER TYPE	TO-15 - Benzene, 12DCA, Naphthalene, PCE, TCE @ 1127/18	TO-15 SIM (Benzene, 12DCA, Naphthalene) PCE, TCE				
J072607-01	18Q3DP009-0A01-0A-0	7/25/18	1125	OA	6-L	✓	✓				
-02	18Q3DP009-IA01-IA-0		1119	IA		✓	✓				
-03	18Q3DP009-IA02-IA-0		1105			✓	✓				
-04	18Q3DP009-IA03-IA-0		1116			✓	✓				
-05	18Q3DP009-IA04-IA-0		1110			✓	✓				
-06	18Q3DP009-IA04-IA-1		1110			✓	✓				
-07	18Q3DP009-SS01-SS-0	7/24/18	1054	SS	1-L	✓	✓				
-08	18Q3DP009-SS02-SS-0	7/24/18	1057	SS	1-L	✓	✓				

AUTHORIZATION TO PERFORM WORK	COMPANY	DATE/TIME	
SAMPLED BY Max Brayham	COMPANY JACOBS	DATE/TIME 7/24 - 7/25/18 1159	
RELINQUISHED BY Max Brayham	DATE/TIME 7/25/18 1256	RECEIVED BY	DATE/TIME
RELINQUISHED BY FedEx	DATE/TIME	RECEIVED BY	DATE/TIME 7/26/18 0935
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____

COMMENTS

OA = outdoor air
IA = indoor air
SS = Subslab soil gas

TO-15 SIM = Benzene, 12DCA, Naphthalene, PCE, TCE

* Samples may contain high concentrations of PHCs. Inst. Cont'd via email w/CS. 7/27/18

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCL **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other

Rev. 03 - 5/7/09

Client: Jacobs
Attn: Corey Schwabenlander
Project Name: JBER
Project No.: 694734.02.02.09.01
Date Received: 07/26/18
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	J072607-01			J072607-02			J072607-03			J072607-04		
Client Sample I.D.:	18Q3DP009-OA01-OA-0			18Q3DP009-IA01-IA-0			18Q3DP009-IA02-IA-0			18Q3DP009-IA03-IA-0		
Date/Time Sampled:	7/25/18 11:25			7/25/18 11:19			7/25/18 11:05			7/25/18 11:16		
Date/Time Analyzed:	8/7/18 14:29			8/7/18 15:14			8/7/18 16:01			8/7/18 16:48		
QC Batch No.:	180807MS2A1			180807MS2A1			180807MS2A1			180807MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	1.0			1.0			1.0			1.0		
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	LOQ ug/m3	LOD ug/m3
Benzene	0.23	0.16	0.032	0.24	0.16	0.032	0.20	0.16	0.032	0.37	0.16	0.032
1,2-Dichloroethane	0.071	0.040	0.012	0.047	0.040	0.012	0.075	0.040	0.012	0.064	0.040	0.012
Trichloroethene	0.013 J	0.054	0.0054	ND	0.054	0.0054	ND	0.054	0.0054	0.013 J	0.054	0.0054
Tetrachloroethene	0.079	0.068	0.034	0.048 J	0.068	0.034	0.034 J	0.068	0.034	0.049 J	0.068	0.034
Naphthalene	1.1	0.10	0.052	0.34	0.10	0.052	0.32	0.10	0.052	0.72	0.10	0.052

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Date 8/10/18
Operations Manager

The cover letter is an integral part of this analytical report

Client: Jacobs
Attn: Corey Schwabenlander
Project Name: JBER
Project No.: 694734.02.02.09.01
Date Received: 07/26/18
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	J072607-05			J072607-06								
Client Sample I.D.:	18Q3DP009-IA04-IA-0			18Q3DP009-IA04-IA-1								
Date/Time Sampled:	7/25/18 11:10			7/25/18 11:10								
Date/Time Analyzed:	8/7/18 17:36			8/7/18 18:23								
QC Batch No.:	180807MS2A1			180807MS2A1								
Analyst Initials:	DT			DT								
Dilution Factor:	1.0			1.0								
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	LOQ ug/m3	LOD ug/m3						
Benzene	0.19	0.16	0.032	0.21	0.16	0.032						
1,2-Dichloroethane	0.060	0.040	0.012	0.061	0.040	0.012						
Trichloroethene	0.0057 J	0.054	0.0054	0.0064 J	0.054	0.0054						
Tetrachloroethene	0.036 J	0.068	0.034	ND	0.068	0.034						
Naphthalene	0.26	0.10	0.052	0.24	0.10	0.052						

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Operations Manager

Date 8/17/18

The cover letter is an integral part of this analytical report

Client: Jacobs
Attn: Corey Schwabenlander
Project Name: JBER
Project No.: 694734.02.02.09.01
Date Received: 07/26/18
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	METHOD BLANK		
Client Sample I.D.:	--		
Date/Time Sampled:	--		
Date/Time Analyzed:	8/7/18 12:47		
QC Batch No.:	180807MS2A1		
Analyst Initials:	DT		
Dilution Factor:	1.0		

ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3
Benzene	ND	0.16	0.032
1,2-Dichloroethane	ND	0.040	0.012
Trichloroethene	ND	0.054	0.0054
Tetrachloroethene	ND	0.068	0.034
Naphthalene	ND	0.10	0.052

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Operations Manager

Date 8/17/18

The cover letter is an integral part of this analytical report

QC Batch No: 180807MS2A1
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	8/7/18 12:47			8/7/18 11:24		8/7/18 12:04					
Analyst Initials:	VM			VM		VM					
Dilution Factor:	1.0			1.0		1.0					
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	% Rec.	Result ug/m3	% Rec.	RPD	Low %Rec	High %Rec	Max. RPD
Vinyl Chloride	ND	0.013	0.0077	1.40	109	1.22	96	13.4	70	130	30
1,1-Dichloroethene	ND	0.020	0.0099	2.39	121	2.11	106	12.8	70	130	30
1,1,1-Trichloroethane	ND	0.055	0.016	2.77	101	2.73	100	1.3	70	130	30
Benzene	ND	0.16	0.032	1.47	92	1.43	89	3.1	70	130	30
Trichloroethene	ND	0.054	0.0054	2.31	86	2.22	83	4.2	70	130	30
Tetrachloroethene	ND	0.068	0.034	2.83	83	2.75	81	2.7	70	130	30

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Date: 8/17/18

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Jacobs
Attn: Corey Schwabenlander
Project Name: JBER
Project No.: 694734.02.02.09.01
Date Received: 07/26/18
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15

Lab No.:	J072607-07			J072607-08								
Client Sample I.D.:	18Q3DP009-SS01-SS-0			18Q3DP009-SS02-SS-0								
Date/Time Sampled:	7/24/18 11:24			7/24/18 10:59								
Date/Time Analyzed:	8/8/18 15:59			8/8/18 16:39								
QC Batch No.:	180808MS2A1			180808MS2A1								
Analyst Initials:	DT			DT								
Dilution Factor:	1.9			1.9								
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	LOQ ug/m3	LOD ug/m3						
Benzene	ND	6.2	3.1	ND	6.2	3.1						
1,2-Dichloroethane	ND	7.9	2.0	ND	7.9	2.0						
Trichloroethene	ND	10	2.6	ND	10	2.6						
Tetrachloroethene	5.6 J	13	2.3	3.7 J	13	2.3						
1,2,4-Trimethylbenzene	9.1 J	9.6	2.4	ND	9.6	2.4						
Naphthalene	ND	51	20	ND	51	20						

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Date 8/21/18
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Jacobs
Attn: Corey Schwabenlander
Project Name: JBER
Project No.: 694734.02.02.09.01
Date Received: 07/26/18
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15

Lab No.:	METHOD BLANK		
Client Sample I.D.:	--		
Date/Time Sampled:	--		
Date/Time Analyzed:	8/8/18 14:12		
QC Batch No.:	180808MS2A1		
Analyst Initials:	DT		
Dilution Factor:	0.20		

ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3
Benzene	ND	0.64	0.32
1,2-Dichloroethane	ND	0.81	0.20
Trichloroethene	ND	1.1	0.27
Tetrachloroethene	ND	1.4	0.24
1,2,4-Trimethylbenzene	ND	0.98	0.25
Naphthalene	ND	5.2	2.1

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Date 8/21/18
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 180808MS2A1

Matrix: Air

Reporting Units: ug/m3

EPA Method TO15
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	8/8/18 14:12			8/8/18 11:52		8/8/18 12:31					
Analyst Initials:	VM			VM		VM					
Dilution Factor:	0.20			1.0		1.0					
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	% Rec.	Result ug/m3	% Rec.	RPD	Low %Rec	High %Rec	Max. RPD
1,1-Dichloroethene	ND	0.79	0.20	31.2	78.8	28.3	71.5	9.7	61	133	30.0
Methylene Chloride	ND	0.69	0.35	28.8	82.8	26.4	76.1	8.5	62	115	30.0
Trichloroethene	ND	1.1	0.27	45.9	85.3	43.8	81.5	4.7	71	123	30.0
Toluene	ND	0.75	0.13	30.6	81.1	30.4	80.6	0.7	66	119	30.0
1,1,2,2-Tetrachloroethane	ND	1.4	0.34	51.8	75.4	52.3	76.2	1.0	65	127	30.0

ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
LOD = Limit of Detection
J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: _____ Date 8/17/18

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

GC/MS Raw Data Index
General Information

Lab Project No.: J072607TO15SIM

Section	Page #
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Conventions and Conversions

1 ppbv = 0.001 ppmv = 0.0000001% v/v
1% v/v = 10,000 ppmv = 10,000,000 ppbv

1 ug/m^3 = 1 ng/L = ppbv x MW/24.45
1 ug/L = 1 mg/m^3 = ppmv x MW/24.45

Where **MW** is the molecular weight of the compound and 24.45 is the molar volume of ideal gas at 1 atmosphere and 25° C.

1 atmosphere = 14.6 psia = 0 psig
30" Hg = 0 psia = -14.6 psig

Standard pressure is taken as 14.6 psia at Air Technology Labs' facility.

1. Supporting Documents

a. Pressurization log (if applicable)

b. ICAL run log

c. CCAL/QC/Samples run log

d. Miscellaneous documents

PRESSURIZATION LOGBOOK

	Date	Sample ID	Can #	Initial Pressure	Final Pressure	Dilution Gas	Dilution Gas Lot #	Initials	ETR #	Client/ Comments	He Prefill
1	7/30/18	J072607-01	5414	4"Hg	5psig	N2	138N8112	MT	4879	JACOBS	NO
2		-02	3140	4"Hg							
3		-03	3649	5"Hg							
4		-04	3641	6"Hg							
5		-05	1438	6"Hg							
6		-06	5227	4"Hg							
7		-07	5302	4"Hg	10psig		157N8712				
8		-08	R1351	3"Hg							
9											
10											
11											
12											
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28											

Approved by/Date:_____

Air Technology Laboratories Inc.

Logbook #17

10722607a

Instrument ID: GCMS2
Analytical Method: TO1806 20
Datafile Directory: 180618

GCMS Injection Logbook

Chemist: D
Blank Lot #: OV2 N8312
IS/Surr Standard Code: AW130810J/AW

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	6/23/18	05:38	22JUN027	706071I-26	HGS	503	10.6/9.74	—	0.2	14	NO	IS fail	180622MS2A
2		06:20	28	Blank	—	250	—	—	0.2	12	OK		
3		07:31	29	CCV	AW130860Z	50	10.6 6/22/18 AW130	—	1.0	B	OK	closing std batch	
4		08:24	30	CCV			—	—	1.0			Batch i	
5		08:50	31	CCV			—	—				L	
6	6/24/18	08:50	24JUN01	BFB	AW130850J	103	—	—	1.0	—	OK		
7		09:35	02	CCV	AW130860Z	50				B			180624MS2A1
8		10:30	03	CCV				10.6/9.74		B			
9		11:28	04	Method Blk	—	250		5/200	0.2	4			
10		12:05	05	JOB2204-01	TA	50		50/100	5.0	1	OK	Report Ethanol only	
11		12:44	06	1:02					5.0	2	OK	L	
12		13:24	07	LCS	AW130860A	50		—	1.0	C	OK		
13		14:04	08	LCSD				—		C	OK		
14		14:48	09	Blank	—	200	—	—	—	4	NO		
15		15:30	010	5min CCV	AW130860A	125				16			180624MS2A
16		16:52	011	2000 ppbv	AW130860Z	50				17			
17		19:41	012	2000									
18		21:22	013	5min Blank	—	250				Y			
19		22:26	014	3.5 ppbv ICAL	AW130871Z	35				13	OK		
20		23:07	015	5.0		50							

Approved by/Date: JY 6/29/18
Logbook GCMS2 #35

Air Technology Laboratories

J072607a

Instrument ID: GCMS2

Analytical Method: SL 180627

Datafile Directory: 180618

GCMS Injection Logbook

Chemist: DT

Blank Lot #: 052N8312

IS/Surr Standard Code: AW130815109

Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
6/24/18	23:47 00:30	24jun06	200 ppbv ICAL DT 6/25/18	AW130815 12	200	—	—	1.0	13	OK		180624WMS2A1
6/25/18	00:30 01:11	17	50	AW130815 13	50				14			
	01:11 01:52	18	100	↓	100				↓			
	02:33	19	200	AW130815 14	50							
	03:16	20	500		125				15			
	03:57	21	1000		250				↑			
	04:38	22	2000	AW130860 2	50				5			
	05:19	23	10000 ↓ ↓	↓	250				↓			
	06:00	24	Blank	—	250				4			
	06:39	25	5ml LCV/LCS	AW130874 5	125				16			
	07:23	26	5ml LCV/LCS	↓	↑				2			
	08:04	27	5ml Blank	—	250				4	↓		
	08:48	28	5ml Screen	2002	250				3	OK	180622ecd13	
		29	— " —	5463					5			
↓	09:29	↓ 30	— " —	5476	↓	↓	↓	↓	6	↓		↓

DT 6/25/18

Approved by/Date: JT 6/29/18

Logbook GCMS2 #35

Air Technology Laboratories

J072607a

Instrument ID: GCMS2

Analytical Method: SL180624

Datafile Directory: 180806

GCMS Injection Logbook

Chemist: DT

Blank Lot #: QJ2N8213

IS/Surr Standard Code: AW13093 02

Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
8/7/18	10:26	07AW609	5ml ccv	AW13094 19	125	—	—	1.0	5	OK		180807MS2A1
	11:24	02	LCS	AW13094 20								
	12:04	03	LCSD									
	12:47	04	Method Bl	—	250				6	OK		
	13:44	05	J073103-01	ATL	50				4	OK		
	14:29	06	J072607-01	Jacobs	387	19.6/12.65			1	OK		
	15:14	07	-02			12.65			2			
	16:01	08	-03		403	12.17			3			
	16:48	09	-04		420	11.68			5			
	17:36	10	-05			11.68			7			
	18:23	11	-06		387	12.65			8			
	19:04	12	J080603-02	Alliance	35	19.6/14.11		10	9	NO	Wrong sample	
8/8/18	08:49	13	-02		35				9	OK		

Approved by/Date:_____

Logbook GCMS2 #35

Air Technology Laboratories

2. Sample Raw Data

a. Results/Chromatograms/Spectra

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\180806\07AUG001.D
Tune Time : 7 Aug 2018 10:26 am

Daily Calibration File : C:\msdchem\1\data\180806\07AUG001.D

					93644	411574	334456
File	Sample	Surrogate Recovery %			Internal Standard Responses		
07AUG002.D	SIM LCS	92	104	112	94739	405423	327261
07AUG003.D	SIM LCSD	93	104	113	94473	400928	324778
07AUG004.D	METHOD BLANK	101	104	109	98123	379264	315732
07AUG006.D	J072607-01	95	108	108	87841	396578	331548
07AUG007.D	J072607-02	95	108	110	96448	401387	336779
07AUG008.D	J072607-03	95	107	110	97458	404788	336507
07AUG009.D	J072607-04	95	109	108	97897	405749	339723
07AUG010.D	J072607-05	95	107	110	97652	406952	338618
07AUG011.D	J072607-06	95	110	108	98291	409408	345574

(fails) - fails 24hr time check * - fails criteria

Created: Tue Aug 14 15:20:31 2018 ms2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG006.D
Acq On : 7 Aug 2018 2:29 pm
Operator : DT
Sample : J072607-01 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 07 14:54:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.330	130	87841	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.685	114	396578	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.207	117	331548	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.093	65	93583	1890.80	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 94.54%			
29) Toluene-d8	12.938	98	326203	2154.36	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 107.72%			
42) 4-Bromofluorobenzene	17.183	95	201293	2152.34	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 107.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.564	85	45017	452.20	pptv	99
3) Chloromethane	3.957	50	8838	702.73	pptv	100
5) Bromomethane	4.879	96	438	21.83	pptv	89
7) Trichlorofluoromethane...	5.496	101	21425	195.66	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.227	151	6590	65.84	pptv	95
9) Acetone	6.113	43	396698	9718.97	pptv	97
11) Methylene Chloride	7.024	49	2053	74.88	pptv	91
12) t-Butyl Methyl Ether	7.311	73	3320	49.01	pptv	68
14) Hexane	7.768	57	2302	68.75	pptv	98
15) 1,1-Dichloroethane	8.083	63	134	2.64	pptv	91
16) 2-Butanone	8.607	72	51447	3221.29	pptv	86
17) c-1,2-Dichloroethene	8.918	96	277	6.98	pptv #	31
18) Chloroform	9.138	83	1573	20.85	pptv	85
19) 1,1,1-Trichloroethane	9.763	97	265	3.40	pptv	84
20) Carbon Tetrachloride	10.151	117	5970	78.83	pptv	97
22) Benzene	10.325	78	10037	71.77	pptv	100
24) 1,2-Dichloroethane	10.221	62	931	17.49	pptv	94
25) Trichloroethene	11.209	130	232	2.51	pptv #	44
26) 1,2-Dichloropropane	11.414	63	281	8.16	pptv	73
27) 1,4-Dioxane	11.709	88	450	14.61	pptv	97
28) Bromodichloromethane	11.676	83	182	2.28	pptv	50
30) Toluene	13.054	91	74206	456.80	pptv	100
32) t-1,3-Dichloropropene	12.481	75	1629	32.72	pptv	62
33) 1,1,2-Trichloroethane	13.538	97	2041	32.56	pptv #	20
34) Tetrachloroethene	14.080	166	1596	11.61	pptv	100
35) 1,2-Dibromoethane	14.528	107	655	7.05	pptv #	18
36) Chlorobenzene	15.262	112	391	2.26	pptv	92
37) Ethylbenzene	15.373	91	14310	76.53	pptv	97
38) p,&m-Xylene	15.505	91	34392	212.84	pptv	97
39) o-Xylene	16.187	91	16948	124.11	pptv	93
40) Styrene	16.210	104	10256	88.87	pptv	98
41) 1,1,2,2-Tetrachloroethane	16.922	83	52	0.53	pptv	50
43) 1,3-Dichlorobenzene	18.828	146	680	3.29	pptv	98
44) 1,4-Dichlorobenzene	18.958	146	10652	50.27	pptv	98
45) Benzyl Chloride	19.052	91	520	12.66	pptv #	54
46) 1,2-Dichlorobenzene	19.454	146	5333	28.09	pptv	99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG006.D
Acq On : 7 Aug 2018 2:29 pm
Operator : DT
Sample : J072607-01 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 07 14:54:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

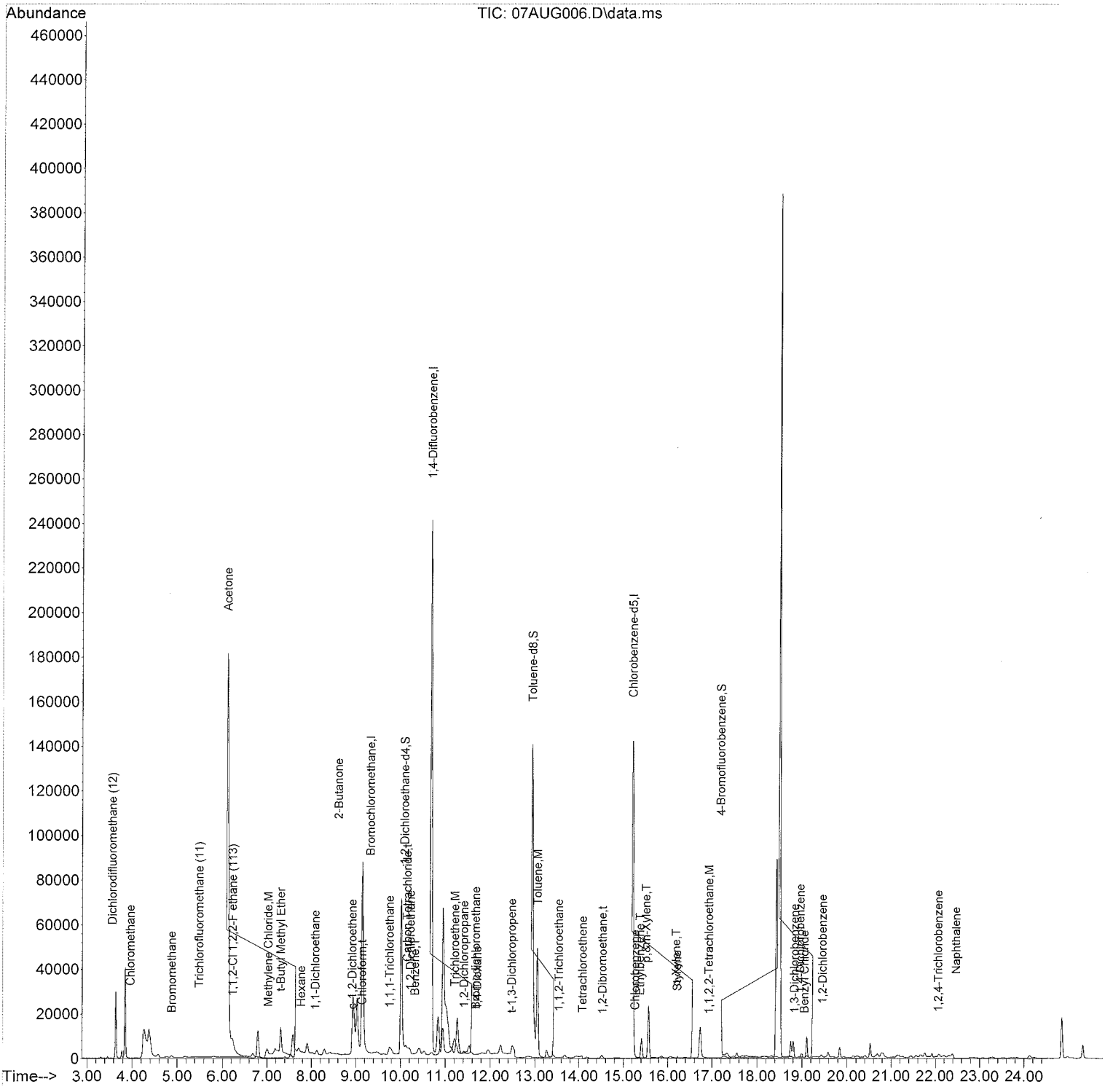
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
47) 1,2,4-Trichlorobenzene	22.059	180	2674	17.82	pptv #	15
48) Naphthalene	22.470	128	42675	207.27	pptv	100

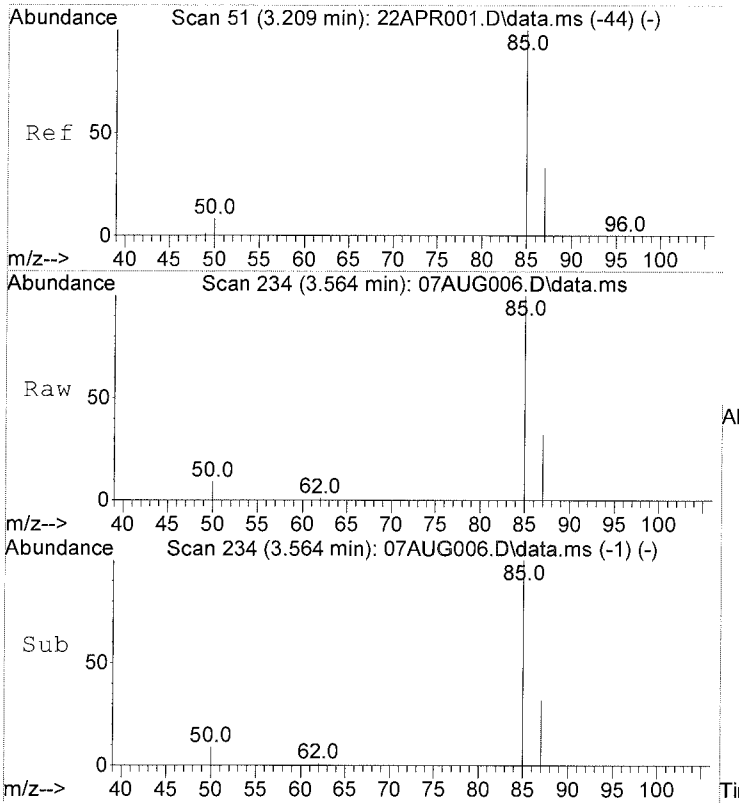
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG006.D
Acq On : 7 Aug 2018 2:29 pm
Operator : DT
Sample : J072607-01 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 07 14:54:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

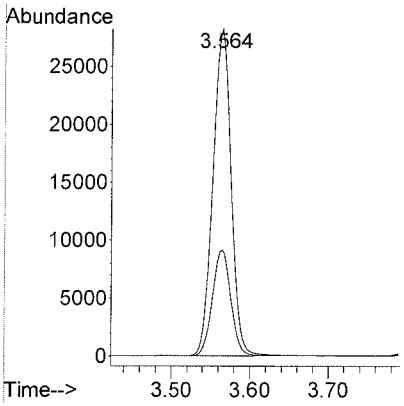


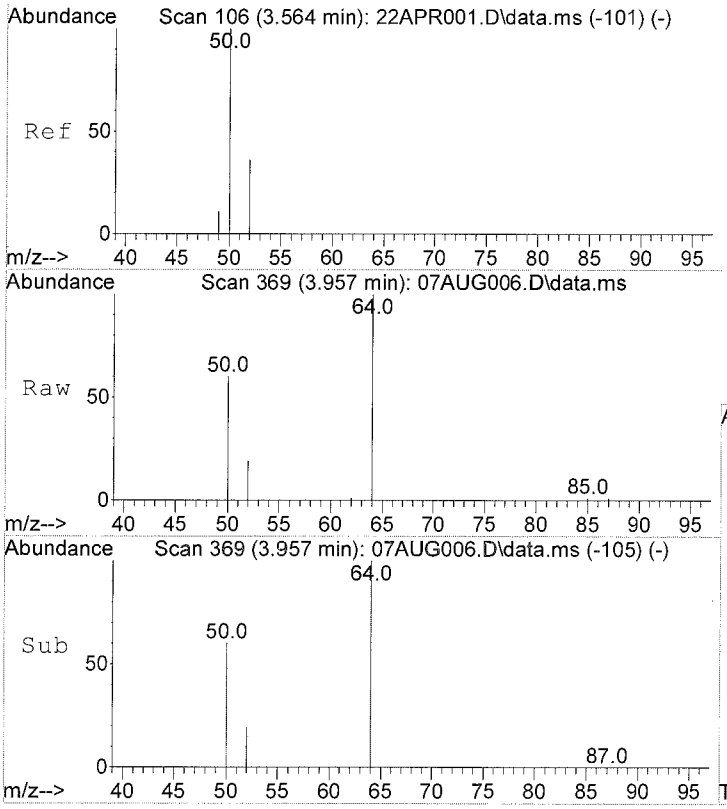


#2
Dichlorodifluoromethane (12)
Concen: 452.20 pptv
RT: 3.564 min Scan# 234
Delta R.T. -0.027 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 85 Resp: 45017

Ion	Ratio	Lower	Upper
85	100		
87	32.3	0.0	81.9

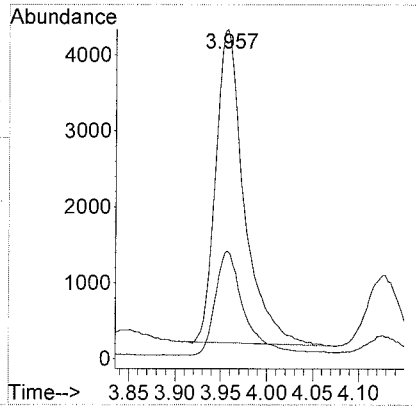


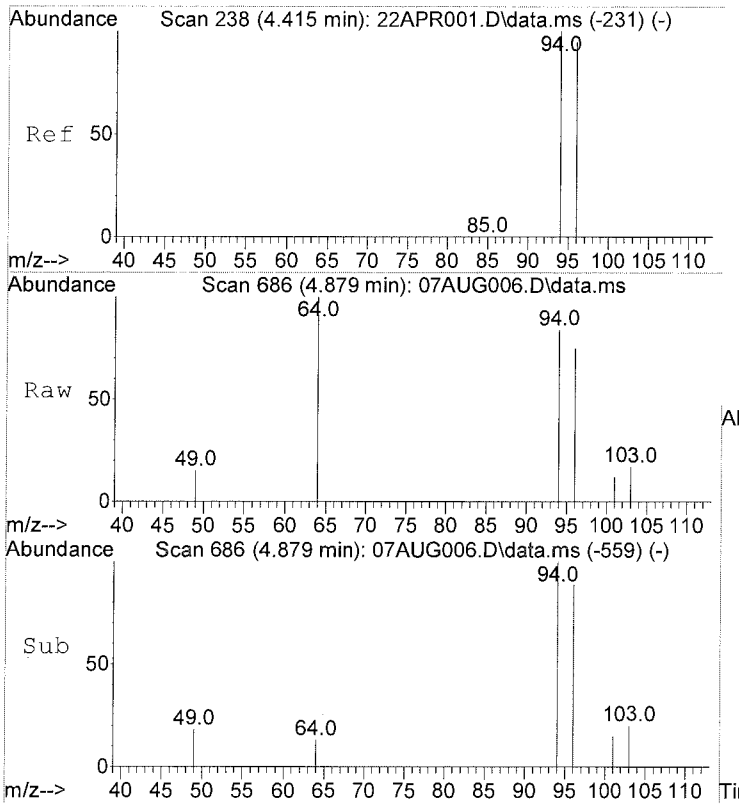


#3
Chloromethane
Concen: 702.73 pptv
RT: 3.957 min Scan# 369
Delta R.T. -0.032 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 50 Resp: 8838

Ion	Ratio	Lower	Upper
50	100		
52	32.8	3.0	63.0

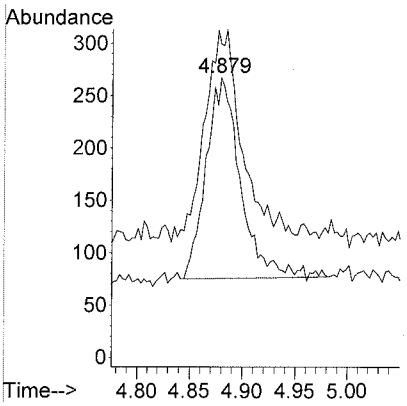


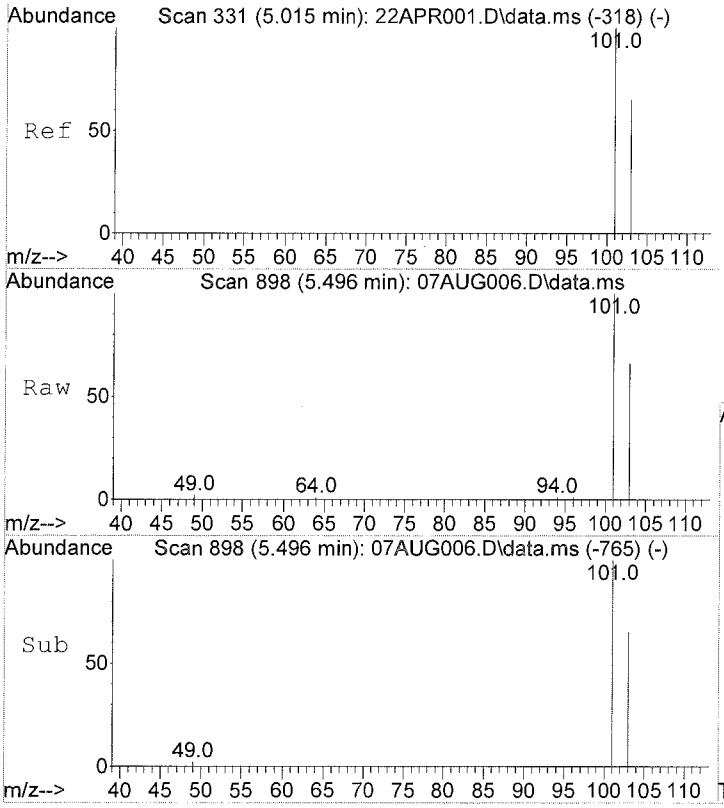


#5
Bromomethane
Concen: 21.83 pptv
RT: 4.879 min Scan# 686
Delta R.T. -0.032 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 96 Resp: 438

Ion	Ratio	Lower	Upper
96	100		
94	93.8	55.4	155.4

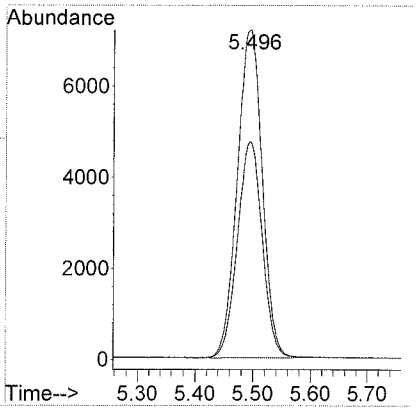


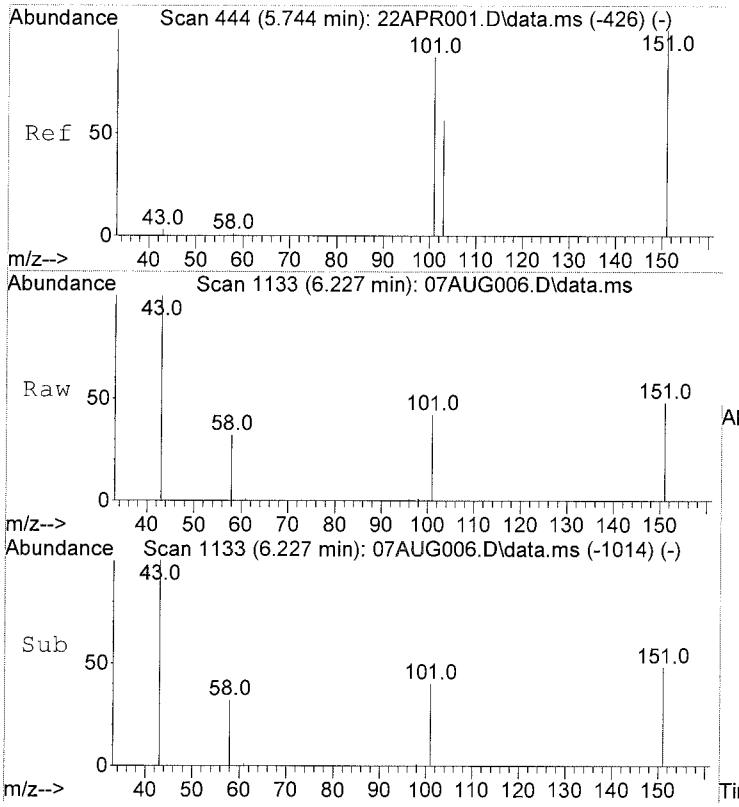


#7
Trichlorofluoromethane (11)
Concen: 195.66 pptv
RT: 5.496 min Scan# 898
Delta R.T. -0.014 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:101 Resp: 21425

Ion	Ratio	Lower	Upper
101	100		
103	65.5	14.6	114.6

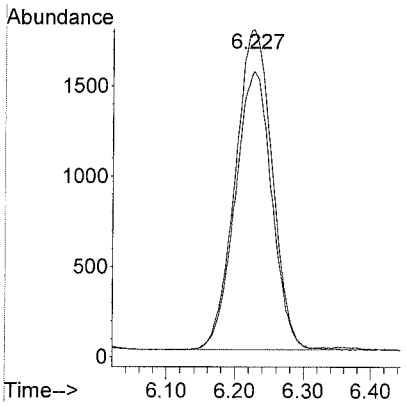


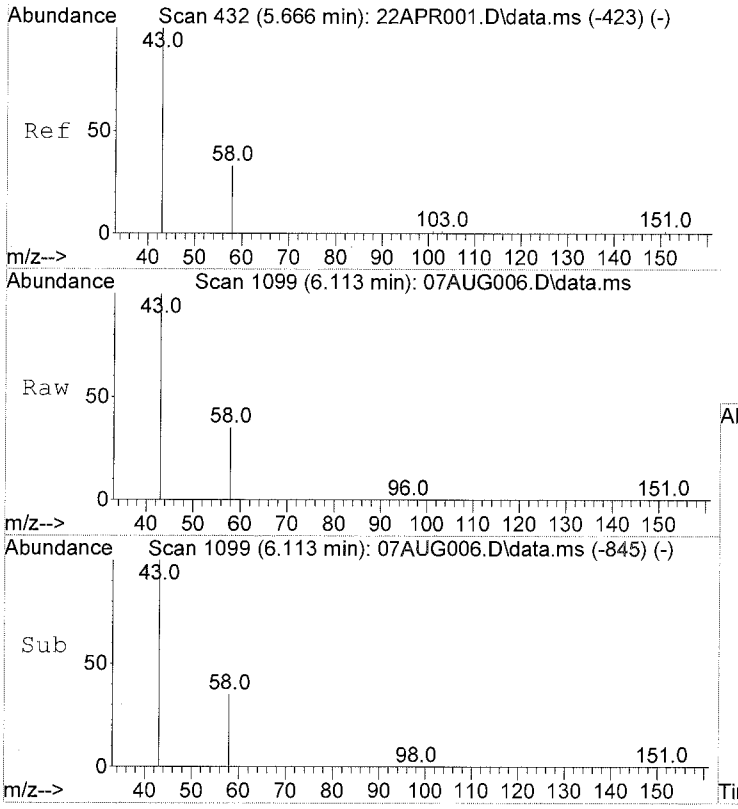


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 65.84 pptv
RT: 6.227 min Scan# 1133
Delta R.T. -0.007 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:151 Resp: 6590

Ion	Ratio	Lower	Upper
151	100		
101	86.9	41.5	141.5

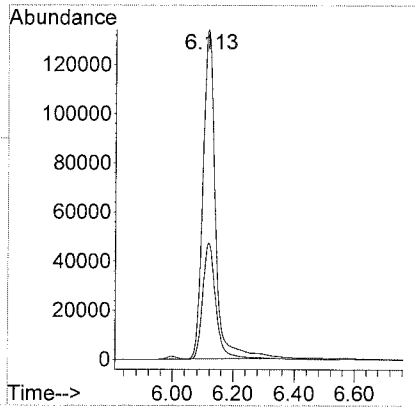


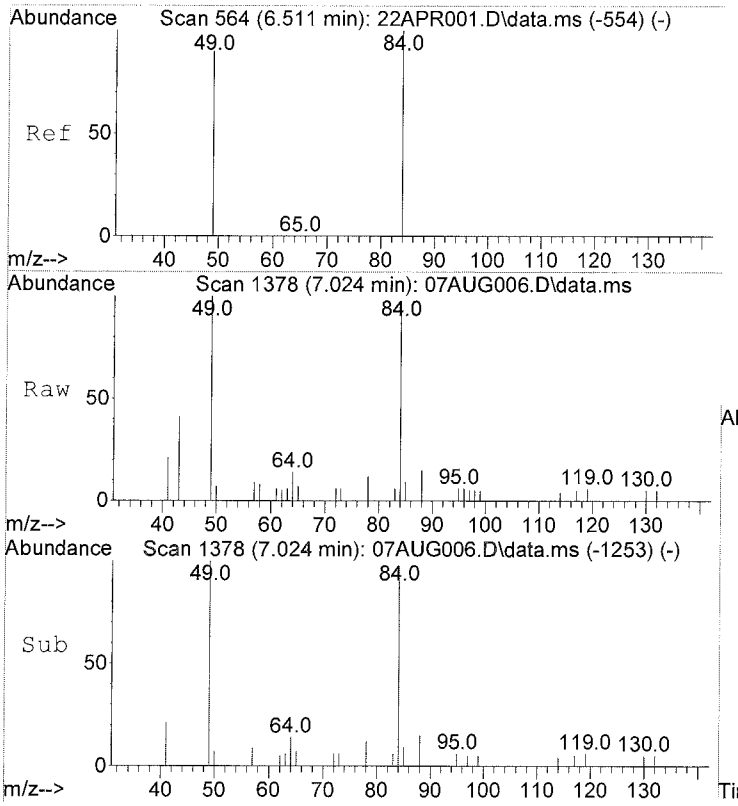


#9
Acetone
Concen: 9718.97 pptv
RT: 6.113 min Scan# 1099
Delta R.T. -0.029 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 43 Resp: 396698

Ion	Ratio	Lower	Upper
43	100		
58	35.0	13.4	53.4

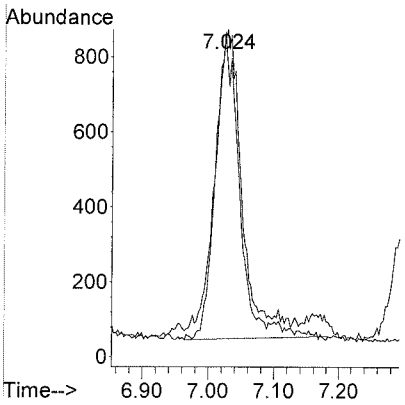


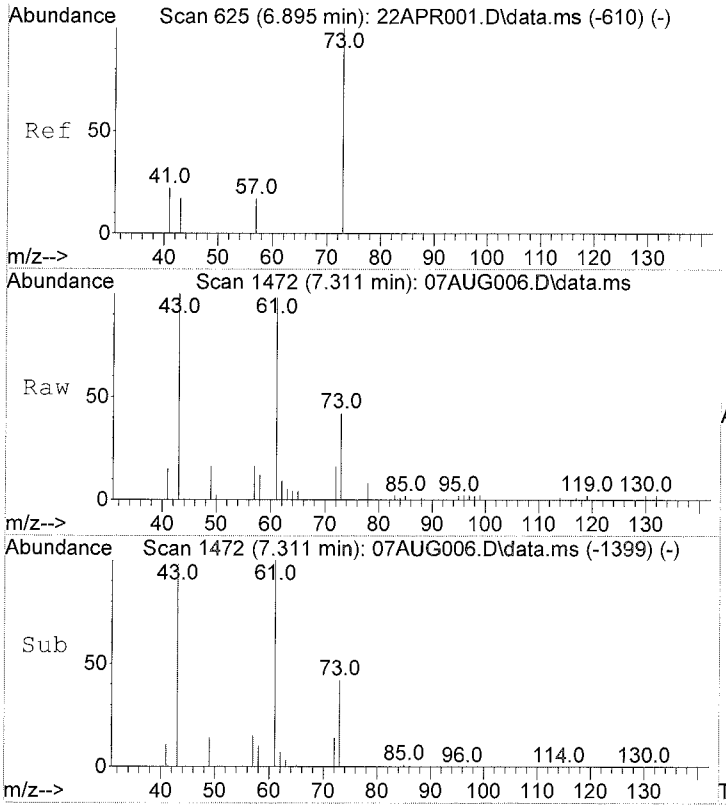


#11
Methylene Chloride
Concen: 74.88 pptv
RT: 7.024 min Scan# 1378
Delta R.T. -0.006 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 49 Resp: 2053

Ion	Ratio	Lower	Upper
49	100		
84	94.5	54.2	154.2

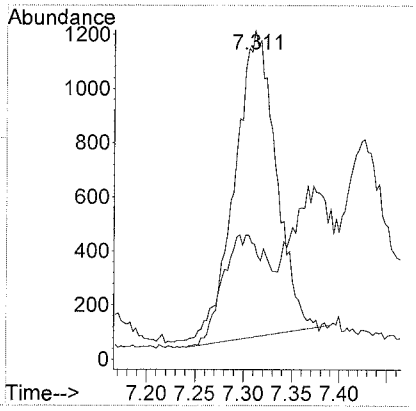


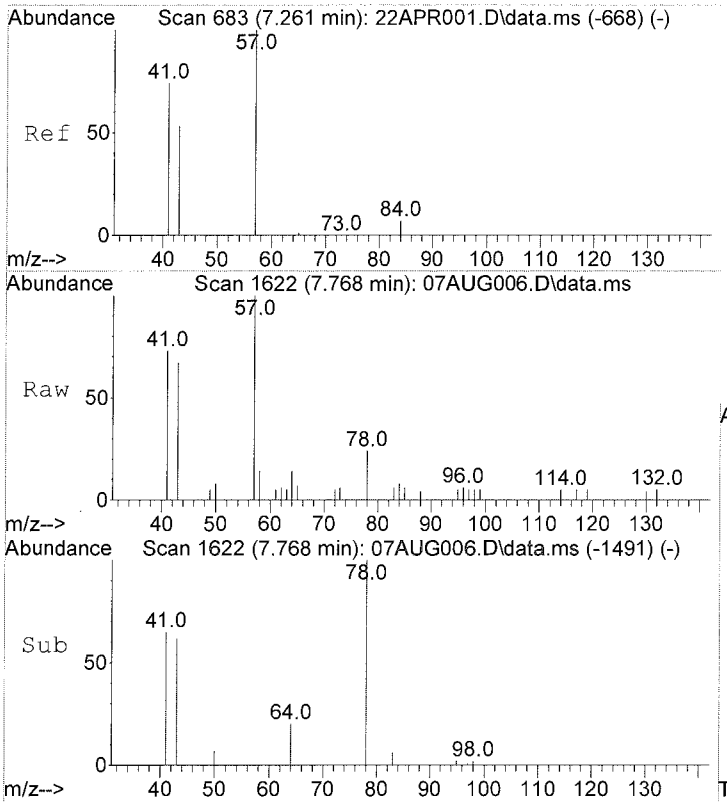


#12
t-Butyl Methyl Ether
Concen: 49.01 pptv
RT: 7.311 min Scan# 1472
Delta R.T. -0.078 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 73 Resp: 3320

Ion	Ratio	Lower	Upper
73	100		
41	30.2	0.0	516.4

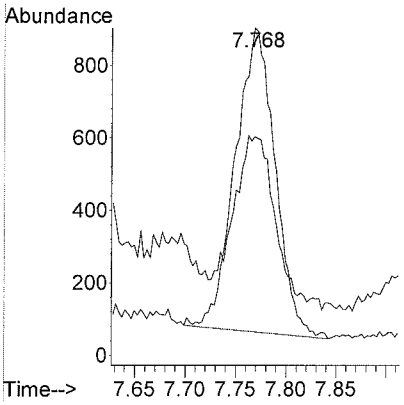


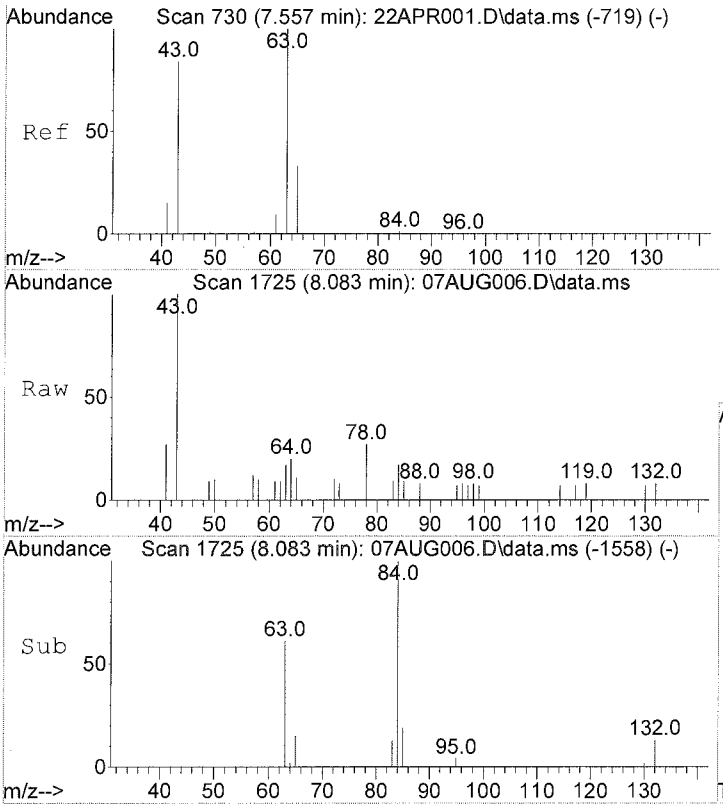


#14
Hexane
Concen: 68.75 pptv
RT: 7.768 min Scan# 1622
Delta R.T. -0.002 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 57 Resp: 2302

Ion	Ratio	Lower	Upper
57	100		
43	53.4	5.0	105.0

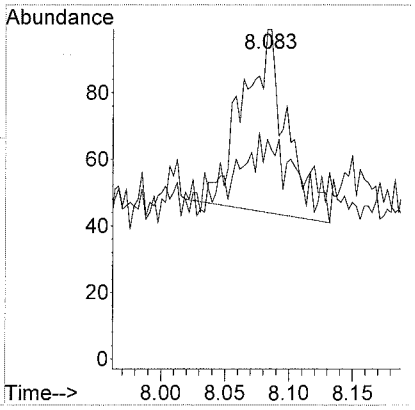


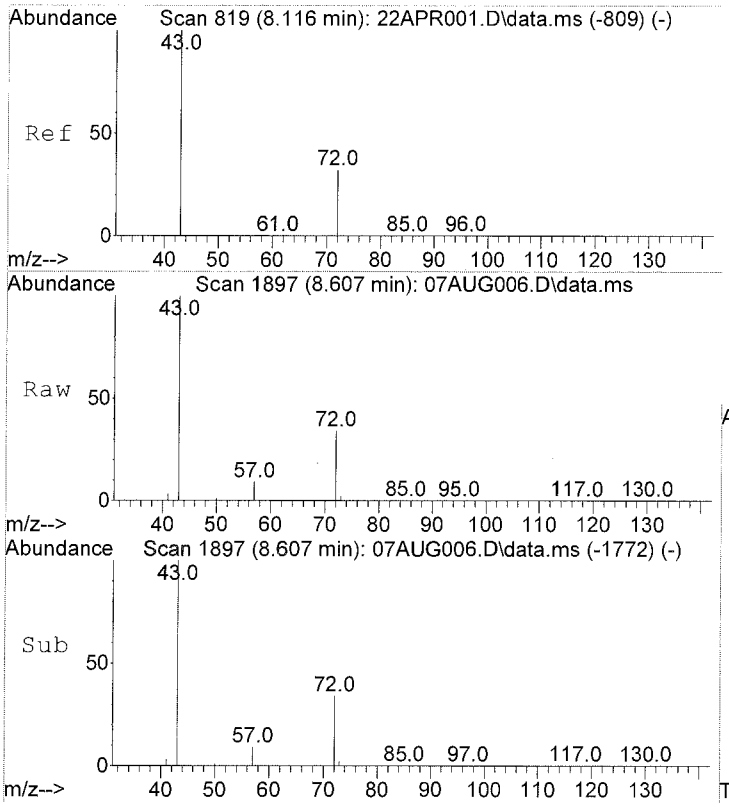


#15
1,1-Dichloroethane
Concen: 2.64 pptv
RT: 8.083 min Scan# 1725
Delta R.T. 0.010 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 63 Resp: 134

Ion	Ratio	Lower	Upper
63	100		
65	27.6	0.0	82.5

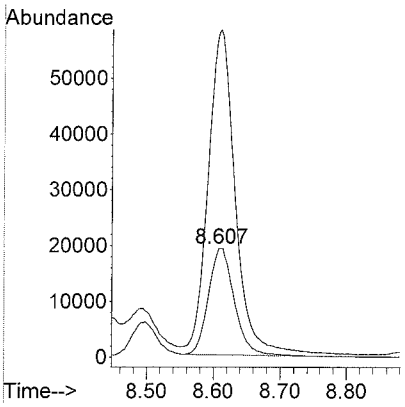


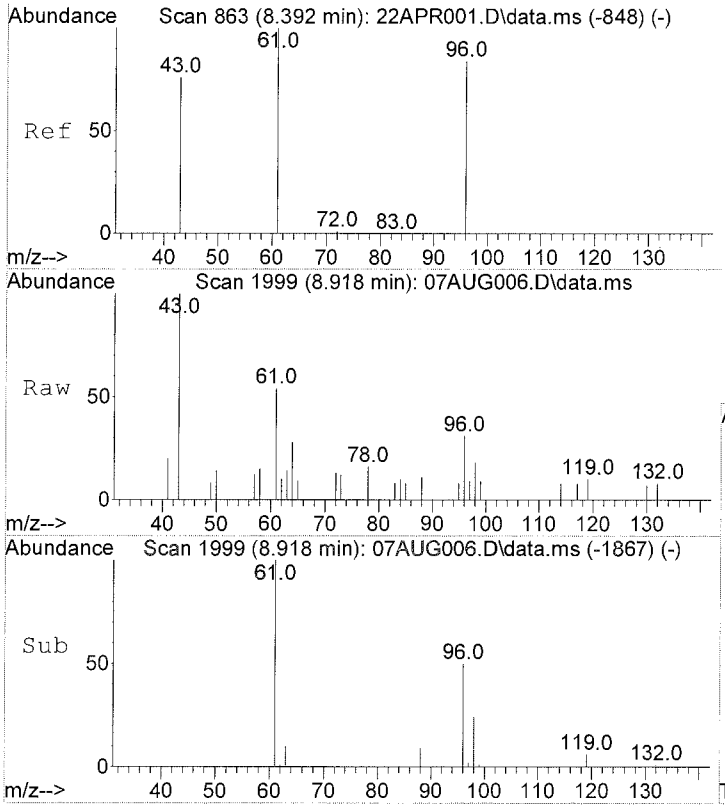


#16
2-Butanone
Concen: 3221.29 pptv
RT: 8.607 min Scan# 1897
Delta R.T. -0.020 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 72 Resp: 51447

Ion	Ratio	Lower	Upper
72	100		
43	297.0	0.0	3591.5

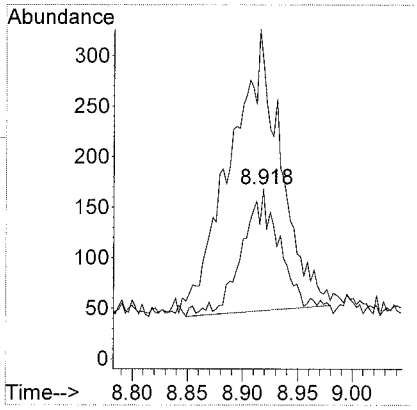


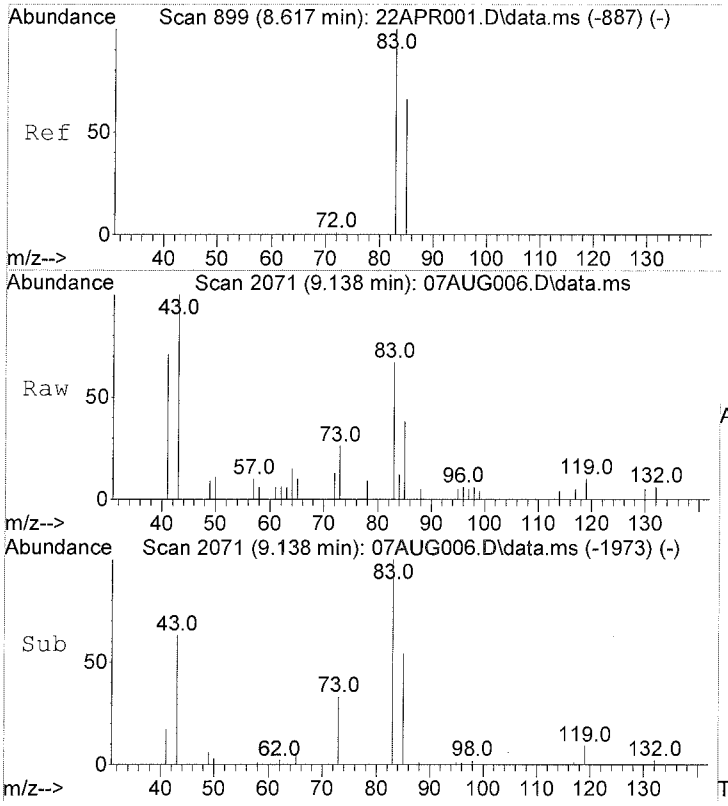


#17
c-1,2-Dichloroethene
Concen: 6.98 pptv
RT: 8.918 min Scan# 1999
Delta R.T. 0.002 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 96 Resp: 277

Ion	Ratio	Lower	Upper
96	100		
61	185.7	62.0	162.0#

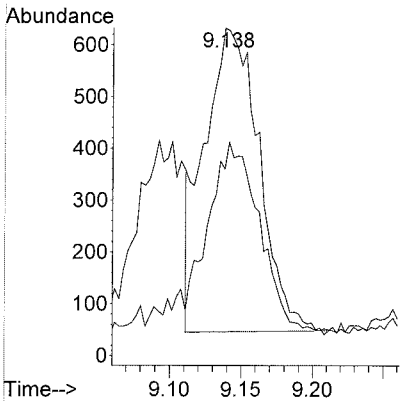


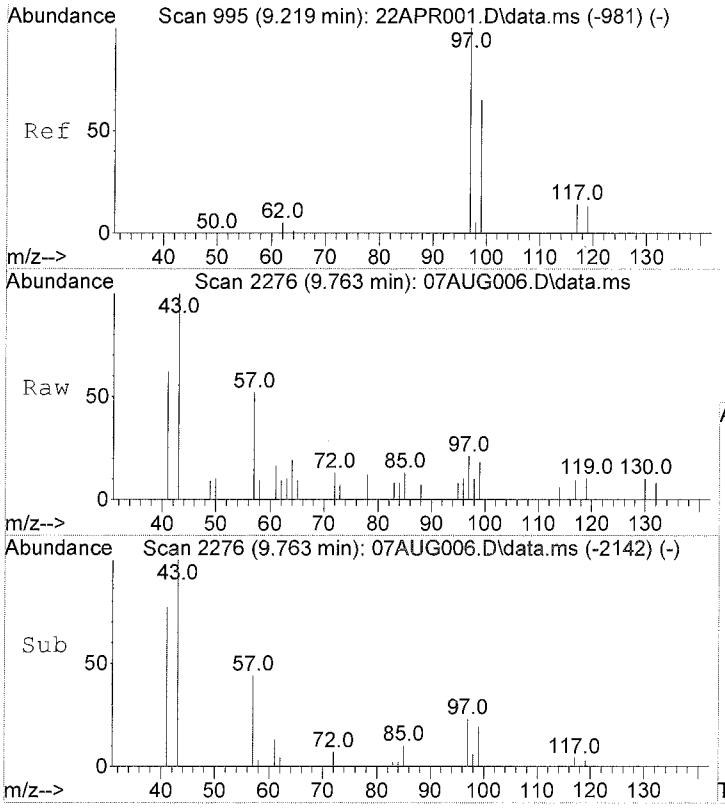


#18
Chloroform
Concen: 20.85 pptv
RT: 9.138 min Scan# 2071
Delta R.T. -0.002 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 83 Resp: 1573

Ion	Ratio	Lower	Upper
83	100		
85	53.1	14.9	114.9

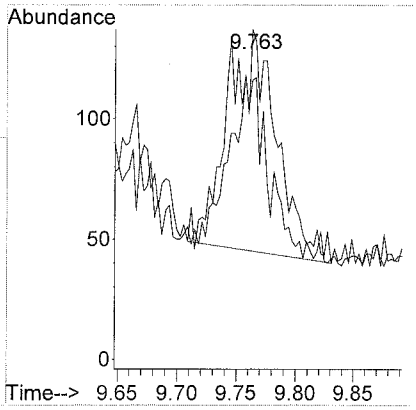


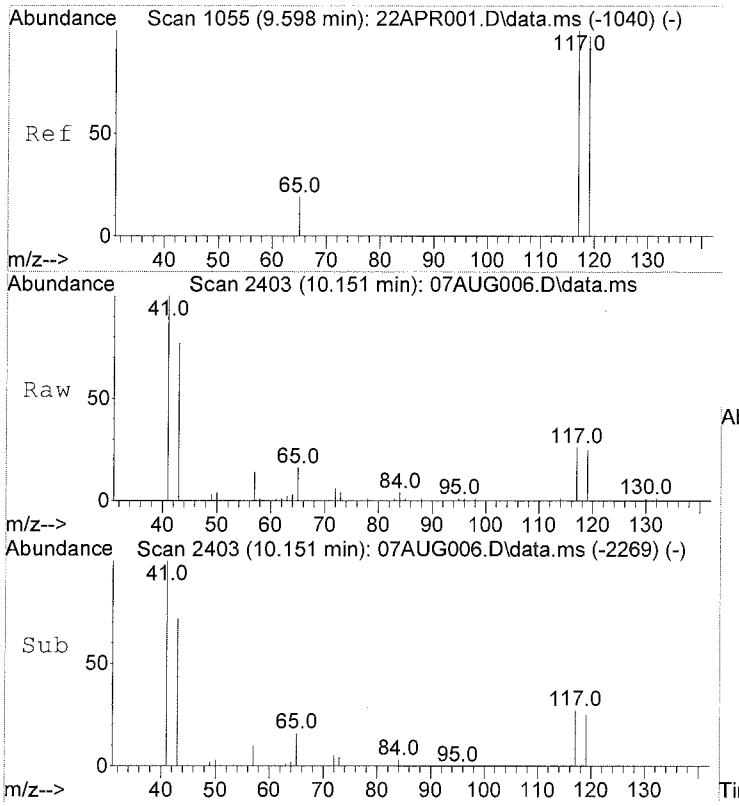


#19
1,1,1-Trichloroethane
Concen: 3.40 pptv
RT: 9.763 min Scan# 2276
Delta R.T. 0.008 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 97 Resp: 265

Ion	Ratio	Lower	Upper
97	100		
99	76.3	13.8	113.8

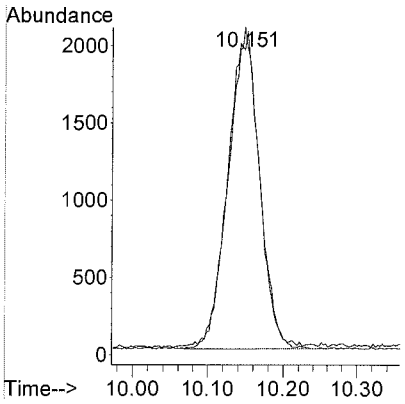


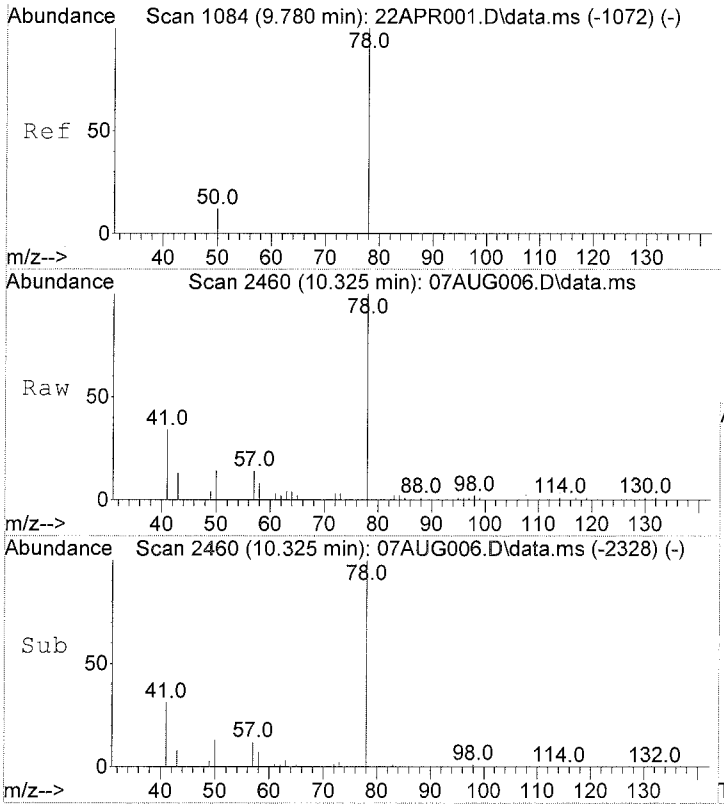


#20
Carbon Tetrachloride
Concen: 78.83 pptv
RT: 10.151 min Scan# 2403
Delta R.T. 0.008 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:117 Resp: 5970

Ion	Ratio	Lower	Upper
117	100		
119	94.5	47.1	147.1

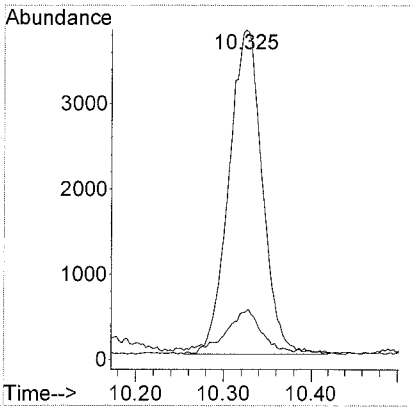


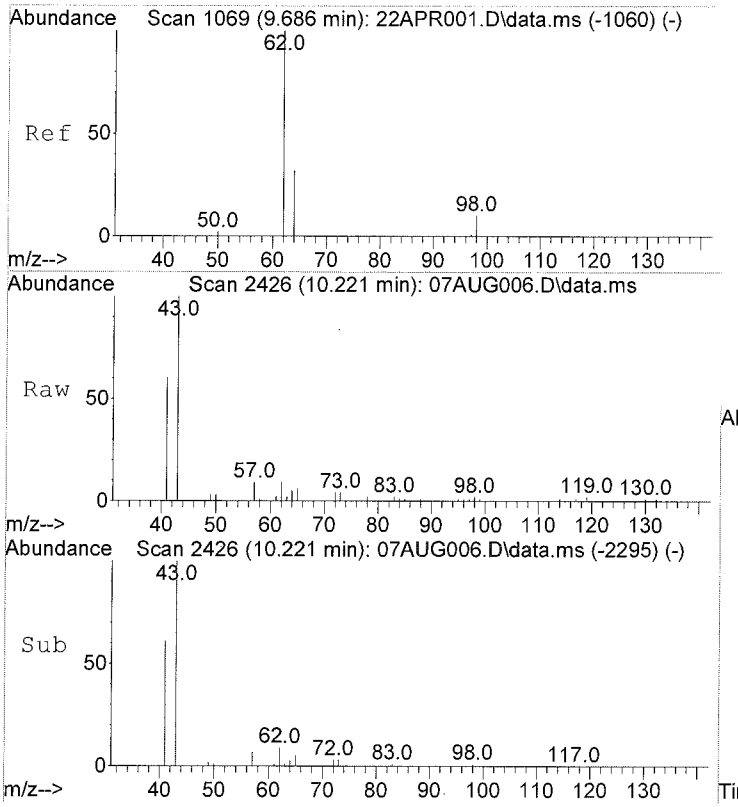


#22
Benzene
Concen: 71.77 pptv
RT: 10.325 min Scan# 2460
Delta R.T. 0.004 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 78 Resp: 10037

Ion	Ratio	Lower	Upper
78	100		
50	12.8	0.0	62.6

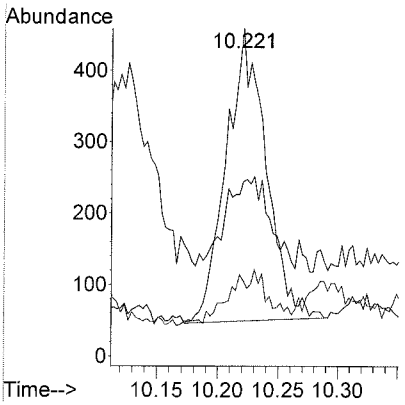


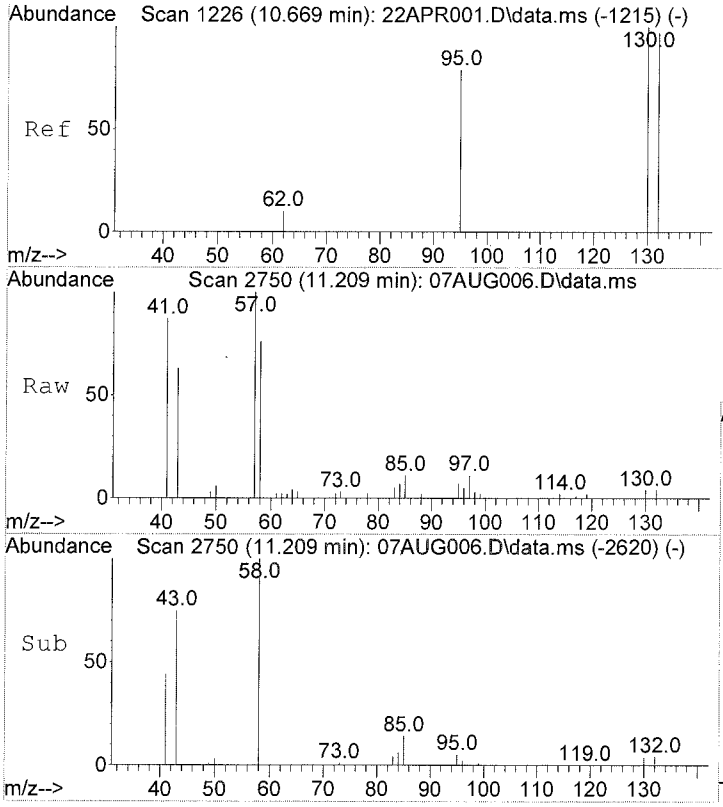


#24
1,2-Dichloroethane
Concen: 17.49 pptv
RT: 10.221 min Scan# 2426
Delta R.T. 0.001 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 62 Resp: 931

Ion	Ratio	Lower	Upper
62	100		
64	30.1	0.0	83.0
98	13.8	0.0	61.0

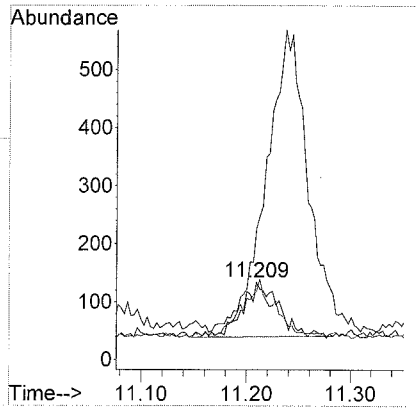


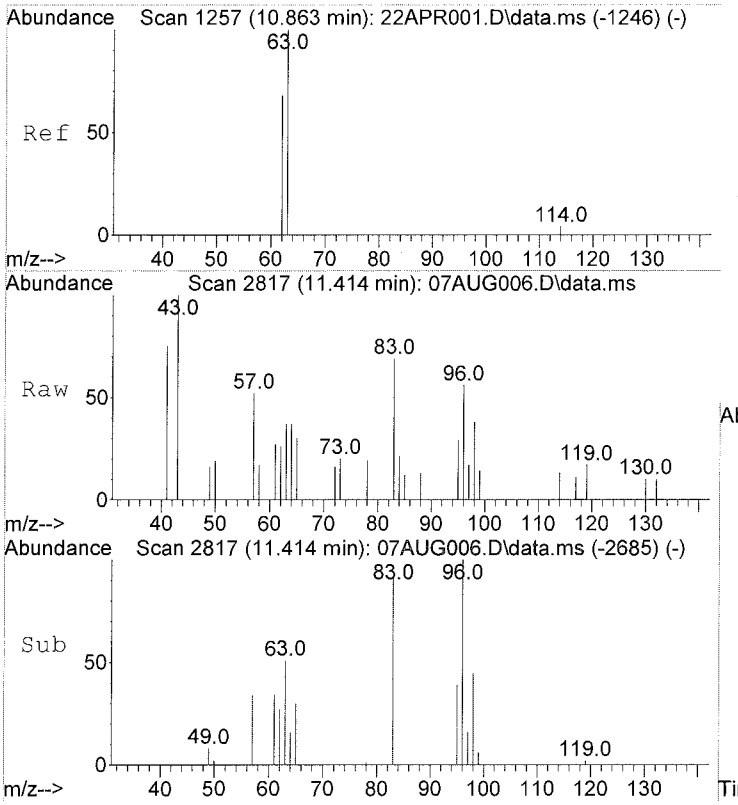


#25
Trichloroethene
Concen: 2.51 pptv
RT: 11.209 min Scan# 2750
Delta R.T. -0.003 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:130 Resp: 232

Ion	Ratio	Lower	Upper
130	100		
95	174.7	30.9	130.9#
132	82.1	46.0	146.0

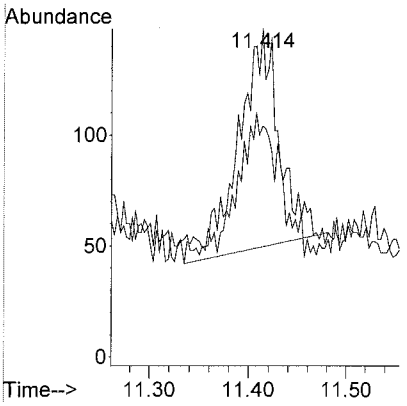


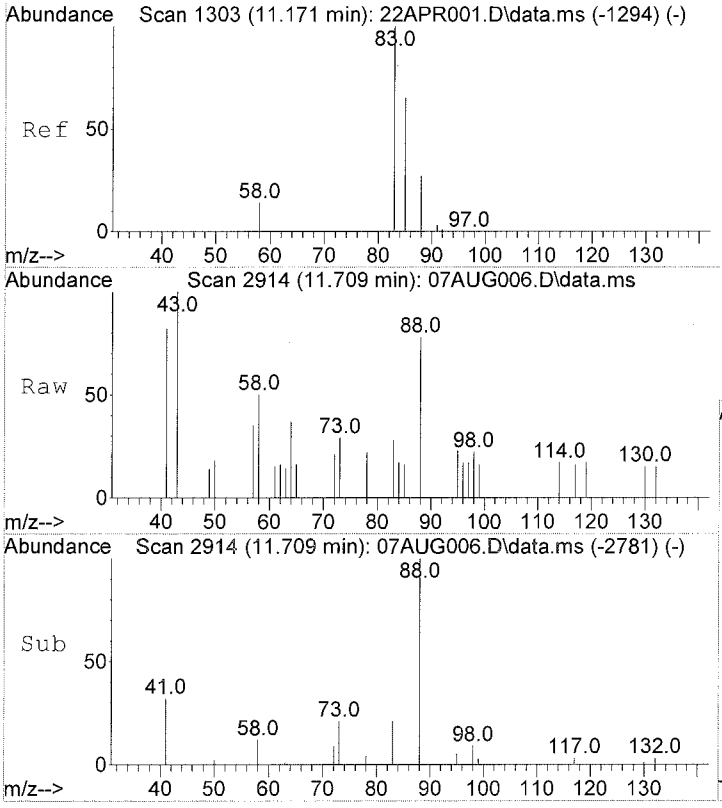


#26
1,2-Dichloropropane
Concen: 8.16 pptv
RT: 11.414 min Scan# 2817
Delta R.T. 0.004 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 63 Resp: 281

Ion	Ratio	Lower	Upper
63	100		
62	48.1	20.3	120.3

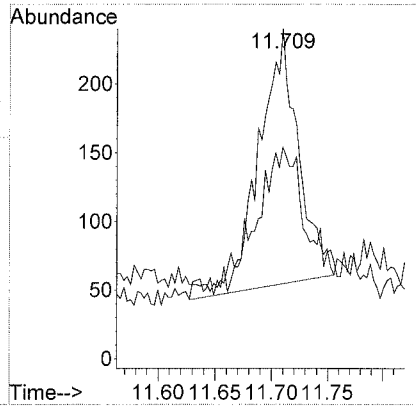


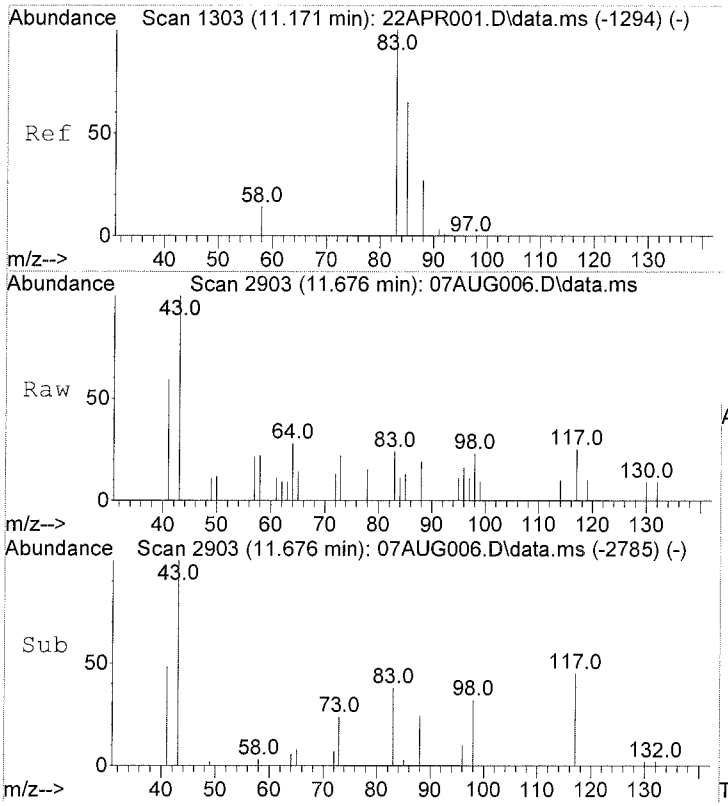


#27
1,4-Dioxane
Concen: 14.61 pptv
RT: 11.709 min Scan# 2914
Delta R.T. 0.006 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 88 Resp: 450

Ion	Ratio	Lower	Upper
88	100		
58	50.8	38.7	58.1

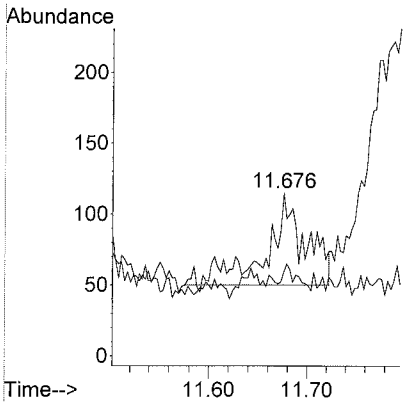


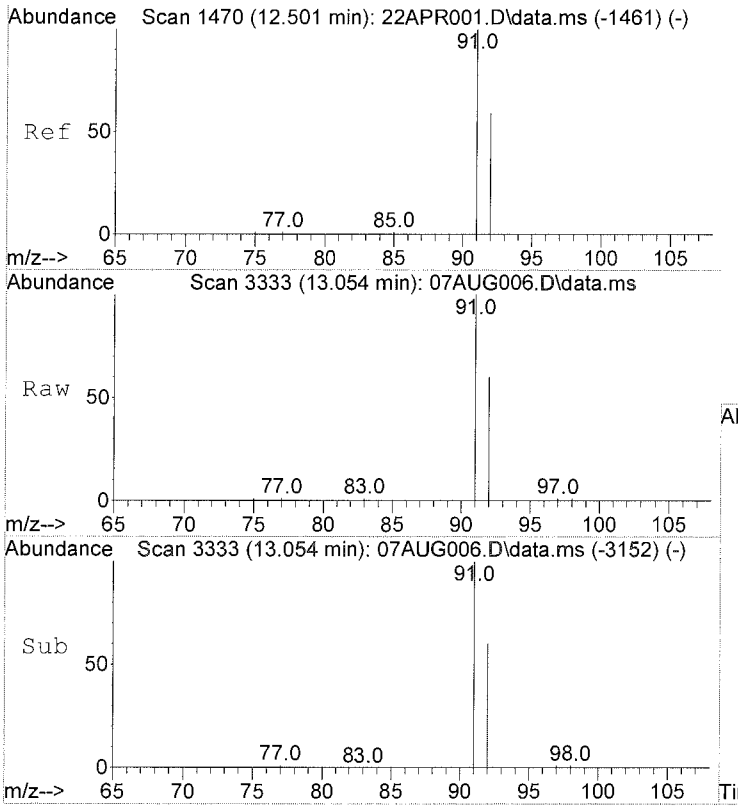


#28
Bromodichloromethane
Concen: 2.28 pptv
RT: 11.676 min Scan# 2903
Delta R.T. -0.040 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 83 Resp: 182

Ion	Ratio	Lower	Upper
83	100		
85	24.6	13.9	113.9

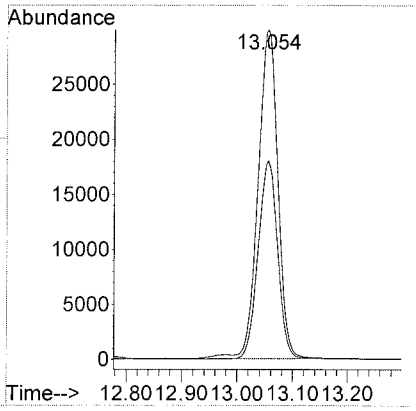


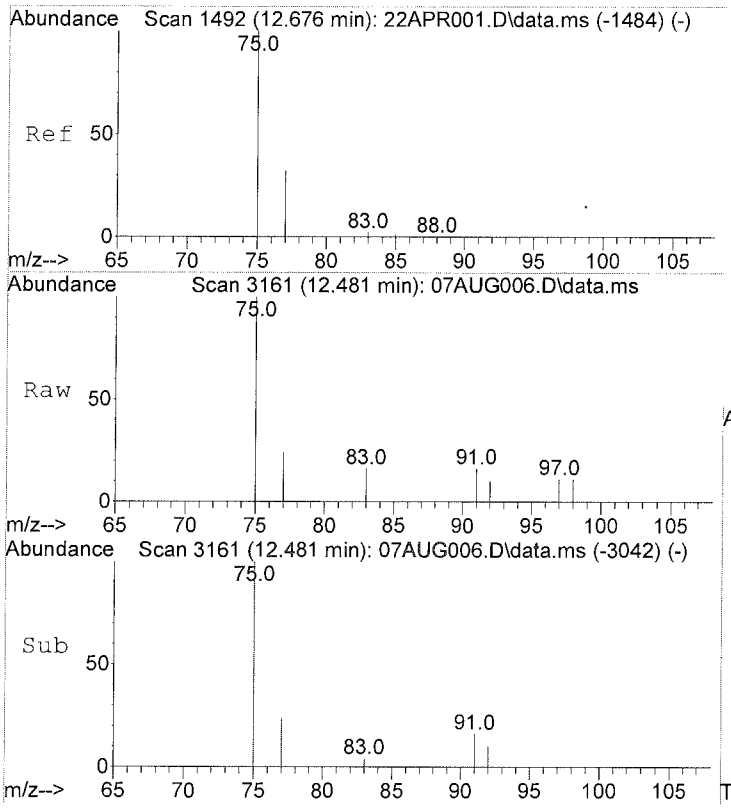


#30
Toluene
Concen: 456.80 pptv
RT: 13.054 min Scan# 3333
Delta R.T. 0.002 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 91 Resp: 74206

Ion	Ratio	Lower	Upper
91	100		
92	60.3	10.0	110.0

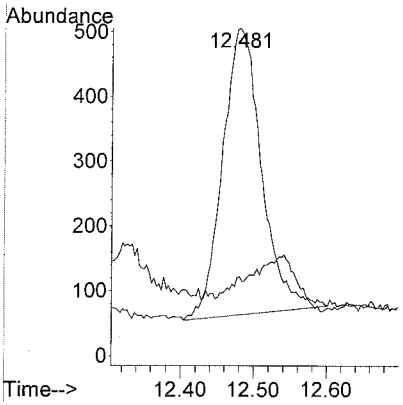


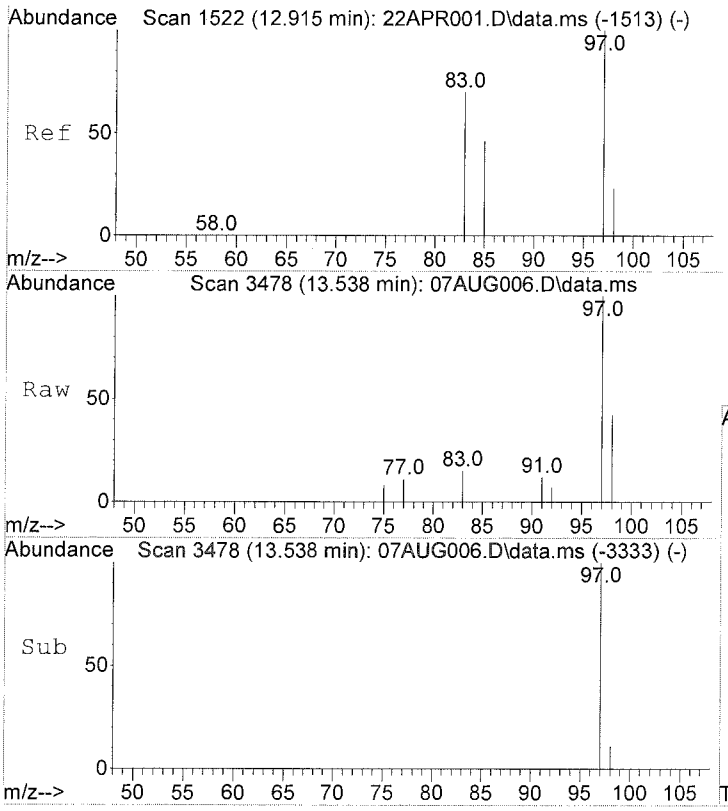


#32
t-1,3-Dichloropropene
Concen: 32.72 pptv
RT: 12.481 min Scan# 3161
Delta R.T. -0.018 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 75 Resp: 1629

Ion	Ratio	Lower	Upper
75	100		
77	10.7	0.0	81.7

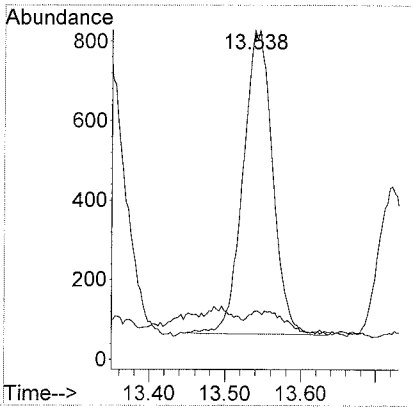


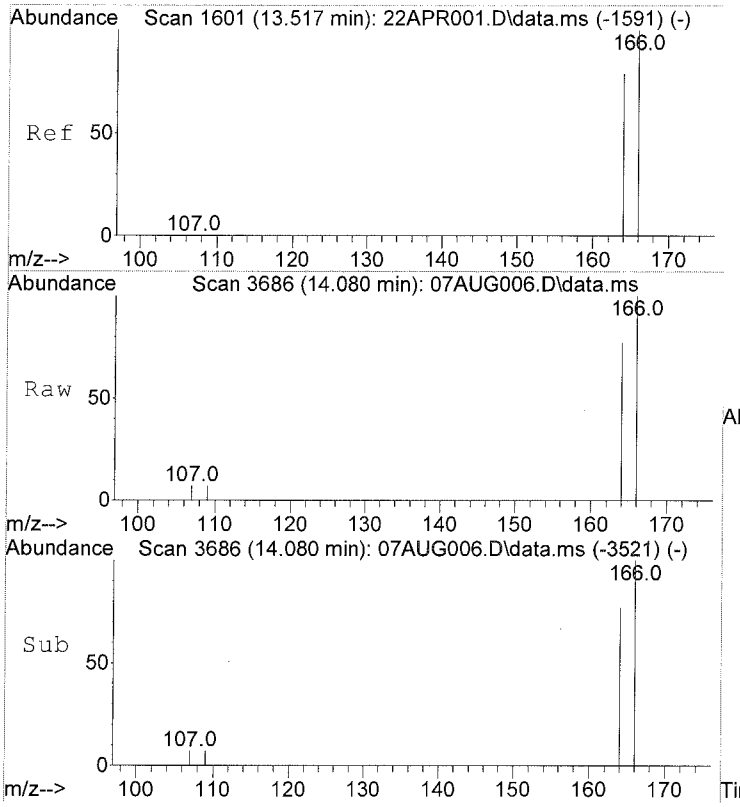


#33
1,1,2-Trichloroethane
Concen: 32.56 pptv
RT: 13.538 min Scan# 3478
Delta R.T. 0.083 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 97 Resp: 2041

Ion	Ratio	Lower	Upper
97	100		
83	6.9	25.1	125.1#

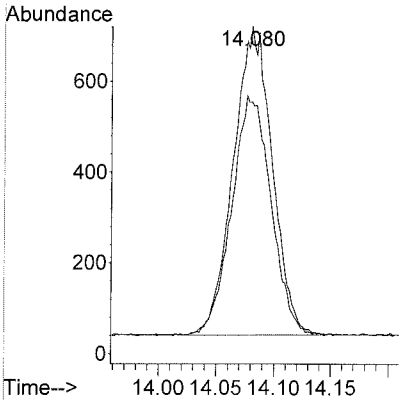


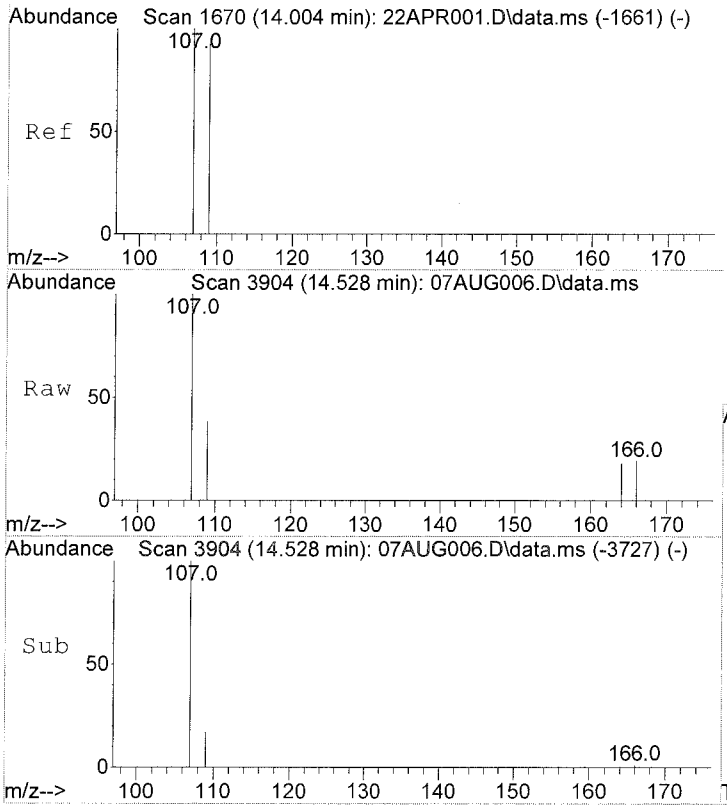


#34
Tetrachloroethene
Concen: 11.61 pptv
RT: 14.080 min Scan# 3686
Delta R.T. -0.001 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:166 Resp: 1596

Ion	Ratio	Lower	Upper
166	100		
164	75.6	25.3	125.3

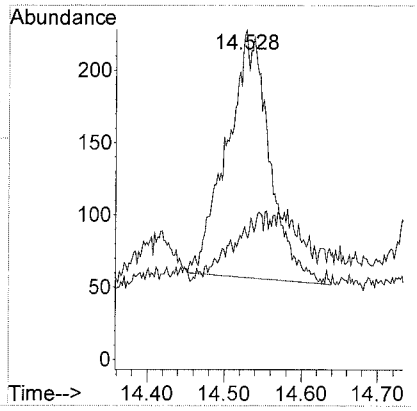


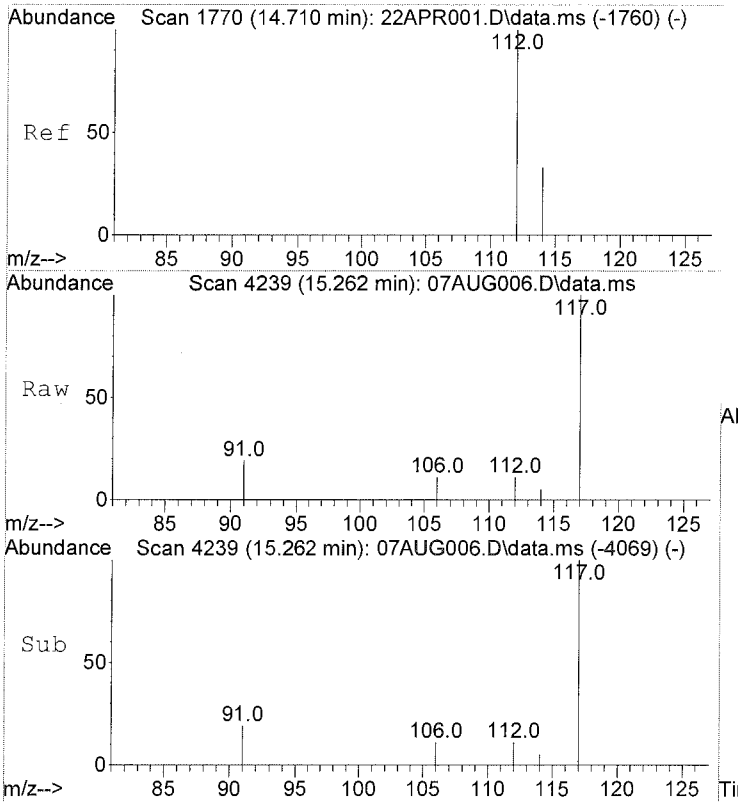


#35
1,2-Dibromoethane
Concen: 7.05 pptv
RT: 14.528 min Scan# 3904
Delta R.T. -0.036 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:107 Resp: 655

Ion	Ratio	Lower	Upper
107	100		
109	14.2	43.3	143.3#

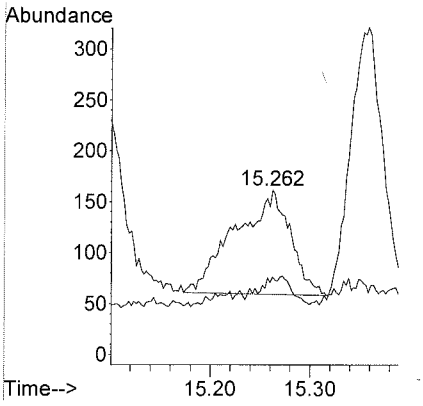


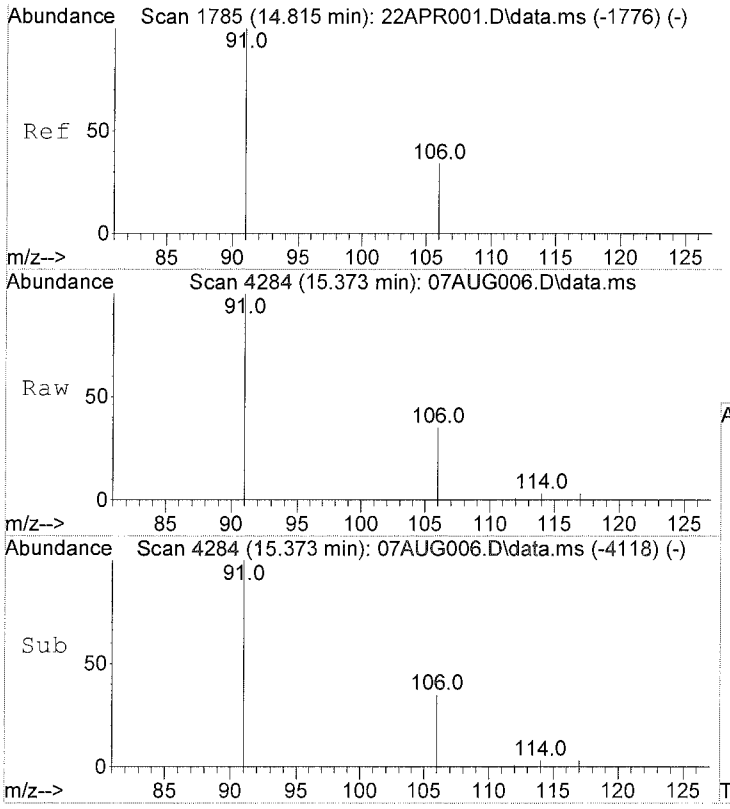


#36
Chlorobenzene
Concen: 2.26 pptv
RT: 15.262 min Scan# 4239
Delta R.T. -0.003 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:112 Resp: 391

Ion	Ratio	Lower	Upper
112	100		
114	27.2	0.0	81.6

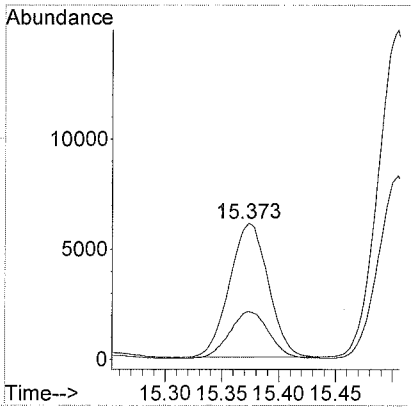


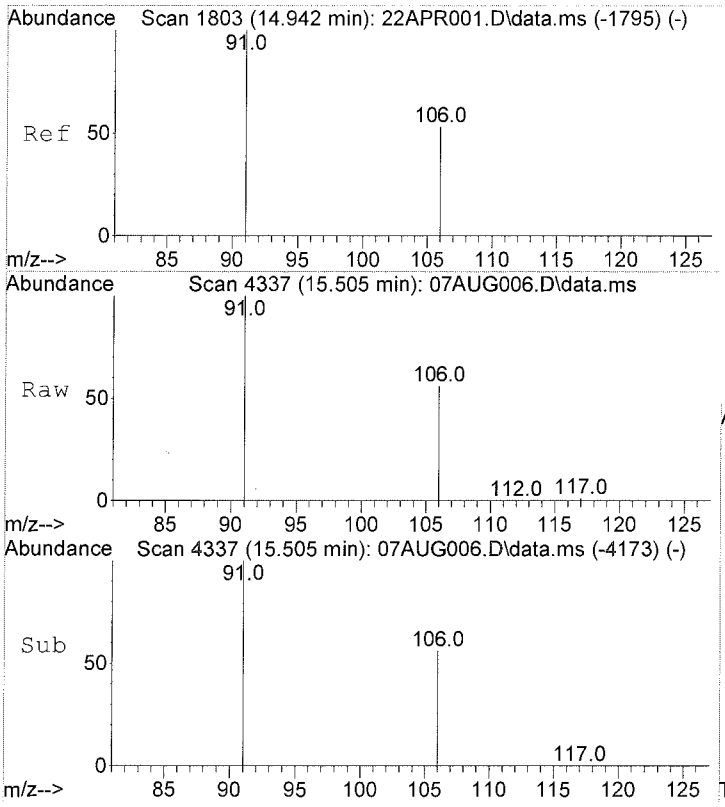


#37
Ethylbenzene
Concen: 76.53 pptv
RT: 15.373 min Scan# 4284
Delta R.T. 0.006 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 91 Resp: 14310

Ion	Ratio	Lower	Upper
91	100		
106	34.9	0.0	83.4

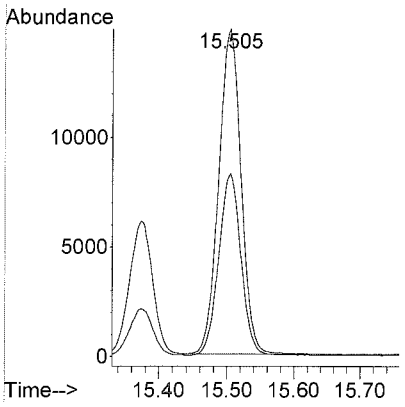


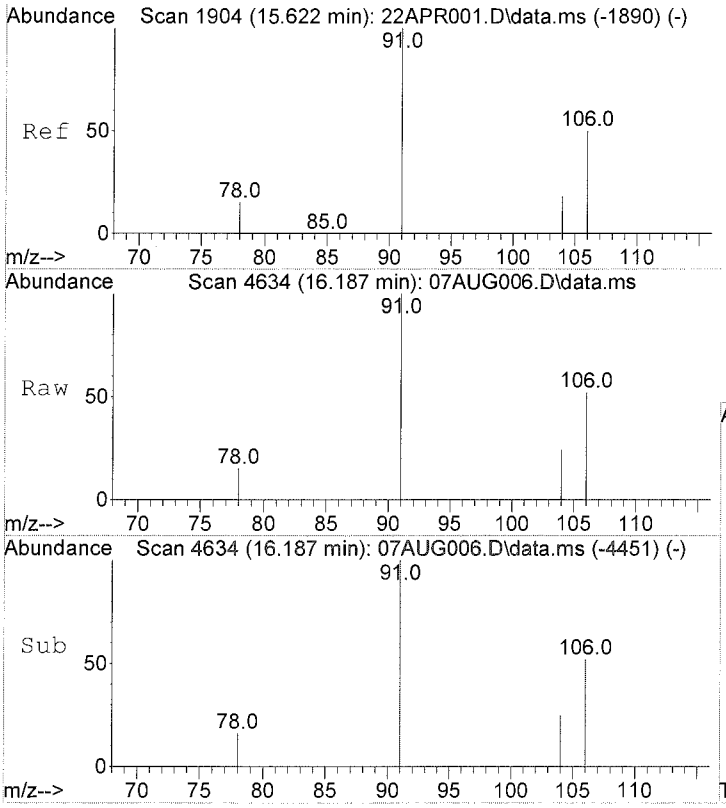


#38
p,&m-Xylene
Concen: 212.84 pptv
RT: 15.505 min Scan# 4337
Delta R.T. 0.007 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 91 Resp: 34392

Ion	Ratio	Lower	Upper
91	100		
106	55.8	3.9	103.9

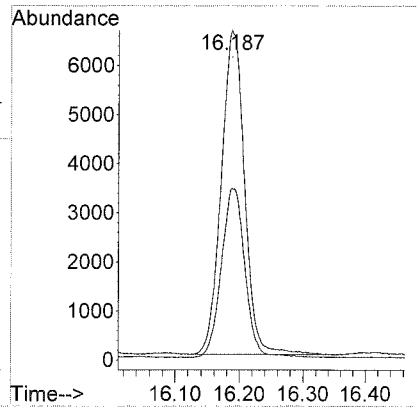


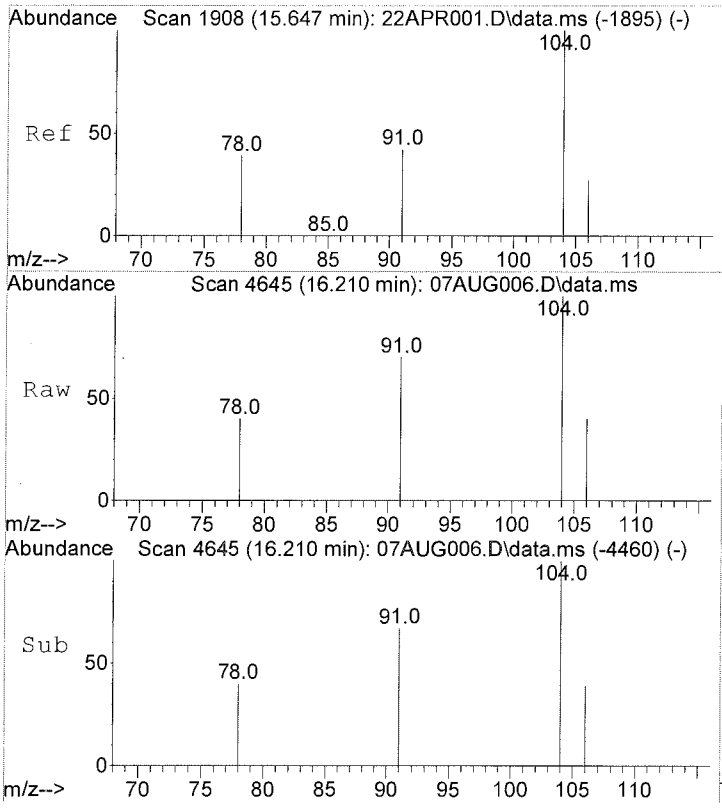


#39
o-Xylene
Concen: 124.11 pptv
RT: 16.187 min Scan# 4634
Delta R.T. 0.000 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 91 Resp: 16948

Ion	Ratio	Lower	Upper
91	100		
106	52.2	0.0	97.3

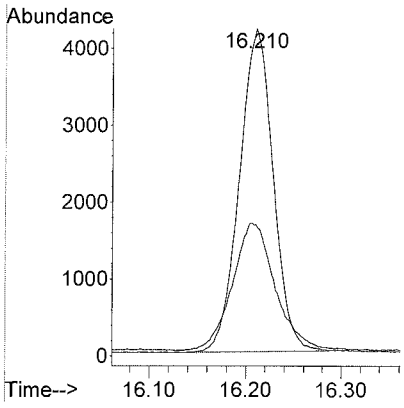


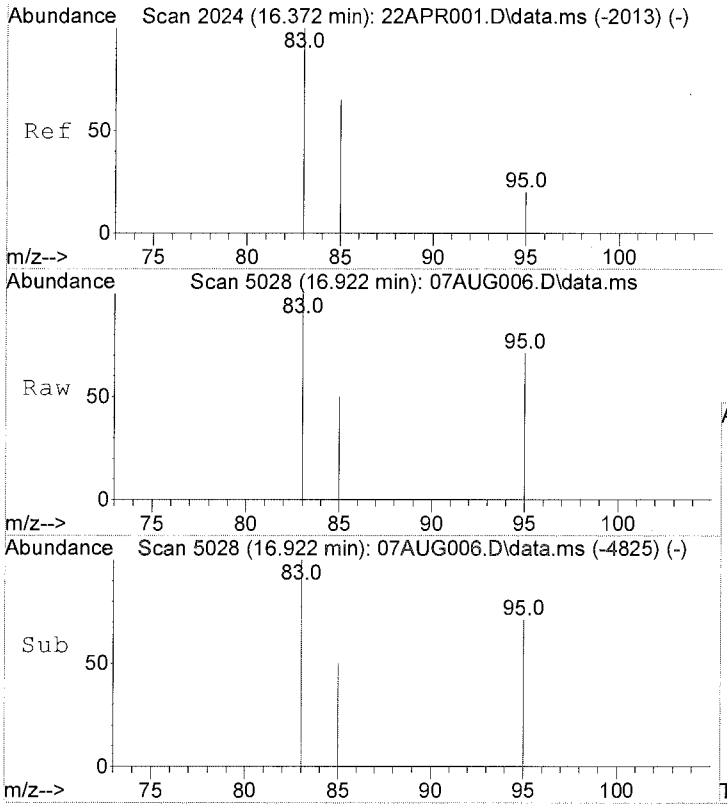


#40
Styrene
Concen: 88.87 pptv
RT: 16.210 min Scan# 4645
Delta R.T. -0.000 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:104 Resp: 10256

Ion	Ratio	Lower	Upper
104	100		
78	38.7	0.0	87.4

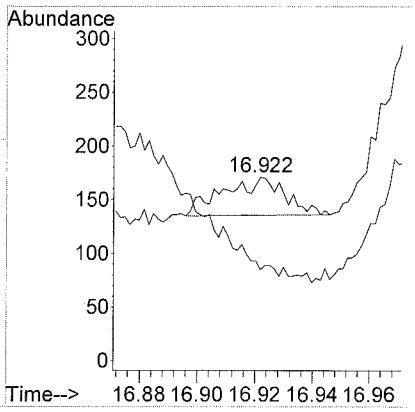


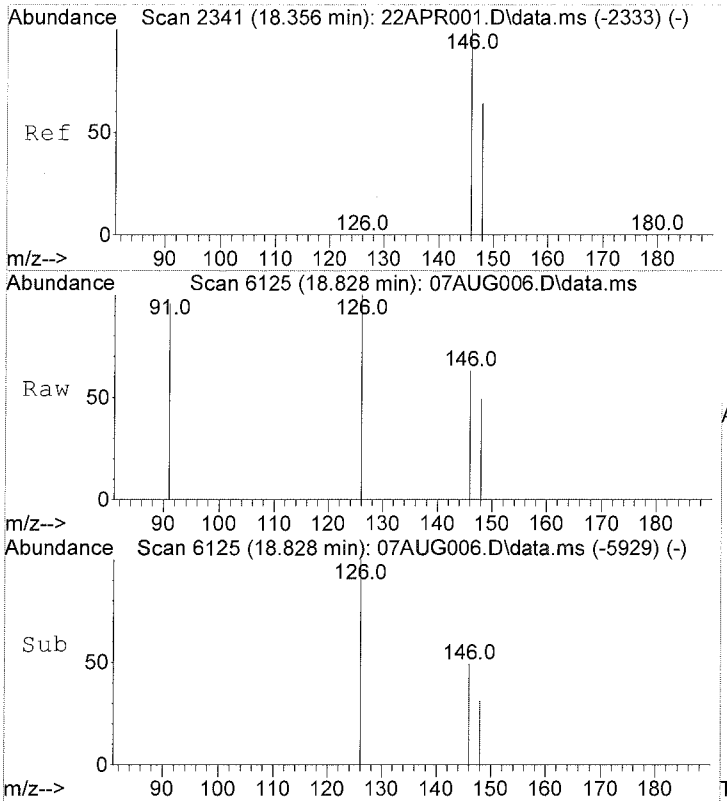


#41
1,1,2,2-Tetrachloroethane
Concen: 0.53 pptv
RT: 16.922 min Scan# 5028
Delta R.T. -0.057 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 83 Resp: 52

Ion	Ratio	Lower	Upper
83	100		
85	25.0	13.6	113.6

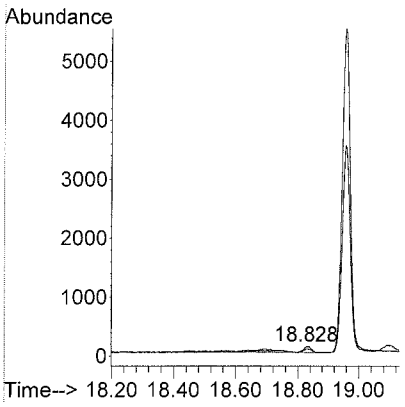


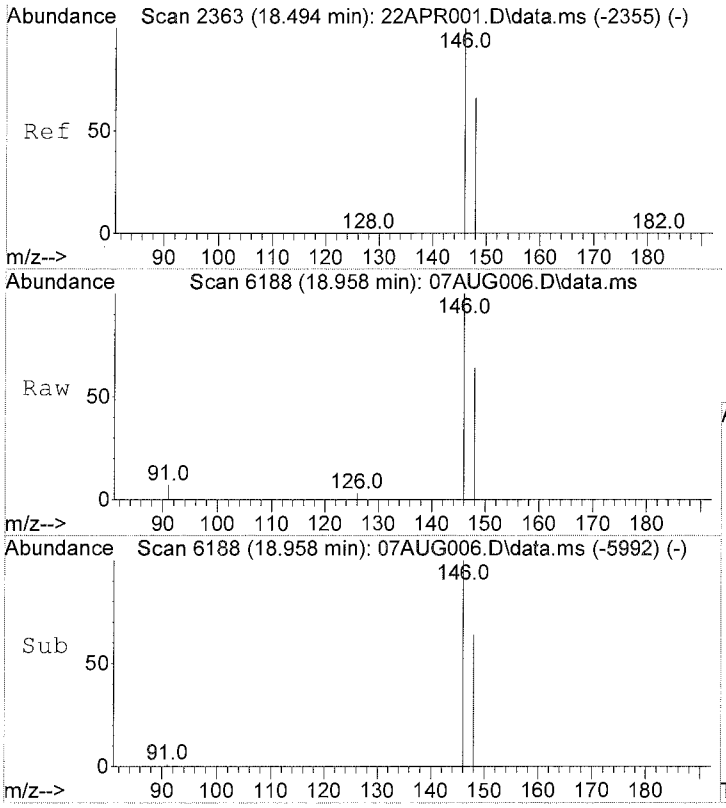


#43
1,3-Dichlorobenzene
Concen: 3.29 pptv
RT: 18.828 min Scan# 6125
Delta R.T. 0.001 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:146 Resp: 680

Ion	Ratio	Lower	Upper
146	100		
148	62.0	13.9	113.9

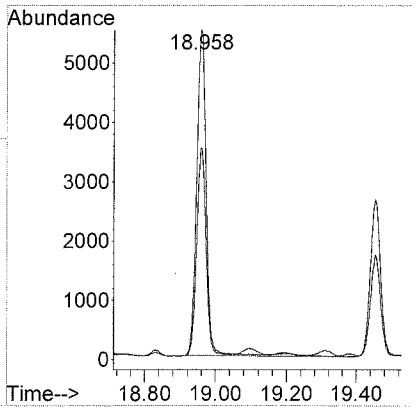


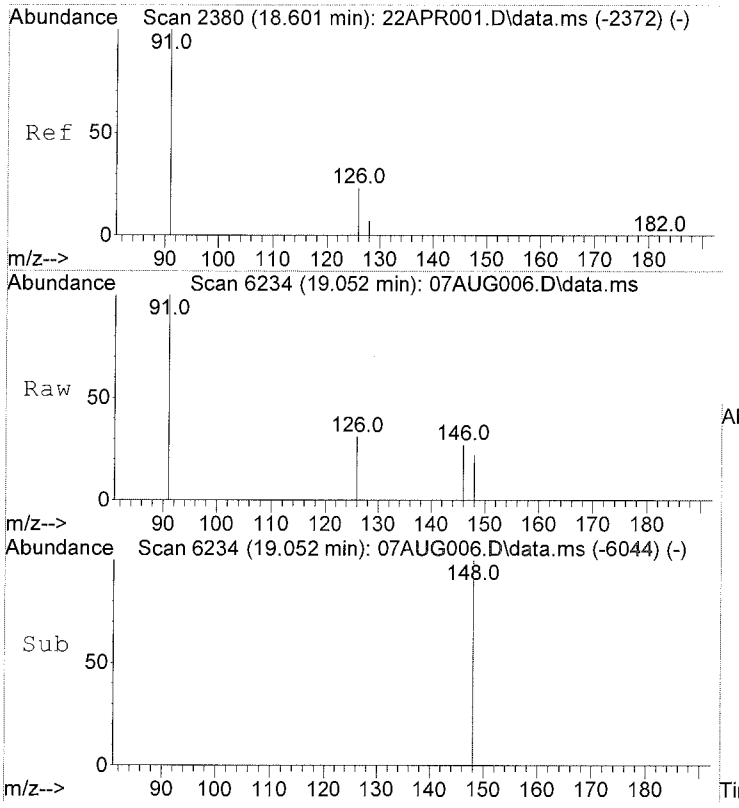


#44
1,4-Dichlorobenzene
Concen: 50.27 pptv
RT: 18.958 min Scan# 6188
Delta R.T. 0.003 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:146 Resp: 10652

Ion	Ratio	Lower	Upper
146	100		
148	63.8	15.5	115.5

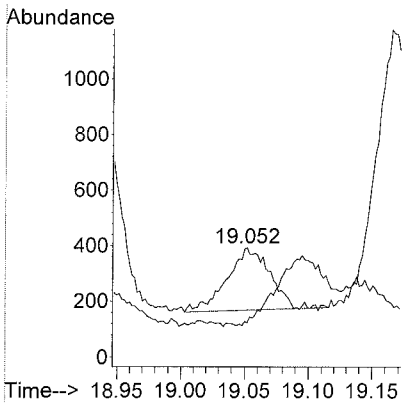


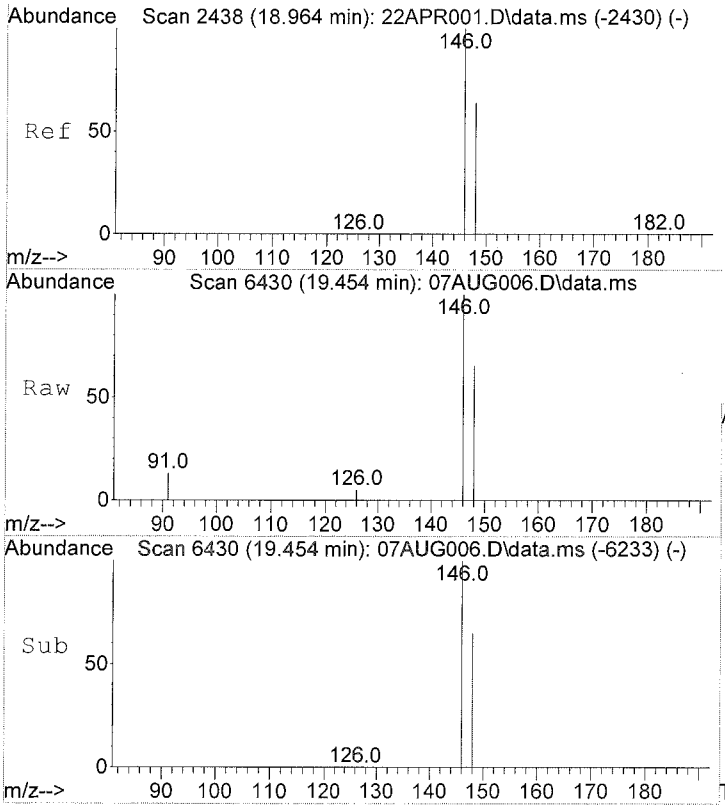


#45
Benzyl Chloride
Concen: 12.66 pptv
RT: 19.052 min Scan# 6234
Delta R.T. -0.010 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion: 91 Resp: 520

Ion	Ratio	Lower	Upper
91	100		
126	0.9	18.7	28.1#

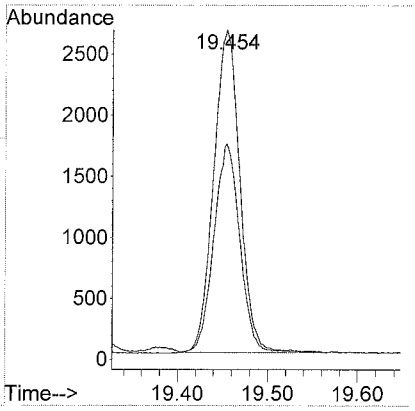


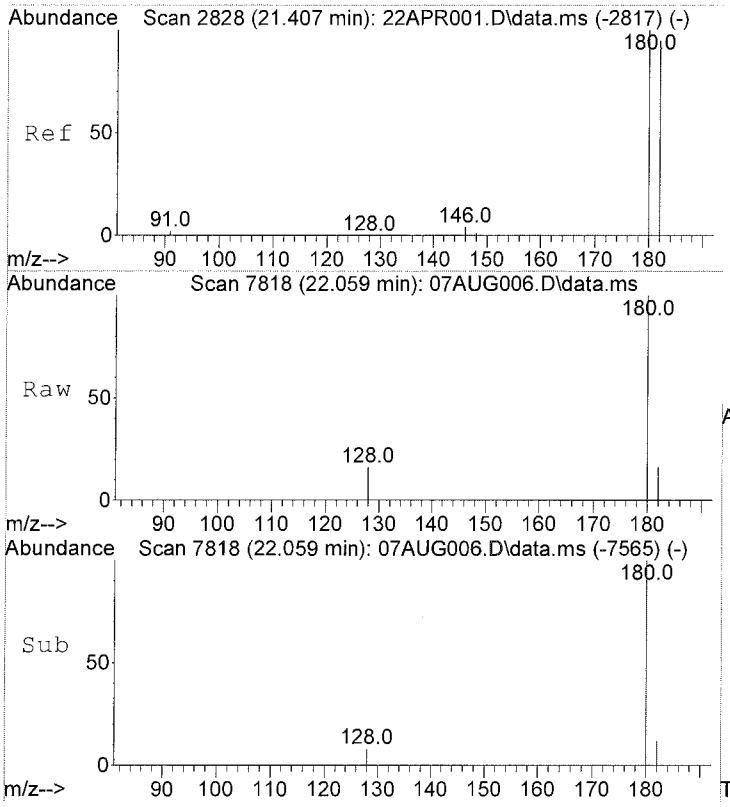


#46
1,2-Dichlorobenzene
Concen: 28.09 pptv
RT: 19.454 min Scan# 6430
Delta R.T. 0.004 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:146 Resp: 5333

Ion	Ratio	Lower	Upper
146	100		
148	64.4	13.7	113.7

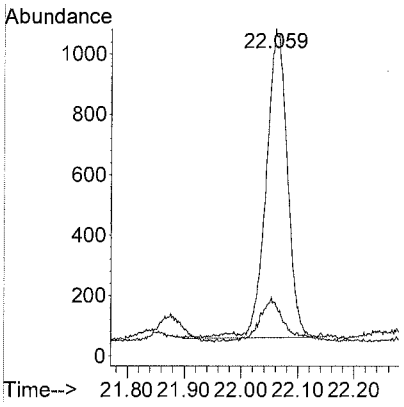


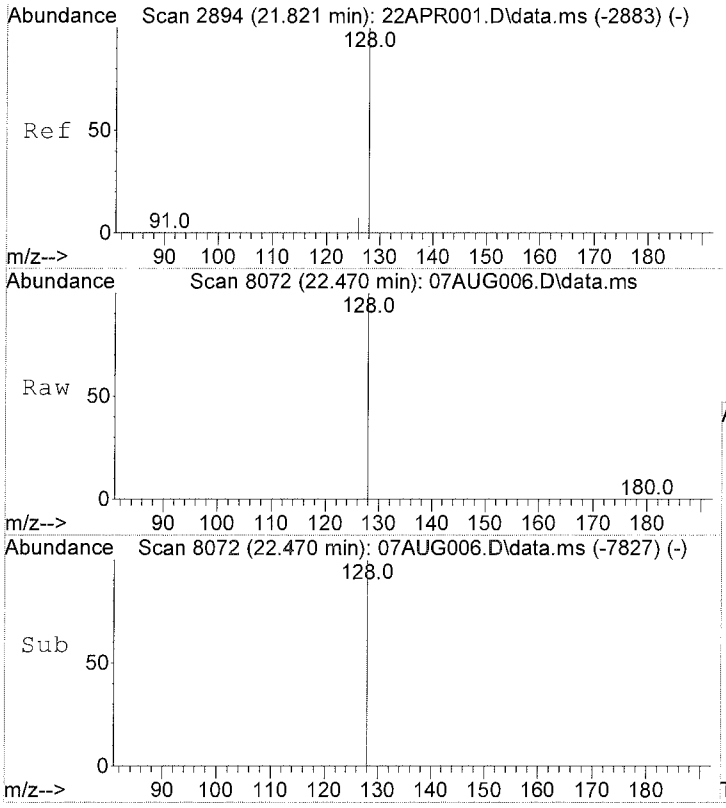


#47
1,2,4-Trichlorobenzene
Concen: 17.82 pptv
RT: 22.059 min Scan# 7818
Delta R.T. 0.010 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:180 Resp: 2674

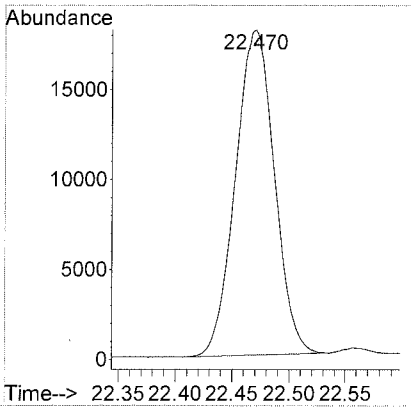
Ion	Ratio	Lower	Upper
180	100		
182	12.2	44.8	144.8#





#48
Naphthalene
Concen: 207.27 pptv
RT: 22.470 min Scan# 8072
Delta R.T. -0.004 min
Lab File: 07AUG006.D
Acq: 7 Aug 2018 2:29 pm

Tgt Ion:128 Resp: 42675



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG007.D
Acq On : 7 Aug 2018 3:14 pm
Operator : DT
Sample : J072607-02 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 07 15:38:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.330	130	96448	2000.00	pptv		0.00
21) 1,4-Difluorobenzene	10.682	114	401387	2000.00	pptv		0.00
31) Chlorobenzene-d5	15.208	117	336779	2000.00	pptv		0.00
System Monitoring Compounds							
23) 1,2-Dichloroethane-d4	10.093	65	95417	1904.76	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 95.24%				
29) Toluene-d8	12.938	98	331549	2163.44	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 108.17%				
42) 4-Bromofluorobenzene	17.184	95	208270	2192.35	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 109.62%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.562	85	45699	418.09	pptv		99
3) Chloromethane	3.960	50	11777	852.86	pptv		97
4) Vinyl Chloride	4.056	62	69	3.48	pptv	#	1
5) Bromomethane	4.865	96	2525	114.64	pptv		96
6) Chloroethane	5.007	64	473	34.64	pptv		99
7) Trichlorofluoromethane...	5.473	101	23696	197.09	pptv		99
8) 1,1,2-Cl 1,2,2-F ethan...	6.227	151	7069	64.32	pptv		92
9) Acetone	6.113	43	318493	7106.64	pptv		95
11) Methylene Chloride	7.027	49	2161	71.79	pptv		93
12) t-Butyl Methyl Ether	7.320	73	284	3.82	pptv		1
14) Hexane	7.775	57	3183	86.58	pptv		78
15) 1,1-Dichloroethane	8.067	63	63	1.13	pptv		42
16) 2-Butanone	8.607	72	25850	1474.12	pptv		90
17) c-1,2-Dichloroethene	8.915	96	81	1.86	pptv	#	45
18) Chloroform	9.144	83	1222	14.75	pptv		87
19) 1,1,1-Trichloroethane	9.760	97	219	2.56	pptv		96
20) Carbon Tetrachloride	10.148	117	6187	74.41	pptv		98
22) Benzene	10.322	78	10606	74.93	pptv		97
24) 1,2-Dichloroethane	10.224	62	623	11.57	pptv		79
25) Trichloroethene	11.212	130	92	0.98	pptv	#	13
26) 1,2-Dichloropropane	11.408	63	212	6.08	pptv		57
27) 1,4-Dioxane	11.710	88	298	9.56	pptv		96
28) Bromodichloromethane	11.636	83	52	0.64	pptv		38
30) Toluene	13.055	91	123536	751.36	pptv		100
32) t-1,3-Dichloropropene	12.481	75	501	9.91	pptv		47
33) 1,1,2-Trichloroethane	13.542	97	2109	33.12	pptv	#	19
34) Tetrachloroethene	14.083	166	989	7.08	pptv		98
35) 1,2-Dibromoethane	14.571	107	142	1.51	pptv		91
36) Chlorobenzene	15.247	112	249	1.42	pptv		67
37) Ethylbenzene	15.374	91	13502	71.09	pptv		97
38) p,&m-Xylene	15.505	91	30700	187.04	pptv		98
39) o-Xylene	16.190	91	70005	504.68	pptv		92
40) Styrene	16.210	104	9508	81.11	pptv		79
41) 1,1,2,2-Tetrachloroethane	16.850	83	137	1.38	pptv		69
43) 1,3-Dichlorobenzene	18.833	146	358	1.71	pptv		93
44) 1,4-Dichlorobenzene	18.960	146	3933	18.27	pptv		100

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG007.D
Acq On : 7 Aug 2018 3:14 pm
Operator : DT
Sample : J072607-02 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 07 15:38:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

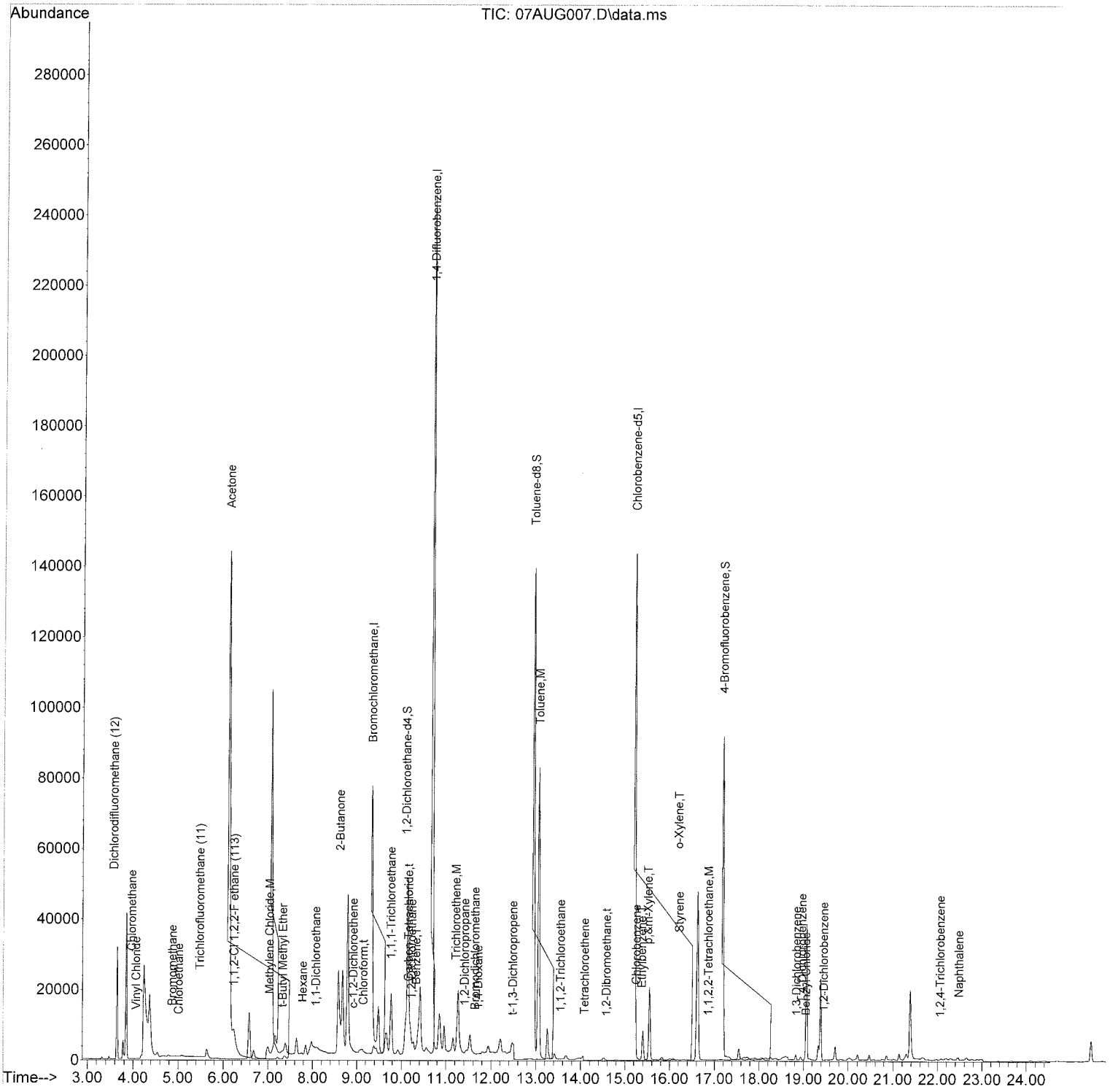
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
45) Benzyl Chloride	19.052	91	558	13.37	pptv #	52
46) 1,2-Dichlorobenzene	19.454	146	1694	8.78	pptv	99
47) 1,2,4-Trichlorobenzene	22.056	180	221	1.45	pptv #	45
48) Naphthalene	22.469	128	13451	64.32	pptv	100

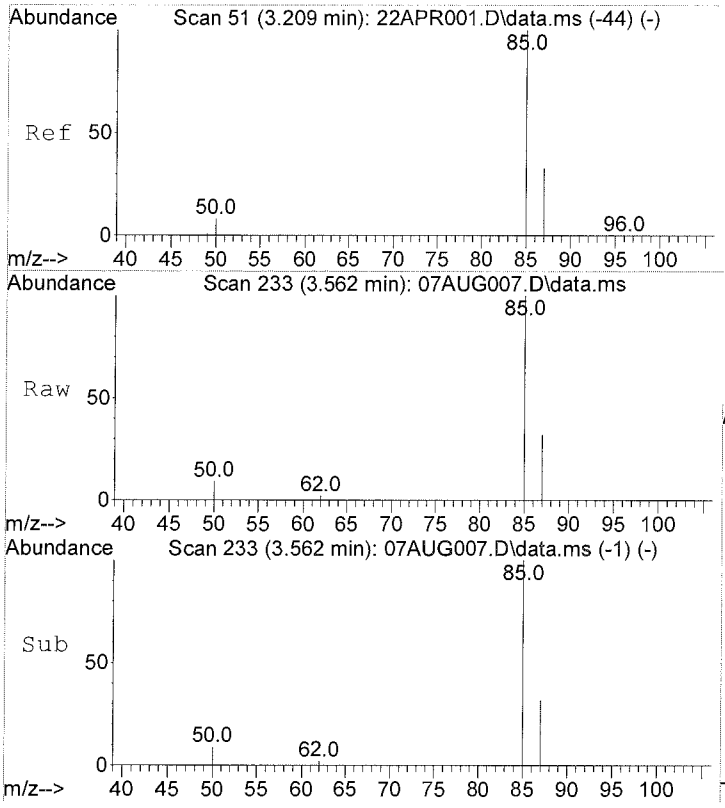
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG007.D
Acq On : 7 Aug 2018 3:14 pm
Operator : DT
Sample : J072607-02 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 07 15:38:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

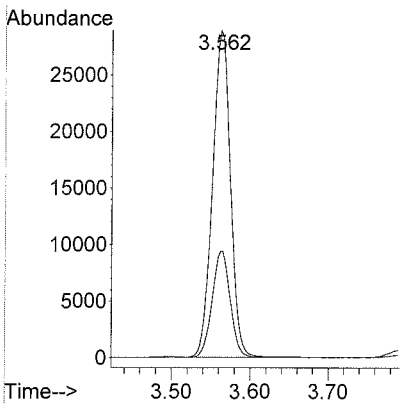


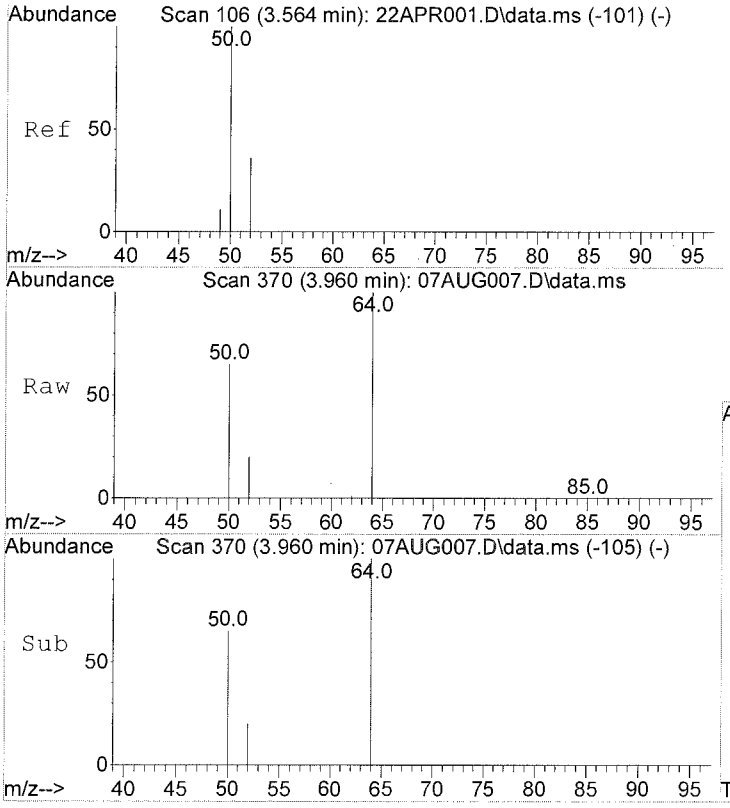


#2
Dichlorodifluoromethane (12)
Concen: 418.09 pptv
RT: 3.562 min Scan# 233
Delta R.T. -0.029 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 85 Resp: 45699

Ion	Ratio	Lower	Upper
85	100		
87	32.4	0.0	81.9

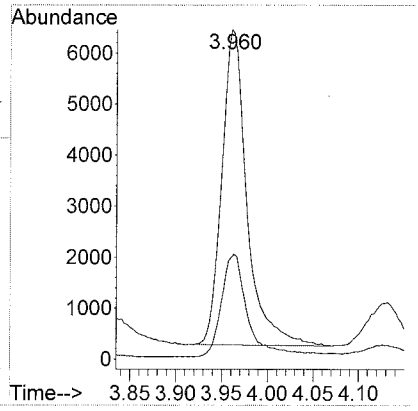


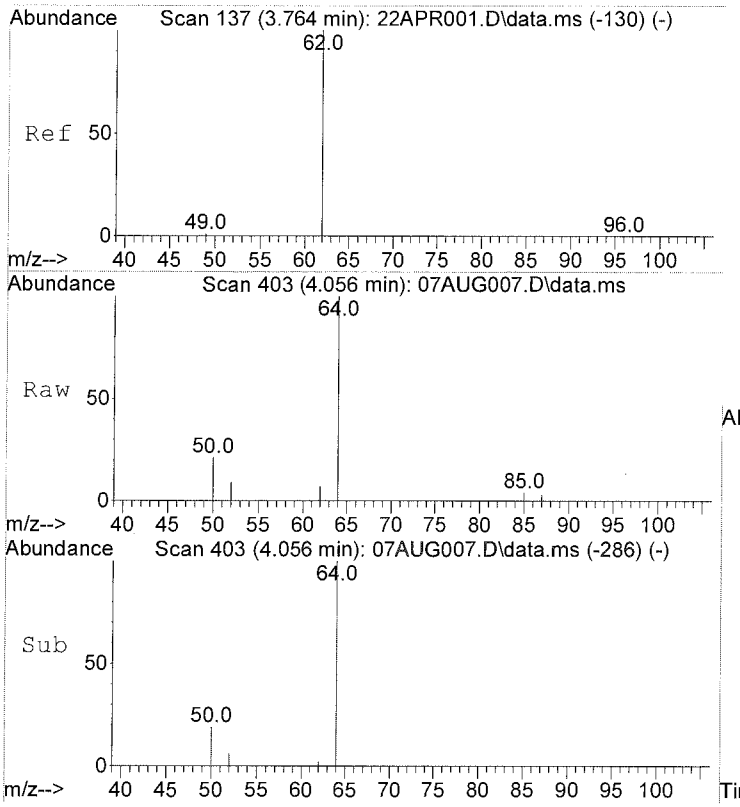


#3
Chloromethane
Concen: 852.86 pptv
RT: 3.960 min Scan# 370
Delta R.T. -0.029 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 50 Resp: 11777

Ion	Ratio	Lower	Upper
50	100		
52	31.6	3.0	63.0

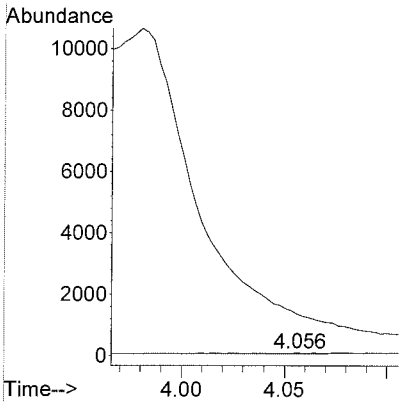


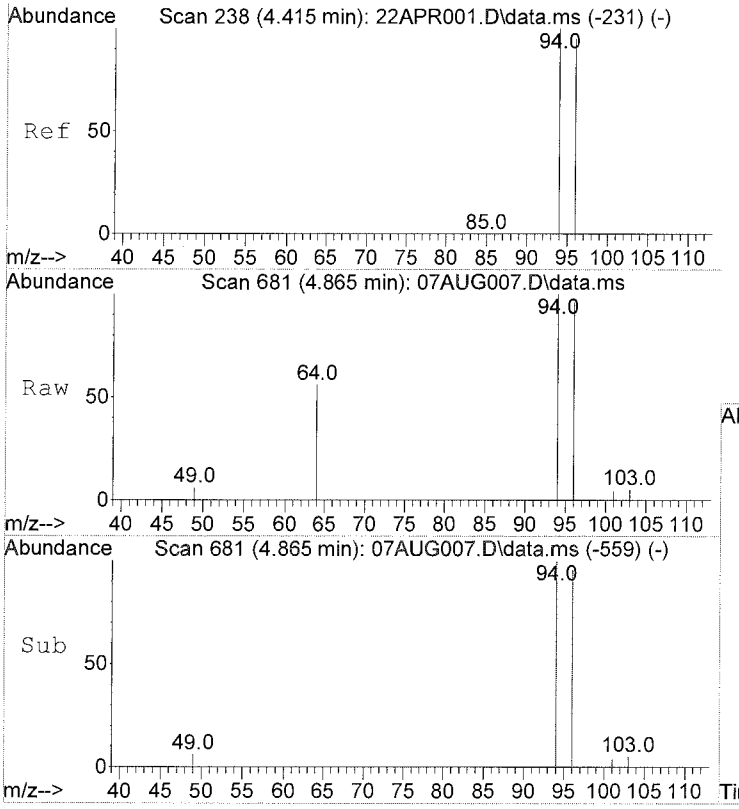


#4
Vinyl Chloride
Concen: 3.48 pptv
RT: 4.056 min Scan# 403
Delta R.T. -0.159 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 62 Resp: 69

Ion	Ratio	Lower	Upper
62	100		
64	1023.1	0.0	82.1#

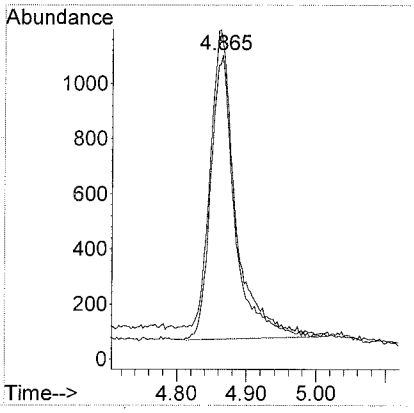


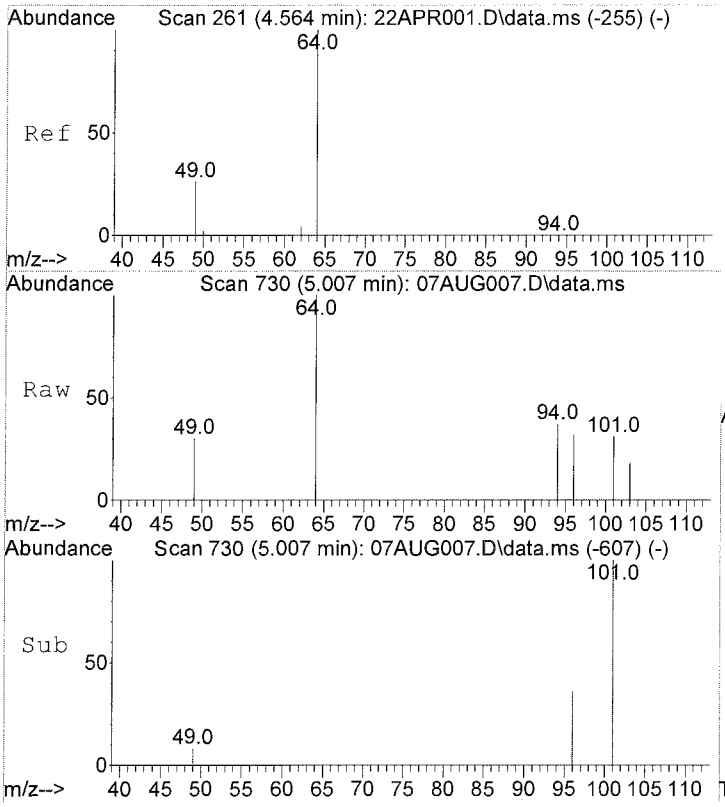


#5
Bromomethane
Concen: 114.64 pptv
RT: 4.865 min Scan# 681
Delta R.T. -0.046 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 96 Resp: 2525

Ion	Ratio	Lower	Upper
96	100		
94	101.4	55.4	155.4

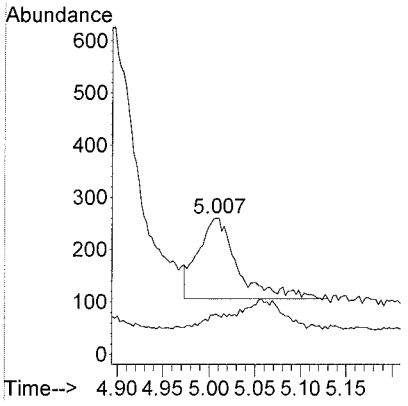


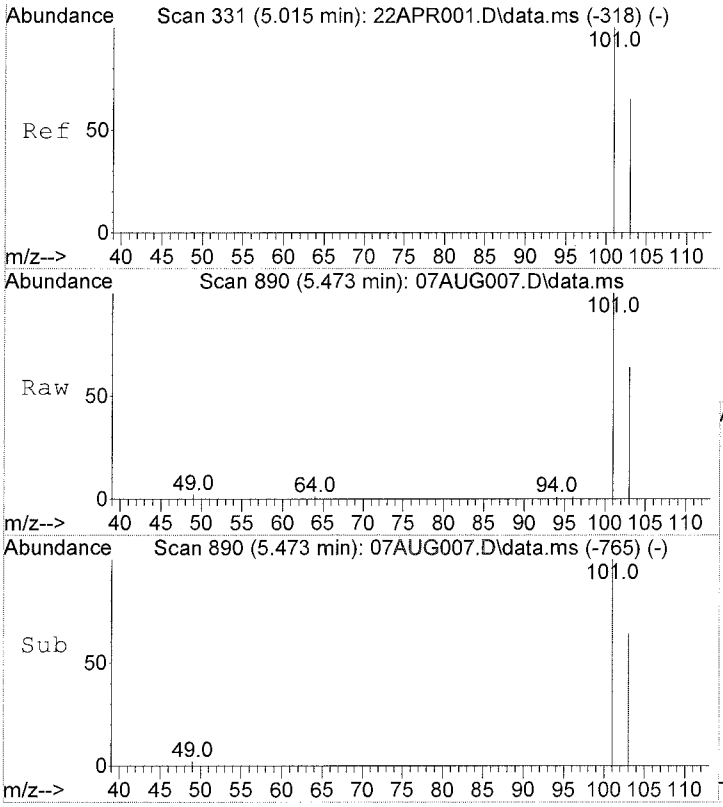


#6
Chloroethane
Concen: 34.64 pptv
RT: 5.007 min Scan# 730
Delta R.T. -0.043 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 64 Resp: 473

Ion	Ratio	Lower	Upper
64	100		
49	18.2	0.0	68.7

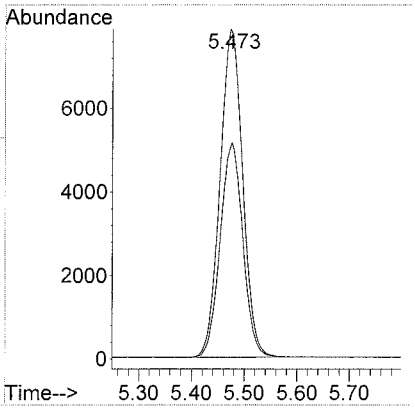


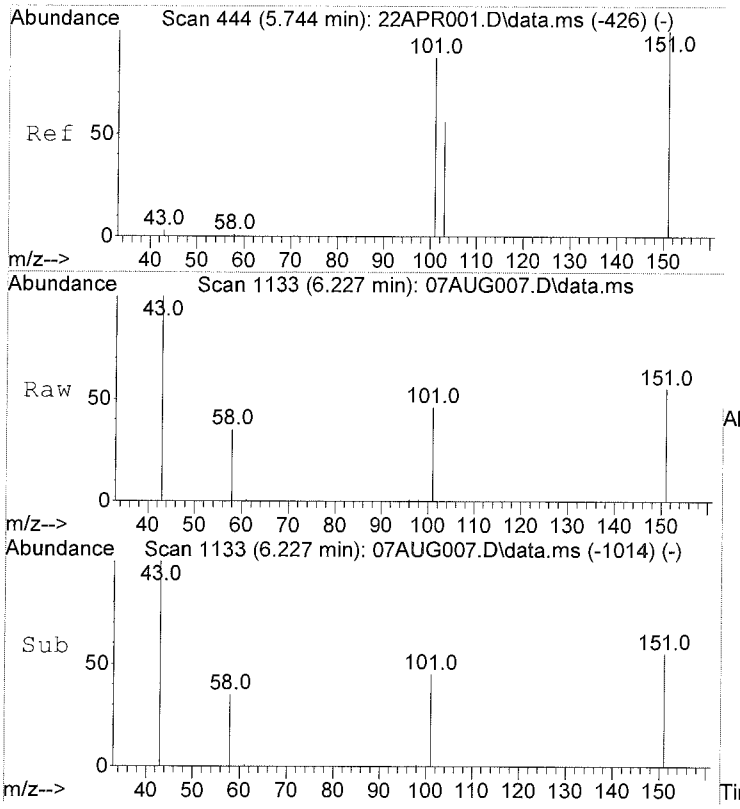


#7
Trichlorofluoromethane (11)
Concen: 197.09 pptv
RT: 5.473 min Scan# 890
Delta R.T. -0.037 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:101 Resp: 23696

Ion	Ratio	Lower	Upper
101	100		
103	64.0	14.6	114.6

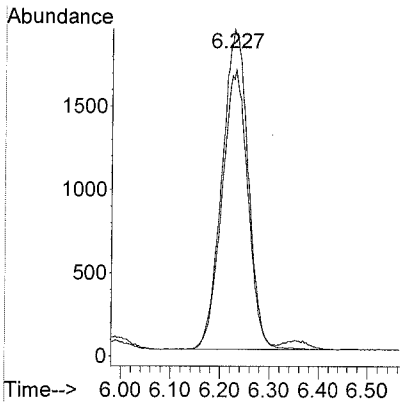


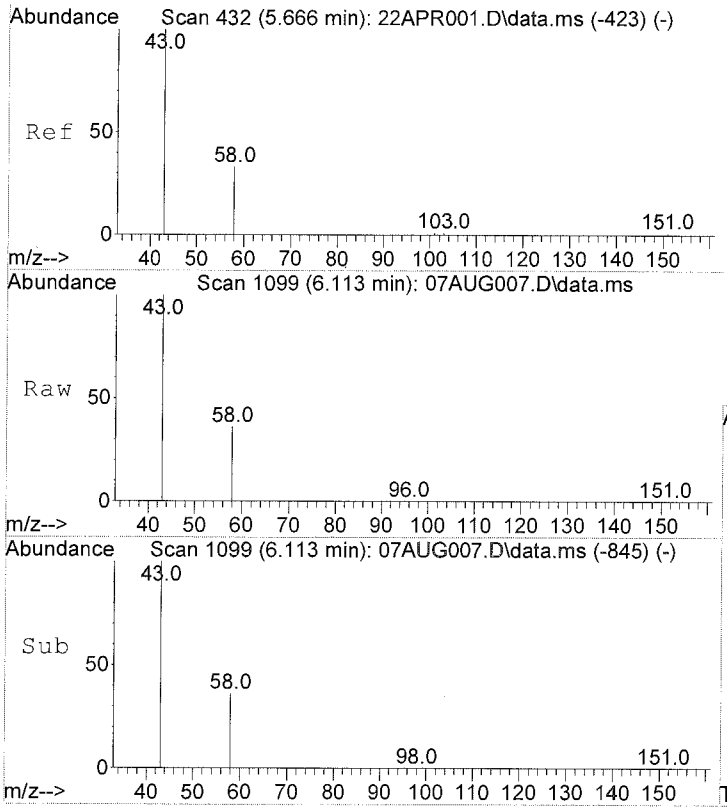


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 64.32 pptv
RT: 6.227 min Scan# 1133
Delta R.T. -0.007 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:151 Resp: 7069

Ion	Ratio	Lower	Upper
151	100		
101	84.2	41.5	141.5

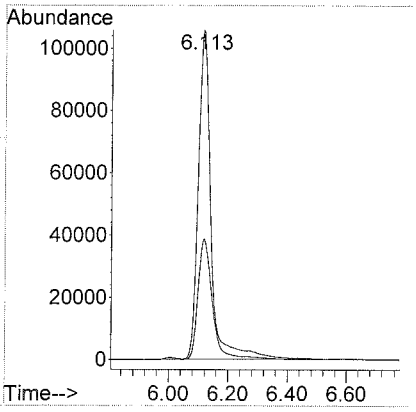


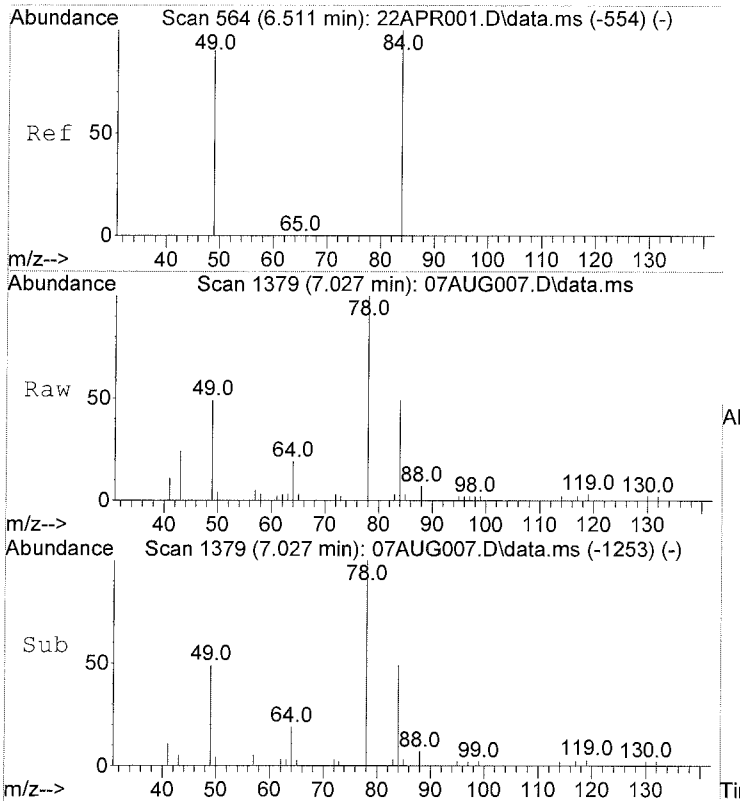


#9
Acetone
Concen: 7106.64 pptv
RT: 6.113 min Scan# 1099
Delta R.T. -0.029 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 43 Resp: 318493

Ion	Ratio	Lower	Upper
43	100		
58	36.1	13.4	53.4

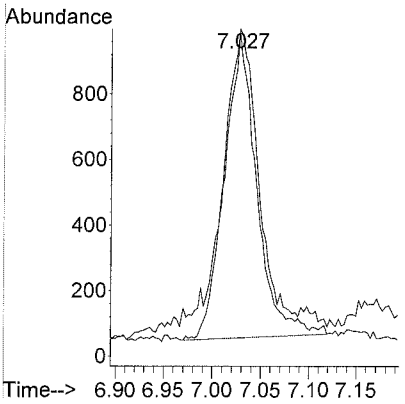


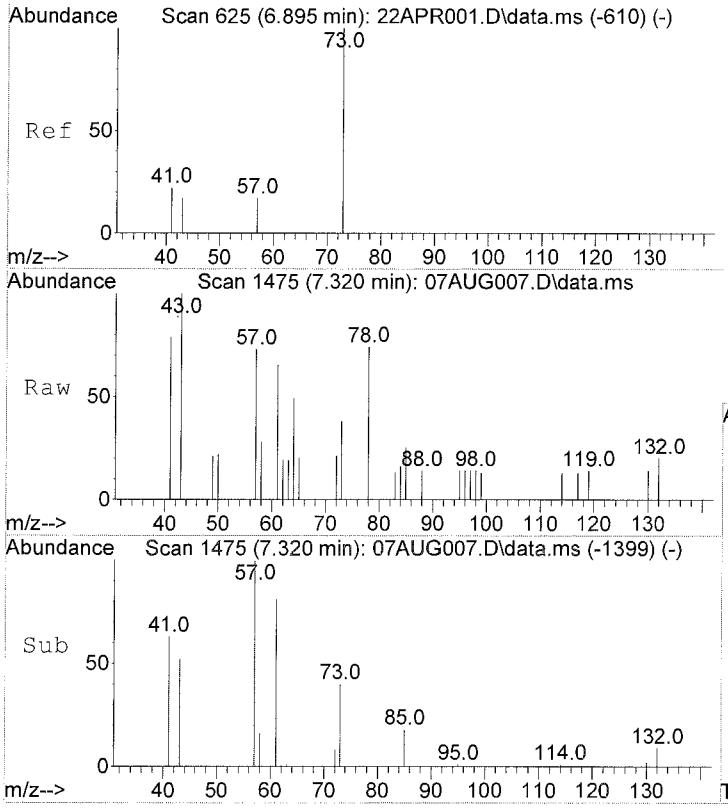


#11
Methylene Chloride
Concen: 71.79 pptv
RT: 7.027 min Scan# 1379
Delta R.T. -0.003 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 49 Resp: 2161

Ion	Ratio	Lower	Upper
49	100		
84	97.1	54.2	154.2

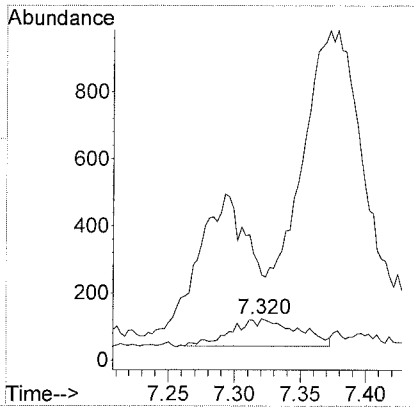


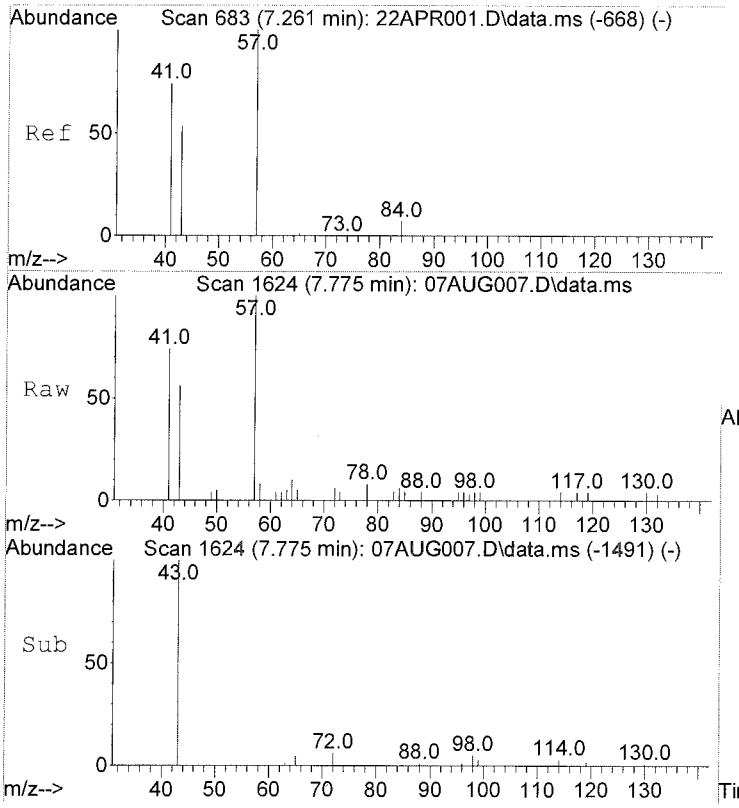


#12
t-Butyl Methyl Ether
Concen: 3.82 pptv
RT: 7.320 min Scan# 1475
Delta R.T. -0.069 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 73 Resp: 284

Ion	Ratio	Lower	Upper
73	100		
41	77.8	0.0	516.4

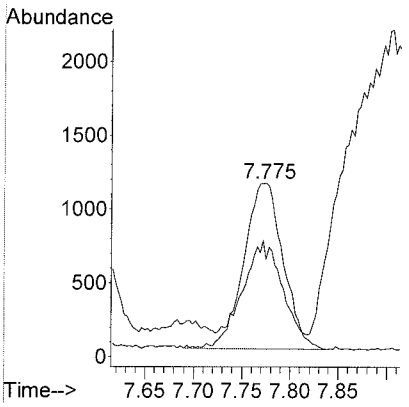


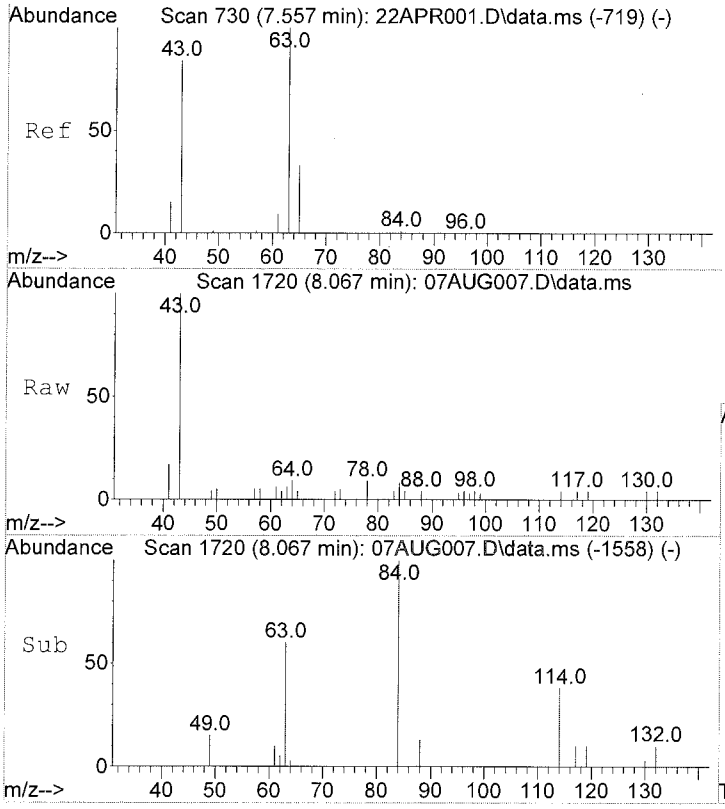


#14
Hexane
Concen: 86.58 pptv
RT: 7.775 min Scan# 1624
Delta R.T. 0.005 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 57 Resp: 3183

Ion	Ratio	Lower	Upper
57	100		
43	39.0	5.0	105.0

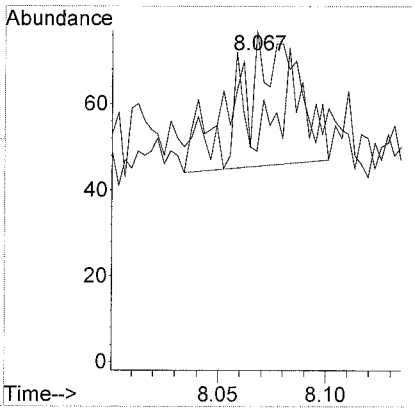


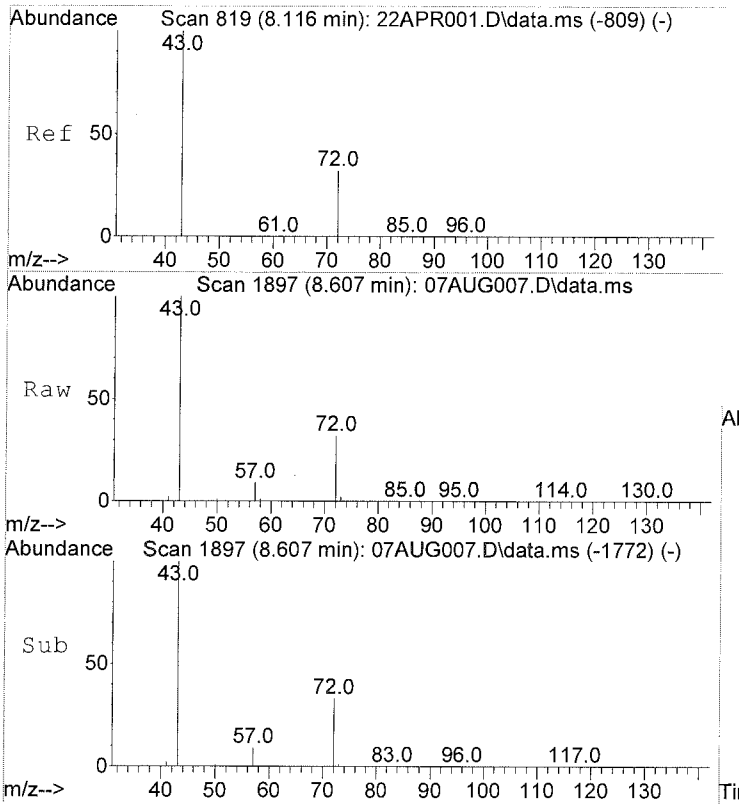


#15
1,1-Dichloroethane
Concen: 1.13 pptv
RT: 8.067 min Scan# 1720
Delta R.T. -0.006 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 63 Resp: 63

Ion	Ratio	Lower	Upper
63	100		
65	0.0	0.0	82.5

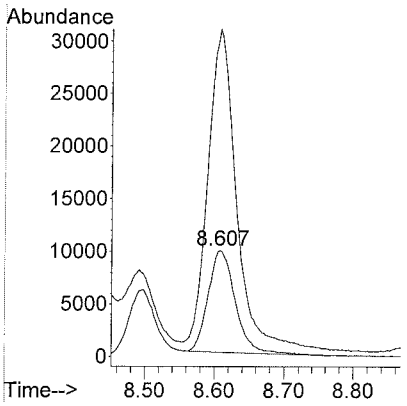


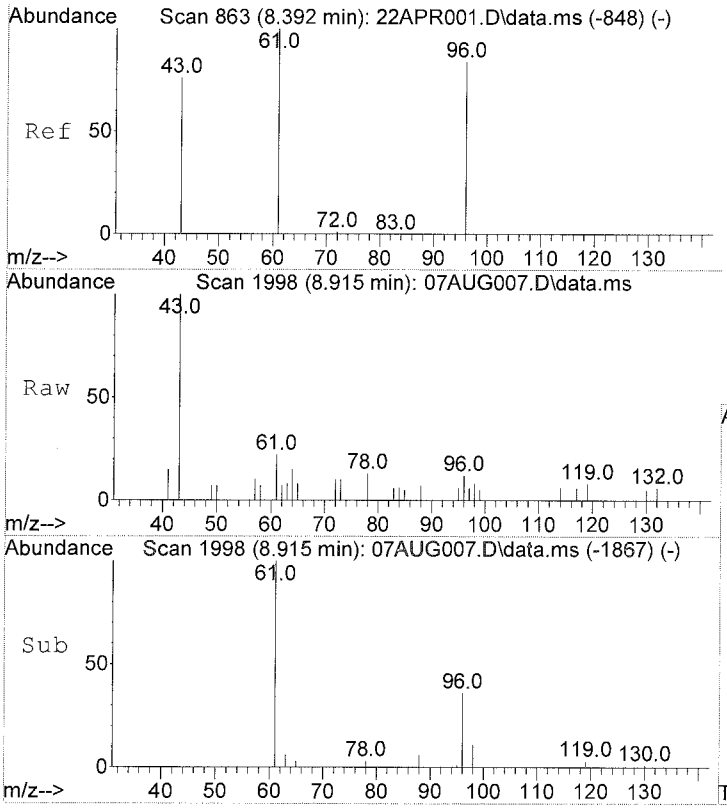


#16
2-Butanone
Concen: 1474.12 pptv
RT: 8.607 min Scan# 1897
Delta R.T. -0.020 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 72 Resp: 25850

Ion	Ratio	Lower	Upper
72	100		
43	305.1	0.0	3591.5

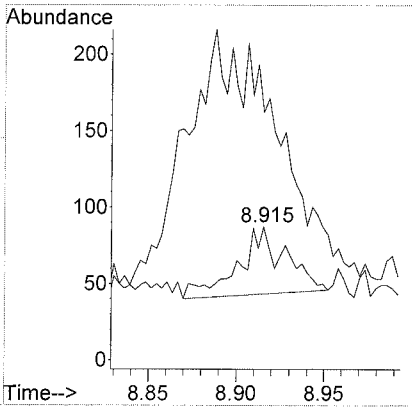


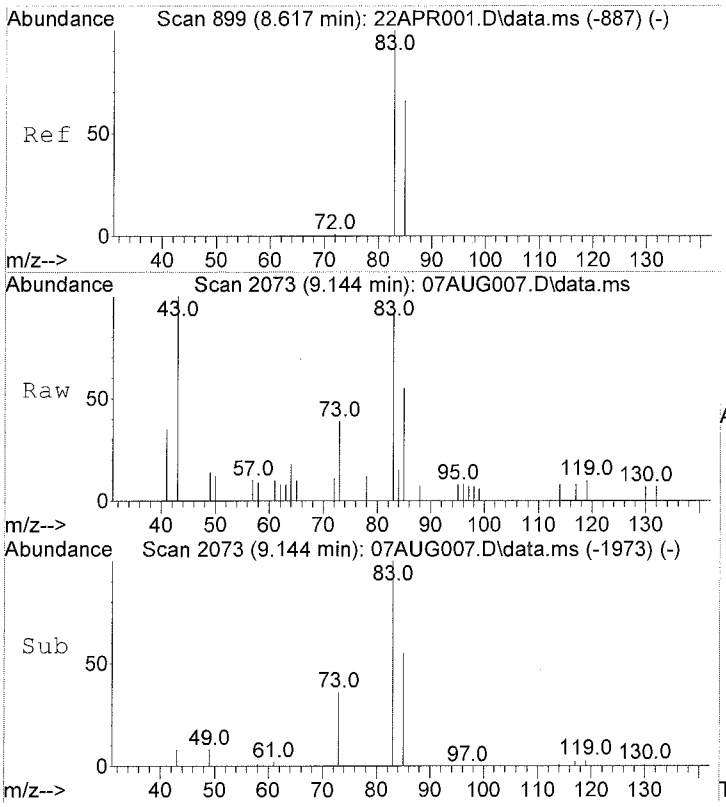


#17
c-1,2-Dichloroethene
Concen: 1.86 pptv
RT: 8.915 min Scan# 1998
Delta R.T. -0.001 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 96 Resp: 81

Ion	Ratio	Lower	Upper
96	100		
61	170.2	62.0	162.0#

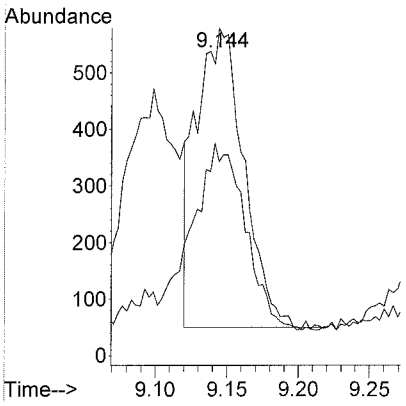


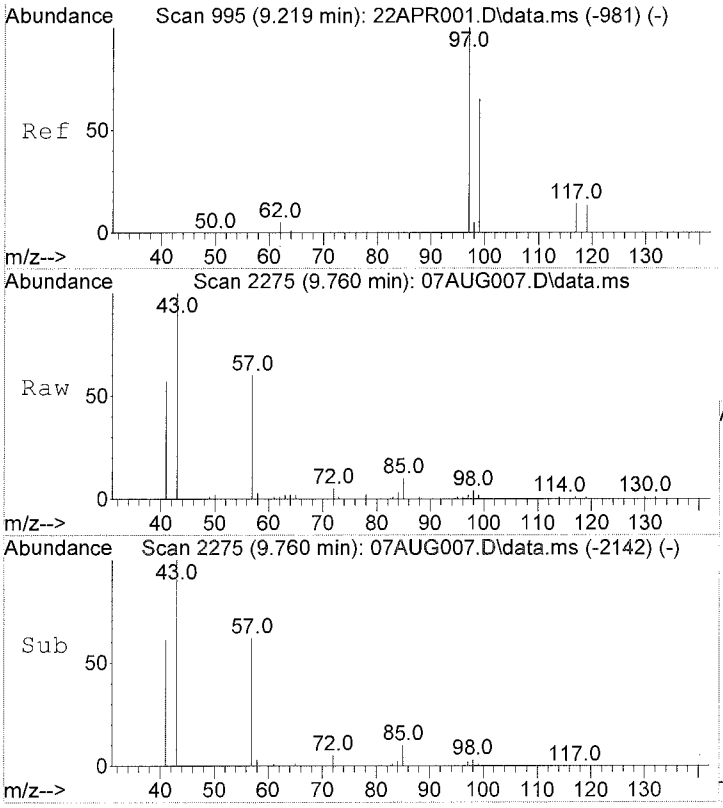


#18
Chloroform
Concen: 14.75 pptv
RT: 9.144 min Scan# 2073
Delta R.T. 0.004 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 83 Resp: 1222

Ion	Ratio	Lower	Upper
83	100		
85	55.0	14.9	114.9

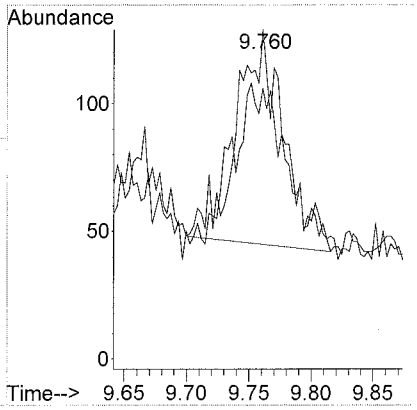


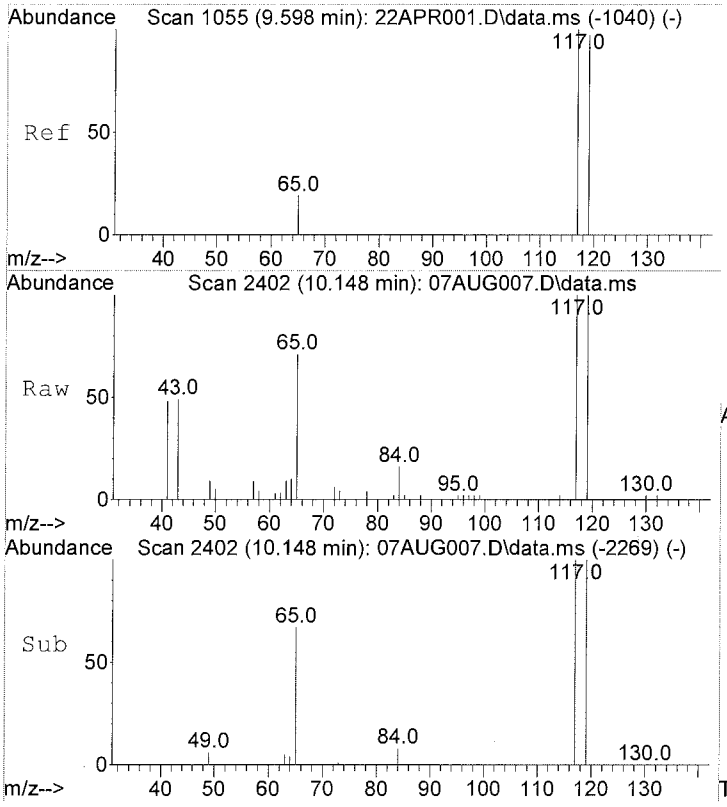


#19
1,1,1-Trichloroethane
Concen: 2.56 pptv
RT: 9.760 min Scan# 2275
Delta R.T. 0.005 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 97 Resp: 219

Ion	Ratio	Lower	Upper
97	100		
99	66.7	13.8	113.8

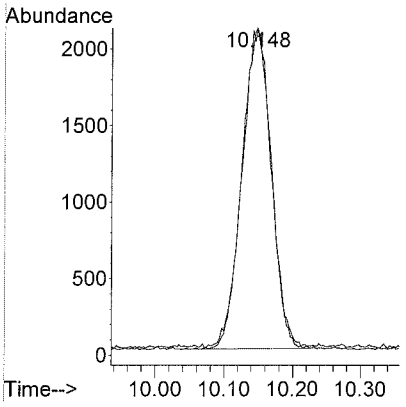


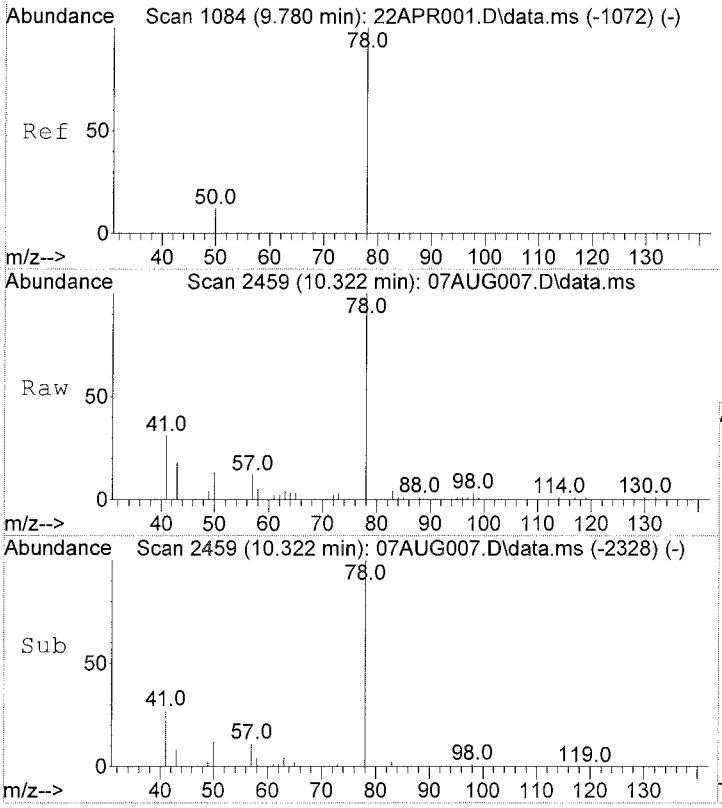


#20
Carbon Tetrachloride
Concen: 74.41 pptv
RT: 10.148 min Scan# 2402
Delta R.T. 0.005 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:117 Resp: 6187

Ion	Ratio	Lower	Upper
117	100		
119	99.4	47.1	147.1

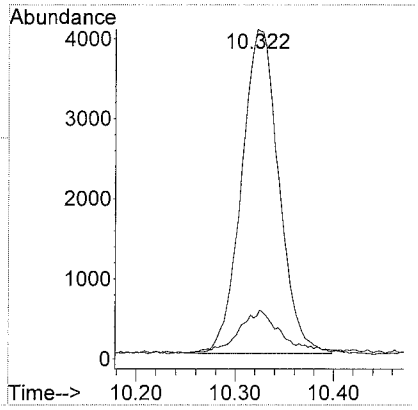


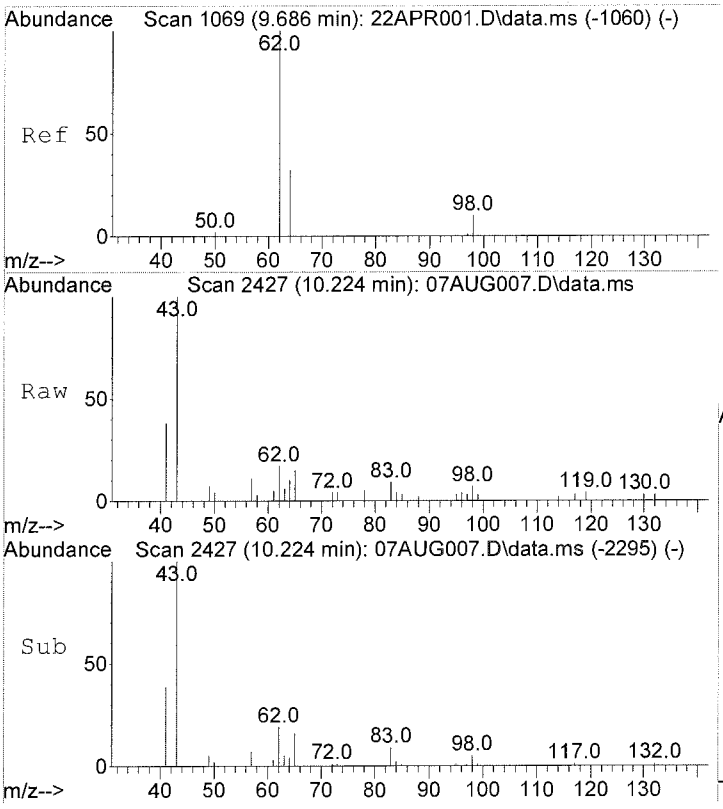


#22
Benzene
Concen: 74.93 pptv
RT: 10.322 min Scan# 2459
Delta R.T. 0.001 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 78 Resp: 10606

Ion	Ratio	Lower	Upper
78	100		
50	11.4	0.0	62.6

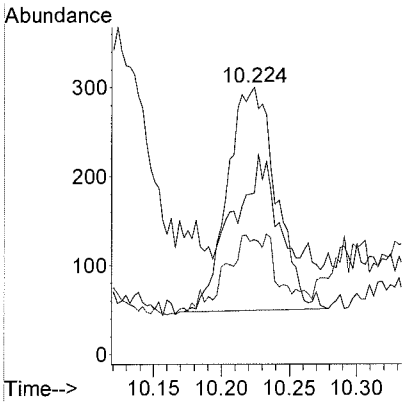


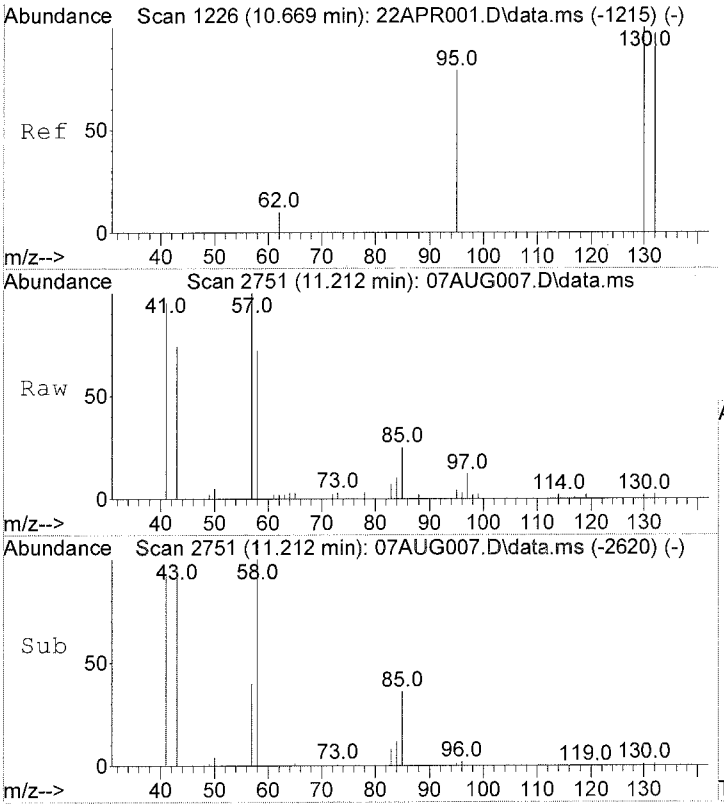


#24
1,2-Dichloroethane
Concen: 11.57 pptv
RT: 10.224 min Scan# 2427
Delta R.T. 0.004 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 62 Resp: 623

Ion	Ratio	Lower	Upper
62	100		
64	26.6	0.0	83.0
98	30.6	0.0	61.0

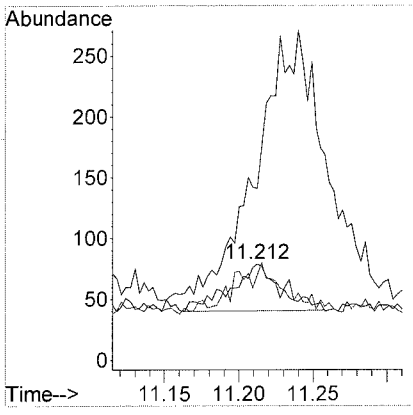


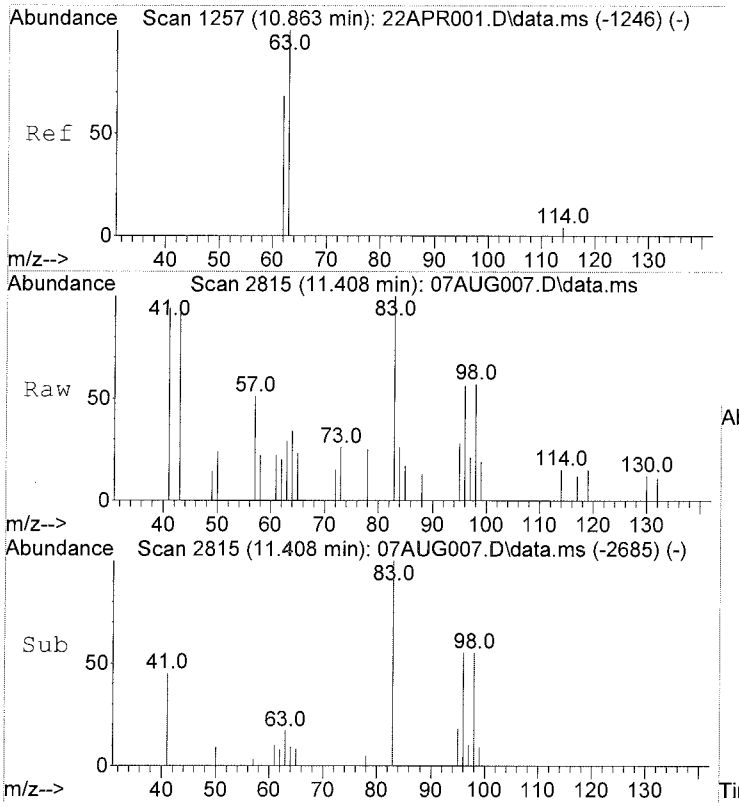


#25
Trichloroethene
Concen: 0.98 pptv
RT: 11.212 min Scan# 2751
Delta R.T. 0.000 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:130 Resp: 92

Ion	Ratio	Lower	Upper
130	100		
95	220.5	30.9	130.9#
132	69.2	46.0	146.0

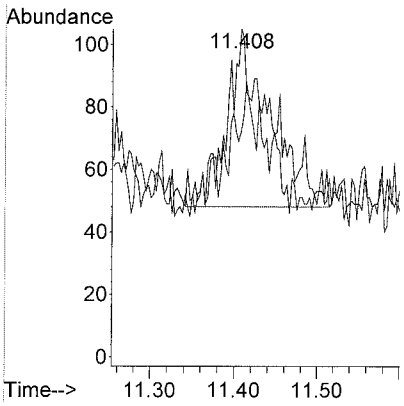


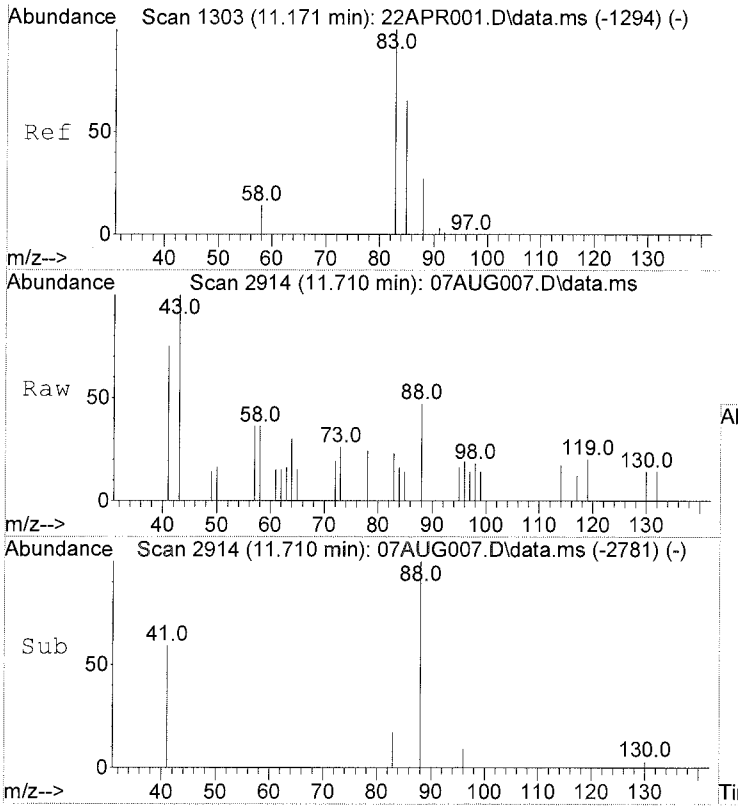


#26
1,2-Dichloropropane
Concen: 6.08 pptv
RT: 11.408 min Scan# 2815
Delta R.T. -0.002 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 63 Resp: 212

Ion	Ratio	Lower	Upper
63	100		
62	35.1	20.3	120.3

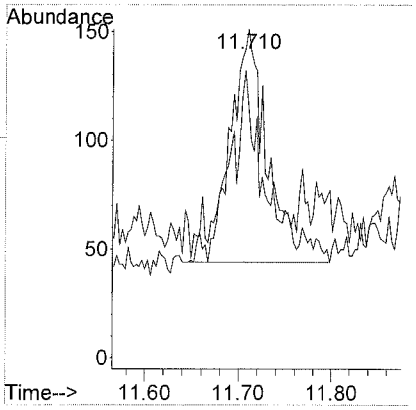


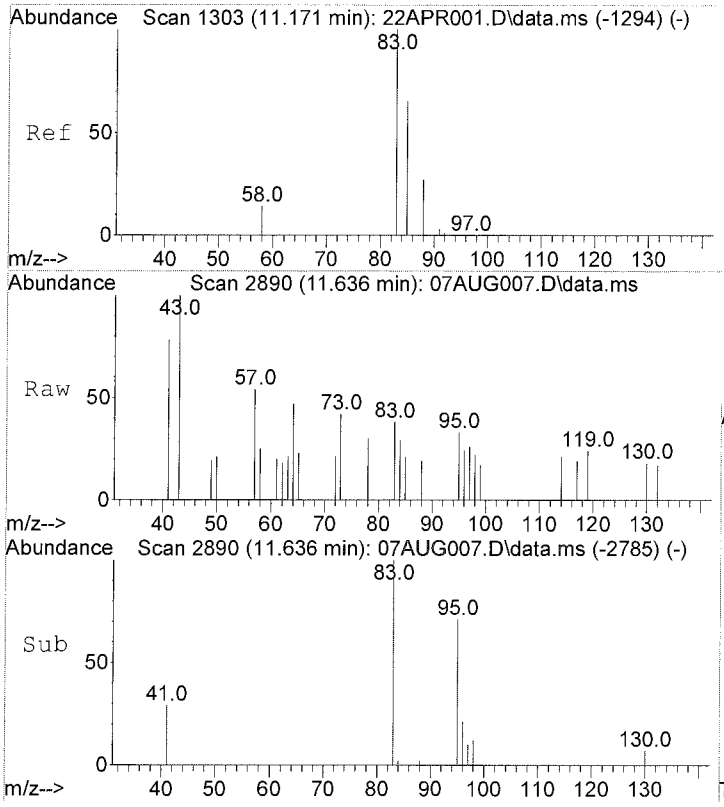


#27
1,4-Dioxane
Concen: 9.56 pptv
RT: 11.710 min Scan# 2914
Delta R.T. 0.007 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 88 Resp: 298

Ion	Ratio	Lower	Upper
88	100		
58	45.8	38.7	58.1

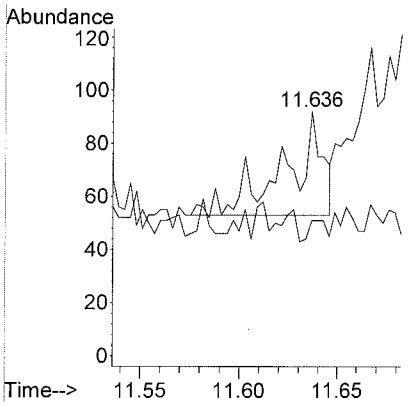


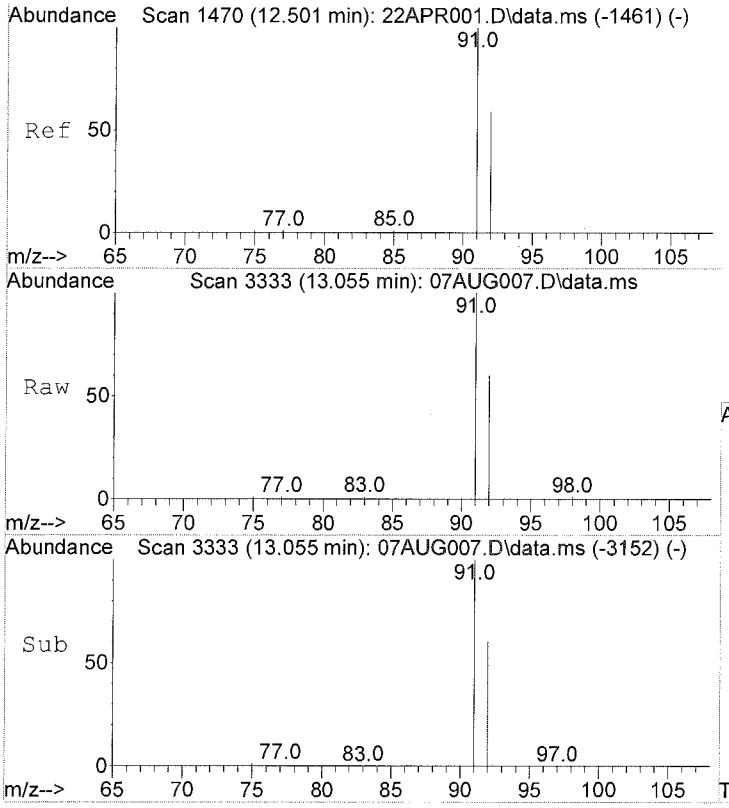


#28
Bromodichloromethane
Concen: 0.64 pptv
RT: 11.636 min Scan# 2890
Delta R.T. -0.080 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 83 Resp: 52

Ion	Ratio	Lower	Upper
83	100		
85	15.4	13.9	113.9

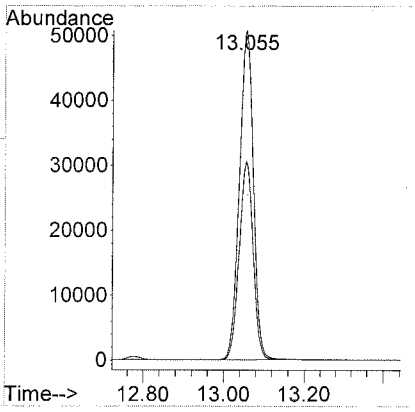


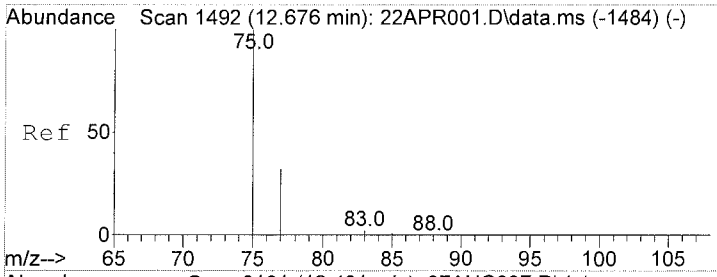


#30
Toluene
Concen: 751.36 pptv
RT: 13.055 min Scan# 3333
Delta R.T. 0.003 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 91 Resp: 123536

Ion	Ratio	Lower	Upper
91	100		
92	60.3	10.0	110.0

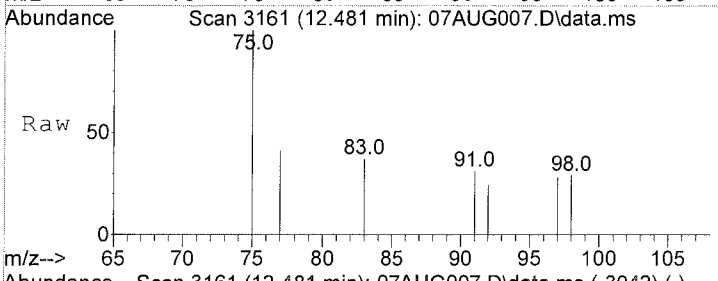


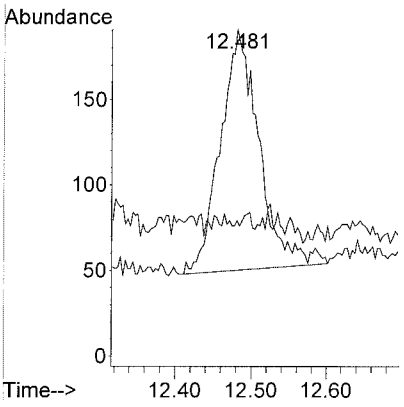


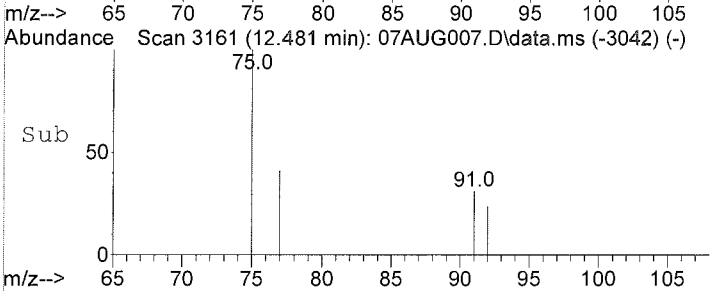
#32
t-1,3-Dichloropropene
Concen: 9.91 pptv
RT: 12.481 min Scan# 3161
Delta R.T. -0.018 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

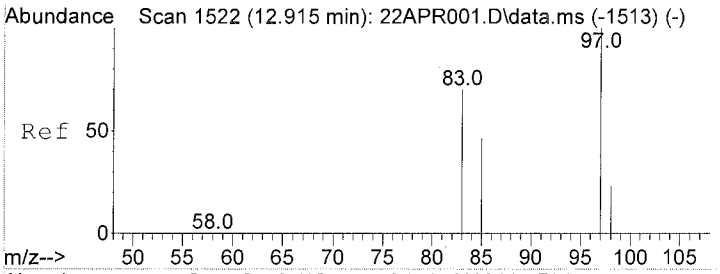
Tgt Ion: 75 Resp: 501

Ion	Ratio	Lower	Upper
75	100		
77	2.1	0.0	81.7





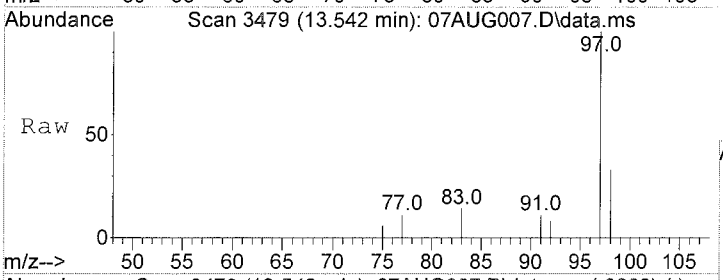


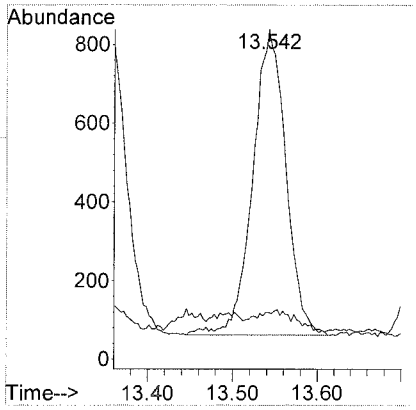


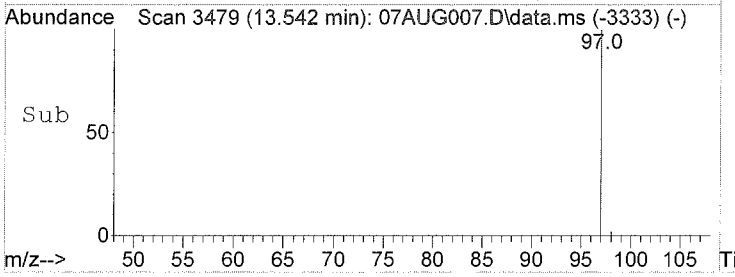
#33
1,1,2-Trichloroethane
Concen: 33.12 pptv
RT: 13.542 min Scan# 3479
Delta R.T. 0.087 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

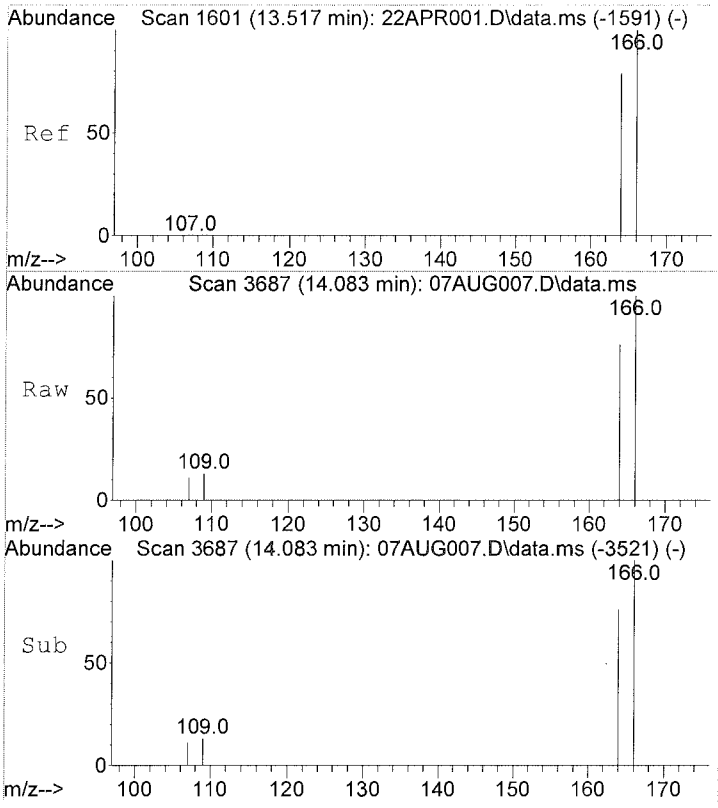
Tgt Ion: 97 Resp: 2109

Ion	Ratio	Lower	Upper
97	100		
83	5.7	25.1	125.1#





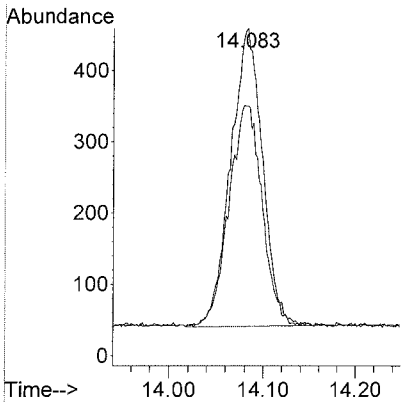


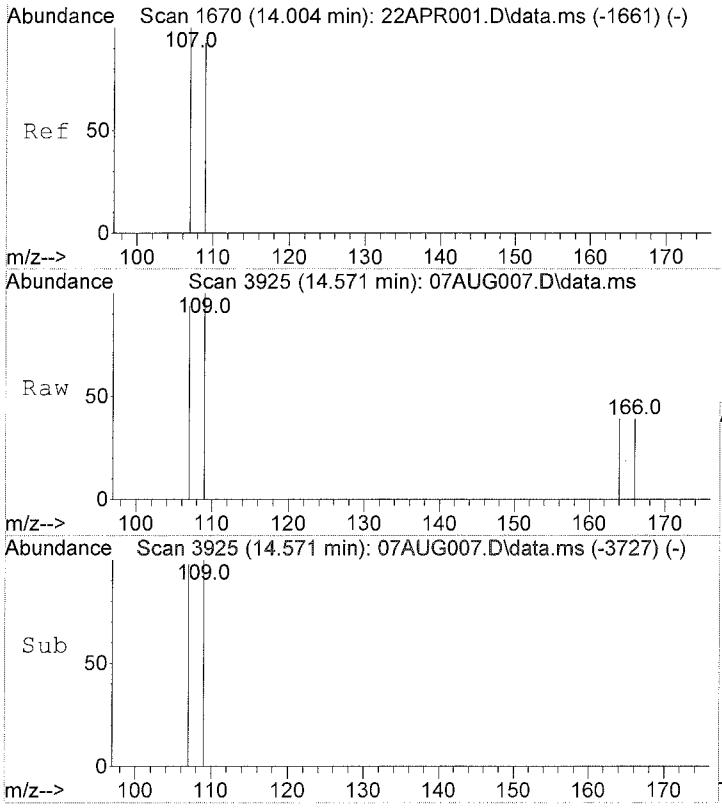


#34
Tetrachloroethene
Concen: 7.08 pptv
RT: 14.083 min Scan# 3687
Delta R.T. 0.002 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:166 Resp: 989

Ion	Ratio	Lower	Upper
166	100		
164	73.7	25.3	125.3

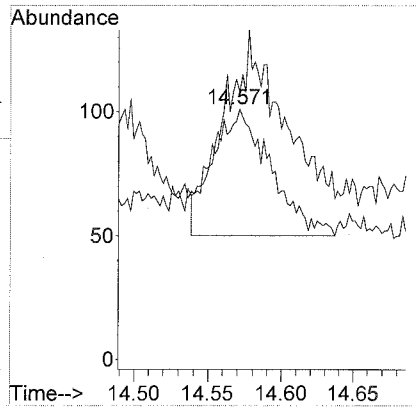


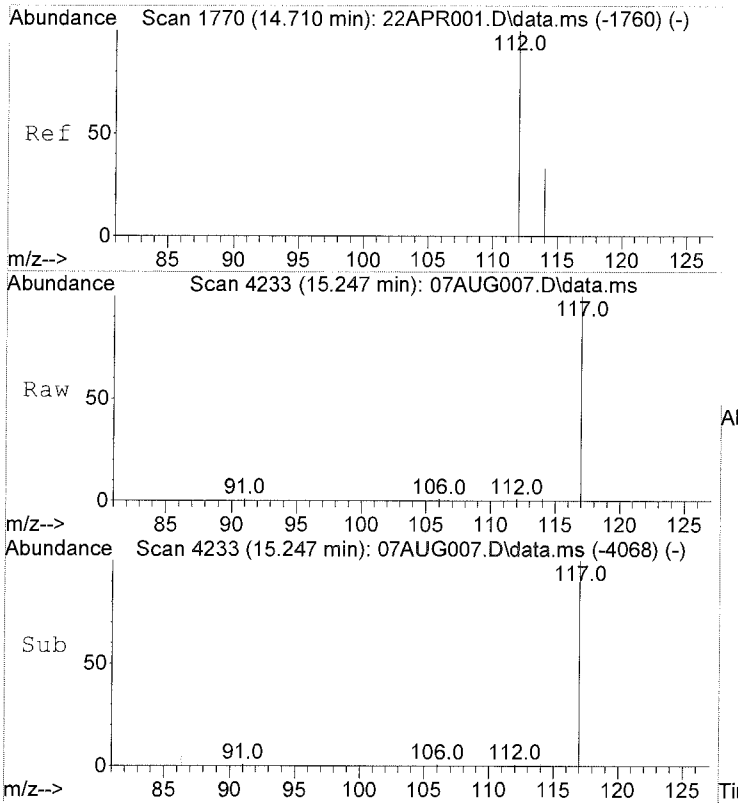


#35
1,2-Dibromoethane
Concen: 1.51 pptv
RT: 14.571 min Scan# 3925
Delta R.T. 0.007 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:107 Resp: 142

Ion	Ratio	Lower	Upper
107	100		
109	84.3	43.3	143.3

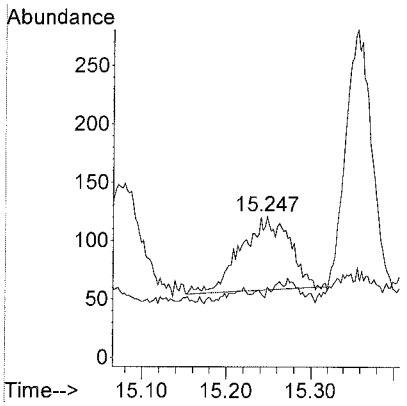


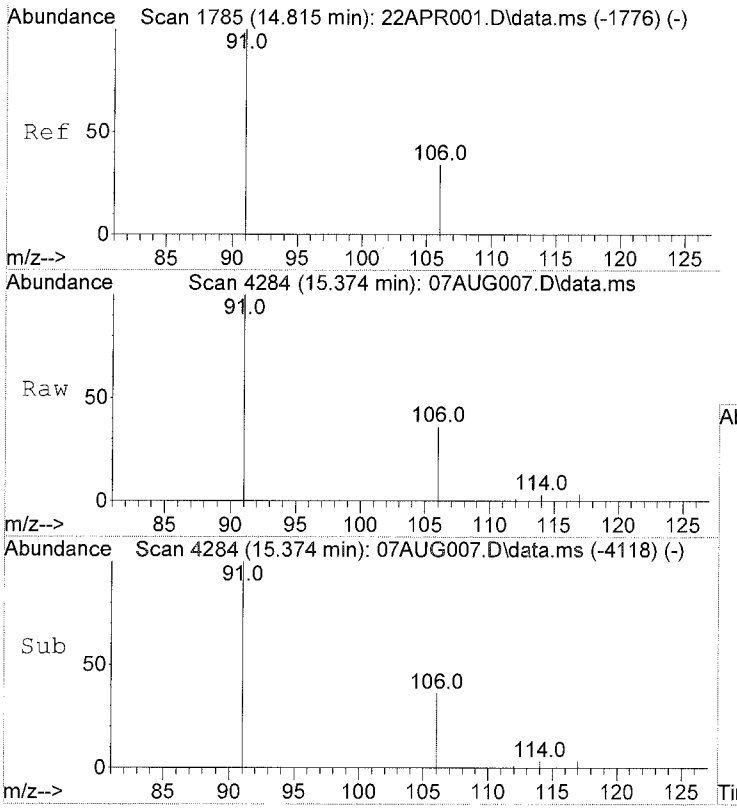


#36
Chlorobenzene
Concen: 1.42 pptv
RT: 15.247 min Scan# 4233
Delta R.T. -0.018 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:112 Resp: 249

Ion	Ratio	Lower	Upper
112	100		
114	13.4	0.0	81.6

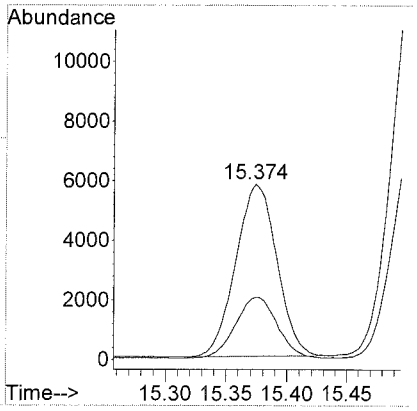


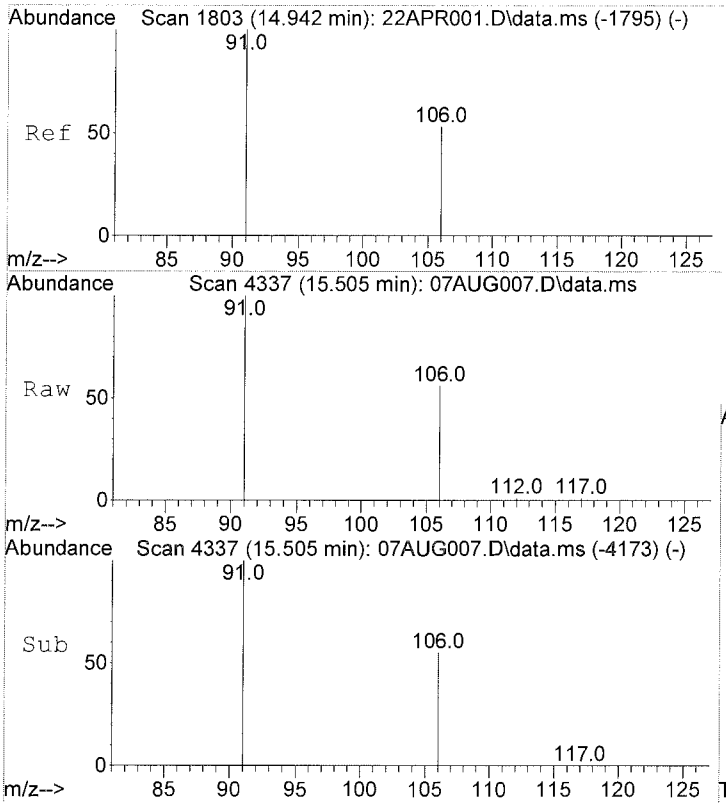


#37
Ethylbenzene
Concen: 71.09 pptv
RT: 15.374 min Scan# 4284
Delta R.T. 0.007 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 91 Resp: 13502

Ion	Ratio	Lower	Upper
91	100		
106	35.3	0.0	83.4

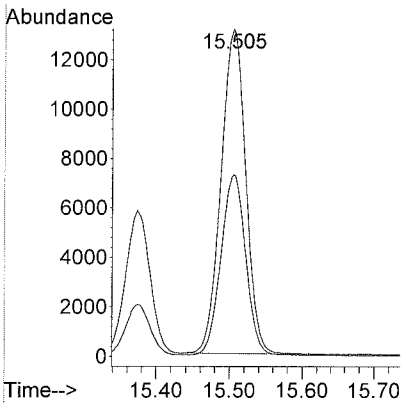


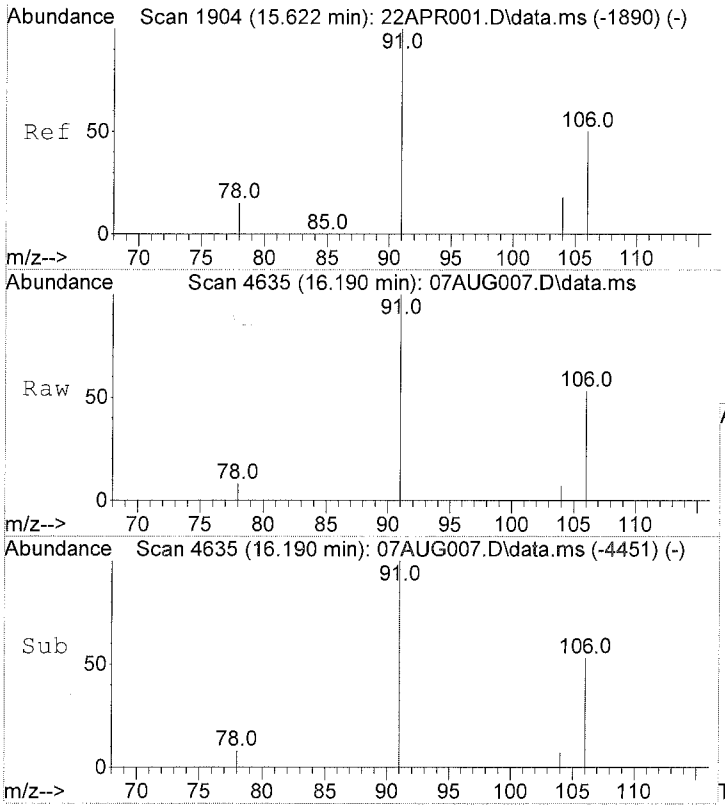


#38
p,&m-Xylene
Concen: 187.04 pptv
RT: 15.505 min Scan# 4337
Delta R.T. 0.007 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 91 Resp: 30700

Ion	Ratio	Lower	Upper
91	100		
106	55.5	3.9	103.9

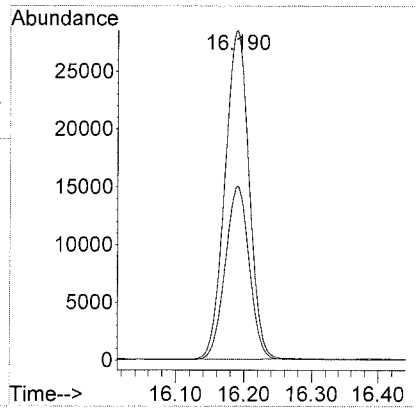


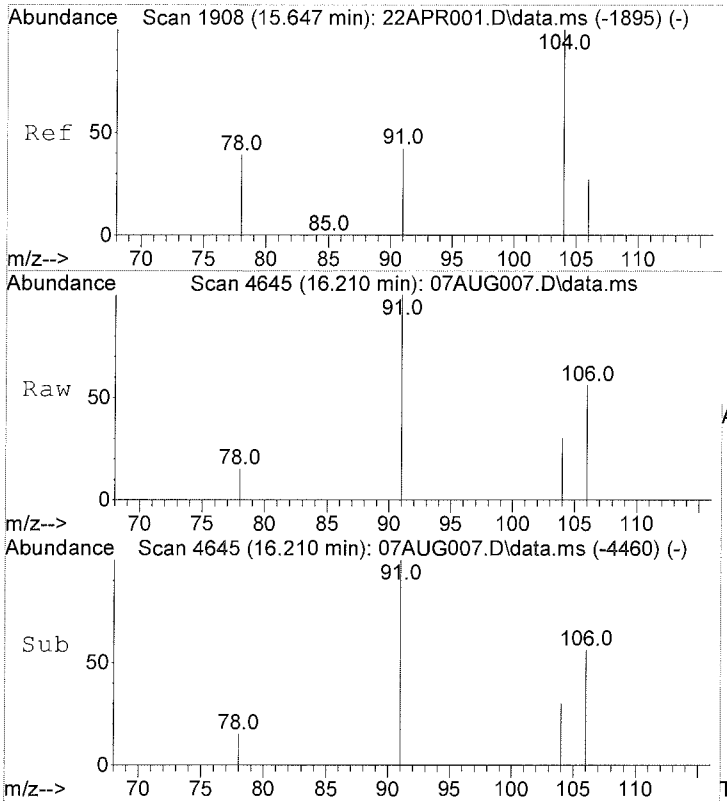


#39
o-Xylene
Concen: 504.68 pptv
RT: 16.190 min Scan# 4635
Delta R.T. 0.003 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 91 Resp: 70005

Ion	Ratio	Lower	Upper
91	100		
106	52.8	0.0	97.3

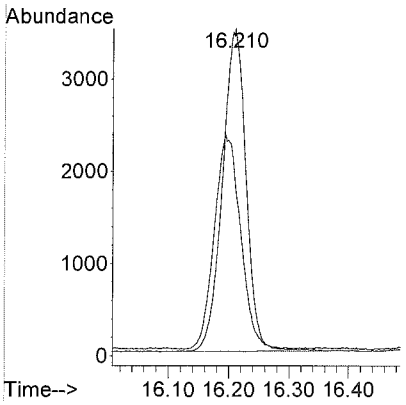


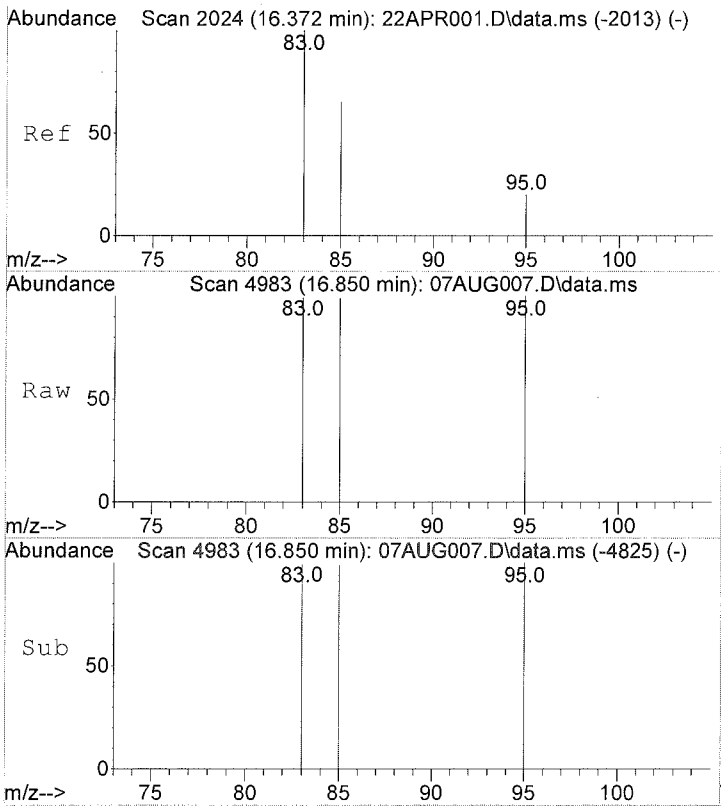


#40
Styrene
Concen: 81.11 pptv
RT: 16.210 min Scan# 4645
Delta R.T. 0.000 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:104 Resp: 9508

Ion	Ratio	Lower	Upper
104	100		
78	50.2	0.0	87.4

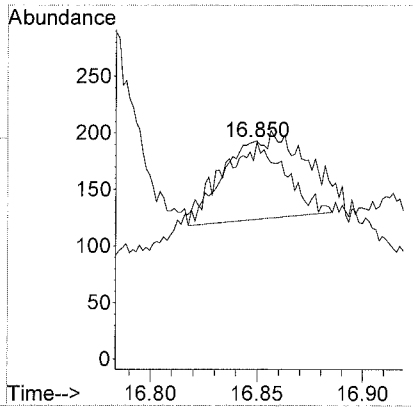


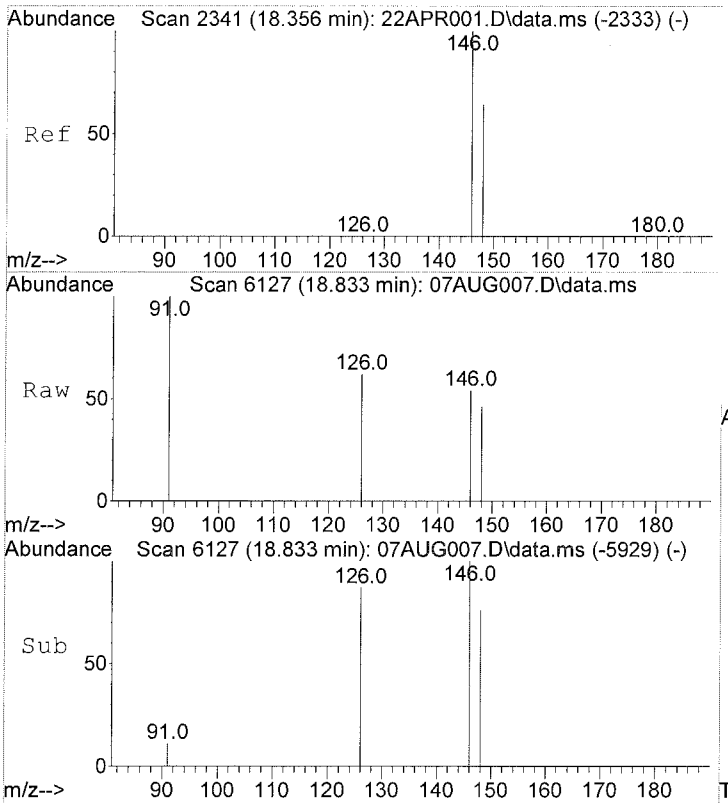


#41
1,1,2,2-Tetrachloroethane
Concen: 1.38 pptv
RT: 16.850 min Scan# 4983
Delta R.T. -0.129 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 83 Resp: 137

Ion	Ratio	Lower	Upper
83	100		
85	87.8	13.6	113.6

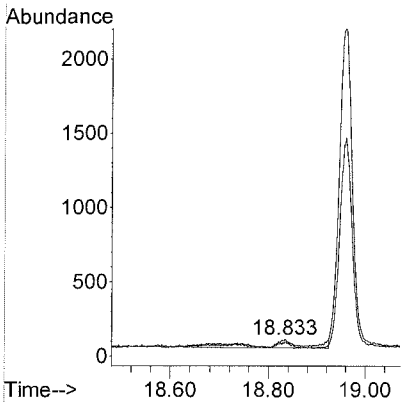


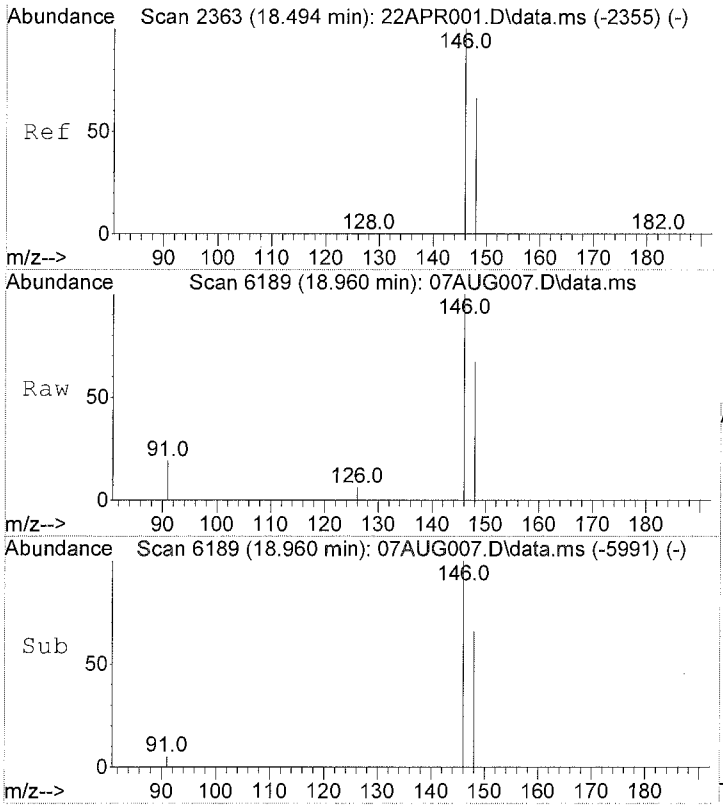


#43
1,3-Dichlorobenzene
Concen: 1.71 pptv
RT: 18.833 min Scan# 6127
Delta R.T. 0.006 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:146 Resp: 358

Ion	Ratio	Lower	Upper
146	100		
148	69.2	13.9	113.9

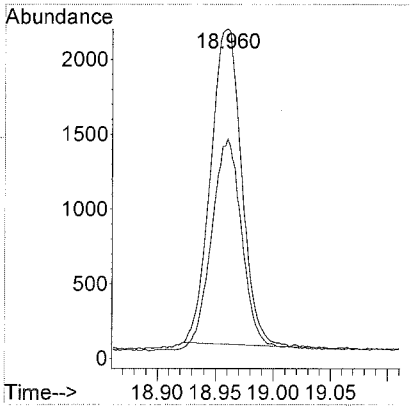


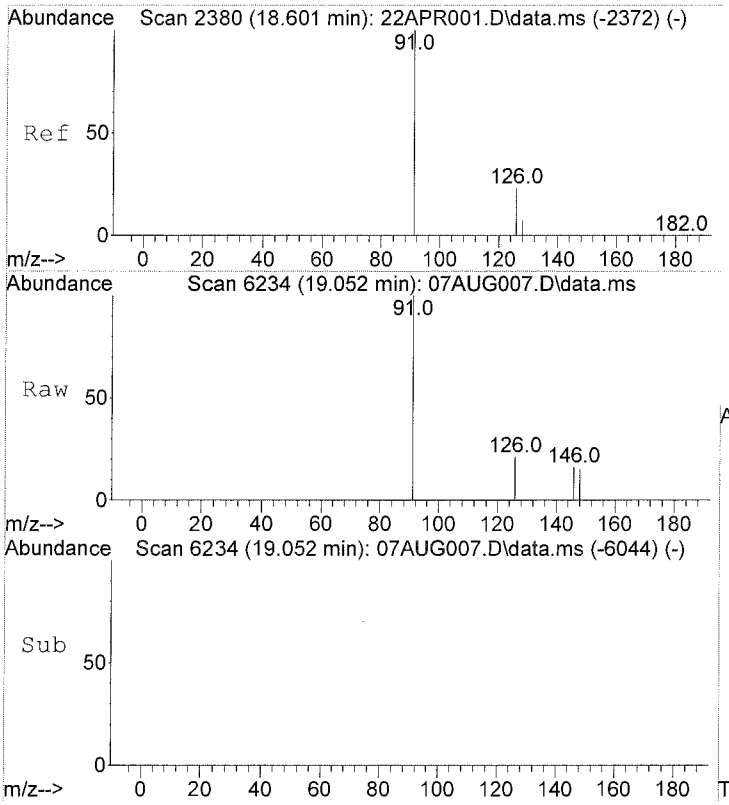


#44
1,4-Dichlorobenzene
Concen: 18.27 pptv
RT: 18.960 min Scan# 6189
Delta R.T. 0.005 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:146 Resp: 3933

Ion	Ratio	Lower	Upper
146	100		
148	65.9	15.5	115.5

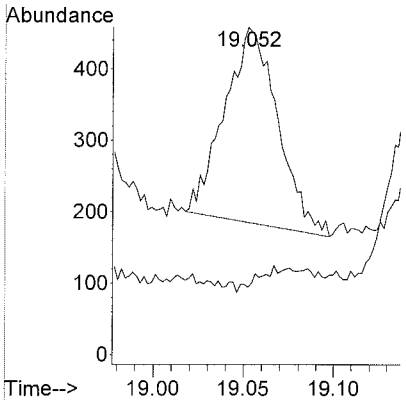


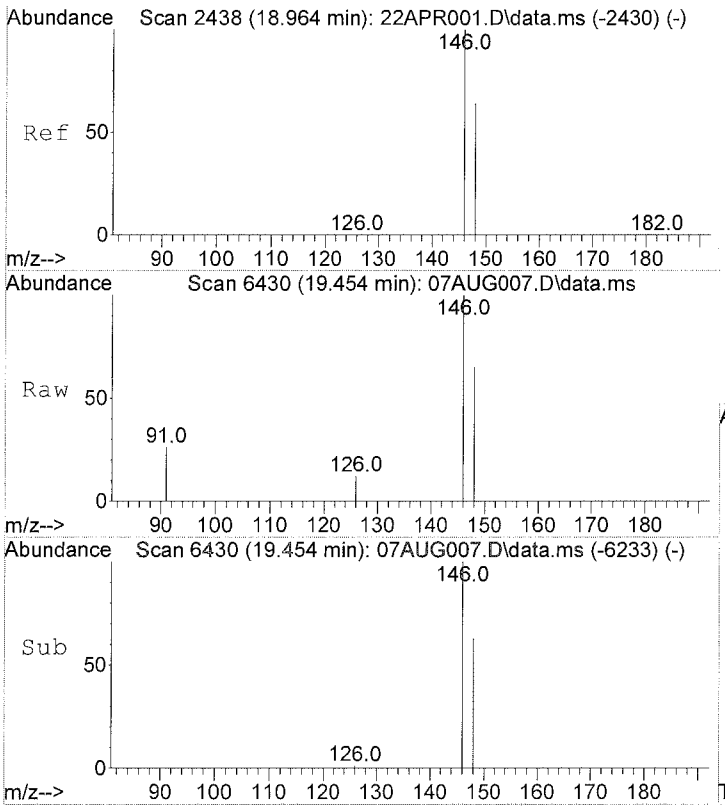


#45
Benzyl Chloride
Concen: 13.37 pptv
RT: 19.052 min Scan# 6234
Delta R.T. -0.010 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion: 91 Resp: 558

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.7	28.1#

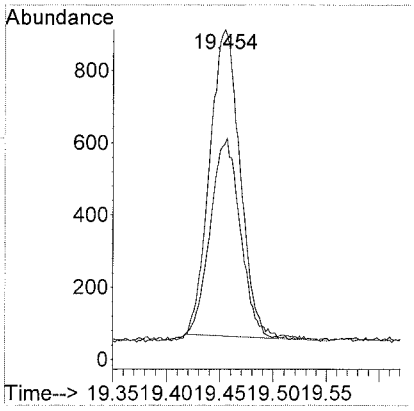


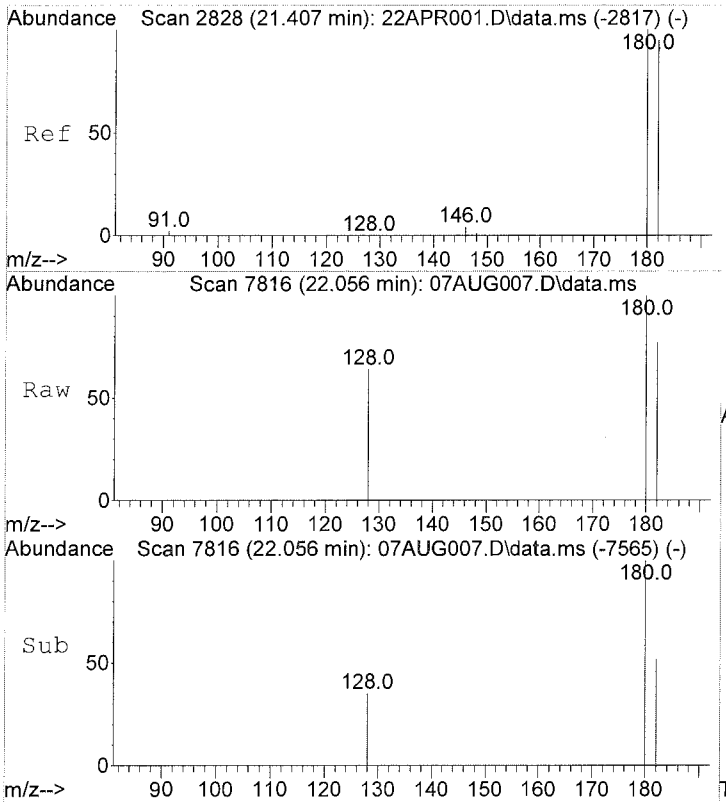


#46
1,2-Dichlorobenzene
Concen: 8.78 pptv
RT: 19.454 min Scan# 6430
Delta R.T. 0.004 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:146 Resp: 1694

Ion	Ratio	Lower	Upper
146	100		
148	62.9	13.7	113.7

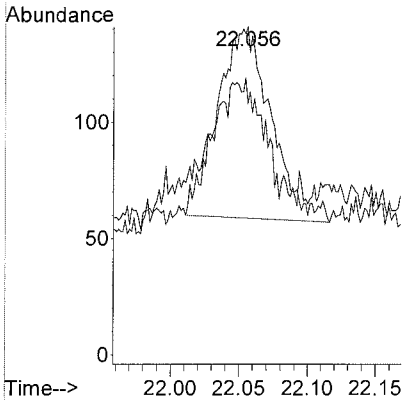


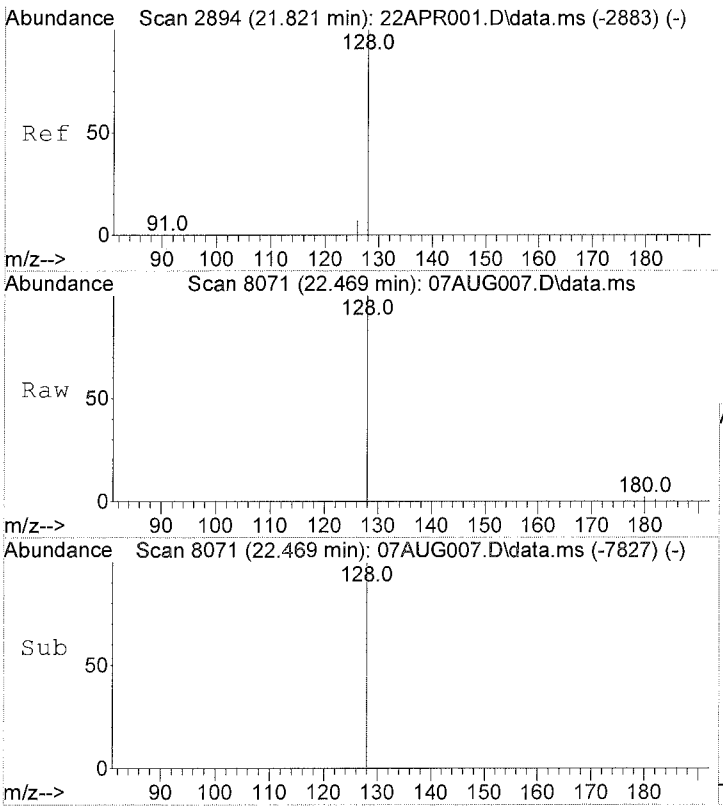


#47
1,2,4-Trichlorobenzene
Concen: 1.45 pptv
RT: 22.056 min Scan# 7816
Delta R.T. 0.007 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:180 Resp: 221

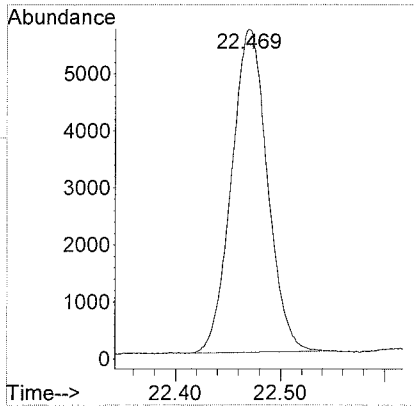
Ion	Ratio	Lower	Upper
180	100		
182	41.7	44.8	144.8#





#48
Naphthalene
Concen: 64.32 pptv
RT: 22.469 min Scan# 8071
Delta R.T. -0.005 min
Lab File: 07AUG007.D
Acq: 7 Aug 2018 3:14 pm

Tgt Ion:128 Resp: 13451



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG008.D
Acq On : 7 Aug 2018 4:01 pm
Operator : DT
Sample : J072607-03 JACOBS
Misc : 403 ML, 19.6/12.17
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 07 16:25:41 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.330	130	97458	2000.00	pptv		0.00
21) 1,4-Difluorobenzene	10.685	114	404788	2000.00	pptv		0.00
31) Chlorobenzene-d5	15.210	117	336507	2000.00	pptv		0.00
System Monitoring Compounds							
23) 1,2-Dichloroethane-d4	10.096	65	96122	1902.71	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 95.14%				
29) Toluene-d8	12.938	98	331199	2143.00	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 107.15%				
42) 4-Bromofluorobenzene	17.183	95	208239	2193.80	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 109.69%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.544	85	47204	427.38	pptv		98
3) Chloromethane	3.943	50	9863	706.85	pptv		98
5) Bromomethane	4.868	96	473	21.25	pptv		89
7) Trichlorofluoromethane...	5.473	101	24585	202.36	pptv		98
8) 1,1,2-Cl 1,2,2-F ethan...	6.227	151	7388	66.53	pptv		95
9) Acetone	6.120	43	195413	4315.13	pptv		94
11) Methylene Chloride	7.024	49	3460	113.75	pptv		95
12) t-Butyl Methyl Ether	7.335	73	154	2.05	pptv		1
14) Hexane	7.772	57	3516	94.65	pptv		88
15) 1,1-Dichloroethane	8.077	63	57	1.01	pptv		56
16) 2-Butanone	8.626	72	9870	557.01	pptv		82
17) c-1,2-Dichloroethene	8.909	96	86	1.95	pptv	#	1
18) Chloroform	9.144	83	1302	15.55	pptv		99
19) 1,1,1-Trichloroethane	9.754	97	237	2.74	pptv		91
20) Carbon Tetrachloride	10.145	117	6261	74.52	pptv		94
22) Benzene	10.328	78	9021	63.20	pptv		98
24) 1,2-Dichloroethane	10.224	62	1002	18.44	pptv		87
25) Trichloroethene	11.222	130	72	0.76	pptv	#	1
26) 1,2-Dichloropropane	11.414	63	220	6.26	pptv		85
27) 1,4-Dioxane	11.710	88	412	13.10	pptv		96
28) Bromodichloromethane	11.667	83	189	2.32	pptv	#	18
30) Toluene	13.055	91	219711	1325.08	pptv		100
32) t-1,3-Dichloropropene	12.477	75	162	3.21	pptv		43
33) 1,1,2-Trichloroethane	13.542	97	1172	18.42	pptv	#	22
34) Tetrachloroethene	14.081	166	702	5.03	pptv		99
35) 1,2-Dibromoethane	14.567	107	236	2.50	pptv		89
36) Chlorobenzene	15.257	112	238	1.36	pptv		86
37) Ethylbenzene	15.376	91	19600	103.27	pptv		96
38) p,&m-Xylene	15.505	91	36796	224.36	pptv		97
39) o-Xylene	16.188	91	21263	153.41	pptv		92
40) Styrene	16.210	104	12386	105.75	pptv		98
41) 1,1,2,2-Tetrachloroethane	16.844	83	71	0.71	pptv		60
43) 1,3-Dichlorobenzene	18.831	146	127	0.61	pptv		100
44) 1,4-Dichlorobenzene	18.958	146	2538	11.80	pptv		98
45) Benzyl Chloride	19.056	91	413	9.90	pptv	#	58
46) 1,2-Dichlorobenzene	19.454	146	1084	5.62	pptv		96

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG008.D
Acq On : 7 Aug 2018 4:01 pm
Operator : DT
Sample : J072607-03 JACOBS
Misc : 403 ML, 19.6/12.17
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 07 16:25:41 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

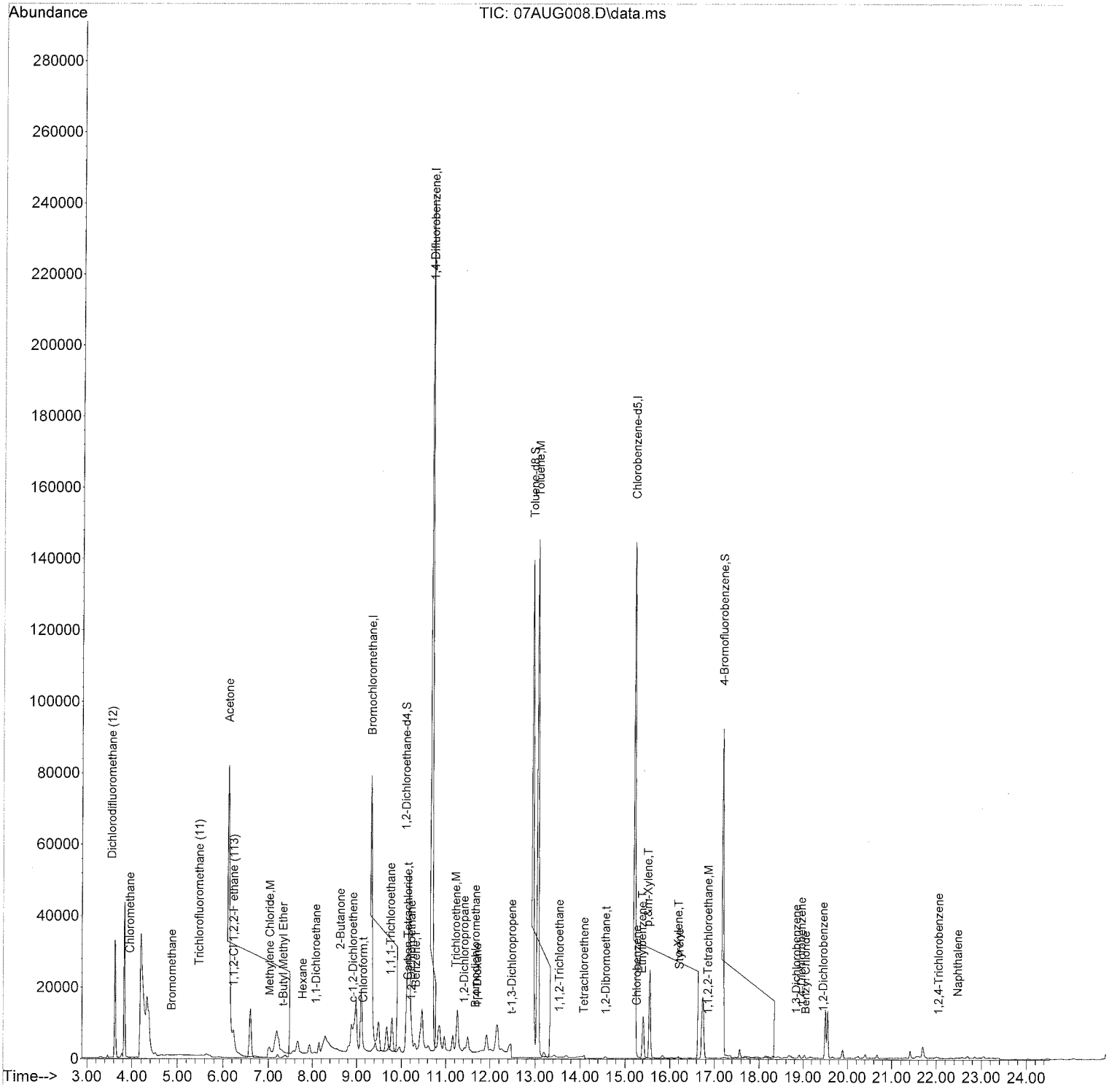
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
47) 1,2,4-Trichlorobenzene	22.046	180	436	2.86	pptv	89
48) Naphthalene	22.470	128	12649	60.53	pptv	100

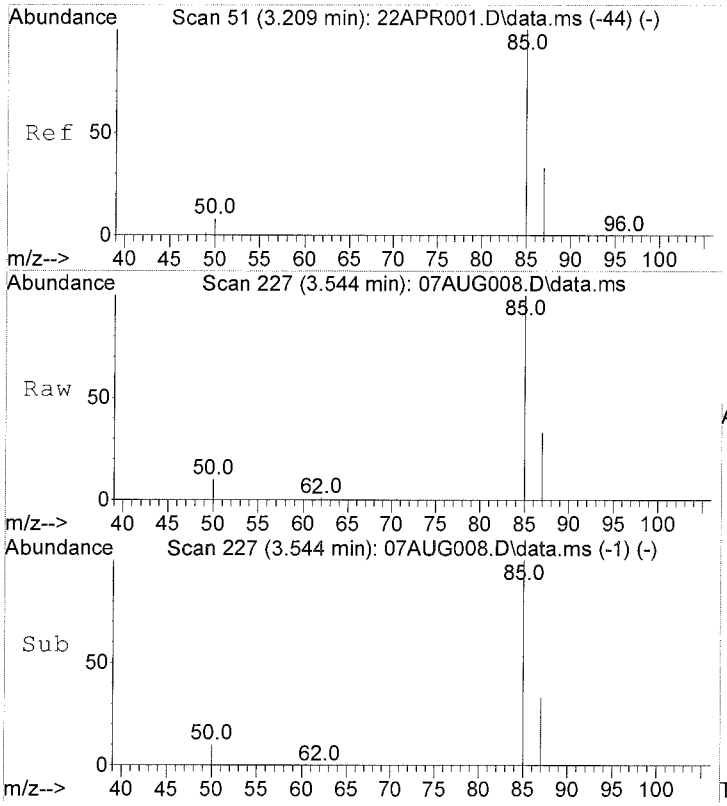
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG008.D
Acq On : 7 Aug 2018 4:01 pm
Operator : DT
Sample : J072607-03 JACOBS
Misc : 403 ML, 19.6/12.17
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 07 16:25:41 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

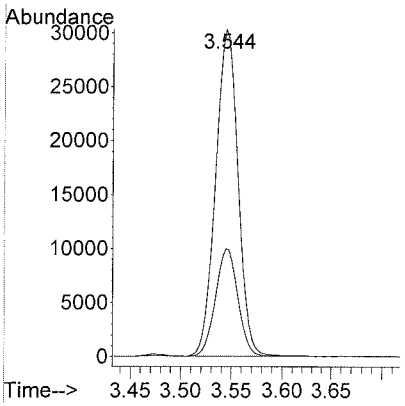


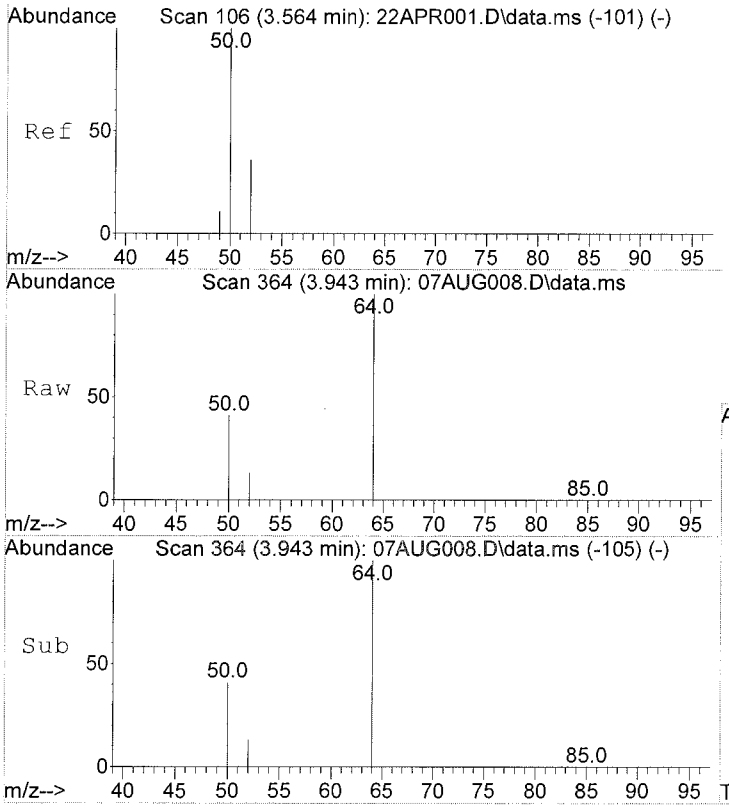


#2
Dichlorodifluoromethane (12)
Concen: 427.38 pptv
RT: 3.544 min Scan# 227
Delta R.T. -0.047 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 85 Resp: 47204

Ion	Ratio	Lower	Upper
85	100		
87	32.8	0.0	81.9

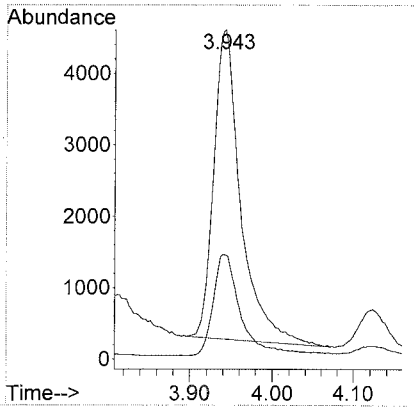


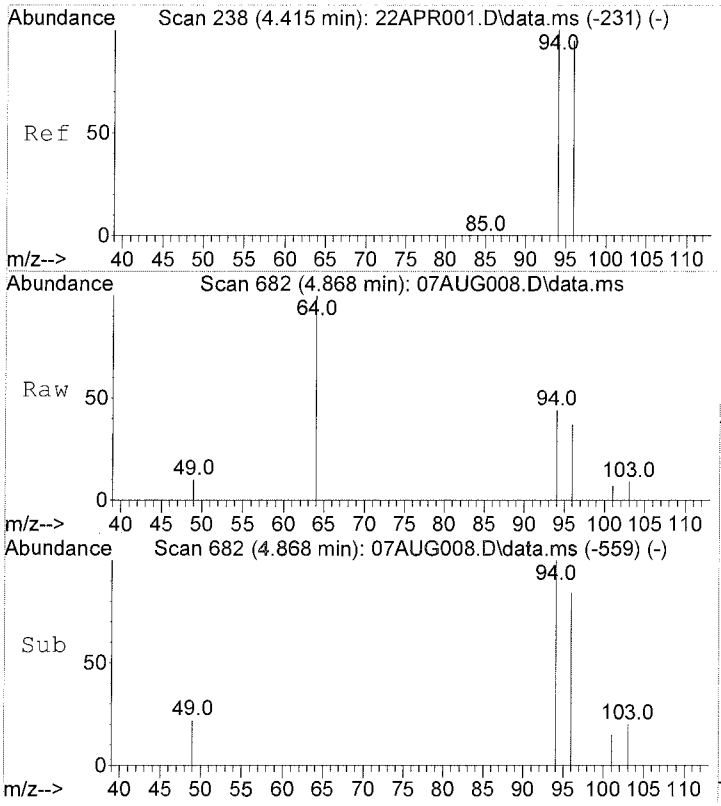


#3
Chloromethane
Concen: 706.85 pptv
RT: 3.943 min Scan# 364
Delta R.T. -0.046 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 50 Resp: 9863

Ion	Ratio	Lower	Upper
50	100		
52	31.7	3.0	63.0

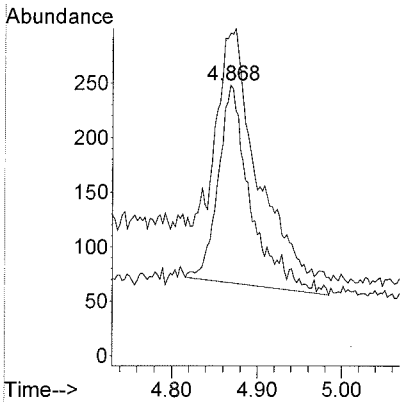


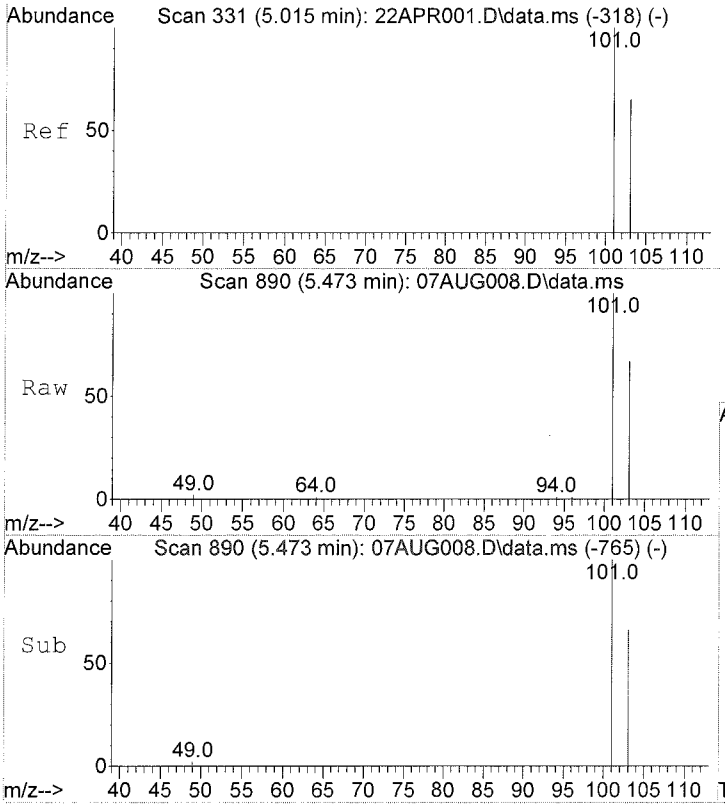


#5
Bromomethane
Concen: 21.25 pptv
RT: 4.868 min Scan# 682
Delta R.T. -0.043 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 96 Resp: 473

Ion	Ratio	Lower	Upper
96	100		
94	116.7	55.4	155.4

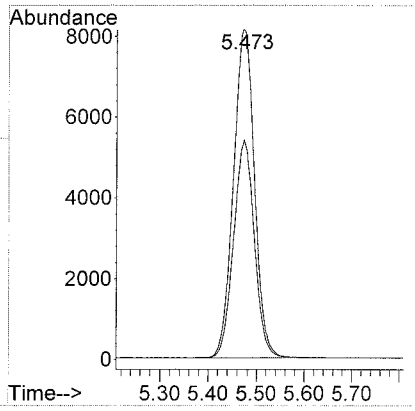


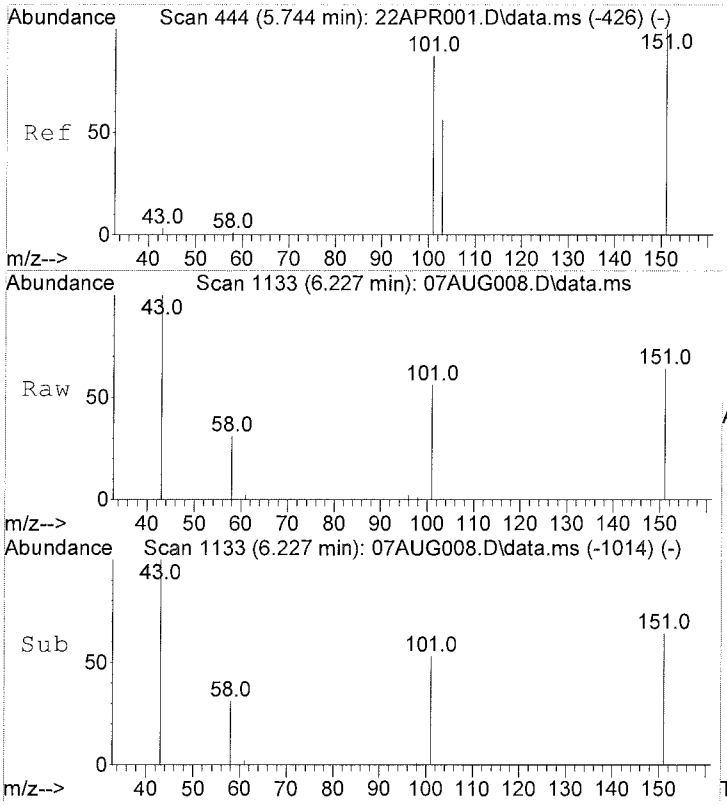


#7
Trichlorofluoromethane (11)
Concen: 202.36 pptv
RT: 5.473 min Scan# 890
Delta R.T. -0.037 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:101 Resp: 24585

Ion	Ratio	Lower	Upper
101	100		
103	66.4	14.6	114.6

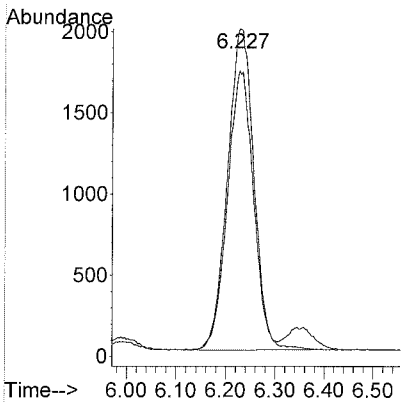


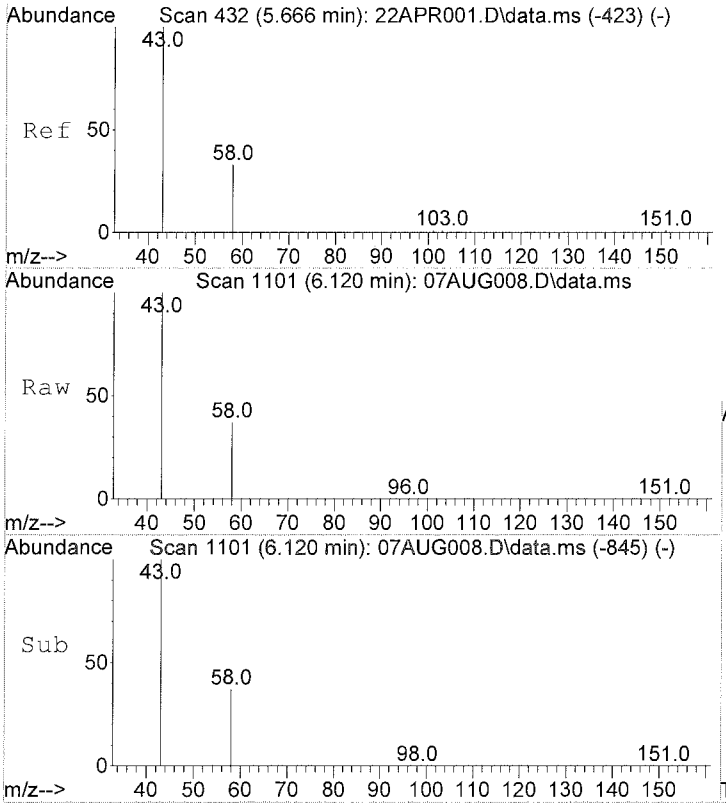


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 66.53 pptv
RT: 6.227 min Scan# 1133
Delta R.T. -0.007 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:151 Resp: 7388

Ion	Ratio	Lower	Upper
151	100		
101	86.7	41.5	141.5

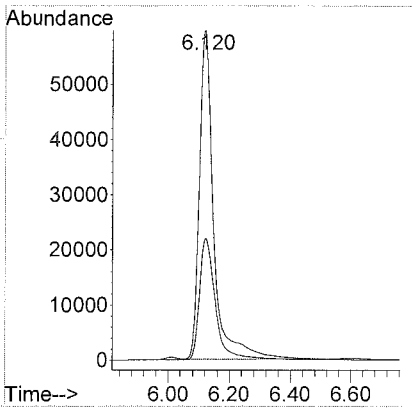


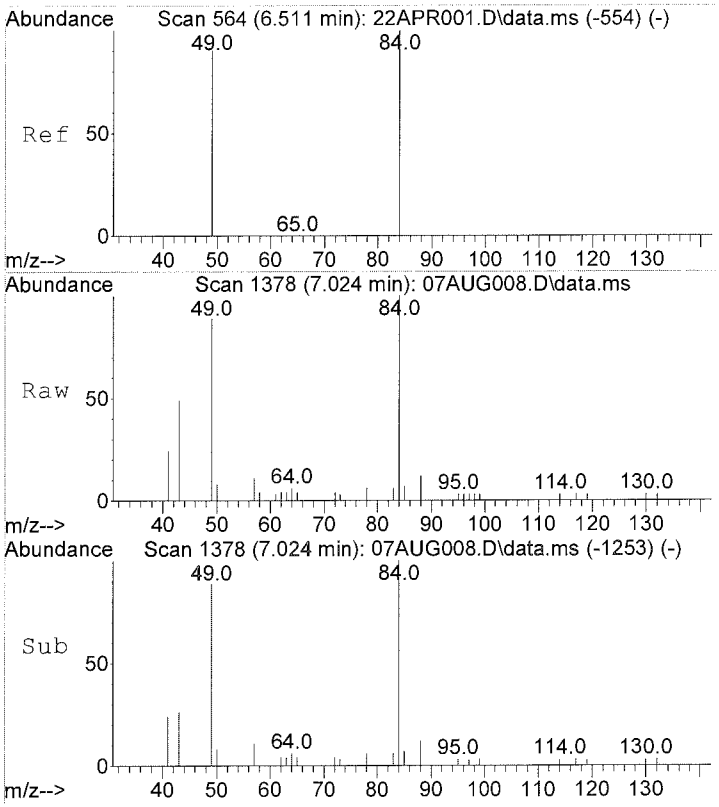


#9
Acetone
Concen: 4315.13 pptv
RT: 6.120 min Scan# 1101
Delta R.T. -0.022 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 43 Resp: 195413

Ion	Ratio	Lower	Upper
43	100		
58	36.9	13.4	53.4

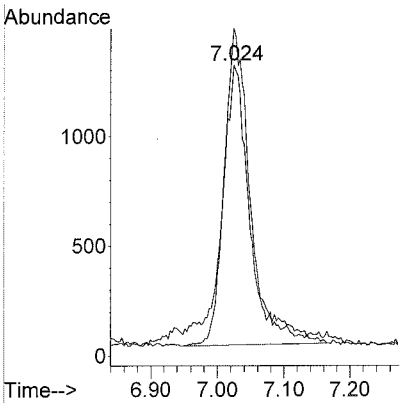


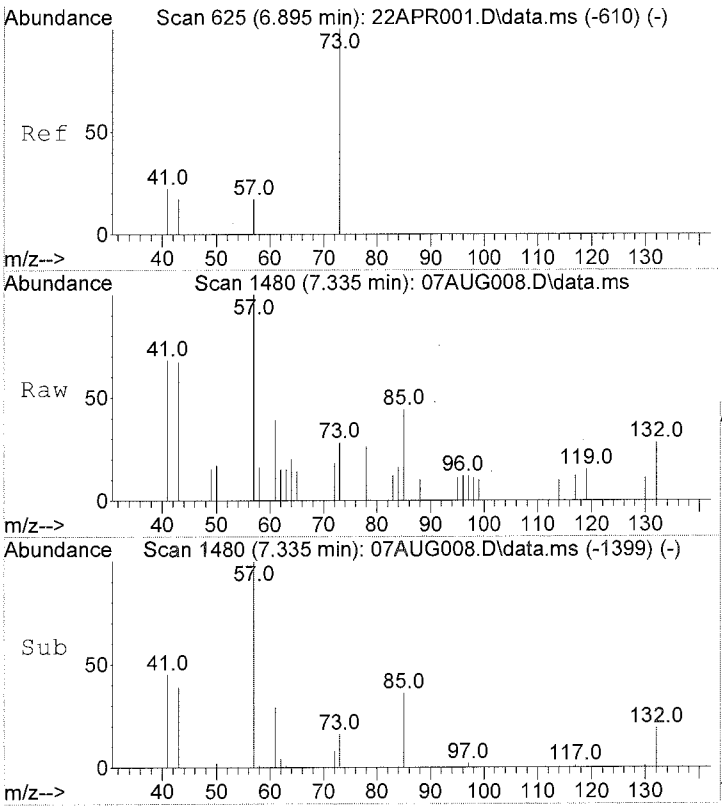


#11
Methylene Chloride
Concen: 113.75 pptv
RT: 7.024 min Scan# 1378
Delta R.T. -0.006 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 49 Resp: 3460

Ion	Ratio	Lower	Upper
49	100		
84	109.0	54.2	154.2

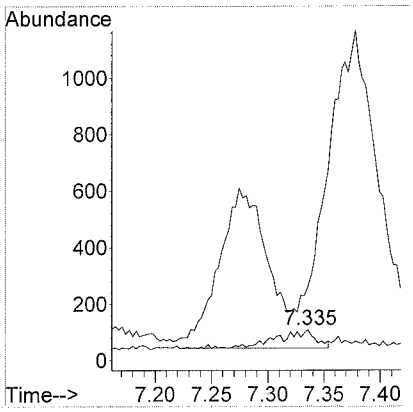


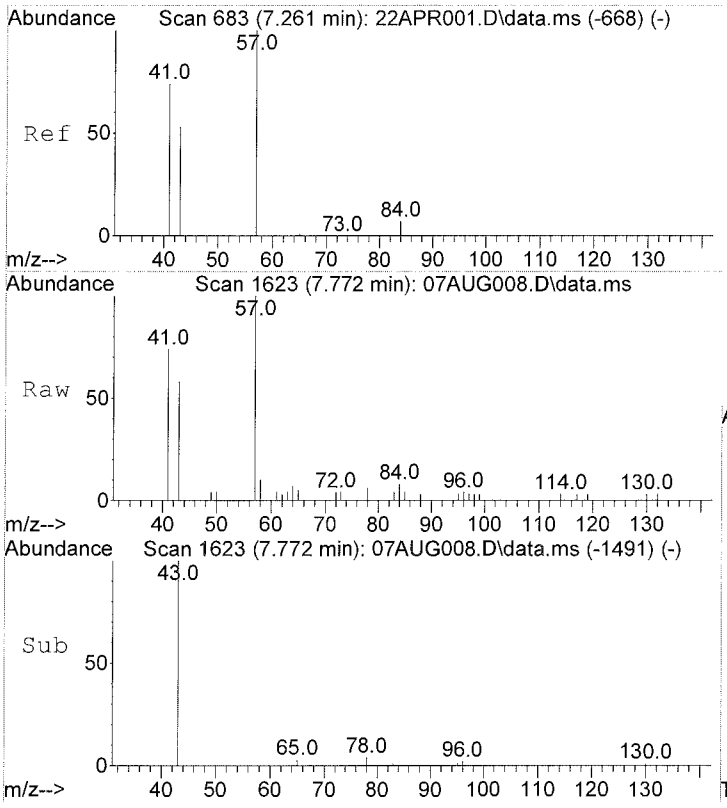


#12
t-Butyl Methyl Ether
Concen: 2.05 pptv
RT: 7.335 min Scan# 1480
Delta R.T. -0.054 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 73 Resp: 154

Ion	Ratio	Lower	Upper
73	100		
41	281.3	0.0	516.4

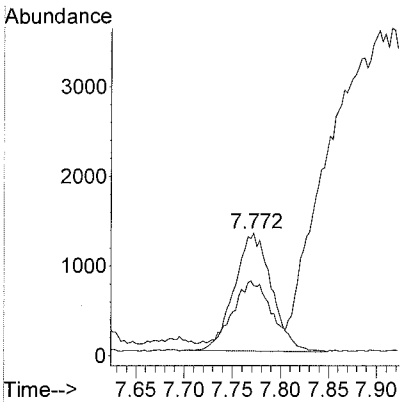


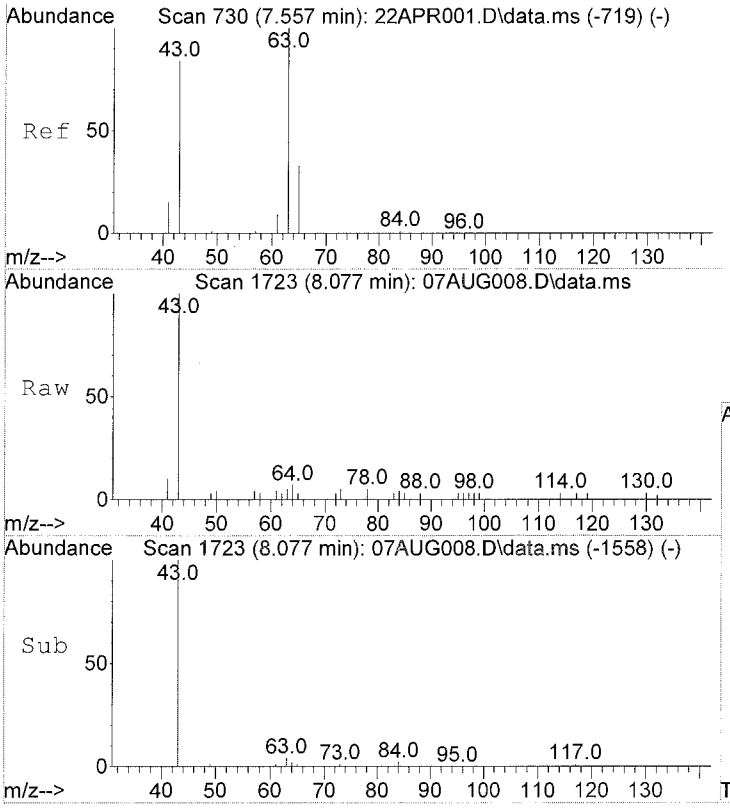


#14
Hexane
Concen: 94.65 pptv
RT: 7.772 min Scan# 1623
Delta R.T. 0.002 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 57 Resp: 3516

Ion	Ratio	Lower	Upper
57	100		
43	46.2	5.0	105.0

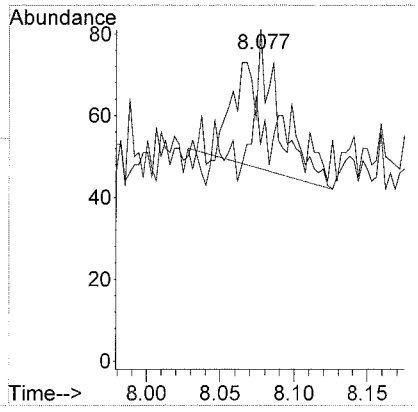


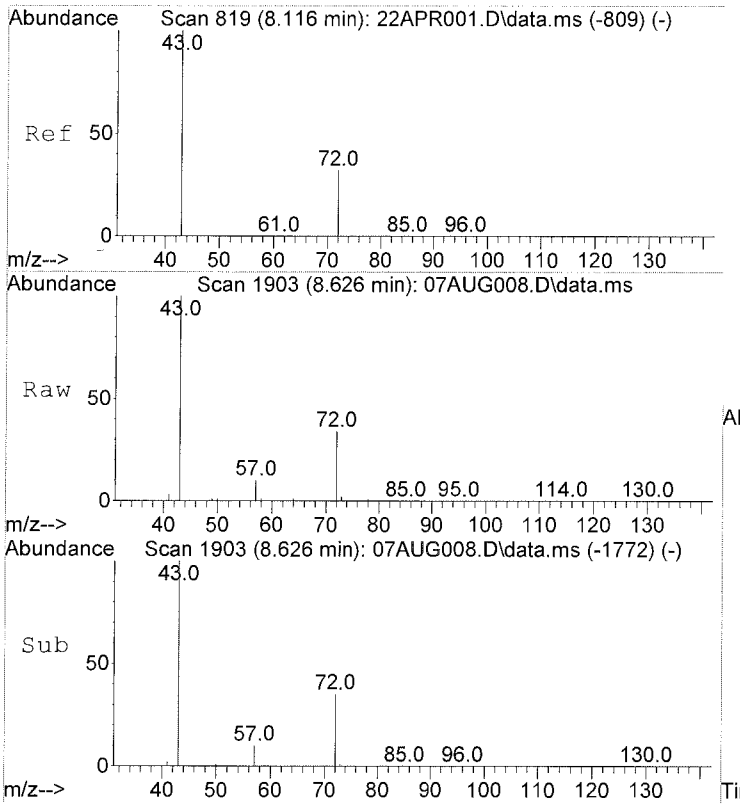


#15
1,1-Dichloroethane
Concen: 1.01 pptv
RT: 8.077 min Scan# 1723
Delta R.T. 0.004 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 63 Resp: 57

Ion	Ratio	Lower	Upper
63	100		
65	7.7	0.0	82.5

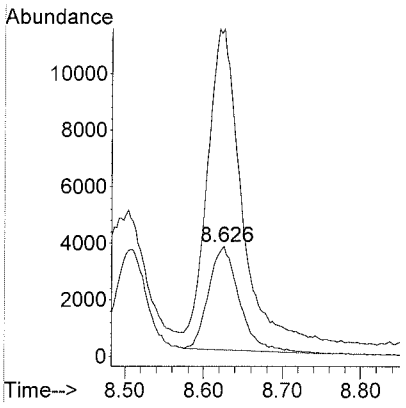


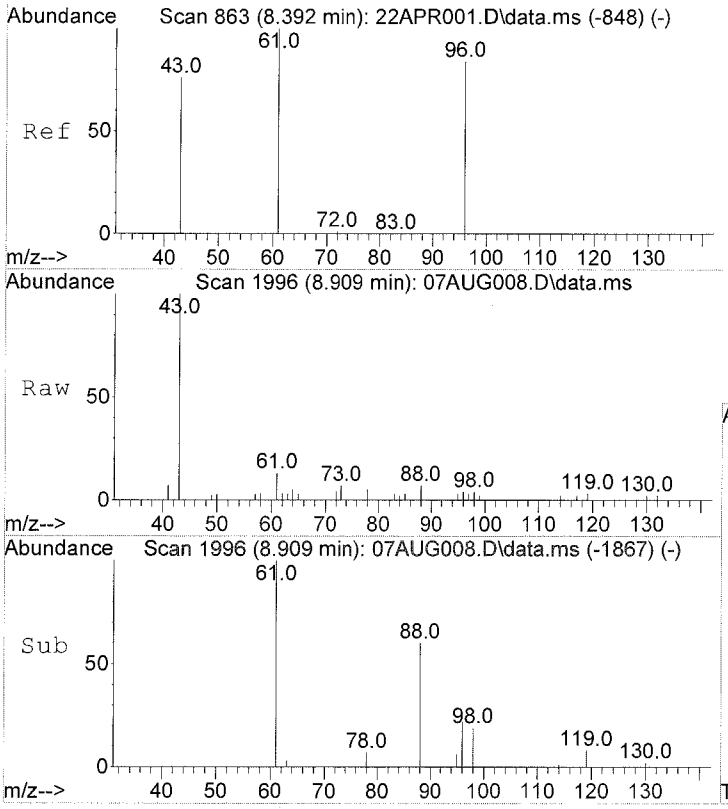


#16
2-Butanone
Concen: 557.01 pptv
RT: 8.626 min Scan# 1903
Delta R.T. -0.001 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 72 Resp: 9870

Ion	Ratio	Lower	Upper
72	100		
43	290.1	0.0	3591.5

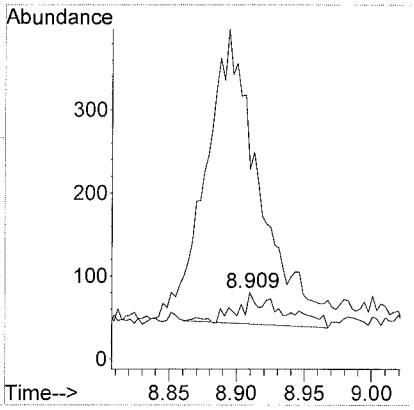


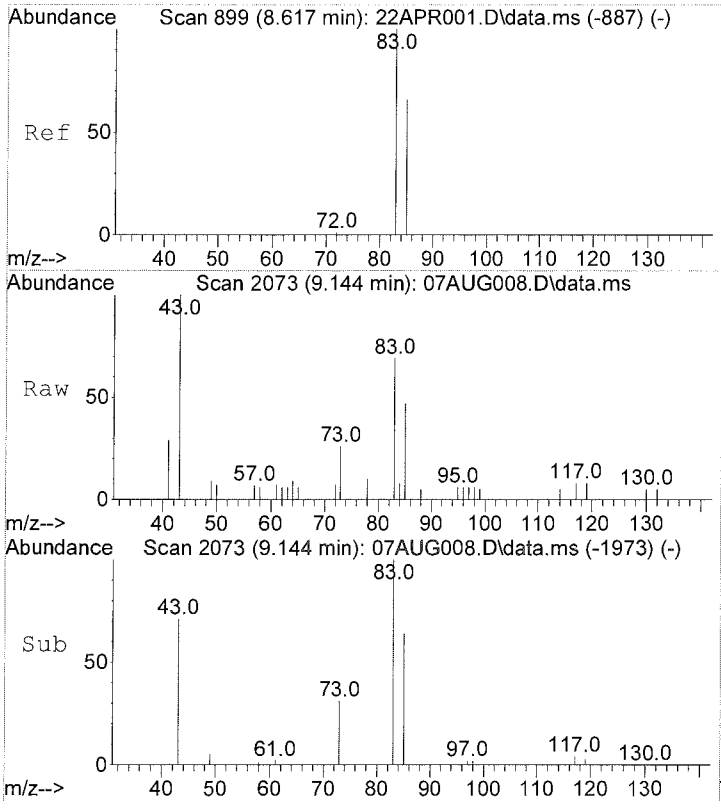


#17
c-1,2-Dichloroethene
Concen: 1.95 pptv
RT: 8.909 min Scan# 1996
Delta R.T. -0.007 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 96 Resp: 86

Ion	Ratio	Lower	Upper
96	100		
61	376.2	62.0	162.0#

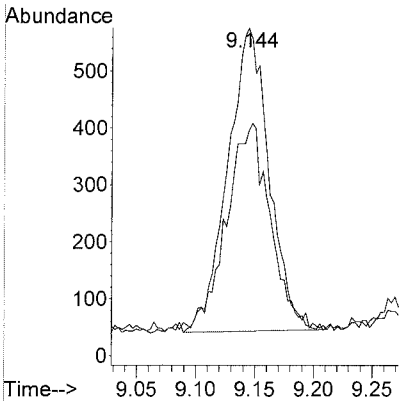


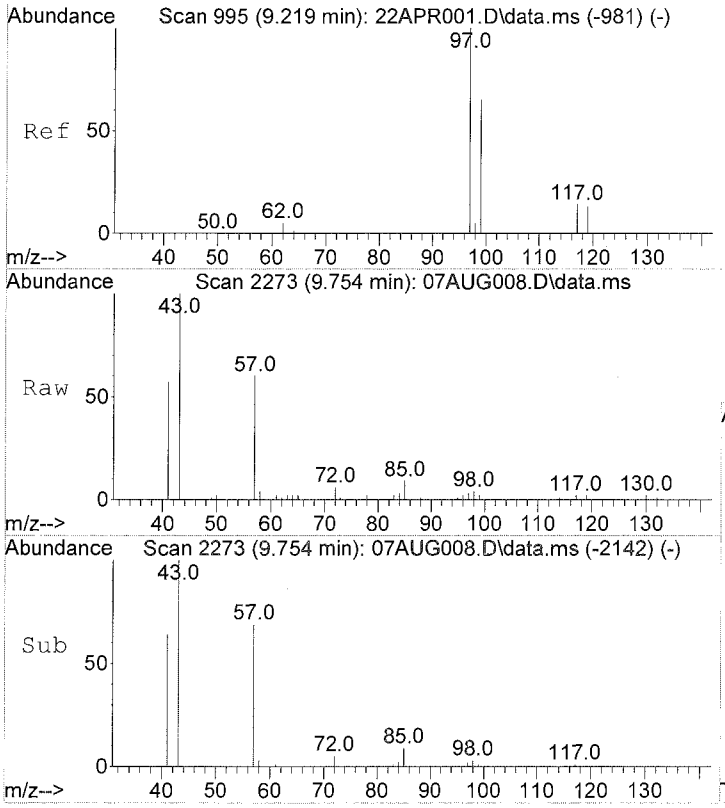


#18
Chloroform
Concen: 15.55 pptv
RT: 9.144 min Scan# 2073
Delta R.T. 0.004 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 83 Resp: 1302

Ion	Ratio	Lower	Upper
83	100		
85	64.1	14.9	114.9

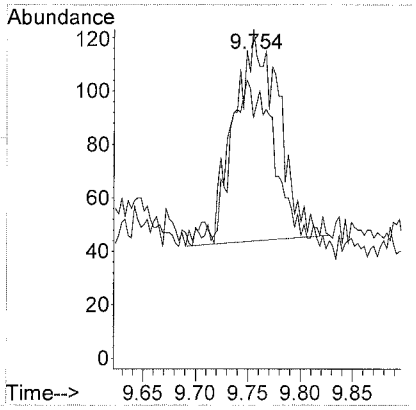


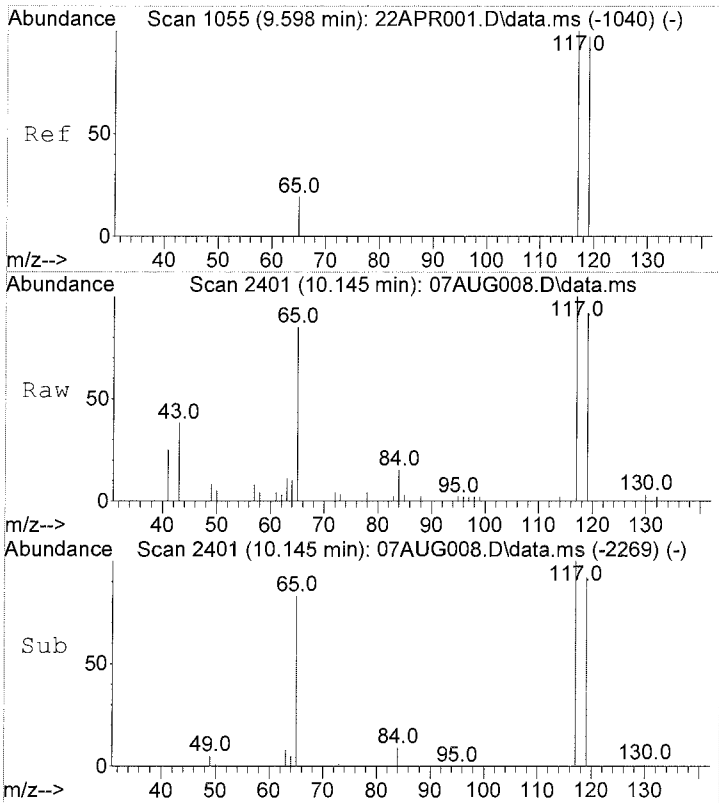


#19
1,1,1-Trichloroethane
Concen: 2.74 pptv
RT: 9.754 min Scan# 2273
Delta R.T. -0.001 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 97 Resp: 237

Ion	Ratio	Lower	Upper
97	100		
99	56.8	13.8	113.8

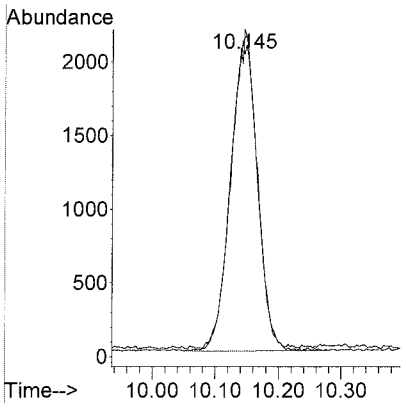


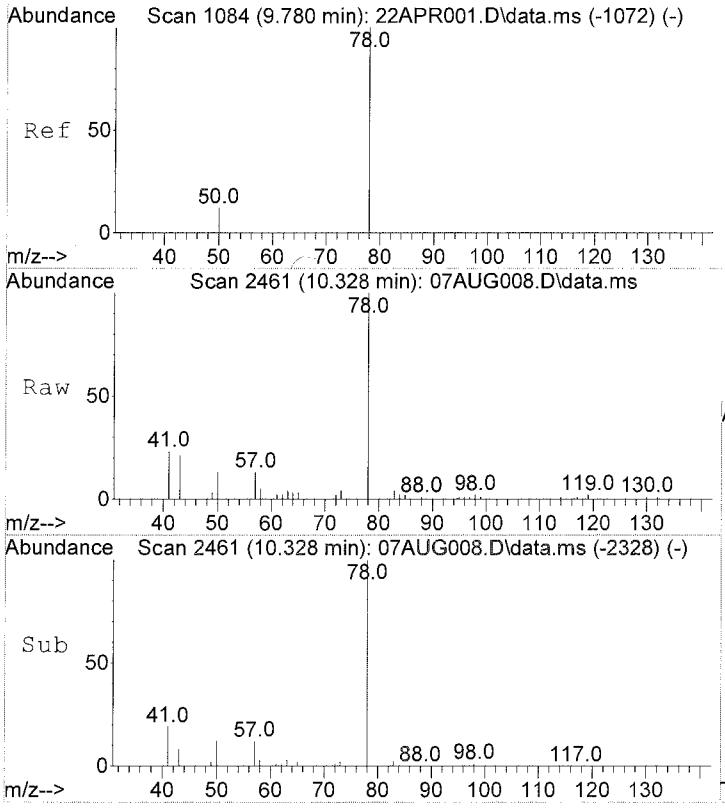


#20
Carbon Tetrachloride
Concen: 74.52 pptv
RT: 10.145 min Scan# 2401
Delta R.T. 0.002 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:117 Resp: 6261

Ion	Ratio	Lower	Upper
117	100		
119	91.5	47.1	147.1

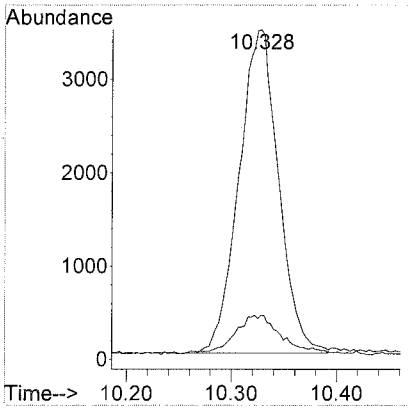


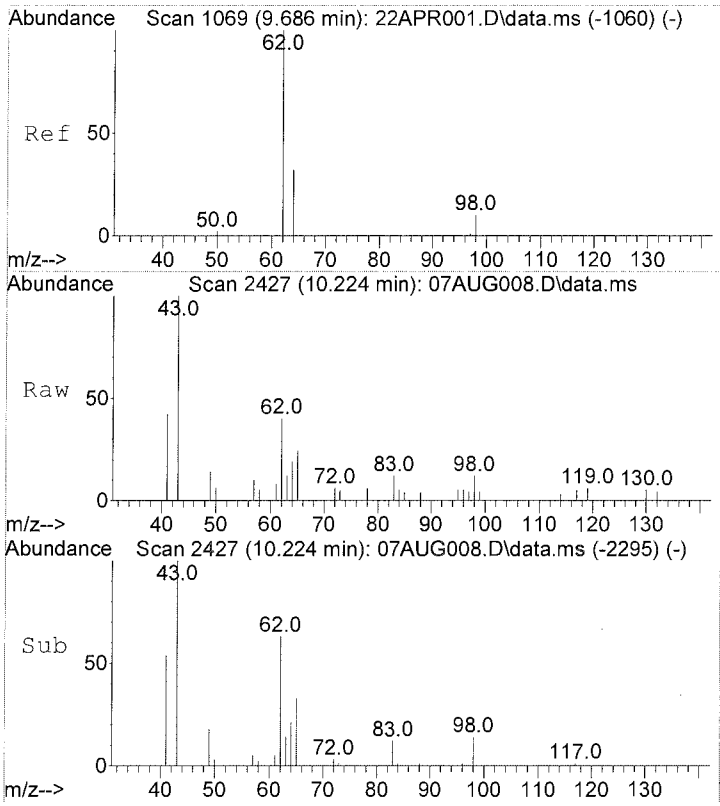


#22
Benzene
Concen: 63.20 pptv
RT: 10.328 min Scan# 2461
Delta R.T. 0.007 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 78 Resp: 9021

Ion	Ratio	Lower	Upper
78	100		
50	12.0	0.0	62.6

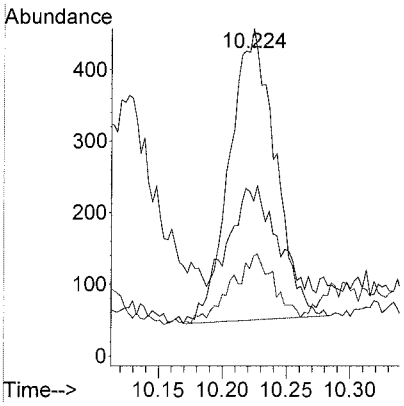


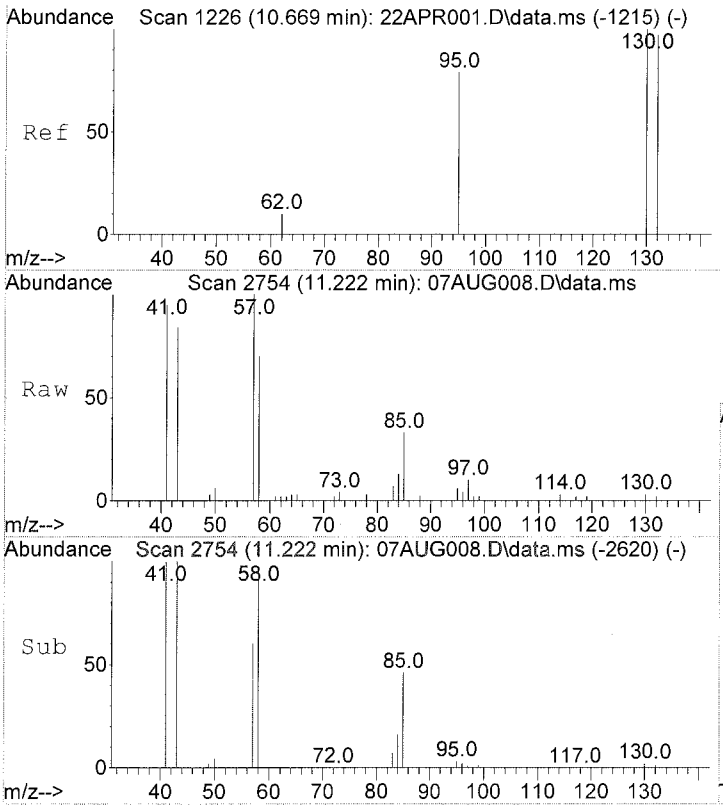


#24
1,2-Dichloroethane
Concen: 18.44 pptv
RT: 10.224 min Scan# 2427
Delta R.T. 0.004 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 62 Resp: 1002

Ion	Ratio	Lower	Upper
62	100		
64	28.6	0.0	83.0
98	22.3	0.0	61.0

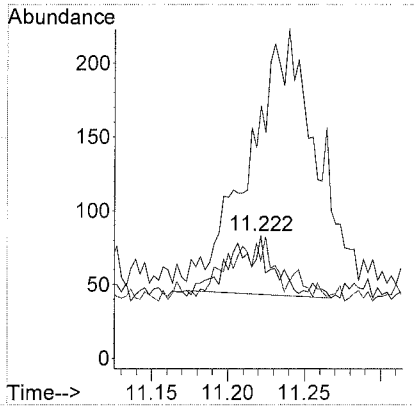


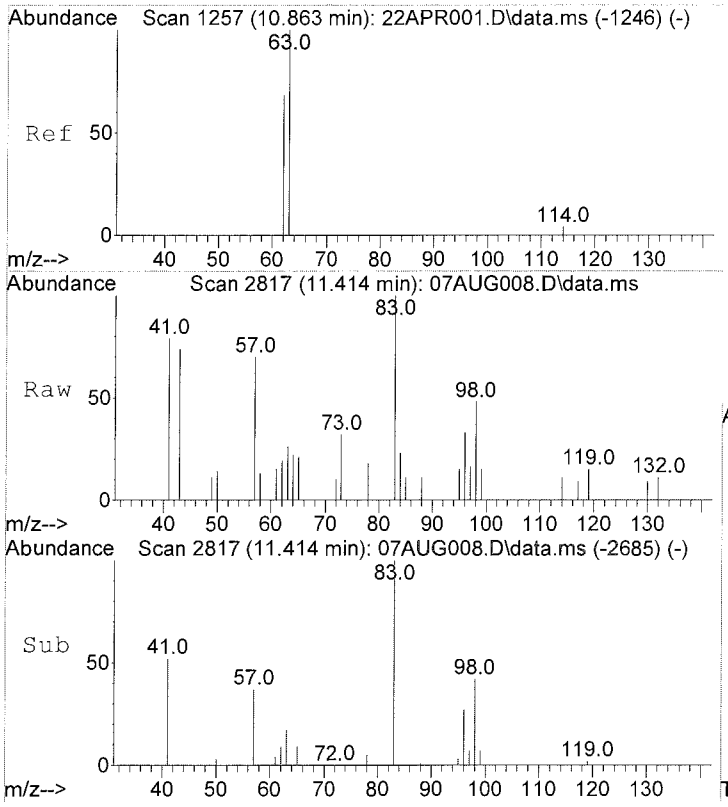


#25
Trichloroethene
Concen: 0.76 pptv
RT: 11.222 min Scan# 2754
Delta R.T. 0.010 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:130 Resp: 72

Ion	Ratio	Lower	Upper
130	100		
95	283.3	30.9	130.9#
132	57.1	46.0	146.0

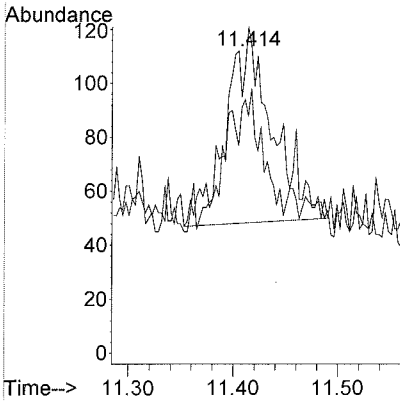


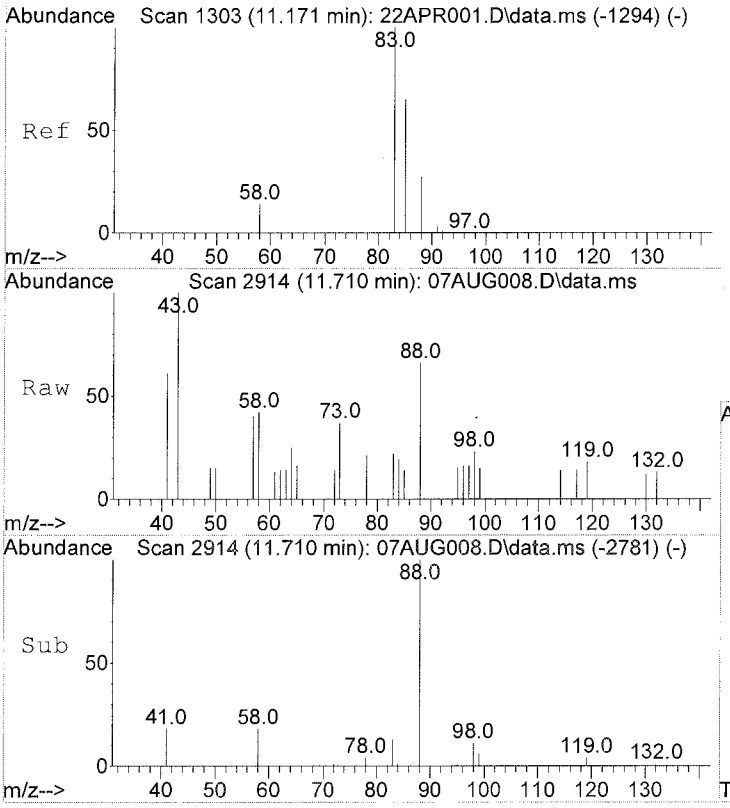


#26
1,2-Dichloropropane
Concen: 6.26 pptv
RT: 11.414 min Scan# 2817
Delta R.T. 0.004 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 63 Resp: 220

Ion	Ratio	Lower	Upper
63	100		
62	58.1	20.3	120.3

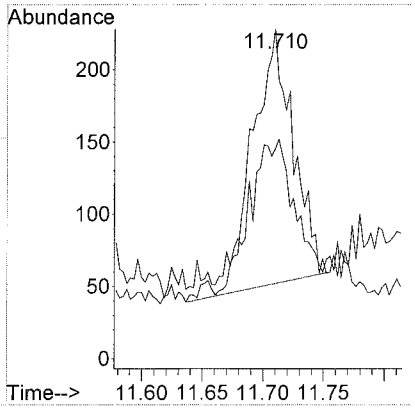


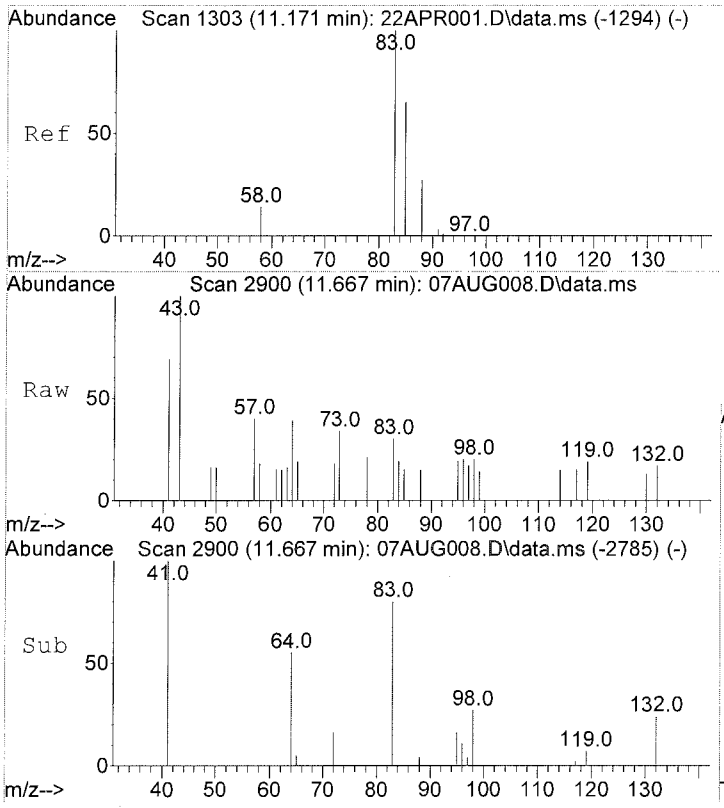


#27
1,4-Dioxane
Concen: 13.10 pptv
RT: 11.710 min Scan# 2914
Delta R.T. 0.007 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 88 Resp: 412

Ion	Ratio	Lower	Upper
88	100		
58	51.3	38.7	58.1

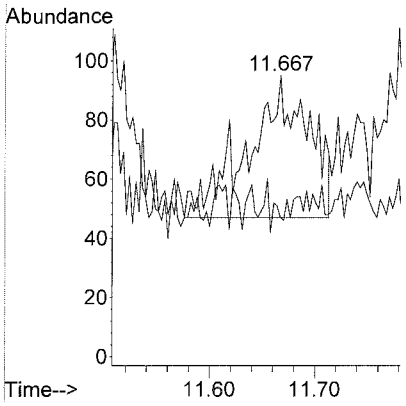


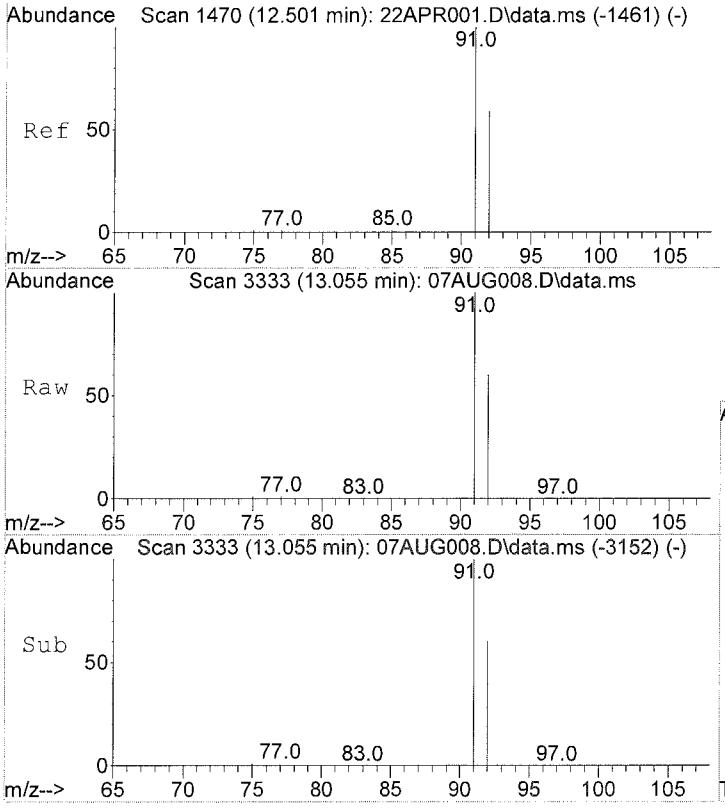


#28
Bromodichloromethane
Concen: 2.32 pptv
RT: 11.667 min Scan# 2900
Delta R.T. -0.049 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 83 Resp: 189

Ion	Ratio	Lower	Upper
83	100		
85	0.0	13.9	113.9#

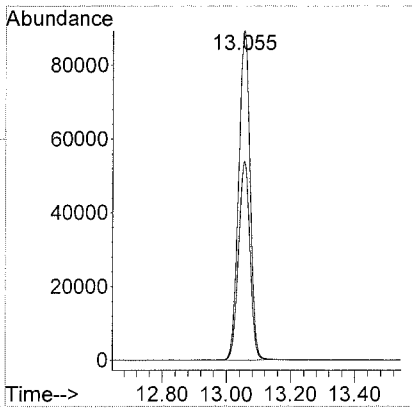


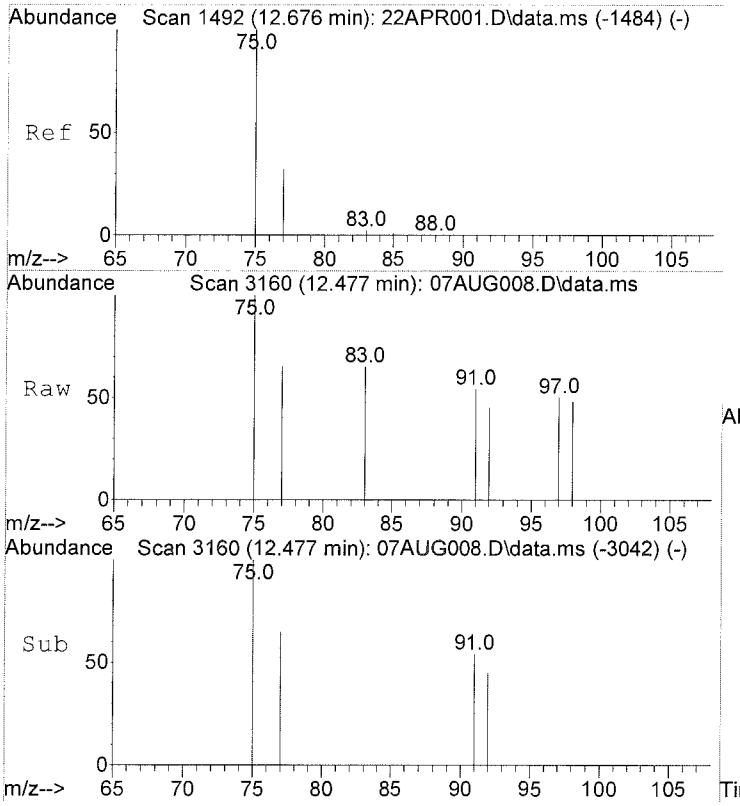


#30
Toluene
Concen: 1325.08 pptv
RT: 13.055 min Scan# 3333
Delta R.T. 0.003 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 91 Resp: 219711

Ion	Ratio	Lower	Upper
91	100		
92	60.3	10.0	110.0

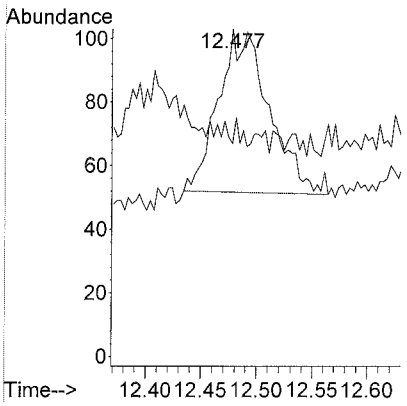


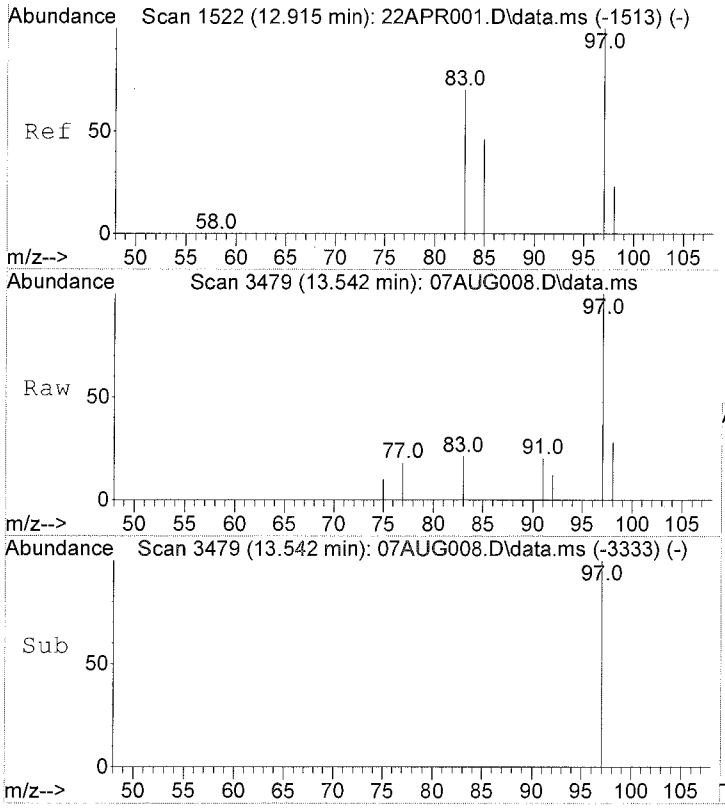


#32
t-1,3-Dichloropropene
Concen: 3.21 pptv
RT: 12.477 min Scan# 3160
Delta R.T. -0.022 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 75 Resp: 162

Ion	Ratio	Lower	Upper
75	100		
77	0.0	0.0	81.7

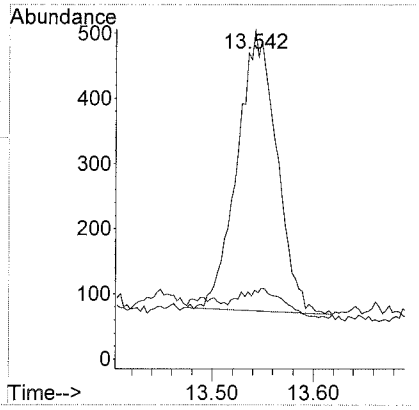


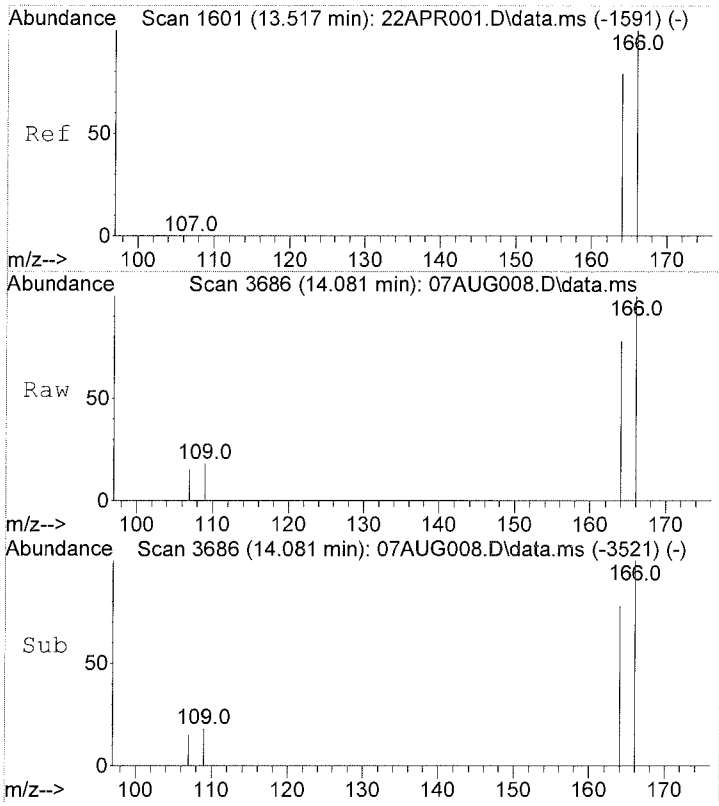


#33
1,1,2-Trichloroethane
Concen: 18.42 pptv
RT: 13.542 min Scan# 3479
Delta R.T. 0.087 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 97 Resp: 1172

Ion	Ratio	Lower	Upper
97	100		
83	8.7	25.1	125.1#

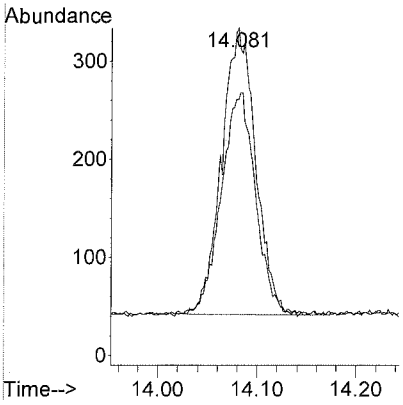


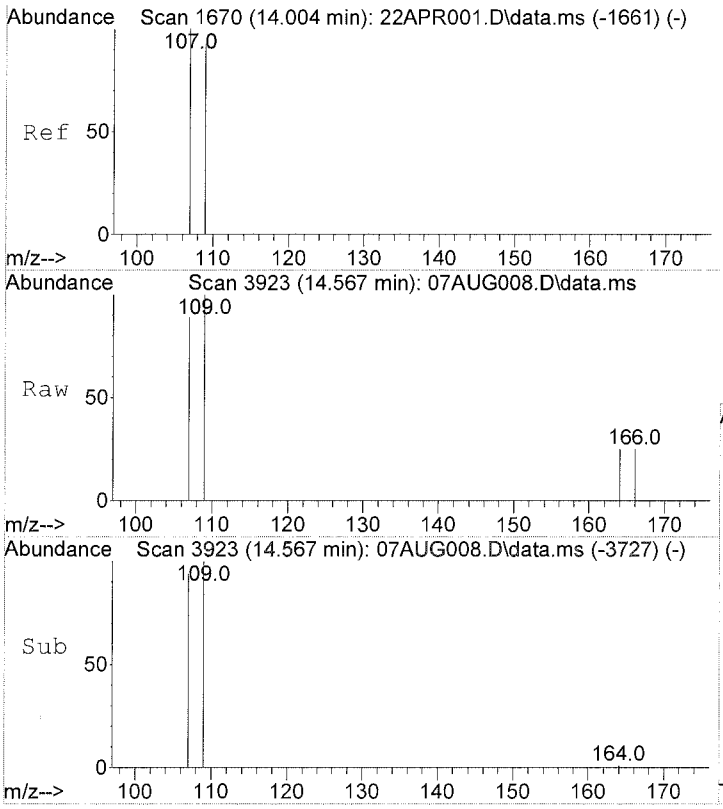


#34
Tetrachloroethene
Concen: 5.03 pptv
RT: 14.081 min Scan# 3686
Delta R.T. -0.000 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:166 Resp: 702

Ion	Ratio	Lower	Upper
166	100		
164	74.4	25.3	125.3

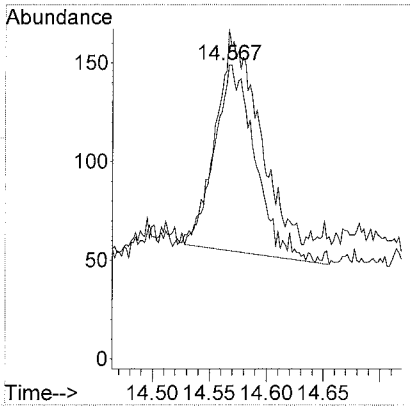


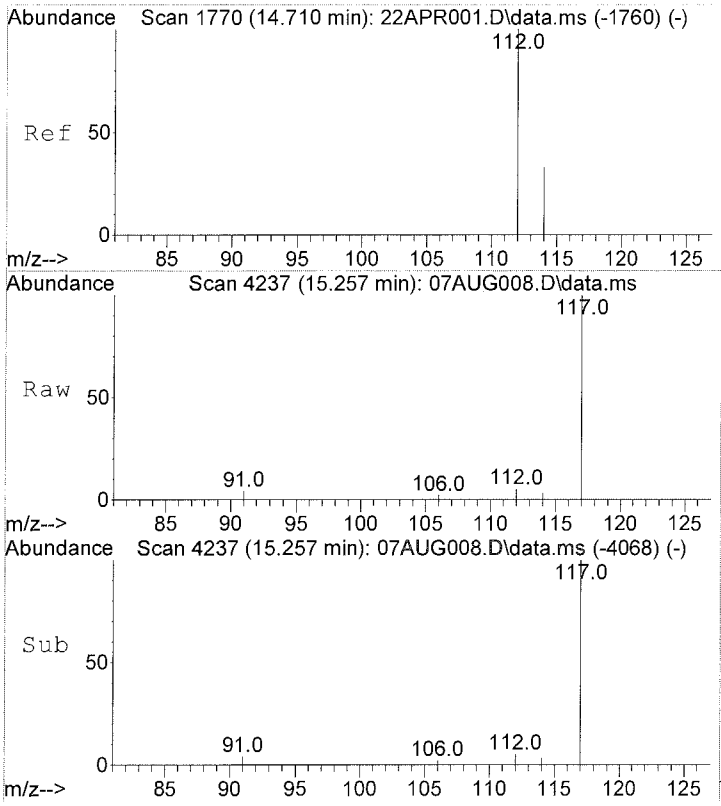


#35
1,2-Dibromoethane
Concen: 2.50 pptv
RT: 14.567 min Scan# 3923
Delta R.T. 0.003 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:107 Resp: 236

Ion	Ratio	Lower	Upper
107	100		
109	104.0	43.3	143.3

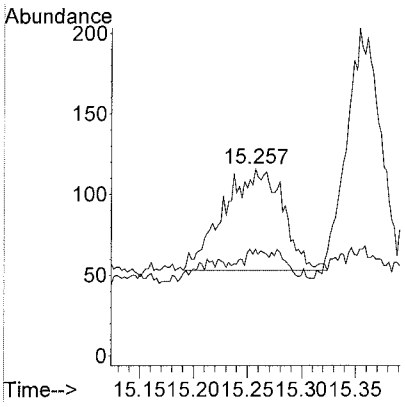


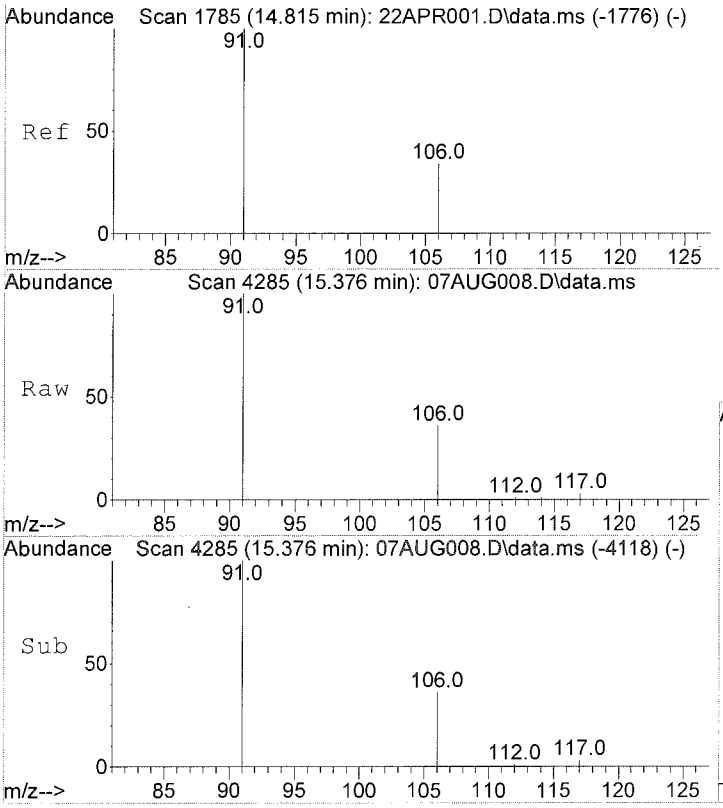


#36
Chlorobenzene
Concen: 1.36 pptv
RT: 15.257 min Scan# 4237
Delta R.T. -0.008 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:112 Resp: 238

Ion	Ratio	Lower	Upper
112	100		
114	23.8	0.0	81.6

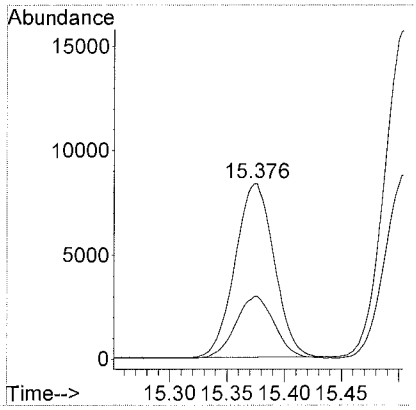


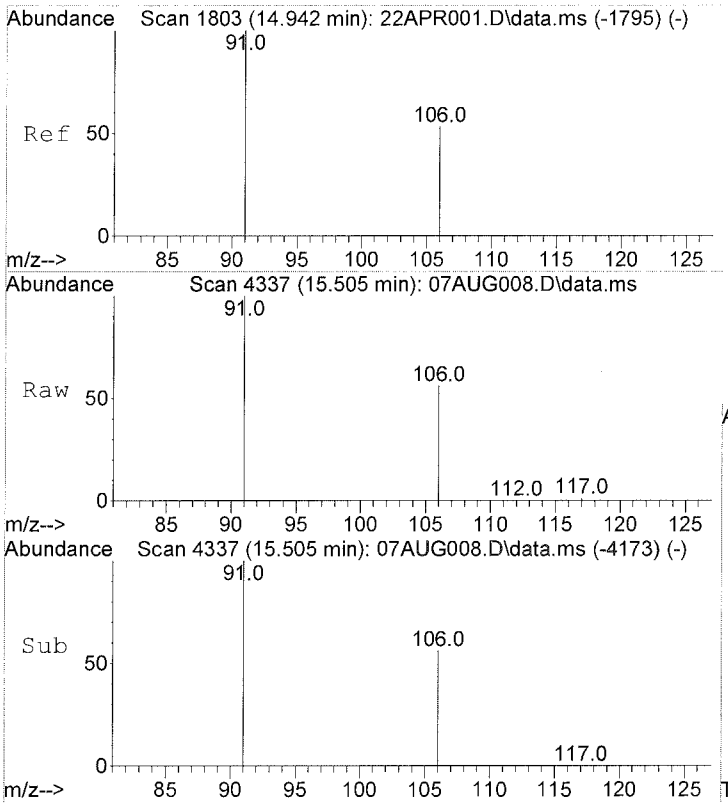


#37
Ethylbenzene
Concen: 103.27 pptv
RT: 15.376 min Scan# 4285
Delta R.T. 0.009 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 91 Resp: 19600

Ion	Ratio	Lower	Upper
91	100		
106	35.5	0.0	83.4

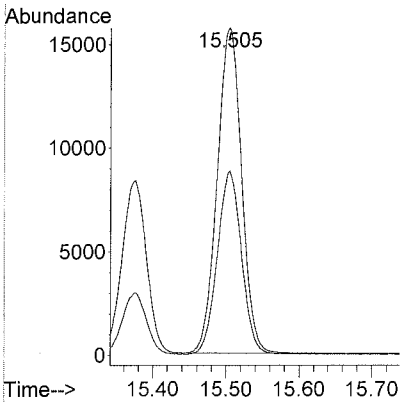


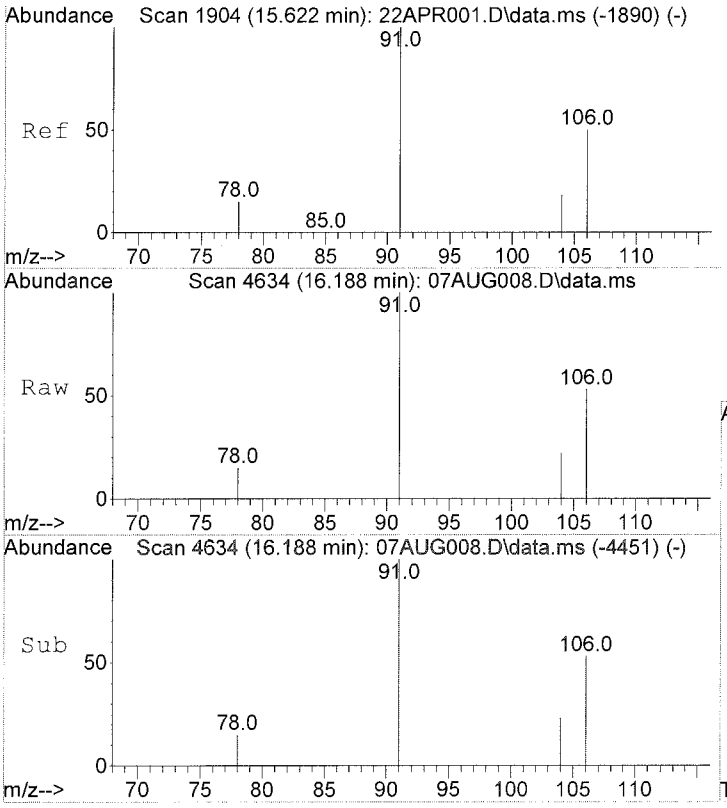


#38
p,&m-Xylene
Concen: 224.36 pptv
RT: 15.505 min Scan# 4337
Delta R.T. 0.007 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 91 Resp: 36796

Ion	Ratio	Lower	Upper
91	100		
106	56.2	3.9	103.9

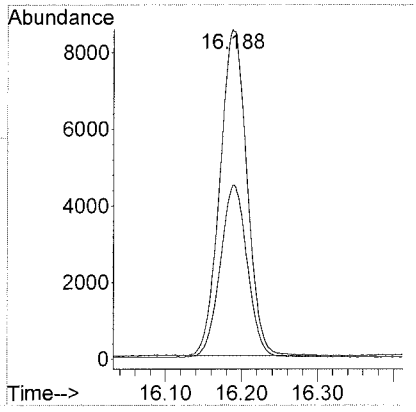


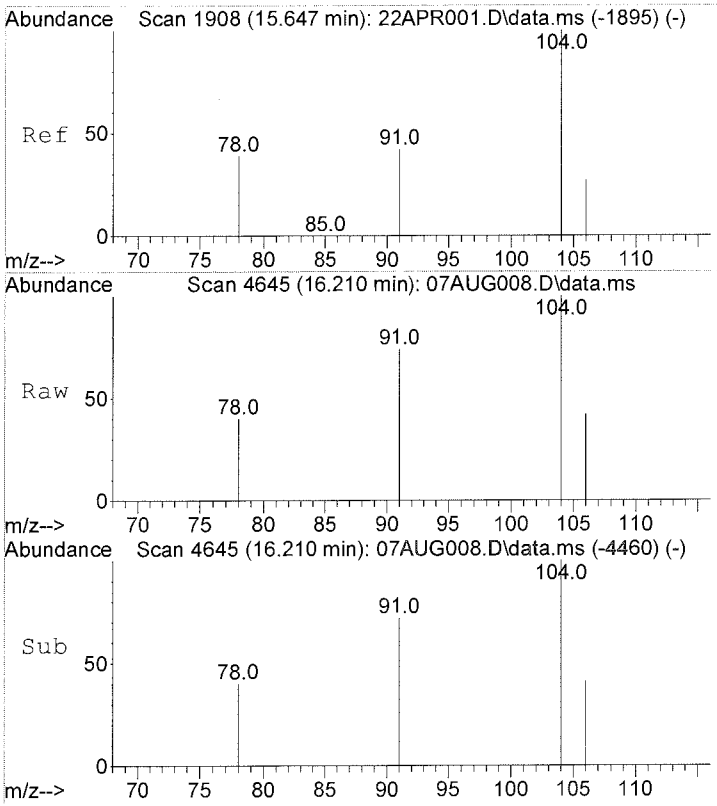


#39
o-Xylene
Concen: 153.41 pptv
RT: 16.188 min Scan# 4634
Delta R.T. 0.001 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 91 Resp: 21263

Ion	Ratio	Lower	Upper
91	100		
106	52.6	0.0	97.3

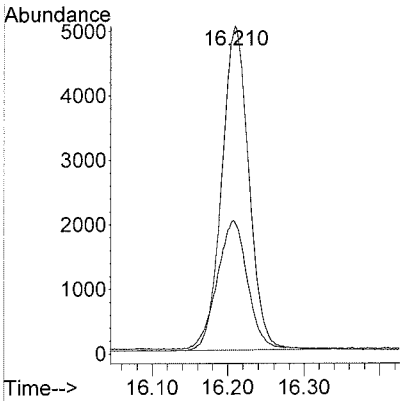


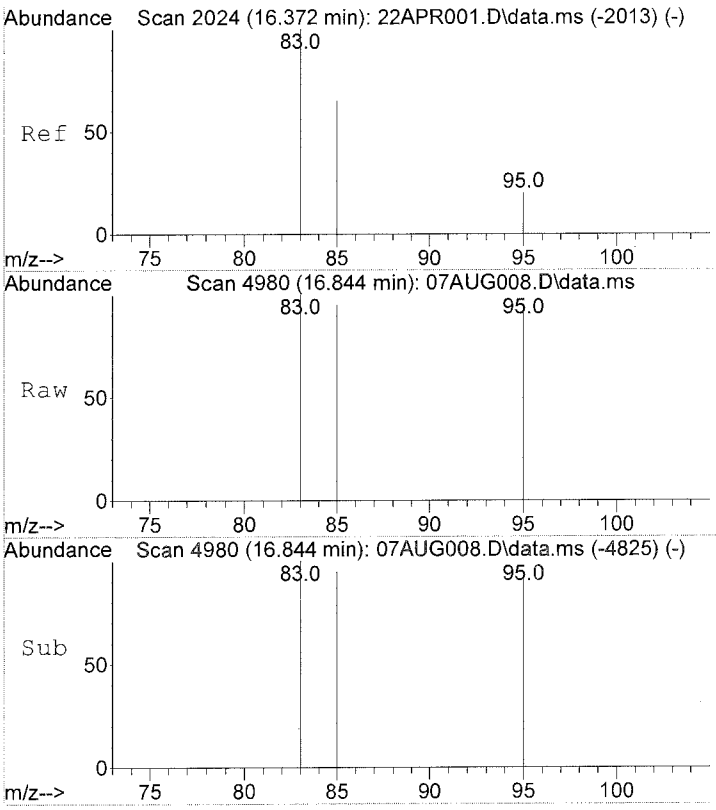


#40
Styrene
Concen: 105.75 pptv
RT: 16.210 min Scan# 4645
Delta R.T. 0.000 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:104 Resp: 12386

Ion	Ratio	Lower	Upper
104	100		
78	38.3	0.0	87.4

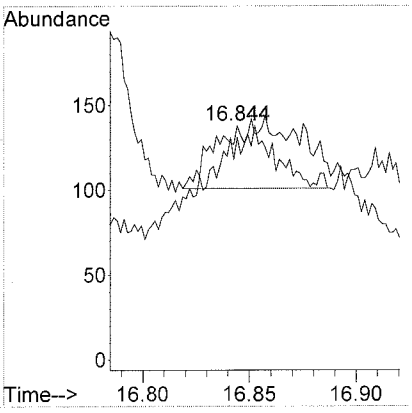


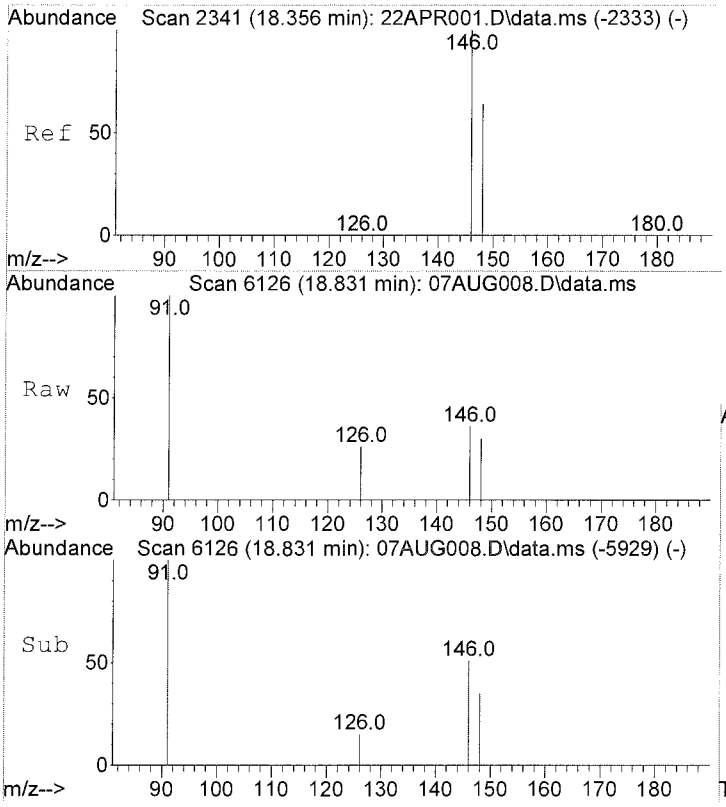


#41
1,1,2,2-Tetrachloroethane
Concen: 0.71 pptv
RT: 16.844 min Scan# 4980
Delta R.T. -0.135 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 83 Resp: 71

Ion	Ratio	Lower	Upper
83	100		
85	94.6	13.6	113.6

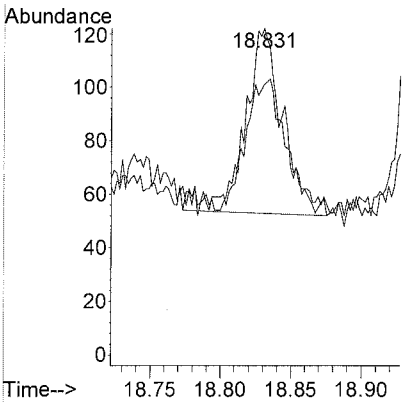


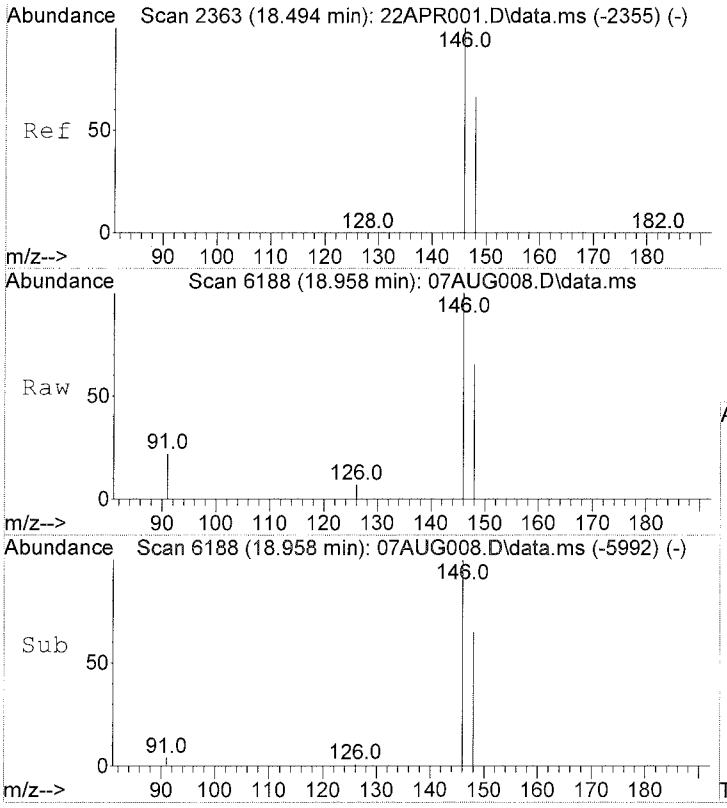


#43
1,3-Dichlorobenzene
Concen: 0.61 pptv
RT: 18.831 min Scan# 6126
Delta R.T. 0.004 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:146 Resp: 127

Ion	Ratio	Lower	Upper
146	100		
148	64.3	13.9	113.9

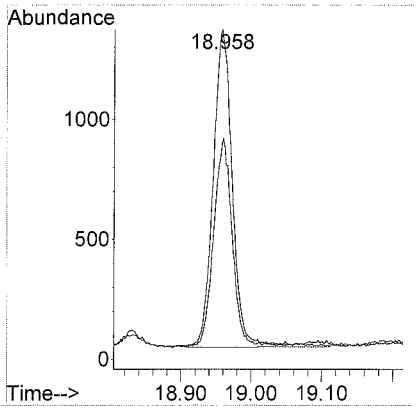


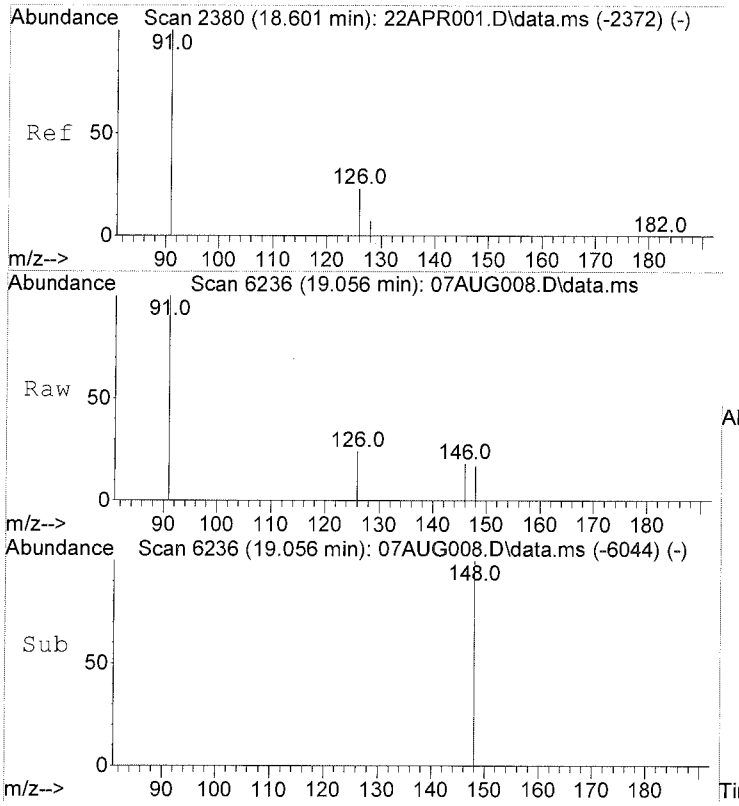


#44
1,4-Dichlorobenzene
Concen: 11.80 pptv
RT: 18.958 min Scan# 6188
Delta R.T. 0.003 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:146 Resp: 2538

Ion	Ratio	Lower	Upper
146	100		
148	63.8	15.5	115.5

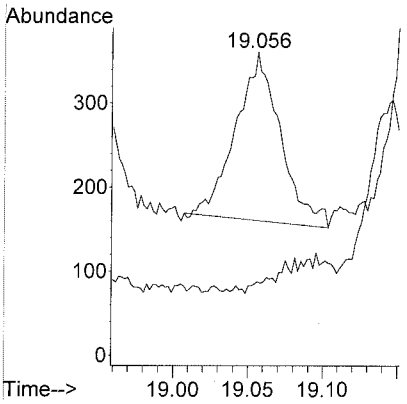


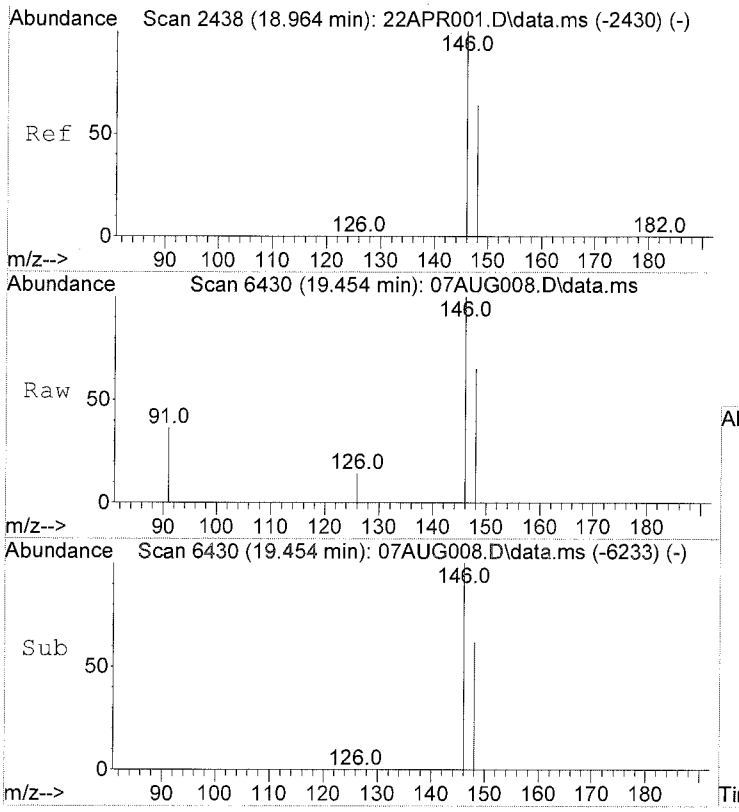


#45
Benzyl Chloride
Concen: 9.90 pptv
RT: 19.056 min Scan# 6236
Delta R.T. -0.006 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion: 91 Resp: 413

Ion	Ratio	Lower	Upper
91	100		
126	2.9	18.7	28.1#

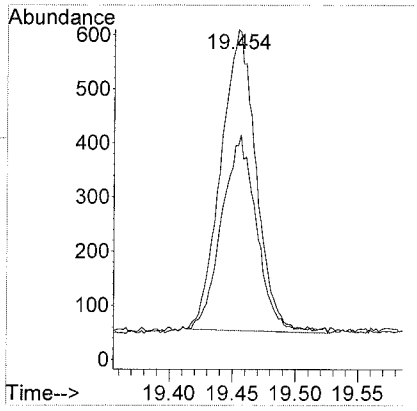


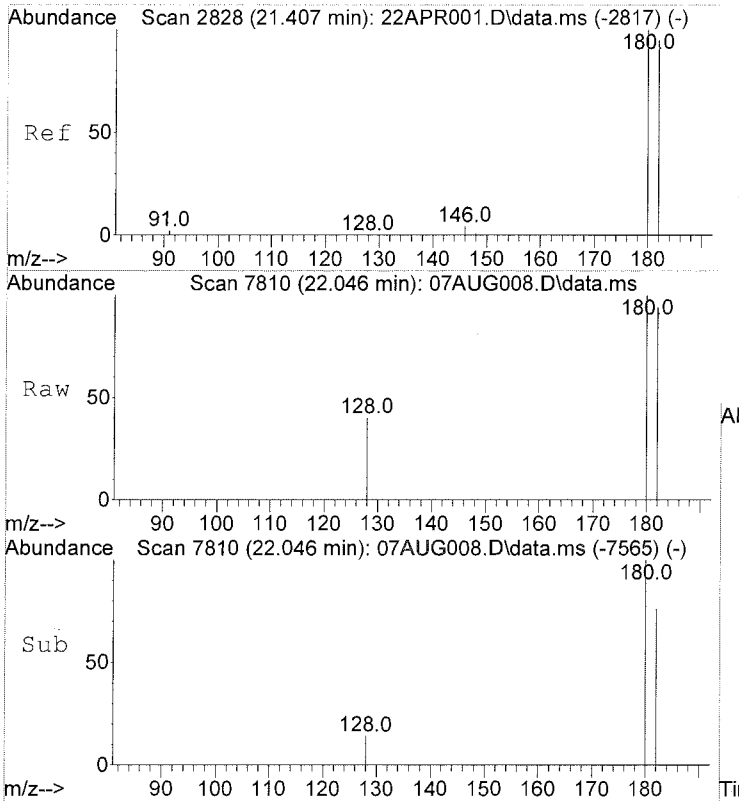


#46
1,2-Dichlorobenzene
Concen: 5.62 pptv
RT: 19.454 min Scan# 6430
Delta R.T. 0.004 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:146 Resp: 1084

Ion	Ratio	Lower	Upper
146	100		
148	60.4	13.7	113.7

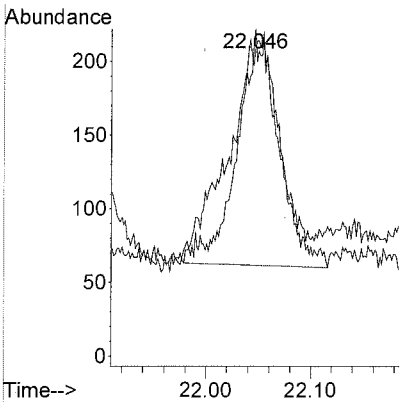


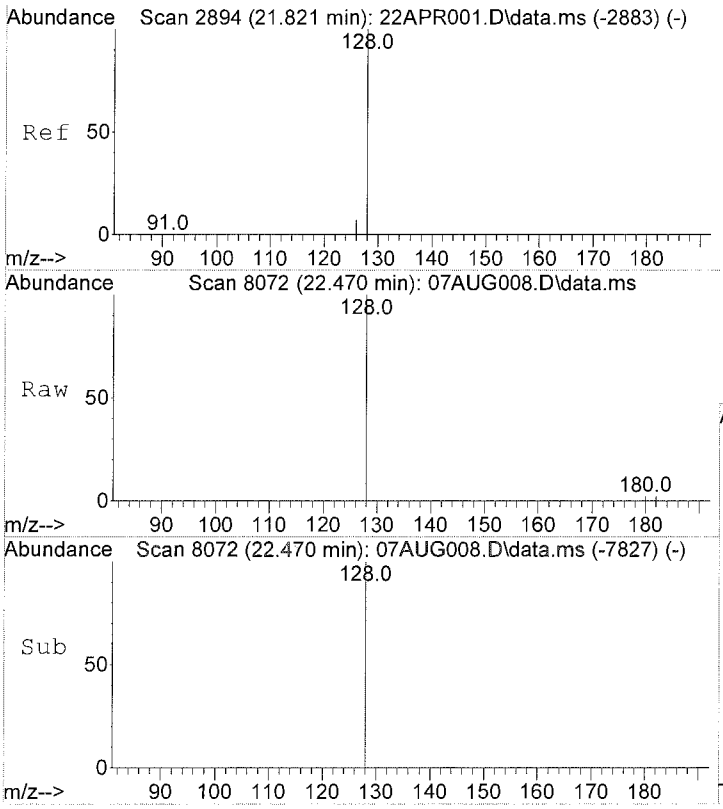


#47
1,2,4-Trichlorobenzene
Concen: 2.86 pptv
RT: 22.046 min Scan# 7810
Delta R.T. -0.003 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:180 Resp: 436

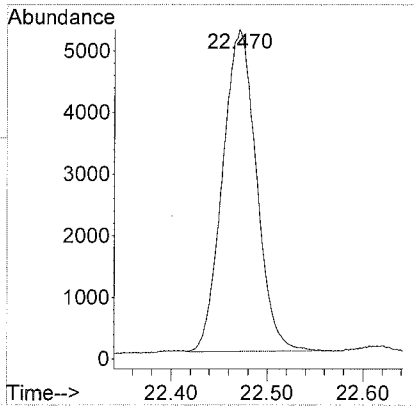
Ion	Ratio	Lower	Upper
180	100		
182	84.6	44.8	144.8





#48
Naphthalene
Concen: 60.53 pptv
RT: 22.470 min Scan# 8072
Delta R.T. -0.004 min
Lab File: 07AUG008.D
Acq: 7 Aug 2018 4:01 pm

Tgt Ion:128 Resp: 12649



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG009.D
Acq On : 7 Aug 2018 4:48 pm
Operator : DT
Sample : J072607-04 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 17:12:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	97897	2000.00	pptv		0.00
21) 1,4-Difluorobenzene	10.682	114	405749	2000.00	pptv		0.00
31) Chlorobenzene-d5	15.210	117	339723	2000.00	pptv		0.00
System Monitoring Compounds							
23) 1,2-Dichloroethane-d4	10.090	65	96449	1904.66	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 95.23%				
29) Toluene-d8	12.938	98	336366	2171.27	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 108.56%				
42) 4-Bromofluorobenzene	17.185	95	207498	2165.30	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 108.27%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.541	85	47643	429.42	pptv		99
3) Chloromethane	3.925	50	10965	782.30	pptv		94
5) Bromomethane	4.827	96	521	23.30	pptv		95
6) Chloroethane	4.999	64	99	7.14	pptv		86
7) Trichlorofluoromethane...	5.464	101	24324	199.32	pptv		100
8) 1,1,2-Cl 1,2,2-F ethan...	6.220	151	7331	65.72	pptv		95
9) Acetone	6.103	43	167282	3677.37	pptv		97
11) Methylene Chloride	7.018	49	4100	134.19	pptv		99
12) t-Butyl Methyl Ether	7.311	73	226	2.99	pptv		62
14) Hexane	7.762	57	28905	774.63	pptv		96
15) 1,1-Dichloroethane	8.064	63	94	1.66	pptv		42
16) 2-Butanone	8.616	72	16754	941.27	pptv		87
17) c-1,2-Dichloroethene	8.903	96	300	6.78	pptv	#	1
18) Chloroform	9.141	83	1387	16.49	pptv		98
19) 1,1,1-Trichloroethane	9.748	97	242	2.78	pptv		80
20) Carbon Tetrachloride	10.139	117	6533	77.40	pptv		95
22) Benzene	10.322	78	16491	115.25	pptv		100
24) 1,2-Dichloroethane	10.224	62	858	15.76	pptv		81
25) Trichloroethene	11.212	130	224	2.37	pptv	#	45
26) 1,2-Dichloropropane	11.426	63	320	9.08	pptv		96
27) 1,4-Dioxane	11.710	88	488	15.48	pptv		87
28) Bromodichloromethane	11.746	83	56	0.69	pptv	#	29
30) Toluene	13.055	91	203748	1225.90	pptv		100
32) t-1,3-Dichloropropene	12.484	75	960	18.82	pptv		52
33) 1,1,2-Trichloroethane	13.542	97	2569	39.99	pptv	#	19
34) Tetrachloroethene	14.079	166	1015	7.21	pptv		100
36) Chlorobenzene	15.267	112	1674	9.45	pptv		98
37) Ethylbenzene	15.374	91	54421	284.04	pptv		97
38) p,&m-Xylene	15.502	91	192313	1161.50	pptv		98
39) o-Xylene	16.190	91	97379	695.94	pptv		92
40) Styrene	16.210	104	16326	138.07	pptv		82
41) 1,1,2,2-Tetrachloroethane	16.854	83	197	1.96	pptv		51
43) 1,3-Dichlorobenzene	18.829	146	203	0.96	pptv		100
44) 1,4-Dichlorobenzene	18.958	146	8585	39.54	pptv		98
45) Benzyl Chloride	19.050	91	504	11.97	pptv	#	56
46) 1,2-Dichlorobenzene	19.456	146	1163	5.98	pptv		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG009.D
Acq On : 7 Aug 2018 4:48 pm
Operator : DT
Sample : J072607-04 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 17:12:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

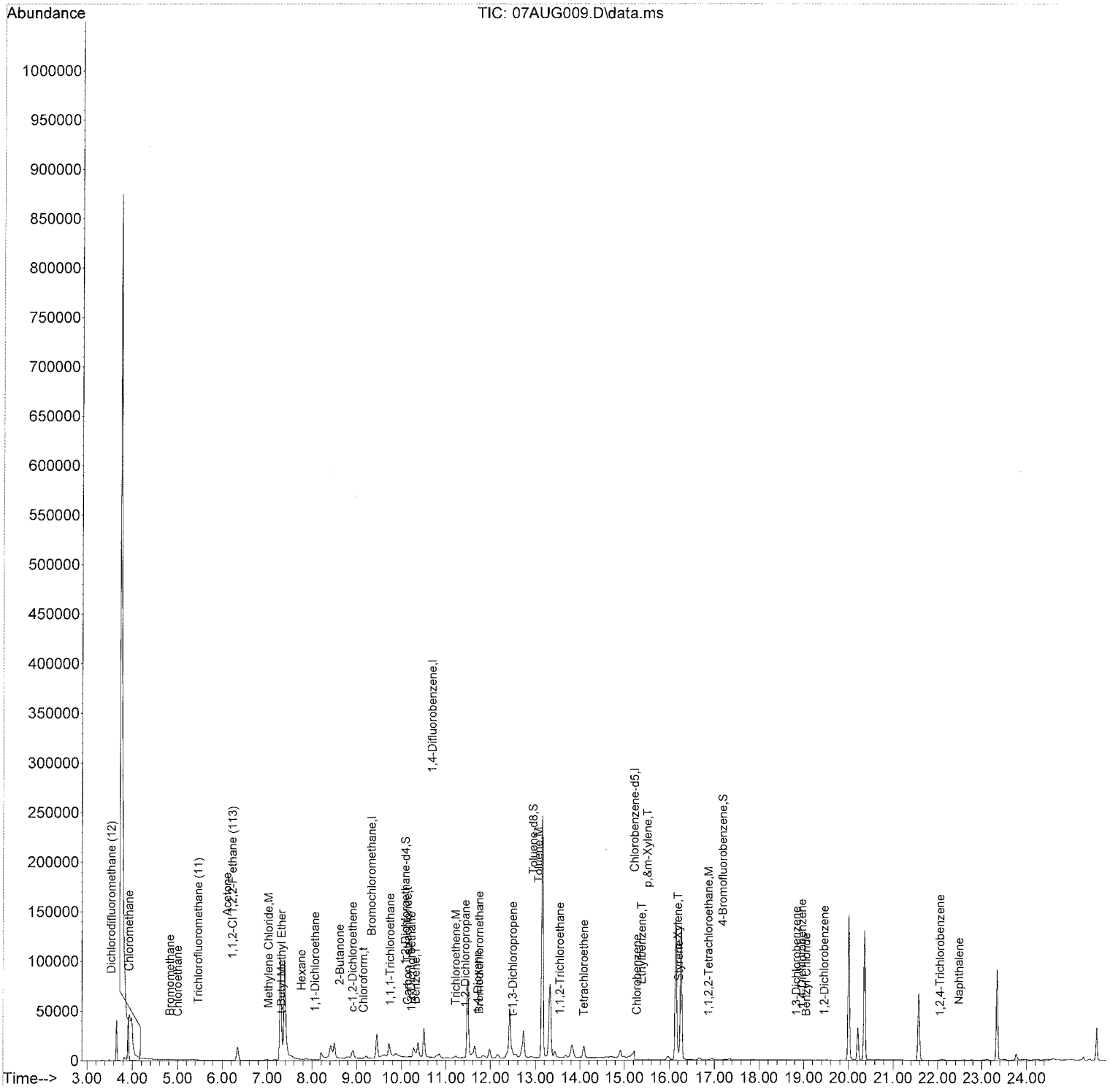
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
47) 1,2,4-Trichlorobenzene	22.045	180	450	2.93	pptv	86
48) Naphthalene	22.471	128	28913	137.05	pptv	100

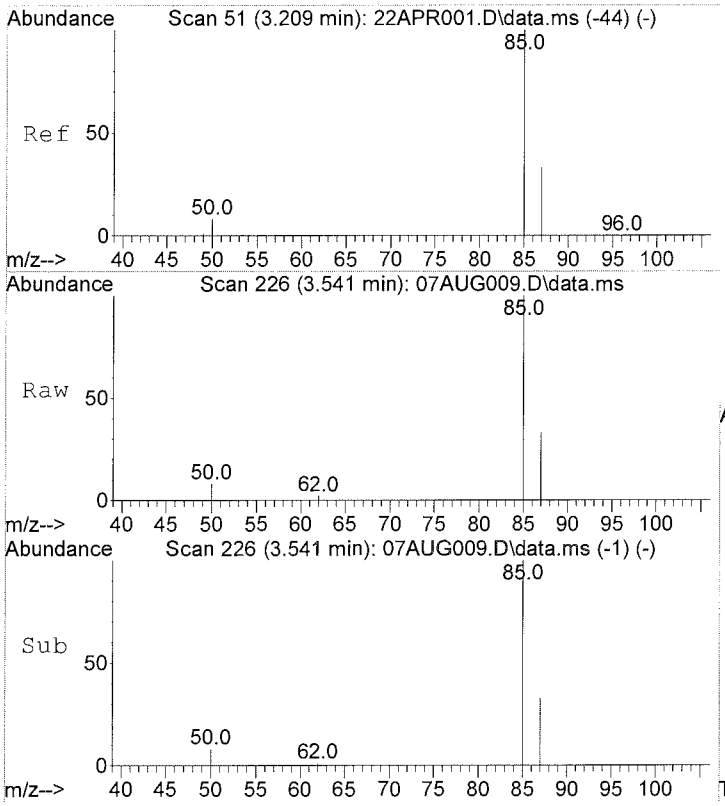
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG009.D
Acq On : 7 Aug 2018 4:48 pm
Operator : DT
Sample : J072607-04 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 17:12:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

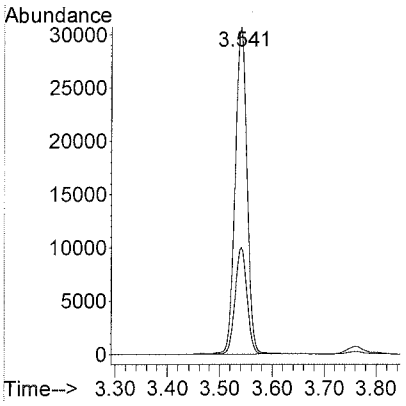


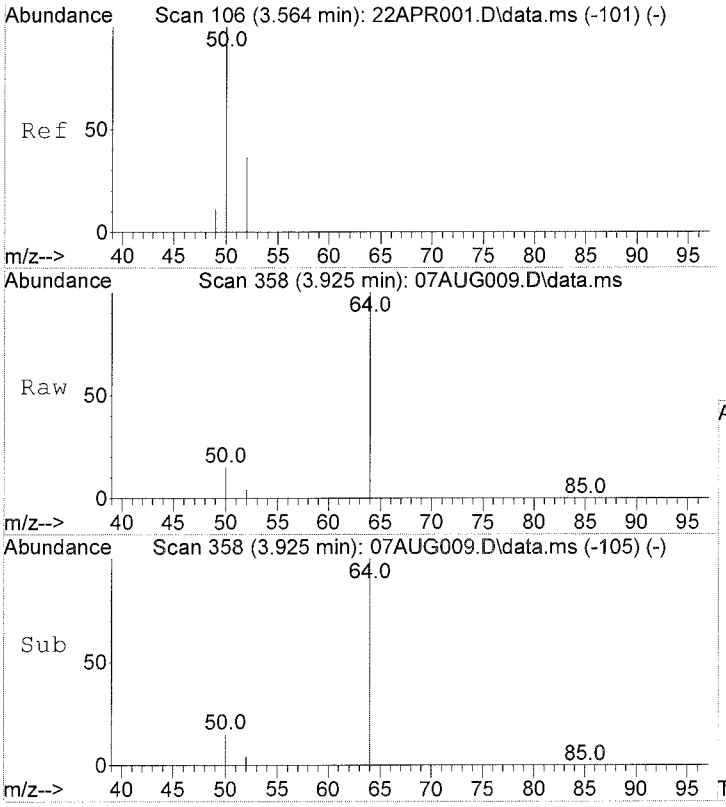


#2
Dichlorodifluoromethane (12)
Concen: 429.42 pptv
RT: 3.541 min Scan# 226
Delta R.T. -0.050 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 85 Resp: 47643

Ion	Ratio	Lower	Upper
85	100		
87	32.6	0.0	81.9

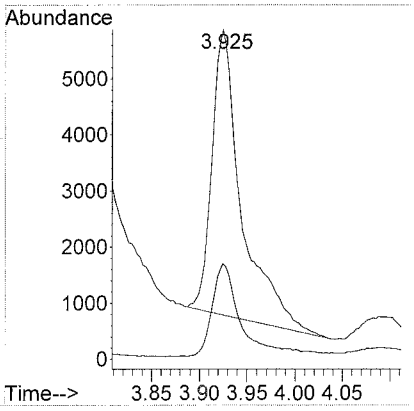


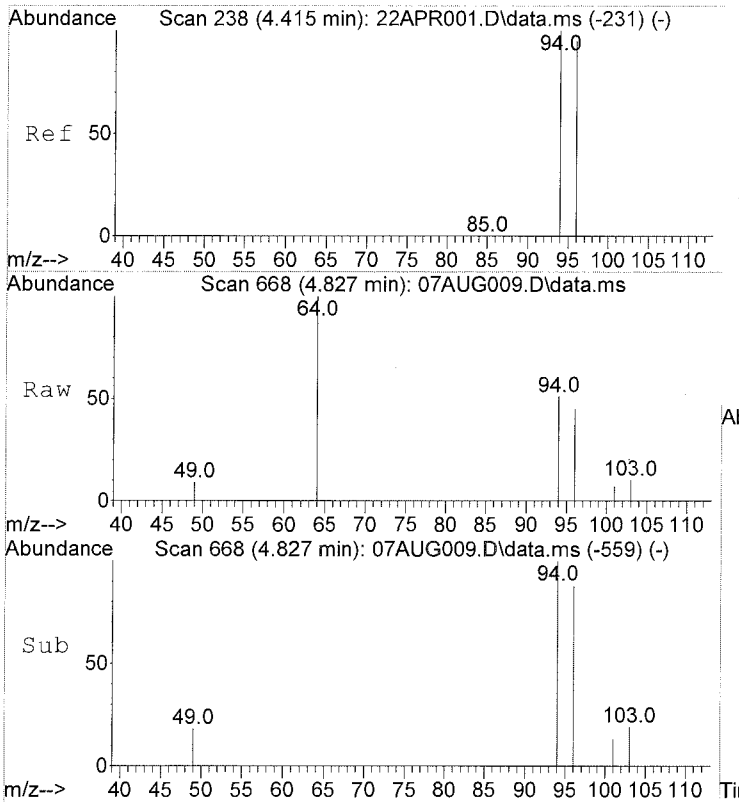


#3
Chloromethane
Concen: 782.30 pptv
RT: 3.925 min Scan# 358
Delta R.T. -0.064 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 50 Resp: 10965

Ion	Ratio	Lower	Upper
50	100		
52	29.9	3.0	63.0

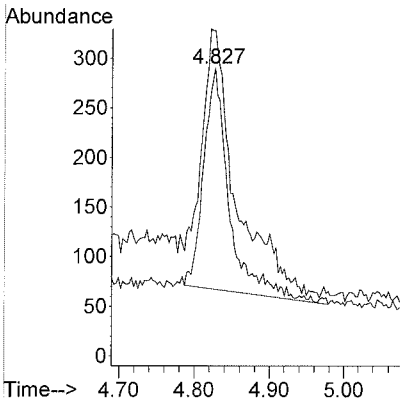


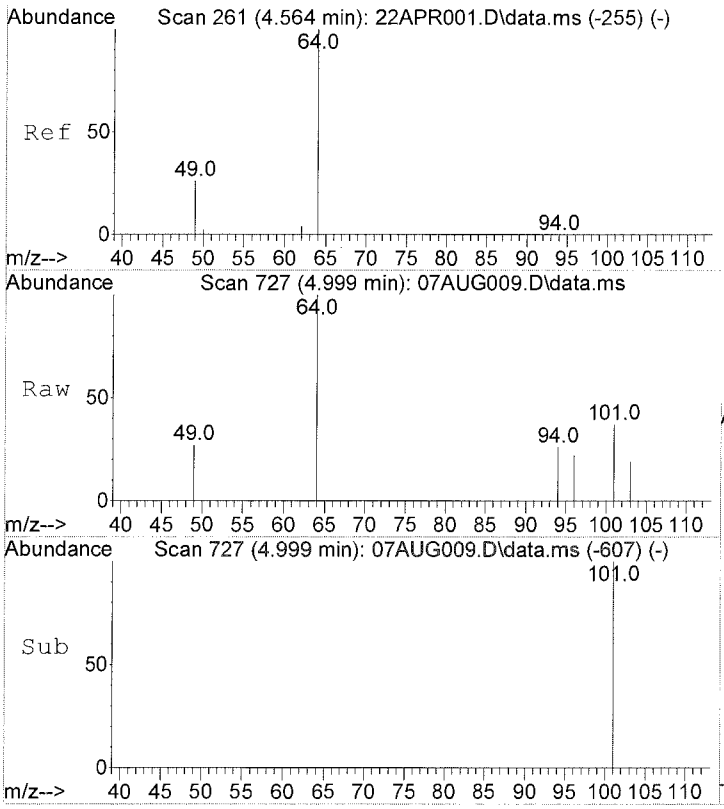


#5
Bromomethane
Concen: 23.30 pptv
RT: 4.827 min Scan# 668
Delta R.T. -0.084 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 96 Resp: 521

Ion	Ratio	Lower	Upper
96	100		
94	110.5	55.4	155.4

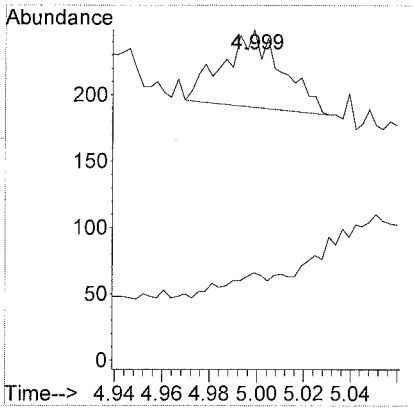


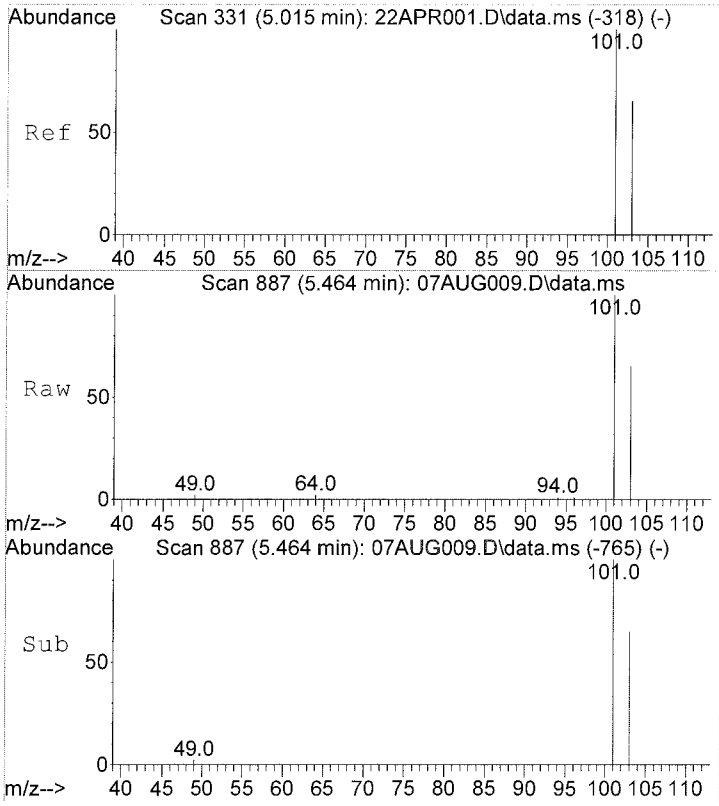


#6
Chloroethane
Concen: 7.14 pptv
RT: 4.999 min Scan# 727
Delta R.T. -0.051 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 64 Resp: 99

Ion	Ratio	Lower	Upper
64	100		
49	25.0	0.0	68.7

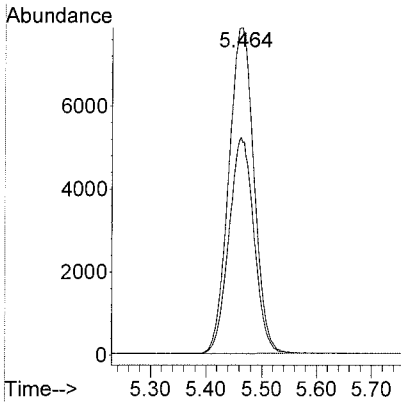


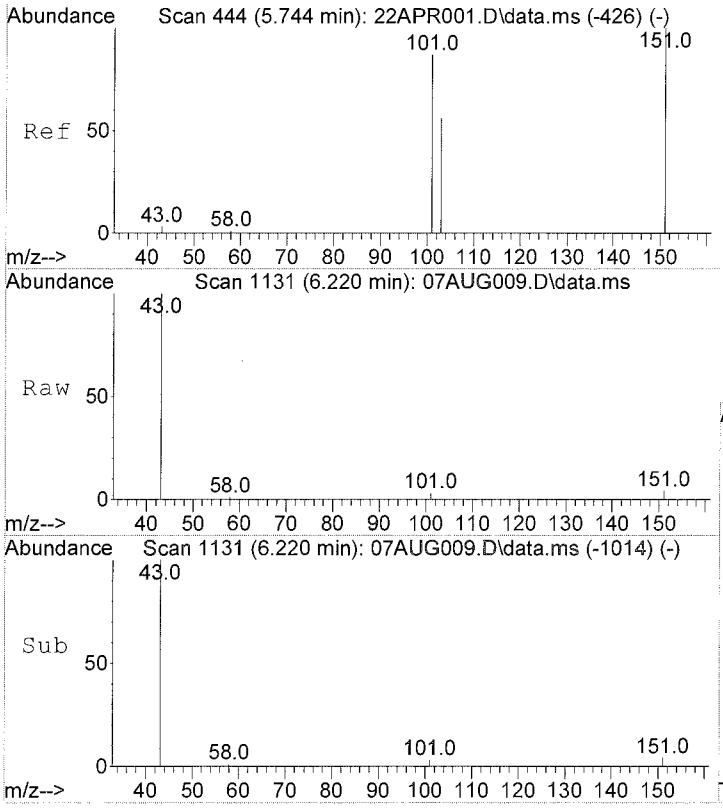


#7
Trichlorofluoromethane (11)
Concen: 199.32 pptv
RT: 5.464 min Scan# 887
Delta R.T. -0.046 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:101 Resp: 24324

Ion	Ratio	Lower	Upper
101	100		
103	64.8	14.6	114.6

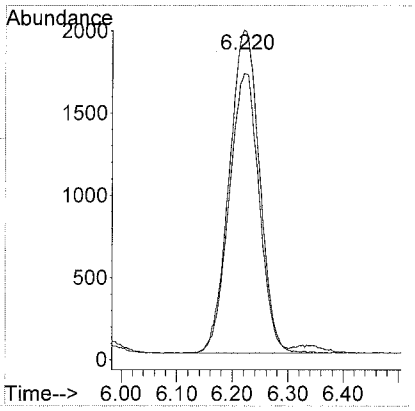


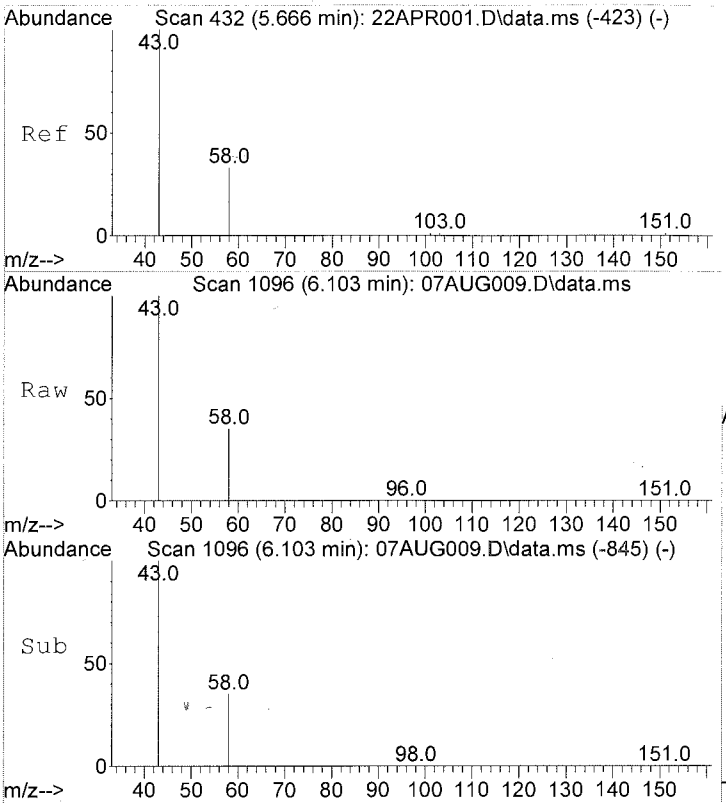


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 65.72 pptv
RT: 6.220 min Scan# 1131
Delta R.T. -0.014 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:151 Resp: 7331

Ion	Ratio	Lower	Upper
151	100		
101	86.4	41.5	141.5

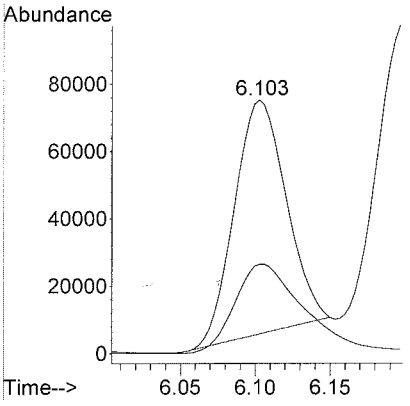


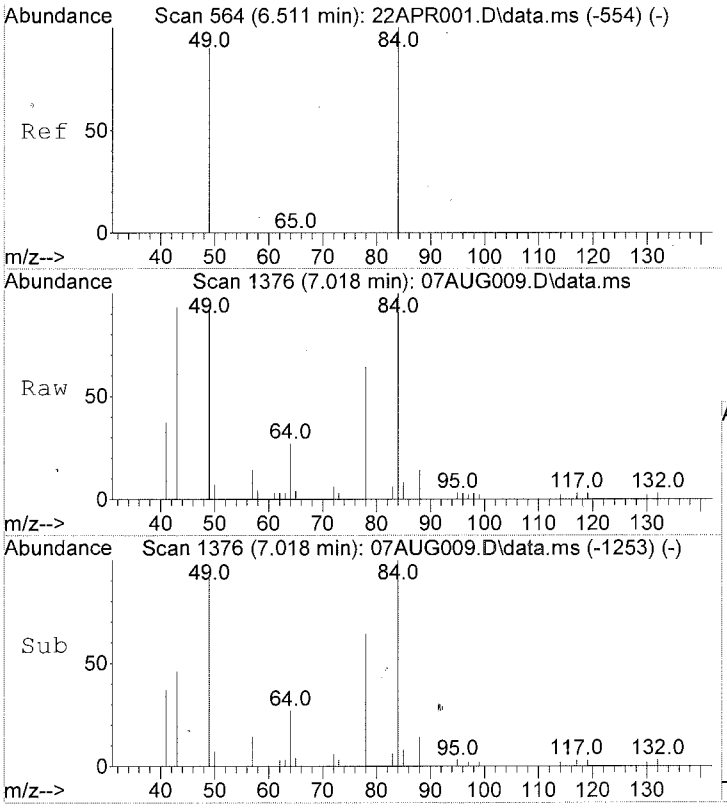


#9
Acetone
Concen: 3677.37 pptv
RT: 6.103 min Scan# 1096
Delta R.T. -0.039 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 43 Resp: 167282

Ion	Ratio	Lower	Upper
43	100		
58	35.3	13.4	53.4

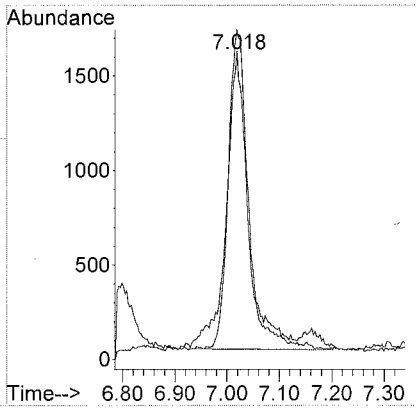


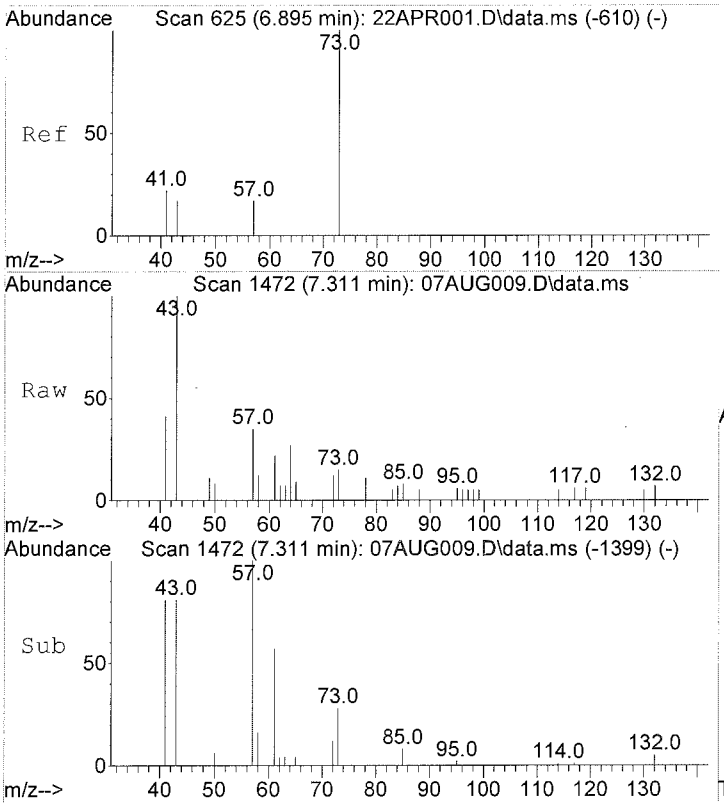


#11
Methylene Chloride
Concen: 134.19 pptv
RT: 7.018 min Scan# 1376
Delta R.T. -0.012 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 49 Resp: 4100

Ion	Ratio	Lower	Upper
49	100		
84	105.7	54.2	154.2

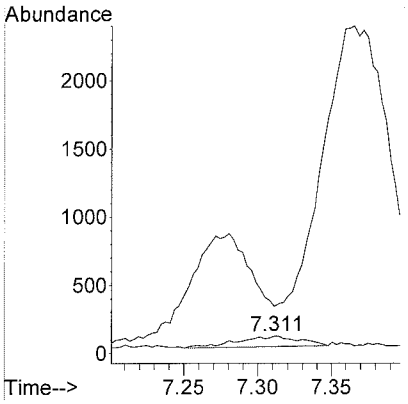


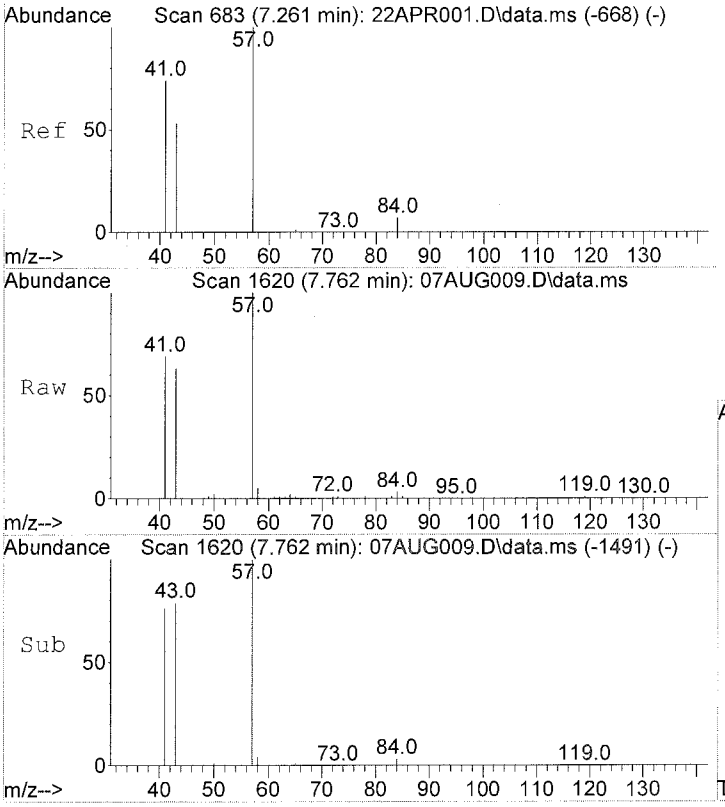


#12
t-Butyl Methyl Ether
Concen: 2.99 pptv
RT: 7.311 min Scan# 1472
Delta R.T. -0.078 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 73 Resp: 226

Ion	Ratio	Lower	Upper
73	100		
41	0.0	0.0	516.4

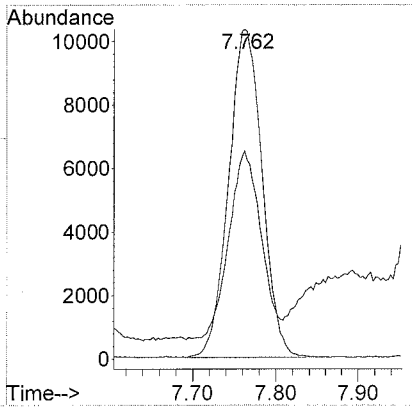


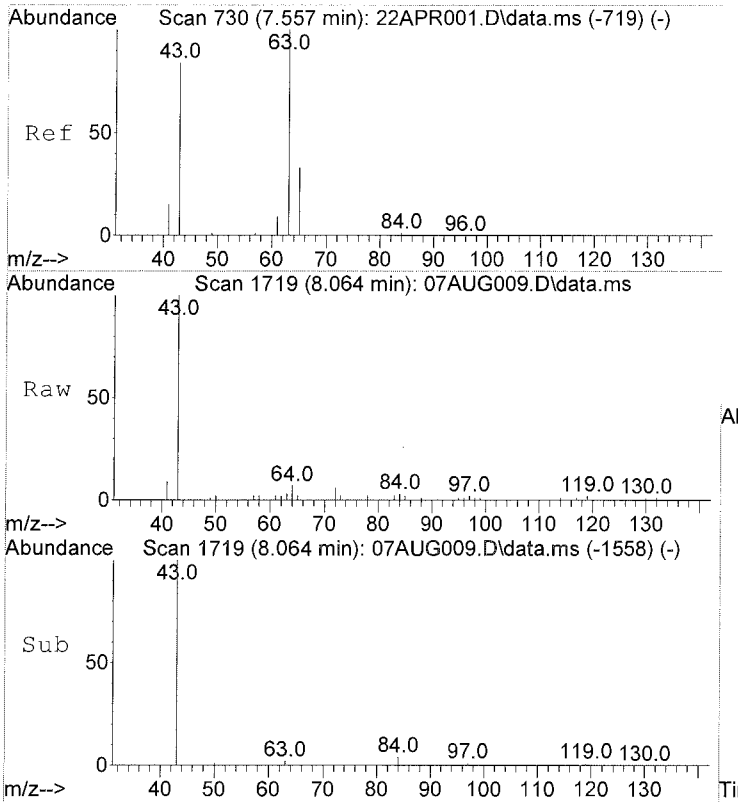


#14
Hexane
Concen: 774.63 pptv
RT: 7.762 min Scan# 1620
Delta R.T. -0.008 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 57 Resp: 28905

Ion	Ratio	Lower	Upper
57	100		
43	57.5	5.0	105.0

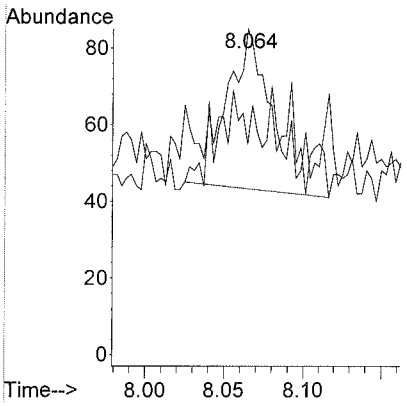


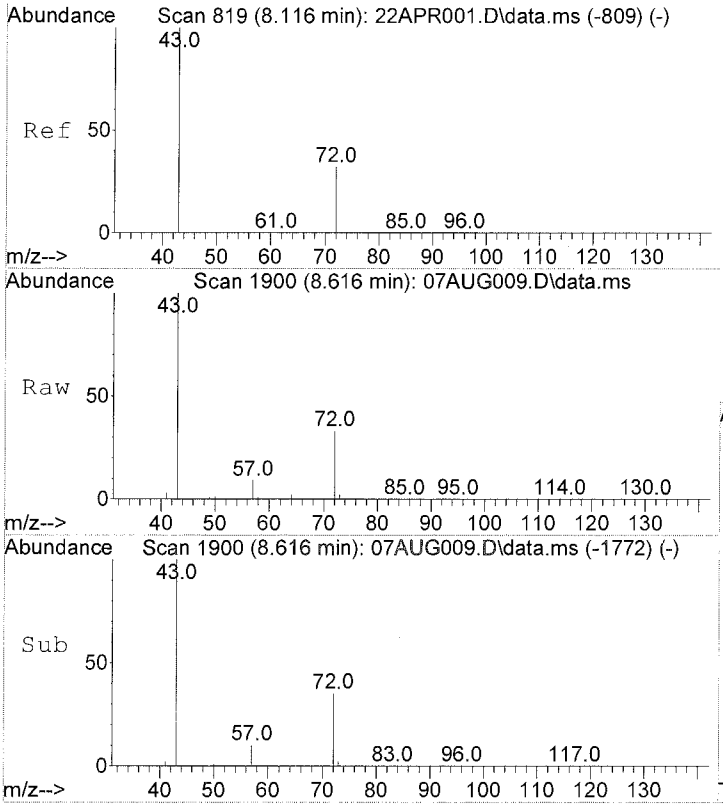


#15
1,1-Dichloroethane
Concen: 1.66 pptv
RT: 8.064 min Scan# 1719
Delta R.T. -0.009 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 63 Resp: 94

Ion	Ratio	Lower	Upper
63	100		
65	0.0	0.0	82.5

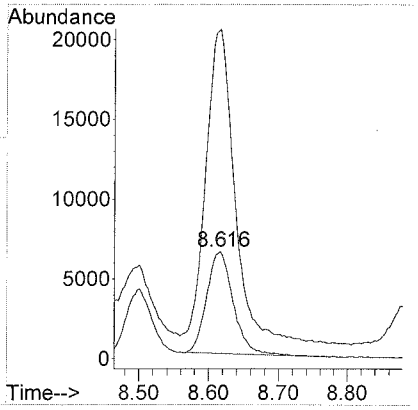


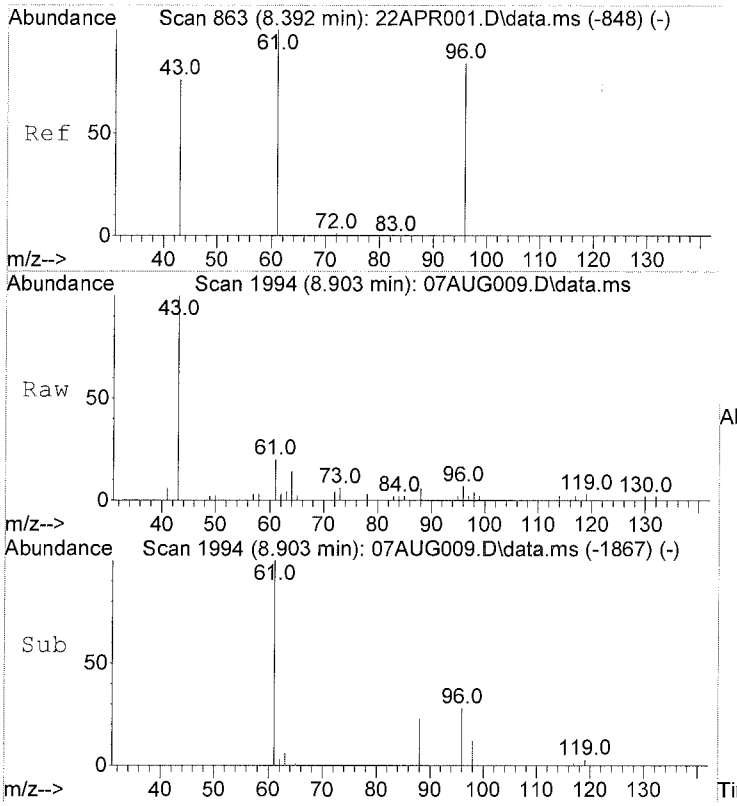


#16
2-Butanone
Concen: 941.27 pptv
RT: 8.616 min Scan# 1900
Delta R.T. -0.011 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 72 Resp: 16754

Ion	Ratio	Lower	Upper
72	100		
43	298.7	0.0	3591.5

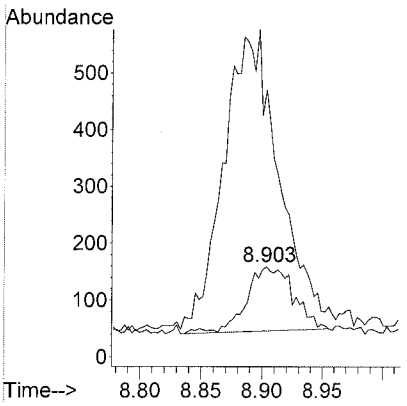


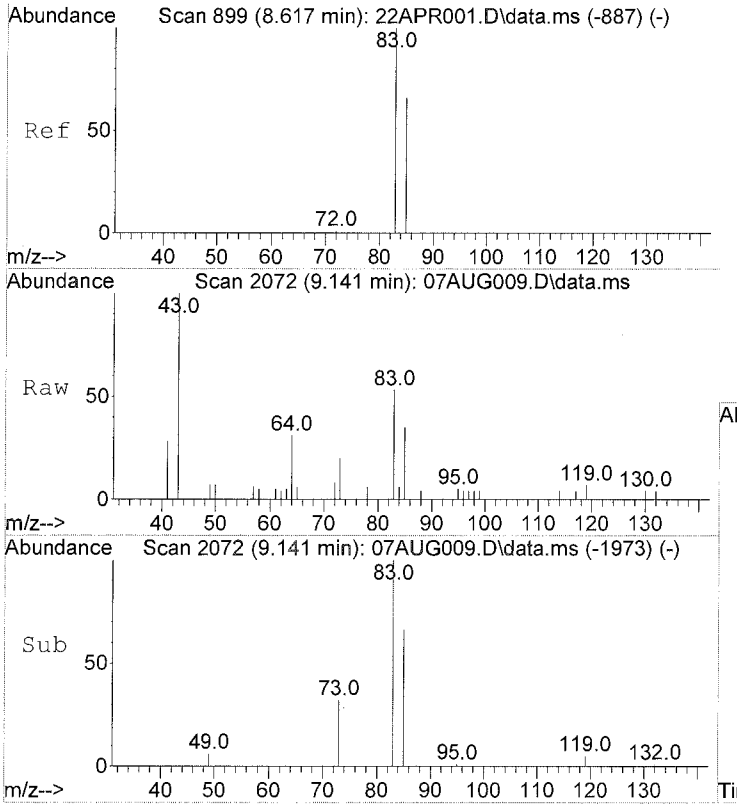


#17
c-1,2-Dichloroethene
Concen: 6.78 pptv
RT: 8.903 min Scan# 1994
Delta R.T. -0.013 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 96 Resp: 300

Ion	Ratio	Lower	Upper
96	100		
61	339.0	62.0	162.0#

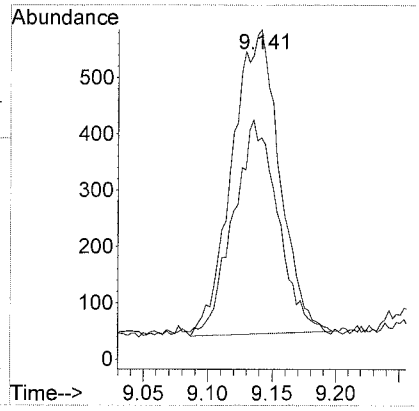


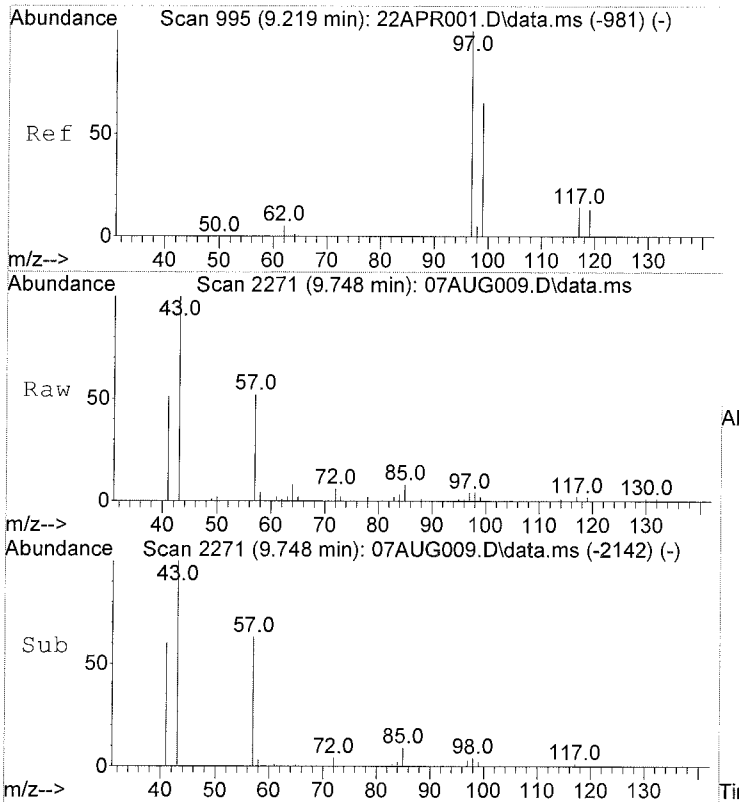


#18
Chloroform
Concen: 16.49 pptv
RT: 9.141 min Scan# 2072
Delta R.T. 0.001 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 83 Resp: 1387

Ion	Ratio	Lower	Upper
83	100		
85	63.4	14.9	114.9

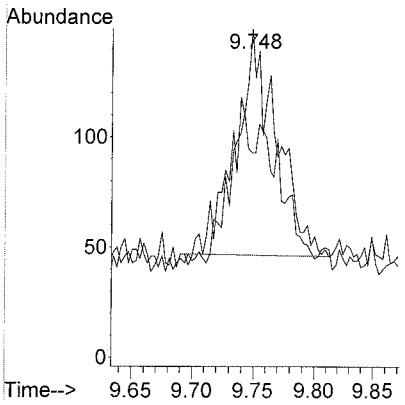


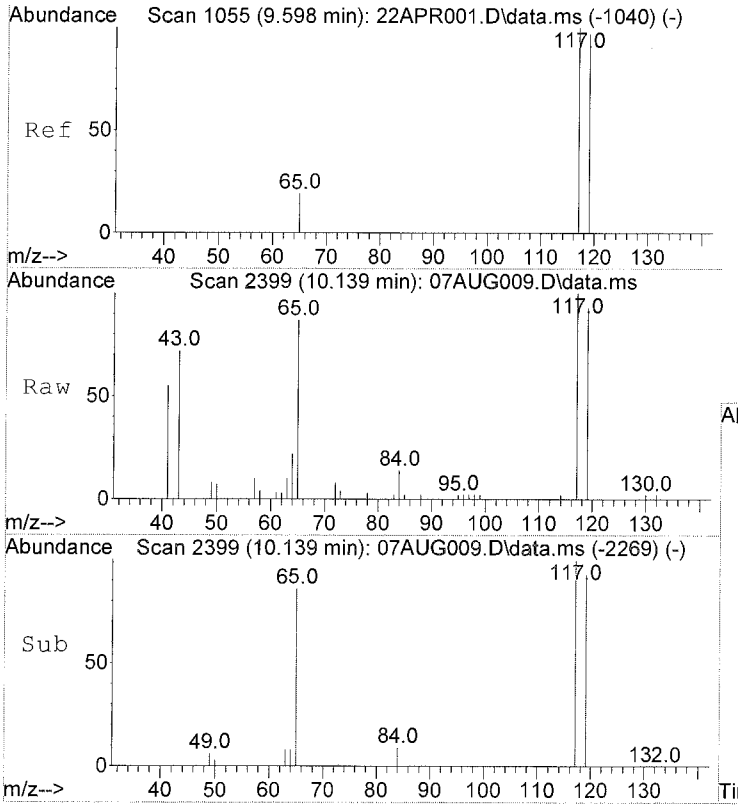


#19
1,1,1-Trichloroethane
Concen: 2.78 pptv
RT: 9.748 min Scan# 2271
Delta R.T. -0.007 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 97 Resp: 242

Ion	Ratio	Lower	Upper
97	100		
99	48.5	13.8	113.8

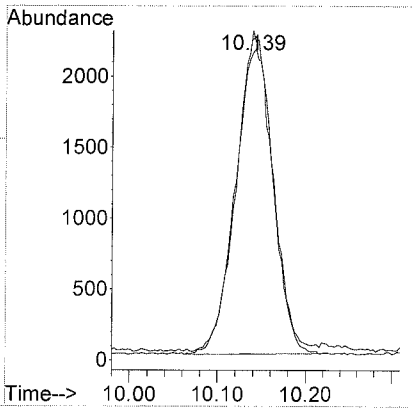


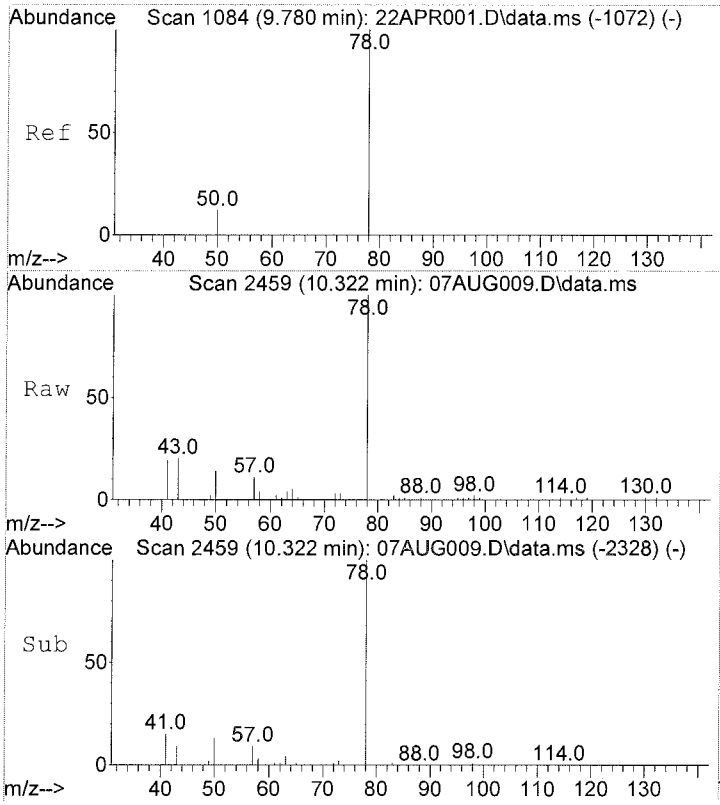


#20
Carbon Tetrachloride
Concen: 77.40 pptv
RT: 10.139 min Scan# 2399
Delta R.T. -0.004 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:117 Resp: 6533

Ion	Ratio	Lower	Upper
117	100		
119	92.0	47.1	147.1

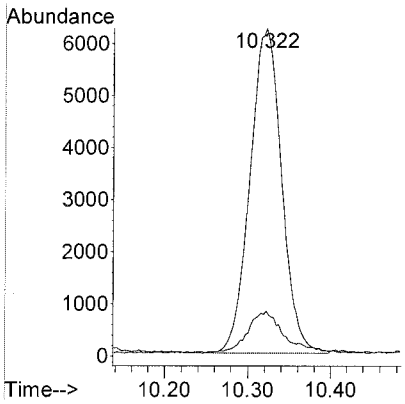


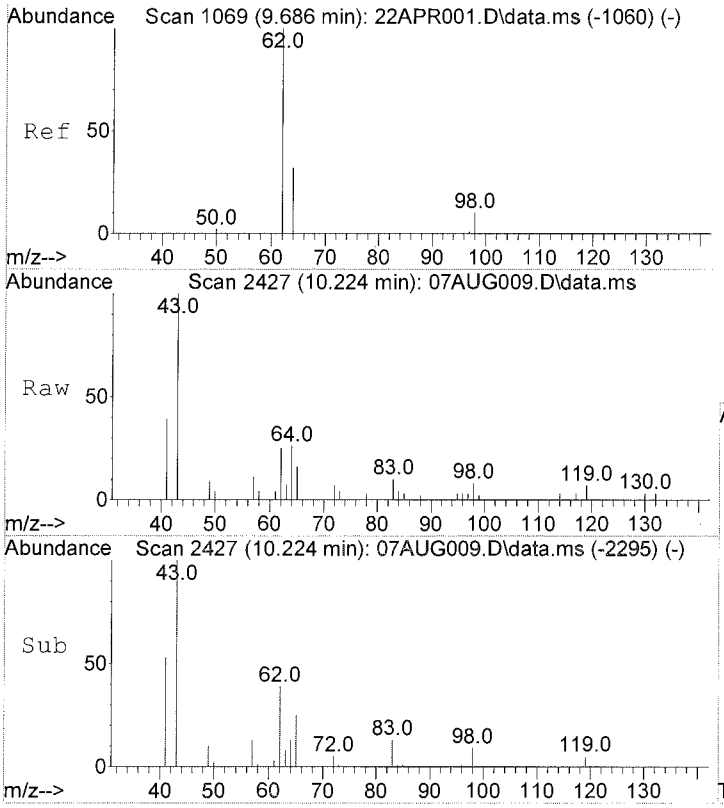


#22
Benzene
Concen: 115.25 pptv
RT: 10.322 min Scan# 2459
Delta R.T. 0.001 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 78 Resp: 16491

Ion	Ratio	Lower	Upper
78	100		
50	12.6	0.0	62.6

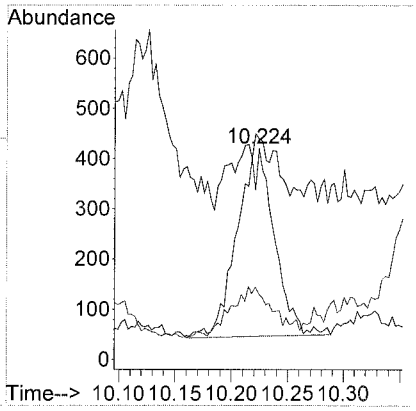


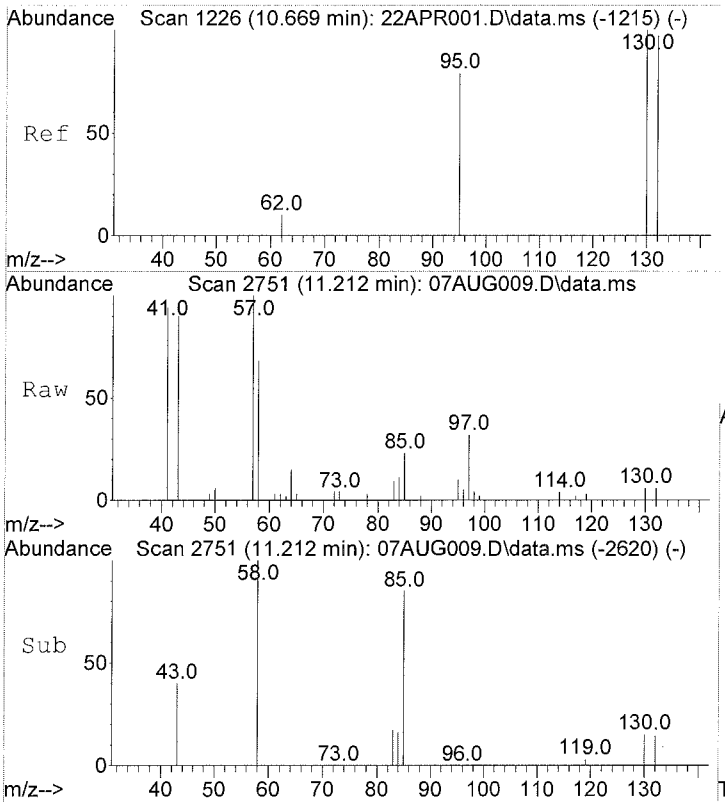


#24
1,2-Dichloroethane
Concen: 15.76 pptv
RT: 10.224 min Scan# 2427
Delta R.T. 0.004 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 62 Resp: 858

Ion	Ratio	Lower	Upper
62	100		
64	24.4	0.0	83.0
98	22.0	0.0	61.0

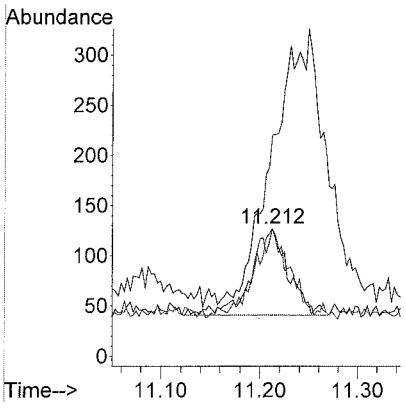


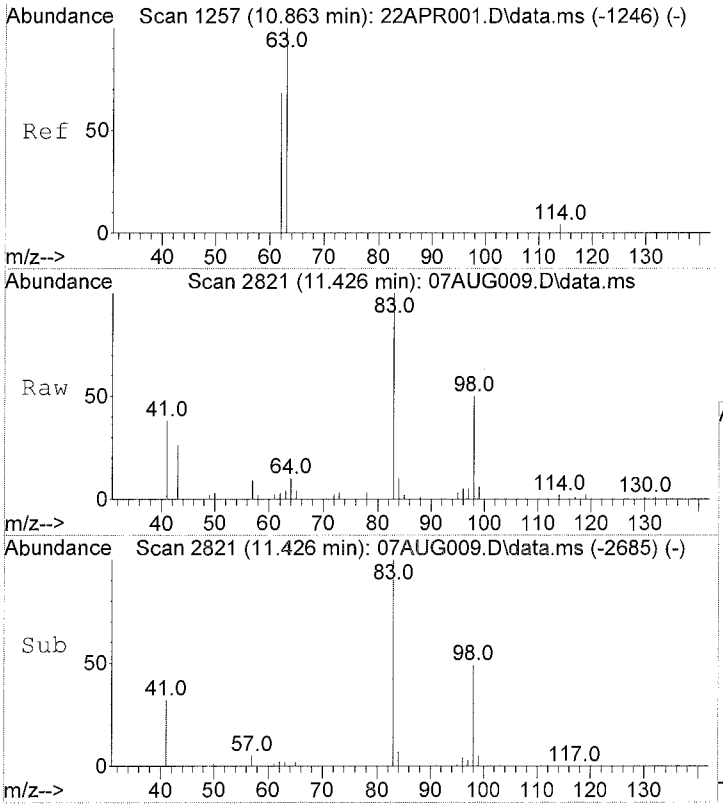


#25
Trichloroethene
Concen: 2.37 pptv
RT: 11.212 min Scan# 2751
Delta R.T. 0.000 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:130 Resp: 224

Ion	Ratio	Lower	Upper
130	100		
95	183.7	30.9	130.9#
132	100.0	46.0	146.0

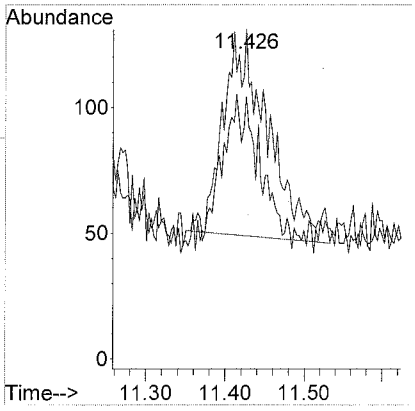


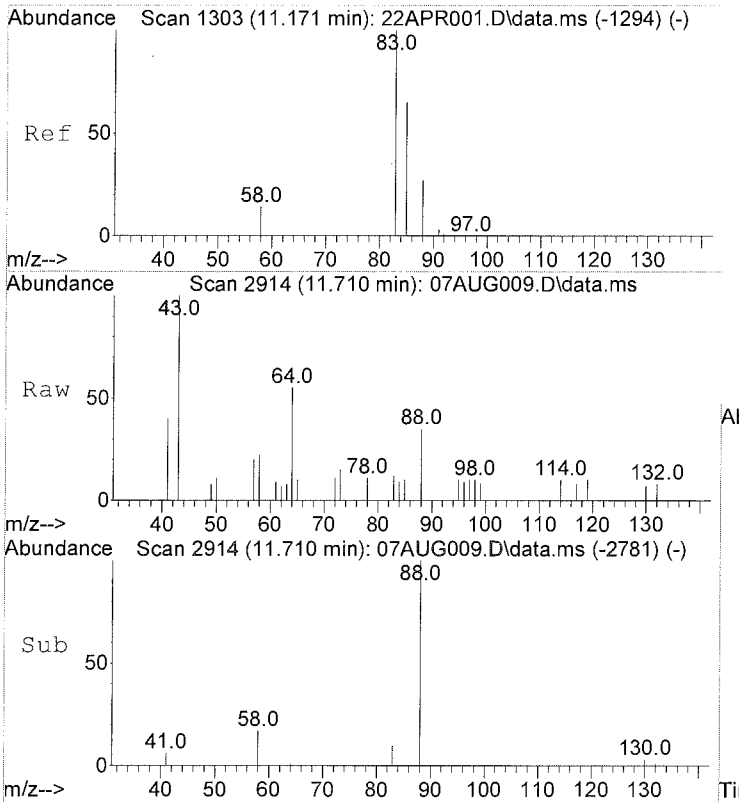


#26
1,2-Dichloropropane
Concen: 9.08 pptv
RT: 11.426 min Scan# 2821
Delta R.T. 0.016 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 63 Resp: 320

Ion	Ratio	Lower	Upper
63	100		
62	67.1	20.3	120.3

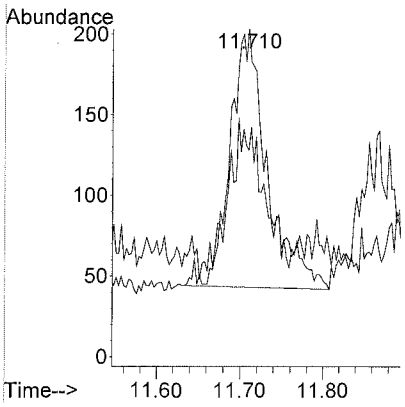


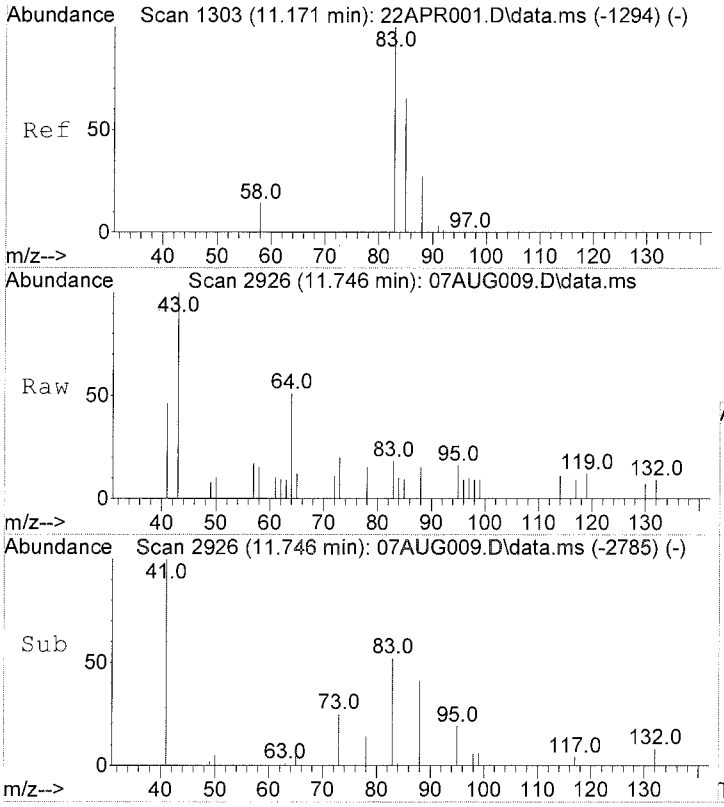


#27
1,4-Dioxane
Concen: 15.48 pptv
RT: 11.710 min Scan# 2914
Delta R.T. 0.007 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 88 Resp: 488

Ion	Ratio	Lower	Upper
88	100		
58	39.8	38.7	58.1

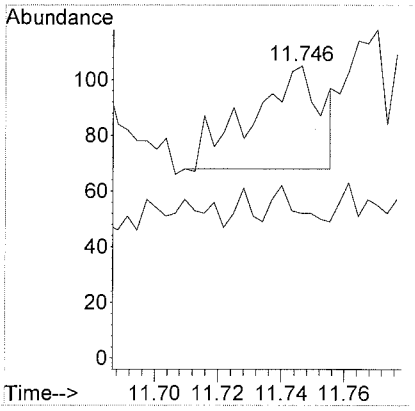


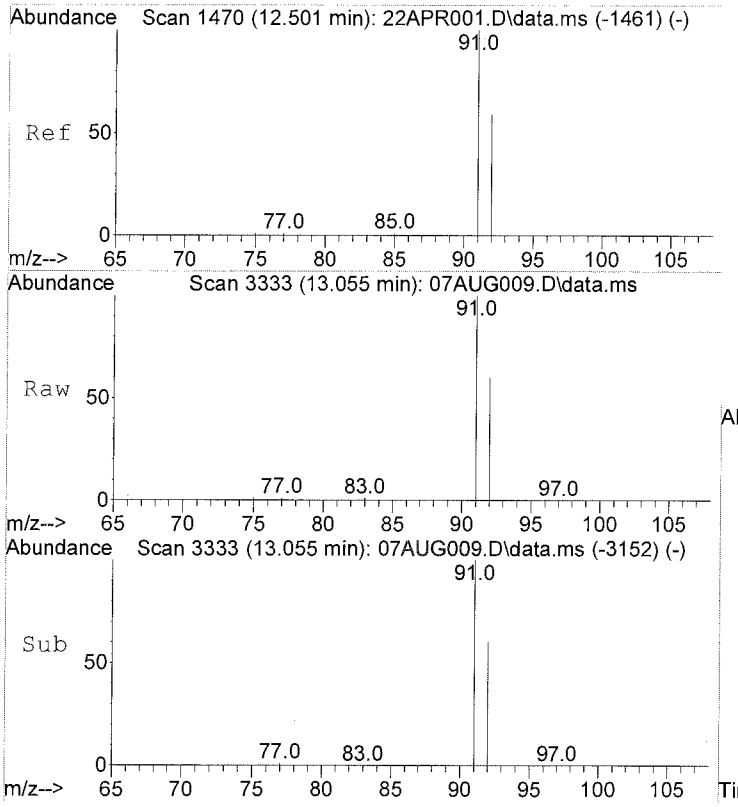


#28
Bromodichloromethane
Concen: 0.69 pptv
RT: 11.746 min Scan# 2926
Delta R.T. 0.030 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 83 Resp: 56

Ion	Ratio	Lower	Upper
83	100		
85	8.1	13.9	113.9#

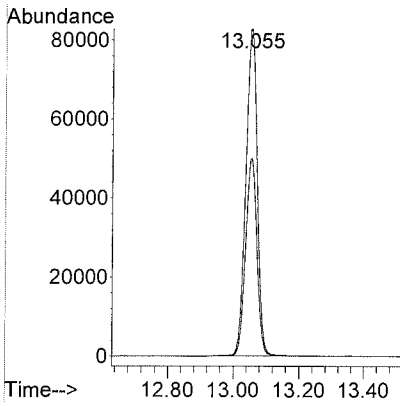


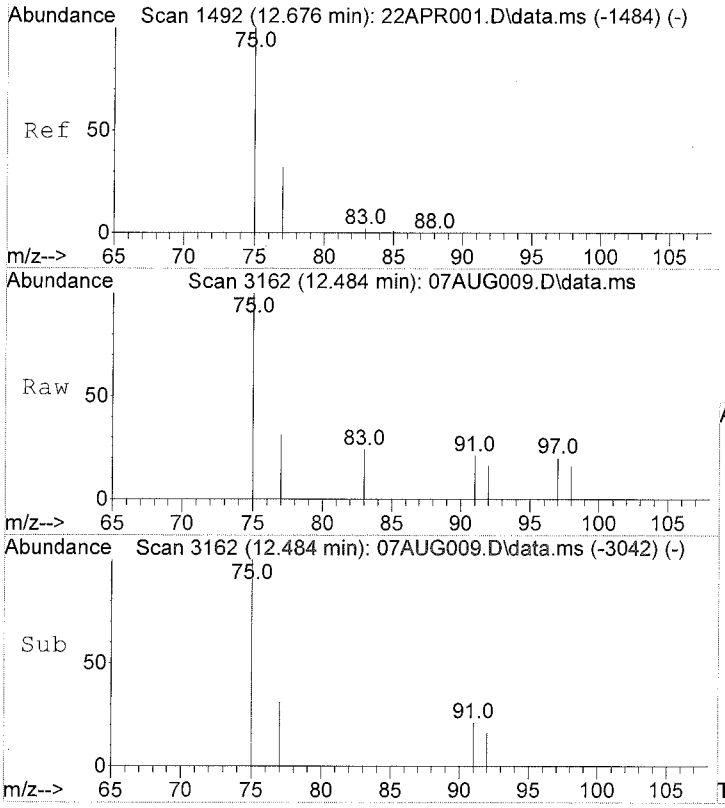


#30
Toluene
Concen: 1225.90 pptv
RT: 13.055 min Scan# 3333
Delta R.T. 0.003 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 91 Resp: 203748

Ion	Ratio	Lower	Upper
91	100		
92	60.4	10.0	110.0

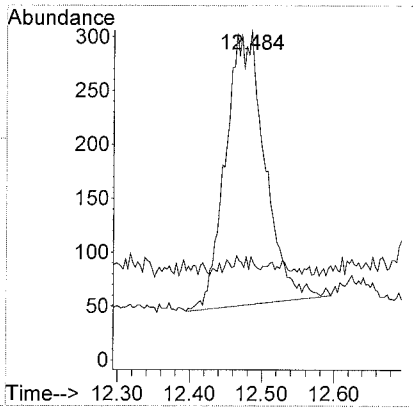


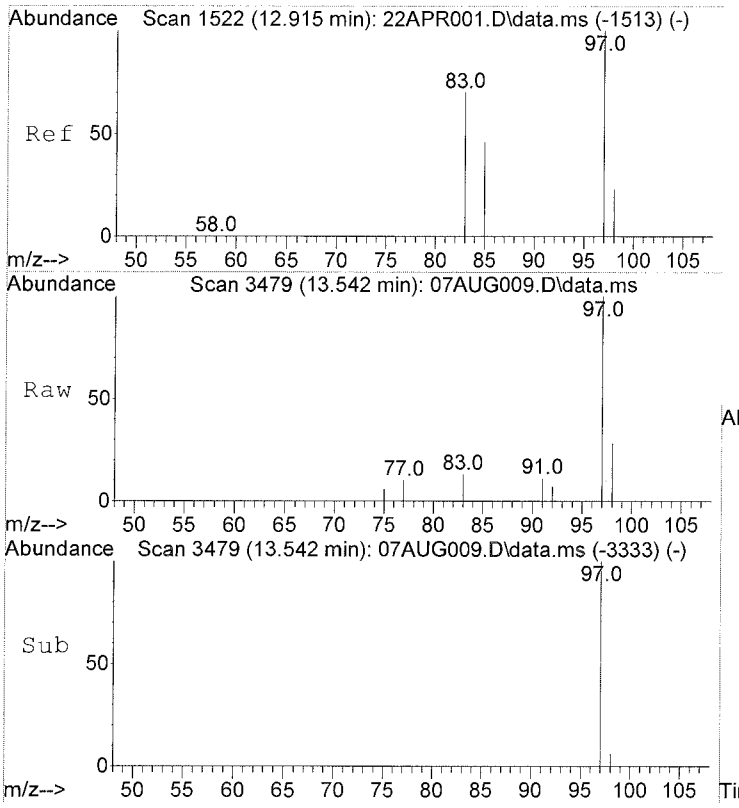


#32
t-1,3-Dichloropropene
Concen: 18.82 pptv
RT: 12.484 min Scan# 3162
Delta R.T. -0.015 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 75 Resp: 960

Ion	Ratio	Lower	Upper
75	100		
77	5.0	0.0	81.7

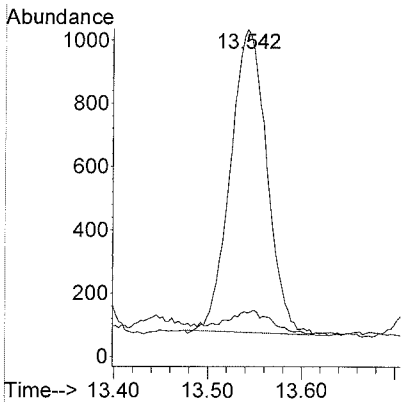


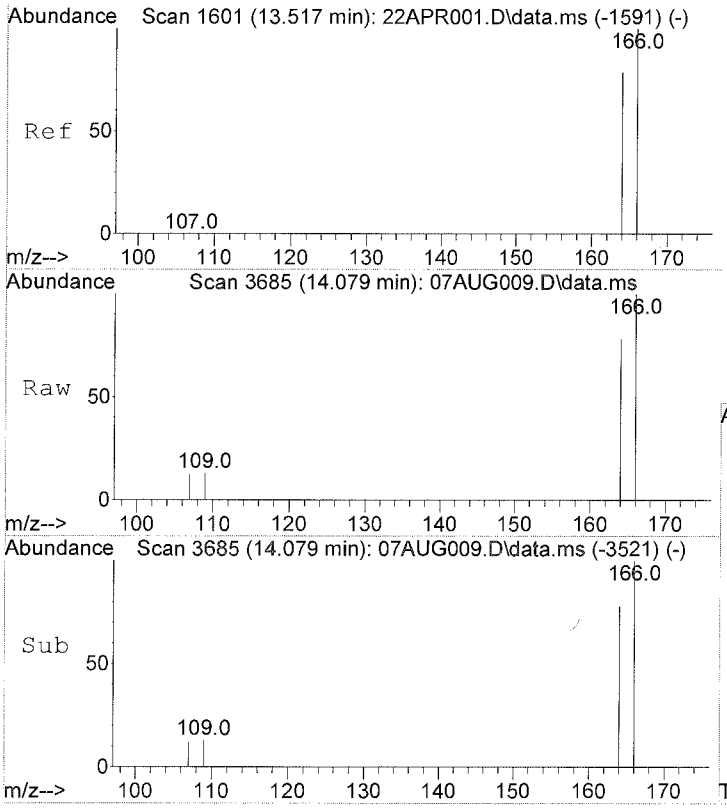


#33
1,1,2-Trichloroethane
Concen: 39.99 pptv
RT: 13.542 min Scan# 3479
Delta R.T. 0.087 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 97 Resp: 2569

Ion	Ratio	Lower	Upper
97	100		
83	6.4	25.1	125.1#

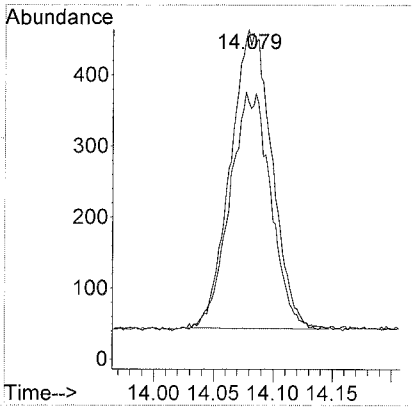


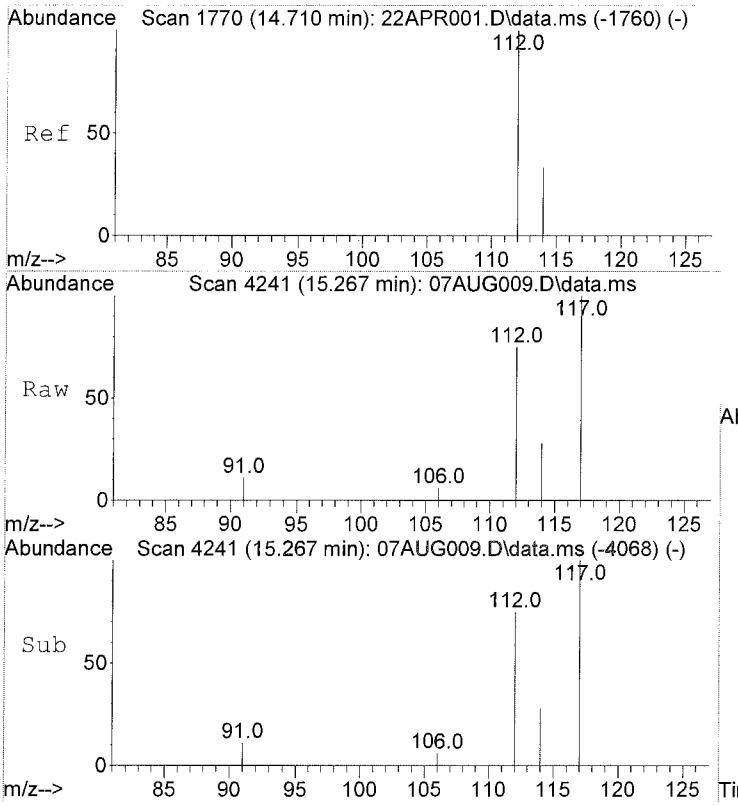


#34
Tetrachloroethene
Concen: 7.21 pptv
RT: 14.079 min Scan# 3685
Delta R.T. -0.002 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:166 Resp: 1015

Ion	Ratio	Lower	Upper
166	100		
164	75.5	25.3	125.3

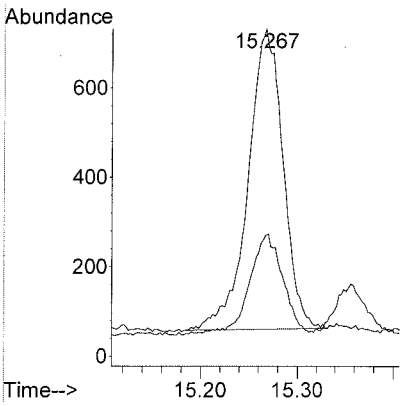


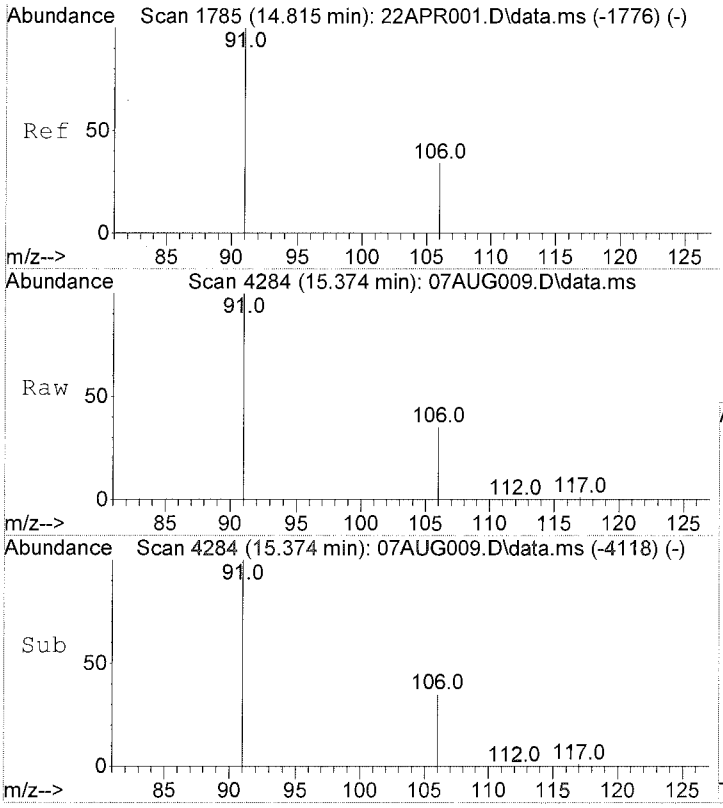


#36
Chlorobenzene
Concen: 9.45 pptv
RT: 15.267 min Scan# 4241
Delta R.T. 0.002 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:112 Resp: 1674

Ion	Ratio	Lower	Upper
112	100		
114	32.9	0.0	81.6

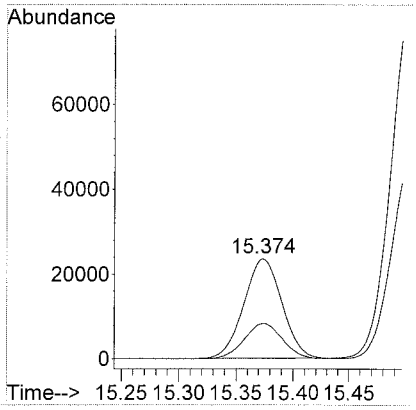


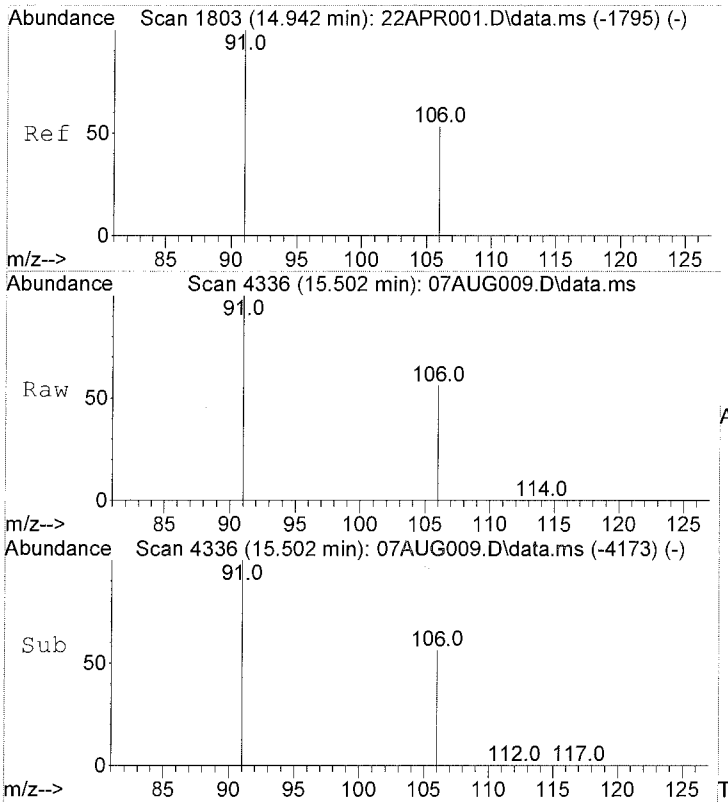


#37
Ethylbenzene
Concen: 284.04 pptv
RT: 15.374 min Scan# 4284
Delta R.T. 0.007 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 91 Resp: 54421

Ion	Ratio	Lower	Upper
91	100		
106	35.3	0.0	83.4

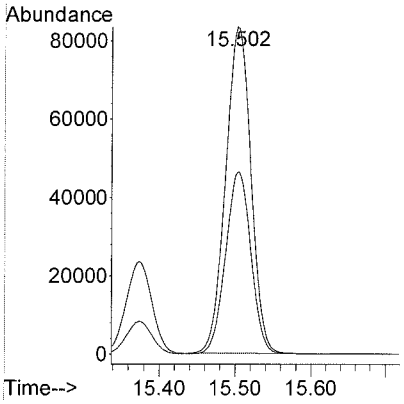


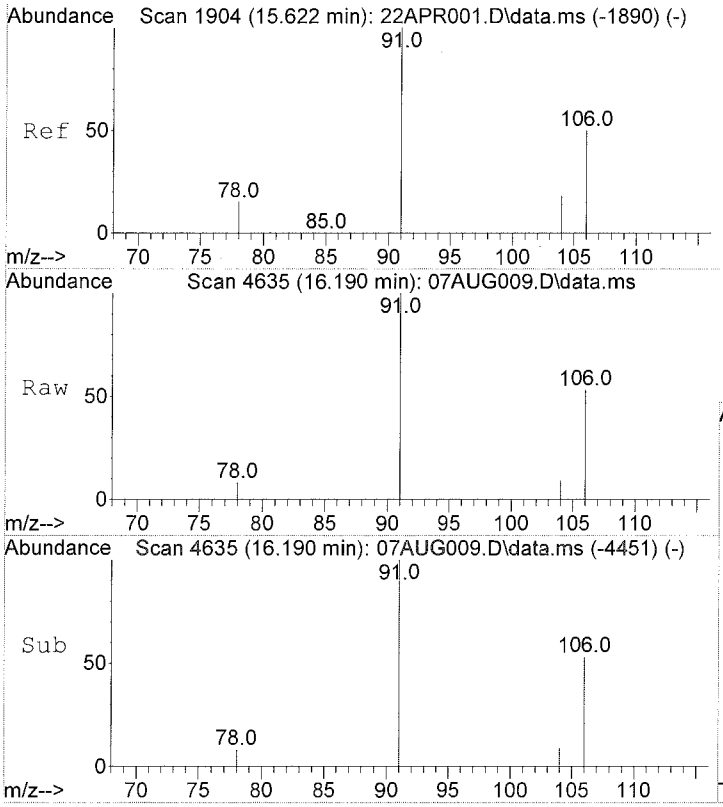


#38
p,&m-Xylene
Concen: 1161.50 pptv
RT: 15.502 min Scan# 4336
Delta R.T. 0.004 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 91 Resp: 192313

Ion	Ratio	Lower	Upper
91	100		
106	55.6	3.9	103.9

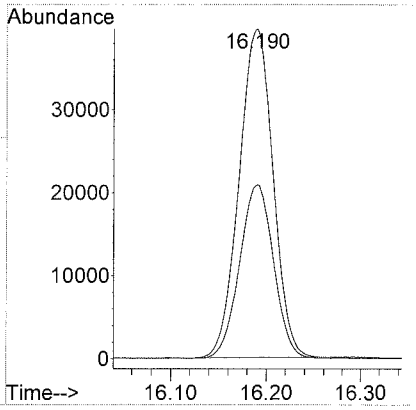


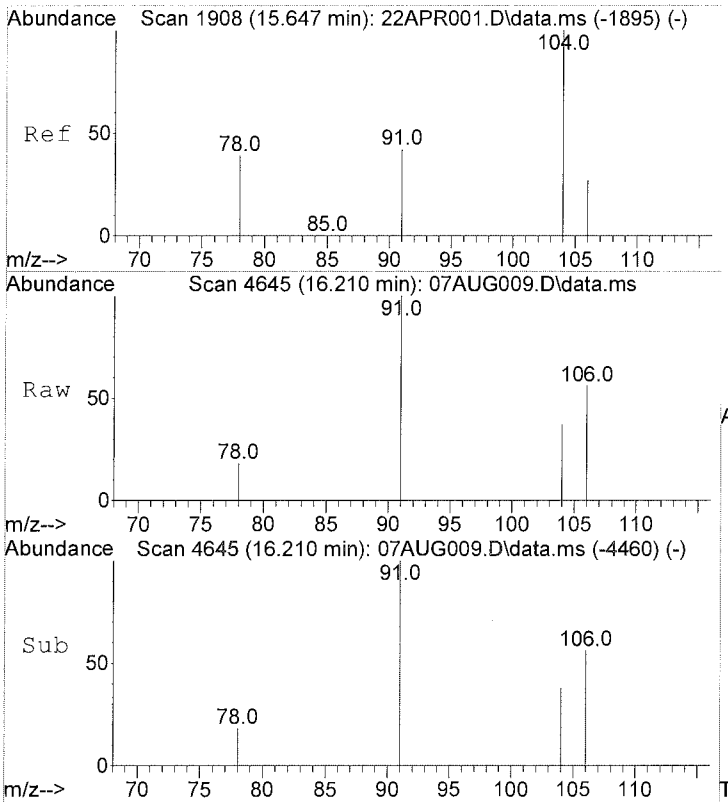


#39
o-Xylene
Concen: 695.94 pptv
RT: 16.190 min Scan# 4635
Delta R.T. 0.003 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 91 Resp: 97379

Ion	Ratio	Lower	Upper
91	100		
106	52.8	0.0	97.3

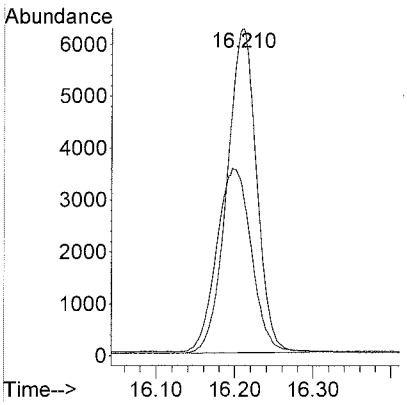


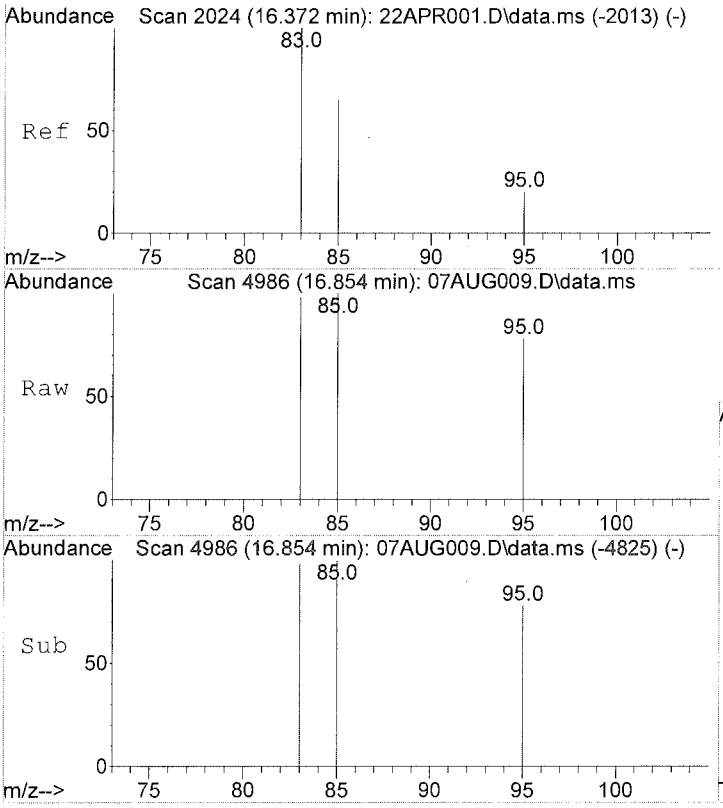


#40
Styrene
Concen: 138.07 pptv
RT: 16.210 min Scan# 4645
Delta R.T. 0.000 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:104 Resp: 16326

Ion	Ratio	Lower	Upper
104	100		
78	48.0	0.0	87.4

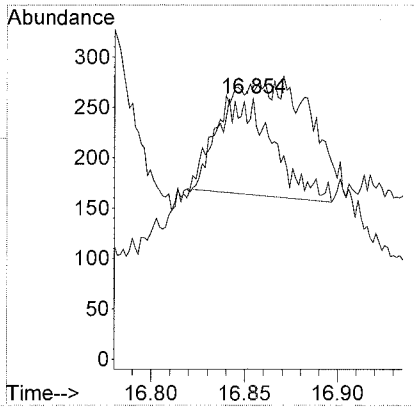


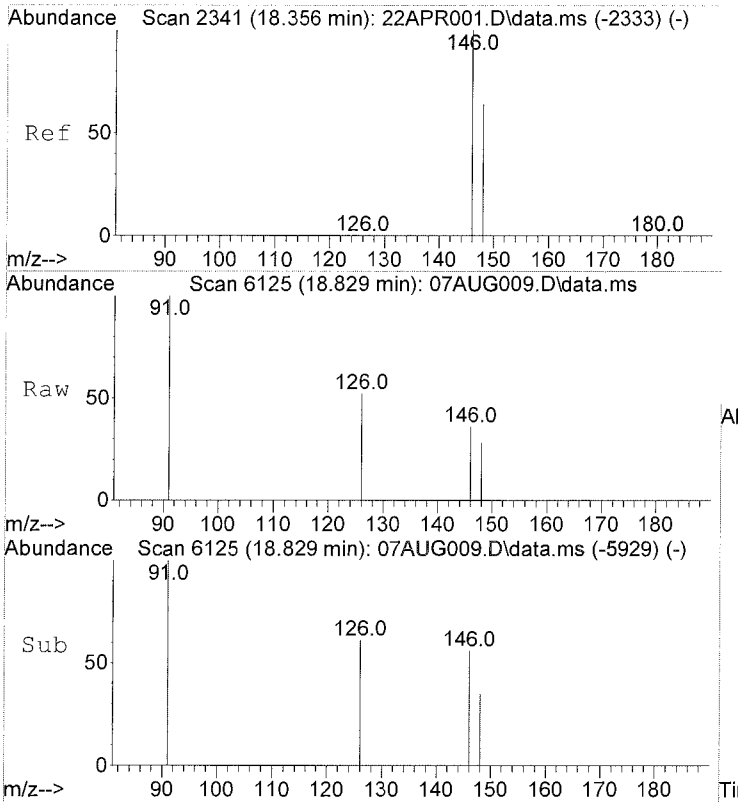


#41
1,1,2,2-Tetrachloroethane
Concen: 1.96 pptv
RT: 16.854 min Scan# 4986
Delta R.T. -0.125 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 83 Resp: 197

Ion	Ratio	Lower	Upper
83	100		
85	101.9	13.6	113.6

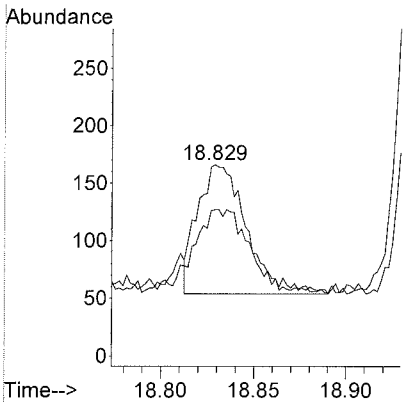


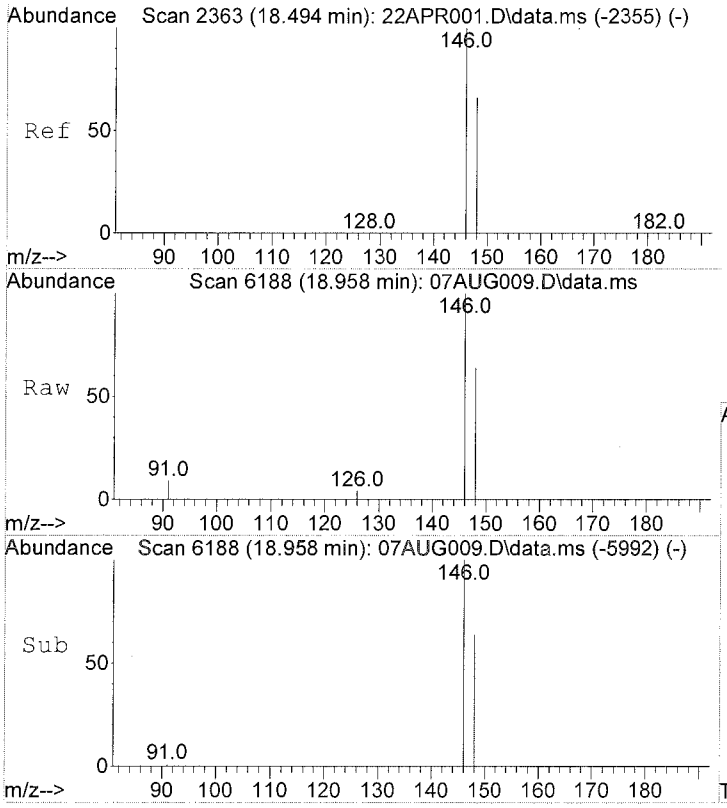


#43
1,3-Dichlorobenzene
Concen: 0.96 pptv
RT: 18.829 min Scan# 6125
Delta R.T. 0.002 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:146 Resp: 203

Ion	Ratio	Lower	Upper
146	100		
148	64.3	13.9	113.9

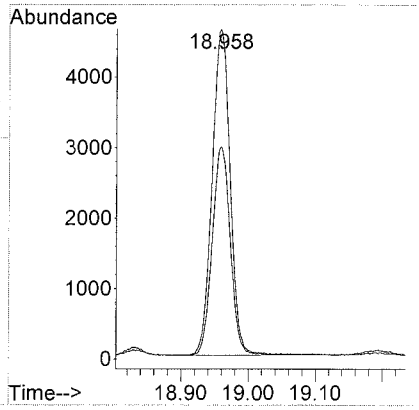


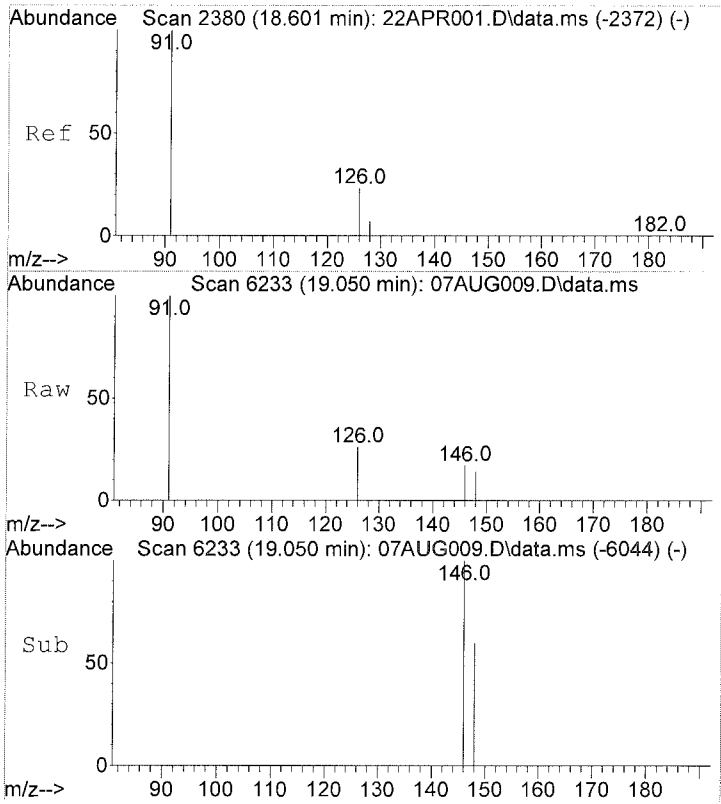


#44
1,4-Dichlorobenzene
Concen: 39.54 pptv
RT: 18.958 min Scan# 6188
Delta R.T. 0.003 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:146 Resp: 8585

Ion	Ratio	Lower	Upper
146	100		
148	64.0	15.5	115.5

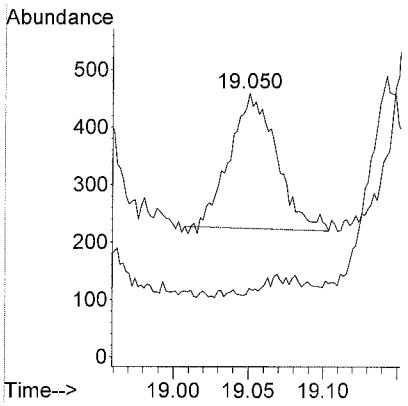


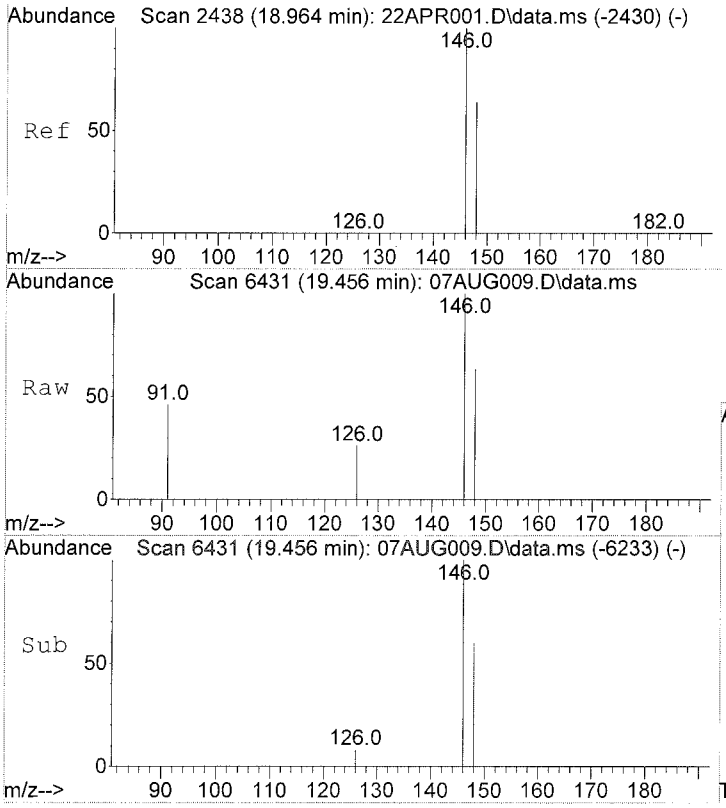


#45
Benzyl Chloride
Concen: 11.97 pptv
RT: 19.050 min Scan# 6233
Delta R.T. -0.012 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion: 91 Resp: 504

Ion	Ratio	Lower	Upper
91	100		
126	1.7	18.7	28.1#

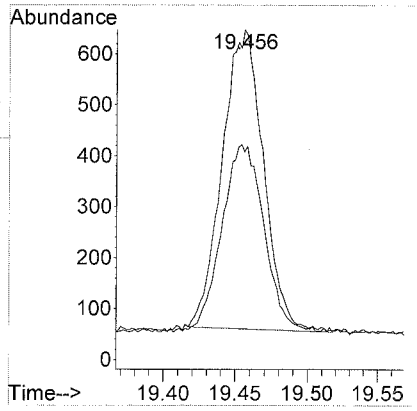


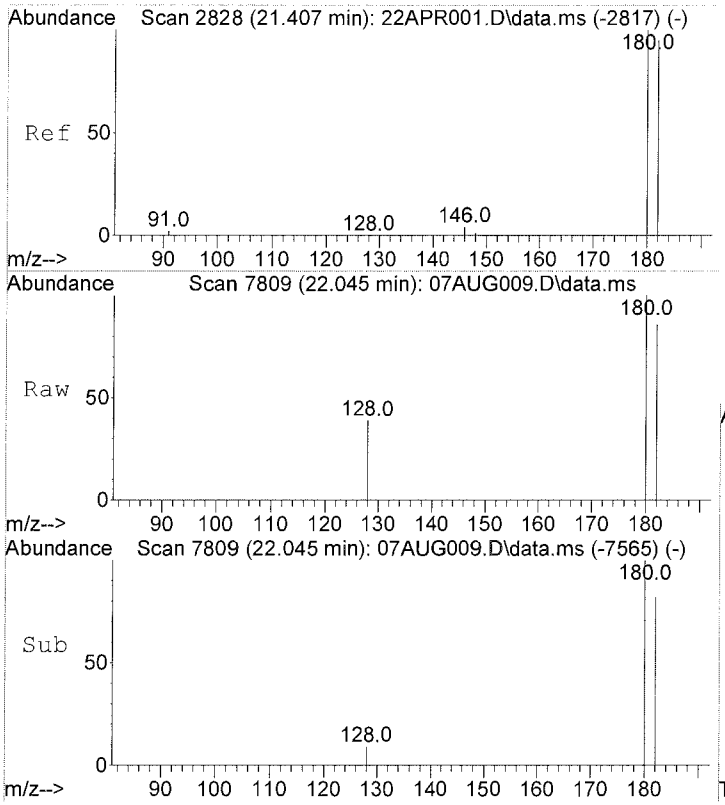


#46
1,2-Dichlorobenzene
Concen: 5.98 pptv
RT: 19.456 min Scan# 6431
Delta R.T. 0.006 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:146 Resp: 1163

Ion	Ratio	Lower	Upper
146	100		
148	59.0	13.7	113.7

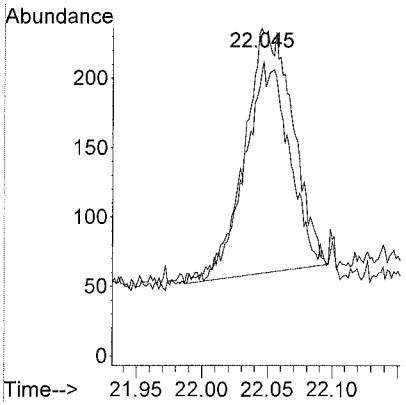


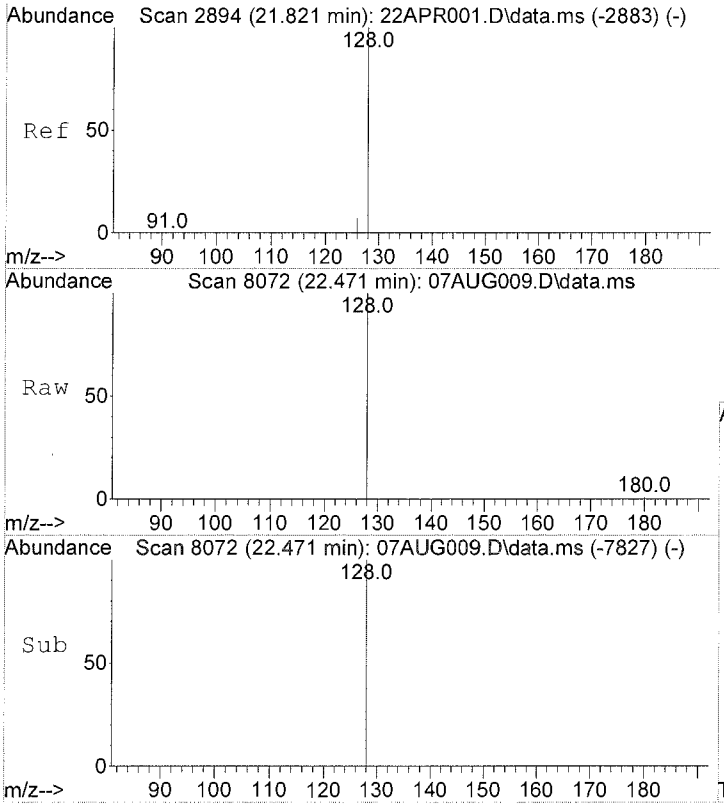


#47
1,2,4-Trichlorobenzene
Concen: 2.93 pptv
RT: 22.045 min Scan# 7809
Delta R.T. -0.004 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:180 Resp: 450

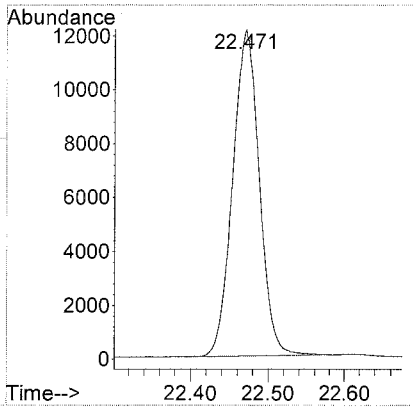
Ion	Ratio	Lower	Upper
180	100		
182	81.5	44.8	144.8





#48
Naphthalene
Concen: 137.05 pptv
RT: 22.471 min Scan# 8072
Delta R.T. -0.003 min
Lab File: 07AUG009.D
Acq: 7 Aug 2018 4:48 pm

Tgt Ion:128 Resp: 28913



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG010.D
Acq On : 7 Aug 2018 5:36 pm
Operator : DT
Sample : J072607-05 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 07 18:00:56 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.330	130	97652	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.685	114	406952	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	338618	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.096	65	96205	1894.23	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 94.71%			
29) Toluene-d8	12.938	98	331641	2134.44	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 106.72%			
42) 4-Bromofluorobenzene	17.184	95	209729	2195.72	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 109.79%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.562	85	48596	439.11	pptv	98
3) Chloromethane	3.966	50	9433	674.69	pptv	100
5) Bromomethane	4.894	96	425	19.06	pptv	99
6) Chloroethane	5.031	64	199	14.39	pptv	99
7) Trichlorofluoromethane...	5.493	101	24509	201.34	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.233	151	7397	66.48	pptv	94
9) Acetone	6.116	43	147107	3241.97	pptv	94
11) Methylene Chloride	7.027	49	2219	72.81	pptv	93
12) t-Butyl Methyl Ether	7.329	73	164	2.18	pptv	1
14) Hexane	7.775	57	2370	63.67	pptv	83
15) 1,1-Dichloroethane	8.077	63	63	1.12	pptv	76
16) 2-Butanone	8.626	72	10606	597.36	pptv	77
17) c-1,2-Dichloroethene	8.919	96	51	1.16	pptv	71
18) Chloroform	9.141	83	2008	23.94	pptv	86
19) 1,1,1-Trichloroethane	9.767	97	201	2.32	pptv	94
20) Carbon Tetrachloride	10.142	117	6413	76.17	pptv	99
22) Benzene	10.328	78	8395	58.50	pptv	97
24) 1,2-Dichloroethane	10.221	62	814	14.90	pptv	83
25) Trichloroethene	11.206	130	100	1.05	pptv	75
26) 1,2-Dichloropropane	11.414	63	144	4.08	pptv	89
27) 1,4-Dioxane	11.703	88	369	11.67	pptv	95
28) Bromodichloromethane	11.777	83	473	5.77	pptv #	30
30) Toluene	13.055	91	72238	433.35	pptv	100
32) t-1,3-Dichloropropene	12.484	75	324	6.37	pptv	43
33) 1,1,2-Trichloroethane	13.545	97	807	12.60	pptv #	20
34) Tetrachloroethene	14.079	166	755	5.38	pptv	96
35) 1,2-Dibromoethane	14.577	107	55	0.58	pptv	87
36) Chlorobenzene	15.262	112	82	0.46	pptv	76
37) Ethylbenzene	15.374	91	10423	54.58	pptv	97
38) p,&m-Xylene	15.502	91	19970	121.00	pptv	98
39) o-Xylene	16.190	91	10348	74.20	pptv	92
40) Styrene	16.210	104	9037	76.68	pptv	100
41) 1,1,2,2-Tetrachloroethane	17.035	83	1568	15.68	pptv #	23
43) 1,3-Dichlorobenzene	18.833	146	61	0.29	pptv	88
44) 1,4-Dichlorobenzene	18.956	146	1624	7.50	pptv	99
45) Benzyl Chloride	18.937	91	514	12.25	pptv	100

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG010.D
Acq On : 7 Aug 2018 5:36 pm
Operator : DT
Sample : J072607-05 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 07 18:00:56 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

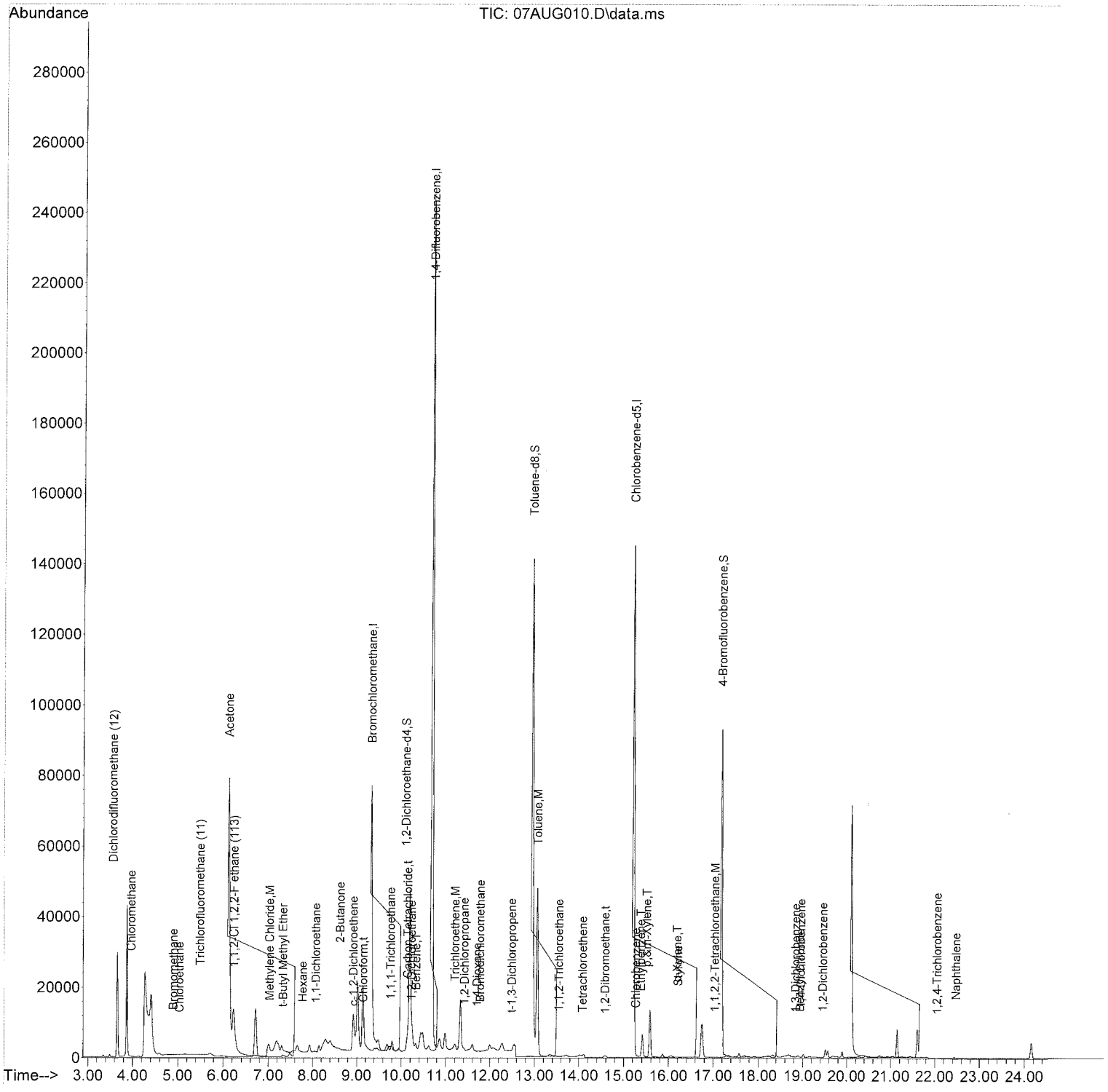
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
46) 1,2-Dichlorobenzene	19.454	146	722	3.72	pptv	94
47) 1,2,4-Trichlorobenzene	22.048	180	175	1.14	pptv	79
48) Naphthalene	22.469	128	10287	48.92	pptv	100

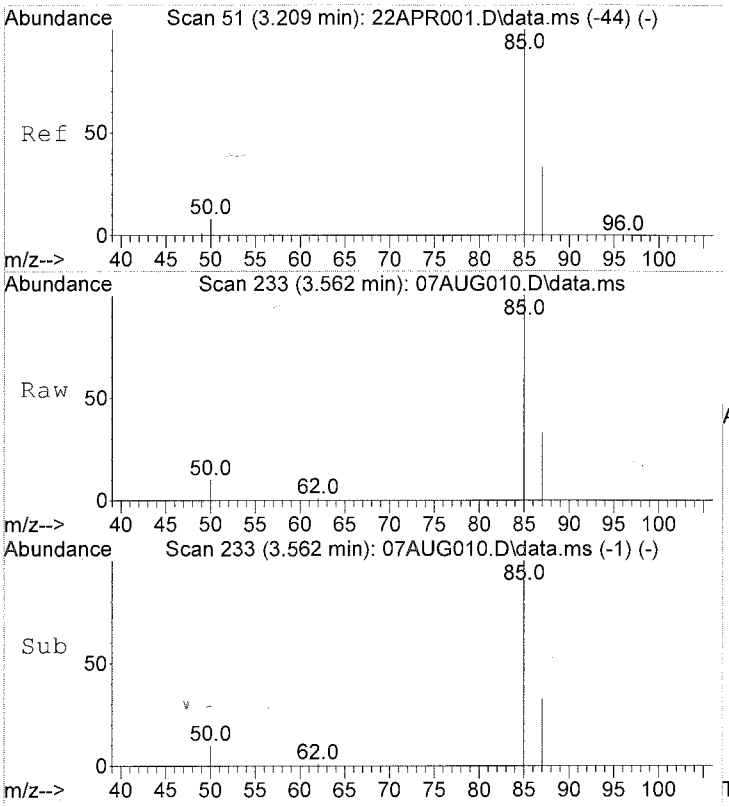
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG010.D
Acq On : 7 Aug 2018 5:36 pm
Operator : DT
Sample : J072607-05 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 07 18:00:56 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

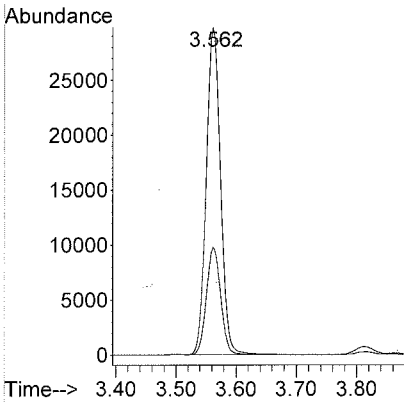


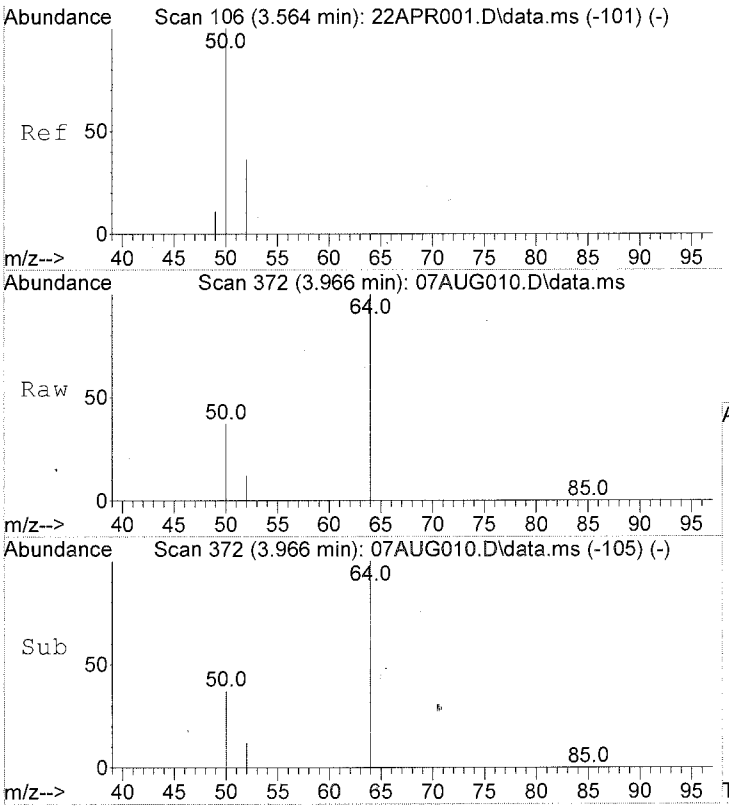


#2
Dichlorodifluoromethane (12)
Concen: 439.11 pptv
RT: 3.562 min Scan# 233
Delta R.T. -0.029 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 85 Resp: 48596

Ion	Ratio	Lower	Upper
85	100		
87	32.8	0.0	81.9

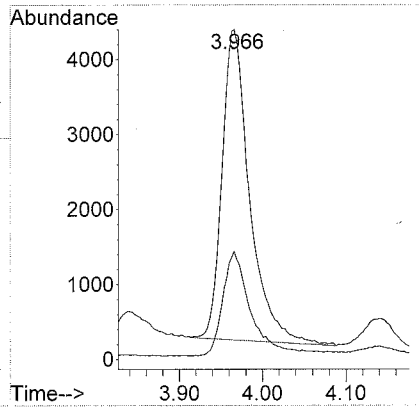


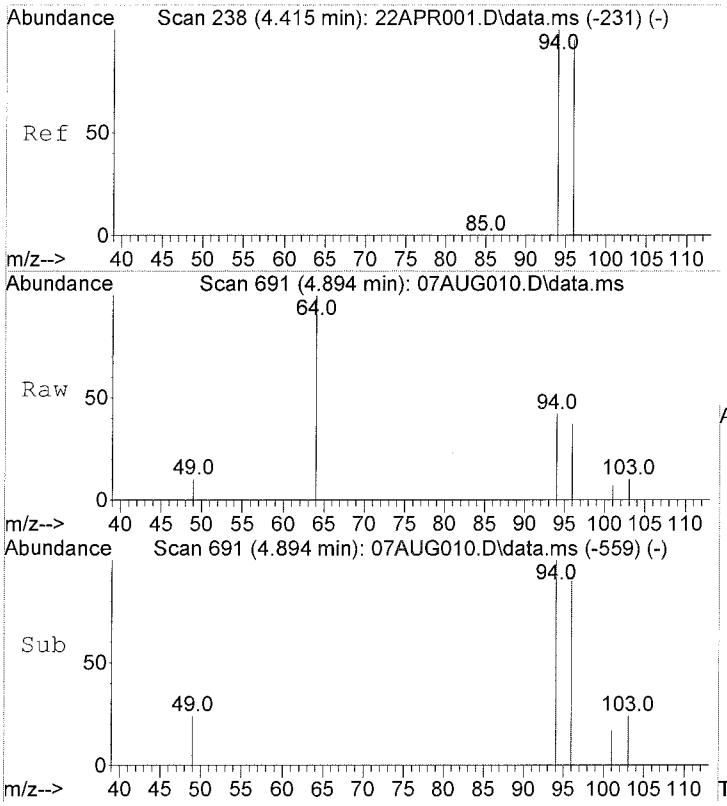


#3
Chloromethane
Concen: 674.69 pptv
RT: 3.966 min Scan# 372
Delta R.T. -0.023 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 50 Resp: 9433

Ion	Ratio	Lower	Upper
50	100		
52	33.1	3.0	63.0

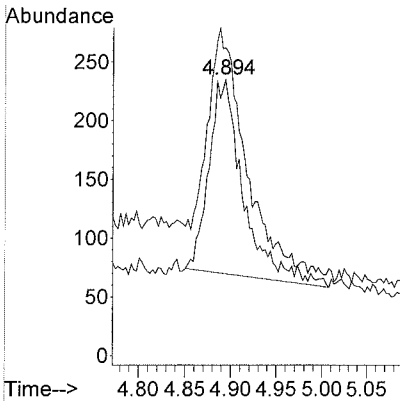


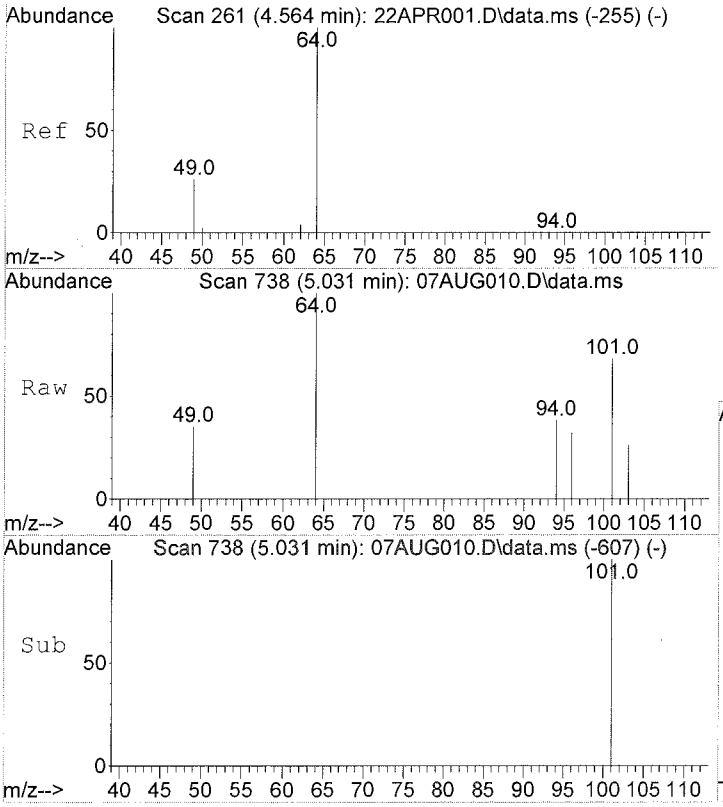


#5
Bromomethane
Concen: 19.06 pptv
RT: 4.894 min Scan# 691
Delta R.T. -0.017 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 96 Resp: 425

Ion	Ratio	Lower	Upper
96	100		
94	106.2	55.4	155.4

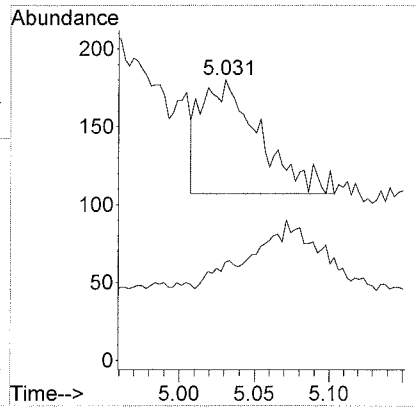


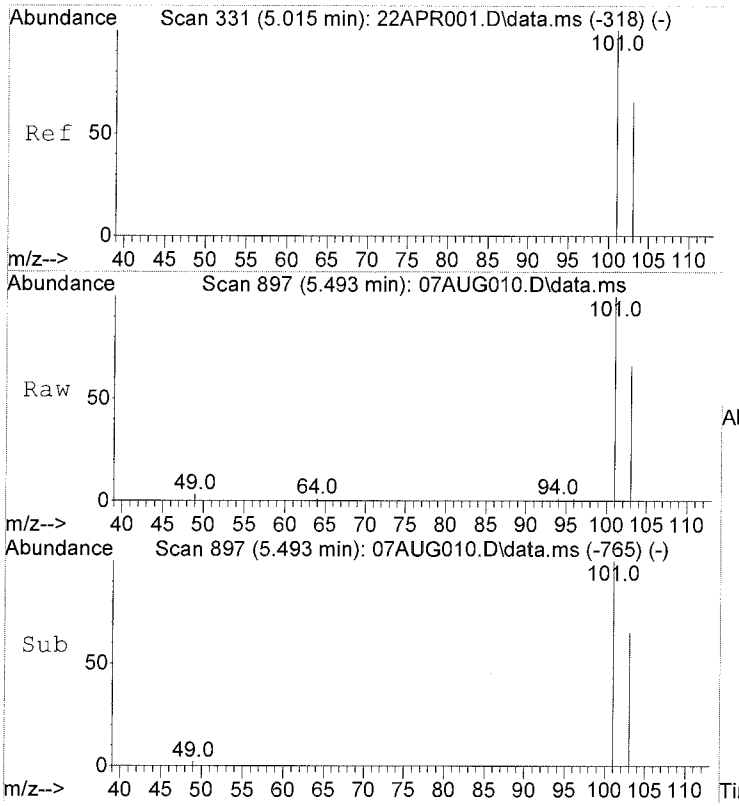


#6
Chloroethane
Concen: 14.39 pptv
RT: 5.031 min Scan# 738
Delta R.T. -0.019 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 64 Resp: 199

Ion	Ratio	Lower	Upper
64	100		
49	19.2	0.0	68.7

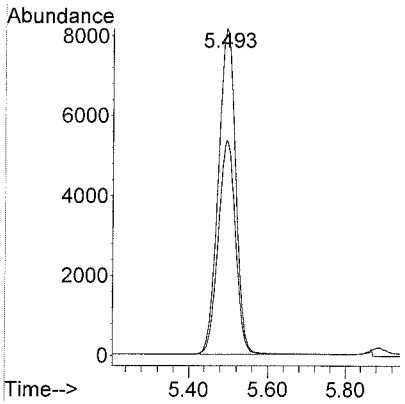


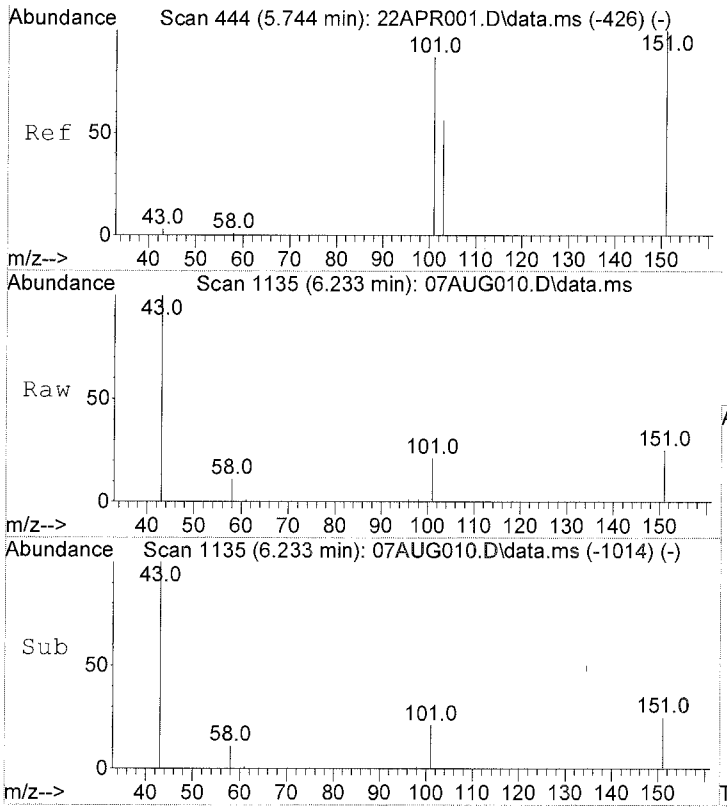


#7
Trichlorofluoromethane (11)
Concen: 201.34 pptv
RT: 5.493 min Scan# 897
Delta R.T. -0.017 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:101 Resp: 24509

Ion	Ratio	Lower	Upper
101	100		
103	65.4	14.6	114.6

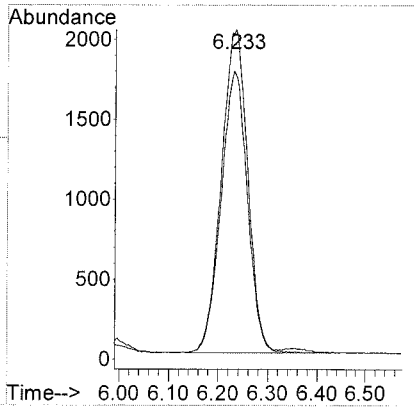


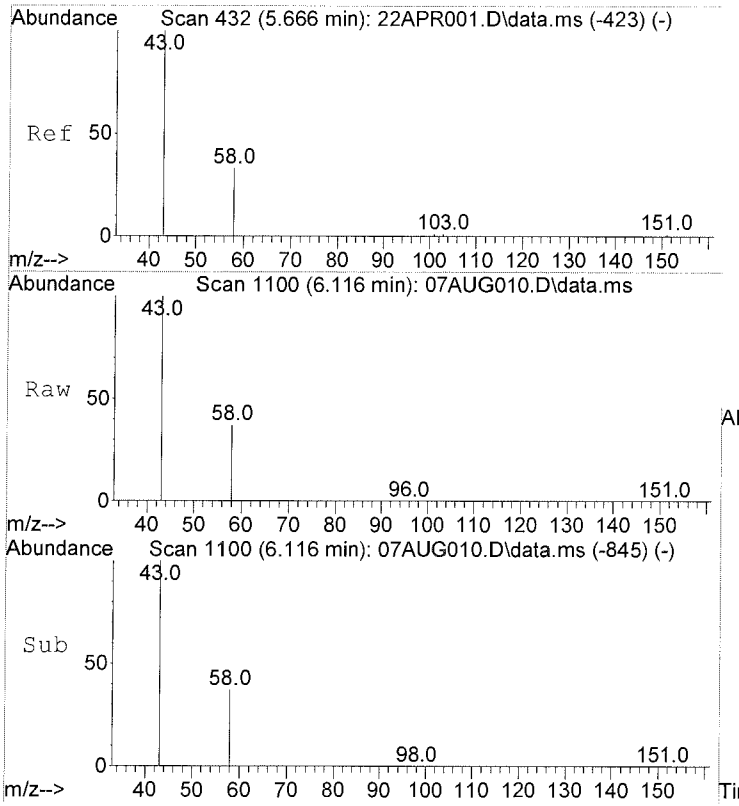


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 66.48 pptv
RT: 6.233 min Scan# 1135
Delta R.T. -0.001 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:151 Resp: 7397

Ion	Ratio	Lower	Upper
151	100		
101	85.9	41.5	141.5

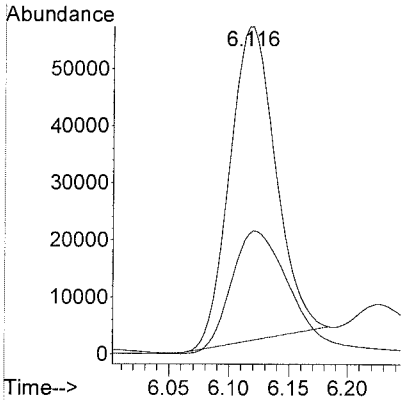


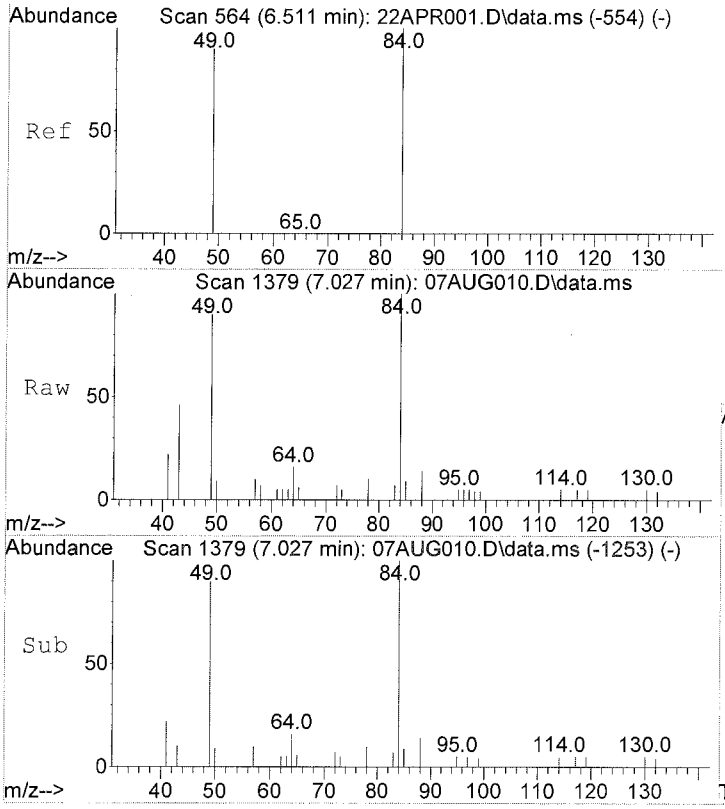


#9
Acetone
Concen: 3241.97 pptv
RT: 6.116 min Scan# 1100
Delta R.T. -0.026 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 43 Resp: 147107

Ion	Ratio	Lower	Upper
43	100		
58	36.8	13.4	53.4

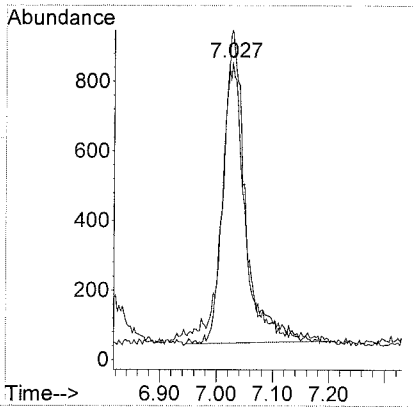


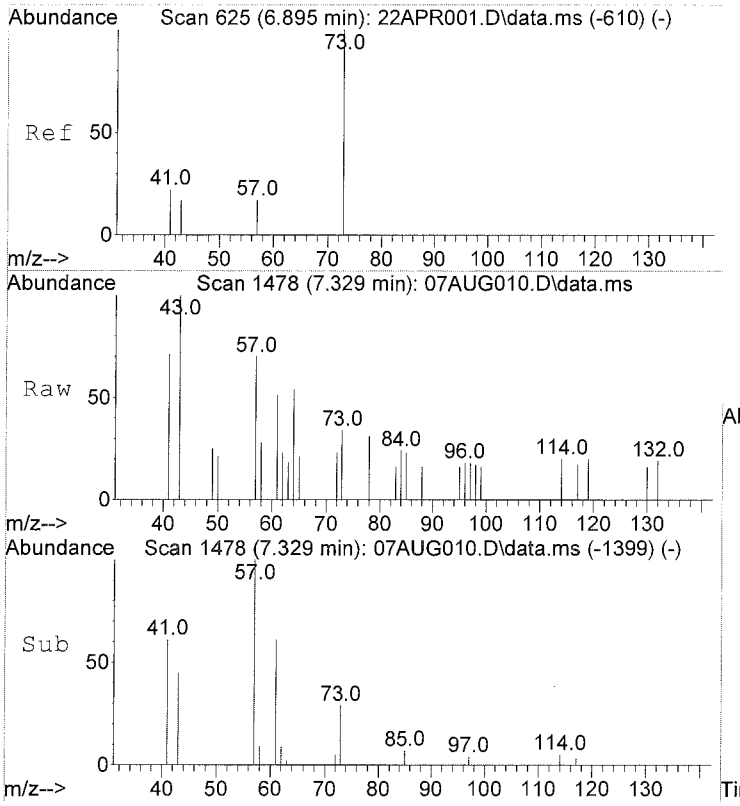


#11
Methylene Chloride
Concen: 72.81 pptv
RT: 7.027 min Scan# 1379
Delta R.T. -0.003 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 49 Resp: 2219

Ion	Ratio	Lower	Upper
49	100		
84	111.0	54.2	154.2

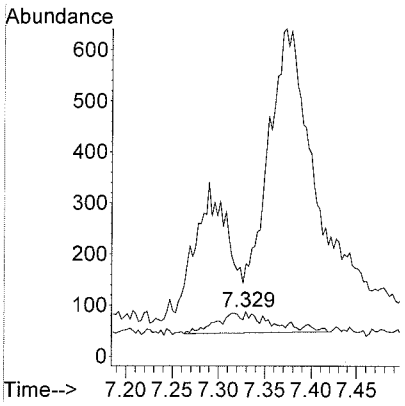


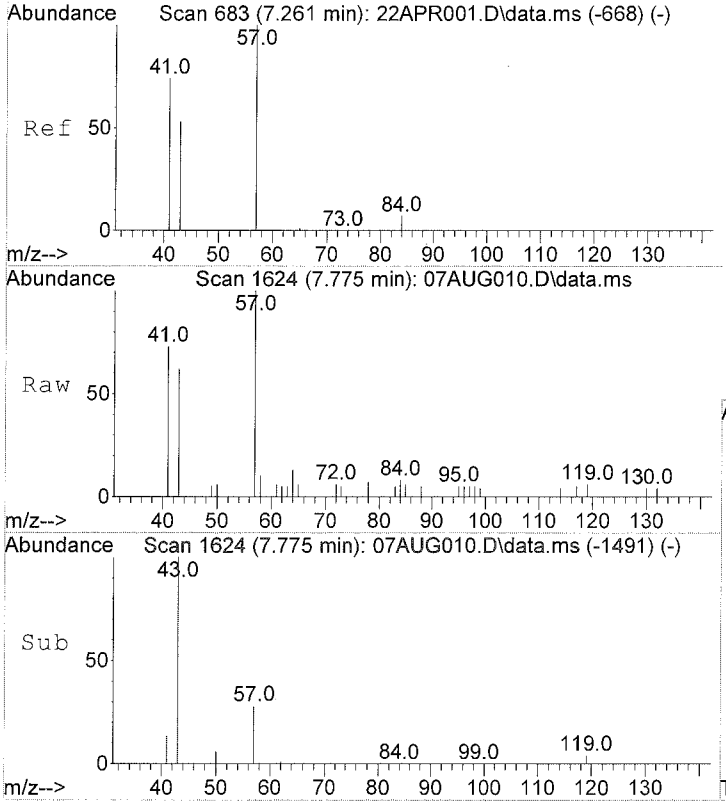


#12
t-Butyl Methyl Ether
Concen: 2.18 pptv
RT: 7.329 min Scan# 1478
Delta R.T. -0.060 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 73 Resp: 164

Ion	Ratio	Lower	Upper
73	100		
41	95.3	0.0	516.4

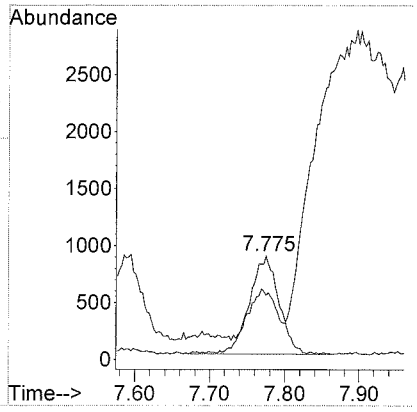


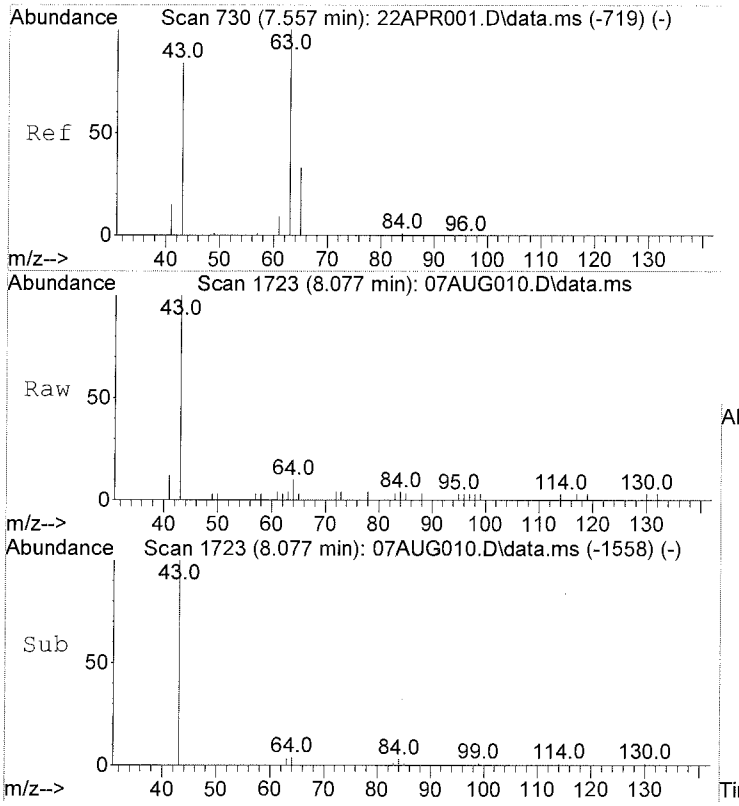


#14
Hexane
Concen: 63.67 pptv
RT: 7.775 min Scan# 1624
Delta R.T. 0.005 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 57 Resp: 2370

Ion	Ratio	Lower	Upper
57	100		
43	42.6	5.0	105.0

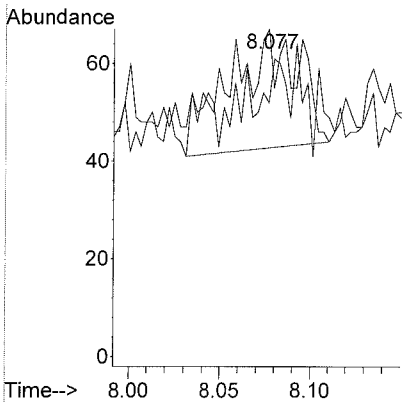


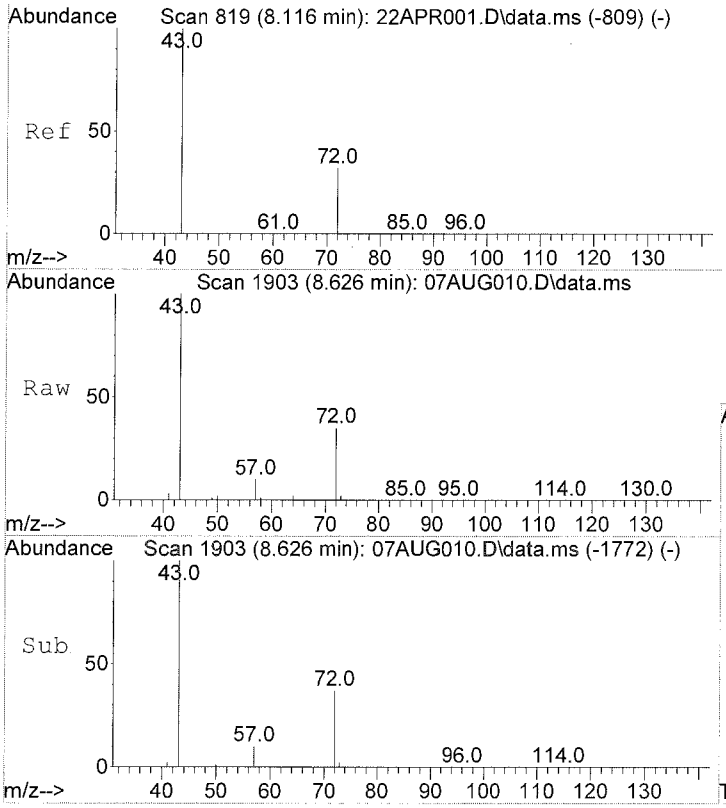


#15
1,1-Dichloroethane
Concen: 1.12 pptv
RT: 8.077 min Scan# 1723
Delta R.T. 0.004 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 63 Resp: 63

Ion	Ratio	Lower	Upper
63	100		
65	19.2	0.0	82.5

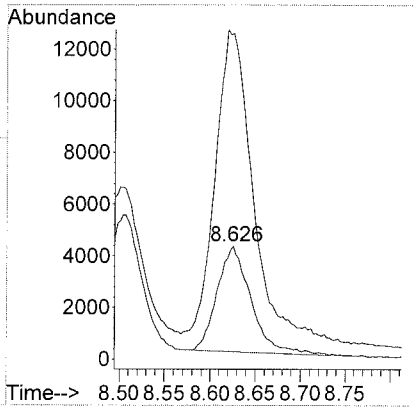


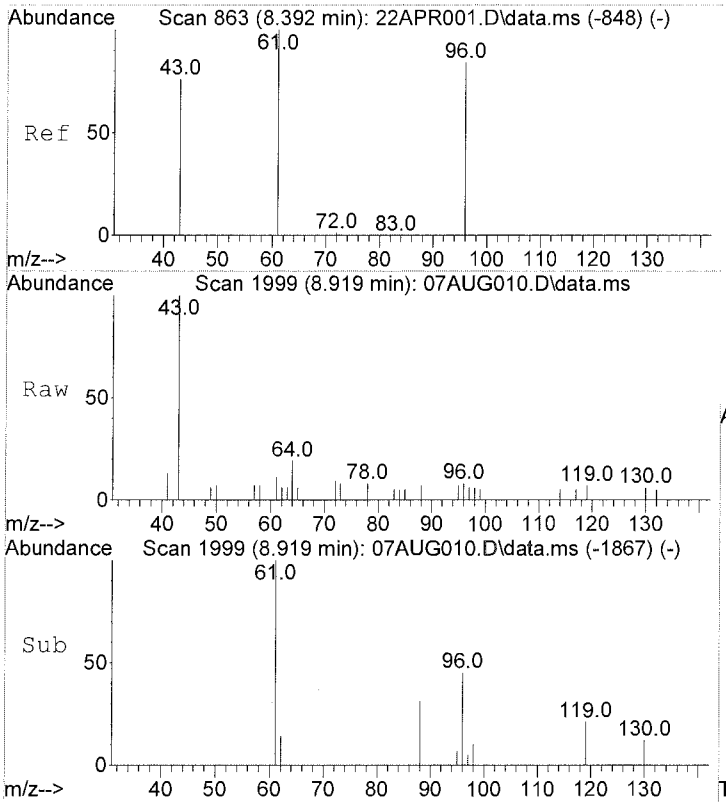


#16
2-Butanone
Concen: 597.36 pptv
RT: 8.626 min Scan# 1903
Delta R.T. -0.001 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 72 Resp: 10606

Ion	Ratio	Lower	Upper
72	100		
43	278.5	0.0	3591.5

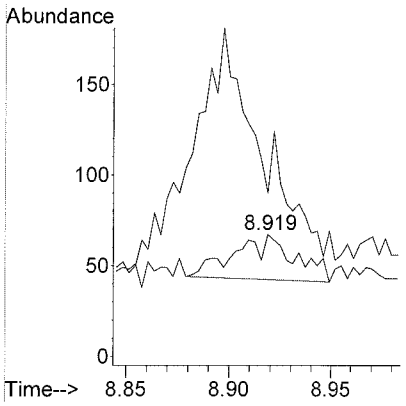


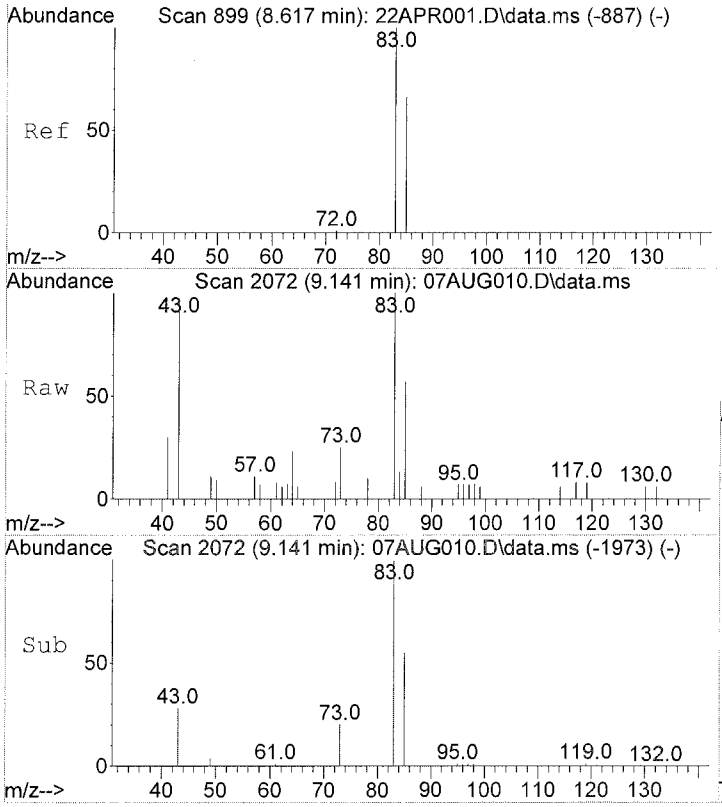


#17
c-1,2-Dichloroethene
Concen: 1.16 pptv
RT: 8.919 min Scan# 1999
Delta R.T. 0.003 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 96 Resp: 51

Ion	Ratio	Lower	Upper
96	100		
61	80.8	62.0	162.0

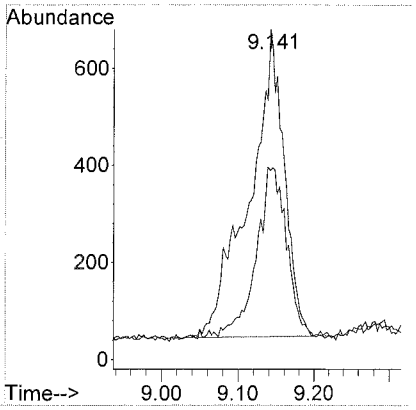


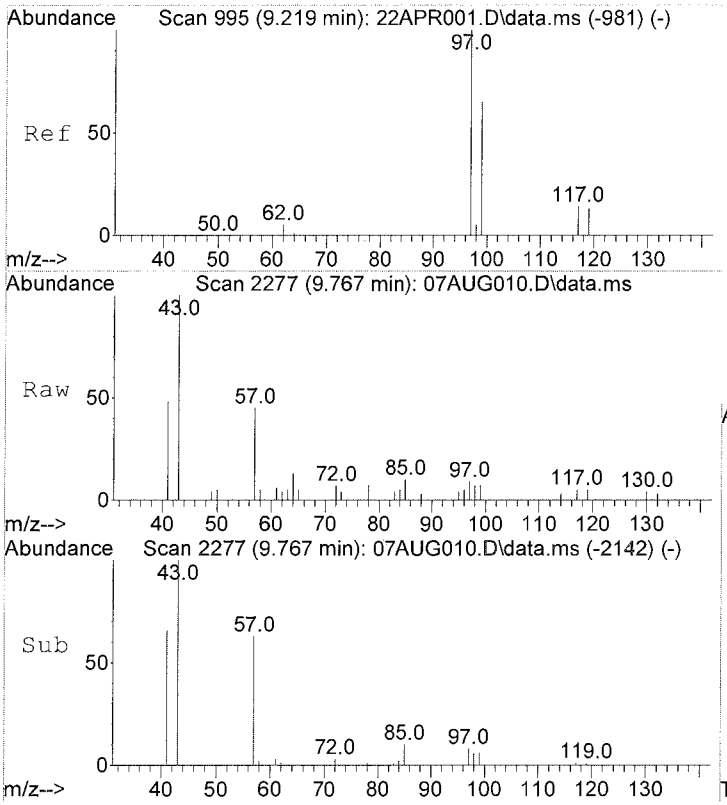


#18
Chloroform
Concen: 23.94 pptv
RT: 9.141 min Scan# 2072
Delta R.T. 0.001 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 83 Resp: 2008

Ion	Ratio	Lower	Upper
83	100		
85	54.0	14.9	114.9

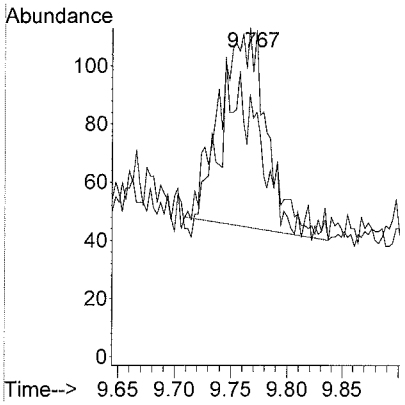


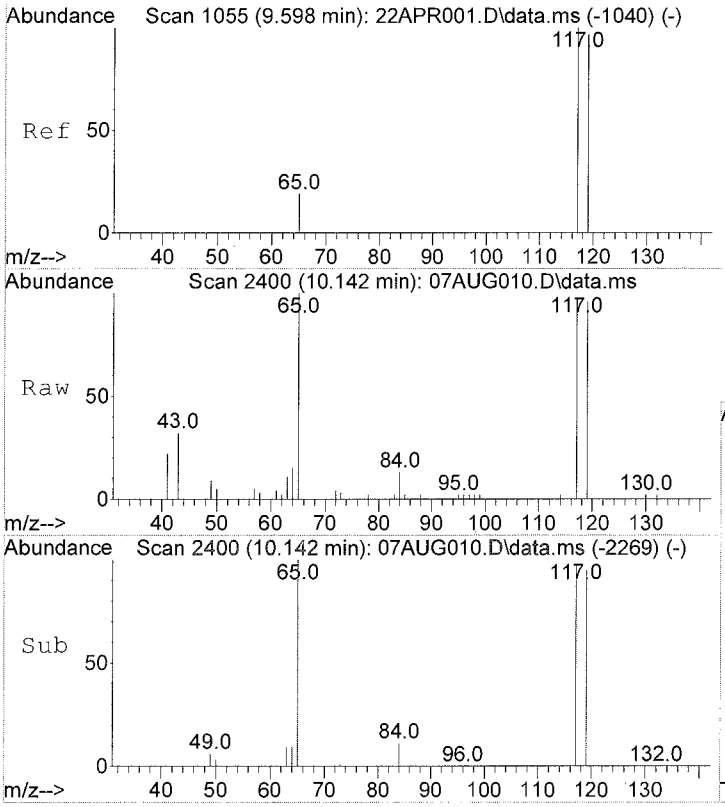


#19
1,1,1-Trichloroethane
Concen: 2.32 pptv
RT: 9.767 min Scan# 2277
Delta R.T. 0.012 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 97 Resp: 201

Ion	Ratio	Lower	Upper
97	100		
99	68.5	13.8	113.8

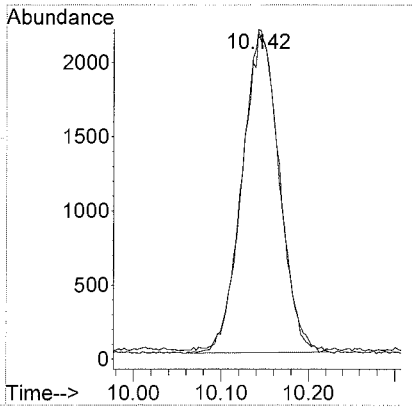


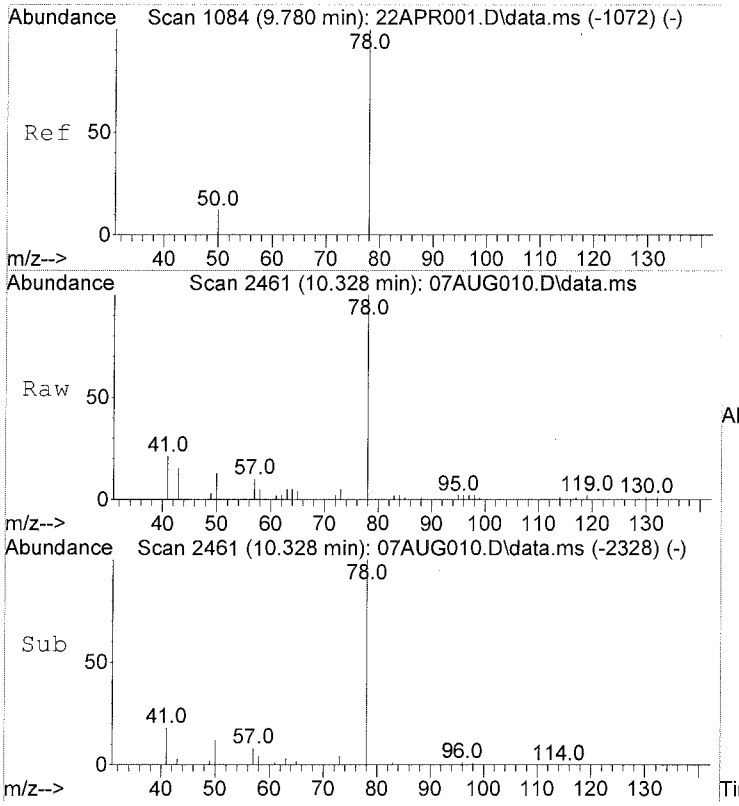


#20
Carbon Tetrachloride
Concen: 76.17 pptv
RT: 10.142 min Scan# 2400
Delta R.T. -0.001 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:117 Resp: 6413

Ion	Ratio	Lower	Upper
117	100		
119	98.4	47.1	147.1

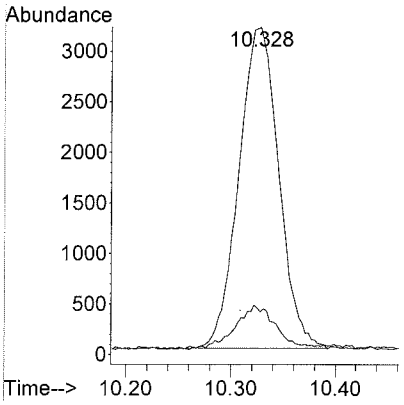


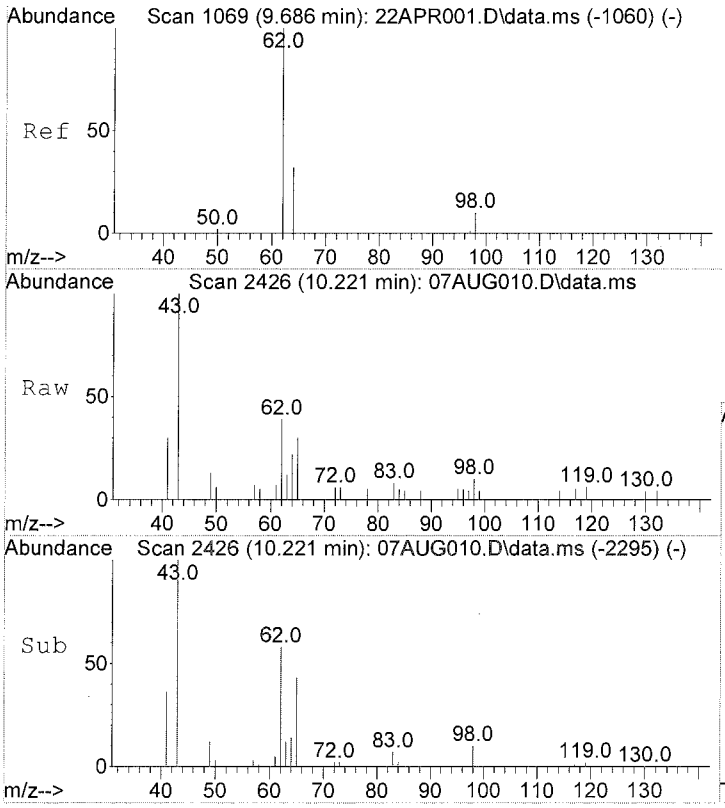


#22
Benzene
Concen: 58.50 pptv
RT: 10.328 min Scan# 2461
Delta R.T. 0.007 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 78 Resp: 8395

Ion	Ratio	Lower	Upper
78	100		
50	11.6	0.0	62.6

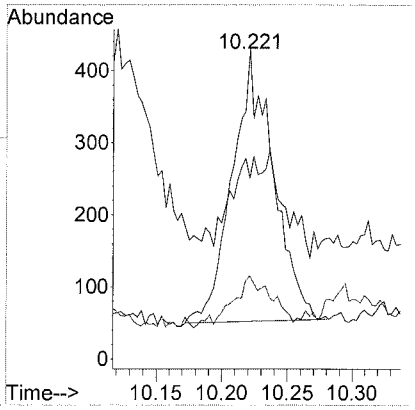


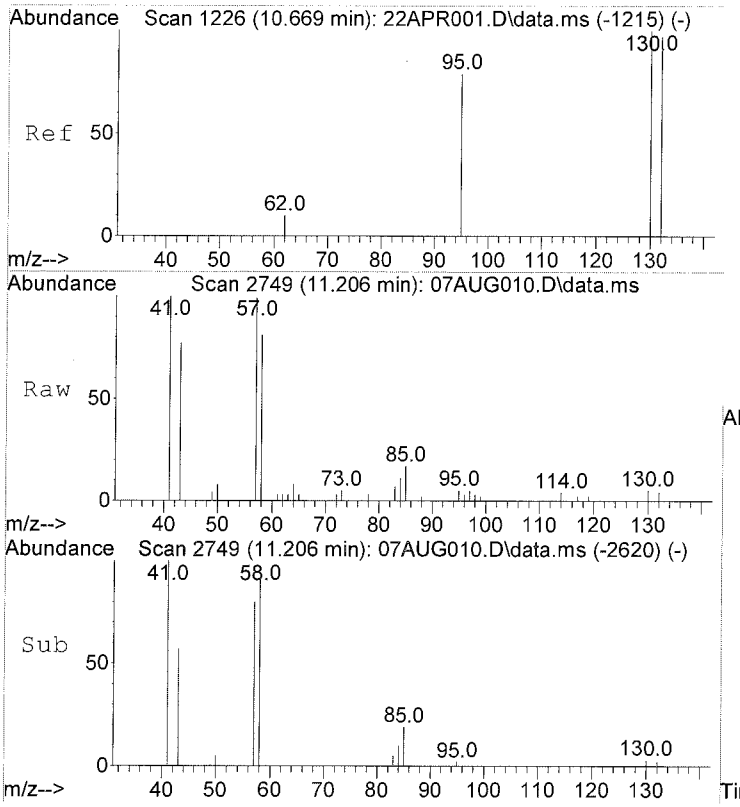


#24
1,2-Dichloroethane
Concen: 14.90 pptv
RT: 10.221 min Scan# 2426
Delta R.T. 0.001 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 62 Resp: 814

Ion	Ratio	Lower	Upper
62	100		
64	21.8	0.0	83.0
98	15.0	0.0	61.0

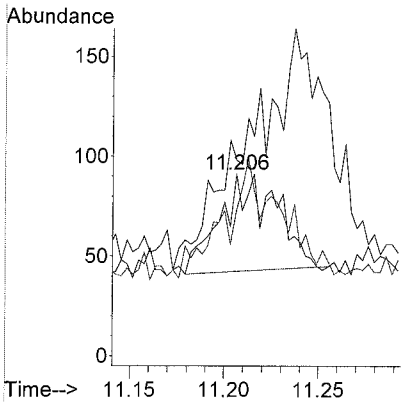


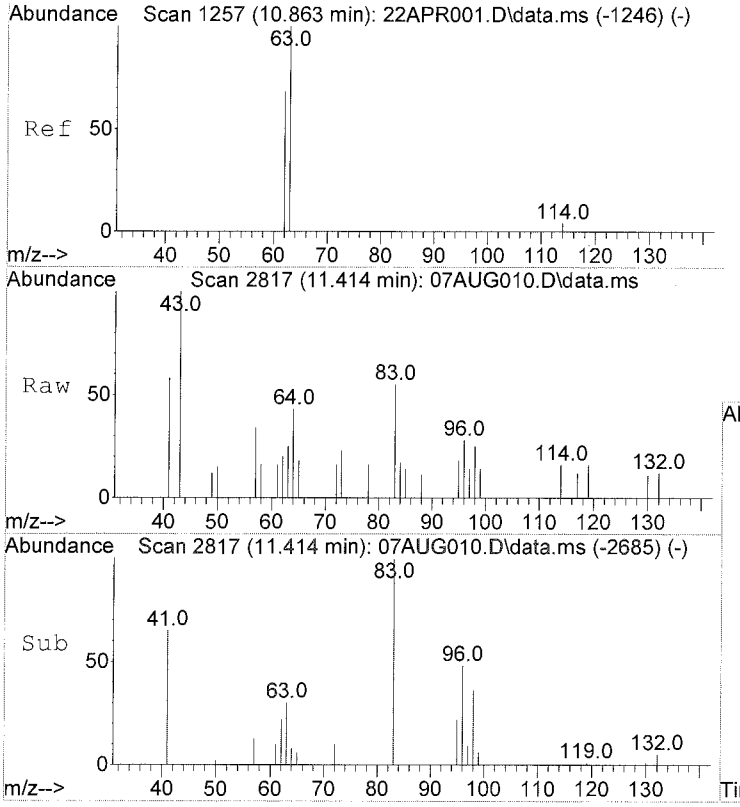


#25
Trichloroethene
Concen: 1.05 pptv
RT: 11.206 min Scan# 2749
Delta R.T. -0.006 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:130 Resp: 100

Ion	Ratio	Lower	Upper
130	100		
95	80.0	30.9	130.9
132	52.0	46.0	146.0

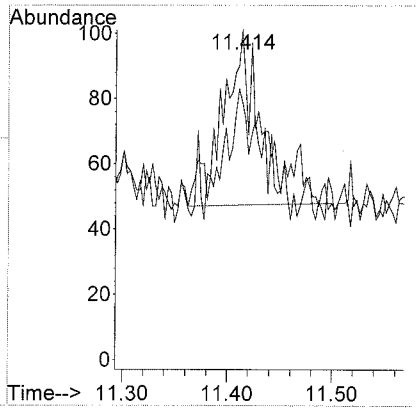


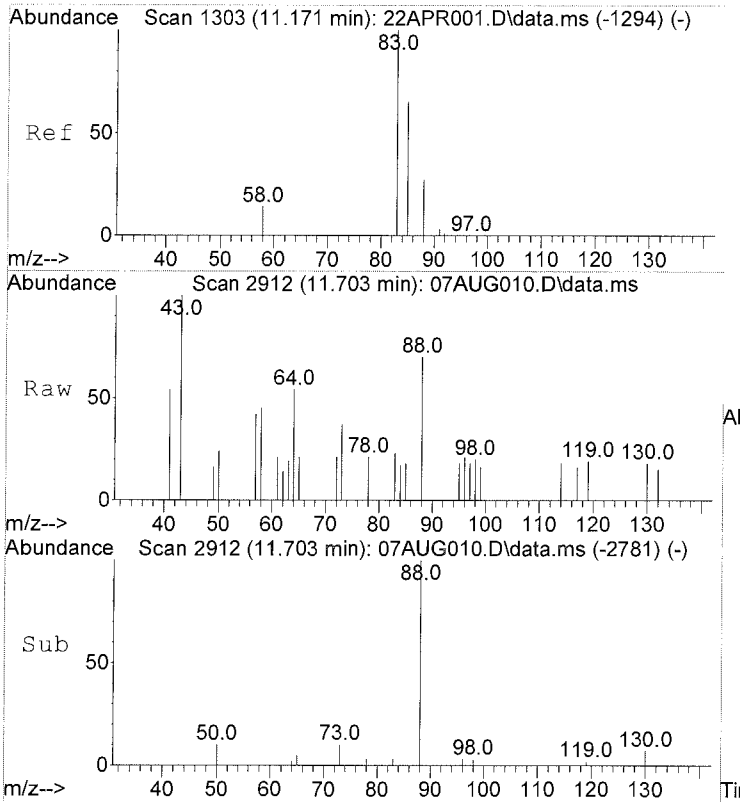


#26
1,2-Dichloropropane
Concen: 4.08 pptv
RT: 11.414 min Scan# 2817
Delta R.T. 0.004 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 63 Resp: 144

Ion	Ratio	Lower	Upper
63	100		
62	61.1	20.3	120.3

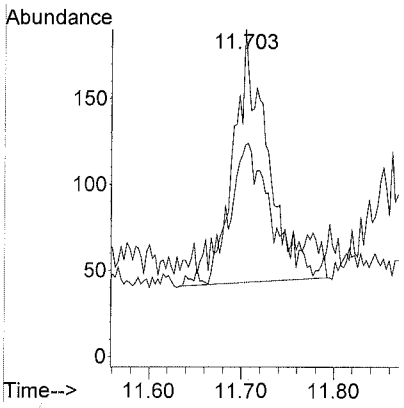


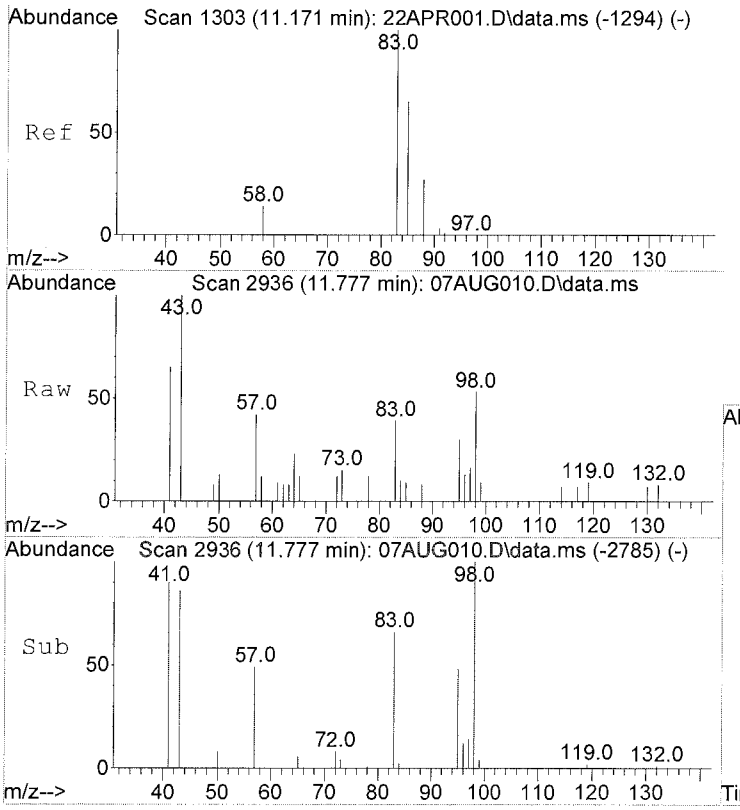


#27
1,4-Dioxane
Concen: 11.67 pptv
RT: 11.703 min Scan# 2912
Delta R.T. 0.000 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 88 Resp: 369

Ion	Ratio	Lower	Upper
88	100		
58	45.0	38.7	58.1

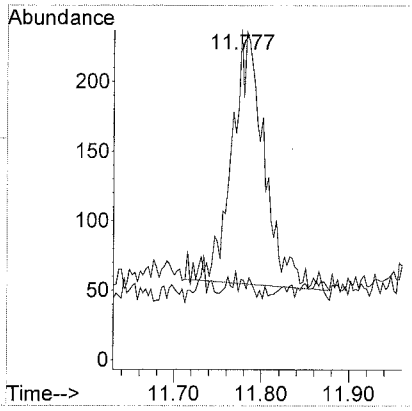


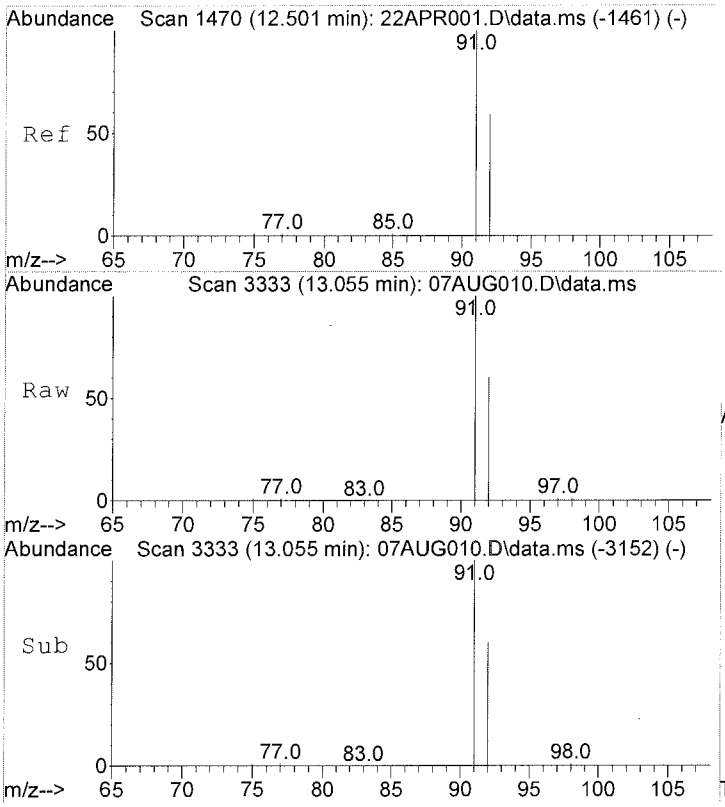


#28
Bromodichloromethane
Concen: 5.77 pptv
RT: 11.777 min Scan# 2936
Delta R.T. 0.061 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 83 Resp: 473

Ion	Ratio	Lower	Upper
83	100		
85	9.1	13.9	113.9#

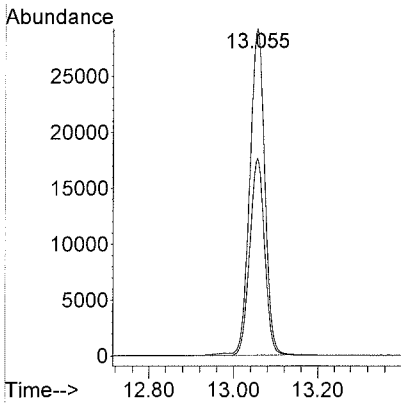


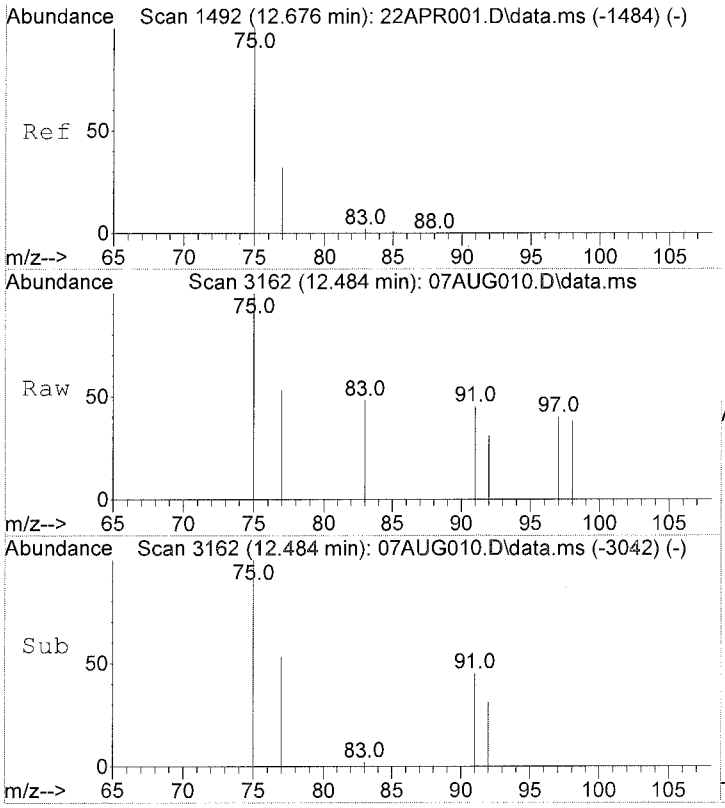


#30
Toluene
Concen: 433.35 pptv
RT: 13.055 min Scan# 3333
Delta R.T. 0.003 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 91 Resp: 72238

Ion	Ratio	Lower	Upper
91	100		
92	60.2	10.0	110.0

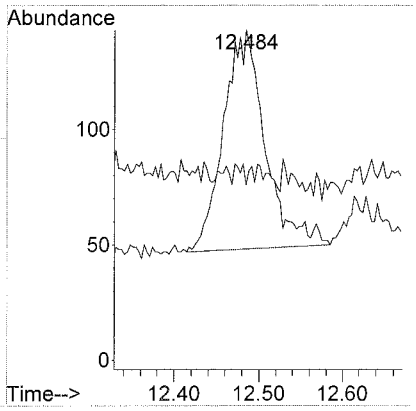


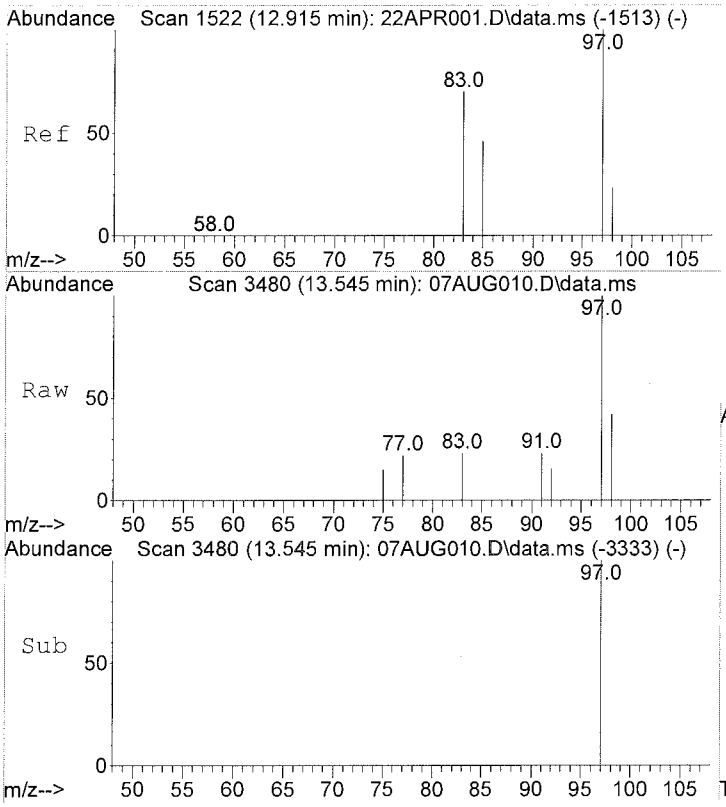


#32
t-1,3-Dichloropropene
Concen: 6.37 pptv
RT: 12.484 min Scan# 3162
Delta R.T. -0.015 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 75 Resp: 324

Ion	Ratio	Lower	Upper
75	100		
77	0.0	0.0	81.7

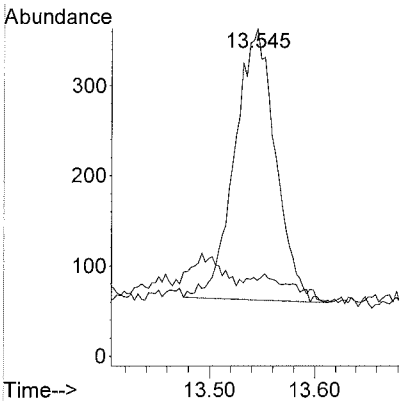


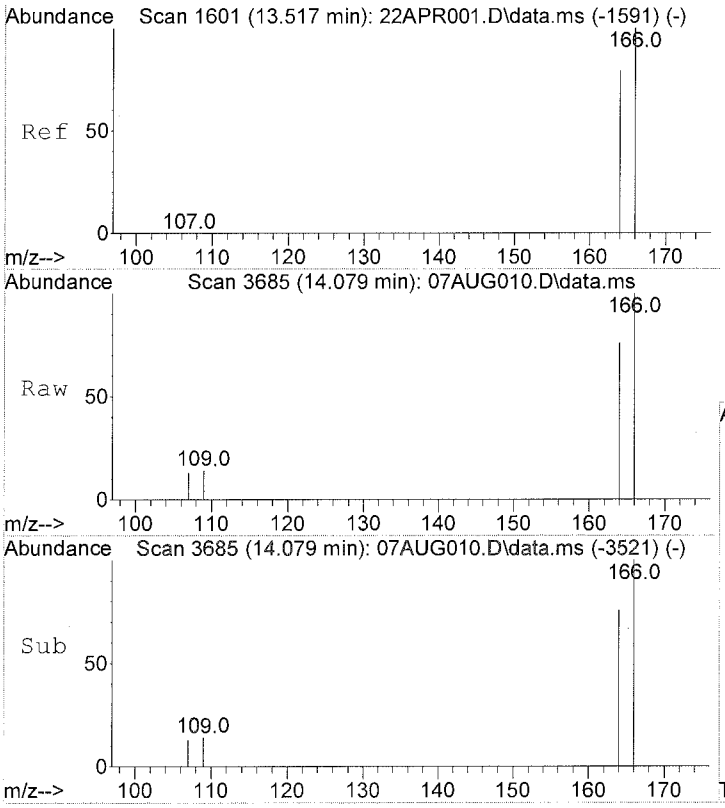


#33
1,1,2-Trichloroethane
Concen: 12.60 pptv
RT: 13.545 min Scan# 3480
Delta R.T. 0.090 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 97 Resp: 807

Ion	Ratio	Lower	Upper
97	100		
83	7.2	25.1	125.1#

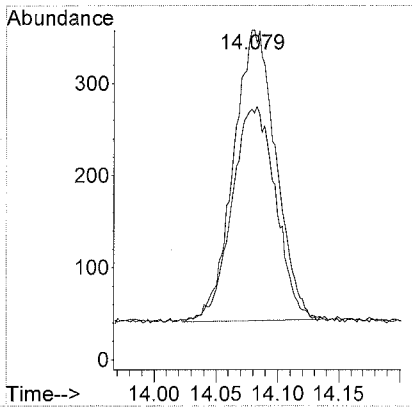


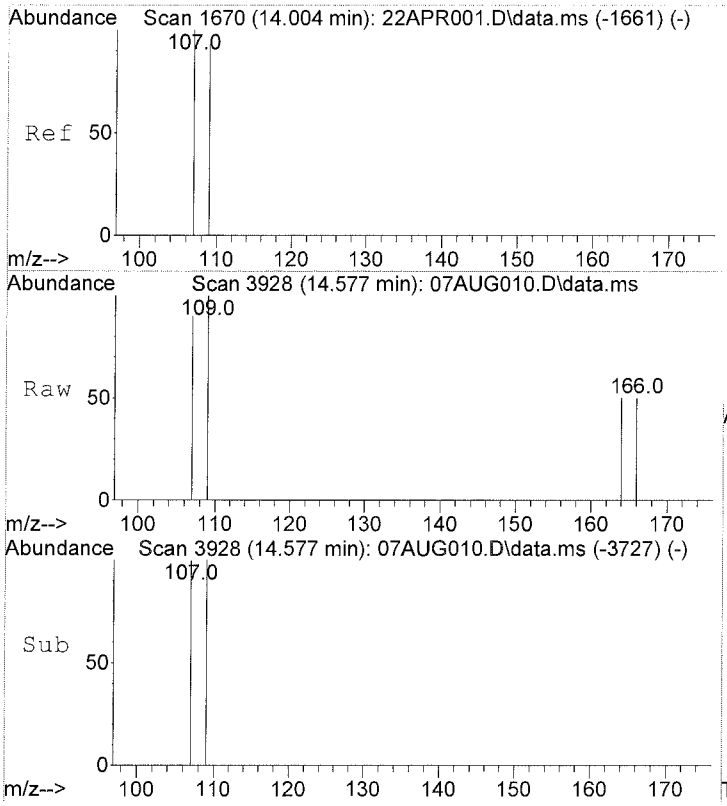


#34
Tetrachloroethene
Concen: 5.38 pptv
RT: 14.079 min Scan# 3685
Delta R.T. -0.002 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:166 Resp: 755

Ion	Ratio	Lower	Upper
166	100		
164	72.2	25.3	125.3

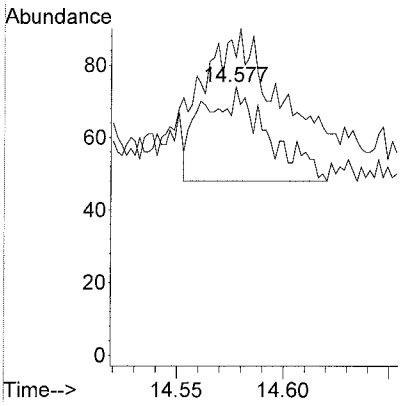


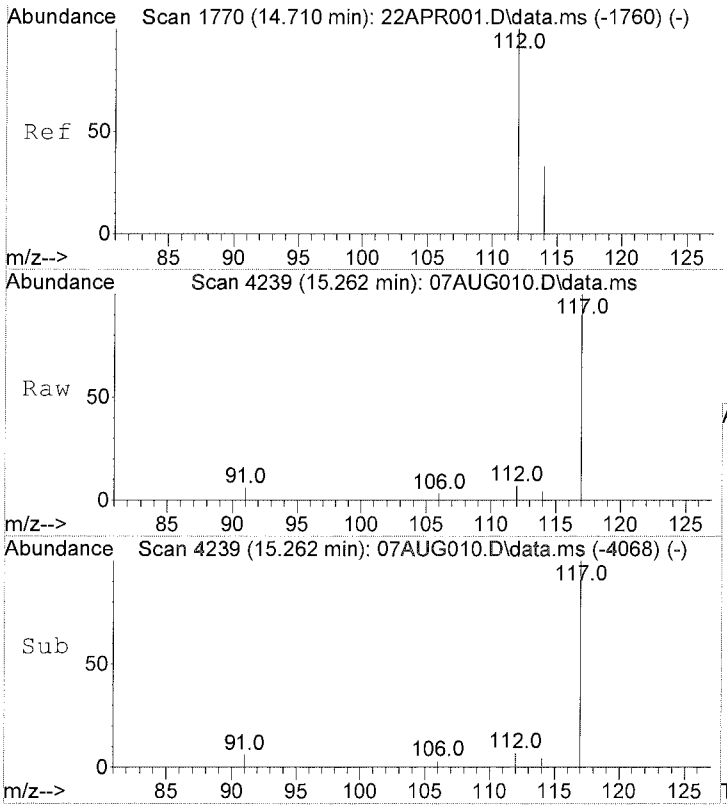


#35
1,2-Dibromoethane
Concen: 0.58 pptv
RT: 14.577 min Scan# 3928
Delta R.T. 0.013 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:107 Resp: 55

Ion	Ratio	Lower	Upper
107	100		
109	80.8	43.3	143.3

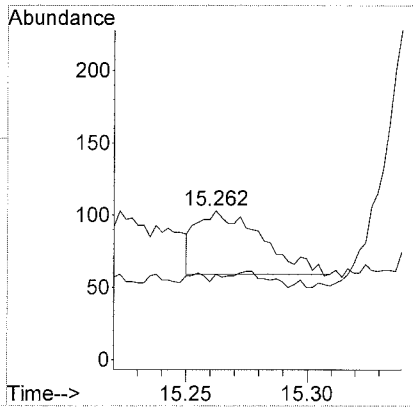


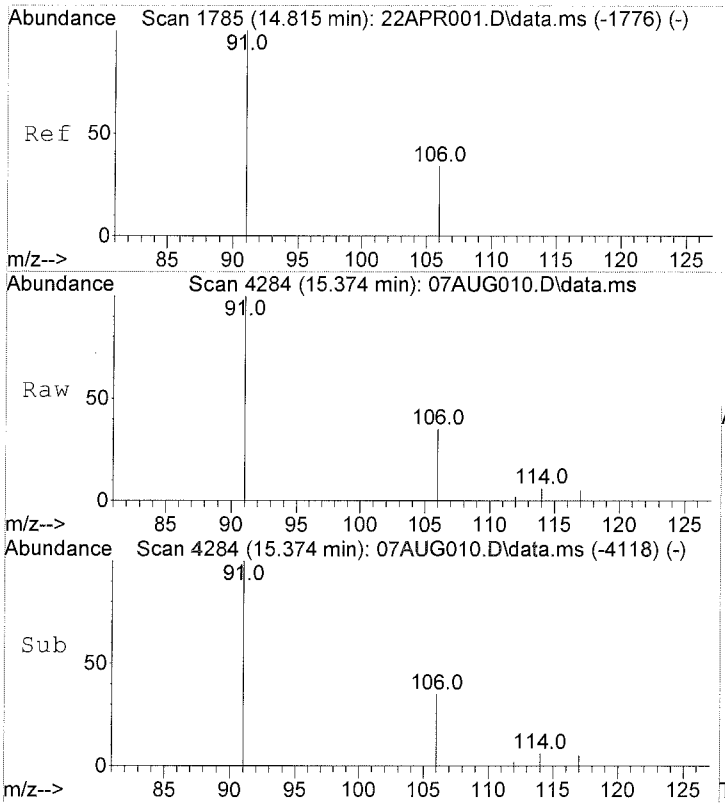


#36
Chlorobenzene
Concen: 0.46 pptv
RT: 15.262 min Scan# 4239
Delta R.T. -0.003 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:112 Resp: 82

Ion	Ratio	Lower	Upper
112	100		
114	18.2	0.0	81.6

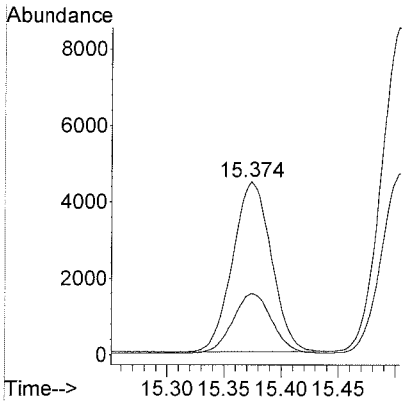


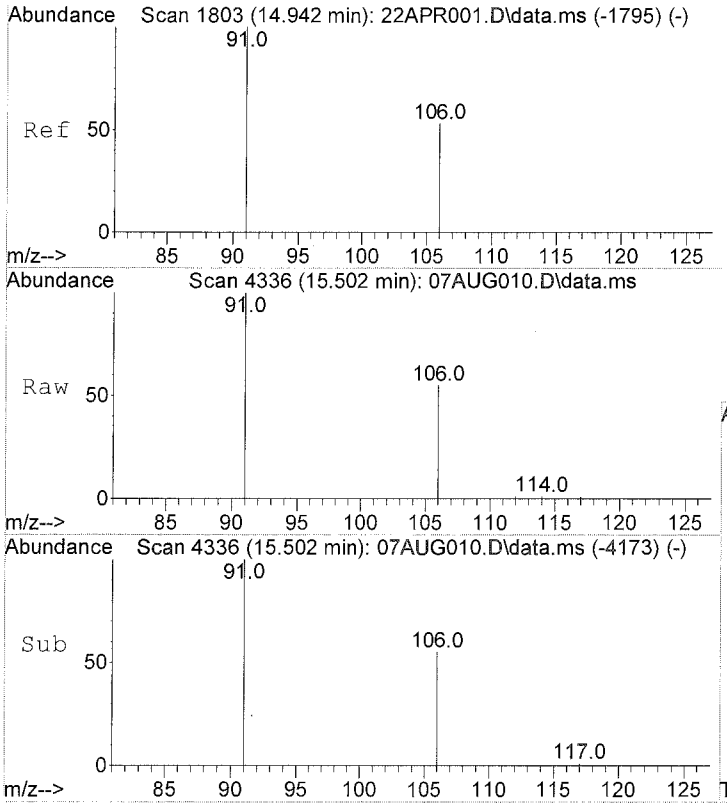


#37
Ethylbenzene
Concen: 54.58 pptv
RT: 15.374 min Scan# 4284
Delta R.T. 0.007 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 91 Resp: 10423

Ion	Ratio	Lower	Upper
91	100		
106	34.9	0.0	83.4

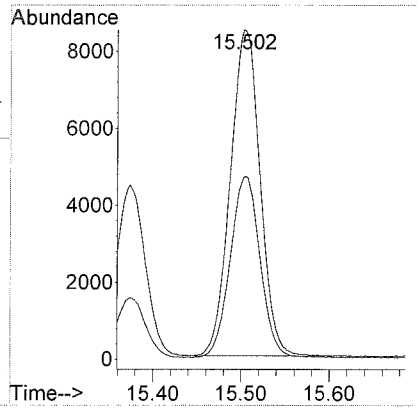


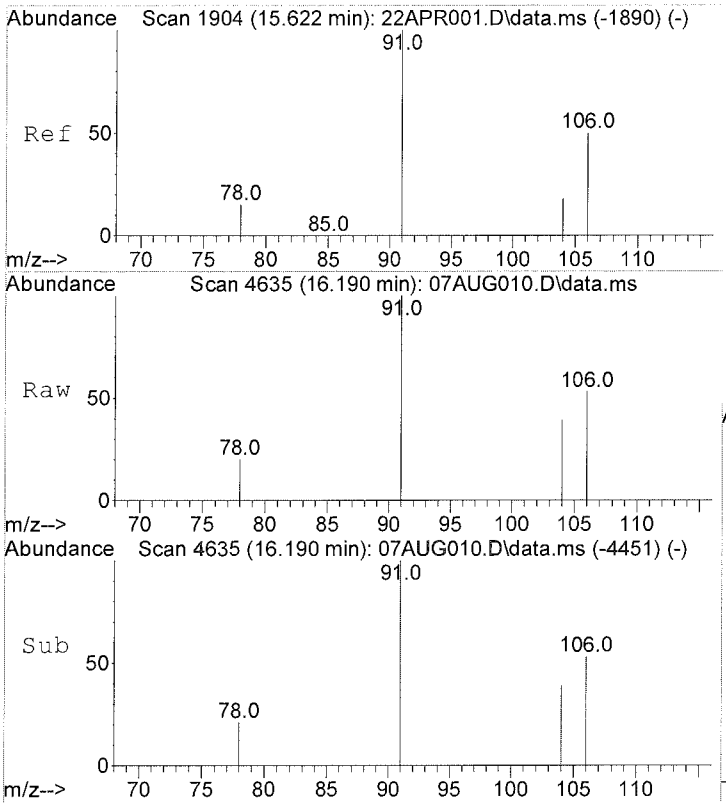


#38
p,&m-Xylene
Concen: 121.00 pptv
RT: 15.502 min Scan# 4336
Delta R.T. 0.004 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 91 Resp: 19970

Ion	Ratio	Lower	Upper
91	100		
106	55.2	3.9	103.9

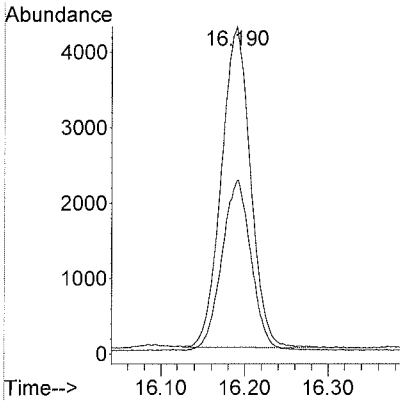


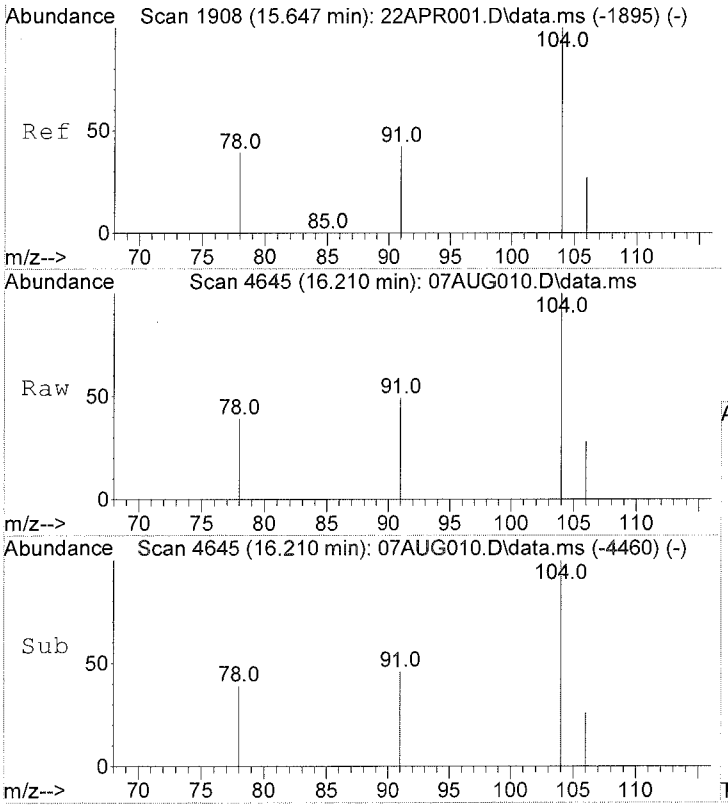


#39
o-Xylene
Concen: 74.20 pptv
RT: 16.190 min Scan# 4635
Delta R.T. 0.003 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 91 Resp: 10348

Ion	Ratio	Lower	Upper
91	100		
106	52.7	0.0	97.3

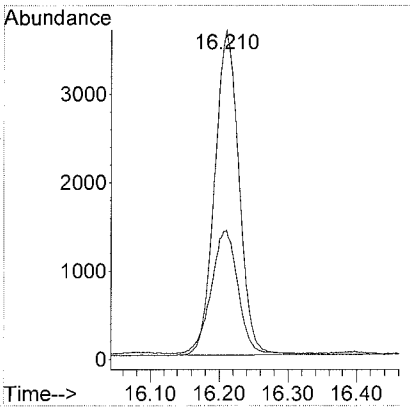


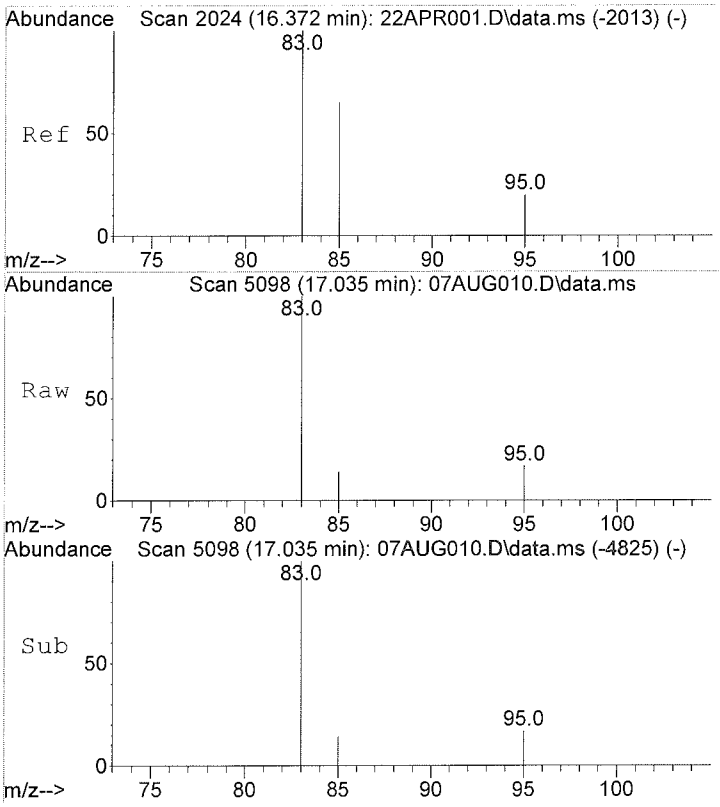


#40
Styrene
Concen: 76.68 pptv
RT: 16.210 min Scan# 4645
Delta R.T. 0.000 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:104 Resp: 9037

Ion	Ratio	Lower	Upper
104	100		
78	37.7	0.0	87.4

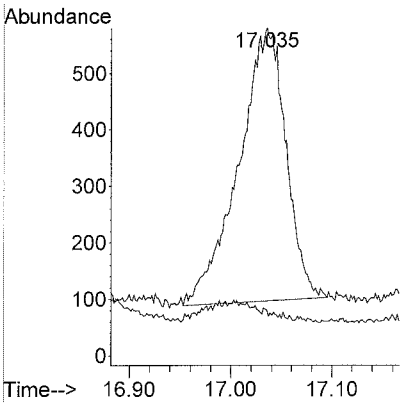


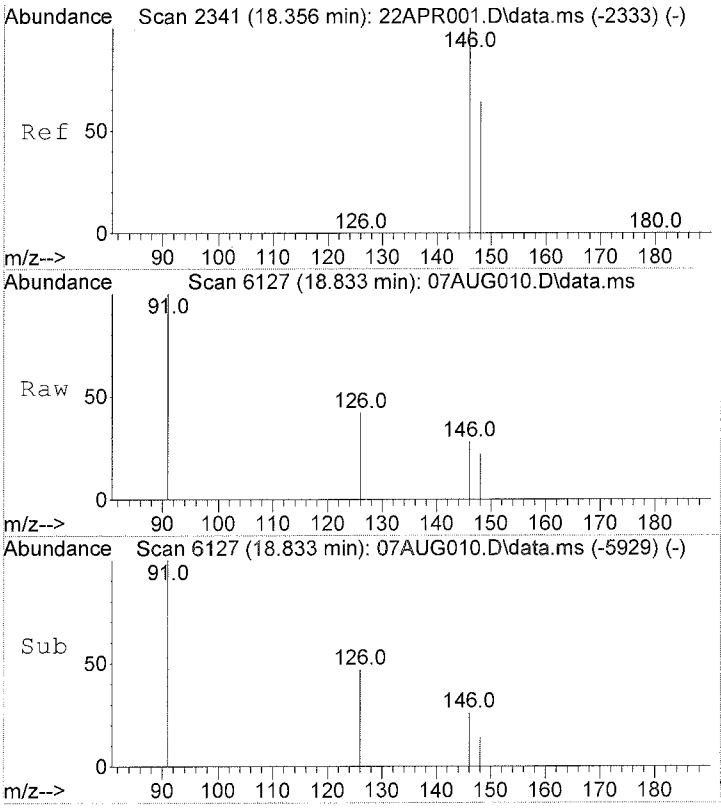


#41
1,1,2,2-Tetrachloroethane
Concen: 15.68 pptv
RT: 17.035 min Scan# 5098
Delta R.T. 0.056 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 83 Resp: 1568

Ion	Ratio	Lower	Upper
83	100		
85	3.9	13.6	113.6#

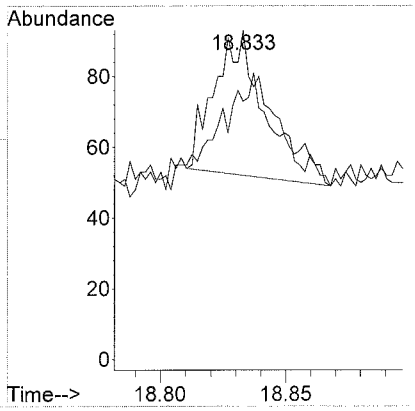


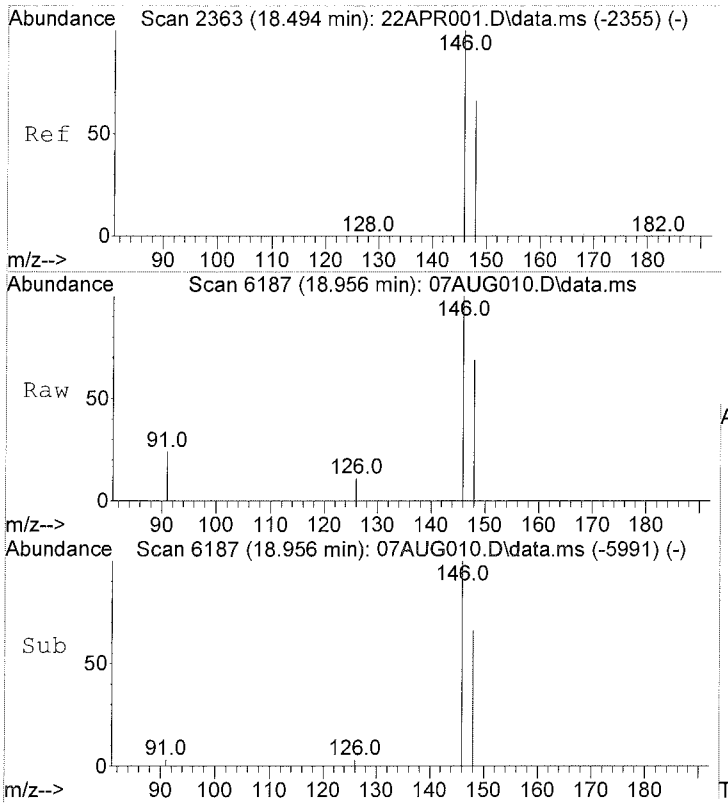


#43
1,3-Dichlorobenzene
Concen: 0.29 pptv
RT: 18.833 min Scan# 6127
Delta R.T. 0.006 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:146 Resp: 61

Ion	Ratio	Lower	Upper
146	100		
148	54.5	13.9	113.9

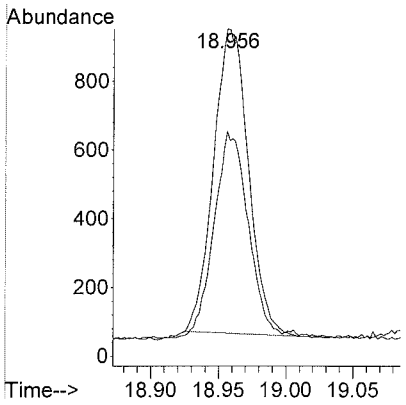


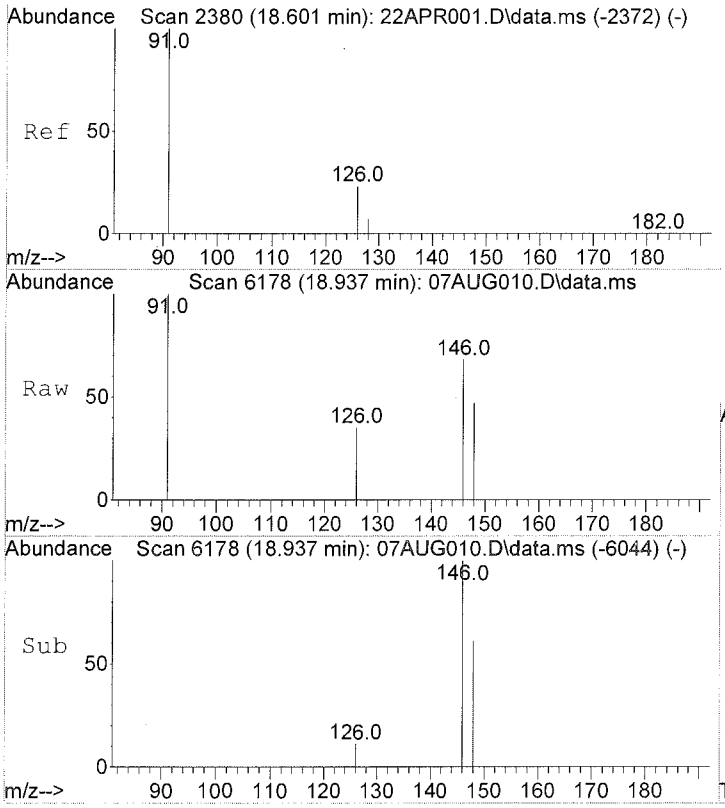


#44
1,4-Dichlorobenzene
Concen: 7.50 pptv
RT: 18.956 min Scan# 6187
Delta R.T. 0.001 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:146 Resp: 1624

Ion	Ratio	Lower	Upper
146	100		
148	66.4	15.5	115.5

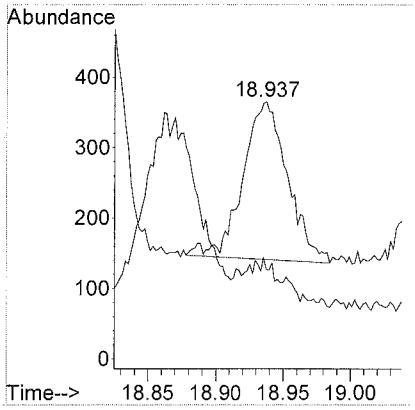


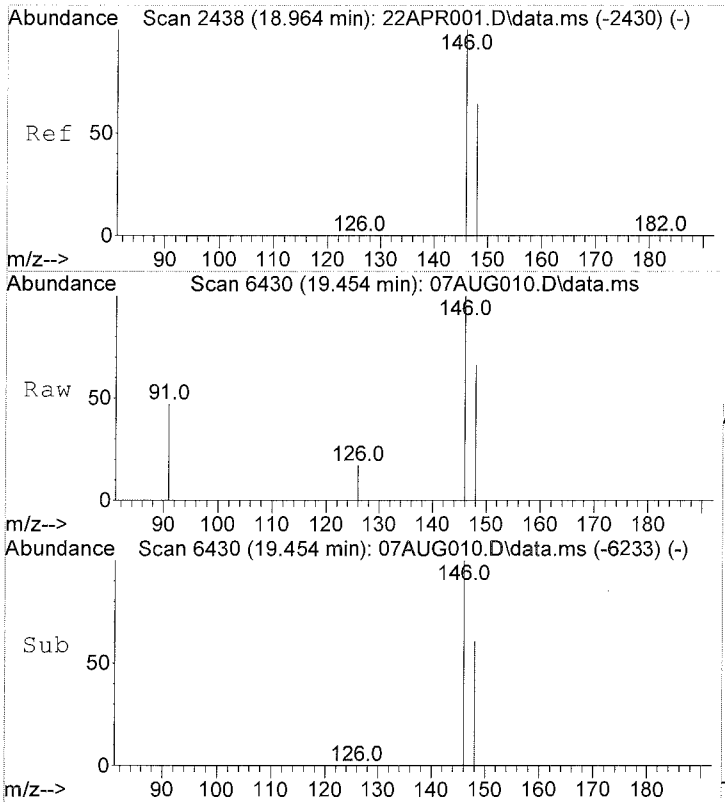


#45
Benzyl Chloride
Concen: 12.25 pptv
RT: 18.937 min Scan# 6178
Delta R.T. -0.125 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion: 91 Resp: 514

Ion	Ratio	Lower	Upper
91	100		
126	23.6	18.7	28.1

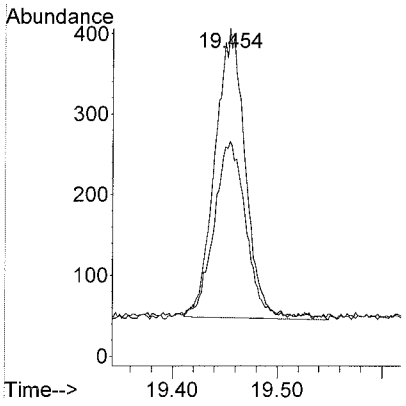


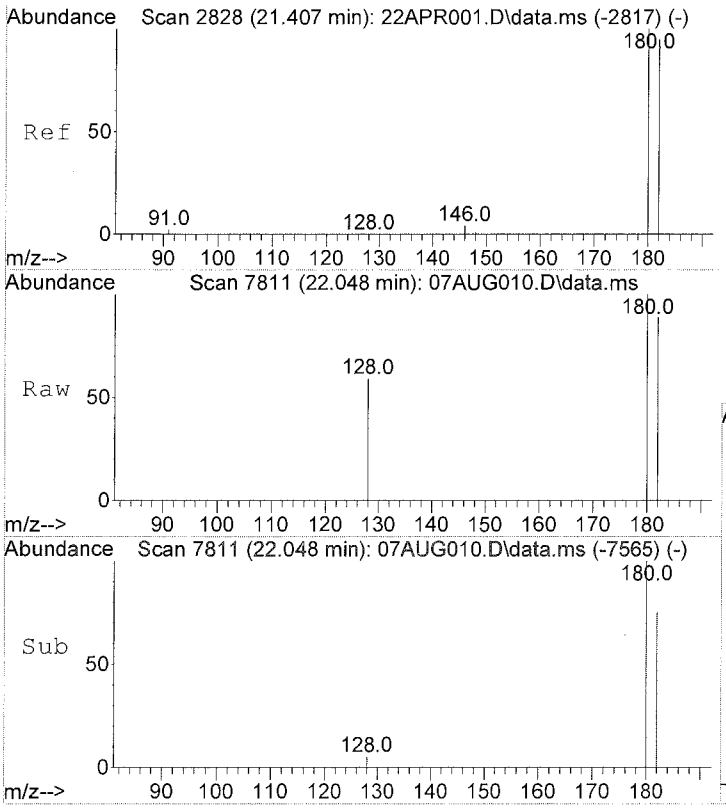


#46
1,2-Dichlorobenzene
Concen: 3.72 pptv
RT: 19.454 min Scan# 6430
Delta R.T. 0.004 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:146 Resp: 722

Ion	Ratio	Lower	Upper
146	100		
148	59.3	13.7	113.7

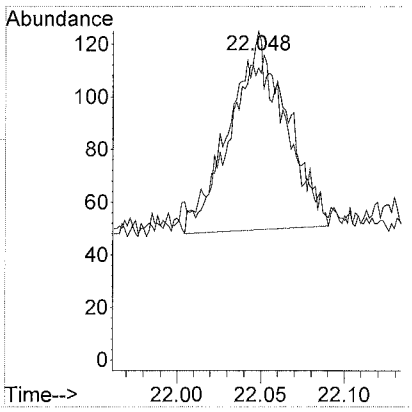


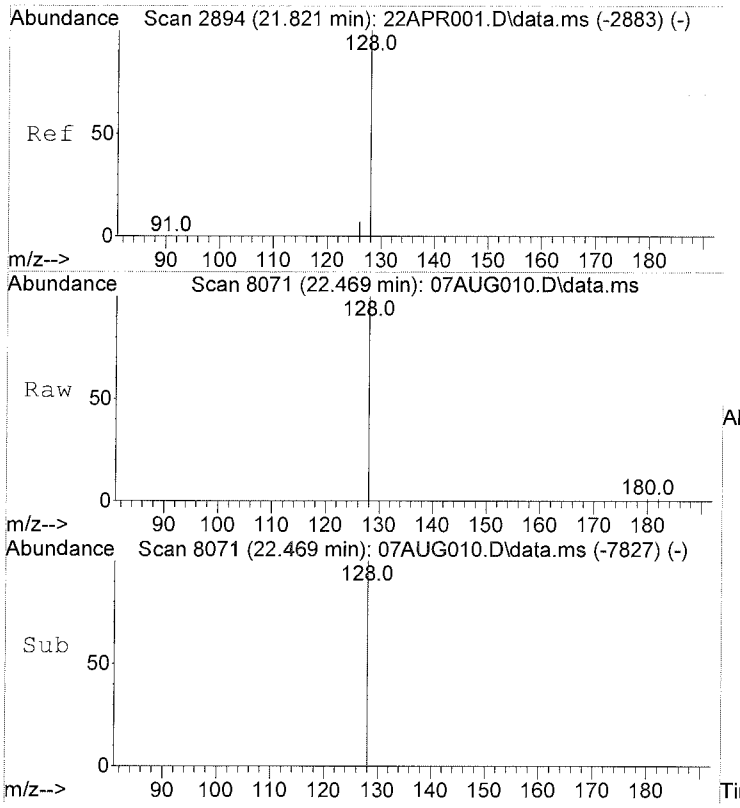


#47
1,2,4-Trichlorobenzene
Concen: 1.14 pptv
RT: 22.048 min Scan# 7811
Delta R.T. -0.001 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:180 Resp: 175

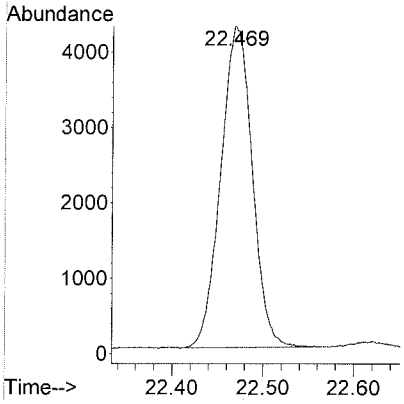
Ion	Ratio	Lower	Upper
180	100		
182	74.0	44.8	144.8





#48
Naphthalene
Concen: 48.92 pptv
RT: 22.469 min Scan# 8071
Delta R.T. -0.005 min
Lab File: 07AUG010.D
Acq: 7 Aug 2018 5:36 pm

Tgt Ion:128 Resp: 10287



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG011.D
Acq On : 7 Aug 2018 6:23 pm
Operator : DT
Sample : J072607-06 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 07 18:48:13 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.327	130	98291	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.684	114	409408	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.207	117	345574	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.092	65	97150	1901.36	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 95.07%			
29) Toluene-d8	12.934	98	343743	2199.06	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 109.95%			
42) 4-Bromofluorobenzene	17.185	95	211180	2166.41	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 108.32%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.541	85	46389	416.44	pptv	98
3) Chloromethane	3.928	50	8989	638.75	pptv	92
5) Bromomethane	4.835	96	489	21.78	pptv	96
6) Chloroethane	4.992	64	192	13.80	pptv	65
7) Trichlorofluoromethane...	5.473	101	23151	188.95	pptv	98
8) 1,1,2-Cl 1,2,2-F ethan...	6.226	151	7082	63.23	pptv	94
9) Acetone	6.112	43	167560	3668.72	pptv	95
11) Methylene Chloride	7.021	49	4377	142.68	pptv	99
12) t-Butyl Methyl Ether	7.292	73	6974	92.00	pptv	40
14) Hexane	7.765	57	3456	92.25	pptv	94
16) 2-Butanone	8.619	72	18517	1036.15	pptv	87
18) Chloroform	9.147	83	1453	17.21	pptv	100
19) 1,1,1-Trichloroethane	9.751	97	217	2.49	pptv	94
20) Carbon Tetrachloride	10.141	117	6247	73.72	pptv	97
22) Benzene	10.324	78	9306	64.46	pptv	98
24) 1,2-Dichloroethane	10.227	62	826	15.03	pptv	87
25) Trichloroethene	11.203	130	113	1.18	pptv	81
26) 1,2-Dichloropropane	11.413	63	214	6.02	pptv	95
27) 1,4-Dioxane	11.700	88	713	22.42	pptv	98
28) Bromodichloromethane	11.682	83	52	0.63	pptv #	18
30) Toluene	13.054	91	76081	453.67	pptv	99
32) t-1,3-Dichloropropene	12.471	75	8741	168.43	pptv	52
33) 1,1,2-Trichloroethane	13.542	97	1495	22.88	pptv #	16
34) Tetrachloroethene	14.083	166	678	4.73	pptv	97
35) 1,2-Dibromoethane	14.575	107	53	0.55	pptv	88
36) Chlorobenzene	15.269	112	127	0.70	pptv	75
37) Ethylbenzene	15.373	91	19487	99.99	pptv	98
38) p,&m-Xylene	15.502	91	33806	200.72	pptv	98
39) o-Xylene	16.189	91	48185	338.54	pptv	92
40) Styrene	16.208	104	10359	86.12	pptv	83
41) 1,1,2,2-Tetrachloroethane	17.040	83	1824	17.88	pptv #	25
43) 1,3-Dichlorobenzene	18.830	146	51	0.24	pptv	97
44) 1,4-Dichlorobenzene	18.960	146	1680	7.61	pptv	95
45) Benzyl Chloride	18.937	91	486	11.35	pptv	91
46) 1,2-Dichlorobenzene	19.454	146	679	3.43	pptv	99
47) 1,2,4-Trichlorobenzene	22.056	180	203	1.30	pptv	52

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG011.D
Acq On : 7 Aug 2018 6:23 pm
Operator : DT
Sample : J072607-06 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 07 18:48:13 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

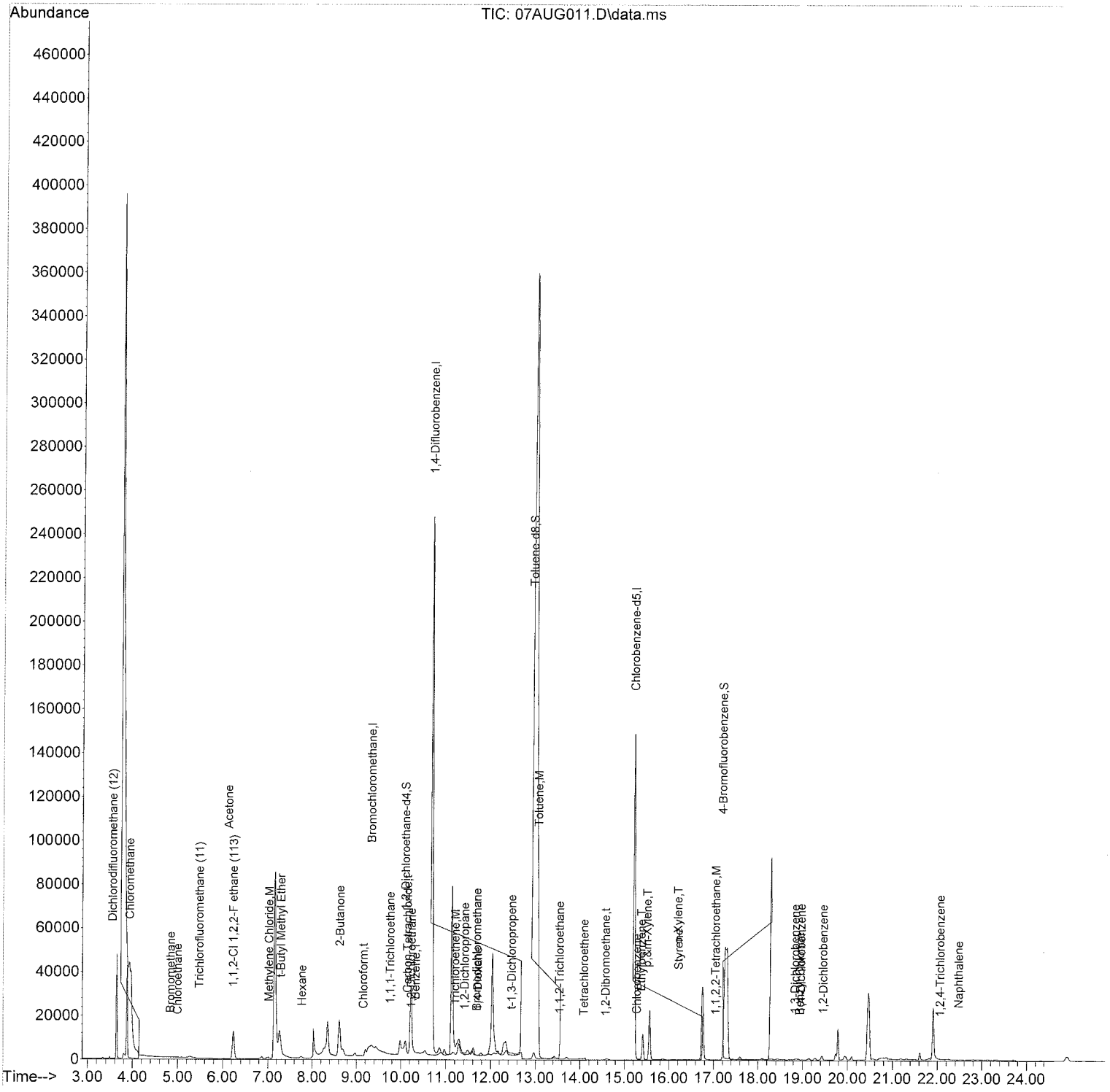
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
48) Naphthalene	22.469	128	10007	46.63	pptv	100

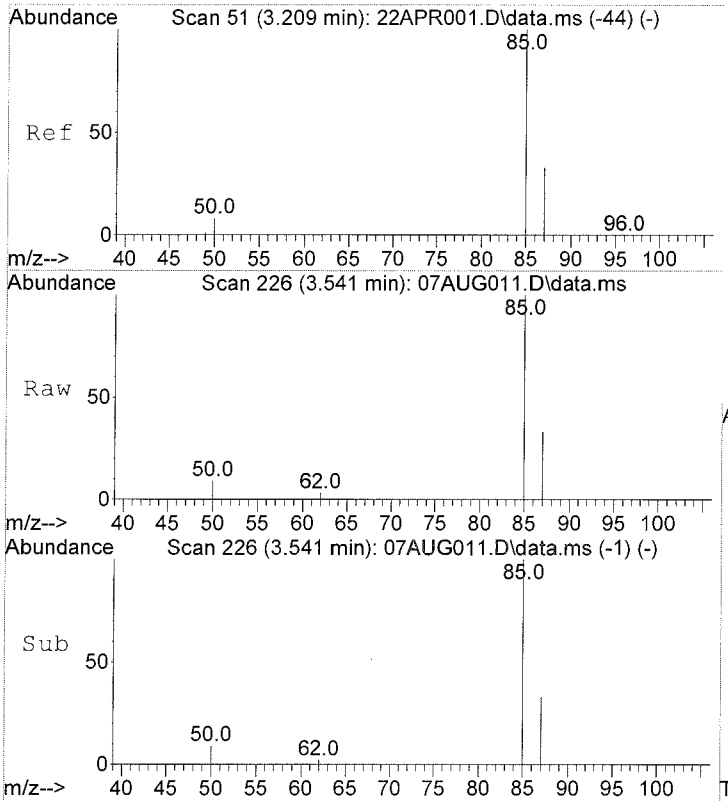
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG011.D
Acq On : 7 Aug 2018 6:23 pm
Operator : DT
Sample : J072607-06 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 07 18:48:13 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

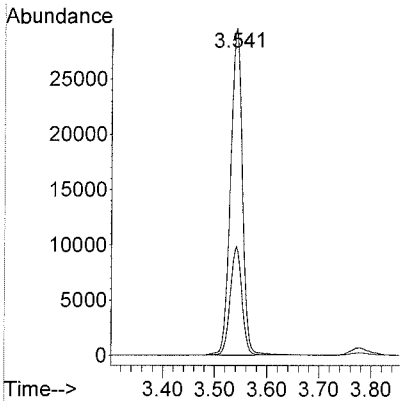


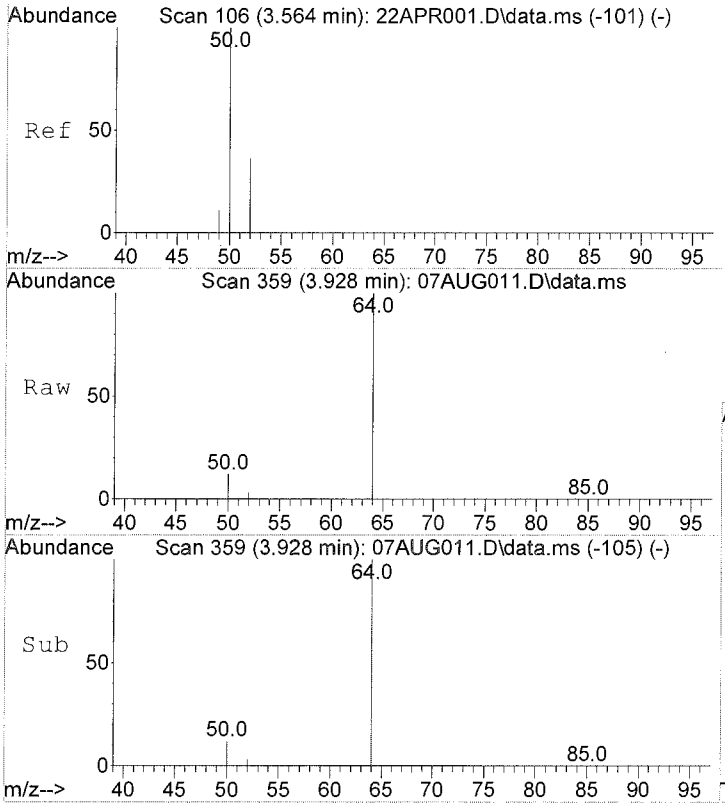


#2
Dichlorodifluoromethane (12)
Concen: 416.44 pptv
RT: 3.541 min Scan# 226
Delta R.T. -0.050 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 85 Resp: 46389

Ion	Ratio	Lower	Upper
85	100		
87	33.2	0.0	81.9

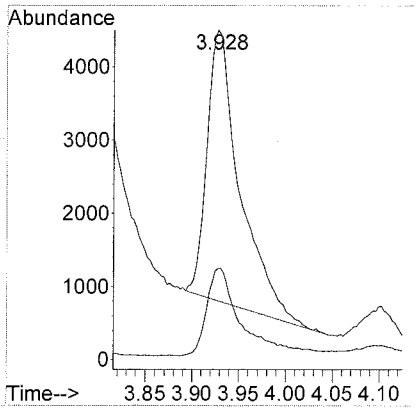


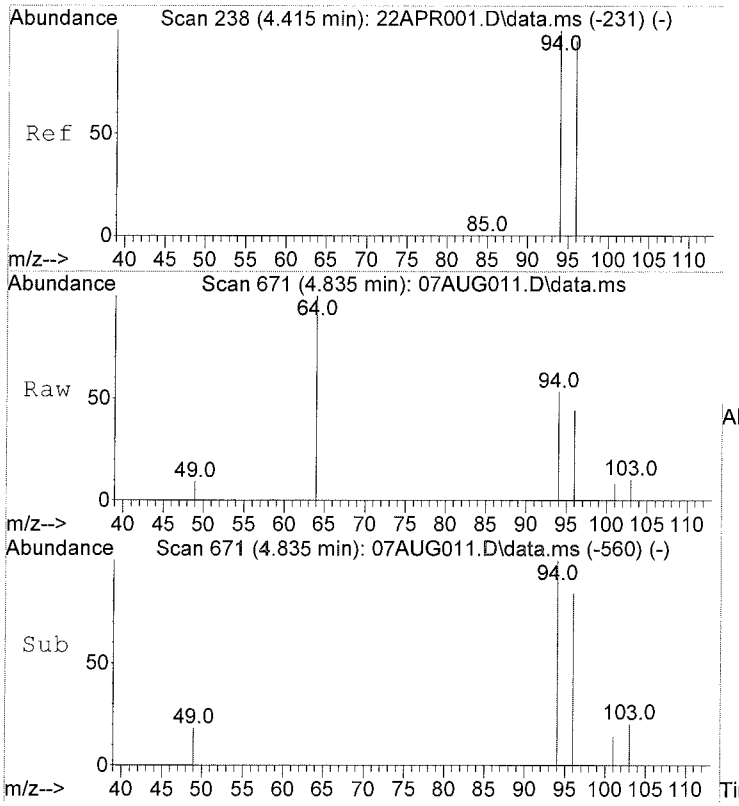


#3
Chloromethane
Concen: 638.75 pptv
RT: 3.928 min Scan# 359
Delta R.T. -0.061 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 50 Resp: 8989

Ion	Ratio	Lower	Upper
50	100		
52	28.2	3.0	63.0

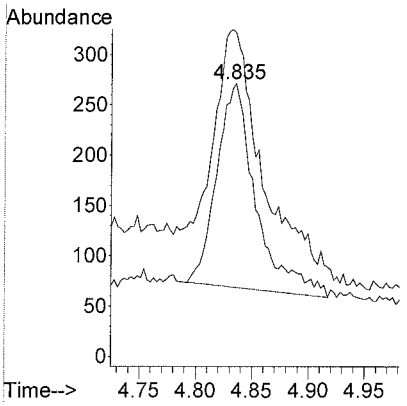


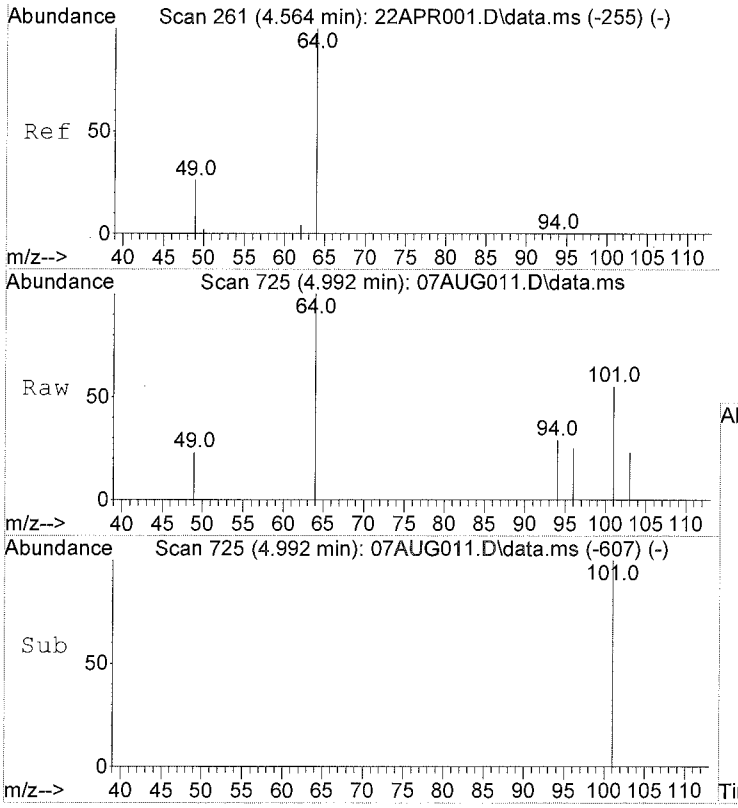


#5
Bromomethane
Concen: 21.78 pptv
RT: 4.835 min Scan# 671
Delta R.T. -0.076 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 96 Resp: 489

Ion	Ratio	Lower	Upper
96	100		
94	109.9	55.4	155.4

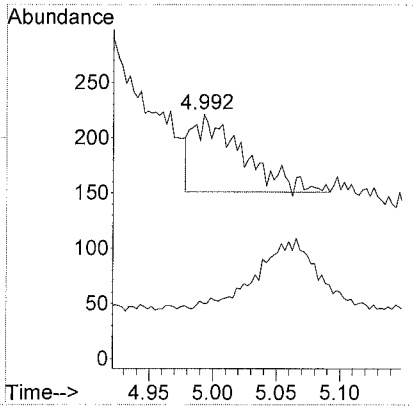


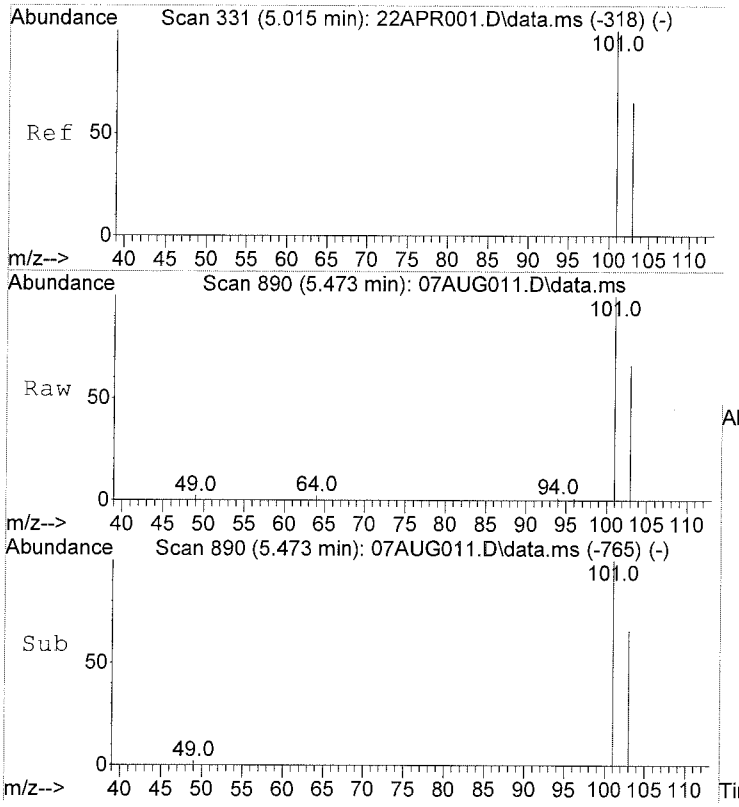


#6
Chloroethane
Concen: 13.80 pptv
RT: 4.992 min Scan# 725
Delta R.T. -0.058 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 64 Resp: 192

Ion	Ratio	Lower	Upper
64	100		
49	2.9	0.0	68.7

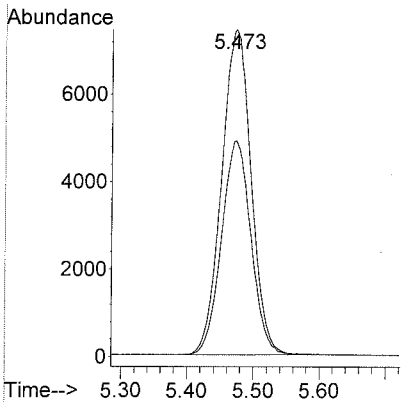


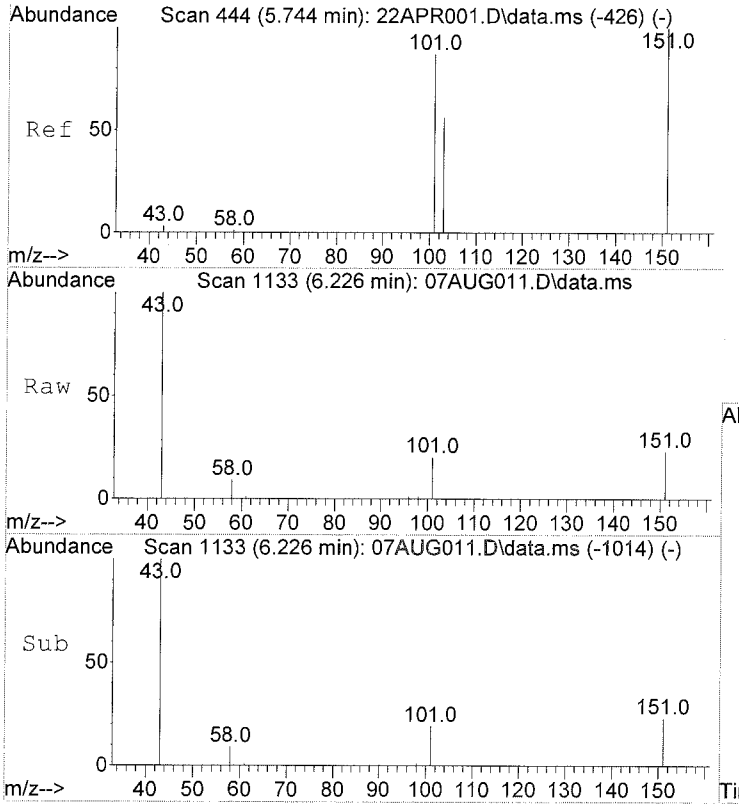


#7
Trichlorofluoromethane (11)
Concen: 188.95 pptv
RT: 5.473 min Scan# 890
Delta R.T. -0.037 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:101 Resp: 23151

Ion	Ratio	Lower	Upper
101	100		
103	65.8	14.6	114.6

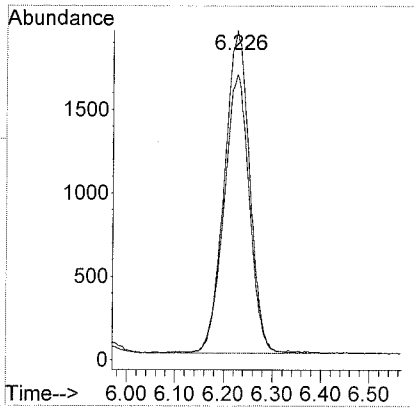


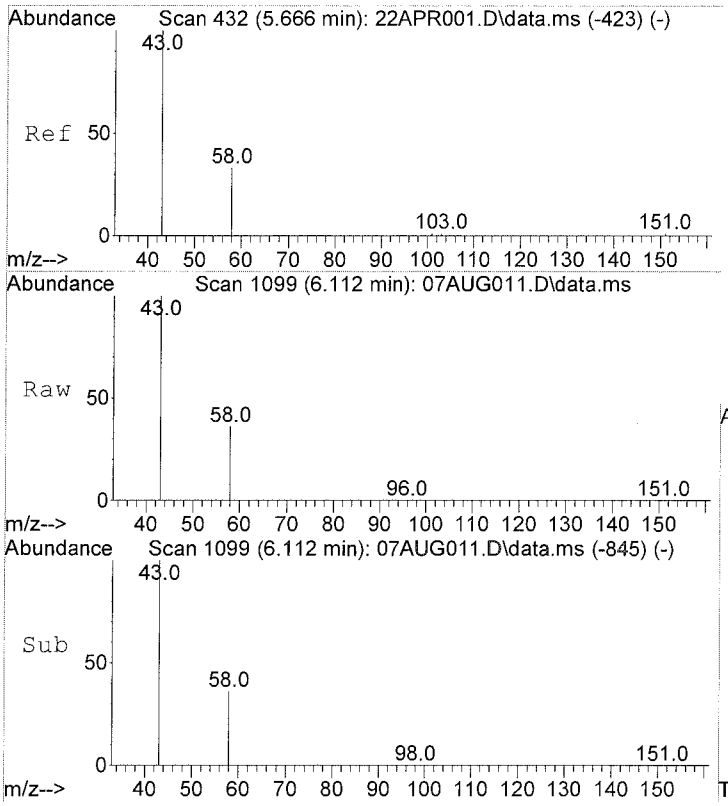


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 63.23 pptv
RT: 6.226 min Scan# 1133
Delta R.T. -0.008 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:151 Resp: 7082

Ion	Ratio	Lower	Upper
151	100		
101	86.0	41.5	141.5

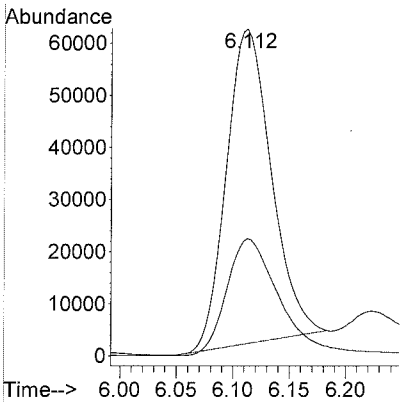


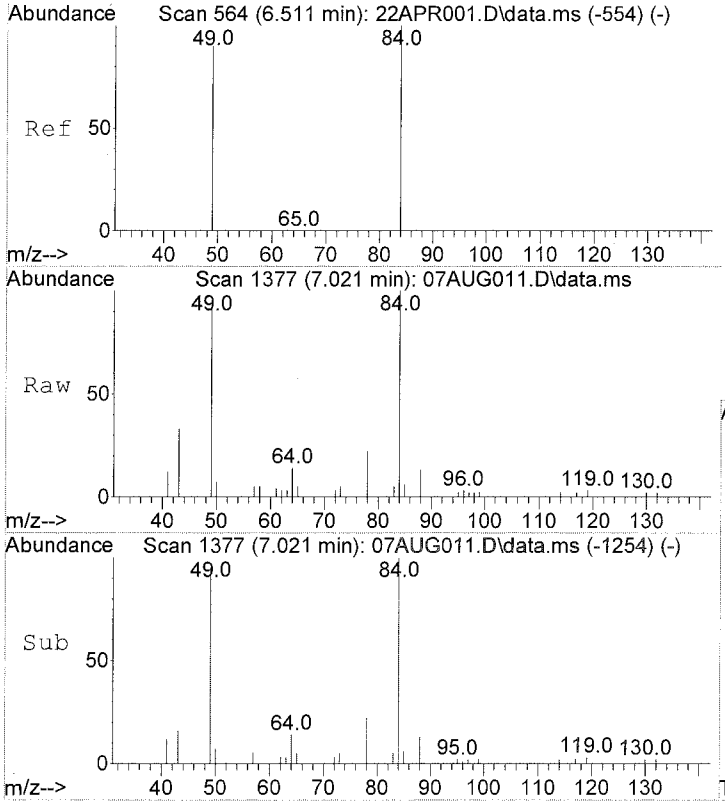


#9
Acetone
Concen: 3668.72 pptv
RT: 6.112 min Scan# 1099
Delta R.T. -0.030 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 43 Resp: 167560

Ion	Ratio	Lower	Upper
43	100		
58	36.0	13.4	53.4

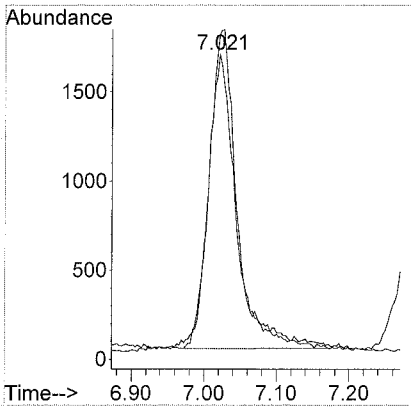


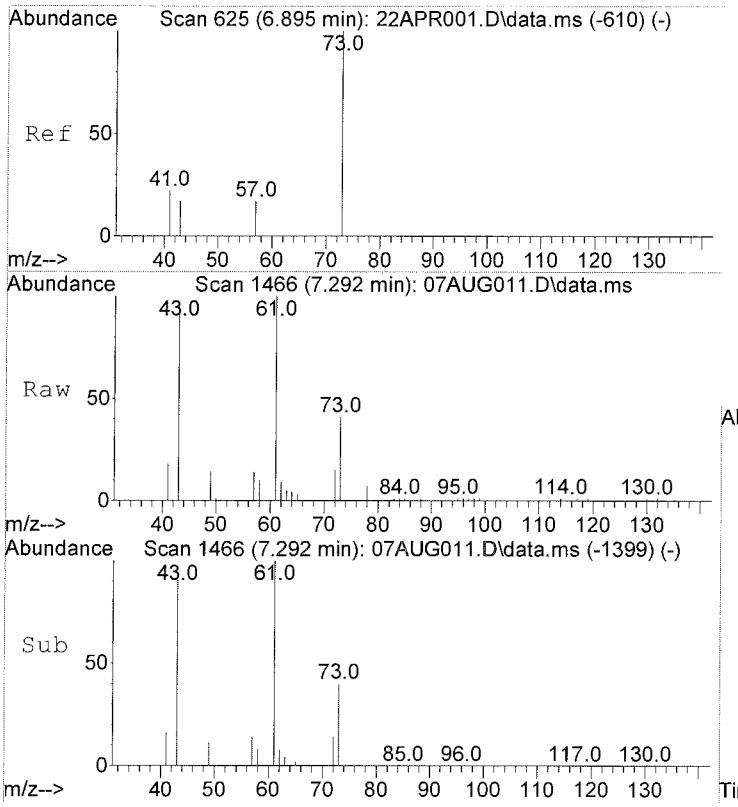


#11
Methylene Chloride
Concen: 142.68 pptv
RT: 7.021 min Scan# 1377
Delta R.T. -0.009 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 49 Resp: 4377

Ion	Ratio	Lower	Upper
49	100		
84	105.4	54.2	154.2

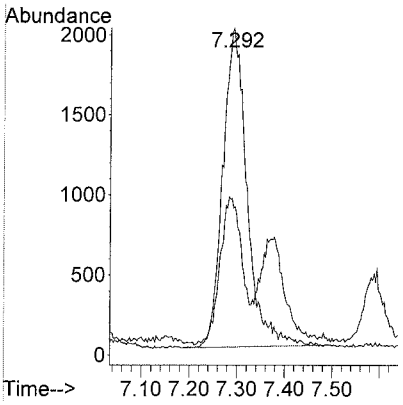


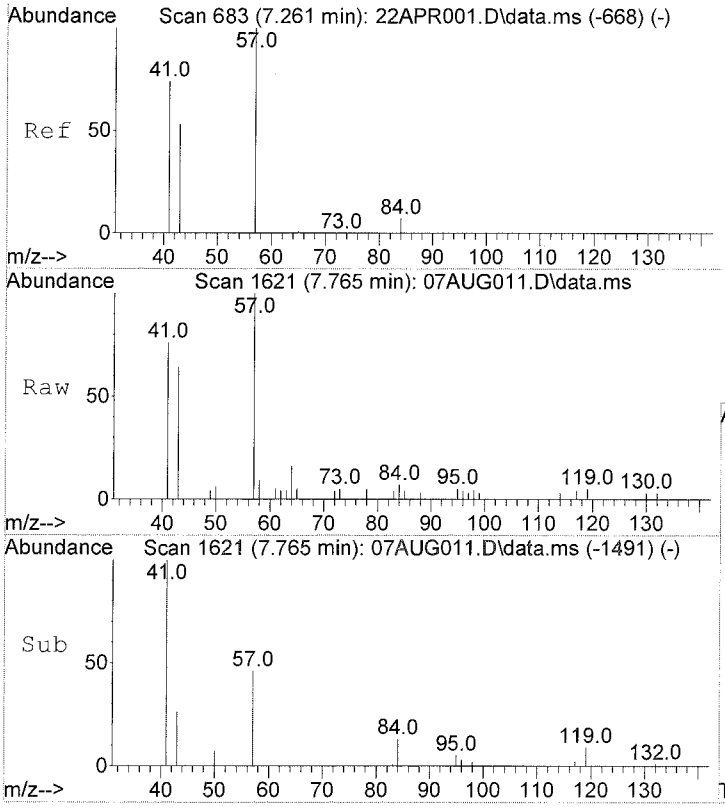


#12
t-Butyl Methyl Ether
Concen: 92.00 pptv
RT: 7.292 min Scan# 1466
Delta R.T. -0.097 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 73 Resp: 6974

Ion	Ratio	Lower	Upper
73	100		
41	41.9	0.0	516.4

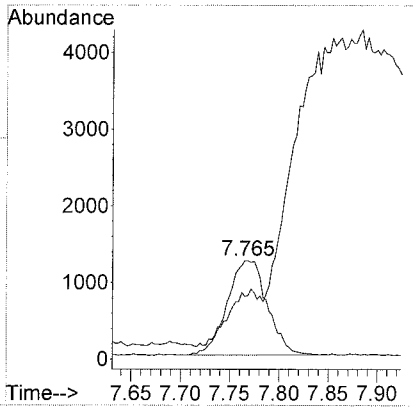


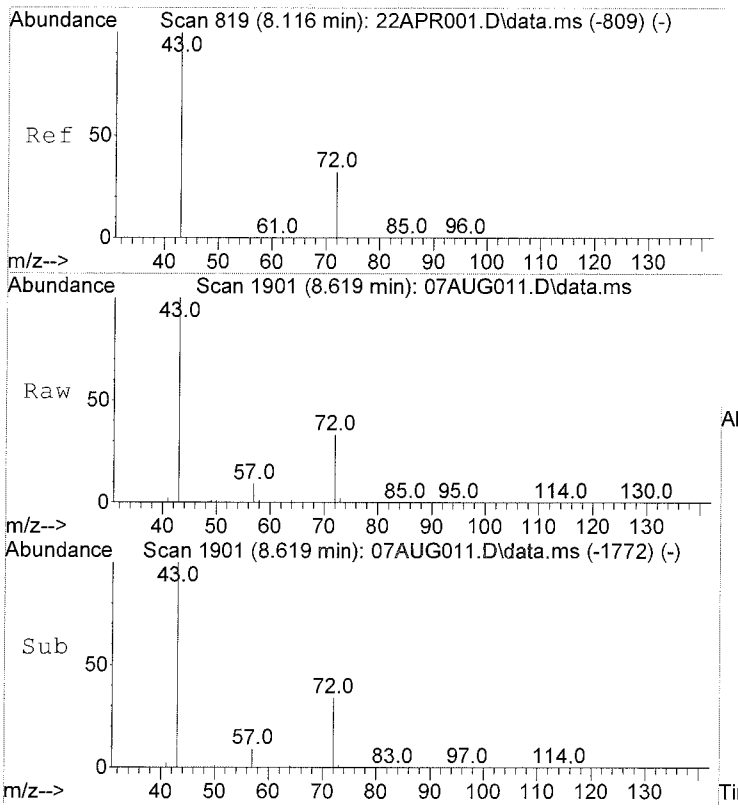


#14
Hexane
Concen: 92.25 pptv
RT: 7.765 min Scan# 1621
Delta R.T. -0.005 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 57 Resp: 3456

Ion	Ratio	Lower	Upper
57	100		
43	50.5	5.0	105.0

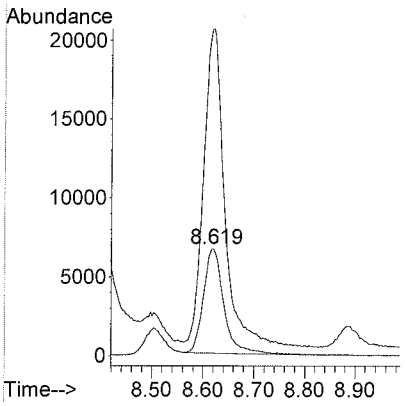


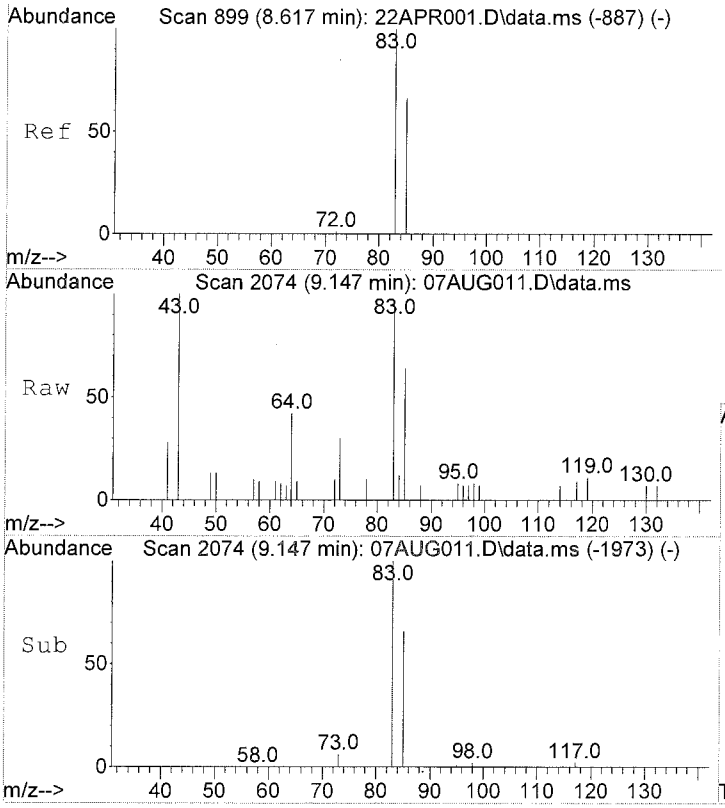


#16
2-Butanone
Concen: 1036.15 pptv
RT: 8.619 min Scan# 1901
Delta R.T. -0.008 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 72 Resp: 18517

Ion	Ratio	Lower	Upper
72	100		
43	299.4	0.0	3591.5

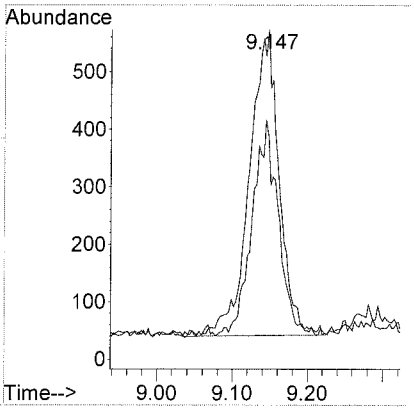


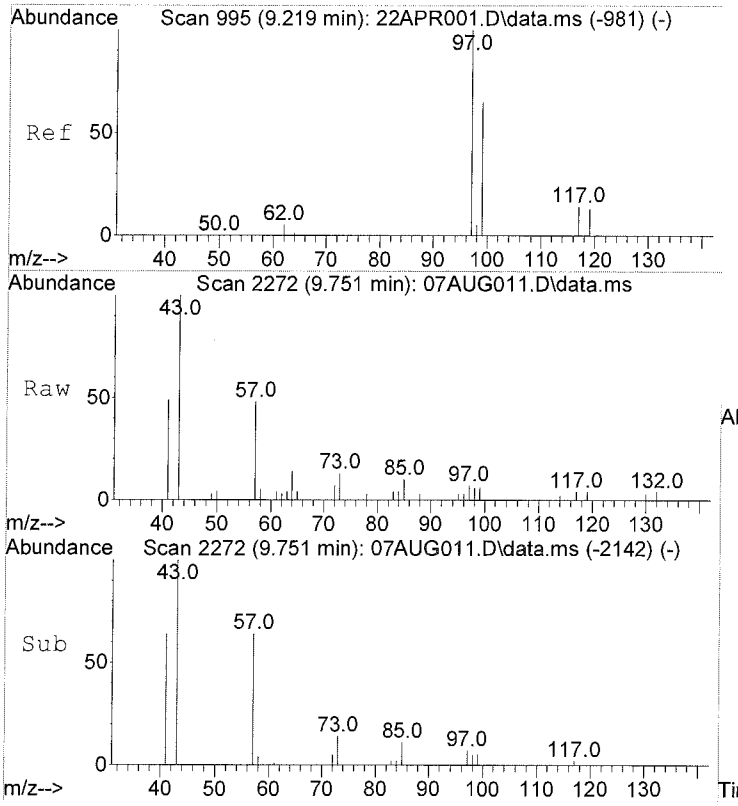


#18
Chloroform
Concen: 17.21 pptv
RT: 9.147 min Scan# 2074
Delta R.T. 0.007 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 83 Resp: 1453

Ion	Ratio	Lower	Upper
83	100		
85	64.7	14.9	114.9

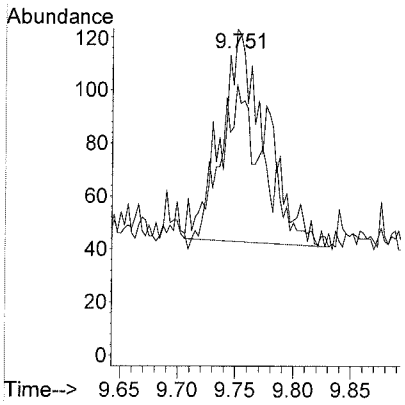


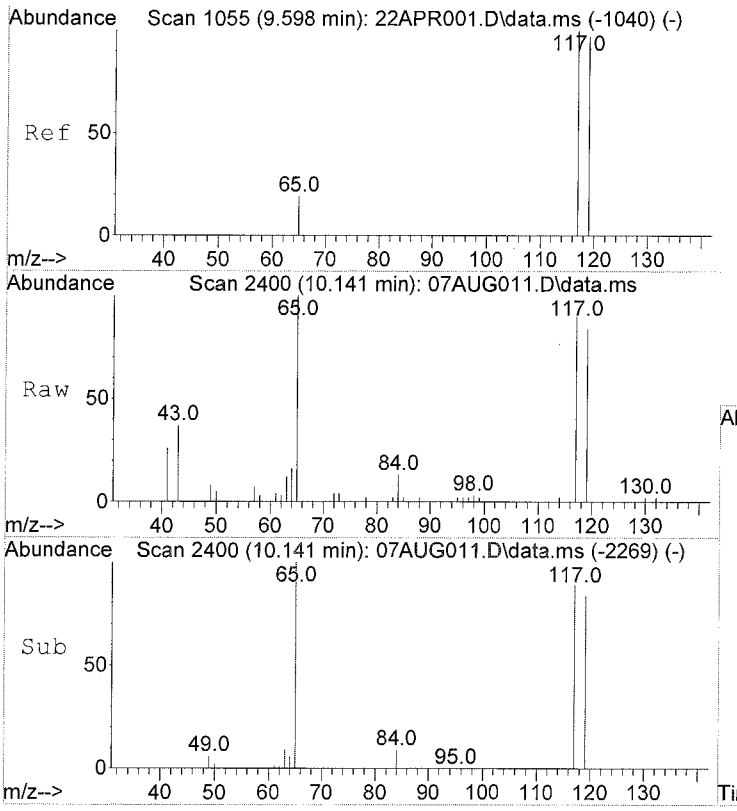


#19
1,1,1-Trichloroethane
Concen: 2.49 pptv
RT: 9.751 min Scan# 2272
Delta R.T. -0.004 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 97 Resp: 217

Ion	Ratio	Lower	Upper
97	100		
99	68.3	13.8	113.8

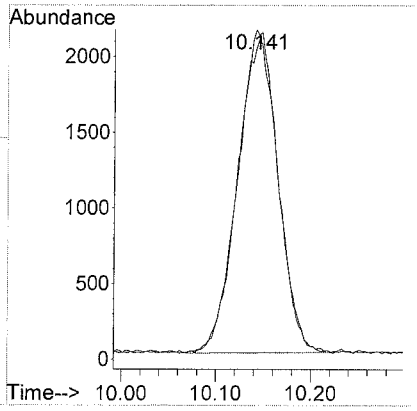


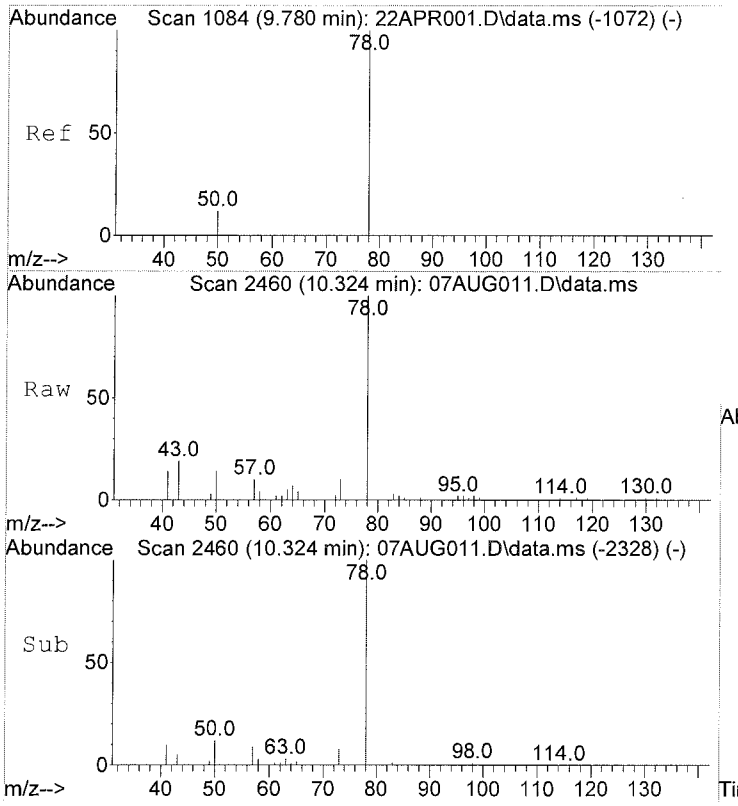


#20
Carbon Tetrachloride
Concen: 73.72 pptv
RT: 10.141 min Scan# 2400
Delta R.T. -0.002 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:117 Resp: 6247

Ion	Ratio	Lower	Upper
117	100		
119	93.9	47.1	147.1

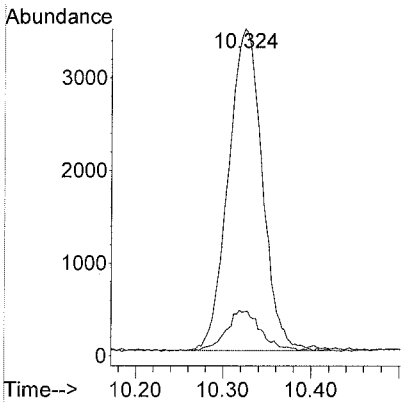


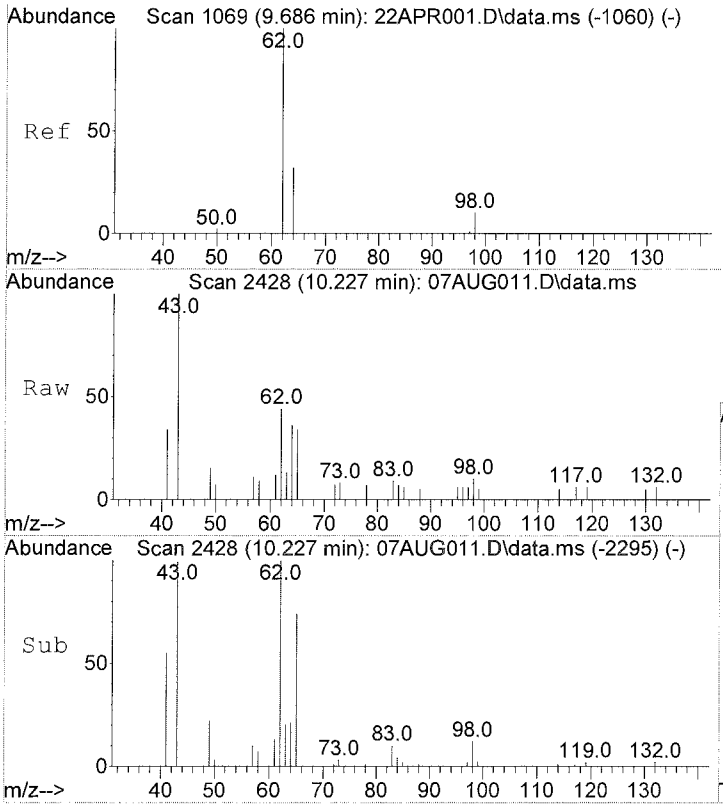


#22
Benzene
Concen: 64.46 pptv
RT: 10.324 min Scan# 2460
Delta R.T. 0.003 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 78 Resp: 9306

Ion	Ratio	Lower	Upper
78	100		
50	11.9	0.0	62.6

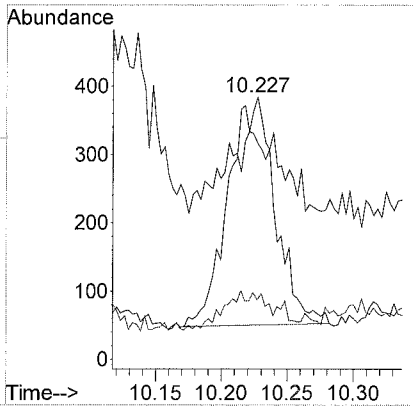


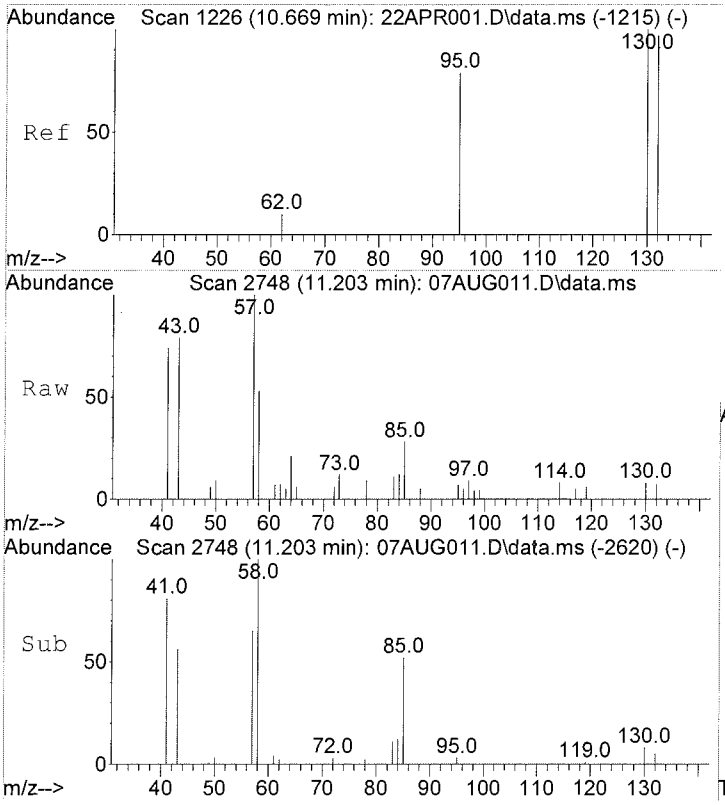


#24
1,2-Dichloroethane
Concen: 15.03 pptv
RT: 10.227 min Scan# 2428
Delta R.T. 0.007 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 62 Resp: 826

Ion	Ratio	Lower	Upper
62	100		
64	24.4	0.0	83.0
98	13.1	0.0	61.0

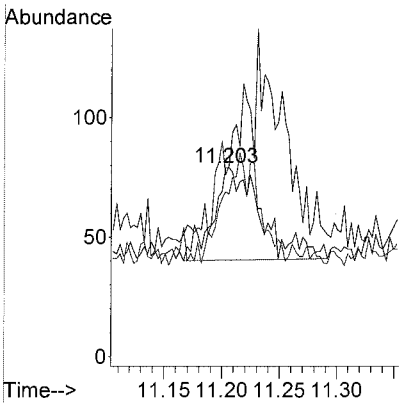


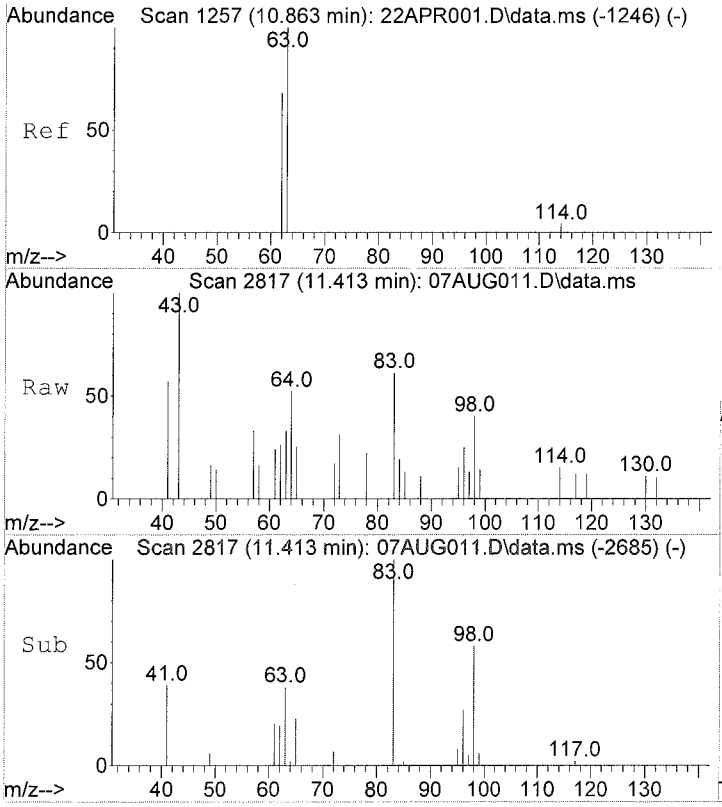


#25
Trichloroethene
Concen: 1.18 pptv
RT: 11.203 min Scan# 2748
Delta R.T. -0.009 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:130 Resp: 113

Ion	Ratio	Lower	Upper
130	100		
95	64.1	30.9	130.9
132	76.9	46.0	146.0

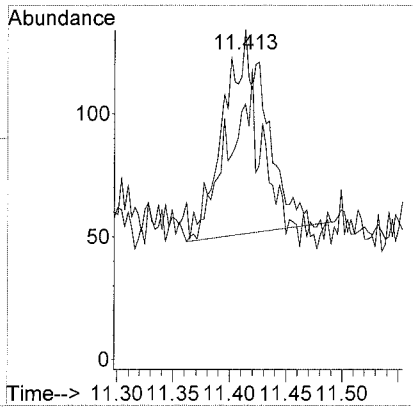


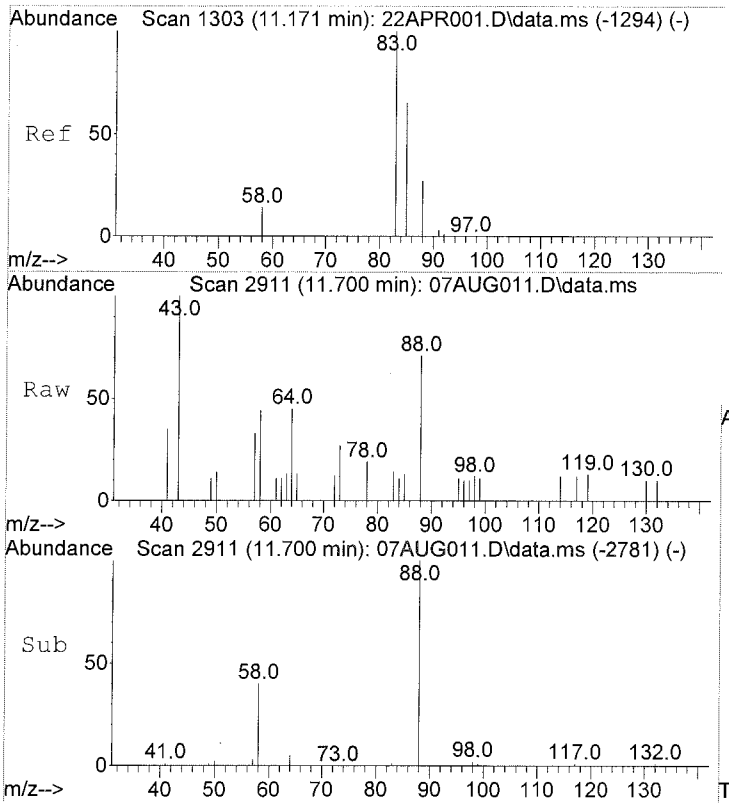


#26
1,2-Dichloropropane
Concen: 6.02 pptv
RT: 11.413 min Scan# 2817
Delta R.T. 0.003 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 63 Resp: 214

Ion	Ratio	Lower	Upper
63	100		
62	66.3	20.3	120.3

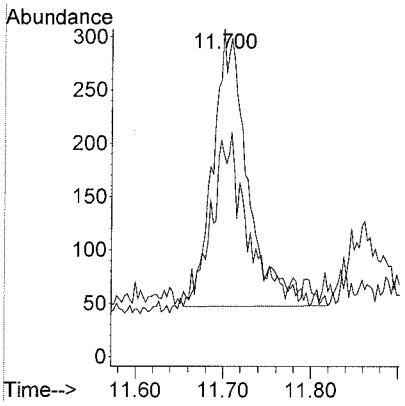


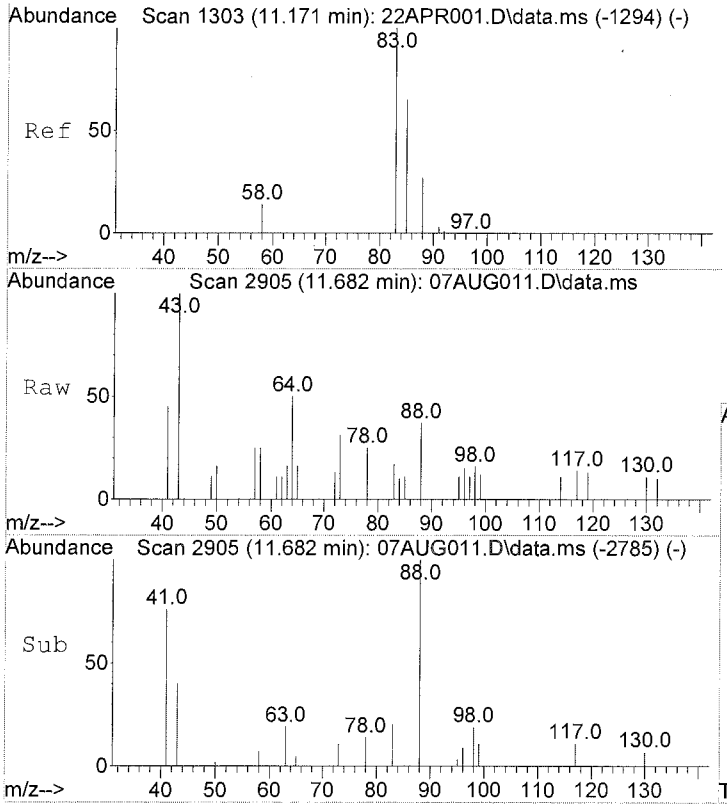


#27
1,4-Dioxane
Concen: 22.42 pptv
RT: 11.700 min Scan# 2911
Delta R.T. -0.003 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 88 Resp: 713

Ion	Ratio	Lower	Upper
88	100		
58	50.0	38.7	58.1

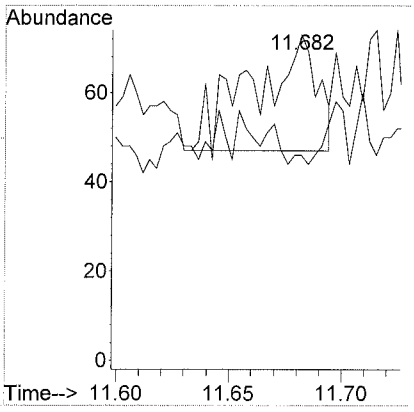


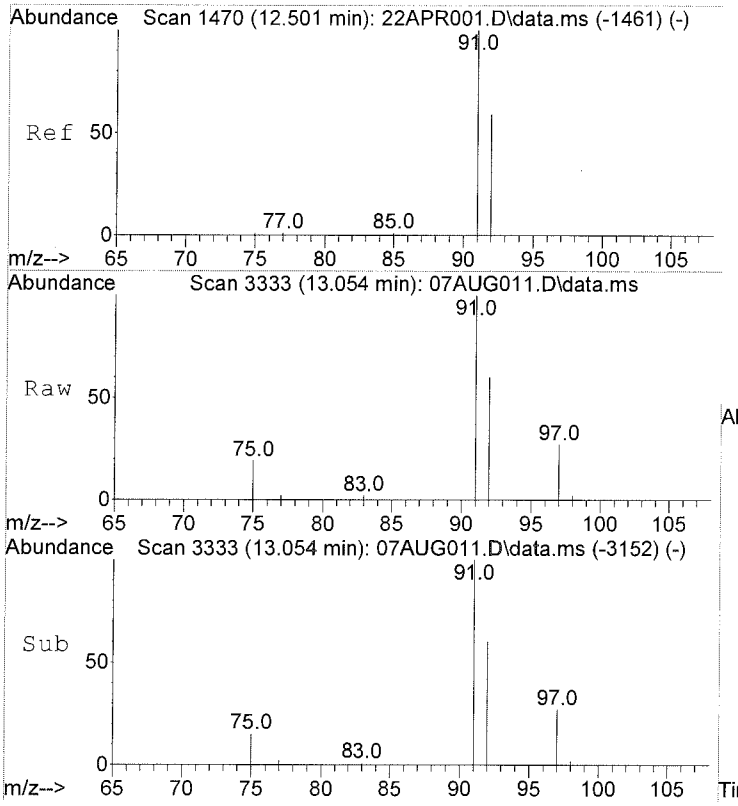


#28
Bromodichloromethane
Concen: 0.63 pptv
RT: 11.682 min Scan# 2905
Delta R.T. -0.034 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 83 Resp: 52

Ion	Ratio	Lower	Upper
83	100		
85	0.0	13.9	113.9#

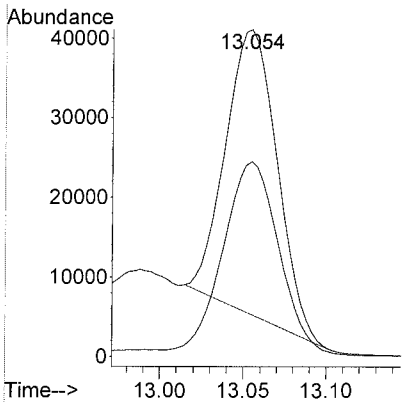


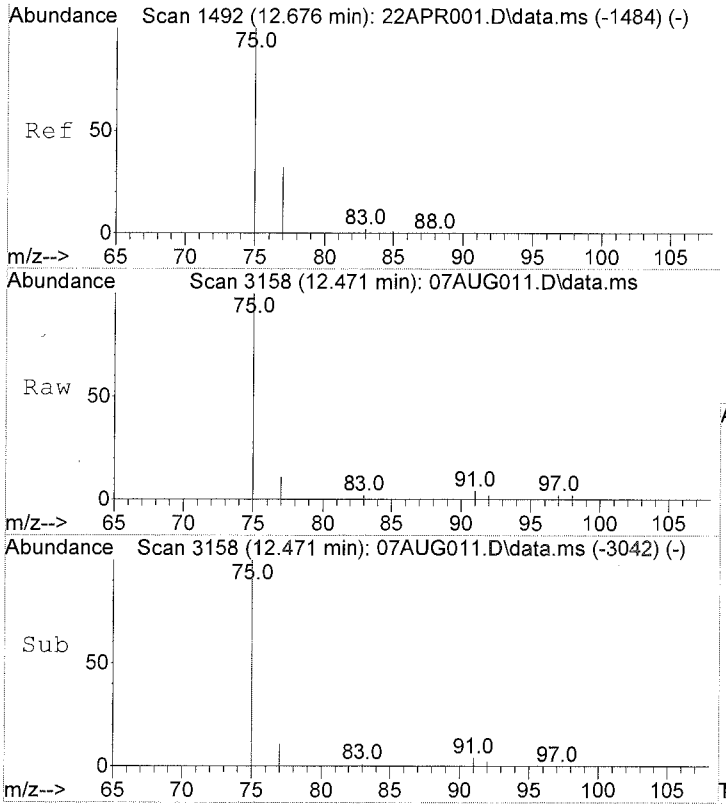


#30
Toluene
Concen: 453.67 pptv
RT: 13.054 min Scan# 3333
Delta R.T. 0.002 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 91 Resp: 76081

Ion	Ratio	Lower	Upper
91	100		
92	59.5	10.0	110.0

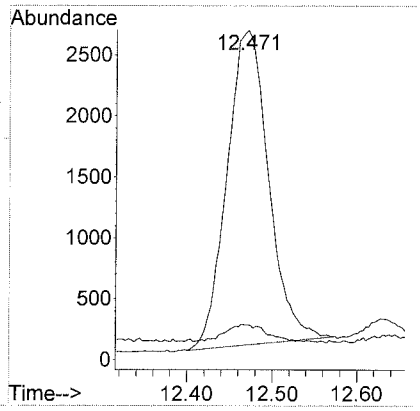


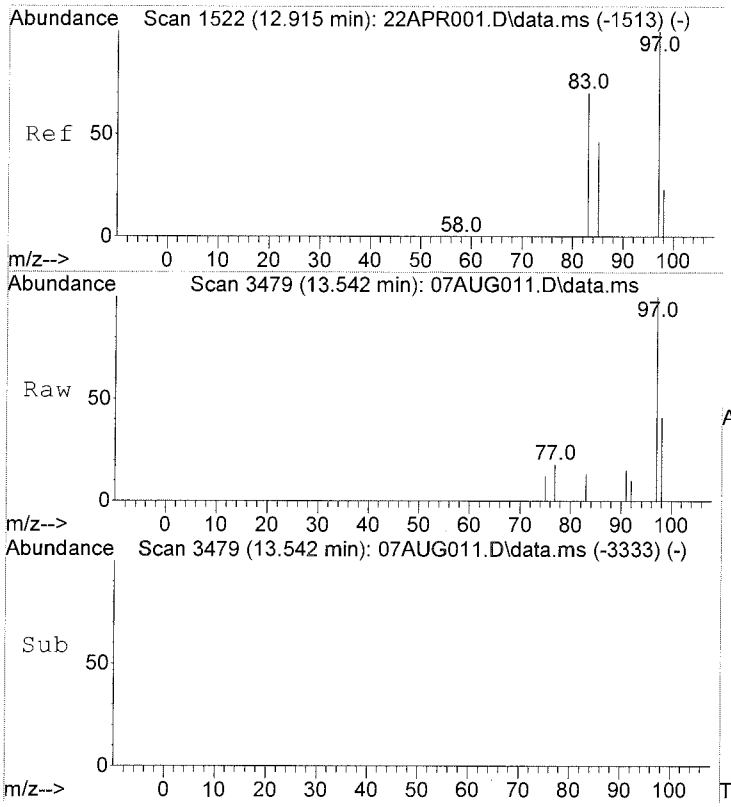


#32
t-1,3-Dichloropropene
Concen: 168.43 pptv
RT: 12.471 min Scan# 3158
Delta R.T. -0.028 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 75 Resp: 8741

Ion	Ratio	Lower	Upper
75	100		
77	5.2	0.0	81.7

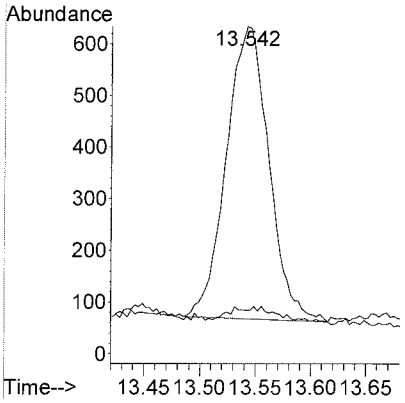


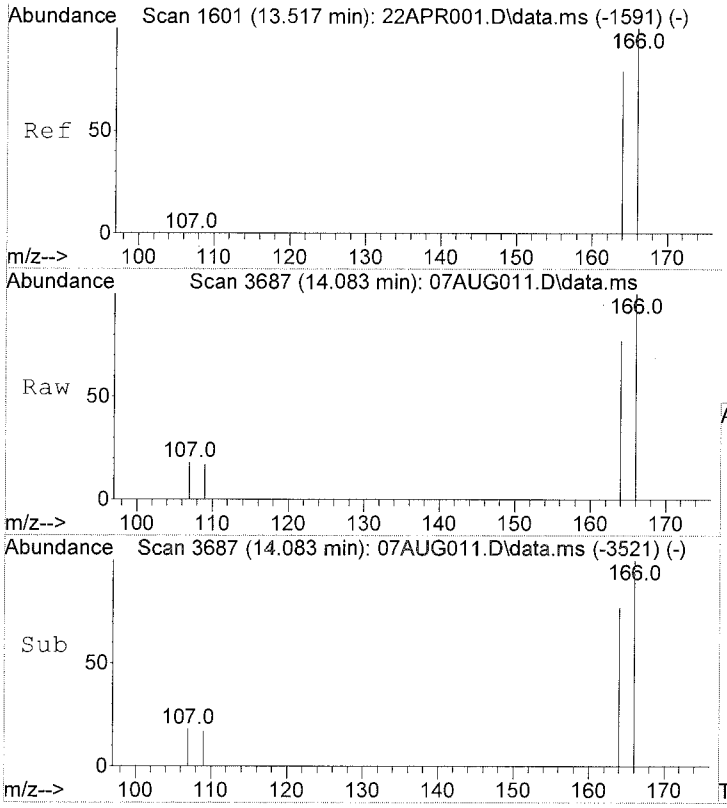


#33
1,1,2-Trichloroethane
Concen: 22.88 pptv
RT: 13.542 min Scan# 3479
Delta R.T. 0.087 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 97 Resp: 1495

Ion	Ratio	Lower	Upper
97	100		
83	3.8	25.1	125.1#

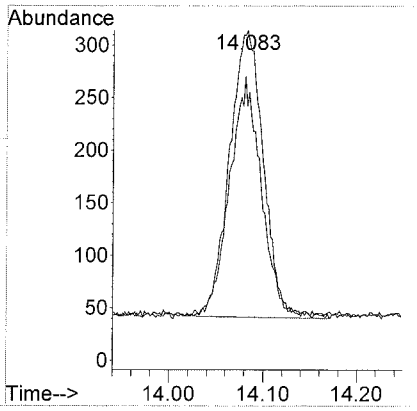


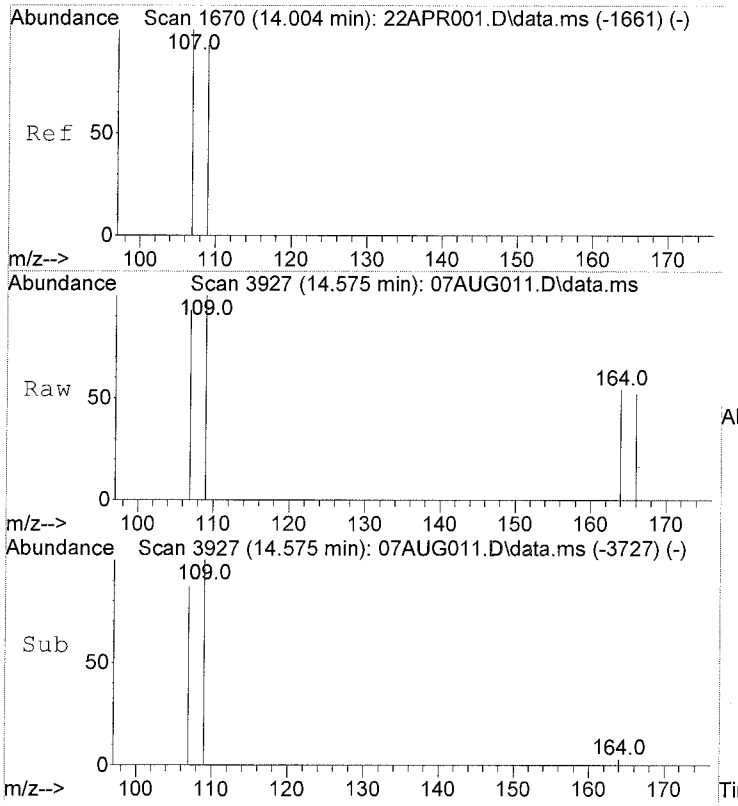


#34
Tetrachloroethene
Concen: 4.73 pptv
RT: 14.083 min Scan# 3687
Delta R.T. 0.002 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:166 Resp: 678

Ion	Ratio	Lower	Upper
166	100		
164	73.0	25.3	125.3

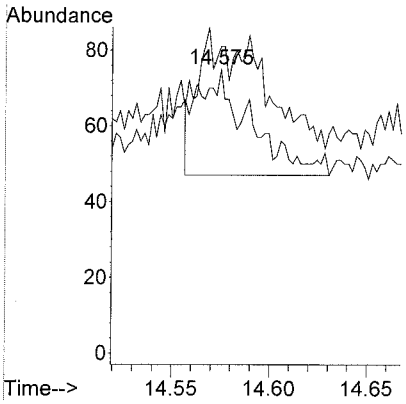


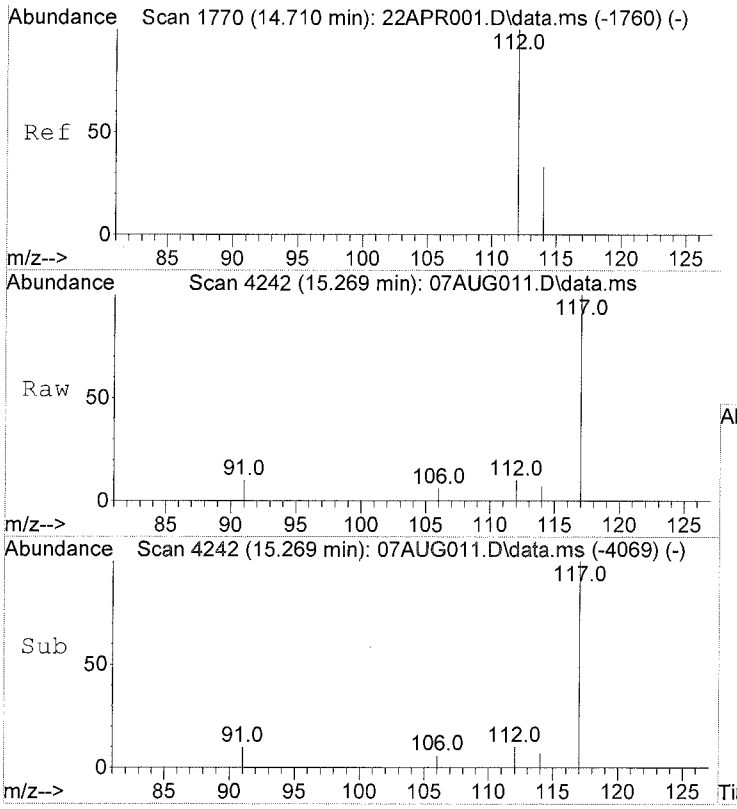


#35
1,2-Dibromoethane
Concen: 0.55 pptv
RT: 14.575 min Scan# 3927
Delta R.T. 0.011 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:107 Resp: 53

Ion	Ratio	Lower	Upper
107	100		
109	82.1	43.3	143.3

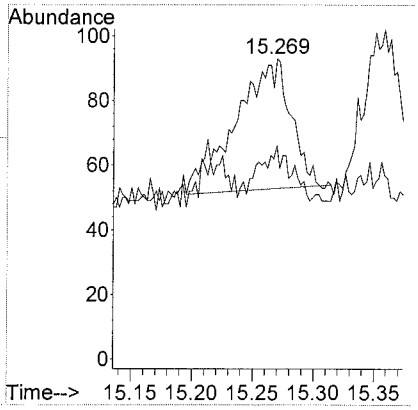


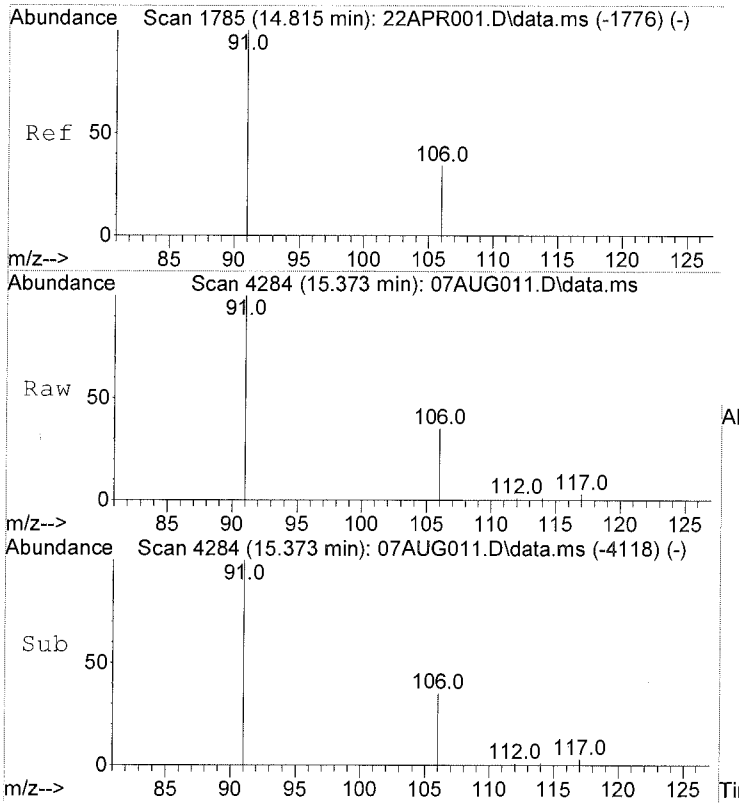


#36
Chlorobenzene
Concen: 0.70 pptv
RT: 15.269 min Scan# 4242
Delta R.T. 0.004 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:112 Resp: 127

Ion	Ratio	Lower	Upper
112	100		
114	45.2	0.0	81.6

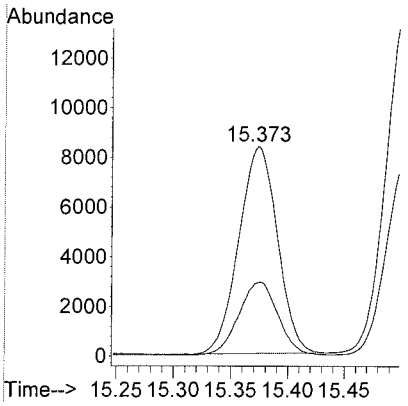


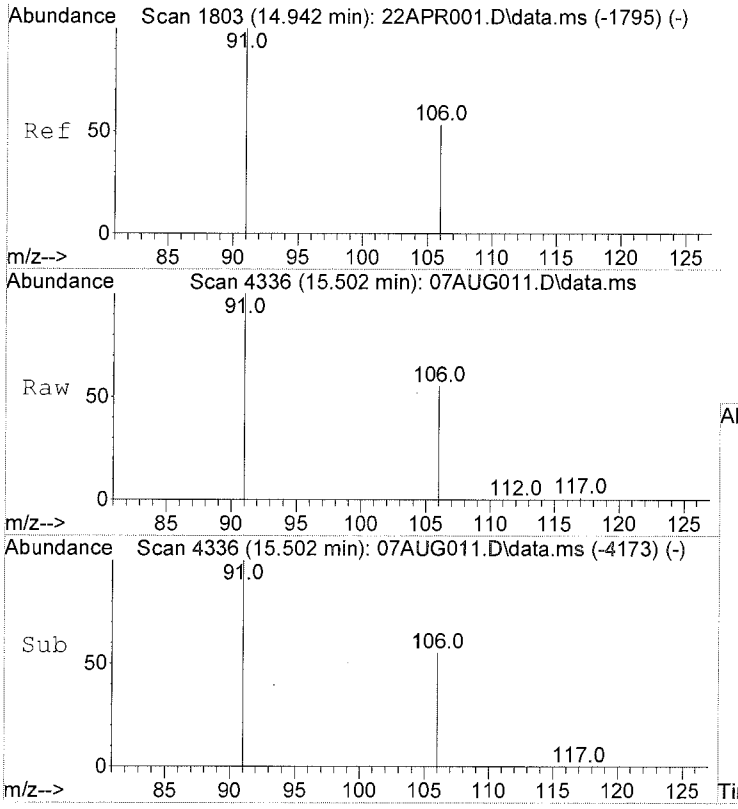


#37
Ethylbenzene
Concen: 99.99 pptv
RT: 15.373 min Scan# 4284
Delta R.T. 0.006 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 91 Resp: 19487

Ion	Ratio	Lower	Upper
91	100		
106	34.8	0.0	83.4

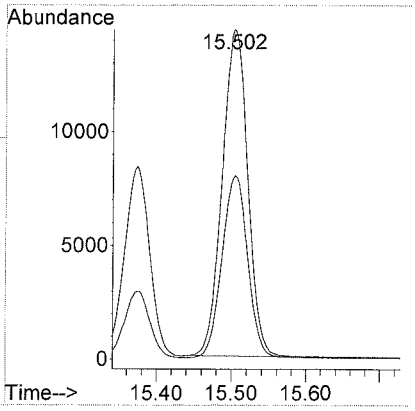


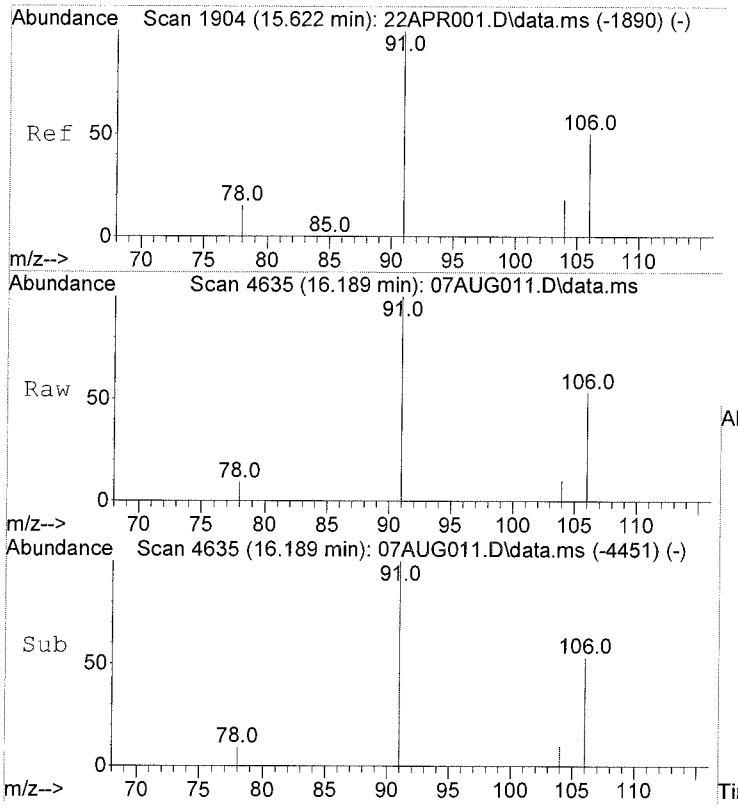


#38
p,&m-Xylene
Concen: 200.72 pptv
RT: 15.502 min Scan# 4336
Delta R.T. 0.004 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 91 Resp: 33806

Ion	Ratio	Lower	Upper
91	100		
106	55.1	3.9	103.9

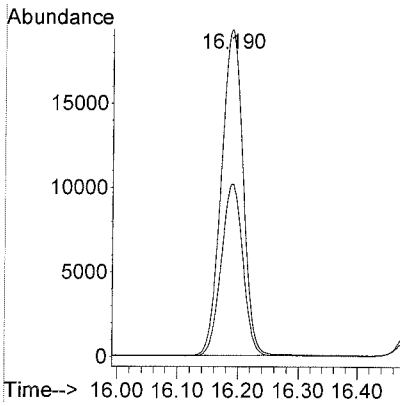


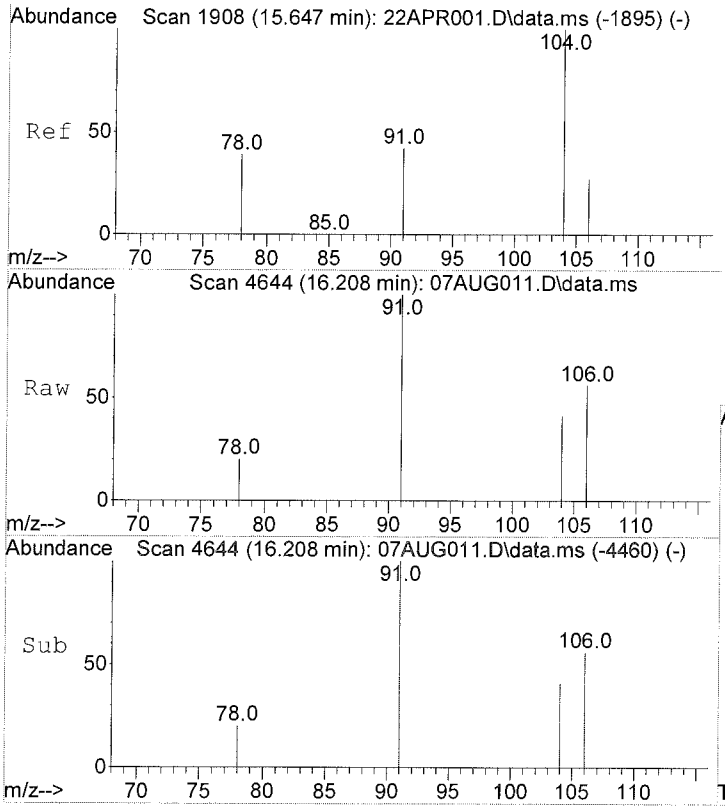


#39
o-Xylene
Concen: 338.54 pptv
RT: 16.189 min Scan# 4635
Delta R.T. 0.002 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 91 Resp: 48185

Ion	Ratio	Lower	Upper
91	100		
106	52.7	0.0	97.3

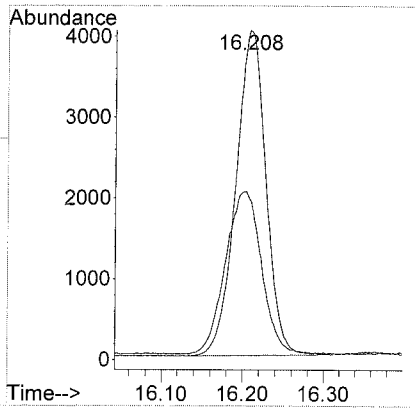


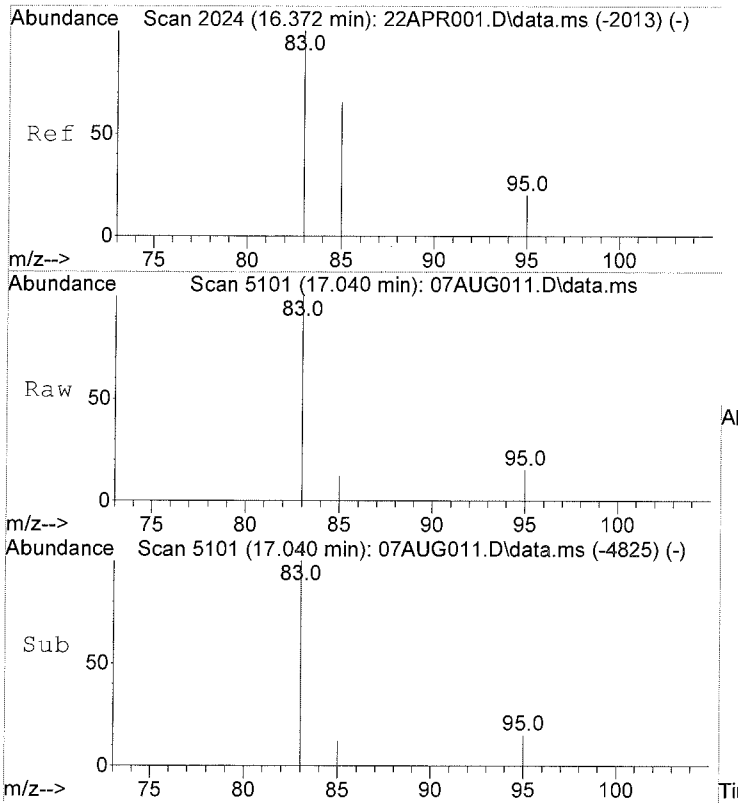


#40
Styrene
Concen: 86.12 pptv
RT: 16.208 min Scan# 4644
Delta R.T. -0.002 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:104 Resp: 10359

Ion	Ratio	Lower	Upper
104	100		
78	47.4	0.0	87.4

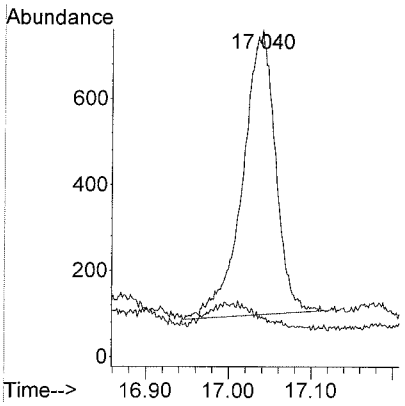


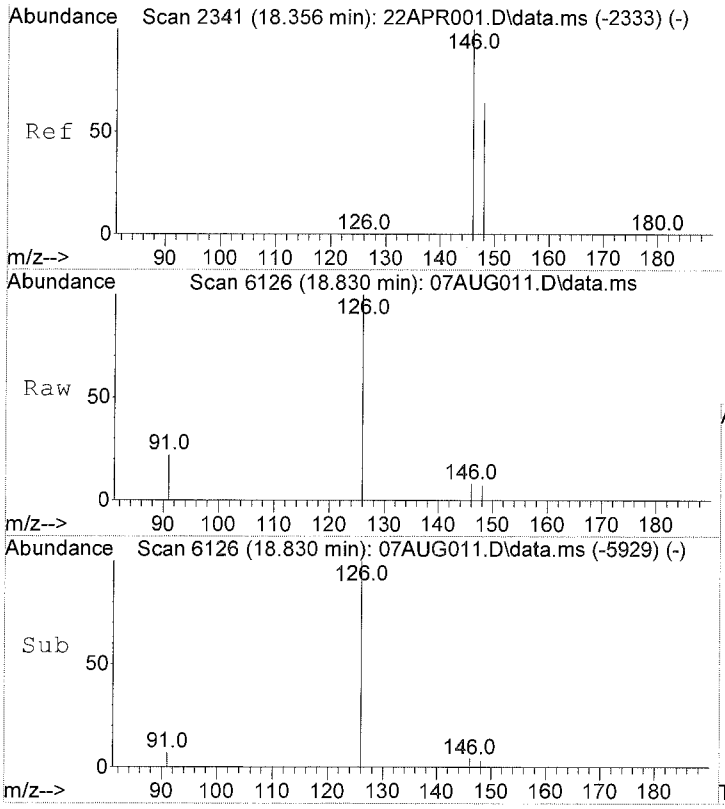


#41
1,1,2,2-Tetrachloroethane
Concen: 17.88 pptv
RT: 17.040 min Scan# 5101
Delta R.T. 0.061 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 83 Resp: 1824

Ion	Ratio	Lower	Upper
83	100		
85	4.8	13.6	113.6#

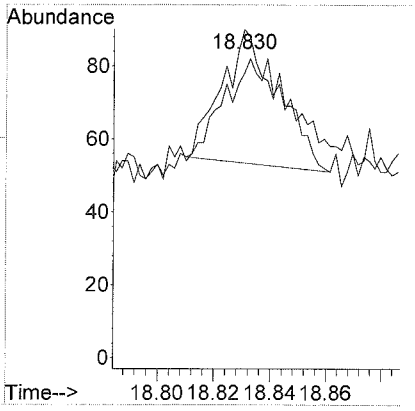


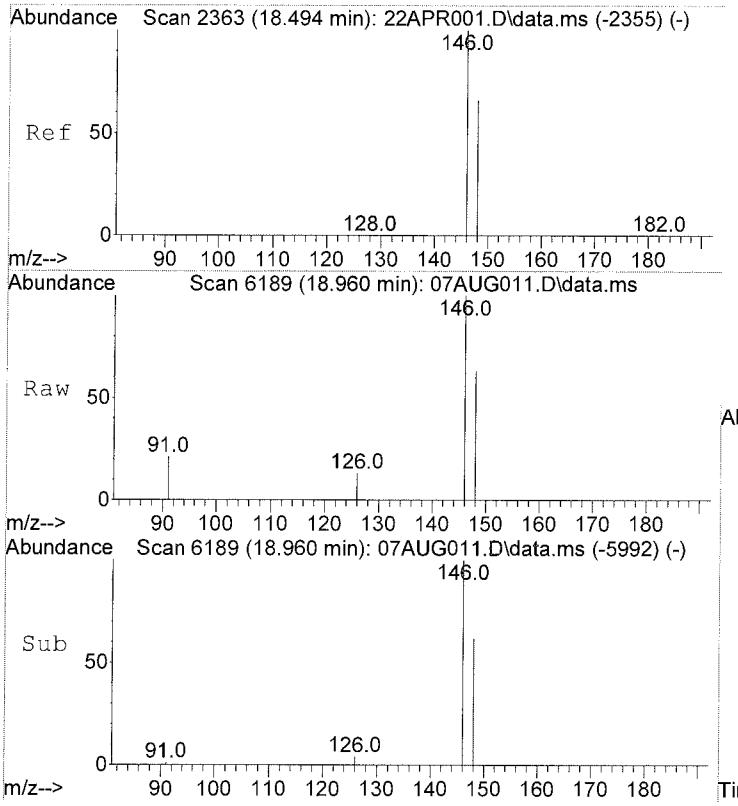


#43
1,3-Dichlorobenzene
Concen: 0.24 pptv
RT: 18.830 min Scan# 6126
Delta R.T. 0.003 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:146 Resp: 51

Ion	Ratio	Lower	Upper
146	100		
148	61.5	13.9	113.9

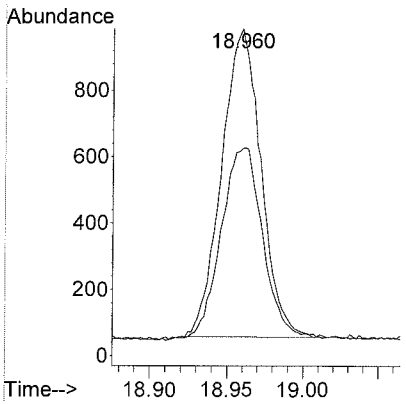


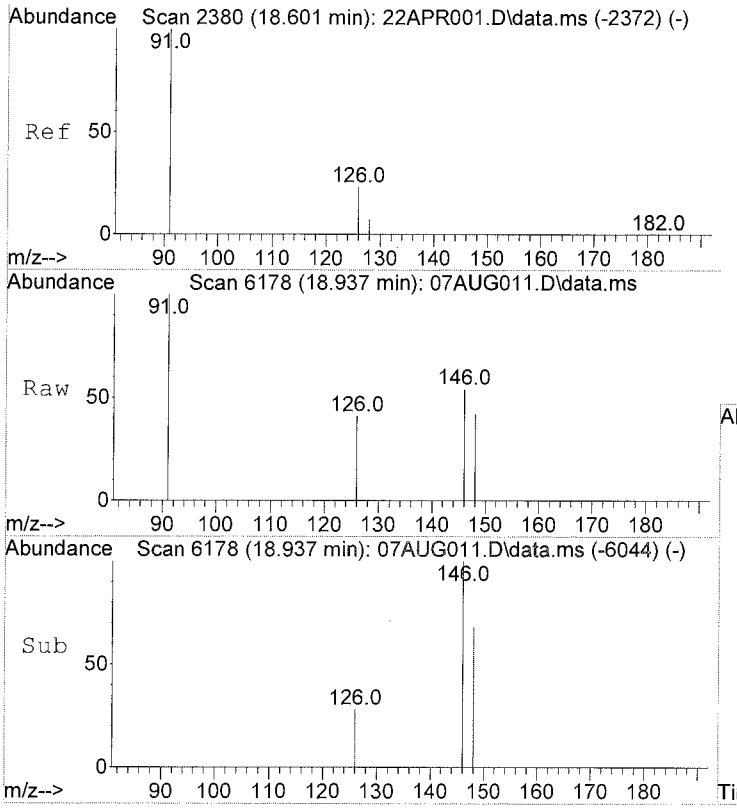


#44
1,4-Dichlorobenzene
Concen: 7.61 pptv
RT: 18.960 min Scan# 6189
Delta R.T. 0.005 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:146 Resp: 1680

Ion	Ratio	Lower	Upper
146	100		
148	61.4	15.5	115.5

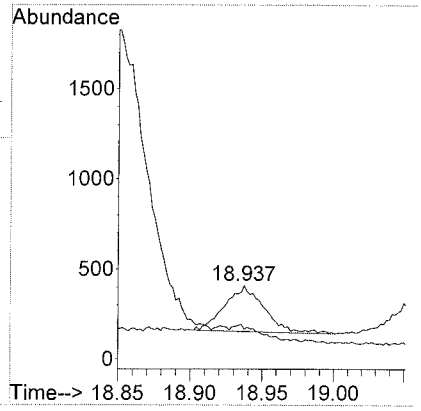


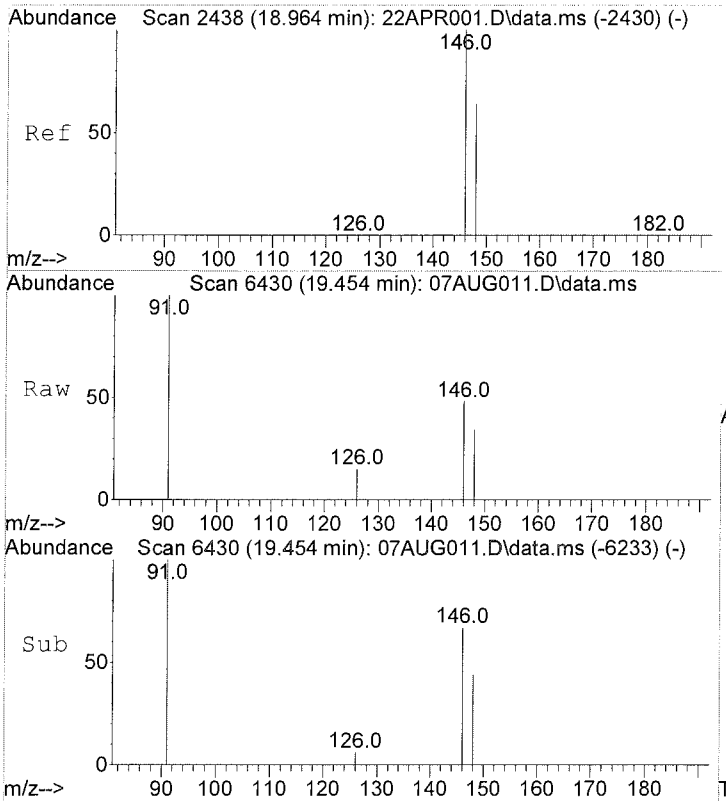


#45
Benzyl Chloride
Concen: 11.35 pptv
RT: 18.937 min Scan# 6178
Delta R.T. -0.125 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion: 91 Resp: 486

Ion	Ratio	Lower	Upper
91	100		
126	27.7	18.7	28.1

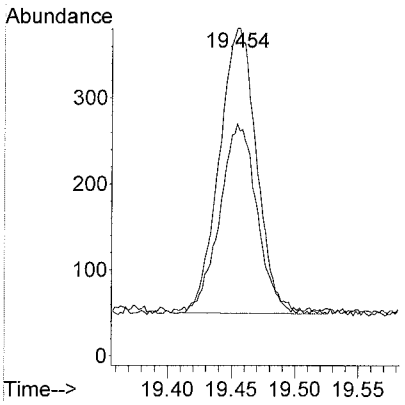


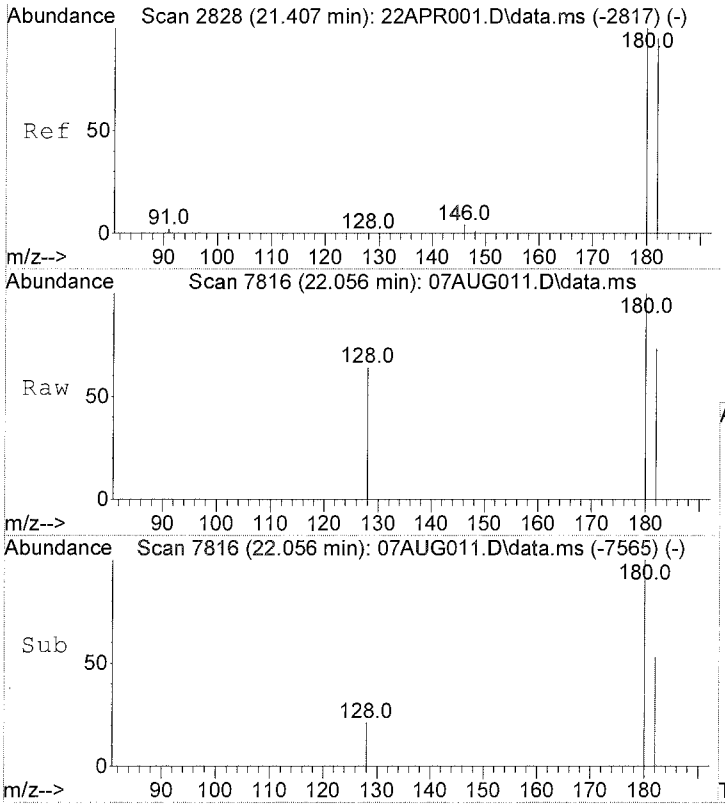


#46
1,2-Dichlorobenzene
Concen: 3.43 pptv
RT: 19.454 min Scan# 6430
Delta R.T. 0.004 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:146 Resp: 679

Ion	Ratio	Lower	Upper
146	100		
148	64.8	13.7	113.7

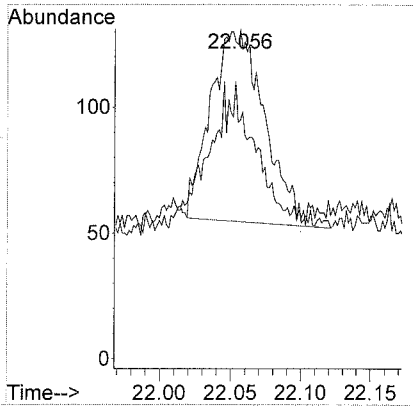


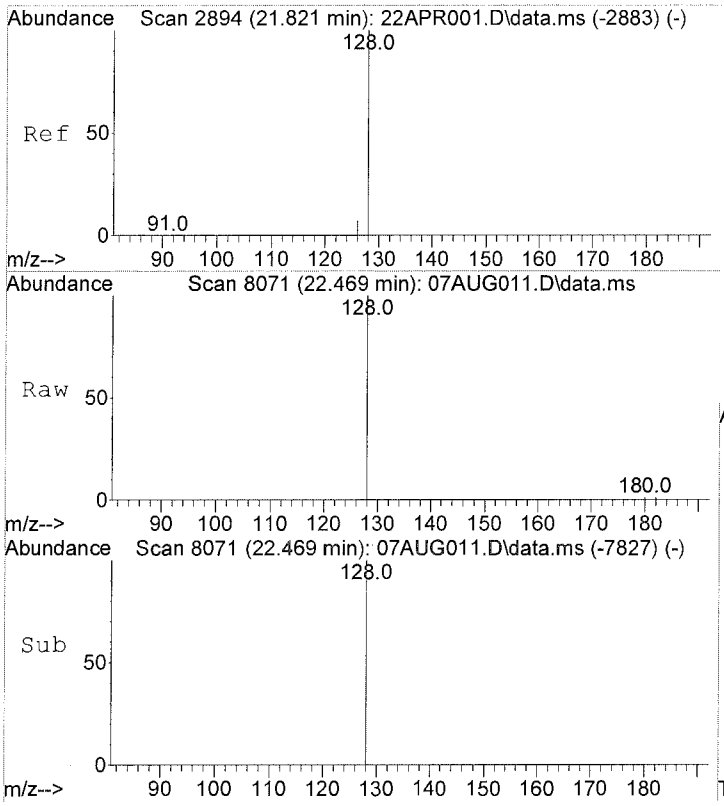


#47
1,2,4-Trichlorobenzene
Concen: 1.30 pptv
RT: 22.056 min Scan# 7816
Delta R.T. 0.007 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:180 Resp: 203

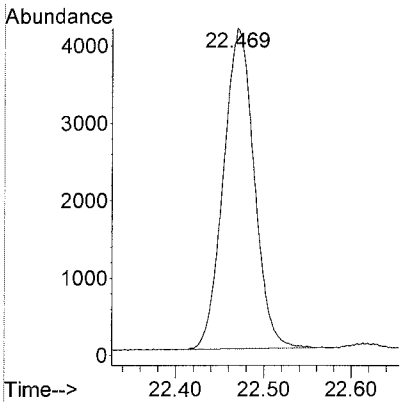
Ion	Ratio	Lower	Upper
180	100		
182	48.1	44.8	144.8





#48
Naphthalene
Concen: 46.63 pptv
RT: 22.469 min Scan# 8071
Delta R.T. -0.005 min
Lab File: 07AUG011.D
Acq: 7 Aug 2018 6:23 pm

Tgt Ion:128 Resp: 10007



3. Initial Calibration

a. ICAL Summary
b. Results/Chromatograms

Default Initial Calibration Criteria:

90% of target compounds must have RSD <30%
All target compounds must have RSD <50%

(This criteria superceded by any project specific criteria)

ethod Path : C:\msdchem\1\methods\
thod File : SL180624.M
tle : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
st Update : Mon Jun 25 10:25:20 2018
esponse Via : Initial Calibration

alibration Files
.5 =24JUN014.D 5.0 =24JUN015.D 20 =24JUN016.D 50 =24JUN017.D 100 =24JUN018.D 200 =24JUN019.D 500 =24JUN020.D
000=24JUN021.D 2000=24JUN022.D 10k =24JUN023.D

		Compound	3.5	5.0	20	50	100	200	500	1000	2000	10k	Avg	%RSD
)	I	Bromochloromethane	----------ISTD----------											
)		Dichlorodifluo...	3.200	2.595	2.275	2.140	2.055	2.222	2.149	2.157	1.972	1.900	2.267	16.69
)		Chloromethane			0.227	0.202	0.388	0.244	0.280	0.305	0.307	0.337	0.286	21.32
)		Vinyl Chloride	0.379	0.517	0.449	0.401	0.387	0.455	0.335	0.379	0.387	0.421	0.411	12.50
)		Bromomethane			0.512	0.564	0.527	0.569	0.342	0.228	0.455		0.457	27.90
)		Chloroethane	0.357	0.353	0.213	0.267	0.250	0.307	0.296	0.242	0.304	0.242	0.283	17.15
)		Trichlorofluor...	3.026	2.763	2.497	2.428	2.328	2.542	2.406	2.509	2.285	2.148	2.493	10.02
)		1,1,2-Cl 1,2,2...	2.539	2.398	2.239	2.259	2.197	2.378	2.310	2.319	2.116	2.034	2.279	6.37
)		Acetone				1.282	1.016	0.822	0.942	0.952	0.790	0.701	0.929	20.39
)		1,1-Dichloroet...	0.899	0.813	0.799	0.773	0.792	0.837	0.832	0.854	0.793	0.776	0.817	4.80
)	M	Methylene Chlo...			0.720	0.604	0.597	0.660	0.621	0.641	0.585	0.565	0.624	7.90
)		t-Butyl Methyl...	0.974	1.474	1.441	1.433	1.441	1.638	1.713	1.833	1.728	1.748	1.542	16.16
)		t-1,2-Dichloro...	0.899	0.813	0.799	0.773	0.792	0.837	0.832	0.854	0.793	0.776	0.817	4.80
)		Hexane	0.915	0.730	0.701	0.635	0.649	0.753	0.797	0.848	0.802	0.795	0.762	11.44
)		1,1-Dichloroet...	1.224	1.189	1.111	1.111	1.087	1.200	1.184	1.222	1.126	1.086	1.154	4.77
)		2-Butanone		0.604	0.375	0.293	0.320	0.309	0.331	0.371	0.336	0.335	0.364	25.85
)		c-1,2-Dichloro...	1.326	0.935	0.754	0.777	0.785	0.904	0.904	0.940	0.873	0.839	0.904	18.01
)	t	Chloroform	1.992	1.801	1.637	1.651	1.591	1.777	1.747	1.786	1.621	1.575	1.718	7.48
)		1,1,1-Trichlor...	2.014	1.668	1.694	1.675	1.655	1.818	1.821	1.887	1.755	1.767	1.775	6.40
)	t	Carbon Tetrach...	1.272	1.338	1.421	1.615	1.609	1.924	1.979	2.089	1.984	2.013	1.724	17.92
)	I	1,4-Difluorobenzene	----------ISTD----------											
)	T	Benzene			1.004	0.763	0.671	0.699	0.664	0.637	0.614	0.591	0.705	18.67
)	S	1,2-Dichloroet...	0.255	0.257	0.254	0.256	0.254	0.244	0.242	0.241	0.245	0.247	0.250	2.53
)		1,2-Dichloroet...	0.400	0.325	0.259	0.237	0.230	0.264	0.250	0.245	0.240	0.234	0.268	19.98
)	M	Trichloroethene			0.729	0.433	0.410	0.463	0.443	0.433	0.417	0.405	0.467	23.07
)		1,2-Dichloropr...	0.117	0.181	0.167	0.175	0.169	0.192	0.187	0.187	0.182	0.179	0.174	12.36
)		1,4-Dioxane		0.216	0.134	0.134	0.128	0.154	0.158	0.164	0.155	0.155	0.155	16.87
)		Bromodichlorom...	0.438	0.365	0.336	0.359	0.345	0.439	0.436	0.441	0.434	0.433	0.403	11.11
)	S	Toluene-d8	0.766	0.767	0.766	0.763	0.761	0.761	0.765	0.763	0.763	0.761	0.764	0.29
)	M	Toluene			0.978	0.830	0.757	0.853	0.819	0.808	0.764	0.745	0.819	9.12
)	I	Chlorobenzene-d5	----------ISTD----------											
)		t-1,3-Dichloro...		0.301	0.250	0.224	0.222	0.287	0.317	0.343	0.353	0.407	0.300	20.65
)		1,1,2-Trichlor...	0.461	0.378	0.340	0.358	0.342	0.407	0.401	0.388	0.357	0.350	0.378	9.93
		Tetrachloroethene	1.027	0.869	0.752	0.789	0.753	0.881	0.839	0.831	0.781	0.767	0.829	10.11
	t	1,2-Dibromoethane		0.812	0.548	0.446	0.440	0.550	0.561	0.579	0.544	0.563	0.560	19.10

Method Path : C:\msdchem\1\methods\
Method File : SL180624.M
Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm

)		Chlorobenzene	1.675	1.268	0.919	0.918	0.870	1.044	1.008	0.988	0.885	0.856	1.043	24.24
)	T	Ethylbenzene	1.558	1.124	0.921	0.962	0.947	1.183	1.206	1.201	1.099	1.080	1.128	16.34
)	T	p,&m-Xylene			1.394	0.743	0.754	1.000	1.044	1.035	0.933	0.895	0.975	21.09
)	T	o-Xylene		0.721	0.609	0.667	0.673	0.903	0.976	1.014	0.929	0.923	0.824	18.73
)		Styrene	0.985	0.693	0.519	0.486	0.492	0.712	0.792	0.825	0.731	0.728	0.696	22.91
)	M	1,1,2,2-Tetrac...	0.742	0.522	0.476	0.545	0.516	0.689	0.663	0.660	0.545	0.545	0.590	15.20
)	S	4-Bromofluorob...	0.560	0.538	0.555	0.573	0.582	0.589	0.579	0.564	0.555	0.547	0.564	2.86
)		1,3-Dichlorobe...		1.836	1.190	1.077	1.011	1.403	1.354	1.299	1.056	0.984	1.245	21.60
)		1,4-Dichlorobe...		2.168	1.304	1.039	0.971	1.360	1.331	1.286	1.047	0.998	1.278	28.80
)		Benzyl Chloride		0.269	0.159	0.136	0.132	0.275	0.308	0.353	0.351		0.248	37.56
)		1,2-Dichlorobe...		1.612	1.054	0.965	0.922	1.320	1.280	1.231	1.003	0.923	1.145	20.34
)		1,2,4-Trichlor...			1.039	0.718	0.652	0.981	0.969	0.977	0.923	0.981	0.905	15.54
)		Naphthalene			1.143	0.883	0.704	1.212	1.411	1.561	1.416	1.606	1.242	25.86

) = Out of Range

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN014.D
Acq On : 24 Jun 2018 10:26 pm
Operator : VM
Sample : 3.5 PPTV
Misc : 35 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 25 01:17:57 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Sun Jun 24 17:35:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.351	130	105550	2000.00	pptv	0.02
21) 1,4-Difluorobenzene	10.688	114	405891m	2000.00	pptv	0.29
31) Chlorobenzene-d5	15.209	117	320950m	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.106	65	103667	1876.66	pptv	0.01
Spiked Amount 2000.000	Range 70 - 130		Recovery = 93.83%			
29) Toluene-d8	12.938	98	310912m	2196.69	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 109.83%			
42) 4-Bromofluorobenzene	17.184	95	179742m	2113.49	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 105.67%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.648	85	591	4.85	pptv	97
3) Chloromethane	3.977	50	329	16.12	pptv #	47
5) Bromomethane	4.970	96	321	11.60	pptv	99
7) Trichlorofluoromethane...	5.551	101	559	4.21	pptv	100
8) 1,1,2-Cl 1,2,2-F ethan...	6.266	151	469	3.84	pptv	94
9) Acetone	6.202	43	2449	32.62	pptv	83
10) 1,1-Dichloroethene	6.447	96	166	4.27	pptv	85
11) Methylene Chloride	7.057	49	150	3.72	pptv	95
12) t-Butyl Methyl Ether	7.429	73	180	2.82	pptv	75
13) t-1,2-Dichloroethene	6.447	96	166	4.88	pptv	93
14) Hexane	7.788	57	169	5.36	pptv	87
15) 1,1-Dichloroethane	8.084	63	226	3.85	pptv	85
16) 2-Butanone	8.662	72	145	8.64	pptv	75
17) c-1,2-Dichloroethene	8.931	96	245	6.70	pptv	88
18) Chloroform	9.150	83	368	4.24	pptv	93
19) 1,1,1-Trichloroethane	9.765	97	372	3.92	pptv	98
20) Carbon Tetrachloride	10.162	117	235	2.52	pptv	95
22) Benzene	10.332	78	2068	14.36	pptv	99
24) 1,2-Dichloroethane	10.225	62	284	5.31	pptv	93
25) Trichloroethene	11.219	130	1448	17.28	pptv	95
26) 1,2-Dichloropropane	11.419	63	83	2.03	pptv	86
27) 1,4-Dioxane	11.719	88	354	17.82	pptv	94
28) Bromodichloromethane	11.727	83	311	3.46	pptv	97
30) Toluene	13.057	91	1902m	12.45	pptv	
32) t-1,3-Dichloropropene	12.508	75	271	8.68	pptv	87
33) 1,1,2-Trichloroethane	13.463	97	259	4.06	pptv	84
34) Tetrachloroethene	14.081	166	577	4.17	pptv	99
35) 1,2-Dibromoethane	14.574	107	610	7.40	pptv	98
36) Chlorobenzene	15.266	112	941	5.86	pptv	98
37) Ethylbenzene	15.371	91	875m	6.02	pptv	
38) p,&m-Xylene	15.499	91	1235	8.92	pptv	99
39) o-Xylene	16.189	91	465	4.55	pptv	96
40) Styrene	16.214	104	553	6.06	pptv	96
41) 1,1,2,2-Tetrachloroethane	16.984	83	417	4.37	pptv	96
43) 1,3-Dichlorobenzene	18.830	146	1815m	10.43	pptv	
44) 1,4-Dichlorobenzene	18.955	146	2000m	12.24	pptv	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN014.D
Acq On : 24 Jun 2018 10:26 pm
Operator : VM
Sample : 3.5 PPTV
Misc : 35 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 25 01:17:57 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Sun Jun 24 17:35:01 2018
Response via : Initial Calibration

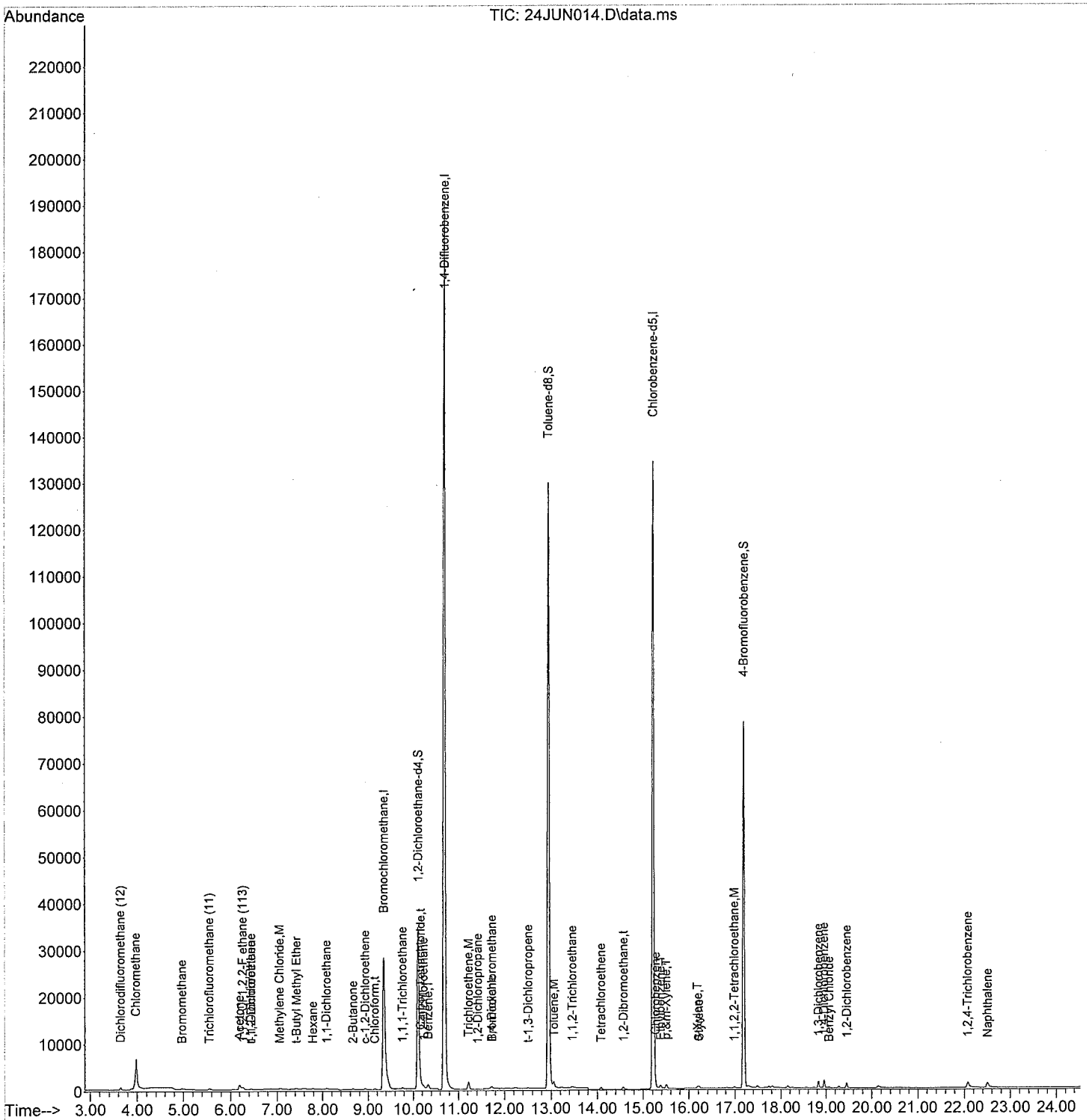
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
45) Benzyl Chloride	19.062	91	314m	5.33	pptv	
46) 1,2-Dichlorobenzene	19.450	146	1482m	8.83	pptv	
47) 1,2,4-Trichlorobenzene	22.075	180	2687m	26.77	pptv	
48) Naphthalene	22.501	128	3739m	44.87	pptv	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN014.D
Acq On : 24 Jun 2018 10:26 pm
Operator : VM
Sample : 3.5 PPTV
Misc : 35 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 25 01:17:57 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Sun Jun 24 17:35:01 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN015.D
Acq On : 24 Jun 2018 11:07 pm
Operator : VM
Sample : 5 PPTV
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 25 01:19:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Sun Jun 24 17:35:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.351	130	105264	2000.00	pptv	0.02
21) 1,4-Difluorobenzene	10.688	114	395408m	2000.00	pptv	0.29
31) Chlorobenzene-d5	15.209	117	312426	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.099	65	101707	1889.99	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 94.50%			
29) Toluene-d8	12.938	98	303222	2199.16	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 109.96%			
42) 4-Bromofluorobenzene	17.184	95	168216	2031.92	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 101.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.642	85	683	5.62	pptv	96
3) Chloromethane	3.970	50	336	16.51	pptv	52
4) Vinyl Chloride	4.280	62	136m	6.57	pptv	
5) Bromomethane	4.964	96	456m	16.52	pptv	
6) Chloroethane	5.099	64	93m	5.62	pptv	
7) Trichlorofluoromethane...	5.550	101	727	5.49	pptv	92
8) 1,1,2-Cl 1,2,2-F ethan...	6.272	151	631m	5.18	pptv	
9) Acetone	6.195	43	1978	26.42	pptv	86
10) 1,1-Dichloroethene	6.440	96	214	5.52	pptv	98
11) Methylene Chloride	7.057	49	417m	10.37	pptv	
12) t-Butyl Methyl Ether	7.422	73	388	6.09	pptv	83
13) t-1,2-Dichloroethene	6.440	96	214	6.31	pptv	86
14) Hexane	7.788	57	192	6.11	pptv	81
15) 1,1-Dichloroethane	8.084	63	313	5.34	pptv	89
16) 2-Butanone	8.655	72	159	9.50	pptv	60
17) c-1,2-Dichloroethene	8.937	96	246	6.74	pptv	84
18) Chloroform	9.150	83	474	5.47	pptv	93
19) 1,1,1-Trichloroethane	9.765	97	439	4.64	pptv	92
20) Carbon Tetrachloride	10.150	117	352	3.79	pptv	94
22) Benzene	10.332	78	2149	15.32	pptv	99
24) 1,2-Dichloroethane	10.232	62	321	6.17	pptv	98
25) Trichloroethene	11.219	130	1280	15.68	pptv	96
26) 1,2-Dichloropropane	11.425	63	179	4.50	pptv	91
27) 1,4-Dioxane	11.719	88	214	11.06	pptv	95
28) Bromodichloromethane	11.719	83	361	4.13	pptv	91
30) Toluene	13.057	91	1877	12.61	pptv	98
32) t-1,3-Dichloropropene	12.508	75	235	7.73	pptv	89
33) 1,1,2-Trichloroethane	13.455	97	295	4.75	pptv	89
34) Tetrachloroethene	14.081	166	679	5.04	pptv	98
35) 1,2-Dibromoethane	14.574	107	634	7.91	pptv	96
36) Chlorobenzene	15.265	112	990	6.33	pptv	98
37) Ethylbenzene	15.371	91	878	6.21	pptv	98
38) p,&m-Xylene	15.498	91	1407	10.43	pptv	98
39) o-Xylene	16.189	91	563	5.66	pptv	98
40) Styrene	16.214	104	541	6.09	pptv	97
41) 1,1,2,2-Tetrachloroethane	16.984	83	408	4.40	pptv	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN015.D
Acq On : 24 Jun 2018 11:07 pm
Operator : VM
Sample : 5 PPTV
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 25 01:19:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Sun Jun 24 17:35:01 2018
Response via : Initial Calibration

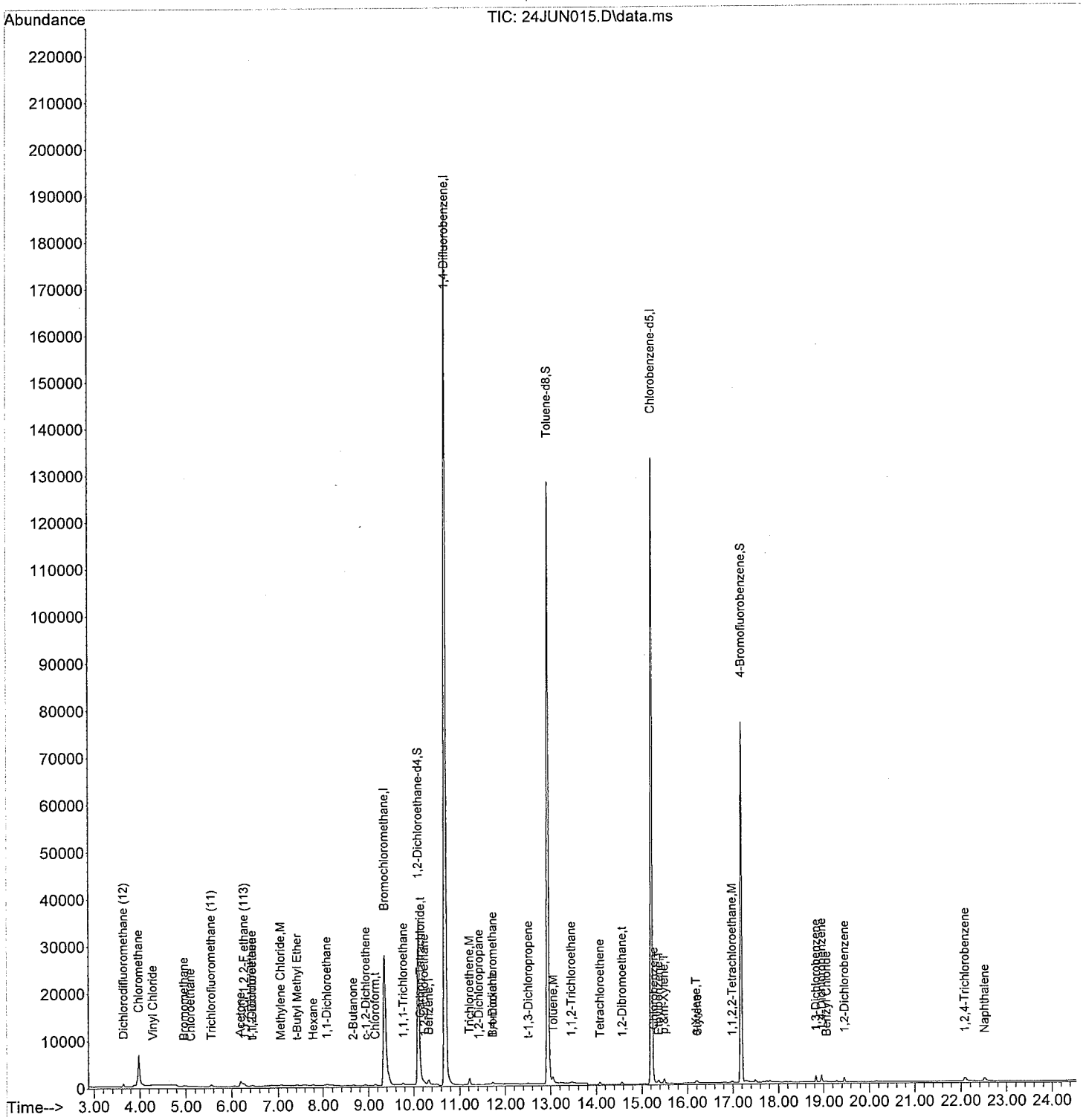
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	1434	8.47	pptv	100
44) 1,4-Dichlorobenzene	18.961	146	1693	10.64	pptv	99
45) Benzyl Chloride	19.062	91	210	3.66	pptv	98
46) 1,2-Dichlorobenzene	19.456	146	1259	7.71	pptv	97
47) 1,2,4-Trichlorobenzene	22.081	180	1754	17.95	pptv	96
48) Naphthalene	22.507	128	2334	28.78	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN015.D
Acq On : 24 Jun 2018 11:07 pm
Operator : VM
Sample : 5 PPTV
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 25 01:19:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Sun Jun 24 17:35:01 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN016.D
Acq On : 24 Jun 2018 11:49 pm
Operator : VM
Sample : 20 PPTV
Misc : 200 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 25 01:21:52 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 01:20:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.344	130	99170	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.688	114	396669	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.209	117	310318	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.099	65	100768	1905.75	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 95.29%			
29) Toluene-d8	12.937	98	303717	2135.88	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 106.79%			
42) 4-Bromofluorobenzene	17.184	95	172286	2046.21	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 102.31%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.628	85	2256	19.98	pptv	99
3) Chloromethane	4.048	50	225	7.40	pptv	95
4) Vinyl Chloride	4.273	62	445m	22.71	pptv	
5) Bromomethane	4.957	96	508m	13.85	pptv	
6) Chloroethane	5.093	64	211	13.57	pptv	89
7) Trichlorofluoromethane...	5.537	101	2476	19.77	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.259	151	2220	19.43	pptv	90
9) Acetone	6.188	43	4648	27.45	pptv	84
10) 1,1-Dichloroethene	6.433	96	792	21.43	pptv	93
11) Methylene Chloride	7.044	49	714	19.68	pptv	88
12) t-Butyl Methyl Ether	7.422	73	1429	22.76	pptv	87
13) t-1,2-Dichloroethene	6.433	96	792	23.30	pptv	92
14) Hexane	7.781	57	695	21.93	pptv	95
15) 1,1-Dichloroethane	8.084	63	1102	19.73	pptv	100
16) 2-Butanone	8.649	72	372	19.30	pptv	94
17) c-1,2-Dichloroethene	8.931	96	748	18.64	pptv	94
18) Chloroform	9.150	83	1623	19.56	pptv	98
19) 1,1,1-Trichloroethane	9.765	97	1680	19.08	pptv	98
20) Carbon Tetrachloride	10.150	117	1409	16.10	pptv	98
22) Benzene	10.326	78	3982	18.66	pptv	97
24) 1,2-Dichloroethane	10.231	62	1027	18.23	pptv	98
25) Trichloroethene	11.219	130	2891	22.33	pptv	95
26) 1,2-Dichloropropane	11.419	63	664	17.54	pptv	90
27) 1,4-Dioxane	11.719	88	530	16.42	pptv	99
28) Bromodichloromethane	11.719	83	1334	15.61	pptv	96
30) Toluene	13.057	91	3880	18.46	pptv	99
32) t-1,3-Dichloropropene	12.507	75	776	20.51	pptv	98
33) 1,1,2-Trichloroethane	13.463	97	1055	16.63	pptv	92
34) Tetrachloroethene	14.080	166	2335	17.30	pptv	96
35) 1,2-Dibromoethane	14.567	107	1702	17.79	pptv	98
36) Chlorobenzene	15.265	112	2852	16.90	pptv	97
37) Ethylbenzene	15.371	91	2859	17.98	pptv	100
38) p,&m-Xylene	15.498	91	4326	24.99	pptv	99
39) o-Xylene	16.189	91	1891	18.04	pptv	94
40) Styrene	16.214	104	1609	16.49	pptv	97
41) 1,1,2,2-Tetrachloroethane	16.984	83	1478	15.38	pptv	94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN016.D
Acq On : 24 Jun 2018 11:49 pm
Operator : VM
Sample : 20 PPTV
Misc : 200 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 25 01:21:52 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 01:20:57 2018
Response via : Initial Calibration

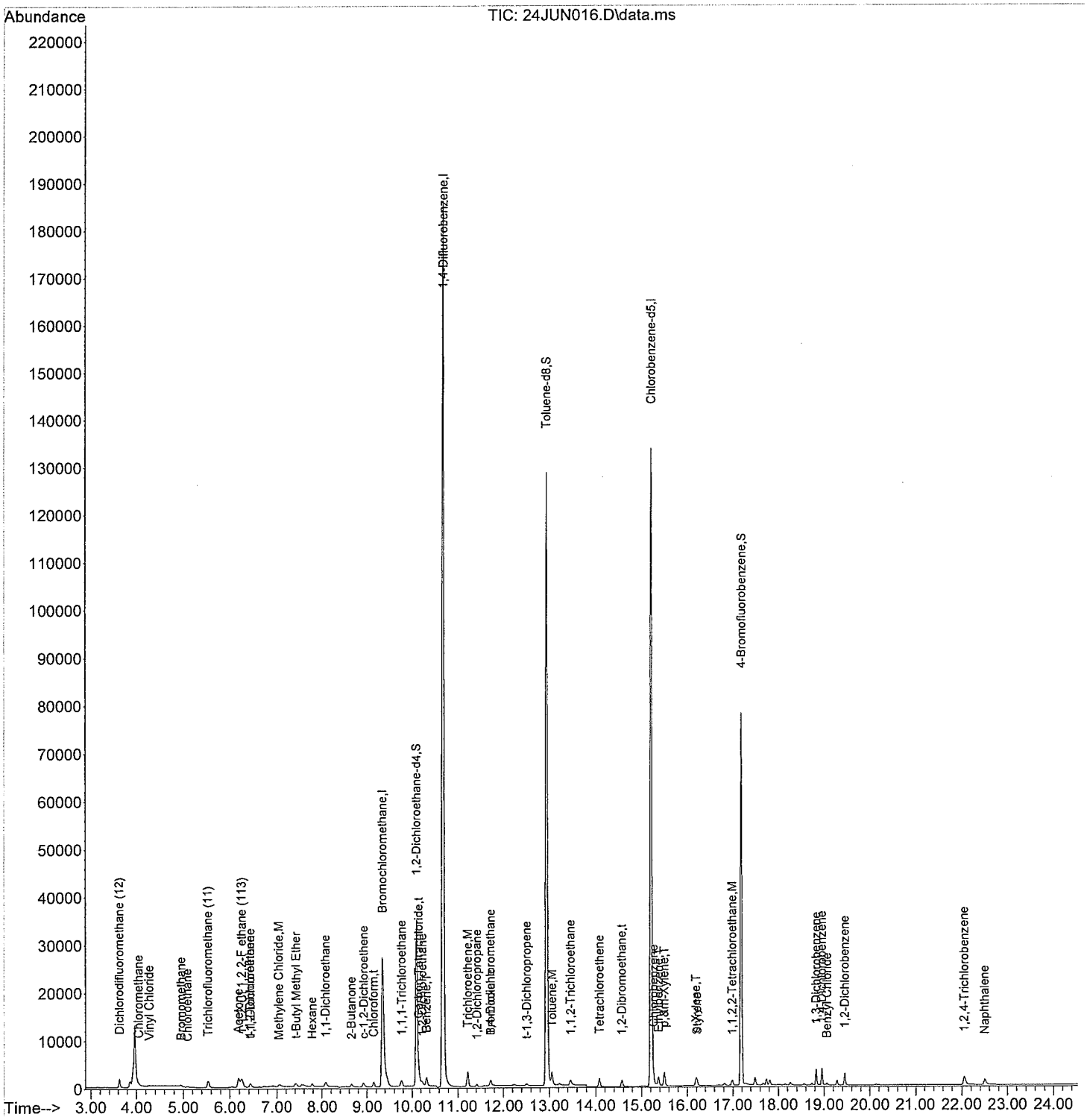
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	3693	16.99	pptv	100
44) 1,4-Dichlorobenzene	18.955	146	4046	18.59	pptv	96
45) Benzyl Chloride	19.061	91	492	8.40	pptv	94
46) 1,2-Dichlorobenzene	19.450	146	3270	16.31	pptv	100
47) 1,2,4-Trichlorobenzene	22.050	180	3225	17.39	pptv	97
48) Naphthalene	22.494	128	3547	14.33	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN016.D
Acq On : 24 Jun 2018 11:49 pm
Operator : VM
Sample : 20 PPTV
Misc : 200 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 25 01:21:52 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVo1atiles 0.32mm
QLast Update : Mon Jun 25 01:20:57 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN017.D
Acq On : 25 Jun 2018 12:30 am
Operator : VM
Sample : 50 PPTV
Misc : 50 ML
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 25 01:23:32 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 01:22:57 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.351	130	103335	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.688	114	392756	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.209	117	307603	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.099	65	100449	1945.66	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 97.28%			
29) Toluene-d8	12.938	98	299697	2104.77	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 105.24%			
42) 4-Bromofluorobenzene	17.184	95	176115	2081.87	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 104.09%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.629	85	5529	46.98	pptv	99
3) Chloromethane	4.054	50	523	17.09	pptv	91
4) Vinyl Chloride	4.274	62	1035m	48.94	pptv	
5) Bromomethane	4.957	96	1456	38.39	pptv	95
6) Chloroethane	5.099	64	691	43.74	pptv	99
7) Trichlorofluoromethane...	5.544	101	6273	48.11	pptv	97
8) 1,1,2-Cl 1,2,2-F ethan...	6.260	151	5837	49.14	pptv	94
9) Acetone	6.195	43	3311	18.09	pptv	89
10) 1,1-Dichloroethene	6.434	96	1998	50.87	pptv	97
11) Methylene Chloride	7.057	49	1561	41.21	pptv	91
12) t-Butyl Methyl Ether	7.416	73	3703	54.28	pptv	79
13) t-1,2-Dichloroethene	6.434	96	1998	54.52	pptv	87
14) Hexane	7.788	57	1640	47.50	pptv	94
15) 1,1-Dichloroethane	8.090	63	2869	48.84	pptv	99
16) 2-Butanone	8.655	72	756	37.77	pptv	89
17) c-1,2-Dichloroethene	8.931	96	2008	46.79	pptv	96
18) Chloroform	9.150	83	4266	49.09	pptv	100
19) 1,1,1-Trichloroethane	9.765	97	4327	47.04	pptv	99
20) Carbon Tetrachloride	10.150	117	4173	45.16	pptv	99
22) Benzene	10.333	78	7488	35.02	pptv	100
24) 1,2-Dichloroethane	10.232	62	2323	41.75	pptv	99
25) Trichloroethene	11.219	130	4248	31.53	pptv	96
26) 1,2-Dichloropropane	11.419	63	1723	49.22	pptv	100
27) 1,4-Dioxane	11.711	88	1315	39.05	pptv	90
28) Bromodichloromethane	11.727	83	3529	42.31	pptv	100
30) Toluene	13.057	91	8151	38.52	pptv	100
32) t-1,3-Dichloropropene	12.508	75	1721	42.62	pptv	100
33) 1,1,2-Trichloroethane	13.463	97	2754	44.03	pptv	96
34) Tetrachloroethene	14.081	166	6065	45.46	pptv	99
35) 1,2-Dibromoethane	14.567	107	3428	35.35	pptv	100
36) Chlorobenzene	15.266	112	7056	42.05	pptv	99
37) Ethylbenzene	15.371	91	7396	45.40	pptv	97
38) p,&m-Xylene	15.499	91	11423	64.94	pptv	99
39) o-Xylene	16.189	91	5127	49.95	pptv	93
40) Styrene	16.214	104	3735	39.30	pptv	96
41) 1,1,2,2-Tetrachloroethane	16.984	83	4193	43.96	pptv	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN017.D
Acq On : 25 Jun 2018 12:30 am
Operator : VM
Sample : 50 PPTV
Misc : 50 ML
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 25 01:23:32 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 01:22:57 2018
Response via : Initial Calibration

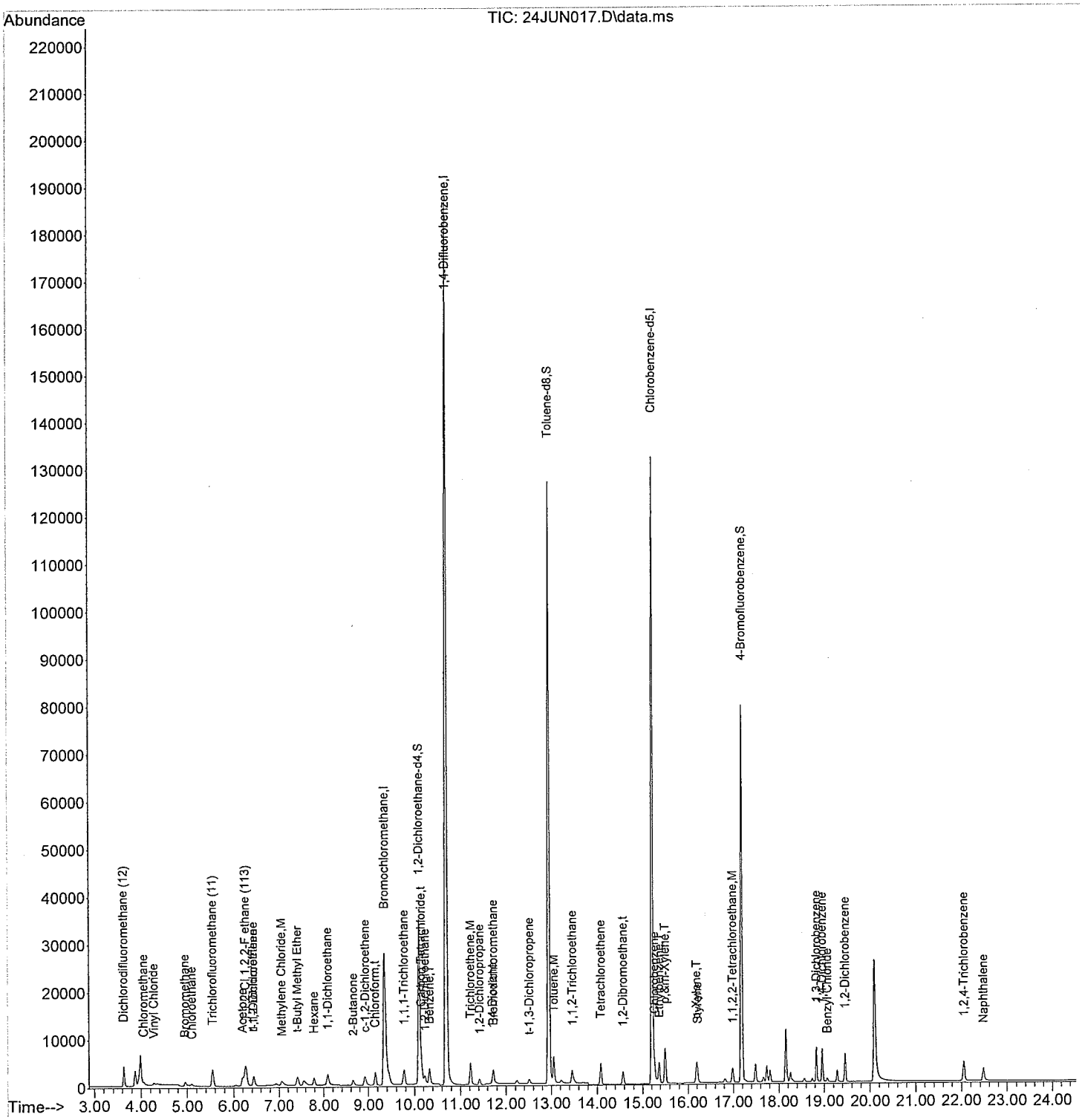
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	8284	37.17	pptv	100
44) 1,4-Dichlorobenzene	18.955	146	7990	35.36	pptv	97
45) Benzyl Chloride	19.062	91	1043	19.08	pptv	94
46) 1,2-Dichlorobenzene	19.450	146	7423	36.46	pptv	98
47) 1,2,4-Trichlorobenzene	22.050	180	5520	28.32	pptv	99
48) Naphthalene	22.470	128	6794	25.47	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN017.D
Acq On : 25 Jun 2018 12:30 am
Operator : VM
Sample : 50 PPTV
Misc : 50 ML
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 25 01:23:32 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 01:22:57 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN018.D
Acq On : 25 Jun 2018 1:11 am
Operator : VM
Sample : 100 PPTV
Misc : 100 ML
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 25 10:10:24 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 01:24:35 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.344	130	102652	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.688	114	400165	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.209	117	312548	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.099	65	101726	1956.69	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 97.83%			
29) Toluene-d8	12.938	98	304546	2075.51	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 103.78%			
42) 4-Bromofluorobenzene	17.184	95	181917	2086.81	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 104.34%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.622	85	10547	90.20	pptv	99
3) Chloromethane	4.041	50	1990m	67.35	pptv	
4) Vinyl Chloride	4.267	62	1986m	94.51	pptv	
5) Bromomethane	4.951	96	2703m	71.30	pptv	
6) Chloroethane	5.086	64	1285	83.07	pptv	89
7) Trichlorofluoromethane...	5.531	101	11950	92.37	pptv	100
8) 1,1,2-Cl 1,2,2-F ethan...	6.253	151	11274	95.60	pptv	95
9) Acetone	6.176	43	5217	30.13	pptv	90
10) 1,1-Dichloroethene	6.427	96	4064	103.02	pptv	96
11) Methylene Chloride	7.051	49	3064	81.68	pptv	95
12) t-Butyl Methyl Ether	7.410	73	7395	106.18	pptv	83
13) t-1,2-Dichloroethene	6.427	96	4064	108.79	pptv	88
14) Hexane	7.782	57	3331	94.43	pptv	98
15) 1,1-Dichloroethane	8.084	63	5580	95.13	pptv	99
16) 2-Butanone	8.643	72	1640	84.26	pptv	98
17) c-1,2-Dichloroethene	8.925	96	4029	92.57	pptv	97
18) Chloroform	9.150	83	8166	94.11	pptv	100
19) 1,1,1-Trichloroethane	9.765	97	8497	92.89	pptv	98
20) Carbon Tetrachloride	10.150	117	8258	90.87	pptv	99
22) Benzene	10.326	78	13431	62.02	pptv	100
24) 1,2-Dichloroethane	10.225	62	4597	82.01	pptv	98
25) Trichloroethene	11.213	130	8213	59.32	pptv	97
26) 1,2-Dichloropropane	11.419	63	3373	95.60	pptv	98
27) 1,4-Dioxane	11.711	88	2562	71.28	pptv	91
28) Bromodichloromethane	11.719	83	6904	82.08	pptv	99
30) Toluene	13.057	91	15149	69.71	pptv	99
32) t-1,3-Dichloropropene	12.508	75	3473	81.01	pptv	100
33) 1,1,2-Trichloroethane	13.463	97	5350	84.95	pptv	92
34) Tetrachloroethene	14.081	166	11766	86.96	pptv	98
35) 1,2-Dibromoethane	14.567	107	6881	69.65	pptv	98
36) Chlorobenzene	15.266	112	13600	79.69	pptv	99
37) Ethylbenzene	15.371	91	14792	87.19	pptv	98
38) p,&m-Xylene	15.498	91	23560	129.21	pptv	98
39) o-Xylene	16.189	91	10510	96.93	pptv	95
40) Styrene	16.214	104	7695	77.15	pptv	98
41) 1,1,2,2-Tetrachloroethane	16.977	83	8063	83.41	pptv	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN018.D
Acq On : 25 Jun 2018 1:11 am
Operator : VM
Sample : 100 PPTV
Misc : 100 ML
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 25 10:10:24 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 01:24:35 2018
Response via : Initial Calibration

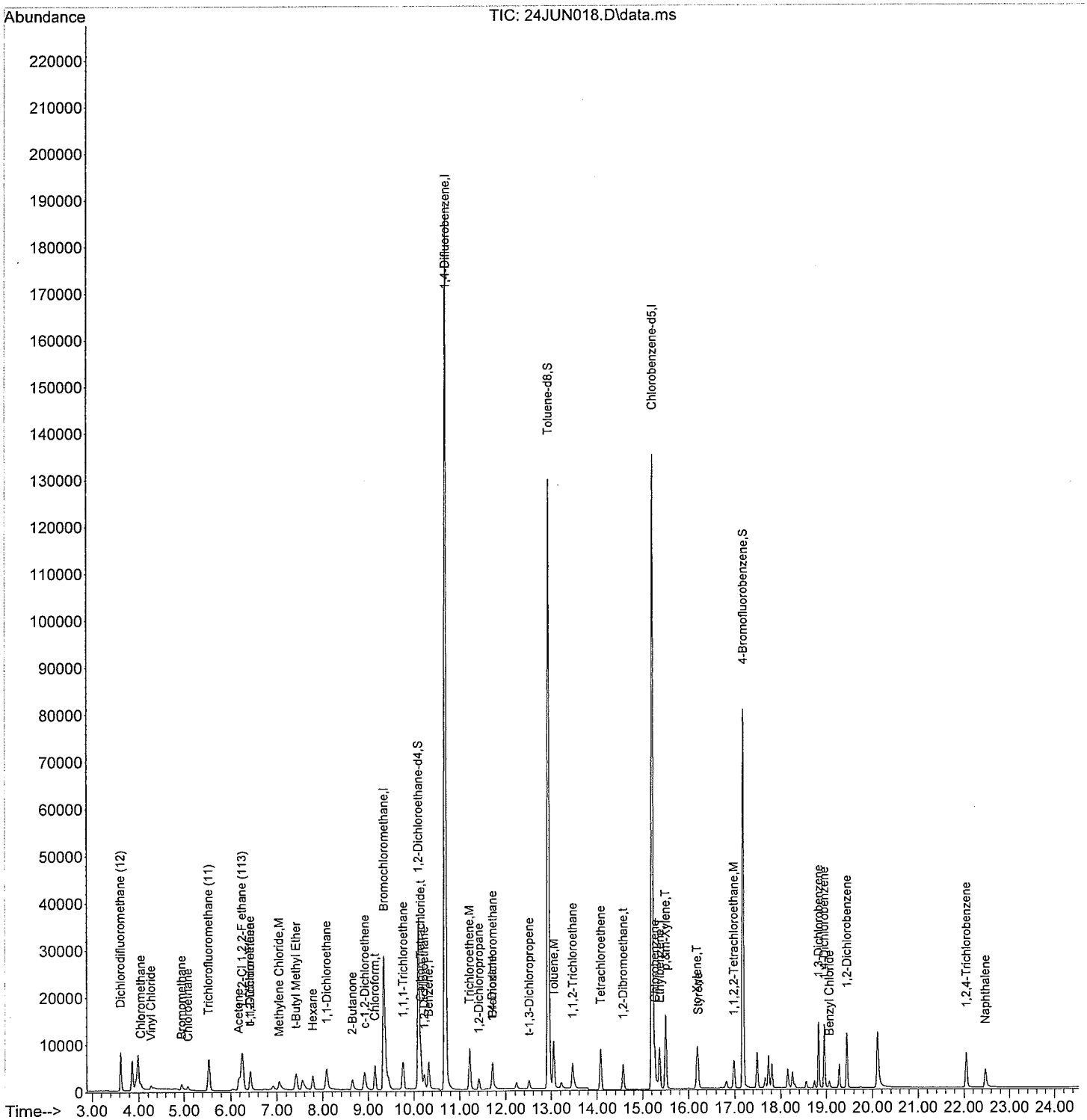
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	15799	68.69	pptv	99
44) 1,4-Dichlorobenzene	18.955	146	15176	64.89	pptv	97
45) Benzyl Chloride	19.062	91	2059	37.90	pptv	90
46) 1,2-Dichlorobenzene	19.450	146	14412	69.16	pptv	99
47) 1,2,4-Trichlorobenzene	22.050	180	10183	50.50	pptv	97
48) Naphthalene	22.470	128	10994	39.21	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN018.D
Acq On : 25 Jun 2018 1:11 am
Operator : VM
Sample : 100 PPTV
Misc : 100 ML
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 25 10:10:24 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 01:24:35 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN019.D
Acq On : 25 Jun 2018 1:52 am
Operator : VM
Sample : 200 PPTV
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 10:11:46 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:11:06 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.338	130	105544	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.683	114	401956	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.209	117	308183	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.099	65	98103	1898.62	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 94.93%			
29) Toluene-d8	12.937	98	305723	2052.23	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 102.61%			
42) 4-Bromofluorobenzene	17.184	95	181372	2096.99	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 104.85%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.609	85	23457	194.70	pptv	98
3) Chloromethane	4.028	50	2573	83.99	pptv	97
4) Vinyl Chloride	4.248	62	4801m	221.34	pptv	
5) Bromomethane	4.931	96	6009m	151.90	pptv	
6) Chloroethane	5.073	64	3237	205.55	pptv	93
7) Trichlorofluoromethane...	5.525	101	26831	201.69	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.247	151	25100	206.93	pptv	93
9) Acetone	6.163	43	8677	51.21	pptv	95
10) 1,1-Dichloroethene	6.421	96	8834	213.64	pptv	97
11) Methylene Chloride	7.038	49	6969	180.27	pptv	96
12) t-Butyl Methyl Ether	7.397	73	17287	234.76	pptv	86
13) t-1,2-Dichloroethene	6.421	96	8834	222.49	pptv	87
14) Hexane	7.775	57	7949	213.18	pptv	97
15) 1,1-Dichloroethane	8.077	63	12665	208.47	pptv	99
16) 2-Butanone	8.636	72	3266	166.70	pptv	98
17) c-1,2-Dichloroethene	8.925	96	9544	209.56	pptv	95
18) Chloroform	9.144	83	18760	209.05	pptv	100
19) 1,1,1-Trichloroethane	9.759	97	19185	203.33	pptv	99
20) Carbon Tetrachloride	10.143	117	20303	218.95	pptv	99
22) Benzene	10.326	78	28096	128.54	pptv	99
24) 1,2-Dichloroethane	10.225	62	10617	189.01	pptv	98
25) Trichloroethene	11.213	130	18615	132.88	pptv	96
26) 1,2-Dichloropropane	11.414	63	7736	218.60	pptv	99
27) 1,4-Dioxane	11.703	88	6181	165.41	pptv	93
28) Bromodichloromethane	11.719	83	17627	210.14	pptv	99
30) Toluene	13.049	91	34286	155.79	pptv	99
32) t-1,3-Dichloropropene	12.499	75	8853	204.27	pptv	100
33) 1,1,2-Trichloroethane	13.455	97	12539	204.26	pptv	100
34) Tetrachloroethene	14.080	166	27155	204.42	pptv	99
35) 1,2-Dibromoethane	14.567	107	16936	173.91	pptv	97
36) Chlorobenzene	15.265	112	32161	191.96	pptv	98
37) Ethylbenzene	15.371	91	36460	214.00	pptv	99
38) p,&m-Xylene	15.498	91	61664	337.56	pptv	99
39) o-Xylene	16.189	91	27826	251.37	pptv	95
40) Styrene	16.208	104	21940	217.11	pptv	99
41) 1,1,2,2-Tetrachloroethane	16.977	83	21243	224.85	pptv	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN019.D
Acq On : 25 Jun 2018 1:52 am
Operator : VM
Sample : 200 PPTV
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 10:11:46 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:11:06 2018
Response via : Initial Calibration

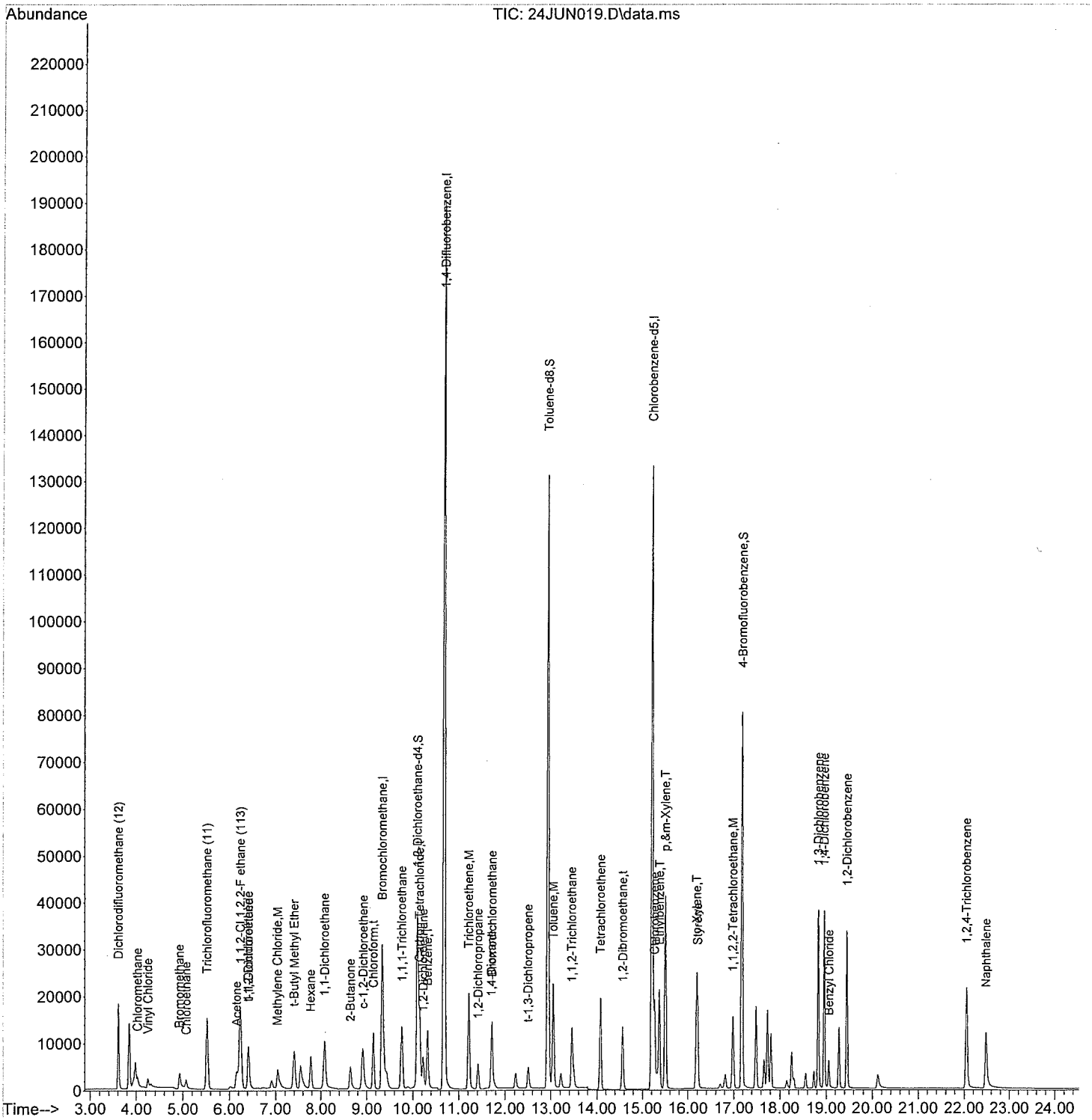
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	43240	189.67	pptv	98
44) 1,4-Dichlorobenzene	18.955	146	41911	179.99	pptv	99
45) Benzyl Chloride	19.061	91	8482	162.97	pptv	97
46) 1,2-Dichlorobenzene	19.450	146	40677	197.82	pptv	99
47) 1,2,4-Trichlorobenzene	22.043	180	30236	150.45	pptv	100
48) Naphthalene	22.476	128	37363	132.10	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN019.D
Acq On : 25 Jun 2018 1:52 am
Operator : VM
Sample : 200 PPTV
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 10:11:46 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:11:06 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN020.D
Acq On : 25 Jun 2018 2:33 am
Operator : VM
Sample : 500 PPTV
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 10:12:26 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:12:17 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.326	130	103347	2000.00	pptv	-0.02
21) 1,4-Difluorobenzene	10.677	114	403548	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.209	117	309296	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.087	65	97673	1907.12	pptv	-0.01
Spiked Amount 2000.000	Range 70 - 130		Recovery = 95.36%			
29) Toluene-d8	12.938	98	308779	2045.50	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 102.28%			
42) 4-Bromofluorobenzene	17.178	95	178937	2054.70	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 102.74%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.577	85	55528	470.85	pptv	99
3) Chloromethane	3.990	50	7243	244.72	pptv	99
4) Vinyl Chloride	4.209	62	8657	394.84	pptv	100
5) Bromomethane	4.899	96	8842	228.13	pptv	100
6) Chloroethane	5.041	64	7643	497.94	pptv	89
7) Trichlorofluoromethane...	5.499	101	62158	477.64	pptv	100
8) 1,1,2-Cl 1,2,2-F ethan...	6.227	151	59674	502.87	pptv	93
9) Acetone	6.124	43	24350	147.48	pptv	99
10) 1,1-Dichloroethene	6.395	96	21488	522.51	pptv	98
11) Methylene Chloride	7.026	49	16054	421.74	pptv	92
12) t-Butyl Methyl Ether	7.378	73	44254	594.19	pptv	89
13) t-1,2-Dichloroethene	6.395	96	21488	538.85	pptv	86
14) Hexane	7.763	57	20585	546.22	pptv	98
15) 1,1-Dichloroethane	8.065	63	30593	511.65	pptv	100
16) 2-Butanone	8.618	72	8543	434.26	pptv	97
17) c-1,2-Dichloroethene	8.906	96	23356	513.43	pptv	95
18) Chloroform	9.138	83	45145	511.23	pptv	99
19) 1,1,1-Trichloroethane	9.753	97	47048	509.04	pptv	97
20) Carbon Tetrachloride	10.137	117	51131	565.53	pptv	99
22) Benzene	10.320	78	66980	305.07	pptv	98
24) 1,2-Dichloroethane	10.219	62	25266	451.25	pptv	99
25) Trichloroethene	11.208	130	44720	315.41	pptv	97
26) 1,2-Dichloropropane	11.408	63	18819	528.70	pptv	100
27) 1,4-Dioxane	11.695	88	15983	413.01	pptv	94
28) Bromodichloromethane	11.711	83	44004	524.53	pptv	100
30) Toluene	13.049	91	82601	369.12	pptv	99
32) t-1,3-Dichloropropene	12.500	75	24488	546.85	pptv	100
33) 1,1,2-Trichloroethane	13.455	97	30984	507.26	pptv	94
34) Tetrachloroethene	14.081	166	64897	488.17	pptv	100
35) 1,2-Dibromoethane	14.560	107	43405	444.47	pptv	99
36) Chlorobenzene	15.265	112	77927	465.35	pptv	98
37) Ethylbenzene	15.364	91	93218	533.10	pptv	100
38) p,&m-Xylene	15.498	91	161517	866.45	pptv	100
39) o-Xylene	16.189	91	75459	646.11	pptv	94
40) Styrene	16.208	104	61222	580.06	pptv	100
41) 1,1,2,2-Tetrachloroethane	16.977	83	51292	541.40	pptv	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN020.D
Acq On : 25 Jun 2018 2:33 am
Operator : VM
Sample : 500 PPTV
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 10:12:26 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:12:17 2018
Response via : Initial Calibration

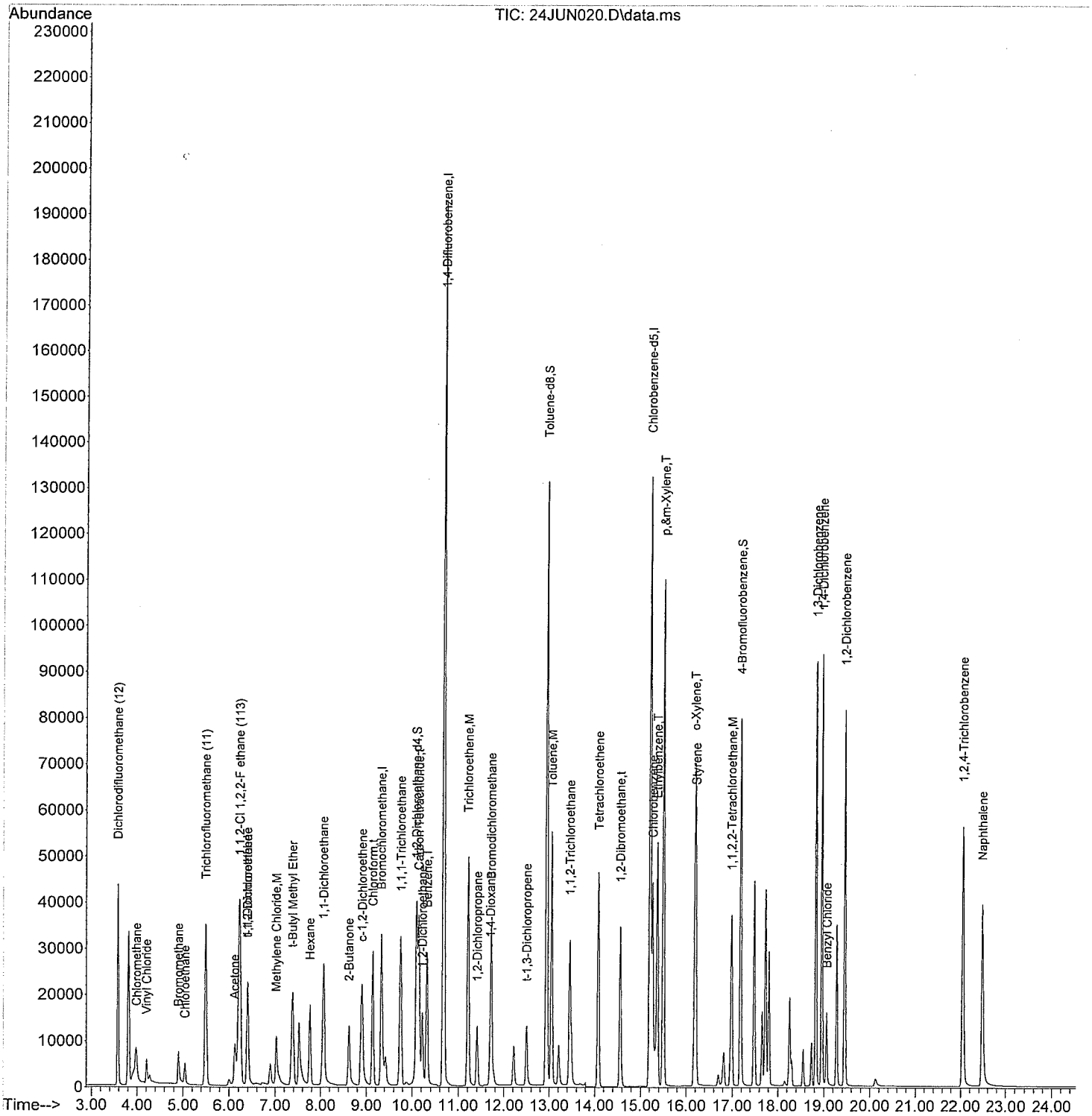
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	104697	453.16	pptv	98
44) 1,4-Dichlorobenzene	18.955	146	102897	433.68	pptv	100
45) Benzyl Chloride	19.062	91	23852	481.67	pptv	97
46) 1,2-Dichlorobenzene	19.450	146	98982	475.90	pptv	98
47) 1,2,4-Trichlorobenzene	22.044	180	74926	361.91	pptv	99
48) Naphthalene	22.469	128	109103	368.04	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN020.D
Acq On : 25 Jun 2018 2:33 am
Operator : VM
Sample : 500 PPTV
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 10:12:26 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:12:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN021.D
Acq On : 25 Jun 2018 3:16 am
Operator : VM
Sample : 1000 PPTV
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 10:13:29 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:13:19 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.325	130	100357	2000.00	pptv	-0.01
21) 1,4-Difluorobenzene	10.677	114	407251	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.209	117	317884	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.087	65	98157	1908.83	pptv	-0.01
Spiked Amount 2000.000	Range 70 - 130		Recovery = 95.44%			
29) Toluene-d8	12.937	98	310856	2026.09	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 101.30%			
42) 4-Bromofluorobenzene	17.177	95	179407	2002.52	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 100.13%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.564	85	108256	945.15	pptv	98
3) Chloromethane	3.970	50	15300	536.79	pptv	99
4) Vinyl Chloride	4.190	62	19009	899.63	pptv	99
5) Bromomethane	4.886	96	11445	309.29	pptv	98
6) Chloroethane	5.028	64	12166	817.99	pptv	90
7) Trichlorofluoromethane...	5.486	101	125888	998.74	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.214	151	116374	1009.92	pptv	94
9) Acetone	6.111	43	47750	298.11	pptv	98
10) 1,1-Dichloroethene	6.388	96	42859	1060.72	pptv	96
11) Methylene Chloride	7.013	49	32183	868.21	pptv	100
12) t-Butyl Methyl Ether	7.372	73	91967	1238.17	pptv	93
13) t-1,2-Dichloroethene	6.388	96	42859	1080.97	pptv	89
14) Hexane	7.762	57	42536	1134.64	pptv	100
15) 1,1-Dichloroethane	8.065	63	61331	1053.47	pptv	100
16) 2-Butanone	8.611	72	18593	959.69	pptv	99
17) c-1,2-Dichloroethene	8.906	96	47188	1052.92	pptv	96
18) Chloroform	9.131	83	89637	1040.51	pptv	100
19) 1,1,1-Trichloroethane	9.746	97	94676	1053.77	pptv	100
20) Carbon Tetrachloride	10.137	117	104809	1194.92	pptv	100
22) Benzene	10.313	78	129627	585.28	pptv	99
24) 1,2-Dichloroethane	10.213	62	49983	892.01	pptv	99
25) Trichloroethene	11.208	130	88100	611.62	pptv	96
26) 1,2-Dichloropropane	11.403	63	38086	1059.15	pptv	100
27) 1,4-Dioxane	11.695	88	33303	834.77	pptv	99
28) Bromodichloromethane	11.711	83	89735	1063.86	pptv	99
30) Toluene	13.049	91	164466	722.26	pptv	100
32) t-1,3-Dichloropropene	12.491	75	54452	1153.21	pptv	100
33) 1,1,2-Trichloroethane	13.455	97	61653	989.58	pptv	92
34) Tetrachloroethene	14.080	166	132145	972.87	pptv	100
35) 1,2-Dibromoethane	14.560	107	92052	919.99	pptv	98
36) Chlorobenzene	15.265	112	157090	918.13	pptv	97
37) Ethylbenzene	15.364	91	190843	1048.92	pptv	99
38) p,&m-Xylene	15.498	91	328939	1707.92	pptv	99
39) o-Xylene	16.183	91	161091	1293.14	pptv	97
40) Styrene	16.208	104	131168	1178.99	pptv	98
41) 1,1,2,2-Tetrachloroethane	16.977	83	104949	1083.19	pptv	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN021.D
Acq On : 25 Jun 2018 3:16 am
Operator : VM
Sample : 1000 PPTV
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 10:13:29 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:13:19 2018
Response via : Initial Calibration

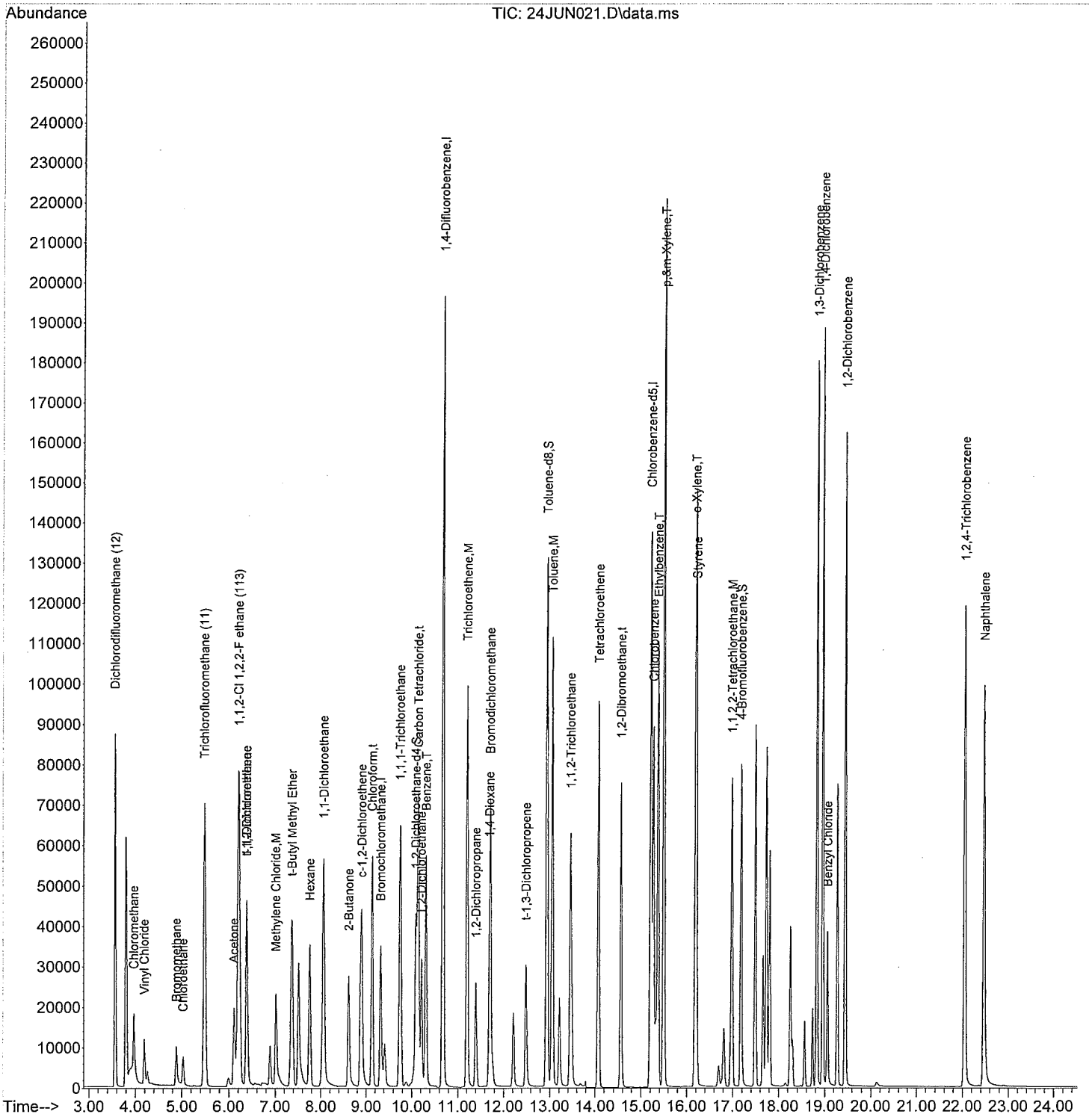
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.823	146	206388	866.74	pptv	100
44) 1,4-Dichlorobenzene	18.955	146	204415	831.57	pptv	99
45) Benzyl Chloride	19.061	91	56174	1177.41	pptv	98
46) 1,2-Dichlorobenzene	19.450	146	195598	913.16	pptv	99
47) 1,2,4-Trichlorobenzene	22.043	180	155276	714.34	pptv	100
48) Naphthalene	22.469	128	248113	779.60	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN021.D
Acq On : 25 Jun 2018 3:16 am
Operator : VM
Sample : 1000 PPTV
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 10:13:29 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:13:19 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN022.D
Acq On : 25 Jun 2018 3:56 am
Operator : VM
Sample : 2000 PPTV
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 10:14:23 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:14:11 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.326	130	108138	2000.00	pptv	-0.01
21) 1,4-Difluorobenzene	10.678	114	408996	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.209	117	321187	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.087	65	100202	1948.43	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 97.42%			
29) Toluene-d8	12.938	98	312172	2013.90	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 100.70%			
42) 4-Bromofluorobenzene	17.178	95	178392	1966.84	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 98.34%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.558	85	213277	1728.55	pptv	98
3) Chloromethane	3.951	50	33247	1090.64	pptv	100
4) Vinyl Chloride	4.171	62	41831	1850.78	pptv	99
5) Bromomethane	4.867	96	49207	1244.33	pptv	100
6) Chloroethane	5.022	64	32869	2098.89	pptv	94
7) Trichlorofluoromethane...	5.486	101	247083	1817.27	pptv	98
8) 1,1,2-Cl 1,2,2-F ethan...	6.215	151	228860	1841.93	pptv	93
9) Acetone	6.105	43	85425	495.71	pptv	98
10) 1,1-Dichloroethene	6.382	96	85762	1948.40	pptv	97
11) Methylene Chloride	7.013	49	63228	1576.88	pptv	94
12) t-Butyl Methyl Ether	7.366	73	186887	2285.15	pptv	95
13) t-1,2-Dichloroethene	6.382	96	85762	1968.27	pptv	87
14) Hexane	7.756	57	86705	2112.50	pptv	100
15) 1,1-Dichloroethane	8.065	63	121786	1938.35	pptv	99
16) 2-Butanone	8.605	72	36319	1717.90	pptv	99
17) c-1,2-Dichloroethene	8.906	96	94403	1933.53	pptv	92
18) Chloroform	9.132	83	175268	1878.87	pptv	100
19) 1,1,1-Trichloroethane	9.746	97	189745	1957.72	pptv	99
20) Carbon Tetrachloride	10.137	117	214496	2267.19	pptv	100
22) Benzene	10.314	78	251202	1131.84	pptv	98
24) 1,2-Dichloroethane	10.213	62	98075	1757.32	pptv	100
25) Trichloroethene	11.208	130	170516	1173.45	pptv	96
26) 1,2-Dichloropropane	11.403	63	74479	2062.35	pptv	99
27) 1,4-Dioxane	11.695	88	63388	1563.33	pptv	97
28) Bromodichloromethane	11.711	83	177436	2102.99	pptv	99
30) Toluene	13.049	91	312383	1359.13	pptv	100
32) t-1,3-Dichloropropene	12.492	75	113381	2328.14	pptv	99
33) 1,1,2-Trichloroethane	13.447	97	114567	1834.72	pptv	98
34) Tetrachloroethene	14.081	166	250765	1837.33	pptv	100
35) 1,2-Dibromoethane	14.560	107	174587	1733.77	pptv	98
36) Chlorobenzene	15.266	112	284254	1653.39	pptv	97
37) Ethylbenzene	15.364	91	352964	1909.29	pptv	99
38) p,&m-Xylene	15.499	91	599371	3083.11	pptv	98
39) o-Xylene	16.183	91	298279	2325.46	pptv	96
40) Styrene	16.208	104	234727	2065.34	pptv	97
41) 1,1,2,2-Tetrachloroethane	16.978	83	174891	1793.97	pptv	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN022.D
Acq On : 25 Jun 2018 3:56 am
Operator : VM
Sample : 2000 PPTV
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 10:14:23 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:14:11 2018
Response via : Initial Calibration

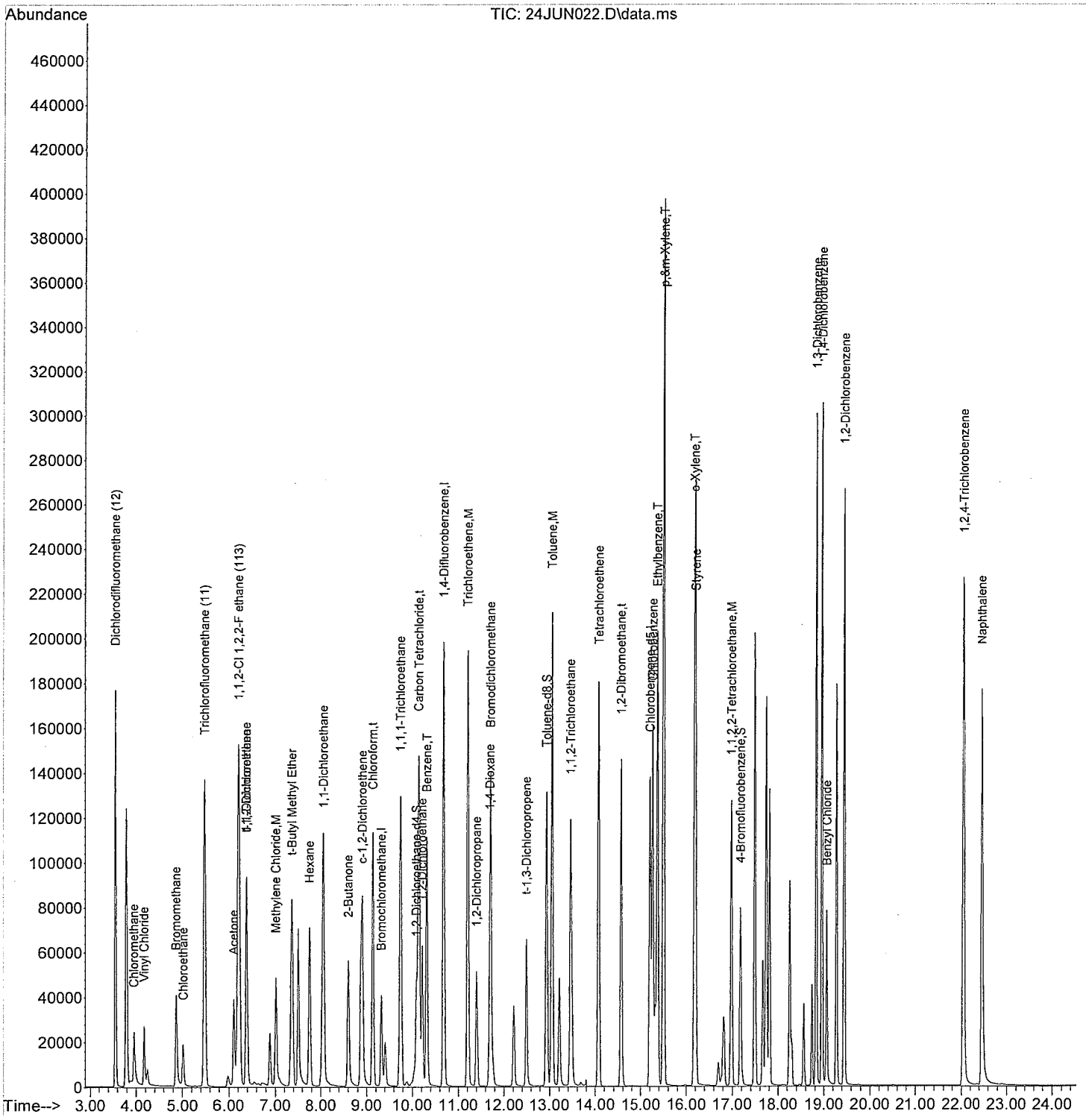
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.824	146	339137	1410.17	pptv	100
44) 1,4-Dichlorobenzene	18.955	146	336340	1349.99	pptv	100
45) Benzyl Chloride	19.062	91	112666	2521.62	pptv	98
46) 1,2-Dichlorobenzene	19.450	146	322030	1489.67	pptv	98
47) 1,2,4-Trichlorobenzene	22.044	180	296568	1330.00	pptv	100
48) Naphthalene	22.463	128	454728	1367.93	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN022.D
Acq On : 25 Jun 2018 3:56 am
Operator : VM
Sample : 2000 PPTV
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 10:14:23 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:14:11 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN023.D
Acq On : 25 Jun 2018 4:38 am
Operator : VM
Sample : 10000 PPTV
Misc : 250 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 10:16:53 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:16:16 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	9.326	130	106624	2000.00 pptv	0.00
21) 1,4-Difluorobenzene	10.677	114	402011	2000.00 pptv	0.00
31) Chlorobenzene-d5	15.209	117	310238	2000.00 pptv	0.00
System Monitoring Compounds					
23) 1,2-Dichloroethane-d4	10.087	65	99416	1981.51 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery =	99.08%	
29) Toluene-d8	12.937	98	305978	1993.48 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery =	99.67%	
42) 4-Bromofluorobenzene	17.178	95	169551	1937.46 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery =	96.87%	
Target Compounds					Qvalue
2) Dichlorodifluoromethan...	3.512	85	1012740	8381.06 pptv	100
3) Chloromethane	3.906	50	179800	6305.42 pptv	99
4) Vinyl Chloride	4.132	62	224566	10251.65 pptv	98
5) Bromomethane	4.835	96	160063	4308.79 pptv	100
6) Chloroethane	4.983	64	128799	8531.39 pptv	90
7) Trichlorofluoromethane...	5.460	101	1145037	8614.80 pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.201	151	1084383	8925.56 pptv	93
9) Acetone	6.092	43	373773	2193.21 pptv	99
10) 1,1-Dichloroethene	6.369	96	413712	9501.16 pptv	96
11) Methylene Chloride	7.000	49	301112	7642.51 pptv	98
12) t-Butyl Methyl Ether	7.359	73	932155	11335.97 pptv	98
13) t-1,2-Dichloroethene	6.369	96	413712	9501.16 pptv	89
14) Hexane	7.756	57	423645	10424.15 pptv	98
15) 1,1-Dichloroethane	8.059	63	579174	9413.45 pptv	99
16) 2-Butanone	8.599	72	178451	8249.24 pptv	99
17) c-1,2-Dichloroethene	8.906	96	447412	9285.02 pptv	91
18) Chloroform	9.138	83	839497	9166.35 pptv	99
19) 1,1,1-Trichloroethane	9.753	97	941862	9951.29 pptv	97
20) Carbon Tetrachloride	10.137	117	1073222	11674.93 pptv	100
22) Benzene	10.313	78	1187815	5508.50 pptv	99
24) 1,2-Dichloroethane	10.213	62	471301	8735.57 pptv	99
25) Trichloroethene	11.208	130	813448	5727.29 pptv	96
26) 1,2-Dichloropropane	11.403	63	359304	10295.24 pptv	100
27) 1,4-Dioxane	11.687	88	312512	8197.31 pptv	97
28) Bromodichloromethane	11.711	83	871250	10764.93 pptv	99
30) Toluene	13.049	91	1498128	6696.21 pptv	100
32) t-1,3-Dichloropropene	12.492	75	630684	12763.08 pptv	99
33) 1,1,2-Trichloroethane	13.455	97	543042	9257.69 pptv	94
34) Tetrachloroethene	14.080	166	1190153	9254.60 pptv	99
35) 1,2-Dibromoethane	14.560	107	873180	9184.60 pptv	98
36) Chlorobenzene	15.265	112	1328516	8210.67 pptv	98
37) Ethylbenzene	15.364	91	1675071	9573.48 pptv	99
38) p,&m-Xylene	15.498	91	2775938	15167.95 pptv	99
39) o-Xylene	16.183	91	1432310	12467.99 pptv	96
40) Styrene	16.208	104	1128715	10452.86 pptv	99
41) 1,1,2,2-Tetrachloroethane	16.977	83	845577	9231.64 pptv	97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN023.D
Acq On : 25 Jun 2018 4:38 am
Operator : VM
Sample : 10000 PPTV
Misc : 250 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 10:16:53 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:16:16 2018
Response via : Initial Calibration

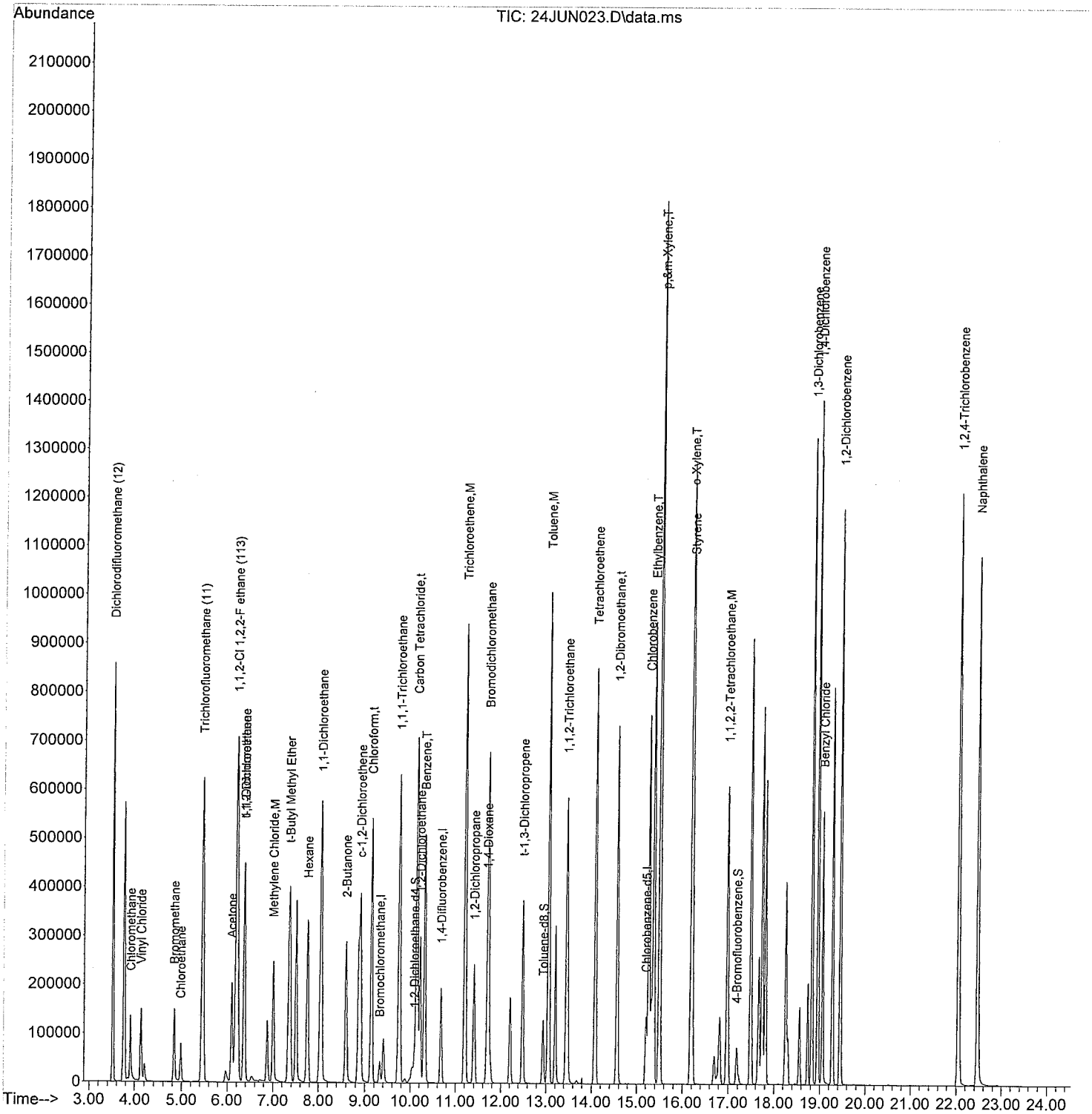
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.823	146	1525876	6811.79 pptv	100
44) 1,4-Dichlorobenzene	18.955	146	1548354	6626.00 pptv	100
45) Benzyl Chloride	19.062	91	772273	16379.03 pptv	98
46) 1,2-Dichlorobenzene	19.450	146	1431326	7126.57 pptv	99
47) 1,2,4-Trichlorobenzene	22.043	180	1521026	6871.79 pptv	99
48) Naphthalene	22.463	128	2490698	8200.11 pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN023.D
Acq On : 25 Jun 2018 4:38 am
Operator : VM
Sample : 10000 PPTV
Misc : 250 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 10:16:53 2018
Quant Method : \\MS2\C on MS2\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:16:16 2018
Response via : Initial Calibration



4. Initial Calibration Verification

a. ICV Summary
b. Results/Chromatograms

Default Initial Calibration Criteria:

Target compounds must have %Diff <30%

(This criteria superseded by any project specific criteria)

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN025.D
Acq On : 25 Jun 2018 6:00 am
Operator : VM
Sample : SIM ICV/LCS
Misc : 125 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 10 09:13:13 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 40% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 175%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	95	0.00
2		Dichlorodifluoromethane (12	2.267	2.093	7.7	93	0.00
3		Chloromethane	0.286	0.276	3.5	94	0.01
4		Vinyl Chloride	0.411	0.422	-2.7	120	0.01
5		Bromomethane	0.457	0.423	7.4	117	0.00
6		Chloroethane	0.283	0.326	-15.2	105	0.01
7		Trichlorofluoromethane (11)	2.493	2.338	6.2	92	0.00
8		1,1,2-Cl 1,2,2-F ethane (11	2.279	2.129	6.6	88	0.00
9		Acetone	0.929	0.886	4.6	89	0.00
10		1,1-Dichloroethene	0.817	0.784	4.0	90	0.00
11	M	Methylene Chloride	0.624	0.604	3.2	92	0.00
12		t-Butyl Methyl Ether	1.542	1.675	-8.6	93	0.00
13		t-1,2-Dichloroethene	0.817	0.784	4.0	90	0.00
14		Hexane	0.762	0.768	-0.8	92	0.00
15		1,1-Dichloroethane	1.154	1.199	-3.9	96	0.00
16		2-Butanone	0.364	0.346	4.9	99	0.00
17		c-1,2-Dichloroethene	0.904	0.917	-1.4	96	0.00
18	t	Chloroform	1.718	1.760	-2.4	96	0.00
19		1,1,1-Trichloroethane	1.775	1.792	-1.0	94	0.00
20	t	Carbon Tetrachloride	1.724	1.967	-14.1	95	0.00
21	I	1,4-Difluorobenzene	1.000	1.000	0.0	95	0.00
22	T	Benzene	0.705	0.655	7.1	93	0.00
23	S	1,2-Dichloroethane-d4	0.250	0.253	-1.2	99	0.00
24		1,2-Dichloroethane	0.268	0.270	-0.7	102	0.00
25	M	Trichloroethene	0.467	0.460	1.5	98	0.00
26		1,2-Dichloropropane	0.174	0.194	-11.5	99	0.00
27		1,4-Dioxane	0.155	0.172	-11.0	103	0.00
28		Bromodichloromethane	0.403	0.443	-9.9	96	0.00
29	S	Toluene-d8	0.764	0.762	0.3	94	0.00
30	M	Toluene	0.819	0.837	-2.2	97	0.00
31	I	Chlorobenzene-d5	1.000	1.000	0.0	97	0.00
32		t-1,3-Dichloropropene	0.300	0.334	-11.3	102	0.00
33		1,1,2-Trichloroethane	0.378	0.406	-7.4	98	0.00
34		Tetrachloroethene	0.829	0.876	-5.7	101	0.00
35	t	1,2-Dibromoethane	0.560	0.595	-6.2	102	0.00
36		Chlorobenzene	1.043	1.064	-2.0	102	0.00
37	T	Ethylbenzene	1.128	1.261	-11.8	101	0.00
38	T	p,&m-Xylene	0.975	1.096	-12.4	101	0.00
39	T	o-Xylene	0.824	1.049	-27.3	104	0.00
40		Styrene	0.696	0.873	-25.4	106	0.00
41	M	1,1,2,2-Tetrachloroethane	0.590	0.707	-19.8	103	0.00
42	S	4-Bromofluorobenzene	0.564	0.581	-3.0	97	0.00
43		1,3-Dichlorobenzene	1.245	1.484	-19.2	106	0.00
44		1,4-Dichlorobenzene	1.278	1.487	-16.4	108	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN025.D
Acq On : 25 Jun 2018 6:00 am
Operator : VM
Sample : SIM ICV/LCS
Misc : 125 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 10 09:13:13 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 40% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 175%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
45	Benzyl Chloride	0.248	0.356	-43.5#	111	0.00
46	1,2-Dichlorobenzene	1.145	1.427	-24.6	108	0.00
47	1,2,4-Trichlorobenzene	0.905	1.304	-44.1#	130	0.00
48	Naphthalene	1.242	0.000#	100.0#	0#	-22.47#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN025.D
Acq On : 25 Jun 2018 6:00 am
Operator : VM
Sample : SIM ICV/LCS
Misc : 125 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 10 09:13:13 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.332	130	98265	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.683	114	382491	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.209	117	298566	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.093	65	96778	2027.37	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 101.37%			
29) Toluene-d8	12.938	98	291614	1996.86	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 99.84%			
42) 4-Bromofluorobenzene	17.178	95	173539	2060.56	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 103.03%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.590	85	51426	461.78	pptv	99
3) Chloromethane	4.003	50	6786	482.34	pptv	100
4) Vinyl Chloride	4.229	62	10378	514.07	pptv	99
5) Bromomethane	4.919	96	10385	462.77	pptv	97
6) Chloroethane	5.061	64	7999	574.91	pptv	91
7) Trichlorofluoromethane...	5.512	101	57432	468.85	pptv	98
8) 1,1,2-Cl 1,2,2-F ethan...	6.234	151	52302	467.12	pptv	94
9) Acetone	6.137	43	21773	476.84	pptv	98
10) 1,1-Dichloroethene	6.408	96	19265	480.07	pptv	96
11) Methylene Chloride	7.032	49	14837	483.77	pptv	96
12) t-Butyl Methyl Ether	7.391	73	41146	542.94	pptv	93
13) t-1,2-Dichloroethene	6.408	96	19272	480.24	pptv	89
14) Hexane	7.769	57	18878	504.02	pptv	99
15) 1,1-Dichloroethane	8.078	63	29467	519.68	pptv	98
16) 2-Butanone	8.624	72	8489	475.14	pptv	98
17) c-1,2-Dichloroethene	8.919	96	22522	507.15	pptv	93
18) Chloroform	9.144	83	43247	512.38	pptv	98
19) 1,1,1-Trichloroethane	9.753	97	44019	504.65	pptv	100
20) Carbon Tetrachloride	10.143	117	48331	570.49	pptv	100
22) Benzene	10.320	78	62620	464.25	pptv	98
24) 1,2-Dichloroethane	10.219	62	25838	503.35	pptv	100
25) Trichloroethene	11.214	130	43955	492.60	pptv	96
26) 1,2-Dichloropropane	11.408	63	18565	559.10	pptv	99
27) 1,4-Dioxane	11.695	88	16494m	555.12	pptv	
28) Bromodichloromethane	11.719	83	42323	549.62	pptv	98
30) Toluene	13.049	91	80057	510.97	pptv	99
32) t-1,3-Dichloropropene	12.500	75	24923	555.87	pptv	99
33) 1,1,2-Trichloroethane	13.455	97	30309	536.90	pptv	97
34) Tetrachloroethene	14.081	166	65352	528.04	pptv	100
35) 1,2-Dibromoethane	14.560	107	44401	530.83	pptv	100
36) Chlorobenzene	15.266	112	79385	509.81	pptv	97
37) Ethylbenzene	15.371	91	94134	559.03	pptv	98
38) p,&m-Xylene	15.499	91	163584	1124.18	pptv	100
39) o-Xylene	16.189	91	78279	636.56	pptv	94
40) Styrene	16.208	104	65137	626.81	pptv	99
41) 1,1,2,2-Tetrachloroethane	16.978	83	52805	599.04	pptv	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN025.D
Acq On : 25 Jun 2018 6:00 am
Operator : VM
Sample : SIM ICV/LCS
Misc : 125 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 10 09:13:13 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

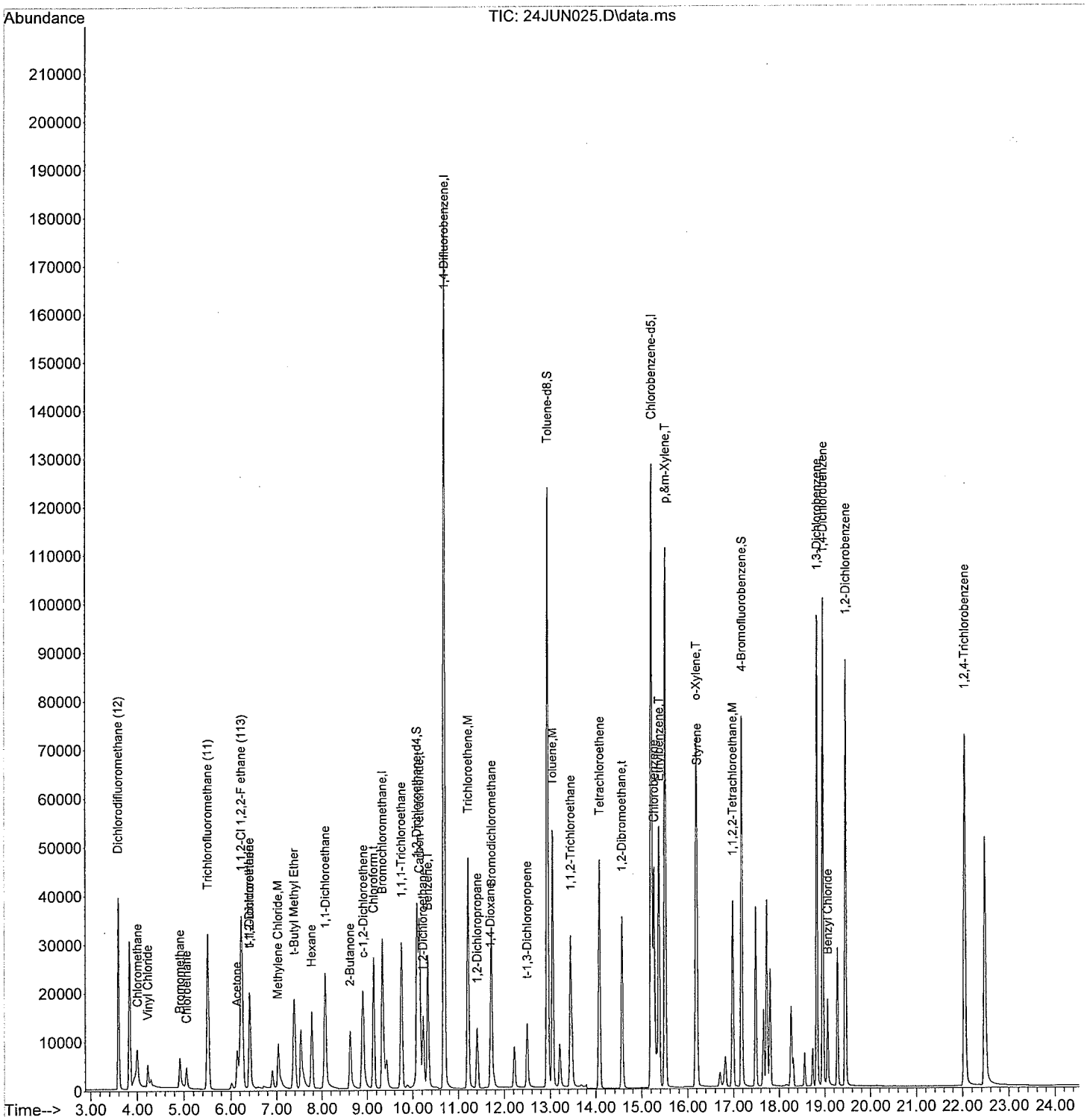
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.824	146	110763	595.72	pptv	99
44) 1,4-Dichlorobenzene	18.955	146	111011	581.79	pptv	100
45) Benzyl Chloride	19.062	91	26547	717.53	pptv	98
46) 1,2-Dichlorobenzene	19.450	146	106498	622.80	pptv	99
47) 1,2,4-Trichlorobenzene	22.044	180	97369	720.75	pptv	99

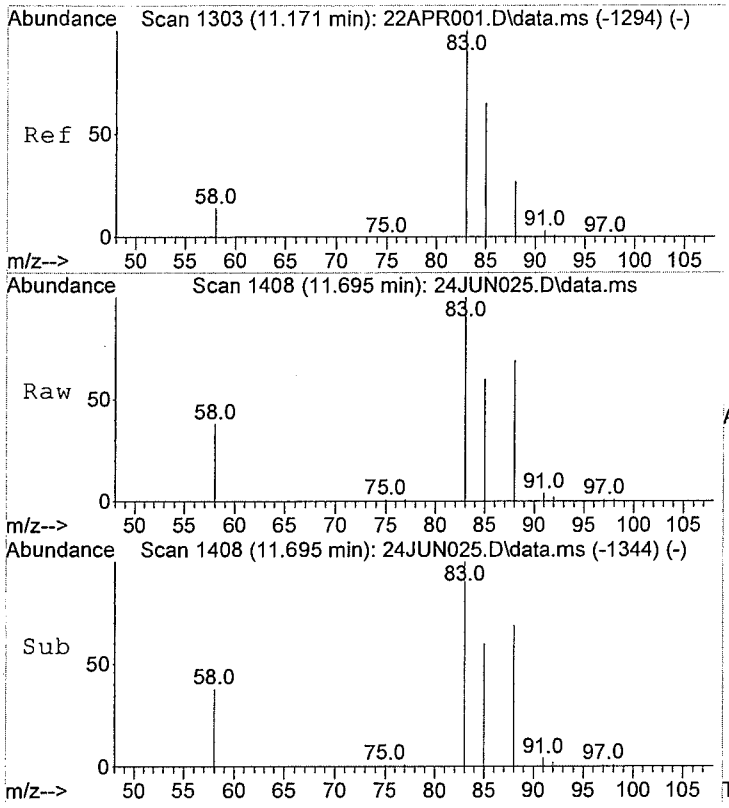
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN025.D
Acq On : 25 Jun 2018 6:00 am
Operator : VM
Sample : SIM ICV/LCS
Misc : 125 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 10 09:13:13 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

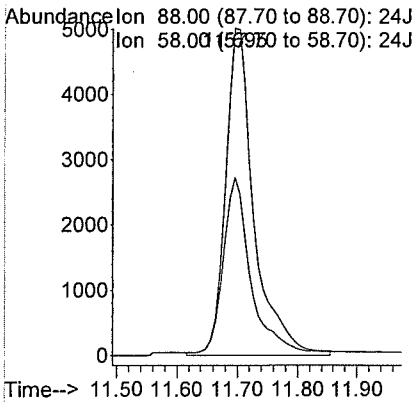




#27
1,4-Dioxane
Concen: 555.12 pptv m
RT: 11.695 min Scan# 1408
Delta R.T. -0.008 min
Lab File: 24JUN025.D
Acq: 25 Jun 2018 6:00 am

Tgt Ion: 88 Resp: 16494

Ion	Ratio	Lower	Upper
88	100		
58	54.2	38.7	58.1



ME-3
D 7/10/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN025.D
Acq On : 25 Jun 2018 6:00 am
Operator : VM
Sample : SIM ICV/LCS
Misc : 125 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 10 09:11:18 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.332	130	98265	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.683	114	382491	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.209	117	298566	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.093	65	96778	2027.37	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 101.37%			
29) Toluene-d8	12.938	98	291614	1996.86	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 99.84%			
42) 4-Bromofluorobenzene	17.178	95	173539	2060.56	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 103.03%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.590	85	51426	461.78	pptv	99
3) Chloromethane	4.003	50	6786	482.34	pptv	100
4) Vinyl Chloride	4.229	62	10378	514.07	pptv	99
5) Bromomethane	4.919	96	10385	462.77	pptv	97
6) Chloroethane	5.061	64	7999	574.91	pptv	91
7) Trichlorofluoromethane...	5.512	101	57432	468.85	pptv	98
8) 1,1,2-Cl 1,2,2-F ethan...	6.234	151	52302	467.12	pptv	94
9) Acetone	6.137	43	21773	476.84	pptv	98
10) 1,1-Dichloroethene	6.408	96	19265	480.07	pptv	96
11) Methylene Chloride	7.032	49	14837	483.77	pptv	96
12) t-Butyl Methyl Ether	7.391	73	41146	542.94	pptv	93
13) t-1,2-Dichloroethene	6.408	96	19272	480.24	pptv	89
14) Hexane	7.769	57	18878	504.02	pptv	99
15) 1,1-Dichloroethane	8.078	63	29467	519.68	pptv	98
16) 2-Butanone	8.624	72	8489	475.14	pptv	98
17) c-1,2-Dichloroethene	8.919	96	22522	507.15	pptv	93
18) Chloroform	9.144	83	43247	512.38	pptv	98
19) 1,1,1-Trichloroethane	9.753	97	44019	504.65	pptv	100
20) Carbon Tetrachloride	10.143	117	48331	570.49	pptv	100
22) Benzene	10.320	78	62620	464.25	pptv	98
24) 1,2-Dichloroethane	10.219	62	25838	503.35	pptv	100
25) Trichloroethene	11.214	130	43955	492.60	pptv	96
26) 1,2-Dichloropropane	11.408	63	18565	559.10	pptv	99
28) Bromodichloromethane	11.719	83	42323	549.62	pptv	98
30) Toluene	13.049	91	80057	510.97	pptv	99
32) t-1,3-Dichloropropene	12.500	75	24923	555.87	pptv	99
33) 1,1,2-Trichloroethane	13.455	97	30309	536.90	pptv	97
34) Tetrachloroethene	14.081	166	65352	528.04	pptv	100
35) 1,2-Dibromoethane	14.560	107	44401	530.83	pptv	100
36) Chlorobenzene	15.266	112	79385	509.81	pptv	97
37) Ethylbenzene	15.371	91	94134	559.03	pptv	98
38) p,&m-Xylene	15.499	91	163584	1124.18	pptv	100
39) o-Xylene	16.189	91	78279	636.56	pptv	94
40) Styrene	16.208	104	65137	626.81	pptv	99
41) 1,1,2,2-Tetrachloroethane	16.978	83	52805	599.04	pptv	98
43) 1,3-Dichlorobenzene	18.824	146	110763	595.72	pptv	99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN025.D
Acq On : 25 Jun 2018 6:00 am
Operator : VM
Sample : SIM ICV/LCS
Misc : 125 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 10 09:11:18 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

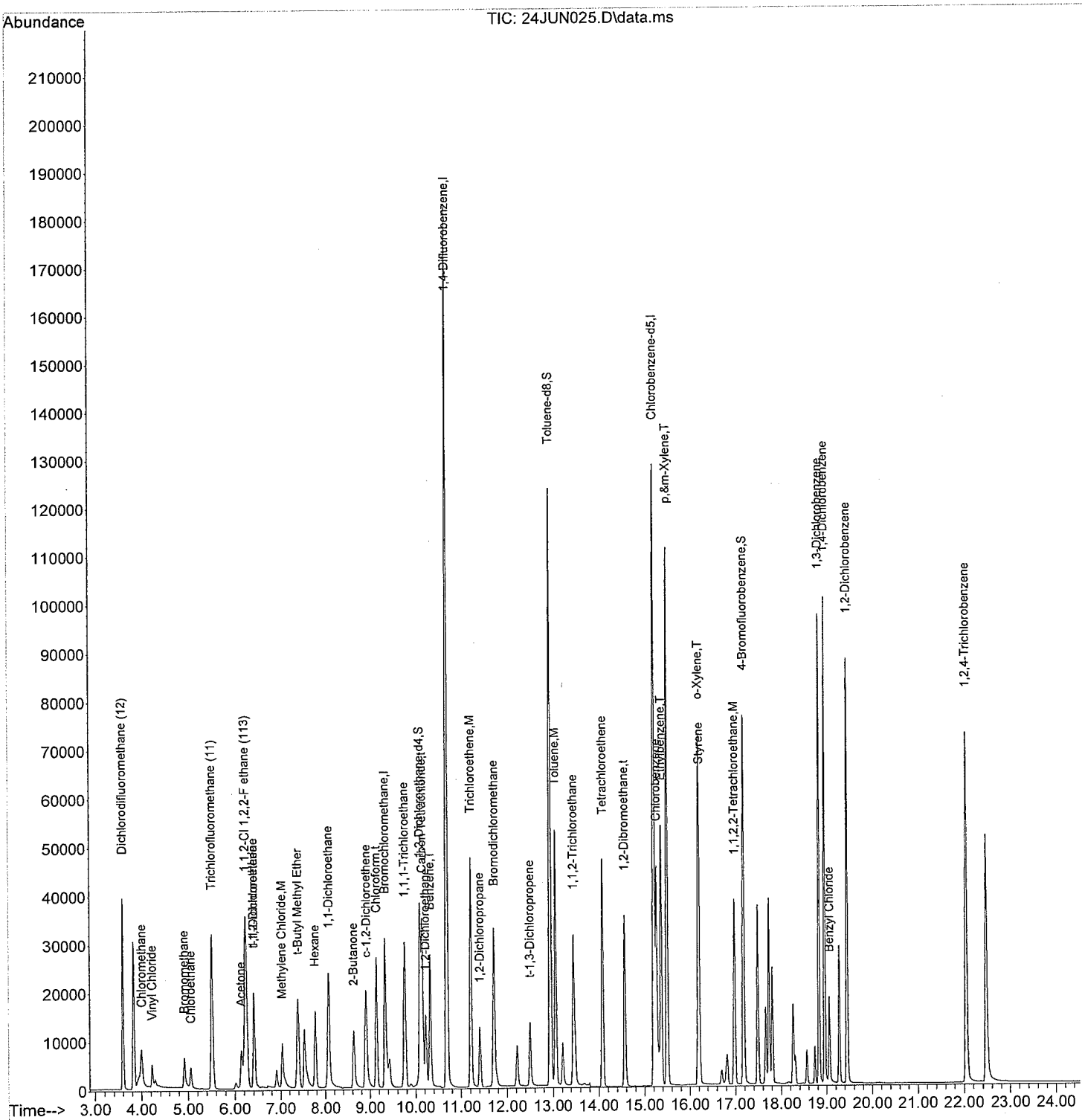
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dichlorobenzene	18.955	146	111011	581.79	pptv	100
45) Benzyl Chloride	19.062	91	26547	717.53	pptv	98
46) 1,2-Dichlorobenzene	19.450	146	106498	622.80	pptv	99
47) 1,2,4-Trichlorobenzene	22.044	180	97369	720.75	pptv	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180618\
Data File : 24JUN025.D
Acq On : 25 Jun 2018 6:00 am
Operator : VM
Sample : SIM ICV/LCS
Misc : 125 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 10 09:11:18 2018
Quant Method : C:\msdchem\1\methods\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration



5. Continuing Calibration Verification

a. CCV Summary
b. Results/Chromatograms

Default Continuing Calibration Criteria:

90% of target compounds must have %Diff <30%
All target compounds must have %Diff <50%

(This criteria superceded by any project specific criteria)

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG001.D
Acq On : 7 Aug 2018 10:26 am
Operator : DT
Sample : SIM CCV
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 10:51:17 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 40% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 175%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	91	0.00
2		Dichlorodifluoromethane (12	2.267	2.135	5.8	90	0.00
3		Chloromethane	0.286	0.362	-26.6	117	0.00
4		Vinyl Chloride	0.411	0.401	2.4	108	0.00
5		Bromomethane	0.457	0.319	30.2#	85	0.00
6		Chloroethane	0.283	0.345	-21.9	106	0.00
7		Trichlorofluoromethane (11)	2.493	2.309	7.4	87	0.00
8		1,1,2-Cl 1,2,2-F ethane (11	2.279	2.144	5.9	84	0.00
9		Acetone	0.929	1.199	-29.1	115	0.00
10		1,1-Dichloroethene	0.817	0.835	-2.2	91	0.00
11	M	Methylene Chloride	0.624	0.657	-5.3	96	0.00
12		t-Butyl Methyl Ether	1.542	1.885	-22.2	100	0.00
13		t-1,2-Dichloroethene	0.817	0.835	-2.2	91	0.00
14		Hexane	0.762	0.879	-15.4	100	0.00
15		1,1-Dichloroethane	1.154	1.262	-9.4	97	0.00
16		2-Butanone	0.364	0.414	-13.7	114	0.00
17		c-1,2-Dichloroethene	0.904	0.945	-4.5	95	0.00
18	t	Chloroform	1.718	1.717	0.1	89	0.00
19		1,1,1-Trichloroethane	1.775	1.815	-2.3	90	0.00
20	t	Carbon Tetrachloride	1.724	1.796	-4.2	82	0.00
21	I	1,4-Difluorobenzene	1.000	1.000	0.0	102	0.00
22	T	Benzene	0.705	0.641	9.1	98	0.00
23	S	1,2-Dichloroethane-d4	0.250	0.229	8.4	96	0.00
24		1,2-Dichloroethane	0.268	0.240	10.4	98	0.00
25	M	Trichloroethene	0.467	0.402	13.9	92	0.00
26		1,2-Dichloropropane	0.174	0.183	-5.2	100	0.00
27		1,4-Dioxane	0.155	0.149	3.9	96	0.00
28		Bromodichloromethane	0.403	0.371	7.9	87	0.00
29	S	Toluene-d8	0.764	0.798	-4.5	106	0.00
30	M	Toluene	0.819	0.789	3.7	98	0.00
31	I	Chlorobenzene-d5	1.000	1.000	0.0	108	0.00
32		t-1,3-Dichloropropene	0.300	0.295	1.7	101	0.00
33		1,1,2-Trichloroethane	0.378	0.336	11.1	91	0.00
34		Tetrachloroethene	0.829	0.705	15.0	91	0.00
35	t	1,2-Dibromoethane	0.560	0.443	20.9	85	0.00
36		Chlorobenzene	1.043	0.864	17.2	93	0.00
37	T	Ethylbenzene	1.128	1.120	0.7	100	0.00
38	T	p,&m-Xylene	0.975	0.930	4.6	96	0.00
39	T	o-Xylene	0.824	0.901	-9.3	100	0.00
40		Styrene	0.696	0.714	-2.6	98	0.00
41	M	1,1,2,2-Tetrachloroethane	0.590	0.575	2.5	94	0.00
42	S	4-Bromofluorobenzene	0.564	0.643	-14.0	120	0.00
43		1,3-Dichlorobenzene	1.245	1.159	6.9	93	0.00
44		1,4-Dichlorobenzene	1.278	1.295	-1.3	105	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG001.D
Acq On : 7 Aug 2018 10:26 am
Operator : DT
Sample : SIM CCV
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 10:51:17 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 40% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 175%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
45	Benzyl Chloride	0.248	0.383	-54.4#	134	0.00
46	1,2-Dichlorobenzene	1.145	1.220	-6.6	103	0.00
47	1,2,4-Trichlorobenzene	0.905	0.812	10.3	91	0.00
48	Naphthalene	1.242	1.153	7.2	88	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG001.D
Acq On : 7 Aug 2018 10:26 am
Operator : DT
Sample : SIM CCV
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 10:51:17 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.333	130	93644	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.685	114	411574	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	334456	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.096	65	94122	1832.41	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 91.62%			
29) Toluene-d8	12.938	98	328338	2089.46	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 104.47%			
42) 4-Bromofluorobenzene	17.185	95	215055	2279.50	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 113.98%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.588	85	49987	471.01	pptv	98
3) Chloromethane	3.998	50	8469	631.66	pptv	100
4) Vinyl Chloride	4.219	62	9390	488.08	pptv	99
5) Bromomethane	4.908	96	7478	349.68	pptv	99
6) Chloroethane	5.051	64	8068	608.48	pptv	94
7) Trichlorofluoromethane...	5.508	101	54046	462.98	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.233	151	50187	470.35	pptv	95
9) Acetone	6.136	43	28079	645.30	pptv	98
10) 1,1-Dichloroethene	6.408	96	19553	511.29	pptv	97
11) Methylene Chloride	7.030	49	15374	526.02	pptv	99
12) t-Butyl Methyl Ether	7.387	73	44132	611.08	pptv	95
13) t-1,2-Dichloroethene	6.408	96	19553	511.29	pptv	88
14) Hexane	7.772	57	20588	576.80	pptv	94
15) 1,1-Dichloroethane	8.074	63	29547	546.80	pptv	98
16) 2-Butanone	8.626	72	9701	569.77	pptv	98
17) c-1,2-Dichloroethene	8.915	96	22133	522.99	pptv	97
18) Chloroform	9.144	83	40185	499.59	pptv	99
19) 1,1,1-Trichloroethane	9.757	97	42483	511.07	pptv	98
20) Carbon Tetrachloride	10.142	117	42037	520.68	pptv	99
22) Benzene	10.322	78	65960	454.46	pptv	97
24) 1,2-Dichloroethane	10.224	62	24654	446.34	pptv	96
25) Trichloroethene	11.212	130	41316	430.31	pptv	97
26) 1,2-Dichloropropane	11.414	63	18873	528.21	pptv	99
27) 1,4-Dioxane	11.704	88	15348	480.05	pptv	95
28) Bromodichloromethane	11.722	83	38197	460.99	pptv	100
30) Toluene	13.055	91	81141	481.29	pptv	99
32) t-1,3-Dichloropropene	12.504	75	24644	490.66	pptv	99
33) 1,1,2-Trichloroethane	13.455	97	28067	443.83	pptv	99
34) Tetrachloroethene	14.081	166	58940	425.13	pptv	98
35) 1,2-Dibromoethane	14.569	107	37063	395.55	pptv	97
36) Chlorobenzene	15.267	112	72206	413.94	pptv	99
37) Ethylbenzene	15.374	91	93640	496.43	pptv	97
38) p,&m-Xylene	15.502	91	155560	954.32	pptv	97
39) o-Xylene	16.190	91	75300	546.62	pptv	93
40) Styrene	16.210	104	59731	513.11	pptv	99
41) 1,1,2,2-Tetrachloroethane	16.985	83	48062	486.73	pptv	98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG001.D
Acq On : 7 Aug 2018 10:26 am
Operator : DT
Sample : SIM CCV
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 10:51:17 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

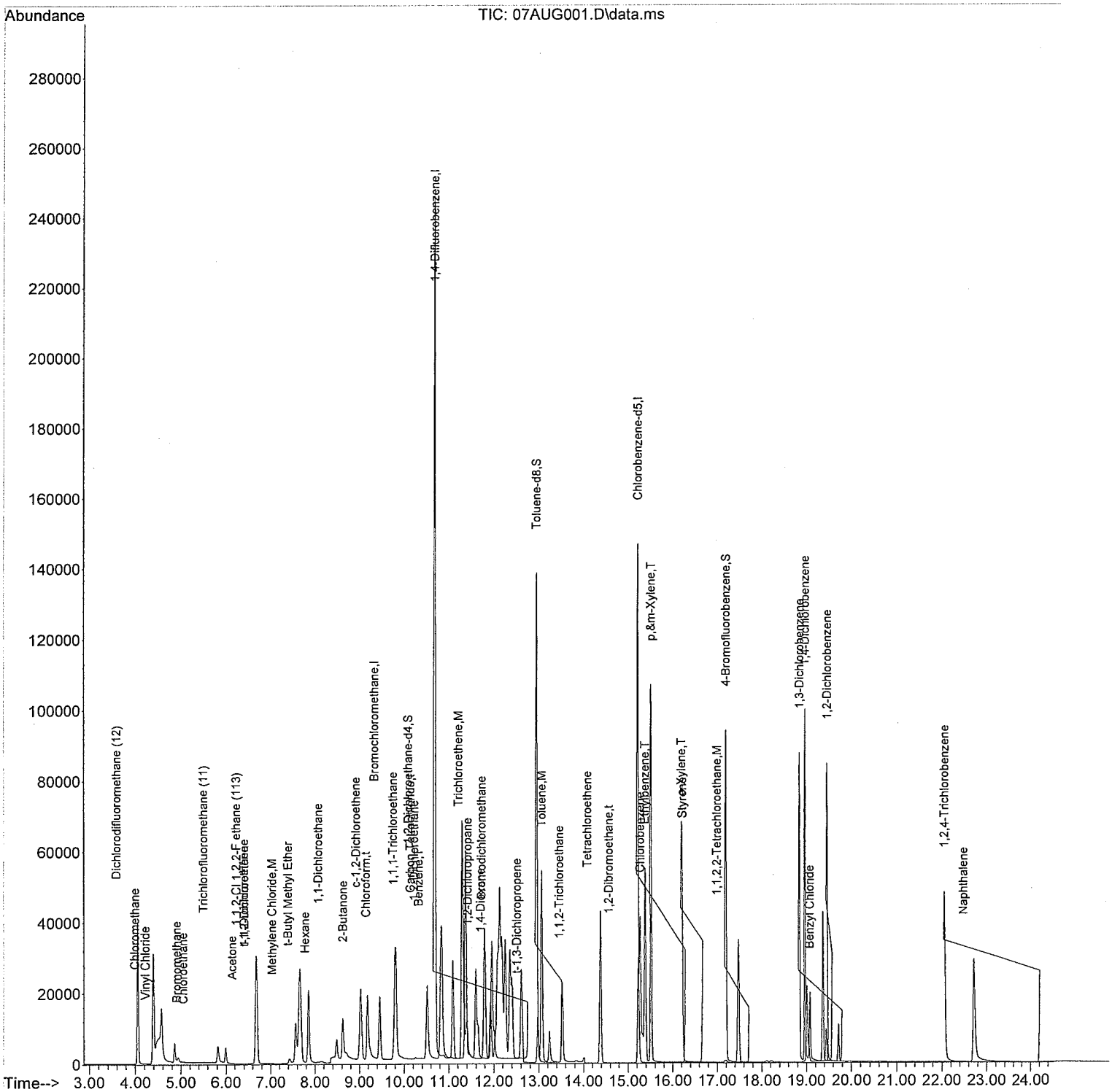
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.831	146	96950	465.48	pptv	100
44) 1,4-Dichlorobenzene	18.958	146	108270	506.53	pptv	98
45) Benzyl Chloride	19.067	91	32002	772.15	pptv	95
46) 1,2-Dichlorobenzene	19.454	146	101973	532.35	pptv	99
47) 1,2,4-Trichlorobenzene	22.050	180	67898	448.67	pptv	98
48) Naphthalene	22.476	128	96377	464.03	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG001.D
Acq On : 7 Aug 2018 10:26 am
Operator : DT
Sample : SIM CCV
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 10:51:17 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration



6. Tune Summaries

a. ICAL Summary
b. CCAL Tune Summary

Criteria as listed in report

7. Method Blank

a. Results/Chromatograms

Method Blank Criteria:

All compounds < Reporting Limit

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG004.D
Acq On : 7 Aug 2018 12:47 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 07 13:12:07 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

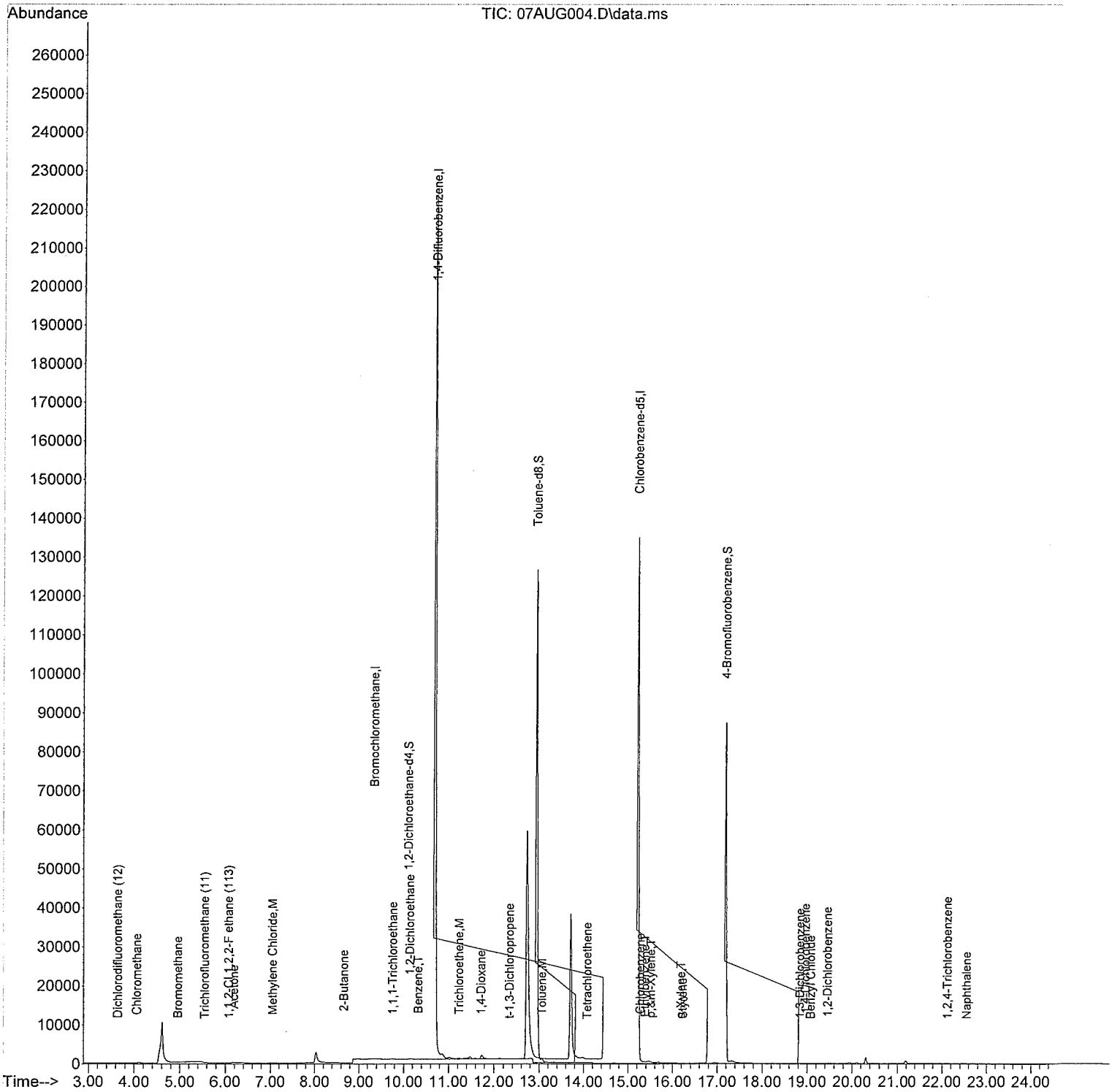
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.345	130	98123	2000.00	pptv		0.01
21) 1,4-Difluorobenzene	10.694	114	379264	2000.00	pptv		0.01
31) Chlorobenzene-d5	15.213	117	315732	2000.00	pptv		0.00
System Monitoring Compounds							
23) 1,2-Dichloroethane-d4	10.105	65	95329	2014.01	pptv		0.01
Spiked Amount 2000.000	Range 70 - 130		Recovery = 100.70%				
29) Toluene-d8	12.941	98	302376	2088.17	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 104.41%				
42) 4-Bromofluorobenzene	17.188	95	194093	2179.31	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 108.97%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.643	85	221	1.99	pptv		93
3) Chloromethane	4.056	50	117	8.33	pptv		88
5) Bromomethane	4.961	96	291	12.99	pptv		96
7) Trichlorofluoromethane...	5.552	101	98	0.80	pptv		83
8) 1,1,2-Cl 1,2,2-F ethan...	6.073	151	206	1.84	pptv		57
9) Acetone	6.193	43	7544	165.46	pptv		86
11) Methylene Chloride	7.052	49	120	3.92	pptv		58
16) 2-Butanone	8.659	72	757	42.43	pptv		66
19) 1,1,1-Trichloroethane	9.760	97	51	0.59	pptv		68
22) Benzene	10.328	78	843	6.30	pptv		93
24) 1,2-Dichloroethane	10.139	62	65	1.28	pptv	#	1
25) Trichloroethene	11.228	130	60	0.68	pptv	#	22
27) 1,4-Dioxane	11.725	88	128	4.34	pptv		91
30) Toluene	13.061	91	1296	8.34	pptv		99
32) t-1,3-Dichloropropene	12.334	75	259	5.46	pptv	#	1
34) Tetrachloroethene	14.079	166	200	1.53	pptv		97
36) Chlorobenzene	15.270	112	125	0.76	pptv		82
37) Ethylbenzene	15.379	91	253	1.42	pptv		95
38) p,&m-Xylene	15.510	91	327	2.13	pptv		95
39) o-Xylene	16.190	91	193	1.48	pptv		92
40) Styrene	16.227	104	117	1.06	pptv		86
43) 1,3-Dichlorobenzene	18.837	146	231	1.17	pptv		89
44) 1,4-Dichlorobenzene	18.962	146	1688	8.37	pptv		94
45) Benzyl Chloride	19.077	91	52	1.33	pptv		98
46) 1,2-Dichlorobenzene	19.458	146	866	4.79	pptv		95
47) 1,2,4-Trichlorobenzene	22.118	180	226	1.58	pptv		94
48) Naphthalene	22.552	128	581	2.96	pptv		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG004.D
Acq On : 7 Aug 2018 12:47 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 07 13:12:07 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration



8. LCS/LCSD

a. Results/Chromatograms

Criteria as listed on report

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG002.D
Acq On : 7 Aug 2018 11:24 am
Operator : DT
Sample : SIM LCS
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 11:49:16 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.333	130	94739	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.688	114	405423	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	327261	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.099	65	93305	1844.06	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 92.20%			
29) Toluene-d8	12.938	98	322439	2083.05	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 104.15%			
42) 4-Bromofluorobenzene	17.185	95	205861	2230.02	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 111.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.591	85	55847	520.15	pptv	98
3) Chloromethane	4.001	50	8614	635.05	pptv	97
4) Vinyl Chloride	4.222	62	10629	546.09	pptv	99
5) Bromomethane	4.911	96	8262	381.87	pptv	99
6) Chloroethane	5.054	64	8644	644.39	pptv	94
7) Trichlorofluoromethane...	5.511	101	57242	484.69	pptv	98
8) 1,1,2-Cl 1,2,2-F ethan...	6.237	151	55769	516.62	pptv	95
9) Acetone	6.140	43	31594	717.68	pptv	98
10) 1,1-Dichloroethene	6.411	96	23370	604.04	pptv	96
11) Methylene Chloride	7.036	49	16466	556.87	pptv	92
12) t-Butyl Methyl Ether	7.387	73	44658	611.22	pptv	93
13) t-1,2-Dichloroethene	6.411	96	23370	604.04	pptv	90
14) Hexane	7.775	57	21740	602.04	pptv	100
15) 1,1-Dichloroethane	8.080	63	29938	547.63	pptv	98
16) 2-Butanone	8.635	72	9597	557.15	pptv	87
17) c-1,2-Dichloroethene	8.918	96	23128	540.18	pptv	97
18) Chloroform	9.144	83	41051	504.46	pptv	100
19) 1,1,1-Trichloroethane	9.760	97	42639	507.02	pptv	99
20) Carbon Tetrachloride	10.145	117	42525	520.64	pptv	100
22) Benzene	10.328	78	65902	460.95	pptv	97
24) 1,2-Dichloroethane	10.227	62	24780	455.43	pptv	98
25) Trichloroethene	11.212	130	40714	430.47	pptv	97
26) 1,2-Dichloropropane	11.417	63	19029	540.65	pptv	95
27) 1,4-Dioxane	11.707	88	15220	483.27	pptv	97
28) Bromodichloromethane	11.725	83	38273	468.91	pptv	100
30) Toluene	13.055	91	77923	469.22	pptv	100
32) t-1,3-Dichloropropene	12.504	75	23241	472.90	pptv	98
33) 1,1,2-Trichloroethane	13.459	97	27556	445.33	pptv	98
34) Tetrachloroethene	14.081	166	56563	416.95	pptv	97
35) 1,2-Dibromoethane	14.569	107	35689	389.26	pptv	97
36) Chlorobenzene	15.267	112	66614	390.28	pptv	98
37) Ethylbenzene	15.376	91	85630	463.94	pptv	97
38) p,&m-Xylene	15.502	91	140952	883.71	pptv	98
39) o-Xylene	16.190	91	65128	483.18	pptv	92
40) Styrene	16.210	104	50636	444.54	pptv	98
41) 1,1,2,2-Tetrachloroethane	16.985	83	35928	371.84	pptv	99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG002.D
Acq On : 7 Aug 2018 11:24 am
Operator : DT
Sample : SIM LCS
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 11:49:16 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

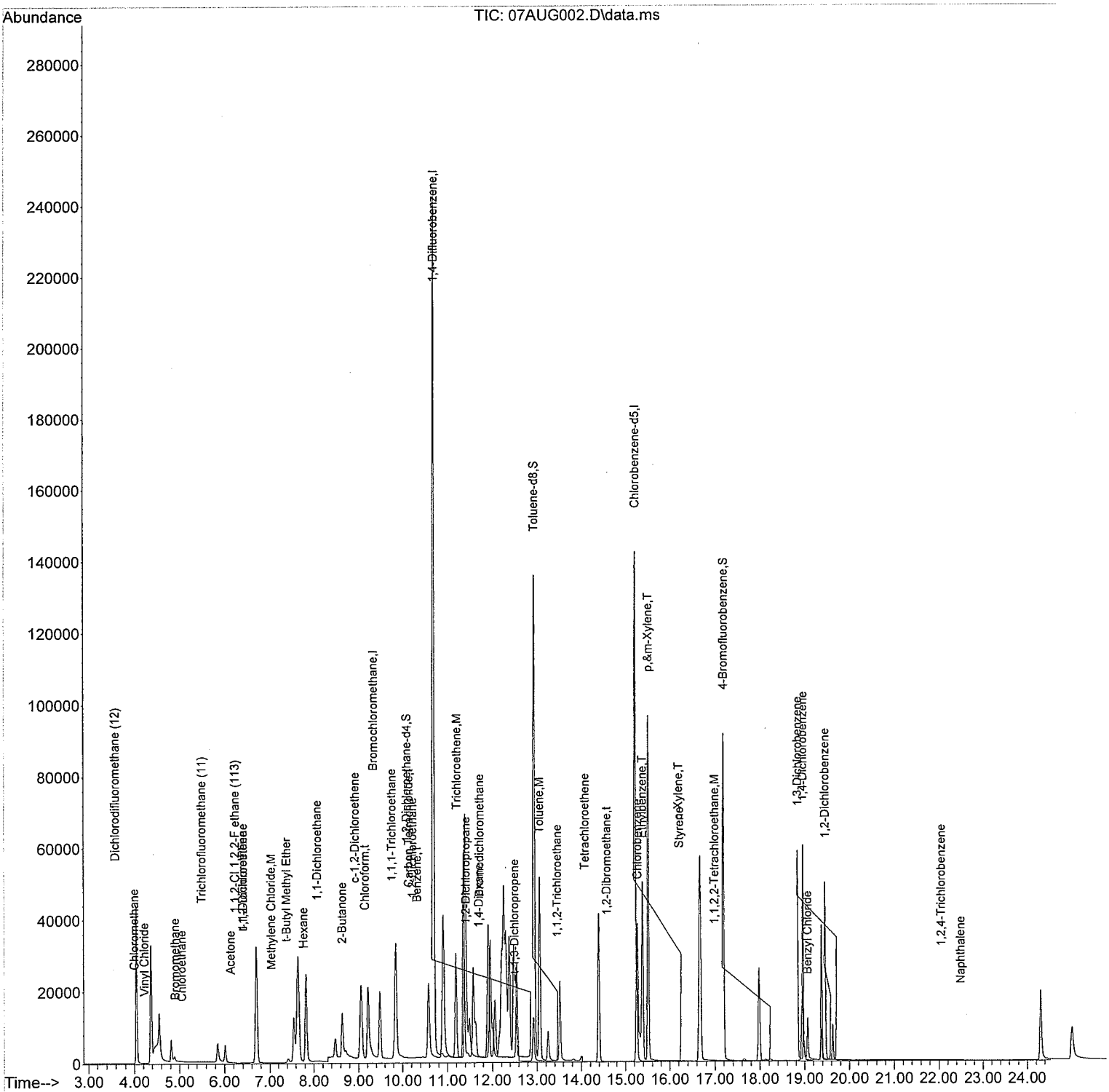
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.831	146	65164	319.75	pptv	99
44) 1,4-Dichlorobenzene	18.958	146	65796	314.59	pptv	98
45) Benzyl Chloride	19.067	91	20198	498.06	pptv	93
46) 1,2-Dichlorobenzene	19.454	146	60128	320.80	pptv	99
47) 1,2,4-Trichlorobenzene	22.050	180	29759	200.97	pptv	98
48) Naphthalene	22.490	128	37212	183.11	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG002.D
Acq On : 7 Aug 2018 11:24 am
Operator : DT
Sample : SIM LCS
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 11:49:16 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG003.D
Acq On : 7 Aug 2018 12:04 pm
Operator : DT
Sample : SIM LCSD
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 12:29:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.333	130	94473	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.685	114	400928	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	324778	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.096	65	92977	1858.18	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 92.91%			
29) Toluene-d8	12.938	98	318333	2079.58	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 103.98%			
42) 4-Bromofluorobenzene	17.184	95	206710	2256.33	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 112.82%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.582	85	49769	464.84	pptv	99
3) Chloromethane	3.995	50	8253	610.15	pptv	99
4) Vinyl Chloride	4.213	62	9268	477.51	pptv	99
5) Bromomethane	4.905	96	10211	473.28	pptv	99
6) Chloroethane	5.048	64	8188	612.11	pptv	95
7) Trichlorofluoromethane...	5.505	101	54175	460.01	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.230	151	53004	492.39	pptv	95
9) Acetone	6.133	43	28674	653.19	pptv	99
10) 1,1-Dichloroethene	6.404	96	20508	531.56	pptv	97
11) Methylene Chloride	7.030	49	15368	521.20	pptv	94
12) t-Butyl Methyl Ether	7.384	73	43293	594.20	pptv	93
13) t-1,2-Dichloroethene	6.404	96	20508	531.56	pptv	88
14) Hexane	7.772	57	20840	578.74	pptv	97
15) 1,1-Dichloroethane	8.074	63	29159	534.88	pptv	100
16) 2-Butanone	8.626	72	9264	539.33	pptv	97
17) c-1,2-Dichloroethene	8.912	96	21151	495.40	pptv	95
18) Chloroform	9.141	83	39596	487.95	pptv	99
19) 1,1,1-Trichloroethane	9.754	97	41959	500.34	pptv	100
20) Carbon Tetrachloride	10.145	117	42171	517.76	pptv	96
22) Benzene	10.325	78	63207	447.05	pptv	97
24) 1,2-Dichloroethane	10.224	62	23484	436.45	pptv	99
25) Trichloroethene	11.212	130	38618	412.89	pptv	97
26) 1,2-Dichloropropane	11.411	63	18268	524.85	pptv	95
27) 1,4-Dioxane	11.700	88	14449	463.93	pptv	95
28) Bromodichloromethane	11.722	83	37087	459.47	pptv	99
30) Toluene	13.055	91	75562	460.10	pptv	100
32) t-1,3-Dichloropropene	12.504	75	22543	462.21	pptv	98
33) 1,1,2-Trichloroethane	13.459	97	26359	429.25	pptv	99
34) Tetrachloroethene	14.081	166	54662	406.02	pptv	98
35) 1,2-Dibromoethane	14.569	107	34946	384.07	pptv	97
36) Chlorobenzene	15.267	112	65222	385.05	pptv	100
37) Ethylbenzene	15.374	91	84197	459.67	pptv	97
38) p,&m-Xylene	15.502	91	138598	875.60	pptv	98
39) o-Xylene	16.190	91	63933	477.94	pptv	92
40) Styrene	16.210	104	50150	443.64	pptv	99
41) 1,1,2,2-Tetrachloroethane	16.983	83	35412	369.30	pptv	99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG003.D
Acq On : 7 Aug 2018 12:04 pm
Operator : DT
Sample : SIM LCSD
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 12:29:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration

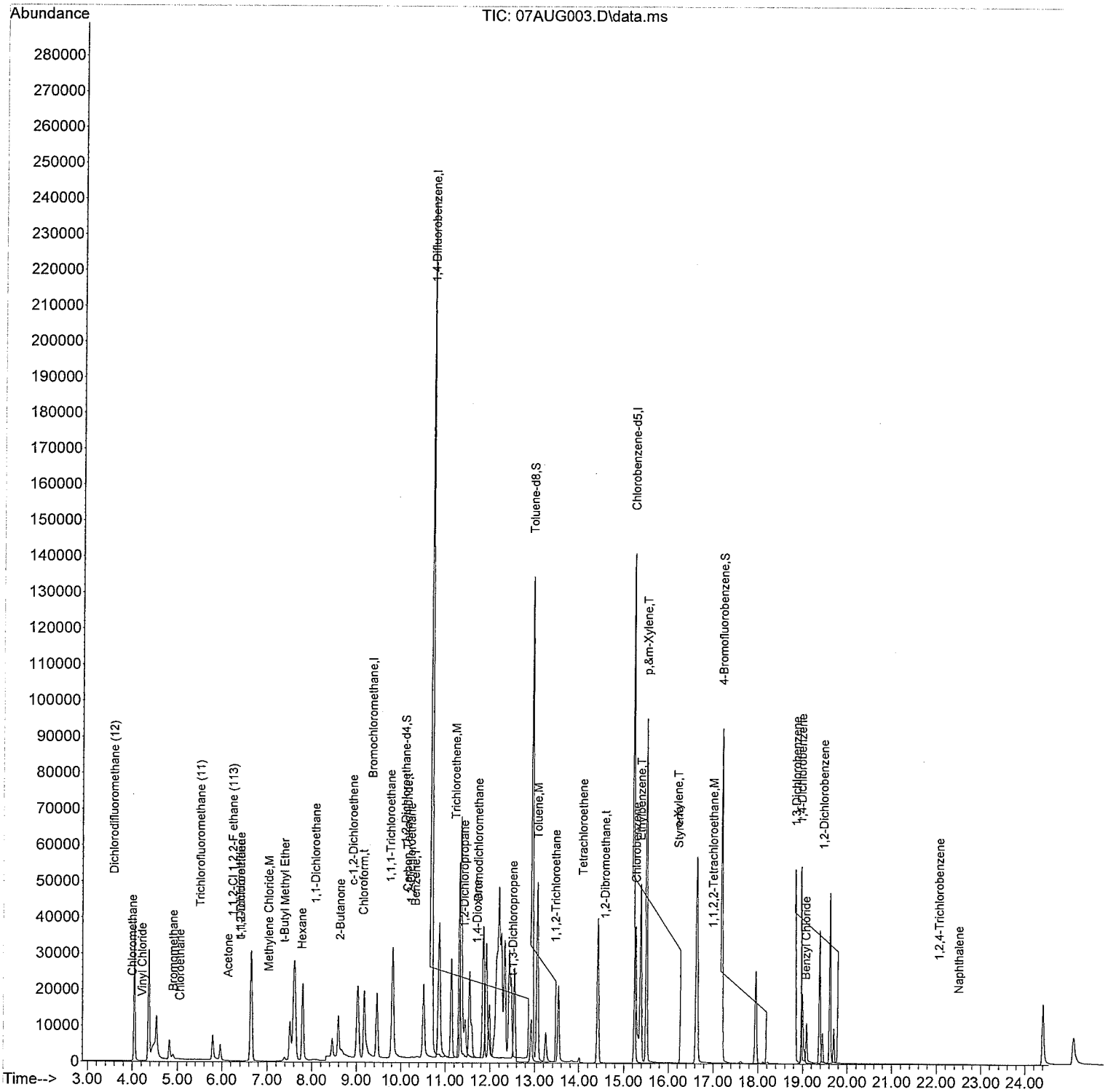
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.831	146	59581	294.59	pptv	100
44) 1,4-Dichlorobenzene	18.960	146	59020	284.35	pptv	99
45) Benzyl Chloride	19.067	91	18719	465.11	pptv	93
46) 1,2-Dichlorobenzene	19.454	146	57188	307.45	pptv	99
47) 1,2,4-Trichlorobenzene	22.050	180	25646	174.52	pptv	100
48) Naphthalene	22.495	128	30957	153.49	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 07AUG003.D
Acq On : 7 Aug 2018 12:04 pm
Operator : DT
Sample : SIM LCSD
Misc : 125 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 07 12:29:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL180624.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Mon Jun 25 10:25:20 2018
Response via : Initial Calibration



GC/MS Raw Data Index
General Information

Lab Project No.: J072607 TO15 Scan

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Conventions and Conversions

1 ppbv = 0.001 ppmv = 0.0000001% v/v
1% v/v = 10,000 ppmv = 10,000,000 ppbv

1 ug/m^3 = 1 ng/L = ppbv x MW/24.45
1 ug/L = 1 mg/m^3 = ppmv x MW/24.45

Where **MW** is the molecular weight of the compound and 24.45 is the molar volume of ideal gas at 1 atmosphere and 25° C.

1 atmosphere = 14.6 psia = 0 psig
30" Hg = 0 psia = -14.6 psig

Standard pressure is taken as 14.6 psia at Air Technology Labs' facility.

1. Supporting Documents

a. Pressurization log (if applicable)
b. ICAL run log
c. CCAL/QC/Samples run log
d. Miscellaneous documents

PRESSURIZATION LOGBOOK

Date	Sample ID	Can #	Initial Pressure	Final Pressure	Dilution Gas	Dilution Gas Lot #	Initials	ETR #	Client/ Comments	He Prefill
7/30/13	J072607-01	5414	4"Hg	5psig	N2	13BN8112	RTT	8879	JACOBS	ND
	-02	3140	4"Hg							
	-03	3649	5"Hg							
	-04	3681	6"Hg							
	-05	1478	6"Hg							
	-06	5227	4"Hg							
	-07	5302	4"Hg	10psig		17N8712				1.94 1.872
	-08	R1351	3"Hg							

Approved by/Date:_____ Air Technology Laboratories Inc. Logbook #17

J072607a

Instrument ID: GCMS2

Analytical Method: TO180625

Datafile Directory: 180625

GCMS Injection Logbook

Chemist: DT

Blank Lot #: 052N8312

IS/Surr Standard Code: AN130852509

Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
6/25/18	10:13	25JUN001	BFB	AN130852509	150	—	—	1.0	—	NO	EM = 2497	180625MS2A1
	10:59	002	BFB						—	OK	EM = 2497	
	11:44	003	BFB						—	OK	for TO15 only EM = 2482	
	12:32	004	BFB						—	OK	EM = 2497	
	13:40	005	1.0 ppbv ICAL	AN130871404	50				15	OK		
	14:22	006	1.0							NO		
	15:02	007	2.5		125					OK		
	15:44	008	5.0		250							
	16:42	009	7.0	AN130860202	35				13			
	17:27	010	10		50							
	18:07	011	25		125							
	18:47	012	100	AN130860303	50				13			
	19:29	013	250		125							
	20:11	014	Blank	—	250			0.2	4	OK	for Yorke only	
	20:54	015	ICV/LCS	AN130860404	50			1.0	6			
	21:37	016	LCS 0									
	22:20	017	Method Blank	—	250			0.2	4			
	23:03	018	J061908-01	Yorke	50	AN16 11.68		2.106	1	OK		
	23:46	019	-02			11.68		2.022	2	NO	T<170	
6/26/18	00:28	020	-03			12.17		2.022	3			

Approved by/Date:_____

Logbook GCMS2 #35

Air Technology Laboratories

J072607a

Instrument ID: GCMS2

Analytical Method: TO18062S

Datafile Directory: 180625

GCMS Injection Logbook

Chemist: JD

Blank Lot #: 052N8312

IS/Surr Standard Code: AW1308509

Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
6/26/18	01:21	25JUL021	J061908-04	Yorke	50	20.6 / 12.17	—	2.022	5	OK		180625MSDA1
	01:53	022	-05			12.17		↓	6	↓		
	02:35	023	-06			11.92		2.063	7			
	03:17	024	-09			11.19		2.198	8	NJ	T<-170°.	
	03:58	025	-10			11.14		↓	9	↓	↓	
	04:40	026	-11			11.68		2.106	10	OK		
	05:21	027	-12			11.19		2.198	11	OK		
	06:03	028	J060711-27	HGS	126	19.6 / 9.73		0.8	12	NO		
	06:44	029	27LR		126	9.73		0.8	12			
	07:25	030	28		200	9.49		0.5	14			
	08:08	031	29		250	—		0.2	15			
	08:49	032	23		50	19.6 / 9.98	200 / 100	5.895	16			
	09:38	033	J061908-02	Yorke	50	20.6 / 11.68		2.106	2	OK		
	10:18	034	-03			12.17		2.022	3	OK		
	10:58	035	-04			12.17		↓	5	NO	can closed	
	11:39	036	-08	25 6/26/18		11.19		2.198	8	OK		
	12:19	037	-06			11.19		↓	9	OK		
↓	12:56	038	-04			12.17	↓	2.022	5	OK	~~result out of~~ outside 24h.1	↓
												JD 6/26/18

Approved by/Date:_____

Logbook GCMS2 #35

Air Technology Laboratories

J072607a

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: TO180625 / SC180624
Datafile Directory: 180625

Chemist: D
Blank Lot #: 0J2N831/2
IS/Surr Standard Code: AW1308509

Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
6/27/18	05:06	26704N021	ccv	AW1308602	50	—	—	1.0	B	OK		180626MS2A1
	05:45	22	sim ccv	AW1308714	125	—	—	1.0	J	OK		180627MS2A1
	08:47	23	706071I-05	HGS	100	19.6/10.71	400/100	3.67	1	NO	CS2, Acetone contamination Re-prepared	180626MS2A1
	10:13	24	↓ -05	↓	50	↓	300/100	5.493	1	OK		↓
↓	10:53	25	ccv	AW1308606	50	—	—	1.0	B	OK		

Approved by/Date:_____
Logbook GCMS2 #35

Air Technology Laboratories

Instrument ID: GCMS2
Analytical Method: TO1806ZS
Datafile Directory: 1806ZS

GCMS Injection Logbook

Chemist: DJ
Blank Lot #: 052N8312
IS/Surr Standard Code: AW1308509

Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
6/26/18	14:54	26JUN001	BFB	AW1308504	150	—	—	1.0	—	OK		180626MS2A1
	16:05	02	10 ppbv ICAL	AW1308602	50				13			
	16:52	03	25	↓	125				↓			
	17:32	04	100	AW1308603	50				13			
	18:12	05	250 ↓	↓	125			↓	↓	↓		
	18:51	06	Blank	—	200			0.2	4	OK		
	19:31	07	ICV/LCS	AW1308604	50			1.0		OK	CH_3Br, Acetone †	
	20:12	08	LCSD	↓	↓			↓		↓	↓	
	20:53	09	Method Blank	—	210	↓	↓	0.2	4	OK		
	21:34	10	J060711-15	HGS	50	19.6/10.71	400/100	7.34	1	NO	U/D	
	22:16	11	-23		35	9.98	—	5.895	16	OK		
	22:57	12	-23LR		35	9.98		↓	16	OK		
↓	23:39	13	-24		50	10.45		1.873	2	OK	†will not cause matrix interf. (IS very low response)	
6/27/18	00:20	14	-26		50	9.73		2.014	3	OK	↓	
	01:02	15	-27		168	9.73		0.6	12	OK		
	01:43	16	-28		206	9.49		0.5	14	OK		
	02:23	17	-29 ↓	↓	250	—	↓	0.2	15	OK	FB (contaminated)	
	03:04	18	J062602-02	SCS	50		400/200	2.0	6	OK		
	03:45	19	↓ -01	↓	↓		—	1.0	7	OK		
↓	04:25	↓	20 CCV	AW1308602	50		—	1.0	8	OK	closing std	↓

Approved by/Date:
Logbook GCMS2 #35

Air Technology Laboratories

J072607a

Instrument ID: GCMS2

Analytical Method: TO-15 80625

Datafile Directory: 180806

GCMS Injection Logbook

Chemist: DS

Blank Lot #: 0JZN8312

IS/Surr Standard Code: AN/309302

Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
8/8/18	09:55	080816 001	BFB	AN/309302	150	—	—	1.0	—	OK		180808MS2A1
	10:40	002	0 cal	AN/309419	50				3			
	11:52	003	LCS	AN/309420					2			
	12:31	004	LCSD	↓					2			
	13:30	005	Siloxanes	5K					16			
	14:12	006	Method Blk	—	250			0.2	6			
	15:19	007	J073103-01	AT2	100			0.5	4	OK		
	15:59	008	J072607-02	Jacobs	50	24.6/12.05		1.944	1	OK		
	16:39	009	-08	↓	↓	↓		↓	2	OK		
	17:19	010	J080801-01	Weack	50	—		1.0	3	OK		
	17:59	11	J080301-01	Clty M	50	24.6/12.17		2.022	5	OK		
	18:40	12	02				↓	↓	7			
	19:21	13	03				900/50	36.396	8			
	20:04	14	04				1000/50	40.44	9			
↓	20:47	15	J080701-01	Toro	50	24.6/11.22	400/200	2.3473	10			

Approved by/Date:_____

Logbook GCMS2 #35

Air Technology Laboratories

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2. Sample Raw Data

a. Results/Chromatograms/Spectra

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\180806\08AUG001.D
Tune Time : 8 Aug 2018 9:55 am

Daily Calibration File : C:\msdchem\1\data\180806\08AUG002.D

					93086	431790	356654
File	Sample	Surrogate Recovery %			Internal Standard Responses		
08AUG003.D							
	LCS	94	100	110	86332	420131	353904
08AUG004.D							
	LCSD	96	101	111	93776	419677	346495
08AUG006.D							
	METHOD BLANK	97	102	113	93775	414064	346082
08AUG008.D							
	J072607-07	95	103	113	83864	401550	337805
08AUG009.D							
	J072607-08	94	103	107	86133	412905	363317

(fails) - fails 24hr time check * - fails criteria

Created: Tue Aug 14 14:50:20 2018 ms2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG008.D
Acq On : 8 Aug 2018 3:59 pm
Operator : DT
Sample : J072607-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

Quant Time: Aug 08 16:24:25 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.321	130	83864	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.682	114	401550	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.204	117	337805	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.091	65	202394	9.47	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 94.70%				
34) Toluene-d8	12.938	98	415988	10.26	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.60%				
53) 4-Bromofluorobenzene	17.175	174	221925	11.29	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 112.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.575	85	9441	0.31	ppbv		79
3) Chloromethane	4.123	50	5944	0.74	ppbv		83
6) Bromomethane	4.871	94	1897	0.35	ppbv	#	8
8) Trichlorofluoromethane...	5.474	101	3294	0.11	ppbv		69
9) 1,1-Dichloroethene	6.569	61	360	0.02	ppbv	#	34
10) Carbon Disulfide	7.065	76	3655706	177.88	ppbv		98
12) Acetone	6.114	43	799739	38.13	ppbv		94
14) t-1,2-Dichloroethene	7.452	96	100	0.01	ppbv	#	1
17) c-1,2-Dichloroethene	8.937	96	148	0.01	ppbv	#	1
18) 2-Butanone	8.609	72	120157	23.84	ppbv	#	64
23) Carbon Tetrachloride	10.141	117	389	0.02	ppbv		64
25) Benzene	10.328	78	7974	0.21	ppbv		74
27) 1,2-Dichloroethane	10.226	62	460	0.02	ppbv		47
32) c-1,3-Dichloropropene	12.472	75	342	0.02	ppbv		59
33) 4-Methyl-2-Pentanone	12.223	43	5547	0.18	ppbv		77
35) Toluene	13.059	91	24091	0.58	ppbv		78
40) Tetrachloroethene	14.079	166	8502	0.43	ppbv		86
41) 2-Hexanone	13.499	58	1381	0.09	ppbv		48
42) Dibromochloromethane	14.073	129	5956	0.27	ppbv	#	16
46) Ethylbenzene	15.368	91	18231	0.32	ppbv		96
47) p,&m-Xylene	15.502	91	27004	0.59	ppbv		89
48) o-Xylene	16.191	91	16743	0.37	ppbv		75
49) Styrene	16.201	104	4611	0.15	ppbv		81
51) Isopropyl benzene	16.814	105	1008	0.02	ppbv	#	55
52) 1,1,2,2-Tetrachloroethane	16.962	83	315	0.01	ppbv	#	34
54) Benzyl Chloride	19.037	91	2035	0.10	ppbv		65
55) 1,2,3-Trichloropropane	17.217	110	20854	2.73	ppbv	#	78
56) n-Propyl Benzene	17.496	91	6794	0.12	ppbv	#	53
57) Bromobenzene	17.496	77	450	0.02	ppbv	#	32
58) 4-Ethyl Toluene	17.631	105	23786	0.39	ppbv		77
59) 1,3,5-Trimethylbenzene	17.726	105	12726	0.24	ppbv		95
60) 2-Chlorotoluene	17.749	91	1231	0.03	ppbv	#	51
62) tert-Butylbenzene	18.316	119	5243	0.14	ppbv	#	71
63) 1,2,4-Trimethylbenzene	18.303	105	50126	0.95	ppbv		95
64) sec-Butylbenzene	18.565	105	5286	0.10	ppbv		91
65) p-Isopropyltoluene	18.739	119	100310	2.56	ppbv		94

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG008.D
Acq On : 8 Aug 2018 3:59 pm
Operator : DT
Sample : J072607-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

Quant Time: Aug 08 16:24:25 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
66) 1,3-Dichlorobenzene	18.959	146	11167	0.39	ppbv		89
67) 1,4-Dichlorobenzene	18.959	146	11167	0.39	ppbv		95
68) n-Butylbenzene	19.267	91	20510	0.46	ppbv	#	82
69) 1,2-Dichlorobenzene	19.444	146	5344	0.20	ppbv		80
71) 1,2,4-Trichlorobenzene	22.058	180	26486	1.17	ppbv	#	26

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG008.D
Acq On : 8 Aug 2018 3:59 pm
Operator : DT
Sample : J072607-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

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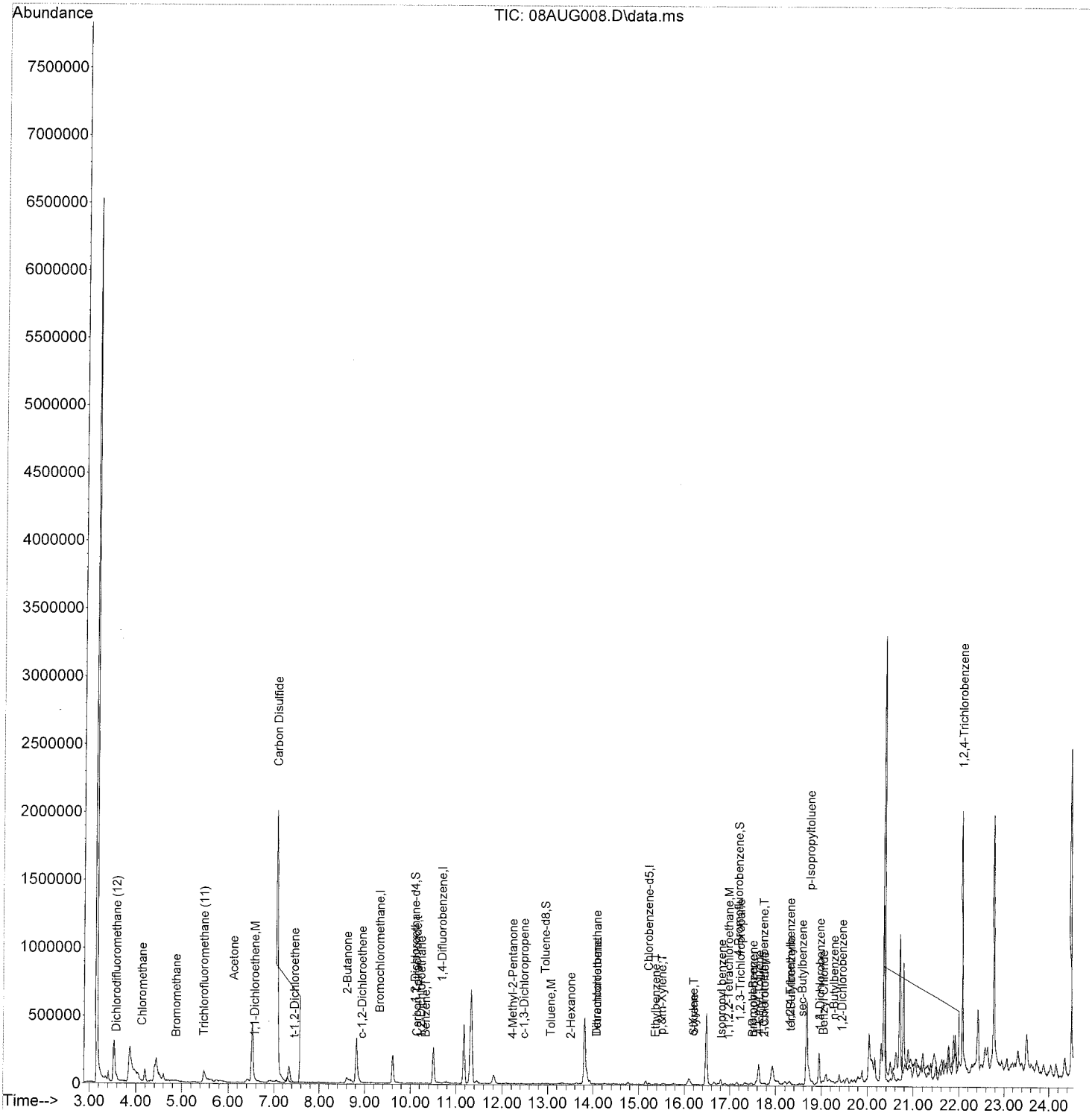
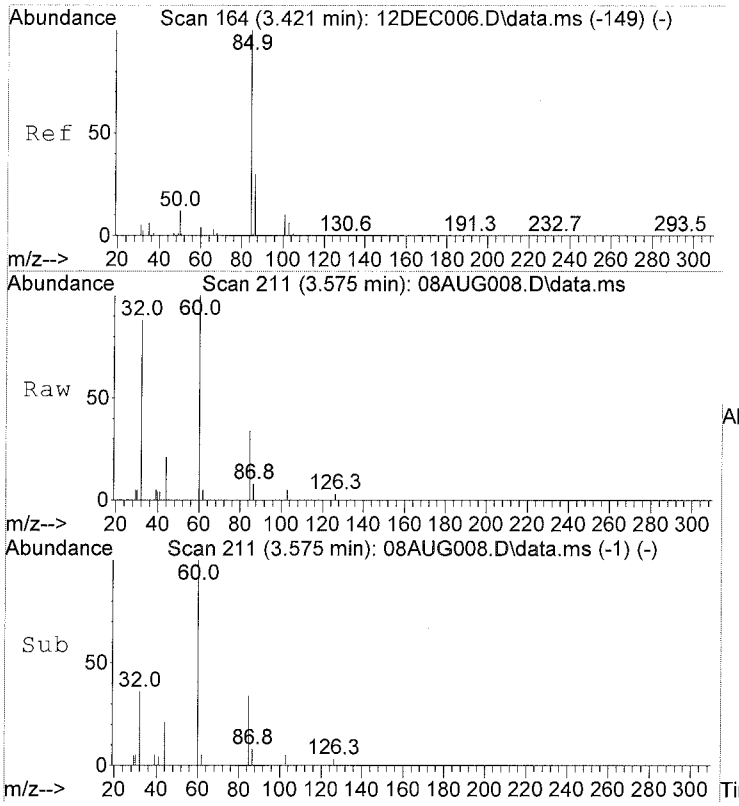
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

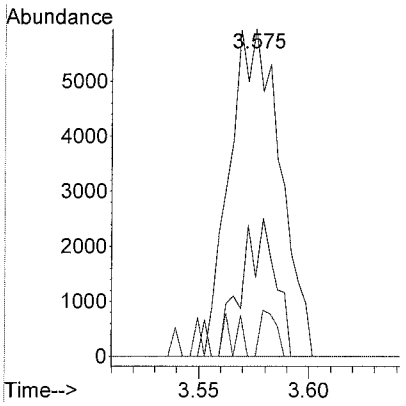


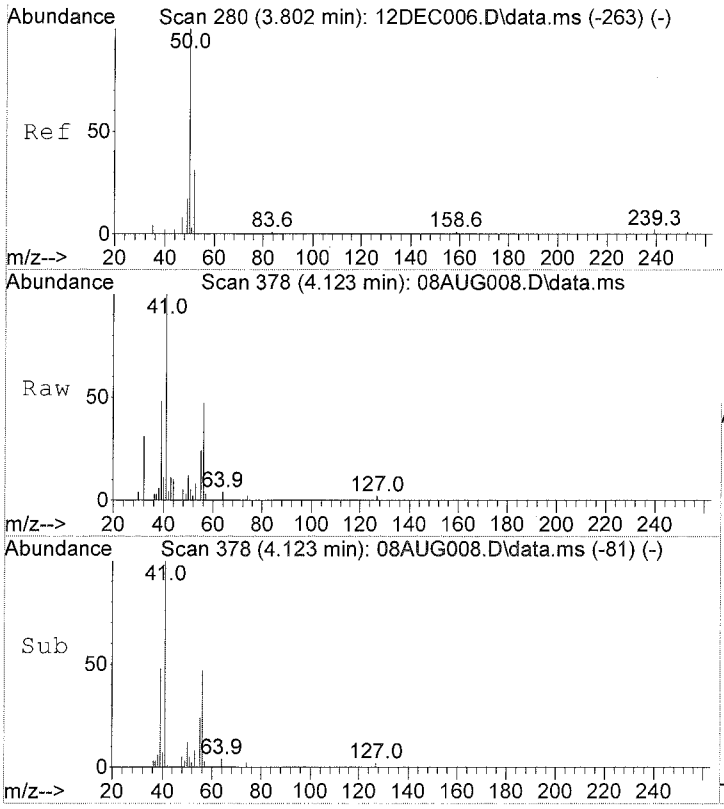


#2
Dichlorodifluoromethane (12)
Concen: 0.31 ppbv
RT: 3.575 min Scan# 211
Delta R.T. 0.029 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 85 Resp: 9441

Ion	Ratio	Lower	Upper
85	100		
87	24.2	0.0	83.5
50	0.0	0.0	63.3

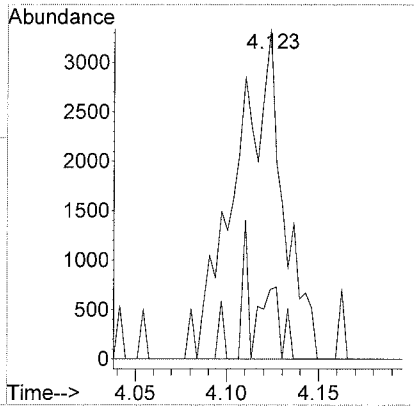


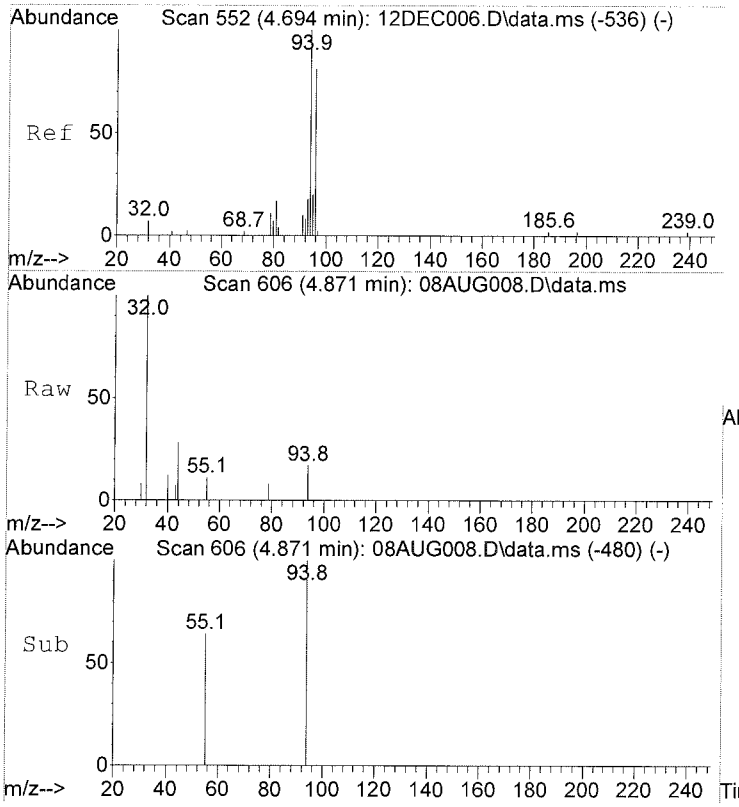


#3
Chloromethane
Concen: 0.74 ppbv
RT: 4.123 min Scan# 378
Delta R.T. 0.174 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 50 Resp: 5944

Ion	Ratio	Lower	Upper
50	100		
52	21.1	0.4	60.4

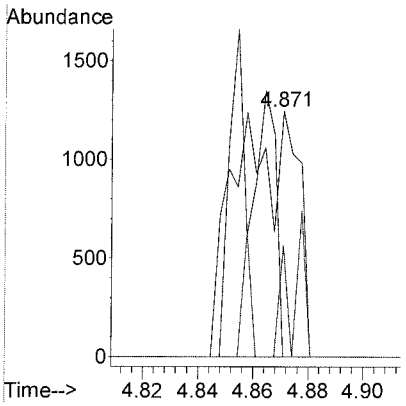


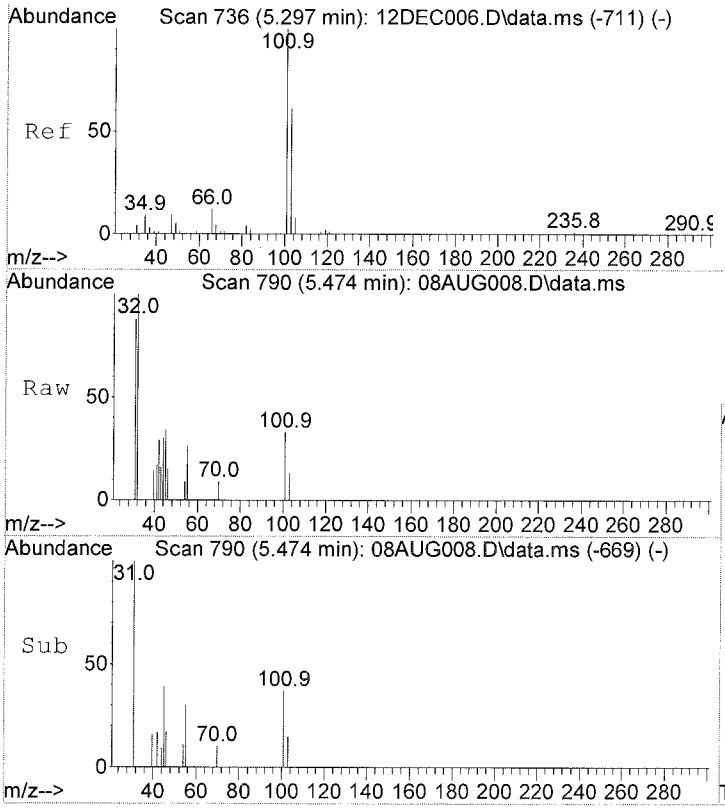


#6
Bromomethane
Concen: 0.35 ppbv
RT: 4.871 min Scan# 606
Delta R.T. 0.013 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 94 Resp: 1897

Ion	Ratio	Lower	Upper
94	100		
96	0.0	48.0	148.0#
79	45.4	0.0	69.2

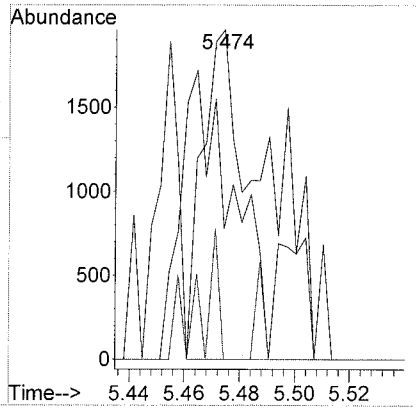


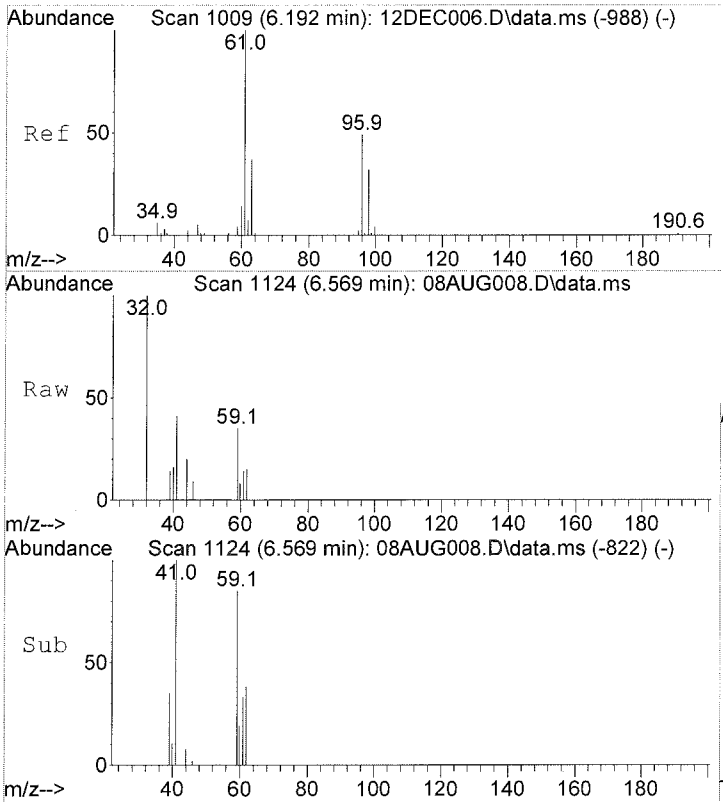


#8
Trichlorofluoromethane (11)
Concen: 0.11 ppbv
RT: 5.474 min Scan# 790
Delta R.T. -0.003 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:101 Resp: 3294

Ion	Ratio	Lower	Upper
101	100		
103	39.8	13.0	113.0
66	0.0	0.0	65.0

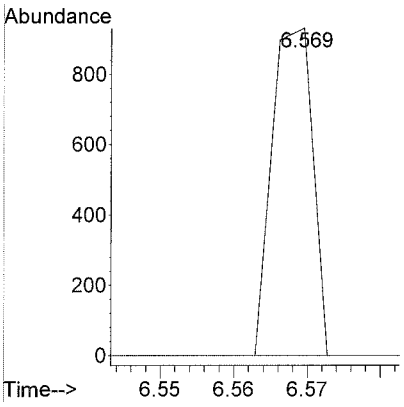


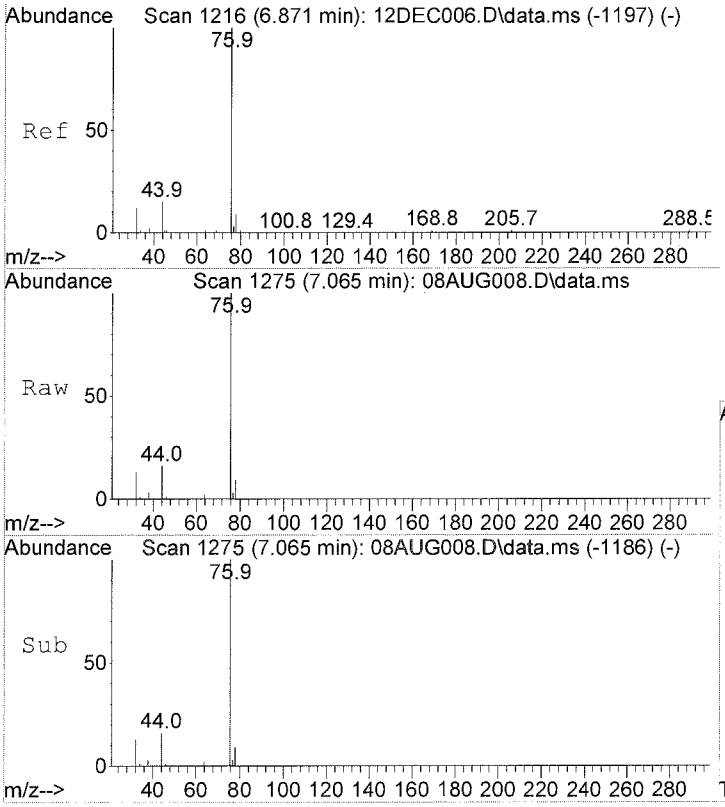


#9
1,1-Dichloroethene
Concen: 0.02 ppbv
RT: 6.569 min Scan# 1124
Delta R.T. 0.190 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 61 Resp: 360

Ion	Ratio	Lower	Upper
61	100		
96	0.0	2.9	102.9#
63	0.0	0.0	81.6
98	0.0	0.0	84.4

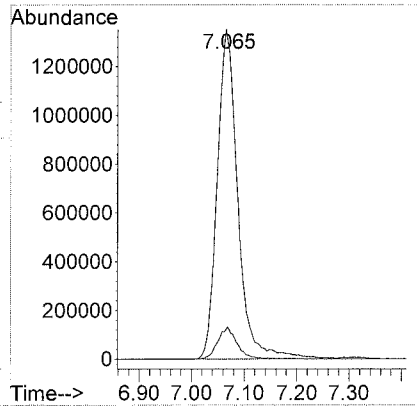


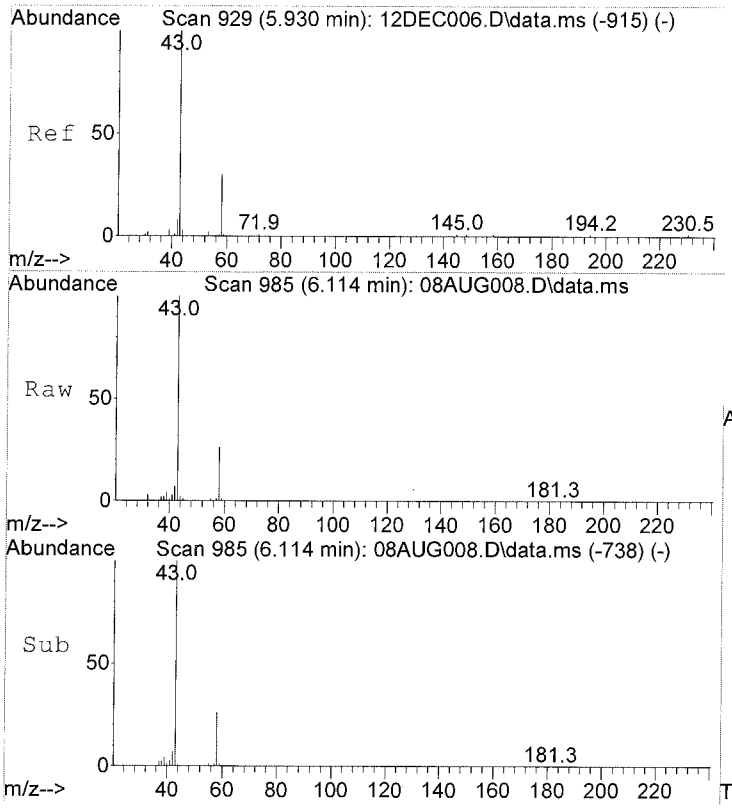


#10
Carbon Disulfide
Concen: 177.88 ppbv
RT: 7.065 min Scan# 1275
Delta R.T. -0.009 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 76 Resp: 3655706

Ion	Ratio	Lower	Upper
76	100		
78	8.8	0.0	59.5

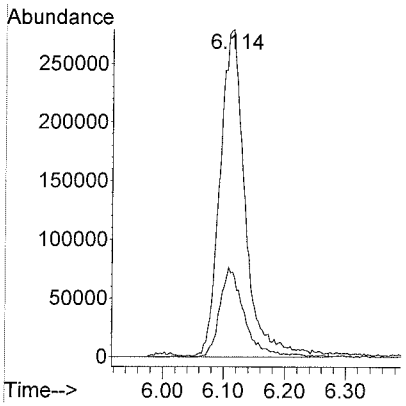


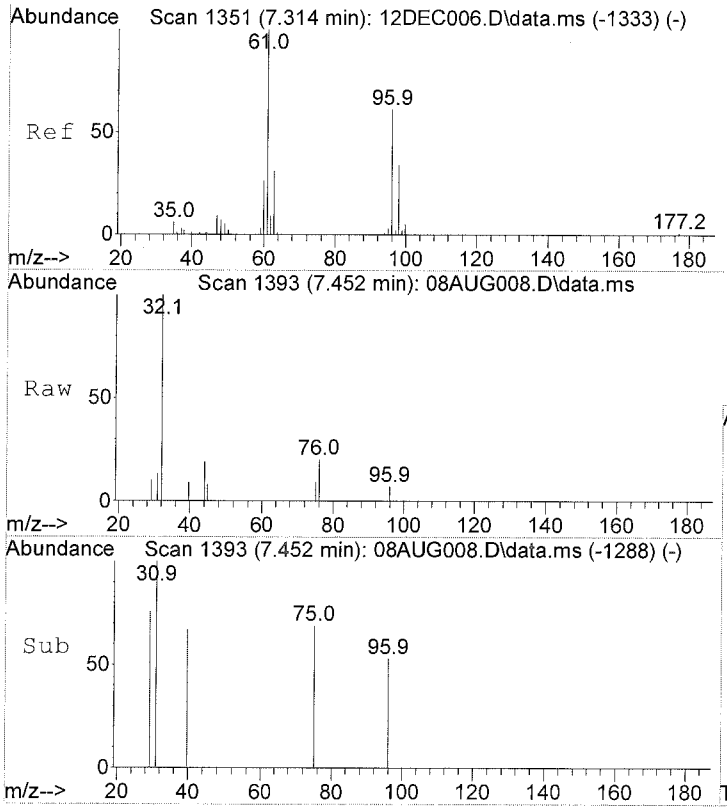


#12
Acetone
Concen: 38.13 ppbv
RT: 6.114 min Scan# 985
Delta R.T. 0.010 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 43 Resp: 799739

Ion	Ratio	Lower	Upper
43	100		
58	25.9	9.3	49.3

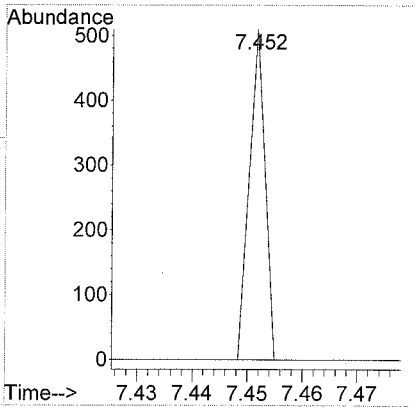


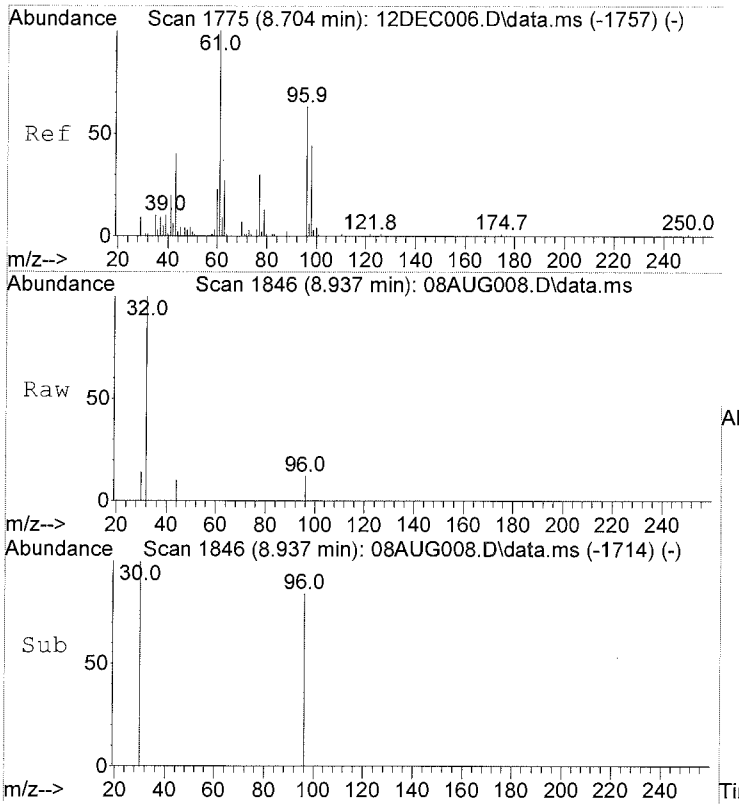


#14
t-1,2-Dichloroethene
Concen: 0.01 ppbv
RT: 7.452 min Scan# 1393
Delta R.T. -0.055 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 96 Resp: 100

Ion	Ratio	Lower	Upper
96	100		
61	0.0	98.0	198.0#
98	0.0	21.0	121.0#
63	0.0	2.1	102.1#

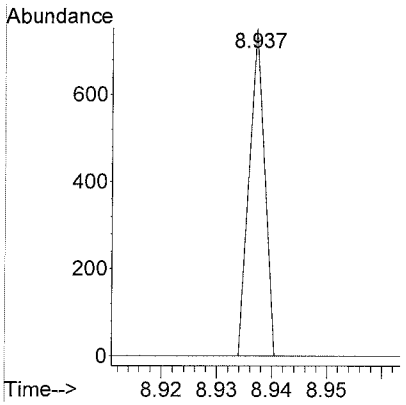


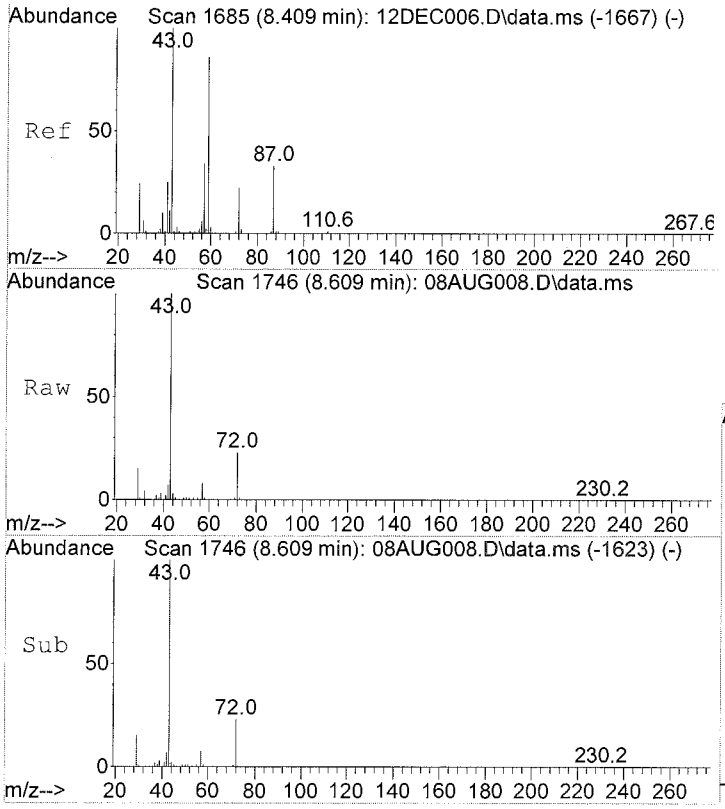


#17
c-1,2-Dichloroethene
Concen: 0.01 ppbv
RT: 8.937 min Scan# 1846
Delta R.T. 0.033 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 96 Resp: 148

Ion	Ratio	Lower	Upper
96	100		
61	0.0	108.2	208.2#
63	0.0	0.0	97.0
98	0.0	12.1	112.1#

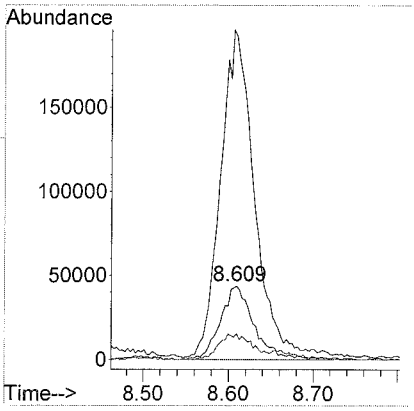


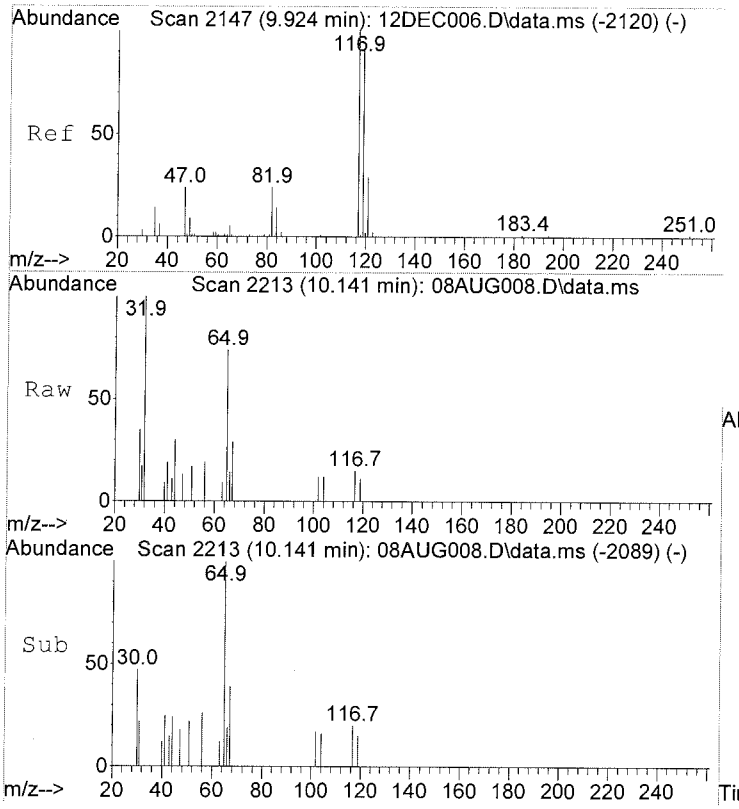


#18
2-Butanone
Concen: 23.84 ppbv
RT: 8.609 min Scan# 1746
Delta R.T. 0.003 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 72 Resp: 120157

Ion	Ratio	Lower	Upper
72	100		
43	436.9	0.0	1397.7
57	35.2	47.5	247.5#

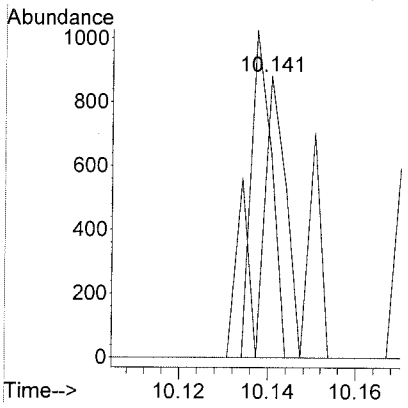


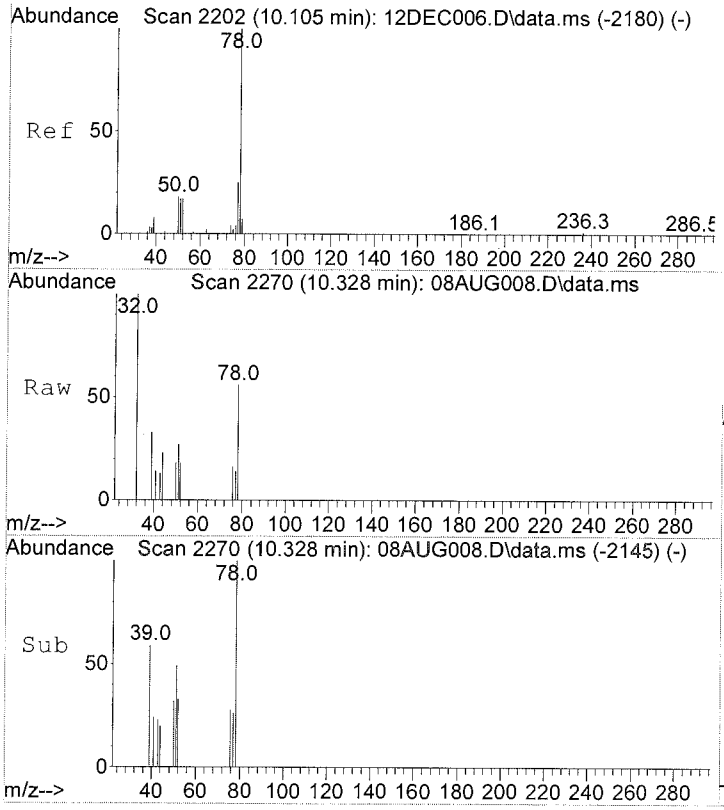


#23
Carbon Tetrachloride
Concen: 0.02 ppbv
RT: 10.141 min Scan# 2213
Delta R.T. 0.007 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:117 Resp: 389

Ion	Ratio	Lower	Upper
117	100		
119	72.4	46.1	146.1
82	0.0	0.0	79.2
121	0.0	0.0	80.5

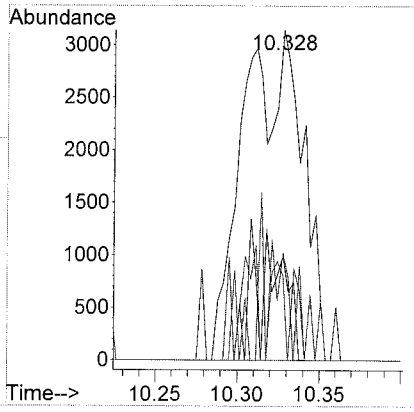


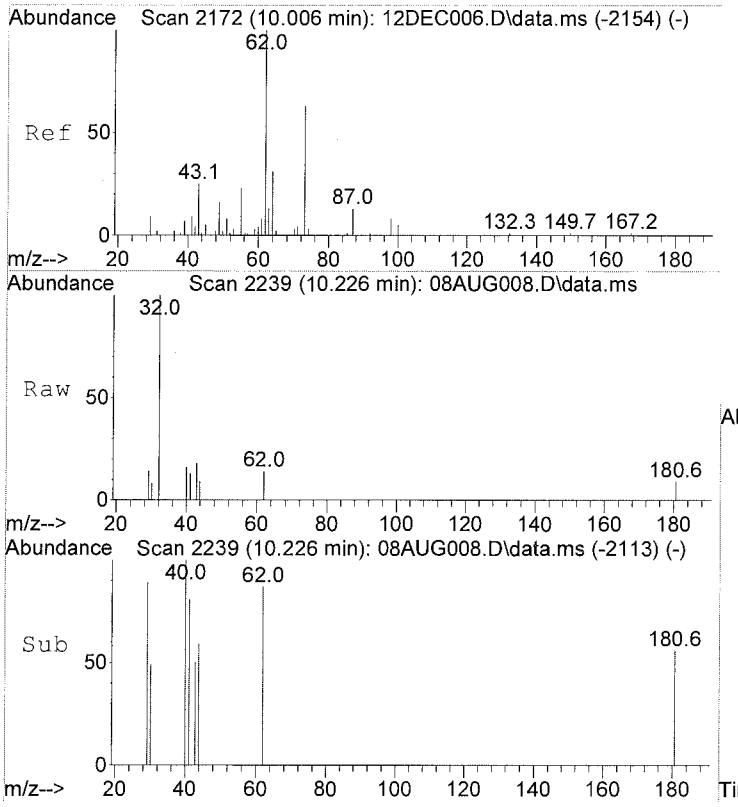


#25
Benzene
Concen: 0.21 ppbv
RT: 10.328 min Scan# 2270
Delta R.T. 0.010 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 78 Resp: 7974

Ion	Ratio	Lower	Upper
78	100		
50	31.6	0.0	66.6
52	32.5	0.0	64.9
77	25.7	0.0	71.7

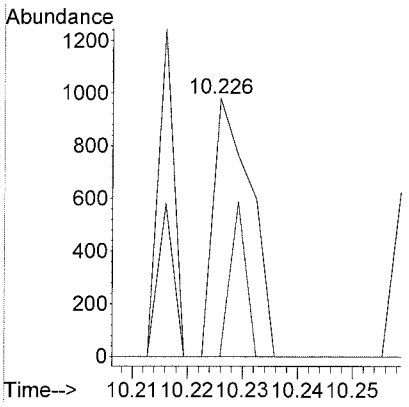


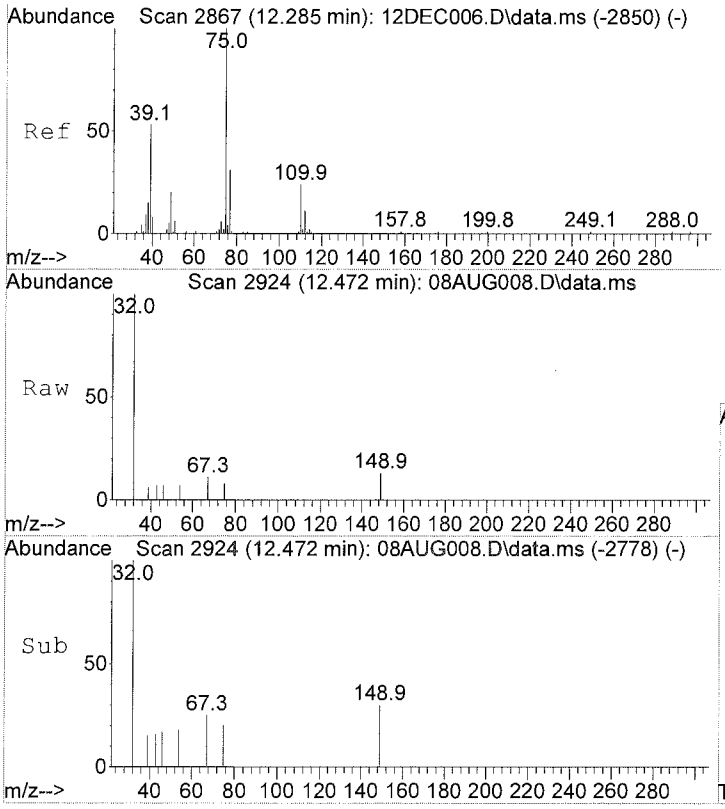


#27
1,2-Dichloroethane
Concen: 0.02 ppbv
RT: 10.226 min Scan# 2239
Delta R.T. 0.013 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 62 Resp: 460

Ion	Ratio	Lower	Upper
62	100		
49	0.0	0.0	71.0
64	0.0	0.0	82.7

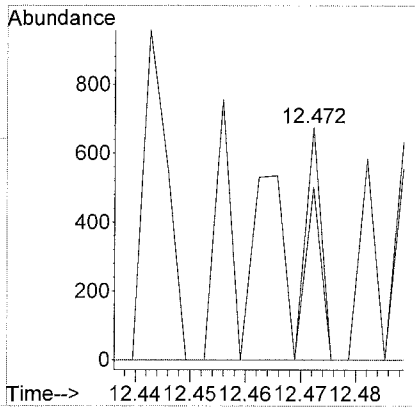


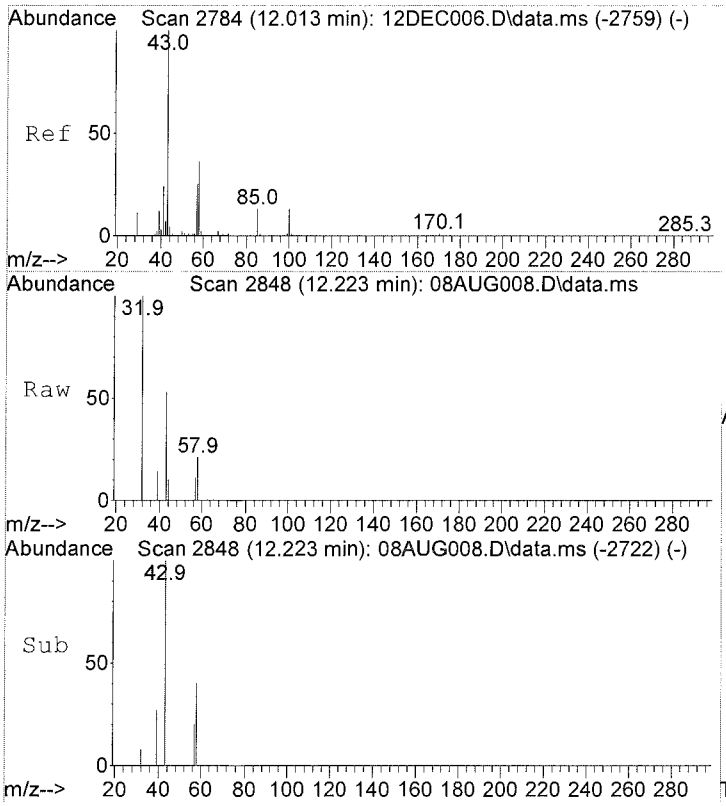


#32
c-1,3-Dichloropropene
Concen: 0.02 ppbv
RT: 12.472 min Scan# 2924
Delta R.T. -0.023 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 75 Resp: 342

Ion	Ratio	Lower	Upper
75	100		
39	74.2	1.4	101.4
77	0.0	0.0	80.8

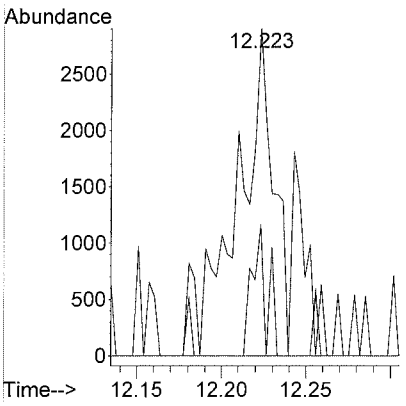


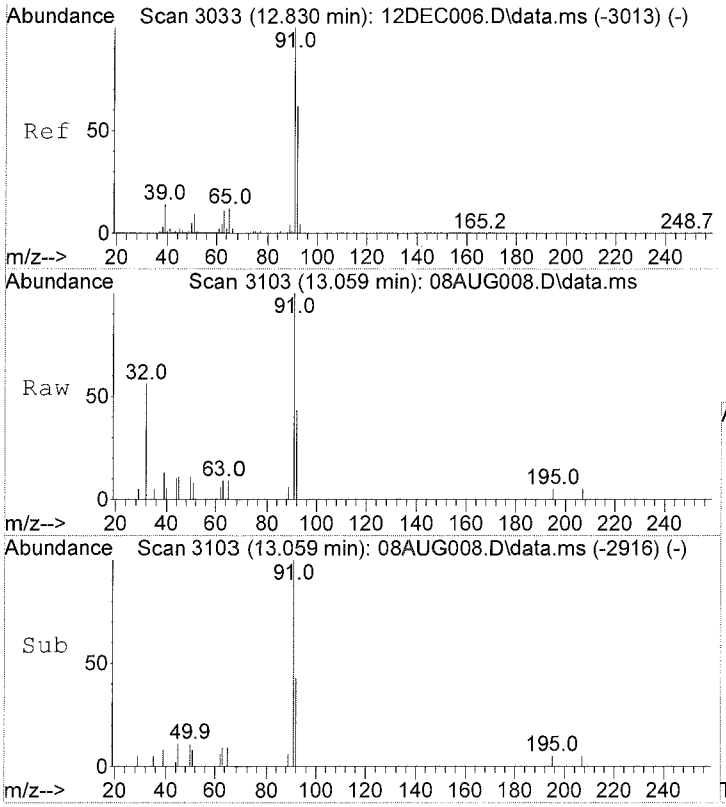


#33
4-Methyl-2-Pentanone
Concen: 0.18 ppbv
RT: 12.223 min Scan# 2848
Delta R.T. 0.013 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 43 Resp: 5547

Ion	Ratio	Lower	Upper
43	100		
58	40.0	0.0	94.4
100	0.0	0.0	64.3
85	0.0	0.0	72.4

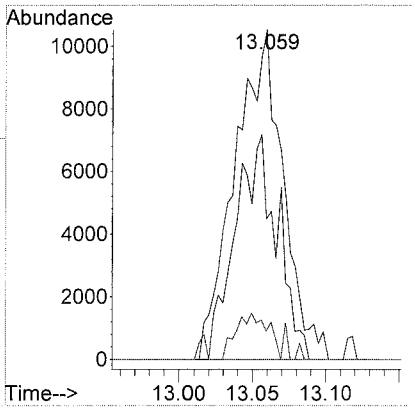


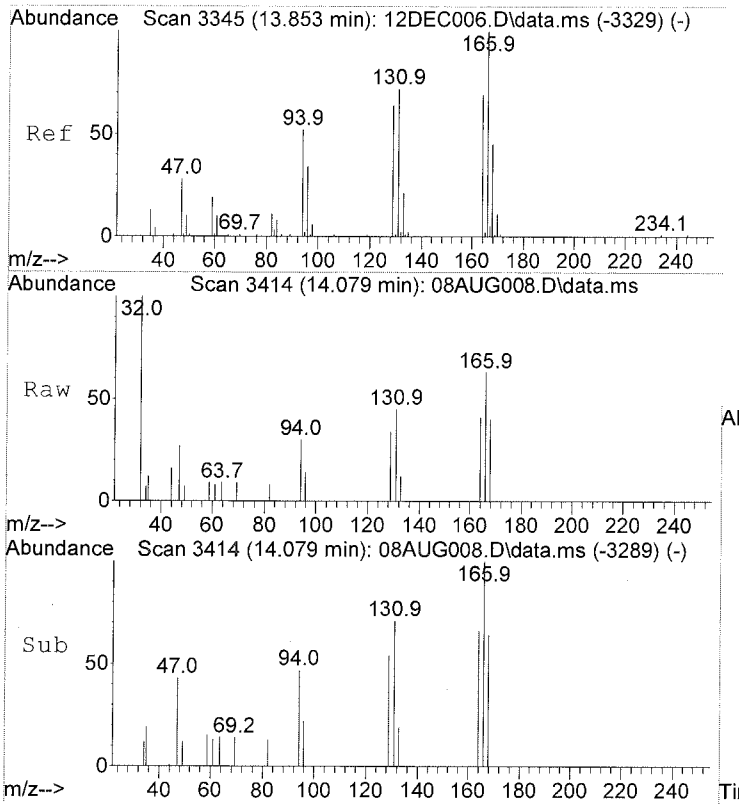


#35
Toluene
Concen: 0.58 ppbv
RT: 13.059 min Scan# 3103
Delta R.T. 0.013 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 91 Resp: 24091

Ion	Ratio	Lower	Upper
91	100		
92	42.8	10.8	110.8
65	8.6	0.0	63.4

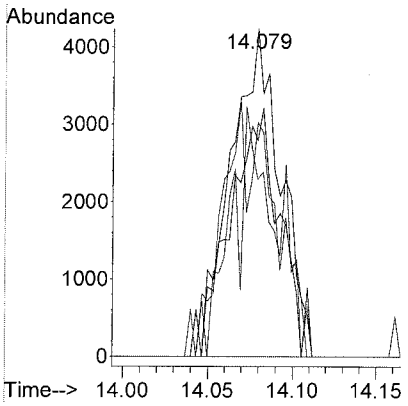


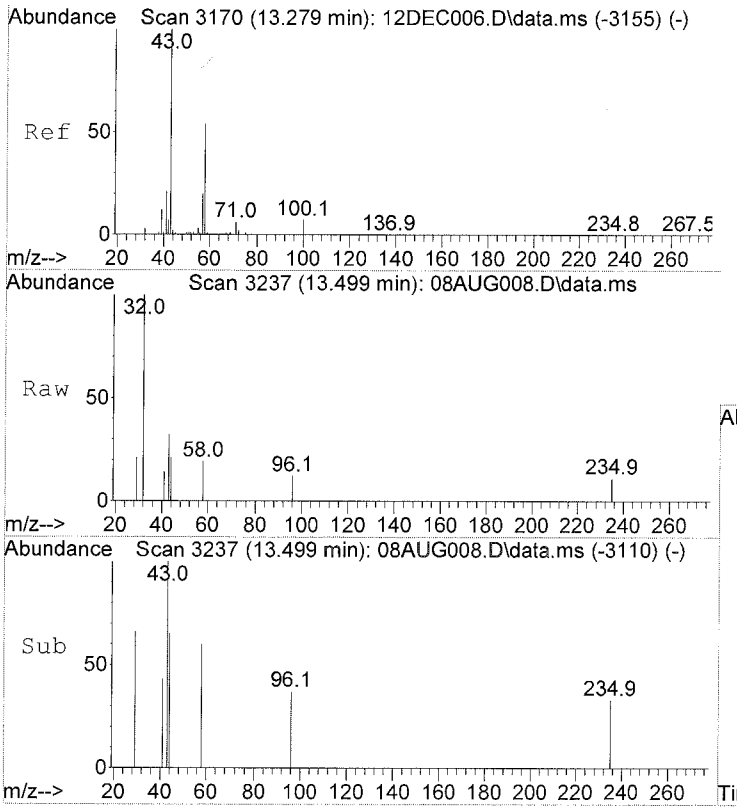


#40
Tetrachloroethene
Concen: 0.43 ppbv
RT: 14.079 min Scan# 3414
Delta R.T. 0.010 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:166 Resp: 8502

Ion	Ratio	Lower	Upper
166	100		
164	66.1	29.5	129.5
131	71.4	18.1	118.1
129	54.1	23.3	123.3

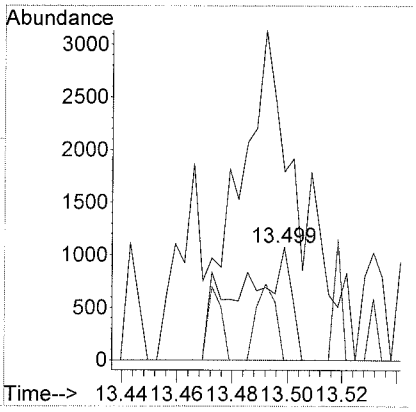


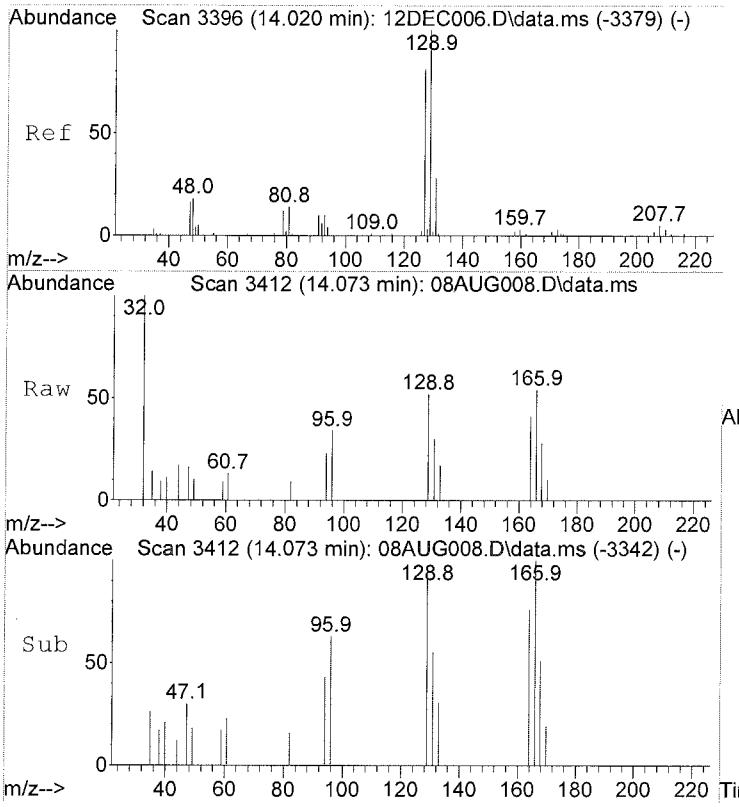


#41
2-Hexanone
Concen: 0.09 ppbv
RT: 13.499 min Scan# 3237
Delta R.T. 0.017 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 58 Resp: 1381

Ion	Ratio	Lower	Upper
58	100		
43	109.1	0.0	682.6
57	0.0	0.0	535.8
100	0.0	0.0	69.5

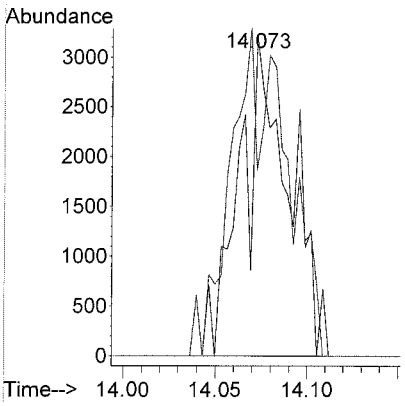


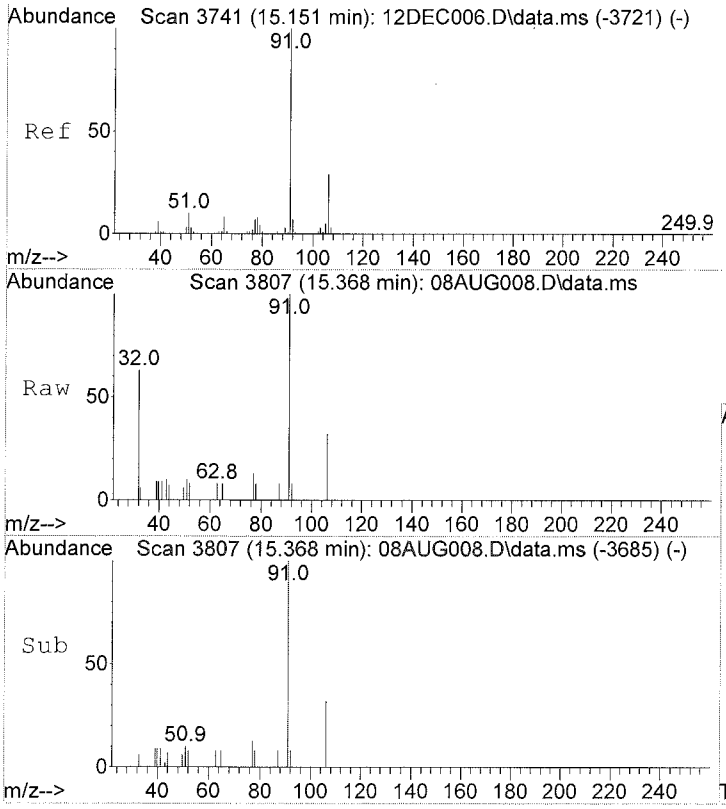


#42
Dibromochloromethane
Concen: 0.27 ppbv
RT: 14.073 min Scan# 3412
Delta R.T. -0.170 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:129 Resp: 5956

Ion	Ratio	Lower	Upper
129	100		
127	0.0	24.3	124.3#
131	57.9	0.0	72.9

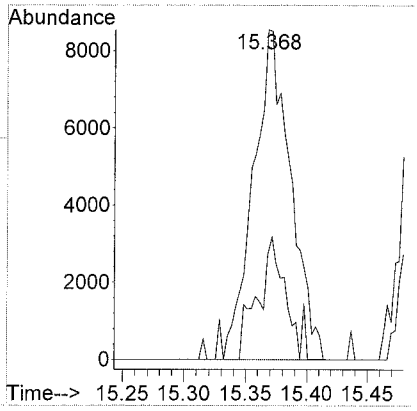


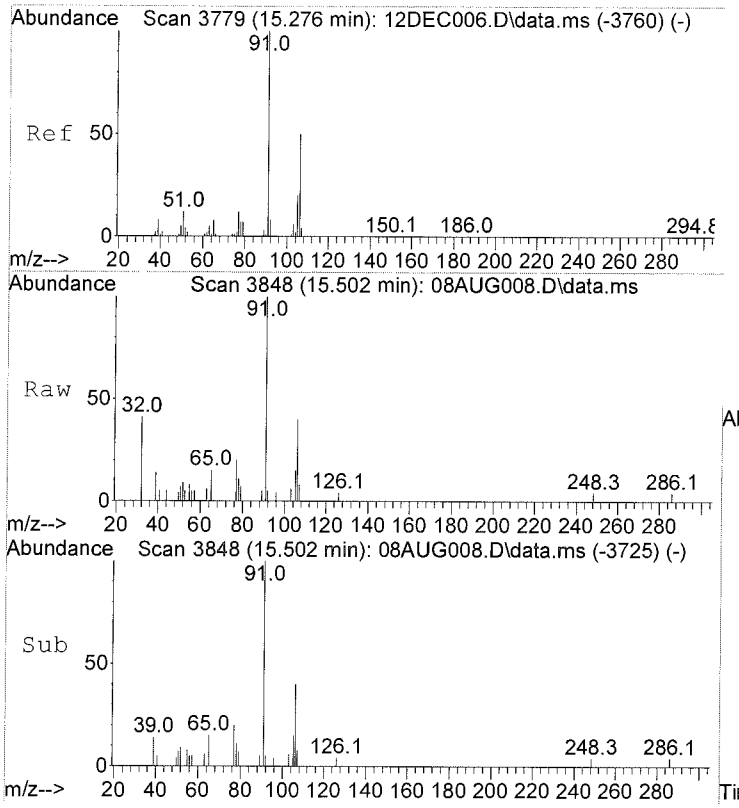


#46
Ethylbenzene
Concen: 0.32 ppbv
RT: 15.368 min Scan# 3807
Delta R.T. -0.000 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 91 Resp: 18231

Ion	Ratio	Lower	Upper
91	100		
106	31.7	0.0	79.5

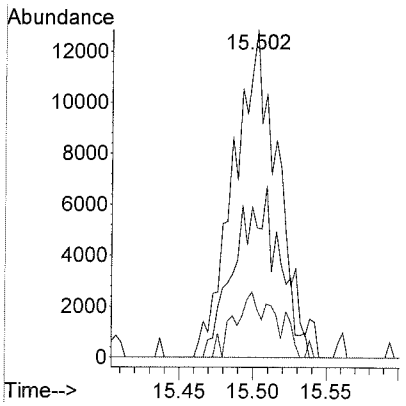


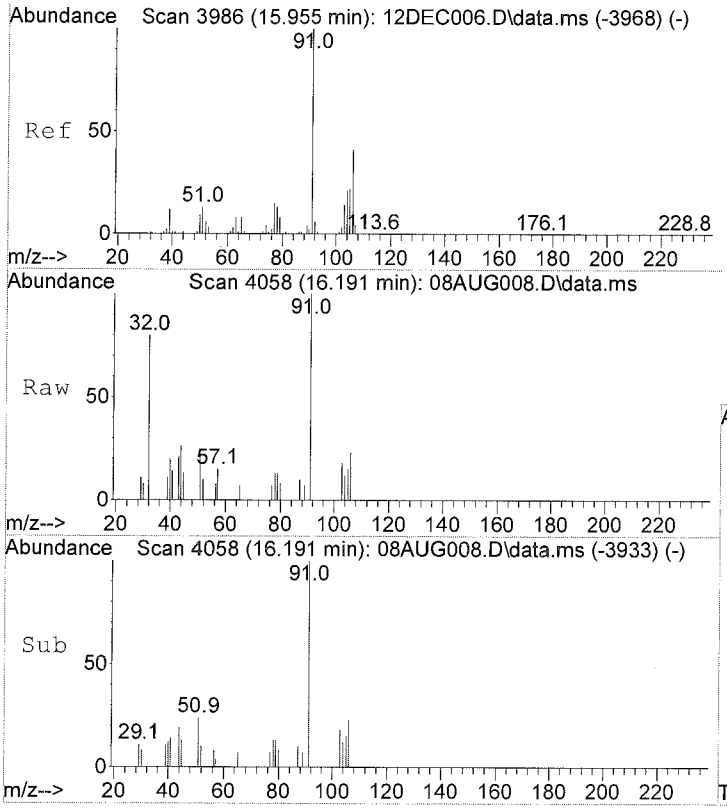


#47
p,&m-Xylene
Concen: 0.59 ppbv
RT: 15.502 min Scan# 3848
Delta R.T. 0.003 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 91 Resp: 27004

Ion	Ratio	Lower	Upper
91	100		
106	39.7	0.0	96.6
105	14.9	0.0	70.6

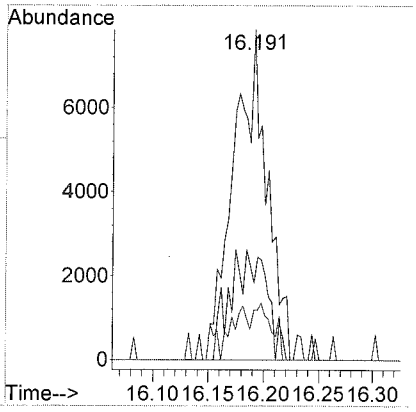


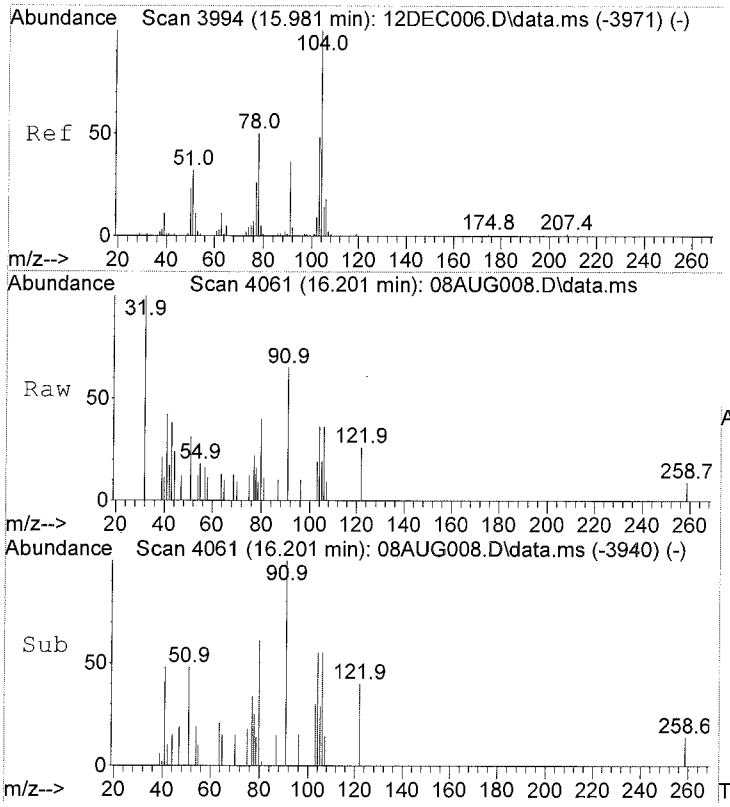


#48
o-Xylene
Concen: 0.37 ppbv
RT: 16.191 min Scan# 4058
Delta R.T. 0.010 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 91 Resp: 16743

Ion	Ratio	Lower	Upper
91	100		
106	23.5	0.0	93.9
105	15.2	0.0	69.1

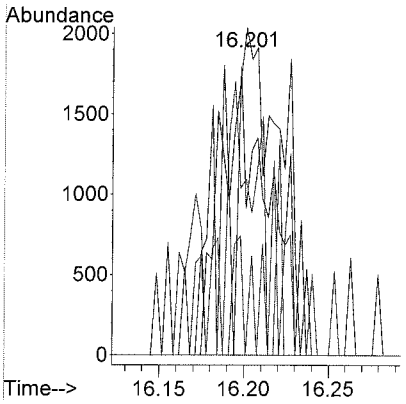


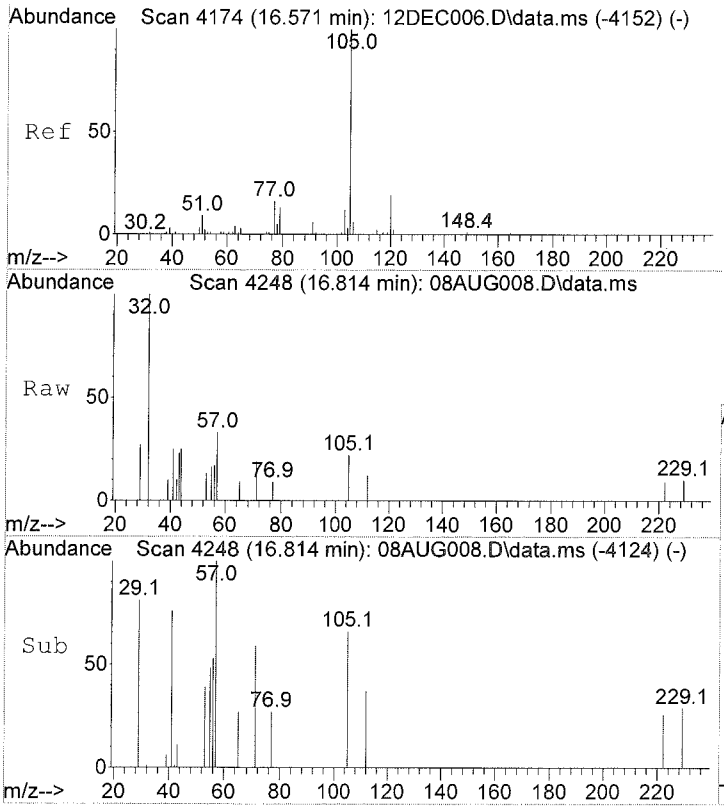


#49
Styrene
Concen: 0.15 ppbv
RT: 16.201 min Scan# 4061
Delta R.T. -0.003 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:104 Resp: 4611

Ion	Ratio	Lower	Upper
104	100		
78	71.2	5.4	105.4
103	53.7	0.0	97.9
50	0.0	0.0	66.2

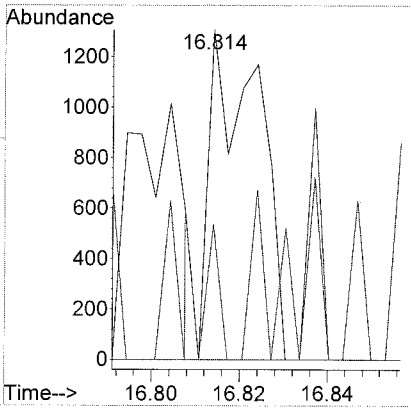


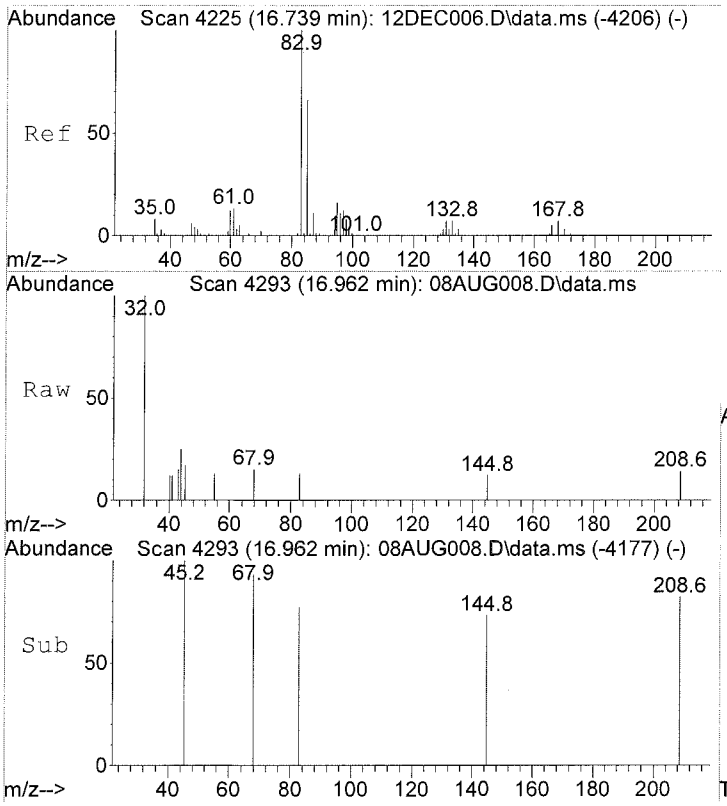


#51
Isopropyl benzene
Concen: 0.02 ppbv
RT: 16.814 min Scan# 4248
Delta R.T. 0.007 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:105 Resp: 1008

Ion	Ratio	Lower	Upper
105	100		
120	0.0	3.8	43.8#
77	41.1	0.0	38.7#
51	0.0	0.0	30.4

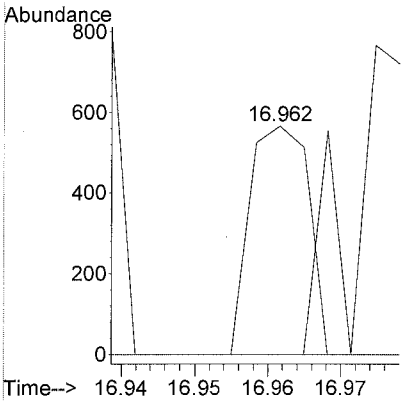


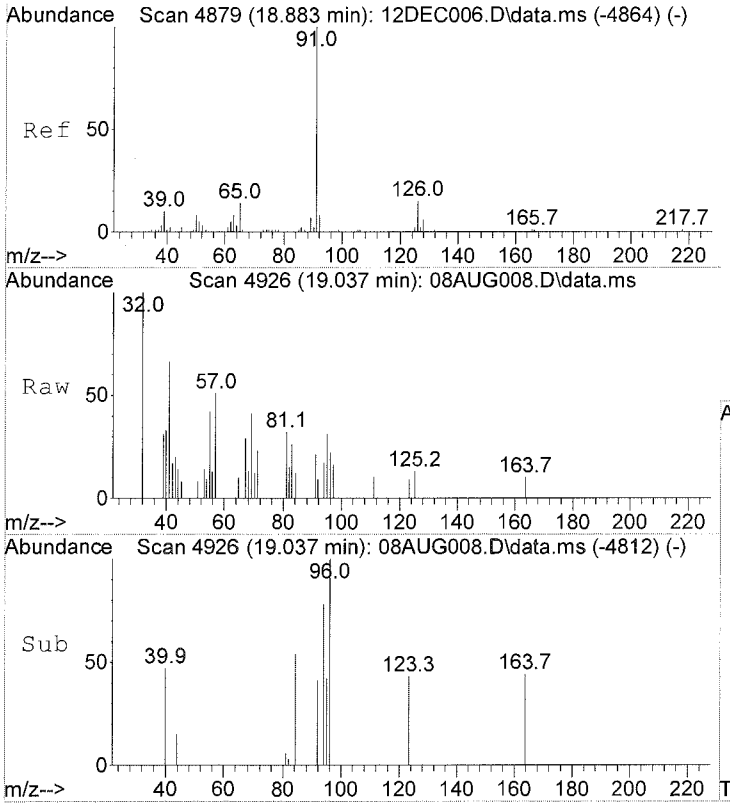


#52
1,1,2,2-Tetrachloroethane
Concen: 0.01 ppbv
RT: 16.962 min Scan# 4293
Delta R.T. -0.019 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 83 Resp: 315

Ion	Ratio	Lower	Upper
83	100		
85	0.0	11.1	111.1#
60	0.0	0.0	64.6
61	0.0	0.0	65.1

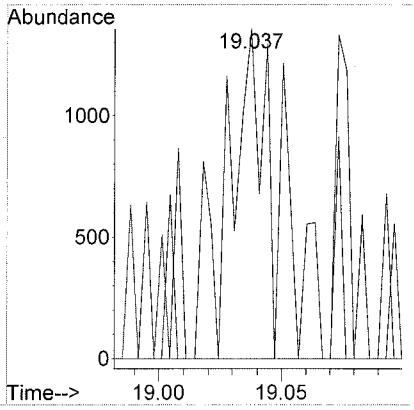


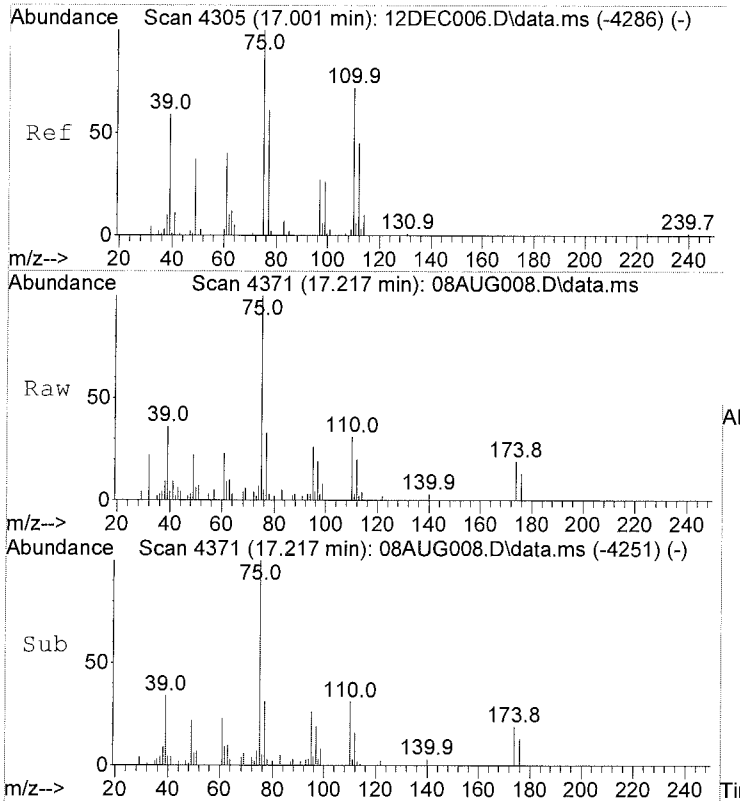


#54
Benzyl Chloride
Concen: 0.10 ppbv
RT: 19.037 min Scan# 4926
Delta R.T. -0.027 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 91 Resp: 2035

Ion	Ratio	Lower	Upper
91	100		
126	0.0	0.0	66.1
63	0.0	0.0	62.0

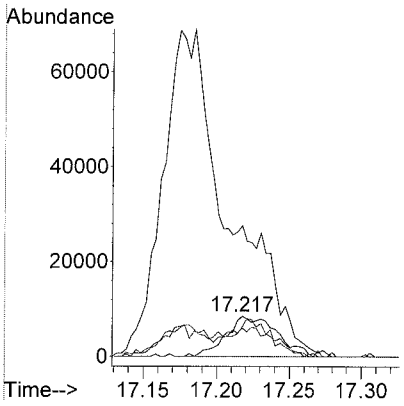


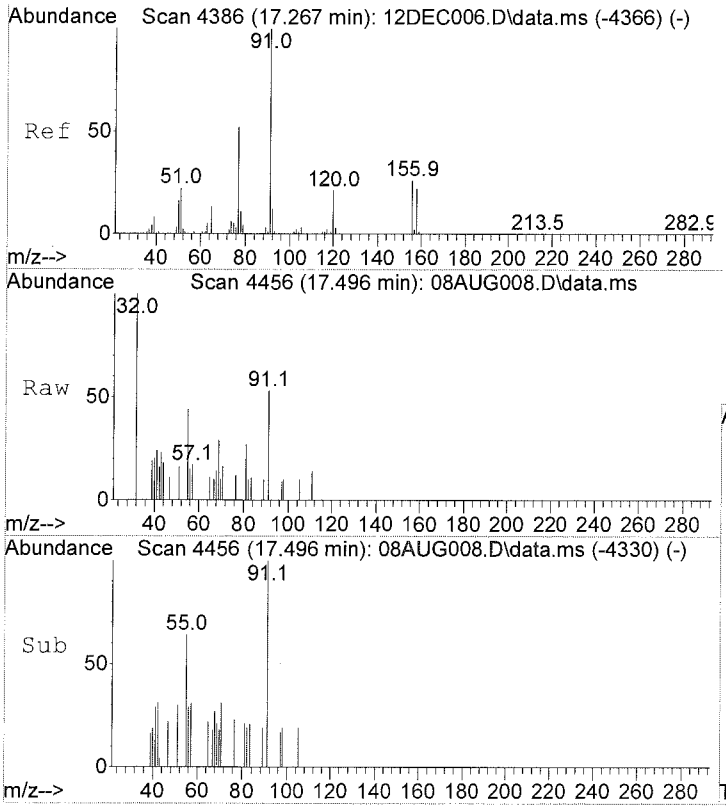


#55
1,2,3-Trichloropropane
Concen: 2.73 ppbv
RT: 17.217 min Scan# 4371
Delta R.T. -0.007 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:110 Resp: 20854

Ion	Ratio	Lower	Upper
110	100		
75	317.0	252.4	292.4#
61	73.4	44.1	84.1
49	70.9	34.3	74.3

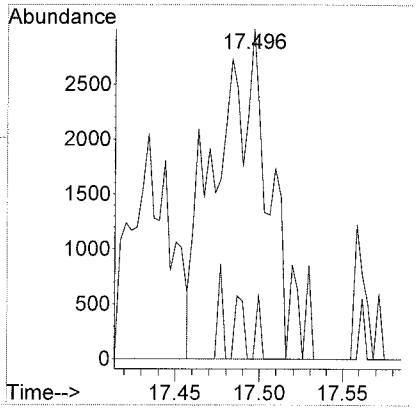


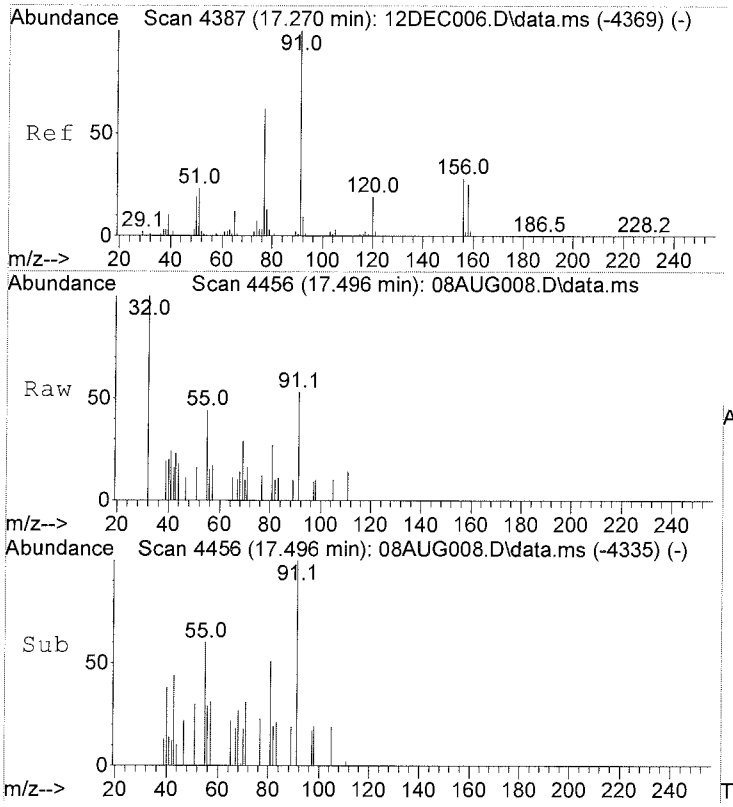


#56
n-Propyl Benzene
Concen: 0.12 ppbv
RT: 17.496 min Scan# 4456
Delta R.T. 0.013 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 91 Resp: 6794

Ion	Ratio	Lower	Upper
91	100		
120	0.0	2.6	42.6#

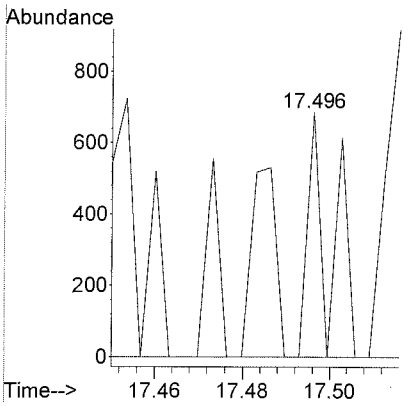


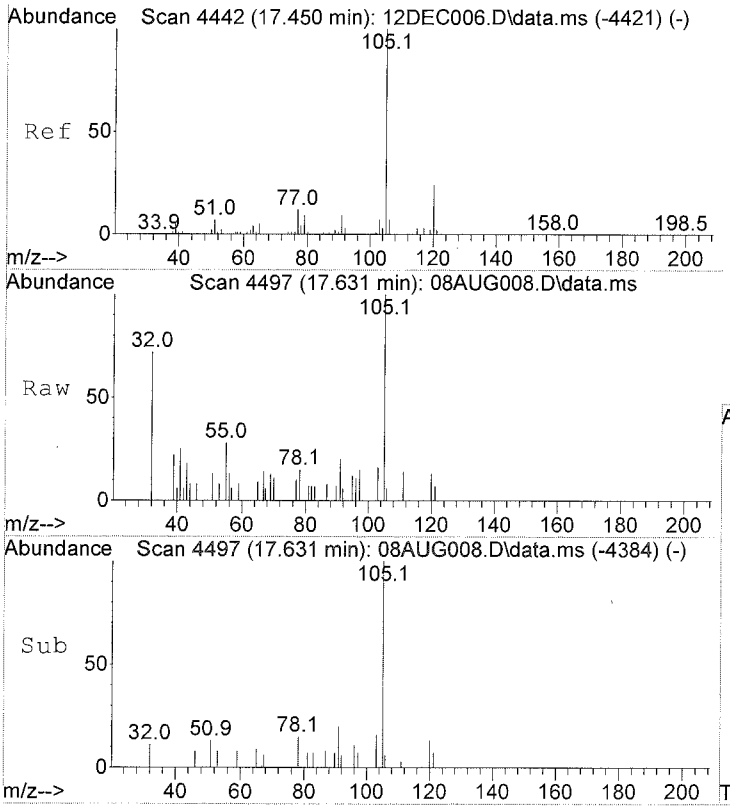


#57
Bromobenzene
Concen: 0.02 ppbv
RT: 17.496 min Scan# 4456
Delta R.T. -0.003 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 77 Resp: 450

Ion	Ratio	Lower	Upper
77	100		
156	0.0	23.3	63.3#
158	0.0	23.9	63.9#

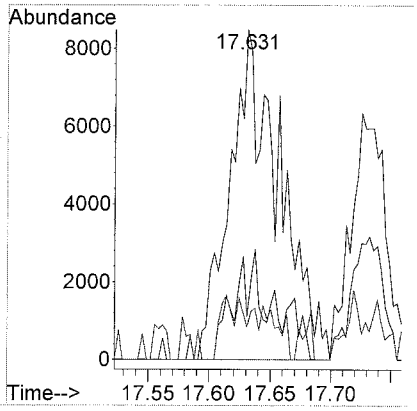


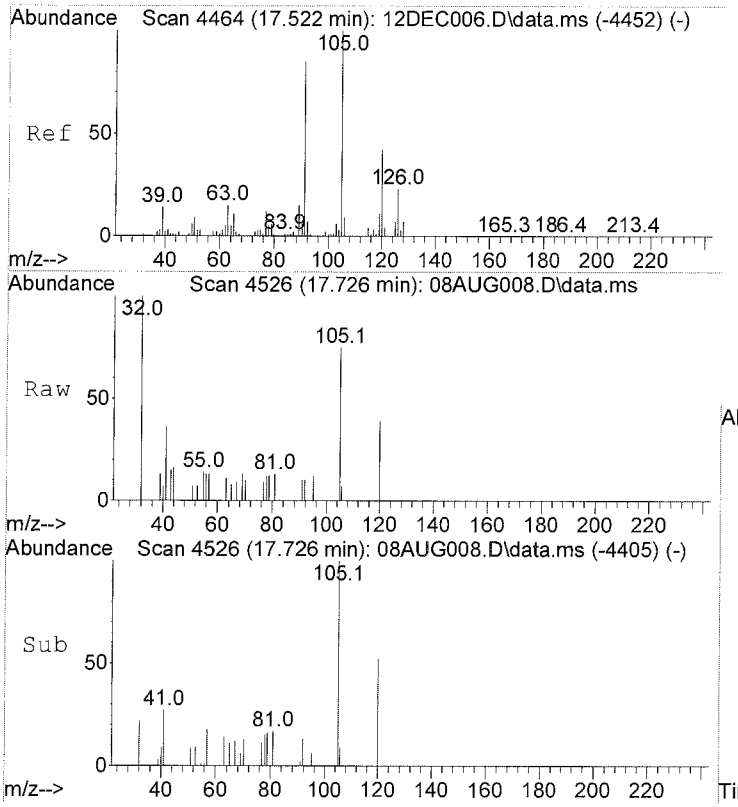


#58
4-Ethyl Toluene
Concen: 0.39 ppbv
RT: 17.631 min Scan# 4497
Delta R.T. -0.029 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:105 Resp: 23786

Ion	Ratio	Lower	Upper
105	100		
120	13.1	0.0	78.8
77	10.0	0.0	64.5

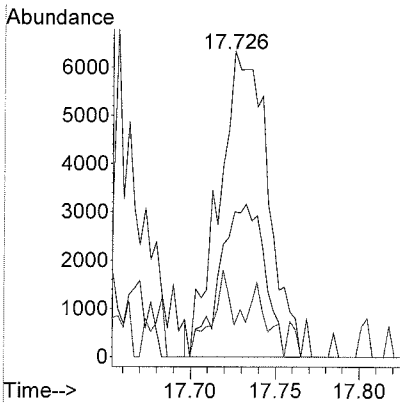


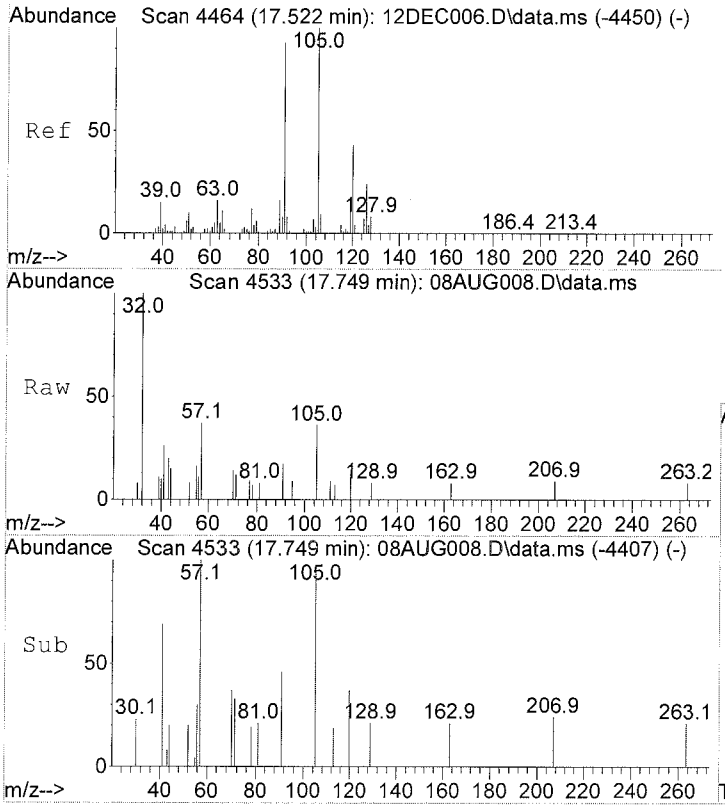


#59
1,3,5-Trimethylbenzene
Concen: 0.24 ppbv
RT: 17.726 min Scan# 4526
Delta R.T. -0.003 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:105 Resp: 12726

Ion	Ratio	Lower	Upper
105	100		
120	47.4	0.0	95.4
77	10.5	0.0	65.8

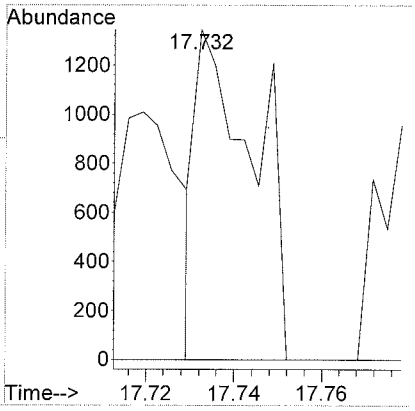


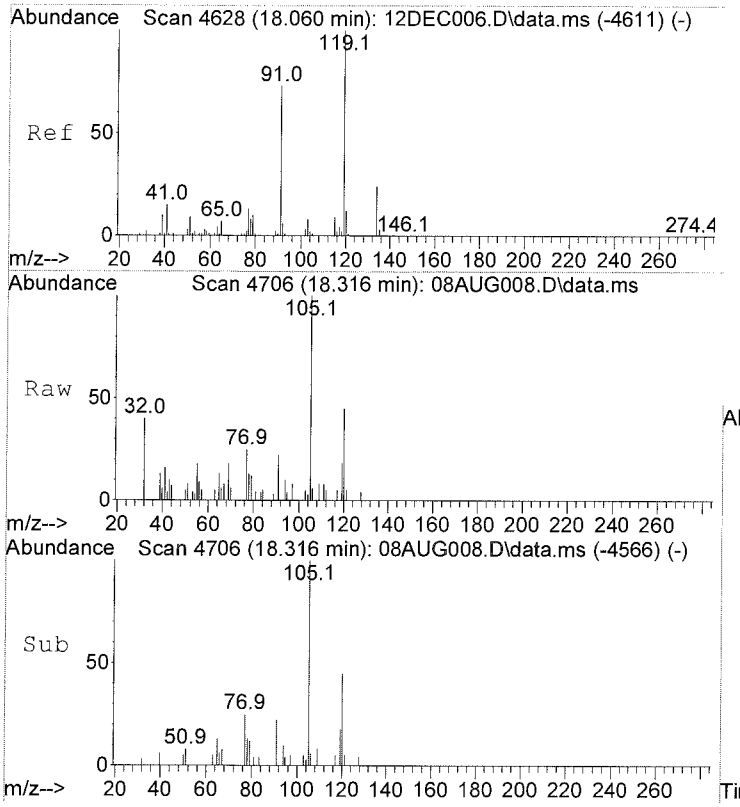


#60
2-Chlorotoluene
Concen: 0.03 ppbv
RT: 17.749 min Scan# 4533
Delta R.T. 0.014 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 91 Resp: 1231

Ion	Ratio	Lower	Upper
91	100		
126	0.0	4.4	44.4#

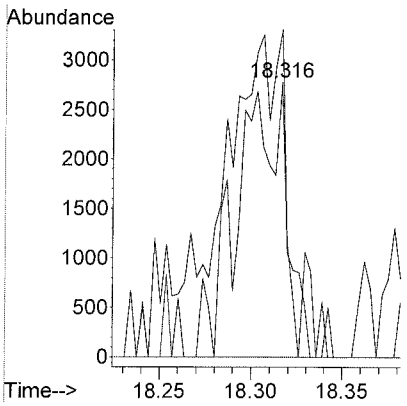


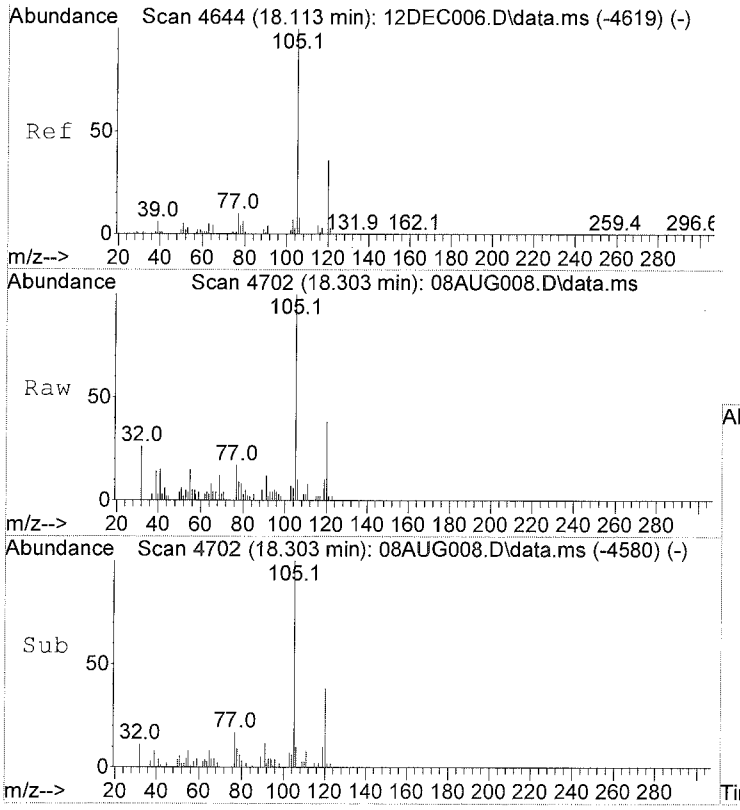


#62
tert-Butylbenzene
Concen: 0.14 ppbv
RT: 18.316 min Scan# 4706
Delta R.T. 0.059 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:119 Resp: 5243

Ion	Ratio	Lower	Upper
119	100		
91	101.1	59.5	99.5#
134	0.0	1.8	41.8#

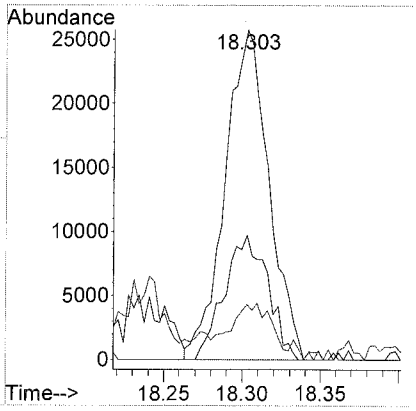


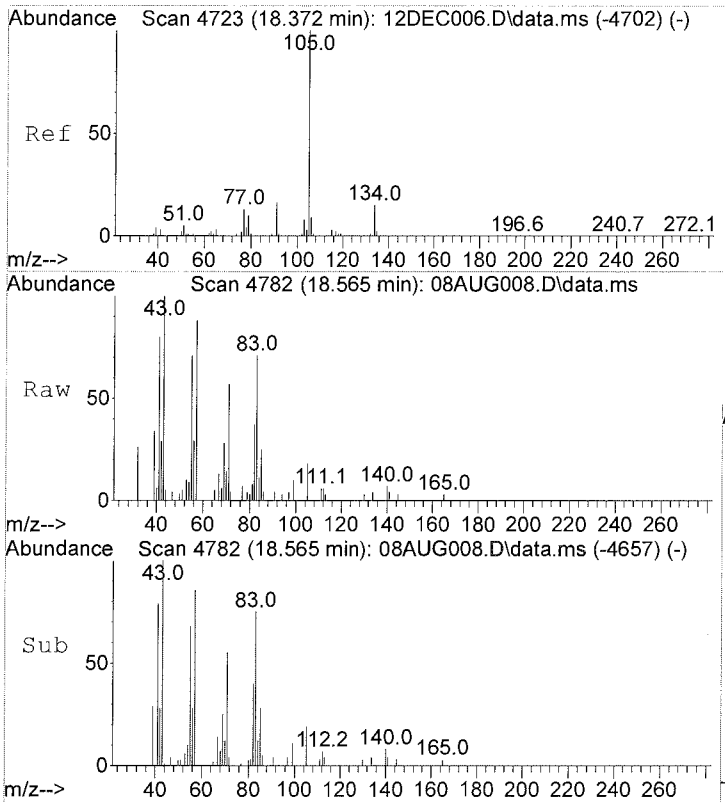


#63
1,2,4-Trimethylbenzene
Concen: 0.95 ppbv
RT: 18.303 min Scan# 4702
Delta R.T. -0.000 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:105 Resp: 50126

Ion	Ratio	Lower	Upper
105	100		
120	37.7	0.0	91.2
77	13.8	0.0	65.1

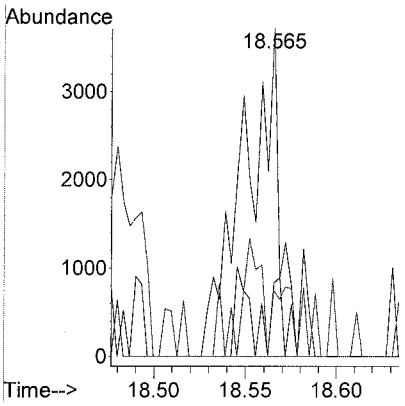


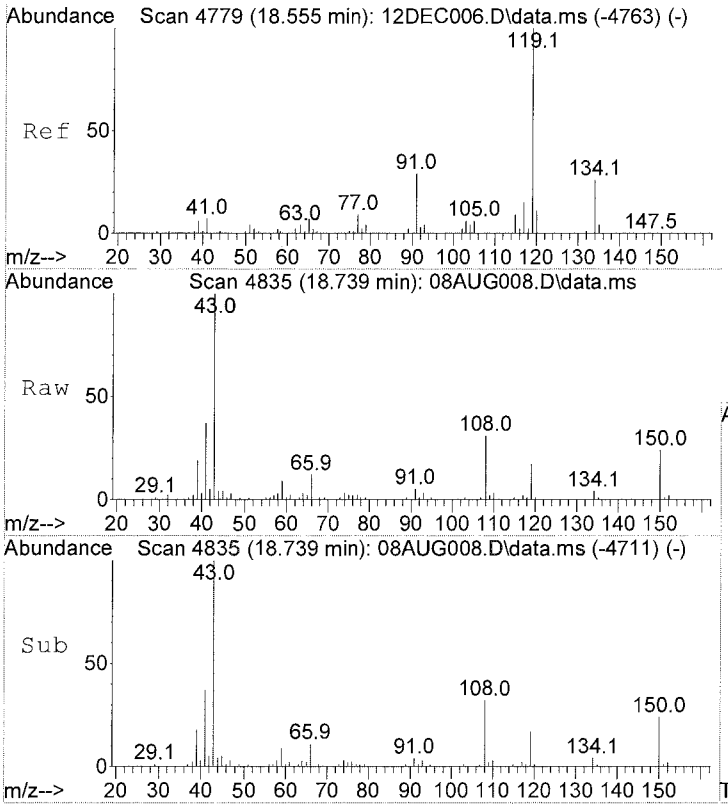


#64
sec-Butylbenzene
Concen: 0.10 ppbv
RT: 18.565 min Scan# 4782
Delta R.T. 0.010 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:105 Resp: 5286

Ion	Ratio	Lower	Upper
105	100		
134	22.4	0.0	37.6
91	20.0	0.0	37.3

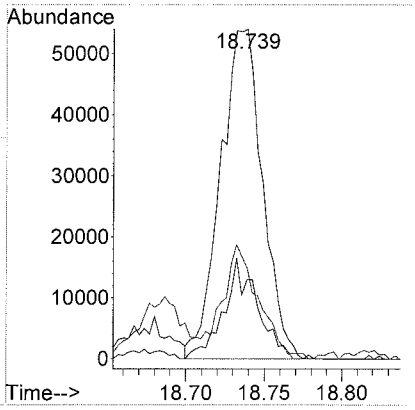


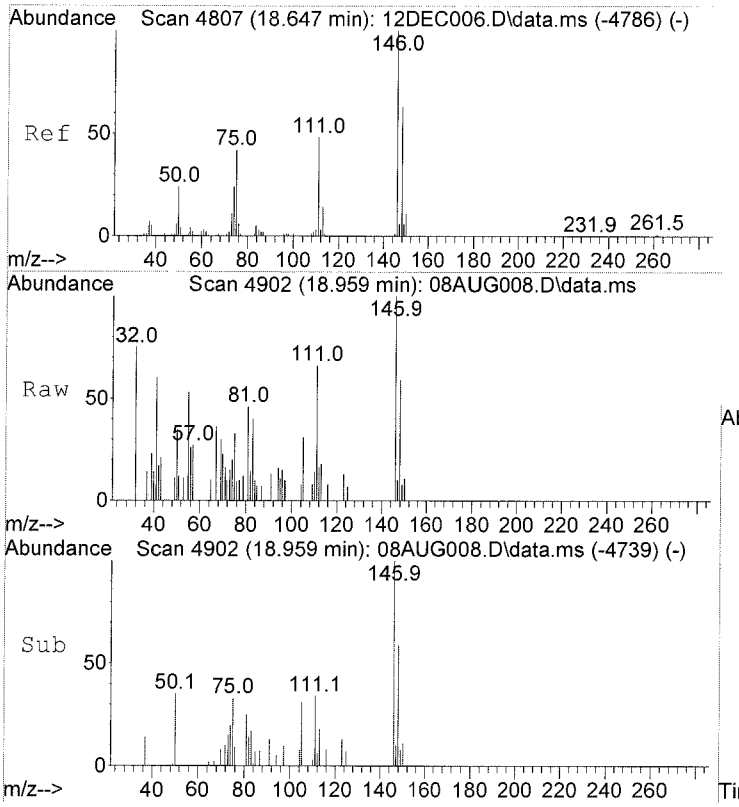


#65
p-Isopropyltoluene
Concen: 2.56 ppbv
RT: 18.739 min Scan# 4835
Delta R.T. 0.007 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:119 Resp: 100310

Ion	Ratio	Lower	Upper
119	100		
134	24.1	2.1	42.1
91	25.7	9.6	49.6

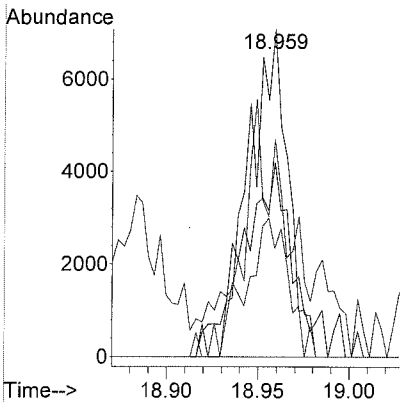


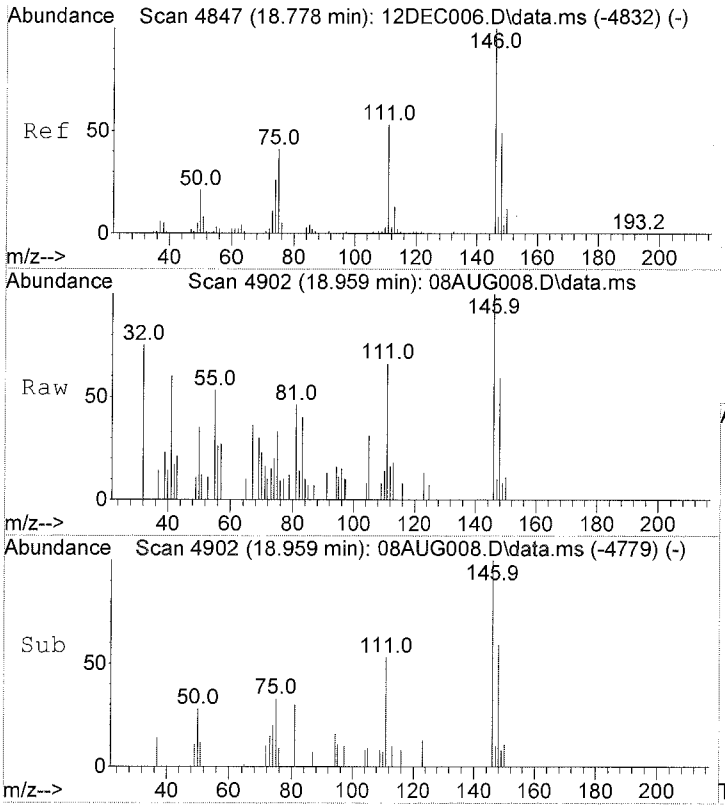


#66
1,3-Dichlorobenzene
Concen: 0.39 ppbv
RT: 18.959 min Scan# 4902
Delta R.T. 0.135 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:146 Resp: 11167

Ion	Ratio	Lower	Upper
146	100		
148	59.2	16.8	116.8
75	33.2	0.0	94.5
111	46.4	1.8	101.8

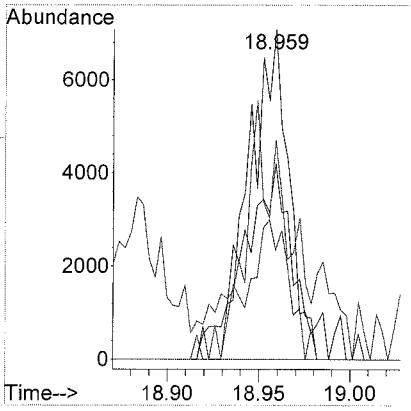


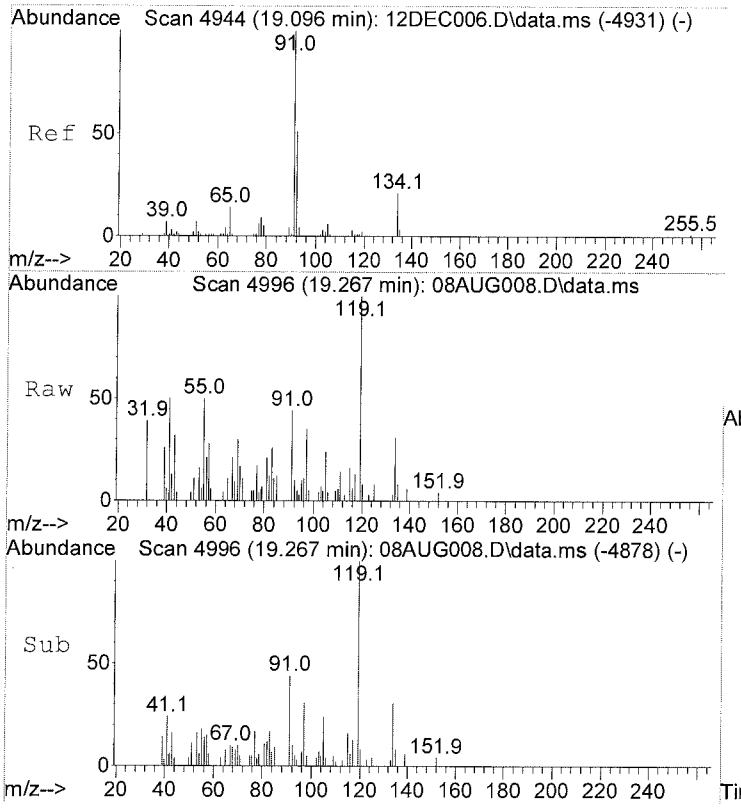


#67
1,4-Dichlorobenzene
Concen: 0.39 ppbv
RT: 18.959 min Scan# 4902
Delta R.T. 0.004 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:146 Resp: 11167

Ion	Ratio	Lower	Upper
146	100		
148	59.2	13.0	113.0
111	46.4	0.0	94.9
75	33.2	0.0	89.4

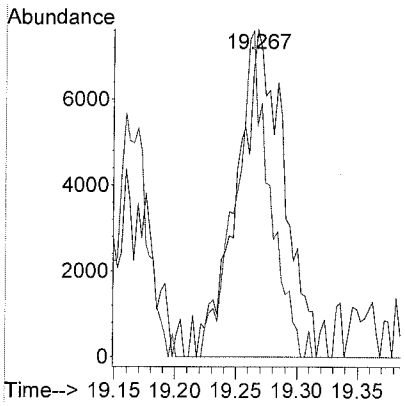


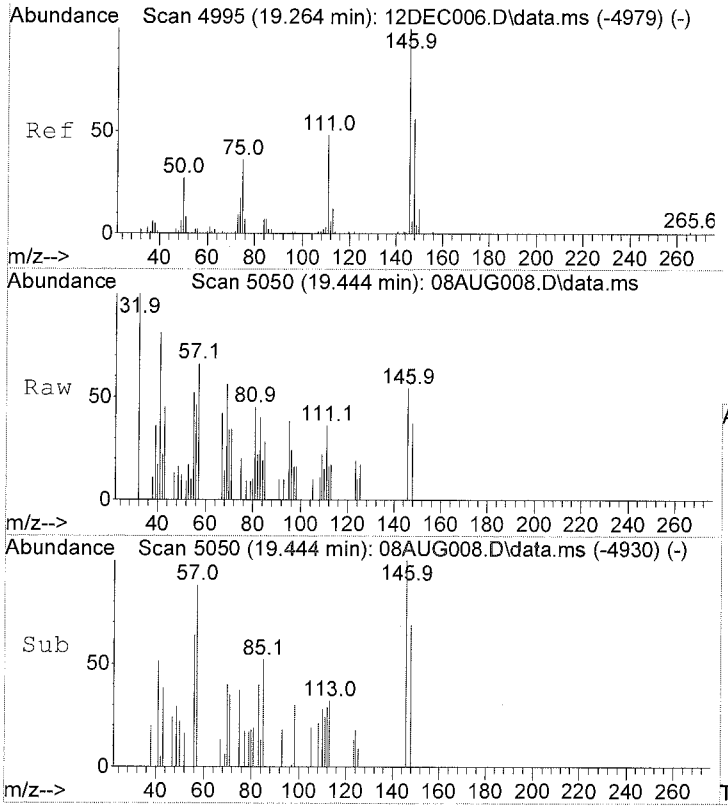


#68
n-Butylbenzene
Concen: 0.46 ppbv
RT: 19.267 min Scan# 4996
Delta R.T. -0.013 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 91 Resp: 20510

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
134	70.7	0.9	40.9#

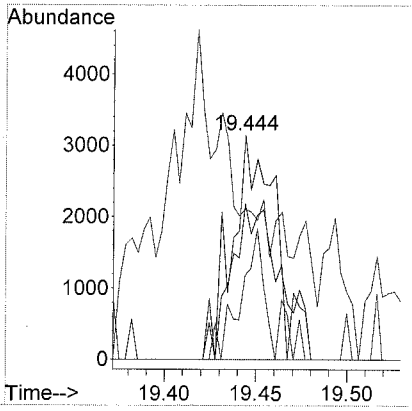


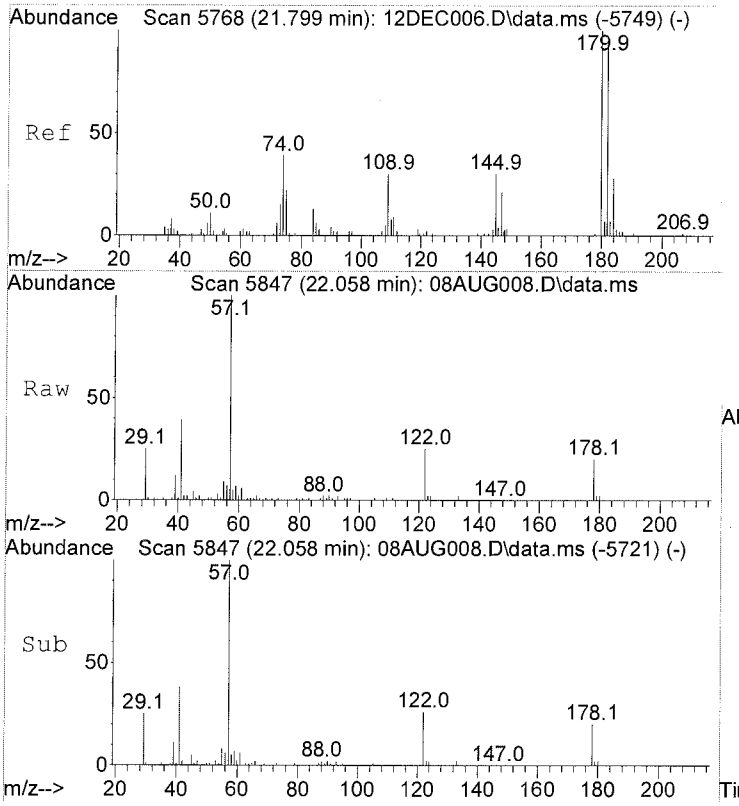


#69
1,2-Dichlorobenzene
Concen: 0.20 ppbv
RT: 19.444 min Scan# 5050
Delta R.T. -0.007 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:146 Resp: 5344

Ion	Ratio	Lower	Upper
146	100		
148	69.4	11.6	111.6
111	17.3	0.0	96.4
75	37.4	0.0	93.8

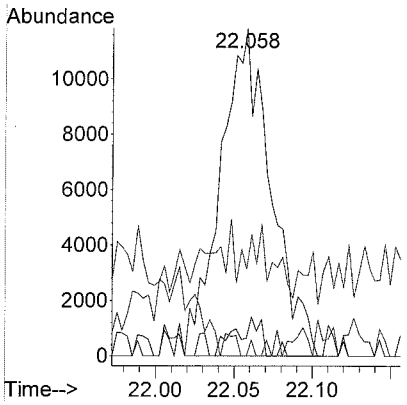




#71
1,2,4-Trichlorobenzene
Concen: 1.17 ppbv
RT: 22.058 min Scan# 5847
Delta R.T. 0.014 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:180 Resp: 26486

Ion	Ratio	Lower	Upper
180	100		
182	5.4	33.4	133.4#
109	0.0	0.0	82.3
145	0.0	0.0	81.1



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG009.D
Acq On : 8 Aug 2018 4:39 pm
Operator : DT
Sample : J072607-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Aug 08 17:04:08 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.334	130	86133	10.00	ppbv		0.02
24) 1,4-Difluorobenzene	10.685	114	412905	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.204	117	363317	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.098	65	206408	9.39	ppbv		0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 93.90%				
34) Toluene-d8	12.935	98	429685	10.31	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 103.10%				
53) 4-Bromofluorobenzene	17.181	174	226022	10.69	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.595	85	10077	0.32	ppbv		88
3) Chloromethane	3.946	50	1745	0.21	ppbv	#	44
4) 1,2-Cl-1,1,2,2-F ethan...	3.595	85	10079	0.36	ppbv	#	48
5) Vinyl Chloride	4.366	62	127	0.02	ppbv		44
6) Bromomethane	4.920	94	254	0.05	ppbv		91
8) Trichlorofluoromethane...	5.527	101	3661	0.11	ppbv		75
10) Carbon Disulfide	7.104	76	69420	3.29	ppbv		95
12) Acetone	6.143	43	240753	11.18	ppbv		96
14) t-1,2-Dichloroethene	7.511	96	117	0.01	ppbv	#	1
18) 2-Butanone	8.639	72	7263	1.40	ppbv	#	20
25) Benzene	10.321	78	10525	0.27	ppbv		86
32) c-1,3-Dichloropropene	12.476	75	391	0.02	ppbv		74
33) 4-Methyl-2-Pentanone	12.236	43	3715	0.12	ppbv		44
35) Toluene	13.053	91	29615	0.69	ppbv		91
38) 1,1,2-Trichloroethane	13.328	97	369	0.02	ppbv	#	9
40) Tetrachloroethene	14.076	166	6001	0.28	ppbv		63
41) 2-Hexanone	13.502	58	376	0.02	ppbv		18
45) 1,1,1,2-Tetrachloroethane	15.329	131	218	0.02	ppbv	#	1
46) Ethylbenzene	15.374	91	16928	0.27	ppbv		87
47) p,&m-Xylene	15.496	91	39614	0.80	ppbv		89
48) o-Xylene	16.188	91	24376	0.50	ppbv		98
49) Styrene	16.204	104	2120	0.06	ppbv		61
50) Bromoform	16.725	173	274	0.01	ppbv	#	16
51) Isopropyl benzene	16.821	105	1117	0.02	ppbv	#	58
52) 1,1,2,2-Tetrachloroethane	16.988	83	386	0.01	ppbv	#	34
54) Benzyl Chloride	19.041	91	900	0.04	ppbv		65
55) 1,2,3-Trichloropropane	17.221	110	8920	1.09	ppbv	#	82
56) n-Propyl Benzene	17.490	91	3377	0.06	ppbv	#	53
57) Bromobenzene	17.486	77	399	0.01	ppbv	#	32
58) 4-Ethyl Toluene	17.660	105	2204	0.03	ppbv		85
59) 1,3,5-Trimethylbenzene	17.729	105	3730	0.07	ppbv		85
60) 2-Chlorotoluene	17.732	91	1516	0.03	ppbv	#	51
61) 4-Chlorotoluene	17.801	91	616	0.01	ppbv	#	49
62) tert-Butylbenzene	18.237	119	717	0.02	ppbv	#	37
63) 1,2,4-Trimethylbenzene	18.296	105	13448	0.24	ppbv		81
65) p-Isopropyltoluene	18.739	119	25886	0.61	ppbv		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG009.D
Acq On : 8 Aug 2018 4:39 pm
Operator : DT
Sample : J072607-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Aug 08 17:04:08 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

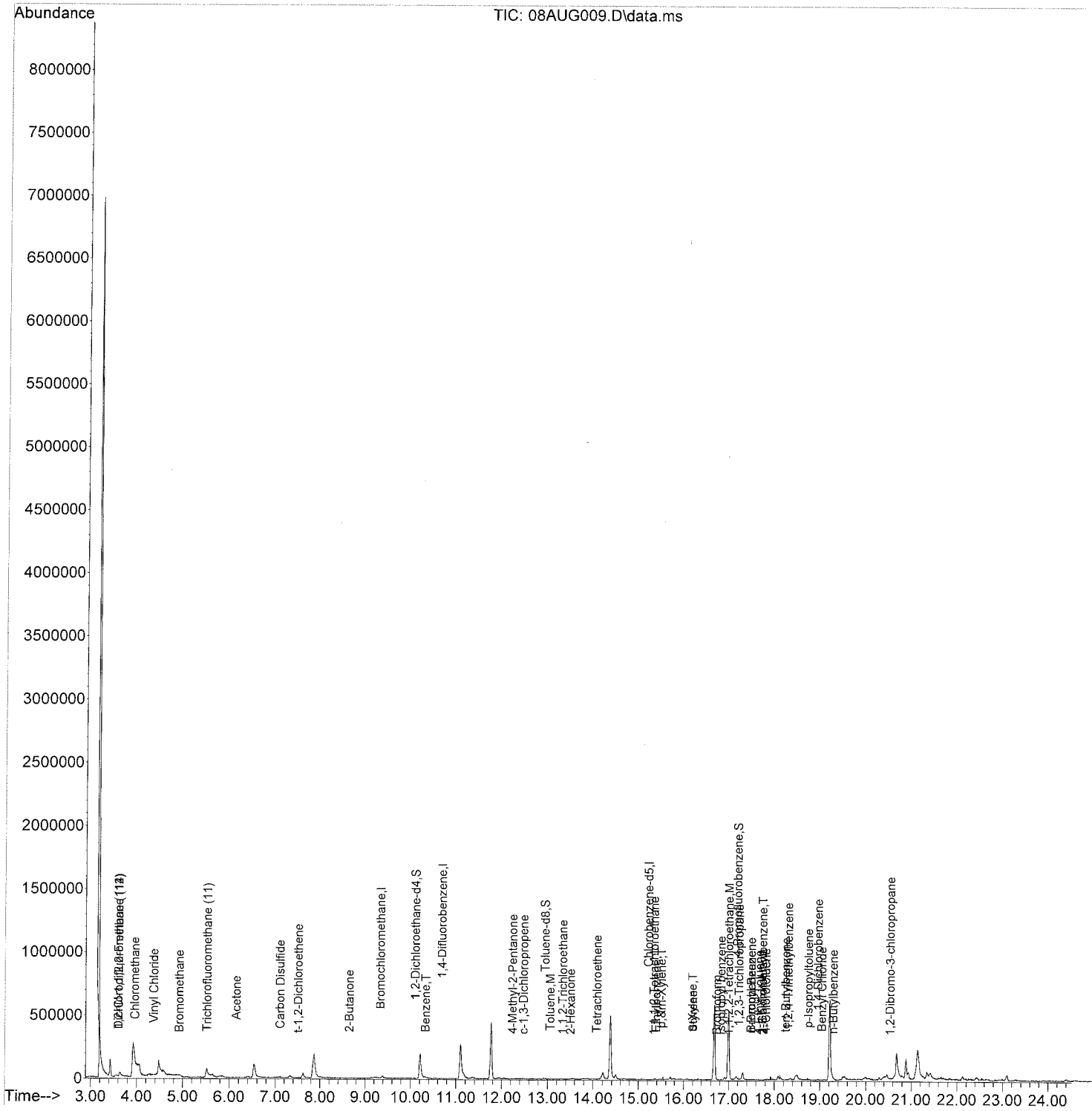
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
67) 1,4-Dichlorobenzene	18.949	146	6383	0.21	ppbv	58
68) n-Butylbenzene	19.290	91	642	0.01	ppbv #	92
70) 1,2-Dibromo-3-chloropr...	20.529	157	123	0.01	ppbv #	1

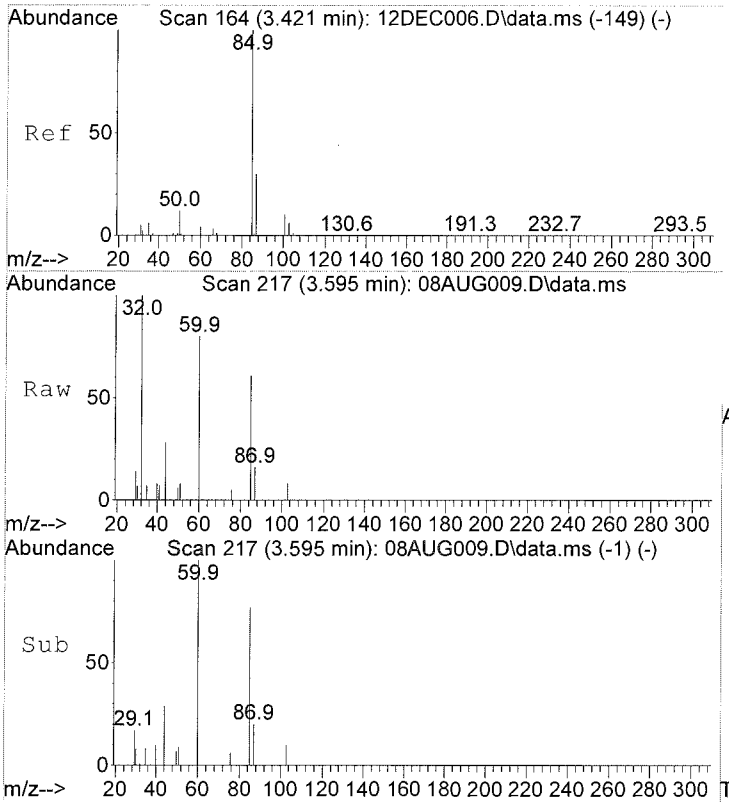
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG009.D
Acq On : 8 Aug 2018 4:39 pm
Operator : DT
Sample : J072607-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Aug 08 17:04:08 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

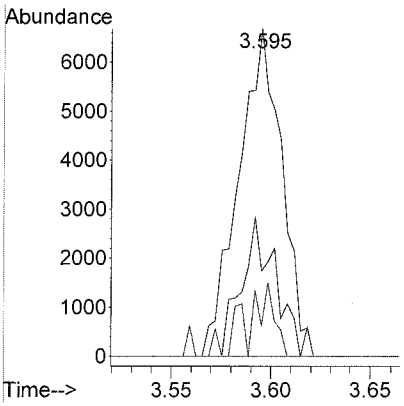


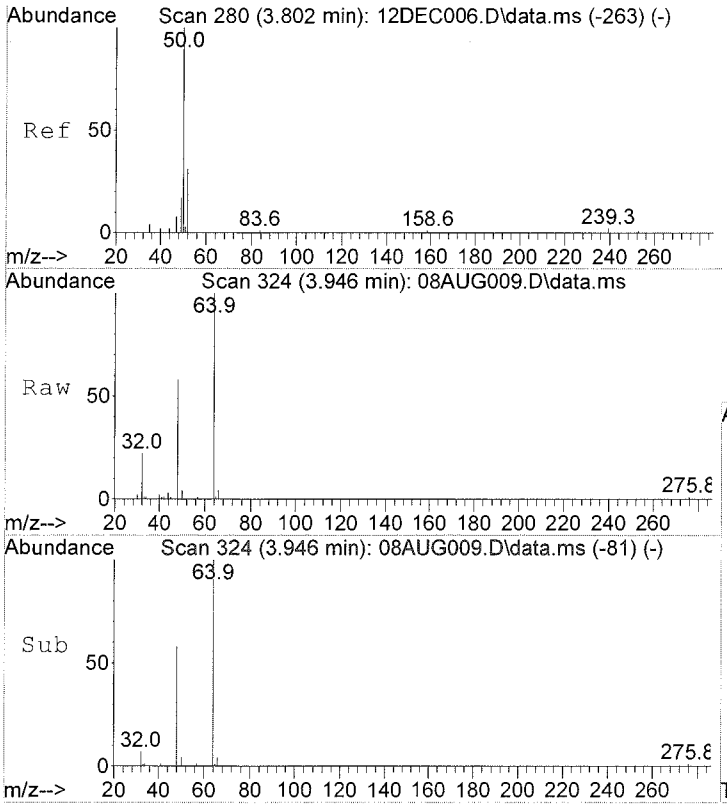


#2
Dichlorodifluoromethane (12)
Concen: 0.32 ppbv
RT: 3.595 min Scan# 217
Delta R.T. 0.049 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 85 Resp: 10077

Ion	Ratio	Lower	Upper
85	100		
87	26.1	0.0	83.5
50	9.3	0.0	63.3

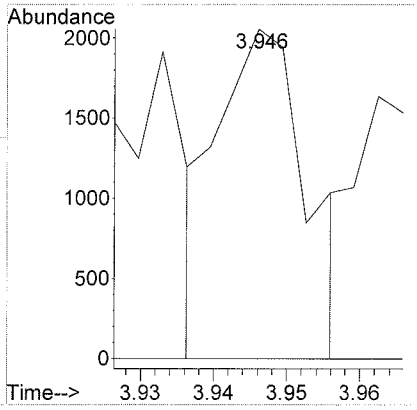


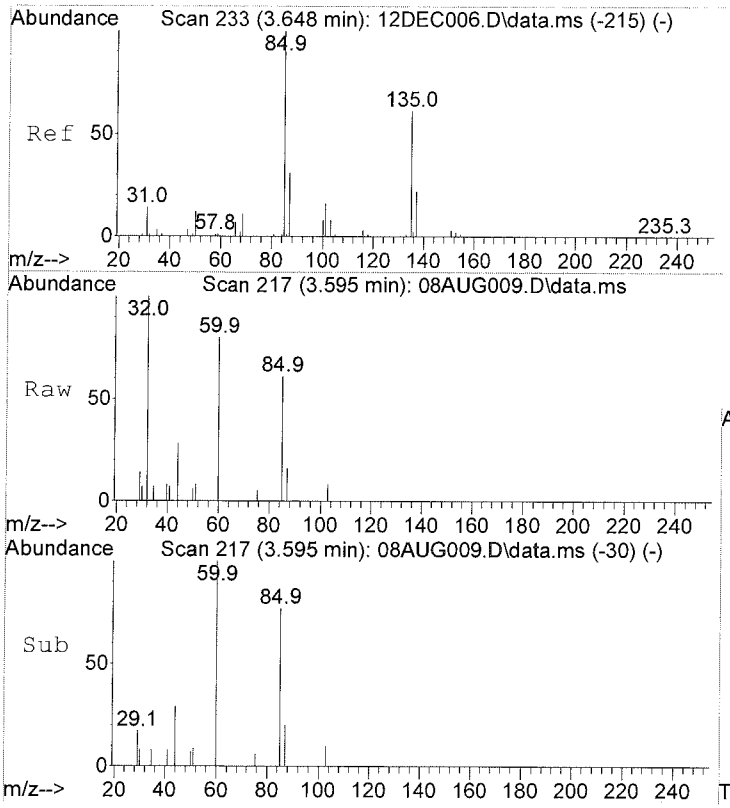


#3
Chloromethane
Concen: 0.21 ppbv
RT: 3.946 min Scan# 324
Delta R.T. -0.003 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 50 Resp: 1745

Ion	Ratio	Lower	Upper
50	100		
52	0.0	0.4	60.4#

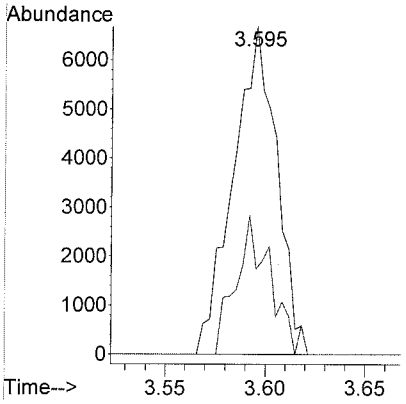


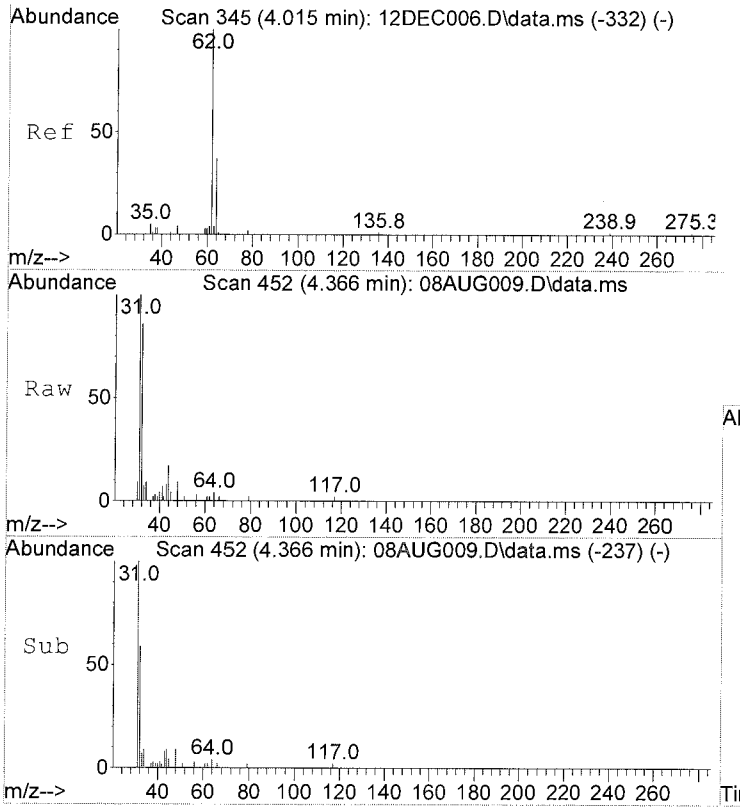


#4
1,2-Cl-1,1,2,2-F ethane (114)
Concen: 0.36 ppbv
RT: 3.595 min Scan# 217
Delta R.T. -0.187 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 85 Resp: 10079

Ion	Ratio	Lower	Upper
85	100		
135	0.0	4.9	104.9#
87	26.1	0.0	82.3

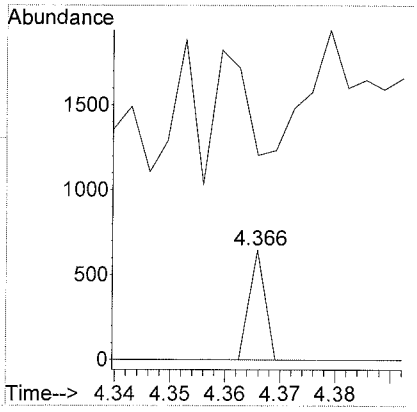


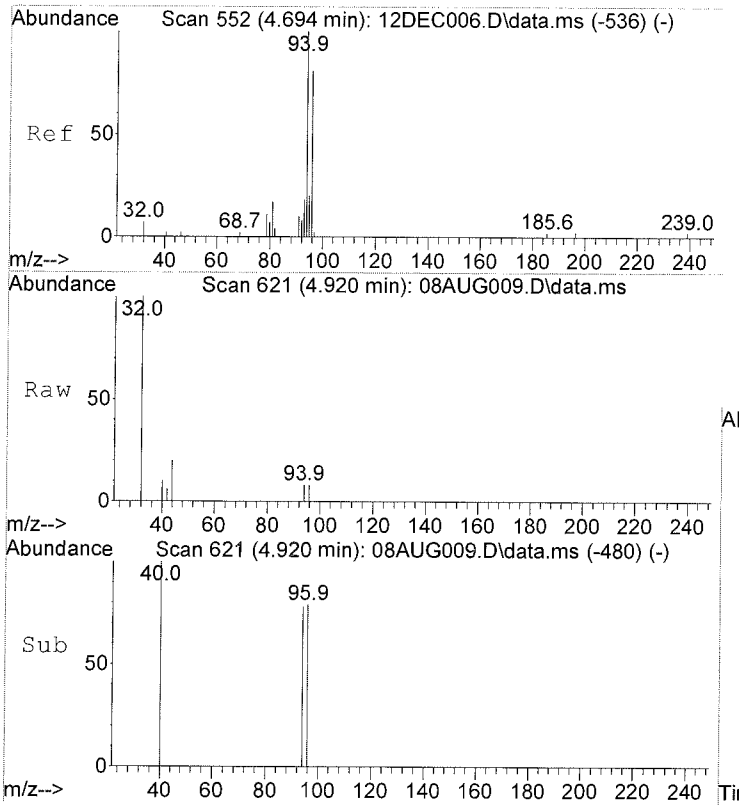


#5
Vinyl Chloride
Concen: 0.02 ppbv
RT: 4.366 min Scan# 452
Delta R.T. 0.204 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 62 Resp: 127

Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	80.9

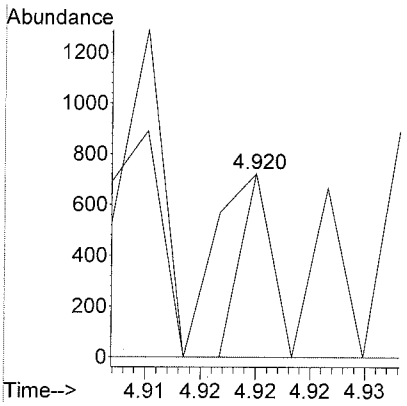


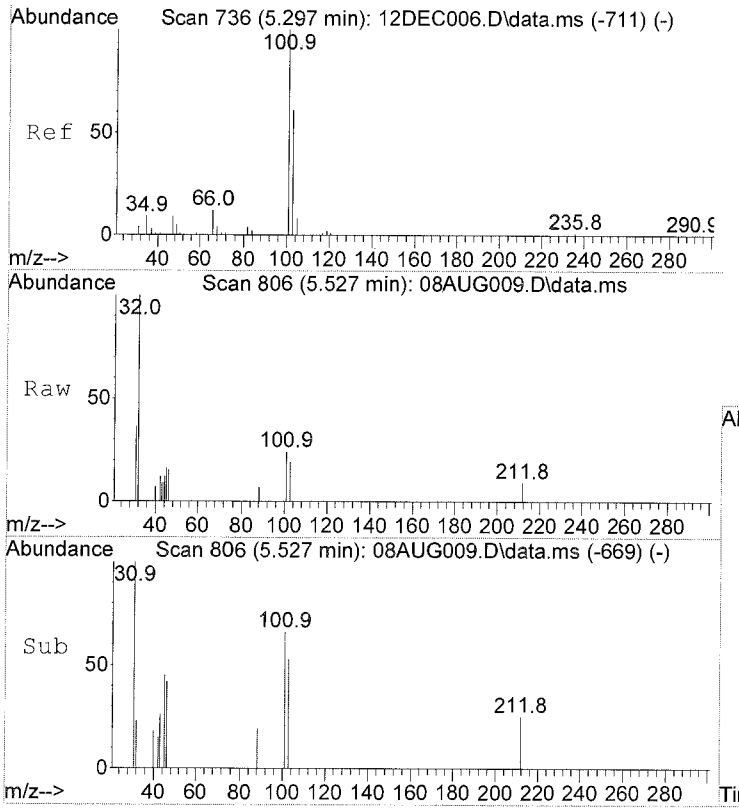


#6
Bromomethane
Concen: 0.05 ppbv
RT: 4.920 min Scan# 621
Delta R.T. 0.062 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 94 Resp: 254

Ion	Ratio	Lower	Upper
94	100		
96	100.1	48.0	148.0
79	0.0	0.0	69.2

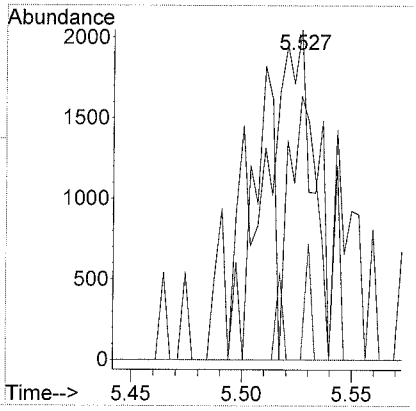


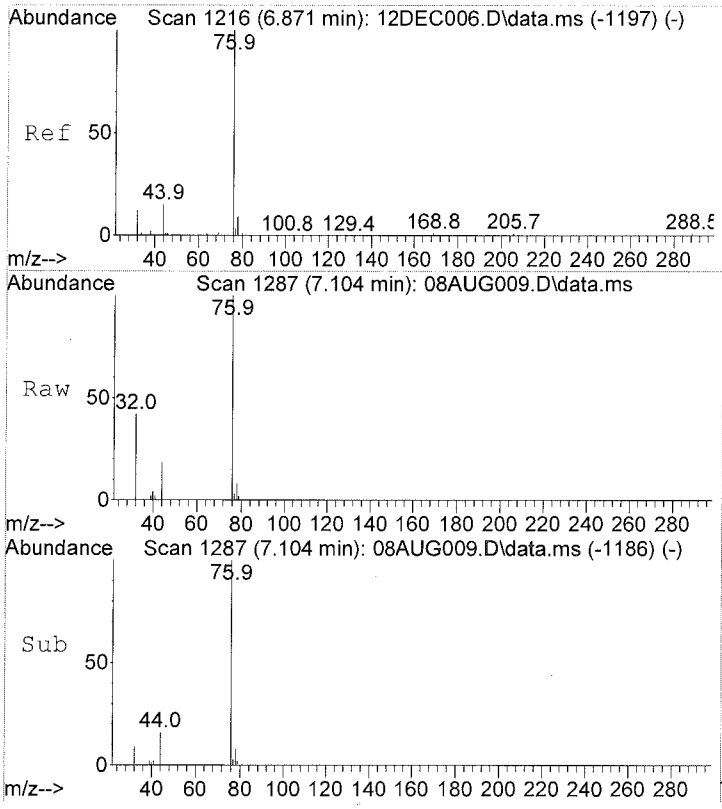


#8
Trichlorofluoromethane (11)
Concen: 0.11 ppbv
RT: 5.527 min Scan# 806
Delta R.T. 0.050 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:101 Resp: 3661

Ion	Ratio	Lower	Upper
101	100		
103	80.0	13.0	113.0
66	0.0	0.0	65.0

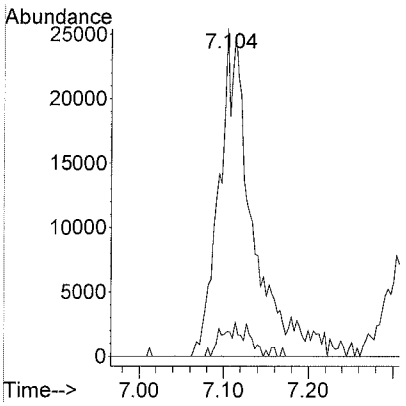


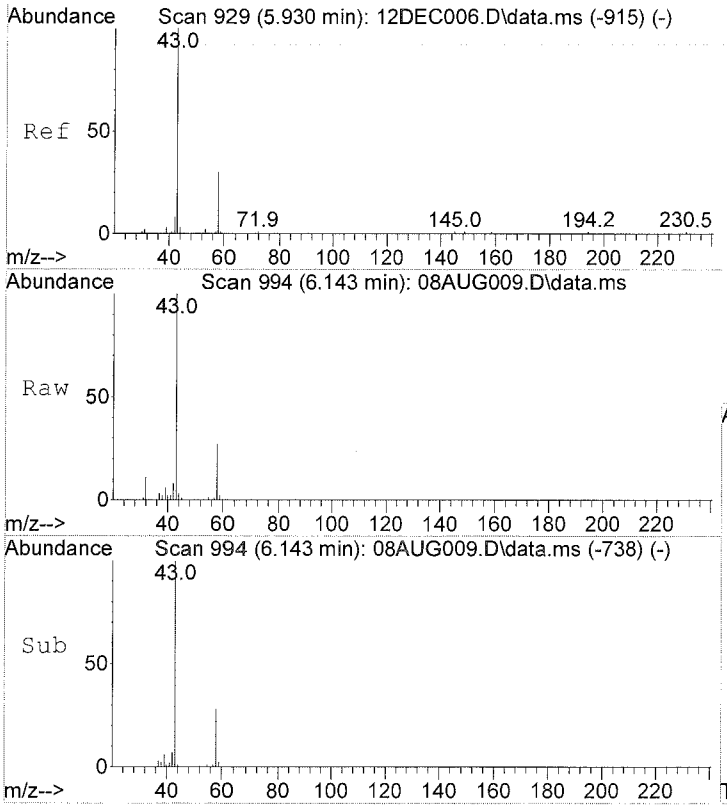


#10
Carbon Disulfide
Concen: 3.29 ppbv
RT: 7.104 min Scan# 1287
Delta R.T. 0.030 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 76 Resp: 69420

Ion	Ratio	Lower	Upper
76	100		
78	7.6	0.0	59.5

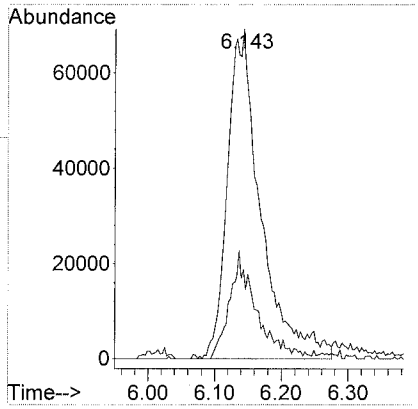


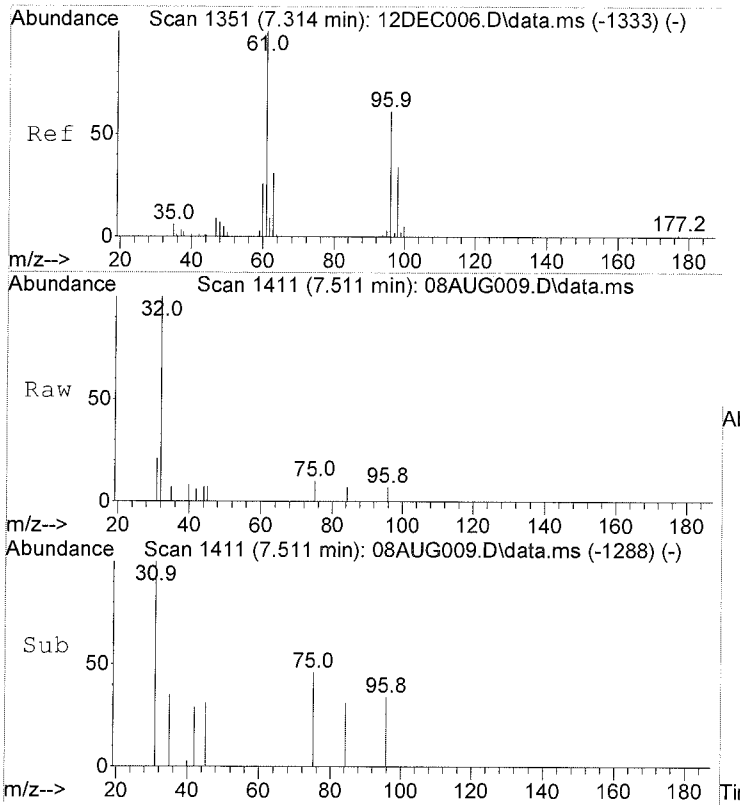


#12
Acetone
Concen: 11.18 ppbv
RT: 6.143 min Scan# 994
Delta R.T. 0.039 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 43 Resp: 240753

Ion	Ratio	Lower	Upper
43	100		
58	27.0	9.3	49.3

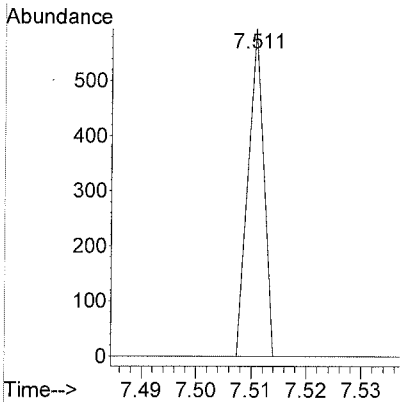


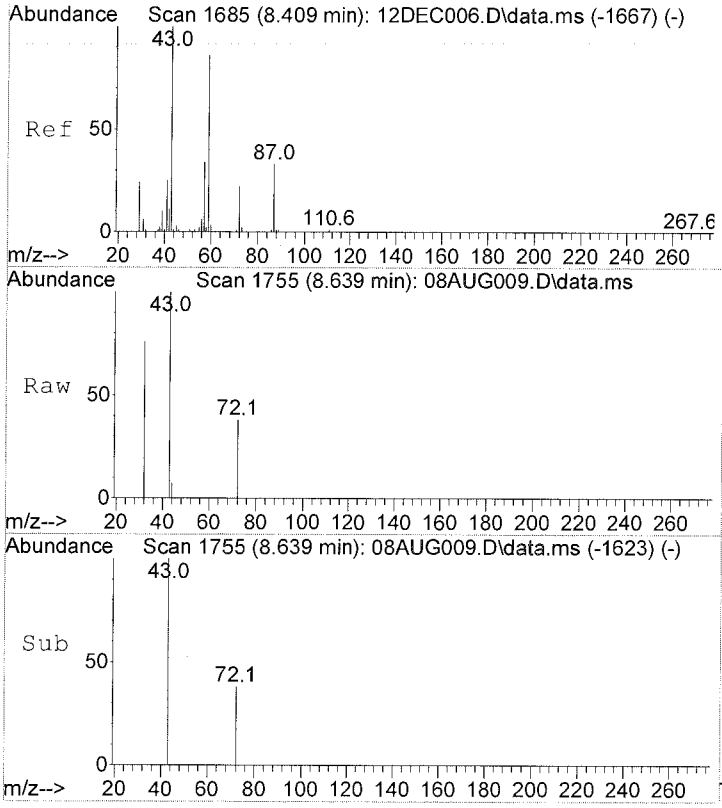


#14
t-1,2-Dichloroethene
Concen: 0.01 ppbv
RT: 7.511 min Scan# 1411
Delta R.T. 0.004 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 96 Resp: 117

Ion	Ratio	Lower	Upper
96	100		
61	0.0	98.0	198.0#
98	0.0	21.0	121.0#
63	0.0	2.1	102.1#

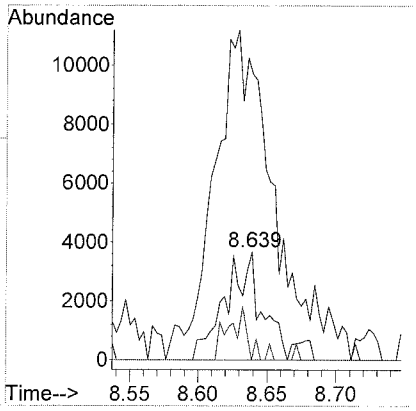


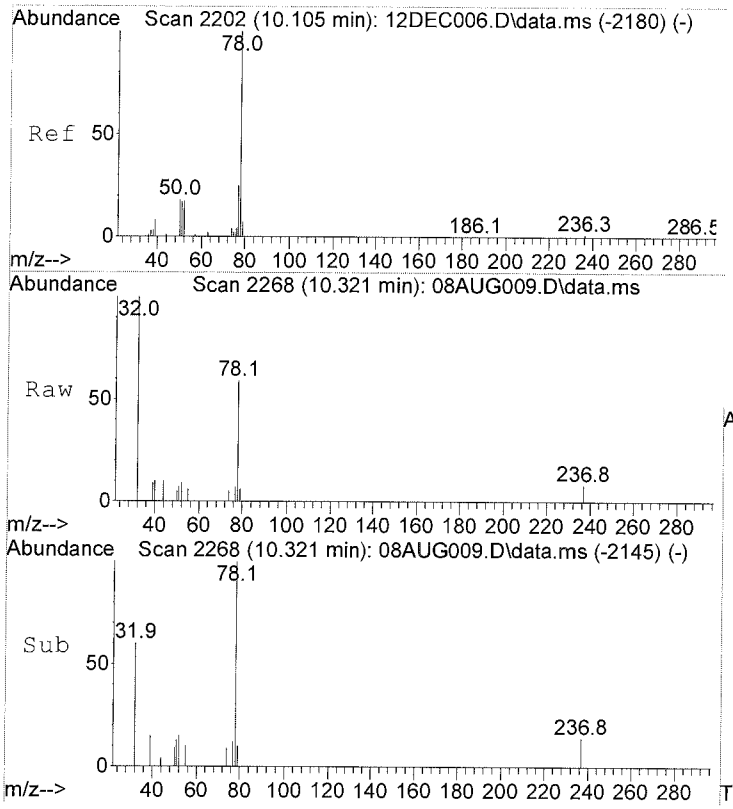


#18
2-Butanone
Concen: 1.40 ppbv
RT: 8.639 min Scan# 1755
Delta R.T. 0.033 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 72 Resp: 7263

Ion	Ratio	Lower	Upper
72	100		
43	242.1	0.0	1397.7
57	0.0	47.5	247.5#

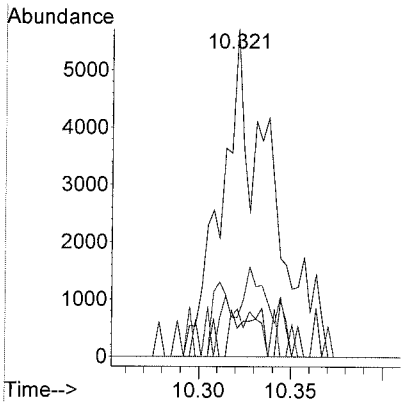


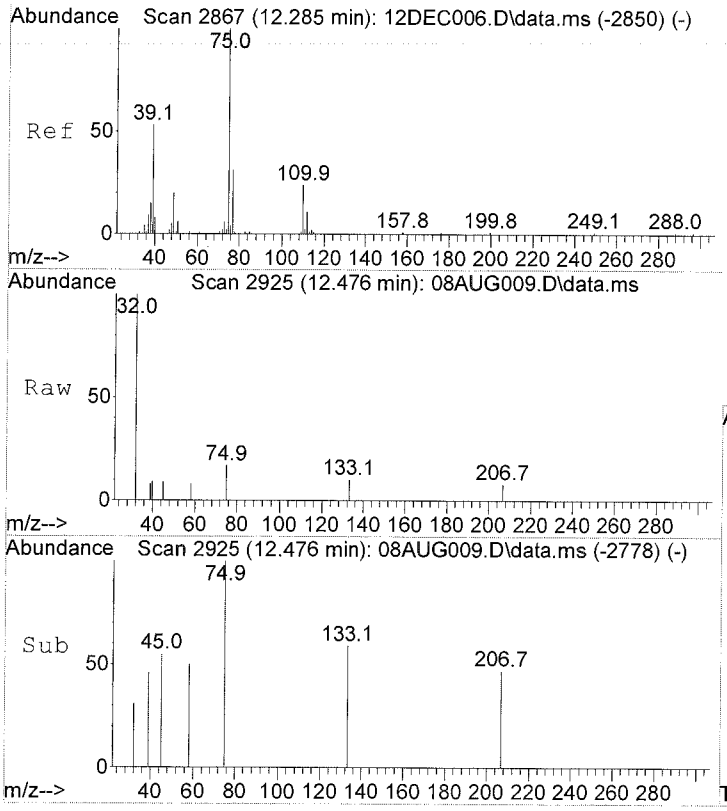


#25
Benzene
Concen: 0.27 ppbv
RT: 10.321 min Scan# 2268
Delta R.T. 0.003 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 78 Resp: 10525

Ion	Ratio	Lower	Upper
78	100		
50	8.8	0.0	66.6
52	14.7	0.0	64.9
77	12.0	0.0	71.7

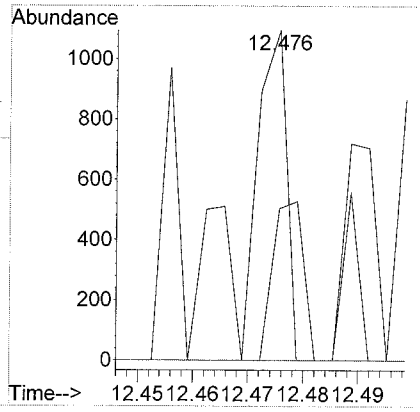


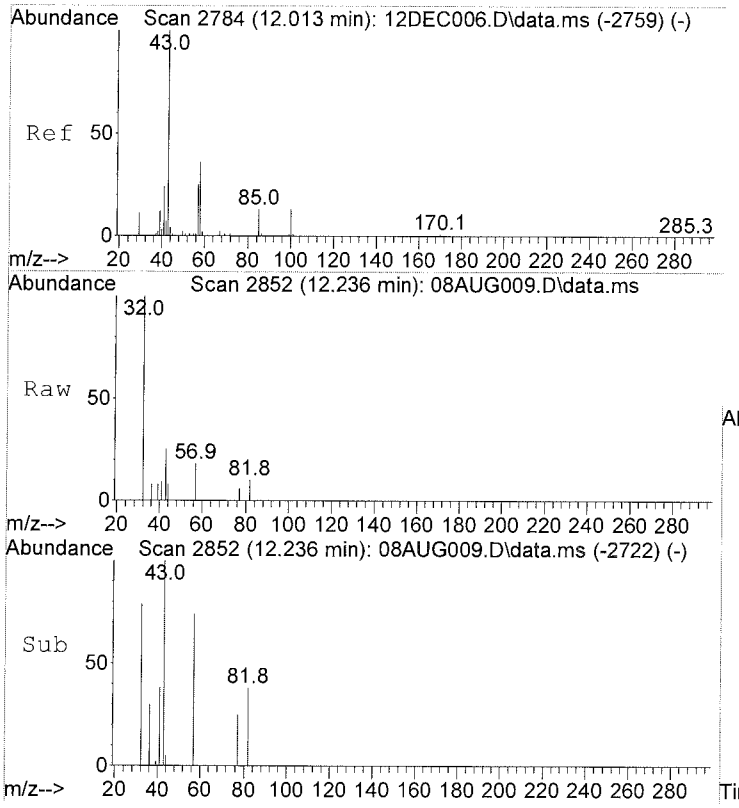


#32
c-1,3-Dichloropropene
Concen: 0.02 ppbv
RT: 12.476 min Scan# 2925
Delta R.T. -0.019 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 75 Resp: 391

Ion	Ratio	Lower	Upper
75	100		
39	46.1	1.4	101.4
77	0.0	0.0	80.8

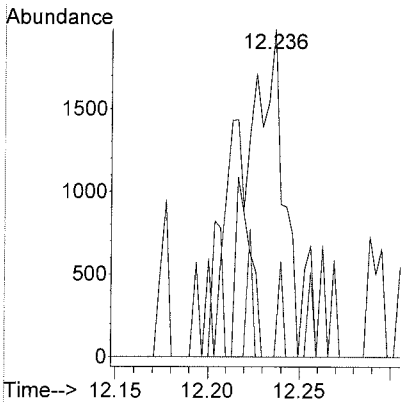


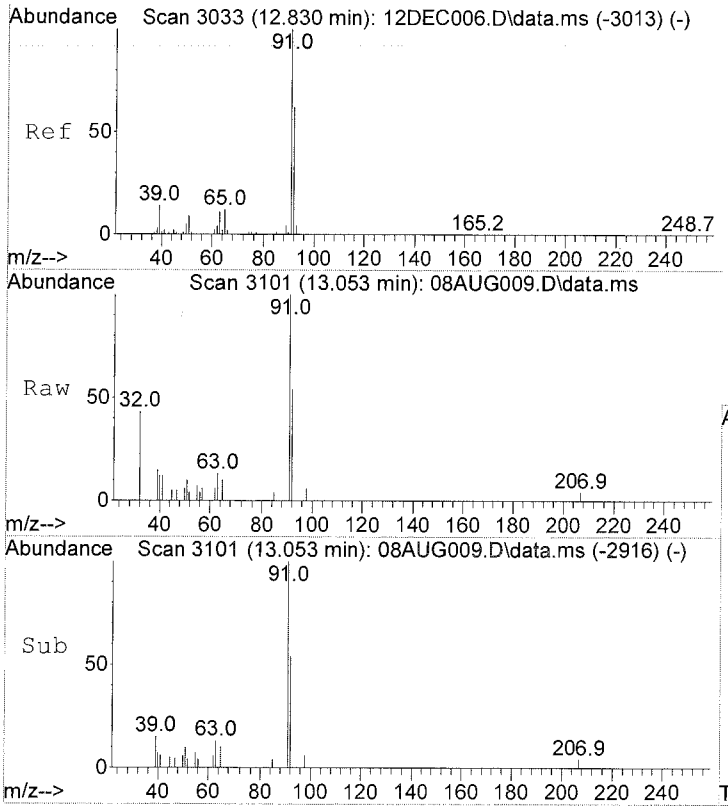


#33
4-Methyl-2-Pentanone
Concen: 0.12 ppbv
RT: 12.236 min Scan# 2852
Delta R.T. 0.026 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 43 Resp: 3715

Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	94.4
100	0.0	0.0	64.3
85	0.0	0.0	72.4

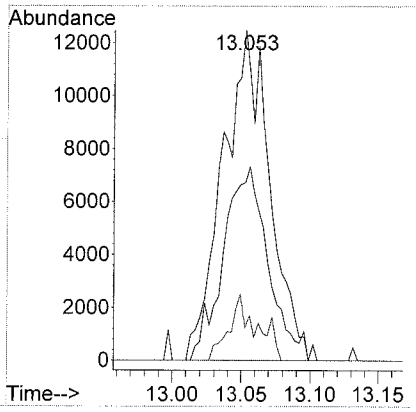


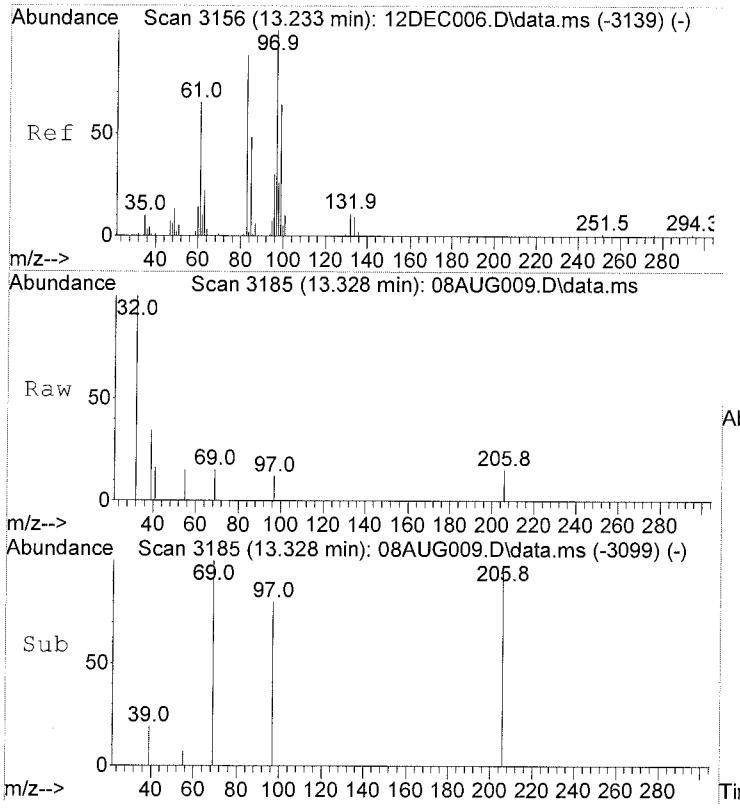


#35
Toluene
Concen: 0.69 ppbv
RT: 13.053 min Scan# 3101
Delta R.T. 0.007 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 91 Resp: 29615

Ion	Ratio	Lower	Upper
91	100		
92	54.0	10.8	110.8
65	10.0	0.0	63.4

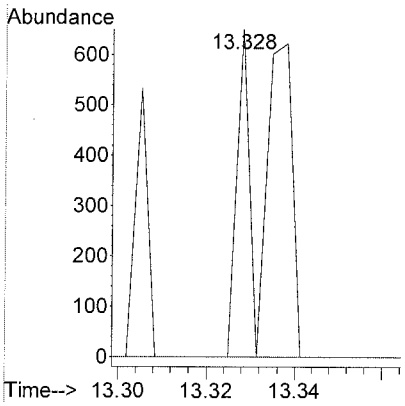


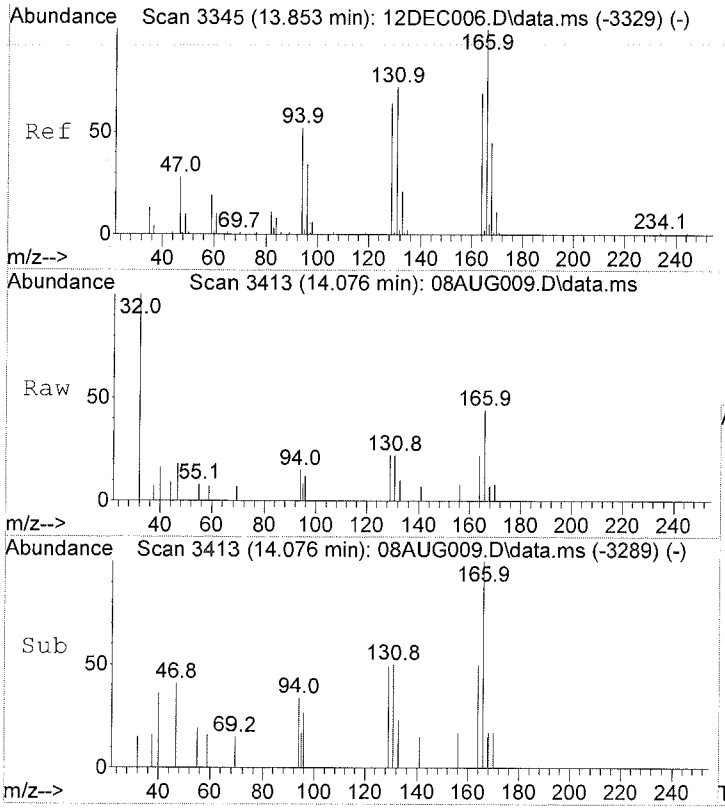


#38
1,1,2-Trichloroethane
Concen: 0.02 ppbv
RT: 13.328 min Scan# 3185
Delta R.T. -0.118 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 97 Resp: 369

Ion	Ratio	Lower	Upper
97	100		
83	0.0	37.9	137.9#
61	0.0	24.7	124.7#

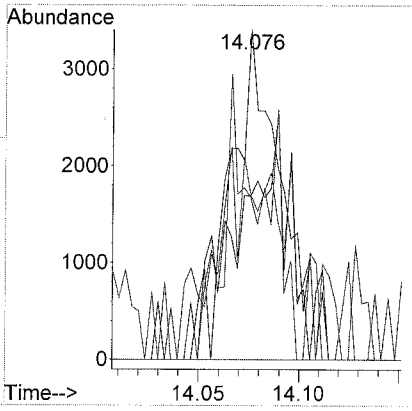


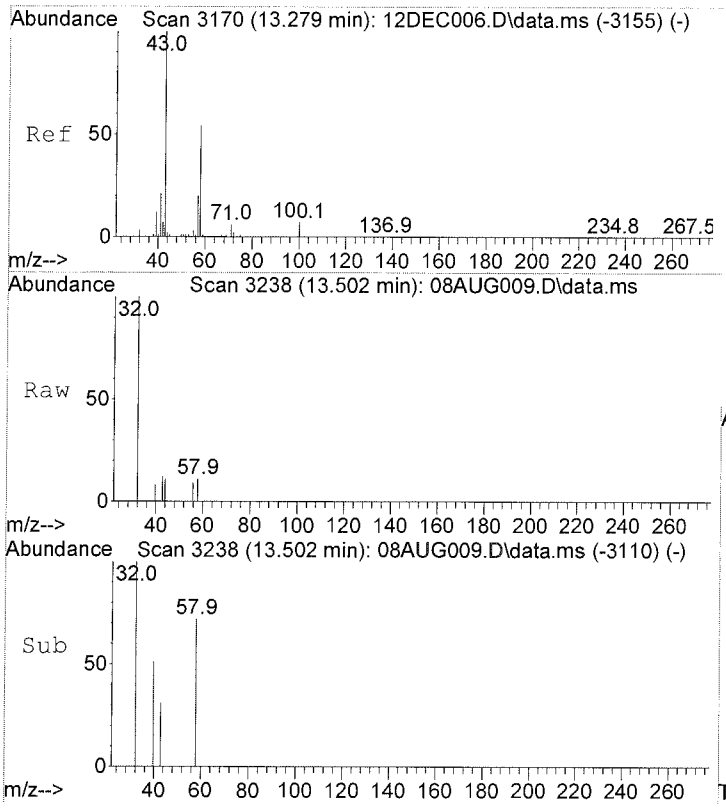


#40
Tetrachloroethene
Concen: 0.28 ppbv
RT: 14.076 min Scan# 3413
Delta R.T. 0.007 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:166 Resp: 6001

Ion	Ratio	Lower	Upper
166	100		
164	49.6	29.5	129.5
131	27.1	18.1	118.1
129	49.1	23.3	123.3

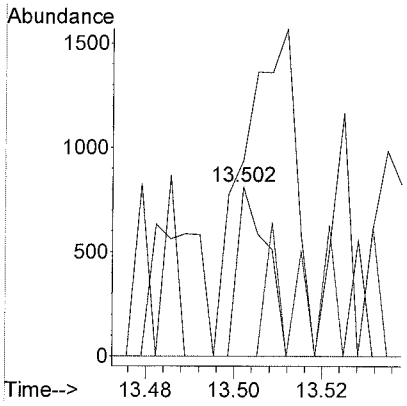


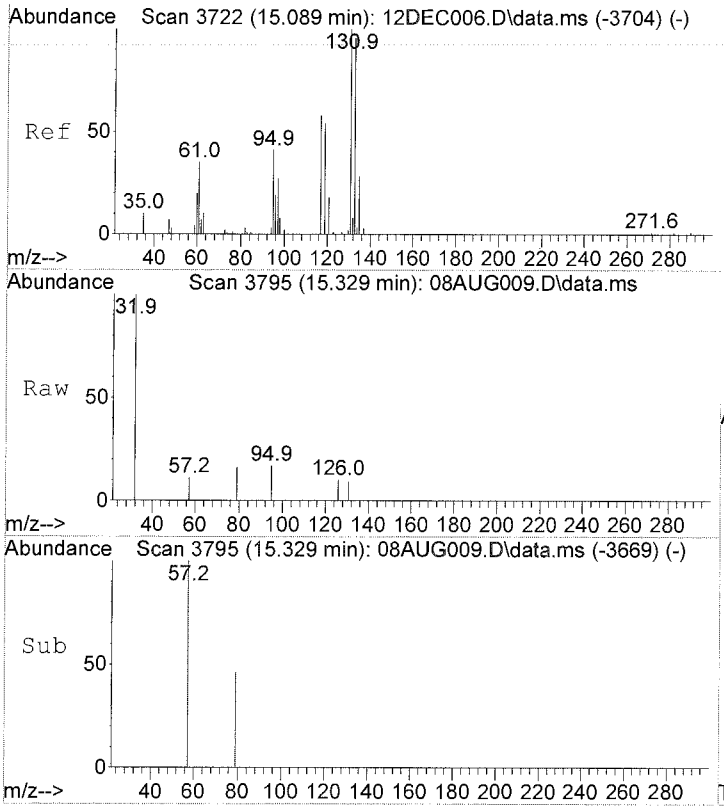


#41
2-Hexanone
Concen: 0.02 ppbv
RT: 13.502 min Scan# 3238
Delta R.T. 0.020 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 58 Resp: 376

Ion	Ratio	Lower	Upper
58	100		
43	54.1	0.0	682.6
57	0.0	0.0	535.8
100	0.0	0.0	69.5

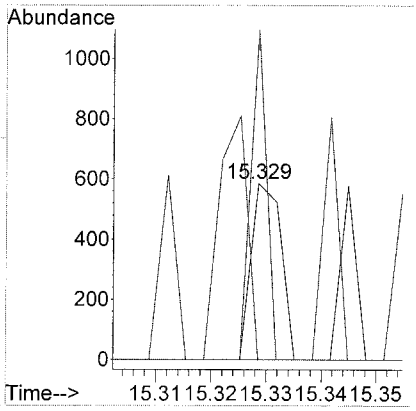


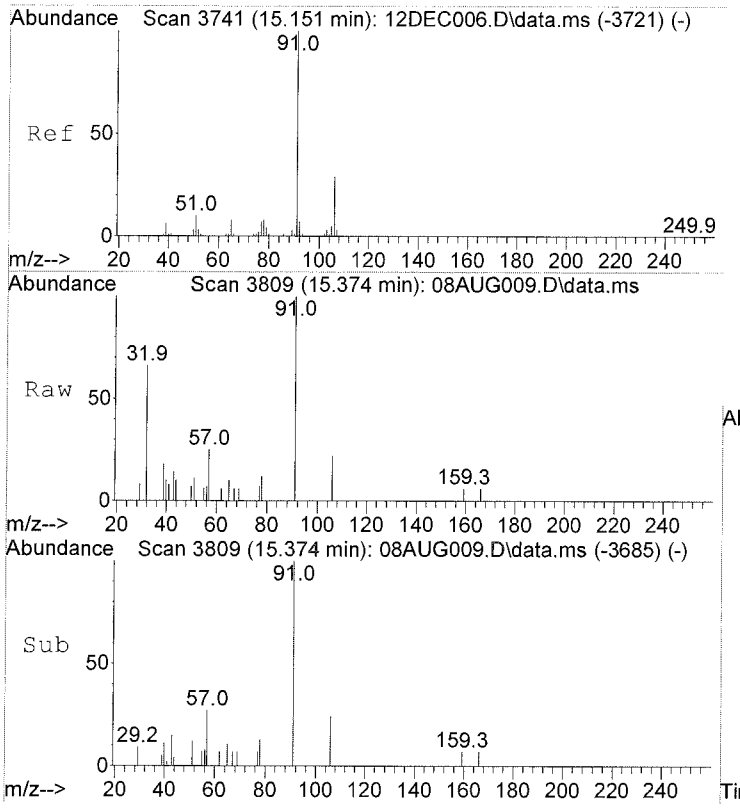


#45
1,1,1,2-Tetrachloroethane
Concen: 0.02 ppbv
RT: 15.329 min Scan# 3795
Delta R.T. 0.014 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:131 Resp: 218

Ion	Ratio	Lower	Upper
131	100		
133	0.0	73.3	113.3#
117	0.0	43.3	83.3#
95	187.2	29.1	69.1#

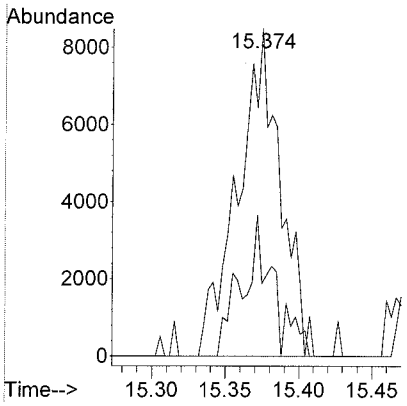


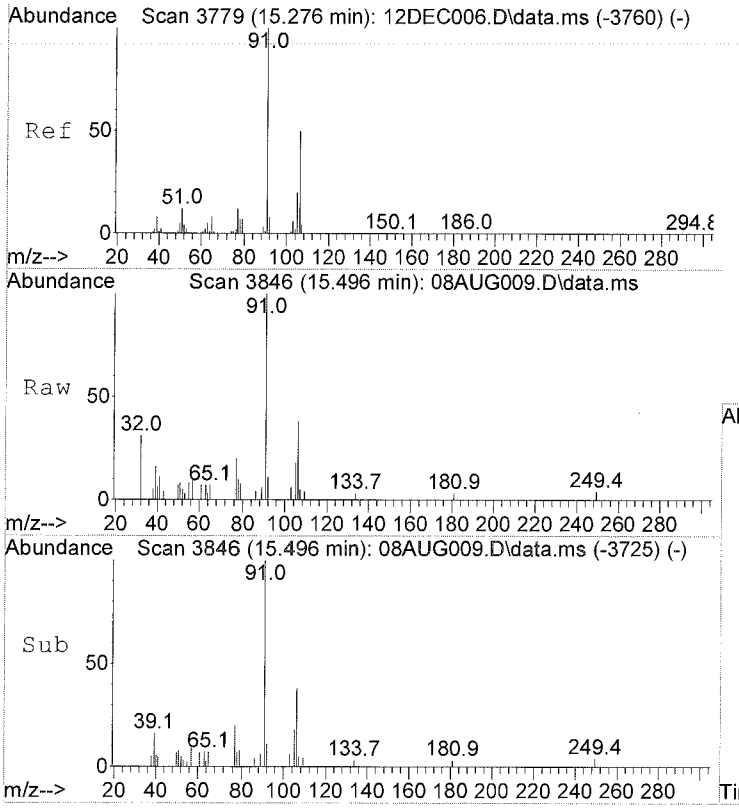


#46
Ethylbenzene
Concen: 0.27 ppbv
RT: 15.374 min Scan# 3809
Delta R.T. 0.006 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 91 Resp: 16928

Ion	Ratio	Lower	Upper
91	100		
106	22.3	0.0	79.5

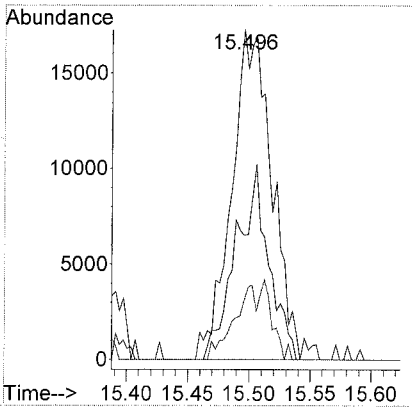


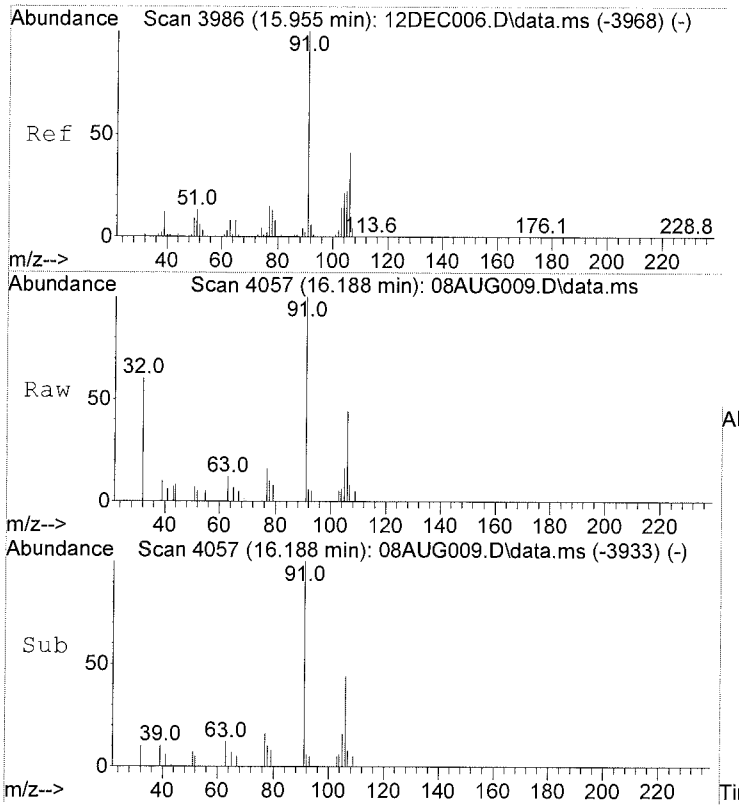


#47
p,&m-Xylene
Concen: 0.80 ppbv
RT: 15.496 min Scan# 3846
Delta R.T. -0.003 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 91 Resp: 39614

Ion	Ratio	Lower	Upper
91	100		
106	37.8	0.0	96.6
105	17.7	0.0	70.6

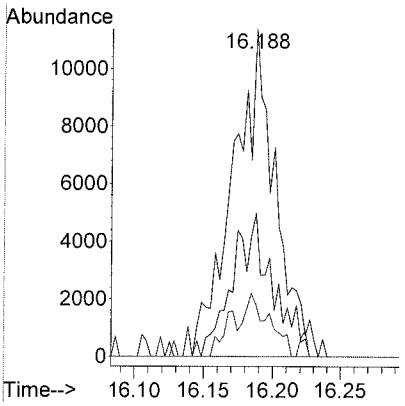


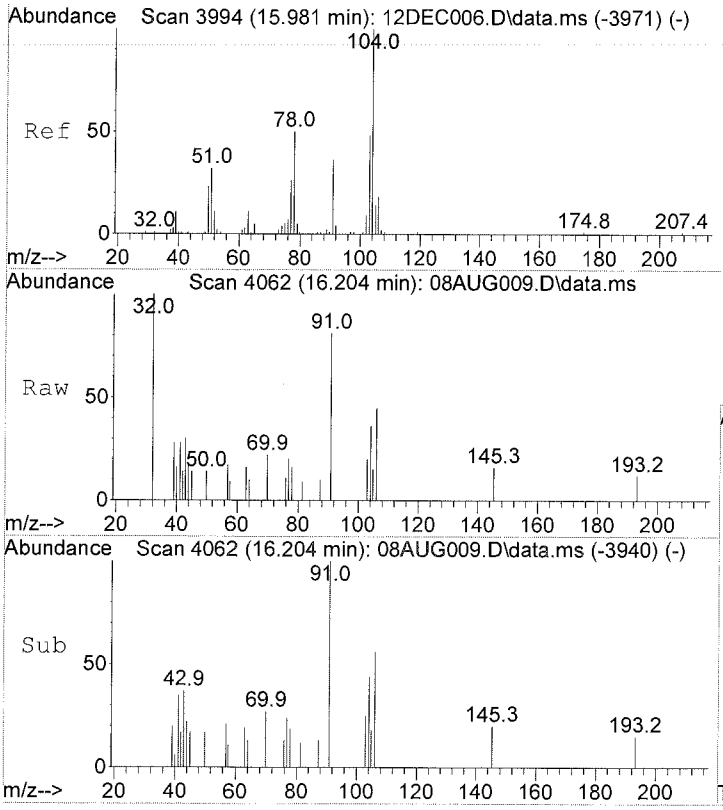


#48
o-Xylene
Concen: 0.50 ppbv
RT: 16.188 min Scan# 4057
Delta R.T. 0.007 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 91 Resp: 24376

Ion	Ratio	Lower	Upper
91	100		
106	43.8	0.0	93.9
105	16.0	0.0	69.1

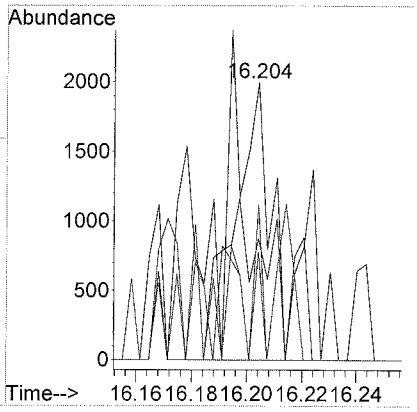


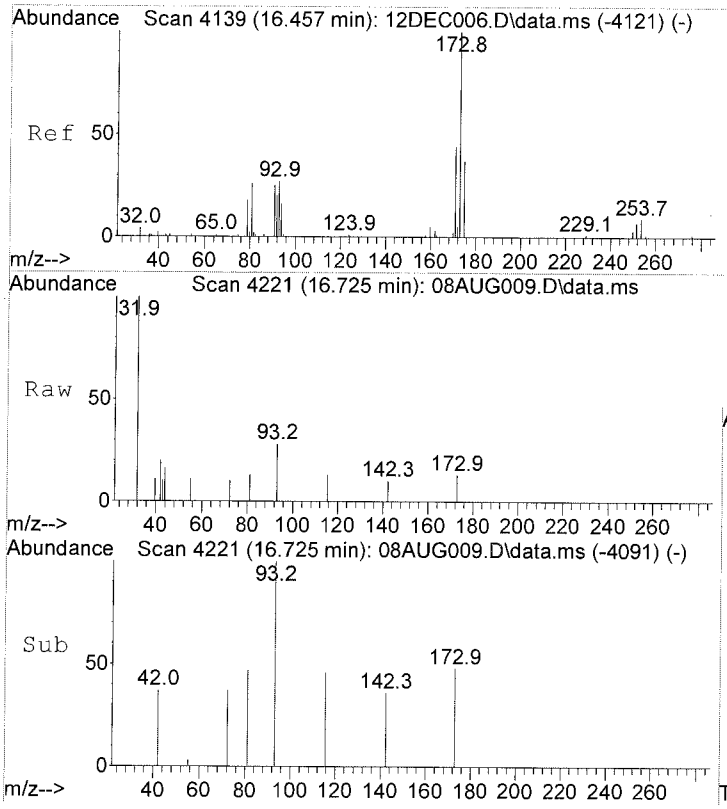


#49
Styrene
Concen: 0.06 ppbv
RT: 16.204 min Scan# 4062
Delta R.T. 0.000 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:104 Resp: 2120

Ion	Ratio	Lower	Upper
104	100		
78	8.5	5.4	105.4
103	39.5	0.0	97.9
50	27.4	0.0	66.2

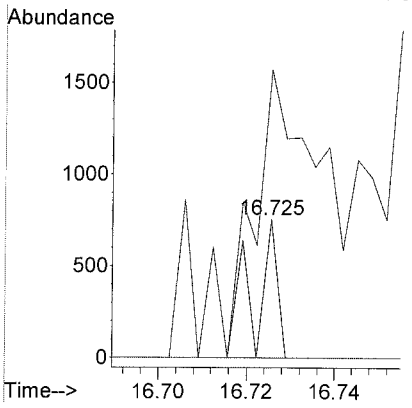


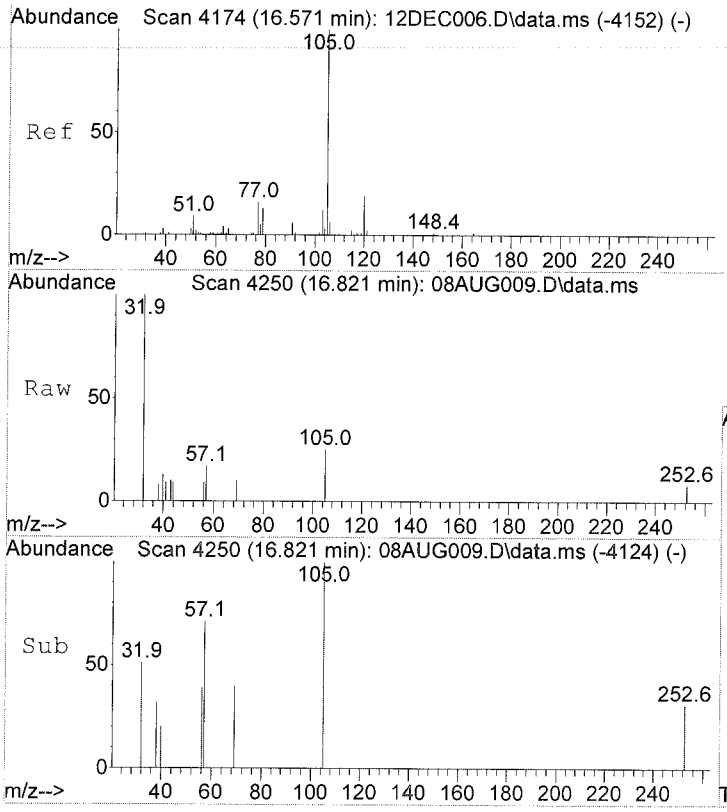


#50
Bromoform
Concen: 0.01 ppbv
RT: 16.725 min Scan# 4221
Delta R.T. 0.026 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:173 Resp: 274

Ion	Ratio	Lower	Upper
173	100		
175	0.0	0.0	97.5
171	0.0	1.4	101.4#
93	94.3	0.0	77.6#

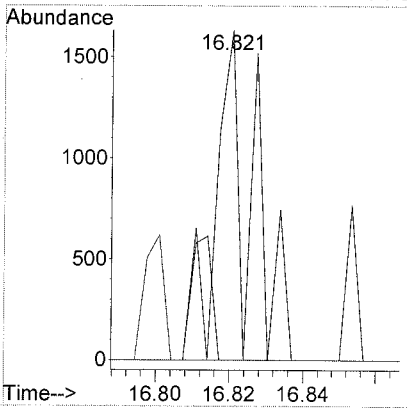


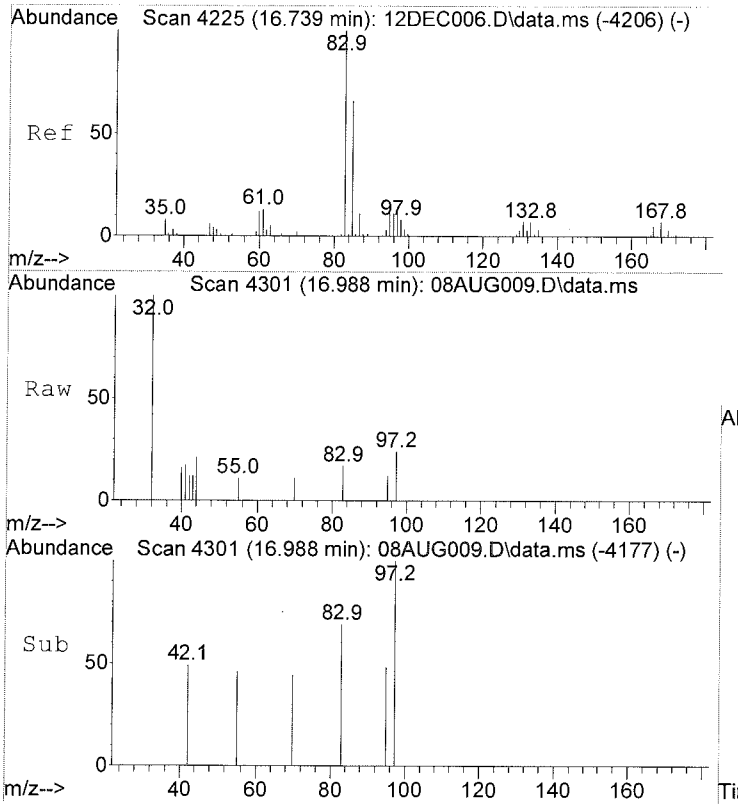


#51
Isopropyl benzene
Concen: 0.02 ppbv
RT: 16.821 min Scan# 4250
Delta R.T. 0.014 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:105 Resp: 1117

Ion	Ratio	Lower	Upper
105	100		
120	0.0	3.8	43.8#
77	0.0	0.0	38.7
51	0.0	0.0	30.4

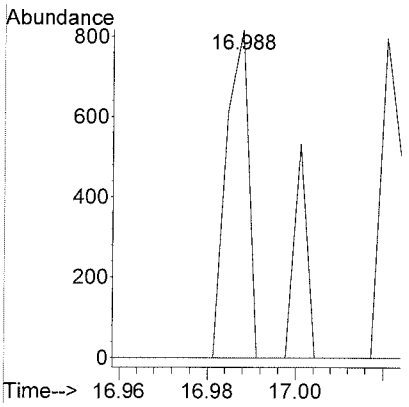


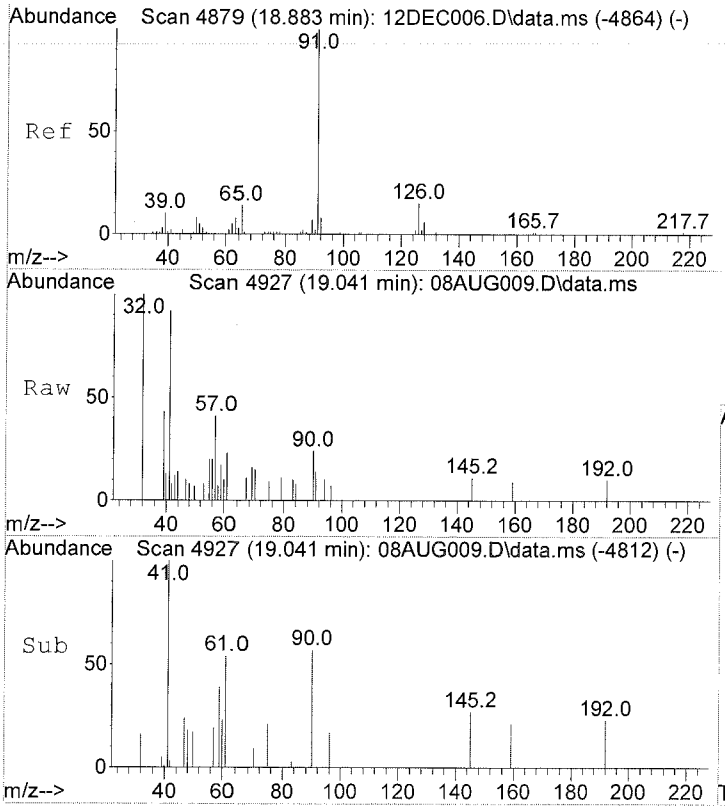


#52
1,1,2,2-Tetrachloroethane
Concen: 0.01 ppbv
RT: 16.988 min Scan# 4301
Delta R.T. 0.007 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 83 Resp: 386

Ion	Ratio	Lower	Upper
83	100		
85	0.0	11.1	111.1#
60	0.0	0.0	64.6
61	0.0	0.0	65.1

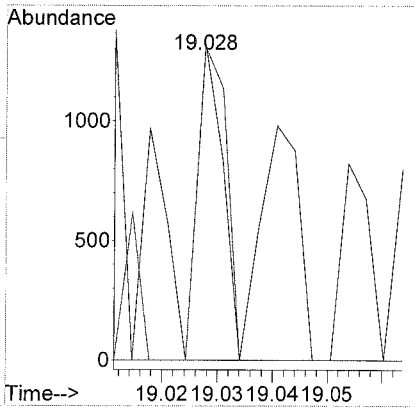


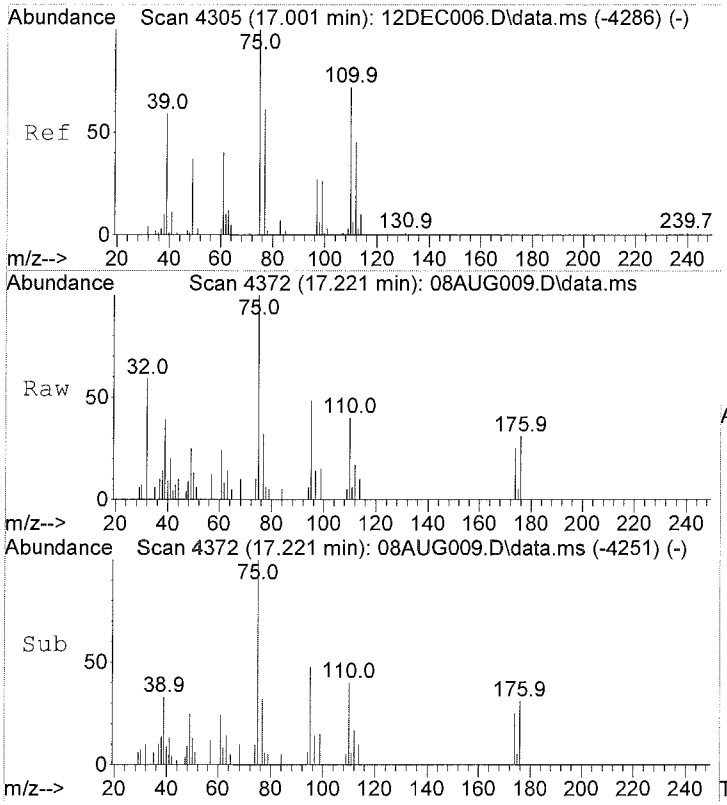


#54
Benzyl Chloride
Concen: 0.04 ppbv
RT: 19.041 min Scan# 4927
Delta R.T. -0.023 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 91 Resp: 900

Ion	Ratio	Lower	Upper
91	100		
126	0.0	0.0	66.1
63	0.0	0.0	62.0

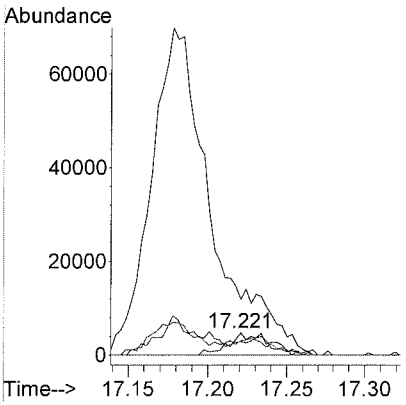


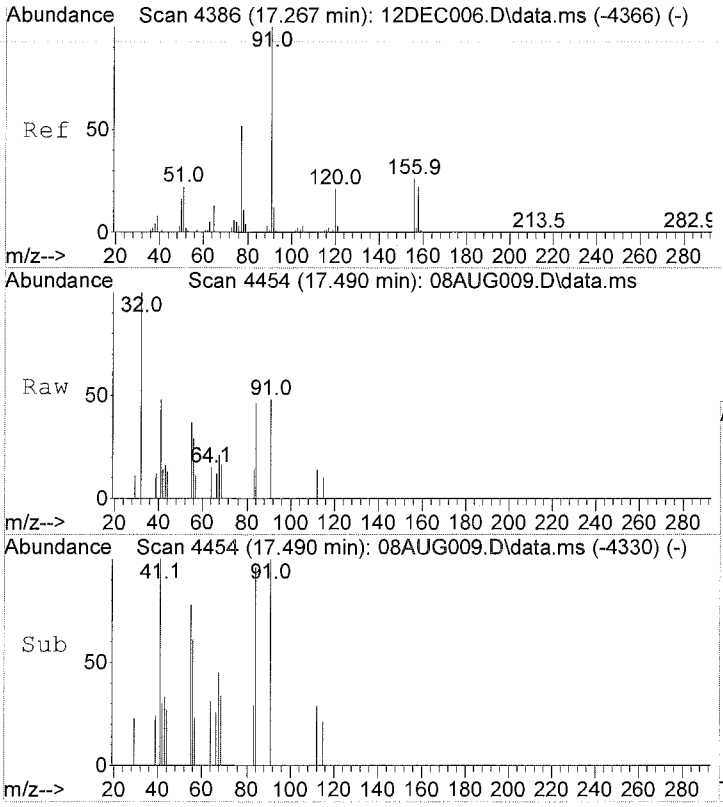


#55
1,2,3-Trichloropropane
Concen: 1.09 ppbv
RT: 17.221 min Scan# 4372
Delta R.T. -0.003 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:110 Resp: 8920

Ion	Ratio	Lower	Upper
110	100		
75	232.3	252.4	292.4#
61	60.5	44.1	84.1
49	63.6	34.3	74.3

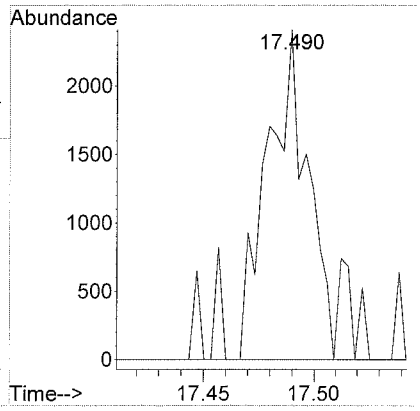


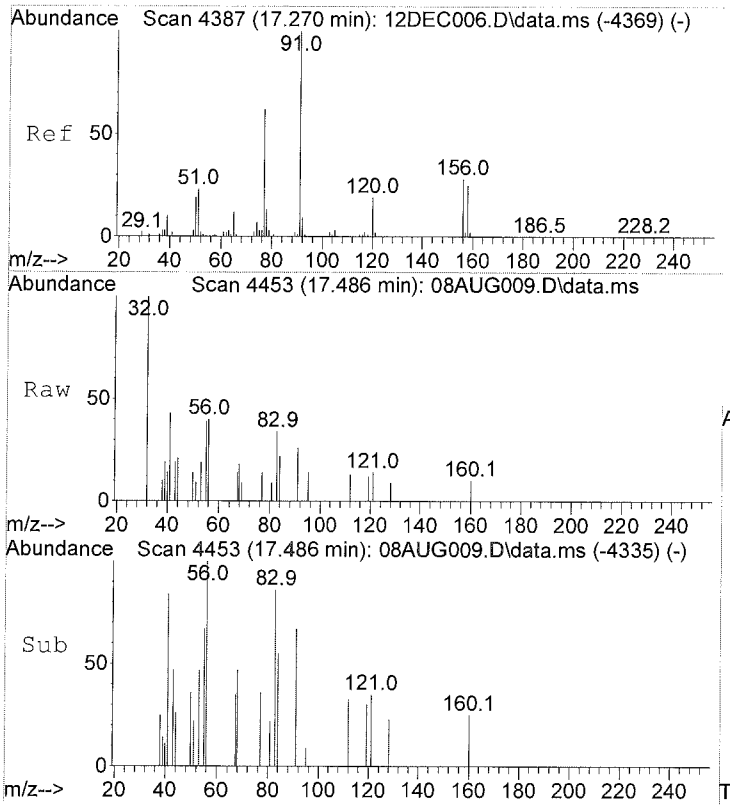


#56
n-Propyl Benzene
Concen: 0.06 ppbv
RT: 17.490 min Scan# 4454
Delta R.T. 0.007 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 91 Resp: 3377

Ion	Ratio	Lower	Upper
91	100		
120	0.0	2.6	42.6#

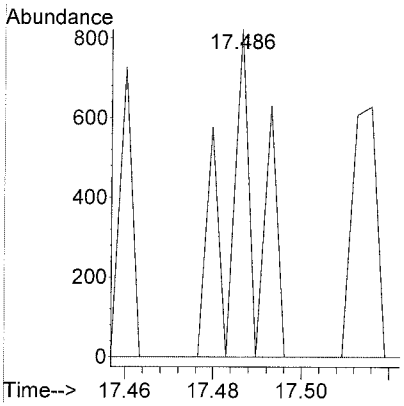


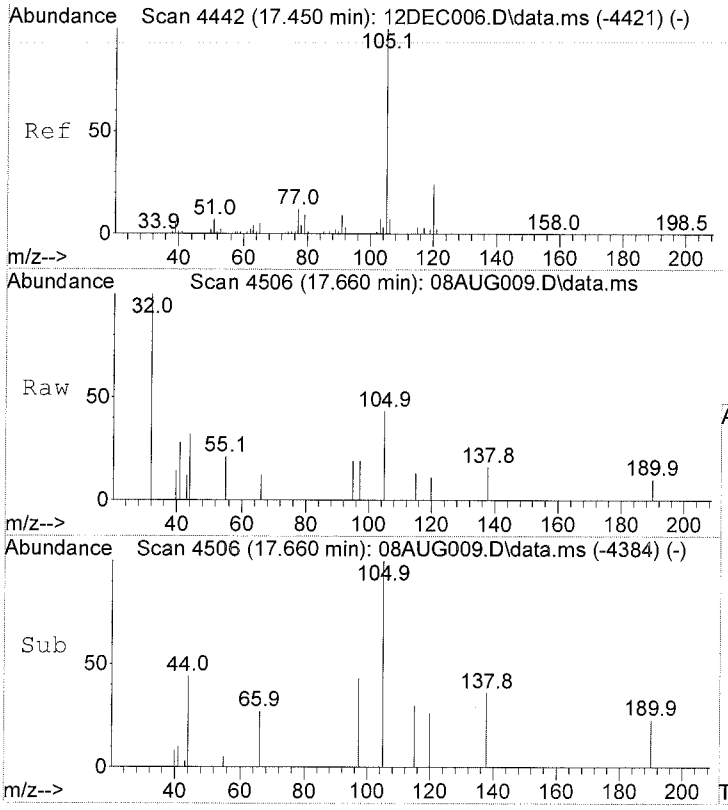


#57
Bromobenzene
Concen: 0.01 ppbv
RT: 17.486 min Scan# 4453
Delta R.T. -0.013 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 77 Resp: 399

Ion	Ratio	Lower	Upper
77	100		
156	0.0	23.3	63.3#
158	0.0	23.9	63.9#

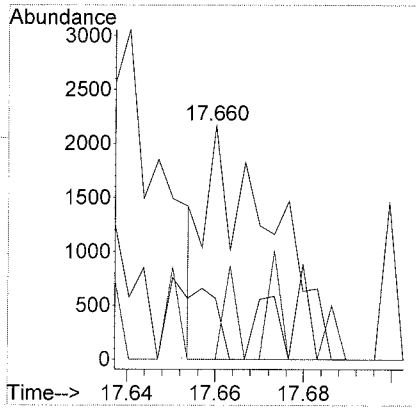


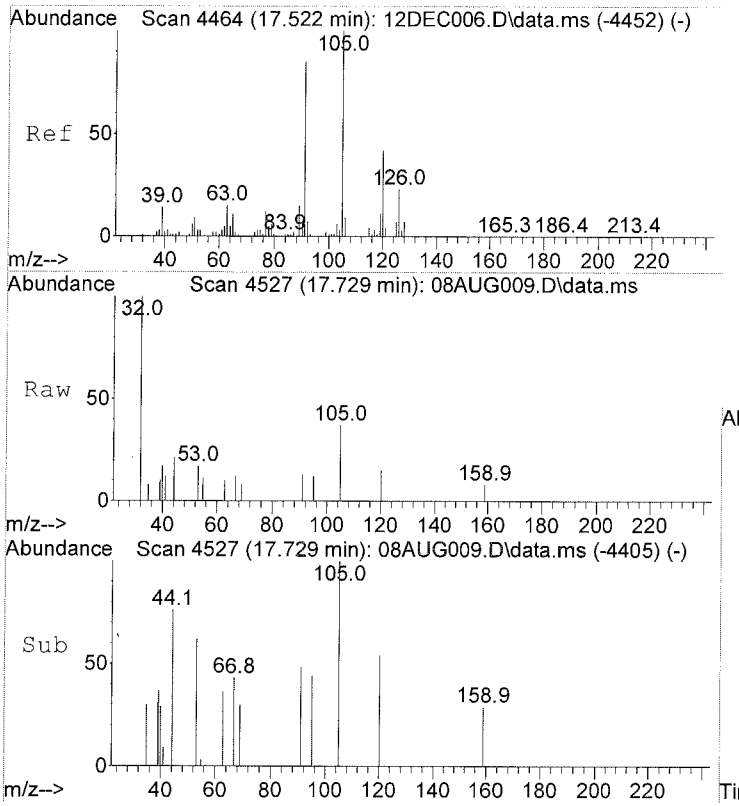


#58
4-Ethyl Toluene
Concen: 0.03 ppbv
RT: 17.660 min Scan# 4506
Delta R.T. 0.000 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:105 Resp: 2204

Ion	Ratio	Lower	Upper
105	100		
120	26.0	0.0	78.8
77	0.0	0.0	64.5

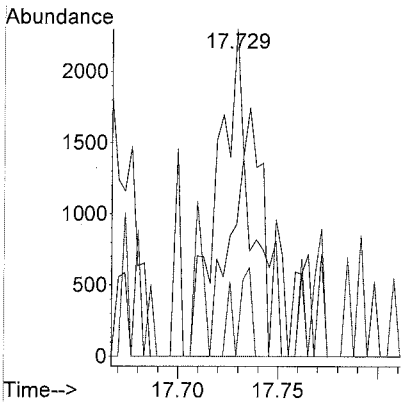


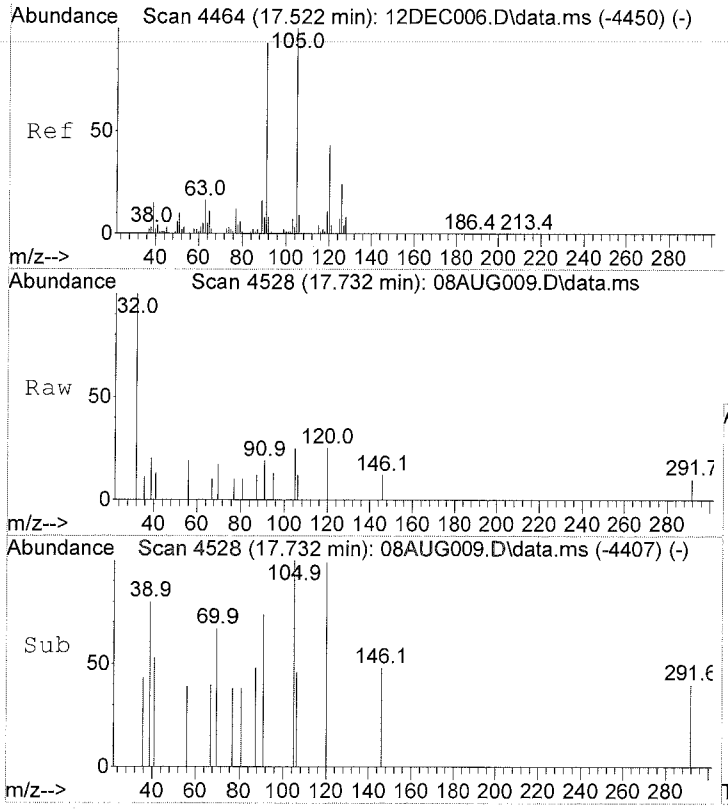


#59
1,3,5-Trimethylbenzene
Concen: 0.07 ppbv
RT: 17.729 min Scan# 4527
Delta R.T. -0.000 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:105 Resp: 3730

Ion	Ratio	Lower	Upper
105	100		
120	40.3	0.0	95.4
77	0.0	0.0	65.8

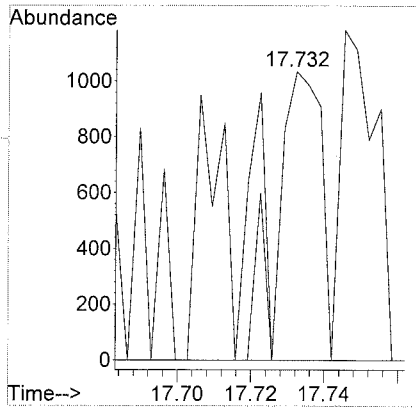


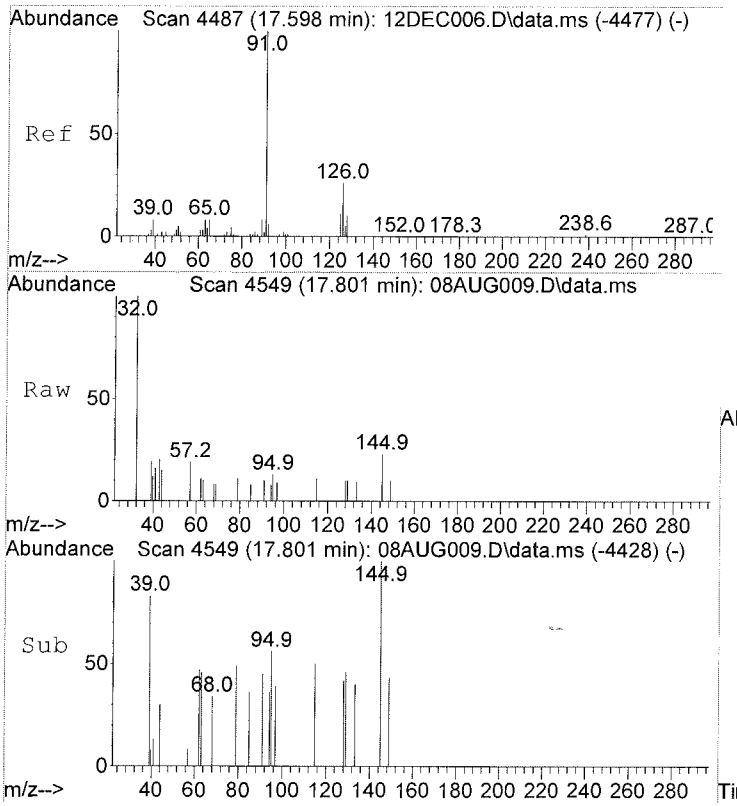


#60
2-Chlorotoluene
Concen: 0.03 ppbv
RT: 17.732 min Scan# 4528
Delta R.T. -0.003 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 91 Resp: 1516

Ion	Ratio	Lower	Upper
91	100		
126	0.0	4.4	44.4#

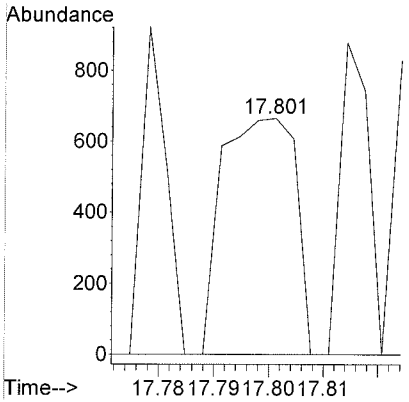


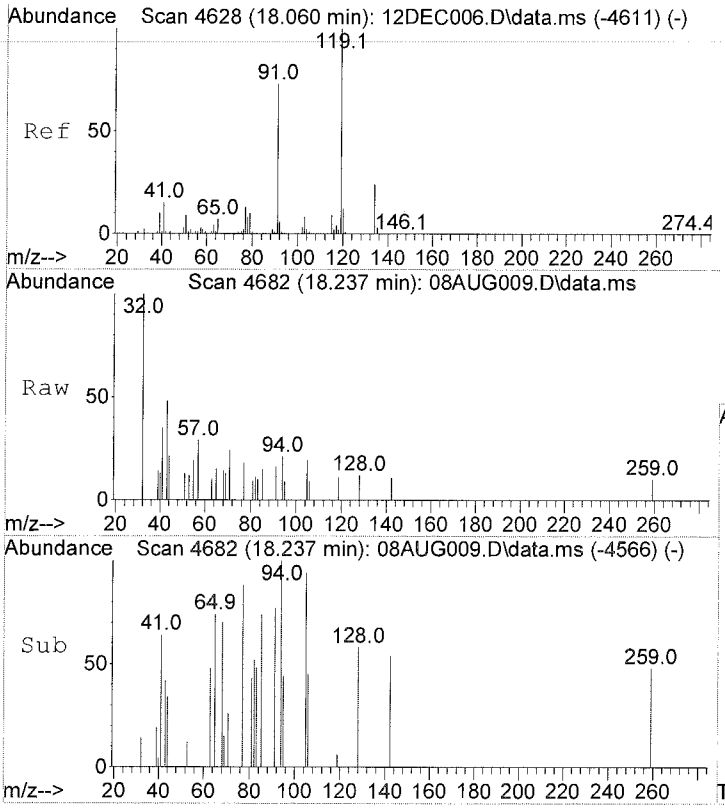


#61
4-Chlorotoluene
Concen: 0.01 ppbv
RT: 17.801 min Scan# 4549
Delta R.T. -0.003 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 91 Resp: 616

Ion	Ratio	Lower	Upper
91	100		
126	0.0	6.4	46.4#

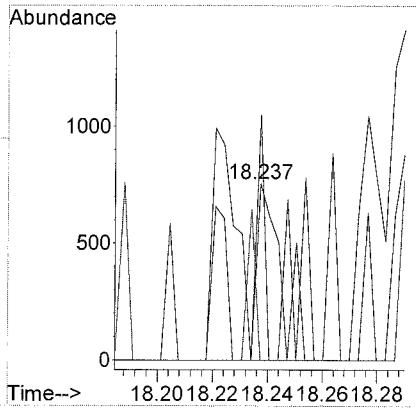


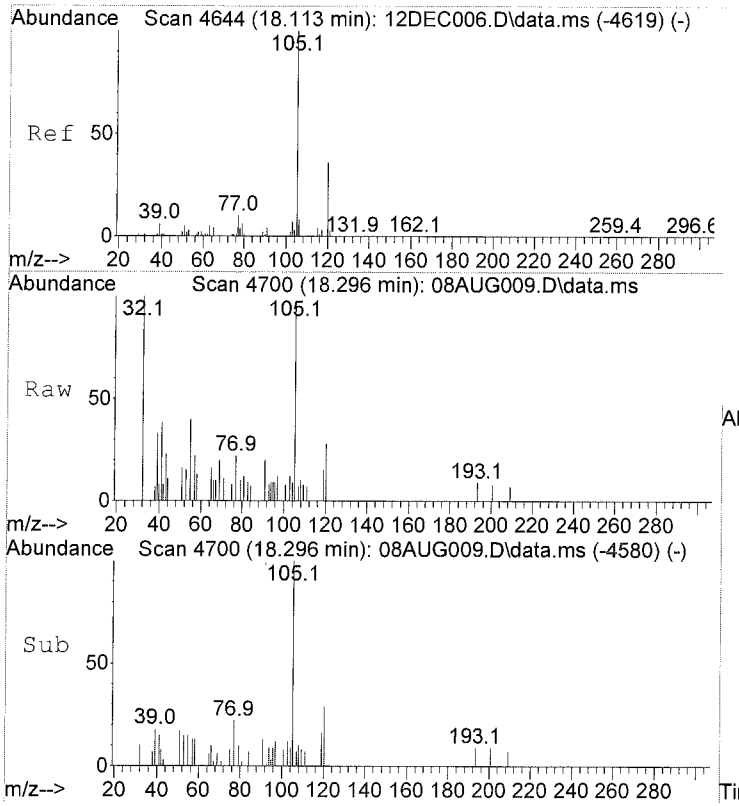


#62
tert-Butylbenzene
Concen: 0.02 ppbv
RT: 18.237 min Scan# 4682
Delta R.T. -0.020 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:119 Resp: 717

Ion	Ratio	Lower	Upper
119	100		
91	138.8	59.5	99.5#
134	0.0	1.8	41.8#

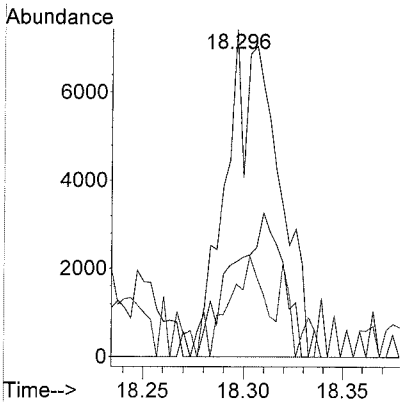


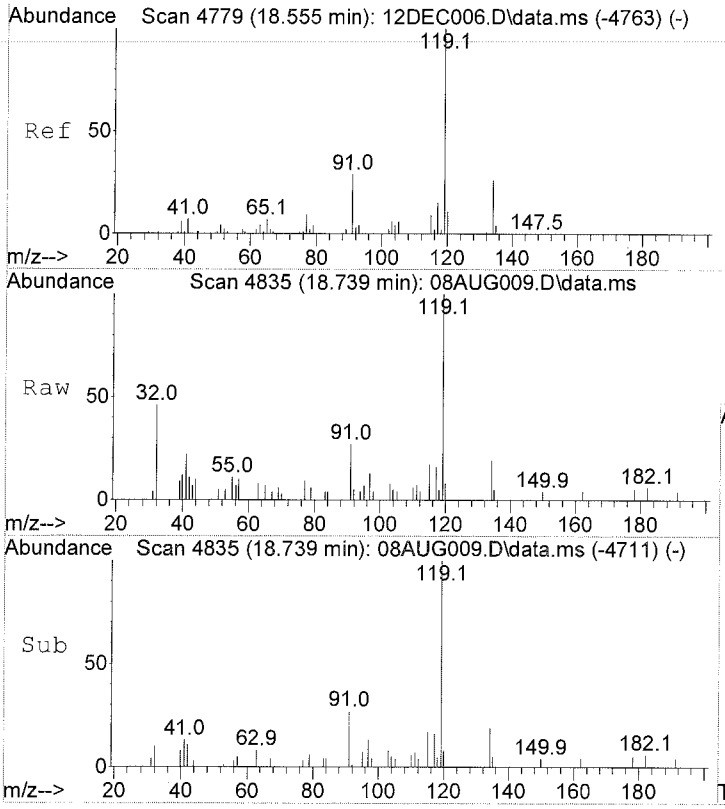


#63
1,2,4-Trimethylbenzene
Concen: 0.24 ppbv
RT: 18.296 min Scan# 4700
Delta R.T. -0.007 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:105 Resp: 13448

Ion	Ratio	Lower	Upper
105	100		
120	29.1	0.0	91.2
77	22.1	0.0	65.1

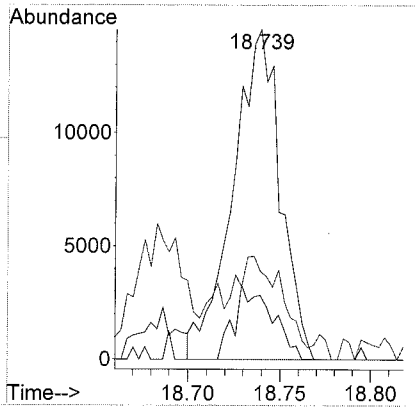


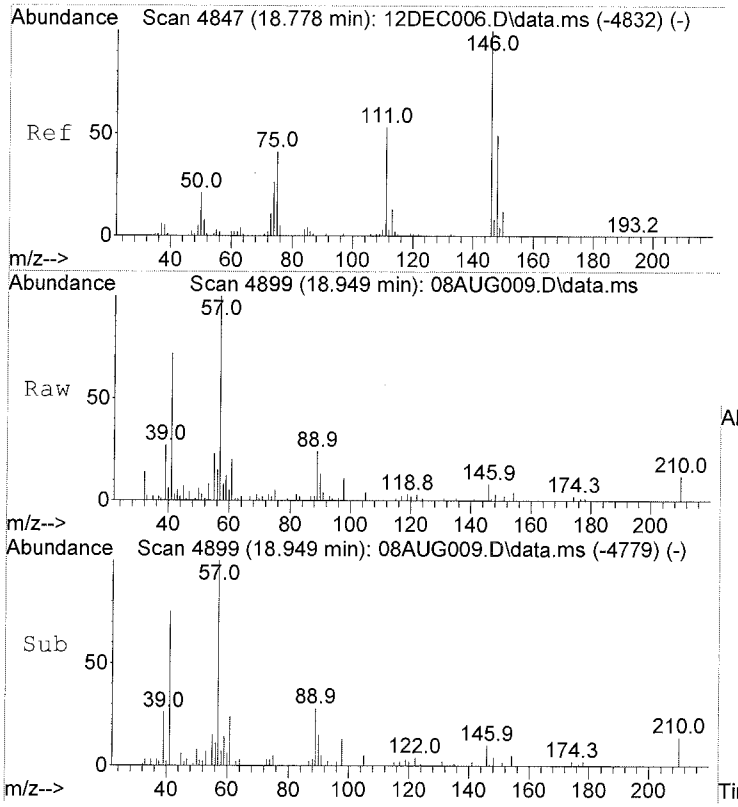


#65
p-Isopropyltoluene
Concen: 0.61 ppbv
RT: 18.739 min Scan# 4835
Delta R.T. 0.007 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:119 Resp: 25886

Ion	Ratio	Lower	Upper
119	100		
134	19.4	2.1	42.1
91	26.8	9.6	49.6

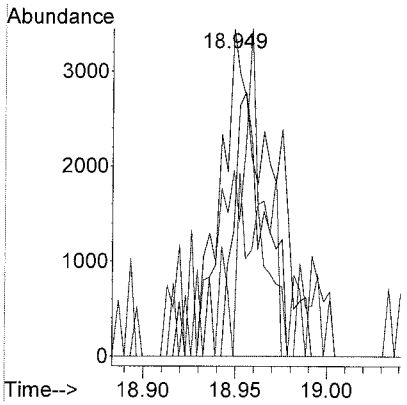


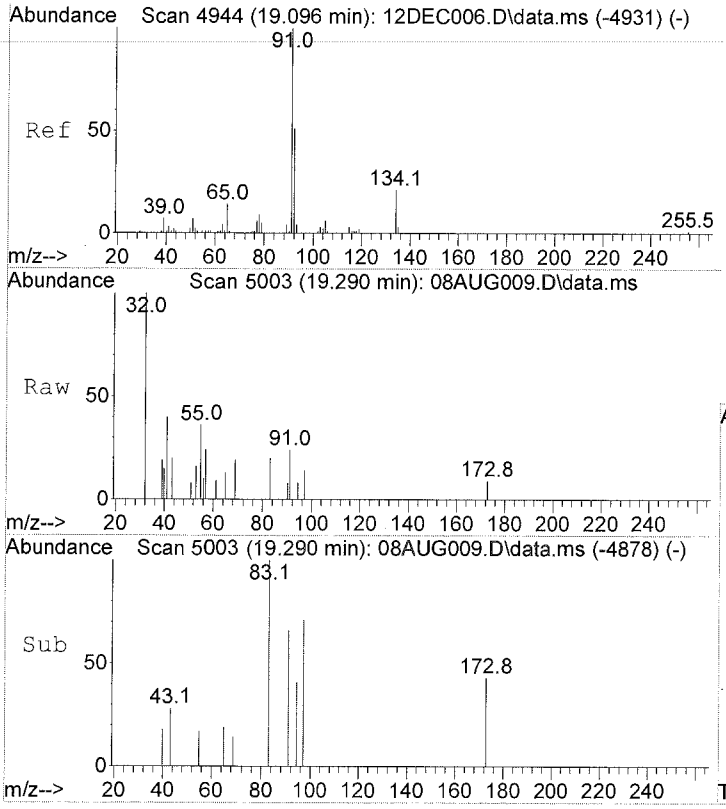


#67
1,4-Dichlorobenzene
Concen: 0.21 ppbv
RT: 18.949 min Scan# 4899
Delta R.T. -0.006 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:146 Resp: 6383

Ion	Ratio	Lower	Upper
146	100		
148	33.6	13.0	113.0
111	0.0	0.0	94.9
75	49.5	0.0	89.4

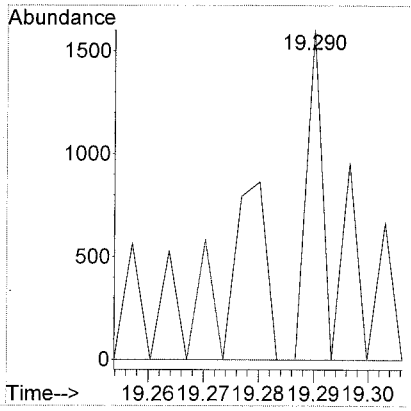


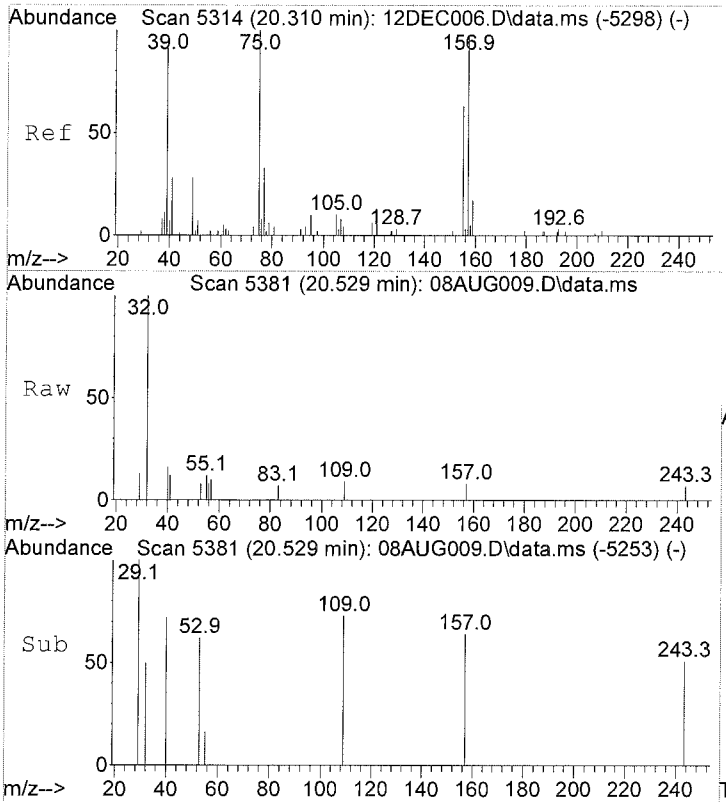


#68
n-Butylbenzene
Concen: 0.01 ppbv
RT: 19.290 min Scan# 5003
Delta R.T. 0.010 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 91 Resp: 642

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
134	0.0	0.9	40.9#

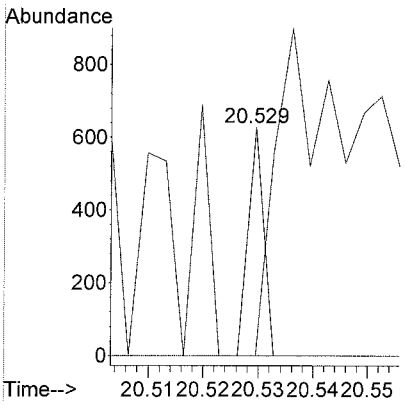




#70
1,2-Dibromo-3-chloropropane
Concen: 0.01 ppbv
RT: 20.529 min Scan# 5381
Delta R.T. 0.019 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:157 Resp: 123

Ion	Ratio	Lower	Upper
157	100		
155	0.0	58.8	98.8#
75	0.0	109.9	149.9#
39	0.0	79.4	119.4#



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG008.D
Acq On : 8 Aug 2018 3:59 pm
Operator : DT
Sample : J072607-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

Quant Time: Aug 15 08:52:59 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration

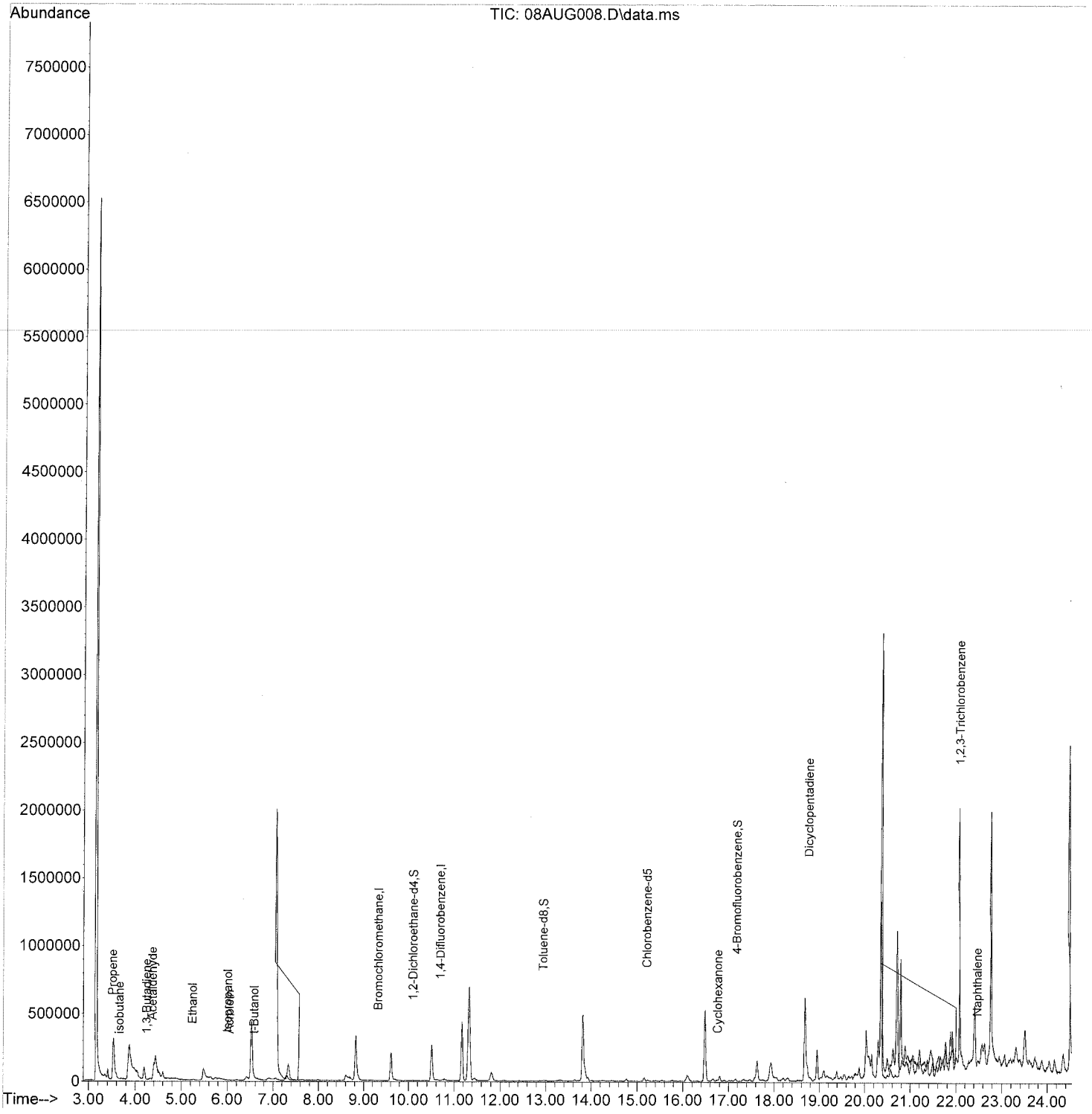
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.321	130	83864	10.00	ppbv	# 0.00
23) 1,4-Difluorobenzene	10.682	114	401550	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.204	117	337805	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.091	65	202394	9.49	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 94.90%			
29) Toluene-d8	12.938	98	415988	10.25	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.50%			
32) 4-Bromofluorobenzene	17.178	95	295556	10.37	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.70%			
Target Compounds						Qvalue
2) Propene	3.507	41	78142	10.21	ppbv #	95
3) isobutane	3.651	41	513	0.12	ppbv	81
4) 1,3-Butadiene	4.241	54	3042	0.56	ppbv #	80
6) Acetaldehyde	4.369	43	40511	15.48	ppbv #	58
7) Ethanol	5.241	45	73139	22.92	ppbv	98
9) Isopropanol	6.005	45	28088	1.92	ppbv #	85
10) Acrolein	6.038	56	14072	3.71	ppbv #	96
11) t-Butanol	6.576	59	6707	0.42	ppbv #	22
31) Cyclohexanone	16.758	55	7064	0.62	ppbv #	72
33) Dicyclopentadiene	18.749	66	82769	108.04	ppbv #	31
34) Naphthalene	22.471	128	30771	0.73	ppbv #	91
35) 1,2,3-Trichlorobenzene	22.058	180	26486	1.17	ppbv #	9

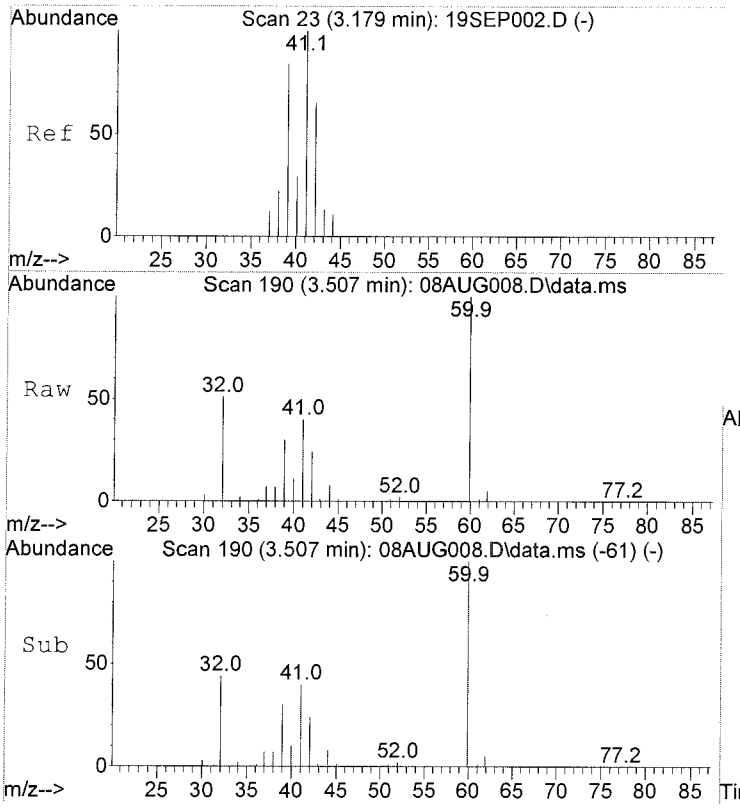
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG008.D
Acq On : 8 Aug 2018 3:59 pm
Operator : DT
Sample : J072607-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

Quant Time: Aug 15 08:52:59 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration

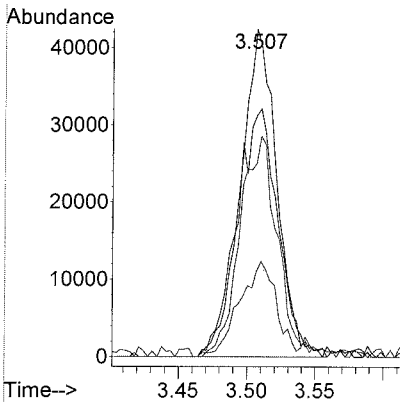


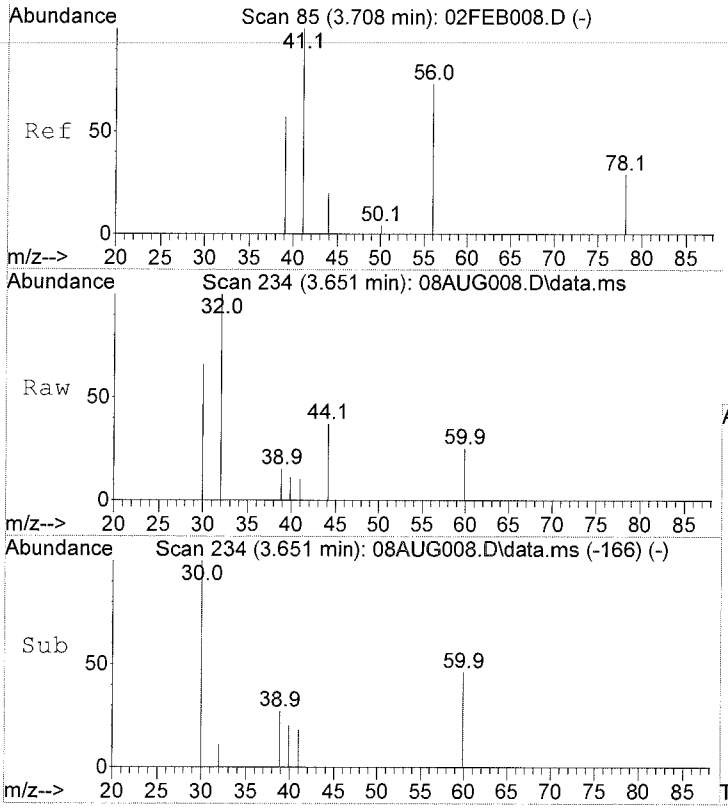


#2
Propene
Concen: 10.21 ppbv
RT: 3.507 min Scan# 190
Delta R.T. 0.023 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 41 Resp: 78142

Ion	Ratio	Lower	Upper
41	100		
39	86.9	65.4	98.0
42	69.3	53.8	80.6
40	32.0	21.2	31.8#

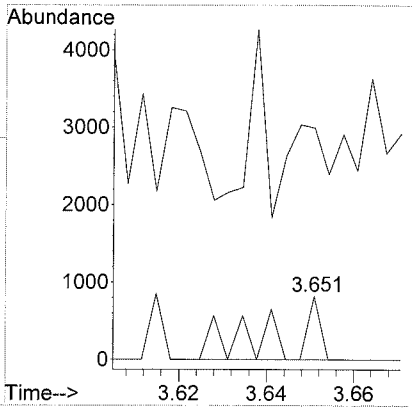


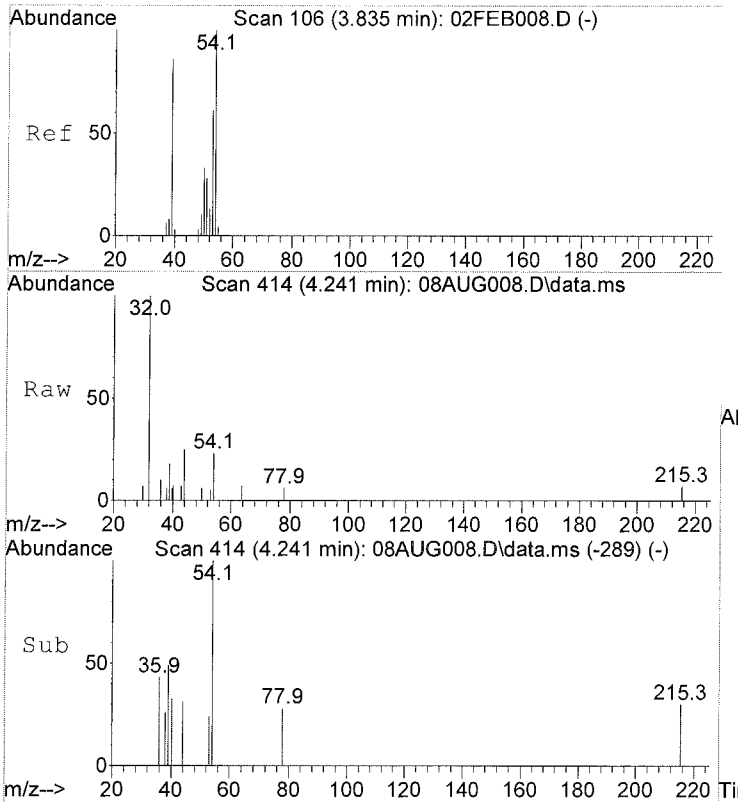


#3
isobutane
Concen: 0.12 ppbv
RT: 3.651 min Scan# 234
Delta R.T. -0.177 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 41 Resp: 513

Ion	Ratio	Lower	Upper
41	100		
44	206.8	144.0	216.0

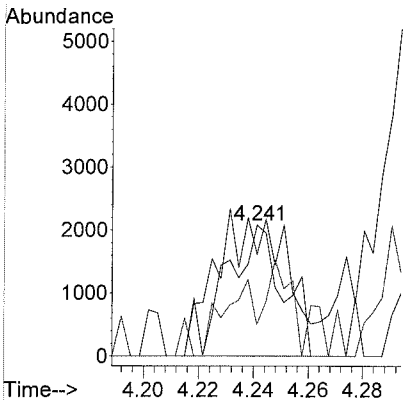


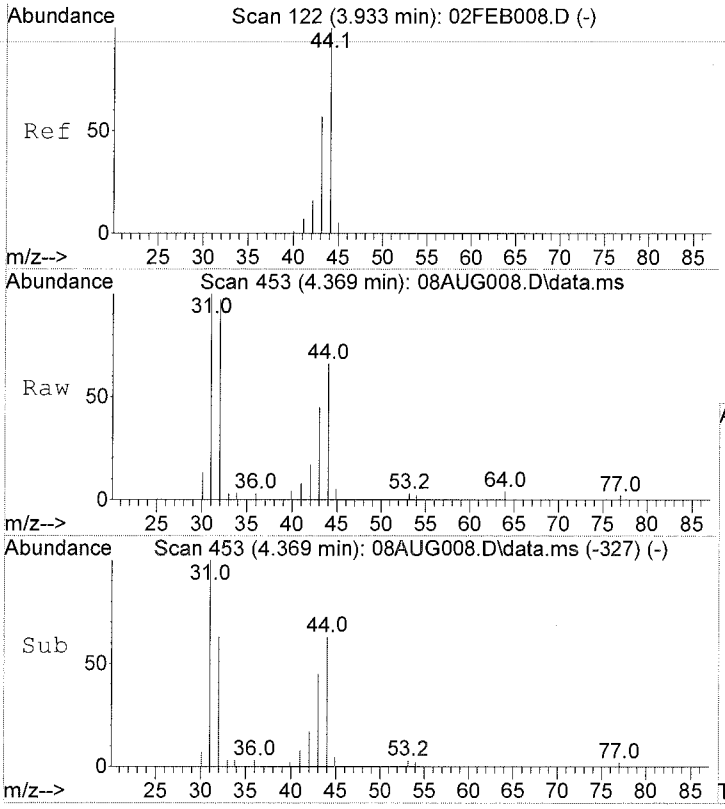


#4
1,3-Butadiene
Concen: 0.56 ppbv
RT: 4.241 min Scan# 414
Delta R.T. 0.010 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 54 Resp: 3042

Ion	Ratio	Lower	Upper
54	100		
39	129.3	81.6	122.4#
53	75.8	55.0	82.6

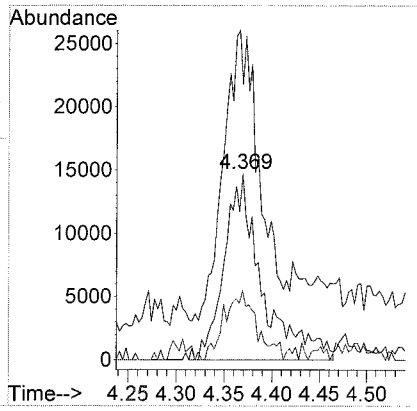


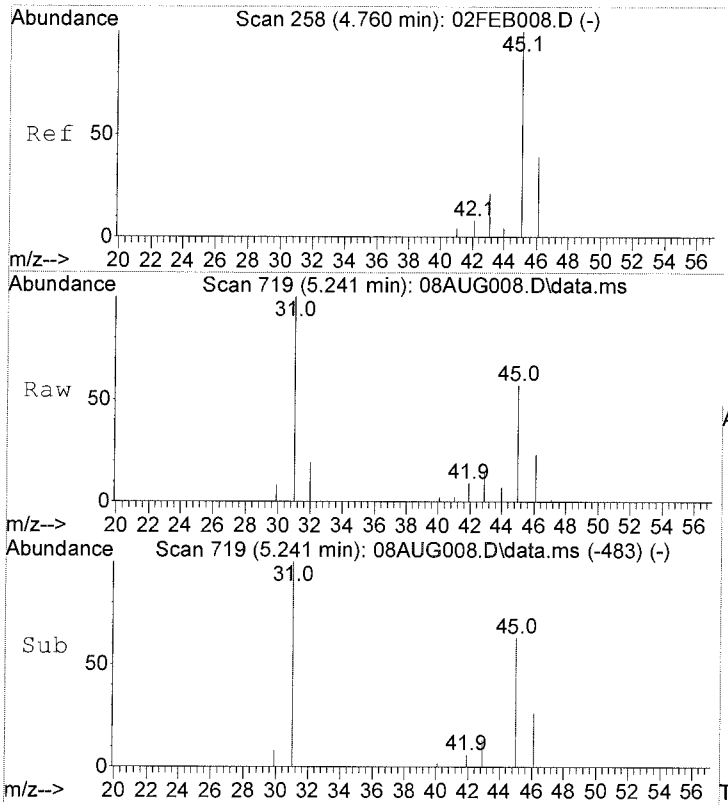


#6
Acetaldehyde
Concen: 15.48 ppbv
RT: 4.369 min Scan# 453
Delta R.T. 0.013 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 43 Resp: 40511

Ion	Ratio	Lower	Upper
43	100		
44	161.5	223.3	263.3#
42	31.6	12.1	52.1

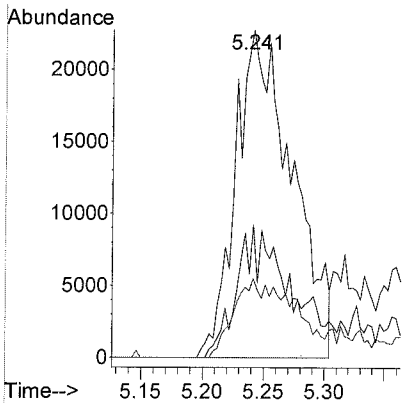


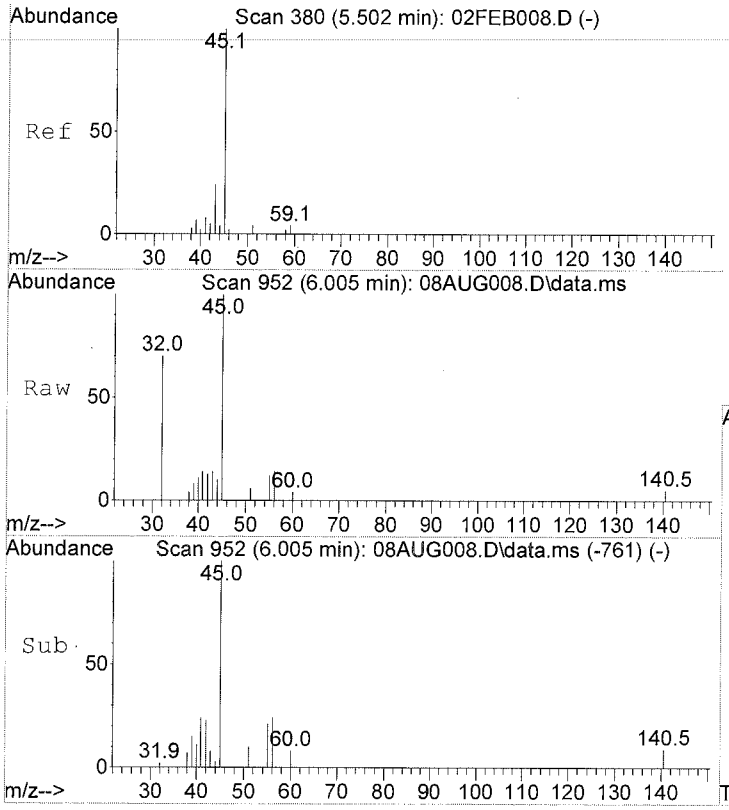


#7
Ethanol
Concen: 22.92 ppbv
RT: 5.241 min Scan# 719
Delta R.T. -0.027 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 45 Resp: 73139

Ion	Ratio	Lower	Upper
45	100		
46	38.6	30.1	45.1
43	26.9	20.2	30.2

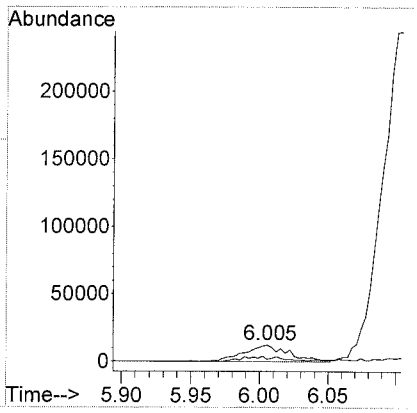


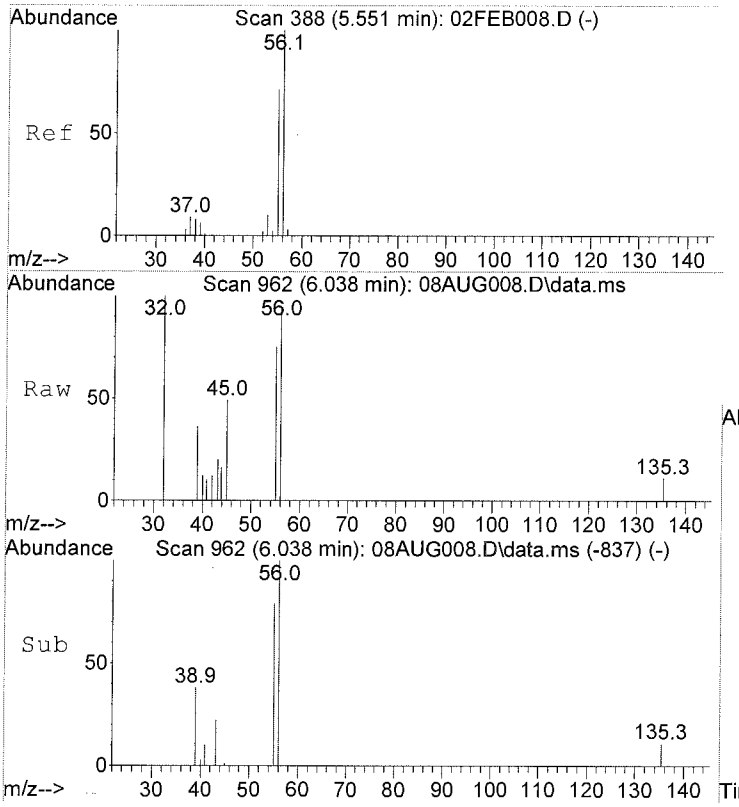


#9
Isopropanol
Concen: 1.92 ppbv
RT: 6.005 min Scan# 952
Delta R.T. 0.026 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 45 Resp: 28088

Ion	Ratio	Lower	Upper
45	100		
43	16.1	18.8	28.2#

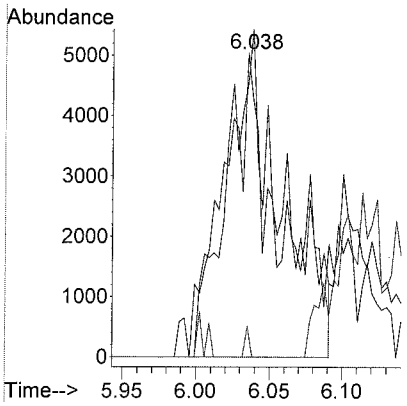


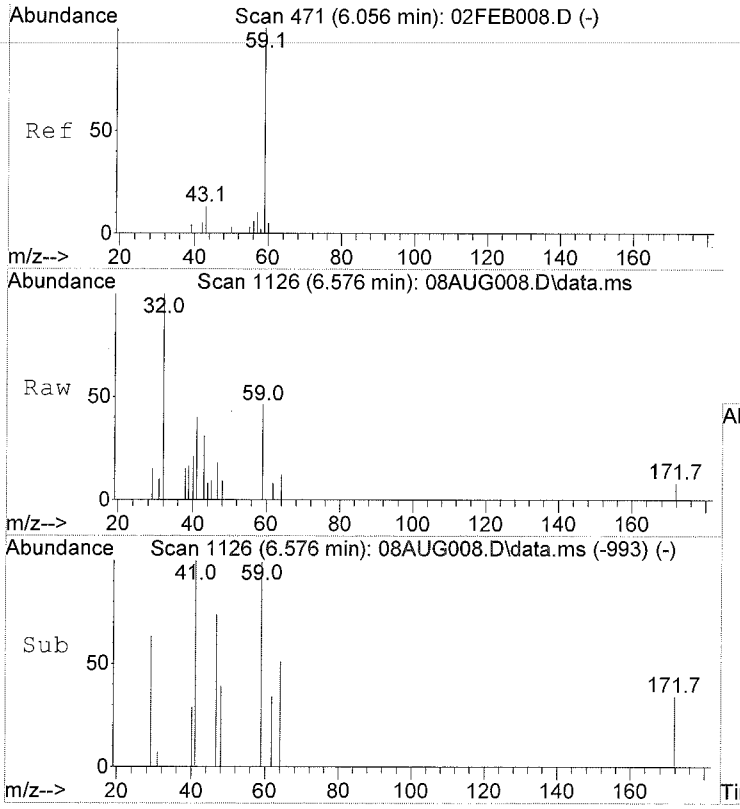


#10
Acrolein
Concen: 3.71 ppbv
RT: 6.038 min Scan# 962
Delta R.T. 0.010 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 56 Resp: 14072

Ion	Ratio	Lower	Upper
56	100		
55	67.1	56.1	84.1
57	0.0	3.8	5.8#

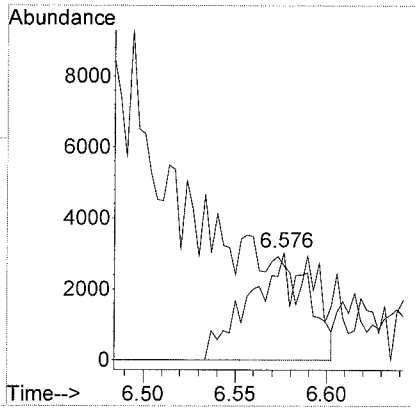


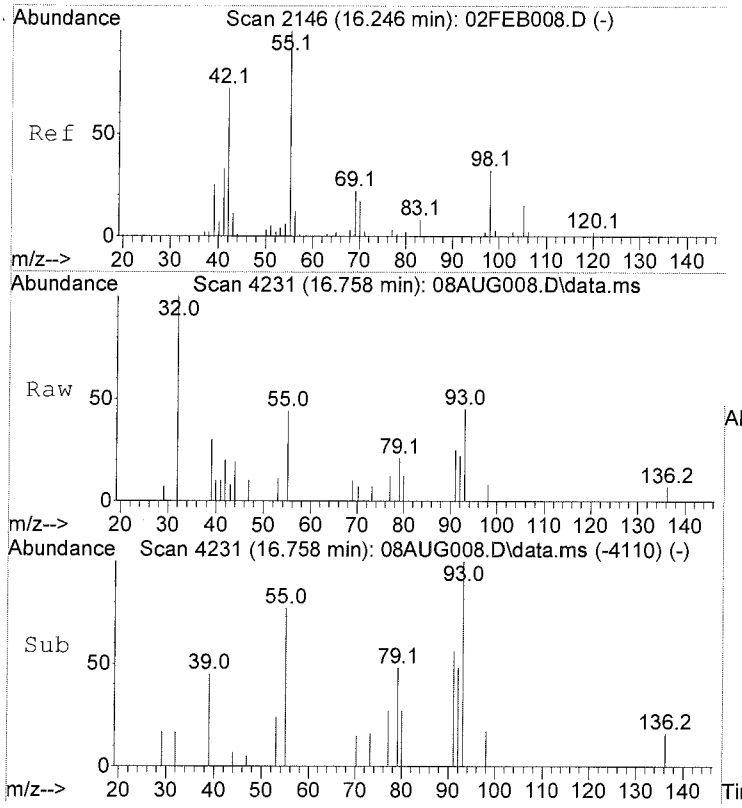


#11
t-Butanol
Concen: 0.42 ppbv
RT: 6.576 min Scan# 1126
Delta R.T. 0.036 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 59 Resp: 6707

Ion	Ratio	Lower	Upper
59	100		
41	71.5	23.5	35.3#

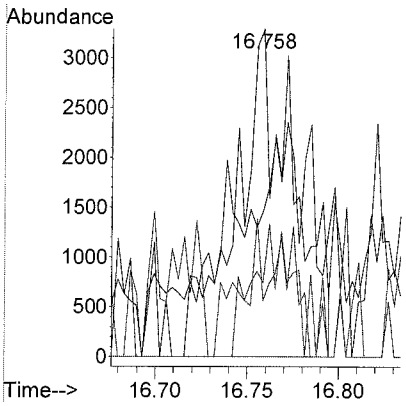


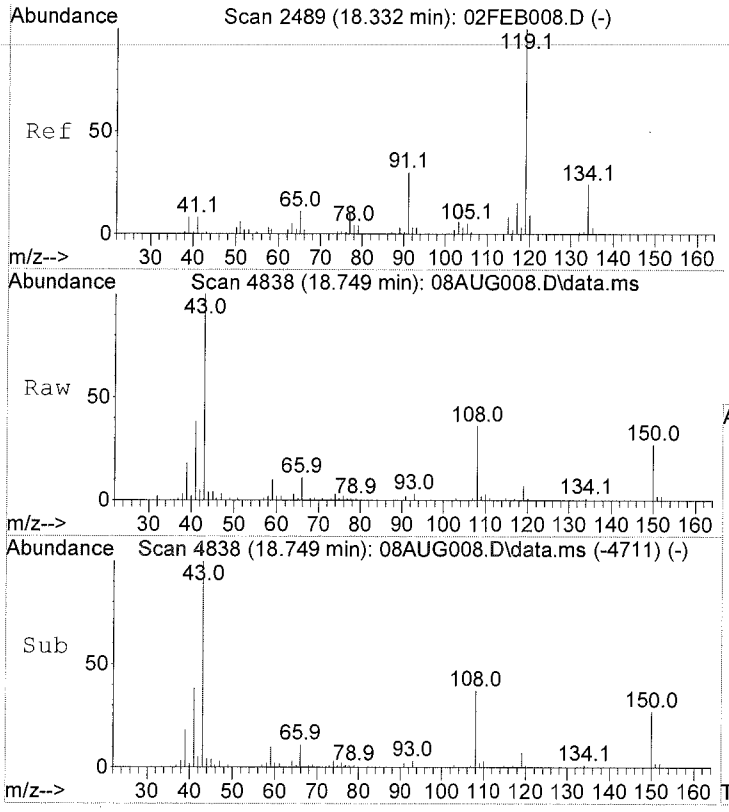


#31
Cyclohexanone
Concen: 0.62 ppbv
RT: 16.758 min Scan# 4231
Delta R.T. -0.004 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 55 Resp: 7064

Ion	Ratio	Lower	Upper
55	100		
42	101.1	56.6	85.0#
69	34.0	25.0	37.4
98	29.3	39.7	59.5#

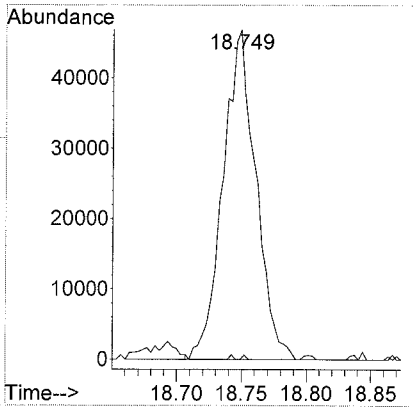


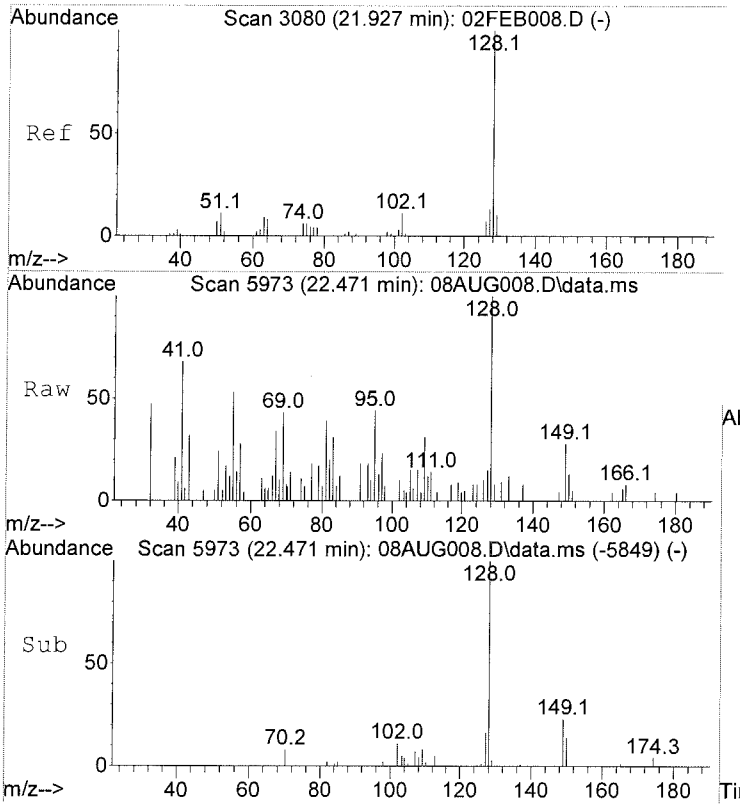


#33
Dicyclopentadiene
Concen: 108.04 ppbv
RT: 18.749 min Scan# 4838
Delta R.T. 0.017 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion: 66 Resp: 82769

Ion	Ratio	Lower	Upper
66	100		
133	0.3	36.5	54.7#

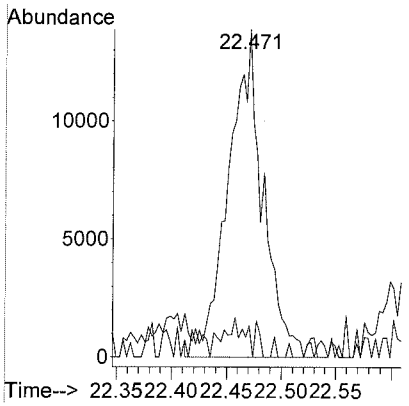


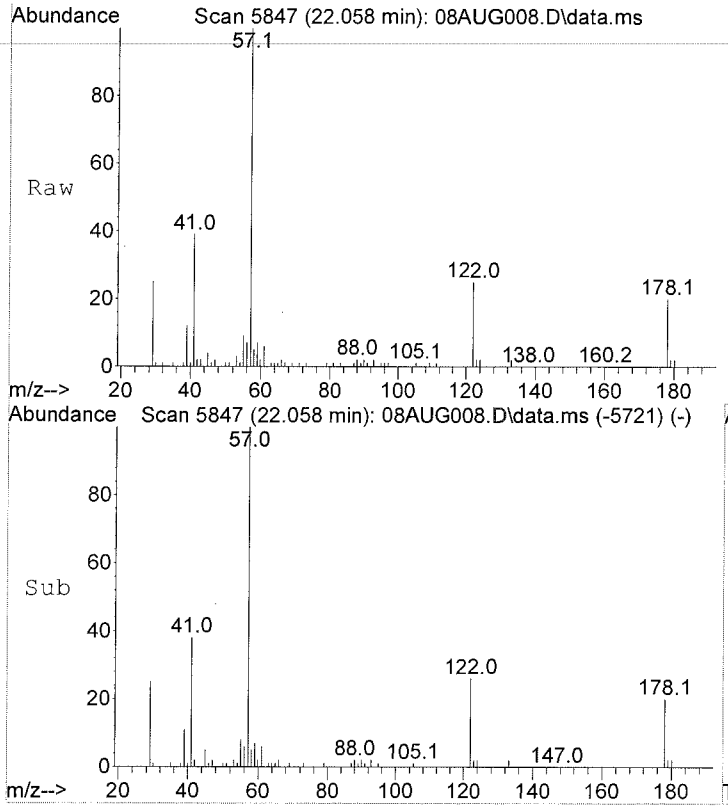


#34
Naphthalene
Concen: 0.73 ppbv
RT: 22.471 min Scan# 5973
Delta R.T. 0.007 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:128 Resp: 30771

Ion	Ratio	Lower	Upper
128	100		
126	10.0	5.4	8.2#

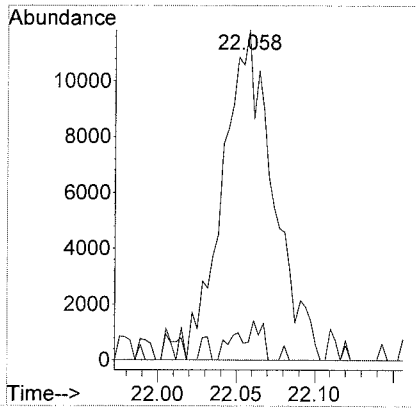




#35
1,2,3-Trichlorobenzene
Concen: 1.17 ppbv
RT: 22.058 min Scan# 5847
Delta R.T. 0.014 min
Lab File: 08AUG008.D
Acq: 8 Aug 2018 3:59 pm

Tgt Ion:180 Resp: 26486

Ion	Ratio	Lower	Upper
180	100		
182	5.9	75.1	112.7#
184	0.0	0.0	0.0



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG009.D
Acq On : 8 Aug 2018 4:39 pm
Operator : DT
Sample : J072607-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Aug 15 08:53:09 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration

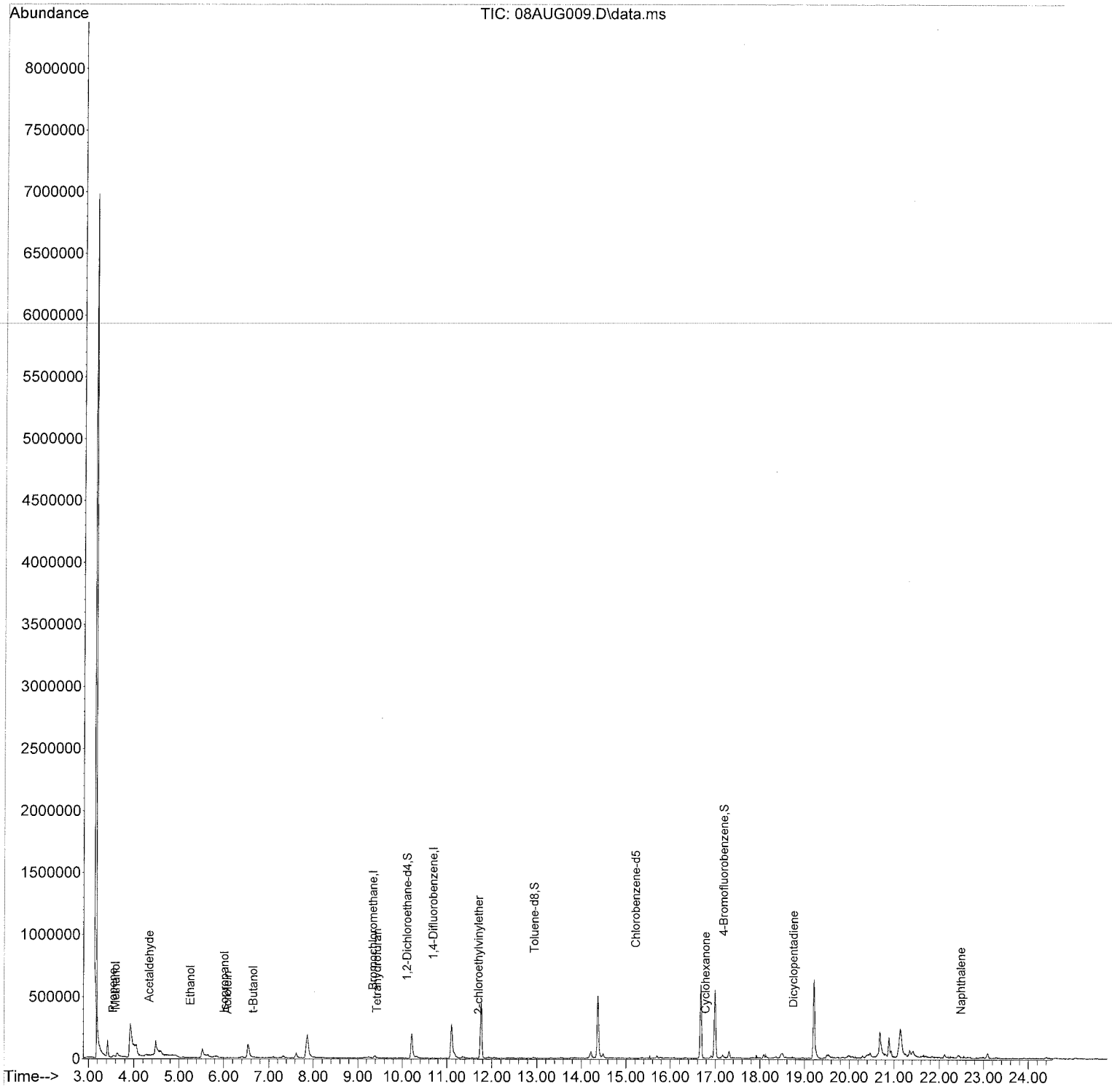
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	86133	10.00	ppbv	0.02
23) 1,4-Difluorobenzene	10.685	114	412905	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.204	117	363317	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.098	65	206408	9.41	ppbv	0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 94.10%			
29) Toluene-d8	12.935	98	429685	10.30	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.00%			
32) 4-Bromofluorobenzene	17.178	95	308030	10.05	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 100.50%			
Target Compounds						Qvalue
2) Propene	3.539	41	8037	1.02	ppbv #	62
5) Methanol	3.592	31	226	0.12	ppbv #	1
6) Acetaldehyde	4.333	43	1589	0.59	ppbv #	39
7) Ethanol	5.258	45	62510	19.08	ppbv	98
9) Isopropanol	6.009	45	13901	0.92	ppbv #	73
10) Acrolein	6.074	56	2143	0.55	ppbv #	63
11) t-Butanol	6.642	59	5062	0.31	ppbv	94
20) Tetrahydrofuran	9.426	72	968	0.18	ppbv #	3
28) 2-chloroethylvinylether	11.702	63	112	5.79	ppbv #	100
31) Cyclohexanone	16.775	55	1804	0.15	ppbv #	25
33) Dicyclopentadiene	18.742	66	771	0.94	ppbv #	51
34) Naphthalene	22.484	128	4957	0.11	ppbv #	80

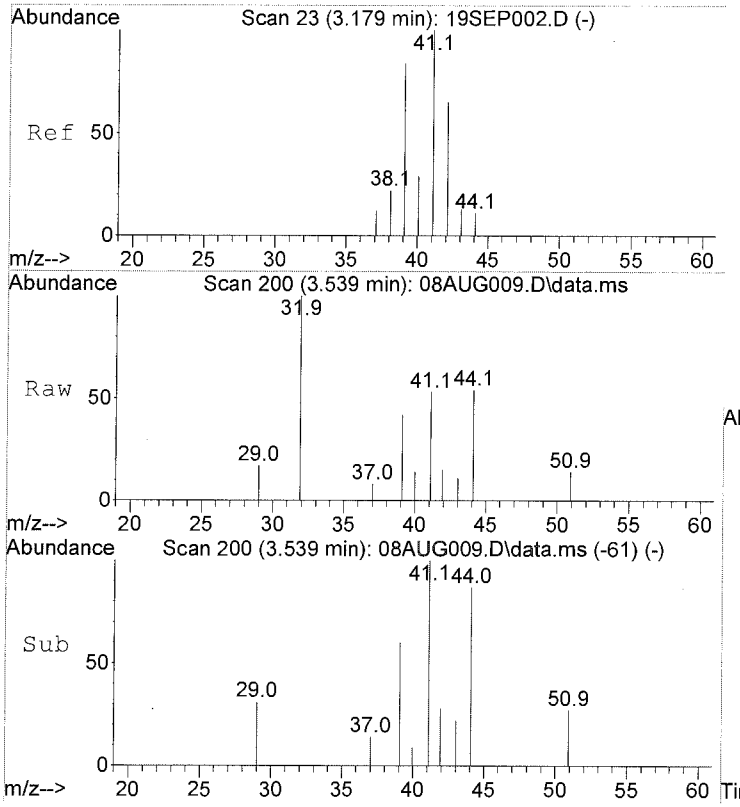
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG009.D
Acq On : 8 Aug 2018 4:39 pm
Operator : DT
Sample : J072607-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Aug 15 08:53:09 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration

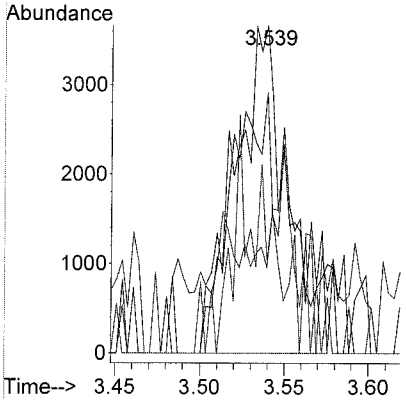


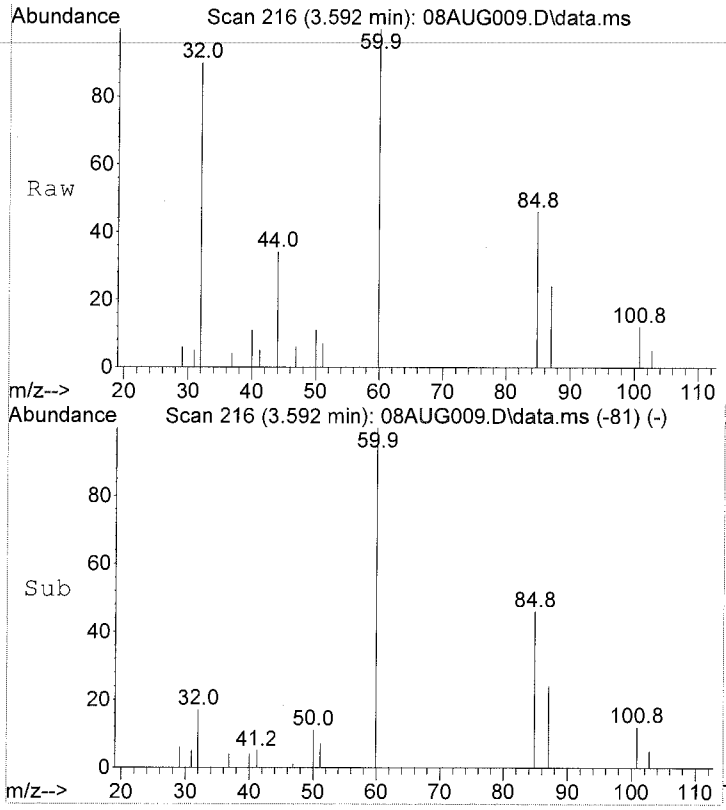


#2
Propene
Concen: 1.02 ppbv
RT: 3.539 min Scan# 200
Delta R.T. 0.055 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 41 Resp: 8037

Ion	Ratio	Lower	Upper
41	100		
39	92.5	65.4	98.0
42	0.0	53.8	80.6#
40	27.4	21.2	31.8

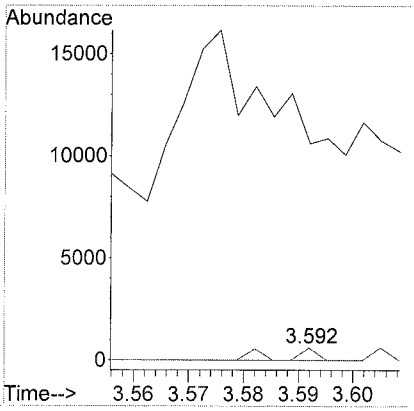


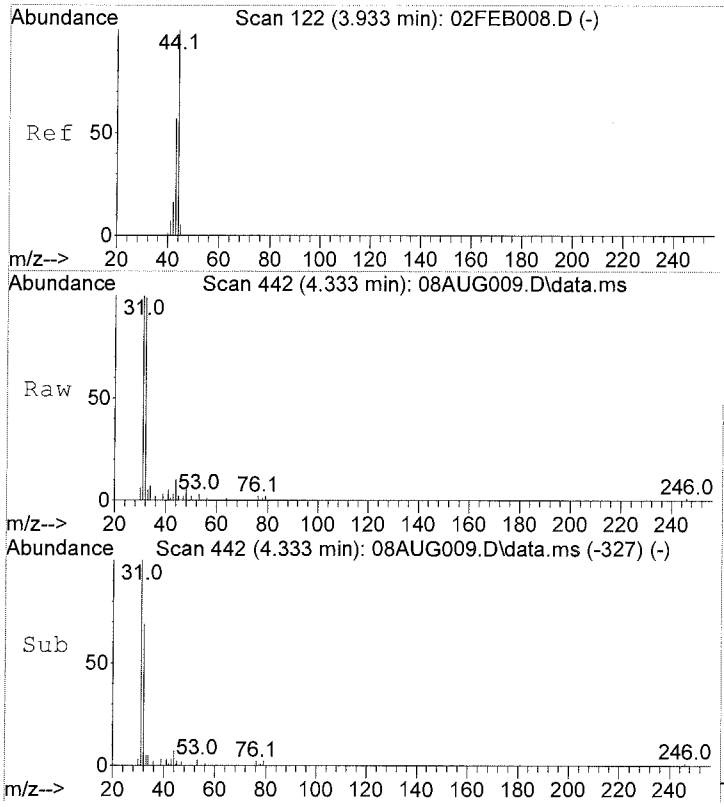


#5
Methanol
Concen: 0.12 ppbv
RT: 3.592 min Scan# 216
Delta R.T. 0.043 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 31 Resp: 226

Ion	Ratio	Lower	Upper
31	100		
32	11442.5	63.7	95.5#
31	100.0	10.2	15.2#

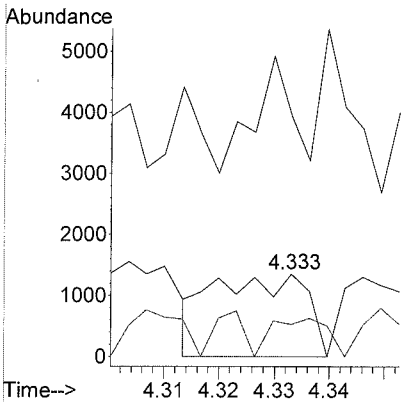


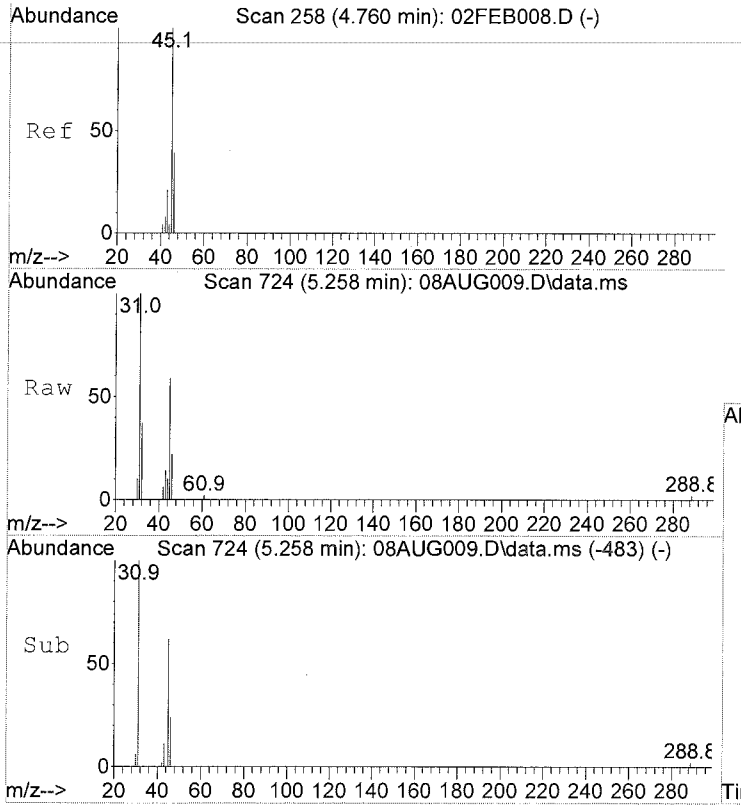


#6
Acetaldehyde
Concen: 0.59 ppbv
RT: 4.333 min Scan# 442
Delta R.T. -0.023 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 43 Resp: 1589

Ion	Ratio	Lower	Upper
43	100		
44	136.0	223.3	263.3#
42	60.5	12.1	52.1#

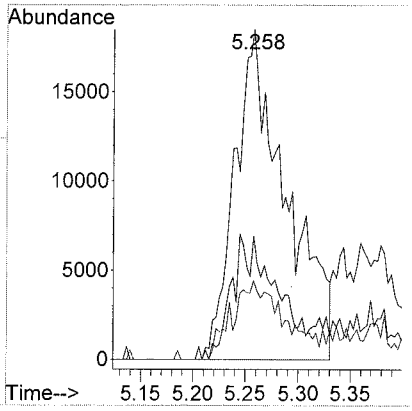


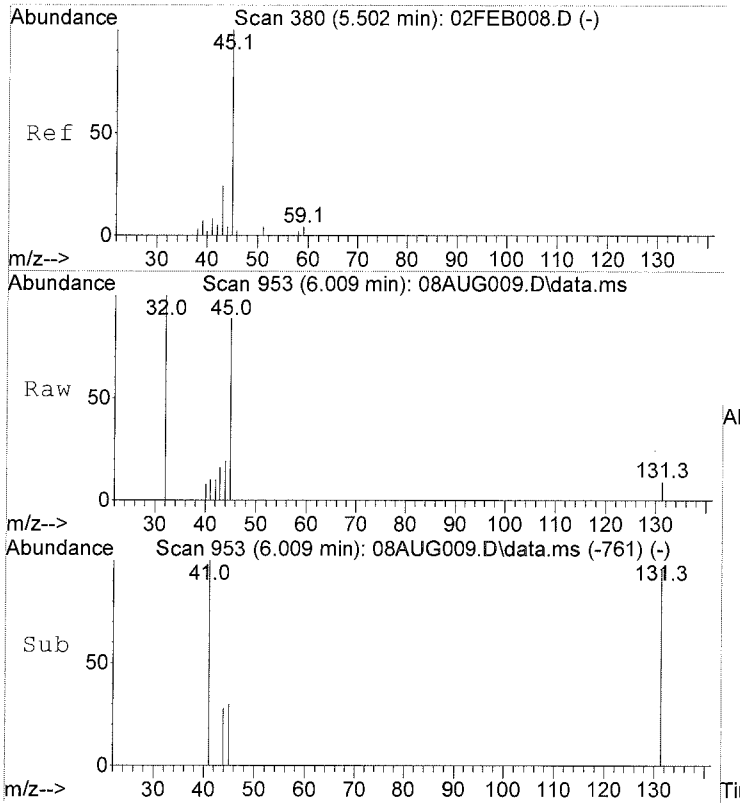


#7
Ethanol
Concen: 19.08 ppbv
RT: 5.258 min Scan# 724
Delta R.T. -0.010 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 45 Resp: 62510

Ion	Ratio	Lower	Upper
45	100		
46	36.4	30.1	45.1
43	24.0	20.2	30.2

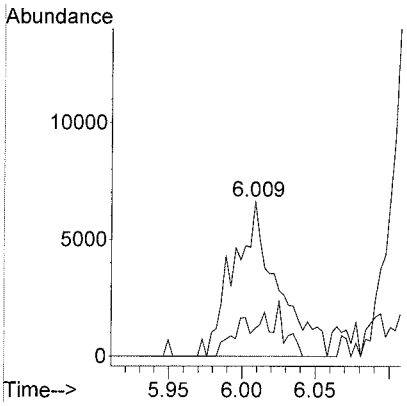


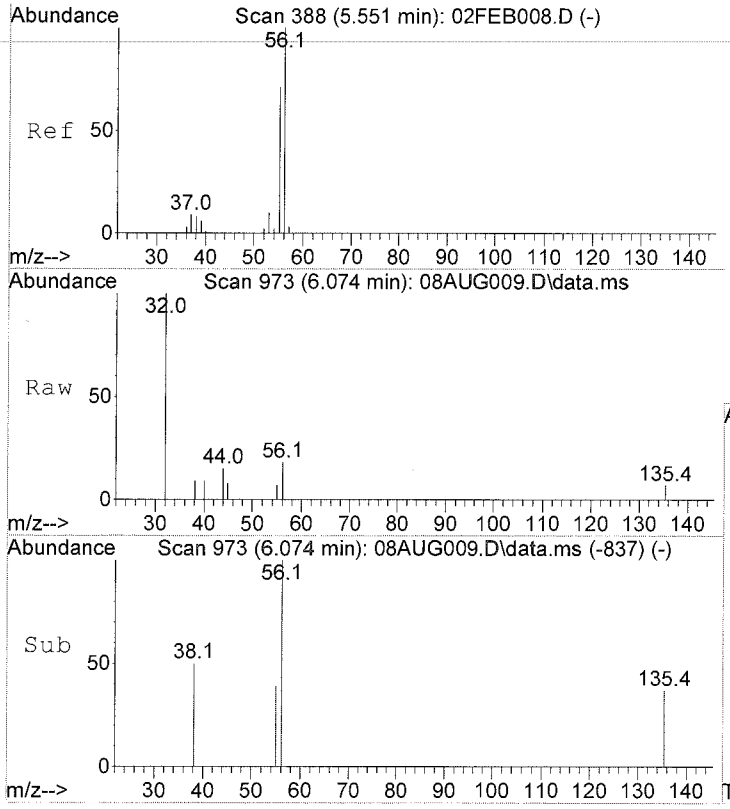


#9
Isopropanol
Concen: 0.92 ppbv
RT: 6.009 min Scan# 953
Delta R.T. 0.030 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 45 Resp: 13901

Ion	Ratio	Lower	Upper
45	100		
43	10.3	18.8	28.2#

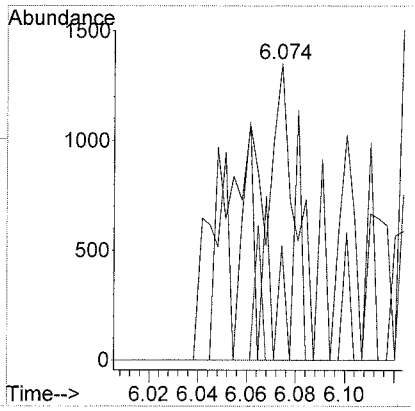


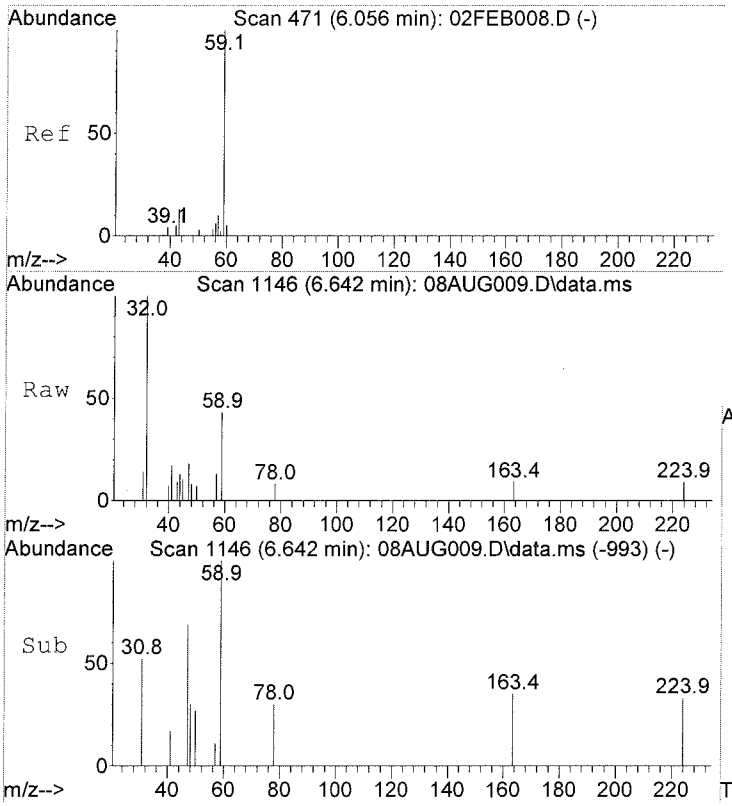


#10
Acrolein
Concen: 0.55 ppbv
RT: 6.074 min Scan# 973
Delta R.T. 0.046 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 56 Resp: 2143

Ion	Ratio	Lower	Upper
56	100		
55	38.6	56.1	84.1#
57	0.0	3.8	5.8#

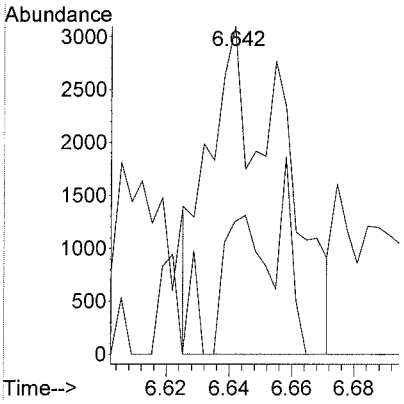


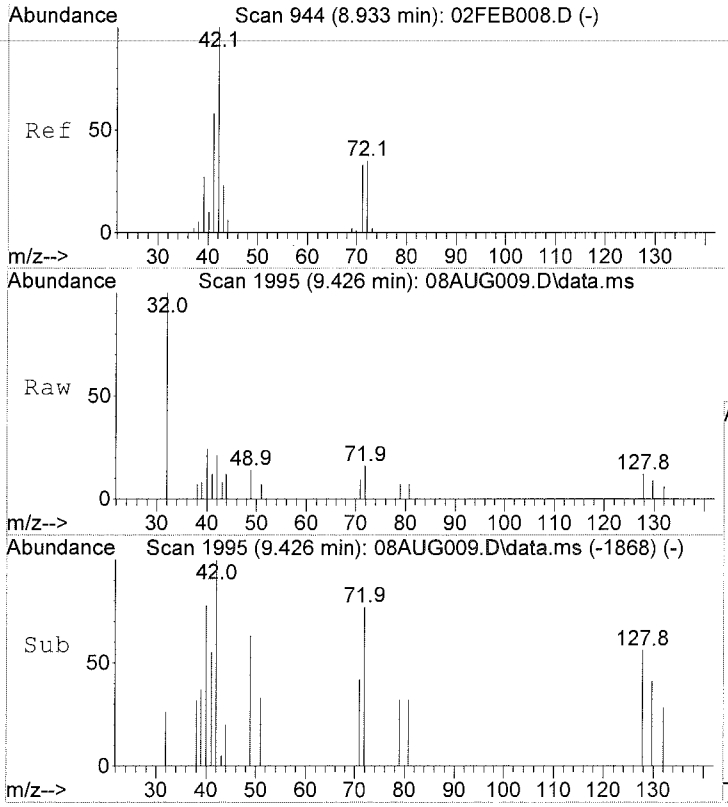


#11
t-Butanol
Concen: 0.31 ppbv
RT: 6.642 min Scan# 1146
Delta R.T. 0.102 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 59 Resp: 5062

Ion	Ratio	Lower	Upper
59	100		
41	32.7	23.5	35.3

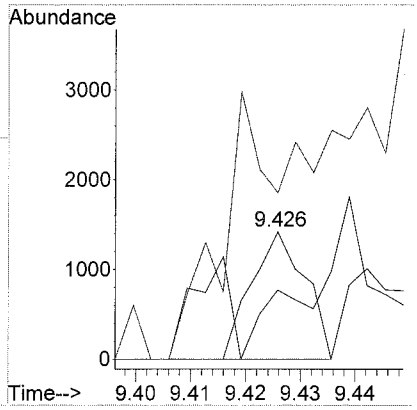


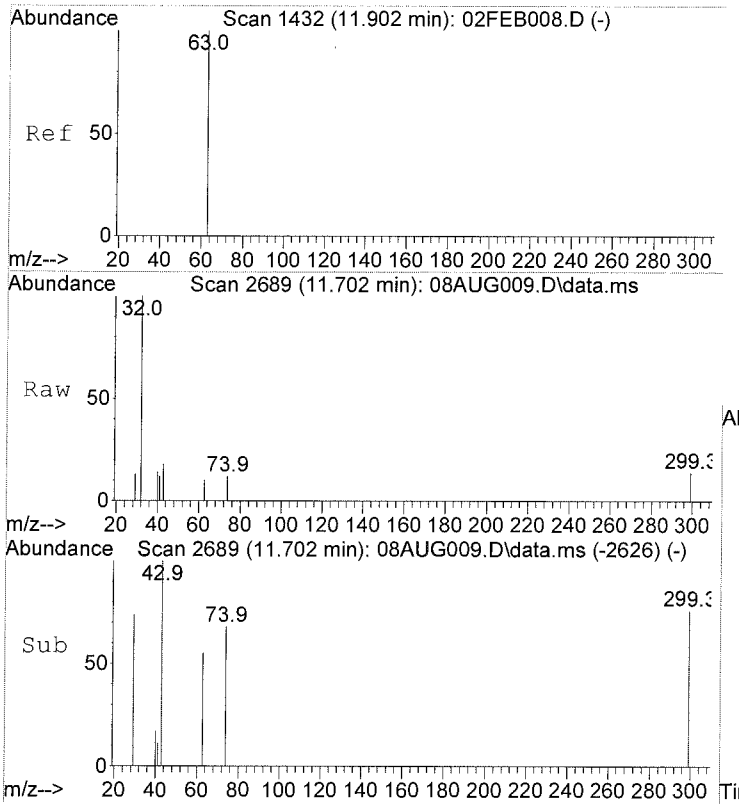


#20
Tetrahydrofuran
Concen: 0.18 ppbv
RT: 9.426 min Scan# 1995
Delta R.T. 0.017 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 72 Resp: 968

Ion	Ratio	Lower	Upper
72	100		
71	64.7	75.3	112.9#
42	0.0	153.0	229.6#

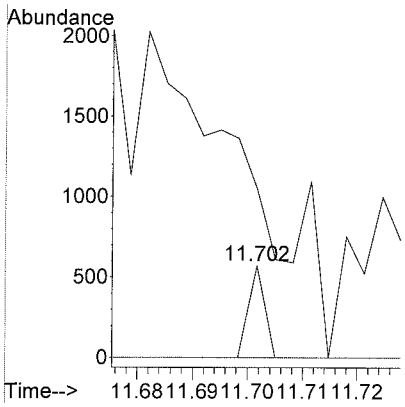


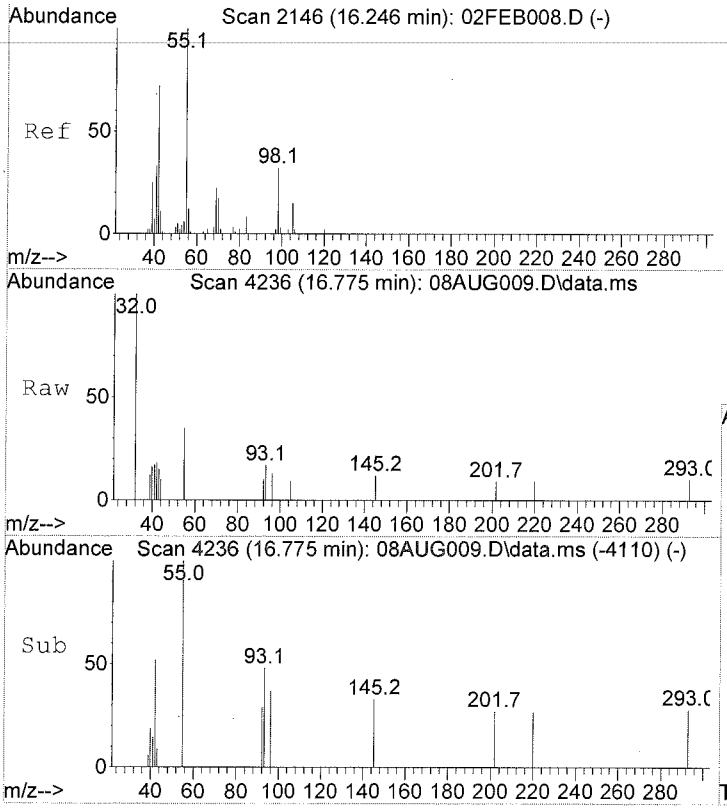


#28
2-chloroethylvinylether
Concen: 5.79 ppbv
RT: 11.702 min Scan# 2689
Delta R.T. 0.007 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 63 Resp: 112

Ion	Ratio	Lower	Upper
63	100		
43	627.7	0.0	0.0#
82	0.0	0.0	0.0

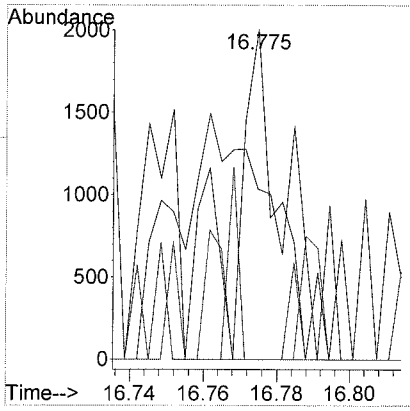


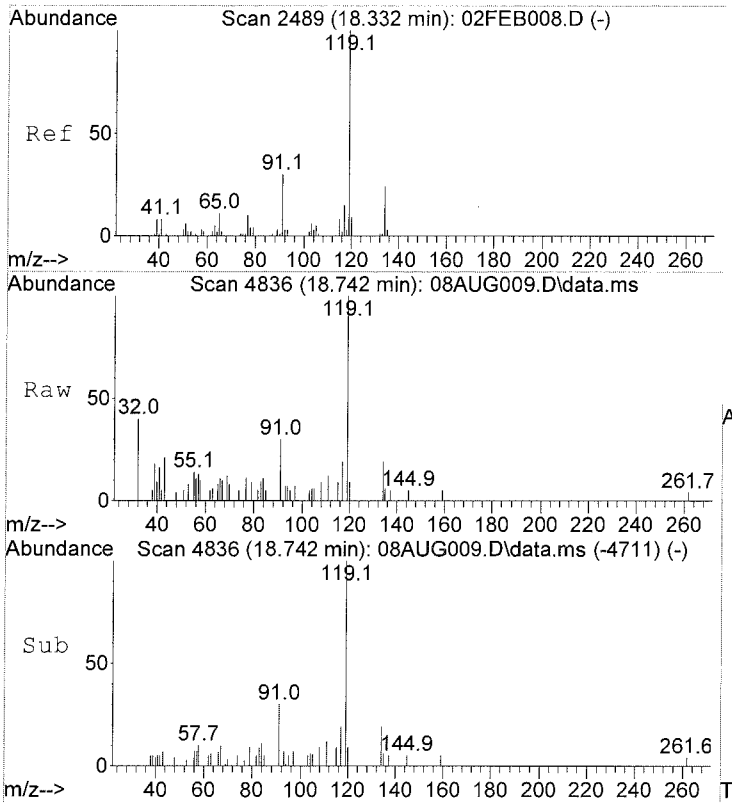


#31
Cyclohexanone
Concen: 0.15 ppbv
RT: 16.775 min Scan# 4236
Delta R.T. 0.013 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 55 Resp: 1804

Ion	Ratio	Lower	Upper
55	100		
42	166.7	56.6	85.0#
69	23.7	25.0	37.4#
98	12.7	39.7	59.5#

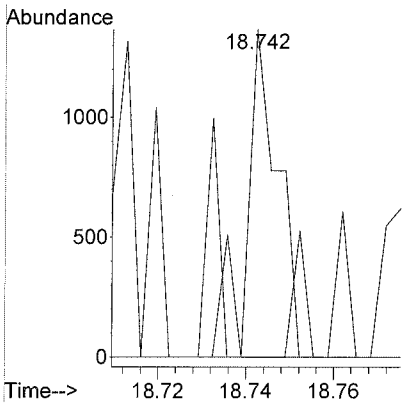


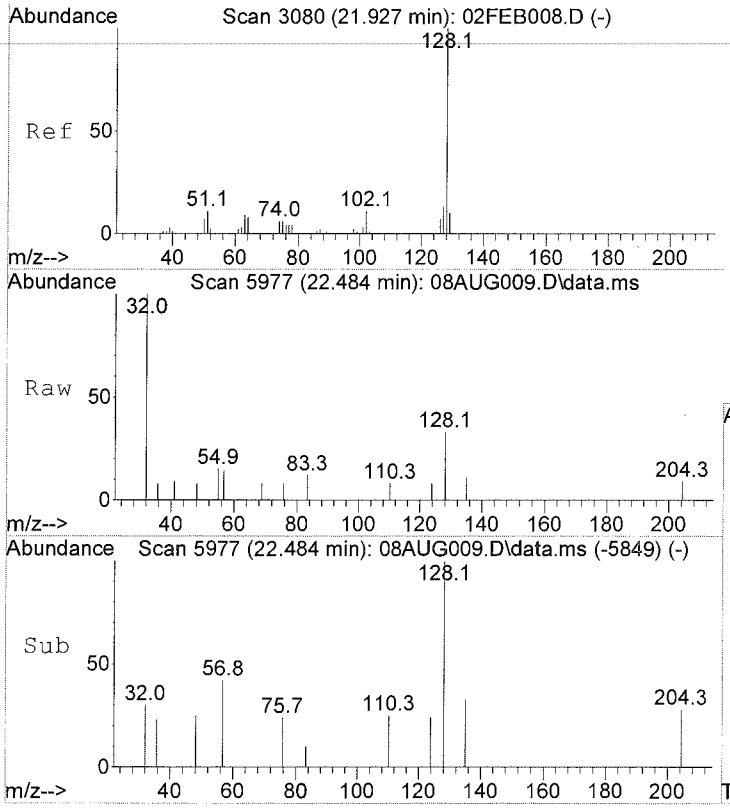


#33
Dicyclopentadiene
Concen: 0.94 ppbv
RT: 18.742 min Scan# 4836
Delta R.T. 0.010 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion: 66 Resp: 771

Ion	Ratio	Lower	Upper
66	100		
133	13.4	36.5	54.7#

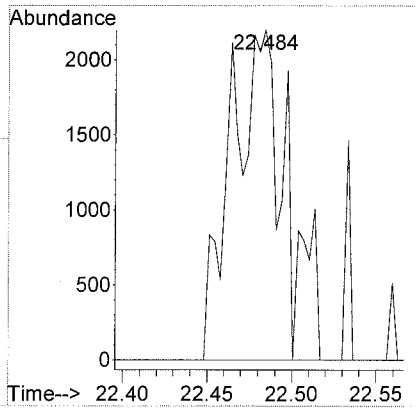




#34
Naphthalene
Concen: 0.11 ppbv
RT: 22.484 min Scan# 5977
Delta R.T. 0.020 min
Lab File: 08AUG009.D
Acq: 8 Aug 2018 4:39 pm

Tgt Ion:128 Resp: 4957

Ion	Ratio	Lower	Upper
128	100		
126	0.0	5.4	8.2#



3. Initial Calibration

a. ICAL Summary
b. Results/Chromatograms

Default Initial Calibration Criteria:

90% of target compounds must have RSD <30%
All target compounds must have RSD <50%

(This criteria superceded by any project specific criteria)

Method Path : C:\msdchem\1\methods\
Method File : TO180625.M
Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
Last Update : Wed Jun 27 08:05:18 2018
Response Via : Initial Calibration

Calibration Files
1.0 =25JUN005.D 2.5 =25JUN007.D 5 =25JUN008.D 7 =25JUN009.D 10 =26JUN002.D 25 =26JUN003.D 100 =26JUN004.D
250 =26JUN005.D

		Compound	1.0	2.5	5	7	10	25	100	250	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------									
2)		Dichlorodifluo...	3.964	4.210	4.126	4.052	3.746	3.628	3.306	2.239	3.659	17.66
3)		Chloromethane	1.363	0.867	1.048	0.942	0.883	0.910	0.945	0.718	0.959	19.55
4)		1,2-Cl-1,1,2,2...	3.431	3.634	3.548	3.511	3.251	3.228	2.970	2.084	3.207	15.64
5)		Vinyl Chloride	0.761	0.893	1.065	0.931	0.911	1.005	0.991	0.735	0.911	12.65
6)		Bromomethane	0.835	0.607	0.368	0.764	0.734	0.488	0.787	0.529	0.639	26.08
7)		Chloroethane	0.221	0.222	0.201	0.221	0.199	0.194	0.183	0.138	0.197	14.17
8)		Trichlorofluor...	4.096	4.045	4.264	4.211	3.800	3.634	3.419	2.353	3.728	16.84
9)	M	1,1-Dichloroet...	2.505	2.456	2.486	2.469	2.359	2.374	2.282	1.648	2.322	12.18
10)		Carbon Disulfide	2.326	2.308	2.702	2.277	2.707	2.709	2.646	1.929	2.451	11.66
11)		1,1,2-Cl 1,2,2...	2.089	2.144	2.162	2.084	1.930	1.950	1.789	1.266	1.927	15.32
12)		Acetone	2.923	2.848	2.736	2.687	2.341	2.362	2.381	1.727	2.501	15.46
13)	M	Methylene Chlo...	1.164	1.164	1.123	1.147	1.052	1.058	1.045	0.762	1.064	12.43
14)		t-1,2-Dichloro...	0.944	1.091	1.117	1.132	1.034	1.096	1.074	0.769	1.032	11.79
15)		1,1-Dichloroet...	2.638	2.751	2.634	2.690	2.535	2.523	2.389	1.671	2.479	13.92
16)		Vinyl Acetate	3.193	4.146	4.606	4.741	4.776	5.172	5.173	3.648	4.432	16.11
17)		c-1,2-Dichloro...	1.150	1.334	1.319	1.329	1.317	1.261	1.203	0.839	1.219	13.74
18)		2-Butanone	0.528	0.594	0.680	0.642	0.648	0.640	0.628	0.447	0.601	12.79
19)		t-Butyl Methyl...	3.415	3.521	3.736	3.767	3.657	3.761	3.572	2.506	3.492	11.95
20)	t	Chloroform	3.291	3.412	3.401	3.365	3.082	3.100	2.958	2.080	3.086	14.25
21)		1,1,1-Trichlor...	3.056	3.230	3.316	3.275	3.007	3.084	2.980	2.097	3.005	12.91
22)		1,1-Dichloropr...	1.692	1.679	1.756	1.848	1.740	1.747	1.704	1.233	1.675	11.11
23)	t	Carbon Tetrach...	2.670	3.501	2.946	2.991	2.760	2.796	2.678	1.810	2.769	17.02
24)	I	1,4-Difluorobenzene	----------ISTD----------									
25)	T	Benzene	1.124	0.952	0.938	0.932	0.908	0.876	0.882	0.809	0.928	9.85
26)	S	1,2-Dichloroet...	0.533	0.512	0.517	0.512	0.521	0.521	0.544	0.601	0.532	5.58
27)		1,2-Dichloroet...	0.668	0.514	0.530	0.536	0.522	0.507	0.505	0.451	0.529	11.66
28)	M	Trichloroethene	0.378	0.345	0.339	0.337	0.347	0.327	0.331	0.296	0.338	6.70
29)		1,2-Dichloropr...	0.331	0.325	0.316	0.314	0.330	0.318	0.331	0.311	0.322	2.53
30)		Bromodichlorom...	0.714	0.684	0.703	0.708	0.709	0.695	0.713	0.623	0.694	4.38
31)		Dibromomethane	0.342	0.299	0.297	0.316	0.303	0.295	0.301	0.267	0.302	6.95
32)		c-1,3-Dichloro...	0.327	0.383	0.417	0.413	0.445	0.480	0.539	0.509	0.439	15.76
33)		4-Methyl-2-Pen...	0.752	0.710	0.765	0.760	0.754	0.785	0.838	0.781	0.768	4.73
34)	S	Toluene-d8	1.025	1.005	1.006	0.965	1.006	1.006	1.034	1.030	1.010	2.15
35)	M	Toluene	1.164	1.086	1.061	1.016	1.032	1.008	1.021	0.909	1.037	7.00

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Method Path : C:\msdchem\1\methods\
Method File : TO180625.M
Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm

		ISTD									
I	Chlorobenzene-d5										
	t-1,3-Dichloro...	0.285	0.351	0.429	0.434	0.477	0.510	0.663	0.657	0.476	28.15
	1,1,2-Trichlor...	0.526	0.470	0.459	0.462	0.440	0.415	0.439	0.403	0.452	8.37
	1,3-Dichloropr...	0.572	0.498	0.534	0.579	0.573	0.554	0.602	0.575	0.561	5.68
	Tetrachloroethene	0.682	0.614	0.608	0.578	0.573	0.542	0.582	0.534	0.589	7.92
	2-Hexanone	0.371	0.384	0.453	0.437	0.475	0.458	0.534	0.503	0.452	12.26
	Dibromochlorom...	0.584	0.563	0.626	0.648	0.649	0.638	0.772	0.684	0.645	9.87
t	1,2-Dibromoethane	0.611	0.572	0.640	0.623	0.599	0.591	0.679	0.625	0.618	5.34
	Chlorobenzene	1.155	1.054	1.053	0.985	0.951	0.904	0.980	0.884	0.996	8.93
	1,1,1,2-Tetrac...	0.315	0.303	0.346	0.389	0.370	0.382	0.395	0.372	0.359	9.53
T	Ethylbenzene	1.773	1.783	1.819	1.751	1.642	1.606	1.721	1.547	1.705	5.64
T	p,&m-Xylene	1.462	1.475	1.508	1.418	1.366	1.309	1.311	1.044	1.362	10.88
T	o-Xylene	1.272	1.330	1.420	1.392	1.356	1.312	1.407	1.240	1.341	4.82
	Styrene	0.854	0.894	0.983	0.894	0.887	0.860	0.947	0.866	0.898	5.01
	Bromoform	0.359	0.370	0.422	0.469	0.492	0.512	0.770	0.697	0.511	29.12
	Isopropyl benzene	1.246	1.208	1.294	1.497	1.424	1.352	1.355	1.218	1.324	7.73
M	1,1,2,2-Tetrac...	0.944	0.941	0.972	0.808	0.813	0.791	0.984	0.901	0.894	8.83
S	4-Bromofluorob...	0.574	0.573	0.568	0.565	0.584	0.572	0.608	0.612	0.582	3.10
	Benzyl Chloride	0.439	0.400	0.512	0.507	0.596	0.693	1.097		0.606	39.09
	1,2,3-Trichlor...	0.249	0.201	0.213	0.241	0.229	0.221	0.238	0.214	0.226	7.34
	n-Propyl Benzene	1.466	1.461	1.563	1.878	1.816	1.739	1.745	1.471	1.642	10.42
	Bromobenzene	0.820	0.756	0.813	0.928	0.913	0.860	0.874	0.770	0.842	7.50
	4-Ethyl Toluene	1.788	1.860	1.946	1.765	1.761	1.710	1.868	1.591	1.786	6.09
T	1,3,5-Trimethy...	1.594	1.742	1.716	1.559	1.495	1.427	1.511	1.267	1.539	9.98
	2-Chlorotoluene	1.358	1.301	1.319	1.464	1.420	1.338	1.313	1.090	1.325	8.34
	4-Chlorotoluene	1.050	1.033	1.042	1.254	1.221	1.178	1.210	1.095	1.135	7.94
	tert-Butylbenzene	0.919	1.013	1.093	1.225	1.246	1.209	1.222	1.080	1.126	10.58
	1,2,4-Trimethy...	1.694	1.627	1.719	1.513	1.528	1.459	1.602	1.344	1.561	8.00
	sec-Butylbenzene	1.522	1.486	1.548	1.848	1.814	1.729	1.616	1.409	1.621	9.85
	p-Isopropyltol...	0.980	0.986	1.078	1.302	1.316	1.270	1.254	1.106	1.162	12.06
	1,3-Dichlorobe...	0.971	0.922	0.959	0.816	0.775	0.744	0.862	0.775	0.853	10.41
	1,4-Dichlorobe...	0.991	0.928	0.936	0.785	0.771	0.745	0.871	0.784	0.851	10.82
	n-Butylbenzene	1.079	1.134	1.217	1.467	1.459	1.427	1.440	1.254	1.310	12.02
	1,2-Dichlorobe...	0.907	0.896	0.877	0.795	0.719	0.710	0.829	0.755	0.811	9.66
	1,2-Dibromo-3-...	0.184	0.171	0.165	0.245	0.252	0.262	0.312	0.311	0.238	24.77
	1,2,4-Trichlor...	0.638	0.604	0.669	0.629	0.650	0.663	0.766	0.726	0.668	7.95
	Hexachlorobuta...	0.890	0.764	0.731	0.782	0.769	0.734	0.666	0.600	0.742	11.51

#) = Out of Range

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Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN005.D
Acq On : 25 Jun 2018 1:40 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 14:04:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	103796	10.00	ppbv	0.02
24) 1,4-Difluorobenzene	10.682	114	460293	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.204	117	362503	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.095	65	245157	11.35	ppbv	0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 113.50%			
34) Toluene-d8	12.931	98	471958	10.48	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.80%			
53) 4-Bromofluorobenzene	17.181	174	208114	9.92	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.598	85	41149	1.16	ppbv	90
3) Chloromethane	4.011	50	14144	1.46	ppbv	75
4) 1,2-Cl-1,1,2,2-F ethan...	3.834	85	35617	1.06	ppbv	86
5) Vinyl Chloride	4.228	62	7902	0.85	ppbv	94
6) Bromomethane	4.920	94	8669	1.06	ppbv	76
7) Chloroethane	5.061	66	2292	1.13	ppbv #	27
8) Trichlorofluoromethane...	5.517	101	42518	1.23	ppbv	93
9) 1,1-Dichloroethene	6.409	61	26003	1.11	ppbv	79
10) Carbon Disulfide	7.107	76	24148	0.90	ppbv	74
11) 1,1,2-Cl 1,2,2-F ethan...	6.228	151	21679	1.08	ppbv #	63
12) Acetone	6.163	43	30342	1.10	ppbv	94
13) Methylene Chloride	7.032	84	4161	0.39	ppbv	83
14) t-1,2-Dichloroethene	7.540	96	9795	0.91	ppbv	76
15) 1,1-Dichloroethane	8.081	63	27381	1.07	ppbv	86
16) Vinyl Acetate	8.075	43	33147	0.63	ppbv	82
17) c-1,2-Dichloroethene	8.921	96	11934	0.91	ppbv	81
18) 2-Butanone	8.639	72	5485	0.82	ppbv	30
19) t-Butyl Methyl Ether	7.399	73	35446	0.86	ppbv	97
20) Chloroform	9.140	83	34158	1.12	ppbv	76
21) 1,1,1-Trichloroethane	9.763	97	31716	1.02	ppbv	85
22) 1,1-Dichloropropene	9.993	75	17561	0.99	ppbv	83
23) Carbon Tetrachloride	10.137	117	27718	1.04	ppbv	78
25) Benzene	10.321	78	51744	1.18	ppbv	96
27) 1,2-Dichloroethane	10.226	62	30735	1.44	ppbv	93
28) Trichloroethene	11.210	130	17377	1.13	ppbv	67
29) 1,2-Dichloropropane	11.413	63	15241	1.00	ppbv	88
30) Bromodichloromethane	11.718	83	32852	1.08	ppbv	70
31) Dibromomethane	11.774	93	15729	1.20	ppbv	100
32) c-1,3-Dichloropropene	12.505	75	15068	0.65	ppbv	83
33) 4-Methyl-2-Pentanone	12.226	43	34608	0.93	ppbv	77
35) Toluene	13.049	91	53588	1.09	ppbv	95
37) t-1,3-Dichloropropene	13.210	75	10321	0.50	ppbv	90
38) 1,1,2-Trichloroethane	13.456	97	19081	1.22	ppbv	73
39) 1,3-Dichloropropane	13.826	76	20724	1.01	ppbv	97
40) Tetrachloroethene	14.076	166	24740	1.17	ppbv	78
41) 2-Hexanone	13.499	58	13436	0.77	ppbv	80

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN005.D
Acq On : 25 Jun 2018 1:40 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 14:04:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

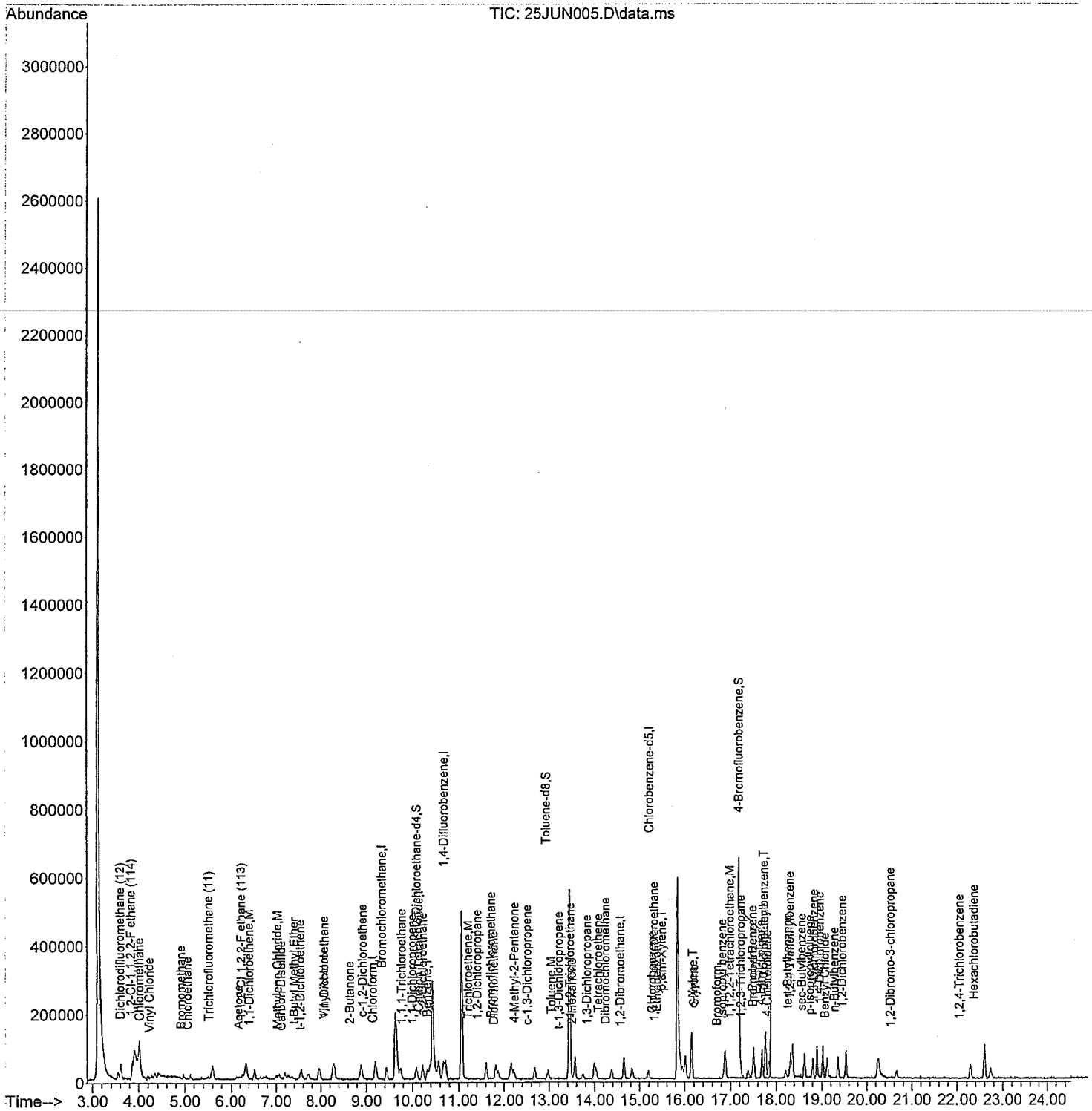
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.236	129	21174	0.91	ppbv		92
43) 1,2-Dibromoethane	14.568	107	22139	0.99	ppbv		84
44) Chlorobenzene	15.269	112	41876	1.21	ppbv		86
45) 1,1,1,2-Tetrachloroethane	15.312	131	11428	0.83	ppbv		86
46) Ethylbenzene	15.378	91	64280	1.09	ppbv		87
47) p,&m-Xylene	15.492	91	106030	2.25	ppbv		96
48) o-Xylene	16.181	91	46113	0.97	ppbv		91
49) Styrene	16.201	104	30965	0.96	ppbv		85
50) Bromoform	16.699	173	13005	0.63	ppbv		79
51) Isopropyl benzene	16.817	105	45175	0.94	ppbv		93
52) 1,1,2,2-Tetrachloroethane	16.984	83	34227	1.14	ppbv		87
54) Benzyl Chloride	19.070	91	15915	0.45	ppbv		90
55) 1,2,3-Trichloropropane	17.227	110	9034	1.15	ppbv	#	63
56) n-Propyl Benzene	17.486	91	53127	0.86	ppbv		89
57) Bromobenzene	17.493	77	29728	1.00	ppbv		84
58) 4-Ethyl Toluene	17.663	105	64826	1.04	ppbv		93
59) 1,3,5-Trimethylbenzene	17.729	105	57781	1.11	ppbv		95
60) 2-Chlorotoluene	17.739	91	49222	1.05	ppbv		100
61) 4-Chlorotoluene	17.804	91	38049	0.91	ppbv		98
62) tert-Butylbenzene	18.257	119	33297	0.76	ppbv		93
63) 1,2,4-Trimethylbenzene	18.303	105	61393	1.15	ppbv		98
64) sec-Butylbenzene	18.562	105	55168	0.91	ppbv		95
65) p-Isopropyltoluene	18.739	119	35543	0.78	ppbv		84
66) 1,3-Dichlorobenzene	18.827	146	35199	1.23	ppbv		90
67) 1,4-Dichlorobenzene	18.949	146	35914	1.25	ppbv		90
68) n-Butylbenzene	19.280	91	39128	0.78	ppbv		99
69) 1,2-Dichlorobenzene	19.447	146	32878	1.21	ppbv		86
70) 1,2-Dibromo-3-chloropr...	20.513	157	6652	0.63	ppbv	#	85
71) 1,2,4-Trichlorobenzene	22.041	180	23134	0.93	ppbv		85
72) Hexachlorobutadiene	22.356	225	32278	1.27	ppbv		92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN005.D
Acq On : 25 Jun 2018 1:40 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 14:04:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN006.D
Acq On : 25 Jun 2018 2:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 14:47:20 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.334	130	97640	10.00	ppbv		0.02
24) 1,4-Difluorobenzene	10.685	114	466867	10.00	ppbv		0.01
36) Chlorobenzene-d5	15.204	117	369974	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.098	65	245384	11.20	ppbv		0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 112.00%				
34) Toluene-d8	12.934	98	478599	10.47	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.70%				
53) 4-Bromofluorobenzene	17.184	174	209036	9.76	ppbv		0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.60%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.608	85	44855	1.34	ppbv		90
3) Chloromethane	4.025	50	8144	0.89	ppbv		95
4) 1,2-Cl-1,1,2,2-F ethan...	3.838	85	34707	1.10	ppbv		83
5) Vinyl Chloride	4.228	62	3372	0.39	ppbv		79
6) Bromomethane	4.933	94	8021	1.05	ppbv		80
7) Chloroethane	5.061	66	754	0.40	ppbv	#	1
8) Trichlorofluoromethane...	5.527	101	44281	1.36	ppbv		95
9) 1,1-Dichloroethene	6.412	61	25478	1.16	ppbv		86
10) Carbon Disulfide	7.120	76	26668	1.06	ppbv		100
11) 1,1,2-Cl 1,2,2-F ethan...	6.241	151	22780	1.21	ppbv		88
12) Acetone	6.048	43	4065	0.16	ppbv		97
13) Methylene Chloride	7.038	84	11690	1.16	ppbv		67
14) t-1,2-Dichloroethene	7.543	96	9321	0.92	ppbv		69
15) 1,1-Dichloroethane	8.078	63	28174	1.17	ppbv		79
16) Vinyl Acetate	8.075	43	15712	0.32	ppbv		84
17) c-1,2-Dichloroethene	8.914	96	13000	1.05	ppbv	#	65
18) 2-Butanone	8.658	72	4518	0.72	ppbv		71
20) Chloroform	9.144	83	34295	1.20	ppbv		98
21) 1,1,1-Trichloroethane	9.760	97	31920	1.09	ppbv		91
22) 1,1-Dichloropropene	9.986	75	17679	1.06	ppbv		88
23) Carbon Tetrachloride	10.154	117	27113	1.08	ppbv		74
25) Benzene	10.321	78	51705	1.16	ppbv		98
27) 1,2-Dichloroethane	10.232	62	27225	1.26	ppbv		90
28) Trichloroethene	11.210	130	16644	1.06	ppbv		64
29) 1,2-Dichloropropane	11.423	63	14854	0.96	ppbv		79
30) Bromodichloromethane	11.715	83	32251	1.05	ppbv		80
31) Dibromomethane	11.780	93	13667	1.03	ppbv	#	87
32) c-1,3-Dichloropropene	12.495	75	15702	0.66	ppbv		87
33) 4-Methyl-2-Pentanone	12.233	43	30921	0.82	ppbv		73
35) Toluene	13.053	91	54853	1.10	ppbv		73
37) t-1,3-Dichloropropene	13.226	75	10878	0.52	ppbv		94
38) 1,1,2-Trichloroethane	13.456	97	16860	1.06	ppbv		87
39) 1,3-Dichloropropane	13.833	76	18822	0.90	ppbv		99
40) Tetrachloroethene	14.082	166	22870	1.06	ppbv		92
41) 2-Hexanone	13.492	58	12711	0.71	ppbv		94
42) Dibromochloromethane	14.246	129	21918	0.92	ppbv		70

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN006.D
Acq On : 25 Jun 2018 2:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 14:47:20 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

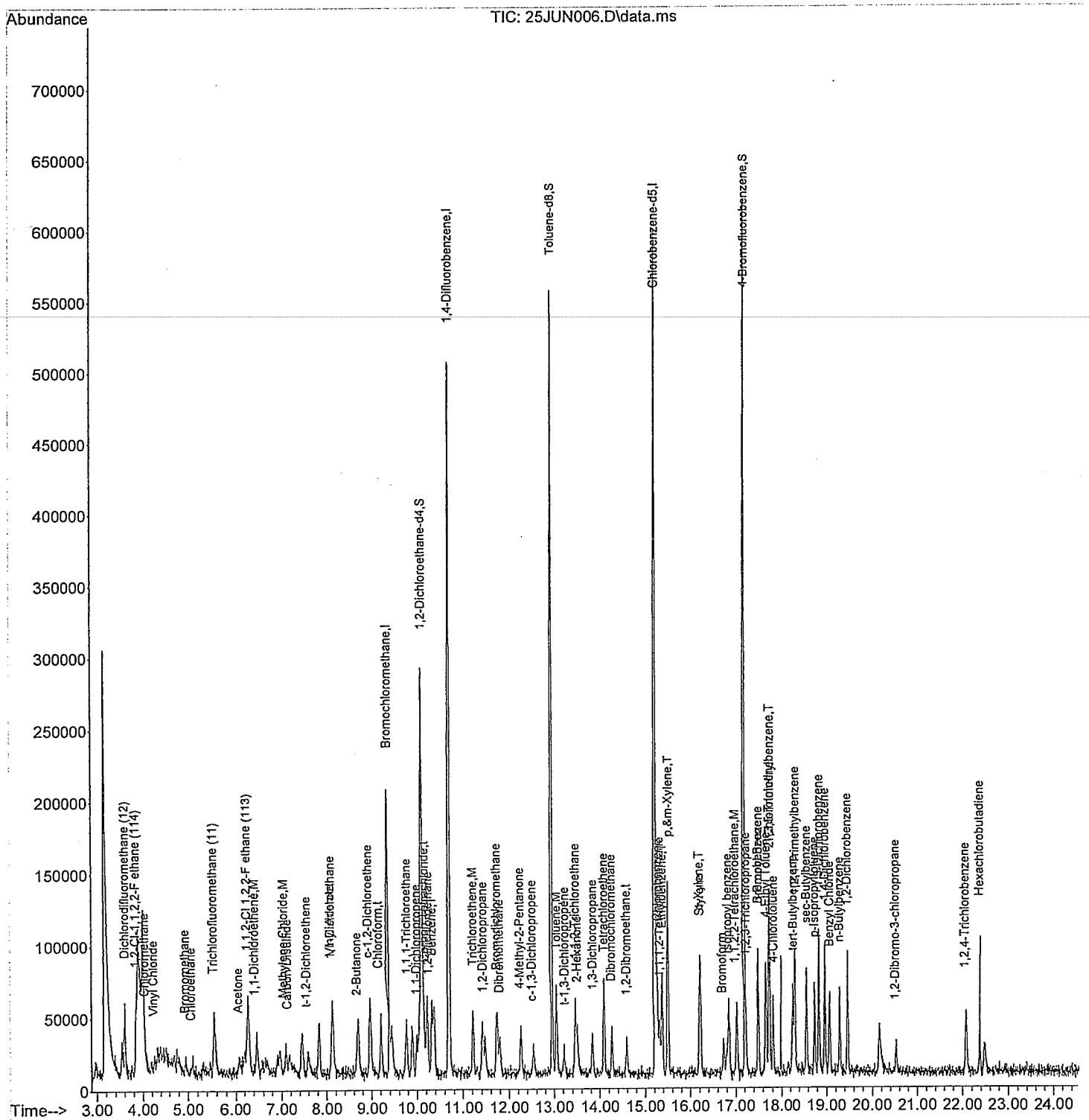
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
43) 1,2-Dibromoethane	14.574	107	22248	0.97	ppbv		89
44) Chlorobenzene	15.266	112	40045	1.14	ppbv		91
45) 1,1,1,2-Tetrachloroethane	15.305	131	12384	0.88	ppbv		92
46) Ethylbenzene	15.371	91	62943	1.04	ppbv		98
47) p,&m-Xylene	15.502	91	106964	2.23	ppbv		94
48) o-Xylene	16.191	91	46082	0.95	ppbv		93
49) Styrene	16.201	104	28497	0.87	ppbv		90
50) Bromoform	16.693	173	13831	0.66	ppbv		79
51) Isopropyl benzene	16.814	105	43832	0.90	ppbv		94
52) 1,1,2,2-Tetrachloroethane	16.975	83	34001	1.11	ppbv		95
54) Benzyl Chloride	19.060	91	13677	0.38	ppbv		78
55) 1,2,3-Trichloropropane	17.224	110	7869	0.98	ppbv	#	52
56) n-Propyl Benzene	17.493	91	54067	0.86	ppbv		82
57) Bromobenzene	17.493	77	30854	1.01	ppbv		90
58) 4-Ethyl Toluene	17.663	105	62032	0.97	ppbv		99
59) 1,3,5-Trimethylbenzene	17.735	105	57491	1.08	ppbv		97
60) 2-Chlorotoluene	17.739	91	48034	1.00	ppbv		90
61) 4-Chlorotoluene	17.814	91	37281	0.88	ppbv		88
62) tert-Butylbenzene	18.260	119	35070	0.78	ppbv		84
63) 1,2,4-Trimethylbenzene	18.303	105	57882	1.06	ppbv		98
64) sec-Butylbenzene	18.558	105	49781	0.80	ppbv		87
65) p-Isopropyltoluene	18.732	119	33872	0.73	ppbv		96
66) 1,3-Dichlorobenzene	18.827	146	36952	1.27	ppbv		86
67) 1,4-Dichlorobenzene	18.955	146	33542	1.14	ppbv		91
68) n-Butylbenzene	19.280	91	35828	0.70	ppbv		96
69) 1,2-Dichlorobenzene	19.450	146	33752	1.22	ppbv		91
70) 1,2-Dibromo-3-chloropr...	20.503	157	5289	0.49	ppbv	#	86
71) 1,2,4-Trichlorobenzene	22.048	180	20133	0.80	ppbv		93
72) Hexachlorobutadiene	22.362	225	28084	1.08	ppbv		79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN006.D
Acq On : 25 Jun 2018 2:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 14:47:20 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN007.D
Acq On : 25 Jun 2018 3:02 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 15:27:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.327	130	98310	10.00	ppbv	0.02
24) 1,4-Difluorobenzene	10.675	114	483498	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.204	117	382667	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.088	65	247454	10.90	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 109.00%			
34) Toluene-d8	12.935	98	485768	10.26	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.60%			
53) 4-Bromofluorobenzene	17.175	174	219423	9.90	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.575	85	103479	3.07	ppbv	98
3) Chloromethane	3.985	50	21314	2.32	ppbv	92
4) 1,2-Cl-1,1,2,2-F ethan...	3.815	85	89317	2.82	ppbv	97
5) Vinyl Chloride	4.212	62	21953	2.50	ppbv	87
6) Bromomethane	4.825	94	336	0.04	ppbv	62
7) Chloroethane	5.035	66	5466	2.85	ppbv #	50
8) Trichlorofluoromethane...	5.500	101	99423	3.03	ppbv	92
9) 1,1-Dichloroethene	6.396	61	60363	2.72	ppbv	93
10) Carbon Disulfide	7.107	76	56727	2.23	ppbv	95
11) 1,1,2-Cl 1,2,2-F ethan...	6.235	151	52683	2.78	ppbv	66
12) Acetone	6.127	43	70001	2.69	ppbv	90
13) Methylene Chloride	7.019	84	28614	2.81	ppbv	86
14) t-1,2-Dichloroethene	7.527	96	26818	2.63	ppbv	85
15) 1,1-Dichloroethane	8.065	63	67601	2.79	ppbv	90
16) Vinyl Acetate	8.065	43	101897	2.06	ppbv	82
17) c-1,2-Dichloroethene	8.904	96	32782	2.63	ppbv	85
18) 2-Butanone	8.629	72	14594	2.31	ppbv	86
19) t-Butyl Methyl Ether	7.383	73	86534	2.21	ppbv	74
20) Chloroform	9.137	83	83860	2.91	ppbv	84
21) 1,1,1-Trichloroethane	9.747	97	79382	2.69	ppbv	88
22) 1,1-Dichloropropene	9.990	75	41271	2.45	ppbv	83
23) Carbon Tetrachloride	10.144	117	68836	2.72	ppbv	83
25) Benzene	10.318	78	115129	2.50	ppbv	94
27) 1,2-Dichloroethane	10.223	62	62155	2.77	ppbv	92
28) Trichloroethene	11.210	130	41722	2.57	ppbv	82
29) 1,2-Dichloropropane	11.403	63	39274	2.44	ppbv	91
30) Bromodichloromethane	11.711	83	82647	2.59	ppbv	81
31) Dibromomethane	11.774	93	36130	2.63	ppbv	97
32) c-1,3-Dichloropropene	12.502	75	46245	1.89	ppbv	80
33) 4-Methyl-2-Pentanone	12.216	43	85877	2.20	ppbv	82
35) Toluene	13.046	91	131258	2.54	ppbv	88
37) t-1,3-Dichloropropene	13.210	75	33540	1.55	ppbv	80
38) 1,1,2-Trichloroethane	13.449	97	44918	2.73	ppbv	86
39) 1,3-Dichloropropane	13.823	76	47672	2.20	ppbv #	88
40) Tetrachloroethene	14.066	166	58712	2.63	ppbv	87
41) 2-Hexanone	13.495	58	36694	1.99	ppbv	77

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN007.D
Acq On : 25 Jun 2018 3:02 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 15:27:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

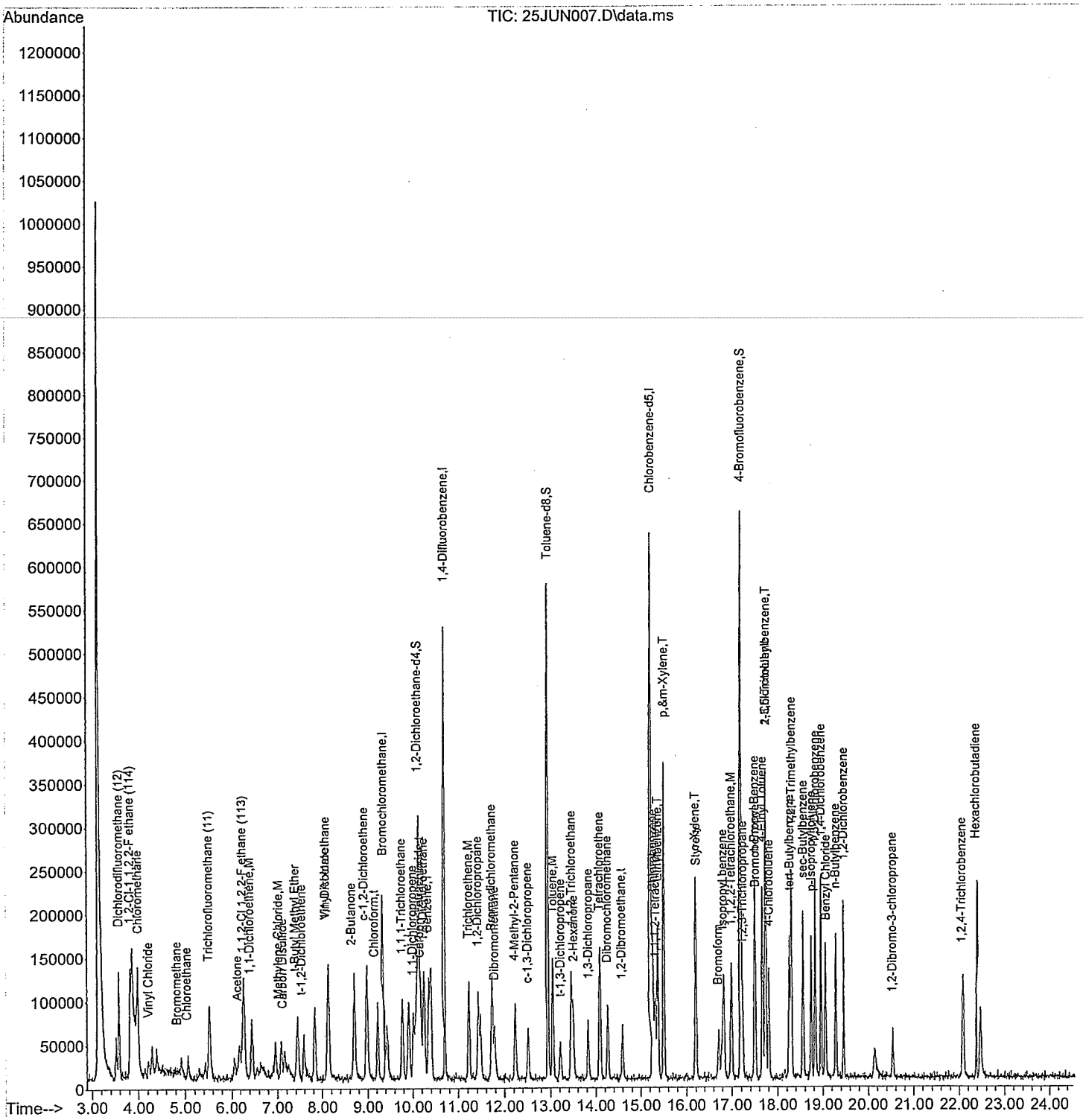
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	53906	2.19	ppbv		93
43) 1,2-Dibromoethane	14.568	107	54689	2.31	ppbv		94
44) Chlorobenzene	15.263	112	100786	2.76	ppbv		94
45) 1,1,1,2-Tetrachloroethane	15.312	131	28998	2.00	ppbv		90
46) Ethylbenzene	15.368	91	170617	2.73	ppbv		86
47) p,&m-Xylene	15.496	91	282161	5.68	ppbv		92
48) o-Xylene	16.184	91	127234	2.52	ppbv		95
49) Styrene	16.204	104	85532	2.52	ppbv		92
50) Bromoform	16.696	173	35353	1.63	ppbv		90
51) Isopropyl benzene	16.804	105	115549	2.29	ppbv		94
52) 1,1,2,2-Tetrachloroethane	16.981	83	90059	2.84	ppbv		90
54) Benzyl Chloride	19.064	91	38314	1.02	ppbv		86
55) 1,2,3-Trichloropropane	17.224	110	19187	2.31	ppbv	#	79
56) n-Propyl Benzene	17.486	91	139791	2.15	ppbv		87
57) Bromobenzene	17.503	77	72285	2.30	ppbv		97
58) 4-Ethyl Toluene	17.657	105	177962	2.70	ppbv		89
59) 1,3,5-Trimethylbenzene	17.732	105	166690	3.02	ppbv		85
60) 2-Chlorotoluene	17.732	91	124433	2.51	ppbv		97
61) 4-Chlorotoluene	17.801	91	98802	2.25	ppbv		89
62) tert-Butylbenzene	18.260	119	96931	2.10	ppbv		95
63) 1,2,4-Trimethylbenzene	18.299	105	155671	2.76	ppbv		97
64) sec-Butylbenzene	18.559	105	142148	2.21	ppbv		98
65) p-Isopropyltoluene	18.736	119	94320	1.96	ppbv		93
66) 1,3-Dichlorobenzene	18.821	146	88214	2.92	ppbv		92
67) 1,4-Dichlorobenzene	18.949	146	88764	2.92	ppbv		94
68) n-Butylbenzene	19.280	91	108451	2.05	ppbv		99
69) 1,2-Dichlorobenzene	19.451	146	85679	3.00	ppbv		92
70) 1,2-Dibromo-3-chloropr...	20.516	157	16384	1.48	ppbv	#	78
71) 1,2,4-Trichlorobenzene	22.051	180	57740	2.21	ppbv		92
72) Hexachlorobutadiene	22.356	225	73068	2.72	ppbv		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN007.D
Acq On : 25 Jun 2018 3:02 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 15:27:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN008.D
Acq On : 25 Jun 2018 3:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 16:09:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.318	130	99547	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.678	114	490739	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.201	117	380259	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.088	65	253662	11.01	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.10%				
34) Toluene-d8	12.931	98	493534	10.27	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.70%				
53) 4-Bromofluorobenzene	17.178	174	216132	9.82	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.20%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.562	85	205389	6.02	ppbv		97
3) Chloromethane	3.966	50	52167	5.60	ppbv		96
4) 1,2-Cl-1,1,2,2-F ethan...	3.798	85	176610	5.50	ppbv		94
5) Vinyl Chloride	4.185	62	53012	5.95	ppbv		81
6) Bromomethane	4.874	94	18292	2.34	ppbv		67
7) Chloroethane	5.038	66	10011	5.16	ppbv	#	15
8) Trichlorofluoromethane...	5.481	101	212219	6.38	ppbv		99
9) 1,1-Dichloroethene	6.389	61	123717	5.50	ppbv		93
10) Carbon Disulfide	7.081	76	134496	5.23	ppbv		96
11) 1,1,2-Cl 1,2,2-F ethan...	6.222	151	107626	5.61	ppbv		81
12) Acetone	6.114	43	136161	5.16	ppbv		83
13) Methylene Chloride	7.022	84	55914	5.42	ppbv		88
14) t-1,2-Dichloroethene	7.514	96	55580	5.39	ppbv		89
15) 1,1-Dichloroethane	8.062	63	131110	5.35	ppbv		94
16) Vinyl Acetate	8.065	43	229258	4.57	ppbv		93
17) c-1,2-Dichloroethene	8.901	96	65633	5.20	ppbv		90
18) 2-Butanone	8.616	72	33824	5.28	ppbv		92
19) t-Butyl Methyl Ether	7.373	73	185944	4.69	ppbv		86
20) Chloroform	9.131	83	169257	5.80	ppbv		94
21) 1,1,1-Trichloroethane	9.750	97	165051	5.53	ppbv		89
22) 1,1-Dichloropropene	9.980	75	87423	5.13	ppbv		88
23) Carbon Tetrachloride	10.128	117	146612	5.72	ppbv		92
25) Benzene	10.311	78	230218	4.93	ppbv		91
27) 1,2-Dichloroethane	10.213	62	130110	5.72	ppbv		97
28) Trichloroethene	11.200	130	83219	5.06	ppbv		86
29) 1,2-Dichloropropane	11.403	63	77523	4.75	ppbv		90
30) Bromodichloromethane	11.715	83	172437	5.32	ppbv		87
31) Dibromomethane	11.764	93	72779	5.21	ppbv		93
32) c-1,3-Dichloropropene	12.495	75	102296	4.12	ppbv		87
33) 4-Methyl-2-Pentanone	12.216	43	187701	4.74	ppbv		84
35) Toluene	13.043	91	260278	4.97	ppbv		97
37) t-1,3-Dichloropropene	13.207	75	81566	3.80	ppbv		94
38) 1,1,2-Trichloroethane	13.453	97	87223	5.33	ppbv		87
39) 1,3-Dichloropropane	13.820	76	101614	4.71	ppbv		96
40) Tetrachloroethene	14.076	166	115633	5.22	ppbv		90
41) 2-Hexanone	13.486	58	86052	4.70	ppbv		94

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN008.D
Acq On : 25 Jun 2018 3:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 16:09:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

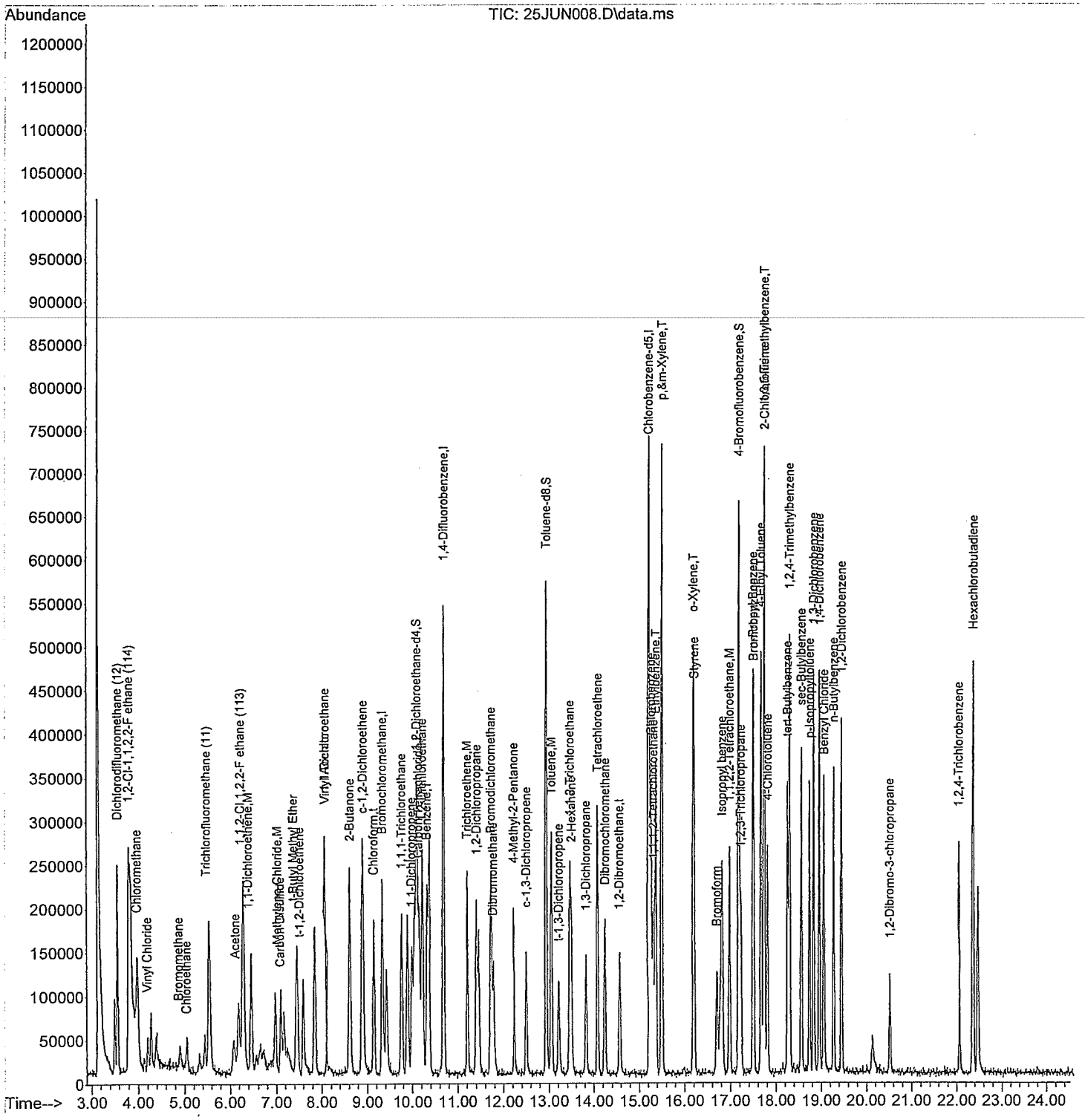
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	118964	4.86	ppbv		95
43) 1,2-Dibromoethane	14.558	107	121775	5.18	ppbv		94
44) Chlorobenzene	15.260	112	200126	5.52	ppbv		96
45) 1,1,1,2-Tetrachloroethane	15.312	131	65794	4.57	ppbv		95
46) Ethylbenzene	15.365	91	345785	5.58	ppbv		93
47) p,&m-Xylene	15.496	91	573284	11.61	ppbv		90
48) o-Xylene	16.184	91	269953	5.39	ppbv		96
49) Styrene	16.204	104	186926	5.55	ppbv		88
50) Bromoform	16.696	173	80320	3.73	ppbv		95
51) Isopropyl benzene	16.811	105	246054	4.90	ppbv		98
52) 1,1,2,2-Tetrachloroethane	16.975	83	184900	5.86	ppbv		98
54) Benzyl Chloride	19.060	91	97422	2.60	ppbv		89
55) 1,2,3-Trichloropropane	17.221	110	40567	4.92	ppbv	#	89
56) n-Propyl Benzene	17.483	91	297222	4.60	ppbv		89
57) Bromobenzene	17.496	77	154591	4.95	ppbv		96
58) 4-Ethyl Toluene	17.660	105	370035	5.64	ppbv		97
59) 1,3,5-Trimethylbenzene	17.729	105	326308	5.95	ppbv		94
60) 2-Chlorotoluene	17.736	91	250768	5.08	ppbv		98
61) 4-Chlorotoluene	17.808	91	198126	4.53	ppbv		100
62) tert-Butylbenzene	18.257	119	207902	4.53	ppbv		94
63) 1,2,4-Trimethylbenzene	18.300	105	326783	5.83	ppbv		96
64) sec-Butylbenzene	18.555	105	294277	4.61	ppbv		99
65) p-Isopropyltoluene	18.736	119	204995	4.29	ppbv		96
66) 1,3-Dichlorobenzene	18.828	146	182264	6.07	ppbv		94
67) 1,4-Dichlorobenzene	18.952	146	177964	5.89	ppbv		93
68) n-Butylbenzene	19.280	91	231318	4.41	ppbv		100
69) 1,2-Dichlorobenzene	19.447	146	166673	5.87	ppbv		89
70) 1,2-Dibromo-3-chloropr...	20.513	157	31422	2.86	ppbv		90
71) 1,2,4-Trichlorobenzene	22.035	180	127229	4.89	ppbv		94
72) Hexachlorobutadiene	22.353	225	139069	5.22	ppbv		91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN008.D
Acq On : 25 Jun 2018 3:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 25 16:09:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN009.D
Acq On : 25 Jun 2018 4:47 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 17:11:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.314	130	101548	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.672	114	490003	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.201	117	375200	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.085	65	251029	10.91	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 109.10%			
34) Toluene-d8	12.928	98	472975	9.86	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.60%			
53) 4-Bromofluorobenzene	17.171	174	211997	9.76	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.546	85	288055	8.28	ppbv	97
3) Chloromethane	3.949	50	66940	7.05	ppbv	77
4) 1,2-Cl-1,1,2,2-F ethan...	3.779	85	249583	7.62	ppbv	98
5) Vinyl Chloride	4.159	62	66180	7.28	ppbv	95
6) Bromomethane	4.864	94	54293	6.80	ppbv	94
7) Chloroethane	5.009	66	15682	7.92	ppbv #	69
8) Trichlorofluoromethane...	5.471	101	299307	8.82	ppbv	93
9) 1,1-Dichloroethene	6.379	61	175530	7.65	ppbv	89
10) Carbon Disulfide	7.078	76	161887	6.17	ppbv	96
11) 1,1,2-Cl 1,2,2-F ethan...	6.209	151	148163	7.58	ppbv	85
12) Acetone	6.101	43	190970	7.09	ppbv	94
13) Methylene Chloride	7.009	84	81563	7.75	ppbv	88
14) t-1,2-Dichloroethene	7.511	96	80462	7.65	ppbv	94
15) 1,1-Dichloroethane	8.052	63	191218	7.65	ppbv	96
16) Vinyl Acetate	8.052	43	336995	6.59	ppbv	95
17) c-1,2-Dichloroethene	8.898	96	94454	7.34	ppbv	91
18) 2-Butanone	8.609	72	45630	6.98	ppbv	89
19) t-Butyl Methyl Ether	7.360	73	267792	6.63	ppbv	92
20) Chloroform	9.137	83	239230	8.03	ppbv	94
21) 1,1,1-Trichloroethane	9.744	97	232767	7.65	ppbv	94
22) 1,1-Dichloropropene	9.973	75	131392	7.56	ppbv	98
23) Carbon Tetrachloride	10.128	117	212590	8.14	ppbv	96
25) Benzene	10.311	78	319695	6.85	ppbv	94
27) 1,2-Dichloroethane	10.206	62	183812	8.09	ppbv	94
28) Trichloroethene	11.197	130	115535	7.03	ppbv	93
29) 1,2-Dichloropropane	11.400	63	107631	6.60	ppbv	89
30) Bromodichloromethane	11.708	83	243010	7.51	ppbv	92
31) Dibromomethane	11.761	93	108492	7.78	ppbv	94
32) c-1,3-Dichloropropene	12.495	75	141787	5.71	ppbv	96
33) 4-Methyl-2-Pentanone	12.207	43	260837	6.59	ppbv	82
35) Toluene	13.046	91	348580	6.67	ppbv	89
37) t-1,3-Dichloropropene	13.204	75	113896	5.38	ppbv	91
38) 1,1,2-Trichloroethane	13.449	97	121421	7.53	ppbv	92
39) 1,3-Dichloropropane	13.813	76	151995	7.14	ppbv #	91
40) Tetrachloroethene	14.073	166	151937	6.95	ppbv	96
41) 2-Hexanone	13.479	58	114861	6.36	ppbv	96

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN009.D
Acq On : 25 Jun 2018 4:47 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 17:11:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

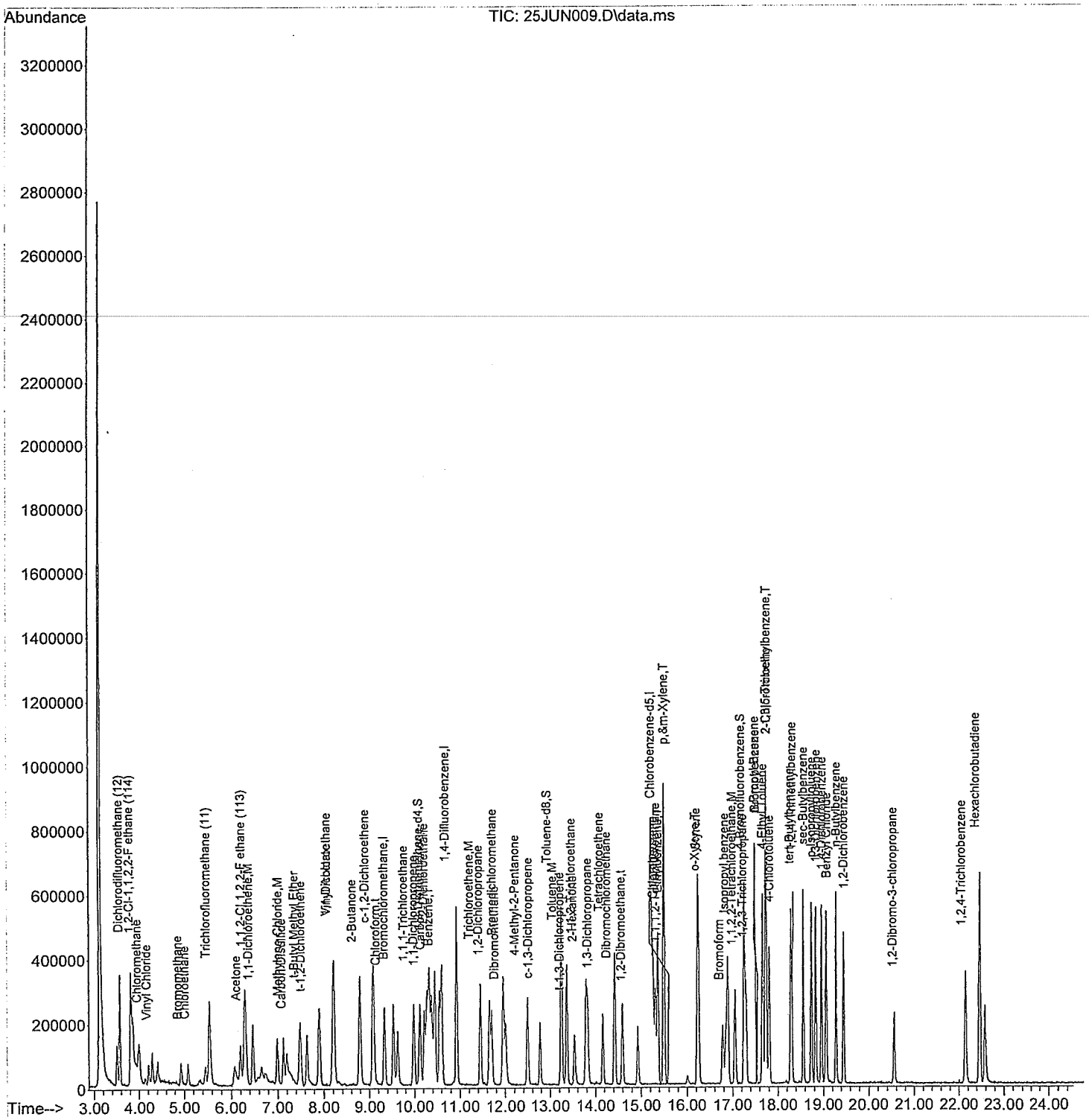
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.236	129	170115	7.04	ppbv		92
43) 1,2-Dibromoethane	14.561	107	163598	7.06	ppbv		94
44) Chlorobenzene	15.260	112	258765	7.24	ppbv		93
45) 1,1,1,2-Tetrachloroethane	15.312	131	102103	7.18	ppbv		96
46) Ethylbenzene	15.365	91	459887	7.52	ppbv		87
47) p,&m-Xylene	15.492	91	744777	15.29	ppbv		96
48) o-Xylene	16.178	91	365647	7.40	ppbv		94
49) Styrene	16.201	104	234728	7.07	ppbv		97
50) Bromoform	16.699	173	123145	5.80	ppbv		94
51) Isopropyl benzene	16.811	105	393237	7.94	ppbv		96
52) 1,1,2,2-Tetrachloroethane	16.978	83	212087	6.81	ppbv		97
54) Benzyl Chloride	19.060	91	133159	3.61	ppbv		87
55) 1,2,3-Trichloropropane	17.221	110	63409	7.79	ppbv	#	94
56) n-Propyl Benzene	17.483	91	493179	7.73	ppbv		90
57) Bromobenzene	17.496	77	243826	7.91	ppbv		90
58) 4-Ethyl Toluene	17.660	105	463688	7.16	ppbv		96
59) 1,3,5-Trimethylbenzene	17.732	105	409509	7.57	ppbv		94
60) 2-Chlorotoluene	17.736	91	384488	7.90	ppbv		96
61) 4-Chlorotoluene	17.804	91	329279	7.64	ppbv		99
62) tert-Butylbenzene	18.254	119	321608	7.10	ppbv		89
63) 1,2,4-Trimethylbenzene	18.300	105	397475	7.19	ppbv		99
64) sec-Butylbenzene	18.555	105	485287	7.71	ppbv		98
65) p-Isopropyltoluene	18.732	119	341856	7.24	ppbv		96
66) 1,3-Dichlorobenzene	18.828	146	214430	7.24	ppbv		91
67) 1,4-Dichlorobenzene	18.955	146	206189	6.92	ppbv		91
68) n-Butylbenzene	19.277	91	385369	7.44	ppbv		99
69) 1,2-Dichlorobenzene	19.451	146	208892	7.46	ppbv		95
70) 1,2-Dibromo-3-chloropr...	20.513	157	64335	5.93	ppbv	#	84
71) 1,2,4-Trichlorobenzene	22.041	180	165285	6.44	ppbv		88
72) Hexachlorobutadiene	22.356	225	205453	7.81	ppbv		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 25JUN009.D
Acq On : 25 Jun 2018 4:47 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 17:11:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN002.D
Acq On : 26 Jun 2018 4:05 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 16:30:22 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.314	130	111539	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.675	114	506214	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.204	117	395397	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.088	65	263487	11.09	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.90%			
34) Toluene-d8	12.928	98	509282	10.28	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.80%			
53) 4-Bromofluorobenzene	17.178	174	230775	10.08	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.546	85	417785	10.93	ppbv	97
3) Chloromethane	3.949	50	98437	9.44	ppbv	98
4) 1,2-Cl-1,1,2,2-F ethan...	3.782	85	362633	10.08	ppbv	91
5) Vinyl Chloride	4.162	62	101604	10.18	ppbv	99
6) Bromomethane	4.858	94	81852	9.34	ppbv	84
7) Chloroethane	5.012	66	22247	10.23	ppbv	89
8) Trichlorofluoromethane...	5.477	101	423845	11.37	ppbv	96
9) 1,1-Dichloroethene	6.379	61	263095	10.44	ppbv	96
10) Carbon Disulfide	7.074	76	301910	10.47	ppbv	98
11) 1,1,2-Cl 1,2,2-F ethan...	6.212	151	215241	10.02	ppbv	94
12) Acetone	6.104	43	261104	8.83	ppbv	93
13) Methylene Chloride	7.006	84	117353	10.15	ppbv	84
14) t-1,2-Dichloroethene	7.507	96	115364	9.99	ppbv	78
15) 1,1-Dichloroethane	8.065	63	282737	10.29	ppbv	97
16) Vinyl Acetate	8.052	43	532765	9.48	ppbv	95
17) c-1,2-Dichloroethene	8.904	96	146912	10.40	ppbv	95
18) 2-Butanone	8.606	72	72330	10.08	ppbv	73
19) t-Butyl Methyl Ether	7.363	73	407949	9.19	ppbv	92
20) Chloroform	9.134	83	343767	10.51	ppbv	91
21) 1,1,1-Trichloroethane	9.747	97	335368	10.03	ppbv	93
22) 1,1-Dichloropropene	9.973	75	194088	10.17	ppbv	96
23) Carbon Tetrachloride	10.134	117	307825	10.73	ppbv	96
25) Benzene	10.318	78	459627	9.54	ppbv	97
27) 1,2-Dichloroethane	10.213	62	264405	11.26	ppbv	97
28) Trichloroethene	11.203	130	175420	10.33	ppbv	85
29) 1,2-Dichloropropane	11.406	63	166854	9.91	ppbv	94
30) Bromodichloromethane	11.708	83	358717	10.72	ppbv	97
31) Dibromomethane	11.761	93	153544	10.66	ppbv	94
32) c-1,3-Dichloropropene	12.495	75	225410	8.79	ppbv	93
33) 4-Methyl-2-Pentanone	12.210	43	381908	9.35	ppbv	88
35) Toluene	13.046	91	522408	9.67	ppbv	98
37) t-1,3-Dichloropropene	13.203	75	188626	8.45	ppbv	95
38) 1,1,2-Trichloroethane	13.446	97	174011	10.23	ppbv	97
39) 1,3-Dichloropropane	13.817	76	226388	10.09	ppbv	92
40) Tetrachloroethene	14.069	166	226653	9.84	ppbv	88
41) 2-Hexanone	13.482	58	187652	9.86	ppbv	96

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN002.D
Acq On : 26 Jun 2018 4:05 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 16:30:22 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

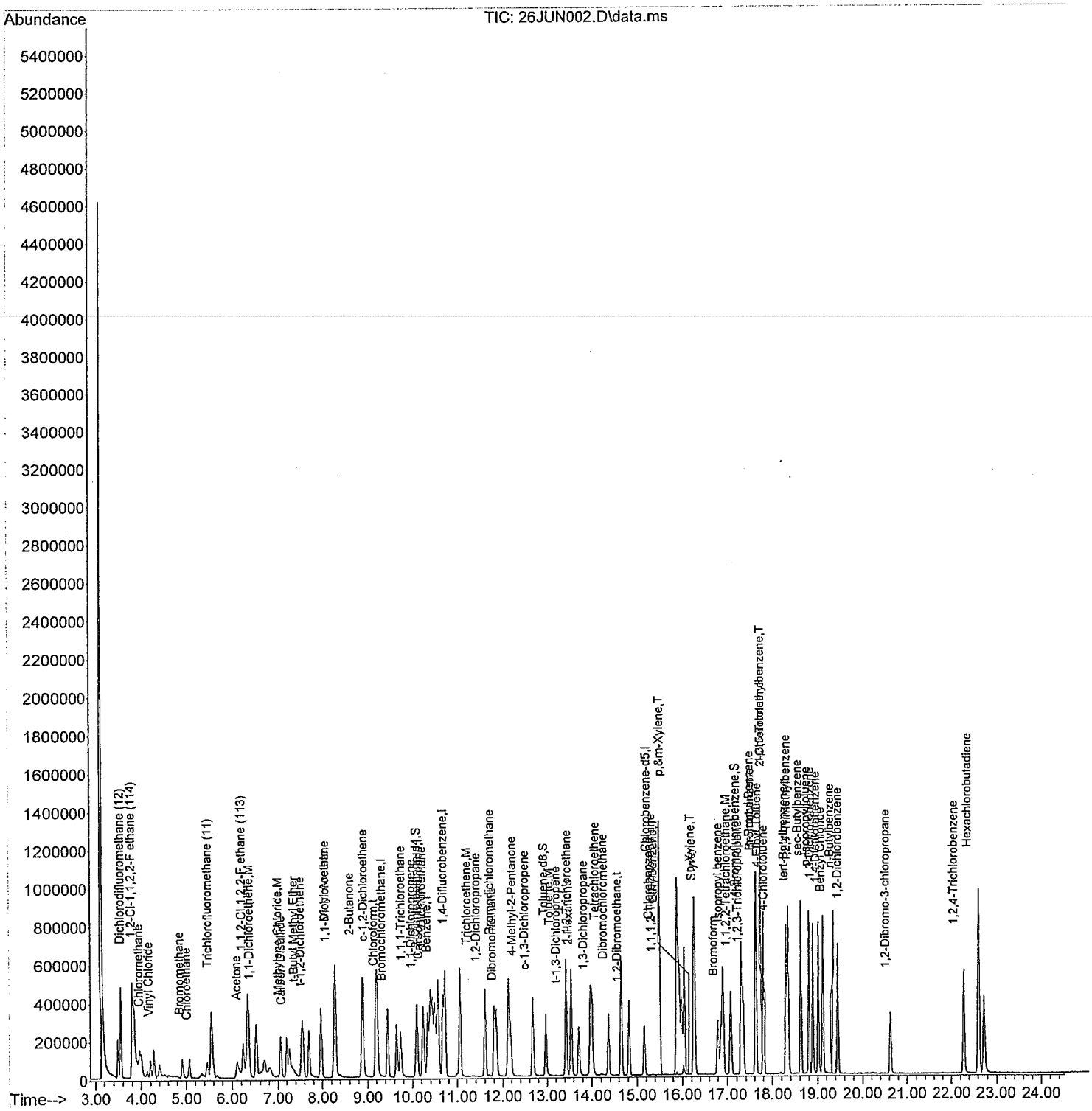
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	256587	10.08	ppbv		92
43) 1,2-Dibromoethane	14.561	107	236910	9.70	ppbv		89
44) Chlorobenzene	15.260	112	375845	9.98	ppbv		90
45) 1,1,1,2-Tetrachloroethane	15.315	131	146228	9.76	ppbv		87
46) Ethylbenzene	15.368	91	649184	10.07	ppbv		97
47) p,&m-Xylene	15.499	91	1080391	21.05	ppbv		93
48) o-Xylene	16.181	91	536320	10.30	ppbv		91
49) Styrene	16.204	104	350796	10.02	ppbv		95
50) Bromoform	16.699	173	194431	8.68	ppbv		88
51) Isopropyl benzene	16.807	105	563006	10.79	ppbv		98
52) 1,1,2,2-Tetrachloroethane	16.981	83	321646	9.81	ppbv		96
54) Benzyl Chloride	19.064	91	235843	6.06	ppbv		91
55) 1,2,3-Trichloropropane	17.224	110	90683	10.58	ppbv	#	86
56) n-Propyl Benzene	17.483	91	718033	10.68	ppbv		94
57) Bromobenzene	17.499	77	361000	11.11	ppbv		97
58) 4-Ethyl Toluene	17.660	105	696306	10.21	ppbv		99
59) 1,3,5-Trimethylbenzene	17.729	105	591302	10.37	ppbv		95
60) 2-Chlorotoluene	17.735	91	561344	10.95	ppbv		99
61) 4-Chlorotoluene	17.804	91	482969	10.63	ppbv		98
62) tert-Butylbenzene	18.257	119	492819	10.32	ppbv		99
63) 1,2,4-Trimethylbenzene	18.303	105	604224	10.37	ppbv		98
64) sec-Butylbenzene	18.555	105	717064	10.81	ppbv		96
65) p-Isopropyltoluene	18.732	119	520233	10.46	ppbv		98
66) 1,3-Dichlorobenzene	18.824	146	306443	9.82	ppbv		96
67) 1,4-Dichlorobenzene	18.955	146	304993	9.71	ppbv		97
68) n-Butylbenzene	19.280	91	576700	10.56	ppbv		100
69) 1,2-Dichlorobenzene	19.451	146	284396	9.63	ppbv		96
70) 1,2-Dibromo-3-chloropr...	20.510	157	99656	8.72	ppbv	#	79
71) 1,2,4-Trichlorobenzene	22.044	180	257073	9.51	ppbv		96
72) Hexachlorobutadiene	22.353	225	304184	10.98	ppbv		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN002.D
Acq On : 26 Jun 2018 4:05 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 16:30:22 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN003.D
Acq On : 26 Jun 2018 4:52 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 17:16:39 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.324	130	110565	10.00	ppbv	0.01
24) 1,4-Difluorobenzene	10.678	114	515455	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.201	117	411590	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.091	65	268342	11.09	ppbv	0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.90%			
34) Toluene-d8	12.931	98	518388	10.27	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.70%			
53) 4-Bromofluorobenzene	17.178	174	235587	9.89	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.536	85	1002924	26.46	ppbv	97
3) Chloromethane	3.933	50	251486	24.32	ppbv	96
4) 1,2-Cl-1,1,2,2-F ethan...	3.779	85	892217	25.02	ppbv	97
5) Vinyl Chloride	4.156	62	277753	28.07	ppbv	99
6) Bromomethane	4.848	94	134977	15.53	ppbv	88
7) Chloroethane	4.999	66	53618	24.87	ppbv	98
8) Trichlorofluoromethane...	5.471	101	1004517	27.19	ppbv	96
9) 1,1-Dichloroethene	6.379	61	656199	26.28	ppbv	96
10) Carbon Disulfide	7.068	76	748759	26.19	ppbv	96
11) 1,1,2-Cl 1,2,2-F ethan...	6.212	151	539111	25.32	ppbv	88
12) Acetone	6.107	43	653000	22.28	ppbv	89
13) Methylene Chloride	7.012	84	292483	25.52	ppbv	92
14) t-1,2-Dichloroethene	7.504	96	303014	26.47	ppbv	90
15) 1,1-Dichloroethane	8.065	63	697263	25.60	ppbv	99
16) Vinyl Acetate	8.048	43	1429528	25.66	ppbv	95
17) c-1,2-Dichloroethene	8.901	96	348656	24.89	ppbv	92
18) 2-Butanone	8.599	72	176964	24.88	ppbv	61
19) t-Butyl Methyl Ether	7.360	73	1039535	23.63	ppbv	90
20) Chloroform	9.137	83	856891	26.42	ppbv	99
21) 1,1,1-Trichloroethane	9.750	97	852366	25.72	ppbv	95
22) 1,1-Dichloropropene	9.983	75	482981	25.53	ppbv	96
23) Carbon Tetrachloride	10.137	117	772780	27.16	ppbv	97
25) Benzene	10.318	78	1128236	22.99	ppbv	97
27) 1,2-Dichloroethane	10.219	62	653604	27.35	ppbv	98
28) Trichloroethene	11.203	130	421639	24.39	ppbv	96
29) 1,2-Dichloropropane	11.406	63	410302	23.93	ppbv	97
30) Bromodichloromethane	11.715	83	895404	26.29	ppbv	97
31) Dibromomethane	11.764	93	379937	25.91	ppbv	96
32) c-1,3-Dichloropropene	12.495	75	618851	23.70	ppbv	93
33) 4-Methyl-2-Pentanone	12.213	43	1012179	24.33	ppbv	88
35) Toluene	13.046	91	1299357	23.62	ppbv	96
37) t-1,3-Dichloropropene	13.207	75	524788	22.58	ppbv	92
38) 1,1,2-Trichloroethane	13.449	97	427010	24.13	ppbv	96
39) 1,3-Dichloropropane	13.823	76	570315	24.43	ppbv	92
40) Tetrachloroethene	14.072	166	558077	23.28	ppbv	98
41) 2-Hexanone	13.479	58	471265	23.80	ppbv	92

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN003.D
Acq On : 26 Jun 2018 4:52 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 17:16:39 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

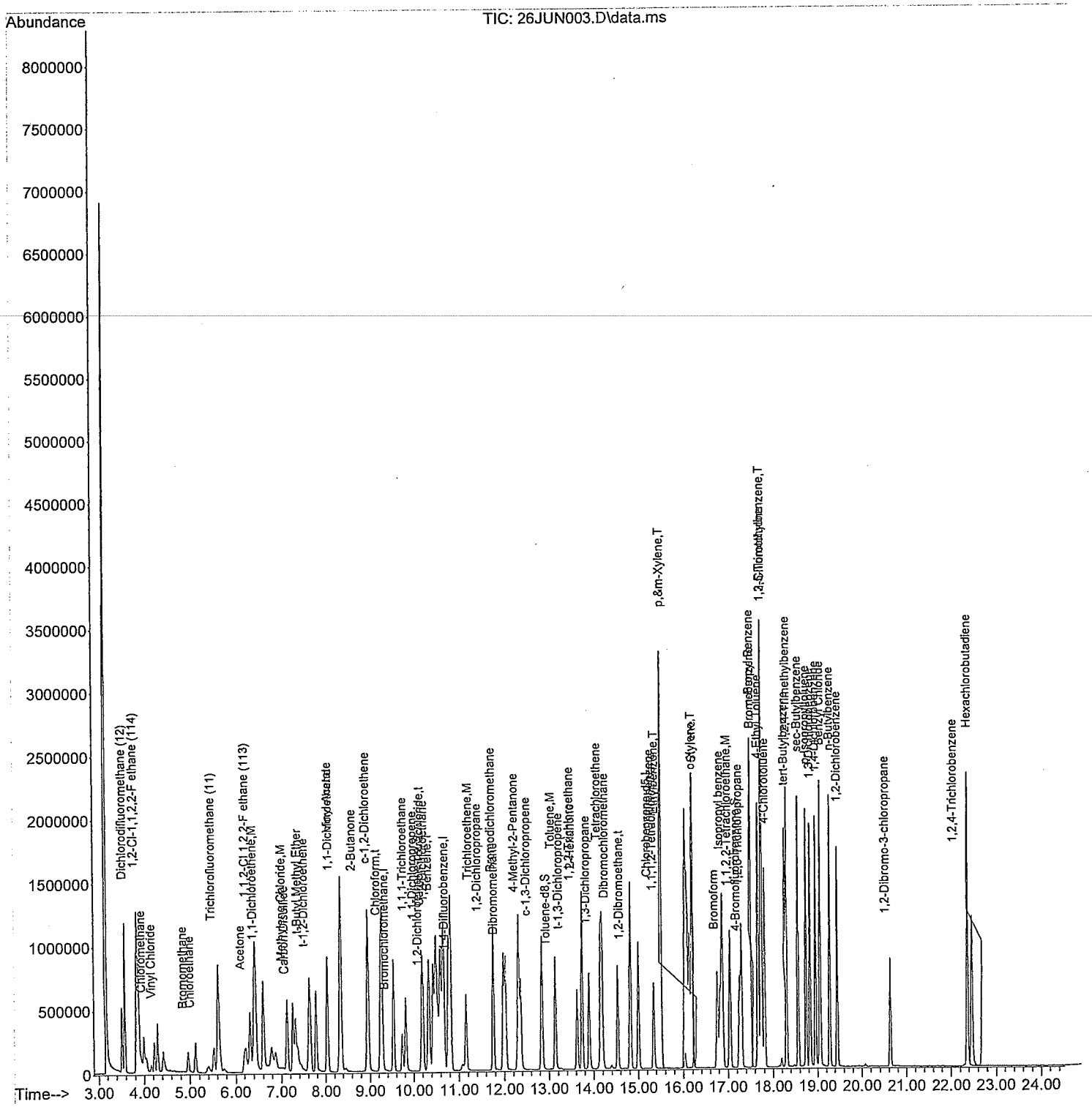
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) Dibromochloromethane	14.240	129	656391	24.77	ppbv	98
43) 1,2-Dibromoethane	14.564	107	608562	23.94	ppbv	97
44) Chlorobenzene	15.263	112	929965	23.71	ppbv	96
45) 1,1,1,2-Tetrachloroethane	15.315	131	393060	25.20	ppbv	97
46) Ethylbenzene	15.368	91	1652897	24.63	ppbv	96
47) p,&m-Xylene	15.499	91	2692840	50.40	ppbv	96
48) o-Xylene	16.181	91	1349823	24.91	ppbv	94
49) Styrene	16.204	104	884546	24.27	ppbv	92
50) Bromoform	16.693	173	526999	22.61	ppbv	94
51) Isopropyl benzene	16.811	105	1390959	25.60	ppbv	98
52) 1,1,2,2-Tetrachloroethane	16.978	83	813560	23.83	ppbv	97
54) Benzyl Chloride	19.060	91	712694	17.60	ppbv	94
55) 1,2,3-Trichloropropane	17.227	110	227199	25.46	ppbv	92
56) n-Propyl Benzene	17.486	91	1788998	25.57	ppbv	93
57) Bromobenzene	17.499	77	885056	26.16	ppbv	96
58) 4-Ethyl Toluene	17.663	105	1759117	24.78	ppbv	94
59) 1,3,5-Trimethylbenzene	17.729	105	1468447	24.74	ppbv	97
60) 2-Chlorotoluene	17.735	91	1376861	25.79	ppbv	100
61) 4-Chlorotoluene	17.808	91	1211632	25.62	ppbv	99
62) tert-Butylbenzene	18.254	119	1244244	25.03	ppbv	98
63) 1,2,4-Trimethylbenzene	18.299	105	1500949	24.74	ppbv	98
64) sec-Butylbenzene	18.559	105	1779063	25.77	ppbv	98
65) p-Isopropyltoluene	18.736	119	1307232	25.25	ppbv	98
66) 1,3-Dichlorobenzene	18.824	146	766032	23.58	ppbv	99
67) 1,4-Dichlorobenzene	18.952	146	766583	23.45	ppbv	94
68) n-Butylbenzene	19.277	91	1468331	25.84	ppbv	100
69) 1,2-Dichlorobenzene	19.451	146	730822	23.78	ppbv	94
70) 1,2-Dibromo-3-chloropr...	20.510	157	269611	22.66	ppbv	90
71) 1,2,4-Trichlorobenzene	22.038	180	681859	24.22	ppbv	91
72) Hexachlorobutadiene	22.356	225	755483	26.19	ppbv	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN003.D
Acq On : 26 Jun 2018 4:52 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 17:16:39 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN004.D
Acq On : 26 Jun 2018 5:32 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 26 17:56:36 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.324	130	120891	10.00	ppbv	0.01
24) 1,4-Difluorobenzene	10.678	114	532066	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.204	117	404148	10.00	ppbv	# 0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.088	65	289463	11.59	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 115.90%			
34) Toluene-d8	12.935	98	550301	10.57	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.70%			
53) 4-Bromofluorobenzene	17.175	174	245606	10.50	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.500	85	3996715	96.45	ppbv	97
3) Chloromethane	3.894	50	1143009	101.11	ppbv	97
4) 1,2-Cl-1,1,2,2-F ethan...	3.746	85	3590688	92.08	ppbv	99
5) Vinyl Chloride	4.116	62	1197453	110.68	ppbv	99
6) Bromomethane	4.831	94	951393	100.14	ppbv	90
7) Chloroethane	4.982	66	221342	93.88	ppbv	96
8) Trichlorofluoromethane...	5.454	101	4133276	102.31	ppbv	99
9) 1,1-Dichloroethene	6.363	61	2759226	101.05	ppbv	96
10) Carbon Disulfide	7.055	76	3198849	102.34	ppbv	98
11) 1,1,2-Cl 1,2,2-F ethan...	6.196	151	2162367	92.87	ppbv	91
12) Acetone	6.097	43	2878830	89.82	ppbv	91
13) Methylene Chloride	6.999	84	1262818	100.78	ppbv	87
14) t-1,2-Dichloroethene	7.501	96	1298130	103.70	ppbv	90
15) 1,1-Dichloroethane	8.065	63	2888360	97.01	ppbv	98
16) Vinyl Acetate	8.045	43	6253467	102.67	ppbv	97
17) c-1,2-Dichloroethene	8.904	96	1454303	94.97	ppbv	93
18) 2-Butanone	8.603	72	759015	97.58	ppbv	59
19) t-Butyl Methyl Ether	7.353	73	4317635	89.76	ppbv	91
20) Chloroform	9.144	83	3575417	100.82	ppbv	96
21) 1,1,1-Trichloroethane	9.750	97	3602858	99.42	ppbv	96
22) 1,1-Dichloropropene	9.983	75	2059993	99.59	ppbv	92
23) Carbon Tetrachloride	10.141	117	3237197	104.06	ppbv	98
25) Benzene	10.318	78	4694335	92.66	ppbv	96
27) 1,2-Dichloroethane	10.219	62	2687819	108.95	ppbv	96
28) Trichloroethene	11.206	130	1763346	98.82	ppbv	98
29) 1,2-Dichloropropane	11.406	63	1760402	99.46	ppbv	96
30) Bromodichloromethane	11.715	83	3794605	107.93	ppbv	94
31) Dibromomethane	11.764	93	1599784	105.67	ppbv	97
32) c-1,3-Dichloropropene	12.495	75	2869519	106.47	ppbv	90
33) 4-Methyl-2-Pentanone	12.210	43	4460812	103.86	ppbv	88
35) Toluene	13.049	91	5432051	95.67	ppbv	99
37) t-1,3-Dichloropropene	13.203	75	2681311	117.48	ppbv	93
38) 1,1,2-Trichloroethane	13.449	97	1775355	102.15	ppbv	99
39) 1,3-Dichloropropane	13.820	76	2431470	106.06	ppbv	92
40) Tetrachloroethene	14.079	166	2353861	100.01	ppbv	97
41) 2-Hexanone	13.479	58	2159786	111.08	ppbv	94

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN004.D
Acq On : 26 Jun 2018 5:32 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 26 17:56:36 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

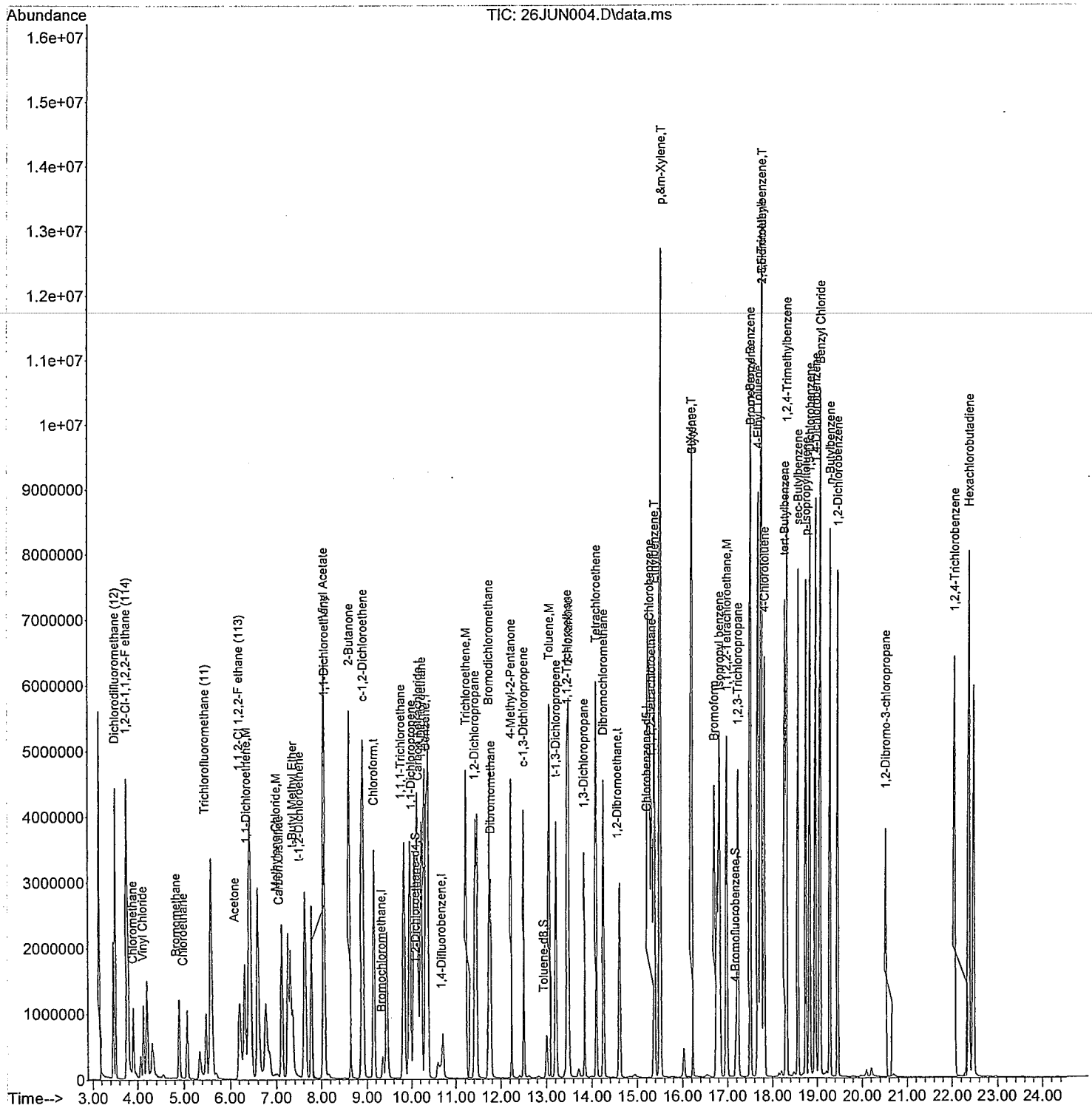
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) Dibromochloromethane	14.243	129	3119109	119.88	ppbv	97
43) 1,2-Dibromoethane	14.561	107	2746038	110.00	ppbv	99
44) Chlorobenzene	15.263	112	3962398	102.90	ppbv	98
45) 1,1,1,2-Tetrachloroethane	15.315	131	1596260	104.24	ppbv	98
46) Ethylbenzene	15.371	91	6954589	105.54	ppbv	97
47) p,&m-Xylene	15.499	91	10594213	201.92	ppbv	99
48) o-Xylene	16.184	91	5685420	106.83	ppbv	96
49) Styrene	16.204	104	3826498	106.93	ppbv	94
50) Bromoform	16.699	173	3113571	136.04	ppbv	97
51) Isopropyl benzene	16.814	105	5476616	102.65	ppbv	99
52) 1,1,2,2-Tetrachloroethane	16.978	83	3975769	118.59	ppbv	99
54) Benzyl Chloride	19.060	91	4432875	111.51	ppbv	96
55) 1,2,3-Trichloropropane	17.224	110	962044	109.78	ppbv	92
56) n-Propyl Benzene	17.486	91	7051338	102.62	ppbv	93
57) Bromobenzene	17.499	77	3531680	106.31	ppbv	95
58) 4-Ethyl Toluene	17.663	105	7551188	108.32	ppbv	98
59) 1,3,5-Trimethylbenzene	17.732	105	6105945	104.75	ppbv	99
60) 2-Chlorotoluene	17.735	91	5306485	101.24	ppbv	99
61) 4-Chlorotoluene	17.808	91	4888340	105.25	ppbv	99
62) tert-Butylbenzene	18.257	119	4940427	101.22	ppbv	95
63) 1,2,4-Trimethylbenzene	18.303	105	6472851	108.67	ppbv	99
64) sec-Butylbenzene	18.559	105	6532590	96.35	ppbv	98
65) p-Isopropyltoluene	18.736	119	5066752	99.65	ppbv	98
66) 1,3-Dichlorobenzene	18.824	146	3484508	109.25	ppbv	97
67) 1,4-Dichlorobenzene	18.955	146	3519986	109.66	ppbv	95
68) n-Butylbenzene	19.277	91	5820899	104.31	ppbv	100
69) 1,2-Dichlorobenzene	19.447	146	3349875	111.00	ppbv	95
70) 1,2-Dibromo-3-chloropr...	20.513	157	1260146	107.88	ppbv	87
71) 1,2,4-Trichlorobenzene	22.041	180	3094738	111.96	ppbv	90
72) Hexachlorobutadiene	22.356	225	2690707	94.99	ppbv	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN004.D
Acq On : 26 Jun 2018 5:32 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 26 17:56:36 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN005.D
Acq On : 26 Jun 2018 6:12 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 26 18:36:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.331	130	160151	10.00	ppbv	0.02
24) 1,4-Difluorobenzene	10.688	114	542532	10.00	ppbv	0.02
36) Chlorobenzene-d5	15.207	117	403430	10.00	ppbv	# 0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.098	65	325976	12.80	ppbv	0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 128.00%			
34) Toluene-d8	12.935	98	558558	10.52	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.20%			
53) 4-Bromofluorobenzene	17.175	174	247025	10.58	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.494	85	8962555	163.26	ppbv	98
3) Chloromethane	3.894	50	2872868	191.82	ppbv	97
4) 1,2-Cl-1,1,2,2-F ethan...	3.749	85	8344759	161.54	ppbv	98
5) Vinyl Chloride	4.123	62	2942534	205.31	ppbv	100
6) Bromomethane	4.831	94	2118698	168.33	ppbv	92
7) Chloroethane	4.992	66	552456	176.88	ppbv	96
8) Trichlorofluoromethane...	5.464	101	9419143	175.99	ppbv	97
9) 1,1-Dichloroethene	6.369	61	6597722	182.39	ppbv	98
10) Carbon Disulfide	7.065	76	7721920	186.49	ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.205	151	5068738	164.33	ppbv	94
12) Acetone	6.107	43	6913678	162.82	ppbv	95
13) Methylene Chloride	7.009	84	3049521	183.71	ppbv	86
14) t-1,2-Dichloroethene	7.511	96	3077944	185.60	ppbv	86
15) 1,1-Dichloroethane	8.075	63	6690657	169.62	ppbv	97
16) Vinyl Acetate	8.058	43	14606407	181.02	ppbv	98
17) c-1,2-Dichloroethene	8.914	96	3357175	165.49	ppbv	89
18) 2-Butanone	8.613	72	1790153	173.73	ppbv	63
19) t-Butyl Methyl Ether	7.366	73	10035101	157.47	ppbv	90
20) Chloroform	9.150	83	8328408	177.27	ppbv	98
21) 1,1,1-Trichloroethane	9.760	97	8396407	174.90	ppbv	96
22) 1,1-Dichloropropene	9.987	75	4938205	180.21	ppbv	94
23) Carbon Tetrachloride	10.147	117	7246113	175.83	ppbv	99
25) Benzene	10.328	78	10978596	212.52	ppbv	94
27) 1,2-Dichloroethane	10.229	62	6118538	243.23	ppbv	96
28) Trichloroethene	11.210	130	4020406	220.96	ppbv	97
29) 1,2-Dichloropropane	11.413	63	4220165	233.82	ppbv	97
30) Bromodichloromethane	11.721	83	8445911	235.60	ppbv	97
31) Dibromomethane	11.767	93	3622509	234.67	ppbv	95
32) c-1,3-Dichloropropene	12.495	75	6909119	251.41	ppbv	89
33) 4-Methyl-2-Pentanone	12.213	43	10589474	241.80	ppbv	90
35) Toluene	13.053	91	12335380	213.07	ppbv	97
37) t-1,3-Dichloropropene	13.207	75	6631205	291.06	ppbv	93
38) 1,1,2-Trichloroethane	13.453	97	4068712	234.52	ppbv	98
39) 1,3-Dichloropropane	13.692	76	7958	0.35	ppbv	95
40) Tetrachloroethene	14.079	166	5390303	229.42	ppbv	95
41) 2-Hexanone	13.482	58	5077072	261.57	ppbv	95

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN005.D
Acq On : 26 Jun 2018 6:12 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 26 18:36:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

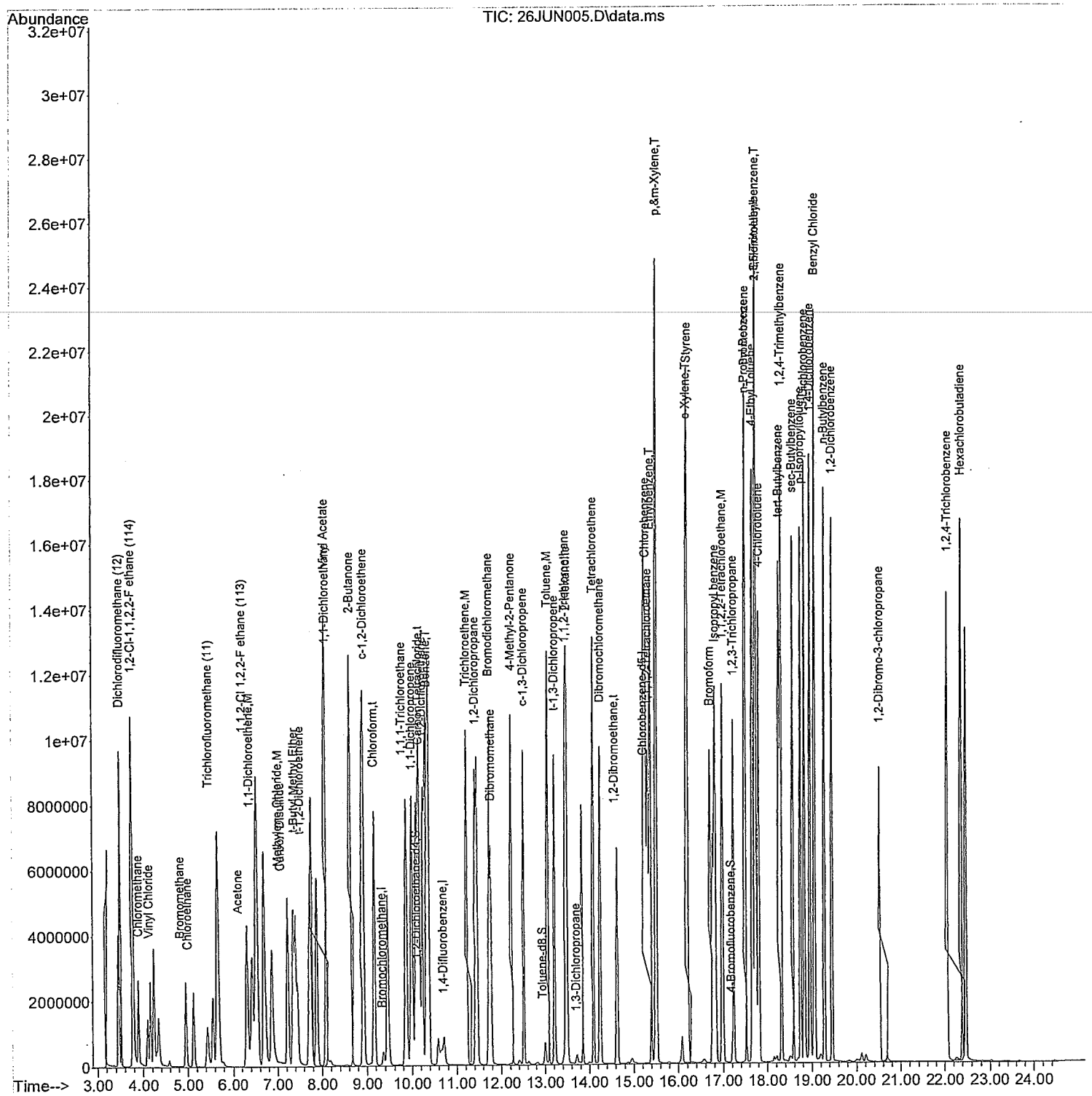
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	6899939	265.67	ppbv		96
43) 1,2-Dibromoethane	14.564	107	6301802	252.88	ppbv		97
44) Chlorobenzene	15.266	112	8912515	231.85	ppbv		96
45) 1,1,1,2-Tetrachloroethane	15.315	131	3750998	245.38	ppbv		98
46) Ethylbenzene	15.371	91	15602122	237.20	ppbv		96
47) p,&m-Xylene	15.502	91	21067400	402.24	ppbv		90
48) o-Xylene	16.184	91	12510374	235.49	ppbv		98
49) Styrene	16.204	104	8734672	244.53	ppbv		95
50) Bromoform	16.699	173	7034130	307.89	ppbv		97
51) Isopropyl benzene	16.814	105	12287301	230.72	ppbv		97
52) 1,1,2,2-Tetrachloroethane	16.978	83	9089204	271.59	ppbv		99
54) Benzyl Chloride	19.060	91	10699745	269.64	ppbv		96
55) 1,2,3-Trichloropropane	17.224	110	2154219	246.25	ppbv	#	82
56) n-Propyl Benzene	17.486	91	14831839	216.24	ppbv		97
57) Bromobenzene	17.499	77	7761525	234.05	ppbv		94
58) 4-Ethyl Toluene	17.663	105	16046708	230.59	ppbv		97
59) 1,3,5-Trimethylbenzene	17.732	105	12780966	219.65	ppbv		98
60) 2-Chlorotoluene	17.739	91	10995269	210.14	ppbv		98
61) 4-Chlorotoluene	17.808	91	11044151	238.21	ppbv		97
62) tert-Butylbenzene	18.260	119	10893176	223.58	ppbv		97
63) 1,2,4-Trimethylbenzene	18.303	105	13560224	228.07	ppbv		95
64) sec-Butylbenzene	18.559	105	14214363	210.02	ppbv		95
65) p-Isopropyltoluene	18.736	119	11155125	219.79	ppbv		93
66) 1,3-Dichlorobenzene	18.828	146	7815354	245.48	ppbv		97
67) 1,4-Dichlorobenzene	18.955	146	7910407	246.88	ppbv		94
68) n-Butylbenzene	19.280	91	12649575	227.08	ppbv		99
69) 1,2-Dichlorobenzene	19.451	146	7612388	252.70	ppbv		95
70) 1,2-Dibromo-3-chloropr...	20.510	157	3133701	268.75	ppbv		91
71) 1,2,4-Trichlorobenzene	22.045	180	7317533	265.20	ppbv		89
72) Hexachlorobutadiene	22.356	225	6048627	213.91	ppbv		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180625\
Data File : 26JUN005.D
Acq On : 26 Jun 2018 6:12 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 26 18:36:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN005.D
Acq On : 26 Jun 2018 6:12 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 08:03:06 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.331	130	160151	10.00	ppbv	0.02
24) 1,4-Difluorobenzene	10.688	114	542532	10.00	ppbv	0.02
36) Chlorobenzene-d5	15.207	117	403430	10.00	ppbv	# 0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.098	65	325976	12.80	ppbv	0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 128.00%			
34) Toluene-d8	12.935	98	558558	10.52	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.20%			
53) 4-Bromofluorobenzene	17.175	174	247025	10.58	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.494	85	8962555	163.26	ppbv	98
3) Chloromethane	3.894	50	2872868	191.82	ppbv	97
4) 1,2-Cl-1,1,2,2-F ethan...	3.749	85	8344759	161.54	ppbv	98
5) Vinyl Chloride	4.123	62	2942534	205.31	ppbv	100
6) Bromomethane	4.831	94	2118698	168.33	ppbv	92
7) Chloroethane	4.992	66	552456	176.88	ppbv	96
8) Trichlorofluoromethane...	5.464	101	9419143	175.99	ppbv	97
9) 1,1-Dichloroethene	6.369	61	6597722	182.39	ppbv	98
10) Carbon Disulfide	7.065	76	7721920	186.49	ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.205	151	5068738	164.33	ppbv	94
12) Acetone	6.107	43	6913678	162.82	ppbv	95
13) Methylene Chloride	7.009	84	3049521	183.71	ppbv	86
14) t-1,2-Dichloroethene	7.511	96	3077944	185.60	ppbv	86
15) 1,1-Dichloroethane	8.075	63	6690657	169.62	ppbv	97
16) Vinyl Acetate	8.058	43	14606407	181.02	ppbv	98
17) c-1,2-Dichloroethene	8.914	96	3357175	165.49	ppbv	89
18) 2-Butanone	8.613	72	1790153	173.73	ppbv	63
19) t-Butyl Methyl Ether	7.366	73	10035101	157.47	ppbv	90
20) Chloroform	9.150	83	8328408	177.27	ppbv	98
21) 1,1,1-Trichloroethane	9.760	97	8396407	174.90	ppbv	96
22) 1,1-Dichloropropene	9.987	75	4938205	180.21	ppbv	94
23) Carbon Tetrachloride	10.147	117	7246113	175.83	ppbv	99
25) Benzene	10.328	78	10978596	212.52	ppbv	94
27) 1,2-Dichloroethane	10.229	62	6118538	243.23	ppbv	96
28) Trichloroethene	11.210	130	4020406	220.96	ppbv	97
29) 1,2-Dichloropropane	11.413	63	4220165	233.82	ppbv	97
30) Bromodichloromethane	11.721	83	8445911	235.60	ppbv	97
31) Dibromomethane	11.767	93	3622509	234.67	ppbv	95
32) c-1,3-Dichloropropene	12.495	75	6909119	251.41	ppbv	89
33) 4-Methyl-2-Pentanone	12.213	43	10589474	241.80	ppbv	90
35) Toluene	13.053	91	12335380	213.07	ppbv	97
37) t-1,3-Dichloropropene	13.207	75	6631205	291.06	ppbv	93
38) 1,1,2-Trichloroethane	13.453	97	4068712	234.52	ppbv	98
39) 1,3-Dichloropropane	13.823	76	5801448m	253.51	ppbv	
40) Tetrachloroethene	14.079	166	5390303	229.42	ppbv	95
41) 2-Hexanone	13.482	58	5077072	261.57	ppbv	95

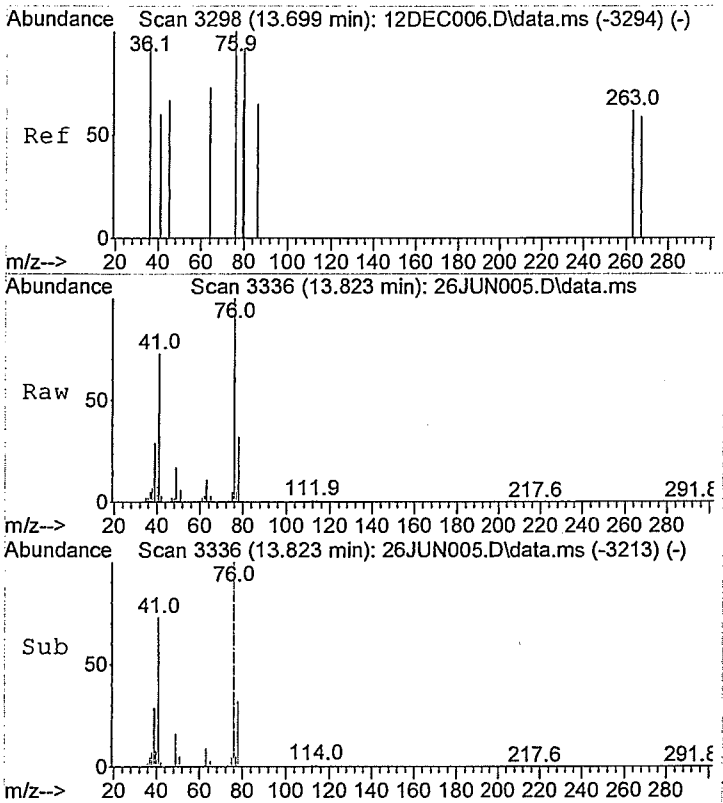
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN005.D
Acq On : 26 Jun 2018 6:12 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 08:03:06 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180620.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 09:49:46 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	6899939	265.67	ppbv		96
43) 1,2-Dibromoethane	14.564	107	6301802	252.88	ppbv		97
44) Chlorobenzene	15.266	112	8912515	231.85	ppbv		96
45) 1,1,1,2-Tetrachloroethane	15.315	131	3750998	245.38	ppbv		98
46) Ethylbenzene	15.371	91	15602122	237.20	ppbv		96
47) p,&m-Xylene	15.502	91	21067400	402.24	ppbv		90
48) o-Xylene	16.184	91	12510374	235.49	ppbv		98
49) Styrene	16.204	104	8734672	244.53	ppbv		95
50) Bromoform	16.699	173	7034130	307.89	ppbv		97
51) Isopropyl benzene	16.814	105	12287301	230.72	ppbv		97
52) 1,1,2,2-Tetrachloroethane	16.978	83	9089204	271.59	ppbv		99
54) Benzyl Chloride	19.060	91	10699745	269.64	ppbv		96
55) 1,2,3-Trichloropropane	17.224	110	2154219	246.25	ppbv	#	82
56) n-Propyl Benzene	17.486	91	14831839	216.24	ppbv		97
57) Bromobenzene	17.499	77	7761525	234.05	ppbv		94
58) 4-Ethyl Toluene	17.663	105	16046708	230.59	ppbv		97
59) 1,3,5-Trimethylbenzene	17.732	105	12780966	219.65	ppbv		98
60) 2-Chlorotoluene	17.739	91	10995269	210.14	ppbv		98
61) 4-Chlorotoluene	17.808	91	11044151	238.21	ppbv		97
62) tert-Butylbenzene	18.260	119	10893176	223.58	ppbv		97
63) 1,2,4-Trimethylbenzene	18.303	105	13560224	228.07	ppbv		95
64) sec-Butylbenzene	18.559	105	14214363	210.02	ppbv		95
65) p-Isopropyltoluene	18.736	119	11155125	219.79	ppbv		93
66) 1,3-Dichlorobenzene	18.828	146	7815354	245.48	ppbv		97
67) 1,4-Dichlorobenzene	18.955	146	7910407	246.88	ppbv		94
68) n-Butylbenzene	19.280	91	12649575	227.08	ppbv		99
69) 1,2-Dichlorobenzene	19.451	146	7612388	252.70	ppbv		95
70) 1,2-Dibromo-3-chloropr...	20.510	157	3133701	268.75	ppbv		91
71) 1,2,4-Trichlorobenzene	22.045	180	7317533	265.20	ppbv		89
72) Hexachlorobutadiene	22.356	225	6048627	213.91	ppbv		98

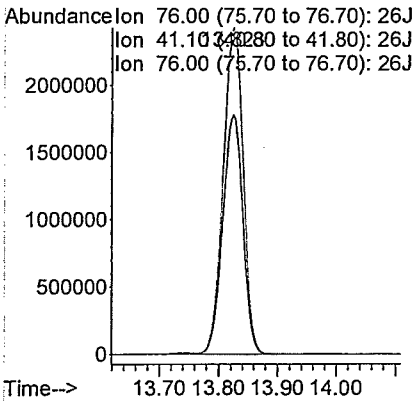
(#) = qualifier out of range (m) = manual integration (+) = signals summed



#39
1,3-Dichloropropane
Concen: 253.51 ppbv m
RT: 13.823 min Scan# 3336
Delta R.T. 0.003 min
Lab File: 26JUN005.D
Acq: 26 Jun 2018 6:12 pm

Tgt Ion: 76 Resp: 5801448

Ion	Ratio	Lower	Upper
76	100		
41	73.2	38.5	71.5#
76	100.0	80.0	120.0



MI-3
DS 6/27/18

ethod Path : C:\msdchem\1\methods\
thod File : AL180625.M
tle : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
st Update : Mon Jul 09 10:14:40 2018
esponse Via : Initial Calibration

alibration Files
=25JUN005.D 2.5 =25JUN007.D 5 =25JUN008.D 7 =25JUN009.D 10 =26JUN002.D 25 =26JUN003.D 100 =26JUN004.D
50 =26JUN005.D

		Compound	1	2.5	5	7	10	25	100	250	Avg	%RSD
)	I	Bromochloromethane	----------ISTD----------									
)		Propene	1.040	1.086	0.945	0.892	0.914	0.901	0.863	0.662	0.913	13.92
)		isobutane	0.578	0.561	0.548	0.583	0.525	0.502	0.497	0.374	0.521	12.97
)		1,3-Butadiene	0.685	0.627	0.647	0.682	0.666	0.661	0.687	0.513	0.646	8.91
)		Methanol	0.279	0.314	0.319	0.278	0.246	0.247	0.000	0.000	0.210	62.90
)		Acetaldehyde	0.380	0.366	0.273	0.326	0.294	0.328	0.303	0.226	0.312	15.97
)		Ethanol	0.500	0.426	0.441	0.361	0.274	0.314	0.415	0.312	0.380	20.40
)		Vinyl Bromide	0.624	0.590	0.600	0.663	0.618	0.626	0.647	0.470	0.605	9.77
)		Isopropanol	1.785	1.722	1.740	1.731	1.229	1.753	2.233	1.779	1.746	15.43
)		Acrolein	0.507	0.510	0.485	0.487	0.340	0.463	0.470	0.355	0.452	14.73
)		t-Butanol	1.804	2.010	2.063	2.254	1.138	2.030	2.267	1.621	1.898	19.75
)		Allyl Chloride	1.014	1.182	1.383	1.508	1.371	1.408	1.442	1.089	1.300	13.87
)		Acrylonitrile	0.819	0.774	0.901	0.968	0.747	0.838	0.889	0.678	0.827	11.27
)		t-Butyl methyl...	3.404	3.533	3.742	3.767	3.657	3.763	3.569	2.508	3.493	11.97
)		n-Hexane	1.847	2.003	1.980	2.020	1.943	2.008	1.887	1.413	1.888	10.66
)		Isopropyl ether	3.235	3.724	3.807	3.943	3.873	4.037	3.939	2.781	3.667	11.86
)		t-Butyl ethyl ...	1.183	1.249	1.349	1.355	1.288	1.355	1.348	1.007	1.267	9.64
)		Ethyl Acetate	0.286	0.283	0.334	0.313	0.300	0.326	0.322	0.234	0.300	10.79
)		2,2-Dichloropr...	1.272	1.376	1.486	1.668	1.639	1.639	1.692	1.260	1.504	12.03
)		Tetrahydrofuran	0.691	0.707	0.633	0.683	0.615	0.639	0.625	0.463	0.632	12.03
)		Cyclohexane	1.837	2.143	2.227	2.228	2.093	2.150	2.074	1.527	2.035	11.76
)		2,2,4-Trimethy...	5.162	5.747	5.914	6.179	5.820	5.854	5.644	4.008	5.541	12.33
)	I	1,4-Difluorobenzene	----------ISTD----------									
)	S	1,2-Dichloroet...	0.538	0.516	0.515	0.512	0.521	0.519	0.529	0.602	0.531	5.61
)		t-Amyl methyl ...	0.561	0.585	0.604	0.636	0.654	0.673	0.719	0.691	0.640	8.49
)		Heptane	0.325	0.287	0.305	0.309	0.307	0.306	0.305	0.284	0.303	4.25
)		1,4-Dioxane	0.200	0.204	0.201	0.190	0.197	0.202	0.215	0.199	0.201	3.53
)		2-chloroethylv...			0.001	0.000	0.001	0.000	0.000	0.000	0.000	108.43
)	S	Toluene-d8	1.029	1.009	1.006	0.965	1.006	1.004	1.034	1.030	1.010	2.18
)		Chlorobenzene-d5	----------ISTD----------									
)		Cyclohexanone	0.257	0.230	0.265	0.349	0.363	0.375	0.445	0.425	0.339	23.63
)	S	4-Bromofluorob...	0.831	0.830	0.821	0.797	0.828	0.827	0.894	0.920	0.843	4.92
)		Dicyclopentadiene	0.022	0.024	0.024	0.021	0.027	0.020	0.022	0.021	0.023	9.52
)		Naphthalene	0.894	1.106	1.288	1.155	1.233	1.308	1.591	1.466	1.255	17.15
)		1,2,3-Trichlor...	0.640	0.603	0.669	0.629	0.654	0.663	0.766	0.725	0.668	7.91

ethod Path : C:\msdchem\1\methods\
thod File : AL180625.M
ile : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm

= Out of Range

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN005.D
Acq On : 25 Jun 2018 1:40 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:46:01 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

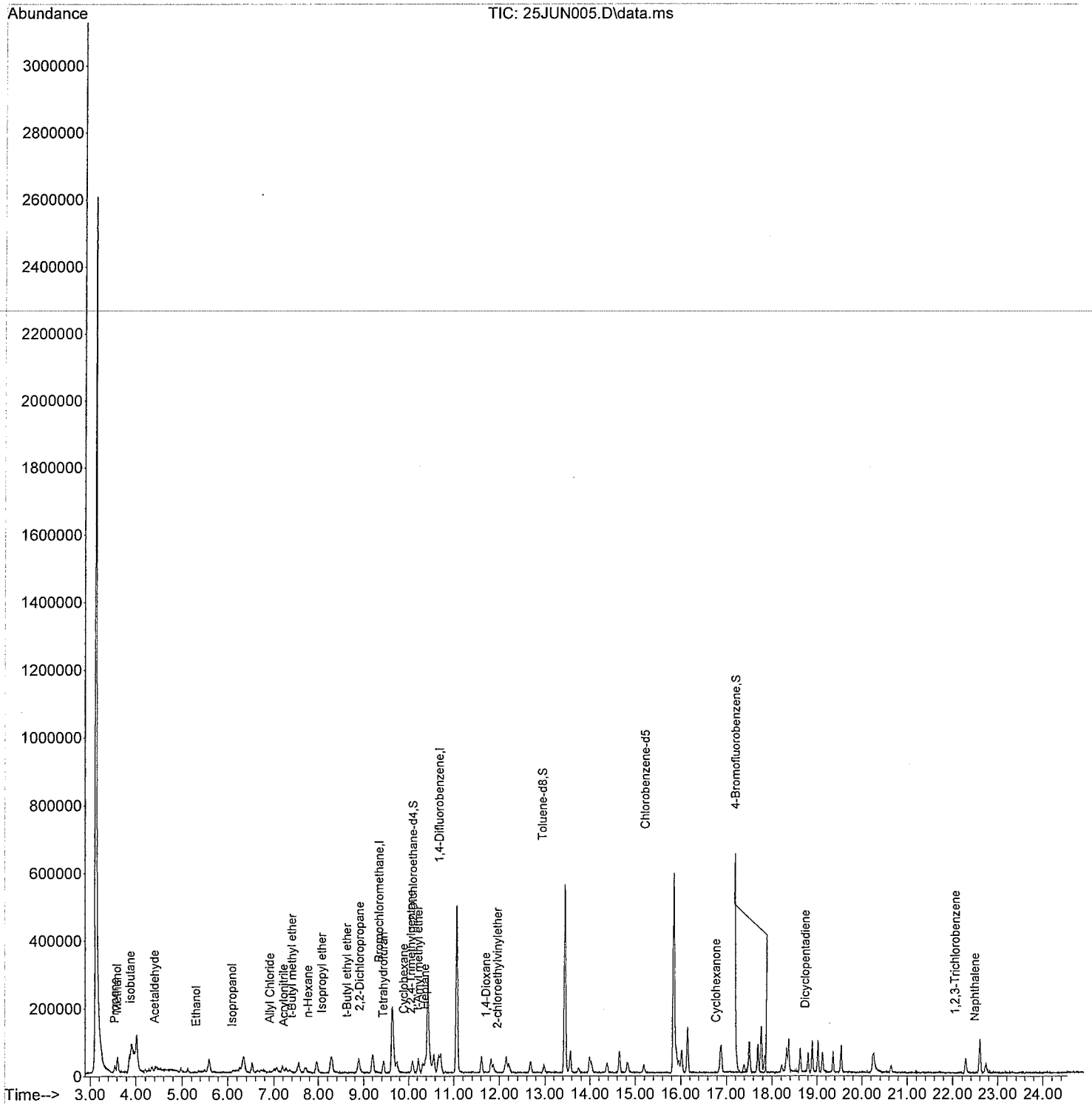
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	103796	10.00	ppbv	0.02
23) 1,4-Difluorobenzene	10.682	114	458805	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.204	117	361621	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.095	65	246801	11.45	ppbv	0.02
Spiked Amount 10.000	Range 80 - 120		Recovery = 114.50%			
29) Toluene-d8	12.931	98	471958	10.50	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 105.00%			
32) 4-Bromofluorobenzene	17.181	95	300560	10.38	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.80%			
Target Compounds						Qvalue
2) Propene	3.543	41	10795	1.00	ppbv #	82
3) isobutane	3.880	41	5998	1.11	ppbv #	1
5) Methanol	3.595	31	2891	1.30	ppbv #	1
6) Acetaldehyde	4.398	43	3947	1.12	ppbv #	15
7) Ethanol	5.304	45	2343	0.64	ppbv #	42
9) Isopropanol	6.091	45	7611	0.45	ppbv	93
12) Allyl Chloride	6.910	41	10527	0.69	ppbv #	93
13) Acrylonitrile	7.212	53	4720	0.53	ppbv #	51
14) t-Butyl methyl ether	7.399	73	35336	0.86	ppbv #	87
15) n-Hexane	7.766	57	19175	0.91	ppbv	96
16) Isopropyl ether	8.075	45	33579	0.79	ppbv #	74
17) t-Butyl ethyl ether	8.619	87	12284	0.78	ppbv	91
19) 2,2-Dichloropropane	8.904	77	13202	0.65	ppbv #	56
20) Tetrahydrofuran	9.429	72	7169	0.97	ppbv #	68
21) Cyclohexane	9.885	56	19072	0.84	ppbv	95
22) 2,2,4-Trimethylpentane	10.052	57	53579	0.88	ppbv	93
25) t-Amyl methyl ether	10.223	73	25733	0.72	ppbv	97
26) Heptane	10.370	71	14889	1.04	ppbv	73
27) 1,4-Dioxane	11.701	88	9155	0.94	ppbv	93
28) 2-chloroethylvinylether	11.957	63	105	5.38	ppbv #	100
31) Cyclohexanone	16.771	55	9278	0.63	ppbv #	71
33) Dicyclopentadiene	18.732	66	796	1.07	ppbv #	62
34) Naphthalene	22.477	128	32322	0.65	ppbv	98
35) 1,2,3-Trichlorobenzene	22.041	180	23134	0.93	ppbv #	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN005.D
Acq On : 25 Jun 2018 1:40 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:46:01 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN005.D
Acq On : 25 Jun 2018 1:40 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:48:15 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

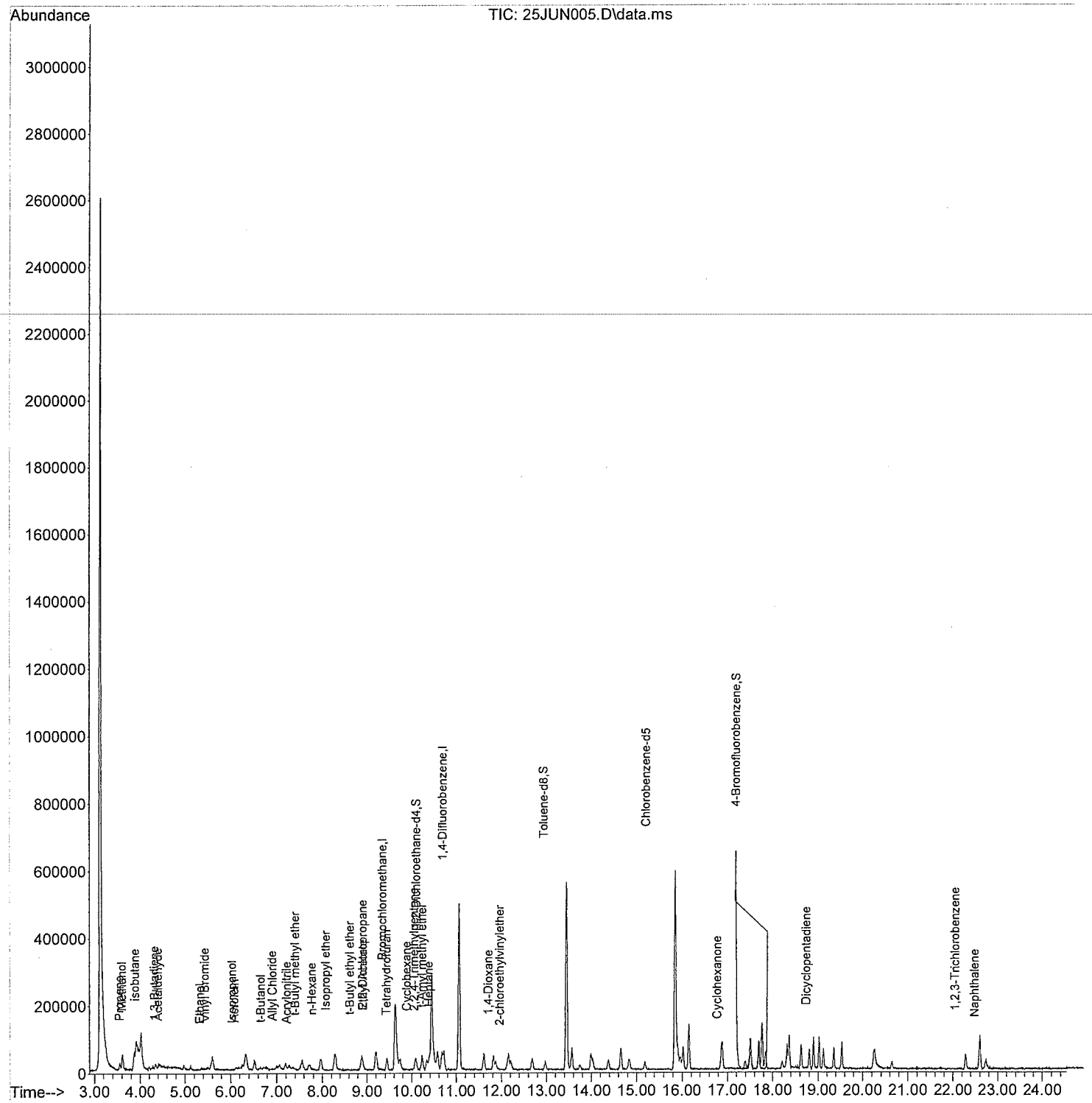
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	103796	10.00	ppbv	0.02
23) 1,4-Difluorobenzene	10.682	114	458805	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.204	117	361621	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.095	65	246801	11.45	ppbv	0.02
Spiked Amount 10.000	Range 80 - 120		Recovery = 114.50%			
29) Toluene-d8	12.931	98	471958	10.50	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 105.00%			
32) 4-Bromofluorobenzene	17.181	95	300560	10.38	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.80%			
Target Compounds						Qvalue
2) Propene	3.543	41	10795	1.00	ppbv #	82
3) isobutane	3.880	41	5998	1.11	ppbv #	1
4) 1,3-Butadiene	4.316	54	7109m	1.03	ppbv	
5) Methanol	3.595	31	2891	1.30	ppbv #	1
6) Acetaldehyde	4.398	43	3947	1.12	ppbv #	15
7) Ethanol	5.323	45	5194m	1.42	ppbv	
8) Vinyl Bromide	5.431	106	6479m	0.99	ppbv	
9) Isopropanol	6.032	45	18527m	1.09	ppbv	
10) Acrolein	6.081	56	5262m	1.04	ppbv	
11) t-Butanol	6.658	59	18720m	0.88	ppbv	
12) Allyl Chloride	6.910	41	10527	0.69	ppbv #	93
13) Acrylonitrile	7.212	53	8500m	0.95	ppbv	
14) t-Butyl methyl ether	7.399	73	35336	0.86	ppbv #	87
15) n-Hexane	7.766	57	19175	0.91	ppbv	96
16) Isopropyl ether	8.075	45	33579	0.79	ppbv #	74
17) t-Butyl ethyl ether	8.619	87	12284	0.78	ppbv	91
18) Ethyl Acetate	8.908	70	2967m	0.88	ppbv	
19) 2,2-Dichloropropane	8.904	77	13202	0.65	ppbv #	56
20) Tetrahydrofuran	9.429	72	7169	0.97	ppbv #	68
21) Cyclohexane	9.885	56	19072	0.84	ppbv	95
22) 2,2,4-Trimethylpentane	10.052	57	53579	0.88	ppbv	93
25) t-Amyl methyl ether	10.223	73	25733	0.72	ppbv	97
26) Heptane	10.370	71	14889	1.04	ppbv	73
27) 1,4-Dioxane	11.701	88	9155	0.94	ppbv	93
28) 2-chloroethylvinylether	11.957	63	105	5.38	ppbv #	100
31) Cyclohexanone	16.771	55	9278	0.63	ppbv #	71
33) Dicyclopentadiene	18.732	66	796	1.07	ppbv #	62
34) Naphthalene	22.477	128	32322	0.65	ppbv	98
35) 1,2,3-Trichlorobenzene	22.041	180	23134	0.93	ppbv #	97

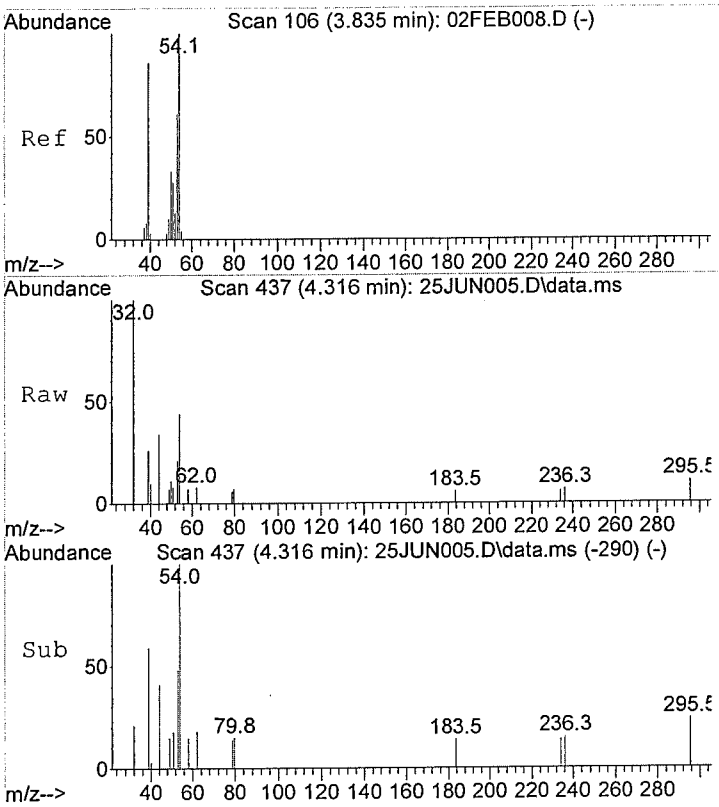
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN005.D
Acq On : 25 Jun 2018 1:40 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:48:15 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

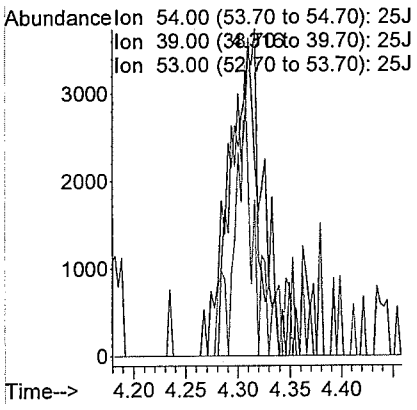




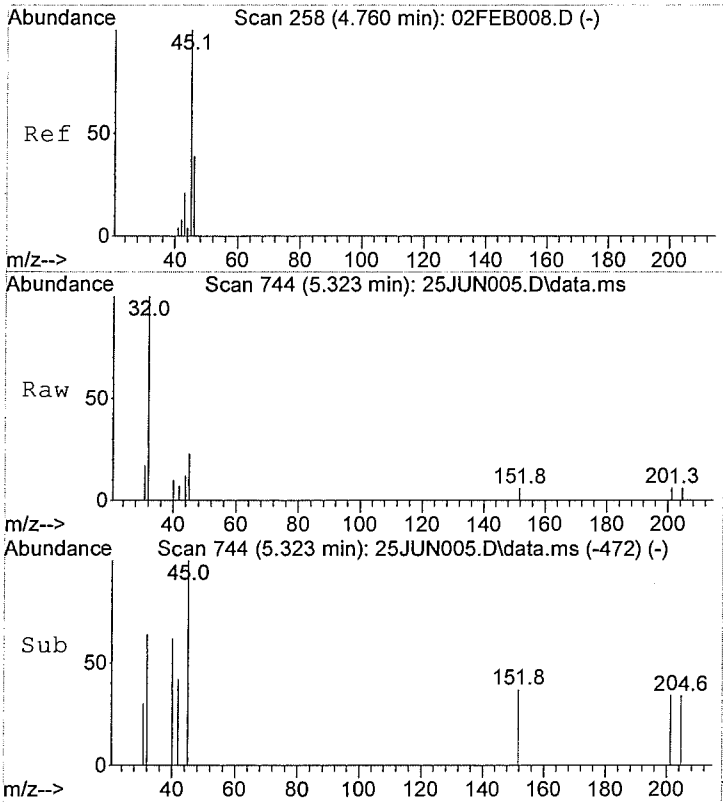
#4
1,3-Butadiene
Concen: 1.03 ppbv m
RT: 4.316 min Scan# 437
Delta R.T. 0.082 min
Lab File: 25JUN005.D
Acq: 25 Jun 2018 1:40 pm

Tgt Ion: 54 Resp: 7109

Ion	Ratio	Lower	Upper
54	100		
39	0.0	81.6	122.4#
53	0.0	55.0	82.6#



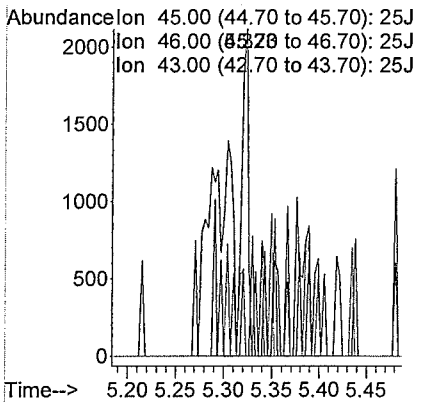
MI -3
JJ - 6/26/18



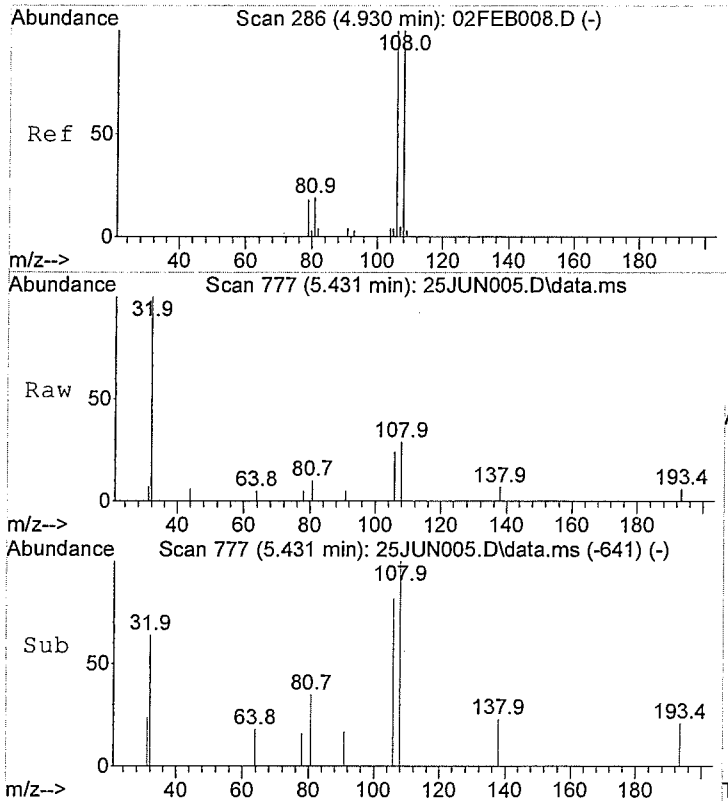
#7
Ethanol
Concen: 1.42 ppbv m
RT: 5.323 min Scan# 744
Delta R.T. 0.091 min
Lab File: 25JUN005.D
Acq: 25 Jun 2018 1:40 pm

Tgt Ion: 45 Resp: 5194

Ion	Ratio	Lower	Upper
45	100		
46	0.0	30.1	45.1#
43	0.0	20.2	30.2#



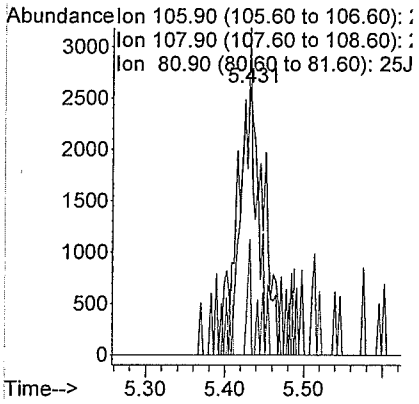
MI-3
D- 6/24/18



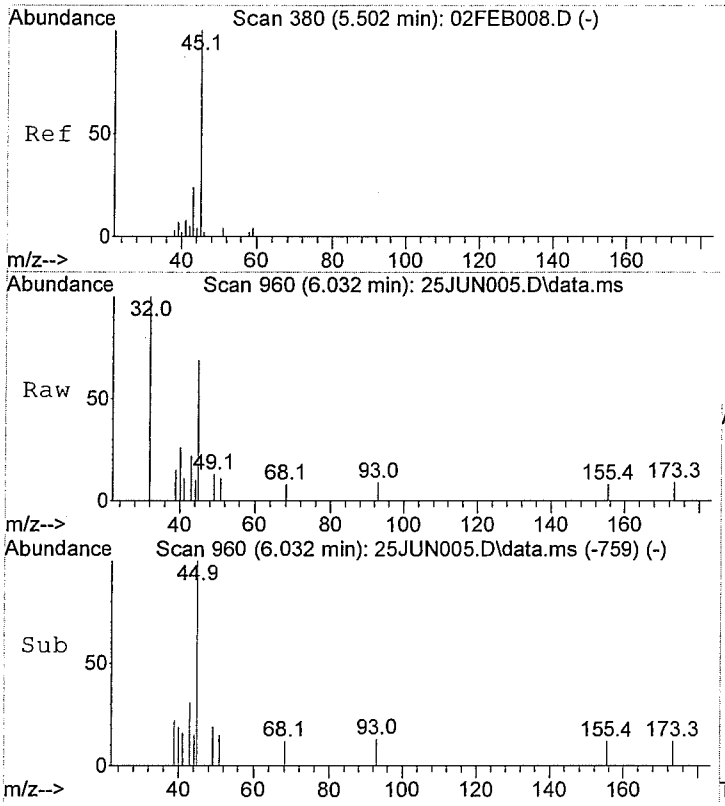
#8
Vinyl Bromide
Concen: 0.99 ppbv m
RT: 5.431 min Scan# 777
Delta R.T. 0.046 min
Lab File: 25JUN005.D
Acq: 25 Jun 2018 1:40 pm

Tgt Ion:106 Resp: 6479

Ion	Ratio	Lower	Upper
106	100		
108	1.5	75.9	113.9#
81	3.9	15.3	22.9#



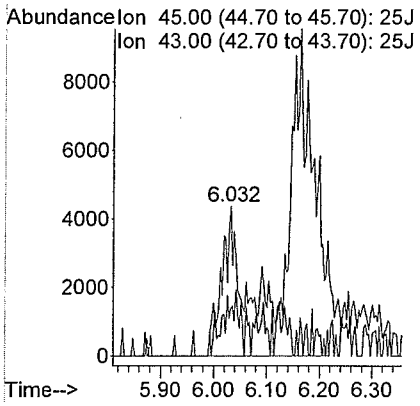
MT - 3
D - 6/26/18



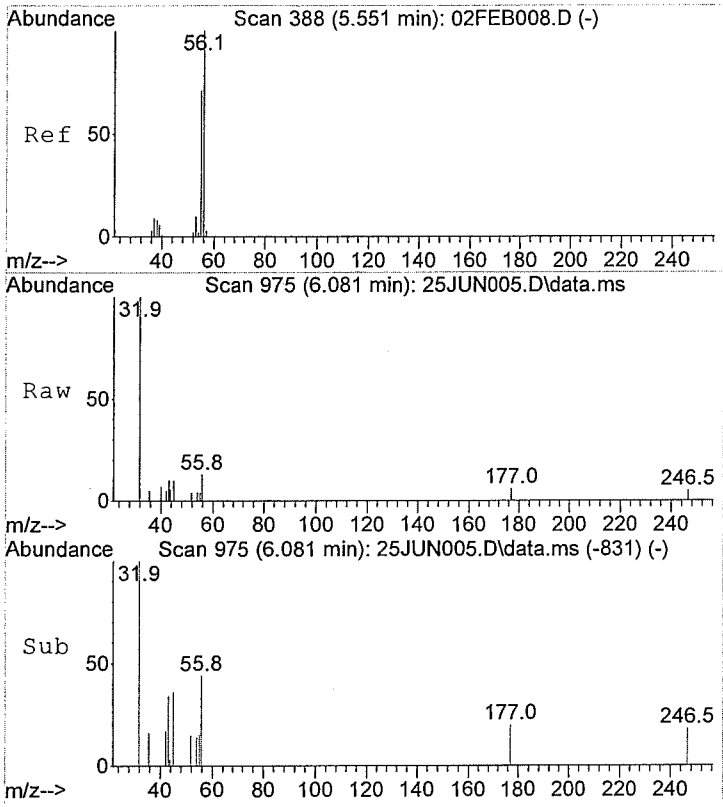
#9
Isopropanol
Concen: 1.09 ppbv m
RT: 6.032 min Scan# 960
Delta R.T. 0.059 min
Lab File: 25JUN005.D
Acq: 25 Jun 2018 1:40 pm

Tgt Ion: 45 Resp: 18527

Ion	Ratio	Lower	Upper
45	100		
43	8.2	18.8	28.2#



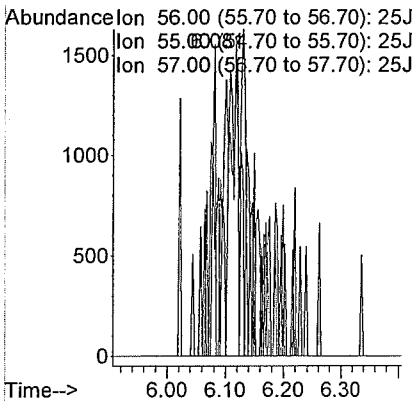
ME-3
D- 6/26/18



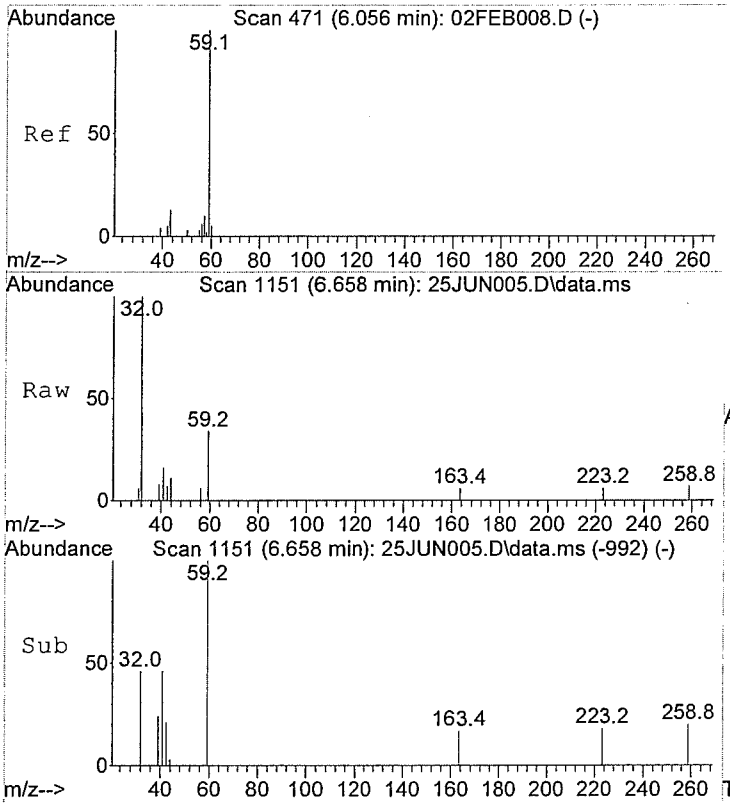
#10
Acrolein
Concen: 1.04 ppbv m
RT: 6.081 min Scan# 975
Delta R.T. 0.072 min
Lab File: 25JUN005.D
Acq: 25 Jun 2018 1:40 pm

Tgt Ion: 56 Resp: 5262

Ion	Ratio	Lower	Upper
56	100		
55	34.2	56.1	84.1#
57	0.0	3.8	5.8#



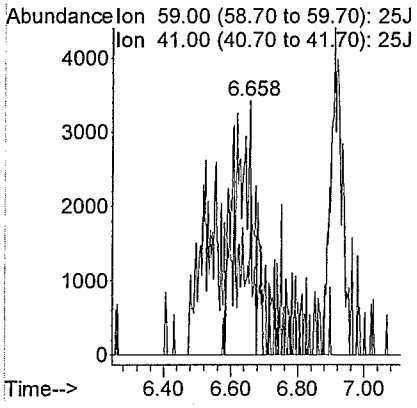
MF-3
D 6/26/18



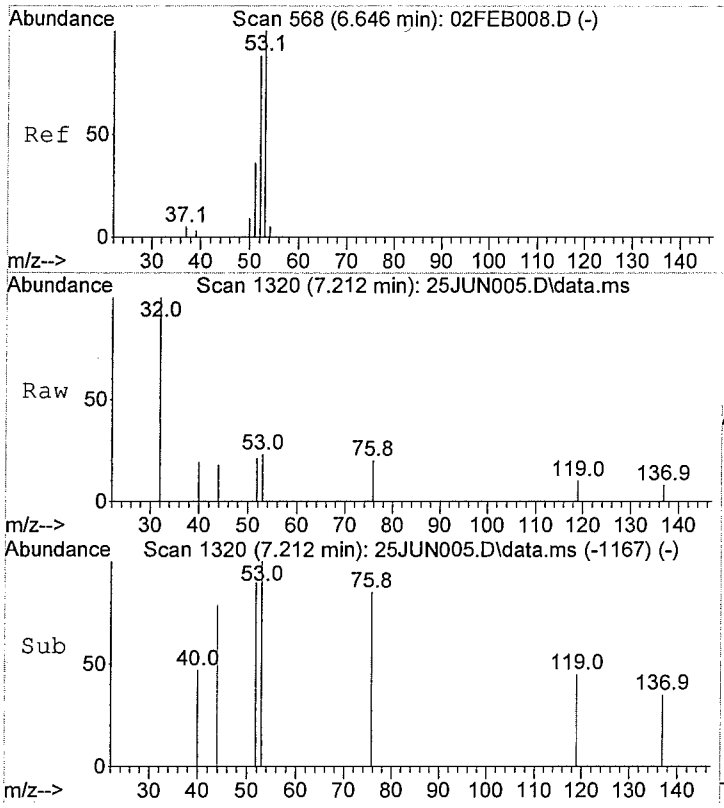
#11
t-Butanol
Concen: 0.88 ppbv m
RT: 6.658 min Scan# 1151
Delta R.T. 0.121 min
Lab File: 25JUN005.D
Acq: 25 Jun 2018 1:40 pm

Tgt Ion: 59 Resp: 18720

Ion	Ratio	Lower	Upper
59	100		
41	1.7	23.5	35.3#



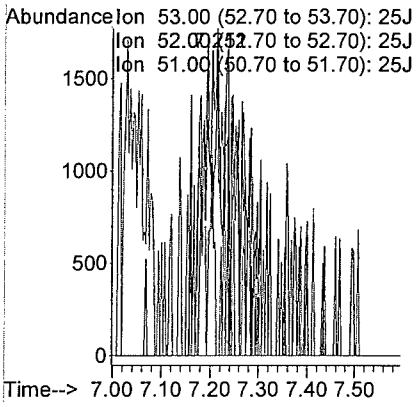
MS 3
JS 6/26/18



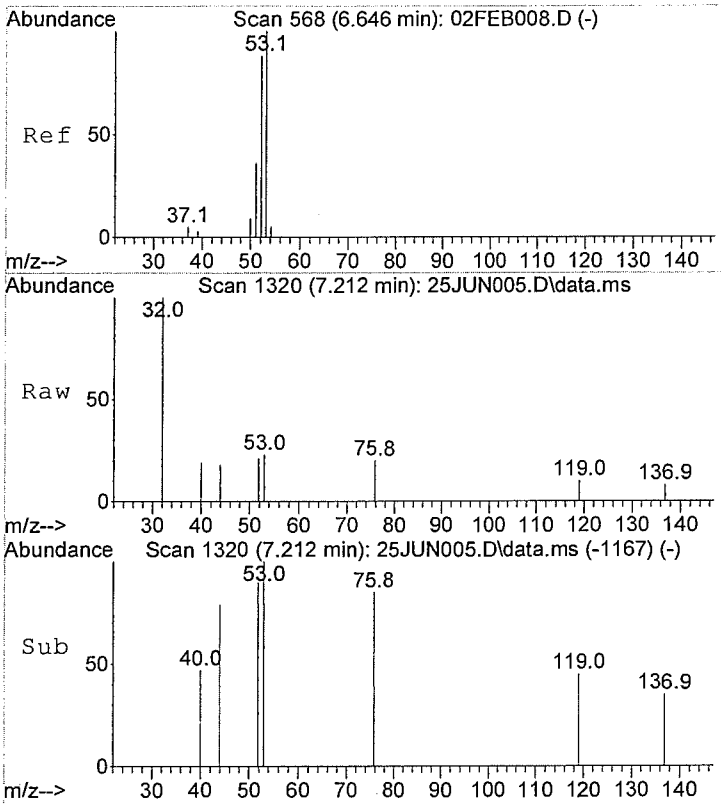
#13
Acrylonitrile
Concen: 0.95 ppbv m
RT: 7.212 min Scan# 1320
Delta R.T. 0.101 min
Lab File: 25JUN005.D
Acq: 25 Jun 2018 1:40 pm

Tgt Ion: 53 Resp: 8500

Ion	Ratio	Lower	Upper
53	100		
52	21.7	64.3	104.3#
51	6.9	21.9	61.9#



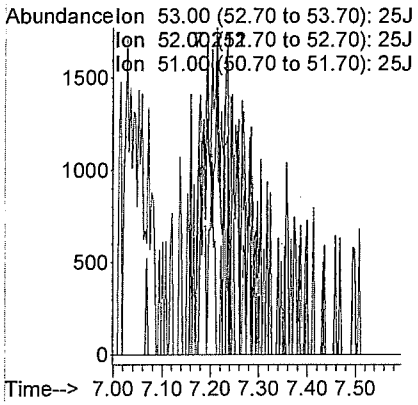
ME 3
DT 6/26/18



#13
Acrylonitrile
Concen: 0.95 ppbv m
RT: 7.212 min Scan# 1320
Delta R.T. 0.101 min
Lab File: 25JUN005.D
Acq: 25 Jun 2018 1:40 pm

Tgt Ion: 53 Resp: 8500

Ion	Ratio	Lower	Upper
53	100		
52	21.7	64.3	104.3#
51	6.9	21.9	61.9#



MI - 3
D - 6/26/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN007.D
Acq On : 25 Jun 2018 3:02 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:50:42 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

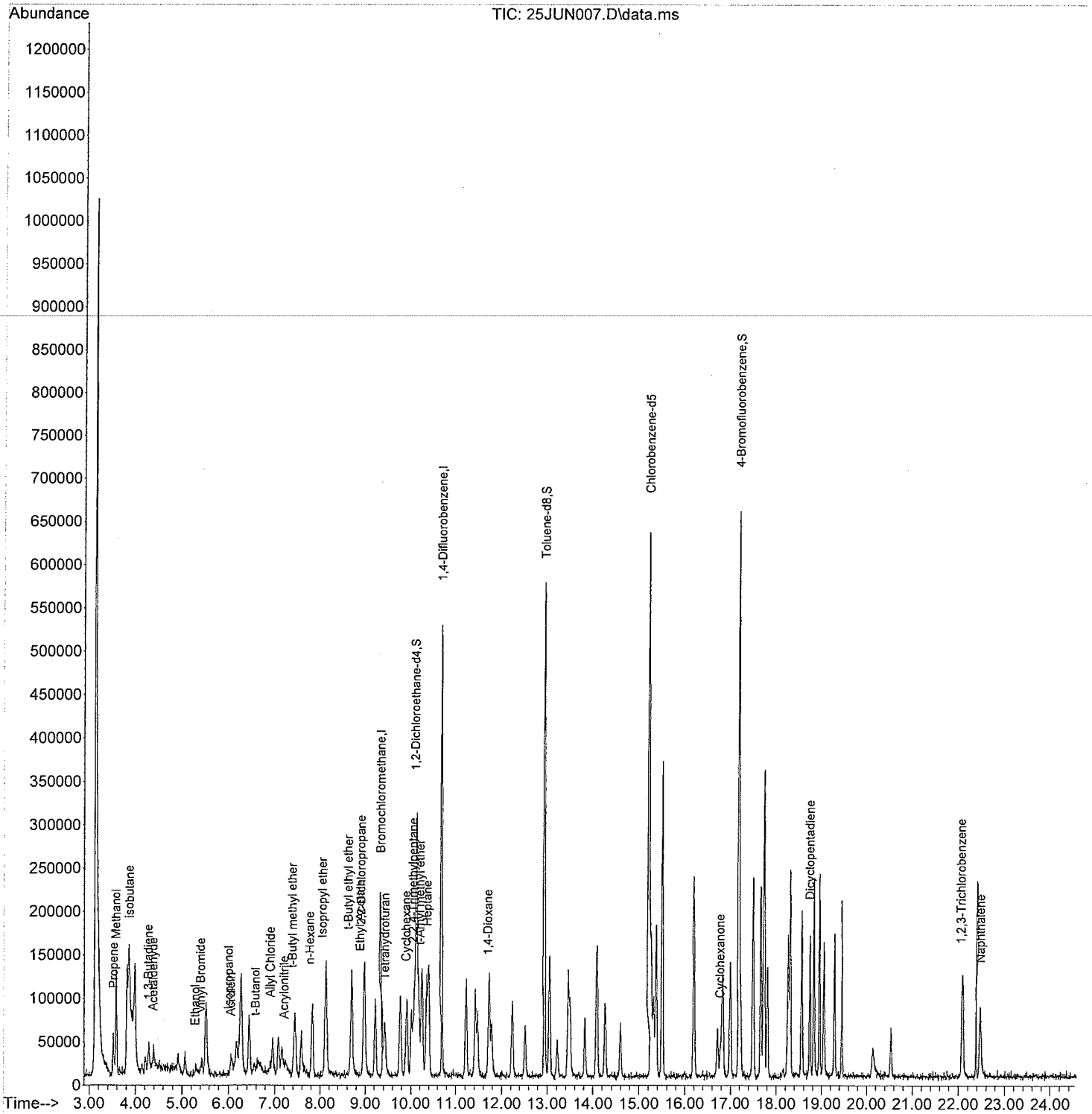
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.327	130	98310	10.00	ppbv		0.00
23) 1,4-Difluorobenzene	10.675	114	481224	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	382881	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	248346	10.98	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 109.80%				
29) Toluene-d8	12.935	98	485768	10.31	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.10%				
32) 4-Bromofluorobenzene	17.178	95	317600	10.36	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.60%				
Target Compounds							Qvalue
2) Propene	3.516	41	26691	2.61	ppbv		97
3) isobutane	3.864	41	13781	2.70	ppbv	#	1
4) 1,3-Butadiene	4.274	54	15404	2.35	ppbv		96
5) Methanol	3.572	31	7713	3.67	ppbv	#	21
6) Acetaldehyde	4.385	43	9006	2.70	ppbv	#	46
7) Ethanol	5.281	45	3840	1.11	ppbv	#	80
8) Vinyl Bromide	5.405	106	14512	2.34	ppbv	#	88
9) Isopropanol	6.005	45	24166	1.51	ppbv	#	55
10) Acrolein	6.048	56	2547	0.53	ppbv	#	75
11) t-Butanol	6.583	59	18296	0.91	ppbv	#	1
12) Allyl Chloride	6.907	41	29044	2.00	ppbv		88
13) Acrylonitrile	7.202	53	13090	1.55	ppbv	#	34
14) t-Butyl methyl ether	7.383	73	86841	2.22	ppbv	#	80
15) n-Hexane	7.766	57	49231	2.45	ppbv		92
16) Isopropyl ether	8.048	45	91521	2.28	ppbv	#	84
17) t-Butyl ethyl ether	8.619	87	30690	2.06	ppbv		76
18) Ethyl Acetate	8.881	70	6949	2.17	ppbv	#	18
19) 2,2-Dichloropropane	8.901	77	33819	1.76	ppbv	#	61
20) Tetrahydrofuran	9.426	72	17373	2.47	ppbv	#	65
21) Cyclohexane	9.891	56	52660	2.45	ppbv		91
22) 2,2,4-Trimethylpentane	10.039	57	141242	2.45	ppbv		93
25) t-Amyl methyl ether	10.196	73	70388	1.89	ppbv		98
26) Heptane	10.357	71	34473	2.30	ppbv	#	66
27) 1,4-Dioxane	11.698	88	24533	2.40	ppbv	#	83
31) Cyclohexanone	16.768	55	22031	1.42	ppbv	#	85
33) Dicyclopentadiene	18.729	66	2286	2.90	ppbv	#	46
34) Naphthalene	22.471	128	105912	2.00	ppbv		97
35) 1,2,3-Trichlorobenzene	22.051	180	57740	2.20	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN007.D
Acq On : 25 Jun 2018 3:02 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:50:42 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN007.D
Acq On : 25 Jun 2018 3:02 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:52:17 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

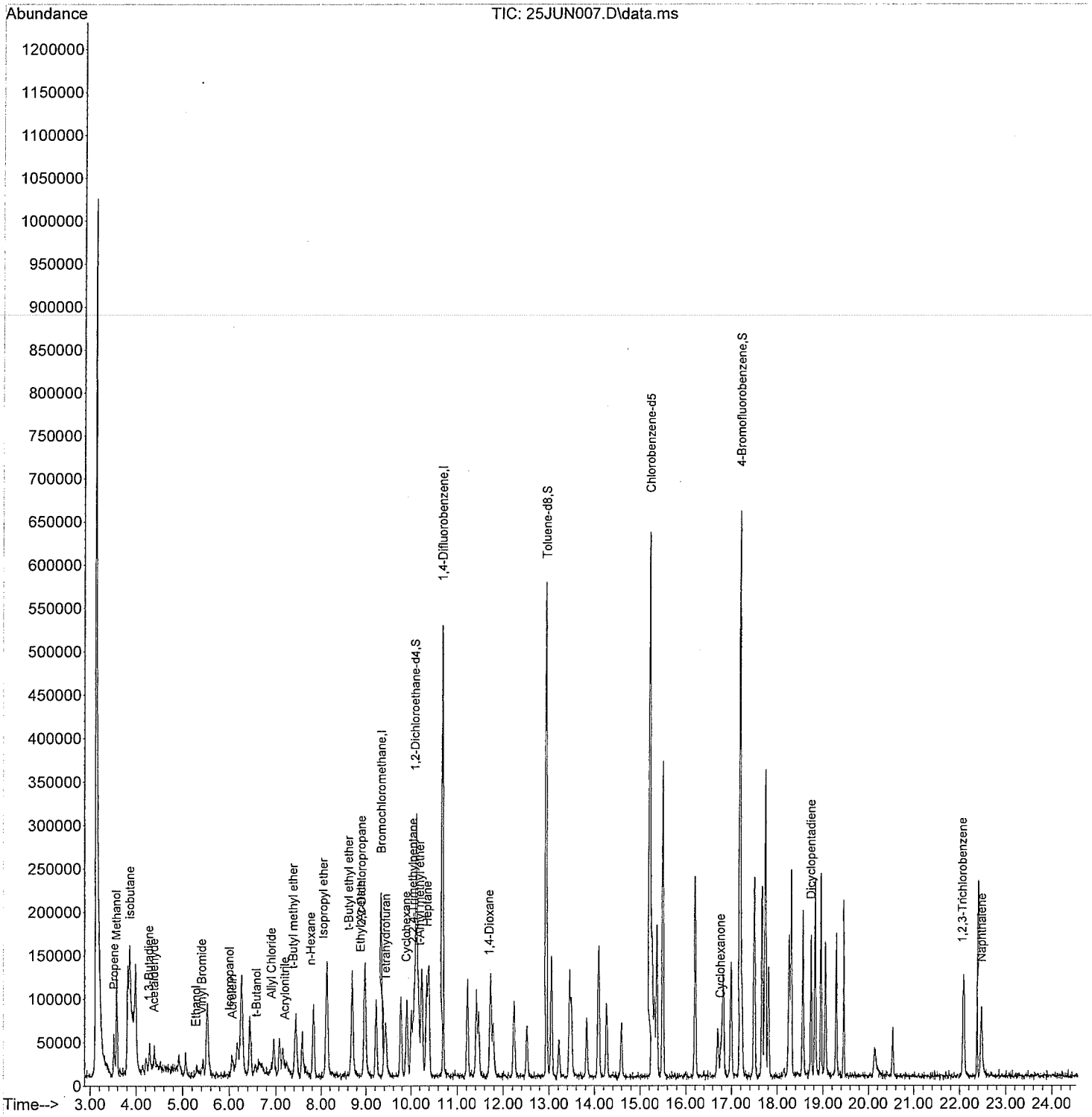
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.327	130	98310	10.00	ppbv		0.00
23) 1,4-Difluorobenzene	10.675	114	481224	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	382881	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	248346	10.98	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 109.80%				
29) Toluene-d8	12.935	98	485768	10.31	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.10%				
32) 4-Bromofluorobenzene	17.178	95	317600	10.36	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.60%				
Target Compounds							Qvalue
2) Propene	3.516	41	26691	2.61	ppbv		97
3) isobutane	3.864	41	13781	2.70	ppbv	#	1
4) 1,3-Butadiene	4.274	54	15404	2.35	ppbv		96
5) Methanol	3.572	31	7713	3.67	ppbv	#	21
6) Acetaldehyde	4.385	43	9006	2.70	ppbv	#	46
7) Ethanol	5.281	45	10480m	3.02	ppbv		
8) Vinyl Bromide	5.405	106	14512	2.34	ppbv	#	88
9) Isopropanol	6.005	45	42324m	2.64	ppbv		
10) Acrolein	6.064	56	12540m	2.63	ppbv		
11) t-Butanol	6.583	59	49390m	2.45	ppbv		
12) Allyl Chloride	6.907	41	29044	2.00	ppbv		88
13) Acrylonitrile	7.202	53	19022m	2.25	ppbv		
14) t-Butyl methyl ether	7.383	73	86841	2.22	ppbv	#	80
15) n-Hexane	7.766	57	49231	2.45	ppbv		92
16) Isopropyl ether	8.048	45	91521	2.28	ppbv	#	84
17) t-Butyl ethyl ether	8.619	87	30690	2.06	ppbv		76
18) Ethyl Acetate	8.881	70	6949	2.17	ppbv	#	18
19) 2,2-Dichloropropane	8.901	77	33819	1.76	ppbv	#	61
20) Tetrahydrofuran	9.426	72	17373	2.47	ppbv	#	65
21) Cyclohexane	9.891	56	52660	2.45	ppbv		91
22) 2,2,4-Trimethylpentane	10.039	57	141242	2.45	ppbv		93
25) t-Amyl methyl ether	10.196	73	70388	1.89	ppbv		98
26) Heptane	10.357	71	34473	2.30	ppbv	#	66
27) 1,4-Dioxane	11.698	88	24533	2.40	ppbv	#	83
31) Cyclohexanone	16.768	55	22031	1.42	ppbv	#	85
33) Dicyclopentadiene	18.729	66	2286	2.90	ppbv	#	46
34) Naphthalene	22.471	128	105912	2.00	ppbv		97
35) 1,2,3-Trichlorobenzene	22.051	180	57740	2.20	ppbv	#	99

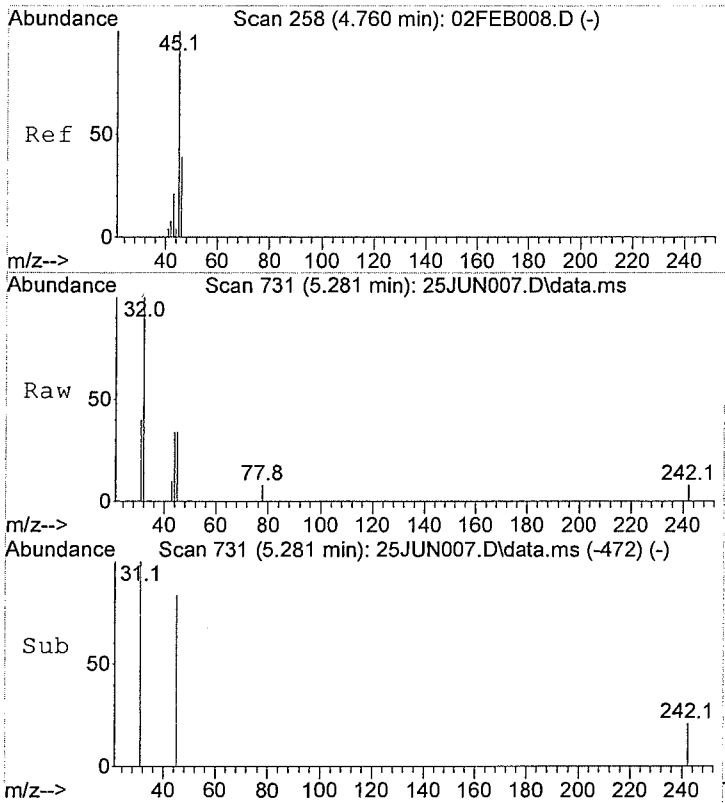
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN007.D
Acq On : 25 Jun 2018 3:02 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:52:17 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

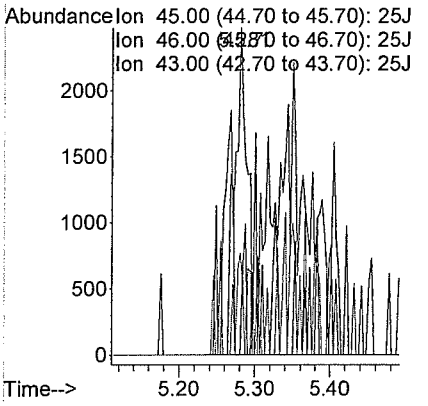




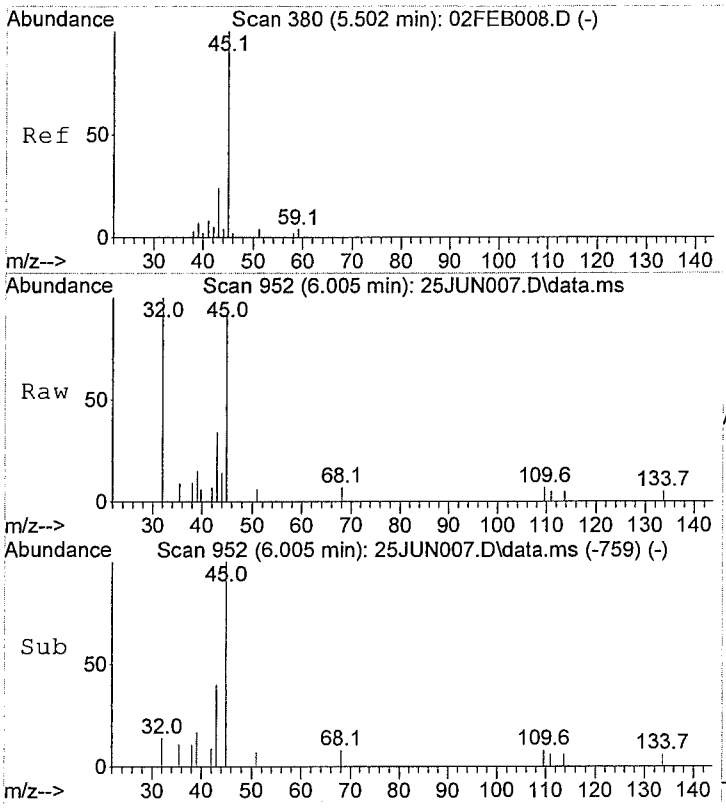
#7
Ethanol
Concen: 3.02 ppbv m
RT: 5.281 min Scan# 731
Delta R.T. 0.049 min
Lab File: 25JUN007.D
Acq: 25 Jun 2018 3:02 pm

Tgt Ion: 45 Resp: 10480

Ion	Ratio	Lower	Upper
45	100		
46	8.0	30.1	45.1#
43	7.1	20.2	30.2#



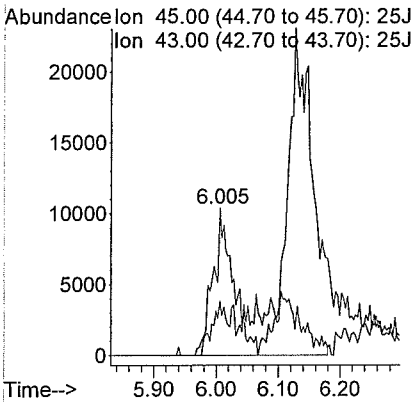
MEB
D- 6/26/18



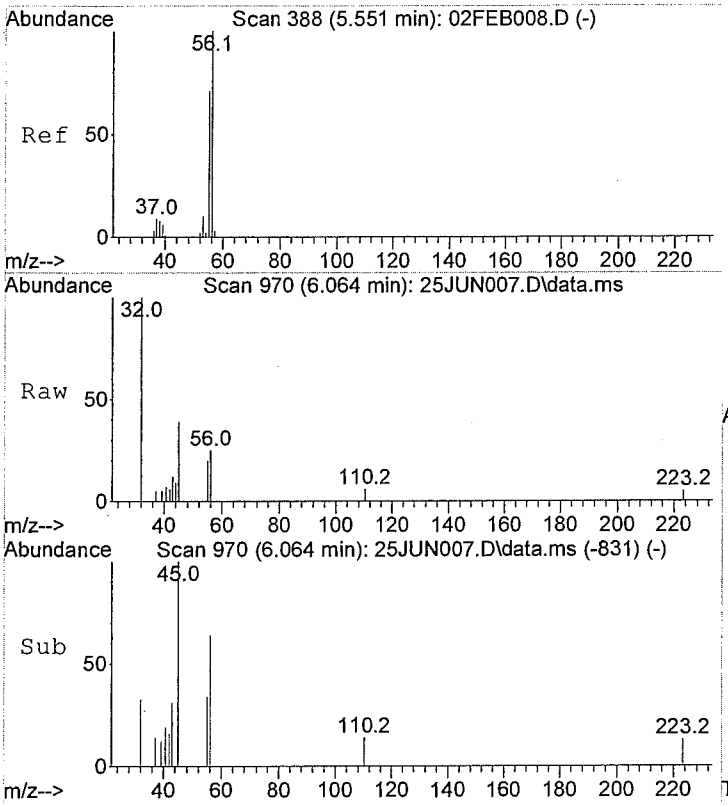
#9
Isopropanol
Concen: 2.64 ppbv m
RT: 6.005 min Scan# 952
Delta R.T. 0.033 min
Lab File: 25JUN007.D
Acq: 25 Jun 2018 3:02 pm

Tgt Ion: 45 Resp: 42324

Ion	Ratio	Lower	Upper
45	100		
43	26.0	18.8	28.2



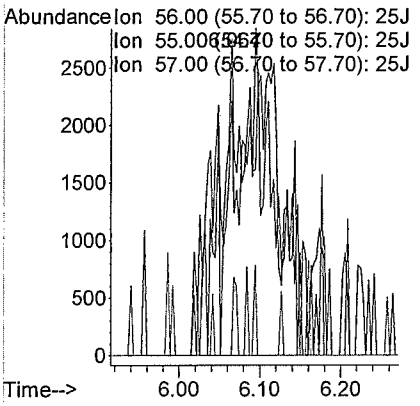
MI 3
JF 6/26/18



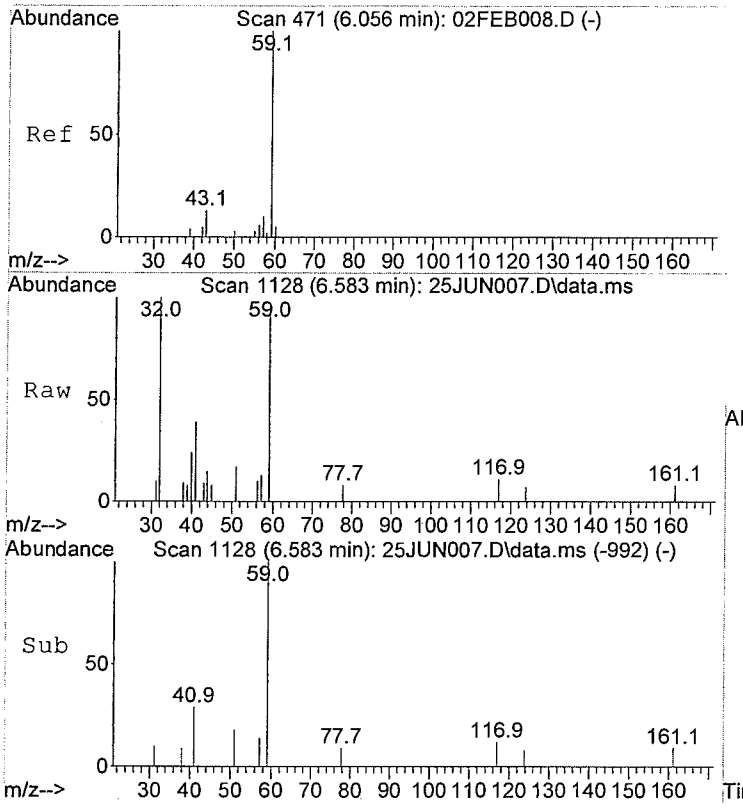
#10
Acrolein
Concen: 2.63 ppbv m
RT: 6.064 min Scan# 970
Delta R.T. 0.055 min
Lab File: 25JUN007.D
Acq: 25 Jun 2018 3:02 pm

Tgt Ion: 56 Resp: 12540

Ion	Ratio	Lower	Upper
56	100		
55	80.4	56.1	84.1
57	0.0	3.8	5.8#



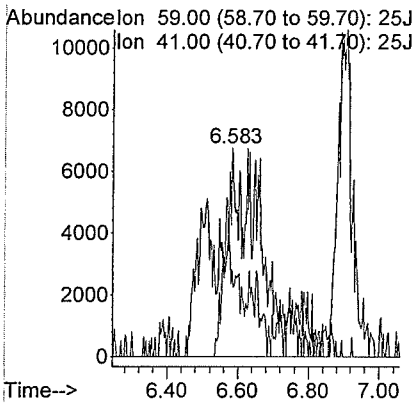
MS-3
D5 6/26/18



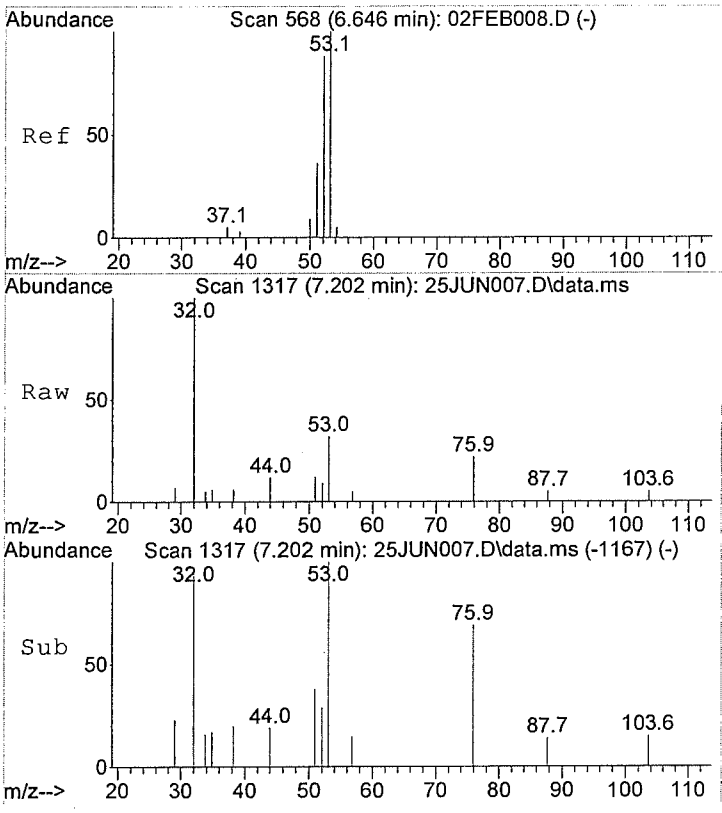
#11
t-Butanol
Concen: 2.45 ppbv m
RT: 6.583 min Scan# 1128
Delta R.T. 0.046 min
Lab File: 25JUN007.D
Acq: 25 Jun 2018 3:02 pm

Tgt Ion: 59 Resp: 49390

Ion	Ratio	Lower	Upper
59	100		
41	30.6	23.5	35.3



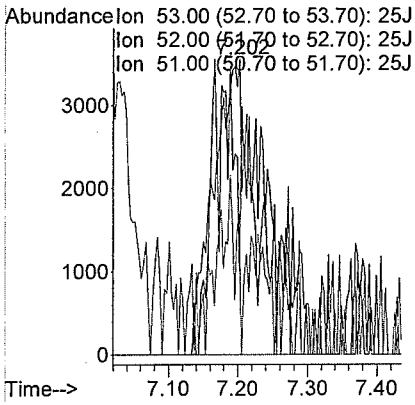
MT-3
D: 6/26/18



#13
Acrylonitrile
Concen: 2.25 ppbv m
RT: 7.202 min Scan# 1317
Delta R.T. 0.091 min
Lab File: 25JUN007.D
Acq: 25 Jun 2018 3:02 pm

Tgt Ion: 53 Resp: 19022

Ion	Ratio	Lower	Upper
53	100		
52	16.7	64.3	104.3#
51	0.0	21.9	61.9#



MC 3
D. 6/26/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN008.D
Acq On : 25 Jun 2018 3:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:54:00 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

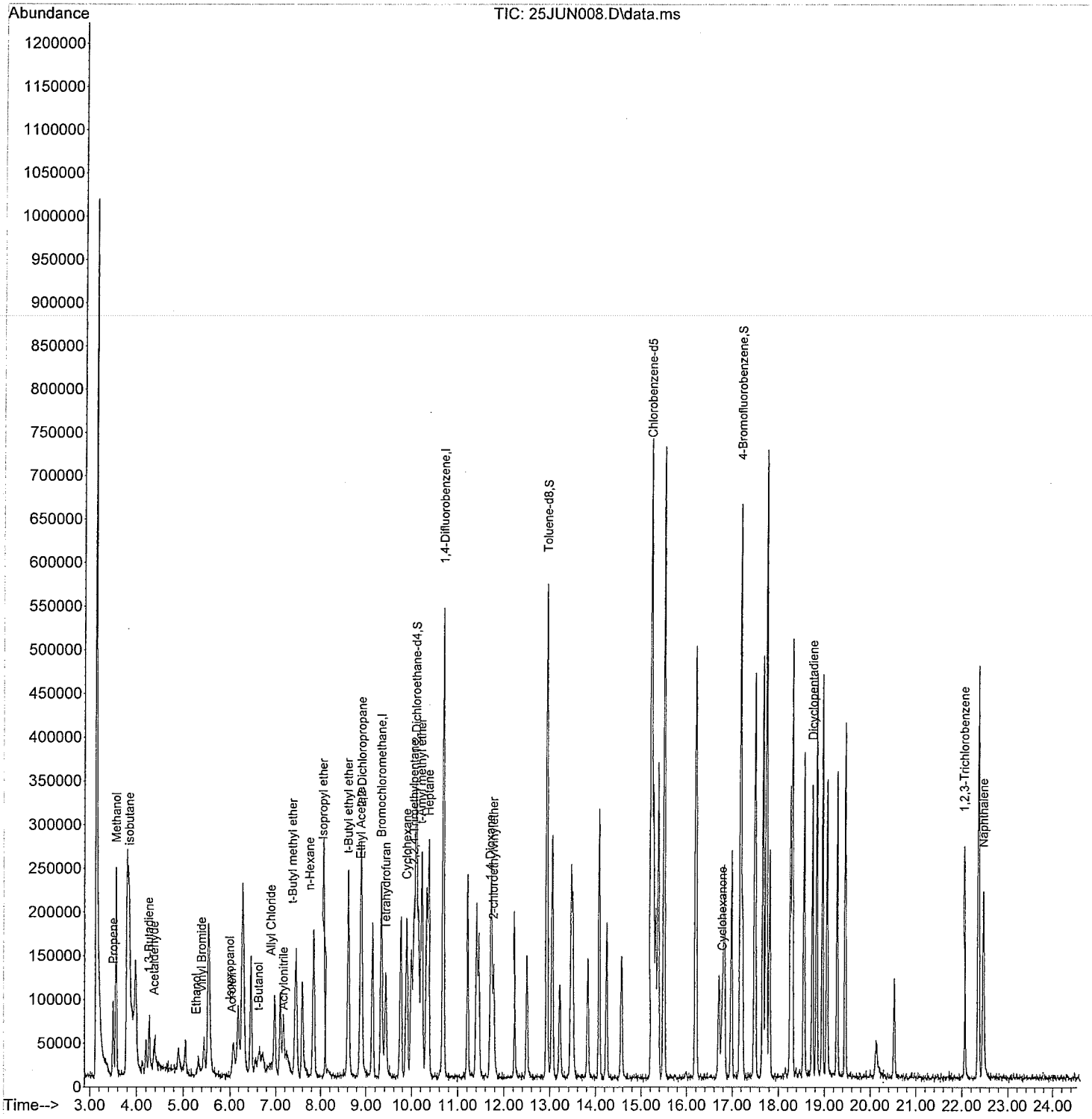
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.318	130	99547	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.678	114	490739	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.201	117	380259	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	252573	10.95	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 109.50%				
29) Toluene-d8	12.931	98	493534	10.27	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.70%				
32) 4-Bromofluorobenzene	17.178	95	312188	10.25	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.50%				
Target Compounds							Qvalue
2) Propene	3.503	41	47021	4.53	ppbv	#	93
3) isobutane	3.844	41	27254	5.27	ppbv	#	1
4) 1,3-Butadiene	4.261	54	32200	4.85	ppbv		97
5) Methanol	3.566	31	15901	7.46	ppbv	#	29
6) Acetaldehyde	4.376	43	13582	4.02	ppbv	#	84
7) Ethanol	5.274	45	13011	3.71	ppbv	#	80
8) Vinyl Bromide	5.389	106	29844	4.75	ppbv		96
9) Isopropanol	5.992	45	57335	3.53	ppbv		92
10) Acrolein	6.038	56	16371	3.39	ppbv	#	71
11) t-Butanol	6.629	59	33969	1.67	ppbv		99
12) Allyl Chloride	6.897	41	68855	4.68	ppbv	#	91
13) Acrylonitrile	7.170	53	27816	3.26	ppbv	#	32
14) t-Butyl methyl ether	7.373	73	186257	4.70	ppbv	#	87
15) n-Hexane	7.753	57	98546	4.85	ppbv		88
16) Isopropyl ether	8.045	45	189499	4.67	ppbv	#	92
17) t-Butyl ethyl ether	8.603	87	67153	4.46	ppbv		76
18) Ethyl Acetate	8.878	70	16603	5.11	ppbv	#	36
19) 2,2-Dichloropropane	8.898	77	73967	3.79	ppbv	#	72
20) Tetrahydrofuran	9.416	72	31524	4.44	ppbv	#	61
21) Cyclohexane	9.885	56	110845	5.09	ppbv		92
22) 2,2,4-Trimethylpentane	10.039	57	294364	5.04	ppbv		96
25) t-Amyl methyl ether	10.203	73	148184	3.90	ppbv		96
26) Heptane	10.364	71	74743	4.88	ppbv		74
27) 1,4-Dioxane	11.695	88	49374	4.74	ppbv		89
28) 2-chloroethylvinylether	11.764	63	257	12.30	ppbv	#	100
31) Cyclohexanone	16.771	55	50431	3.27	ppbv		89
33) Dicyclopentadiene	18.732	66	4655	5.95	ppbv		90
34) Naphthalene	22.461	128	244918	4.65	ppbv		99
35) 1,2,3-Trichlorobenzene	22.035	180	127229	4.89	ppbv	#	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN008.D
Acq On : 25 Jun 2018 3:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:54:00 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN008.D
Acq On : 25 Jun 2018 3:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:55:10 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

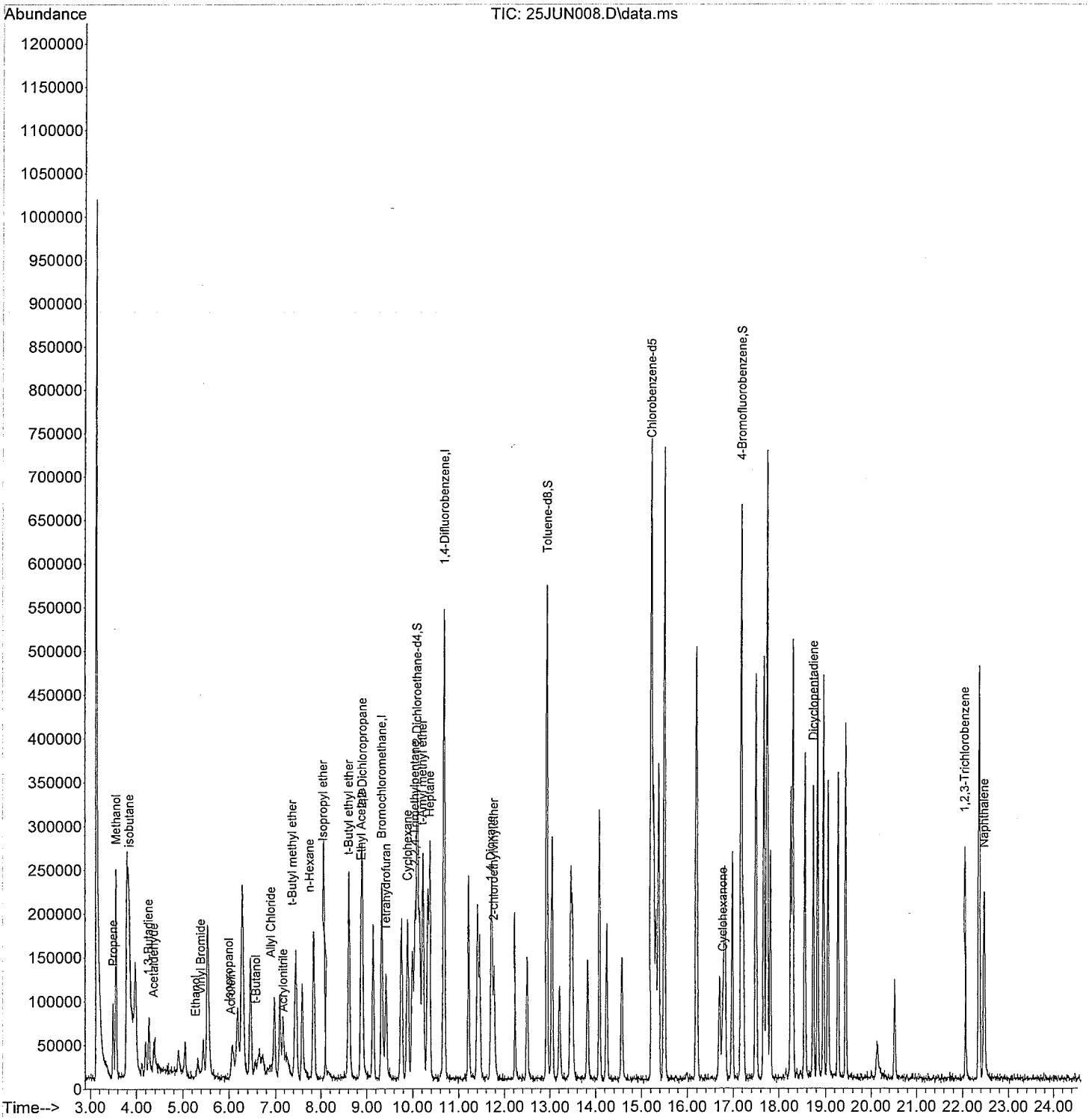
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.318	130	99547	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.678	114	490739	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.201	117	380259	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	252573	10.95	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 109.50%				
29) Toluene-d8	12.931	98	493534	10.27	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.70%				
32) 4-Bromofluorobenzene	17.178	95	312188	10.25	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.50%				
Target Compounds							Qvalue
2) Propene	3.503	41	47021	4.53	ppbv	#	93
3) isobutane	3.844	41	27254	5.27	ppbv	#	1
4) 1,3-Butadiene	4.261	54	32200	4.85	ppbv		97
5) Methanol	3.566	31	15901	7.46	ppbv	#	29
6) Acetaldehyde	4.376	43	13582	4.02	ppbv	#	84
7) Ethanol	5.274	45	21934m	6.25	ppbv		
8) Vinyl Bromide	5.389	106	29844	4.75	ppbv		96
9) Isopropanol	5.992	45	86586m	5.33	ppbv		
10) Acrolein	6.038	56	24163m	5.00	ppbv		
11) t-Butanol	6.573	59	102695m	5.04	ppbv		
12) Allyl Chloride	6.897	41	68855	4.68	ppbv	#	91
13) Acrylonitrile	7.170	53	44825m	5.25	ppbv		
14) t-Butyl methyl ether	7.373	73	186257	4.70	ppbv	#	87
15) n-Hexane	7.753	57	98546	4.85	ppbv		88
16) Isopropyl ether	8.045	45	189499	4.67	ppbv	#	92
17) t-Butyl ethyl ether	8.603	87	67153	4.46	ppbv		76
18) Ethyl Acetate	8.878	70	16603	5.11	ppbv	#	36
19) 2,2-Dichloropropane	8.898	77	73967	3.79	ppbv	#	72
20) Tetrahydrofuran	9.416	72	31524	4.44	ppbv	#	61
21) Cyclohexane	9.885	56	110845	5.09	ppbv		92
22) 2,2,4-Trimethylpentane	10.039	57	294364	5.04	ppbv		96
25) t-Amyl methyl ether	10.203	73	148184	3.90	ppbv		96
26) Heptane	10.364	71	74743	4.88	ppbv		74
27) 1,4-Dioxane	11.695	88	49374	4.74	ppbv		89
28) 2-chloroethylvinylether	11.764	63	257	12.30	ppbv	#	100
31) Cyclohexanone	16.771	55	50431	3.27	ppbv		89
33) Dicyclopentadiene	18.732	66	4655	5.95	ppbv		90
34) Naphthalene	22.461	128	244918	4.65	ppbv		99
35) 1,2,3-Trichlorobenzene	22.035	180	127229	4.89	ppbv	#	97

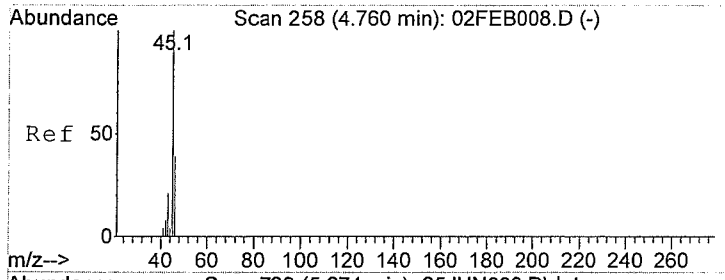
(#) = qualifier out of range (m) = manual integration (+) = signals summed

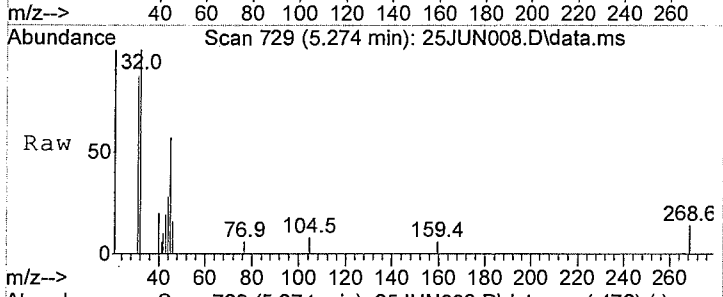
Quantitation Report (QT Reviewed)

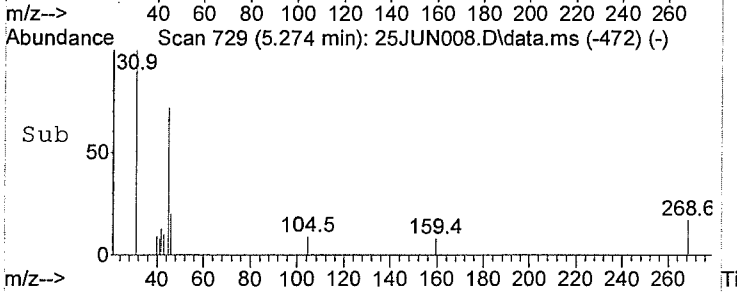
Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN008.D
Acq On : 25 Jun 2018 3:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 26 09:55:10 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration





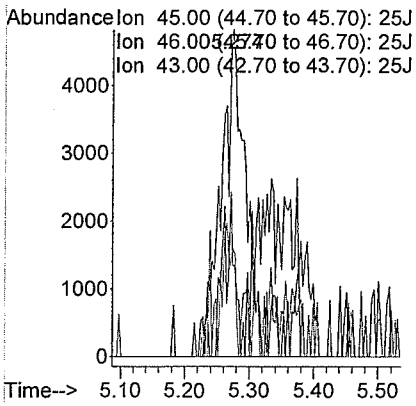




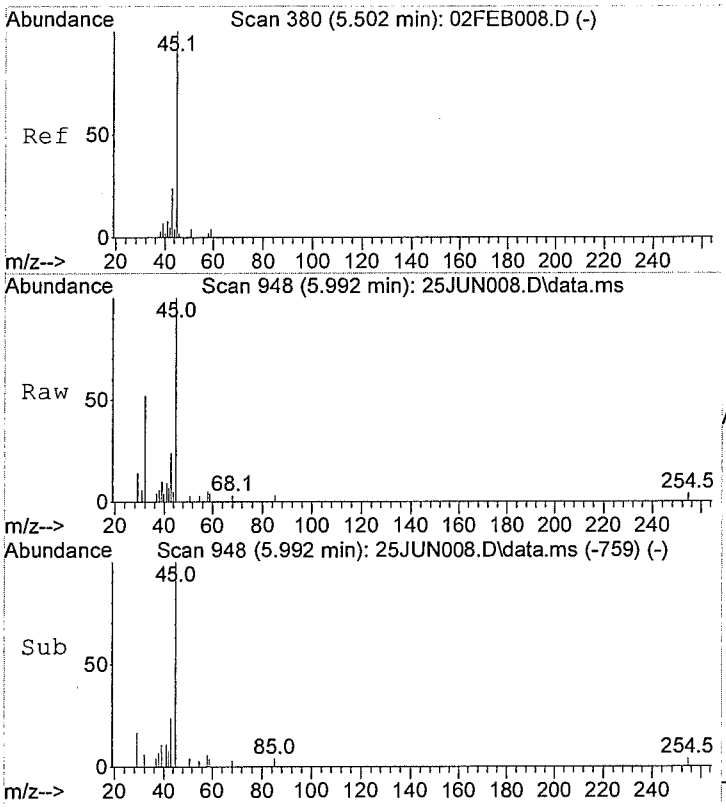
#7
Ethanol
Concen: 6.25 ppbv m
RT: 5.274 min Scan# 729
Delta R.T. 0.042 min
Lab File: 25JUN008.D
Acq: 25 Jun 2018 3:44 pm

Tgt Ion: 45 Resp: 21934

Ion	Ratio	Lower	Upper
45	100		
46	13.7	30.1	45.1#
43	11.0	20.2	30.2#



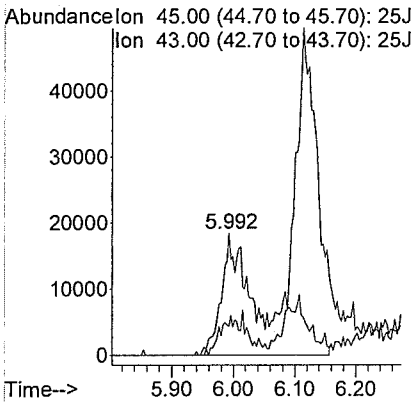
ME 3
B- 6/26/18



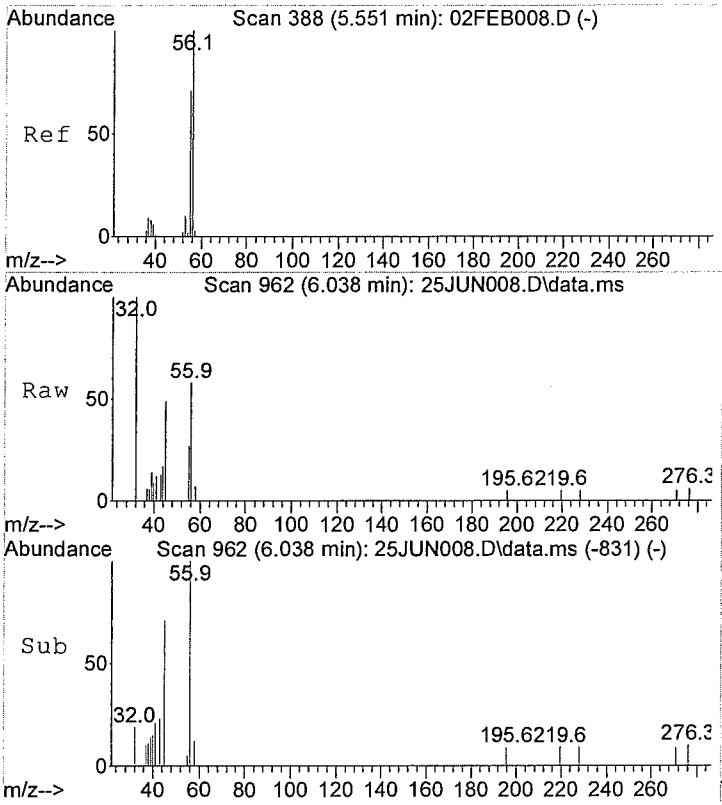
#9
Isopropanol
Concen: 5.33 ppbv m
RT: 5.992 min Scan# 948
Delta R.T. 0.020 min
Lab File: 25JUN008.D
Acq: 25 Jun 2018 3:44 pm

Tgt Ion: 45 Resp: 86586

Ion	Ratio	Lower	Upper
45	100		
43	13.1	18.8	28.2#



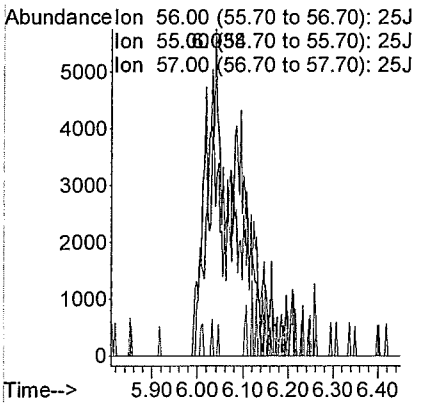
MI 3
DJ 6/26/18



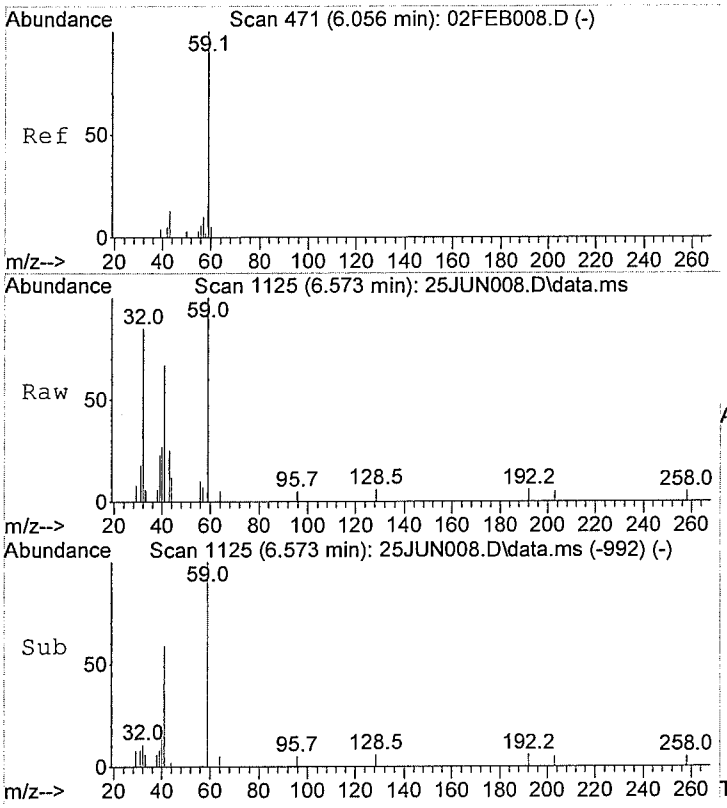
#10
Acrolein
Concen: 5.00 ppbv m
RT: 6.038 min Scan# 962
Delta R.T. 0.029 min
Lab File: 25JUN008.D
Acq: 25 Jun 2018 3:44 pm

Tgt Ion: 56 Resp: 24163

Ion	Ratio	Lower	Upper
56	100		
55	45.7	56.1	84.1#
57	0.0	3.8	5.8#



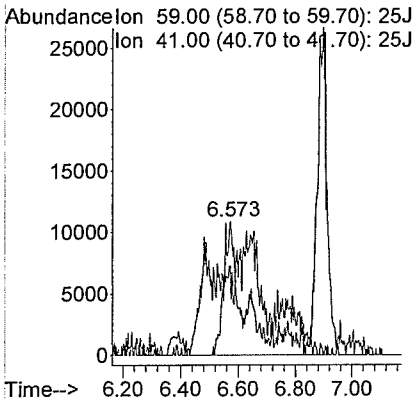
ME-3
DT 6/26/18



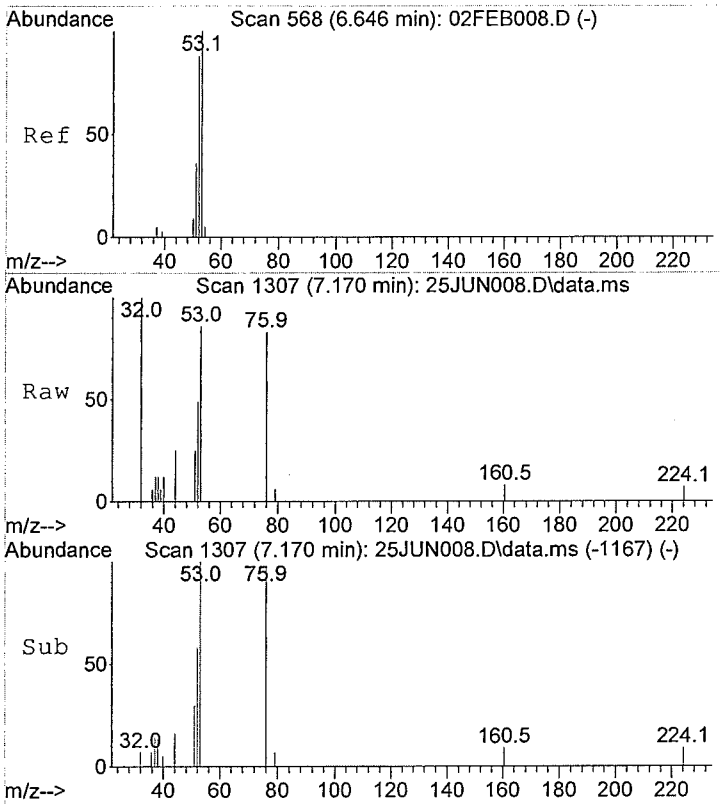
#11
t-Butanol
Concen: 5.04 ppbv m
RT: 6.573 min Scan# 1125
Delta R.T. 0.036 min
Lab File: 25JUN008.D
Acq: 25 Jun 2018 3:44 pm

Tgt Ion: 59 Resp: 102695

Ion	Ratio	Lower	Upper
59	100		
41	9.5	23.5	35.3#



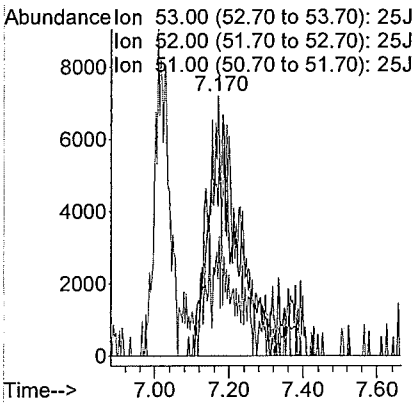
ME-3
D1 - 6/26/18



#13
Acrylonitrile
Concen: 5.25 ppbv m
RT: 7.170 min Scan# 1307
Delta R.T. 0.059 min
Lab File: 25JUN008.D
Acq: 25 Jun 2018 3:44 pm

Tgt Ion: 53 Resp: 44825

Ion	Ratio	Lower	Upper
53	100		
52	0.0	64.3	104.3#
51	19.5	21.9	61.9#



MI - 3
DT 6/26/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN009.D
Acq On : 25 Jun 2018 4:47 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 09:56:56 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

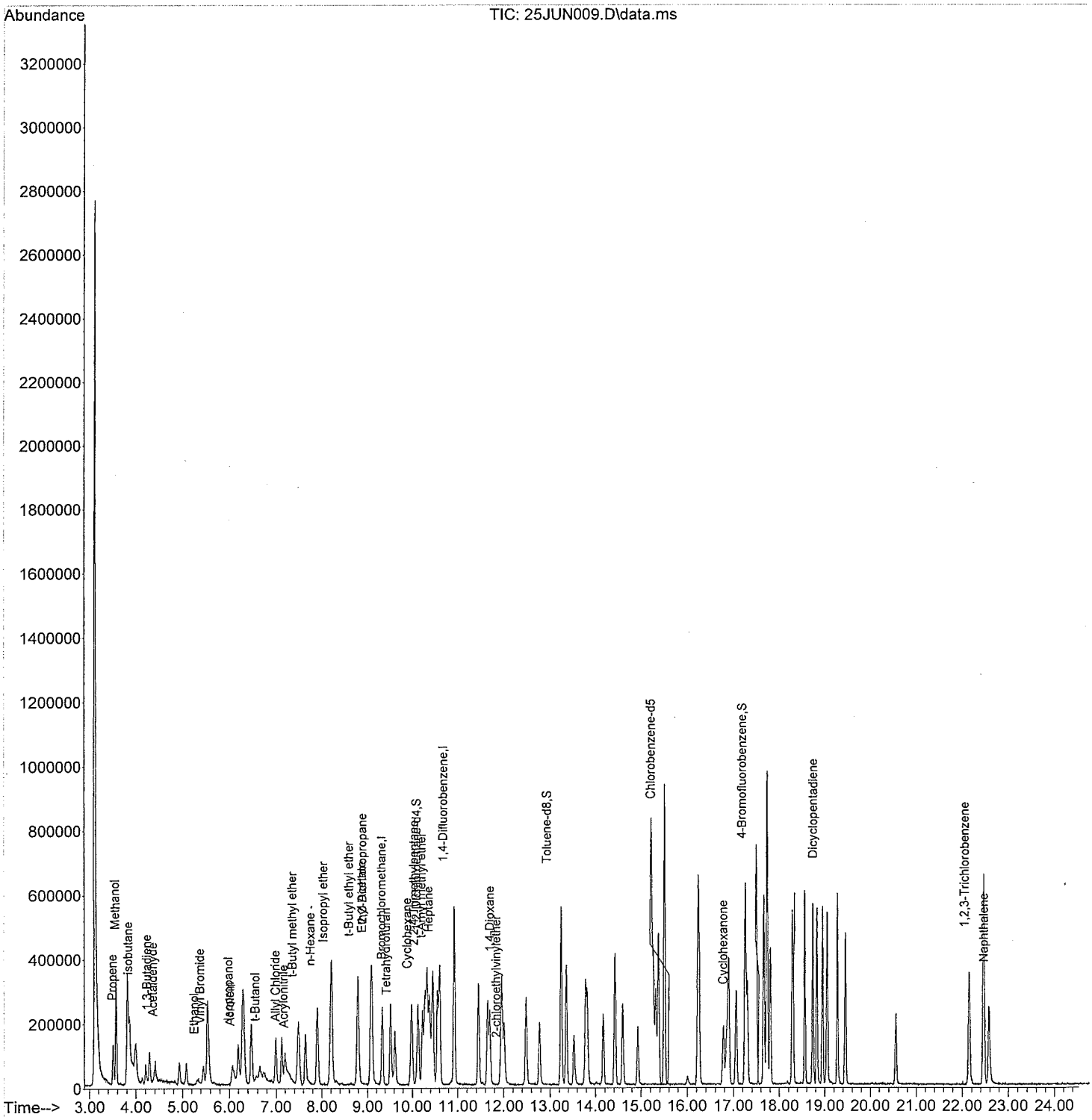
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.314	130	101548	10.00	ppbv		0.00
23) 1,4-Difluorobenzene	10.672	114	490003	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.201	117	375413	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.085	65	250704	10.89	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 108.90%				
29) Toluene-d8	12.928	98	472975	9.86	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 98.60%				
32) 4-Bromofluorobenzene	17.178	95	299133	9.95	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.50%				
Target Compounds							Qvalue
2) Propene	3.490	41	63377	5.99	ppbv	#	91
3) isobutane	3.828	41	41455	7.86	ppbv	#	1
4) 1,3-Butadiene	4.235	54	48477	7.15	ppbv		91
5) Methanol	3.549	31	19762	9.09	ppbv	#	1
6) Acetaldehyde	4.359	43	23143	6.72	ppbv	#	83
7) Ethanol	5.258	45	14434	4.03	ppbv	#	77
8) Vinyl Bromide	5.379	106	47130	7.35	ppbv		98
9) Isopropanol	5.982	45	85091	5.13	ppbv	#	83
10) Acrolein	6.012	56	27618	5.60	ppbv	#	78
11) t-Butanol	6.553	59	65675	3.16	ppbv		98
12) Allyl Chloride	6.986	41	1699	0.11	ppbv		88
13) Acrylonitrile	7.160	53	54410	6.24	ppbv	#	73
14) t-Butyl methyl ether	7.360	73	267792	6.63	ppbv	#	88
15) n-Hexane	7.750	57	143595	6.93	ppbv		90
16) Isopropyl ether	8.032	45	280260	6.77	ppbv	#	90
17) t-Butyl ethyl ether	8.593	87	96308	6.27	ppbv	#	71
18) Ethyl Acetate	8.875	70	22257	6.72	ppbv	#	43
19) 2,2-Dichloropropane	8.885	77	118575	5.96	ppbv	#	77
20) Tetrahydrofuran	9.416	72	48528	6.69	ppbv	#	74
21) Cyclohexane	9.885	56	158352	7.13	ppbv		91
22) 2,2,4-Trimethylpentane	10.032	57	439258	7.37	ppbv		96
25) t-Amyl methyl ether	10.196	73	218276	5.75	ppbv		99
26) Heptane	10.354	71	105833	6.92	ppbv		78
27) 1,4-Dioxane	11.695	88	65287	6.28	ppbv	#	84
28) 2-chloroethylvinylether	11.836	63	134	6.42	ppbv	#	100
31) Cyclohexanone	16.768	55	91606	6.02	ppbv		90
33) Dicyclopentadiene	18.732	66	5562	7.20	ppbv		90
34) Naphthalene	22.464	128	303636	5.84	ppbv		99
35) 1,2,3-Trichlorobenzene	22.041	180	165285	6.43	ppbv	#	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN009.D
Acq On : 25 Jun 2018 4:47 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 09:56:56 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN009.D
Acq On : 25 Jun 2018 4:47 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 09:58:55 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

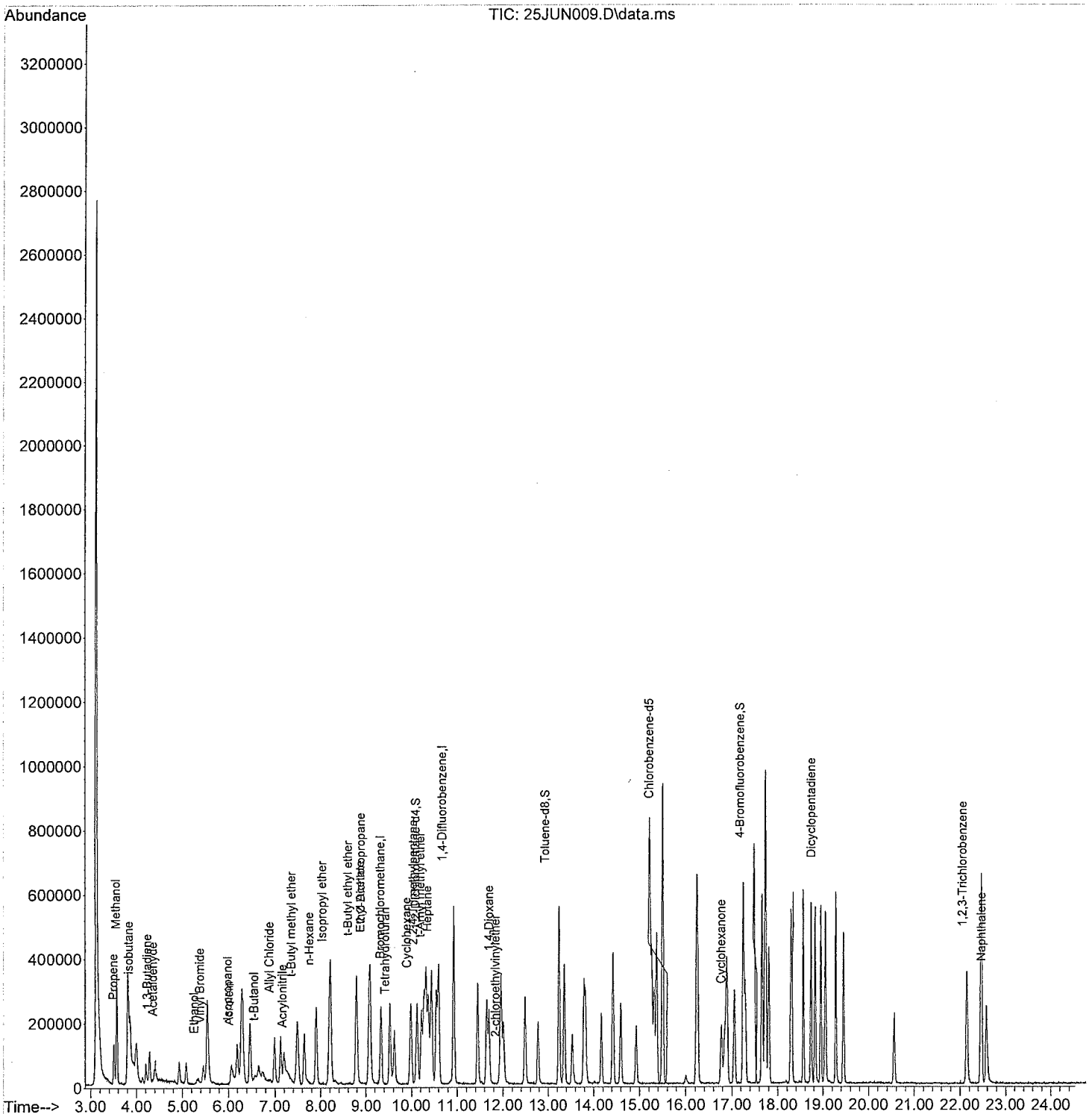
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.314	130	101548	10.00	ppbv		0.00
23) 1,4-Difluorobenzene	10.672	114	490003	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.201	117	375413	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.085	65	250704	10.89	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 108.90%				
29) Toluene-d8	12.928	98	472975	9.86	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 98.60%				
32) 4-Bromofluorobenzene	17.178	95	299133	9.95	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.50%				
Target Compounds							Qvalue
2) Propene	3.490	41	63377	5.99	ppbv	#	91
3) isobutane	3.828	41	41455	7.86	ppbv	#	1
4) 1,3-Butadiene	4.235	54	48477	7.15	ppbv		91
5) Methanol	3.549	31	19762	9.09	ppbv	#	1
6) Acetaldehyde	4.359	43	23143	6.72	ppbv	#	83
7) Ethanol	5.258	45	25687m	7.18	ppbv		
8) Vinyl Bromide	5.379	106	47130	7.35	ppbv		98
9) Isopropanol	5.982	45	123071m	7.43	ppbv		
10) Acrolein	6.012	56	34638m	7.03	ppbv		
11) t-Butanol	6.553	59	160196m	7.70	ppbv		
12) Allyl Chloride	6.881	41	107177m	7.14	ppbv		
13) Acrylonitrile	7.160	53	68817m	7.89	ppbv		
14) t-Butyl methyl ether	7.360	73	267792	6.63	ppbv	#	88
15) n-Hexane	7.750	57	143595	6.93	ppbv		90
16) Isopropyl ether	8.032	45	280260	6.77	ppbv	#	90
17) t-Butyl ethyl ether	8.593	87	96308	6.27	ppbv	#	71
18) Ethyl Acetate	8.875	70	22257	6.72	ppbv	#	43
19) 2,2-Dichloropropane	8.885	77	118575	5.96	ppbv	#	77
20) Tetrahydrofuran	9.416	72	48528	6.69	ppbv	#	74
21) Cyclohexane	9.885	56	158352	7.13	ppbv		91
22) 2,2,4-Trimethylpentane	10.032	57	439258	7.37	ppbv		96
25) t-Amyl methyl ether	10.196	73	218276	5.75	ppbv		99
26) Heptane	10.354	71	105833	6.92	ppbv		78
27) 1,4-Dioxane	11.695	88	65287	6.28	ppbv	#	84
28) 2-chloroethylvinylether	11.836	63	134	6.42	ppbv	#	100
31) Cyclohexanone	16.768	55	91606	6.02	ppbv		90
33) Dicyclopentadiene	18.732	66	5562	7.20	ppbv		90
34) Naphthalene	22.464	128	303636	5.84	ppbv		99
35) 1,2,3-Trichlorobenzene	22.041	180	165285	6.43	ppbv	#	97

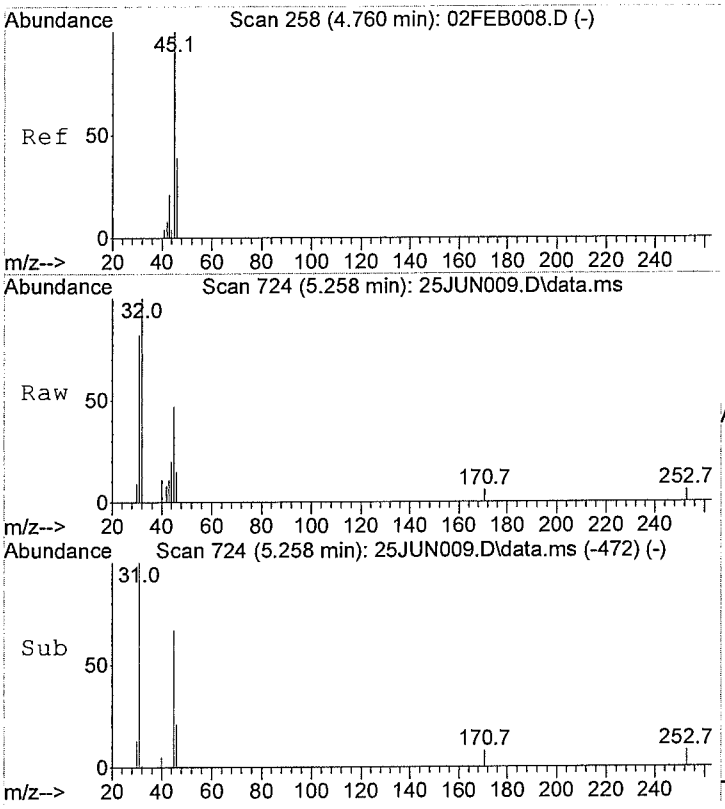
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN009.D
Acq On : 25 Jun 2018 4:47 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 26 09:58:55 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Thu Jun 21 11:02:46 2018
Response via : Initial Calibration

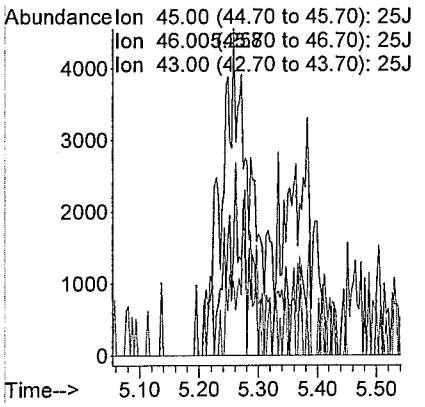




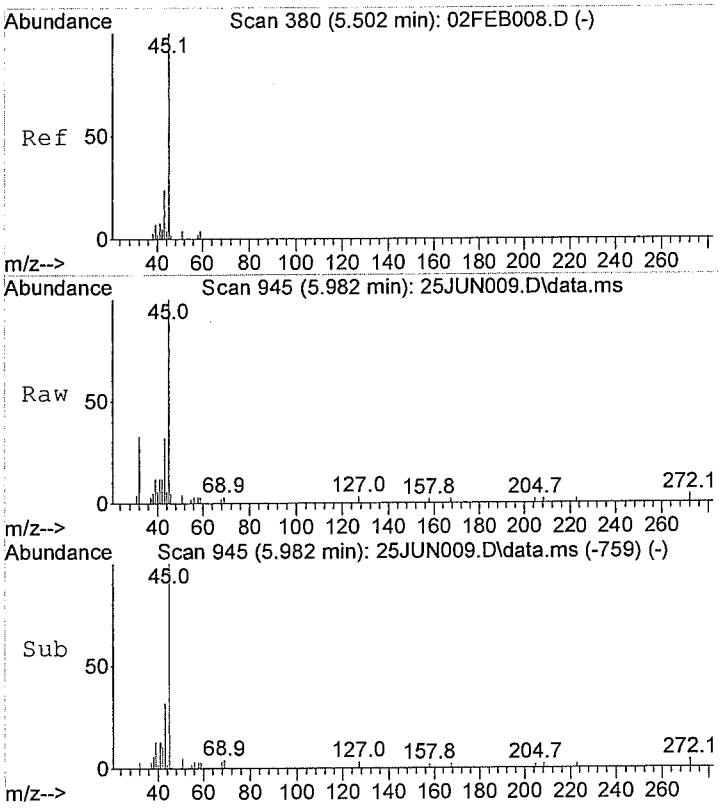
#7
Ethanol
Concen: 7.18 ppbv m
RT: 5.258 min Scan# 724
Delta R.T. 0.026 min
Lab File: 25JUN009.D
Acq: 25 Jun 2018 4:47 pm

Tgt Ion: 45 Resp: 25687

Ion	Ratio	Lower	Upper
45	100		
46	14.5	30.1	45.1#
43	6.6	20.2	30.2#



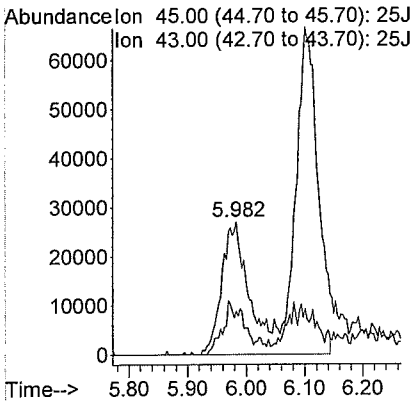
ME-3
D-6/26/18



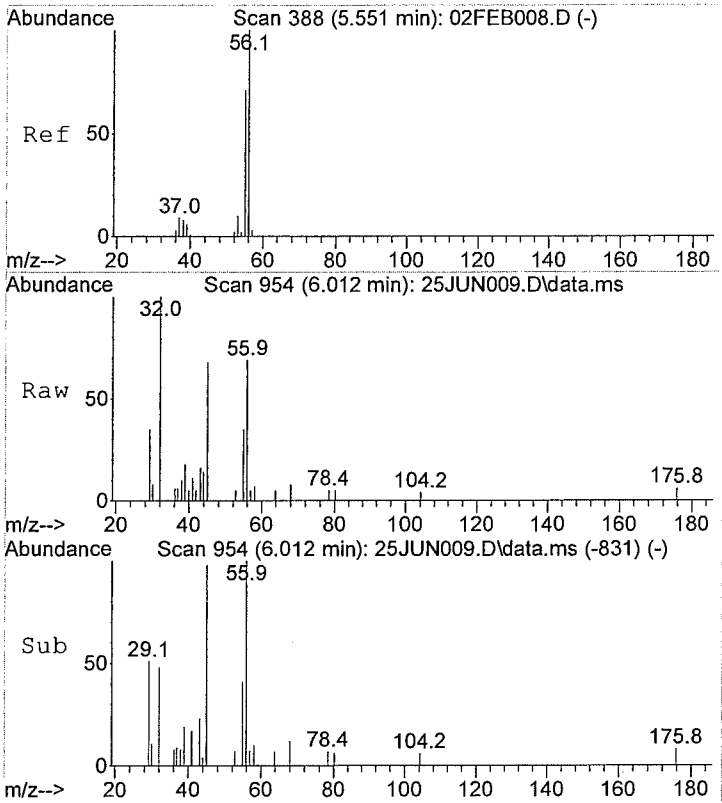
#9
Isopropanol
Concen: 7.43 ppbv m
RT: 5.982 min Scan# 945
Delta R.T. 0.010 min
Lab File: 25JUN009.D
Acq: 25 Jun 2018 4:47 pm

Tgt Ion: 45 Resp: 123071

Ion	Ratio	Lower	Upper
45	100		
43	21.9	18.8	28.2



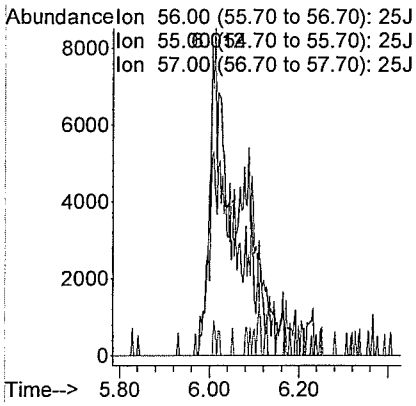
ME-3
JS 6/26/18



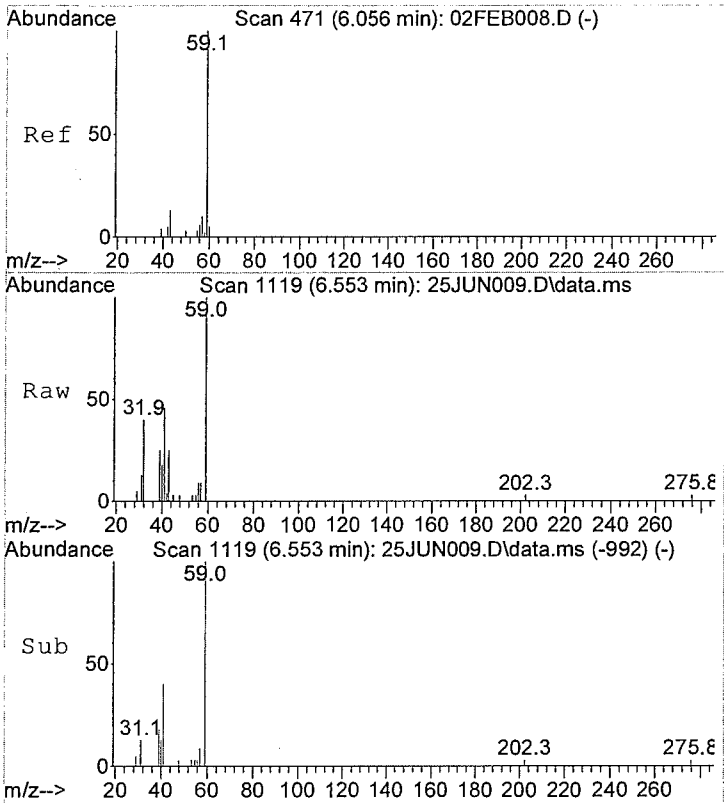
#10
Acrolein
Concen: 7.03 ppbv m
RT: 6.012 min Scan# 954
Delta R.T. 0.003 min
Lab File: 25JUN009.D
Acq: 25 Jun 2018 4:47 pm

Tgt Ion: 56 Resp: 34638

Ion	Ratio	Lower	Upper
56	100		
55	50.9	56.1	84.1#
57	7.2	3.8	5.8#



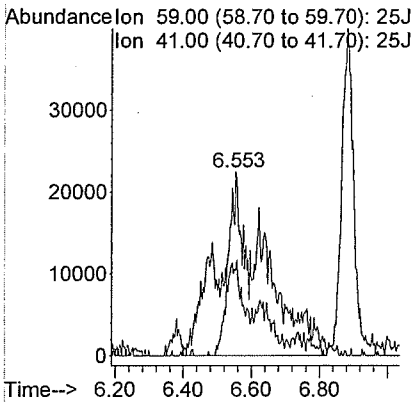
ME-3
DT 6/26/18



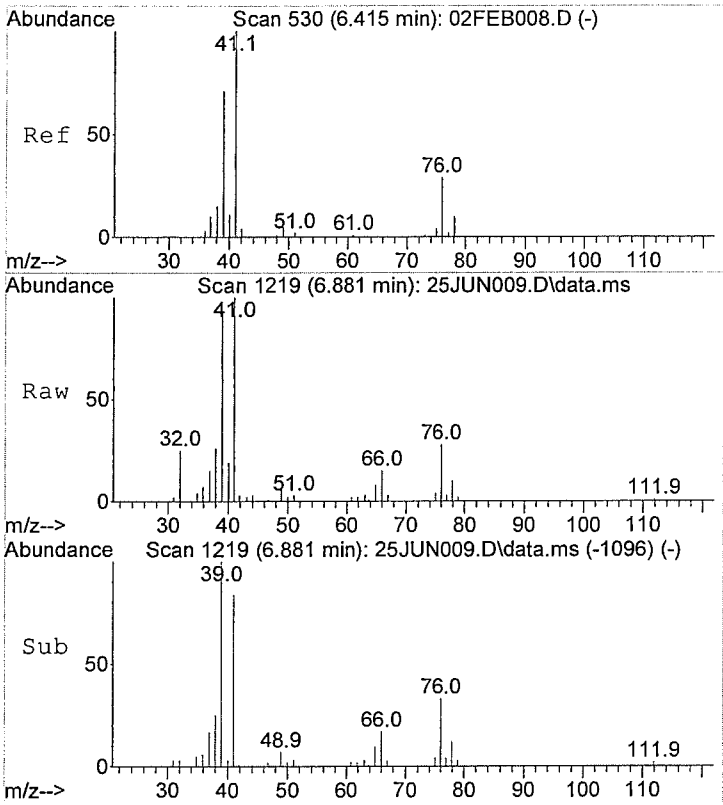
#11
t-Butanol
Concen: 7.70 ppbv m
RT: 6.553 min Scan# 1119
Delta R.T. 0.016 min
Lab File: 25JUN009.D
Acq: 25 Jun 2018 4:47 pm

Tgt Ion: 59 Resp: 160196

Ion	Ratio	Lower	Upper
59	100		
41	12.6	23.5	35.3#



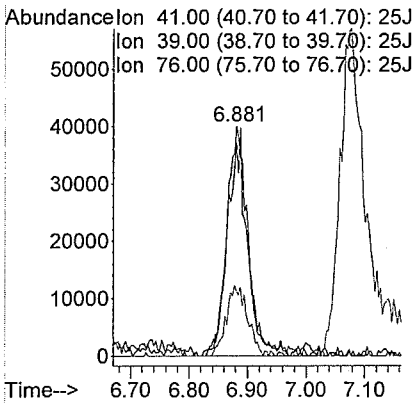
ME-3
D - 6/26/18



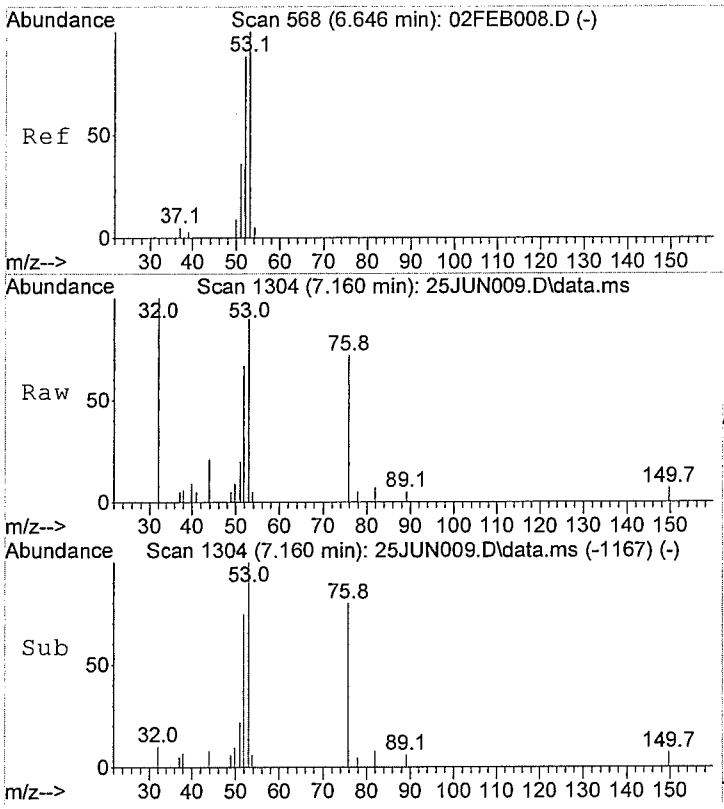
#12
Allyl Chloride
Concen: 7.14 ppbv m
RT: 6.881 min Scan# 1219
Delta R.T. 0.003 min
Lab File: 25JUN009.D
Acq: 25 Jun 2018 4:47 pm

Tgt Ion: 41 Resp: 107177

Ion	Ratio	Lower	Upper
41	100		
39	1.2	70.6	106.0#
76	0.6	33.6	50.4#



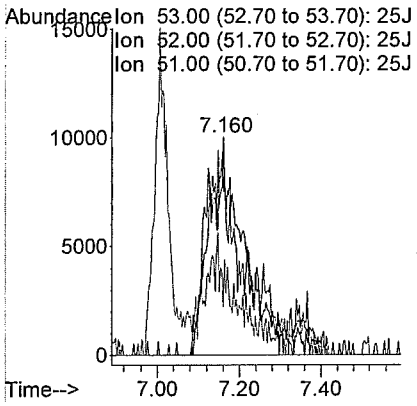
ME -3
DF 6/26/18



#13
Acrylonitrile
Concen: 7.89 ppbv m
RT: 7.160 min Scan# 1304
Delta R.T. 0.049 min
Lab File: 25JUN009.D
Acq: 25 Jun 2018 4:47 pm

Tgt Ion: 53 Resp: 68817

Ion	Ratio	Lower	Upper
53	100		
52	38.5	64.3	104.3#
51	35.0	21.9	61.9



MI - 3
D - 6/26/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN002.D
Acq On : 26 Jun 2018 4:05 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 09 09:29:13 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

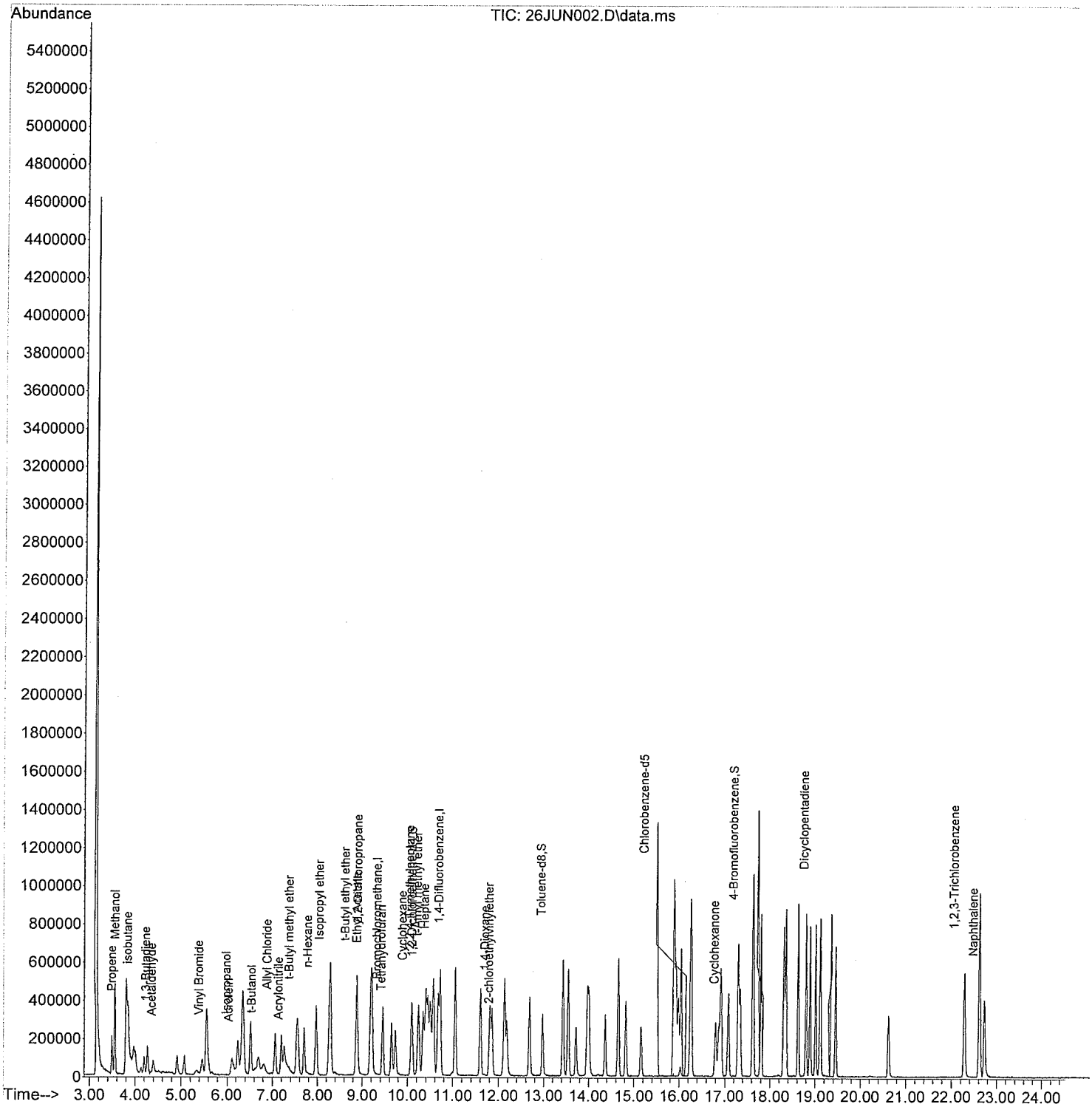
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.314	130	111539	10.00	ppbv	# 0.00
23) 1,4-Difluorobenzene	10.675	114	506214	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.204	117	395397	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.088	65	261889	11.01	ppbv	0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 110.10%			
29) Toluene-d8	12.928	98	509282	10.27	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.70%			
32) 4-Bromofluorobenzene	17.178	95	327098	10.33	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.30%			
Target Compounds						Qvalue
2) Propene	3.484	41	101970	8.77	ppbv #	94
3) isobutane	3.828	41	58532	10.10	ppbv #	1
4) 1,3-Butadiene	4.231	54	74318	9.98	ppbv	97
5) Methanol	3.549	31	27477	11.51	ppbv #	4
6) Acetaldehyde	4.356	43	37004	9.79	ppbv #	63
8) Vinyl Bromide	5.386	106	68900	9.78	ppbv	98
9) Isopropanol	5.979	45	137048	7.53	ppbv #	87
10) Acrolein	6.028	56	45372	8.38	ppbv #	90
11) t-Butanol	6.540	59	129165	5.66	ppbv #	87
12) Allyl Chloride	6.881	41	156701	9.51	ppbv #	94
13) Acrylonitrile	7.130	53	92505	9.66	ppbv #	56
14) t-Butyl methyl ether	7.363	73	407949	9.19	ppbv #	90
15) n-Hexane	7.766	57	215796	9.48	ppbv	92
16) Isopropyl ether	8.035	45	431600	9.50	ppbv #	91
17) t-Butyl ethyl ether	8.609	87	143564	8.51	ppbv #	69
18) Ethyl Acetate	8.875	70	34157	9.38	ppbv #	34
19) 2,2-Dichloropropane	8.891	77	182738	8.36	ppbv	82
20) Tetrahydrofuran	9.409	72	68740	8.63	ppbv #	70
21) Cyclohexane	9.878	56	233405	9.57	ppbv	91
22) 2,2,4-Trimethylpentane	10.042	57	649178	9.92	ppbv	96
25) t-Amyl methyl ether	10.200	73	330388	8.43	ppbv	97
26) Heptane	10.357	71	155556	9.84	ppbv	74
27) 1,4-Dioxane	11.692	88	99701	9.29	ppbv #	81
28) 2-chloroethylvinylether	11.780	63	125	5.80	ppbv #	100
31) Cyclohexanone	16.762	55	143449	8.96	ppbv	91
33) Dicyclopentadiene	18.732	66	10800	13.28	ppbv #	84
34) Naphthalene	22.464	128	487143	8.90	ppbv	100
35) 1,2,3-Trichlorobenzene	22.044	180	257073	9.50	ppbv #	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN002.D
Acq On : 26 Jun 2018 4:05 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 09 09:29:13 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN002.D
Acq On : 26 Jun 2018 4:05 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 09 09:34:29 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

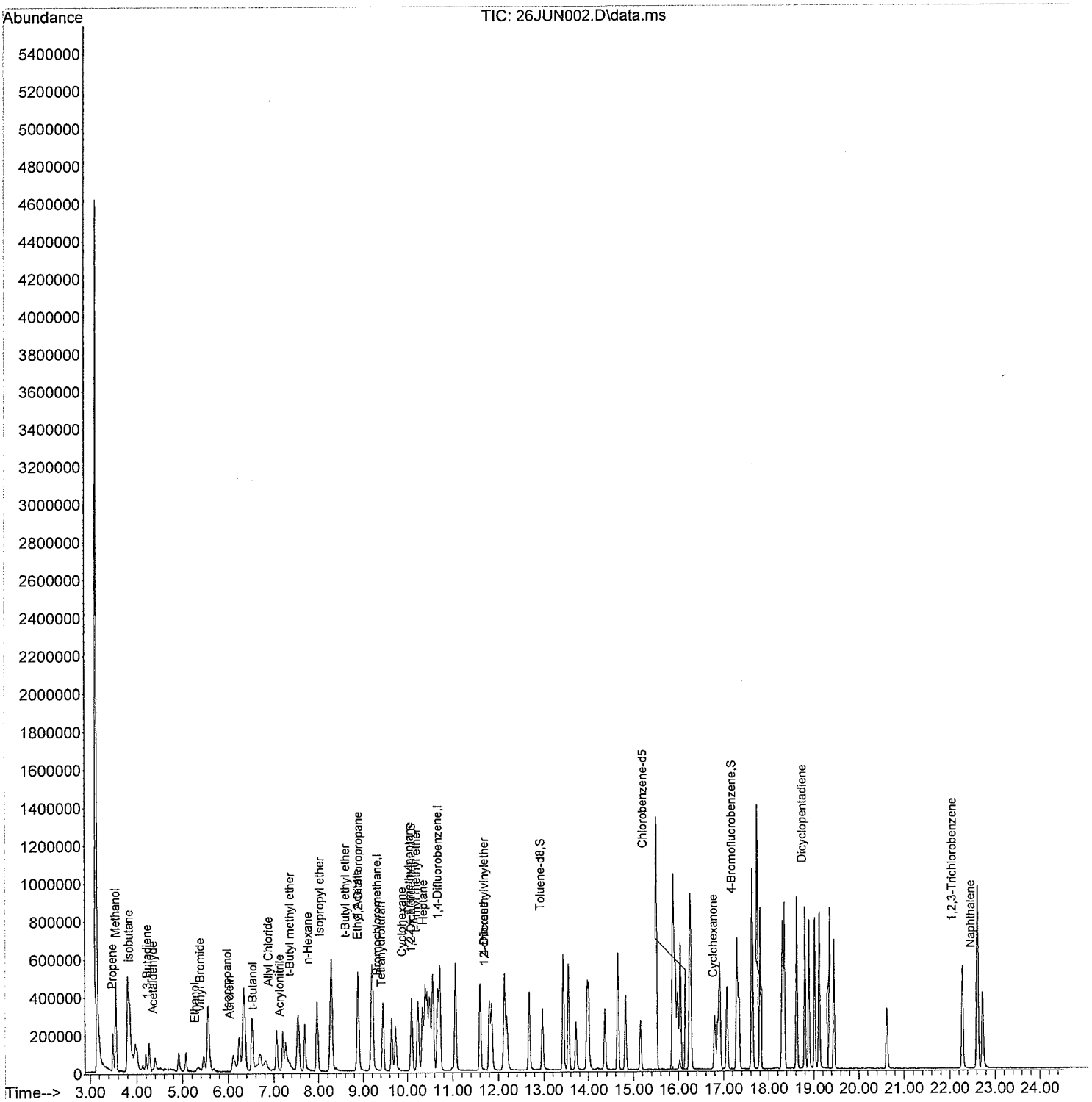
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.314	130	111539	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.675	114	506214	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	395397	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	261889	11.01	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 110.10%				
29) Toluene-d8	12.928	98	509282	10.27	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.70%				
32) 4-Bromofluorobenzene	17.178	95	327098	10.33	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.30%				
Target Compounds							Qvalue
2) Propene	3.484	41	101970	8.77	ppbv	#	94
3) isobutane	3.828	41	58532	10.10	ppbv	#	1
4) 1,3-Butadiene	4.231	54	74318	9.98	ppbv		97
5) Methanol	3.549	31	27477	11.51	ppbv	#	4
6) Acetaldehyde	4.356	43	37004	9.79	ppbv	#	63
7) Ethanol	5.268	45	42433m	10.79	ppbv		
8) Vinyl Bromide	5.386	106	68900	9.78	ppbv		98
9) Isopropanol	5.979	45	250389m	13.76	ppbv		
10) Acrolein	6.028	56	45372	8.38	ppbv	#	90
11) t-Butanol	6.540	59	254969m	11.16	ppbv		
12) Allyl Chloride	6.881	41	156701	9.51	ppbv	#	94
13) Acrylonitrile	7.130	53	92505	9.66	ppbv	#	56
14) t-Butyl methyl ether	7.363	73	407949	9.19	ppbv	#	90
15) n-Hexane	7.766	57	215796	9.48	ppbv		92
16) Isopropyl ether	8.035	45	431600	9.50	ppbv	#	91
17) t-Butyl ethyl ether	8.609	87	143564	8.51	ppbv	#	69
18) Ethyl Acetate	8.875	70	34157	9.38	ppbv	#	34
19) 2,2-Dichloropropane	8.891	77	182738	8.36	ppbv		82
20) Tetrahydrofuran	9.409	72	68740	8.63	ppbv	#	70
21) Cyclohexane	9.878	56	233405	9.57	ppbv		91
22) 2,2,4-Trimethylpentane	10.042	57	649178	9.92	ppbv		96
25) t-Amyl methyl ether	10.200	73	330388	8.43	ppbv		97
26) Heptane	10.357	71	155556	9.84	ppbv		74
27) 1,4-Dioxane	11.692	88	99701	9.29	ppbv	#	81
28) 2-chloroethylvinylether	11.695	63	688m	31.93	ppbv		
31) Cyclohexanone	16.762	55	143449	8.96	ppbv		91
33) Dicyclopentadiene	18.732	66	10800	13.28	ppbv	#	84
34) Naphthalene	22.464	128	487143	8.90	ppbv		100
35) 1,2,3-Trichlorobenzene	22.044	180	257073	9.50	ppbv	#	98

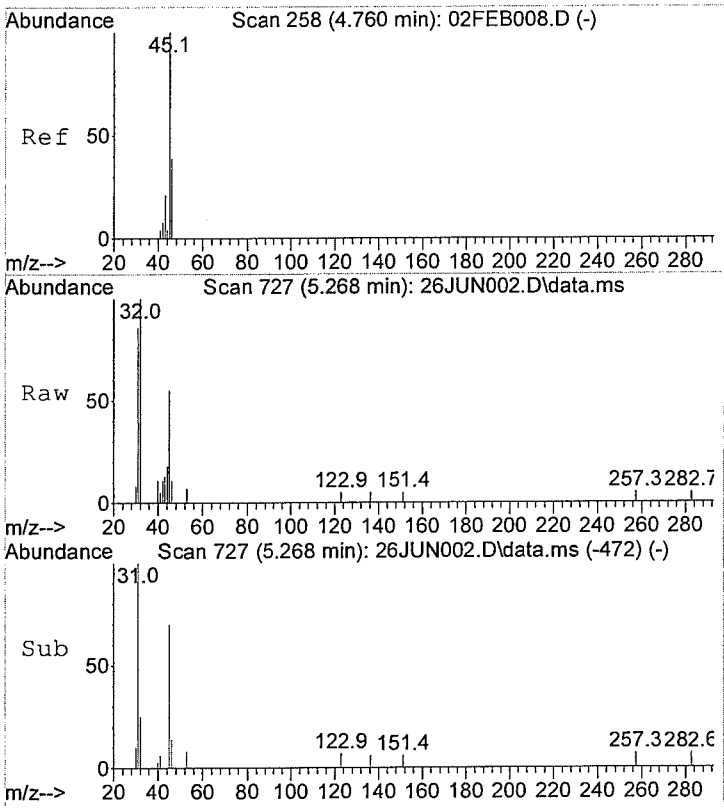
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN002.D
Acq On : 26 Jun 2018 4:05 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 09 09:34:29 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

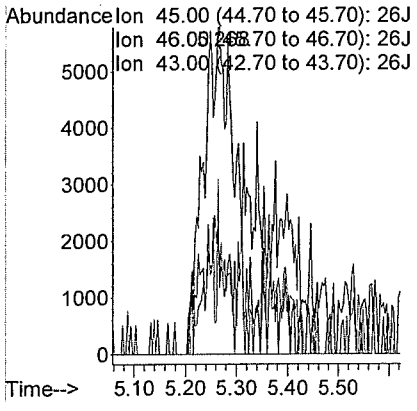




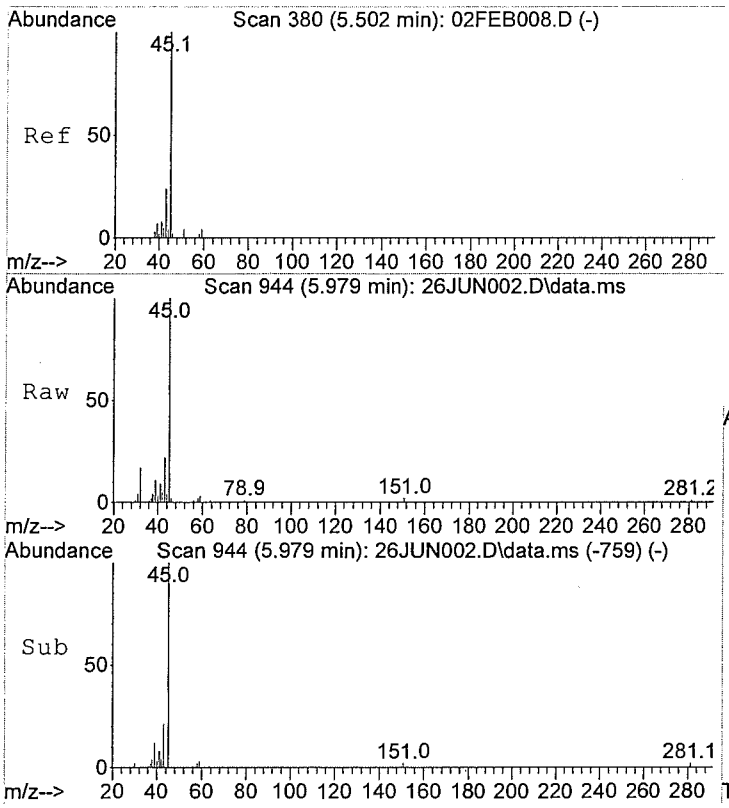
#7
Ethanol
Concen: 10.79 ppbv m
RT: 5.268 min Scan# 727
Delta R.T. 0.036 min
Lab File: 26JUN002.D
Acq: 26 Jun 2018 4:05 pm

Tgt Ion: 45 Resp: 42433

Ion	Ratio	Lower	Upper
45	100		
46	5.2	30.1	45.1#
43	0.0	20.2	30.2#



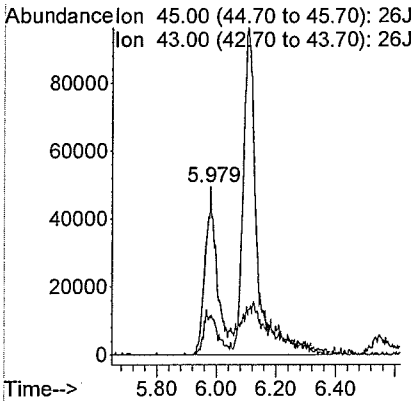
ME-3
DT 7/9/18



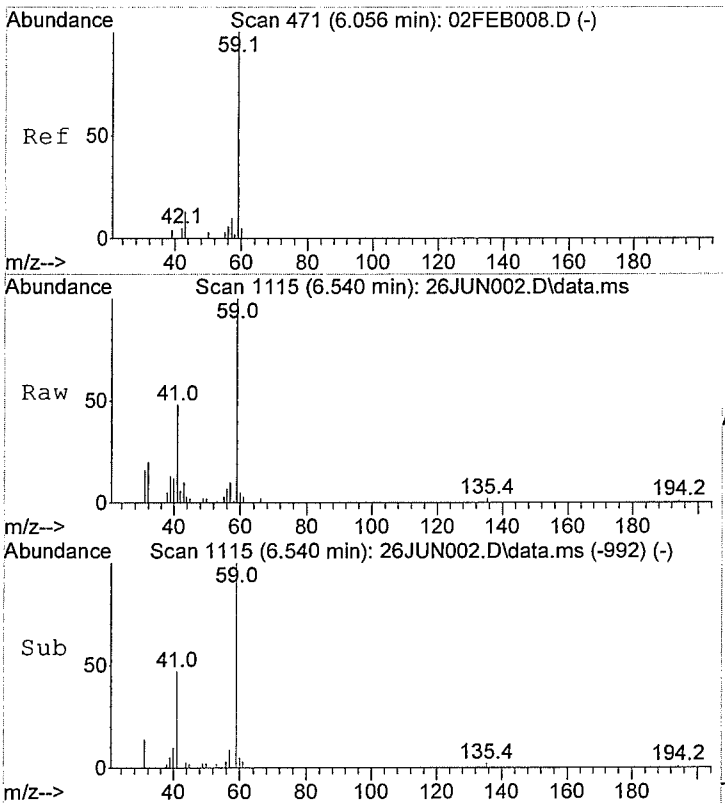
#9
Isopropanol
Concen: 13.76 ppbv m
RT: 5.979 min Scan# 944
Delta R.T. 0.006 min
Lab File: 26JUN002.D
Acq: 26 Jun 2018 4:05 pm

Tgt Ion: 45 Resp: 250389

Ion	Ratio	Lower	Upper
45	100		
43	16.3	18.8	28.2#



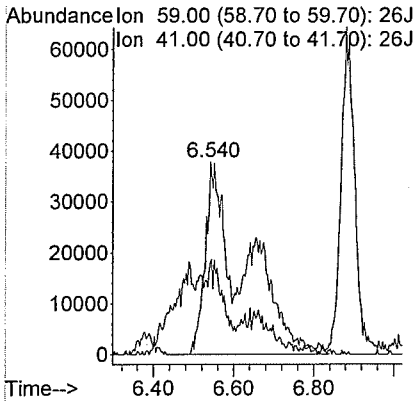
MI - 3
D - 7/9/18



#11
t-Butanol
Concen: 11.16 ppbv m
RT: 6.540 min Scan# 1115
Delta R.T. 0.003 min
Lab File: 26JUN002.D
Acq: 26 Jun 2018 4:05 pm

Tgt Ion: 59 Resp: 254969

Ion	Ratio	Lower	Upper
59	100		
41	11.4	23.5	35.3#



MI - 3
JS 7/9/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN003.D
Acq On : 26 Jun 2018 4:52 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 09 09:36:25 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

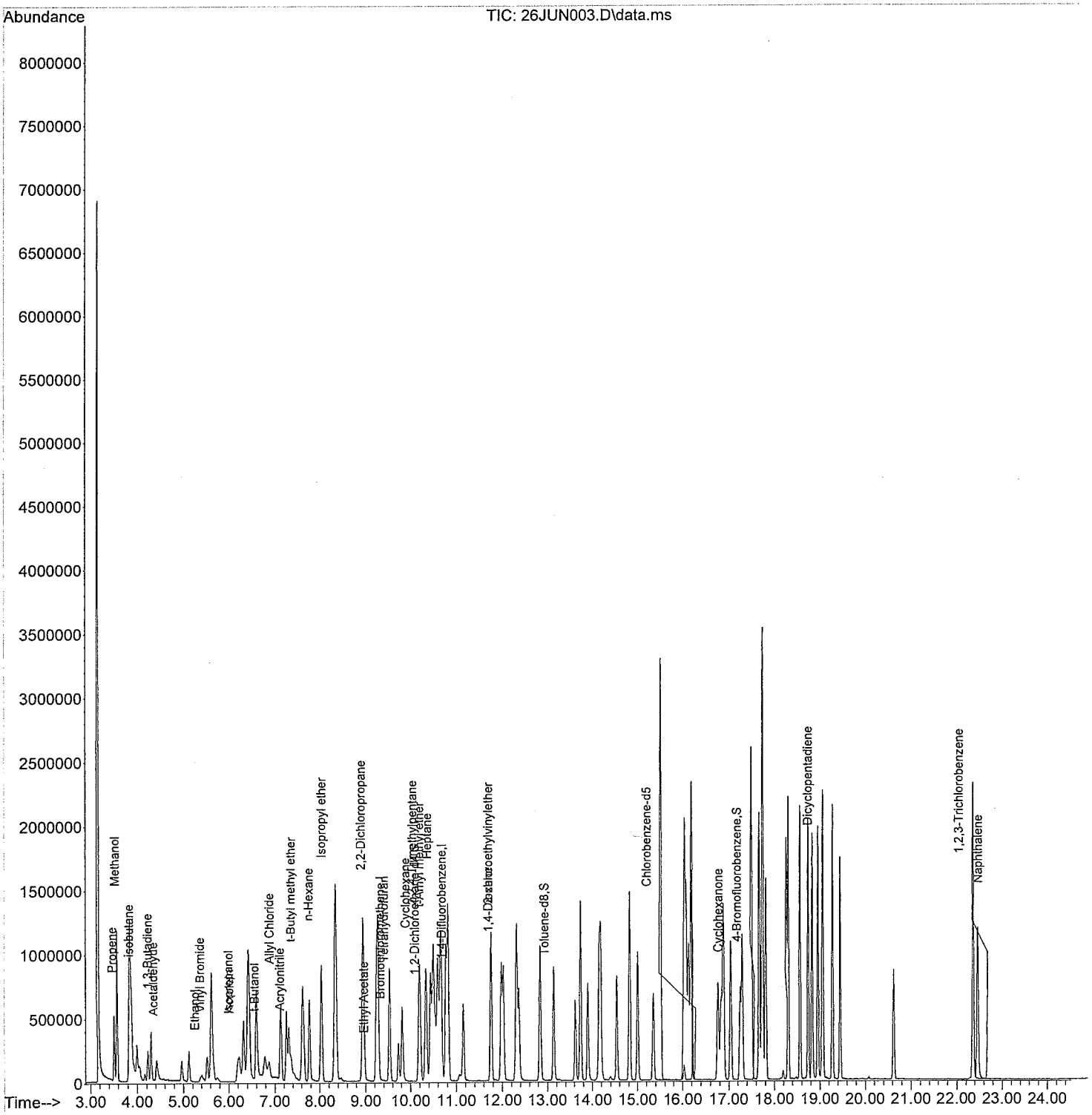
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	110565	10.00	ppbv		0.00
23) 1,4-Difluorobenzene	10.678	114	516557	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.201	117	411590	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.091	65	267884	11.04	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 110.40%				
29) Toluene-d8	12.931	98	518388	10.25	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.50%				
32) 4-Bromofluorobenzene	17.178	95	340195	10.32	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.20%				
Target Compounds							Qvalue
2) Propene	3.470	41	248947	21.61	ppbv		96
3) isobutane	3.821	41	138793	24.16	ppbv	#	1
4) 1,3-Butadiene	4.225	54	182832	24.78	ppbv		93
5) Methanol	3.536	31	68259	28.84	ppbv	#	1
6) Acetaldehyde	4.349	43	90618	24.18	ppbv	#	58
7) Ethanol	5.251	45	52497	13.47	ppbv		98
8) Vinyl Bromide	5.366	106	172913	24.76	ppbv		97
9) Isopropanol	5.992	45	312009	17.29	ppbv		96
10) Acrolein	6.012	56	110144	20.52	ppbv	#	85
11) t-Butanol	6.556	59	296168	13.08	ppbv	#	65
12) Allyl Chloride	6.888	41	389240	23.83	ppbv	#	93
13) Acrylonitrile	7.107	53	231605	24.40	ppbv		94
14) t-Butyl methyl ether	7.360	73	1040244	23.65	ppbv	#	92
15) n-Hexane	7.760	57	555034	24.60	ppbv		93
16) Isopropyl ether	8.042	45	1115898	24.77	ppbv	#	95
18) Ethyl Acetate	8.963	70	997	0.28	ppbv		70
19) 2,2-Dichloropropane	8.898	77	452988	20.91	ppbv		87
20) Tetrahydrofuran	9.406	72	176511	22.36	ppbv	#	73
21) Cyclohexane	9.888	56	594413	24.58	ppbv		89
22) 2,2,4-Trimethylpentane	10.042	57	1618252	24.94	ppbv		97
25) t-Amyl methyl ether	10.193	73	869141	21.73	ppbv		97
26) Heptane	10.360	71	395716	24.54	ppbv		77
27) 1,4-Dioxane	11.695	88	260567	23.79	ppbv	#	79
28) 2-chloroethylvinylether	11.698	63	248	11.28	ppbv	#	100
31) Cyclohexanone	16.765	55	386302	23.17	ppbv		90
33) Dicyclopentadiene	18.726	66	17983	21.25	ppbv		97
34) Naphthalene	22.467	128	1346281	23.62	ppbv		98
35) 1,2,3-Trichlorobenzene	22.038	180	681859	24.21	ppbv	#	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN003.D
Acq On : 26 Jun 2018 4:52 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 09 09:36:25 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN003.D
Acq On : 26 Jun 2018 4:52 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 09 09:38:21 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

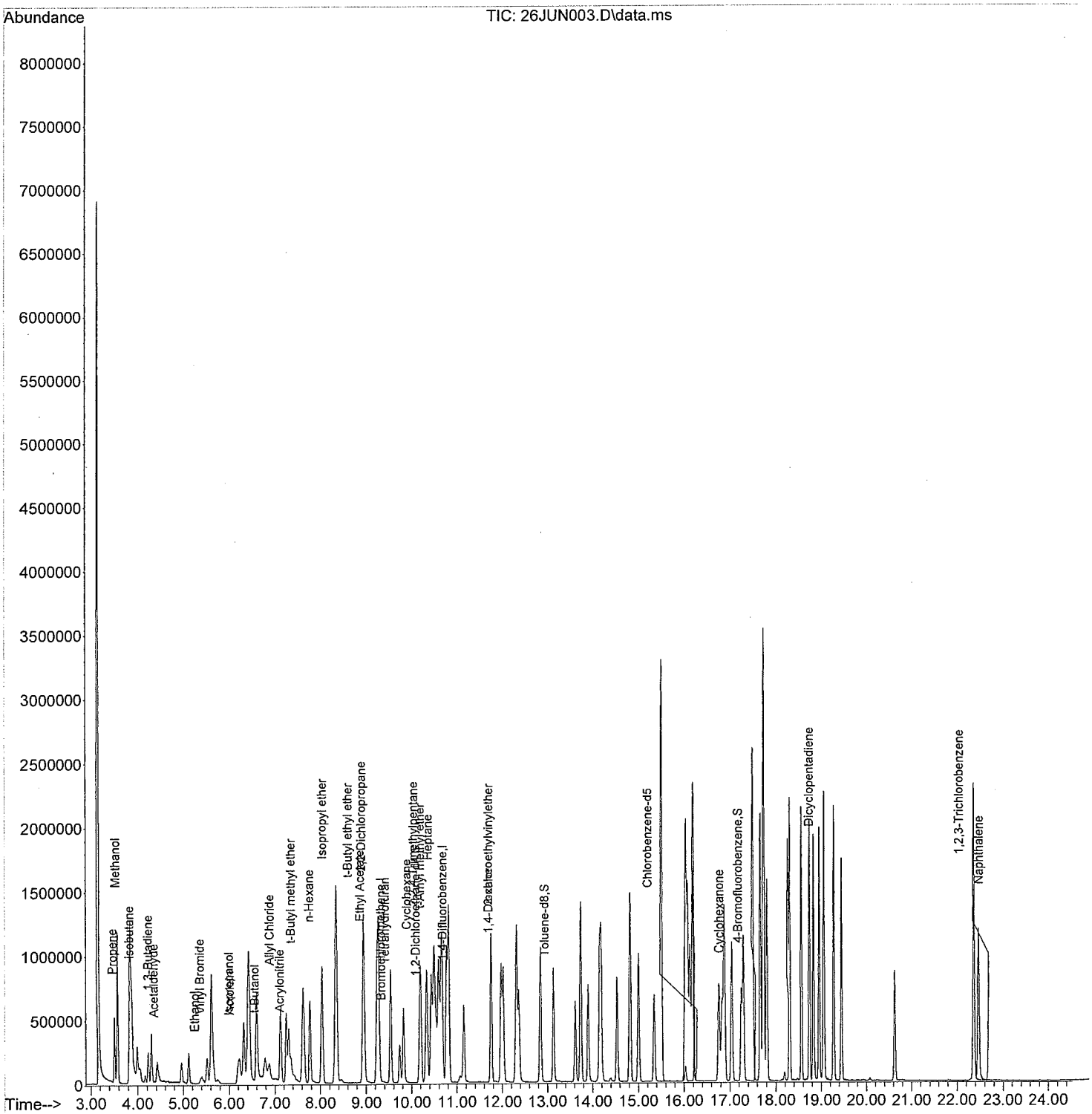
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	110565	10.00	ppbv		0.00
23) 1,4-Difluorobenzene	10.678	114	516557	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.201	117	411590	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.091	65	267884	11.04	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 110.40%				
29) Toluene-d8	12.931	98	518388	10.25	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.50%				
32) 4-Bromofluorobenzene	17.178	95	340195	10.32	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.20%				
Target Compounds							Qvalue
2) Propene	3.470	41	248947	21.61	ppbv		96
3) isobutane	3.821	41	138793	24.16	ppbv	#	1
4) 1,3-Butadiene	4.225	54	182832	24.78	ppbv		93
5) Methanol	3.536	31	68259	28.84	ppbv	#	1
6) Acetaldehyde	4.349	43	90618	24.18	ppbv	#	58
7) Ethanol	5.251	45	86732m	22.26	ppbv		
8) Vinyl Bromide	5.366	106	172913	24.76	ppbv		97
9) Isopropanol	5.992	45	484591m	26.86	ppbv		
10) Acrolein	6.012	56	128060m	23.86	ppbv		
11) t-Butanol	6.556	59	561096m	24.78	ppbv		
12) Allyl Chloride	6.888	41	389240	23.83	ppbv	#	93
13) Acrylonitrile	7.107	53	231605	24.40	ppbv		94
14) t-Butyl methyl ether	7.360	73	1040244	23.65	ppbv	#	92
15) n-Hexane	7.760	57	555034	24.60	ppbv		93
16) Isopropyl ether	8.042	45	1115898	24.77	ppbv	#	95
17) t-Butyl ethyl ether	8.603	87	374533m	22.39	ppbv		
18) Ethyl Acetate	8.868	70	90088m	24.97	ppbv		
19) 2,2-Dichloropropane	8.898	77	452988	20.91	ppbv		87
20) Tetrahydrofuran	9.406	72	176511	22.36	ppbv	#	73
21) Cyclohexane	9.888	56	594413	24.58	ppbv		89
22) 2,2,4-Trimethylpentane	10.042	57	1618252	24.94	ppbv		97
25) t-Amyl methyl ether	10.193	73	869141	21.73	ppbv		97
26) Heptane	10.360	71	395716	24.54	ppbv		77
27) 1,4-Dioxane	11.695	88	260567	23.79	ppbv	#	79
28) 2-chloroethylvinylether	11.698	63	248	11.28	ppbv	#	100
31) Cyclohexanone	16.765	55	386302	23.17	ppbv		90
33) Dicyclopentadiene	18.726	66	20839m	24.62	ppbv		
34) Naphthalene	22.467	128	1346281	23.62	ppbv		98
35) 1,2,3-Trichlorobenzene	22.038	180	681859	24.21	ppbv	#	100

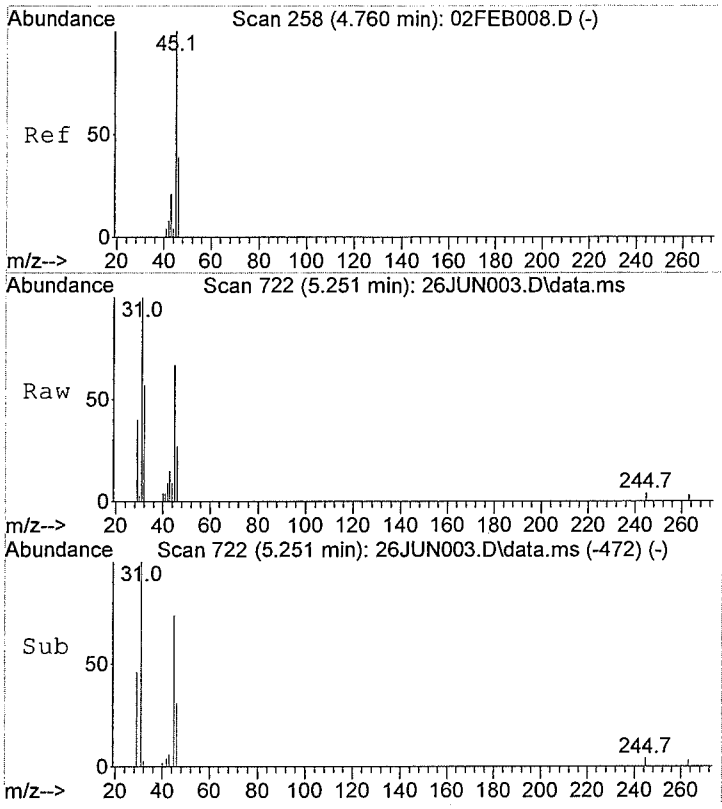
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN003.D
Acq On : 26 Jun 2018 4:52 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 09 09:38:21 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

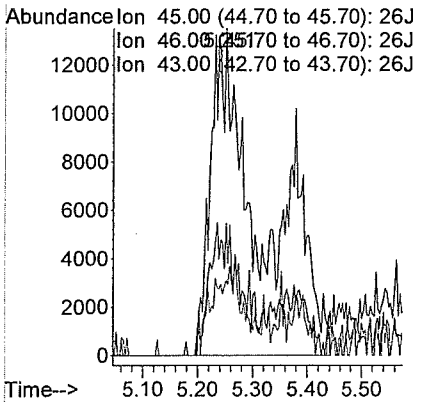




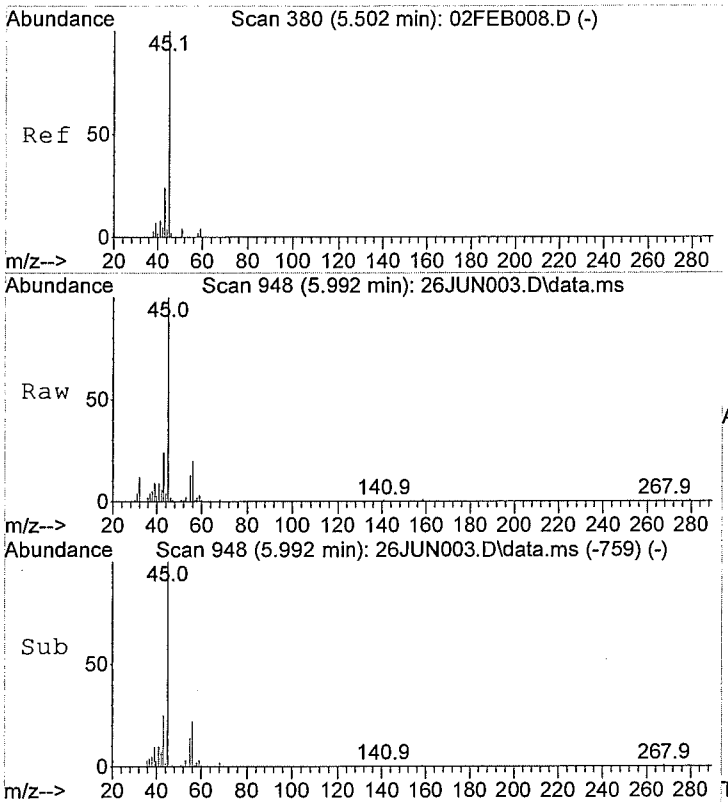
#7
Ethanol
Concen: 22.26 ppbv m
RT: 5.251 min Scan# 722
Delta R.T. 0.019 min
Lab File: 26JUN003.D
Acq: 26 Jun 2018 4:52 pm

Tgt Ion: 45 Resp: 86732

Ion	Ratio	Lower	Upper
45	100		
46	23.3	30.1	45.1#
43	14.4	20.2	30.2#



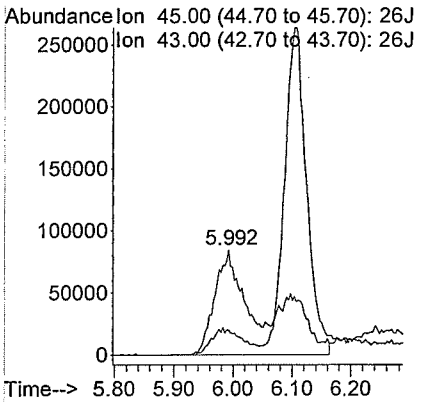
MI - 3
D- 7/9/18



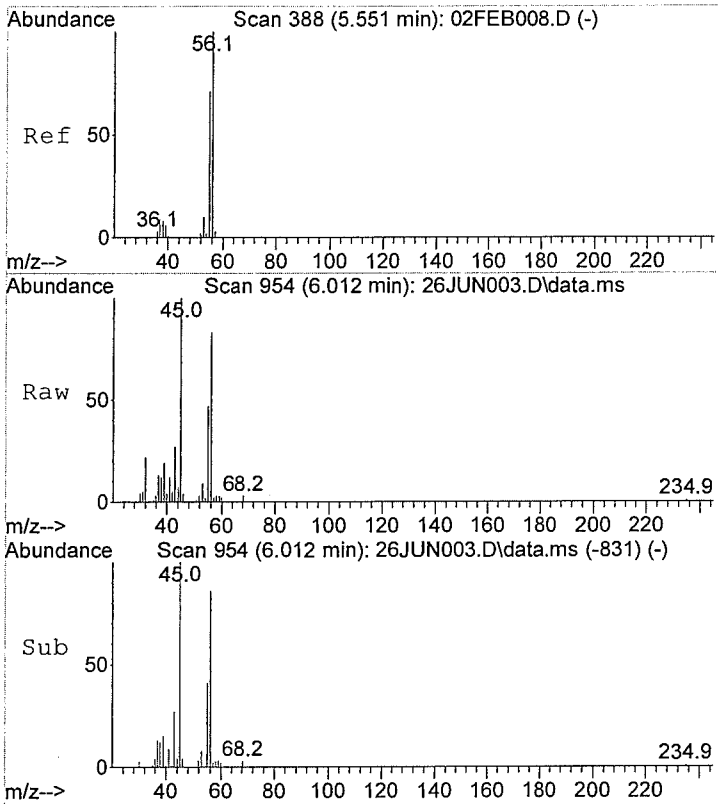
#9
Isopropanol
Concen: 26.86 ppbv m
RT: 5.992 min Scan# 948
Delta R.T. 0.020 min
Lab File: 26JUN003.D
Acq: 26 Jun 2018 4:52 pm

Tgt Ion: 45 Resp: 484591

Ion	Ratio	Lower	Upper
45	100		
43	16.4	18.8	28.2#



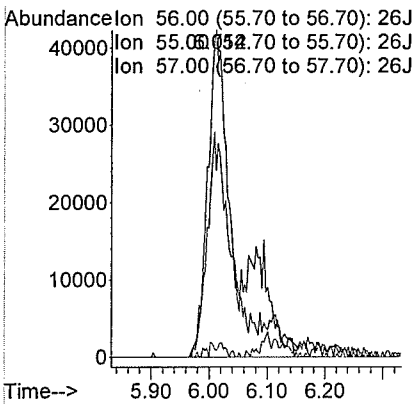
MI 3
JJ 7/9/18



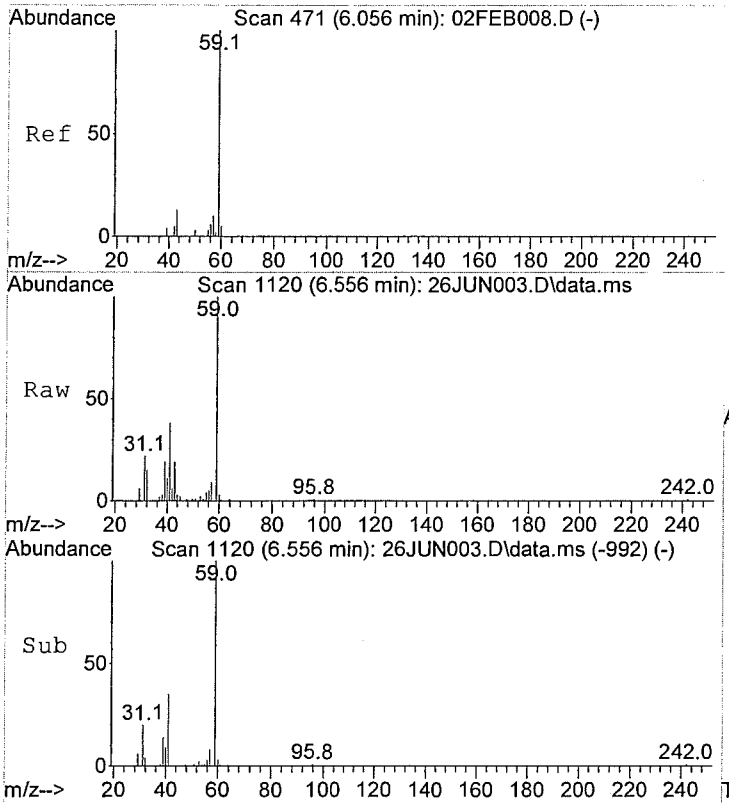
#10
Acrolein
Concen: 23.86 ppbv m
RT: 6.012 min Scan# 954
Delta R.T. 0.003 min
Lab File: 26JUN003.D
Acq: 26 Jun 2018 4:52 pm

Tgt Ion: 56 Resp: 128060

Ion	Ratio	Lower	Upper
56	100		
55	57.1	56.1	84.1
57	2.1	3.8	5.8#



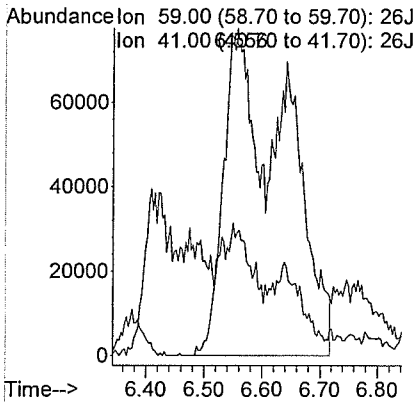
ME-3
JS 7/9/18



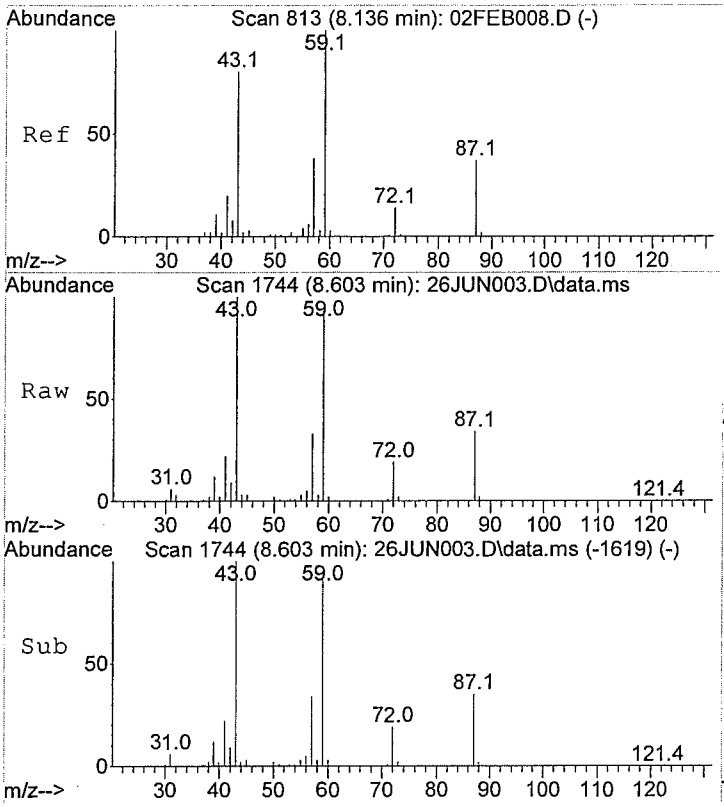
#11
t-Butanol
Concen: 24.78 ppbv m
RT: 6.556 min Scan# 1120
Delta R.T. 0.019 min
Lab File: 26JUN003.D
Acq: 26 Jun 2018 4:52 pm

Tgt Ion: 59 Resp: 561096

Ion	Ratio	Lower	Upper
59	100		
41	5.7	23.5	35.3#



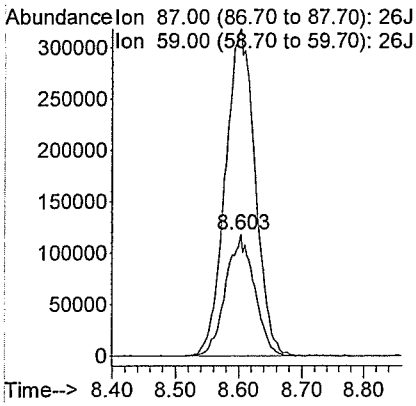
MI 3
D 7/9/18



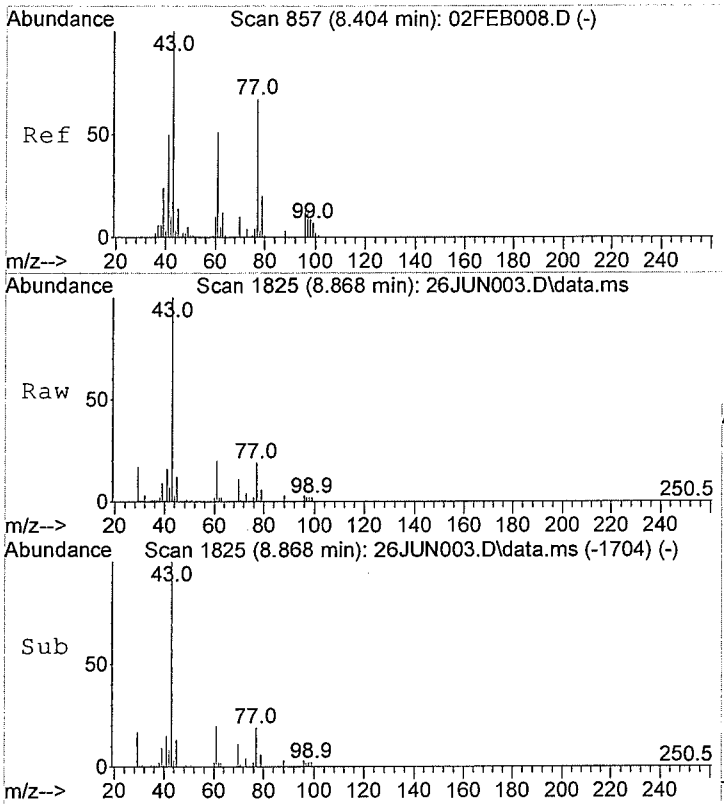
#17
t-Butyl ethyl ether
Concen: 22.39 ppbv m
RT: 8.603 min Scan# 1744
Delta R.T. 0.010 min
Lab File: 26JUN003.D
Acq: 26 Jun 2018 4:52 pm

Tgt Ion: 87 Resp: 374533

Ion	Ratio	Lower	Upper
87	100		
59	0.1	184.5	276.7#



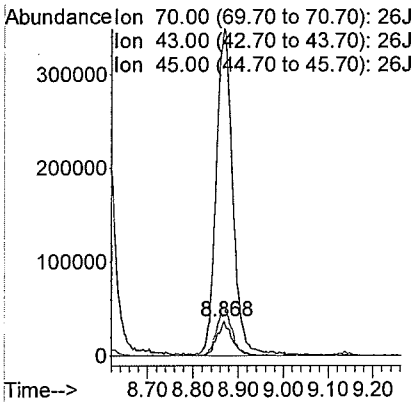
MI -3
D 7/9/18



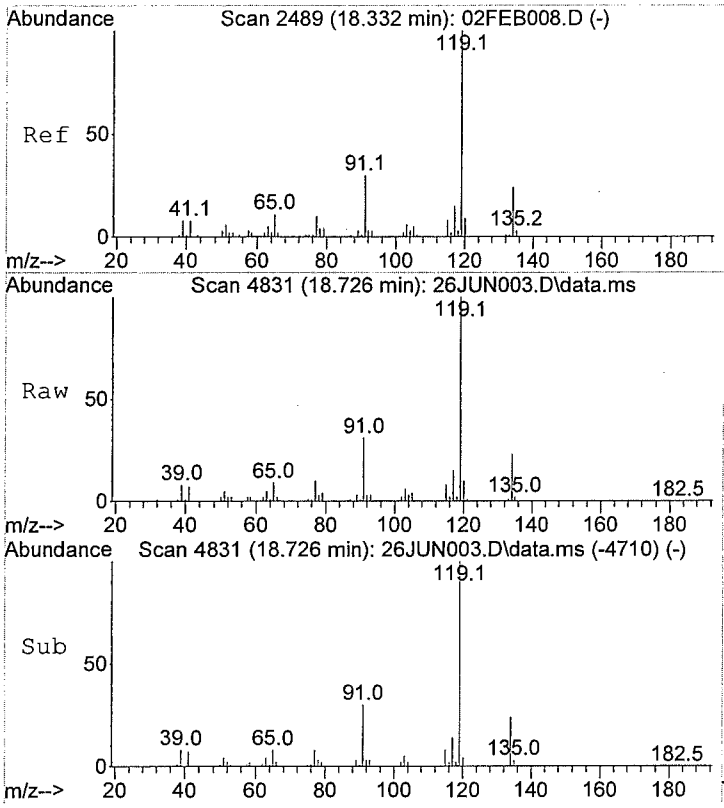
#18
Ethyl Acetate
Concen: 24.97 ppbv m
RT: 8.868 min Scan# 1825
Delta R.T. -0.004 min
Lab File: 26JUN003.D
Acq: 26 Jun 2018 4:52 pm

Tgt Ion: 70 Resp: 90088

Ion	Ratio	Lower	Upper
70	100		
43	10.0	624.8	937.2#
45	1.0	87.0	130.6#



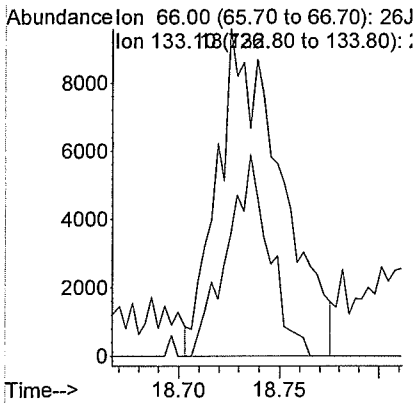
MI - 3
DS 7/9/18



#33
Dicyclopentadiene
Concen: 24.62 ppbv m
RT: 18.726 min Scan# 4831
Delta R.T. -0.003 min
Lab File: 26JUN003.D
Acq: 26 Jun 2018 4:52 pm

Tgt Ion: 66 Resp: 20839

Ion	Ratio	Lower	Upper
66	100		
133	41.1	36.5	54.7



ME -3
7/9/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN004.D
Acq On : 26 Jun 2018 5:32 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 09 09:48:59 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

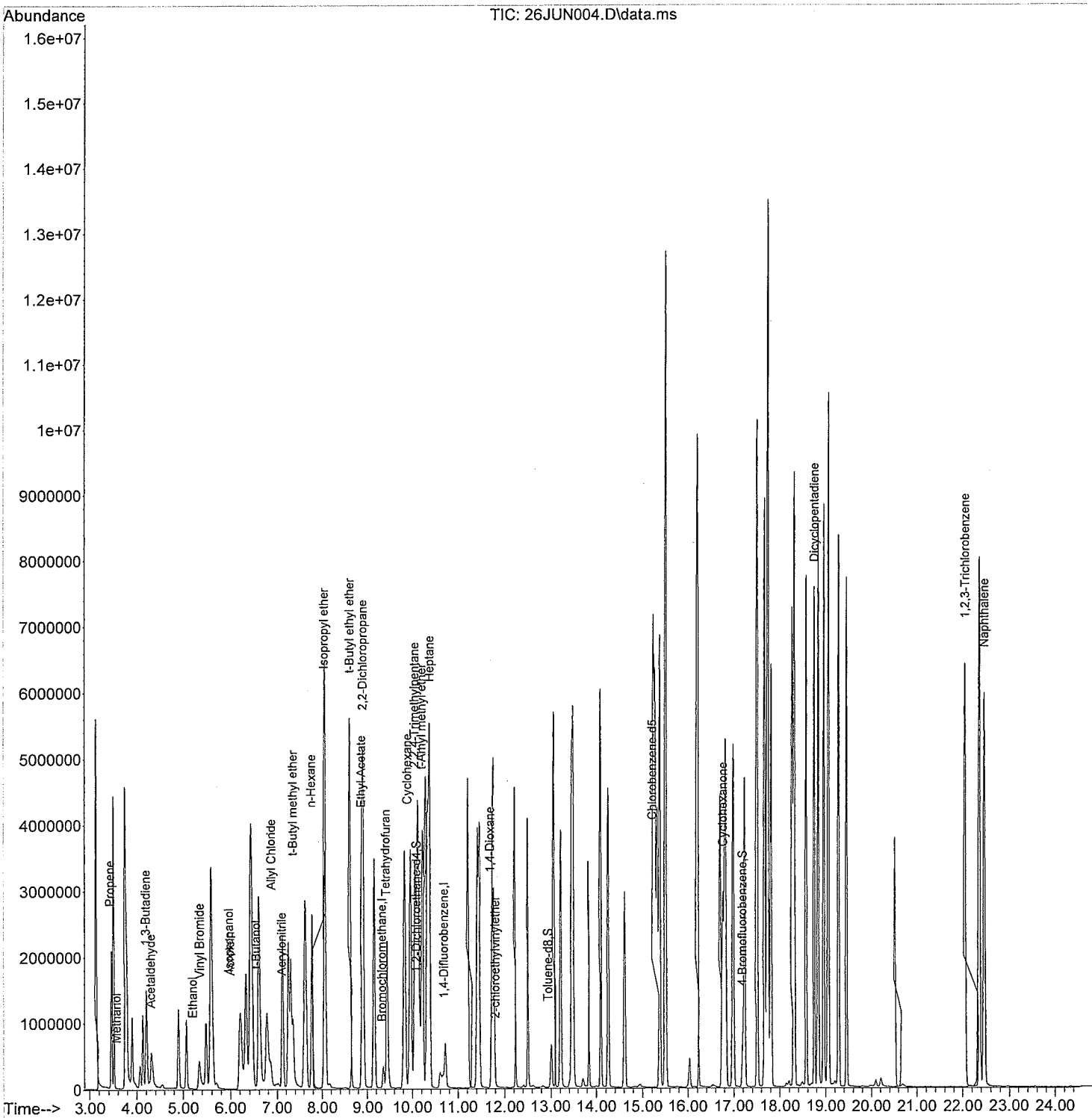
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	120891	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.678	114	532039	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	404148	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	281433	11.26	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 112.60%				
29) Toluene-d8	12.935	98	550301	10.56	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 105.60%				
32) 4-Bromofluorobenzene	17.181	95	361379	11.17	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 111.70%				
Target Compounds							Qvalue
2) Propene	3.428	41	1043880	82.86	ppbv		97
4) 1,3-Butadiene	4.192	54	830937	103.00	ppbv		97
5) Methanol	3.562	31	373	0.14	ppbv	#	1
6) Acetaldehyde	4.300	43	366492	89.43	ppbv	#	68
7) Ethanol	5.205	45	377835	88.67	ppbv		97
8) Vinyl Bromide	5.349	106	781708	102.38	ppbv		99
9) Isopropanol	5.969	45	2136971	108.32	ppbv		99
10) Acrolein	5.996	56	568341	96.86	ppbv		98
11) t-Butanol	6.537	59	2740392	110.71	ppbv		95
12) Allyl Chloride	6.871	41	1742833	97.60	ppbv	#	93
13) Acrylonitrile	7.104	53	1074417	103.53	ppbv		98
14) t-Butyl methyl ether	7.353	73	4314431	89.71	ppbv		93
15) n-Hexane	7.757	57	2281716	92.51	ppbv		92
16) Isopropyl ether	8.039	45	4762013	96.67	ppbv	#	95
17) t-Butyl ethyl ether	8.603	87	1629648	89.11	ppbv	#	68
18) Ethyl Acetate	8.865	70	389682	98.78	ppbv	#	44
19) 2,2-Dichloropropane	8.894	77	2045259	86.34	ppbv		92
20) Tetrahydrofuran	9.409	72	755883	87.57	ppbv	#	71
21) Cyclohexane	9.885	56	2506938	94.83	ppbv		90
22) 2,2,4-Trimethylpentane	10.042	57	6823631	96.18	ppbv		98
25) t-Amyl methyl ether	10.193	73	3825558	92.85	ppbv		97
26) Heptane	10.364	71	1624897	97.85	ppbv		75
27) 1,4-Dioxane	11.688	88	1145474	101.54	ppbv	#	80
28) 2-chloroethylvinylether	11.797	63	114	5.03	ppbv	#	100
31) Cyclohexanone	16.761	55	1799987	109.95	ppbv	#	90
33) Dicyclopentadiene	18.739	66	85852	103.30	ppbv		89
34) Naphthalene	22.461	128	6431635	114.90	ppbv		98
35) 1,2,3-Trichlorobenzene	22.041	180	3094738	111.89	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN004.D
Acq On : 26 Jun 2018 5:32 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 09 09:48:59 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN004.D
Acq On : 26 Jun 2018 5:32 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 09 10:05:42 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

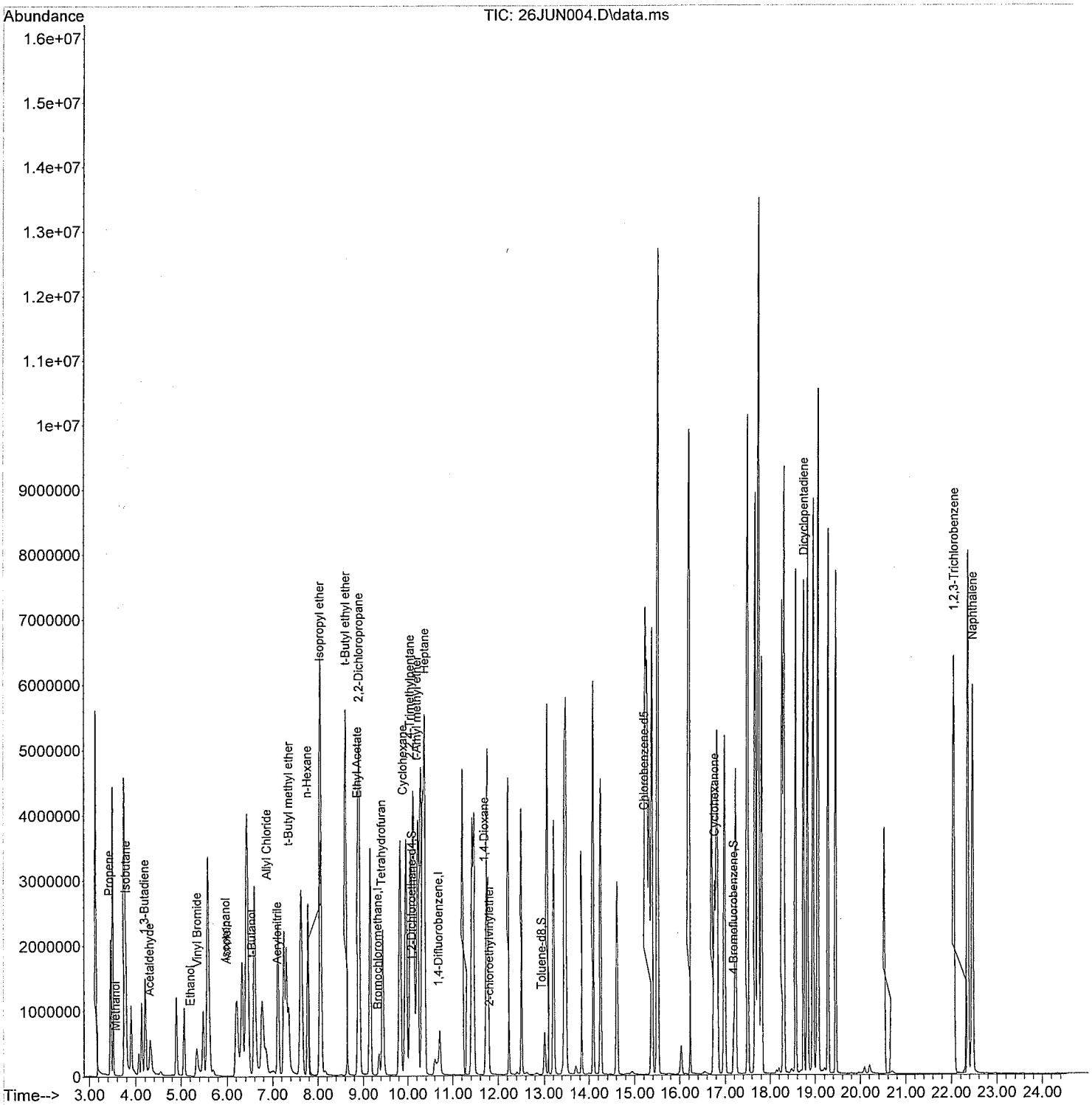
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	120891	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.678	114	532039	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	404148	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	281433	11.26	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 112.60%				
29) Toluene-d8	12.935	98	550301	10.56	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 105.60%				
32) 4-Bromofluorobenzene	17.181	95	361379	11.17	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 111.70%				
Target Compounds							Qvalue
2) Propene	3.428	41	1043880	82.86	ppbv		97
3) isobutane	3.785	41	601193m	95.73	ppbv		
4) 1,3-Butadiene	4.192	54	830937	103.00	ppbv		97
5) Methanol	3.562	31	373	0.14	ppbv	#	1
6) Acetaldehyde	4.300	43	366492	89.43	ppbv	#	68
7) Ethanol	5.205	45	501588m	117.71	ppbv		
8) Vinyl Bromide	5.349	106	781708	102.38	ppbv		99
9) Isopropanol	5.969	45	2699339m	136.82	ppbv		
10) Acrolein	5.996	56	568341	96.86	ppbv		98
11) t-Butanol	6.537	59	2740392	110.71	ppbv		95
12) Allyl Chloride	6.871	41	1742833	97.60	ppbv	#	93
13) Acrylonitrile	7.104	53	1074417	103.53	ppbv		98
14) t-Butyl methyl ether	7.353	73	4314431	89.71	ppbv		93
15) n-Hexane	7.757	57	2281716	92.51	ppbv		92
16) Isopropyl ether	8.039	45	4762013	96.67	ppbv	#	95
17) t-Butyl ethyl ether	8.603	87	1629648	89.11	ppbv	#	68
18) Ethyl Acetate	8.865	70	389682	98.78	ppbv	#	44
19) 2,2-Dichloropropane	8.894	77	2045259	86.34	ppbv		92
20) Tetrahydrofuran	9.409	72	755883	87.57	ppbv	#	71
21) Cyclohexane	9.885	56	2506938	94.83	ppbv		90
22) 2,2,4-Trimethylpentane	10.042	57	6823631	96.18	ppbv		98
25) t-Amyl methyl ether	10.193	73	3825558	92.85	ppbv		97
26) Heptane	10.364	71	1624897	97.85	ppbv		75
27) 1,4-Dioxane	11.688	88	1145474	101.54	ppbv	#	80
28) 2-chloroethylvinylether	11.797	63	114	5.03	ppbv	#	100
31) Cyclohexanone	16.761	55	1799987	109.95	ppbv	#	90
33) Dicyclopentadiene	18.739	66	89459m	107.64	ppbv		
34) Naphthalene	22.461	128	6431635	114.90	ppbv		98
35) 1,2,3-Trichlorobenzene	22.041	180	3094738	111.89	ppbv	#	99

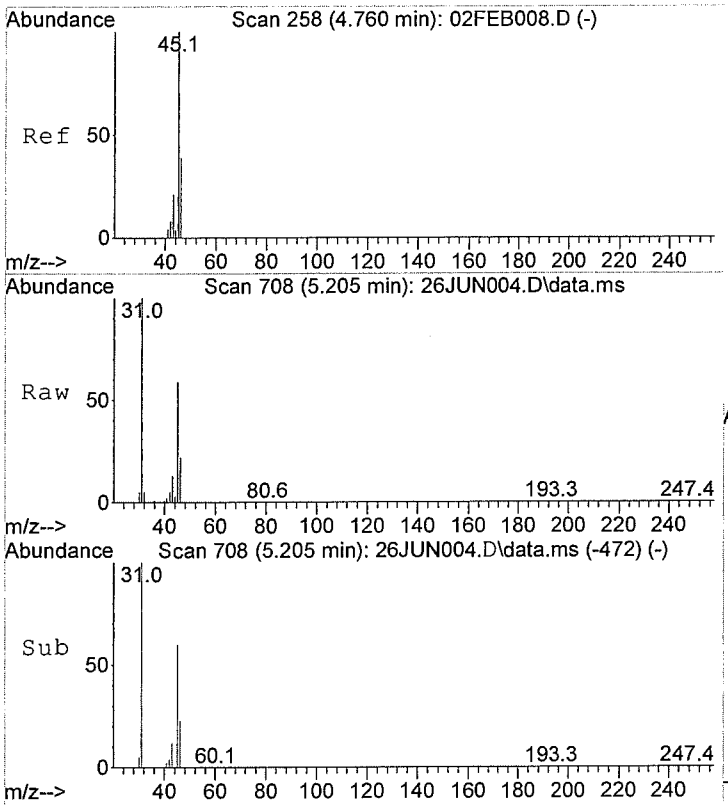
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN004.D
Acq On : 26 Jun 2018 5:32 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 09 10:05:42 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

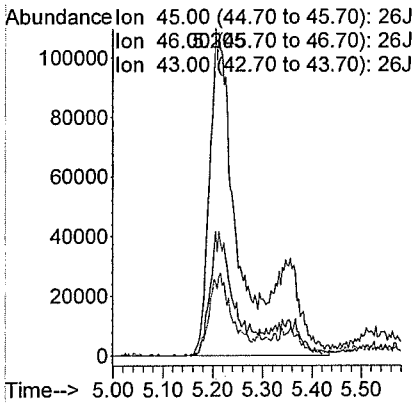




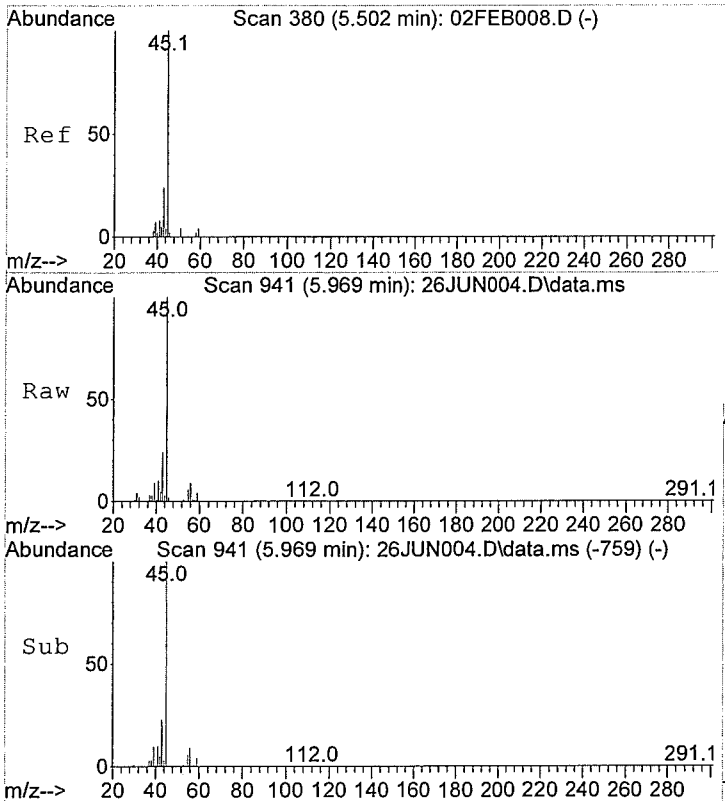
#7
Ethanol
Concen: 117.71 ppbv m
RT: 5.205 min Scan# 708
Delta R.T. -0.027 min
Lab File: 26JUN004.D
Acq: 26 Jun 2018 5:32 pm

Tgt Ion: 45 Resp: 501588

Ion	Ratio	Lower	Upper
45	100		
46	29.0	30.1	45.1#
43	17.3	20.2	30.2#



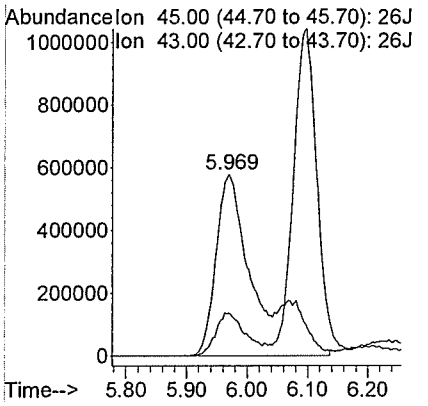
ME-3
7/9/18



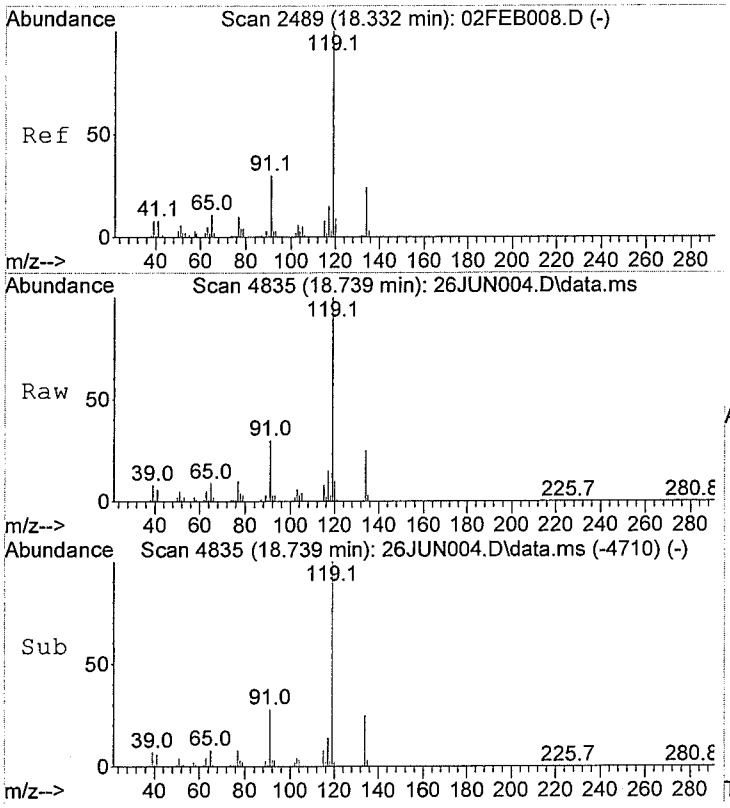
#9
Isopropanol
Concen: 136.82 ppbv m
RT: 5.969 min Scan# 941
Delta R.T. -0.003 min
Lab File: 26JUN004.D
Acq: 26 Jun 2018 5:32 pm

Tgt Ion: 45 Resp: 2699339

Ion	Ratio	Lower	Upper
45	100		
43	18.2	18.8	28.2#



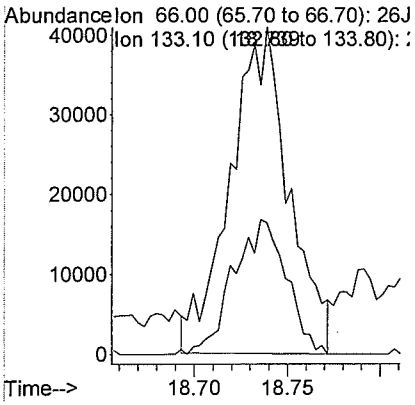
MI→
D- 7/9/18



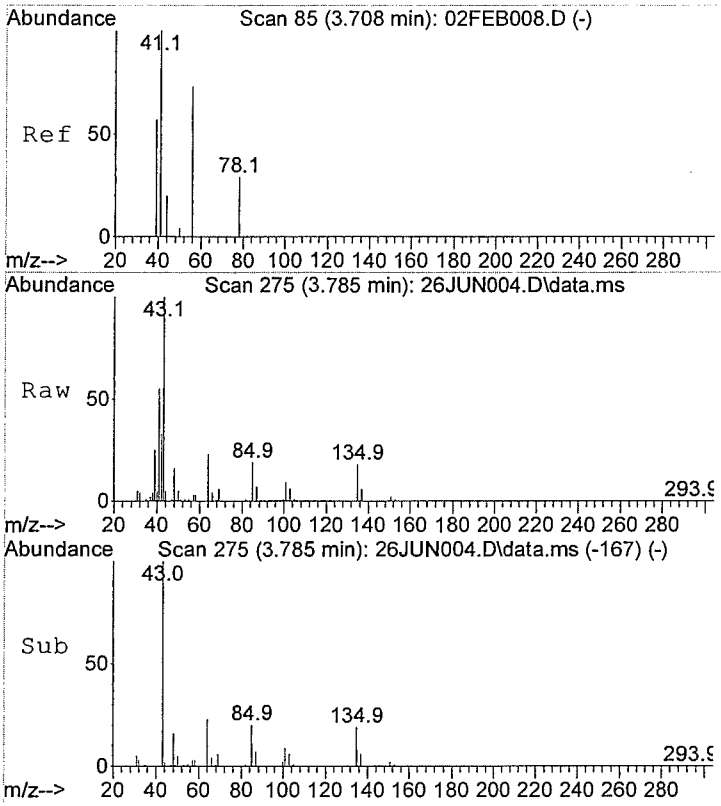
#33
Dicyclopentadiene
Concen: 107.64 ppbv m
RT: 18.739 min Scan# 4835
Delta R.T. 0.010 min
Lab File: 26JUN004.D
Acq: 26 Jun 2018 5:32 pm

Tgt Ion: 66 Resp: 89459

Ion	Ratio	Lower	Upper
66	100		
133	37.0	36.5	54.7



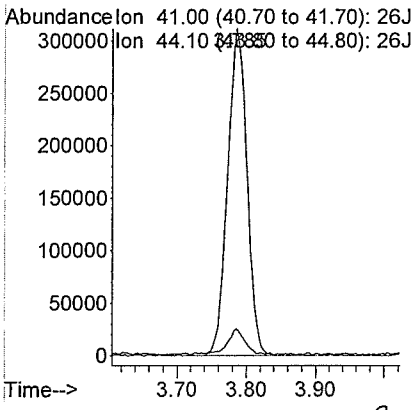
MI-3
7/9/18



#3
isobutane
Concen: 95.73 ppbv m
RT: 3.785 min Scan# 275
Delta R.T. -0.046 min
Lab File: 26JUN004.D
Acq: 26 Jun 2018 5:32 pm

Tgt Ion: 41 Resp: 601193

Ion	Ratio	Lower	Upper
41	100		
44	0.0	144.0	216.0#



ME -3
D 7/9/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN005.D
Acq On : 26 Jun 2018 6:12 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 09 10:06:56 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

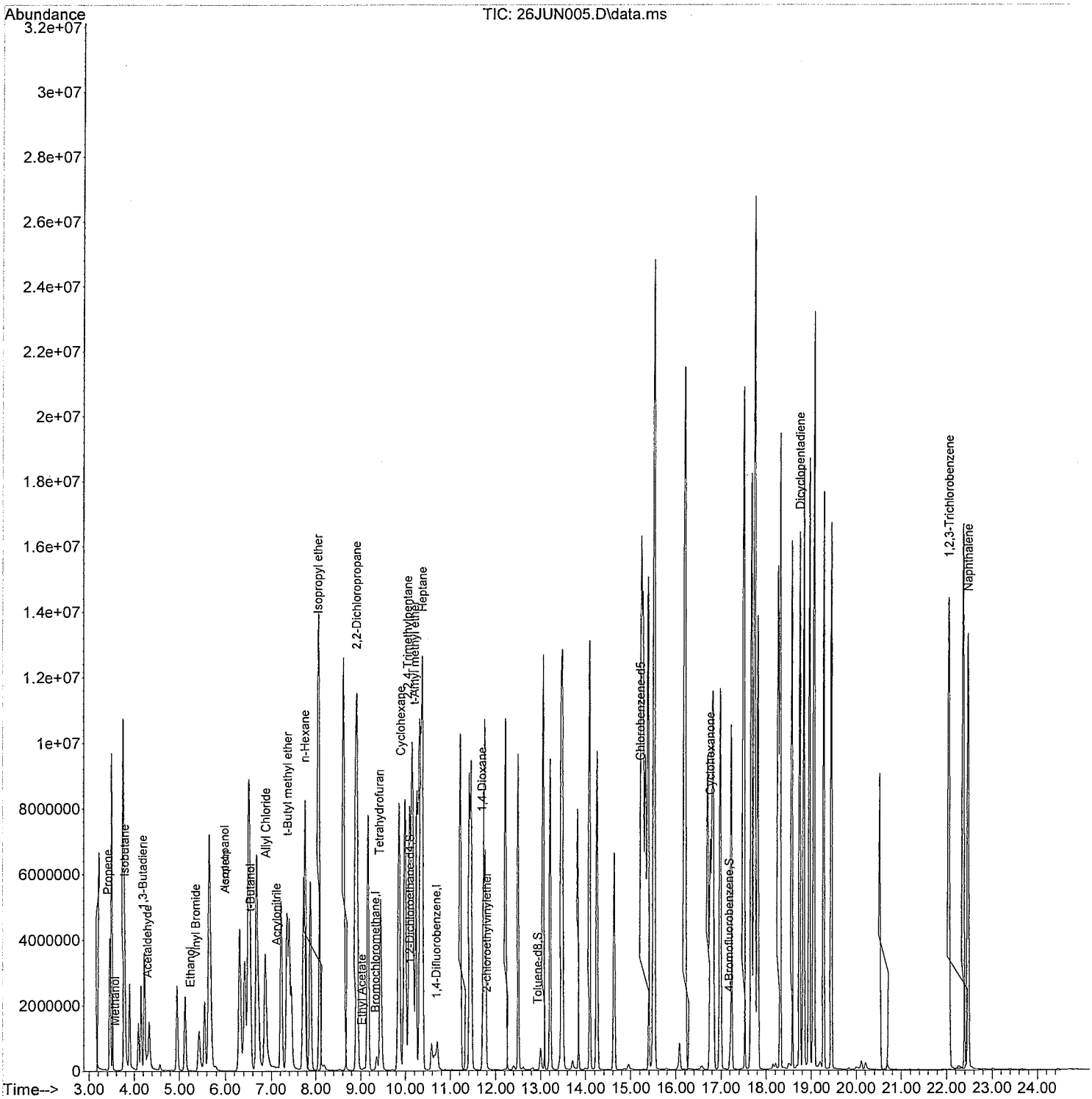
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.331	130	160151	10.00	ppbv		0.01
23) 1,4-Difluorobenzene	10.688	114	542532	10.00	ppbv		0.01
30) Chlorobenzene-d5	15.207	117	403430	10.00	ppbv		0.01
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.098	65	326573	12.81	ppbv		0.02
Spiked Amount 10.000	Range 80 - 120		Recovery = 128.10%#				
29) Toluene-d8	12.935	98	558558	10.51	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 105.10%				
32) 4-Bromofluorobenzene	17.181	95	371343	11.50	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 115.00%				
Target Compounds							Qvalue
2) Propene	3.415	41	2650977	158.83	ppbv		97
3) isobutane	3.785	41	1496695	179.90	ppbv	#	1
4) 1,3-Butadiene	4.195	54	2054168	192.21	ppbv		97
5) Methanol	3.569	31	1389	0.41	ppbv	#	39
6) Acetaldehyde	4.303	43	905443	166.78	ppbv	#	64
7) Ethanol	5.238	45	1142631	202.42	ppbv		99
8) Vinyl Bromide	5.359	106	1883077	186.16	ppbv		99
9) Isopropanol	5.989	45	7123768	272.56	ppbv		94
10) Acrolein	6.002	56	1421357	182.86	ppbv		100
11) t-Butanol	6.553	59	6491086	197.94	ppbv		89
12) Allyl Chloride	6.884	41	4358122	184.22	ppbv	#	94
13) Acrylonitrile	7.117	53	2714499	197.45	ppbv		99
14) t-Butyl methyl ether	7.366	73	10040288	157.58	ppbv		94
15) n-Hexane	7.757	57	5657948	173.16	ppbv		93
16) Isopropyl ether	8.048	45	11134635	170.63	ppbv	#	95
18) Ethyl Acetate	9.022	70	1163	0.22	ppbv		62
19) 2,2-Dichloropropane	8.904	77	5042973	160.70	ppbv		96
20) Tetrahydrofuran	9.416	72	1854697	162.19	ppbv	#	71
21) Cyclohexane	9.895	56	6113724	174.57	ppbv		89
22) 2,2,4-Trimethylpentane	10.046	57	16048693	170.75	ppbv		98
25) t-Amyl methyl ether	10.196	73	9371079	223.03	ppbv		98
26) Heptane	10.367	71	3850739	227.39	ppbv		76
27) 1,4-Dioxane	11.695	88	2700449	234.74	ppbv	#	80
28) 2-chloroethylvinylether	11.800	63	139	6.02	ppbv	#	100
31) Cyclohexanone	16.762	55	4290914	262.57	ppbv	#	90
33) Dicyclopentadiene	18.732	66	222228	267.87	ppbv	#	81
34) Naphthalene	22.464	128	14784395	264.60	ppbv		97
35) 1,2,3-Trichlorobenzene	22.045	180	7311963	264.84	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN005.D
Acq On : 26 Jun 2018 6:12 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 09 10:06:56 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN005.D
Acq On : 26 Jun 2018 6:12 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 09 10:09:10 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

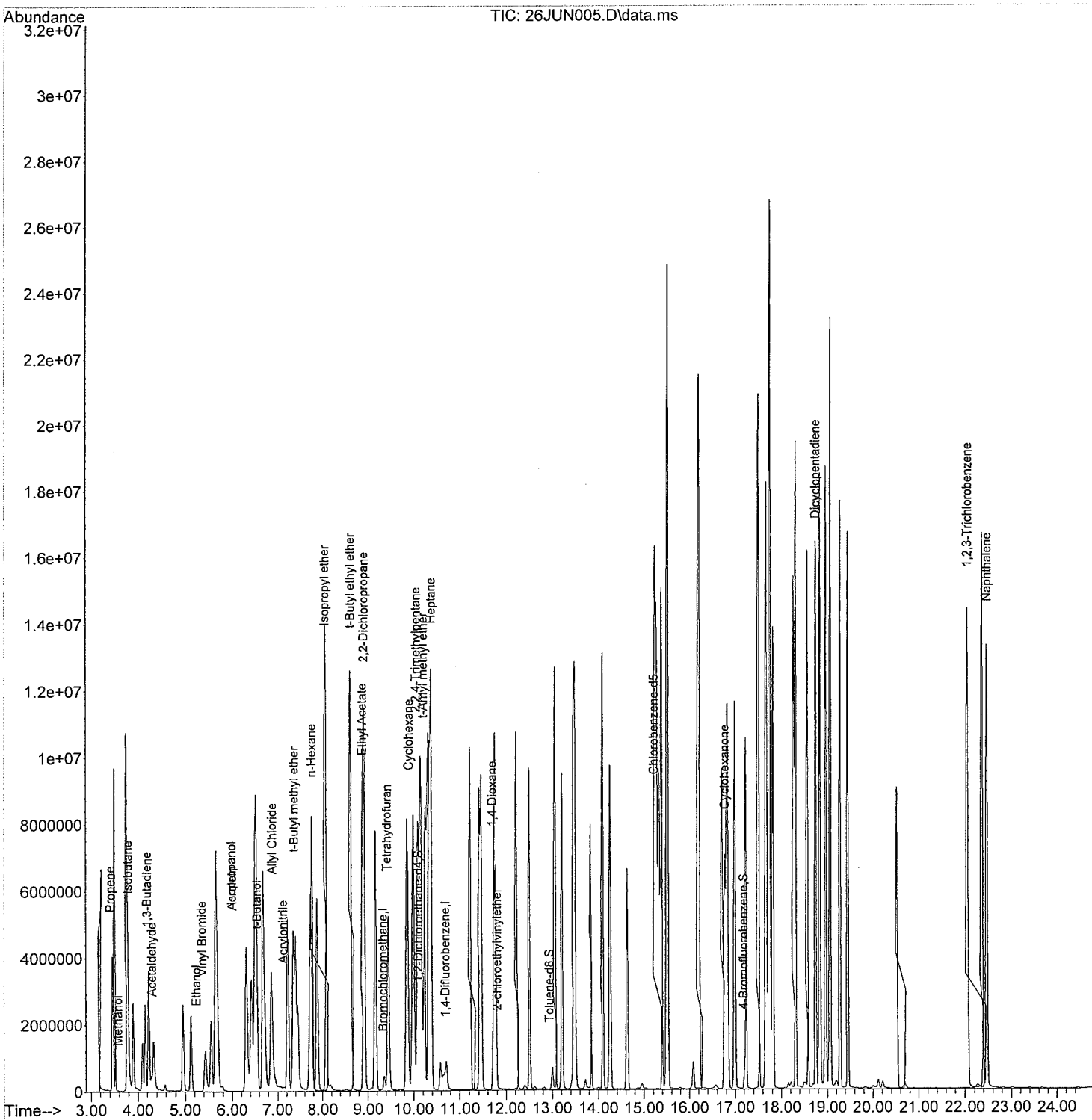
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.331	130	160151	10.00	ppbv		0.01
23) 1,4-Difluorobenzene	10.688	114	542532	10.00	ppbv		0.01
30) Chlorobenzene-d5	15.207	117	403430	10.00	ppbv		0.01
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.098	65	326573	12.81	ppbv		0.02
Spiked Amount 10.000	Range 80 - 120		Recovery = 128.10%#				
29) Toluene-d8	12.935	98	558558	10.51	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 105.10%				
32) 4-Bromofluorobenzene	17.181	95	371343	11.50	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 115.00%				
Target Compounds							Qvalue
2) Propene	3.415	41	2650977	158.83	ppbv		97
3) isobutane	3.785	41	1496695	179.90	ppbv	#	1
4) 1,3-Butadiene	4.195	54	2054168	192.21	ppbv		97
5) Methanol	3.569	31	1389	0.41	ppbv	#	39
6) Acetaldehyde	4.303	43	905443	166.78	ppbv	#	64
7) Ethanol	5.238	45	1251152m	221.64	ppbv		
8) Vinyl Bromide	5.359	106	1883077	186.16	ppbv		99
9) Isopropanol	5.989	45	7123768	272.56	ppbv		94
10) Acrolein	6.002	56	1421357	182.86	ppbv		100
11) t-Butanol	6.553	59	6491086	197.94	ppbv		89
12) Allyl Chloride	6.884	41	4358122	184.22	ppbv	#	94
13) Acrylonitrile	7.117	53	2714499	197.45	ppbv		99
14) t-Butyl methyl ether	7.366	73	10040288	157.58	ppbv		94
15) n-Hexane	7.757	57	5657948	173.16	ppbv		93
16) Isopropyl ether	8.048	45	11134635	170.63	ppbv	#	95
17) t-Butyl ethyl ether	8.613	87	4030448m	166.36	ppbv		
18) Ethyl Acetate	8.875	70	936986m	179.29	ppbv		
19) 2,2-Dichloropropane	8.904	77	5042973	160.70	ppbv		96
20) Tetrahydrofuran	9.416	72	1854697	162.19	ppbv	#	71
21) Cyclohexane	9.895	56	6113724	174.57	ppbv		89
22) 2,2,4-Trimethylpentane	10.046	57	16048693	170.75	ppbv		98
25) t-Amyl methyl ether	10.196	73	9371079	223.03	ppbv		98
26) Heptane	10.367	71	3850739	227.39	ppbv		76
27) 1,4-Dioxane	11.695	88	2700449	234.74	ppbv	#	80
28) 2-chloroethylvinylether	11.800	63	139	6.02	ppbv	#	100
31) Cyclohexanone	16.762	55	4290914	262.57	ppbv	#	90
33) Dicyclopentadiene	18.732	66	210361m	253.56	ppbv		
34) Naphthalene	22.464	128	14784395	264.60	ppbv		97
35) 1,2,3-Trichlorobenzene	22.045	180	7311963	264.84	ppbv	#	99

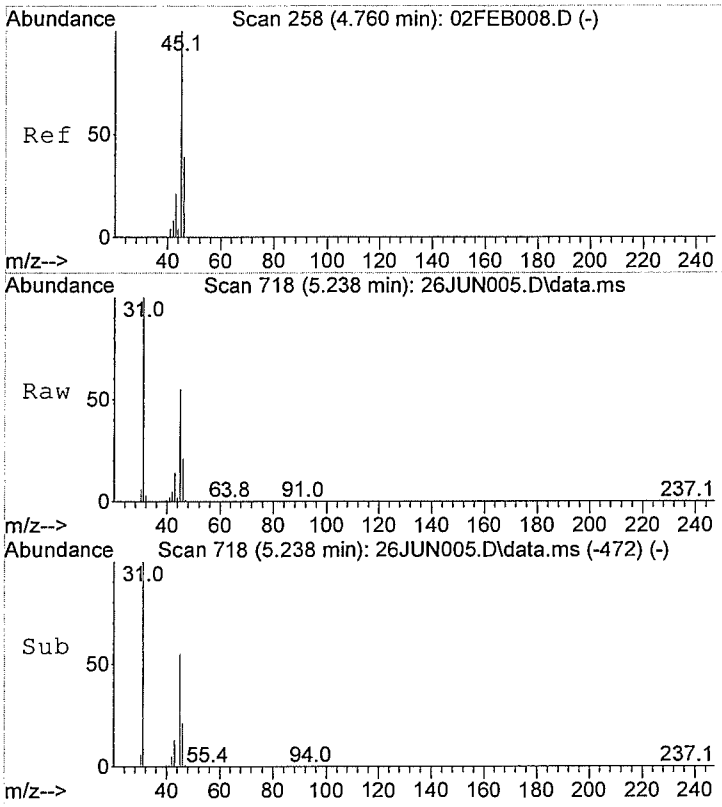
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN005.D
Acq On : 26 Jun 2018 6:12 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 09 10:09:10 2018
Quant Method : C:\msdchem\1\methods\AL180620.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Tue Jun 26 10:38:17 2018
Response via : Initial Calibration

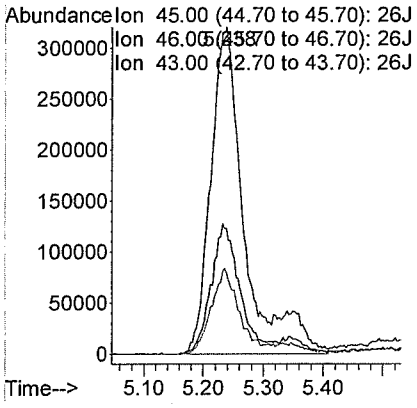




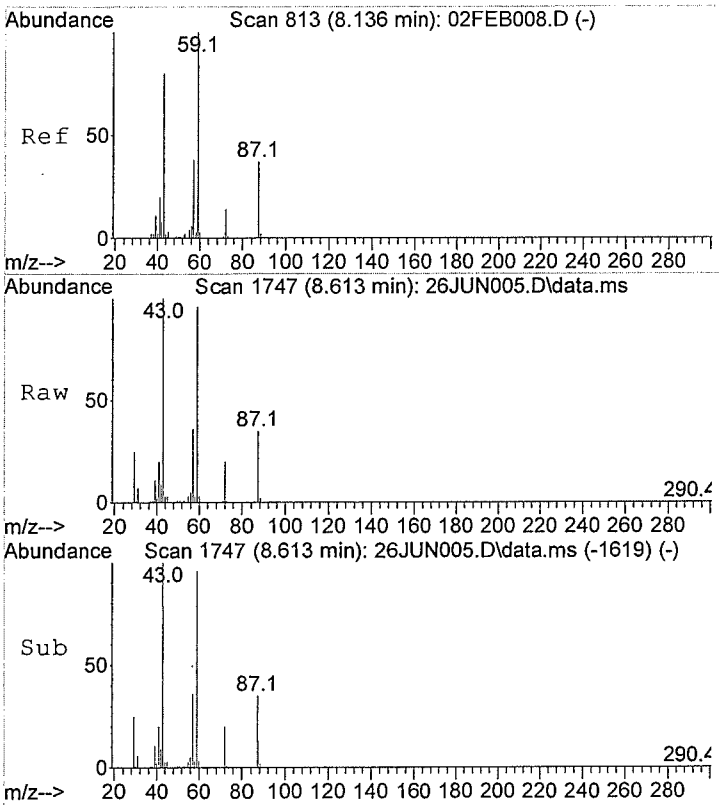
#7
Ethanol
Concen: 221.64 ppbv m
RT: 5.238 min Scan# 718
Delta R.T. 0.006 min
Lab File: 26JUN005.D
Acq: 26 Jun 2018 6:12 pm

Tgt Ion: 45 Resp: 1251152

Ion	Ratio	Lower	Upper
45	100		
46	34.4	30.1	45.1
43	21.5	20.2	30.2



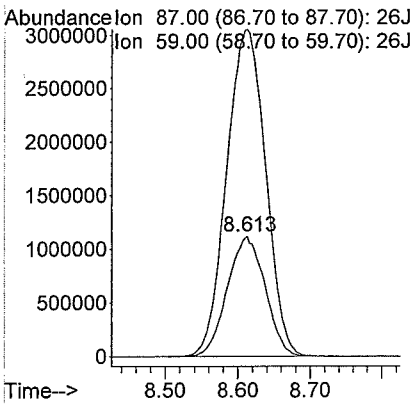
ME-3
DF 7/9/18



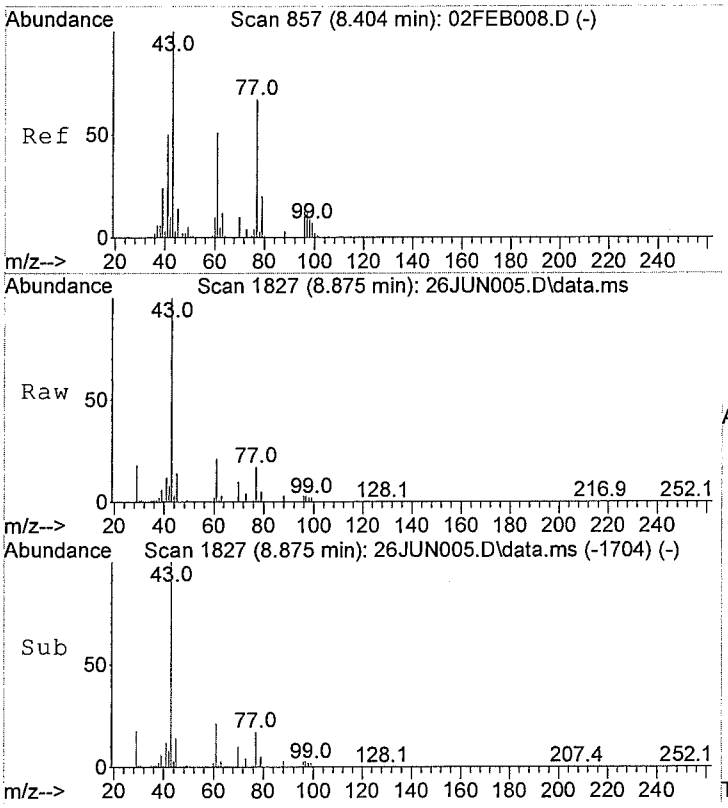
#17
t-Butyl ethyl ether
Concen: 166.36 ppbv m
RT: 8.613 min Scan# 1747
Delta R.T. 0.020 min
Lab File: 26JUN005.D
Acq: 26 Jun 2018 6:12 pm

Tgt Ion: 87 Resp: 4030448

Ion	Ratio	Lower	Upper
87	100		
59	0.0	184.5	276.7#



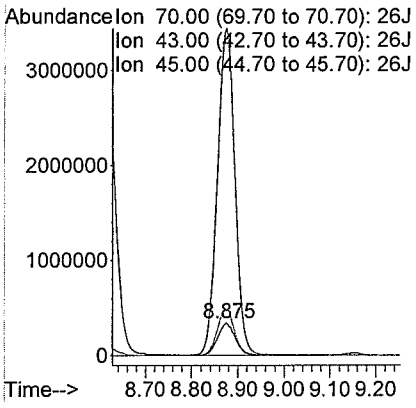
ME-3
D- 7/9/18



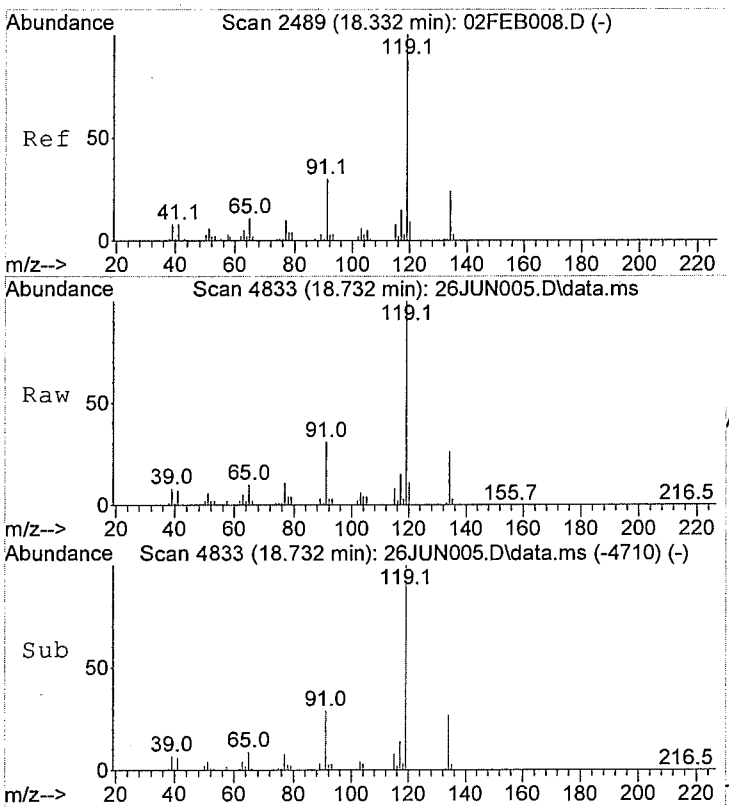
#18
Ethyl Acetate
Concen: 179.29 ppbv m
RT: 8.875 min Scan# 1827
Delta R.T. 0.003 min
Lab File: 26JUN005.D
Acq: 26 Jun 2018 6:12 pm

Tgt Ion: 70 Resp: 936986

Ion	Ratio	Lower	Upper
70	100		
43	1.2	624.8	937.2#
45	0.1	87.0	130.6#



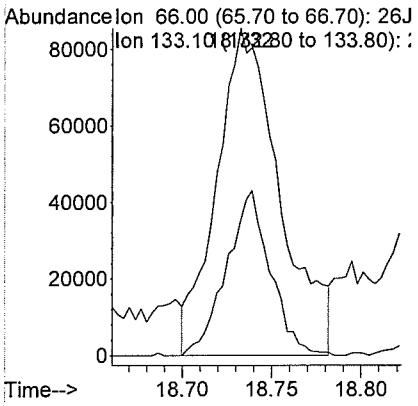
ME 3
D- 7/9/18



#33
Dicyclopentadiene
Concen: 253.56 ppbv m
RT: 18.732 min Scan# 4833
Delta R.T. 0.003 min
Lab File: 26JUN005.D
Acq: 26 Jun 2018 6:12 pm

Tgt Ion: 66 Resp: 210361

Ion	Ratio	Lower	Upper
66	100		
133	34.9	36.5	54.7#



MI - 3
DS 7/9/18

4. Initial Calibration Verification

a. ICV Summary
b. Results/Chromatograms

Default Initial Calibration Criteria:

Target compounds must have %Diff <30%

(This criteria superseded by any project specific criteria)

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN007.D
Acq On : 26 Jun 2018 7:31 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 27 08:09:04 2018
Quant Method : C:\msdchem\1\methods\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:05:18 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	102	0.00
2		Dichlorodifluoromethane (12	3.659	3.830	-4.7	104	0.00
3		Chloromethane	0.959	1.032	-7.6	119	-0.02
4		1,2-Cl-1,1,2,2-F ethane (11	3.207	3.428	-6.9	108	-0.01
5		Vinyl Chloride	0.911	0.970	-6.5	109	-0.01
6		Bromomethane	0.639	0.895	-40.1#	124	-0.02
7		Chloroethane	0.197	0.211	-7.1	108	-0.02
8		Trichlorofluoromethane (11)	3.728	3.876	-4.0	104	-0.02
9	M	1,1-Dichloroethene	2.322	2.396	-3.2	104	-0.02
10		Carbon Disulfide	2.451	2.747	-12.1	104	-0.01
11		1,1,2-Cl 1,2,2-F ethane (11	1.927	1.872	2.9	99	-0.01
12		Acetone	2.501	3.371	-34.8#	147#	-0.01
13	M	Methylene Chloride	1.064	1.031	3.1	100	0.00
14		t-1,2-Dichloroethene	1.032	1.016	1.6	100	-0.01
15		1,1-Dichloroethane	2.479	2.696	-8.8	109	-0.02
16		Vinyl Acetate	4.432	5.213	-17.6	111	-0.01
17		c-1,2-Dichloroethene	1.219	1.368	-12.2	106	0.00
18		2-Butanone	0.601	0.685	-14.0	108	-0.02
19		t-Butyl Methyl Ether	3.492	3.918	-12.2	109	-0.02
20	t	Chloroform	3.086	3.205	-3.9	106	0.00
21		1,1,1-Trichloroethane	3.005	3.202	-6.6	109	0.00
22		1,1-Dichloropropene	1.675	1.911	-14.1	112	0.00
23	t	Carbon Tetrachloride	2.769	2.761	0.3	102	0.00
24	I	1,4-Difluorobenzene	1.000	1.000	0.0	107	0.00
25	T	Benzene	0.928	0.949	-2.3	112	-0.01
26	S	1,2-Dichloroethane-d4	0.532	0.482	9.4	99	-0.01
27		1,2-Dichloroethane	0.529	0.518	2.1	106	0.00
28	M	Trichloroethene	0.338	0.345	-2.1	106	0.00
29		1,2-Dichloropropane	0.322	0.343	-6.5	111	0.00
30		Bromodichloromethane	0.694	0.696	-0.3	105	0.00
31		Dibromomethane	0.302	0.313	-3.6	110	0.00
32		c-1,3-Dichloropropene	0.439	0.493	-12.3	118	0.00
33		4-Methyl-2-Pentanone	0.768	0.844	-9.9	120	0.00
34	S	Toluene-d8	1.010	1.008	0.2	107	0.00
35	M	Toluene	1.037	1.061	-2.3	110	0.00
36	I	Chlorobenzene-d5	1.000	1.000	0.0	106	0.00
37		t-1,3-Dichloropropene	0.476	0.501	-5.3	111	0.00
38		1,1,2-Trichloroethane	0.452	0.455	-0.7	109	0.00
39		1,3-Dichloropropane	0.561	0.611	-8.9	113	0.00
40		Tetrachloroethene	0.589	0.606	-2.9	112	0.01
41		2-Hexanone	0.452	0.522	-15.5	116	0.00
42		Dibromochloromethane	0.645	0.690	-7.0	112	0.00
43	t	1,2-Dibromoethane	0.618	0.651	-5.3	115	0.00
44		Chlorobenzene	0.996	1.027	-3.1	114	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN007.D
Acq On : 26 Jun 2018 7:31 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 27 08:09:04 2018
Quant Method : C:\msdchem\1\methods\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:05:18 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
5		1,1,1,2-Tetrachloroethane	0.359	0.403	-12.3	115	0.00
6	T	Ethylbenzene	1.705	1.787	-4.8	115	0.00
7	T	p,&m-Xylene	1.362	1.442	-5.9	111	0.00
8	T	o-Xylene	1.341	1.453	-8.4	113	0.00
9		Styrene	0.898	0.958	-6.7	114	0.00
0		Bromoform	0.511	0.609	-19.2	131	0.00
1		Isopropyl benzene	1.324	1.520	-14.8	113	0.00
2	M	1,1,2,2-Tetrachloroethane	0.894	0.904	-1.1	117	0.00
3	S	4-Bromofluorobenzene	0.582	0.581	0.2	105	0.00
4		Benzyl Chloride	0.606	0.615	-1.5	109	0.00
5		1,2,3-Trichloropropane	0.226	0.241	-6.6	111	0.00
6		n-Propyl Benzene	1.642	1.958	-19.2	114	0.00
7		Bromobenzene	0.842	0.954	-13.3	110	0.00
8		4-Ethyl Toluene	1.786	1.848	-3.5	111	0.00
9	T	1,3,5-Trimethylbenzene	1.539	1.595	-3.6	113	0.00
0		2-Chlorotoluene	1.325	1.389	-4.8	103	0.00
1		4-Chlorotoluene	1.135	1.277	-12.5	110	0.00
2		tert-Butylbenzene	1.126	1.325	-17.7	112	0.00
3		1,2,4-Trimethylbenzene	1.561	1.640	-5.1	113	0.00
4		sec-Butylbenzene	1.621	1.896	-17.0	110	0.00
5		p-Isopropyltoluene	1.162	1.380	-18.8	111	0.00
6		1,3-Dichlorobenzene	0.853	0.846	0.8	115	0.00
7		1,4-Dichlorobenzene	0.851	0.848	0.4	116	0.00
8		n-Butylbenzene	1.310	1.580	-20.6	114	0.00
9		1,2-Dichlorobenzene	0.811	0.782	3.6	115	0.00
0		1,2-Dibromo-3-chloropropane	0.238	0.294	-23.5	123	0.00
1		1,2,4-Trichlorobenzene	0.668	0.574	14.1	93	0.00
2		Hexachlorobutadiene	0.742	0.700	5.7	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN007.D
Acq On : 26 Jun 2018 7:31 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 27 08:09:04 2018
Quant Method : C:\msdchem\1\methods\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:05:18 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.311	130	113800	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.672	114	541067	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.197	117	417449	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.075	65	260904	9.06	ppbv	-0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 90.60%			
34) Toluene-d8	12.931	98	545352	9.98	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.80%			
53) 4-Bromofluorobenzene	17.175	174	242425	9.98	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.536	85	435837	10.47	ppbv	96
3) Chloromethane	3.933	50	117445	10.76	ppbv	100
4) 1,2-Cl-1,1,2,2-F ethan...	3.769	85	390090	10.69	ppbv	97
5) Vinyl Chloride	4.149	62	110383	10.64	ppbv	99
6) Bromomethane	4.838	94	101798	14.00	ppbv	96
7) Chloroethane	4.995	66	24061	10.71	ppbv	83
8) Trichlorofluoromethane...	5.458	101	441106	10.40	ppbv	98
9) 1,1-Dichloroethene	6.363	61	272659	10.32	ppbv	88
10) Carbon Disulfide	7.061	76	312623	11.21	ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.199	151	213068	9.72	ppbv	91
12) Acetone	6.091	43	383612	13.48	ppbv	91
13) Methylene Chloride	6.999	84	117341	9.69	ppbv	85
14) t-1,2-Dichloroethene	7.494	96	115650	9.85	ppbv	94
15) 1,1-Dichloroethane	8.049	63	306842	10.88	ppbv	96
16) Vinyl Acetate	8.042	43	593268	11.76	ppbv	93
17) c-1,2-Dichloroethene	8.895	96	155730	11.23	ppbv	95
18) 2-Butanone	8.590	72	77898	11.39	ppbv	62
19) t-Butyl Methyl Ether	7.343	73	445812	11.22	ppbv	92
20) Chloroform	9.131	83	364720	10.39	ppbv	95
21) 1,1,1-Trichloroethane	9.744	97	364440	10.66	ppbv	92
22) 1,1-Dichloropropene	9.970	75	217449	11.41	ppbv	95
23) Carbon Tetrachloride	10.128	117	314191	9.97	ppbv	91
25) Benzene	10.305	78	513586	10.23	ppbv	96
27) 1,2-Dichloroethane	10.206	62	280009	9.78	ppbv	96
28) Trichloroethene	11.203	130	186726	10.22	ppbv	94
29) 1,2-Dichloropropane	11.400	63	185346	10.64	ppbv	91
30) Bromodichloromethane	11.705	83	376482	10.03	ppbv	91
31) Dibromomethane	11.757	93	169198	10.34	ppbv	97
32) c-1,3-Dichloropropene	12.492	75	267002	11.23	ppbv	88
33) 4-Methyl-2-Pentanone	12.210	43	456490	10.98	ppbv	85
35) Toluene	13.043	91	574318	10.23	ppbv	97
37) t-1,3-Dichloropropene	13.204	75	208965	10.52	ppbv	95
38) 1,1,2-Trichloroethane	13.443	97	189868	10.07	ppbv	96
39) 1,3-Dichloropropane	13.814	76	255228	10.90	ppbv	92
40) Tetrachloroethene	14.079	166	252838	10.28	ppbv	92
41) 2-Hexanone	13.479	58	217712	11.54	ppbv	90

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN007.D
Acq On : 26 Jun 2018 7:31 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 27 08:09:04 2018
Quant Method : C:\msdchem\1\methods\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:05:18 2018
Response via : Initial Calibration

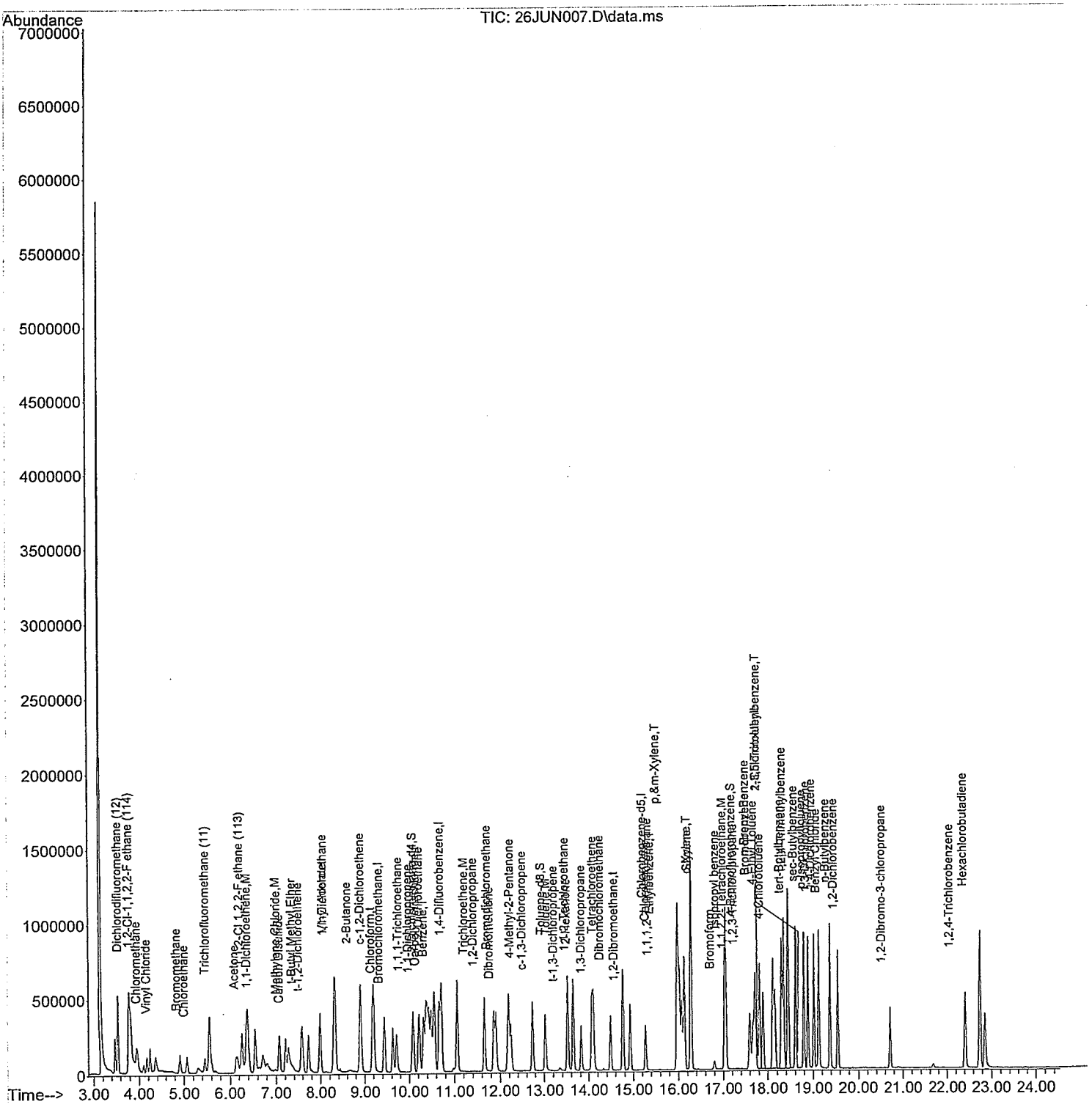
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) Dibromochloromethane	14.237	129	288152	10.69	ppbv	99
43) 1,2-Dibromoethane	14.558	107	271968	10.55	ppbv	96
44) Chlorobenzene	15.260	112	428839	10.32	ppbv	97
45) 1,1,1,2-Tetrachloroethane	15.309	131	168412	11.24	ppbv	96
46) Ethylbenzene	15.368	91	746000	10.48	ppbv	99
47) p,&m-Xylene	15.496	91	1203798	21.18	ppbv	94
48) o-Xylene	16.184	91	606727	10.84	ppbv	95
49) Styrene	16.198	104	399758	10.66	ppbv	96
50) Bromoform	16.696	173	254262	11.91	ppbv	95
51) Isopropyl benzene	16.808	105	634720	11.48	ppbv	97
52) 1,1,2,2-Tetrachloroethane	16.975	83	377328	10.11	ppbv	99
54) Benzyl Chloride	19.060	91	256783	10.14	ppbv	91
55) 1,2,3-Trichloropropane	17.221	110	100426	10.65	ppbv	90
56) n-Propyl Benzene	17.483	91	817552	11.93	ppbv	90
57) Bromobenzene	17.499	77	398387	11.34	ppbv	96
58) 4-Ethyl Toluene	17.660	105	771625	10.35	ppbv	96
59) 1,3,5-Trimethylbenzene	17.732	105	665733	10.36	ppbv	94
60) 2-Chlorotoluene	17.732	91	579748	10.48	ppbv	95
61) 4-Chlorotoluene	17.804	91	533277	11.25	ppbv	99
62) tert-Butylbenzene	18.254	119	553061	11.77	ppbv	97
63) 1,2,4-Trimethylbenzene	18.300	105	684527	10.51	ppbv	98
64) sec-Butylbenzene	18.555	105	791297	11.69	ppbv	100
65) p-Isopropyltoluene	18.736	119	576130	11.88	ppbv	96
66) 1,3-Dichlorobenzene	18.824	146	353016	9.91	ppbv	96
67) 1,4-Dichlorobenzene	18.952	146	354004	9.96	ppbv	96
68) n-Butylbenzene	19.274	91	659743	12.07	ppbv	100
69) 1,2-Dichlorobenzene	19.447	146	326278	9.64	ppbv	95
70) 1,2-Dibromo-3-chloropr...	20.510	157	122723	12.37	ppbv	86
71) 1,2,4-Trichlorobenzene	22.041	180	239710	8.60	ppbv	85
72) Hexachlorobutadiene	22.356	225	292192	9.43	ppbv	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN007.D
Acq On : 26 Jun 2018 7:31 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 27 08:09:04 2018
Quant Method : C:\msdchem\1\methods\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:05:18 2018
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180702\
Data File : 02JUL005.D
Acq On : 2 Jul 2018 1:17 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 02 13:42:34 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	91	0.00
2		Dichlorodifluoromethane (12	3.659	3.109	15.0	75	-0.02
3		Chloromethane	0.959	1.078	-12.4	111	-0.02
4		1,2-Cl-1,1,2,2-F ethane (11	3.207	3.278	-2.2	92	0.00
5		Vinyl Chloride	0.911	0.948	-4.1	94	0.00
6		Bromomethane	0.639	0.809	-26.6	100	0.00
7		Chloroethane	0.197	0.193	2.0	88	0.00
8		Trichlorofluoromethane (11)	3.728	3.496	6.2	83	0.00
9	M	1,1-Dichloroethene	2.322	2.229	4.0	86	0.00
0		Carbon Disulfide	2.451	2.502	-2.1	84	0.00
1		1,1,2-Cl 1,2,2-F ethane (11	1.927	1.847	4.2	87	0.00
2		Acetone	2.501	2.370	5.2	92	0.00
3	M	Methylene Chloride	1.064	1.087	-2.2	94	0.00
4		t-1,2-Dichloroethene	1.032	1.033	-0.1	91	0.00
5		1,1-Dichloroethane	2.479	2.537	-2.3	91	0.00
6		Vinyl Acetate	4.432	4.944	-11.6	94	0.00
7		c-1,2-Dichloroethene	1.219	1.289	-5.7	89	0.00
8		2-Butanone	0.601	0.663	-10.3	93	0.00
9		t-Butyl Methyl Ether	3.492	3.715	-6.4	92	0.00
0	t	Chloroform	3.086	3.019	2.2	89	0.00
1		1,1,1-Trichloroethane	3.005	2.949	1.9	89	0.00
2		1,1-Dichloropropene	1.675	1.749	-4.4	91	0.00
3	t	Carbon Tetrachloride	2.769	2.595	6.3	85	0.00
4	I	1,4-Difluorobenzene	1.000	1.000	0.0	98	0.00
5	T	Benzene	0.928	0.889	4.2	95	0.00
6	S	1,2-Dichloroethane-d4	0.532	0.464	12.8	87	0.00
7		1,2-Dichloroethane	0.529	0.469	11.3	88	0.00
8	M	Trichloroethene	0.338	0.330	2.4	93	0.00
9		1,2-Dichloropropane	0.322	0.320	0.6	95	0.00
0		Bromodichloromethane	0.694	0.643	7.3	88	0.00
1		Dibromomethane	0.302	0.285	5.6	91	0.00
2		c-1,3-Dichloropropene	0.439	0.465	-5.9	102	0.00
3		4-Methyl-2-Pentanone	0.768	0.768	0.0	99	0.00
4	S	Toluene-d8	1.010	1.014	-0.4	98	0.00
5	M	Toluene	1.037	1.022	1.4	97	0.00
6	I	Chlorobenzene-d5	1.000	1.000	0.0	99	0.00
7		t-1,3-Dichloropropene	0.476	0.475	0.2	99	0.00
8		1,1,2-Trichloroethane	0.452	0.426	5.8	96	0.00
9		1,3-Dichloropropane	0.561	0.535	4.6	93	0.00
0		Tetrachloroethene	0.589	0.564	4.2	97	0.00
1		2-Hexanone	0.452	0.476	-5.3	99	0.00
2		Dibromochloromethane	0.645	0.653	-1.2	100	0.00
3	t	1,2-Dibromoethane	0.618	0.605	2.1	100	0.00
4		Chlorobenzene	0.996	0.973	2.3	101	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180702\
Data File : 02JUL005.D
Acq On : 2 Jul 2018 1:17 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 02 13:42:34 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
5		1,1,1,2-Tetrachloroethane	0.359	0.357	0.6	96	0.00
6	T	Ethylbenzene	1.705	1.621	4.9	98	0.00
7	T	p,&m-Xylene	1.362	1.296	4.8	94	0.00
8	T	o-Xylene	1.341	1.311	2.2	96	0.00
9		Styrene	0.898	0.865	3.7	96	0.00
0		Bromoform	0.511	0.604	-18.2	121	0.00
1		Isopropyl benzene	1.324	1.241	6.3	86	0.00
2	M	1,1,2,2-Tetrachloroethane	0.894	0.881	1.5	107	0.00
3	S	4-Bromofluorobenzene	0.582	0.554	4.8	94	0.00
4		Benzyl Chloride	0.606	0.629	-3.8	104	0.00
5		1,2,3-Trichloropropane	0.226	0.214	5.3	92	0.00
6		n-Propyl Benzene	1.642	1.570	4.4	86	0.00
7		Bromobenzene	0.842	0.830	1.4	90	0.00
8		4-Ethyl Toluene	1.786	1.586	11.2	89	0.00
9	T	1,3,5-Trimethylbenzene	1.539	1.478	4.0	98	0.00
0		2-Chlorotoluene	1.325	1.252	5.5	87	0.00
1		4-Chlorotoluene	1.135	1.076	5.2	87	0.00
2		tert-Butylbenzene	1.126	1.172	-4.1	93	0.00
3		1,2,4-Trimethylbenzene	1.561	1.510	3.3	98	0.00
4		sec-Butylbenzene	1.621	1.646	-1.5	90	0.00
5		p-Isopropyltoluene	1.162	1.203	-3.5	91	0.00
6		1,3-Dichlorobenzene	0.853	0.810	5.0	103	0.00
7		1,4-Dichlorobenzene	0.851	0.799	6.1	103	0.00
8		n-Butylbenzene	1.310	1.433	-9.4	97	0.00
9		1,2-Dichlorobenzene	0.811	0.743	8.4	102	0.00
0		1,2-Dibromo-3-chloropropane	0.238	0.376	~~58.0#~~	~~148#~~	0.00
1		1,2,4-Trichlorobenzene	0.668	0.510	23.7	78	0.00
2		Hexachlorobutadiene	0.742	0.549	26.0	71	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

DT 7/3/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180702\
Data File : 02JUL005.D
Acq On : 2 Jul 2018 1:17 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 02 13:42:34 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.317	130	101233	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.675	114	493575	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.204	117	391307	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.088	65	229098	8.72	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 87.20%				
34) Toluene-d8	12.928	98	500282	10.04	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.40%				
53) 4-Bromofluorobenzene	17.178	174	216921	9.52	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.20%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.526	85	314714	8.50	ppbv		95
3) Chloromethane	3.933	50	109139	11.24	ppbv		100
4) 1,2-Cl-1,1,2,2-F ethan...	3.779	85	331857	10.22	ppbv		96
5) Vinyl Chloride	4.156	62	95984	10.40	ppbv		90
6) Bromomethane	4.854	94	81941	12.67	ppbv		89
7) Chloroethane	5.005	66	19570	9.79	ppbv	#	66
8) Trichlorofluoromethane...	5.468	101	353864	9.38	ppbv		95
9) 1,1-Dichloroethene	6.382	61	225627	9.60	ppbv		95
10) Carbon Disulfide	7.068	76	253276	10.21	ppbv		99
11) 1,1,2-Cl 1,2,2-F ethan...	6.212	151	186977	9.59	ppbv		82
12) Acetone	6.110	43	239881	9.48	ppbv		89
13) Methylene Chloride	7.012	84	110050	10.21	ppbv		89
14) t-1,2-Dichloroethene	7.507	96	104534	10.01	ppbv		90
15) 1,1-Dichloroethane	8.065	63	256877	10.24	ppbv		96
16) Vinyl Acetate	8.048	43	500493	11.16	ppbv		96
17) c-1,2-Dichloroethene	8.901	96	130447	10.57	ppbv		92
18) 2-Butanone	8.603	72	67075	11.03	ppbv		78
19) t-Butyl Methyl Ether	7.366	73	376120	10.64	ppbv		91
20) Chloroform	9.134	83	305672	9.78	ppbv		94
21) 1,1,1-Trichloroethane	9.744	97	298505	9.81	ppbv		98
22) 1,1-Dichloropropene	9.977	75	177037	10.44	ppbv		99
23) Carbon Tetrachloride	10.134	117	262715	9.37	ppbv		93
25) Benzene	10.314	78	438683	9.58	ppbv		95
27) 1,2-Dichloroethane	10.216	62	231493	8.86	ppbv		95
28) Trichloroethene	11.206	130	162889	9.78	ppbv		90
29) 1,2-Dichloropropane	11.410	63	157817	9.93	ppbv		86
30) Bromodichloromethane	11.711	83	317169	9.27	ppbv		89
31) Dibromomethane	11.761	93	140464	9.41	ppbv		97
32) c-1,3-Dichloropropene	12.489	75	229650	10.59	ppbv		95
33) 4-Methyl-2-Pentanone	12.210	43	378858	9.99	ppbv		87
35) Toluene	13.043	91	504519	9.85	ppbv		100
37) t-1,3-Dichloropropene	13.210	75	185832	9.98	ppbv		97
38) 1,1,2-Trichloroethane	13.449	97	166822	9.44	ppbv		94
39) 1,3-Dichloropropane	13.817	76	209444	9.54	ppbv	#	89
40) Tetrachloroethene	14.076	166	220821	9.57	ppbv		96
41) 2-Hexanone	13.482	58	186409	10.54	ppbv		90

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180702\
Data File : 02JUL005.D
Acq On : 2 Jul 2018 1:17 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 02 13:42:34 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

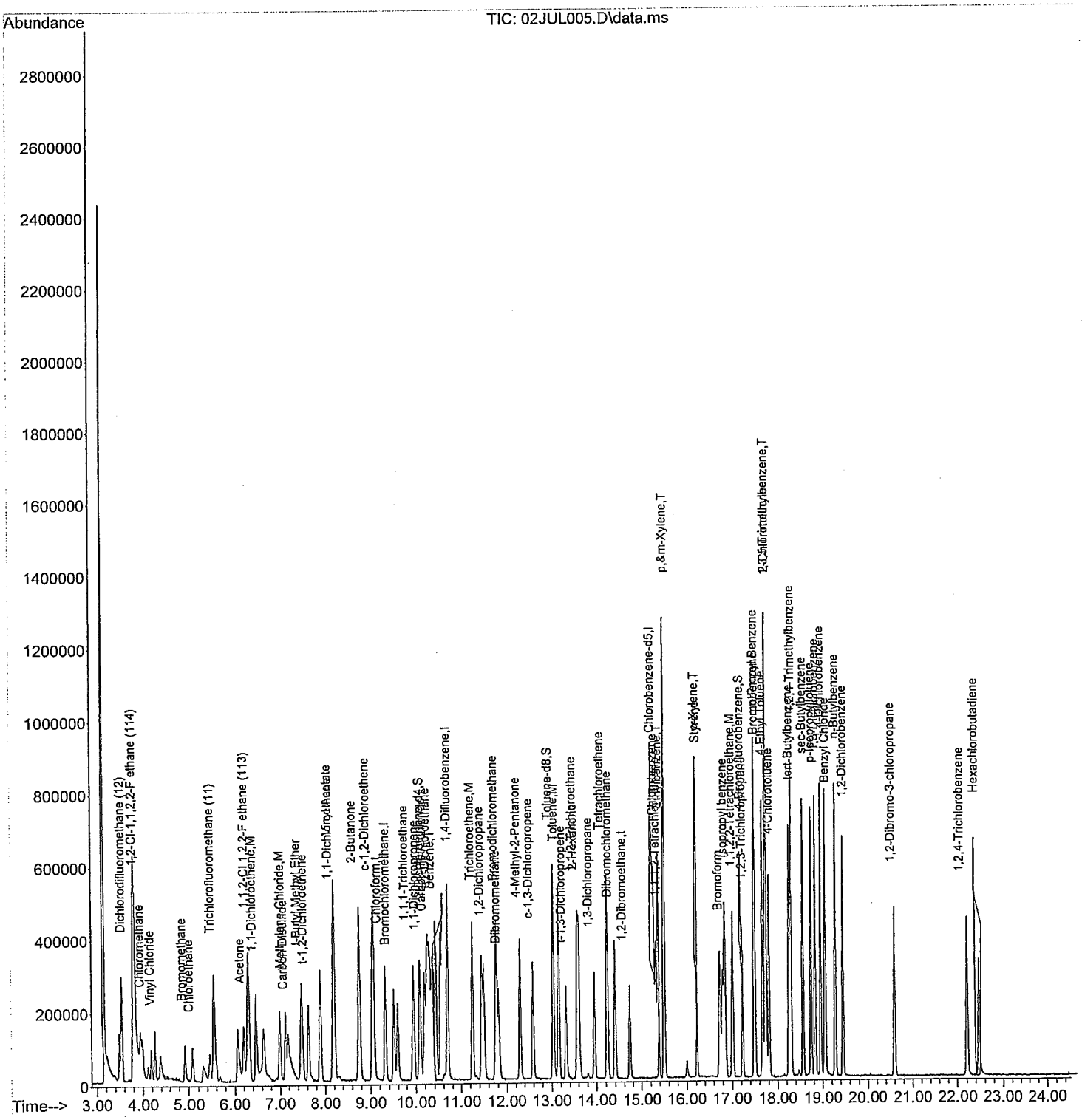
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) Dibromochloromethane	14.240	129	255556	10.12	ppbv	99
43) 1,2-Dibromoethane	14.558	107	236736	9.80	ppbv	97
44) Chlorobenzene	15.260	112	380558	9.77	ppbv	95
45) 1,1,1,2-Tetrachloroethane	15.312	131	139674	9.94	ppbv	91
46) Ethylbenzene	15.368	91	634243	9.50	ppbv	98
47) p,&m-Xylene	15.496	91	1014088	19.03	ppbv	99
48) o-Xylene	16.184	91	513064	9.78	ppbv	92
49) Styrene	16.201	104	338428	9.63	ppbv	98
50) Bromoform	16.696	173	236223	11.80	ppbv	98
51) Isopropyl benzene	16.807	105	485701	9.37	ppbv	97
52) 1,1,2,2-Tetrachloroethane	16.975	83	344936	9.86	ppbv	94
54) Benzyl Chloride	19.064	91	245989	10.37	ppbv	96
55) 1,2,3-Trichloropropane	17.221	110	83655	9.47	ppbv	93
56) n-Propyl Benzene	17.486	91	614218	9.56	ppbv	92
57) Bromobenzene	17.499	77	324648	9.86	ppbv	95
58) 4-Ethyl Toluene	17.660	105	620591	8.88	ppbv	96
59) 1,3,5-Trimethylbenzene	17.729	105	578258	9.60	ppbv	95
60) 2-Chlorotoluene	17.735	91	489884	9.45	ppbv	98
61) 4-Chlorotoluene	17.804	91	420890	9.47	ppbv	93
62) tert-Butylbenzene	18.257	119	458588	10.41	ppbv	93
63) 1,2,4-Trimethylbenzene	18.299	105	591003	9.68	ppbv	96
64) sec-Butylbenzene	18.555	105	644170	10.15	ppbv	99
65) p-Isopropyltoluene	18.736	119	470855	10.36	ppbv	95
66) 1,3-Dichlorobenzene	18.827	146	316810	9.49	ppbv	94
67) 1,4-Dichlorobenzene	18.952	146	312718	9.39	ppbv	98
68) n-Butylbenzene	19.280	91	560600	10.94	ppbv	99
69) 1,2-Dichlorobenzene	19.450	146	290576	9.16	ppbv	96
70) 1,2-Dibromo-3-chloropr...	20.513	157	147074	15.81	ppbv	89
71) 1,2,4-Trichlorobenzene	22.041	180	199692	7.64	ppbv	94
72) Hexachlorobutadiene	22.359	225	214634	7.39	ppbv	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180702\
Data File : 02JUL005.D
Acq On : 2 Jul 2018 1:17 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 02 13:42:34 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN007.D
Acq On : 26 Jun 2018 7:31 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 09 11:30:48 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration

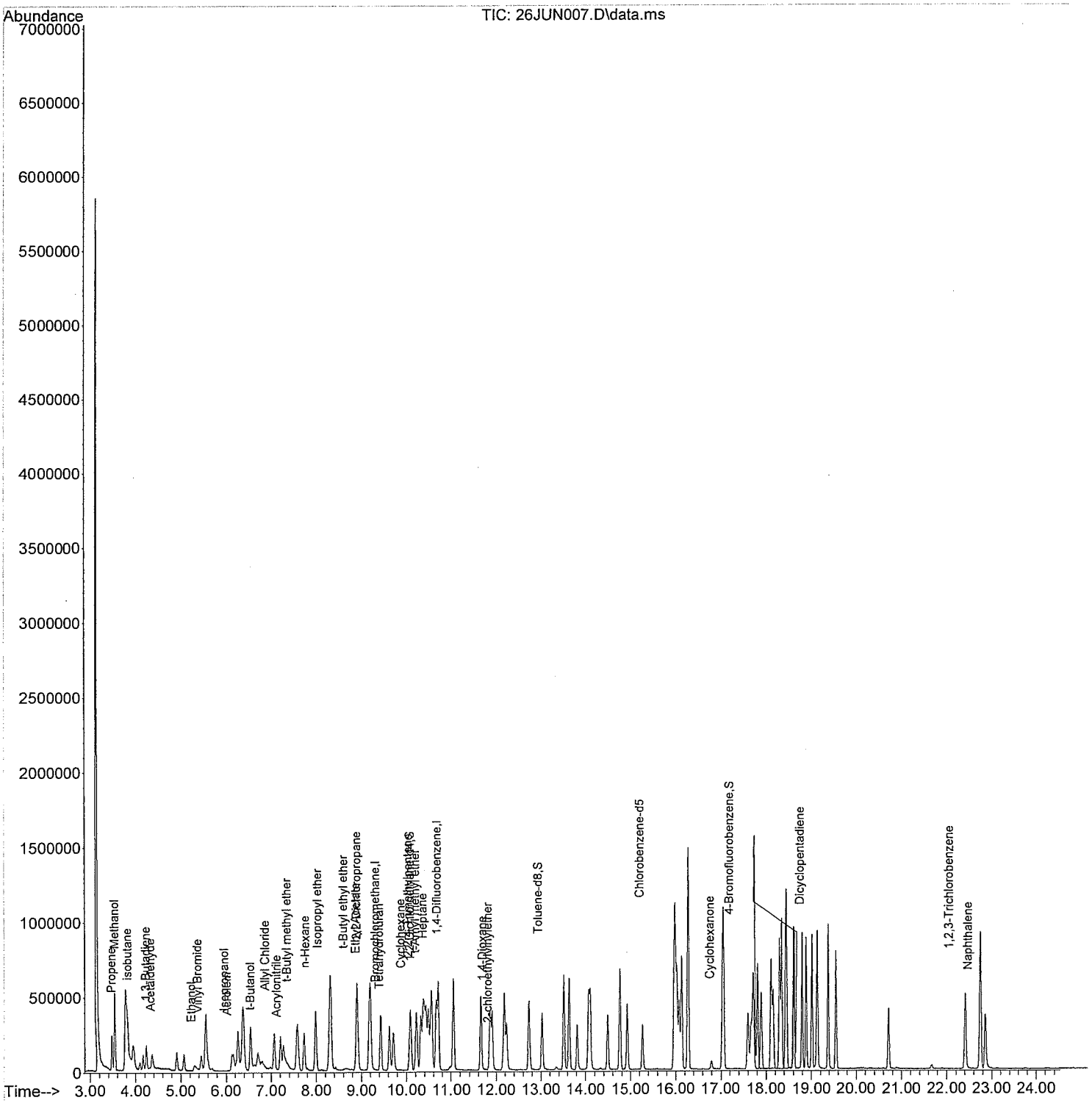
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.311	130	113800	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.672	114	541067	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.197	117	417449	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.075	65	260904	9.08	ppbv		-0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 90.80%				
29) Toluene-d8	12.931	98	545352	9.98	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.80%				
32) 4-Bromofluorobenzene	17.178	95	342944	9.74	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.40%				
Target Compounds							Qvalue
2) Propene	3.467	41	113334	10.91	ppbv		96
3) isobutane	3.818	41	67385	11.37	ppbv	#	1
4) 1,3-Butadiene	4.222	54	77341	10.52	ppbv		94
5) Methanol	3.533	31	30689	12.81	ppbv	#	3
6) Acetaldehyde	4.330	43	55215	15.55	ppbv	#	65
7) Ethanol	5.228	45	37825	8.74	ppbv	#	88
8) Vinyl Bromide	5.369	106	80639	11.72	ppbv	#	97
9) Isopropanol	5.960	45	184104	9.26	ppbv		96
10) Acrolein	6.012	56	62843	12.21	ppbv	#	86
11) t-Butanol	6.537	59	168324	7.79	ppbv	#	89
12) Allyl Chloride	6.871	41	170534	11.53	ppbv	#	89
13) Acrylonitrile	7.117	53	58682	6.24	ppbv	#	50
14) t-Butyl methyl ether	7.343	73	445441	11.21	ppbv		91
15) n-Hexane	7.750	57	233456	10.87	ppbv		92
16) Isopropyl ether	8.026	45	510430	12.23	ppbv	#	89
17) t-Butyl ethyl ether	8.599	87	171341	11.89	ppbv		73
18) Ethyl Acetate	8.868	70	35568	10.43	ppbv	#	38
19) 2,2-Dichloropropane	8.888	77	206782	12.08	ppbv		85
20) Tetrahydrofuran	9.400	72	78026	10.85	ppbv	#	72
21) Cyclohexane	9.875	56	258904	11.18	ppbv		88
22) 2,2,4-Trimethylpentane	10.036	57	738942	11.72	ppbv		96
25) t-Amyl methyl ether	10.190	73	386763	11.16	ppbv		98
26) Heptane	10.357	71	170649	10.40	ppbv		75
27) 1,4-Dioxane	11.685	88	119517	10.99	ppbv	#	80
28) 2-chloroethylvinylether	11.807	63	150	5.92	ppbv	#	100
31) Cyclohexanone	16.758	55	186430	13.18	ppbv	#	90
33) Dicyclopentadiene	18.739	66	10036	10.60	ppbv	#	85
34) Naphthalene	22.464	128	438143	8.36	ppbv		98
35) 1,2,3-Trichlorobenzene	22.041	180	239710	8.59	ppbv	#	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN007.D
Acq On : 26 Jun 2018 7:31 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 09 11:30:48 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration



5. Continuing Calibration Verification

a. CCV Summary
b. Results/Chromatograms

Default Continuing Calibration Criteria:

90% of target compounds must have %Diff <30%
All target compounds must have %Diff <50%

(This criteria superceded by any project specific criteria)

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG002.D
Acq On : 8 Aug 2018 10:40 am
Operator : DT
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 11:05:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	83	0.02
2		Dichlorodifluoromethane (12	3.659	3.608	1.4	80	0.00
3		Chloromethane	0.959	0.970	-1.1	92	0.00
4		1,2-Cl-1,1,2,2-F ethane (11	3.207	3.355	-4.6	86	0.00
5		Vinyl Chloride	0.911	0.989	-8.6	91	0.00
6		Bromomethane	0.639	0.755	-18.2	86	0.00
7		Chloroethane	0.197	0.198	-0.5	83	0.00
8		Trichlorofluoromethane (11)	3.728	3.509	5.9	77	0.00
9	M	1,1-Dichloroethene	2.322	2.236	3.7	79	0.00
10		Carbon Disulfide	2.451	2.588	-5.6	80	0.00
11		1,1,2-Cl 1,2,2-F ethane (11	1.927	1.915	0.6	83	0.00
12		Acetone	2.501	2.591	-3.6	92	0.00
13	M	Methylene Chloride	1.064	1.086	-2.1	86	0.00
14		t-1,2-Dichloroethene	1.032	1.040	-0.8	84	0.00
15		1,1-Dichloroethane	2.479	2.527	-1.9	83	0.00
16		Vinyl Acetate	4.432	4.557	-2.8	80	0.00
17		c-1,2-Dichloroethene	1.219	1.220	-0.1	77	0.00
18		2-Butanone	0.601	0.626	-4.2	81	0.00
19		t-Butyl Methyl Ether	3.492	3.443	1.4	79	0.00
20	t	Chloroform	3.086	2.965	3.9	80	0.00
21		1,1,1-Trichloroethane	3.005	2.954	1.7	82	0.00
22		1,1-Dichloropropene	1.675	1.630	2.7	78	0.00
23	t	Carbon Tetrachloride	2.769	2.580	6.8	78	0.00
24	I	1,4-Difluorobenzene	1.000	1.000	0.0	85	0.00
25	T	Benzene	0.928	0.872	6.0	82	0.00
26	S	1,2-Dichloroethane-d4	0.532	0.495	7.0	81	0.00
27		1,2-Dichloroethane	0.529	0.486	8.1	79	0.00
28	M	Trichloroethene	0.338	0.327	3.3	81	0.00
29		1,2-Dichloropropane	0.322	0.314	2.5	81	0.00
30		Bromodichloromethane	0.694	0.674	2.9	81	0.00
31		Dibromomethane	0.302	0.273	9.6	77	0.00
32		c-1,3-Dichloropropene	0.439	0.438	0.2	84	0.00
33		4-Methyl-2-Pentanone	0.768	0.737	4.0	83	0.00
34	S	Toluene-d8	1.010	1.000	1.0	85	0.00
35	M	Toluene	1.037	0.994	4.1	82	0.00
36	I	Chlorobenzene-d5	1.000	1.000	0.0	90	0.00
37		t-1,3-Dichloropropene	0.476	0.433	9.0	82	0.00
38		1,1,2-Trichloroethane	0.452	0.391	13.5	80	0.00
39		1,3-Dichloropropane	0.561	0.496	11.6	78	0.00
40		Tetrachloroethene	0.589	0.540	8.3	85	0.01
41		2-Hexanone	0.452	0.421	6.9	80	0.00
42		Dibromochloromethane	0.645	0.613	5.0	85	0.00
43	t	1,2-Dibromoethane	0.618	0.547	11.5	82	0.00
44		Chlorobenzene	0.996	0.894	10.2	85	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG002.D
Acq On : 8 Aug 2018 10:40 am
Operator : DT
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 11:05:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
45		1,1,1,2-Tetrachloroethane	0.359	0.339	5.6	83	0.00
46	T	Ethylbenzene	1.705	1.520	10.9	84	0.00
47	T	p,&m-Xylene	1.362	1.271	6.7	84	0.00
48	T	o-Xylene	1.341	1.243	7.3	83	0.00
49		Styrene	0.898	0.851	5.2	87	0.00
50		Bromoform	0.511	0.544	-6.5	100	0.00
51		Isopropyl benzene	1.324	1.306	1.4	83	0.00
52	M	1,1,2,2-Tetrachloroethane	0.894	0.771	13.8	85	0.00
53	S	4-Bromofluorobenzene	0.582	0.647	-11.2	100	0.00
54		Benzyl Chloride	0.606	0.651	-7.4	98	0.00
55		1,2,3-Trichloropropane	0.226	0.198	12.4	78	0.00
56		n-Propyl Benzene	1.642	1.650	-0.5	82	0.00
57		Bromobenzene	0.842	0.805	4.4	79	0.00
58		4-Ethyl Toluene	1.786	1.683	5.8	86	0.00
59	T	1,3,5-Trimethylbenzene	1.539	1.423	7.5	86	0.00
60		2-Chlorotoluene	1.325	1.277	3.6	81	0.00
61		4-Chlorotoluene	1.135	1.089	4.1	80	0.00
62		tert-Butylbenzene	1.126	1.104	2.0	80	0.00
63		1,2,4-Trimethylbenzene	1.561	1.425	8.7	84	0.00
64		sec-Butylbenzene	1.621	1.635	-0.9	81	0.00
65		p-Isopropyltoluene	1.162	1.159	0.3	79	0.00
66		1,3-Dichlorobenzene	0.853	0.784	8.1	91	0.00
67		1,4-Dichlorobenzene	0.851	0.780	8.3	91	0.00
68		n-Butylbenzene	1.310	1.279	2.4	79	0.00
69		1,2-Dichlorobenzene	0.811	0.723	10.9	91	0.00
70		1,2-Dibromo-3-chloropropane	0.238	0.249	-4.6	89	0.00
71		1,2,4-Trichlorobenzene	0.668	0.578	13.5	80	0.00
72		Hexachlorobutadiene	0.742	0.653	12.0	77	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180806\
Data File : 08AUG002.D
Acq On : 8 Aug 2018 10:40 am
Operator : DT
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 11:05:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.331	130	93086	10.00	ppbv	0.02
24) 1,4-Difluorobenzene	10.675	114	431790	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.204	117	356654	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.091	65	213729	9.30	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 93.00%			
34) Toluene-d8	12.928	98	431857	9.91	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.10%			
53) 4-Bromofluorobenzene	17.181	174	230879	11.12	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 111.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.549	85	335839	9.86	ppbv	94
3) Chloromethane	3.946	50	90295	10.11	ppbv	95
4) 1,2-Cl-1,1,2,2-F ethan...	3.789	85	312306	10.46	ppbv	98
5) Vinyl Chloride	4.166	62	92052	10.85	ppbv	94
6) Bromomethane	4.861	94	70234	11.81	ppbv	97
7) Chloroethane	5.015	66	18404	10.01	ppbv	82
8) Trichlorofluoromethane...	5.484	101	326676	9.41	ppbv	97
9) 1,1-Dichloroethene	6.386	61	208167	9.63	ppbv	95
10) Carbon Disulfide	7.071	76	240919	10.56	ppbv	99
11) 1,1,2-Cl 1,2,2-F ethan...	6.209	151	178291	9.94	ppbv	76
12) Acetone	6.107	43	241229	10.36	ppbv	93
13) Methylene Chloride	7.015	84	101115	10.20	ppbv	83
14) t-1,2-Dichloroethene	7.511	96	96834	10.08	ppbv	91
15) 1,1-Dichloroethane	8.062	63	235204	10.19	ppbv	97
16) Vinyl Acetate	8.052	43	424186	10.28	ppbv	93
17) c-1,2-Dichloroethene	8.901	96	113587	10.01	ppbv	96
18) 2-Butanone	8.612	72	58226	10.41	ppbv	90
19) t-Butyl Methyl Ether	7.360	73	320484	9.86	ppbv	87
20) Chloroform	9.134	83	275966	9.61	ppbv	92
21) 1,1,1-Trichloroethane	9.750	97	274972	9.83	ppbv	94
22) 1,1-Dichloropropene	9.980	75	151732	9.73	ppbv	94
23) Carbon Tetrachloride	10.134	117	240201	9.32	ppbv	95
25) Benzene	10.318	78	376640	9.40	ppbv	96
27) 1,2-Dichloroethane	10.216	62	209806	9.18	ppbv	96
28) Trichloroethene	11.210	130	141281	9.69	ppbv	90
29) 1,2-Dichloropropane	11.403	63	135604	9.75	ppbv	97
30) Bromodichloromethane	11.715	83	291040	9.72	ppbv	91
31) Dibromomethane	11.764	93	118016	9.04	ppbv	97
32) c-1,3-Dichloropropene	12.498	75	189126	9.97	ppbv	92
33) 4-Methyl-2-Pentanone	12.213	43	318114	9.59	ppbv	88
35) Toluene	13.046	91	429166	9.58	ppbv	95
37) t-1,3-Dichloropropene	13.207	75	154362	9.10	ppbv	98
38) 1,1,2-Trichloroethane	13.449	97	139539	8.66	ppbv	96
39) 1,3-Dichloropropane	13.820	76	176822	8.84	ppbv	93
40) Tetrachloroethene	14.079	166	192444	9.15	ppbv	96
41) 2-Hexanone	13.479	58	150250	9.32	ppbv	98

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180806\
Data File : 08AUG002.D
Acq On : 8 Aug 2018 10:40 am
Operator : DT
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 11:05:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

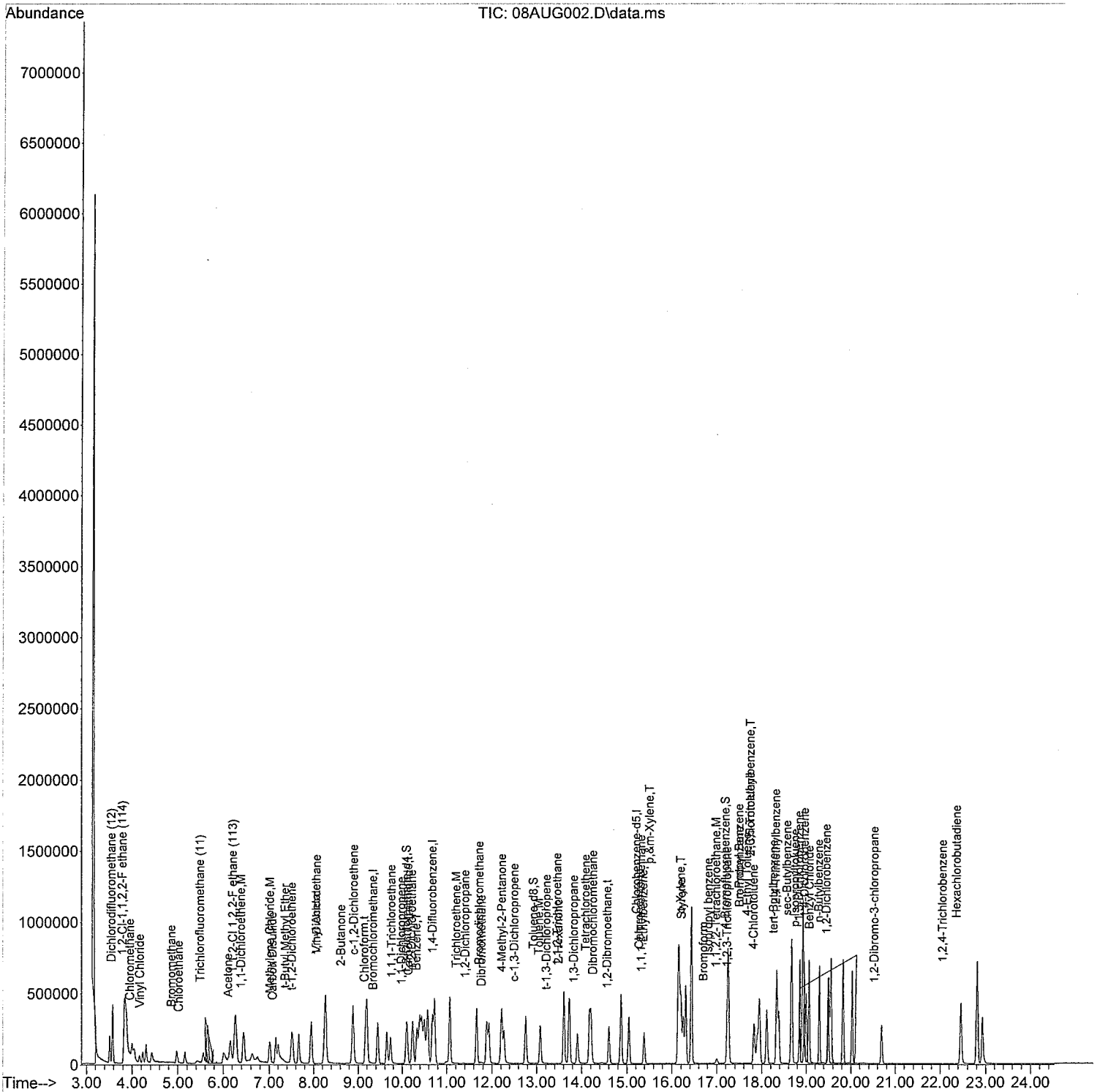
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.246	129	218657	9.50	ppbv		96
43) 1,2-Dibromoethane	14.561	107	194917	8.85	ppbv		95
44) Chlorobenzene	15.266	112	318758	8.98	ppbv		98
45) 1,1,1,2-Tetrachloroethane	15.312	131	120842	9.44	ppbv		93
46) Ethylbenzene	15.368	91	542277	8.92	ppbv		98
47) p,&m-Xylene	15.499	91	906341	18.66	ppbv		93
48) o-Xylene	16.188	91	443278	9.27	ppbv		96
49) Styrene	16.204	104	303503	9.48	ppbv		96
50) Bromoform	16.702	173	194165	10.65	ppbv		96
51) Isopropyl benzene	16.814	105	465846	9.86	ppbv		99
52) 1,1,2,2-Tetrachloroethane	16.978	83	274810	8.62	ppbv		96
54) Benzyl Chloride	19.064	91	232076	10.73	ppbv		92
55) 1,2,3-Trichloropropane	17.224	110	70776	8.79	ppbv	#	88
56) n-Propyl Benzene	17.490	91	588530	10.05	ppbv		91
57) Bromobenzene	17.499	77	286958	9.56	ppbv		97
58) 4-Ethyl Toluene	17.663	105	600137	9.42	ppbv		94
59) 1,3,5-Trimethylbenzene	17.732	105	507606	9.25	ppbv		99
60) 2-Chlorotoluene	17.735	91	455575	9.64	ppbv		98
61) 4-Chlorotoluene	17.808	91	388378	9.59	ppbv		99
62) tert-Butylbenzene	18.257	119	393781	9.81	ppbv		95
63) 1,2,4-Trimethylbenzene	18.303	105	508097	9.13	ppbv		97
64) sec-Butylbenzene	18.559	105	583034	10.08	ppbv		99
65) p-Isopropyltoluene	18.736	119	413231	9.98	ppbv		93
66) 1,3-Dichlorobenzene	18.824	146	279716	9.19	ppbv		92
67) 1,4-Dichlorobenzene	18.955	146	278108	9.16	ppbv		96
68) n-Butylbenzene	19.280	91	456248	9.77	ppbv		99
69) 1,2-Dichlorobenzene	19.447	146	257911	8.92	ppbv		95
70) 1,2-Dibromo-3-chloropr...	20.516	157	88912	10.49	ppbv	#	86
71) 1,2,4-Trichlorobenzene	22.041	180	205978	8.65	ppbv		93
72) Hexachlorobutadiene	22.356	225	232982	8.80	ppbv		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180806\
Data File : 08AUG002.D
Acq On : 8 Aug 2018 10:40 am
Operator : DT
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 11:05:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG002.D
Acq On : 8 Aug 2018 10:40 am
Operator : DT
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 14 14:51:59 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration

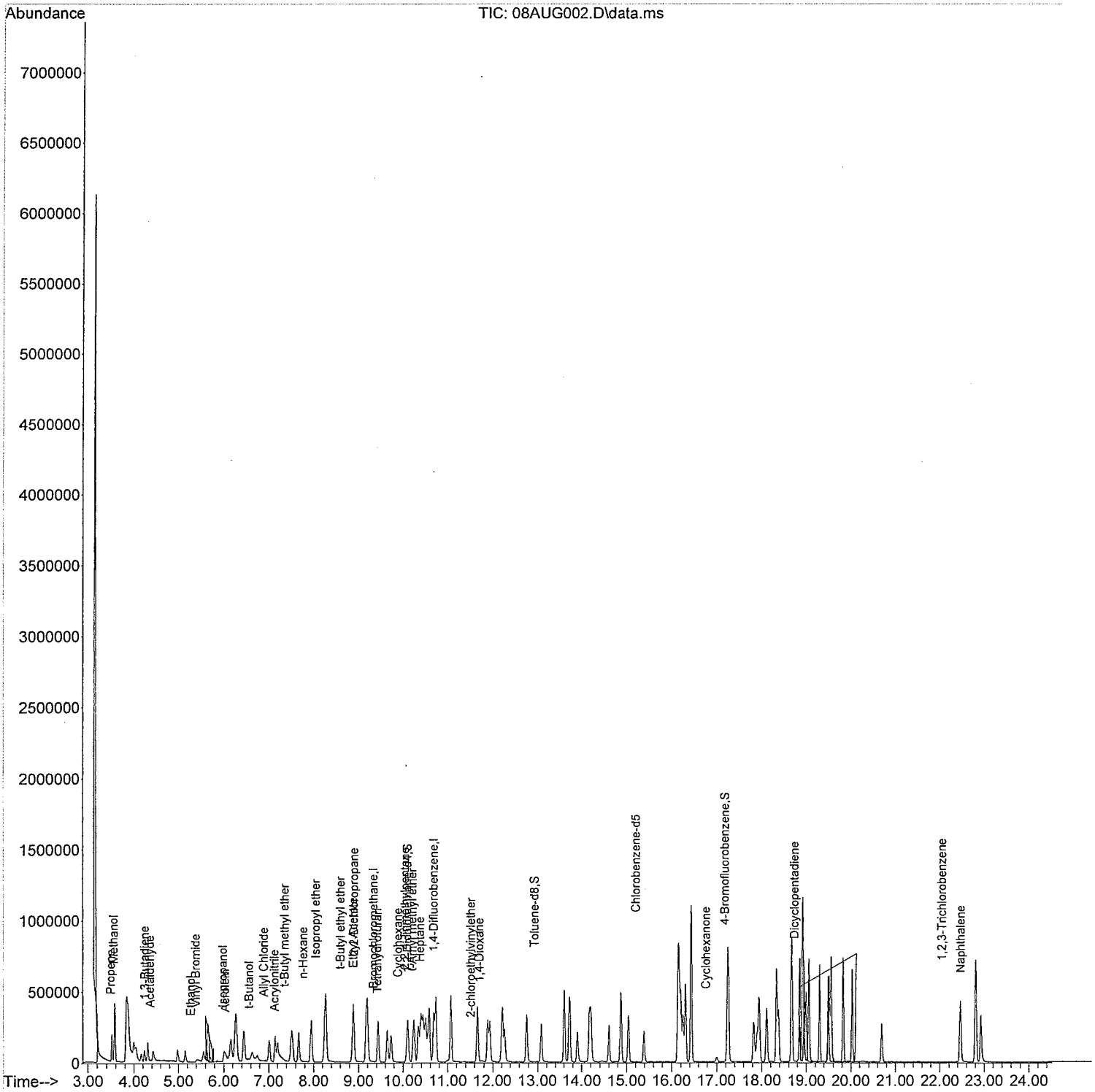
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.331	130	93086	10.00	ppbv	#	0.02
23) 1,4-Difluorobenzene	10.675	114	431790	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	356654	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.091	65	213729	9.32	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 93.20%				
29) Toluene-d8	12.928	98	431857	9.90	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.00%				
32) 4-Bromofluorobenzene	17.178	95	313296	10.42	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 104.20%				
Target Compounds							Qvalue
2) Propene	3.490	41	90224	10.62	ppbv		99
4) 1,3-Butadiene	4.241	54	64600	10.74	ppbv		100
5) Methanol	3.556	31	23250	11.87	ppbv	#	23
6) Acetaldehyde	4.359	43	33734	11.62	ppbv		90
7) Ethanol	5.277	45	35814m	10.11	ppbv		
8) Vinyl Bromide	5.386	106	62798	11.16	ppbv	#	92
9) Isopropanol	5.979	45	169859m	10.45	ppbv		
10) Acrolein	6.028	56	31343	7.44	ppbv	#	97
11) t-Butanol	6.556	59	173322m	9.81	ppbv		
12) Allyl Chloride	6.891	41	117760	9.73	ppbv	#	93
13) Acrylonitrile	7.130	53	64428	8.37	ppbv		97
14) t-Butyl methyl ether	7.360	73	320484	9.86	ppbv	#	90
15) n-Hexane	7.763	57	181734	10.34	ppbv		94
16) Isopropyl ether	8.042	45	353976	10.37	ppbv	#	90
17) t-Butyl ethyl ether	8.596	87	108997	9.24	ppbv		74
18) Ethyl Acetate	8.878	70	28686	10.28	ppbv	#	39
19) 2,2-Dichloropropane	8.891	77	176246	12.59	ppbv		93
20) Tetrahydrofuran	9.416	72	57345	9.75	ppbv	#	71
21) Cyclohexane	9.885	56	189880	10.02	ppbv		89
22) 2,2,4-Trimethylpentane	10.042	57	522948	10.14	ppbv		97
25) t-Amyl methyl ether	10.200	73	249009	9.01	ppbv		95
26) Heptane	10.367	71	128952	9.84	ppbv		77
27) 1,4-Dioxane	11.695	88	85036	9.80	ppbv	#	74
28) 2-chloroethylvinylether	11.515	63	119	5.89	ppbv	#	100
31) Cyclohexanone	16.765	55	120482	9.97	ppbv		91
33) Dicyclopentadiene	18.729	66	7921	9.79	ppbv		88
34) Naphthalene	22.464	128	395960	8.84	ppbv		100
35) 1,2,3-Trichlorobenzene	22.041	180	205978	8.64	ppbv	#	97

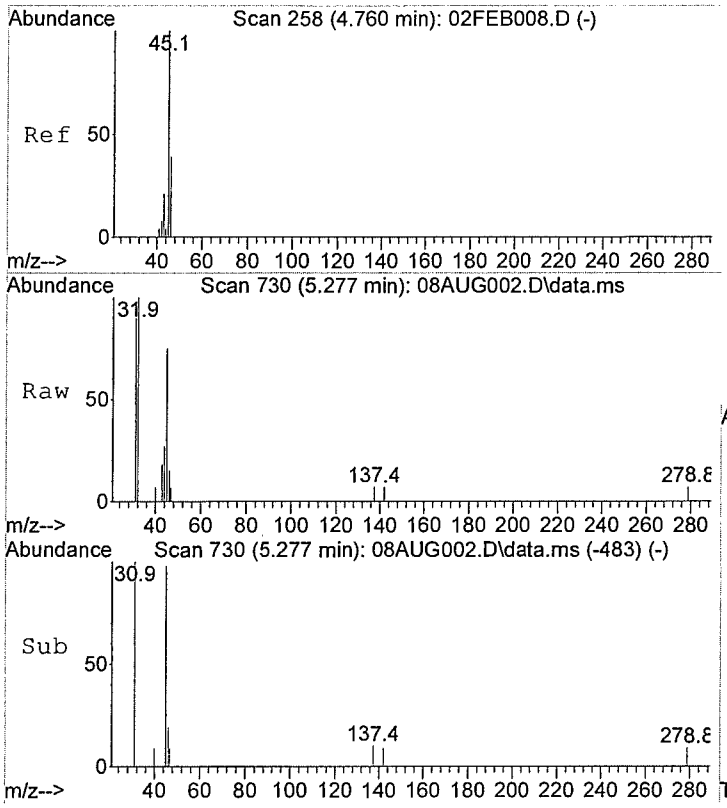
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG002.D
Acq On : 8 Aug 2018 10:40 am
Operator : DT
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 14 14:51:59 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration

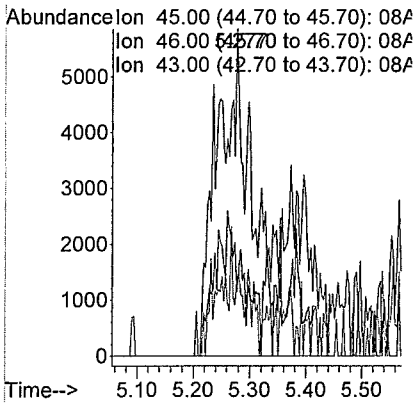




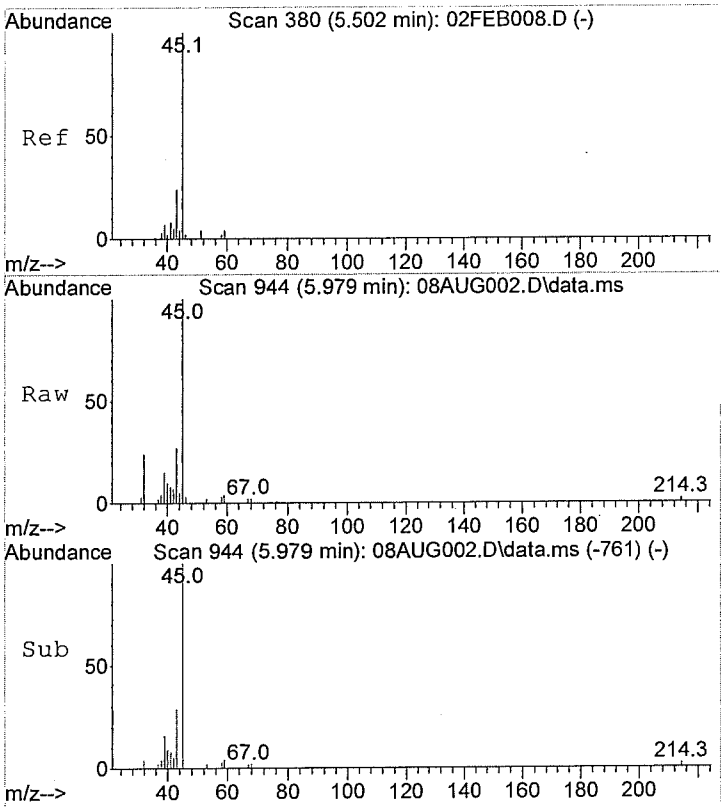
#7
Ethanol
Concen: 10.11 ppbv m
RT: 5.277 min Scan# 730
Delta R.T. 0.009 min
Lab File: 08AUG002.D
Acq: 8 Aug 2018 10:40 am

Tgt Ion: 45 Resp: 35814

Ion	Ratio	Lower	Upper
45	100		
46	5.6	30.1	45.1#
43	5.5	20.2	30.2#



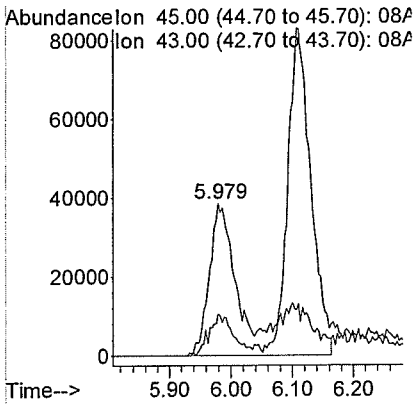
MI - 3
8/14/18



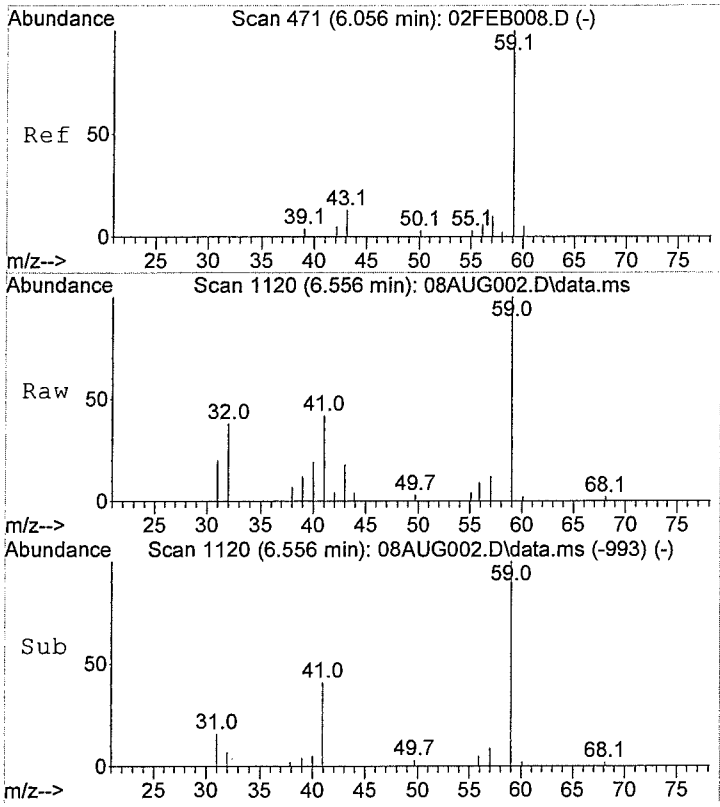
#9
Isopropanol
Concen: 10.45 ppbv m
RT: 5.979 min Scan# 944
Delta R.T. 0.000 min
Lab File: 08AUG002.D
Acq: 8 Aug 2018 10:40 am

Tgt Ion: 45 Resp: 169859

Ion	Ratio	Lower	Upper
45	100		
43	16.8	18.8	28.2#



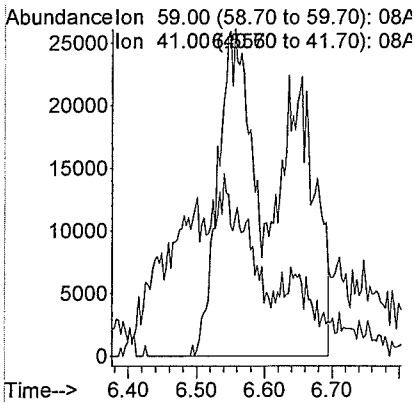
MI - 3
JJ - 8/14/18



#11
t-Butanol
Concen: 9.81 ppbv m
RT: 6.556 min Scan# 1120
Delta R.T. 0.016 min
Lab File: 08AUG002.D
Acq: 8 Aug 2018 10:40 am

Tgt Ion: 59 Resp: 173322

Ion	Ratio	Lower	Upper
59	100		
41	31.3	23.5	35.3



MI -3
D: 8/14/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG002.D
Acq On : 8 Aug 2018 10:40 am
Operator : DT
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 14 14:51:26 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration

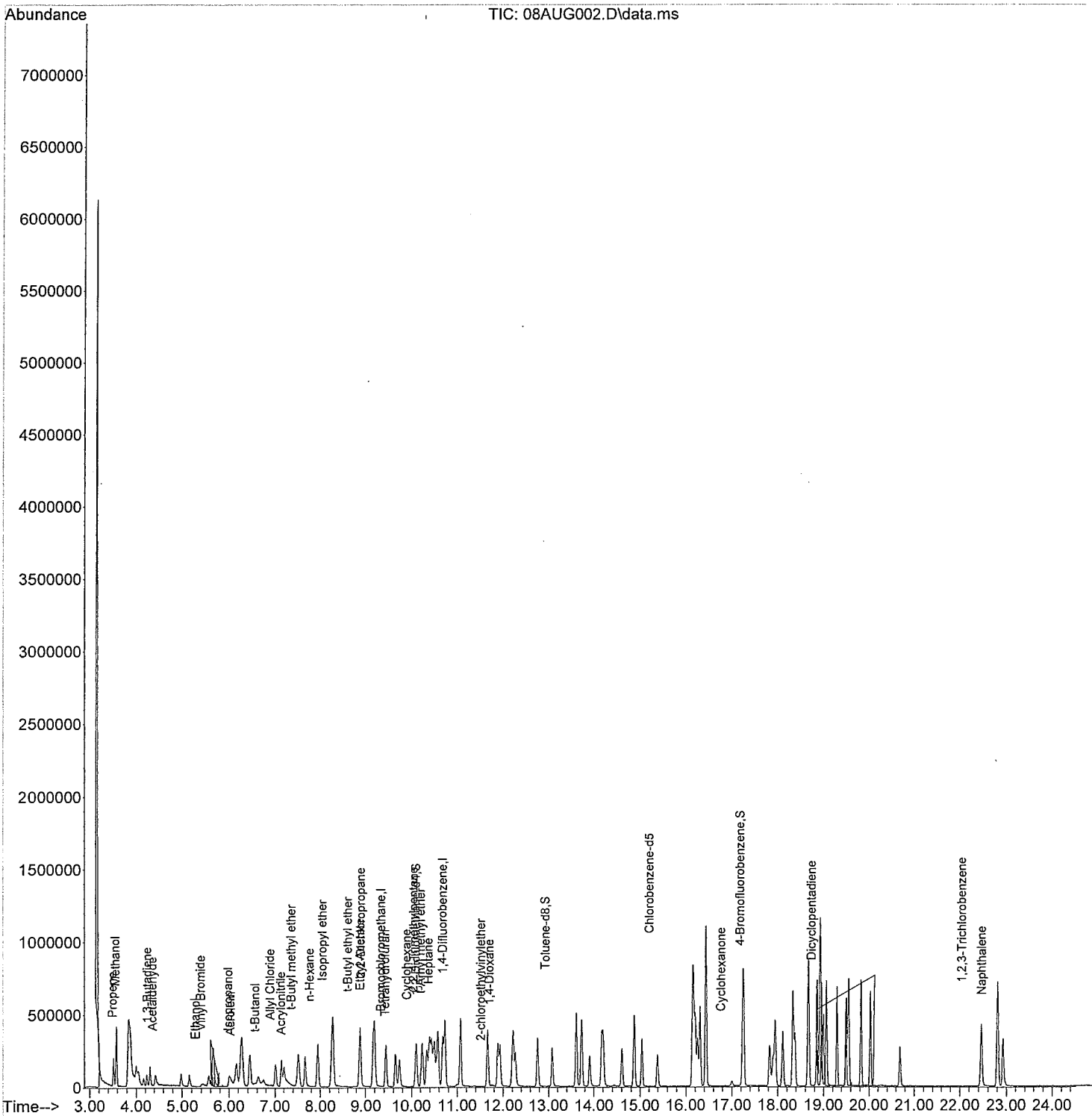
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.331	130	93086	10.00	ppbv	#	0.02
23) 1,4-Difluorobenzene	10.675	114	431790	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	356654	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.091	65	213729	9.32	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 93.20%				
29) Toluene-d8	12.928	98	431857	9.90	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.00%				
32) 4-Bromofluorobenzene	17.178	95	313296	10.42	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 104.20%				
Target Compounds							Qvalue
2) Propene	3.490	41	90224	10.62	ppbv		99
4) 1,3-Butadiene	4.241	54	64600	10.74	ppbv		100
5) Methanol	3.556	31	23250	11.87	ppbv	#	23
6) Acetaldehyde	4.359	43	33734	11.62	ppbv		90
7) Ethanol	5.277	45	14867	4.20	ppbv	#	66
8) Vinyl Bromide	5.386	106	62798	11.16	ppbv	#	92
9) Isopropanol	5.979	45	109376	6.73	ppbv		95
10) Acrolein	6.028	56	31343	7.44	ppbv	#	97
11) t-Butanol	6.556	59	88078	4.98	ppbv	#	40
12) Allyl Chloride	6.891	41	117760	9.73	ppbv	#	93
13) Acrylonitrile	7.130	53	64428	8.37	ppbv		97
14) t-Butyl methyl ether	7.360	73	320484	9.86	ppbv	#	90
15) n-Hexane	7.763	57	181734	10.34	ppbv		94
16) Isopropyl ether	8.042	45	353976	10.37	ppbv	#	90
17) t-Butyl ethyl ether	8.596	87	108997	9.24	ppbv		74
18) Ethyl Acetate	8.878	70	28686	10.28	ppbv	#	39
19) 2,2-Dichloropropane	8.891	77	176246	12.59	ppbv		93
20) Tetrahydrofuran	9.416	72	57345	9.75	ppbv	#	71
21) Cyclohexane	9.885	56	189880	10.02	ppbv		89
22) 2,2,4-Trimethylpentane	10.042	57	522948	10.14	ppbv		97
25) t-Amyl methyl ether	10.200	73	249009	9.01	ppbv		95
26) Heptane	10.367	71	128952	9.84	ppbv		77
27) 1,4-Dioxane	11.695	88	85036	9.80	ppbv	#	74
28) 2-chloroethylvinylether	11.515	63	119	5.89	ppbv	#	100
31) Cyclohexanone	16.765	55	120482	9.97	ppbv		91
33) Dicyclopentadiene	18.729	66	7921	9.79	ppbv		88
34) Naphthalene	22.464	128	395960	8.84	ppbv		100
35) 1,2,3-Trichlorobenzene	22.041	180	205978	8.64	ppbv	#	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG002.D
Acq On : 8 Aug 2018 10:40 am
Operator : DT
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 14 14:51:26 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration



6. Tune Summaries

a. ICAL Summary
b. CCAL Tune Summary

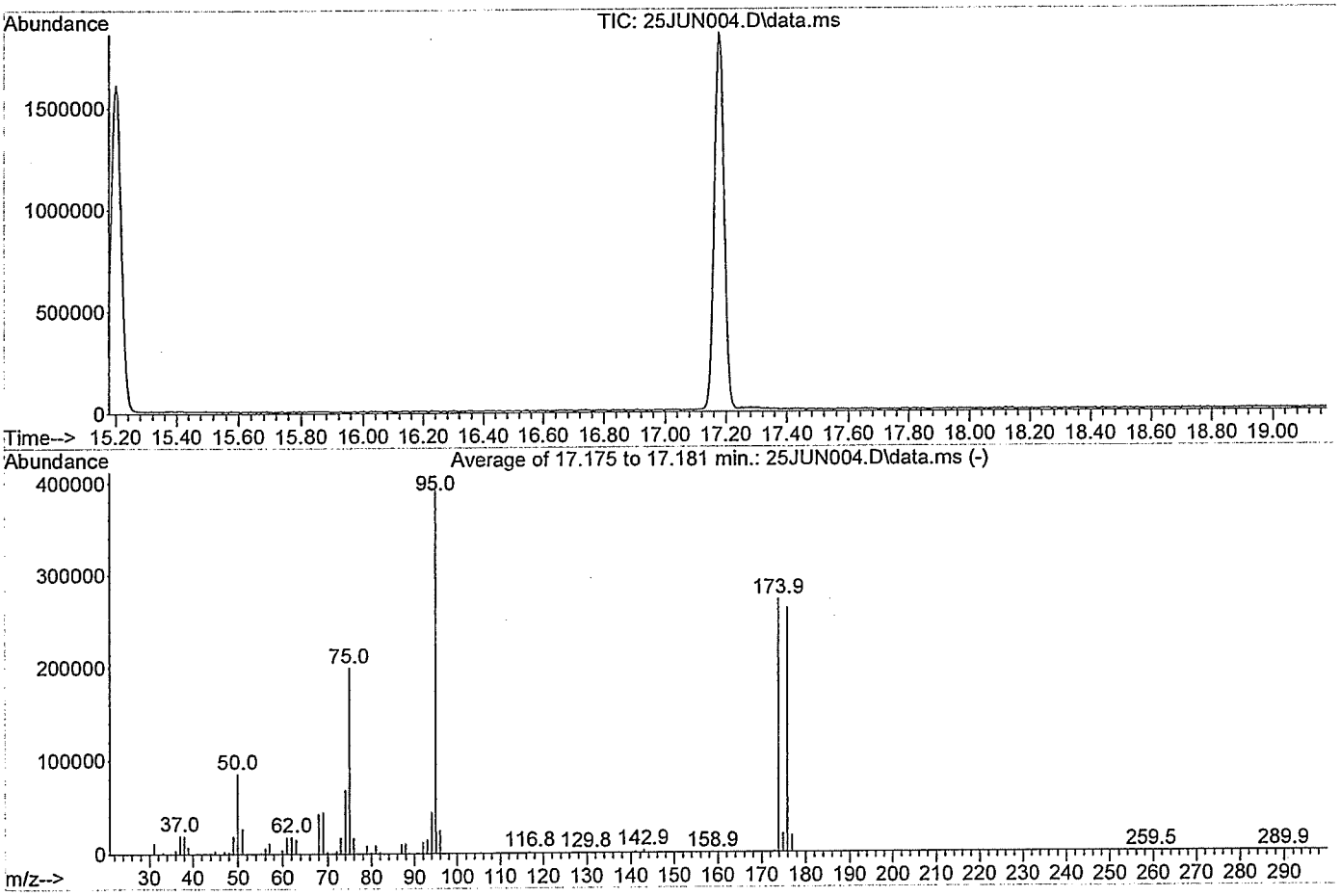
Criteria as listed in report

BFB (TO-14/15 Criteria)

Data Path : C:\msdchem\1\data\180625\
Data File : 25JUN004.D
Acq On : 25 Jun 2018 12:52 pm
Operator : DT
Sample : BFB
Misc : 150 ML EM = 2494
ALS Vial : 4 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\TO180625.M
Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
Last Update : Tue Jun 26 08:31:02 2018



AutoFind: Scans 4358, 4359, 4360; Background Corrected with Scan 4340

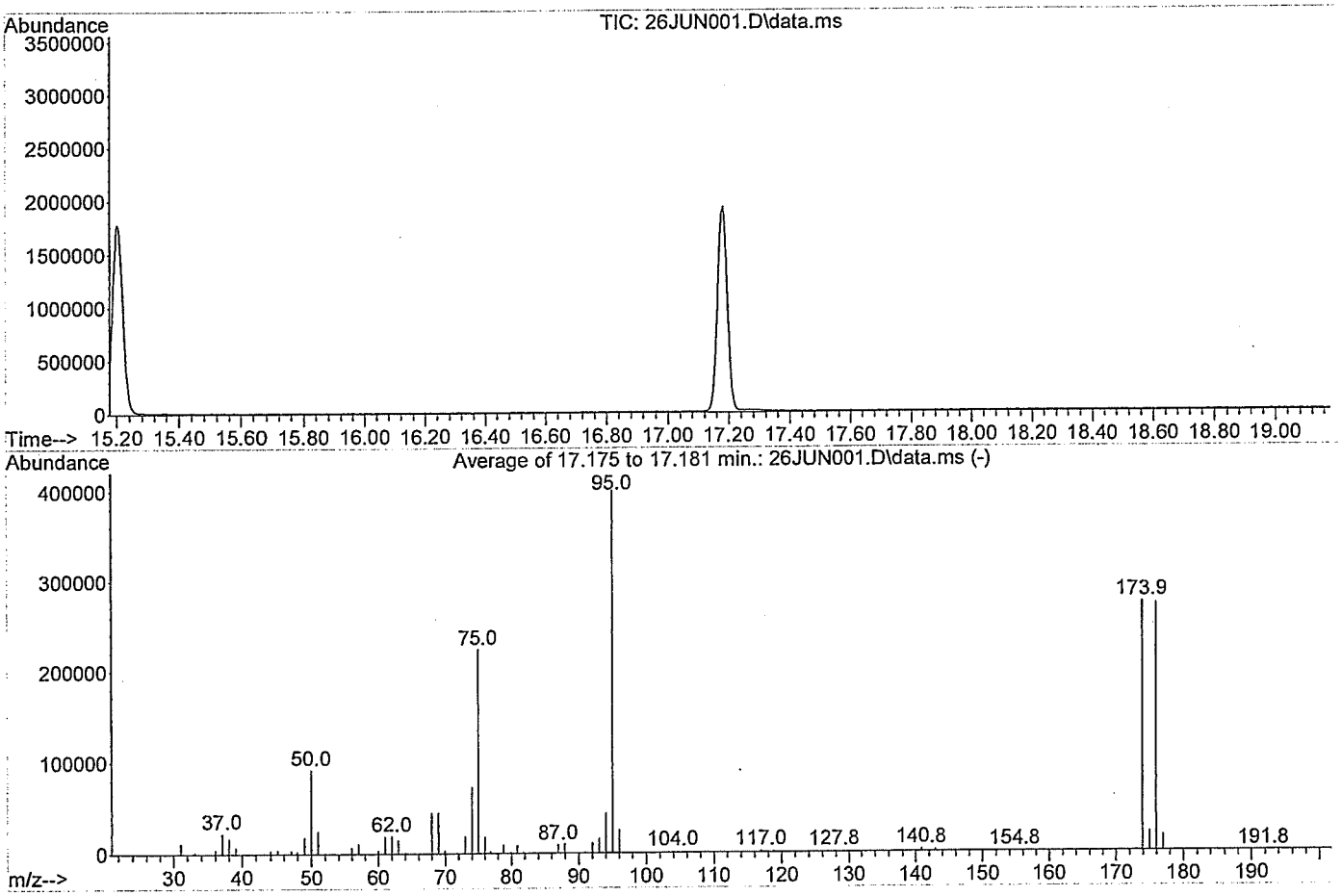
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	85901	PASS
75	95	30	60	51.0	199936	PASS
95	95	100	100	100.0	392405	PASS
96	95	5	9	6.4	25032	PASS
173	174	0.00	2	0.7	1813	PASS
174	95	50	100	69.4	272448	PASS
175	174	5	9	7.5	20504	PASS
176	174	95	101	96.5	262869	PASS
177	176	5	9	7.0	18408	PASS

BFB (TO-14/15 Criteria)

Data Path : C:\msdchem\1\data\180625\
Data File : 26JUN001.D
Acq On : 26 Jun 2018 2:54 pm
Operator : DT
Sample : BFB
Misc : 150 ML
ALS Vial : 4 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\TO180625.M
Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
Last Update : Wed Jun 27 08:05:18 2018



AutoFind: Scans 4358, 4359, 4360; Background Corrected with Scan 4338

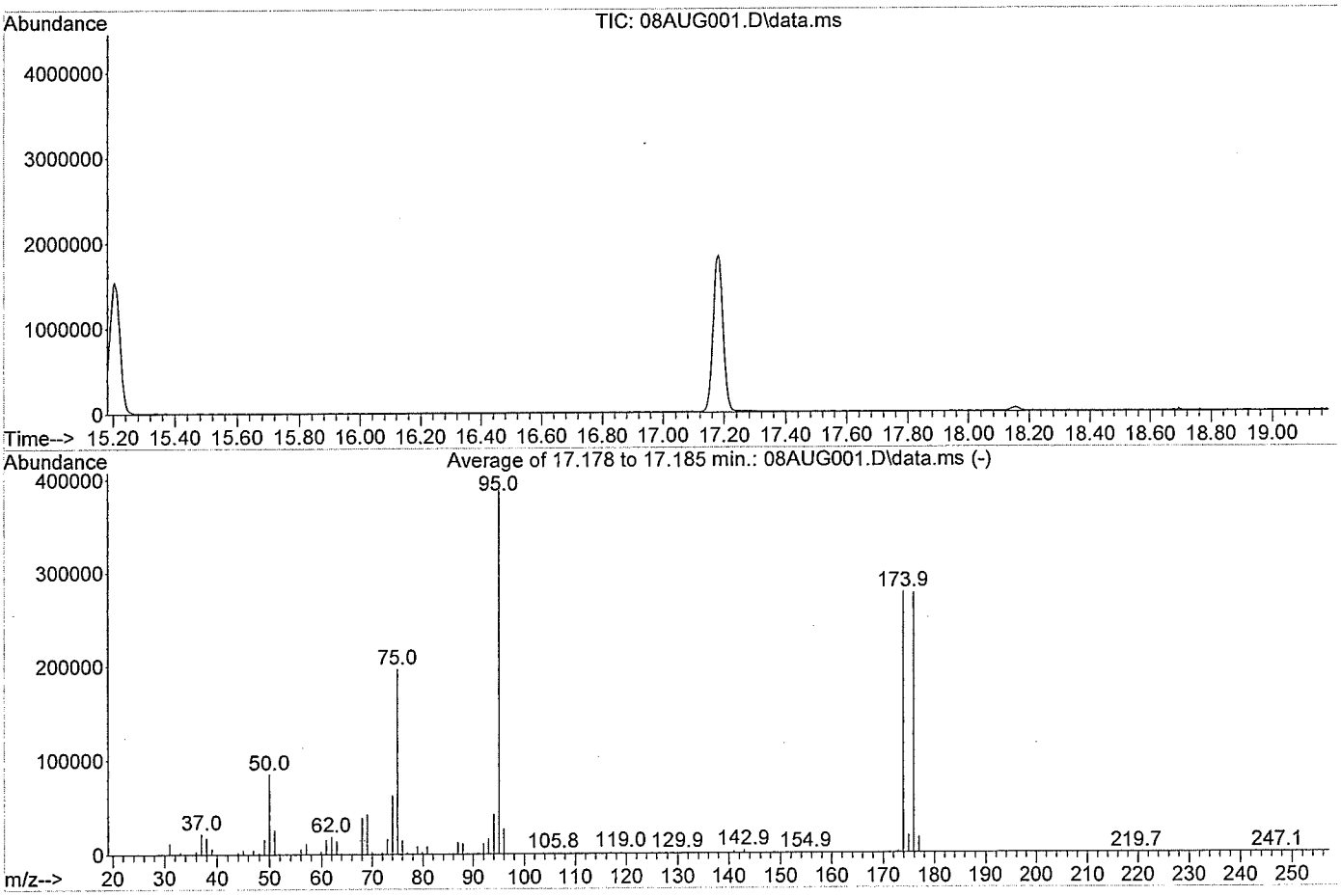
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.0	92301	PASS
75	95	30	60	56.0	224683	PASS
95	95	100	100	100.0	401344	PASS
96	95	5	9	6.4	25669	PASS
173	174	0.00	2	0.7	1995	PASS
174	95	50	100	68.6	275221	PASS
175	174	5	9	7.8	21413	PASS
176	174	95	101	99.3	273344	PASS
177	176	5	9	6.3	17315	PASS

BFB (TO-14/15 Criteria)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG001.D
Acq On : 8 Aug 2018 9:55 am
Operator : DT
Sample : BFB
Misc : 150 ML
ALS Vial : 7 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\TO180625.M
Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
Last Update : Wed Jun 27 08:05:18 2018



AutoFind: Scans 4359, 4360, 4361; Background Corrected with Scan 4340

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	85069	PASS
75	95	30	60	50.7	196885	PASS
95	95	100	100	100.0	388075	PASS
96	95	5	9	7.0	27144	PASS
173	174	0.00	2	0.8	2102	PASS
174	95	50	100	71.5	277632	PASS
175	174	5	9	6.6	18376	PASS
176	174	95	101	99.6	276480	PASS
177	176	5	9	6.1	16837	PASS

7. Method Blank

a. Results/Chromatograms

Method Blank Criteria:

All compounds < Reporting Limit

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180806\
Data File : 08AUG006.D
Acq On : 8 Aug 2018 2:12 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: Aug 08 14:37:03 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

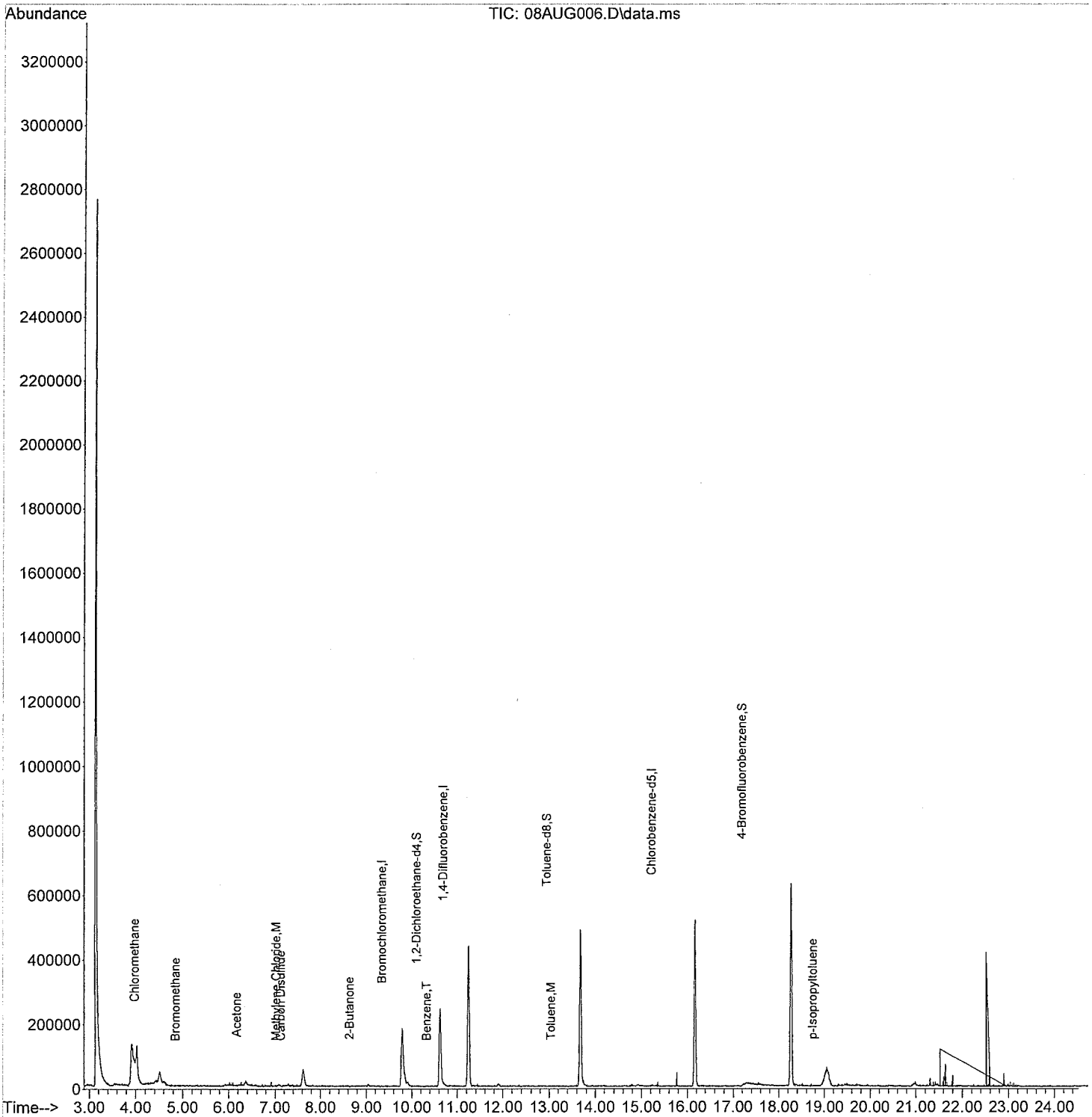
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	93775	10.00	ppbv	0.02
24) 1,4-Difluorobenzene	10.685	114	414064	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.207	117	346082	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.098	65	213065	9.66	ppbv	0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.60%			
34) Toluene-d8	12.935	98	427504	10.23	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.30%			
53) 4-Bromofluorobenzene	17.178	174	227321	11.28	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 112.80%			
Target Compounds						Qvalue
3) Chloromethane	3.976	50	5756	0.64	ppbv #	44
6) Bromomethane	4.848	94	132	0.02	ppbv #	10
10) Carbon Disulfide	7.117	76	2315	0.10	ppbv	74
12) Acetone	6.169	43	22771	0.97	ppbv	90
13) Methylene Chloride	7.019	84	116	0.01	ppbv #	1
18) 2-Butanone	8.629	72	262	0.05	ppbv #	1
25) Benzene	10.328	78	2937	0.08	ppbv	52
35) Toluene	13.036	91	435	0.01	ppbv	70
65) p-Isopropyltoluene	18.732	119	2613	0.07	ppbv #	67

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\180806\
Data File : 08AUG006.D
Acq On : 8 Aug 2018 2:12 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: Aug 08 14:37:03 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG006.D
Acq On : 8 Aug 2018 2:12 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: Aug 09 08:51:51 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration

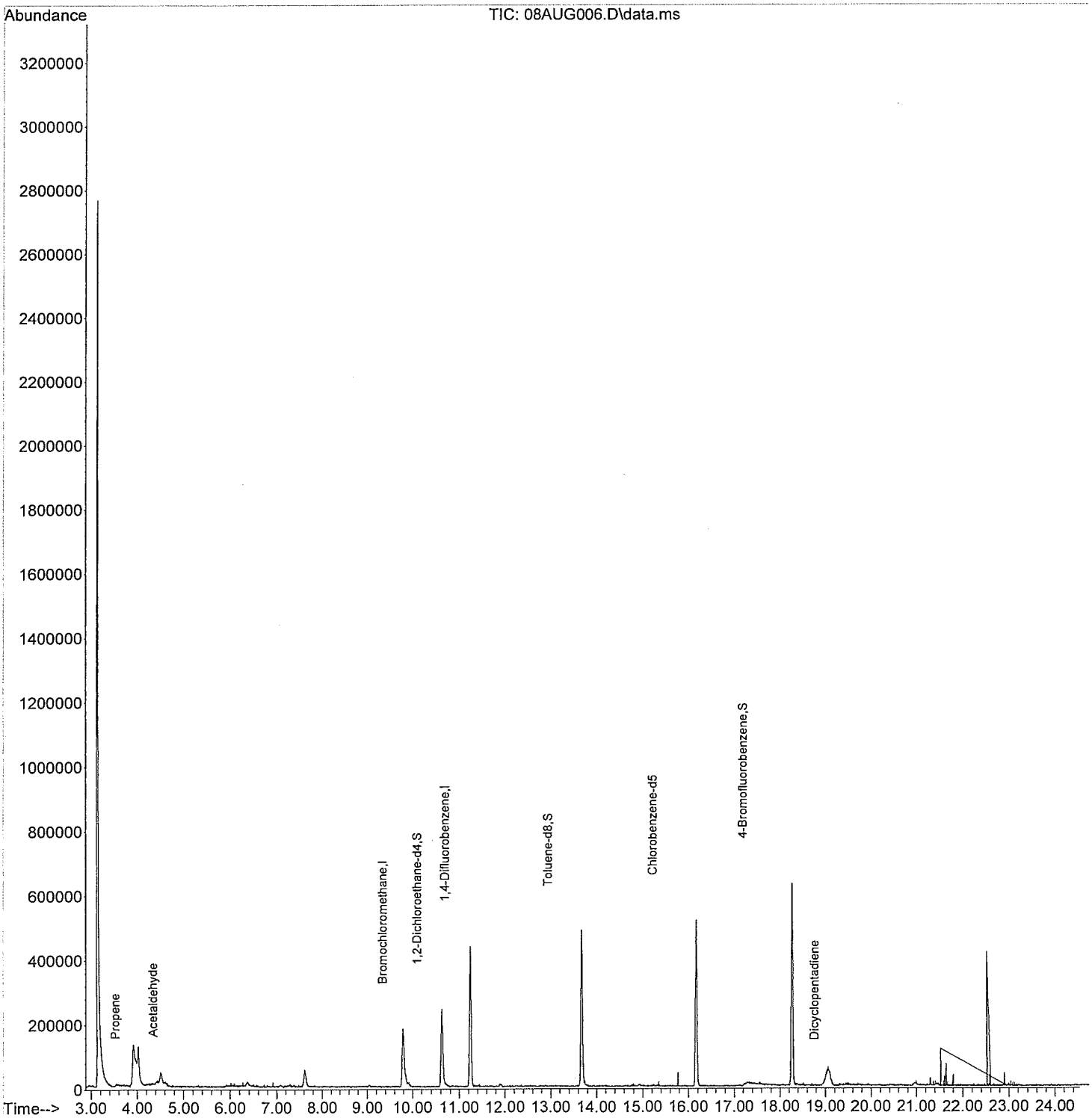
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	93775	10.00	ppbv	0.02
23) 1,4-Difluorobenzene	10.685	114	414064	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.207	117	346082	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.098	65	213065	9.69	ppbv	0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 96.90%			
29) Toluene-d8	12.935	98	427504	10.22	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 102.20%			
32) 4-Bromofluorobenzene	17.181	95	314883	10.79	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 107.90%			
Target Compounds						Qvalue
2) Propene	3.523	41	1096	0.13	ppbv #	30
6) Acetaldehyde	4.343	43	2231	0.76	ppbv #	66
33) Dicyclopentadiene	18.759	66	204	0.26	ppbv #	31

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG006.D
Acq On : 8 Aug 2018 2:12 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: Aug 09 08:51:51 2018
Quant Method : C:\msdchem\1\methods\AL180625.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Mon Jul 09 10:24:37 2018
Response via : Initial Calibration



8. LCS/LCSD

a. Results/Chromatograms

Criteria as listed on report

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG003.D
Acq On : 8 Aug 2018 11:52 am
Operator : DT
Sample : LCS
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 12:16:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.324	130	86332	10.00	ppbv	0.01
24) 1,4-Difluorobenzene	10.678	114	420131	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.207	117	353904	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.085	65	210965	9.43	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 94.30%			
34) Toluene-d8	12.935	98	423324	9.98	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.80%			
53) 4-Bromofluorobenzene	17.181	174	226106	10.98	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 109.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.553	85	277688	8.79	ppbv	98
3) Chloromethane	3.956	50	79537	9.60	ppbv	95
4) 1,2-Cl-1,1,2,2-F ethan...	3.792	85	252121	9.11	ppbv	97
5) Vinyl Chloride	4.176	62	75246	9.56	ppbv	95
6) Bromomethane	4.861	94	59611	10.81	ppbv	96
7) Chloroethane	5.022	66	14997	8.80	ppbv #	71
8) Trichlorofluoromethane...	5.484	101	265249	8.24	ppbv	97
9) 1,1-Dichloroethene	6.389	61	157976	7.88	ppbv	93
10) Carbon Disulfide	7.081	76	191328	9.04	ppbv	95
11) 1,1,2-Cl 1,2,2-F ethan...	6.219	151	136918	8.23	ppbv	91
12) Acetone	6.114	43	237703	11.01	ppbv	90
13) Methylene Chloride	7.012	84	76124	8.28	ppbv	88
14) t-1,2-Dichloroethene	7.517	96	74499	8.36	ppbv	94
15) 1,1-Dichloroethane	8.068	63	190593	8.91	ppbv	99
16) Vinyl Acetate	8.055	43	346911	9.07	ppbv	92
17) c-1,2-Dichloroethene	8.898	96	90033	8.56	ppbv	95
18) 2-Butanone	8.613	72	48245	9.30	ppbv	78
19) t-Butyl Methyl Ether	7.363	73	258970	8.59	ppbv	89
20) Chloroform	9.137	83	224723	8.43	ppbv	99
21) 1,1,1-Trichloroethane	9.747	97	223298	8.61	ppbv	94
22) 1,1-Dichloropropene	9.980	75	127021	8.78	ppbv	91
23) Carbon Tetrachloride	10.141	117	197021	8.24	ppbv	89
25) Benzene	10.314	78	312624	8.02	ppbv	96
27) 1,2-Dichloroethane	10.216	62	172750	7.77	ppbv	99
28) Trichloroethene	11.200	130	121026	8.53	ppbv	83
29) 1,2-Dichloropropane	11.406	63	111461	8.24	ppbv	93
30) Bromodichloromethane	11.711	83	236738	8.13	ppbv	96
31) Dibromomethane	11.761	93	100944	7.94	ppbv	99
32) c-1,3-Dichloropropene	12.495	75	162882	8.83	ppbv	88
33) 4-Methyl-2-Pentanone	12.213	43	266010	8.24	ppbv	86
35) Toluene	13.049	91	353613	8.11	ppbv	97
37) t-1,3-Dichloropropene	13.207	75	133143	7.91	ppbv	99
38) 1,1,2-Trichloroethane	13.449	97	119266	7.46	ppbv	96
39) 1,3-Dichloropropane	13.823	76	146063	7.36	ppbv	93
40) Tetrachloroethene	14.079	166	161752	7.75	ppbv	98
41) 2-Hexanone	13.489	58	124688	7.80	ppbv	92

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG003.D
Acq On : 8 Aug 2018 11:52 am
Operator : DT
Sample : LCS
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 12:16:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

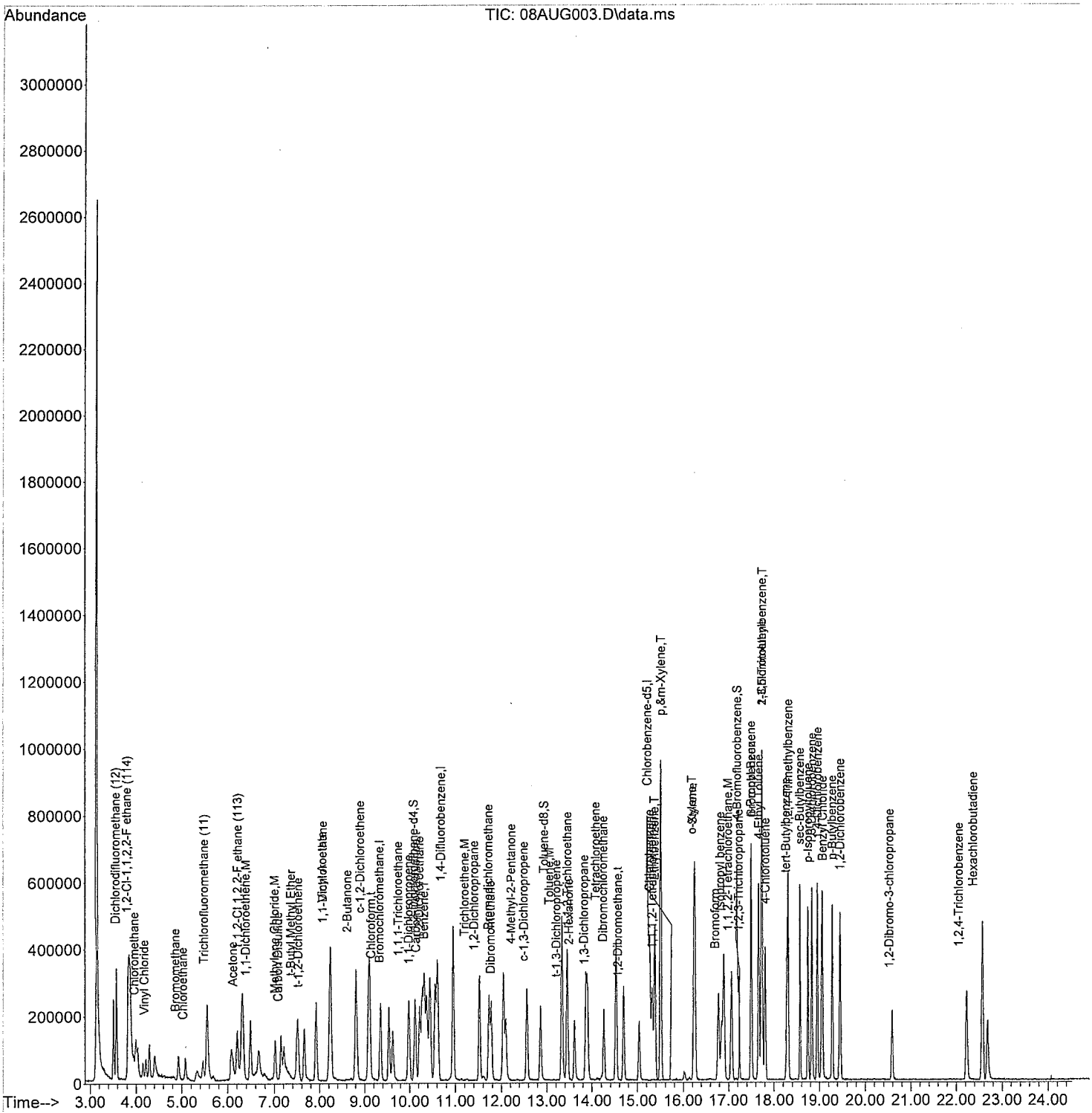
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) Dibromochloromethane	14.240	129	183753	8.04	ppbv	95
43) 1,2-Dibromoethane	14.561	107	162580	7.44	ppbv	95
44) Chlorobenzene	15.263	112	271842	7.72	ppbv	98
45) 1,1,1,2-Tetrachloroethane	15.319	131	98911	7.79	ppbv	90
46) Ethylbenzene	15.368	91	460624	7.63	ppbv	92
47) p,&m-Xylene	15.499	91	758877	15.75	ppbv	95
48) o-Xylene	16.184	91	372668	7.85	ppbv	96
49) Styrene	16.201	104	259605	8.17	ppbv	96
50) Bromoform	16.703	173	172288	9.52	ppbv	96
51) Isopropyl benzene	16.814	105	376264	8.03	ppbv	99
52) 1,1,2,2-Tetrachloroethane	16.981	83	238756	7.54	ppbv	95
54) Benzyl Chloride	19.064	91	206211	9.61	ppbv	98
55) 1,2,3-Trichloropropane	17.221	110	61875	7.74	ppbv	95
56) n-Propyl Benzene	17.486	91	472136	8.12	ppbv	93
57) Bromobenzene	17.499	77	230769	7.75	ppbv	90
58) 4-Ethyl Toluene	17.663	105	488828	7.73	ppbv	99
59) 1,3,5-Trimethylbenzene	17.732	105	421291	7.73	ppbv	95
60) 2-Chlorotoluene	17.732	91	363547	7.75	ppbv	93
61) 4-Chlorotoluene	17.811	91	306423	7.63	ppbv	99
62) tert-Butylbenzene	18.254	119	318500	7.99	ppbv	97
63) 1,2,4-Trimethylbenzene	18.303	105	431277	7.81	ppbv	97
64) sec-Butylbenzene	18.555	105	466687	8.13	ppbv	98
65) p-Isopropyltoluene	18.736	119	319646	7.78	ppbv	95
66) 1,3-Dichlorobenzene	18.824	146	235508	7.80	ppbv	93
67) 1,4-Dichlorobenzene	18.955	146	235341	7.81	ppbv	93
68) n-Butylbenzene	19.280	91	357658	7.72	ppbv	100
69) 1,2-Dichlorobenzene	19.451	146	217922	7.59	ppbv	96
70) 1,2-Dibromo-3-chloropr...	20.516	157	66854	7.95	ppbv	87
71) 1,2,4-Trichlorobenzene	22.048	180	133094	5.63	ppbv	92
72) Hexachlorobutadiene	22.363	225	156273	5.95	ppbv	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG003.D
Acq On : 8 Aug 2018 11:52 am
Operator : DT
Sample : LCS
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 12:16:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG004.D
Acq On : 8 Aug 2018 12:31 pm
Operator : DT
Sample : LCSD
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 12:56:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.321	130	93776	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.678	114	419677	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.204	117	346495	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.085	65	214040	9.58	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.80%				
34) Toluene-d8	12.931	98	428639	10.12	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.20%				
53) 4-Bromofluorobenzene	17.178	174	224346	11.12	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 111.20%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.549	85	277063	8.07	ppbv		97
3) Chloromethane	3.949	50	78011	8.67	ppbv		99
4) 1,2-Cl-1,1,2,2-F ethan...	3.789	85	250753	8.34	ppbv		94
5) Vinyl Chloride	4.172	62	72939	8.53	ppbv		97
6) Bromomethane	4.867	94	59044	9.85	ppbv		81
7) Chloroethane	5.012	66	14638	7.91	ppbv	#	73
8) Trichlorofluoromethane...	5.477	101	268275	7.67	ppbv		97
9) 1,1-Dichloroethene	6.379	61	155660	7.15	ppbv		94
10) Carbon Disulfide	7.078	76	195146	8.49	ppbv		94
11) 1,1,2-Cl 1,2,2-F ethan...	6.209	151	136409	7.55	ppbv		79
12) Acetone	6.107	43	215722	9.20	ppbv		93
13) Methylene Chloride	7.019	84	75948	7.61	ppbv		83
14) t-1,2-Dichloroethene	7.511	96	74914	7.74	ppbv		94
15) 1,1-Dichloroethane	8.065	63	182930	7.87	ppbv		99
16) Vinyl Acetate	8.055	43	345195	8.31	ppbv		96
17) c-1,2-Dichloroethene	8.908	96	93839	8.21	ppbv		97
18) 2-Butanone	8.599	72	45808	8.13	ppbv		87
19) t-Butyl Methyl Ether	7.363	73	248956	7.60	ppbv		86
20) Chloroform	9.134	83	215440	7.44	ppbv		89
21) 1,1,1-Trichloroethane	9.744	97	220553	7.83	ppbv		96
22) 1,1-Dichloropropene	9.983	75	118528	7.55	ppbv		96
23) Carbon Tetrachloride	10.141	117	194116	7.48	ppbv		95
25) Benzene	10.314	78	306278	7.87	ppbv		93
27) 1,2-Dichloroethane	10.213	62	168114	7.57	ppbv		98
28) Trichloroethene	11.203	130	115386	8.15	ppbv		94
29) 1,2-Dichloropropane	11.406	63	110082	8.15	ppbv		93
30) Bromodichloromethane	11.715	83	229779	7.89	ppbv		98
31) Dibromomethane	11.761	93	98567	7.77	ppbv		98
32) c-1,3-Dichloropropene	12.498	75	154625	8.39	ppbv		92
33) 4-Methyl-2-Pentanone	12.207	43	260151	8.07	ppbv		83
35) Toluene	13.046	91	350873	8.06	ppbv		92
37) t-1,3-Dichloropropene	13.210	75	126799	7.69	ppbv		90
38) 1,1,2-Trichloroethane	13.449	97	117632	7.51	ppbv		89
39) 1,3-Dichloropropane	13.823	76	143811	7.40	ppbv		94
40) Tetrachloroethene	14.076	166	155780	7.63	ppbv		88
41) 2-Hexanone	13.479	58	120308	7.68	ppbv		92

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG004.D
Acq On : 8 Aug 2018 12:31 pm
Operator : DT
Sample : LCSD
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 12:56:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration

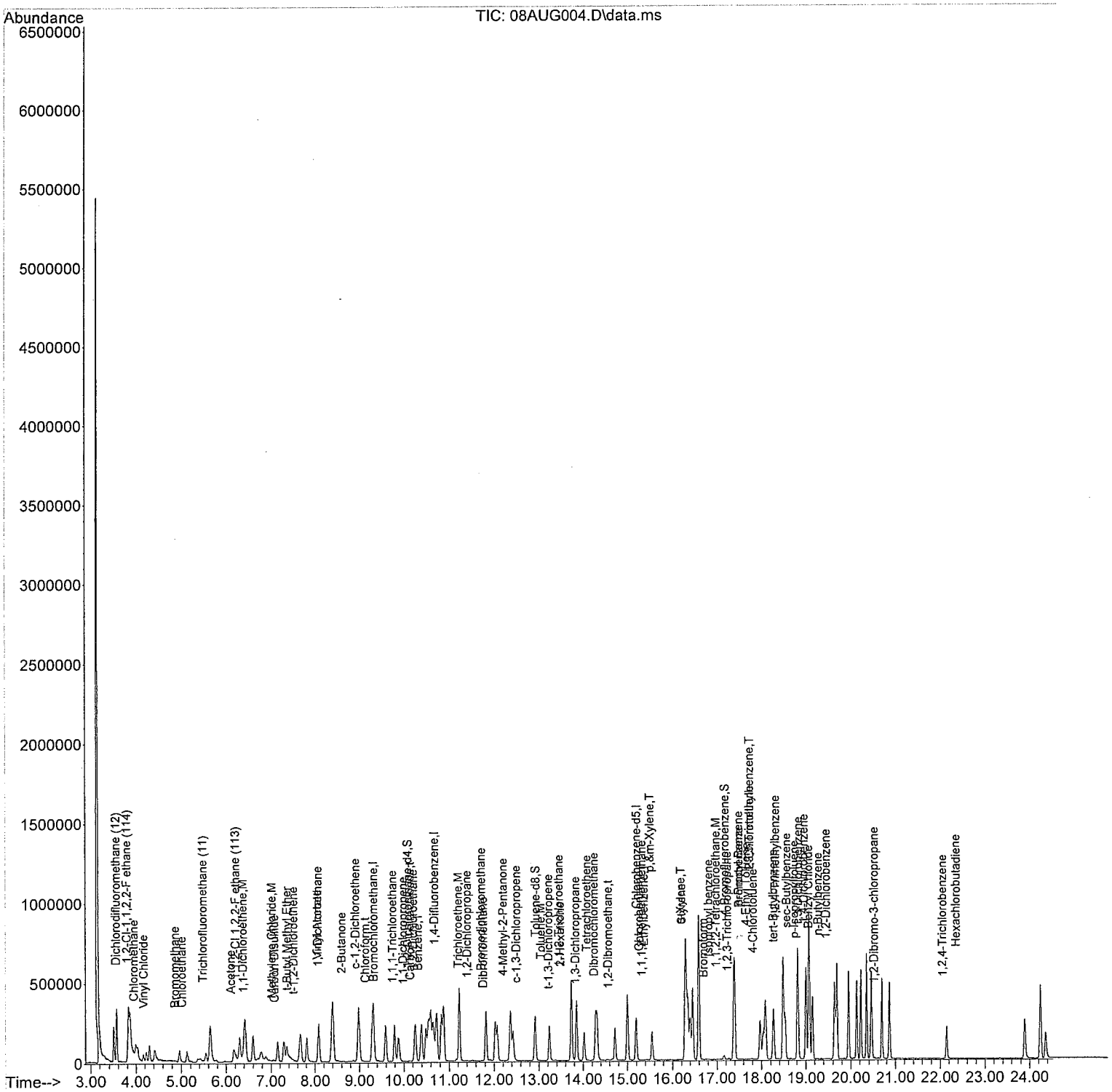
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) Dibromochloromethane	14.246	129	178744	7.99	ppbv	98
43) 1,2-Dibromoethane	14.568	107	166277	7.77	ppbv	94
44) Chlorobenzene	15.263	112	261161	7.57	ppbv	94
45) 1,1,1,2-Tetrachloroethane	15.319	131	100303	8.06	ppbv	90
46) Ethylbenzene	15.368	91	445591	7.54	ppbv	98
47) p,&m-Xylene	15.499	91	738434	15.65	ppbv	95
48) o-Xylene	16.184	91	365190	7.86	ppbv	92
49) Styrene	16.204	104	243890	7.84	ppbv	95
50) Bromoform	16.699	173	164265	9.27	ppbv	95
51) Isopropyl benzene	16.811	105	370765	8.08	ppbv	97
52) 1,1,2,2-Tetrachloroethane	16.975	83	236070	7.62	ppbv	96
54) Benzyl Chloride	19.060	91	188975	8.99	ppbv	92
55) 1,2,3-Trichloropropane	17.227	110	59300	7.58	ppbv	97
56) n-Propyl Benzene	17.489	91	462655	8.13	ppbv	91
57) Bromobenzene	17.496	77	223262	7.66	ppbv	97
58) 4-Ethyl Toluene	17.660	105	471596	7.62	ppbv	93
59) 1,3,5-Trimethylbenzene	17.729	105	410276	7.69	ppbv	95
60) 2-Chlorotoluene	17.735	91	361649	7.88	ppbv	98
61) 4-Chlorotoluene	17.808	91	299052	7.60	ppbv	98
62) tert-Butylbenzene	18.260	119	312032	8.00	ppbv	99
63) 1,2,4-Trimethylbenzene	18.303	105	415201	7.68	ppbv	98
64) sec-Butylbenzene	18.555	105	449792	8.01	ppbv	98
65) p-Isopropyltoluene	18.739	119	309934	7.70	ppbv	97
66) 1,3-Dichlorobenzene	18.827	146	230595	7.80	ppbv	93
67) 1,4-Dichlorobenzene	18.955	146	225397	7.64	ppbv	98
68) n-Butylbenzene	19.280	91	339671	7.49	ppbv	100
69) 1,2-Dichlorobenzene	19.451	146	208689	7.43	ppbv	97
70) 1,2-Dibromo-3-chloropr...	20.513	157	63263	7.68	ppbv	90
71) 1,2,4-Trichlorobenzene	22.048	180	120449	5.20	ppbv	90
72) Hexachlorobutadiene	22.353	225	146199	5.69	ppbv	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\180806\
Data File : 08AUG004.D
Acq On : 8 Aug 2018 12:31 pm
Operator : DT
Sample : LCSD
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 12:56:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO180625.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Jun 27 08:07:02 2018
Response via : Initial Calibration



AirTECHNOLOGY
Laboratories, Inc.

December 6, 2018

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175
TX Cert T104704450-14-6
EPA Methods TO14A, TO15
UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Jacobs
ATTN: Andrea Beausang
4246 S. Riverboat Rd, Suite 210
Taylorsville, UT 84123

LABORATORY TEST RESULTS

AFCEC Contract No.: FA8903-16-D-0026
Contract Number: 694734.02.02.09.01
Site Location: JBER TO075 DP009 BLDG 986
Lab Number: J110805-01/08

Enclosed are results for sample(s) received 11/08/18 by Air Technology Laboratories, Inc. (ATLI). Analyses were performed according to specifications on the chain of custody provided with the sample(s).

CASE NARRATIVE (attached)
ANALYTICAL RESULTS (attached)
SAMPLE MANAGEMENT RECORDS (attached)
QA/QC INFORMATION (attached)

Preliminary results were e-mailed to Andi Beausang and Quin Bingham on 12/05/18.

Laboratory test results shall not be reproduced, except in full, without the written approval of the laboratory. ATLI appreciates the opportunity to have provided these testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

CASE NARRATIVE:

1. Sample Receipt Summary (attached)
2. List of data qualifiers (attached)
3. No subcontract laboratories were utilized.
4. All samples received were analyzed.
5. HOLDING TIMES – all samples were analyzed within required holding-times.
6. BFB CRITERIA (if applicable) – all BFB analyses were within required criteria.
7. INITIAL CALIBRATION – initial calibration criteria were met.
8. INITIAL CALIBRATION VERIFICATION – initial calibration verification criteria were met.
9. CONTINUING CALIBRATION VERIFICATION – Napthalene exhibited high recoveries.
10. LABORATORY CONTROL SAMPLE/DUPLICATE – Naphthalene exhibited high recoveries in the LCS/LCSD. This may indicate a high bias in results reported above the LOQ.
11. METHOD BLANK – all analytes were within required criteria.
12. SURROGATE RECOVERIES (if applicable) – all analytes were within required criteria.
13. INTERNAL STANDARD CRITERIA (if applicable) – all analytes were within required criteria.
14. All samples received in an acceptable condition to proceed with analysis
15. MANUAL INTEGRATIONS – none required.
16. Sample analyses were performed within method performance criteria and in accordance with TNI Standards dated 2009 and DoD QSM version 5.1, unless project-specific requirements are specified by the client.
17. The enclosed results relate only to the sample(s).

SAMPLE RECEIPT ACKNOWLEDGEMENT

REPORT TO: Andrea Beausang / Quin Bingham
Jacobs
949 E. 36th Ave., Suite 500
Anchorage, AK 99508

PROJECT NAME: JBER
PROJECT NUMBER: TO075 DP009 BLDG 986
DATE RECEIVED: 11/8/18 9:20
REPORT DUE DATE: 11/30/18

Lab No.	Sample ID	DATE COLL	TIME COLL	TEST REQUEST
J110805-01	18Q4DP009-OA01-OA-0	11/6/18	11:28	TO15 SIM+1,2,4-TMB
J110805-02	18Q4DP009-IA01-IA-0	11/6/18	11:38	TO15 SIM+1,2,4-TMB
J110805-03	18Q4DP009-IA02-IA-0	11/6/18	11:40	TO15 SIM+1,2,4-TMB
J110805-04	18Q4DP009-IA03-IA-0	11/6/18	11:35	TO15 SIM+1,2,4-TMB
J110805-05	18Q4DP009-IA04-IA-0	11/6/18	11:47	TO15 SIM+1,2,4-TMB
J110805-06	18Q4DP009-IA04-IA-1	11/6/18	11:47	TO15 SIM+1,2,4-TMB
J110805-07	18Q4DP009-SS01-SS-0	11/5/18	15:01	TO15 Scan+1,2,4-TMB
J110805-08	18Q4DP009-SS02-SS-0	11/5/18	15:40	TO15 Scan+1,2,4-TMB

Reviewed By: _____ 11/20/2018 3:54 PM

List of Data Qualifiers	
Qualifier	**Description**
B	Analyte detected in method blank (less than 10x blank level)
D	Analyte reported from secondary dilution
E	Estimated value. Exceeds instrument calibration range.
J	Trace estimated amount less than LOQ but greater or equal to LOD
M	Matrix interference
N	See Case Narrative
Q	QC issue associated with analyte, see Case Narrative
*	Custom footnote, sample specific

J110805

CHAIN OF CUSTODY RECORD

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

PAGE: / **OF** /

TURNAROUND TIME

Standard ☑ 48 hours ☐
Same Day ☐ 72 hours ☐
24 hours ☐ 96 hours ☐
Other:

DELIVERABLES

EDD ☑ 4
EDF ☐
LEVEL 3 ☐
LEVEL 4 ☑ LABSPEC

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.:	694734.02.02.09.01
Project Name:	JBER TO#75 DPOOR BLDG 986
Report To:	ANDI BEAUSANG / QUIN BINGHAM
Company:	JACOBS
Street:	949 E 36th, SUITE 500
City/State/Zip:	ANCHORAGE / AK / 99503
Phone& Fax:	907-762-1500
e-mail:	ANDREA.BEAUSANG@JACOBS.COM, QUIN.BINGHAM@JACOBS.COM

BILLING

P.O. No.:
Bill to:

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	CONTAINER TYPE	TO-15 (Benzene, 1,2-DCA, Naphthalene, PCE, TCE, 124-TMB per 11/9/18)	TO-15 (SIM) (Benzene, 1,2-DCA, Naphthalene, PCE, TCE, 124-TMB)				
J110805-01	18Q40P0009-OA01-OA-0	11/6/18	1128	OA	6-L	✓	–				
-02	" - IA01-IA-0		1138	IA		✓	–				
-03	" - IA02-IA-0		1140			✓	–				
-04	" - IA03-IA-0		1135			✓	–				
-05	" - IA04-IA-0		1147			✓	–				
-06	" - IA04-IA-1		1147			✓	–				
-07	" - SS01-SS-0	11/5/18	1501	SS	1-L	–	✓				
-08	" - SS02-SS-0	"	1540	SS	1-L	–	✓				

AUTHORIZATION TO PERFORM WORK	COMPANY	DATE/TIME
SAMPLED BY	COMPANY	DATE/TIME
	JACOBS	11/5-11/6
RELINQUISHED BY	DATE/TIME	RECEIVED BY / DATE/TIME
	11/6/18 1430	
RELINQUISHED BY	DATE/TIME	RECEIVED BY / DATE/TIME
FedEx		11/8/18 9:20a
RELINQUISHED BY	DATE/TIME	RECEIVED BY / DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In (FedEx) UPS Courier ATLI Other _____

COMMENTS

OA = OUTDOOR AIR
IA = INDOOR AIR
SS = SUBSLAB SOIL GAS
*SAMPLES MAY CONTAIN HIGH CONCENTRATIONS OF PAH.

TO-15 SIM & Scan
BENZENE 12DCA
NAPHTHALENE
TCE, PCE
124-TMB
Scan → LR
SIM → GR @ 11/8/18 per RB

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCL **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other

Rev. 03 - 5/7/09

cc: Bernice Kidd @ 11/9/18 per RK

Client: Jacobs
Attn: Andrea Beausang
Project Name: JBER TO075 DP009 BLDG 986
Project No.: 694734.02.02.09.01
Date Received: 11/08/18
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	J110805-01			J110805-02			J110805-03			J110805-04		
Client Sample I.D.:	18Q4DP009-OA01-OA-0			18Q4DP009-IA01-IA-0			18Q4DP009-IA02-IA-0			18Q4DP009-IA03-IA-0		
Date/Time Sampled:	11/6/18 11:28			11/6/18 11:38			11/6/18 11:40			11/6/18 11:35		
Date/Time Analyzed:	11/27/18 6:50			11/27/18 7:39			11/27/18 8:24			11/27/18 9:09		
QC Batch No.:	181126MS2A2			181126MS2A2			181126MS2A2			181126MS2A2		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	1.0			1.0			1.0			1.0		
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	LOQ ug/m3	LOD ug/m3
Benzene	1.2	0.16	0.032	4.1	0.16	0.032	5.7	0.16	0.032	3.8	0.16	0.032
1,2-Dichloroethane	0.10	0.040	0.012	ND	0.040	0.012	ND	0.040	0.012	ND	0.040	0.012
Trichloroethene	0.023 J	0.054	0.0054	0.048 J	0.054	0.0054	0.031 J	0.054	0.0054	0.024 J	0.054	0.0054
Tetrachloroethene	0.055 J	0.068	0.034	0.25	0.068	0.034	0.45	0.068	0.034	0.52	0.068	0.034
Naphthalene	0.32	0.10	0.052	2.7	0.10	0.052	3.7	0.10	0.052	2.6	0.10	0.052
1,2,4-Trimethylbenzene	0.81	0.049	0.017	14	0.049	0.017	25	0.049	0.017	14	0.049	0.017

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Operations Manager

Date 12/5/18

The cover letter is an integral part of this analytical report

Client: Jacobs
Attn: Andrea Beausang
Project Name: JBER TO075 DP009 BLDG 986
Project No.: 694734.02.02.09.01
Date Received: 11/08/18
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	J110805-05			J110805-06								
Client Sample I.D.:	18Q4DP009-IA04-IA-0			18Q4DP009-IA04-IA-1								
Date/Time Sampled:	11/6/18 11:47			11/6/18 11:47								
Date/Time Analyzed:	11/27/18 9:53			11/27/18 10:38								
QC Batch No.:	181126MS2A2			181126MS2A2								
Analyst Initials:	DT			DT								
Dilution Factor:	1.0			1.0								
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	LOQ ug/m3	LOD ug/m3						
Benzene	3.7	0.16	0.032	3.6	0.16	0.032						
1,2-Dichloroethane	ND	0.040	0.012	0.16	0.040	0.012						
Trichloroethene	0.050 J	0.054	0.0054	0.036 J	0.054	0.0054						
Tetrachloroethene	0.69	0.068	0.034	0.68	0.068	0.034						
Naphthalene	2.6	0.10	0.052	1.8	0.10	0.052						
1,2,4-Trimethylbenzene	14	0.049	0.017	12	0.049	0.017						

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Operations Manager Date 12/5/18

The cover letter is an integral part of this analytical report

QC Batch No: 181126MS2A2
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	11/27/18 6:06			11/26/18 13:24		11/26/18 14:03					
Analyst Initials:	DT			DT		DT					
Dilution Factor:	1.0			1.0		1.0					
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	% Rec.	Result ug/m3	% Rec.	RPD	Low %Rec	High %Rec	Max. RPD
Benzene	ND	0.16	0.032	1.61	101	1.58	99	2.1	70	130	30
1,2-Dichloroethane	ND	0.040	0.012	2.27	112	2.23	110	1.7	70	130	30
Trichloroethene	ND	0.054	0.0054	2.66	99	2.55	95	4.2	70	130	30
Tetrachloroethene	ND	0.068	0.034	3.15	93	3.06	90	2.9	70	130	30
Naphthalene	ND	0.10	0.052	4.00	152 *	3.80	145 *	5.0	70	130	30
1,2,4-Trimethylbenzene	0.044 J	0.049	0.017	2.95	118	2.85	114	3.6	70	130	30

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD
* = Analyte is outside QC Criteria

Reviewed/Approved By: [signature] Date: 12/5/18

The cover letter is an integral part of this analytical report

Client: Jacobs
Attn: Andrea Beausang
Project Name: JBER TO075 DP009 BLDG 986
Project No.: 694734.02.02.09.01
Date Received: 11/08/18
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15

Lab No.:	J110805-07			J110805-08								
Client Sample I.D.:	18Q4DP009-SS01-SS-0			18Q4DP009-SS02-SS-0								
Date/Time Sampled:	11/5/18 15:01			11/5/18 15:40								
Date/Time Analyzed:	11/26/18 17:41			11/26/18 18:21								
QC Batch No.:	181126MS2A1			181126MS2A1								
Analyst Initials:	DT			DT								
Dilution Factor:	1.9			1.9								
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3		LOQ ug/m3	LOD ug/m3					
Benzene	ND	6.2	3.1	11		6.2	3.1					
1,2-Dichloroethane	ND	7.9	2.0	ND		7.9	2.0					
Trichloroethene	ND	10	2.6	ND		10	2.6					
Tetrachloroethene	20	13	2.3	4.0	J	13	2.3					
1,2,4-Trimethylbenzene	ND	9.6	2.4	72		9.6	2.4					
Naphthalene	ND	51	20	47	J	51	20					

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Date 12/5/18
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client:	Jacobs
Attn:	Andrea Beausang
Project Name:	JBER TO075 DP009 BLDG 986
Project No.:	694734.02.02.09.01
Date Received:	11/08/18
Matrix:	Air
Reporting Units:	ug/m3

EPA Method TO15

Lab No.:	METHOD BLANK		
Client Sample I.D.:	-		
Date/Time Sampled:	-		
Date/Time Analyzed:	11/26/18 17:02		
QC Batch No.:	181126MS2A1		
Analyst Initials:	DT		
Dilution Factor:	0.20		

ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3
Benzene	ND	0.64	0.32
1,2-Dichloroethane	ND	0.81	0.20
Trichloroethene	ND	1.1	0.27
Tetrachloroethene	ND	1.4	0.24
1,2,4-Trimethylbenzene	ND	0.98	0.25
Naphthalene	ND	5.2	2.1

LOD = Limit of Detection
ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Date 12/5/18

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 181126MS2A1

Matrix: Air

Reporting Units: ug/m3

EPA Method TO15
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	11/26/18 17:02			11/26/18 15:41		11/26/18 16:21					
Analyst Initials:	DT			DT		DT					
Dilution Factor:	0.20			1.0		1.0					
ANALYTE	Result ug/m3	LOQ ug/m3	LOD ug/m3	Result ug/m3	% Rec.	Result ug/m3	% Rec.	RPD	Low %Rec	High %Rec	Max. RPD
Benzene	ND	0.64	0.32	37.4	117	36.8	115	1.6	69	119	30.0
1,2-Dichloroethane	ND	0.81	0.20	51.2	126	51.0	126	0.4	65	128	30.0
Trichloroethene	ND	1.1	0.27	62.2	116	62.6	117	0.8	71	123	30.0
Tetrachloroethene	ND	1.4	0.24	75.3	111	73.3	108	2.7	66	124	30.0
1,2,4-Trimethylbenzene	ND	0.98	0.25	58.1	118	55.7	113	4.1	66	132	30.0
Naphthalene	ND	5.2	2.1	98.6	188 *	108	206 *	9.3	57	138	30.0

ND= Not Detected (below LOD)
LOQ = Limit of Quantitation
LOD = Limit of Detection
J = Trace amount. Analyte concentration between LOQ and LOD

Reviewed/Approved By: _____ Date 12/5/18
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

GC/MS Raw Data Index
General Information

Lab Project No.: J110805 TO15SIM

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Conventions and Conversions

1 ppbv = 0.001 ppmv = 0.0000001% v/v
1% v/v = 10,000 ppmv = 10,000,000 ppbv

1 ug/m^3 = 1 ng/L = ppbv x MW/24.45
1 ug/L = 1 mg/m^3 = ppmv x MW/24.45

Where **MW** is the molecular weight of the compound and 24.45 is the molar volume of ideal gas at 1 atmosphere and 25° C.

1 atmosphere = 14.6 psia = 0 psig
30" Hg = 0 psia = -14.6 psig

Standard pressure is taken as 14.6 psia at Air Technology Labs' facility.

1. Supporting Documents

a. Pressurization log (if applicable)

b. ICAL run log

c. CCAL/QC/Samples run log

d. Miscellaneous documents

PRESSURIZATION LOGBOOK

	Date	Sample ID	Can #	Initial Pressure	Final Pressure	Dilution Gas	Dilution Gas Lot #	Initials	ETR #	Client/ Comments	He Prefill
1	11/9/18	J110708-01	1466	2"Hg	10psig	He	2700802	VTT	9996	FOSH	YES
2		-02	3670	1"Hg							
3		-03	3575	1"Hg							
4		-04	1461	1"Hg							
5	11/9/18	J110810-01	3150	5"Hg	10psig	He	2700802	VTT	9028	WEAVER	YES
6		-02	5849	5"Hg							
7		-03	5464	6"Hg							
8		-04	1454	6"Hg							
9	11/9/18	J110811-01	7130	6"Hg	5psig	N_2	250NB124	VTT	9038	SCS/GKK	NO
10		-02	6012	4"Hg							
11		-03	5957	6"Hg							
12		-04	5199	3.5"Hg							
13	11/9/18	J110805-01	1423	4"Hg	5psig	N_2	250NB124	VTT	9026	JACOBS	NO
14		-02	1471	6"Hg							
15		-03	1425	7"Hg							
16		-04	5469	7"Hg							
17		-05	1456	5"Hg							
18		-06	1453	4"Hg							
19		-07	5816	4"Hg	10psig		250NB124			12.65	1.3964
20		-08	A7648	4"Hg	"	"	"	"	"	"	"
21											
22											
23											
24											
25											
26											
27											
28											

387
420
438
438
403
312

Approved by/Date:_____ Air Technology Laboratories Inc. Logbook #17

J110805

Instrument ID: GCMS2

Analytical Method: TO18103A / SC181116

Datafile Directory: 181112

GCMS Injection Logbook

Chemist: D

Blank Lot #: 138N8112

IS/Surr Standard Code: AW1310818

	Date	Time (11/16/18 first row)	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	11/15/18	1104	15NOV010	J110506-02	Asset	100	20.6 / 12.17	1000/1	202.2	9	OK		
2		1144	11	09		50	10.22	19.6/15.6 1000/1	60.483	11	OK		
3		1224	12	10		50	11.68	19.6/15.6 1000/200	3.2274 / 3.059	12	OK		
4		1304	13	12		50	10.71	1000/1	459.6	14	OK		
5		1344	14	13		50	10.22	1000/1.0	4814	1	OK		
6		1424	15	14		50	10.71	1000/1.0	2298	2	NO	D/D	
7		1504	16	15		50	11.19	1000/1.0 300/200	6094	3			
8		1544	17	16		50	10.71	19.6/4.11 1000/100	318.73	4			
9		1628	18	14		100	10.71	1000/1.0	1149	2	OK		
10		1708	19	15		50	11.19	1000/1.0	2198	3	OK		
11		1747	20	16		100	10.71	19.6/4.11 1000/10	1595.91	4	OK		
12		2157	21	500 Blank	—	250	—	—	1.0	16	NO	IS anec ↓	
13		2244	22	↓	—	250				16	NO	EM 2047 - 2141	
14		2326	23	500 ppbv	AW1311202	125				7	NOv	EM 2141 - 2200	
15	11/16/18	0017	16NOV001	3.5 ppbv (military)	AW1311204	35				5	OKv	EM 2200 - 2247	181116MS241
16		0056	002	3.5 ppbv		35				5	OKv		
17		0135	003	5.0 ppbv		50				5	OKv		
18		0213	004	5.0 ppbv		50				5	OKv		
19		0255	005	20 ppbv		200				5	OKv		
20		0333	006	50 ppbv	AW1311205	50				6	OKv		

Approved by/Date: _____

Logbook GCMS2 #36

Air Technology Laboratories

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J110805

Instrument ID: GCMS2

Analytical Method: SL181116

Datafile Directory: 181112

GCMS Injection Logbook

Chemist: VL

Blank Lot #: 138N8112

IS/Surr Standard Code: AW131312

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	11/16/18	0412	16NOV007	100 pg/µL ICAL	AW131205	100	—		1.0	6	OKv		181116MS2A1
2		0452	008	200	↓	200				6	OKv		
3		0531	009	200	AW131202	50				~~B~~ 7	OKv		
4		0609	010	500	↓	125				~~B~~ 7	OKv		
5		0651	011	1000	↓	250				~~B~~ 7	OKv		
6		0729	012	2000	AW131218	50				B	OKv		
7		0810	013	1000	↓	250				B	OKv		
8		0852	014	Blk	—	250				6	—		
9		0931	015	ICV/LCS	AW131203	125				8	NOv	std not attached	
10		1010	016	ICV/LCSD	↓	↓				8	NOv		
11		1050	017	ICV/LCS						8	OKv	Bzyl Chlrid. ↑ 124TCB ↑	
12		1129	018	ICV/LCSD	↓	↓	↓	↓	↓	8	OKv	↓	
13		1226	019	M. Blk						4	OKv		
14		1333	020	J110811-01	SCS	420	19.6/11.68	—	1.0	1	OKv		
15		1418	021	-02	↓	387	19.6/12.65	—	↓	2	OKv		
16		1505	022	-03		420	19.6/11.68	—		3	OKv		
17		1549	023	-04	↓	380	19.6/12.9	—		~~5~~ 4	OKv		
18		16:30	024	Blk J110808-01	Nat. Env.	~~350~~ 387	19.6/12.65			6	OKv		
19		17:16	025	J110808-01	Nat. Env.	387	19.6/12.65	—	1.0	5	OK		
20		18:02	026	J110901-01	FD1	403	19.6/12.17	—	1.0	7	OK		

D 11/18/18

Approved by/Date:_____

Logbook GCMS2 #36

Air Technology Laboratories

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J110805

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: TO18 1031
Datafile Directory: 181119 / 181126

Chemist: JL
Blank Lot #: 138N8112
IS/Surr Standard Code: AW 131312

Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
11/23/18	14:02	23NOV0010	J112106-03	Asset	50	-	-	1.0	3	OK		181123MS2A1
	14:41	11	-04						4			
	15:21	12	-05						5			
	16:01	13	Toxanes	TK	50				16			
	16:46	14	Blank	-	250			0.2	6			
	17:25	15	J111407-01	Evonik	50	24.6/10.22		2.407	7			
	18:04	16	J111902-01	Covestro	50	24.6/9.27	1000/20	133	8			
	18:43	17	-02						9			
11/26/18	08:46	26NOV001	BFB	AW131312	150	-	-	1.0	-	OK		181126MS2A1
	09:32	002	ccv	AW131411					6	OK		
	10:45	003	Blank	-	250			0.2	6	OK		
	11:24	004	Init ccv	AW131202	125			1.0	1	NO		181126MS2A2
	12:19	005	ccv						1	OK	CF 244 → 250G	
	13:24	006	Lcs	AW131203					2		Naphthalene ↑	
	14:03	007	LcsD						2		↓	
	14:44	008	Method Bl	-	250			1.0	6	NO	replaced the can	
	15:41	009	Lcs	AW131412	50			1.0	8	OK		181126MS2A1
	16:24	010	LcsD					1.0	8	OK		
	17:02	011	Method Bl	-	200			0.2	6	OK		
	17:41	012	J110805-07	Jacobs	50	24.6/12.65		1.944	1	OK		

Approved by/Date:_____
Logbook GCMS2 #36

Air Technology Laboratories

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J110805

Instrument ID: GCMS2

Analytical Method: TO/181031 / SC/181116

Datafile Directory: 181126

GCMS Injection Logbook

Chemist: DT

Blank Lot #: 138N8112

IS/Surr Standard Code: AW131312

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	11/26/18	18:24	26NOV013	J110805-08	Jacobs	50	21.6 / 12.65	—	1.944	2	OK		181126MS2#1
2		19:10	14	J111203-04	HGS	447	19.6 / 10.95		0.2	3	OK		
3		19:55	15	05		438	11.19			4			
4		20:40	16	04D			11.19			4			
5		21:19	17	CCV	AW131411	50	—		1.0	6	OK		
6		21:59	18	Blank	—	250	—		1.0	6			181126MS2#2
7		22:39	19	— " —						7			
8		23:20	20	— " —						7			
9	11/27/18	00:00	21	MDL 1	AW131204	200				5	OK		
10		00:41	22	2									
11		01:24	23	3									
12		02:04	24	4									
13		02:46	25	5									
14		03:28	26	6									
15		04:07	27	7									
16		04:47	28	8						4			
17		05:25	29	LOD	AW131204	35				8	OK		
18		06:06	30	Method Bl	—	200				7	OK		
19		06:50	31	J110805-01	Jacobs	387	19.6 / 11.68			9	OK		
20		07:39	32	-02		420	11.68			10			

Approved by/Date:_____

Logbook GCMS2 #36

Air Technology Laboratories

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J110805

Instrument ID: GCMS2

Analytical Method: SL181116 / TO181031

Datafile Directory: 181126

GCMS Injection Logbook

Chemist: DT

Blank Lot #: 18N8112

IS/Surr Standard Code: AW131312

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	11/27/18	08:24	26Nov033	J110805-03	Jacobs	438	19.6/11.19	—	1.0	11	OK		181126MS2A
2		09:09	34	04		403	11.19			12			
3		09:53	35	05		403	12.12			13			
4		10:38	36	06		387	12.65			14			
5	11/27/18	11:15	27Nov001	BFB	AW131312	150	—	—	1.0	—	OK		181127MS2A1
6		12:19	002	CCV	AW131411	50				8	OK		
7		13:13	003	LCS	AW131412					C	NO	RR	
8		13:53	004	LCSD						C	OK		
9		14:41	005	Blank	—	250			0.2	7	OK		
10		15:20	006	LCS	AW131412	50			1.0	C	OK		
11		16:22	007	Method Bl	—	250			0.2	7	OK		
12		17:19	008	J111203-01	HGS	438	19.6/11.19		0.2	1			
13		18:03	009	-02	HGS	403	12.17			2			
14		18:48	010	-02LR		403	12.17			2			
15		19:34	011	-03		479	10.22			3			
16		20:19	012	-06		411	11.92			4			
17		21:06	013	-07		403	9.73			5			
18	11/28/18	21:51 22:37	014	-08		420	11.68			6			
19	11/28/18	22:37 23:22	015	-09		438	11.19			8			
20		23:22	016	-10		420	11.66			9			

Approved by/Date: _____

Logbook GCMS2 #36

Air Technology Laboratories

2. Sample Raw Data

a. Results/Chromatograms/Spectra

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\181126\26NOV005.D
Tune Time : 26 Nov 2018 12:19 pm

Daily Calibration File : C:\msdchem\1\data\181126\26NOV005.D

					Internal Standard Responses		
					118089	460413	259576
File	Sample	Surrogate Recovery %					
26NOV006.D	SIM LCS	119	92	119	122893	456132	253418
26NOV007.D	SIM LCSD	113	92	117	122262	446243	248306
26NOV030.D	METHOD BLANK	128	92	116	113890	374676	206519
26NOV031.D	J110805-01	127	90	111	116598	391926	204446
26NOV032.D	J110805-02	128	93	99	119150	411601	217186
26NOV033.D	J110805-03	117	92	96	114405	409053	212473
26NOV034.D	J110805-04	119	92	97	113239	405569	215794
26NOV035.D	J110805-05	118	92	98	110812	394427	208966
26NOV036.D	J110805-06	116	92	101	107849	374240	201698

(fails) - fails 24hr time check * - fails criteria

Created: Tue Dec 04 12:55:09 2018 ms2

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\181126\26NOV005.D
Tune Time : 26 Nov 2018 12:19 pm

Daily Calibration File : C:\msdchem\1\data\181126\26NOV005.D

					118089	460413	259576
File	Sample	Surrogate Recovery %			Internal Standard Responses		
26NOV006.D							
	SIM LCS	119	92	119	122893	456132	253418
26NOV007.D							
	SIM LCSD	113	92	117	122262	446243	248306
26NOV030.D							
	METHOD BLANK	128	92	116	113890	374676	206519
26NOV031.D							
	J110805-01	127	90	111	116598	391926	204446
26NOV032.D							
	J110805-02	128	93	99	119150	411601	217186
26NOV033.D							
	J110805-03	117	92	96	114405	409053	212473
26NOV034.D							
	J110805-04	119	92	97	113239	405569	215794
26NOV035.D							
	J110805-05	118	92	98	110812	394427	208966
26NOV036.D							
	J110805-06	116	92	101	107849	374240	201698

(fails) - fails 24hr time check * - fails criteria

Created: Tue Dec 04 12:55:09 2018 ms2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV031.D
Acq On : 27 Nov 2018 6:50 am
Operator : DT
Sample : J110805-01 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 07:15:05 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.333	130	116598	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.688	114	391926	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	204446	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.099	65	168224	2537.93	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 126.90%			
29) Toluene-d8	12.938	98	251088	1803.36	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 90.17%			
42) 4-Bromofluorobenzene	17.184	95	114153	2222.78	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 111.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.553	85	74720	540.97	pptv	99
3) Chloromethane	3.940	50	28011	609.05	pptv	91
4) Vinyl Chloride	4.152	62	240	5.32	pptv #	1
5) Bromomethane	4.839	96	709	35.62	pptv	96
6) Chloroethane	5.019	64	340	10.50	pptv	87
7) Trichlorofluoromethane...	5.485	101	44304	238.87	pptv	100
8) 1,1,2-Cl 1,2,2-F ethan...	6.233	151	8768	63.45	pptv	89
9) Acetone	6.126	43	362553	3351.93	pptv	99
11) Methylene Chloride	7.033	49	5440	79.99	pptv	62
12) t-Butyl Methyl Ether	7.399	73	318	2.28	pptv #	1
14) Hexane	7.778	57	8172	94.74	pptv	91
15) 1,1-Dichloroethane	8.074	63	175	1.73	pptv	92
16) 2-Butanone	8.629	72	15436	599.62	pptv	57
18) Chloroform	9.150	83	2282	19.38	pptv	97
19) 1,1,1-Trichloroethane	9.757	97	391	3.47	pptv	67
20) Carbon Tetrachloride	10.145	117	8424	97.58	pptv	95
22) Benzene	10.325	78	53989	363.28	pptv	89
24) 1,2-Dichloroethane	10.224	62	1795	25.82	pptv	98
25) Trichloroethene	11.212	130	359	4.23	pptv	76
26) 1,2-Dichloropropane	11.414	63	459	9.36	pptv	88
27) 1,4-Dioxane	11.710	88	206	5.30	pptv	87
28) Bromodichloromethane	11.722	83	109	1.44	pptv #	18
30) Toluene	13.055	91	123809	841.88	pptv	99
32) t-1,3-Dichloropropene	12.504	75	149	4.03	pptv	60
33) 1,1,2-Trichloroethane	13.542	97	954	19.85	pptv #	24
34) Tetrachloroethene	14.083	166	590	8.15	pptv	94
35) 1,2-Dibromoethane	14.577	107	56	1.03	pptv	84
36) Chlorobenzene	15.265	112	193	2.14	pptv	94
37) Ethylbenzene	15.376	91	12525	117.73	pptv	99
38) p,&m-Xylene	15.507	91	36166	464.79	pptv	98
39) o-Xylene	16.192	91	17975	250.76	pptv	100
40) Styrene	16.194	104	739	15.92	pptv #	1
41) 1,1,2,2-Tetrachloroethane	17.030	83	424	7.64	pptv	48
43) 1,3-Dichlorobenzene	18.961	146	281	5.03	pptv	85
44) 1,4-Dichlorobenzene	18.961	146	281	4.83	pptv	83
45) Benzyl Chloride	19.060	91	174	7.54	pptv #	52

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV031.D
Acq On : 27 Nov 2018 6:50 am
Operator : DT
Sample : J110805-01 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 07:15:05 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

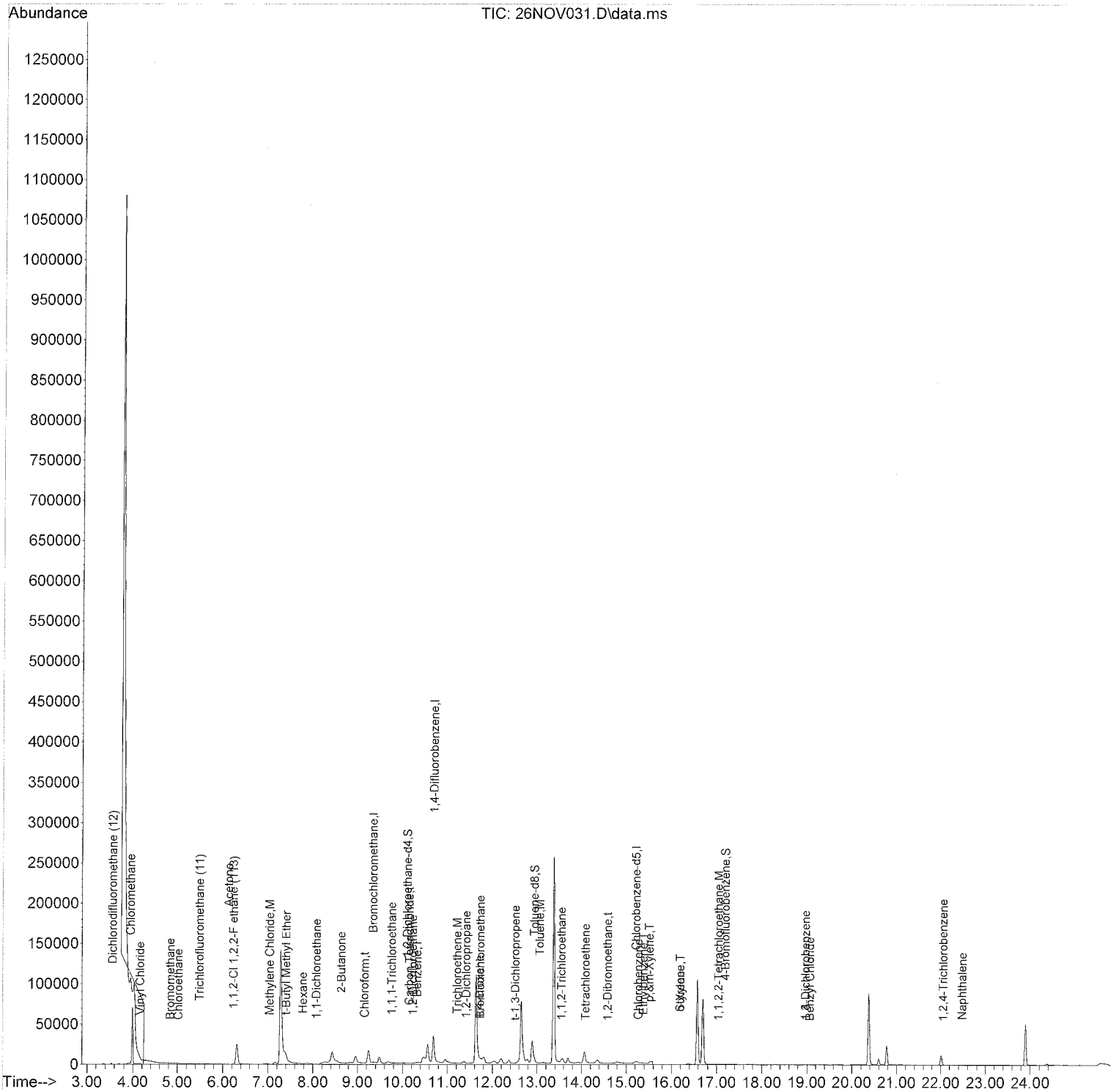
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
47) 1,2,4-Trichlorobenzene	22.049	180	84	1.90	pptv	67
48) Naphthalene	22.475	128	5251	61.33	pptv	100

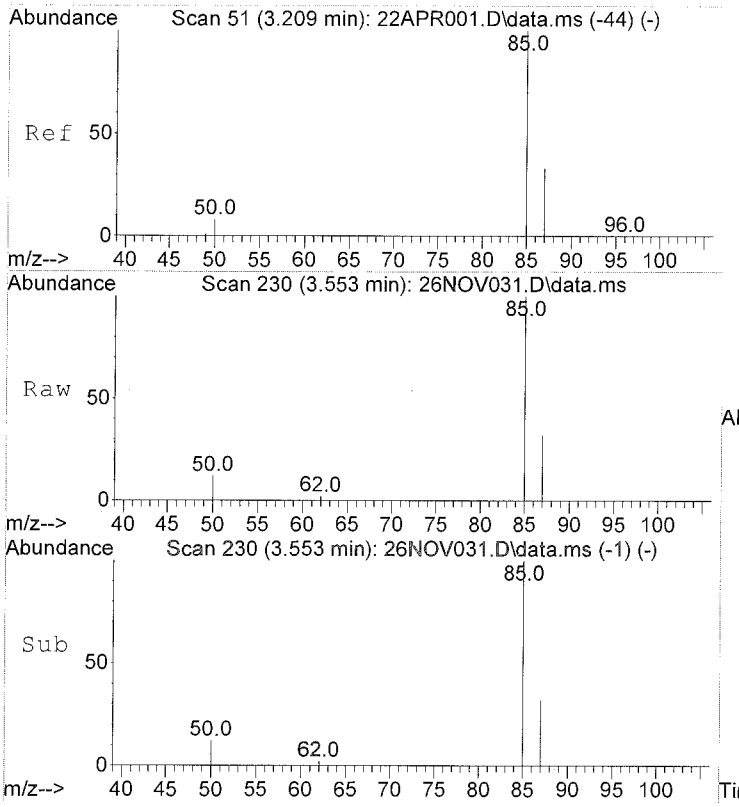
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV031.D
Acq On : 27 Nov 2018 6:50 am
Operator : DT
Sample : J110805-01 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 07:15:05 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

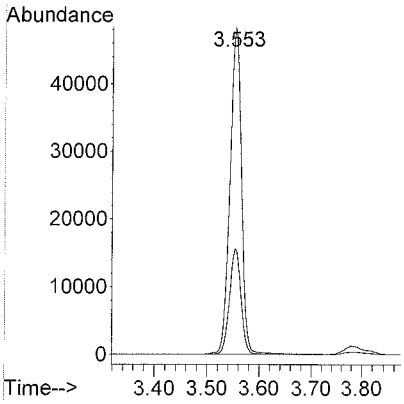


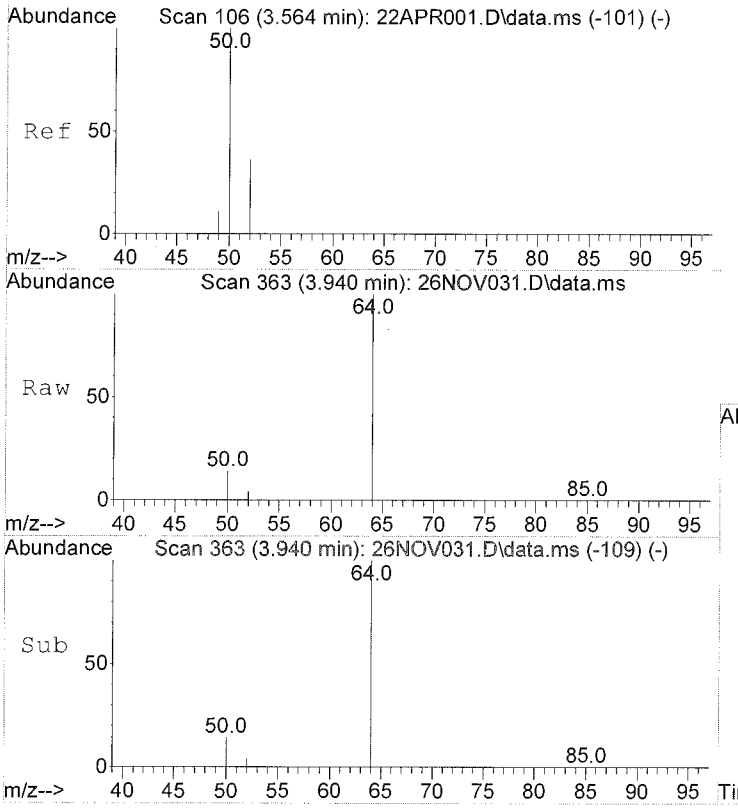


#2
Dichlorodifluoromethane (12)
Concen: 540.97 pptv
RT: 3.553 min Scan# 230
Delta R.T. -0.035 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 85 Resp: 74720

Ion	Ratio	Lower	Upper
85	100		
87	32.2	0.0	81.9

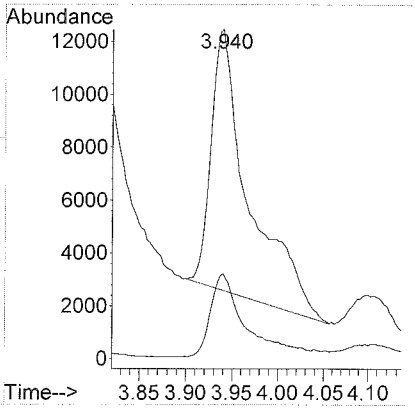


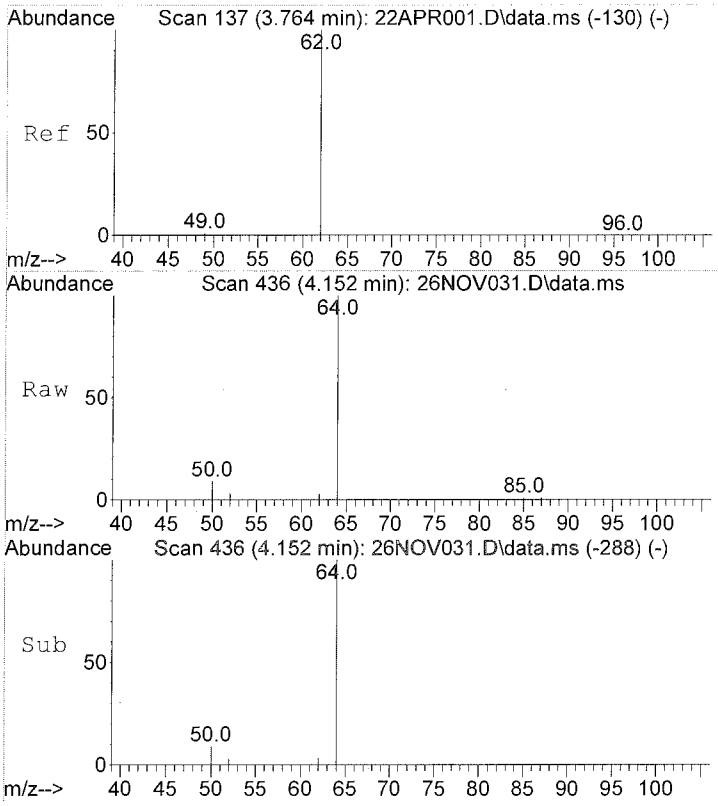


#3
Chloromethane
Concen: 609.05 pptv
RT: 3.940 min Scan# 363
Delta R.T. -0.061 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 50 Resp: 28011

Ion	Ratio	Lower	Upper
50	100		
52	28.2	3.0	63.0

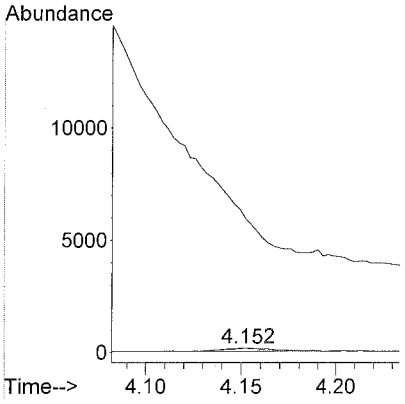


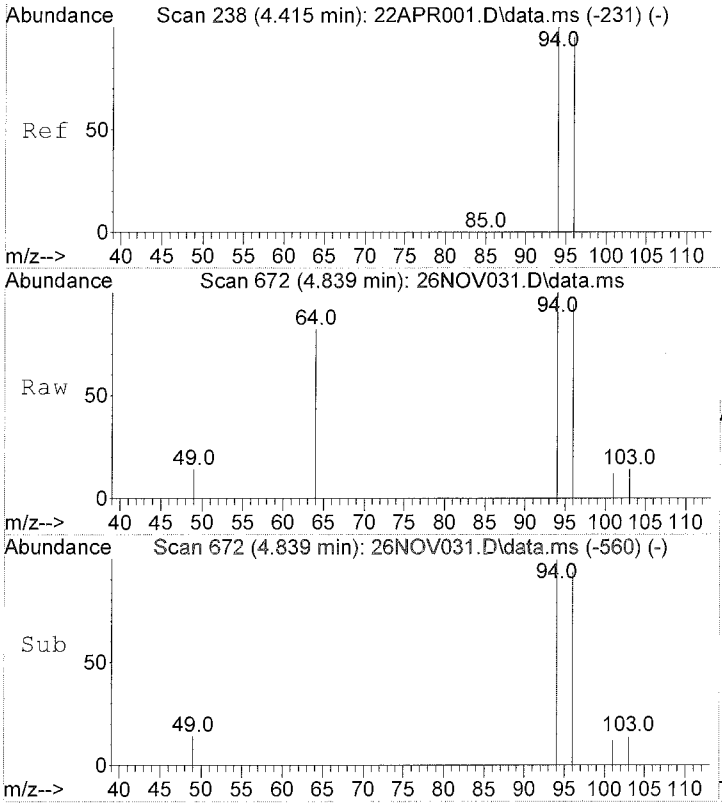


#4
Vinyl Chloride
Concen: 5.32 pptv
RT: 4.152 min Scan# 436
Delta R.T. -0.070 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 62 Resp: 240

Ion	Ratio	Lower	Upper
62	100		
64	1155.4	0.0	82.1#

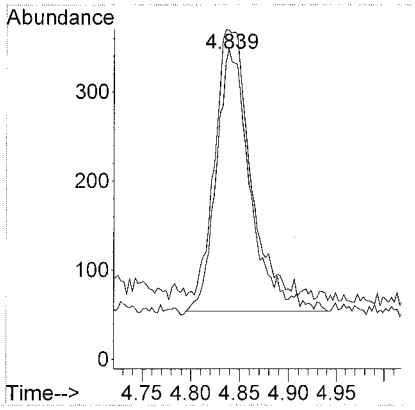


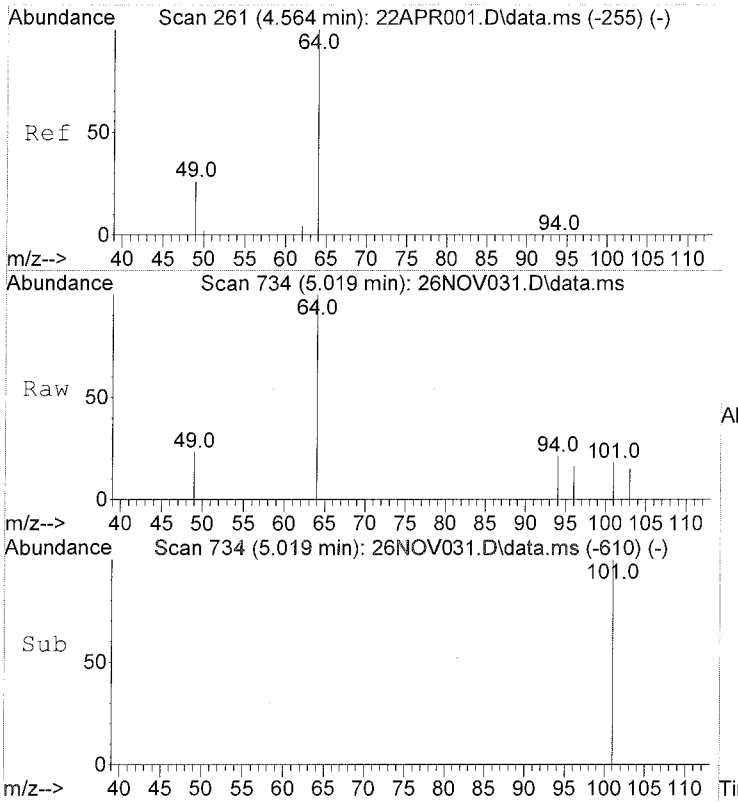


#5
Bromomethane
Concen: 35.62 pptv
RT: 4.839 min Scan# 672
Delta R.T. -0.075 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 96 Resp: 709

Ion	Ratio	Lower	Upper
96	100		
94	101.4	55.4	155.4

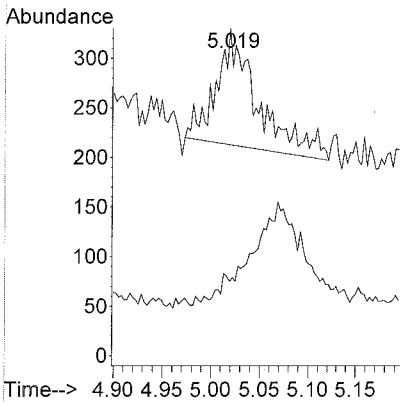


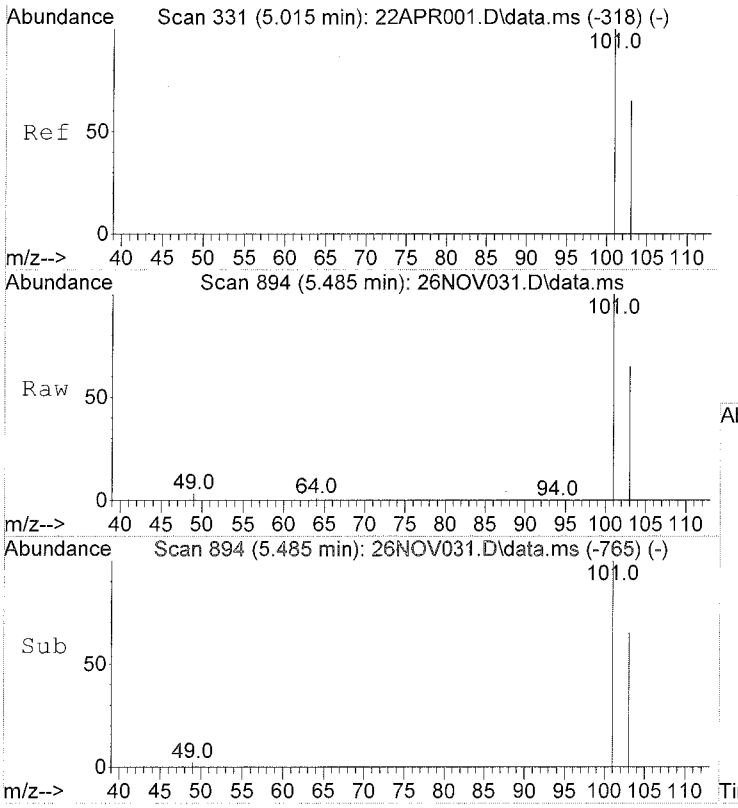


#6
Chloroethane
Concen: 10.50 pptv
RT: 5.019 min Scan# 734
Delta R.T. -0.038 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 64 Resp: 340

Ion	Ratio	Lower	Upper
64	100		
49	12.8	0.0	68.7

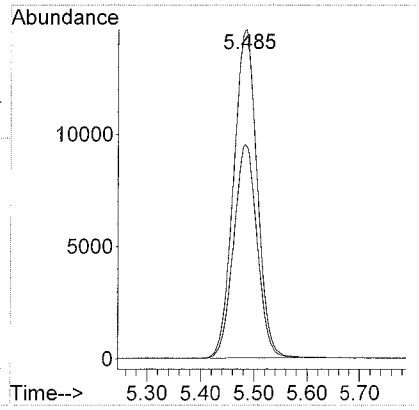


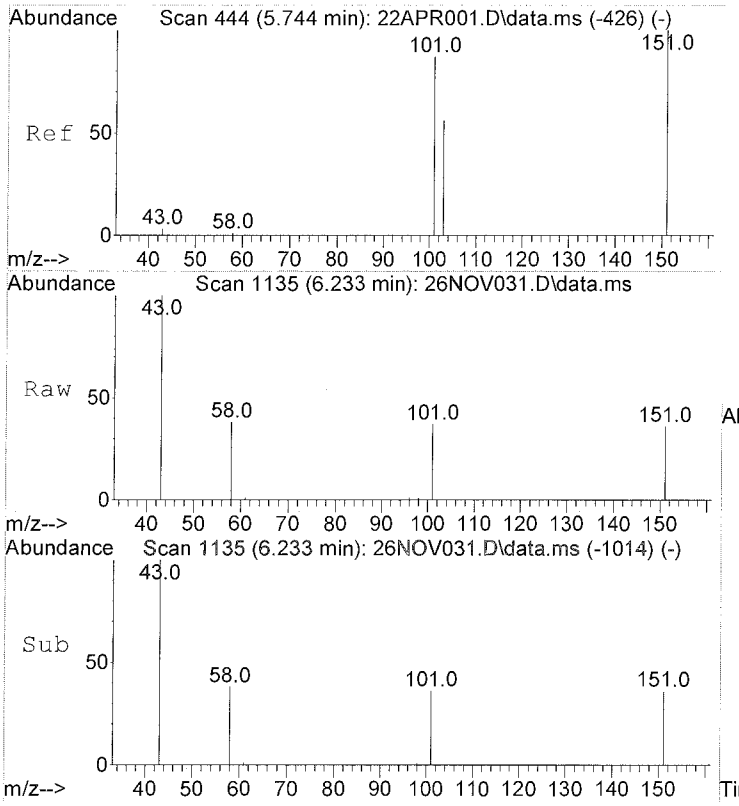


#7
Trichlorofluoromethane (11)
Concen: 238.87 pptv
RT: 5.485 min Scan# 894
Delta R.T. -0.023 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:101 Resp: 44304

Ion	Ratio	Lower	Upper
101	100		
103	64.4	14.6	114.6

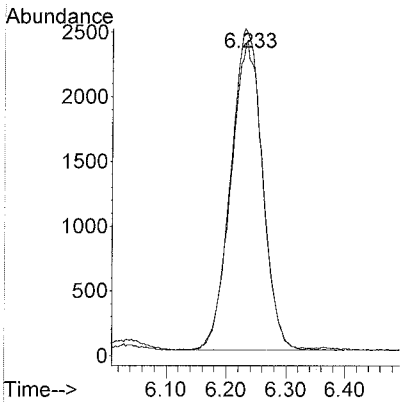


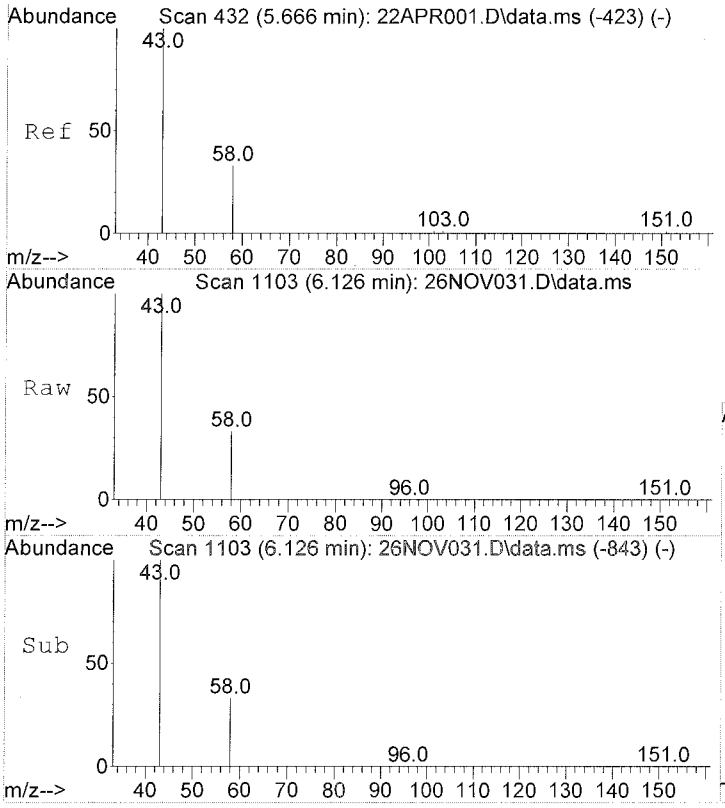


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 63.45 pptv
RT: 6.233 min Scan# 1135
Delta R.T. 0.000 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:151 Resp: 8768

Ion	Ratio	Lower	Upper
151	100		
101	102.2	41.5	141.5

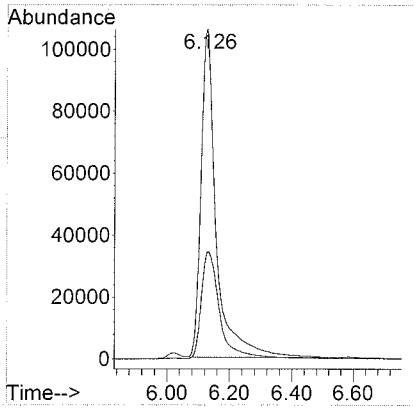


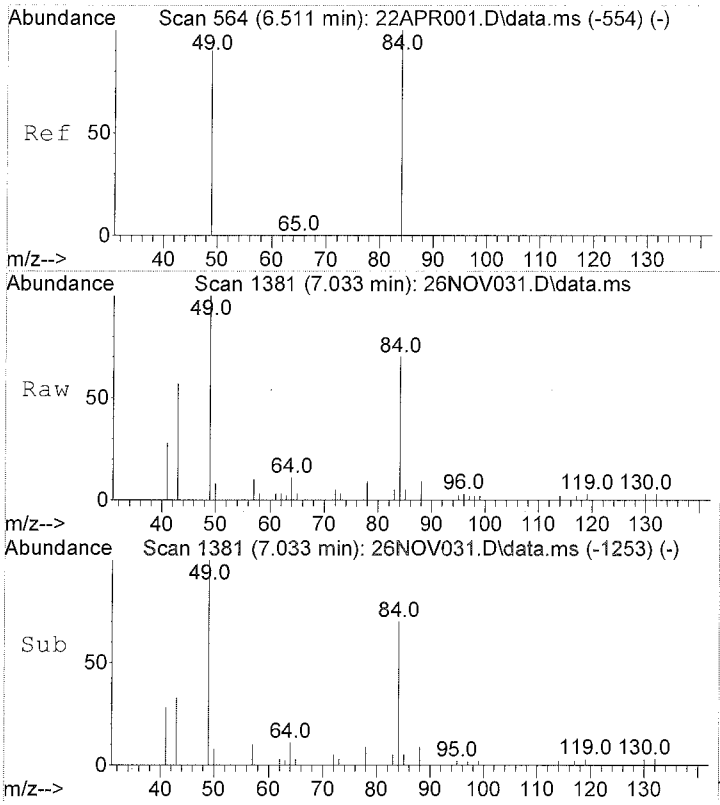


#9
Acetone
Concen: 3351.93 pptv
RT: 6.126 min Scan# 1103
Delta R.T. -0.010 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 43 Resp: 362553

Ion	Ratio	Lower	Upper
43	100		
58	32.6	13.4	53.4

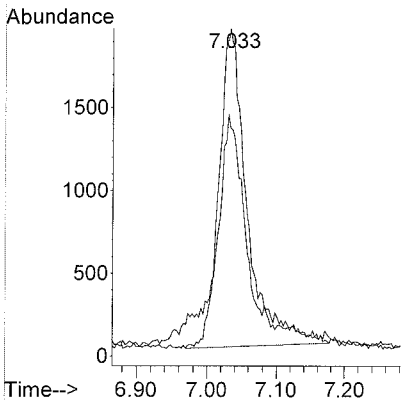


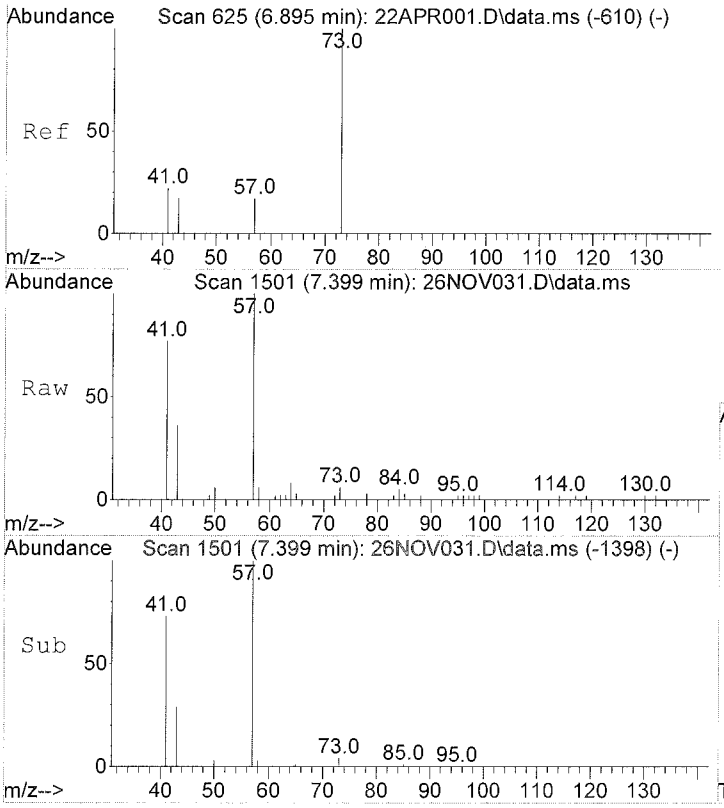


#11
Methylene Chloride
Concen: 79.99 pptv
RT: 7.033 min Scan# 1381
Delta R.T. 0.003 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 49 Resp: 5440

Ion	Ratio	Lower	Upper
49	100		
84	65.6	54.2	154.2

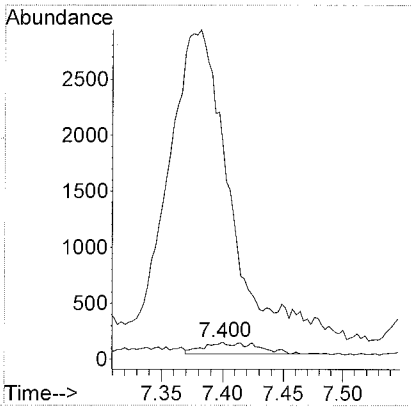


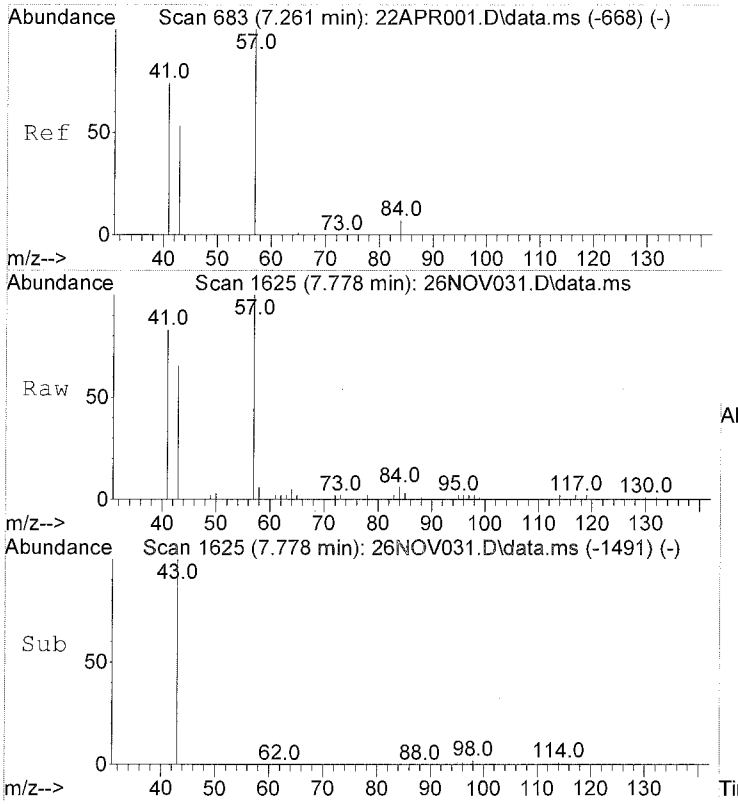


#12
t-Butyl Methyl Ether
Concen: 2.28 pptv
RT: 7.399 min Scan# 1501
Delta R.T. 0.015 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 73 Resp: 318

Ion	Ratio	Lower	Upper
73	100		
41	1524.8	0.0	516.4#

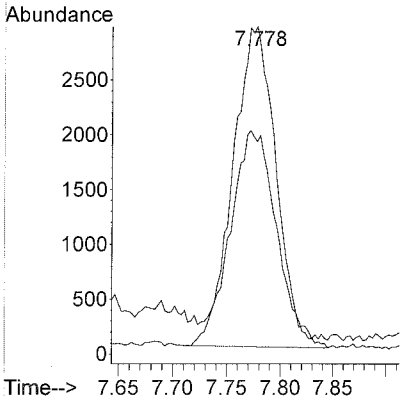


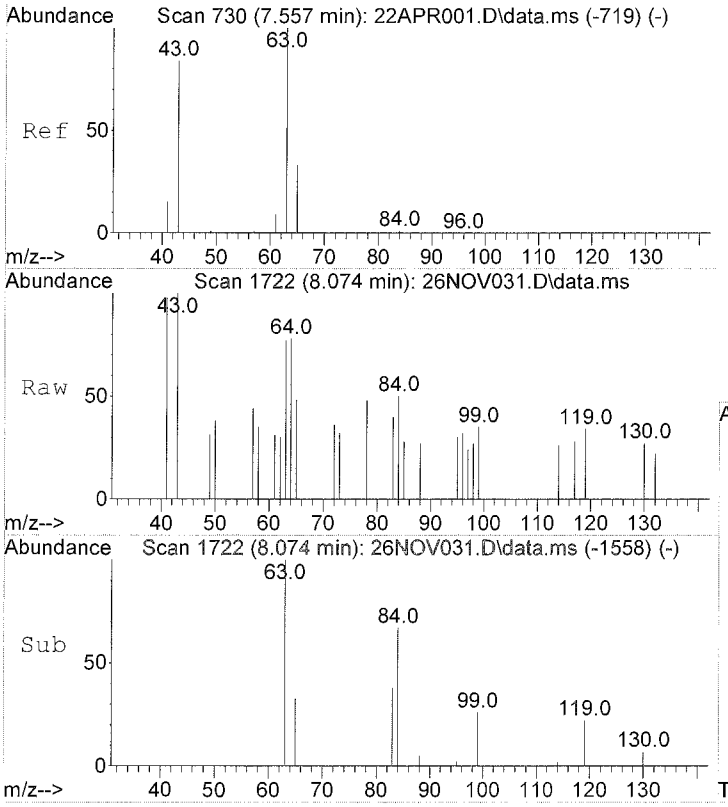


#14
Hexane
Concen: 94.74 pptv
RT: 7.778 min Scan# 1625
Delta R.T. 0.009 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 57 Resp: 8172

Ion	Ratio	Lower	Upper
57	100		
43	61.7	5.0	105.0

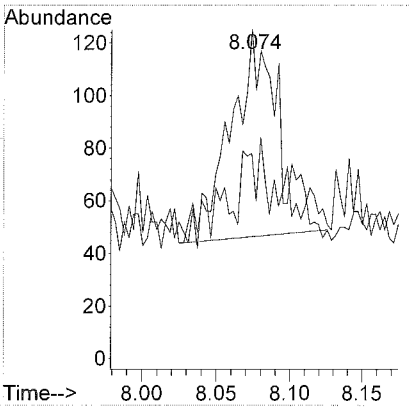


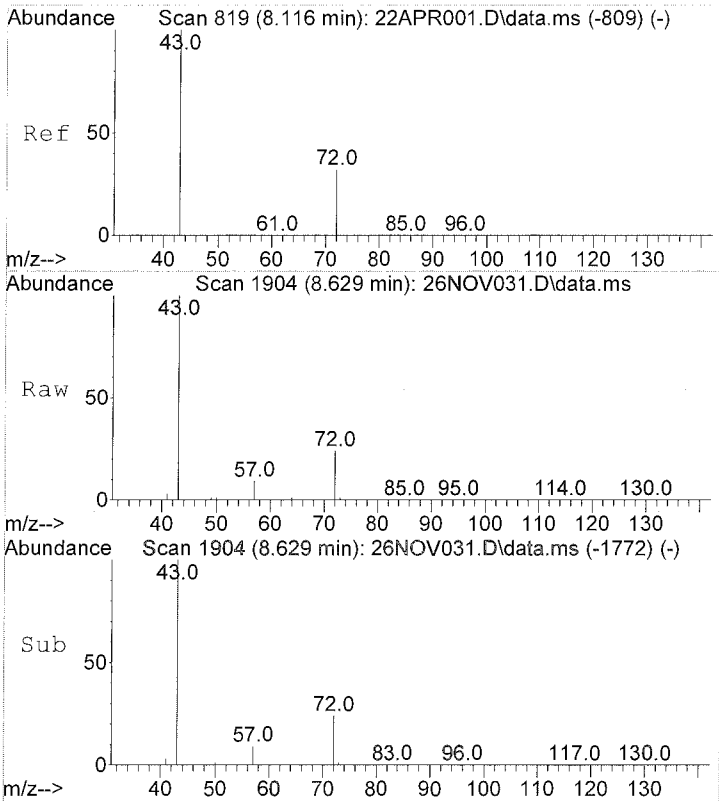


#15
1,1-Dichloroethane
Concen: 1.73 pptv
RT: 8.074 min Scan# 1722
Delta R.T. 0.000 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 63 Resp: 175

Ion	Ratio	Lower	Upper
63	100		
65	37.0	0.0	82.5

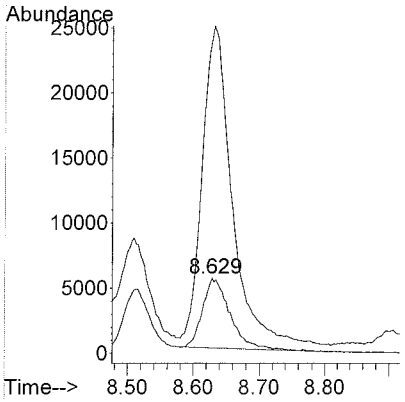


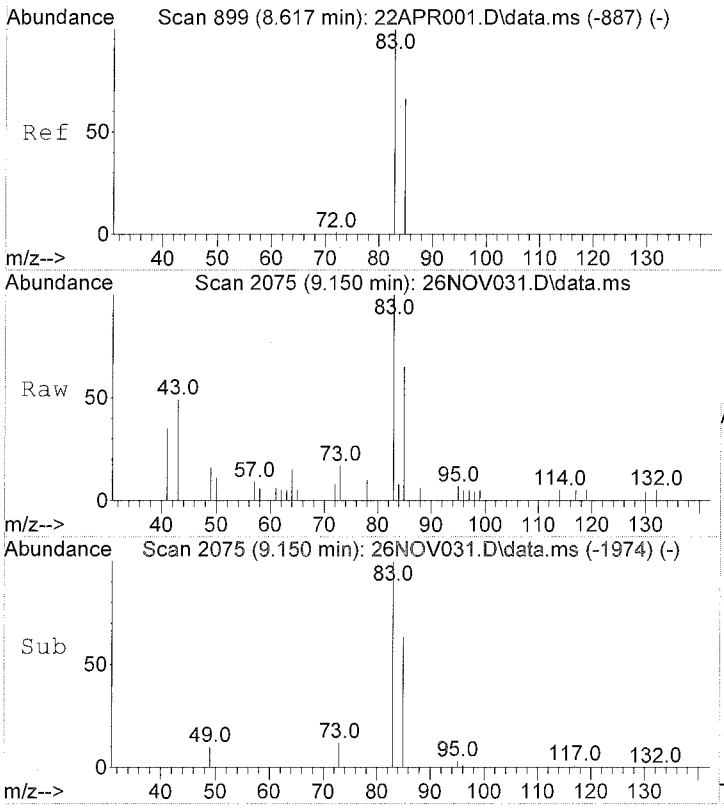


#16
2-Butanone
Concen: 599.62 pptv
RT: 8.629 min Scan# 1904
Delta R.T. 0.003 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 72 Resp: 15436

Ion	Ratio	Lower	Upper
72	100		
43	415.8	0.0	3591.5

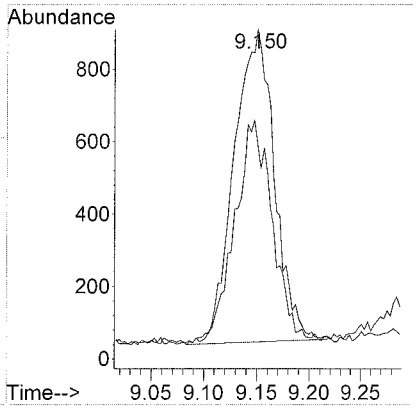


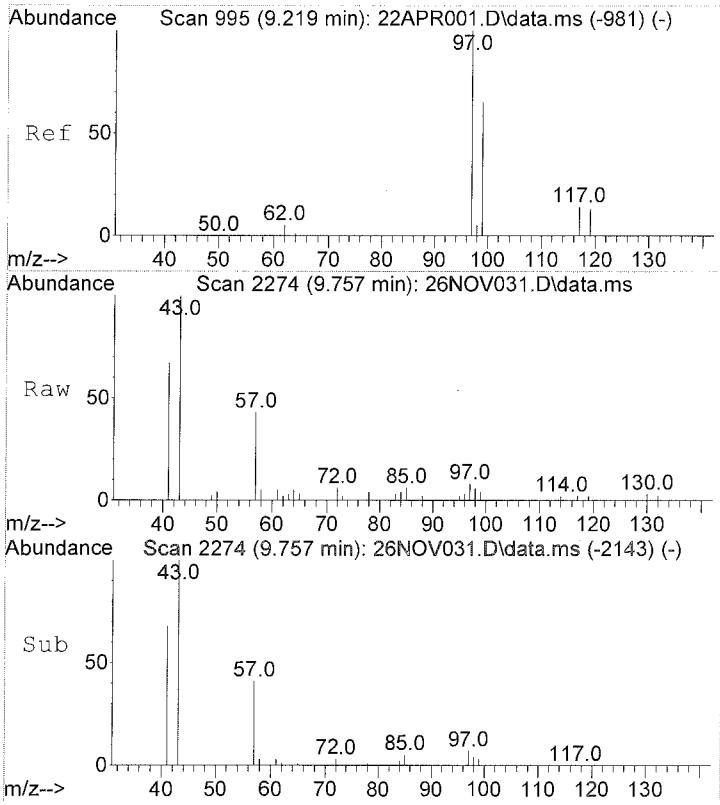


#18
Chloroform
Concen: 19.38 pptv
RT: 9.150 min Scan# 2075
Delta R.T. 0.009 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 83 Resp: 2282

Ion	Ratio	Lower	Upper
83	100		
85	62.8	14.9	114.9

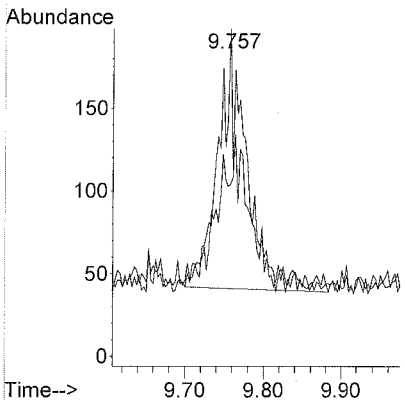


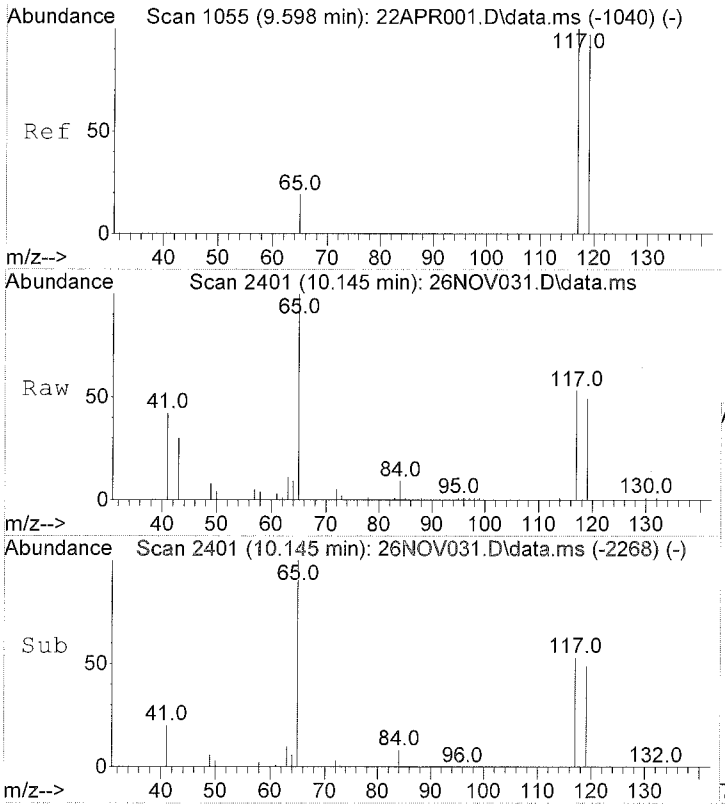


#19
1,1,1-Trichloroethane
Concen: 3.47 pptv
RT: 9.757 min Scan# 2274
Delta R.T. 0.000 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 97 Resp: 391

Ion	Ratio	Lower	Upper
97	100		
99	37.7	13.8	113.8

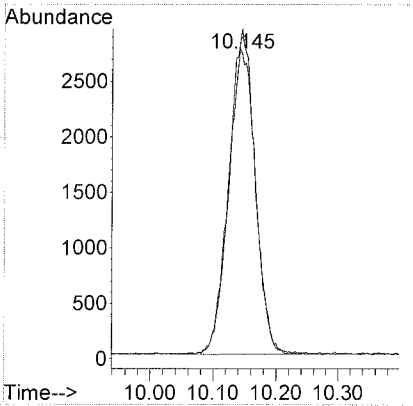


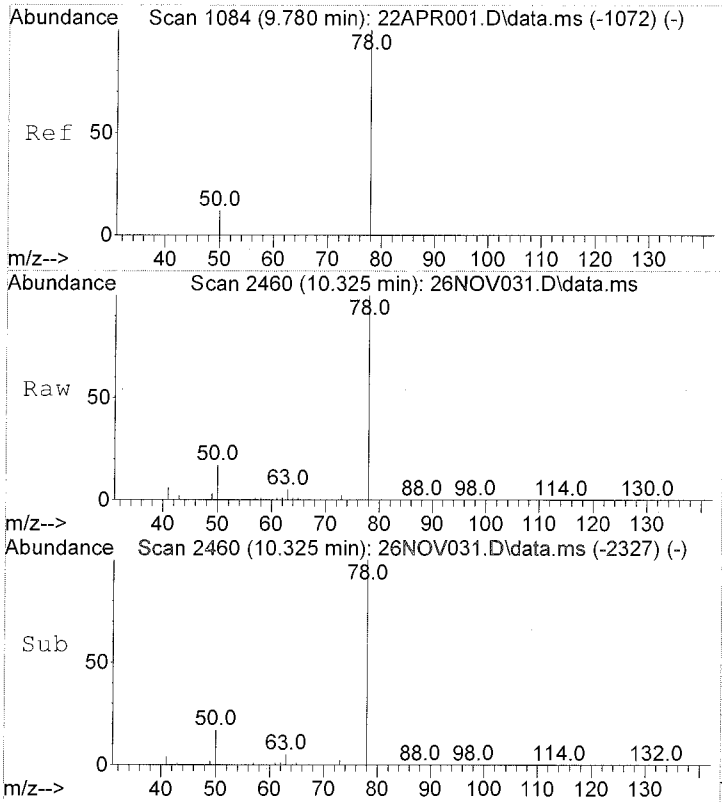


#20
Carbon Tetrachloride
Concen: 97.58 pptv
RT: 10.145 min Scan# 2401
Delta R.T. 0.006 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:117 Resp: 8424

Ion	Ratio	Lower	Upper
117	100		
119	92.2	47.1	147.1

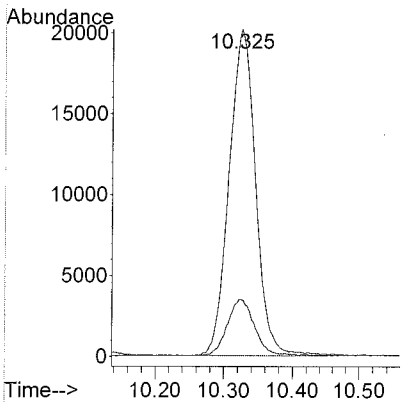


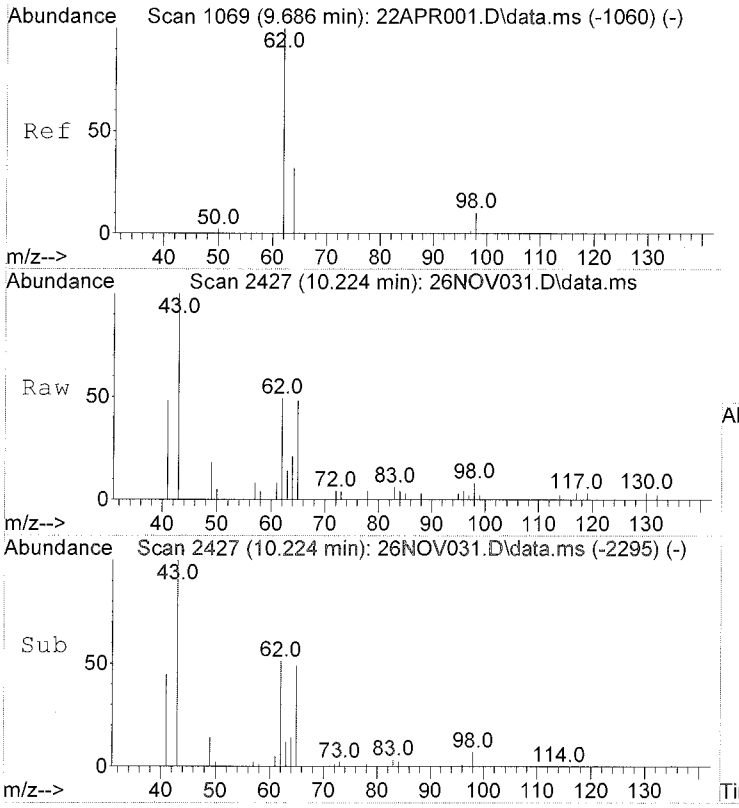


#22
Benzene
Concen: 363.28 pptv
RT: 10.325 min Scan# 2460
Delta R.T. 0.006 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 78 Resp: 53989

Ion	Ratio	Lower	Upper
78	100		
50	17.0	0.0	62.6

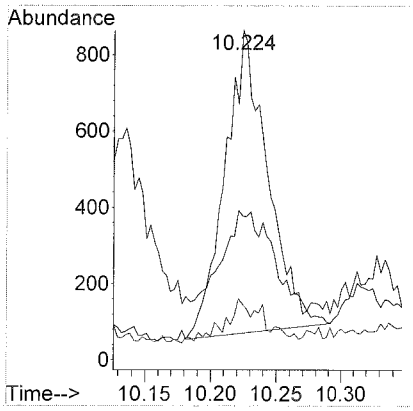


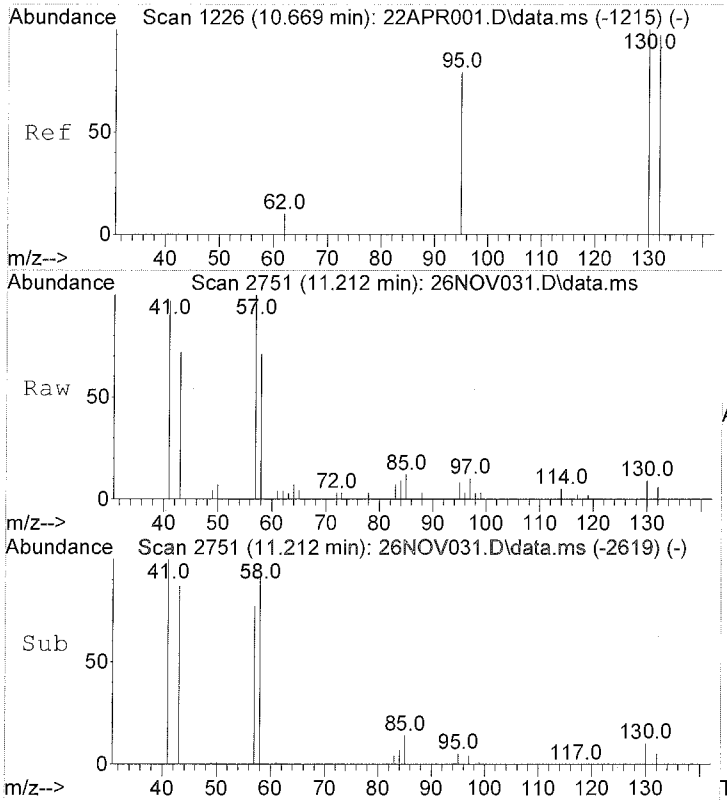


#24
1,2-Dichloroethane
Concen: 25.82 pptv
RT: 10.224 min Scan# 2427
Delta R.T. 0.003 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 62 Resp: 1795

Ion	Ratio	Lower	Upper
62	100		
64	31.5	0.0	83.0
98	10.9	0.0	61.0

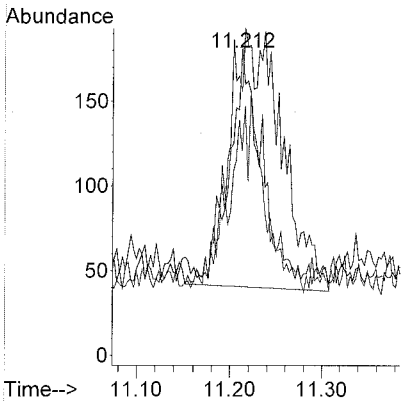


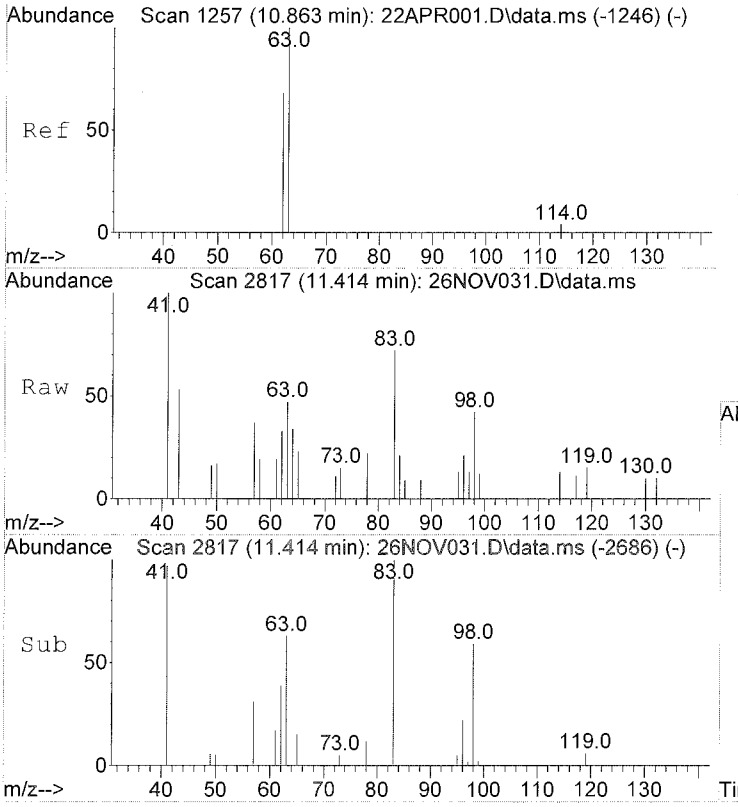


#25
Trichloroethene
Concen: 4.23 pptv
RT: 11.212 min Scan# 2751
Delta R.T. 0.003 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:130 Resp: 359

Ion	Ratio	Lower	Upper
130	100		
95	79.0	30.9	130.9
132	55.2	46.0	146.0

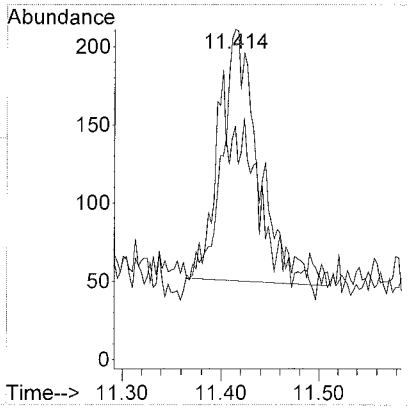


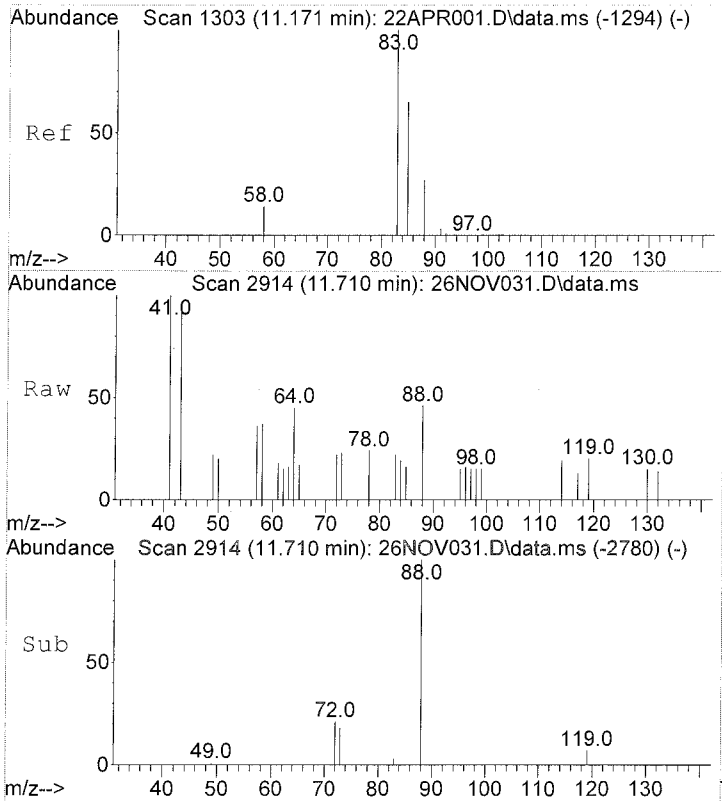


#26
1,2-Dichloropropane
Concen: 9.36 pptv
RT: 11.414 min Scan# 2817
Delta R.T. 0.000 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 63 Resp: 459

Ion	Ratio	Lower	Upper
63	100		
62	60.4	20.3	120.3

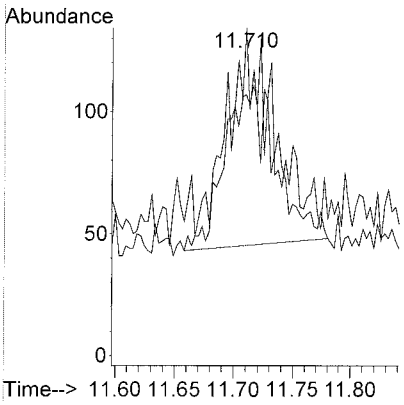


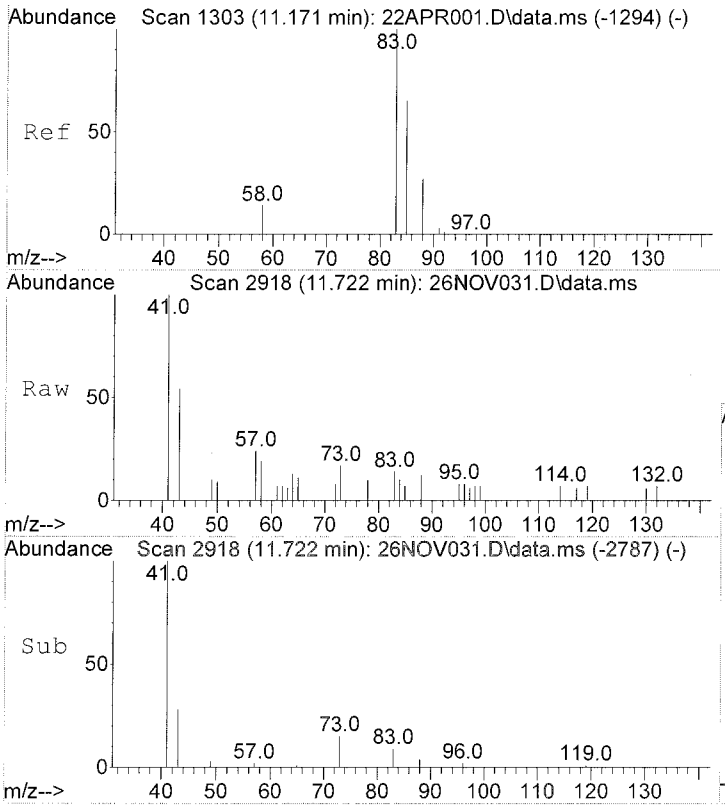


#27
1,4-Dioxane
Concen: 5.30 pptv
RT: 11.710 min Scan# 2914
Delta R.T. 0.009 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 88 Resp: 206

Ion	Ratio	Lower	Upper
88	100		
58	57.1	38.7	58.1

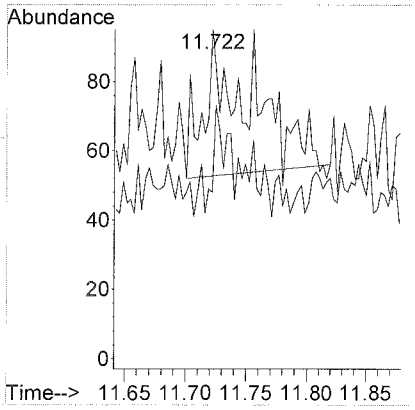


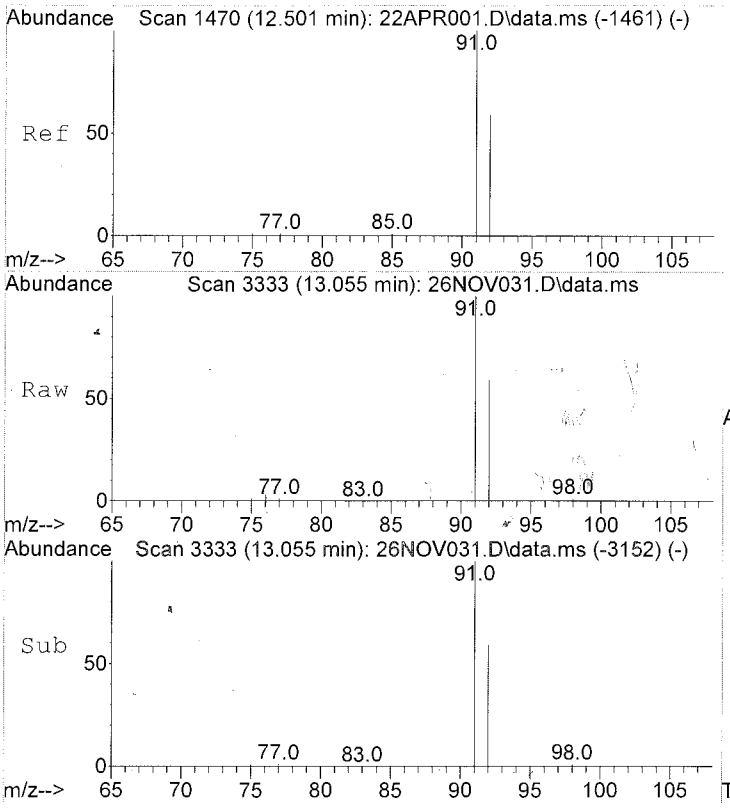


#28
Bromodichloromethane
Concen: 1.44 pptv
RT: 11.722 min Scan# 2918
Delta R.T. 0.000 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 83 Resp: 109

Ion	Ratio	Lower	Upper
83	100		
85	0.0	13.9	113.9#

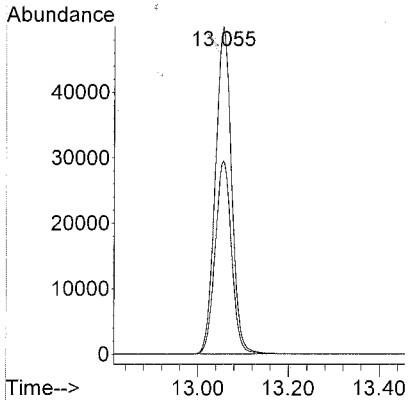


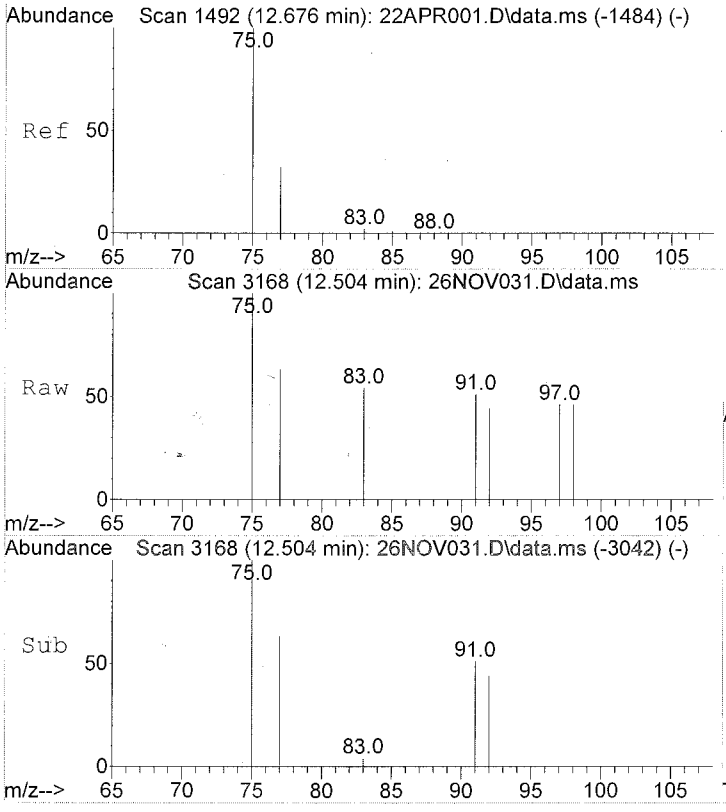


#30
Toluene
Concen: 841.88 pptv
RT: 13.055 min Scan# 3333
Delta R.T. 0.003 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 91 Resp: 123809

Ion	Ratio	Lower	Upper
91	100		
92	59.0	10.0	110.0

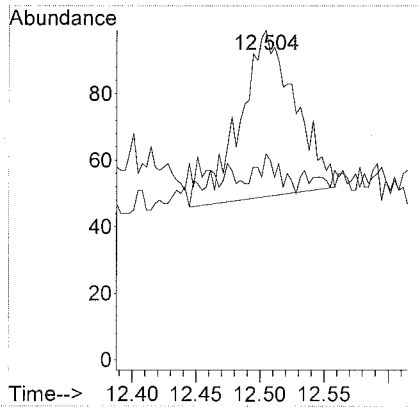


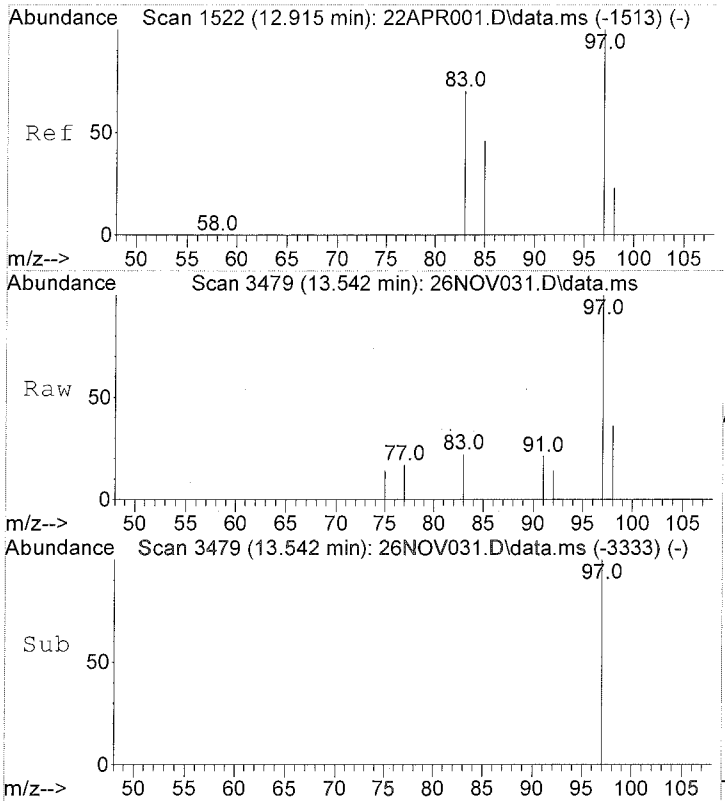


#32
t-1,3-Dichloropropene
Concen: 4.03 pptv
RT: 12.504 min Scan# 3168
Delta R.T. 0.003 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 75 Resp: 149

Ion	Ratio	Lower	Upper
75	100		
77	9.4	0.0	81.7

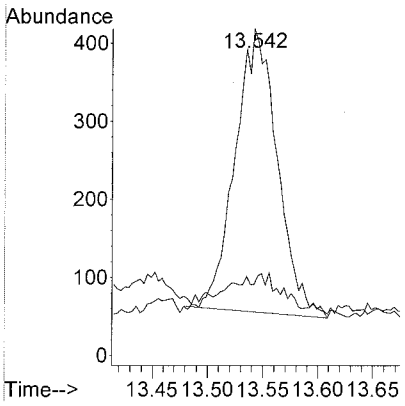


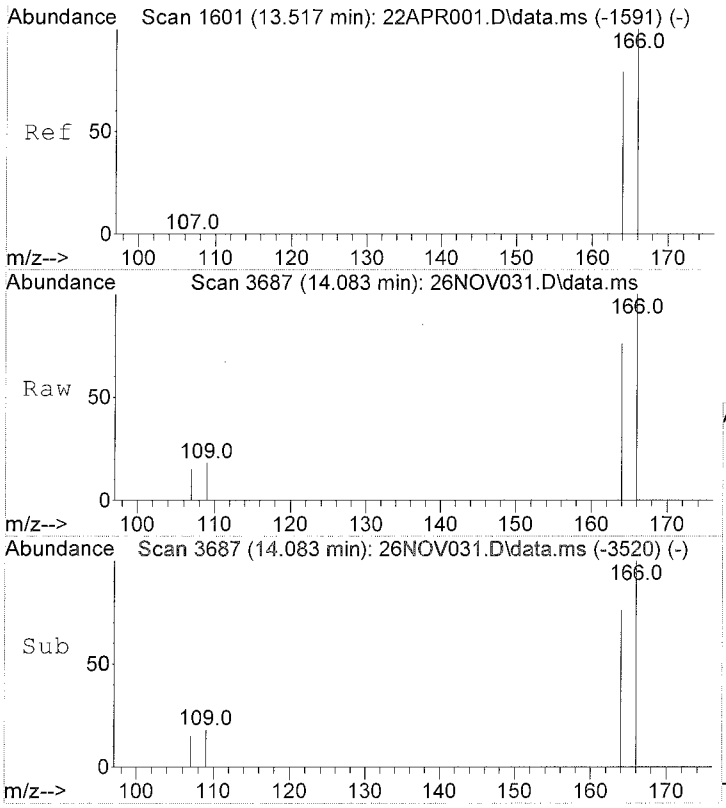


#33
1,1,2-Trichloroethane
Concen: 19.85 pptv
RT: 13.542 min Scan# 3479
Delta R.T. 0.087 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 97 Resp: 954

Ion	Ratio	Lower	Upper
97	100		
83	10.2	25.1	125.1#

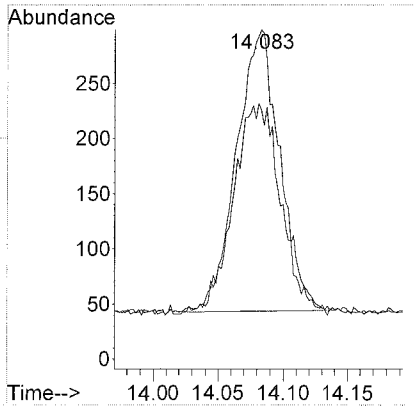


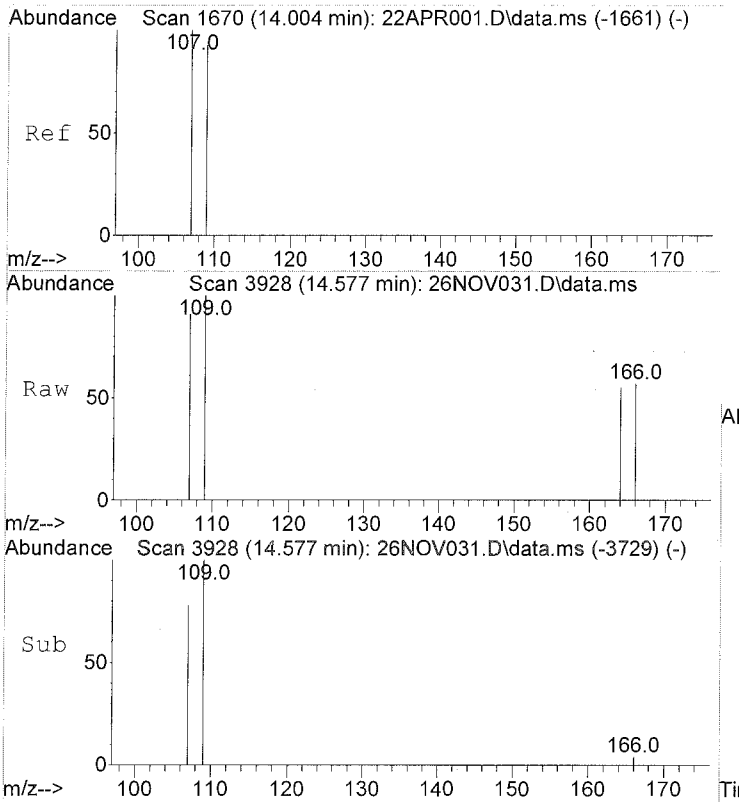


#34
Tetrachloroethene
Concen: 8.15 pptv
RT: 14.083 min Scan# 3687
Delta R.T. 0.004 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:166 Resp: 590

Ion	Ratio	Lower	Upper
166	100		
164	70.3	25.3	125.3

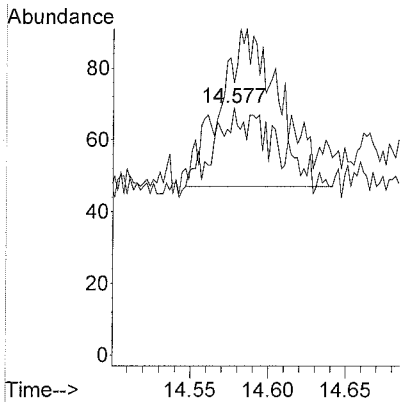


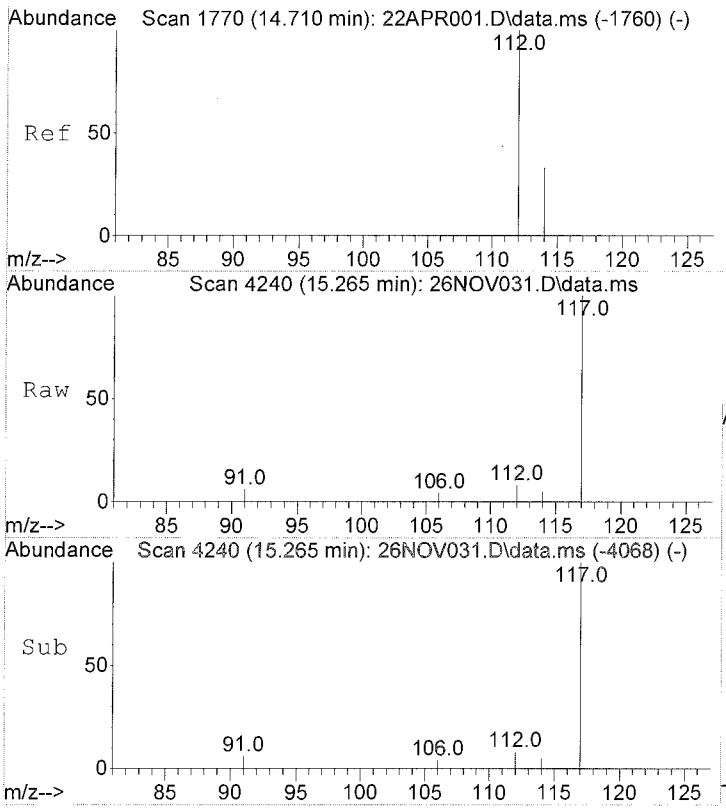


#35
1,2-Dibromoethane
Concen: 1.03 pptv
RT: 14.577 min Scan# 3928
Delta R.T. 0.008 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:107 Resp: 56

Ion	Ratio	Lower	Upper
107	100		
109	109.1	43.3	143.3

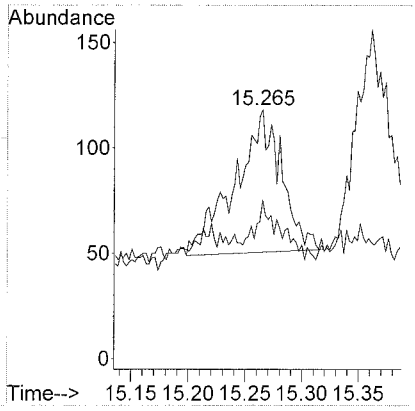


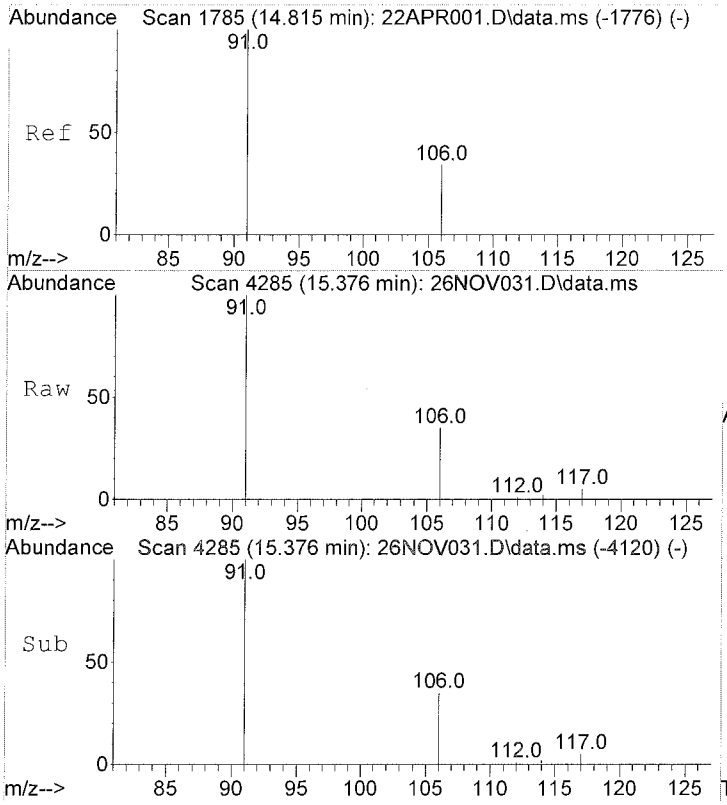


#36
Chlorobenzene
Concen: 2.14 pptv
RT: 15.265 min Scan# 4240
Delta R.T. 0.000 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:112 Resp: 193

Ion	Ratio	Lower	Upper
112	100		
114	34.8	0.0	81.6

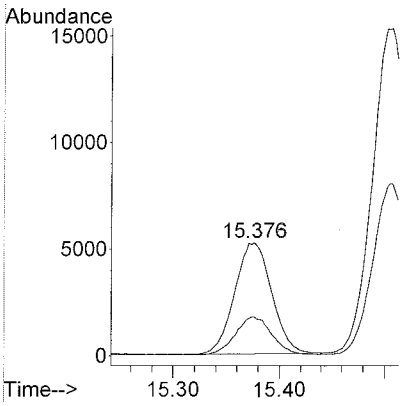


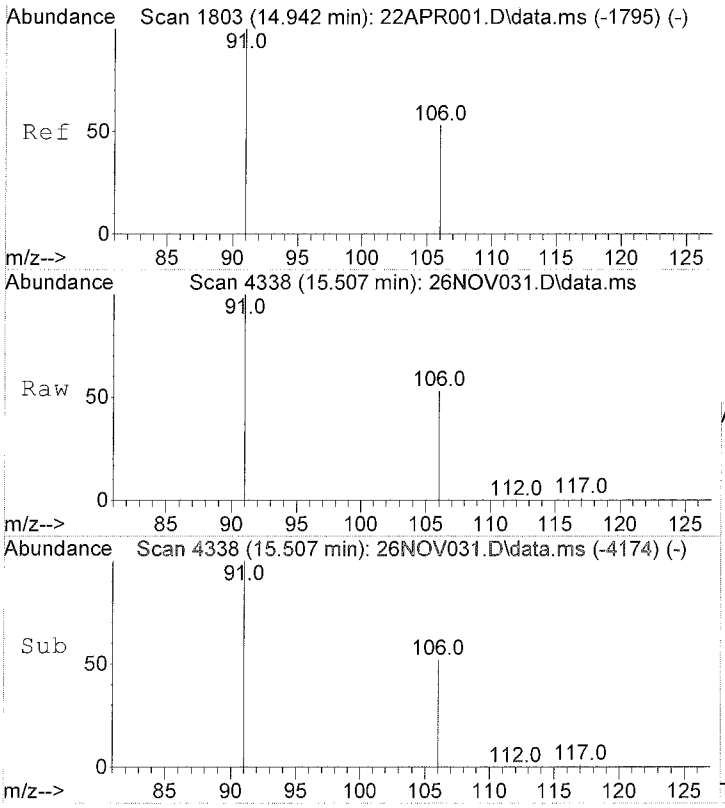


#37
Ethylbenzene
Concen: 117.73 pptv
RT: 15.376 min Scan# 4285
Delta R.T. 0.005 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 91 Resp: 12525

Ion	Ratio	Lower	Upper
91	100		
106	34.1	0.0	83.4

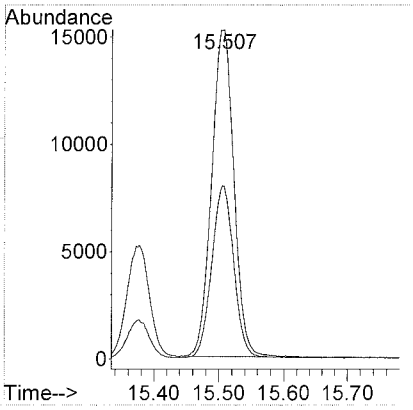


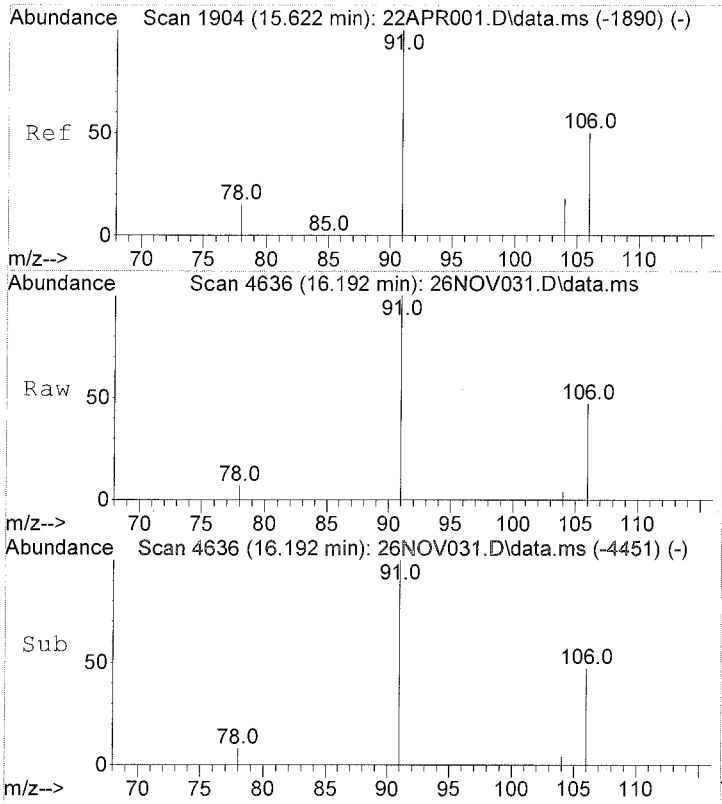


#38
p,&m-Xylene
Concen: 464.79 pptv
RT: 15.507 min Scan# 4338
Delta R.T. 0.005 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 91 Resp: 36166

Ion	Ratio	Lower	Upper
91	100		
106	52.4	3.9	103.9

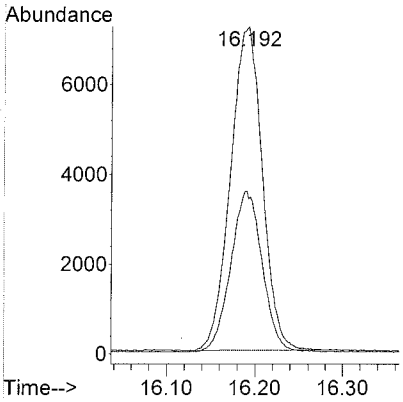


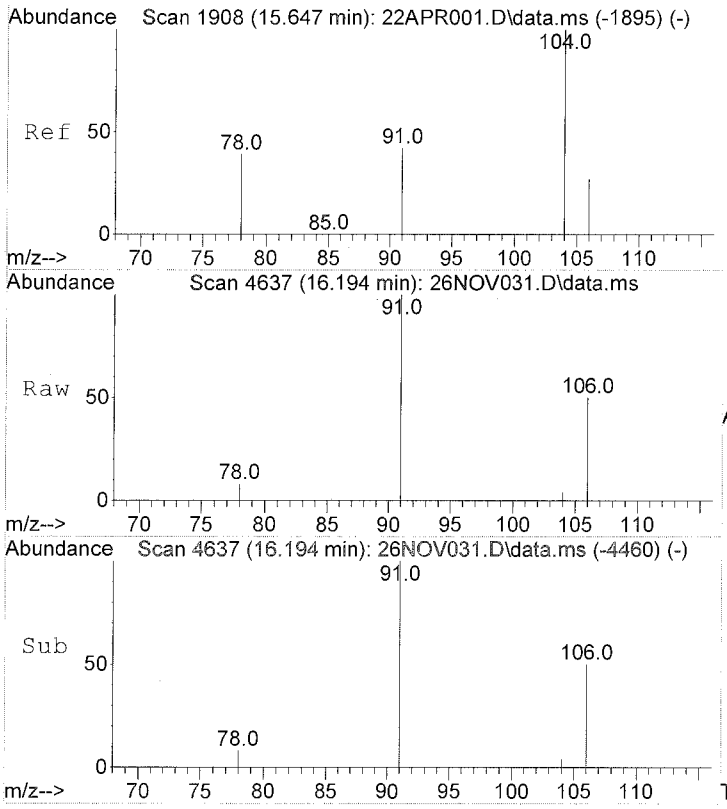


#39
o-Xylene
Concen: 250.76 pptv
RT: 16.192 min Scan# 4636
Delta R.T. 0.004 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 91 Resp: 17975

Ion	Ratio	Lower	Upper
91	100		
106	47.2	0.0	97.3

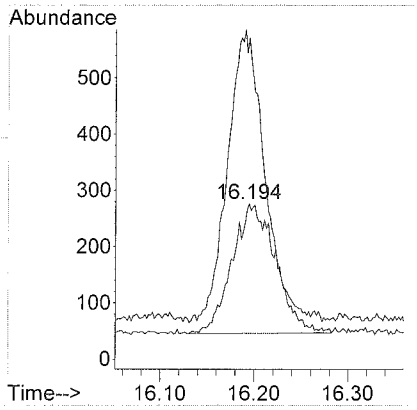


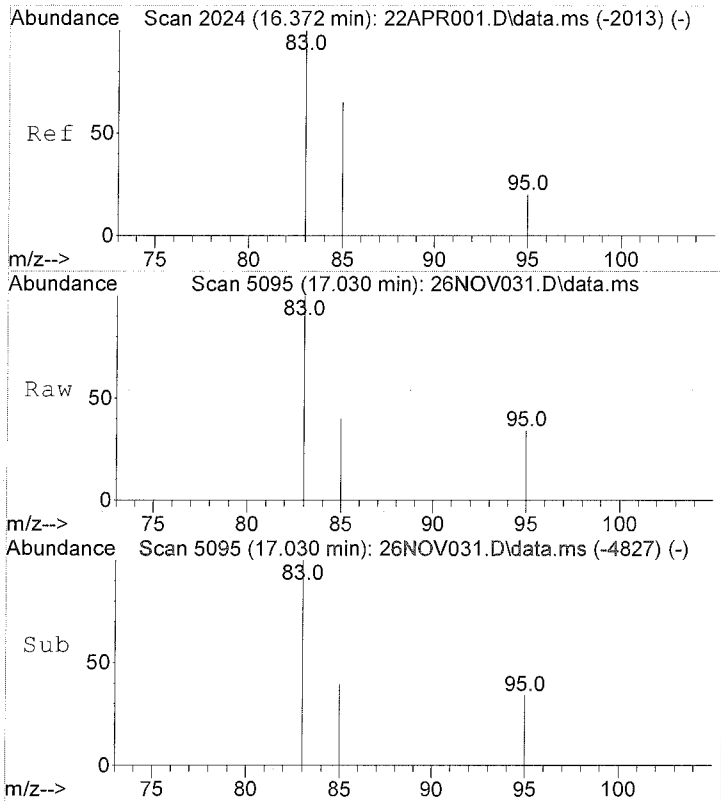


#40
Styrene
Concen: 15.92 pptv
RT: 16.194 min Scan# 4637
Delta R.T. -0.016 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:104 Resp: 739

Ion	Ratio	Lower	Upper
104	100		
78	215.6	0.0	87.4#

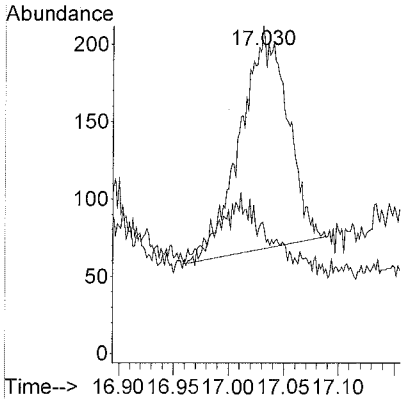


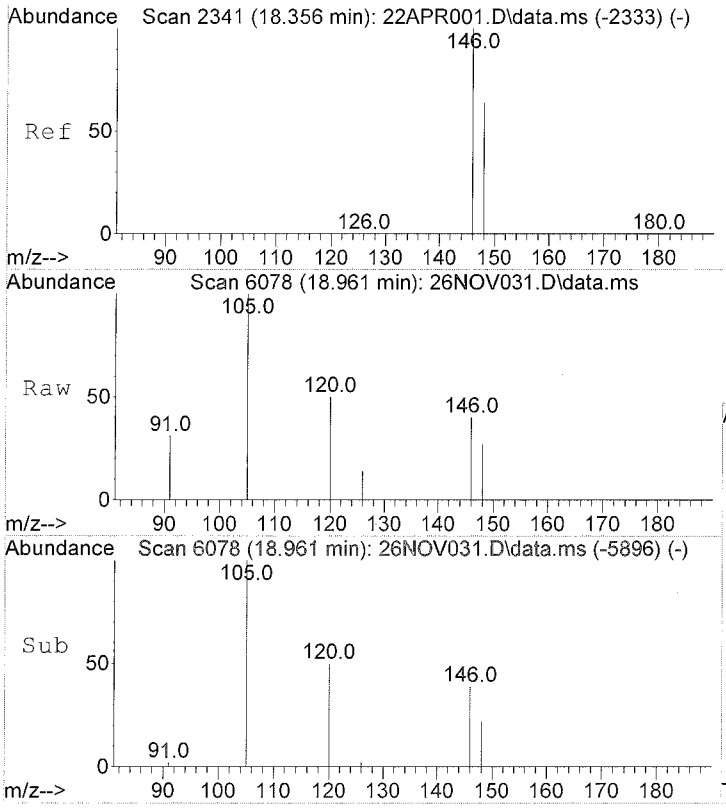


#41
1,1,2,2-Tetrachloroethane
Concen: 7.64 pptv
RT: 17.030 min Scan# 5095
Delta R.T. 0.047 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 83 Resp: 424

Ion	Ratio	Lower	Upper
83	100		
85	23.4	13.6	113.6

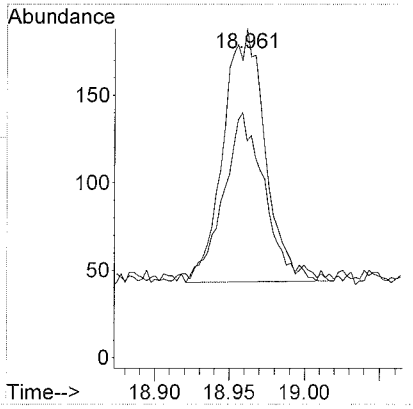


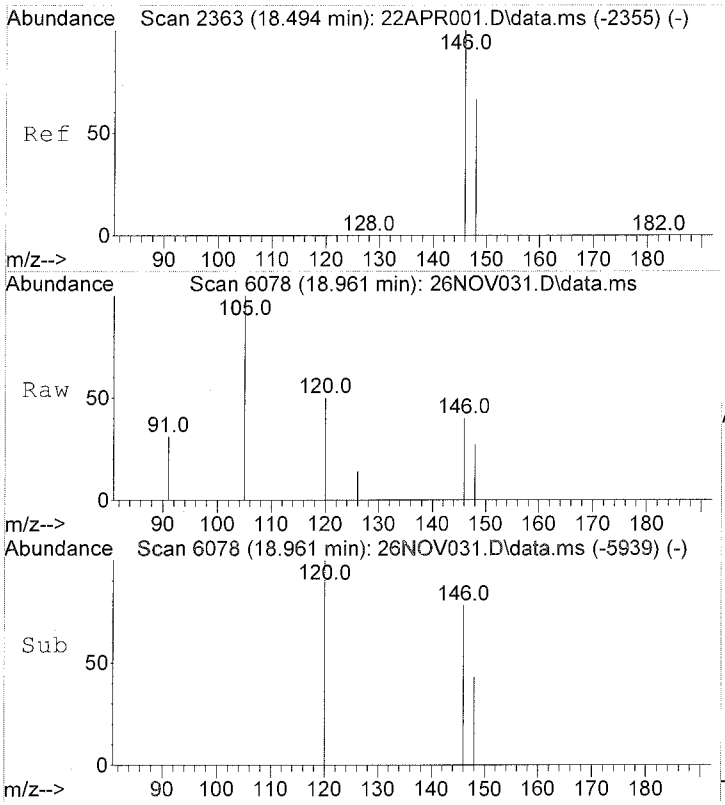


#43
1,3-Dichlorobenzene
Concen: 5.03 pptv
RT: 18.961 min Scan# 6078
Delta R.T. 0.131 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:146 Resp: 281

Ion	Ratio	Lower	Upper
146	100		
148	52.4	13.9	113.9

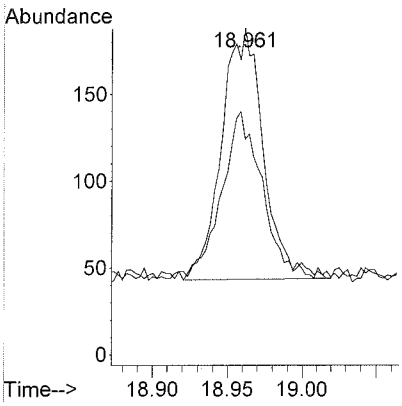


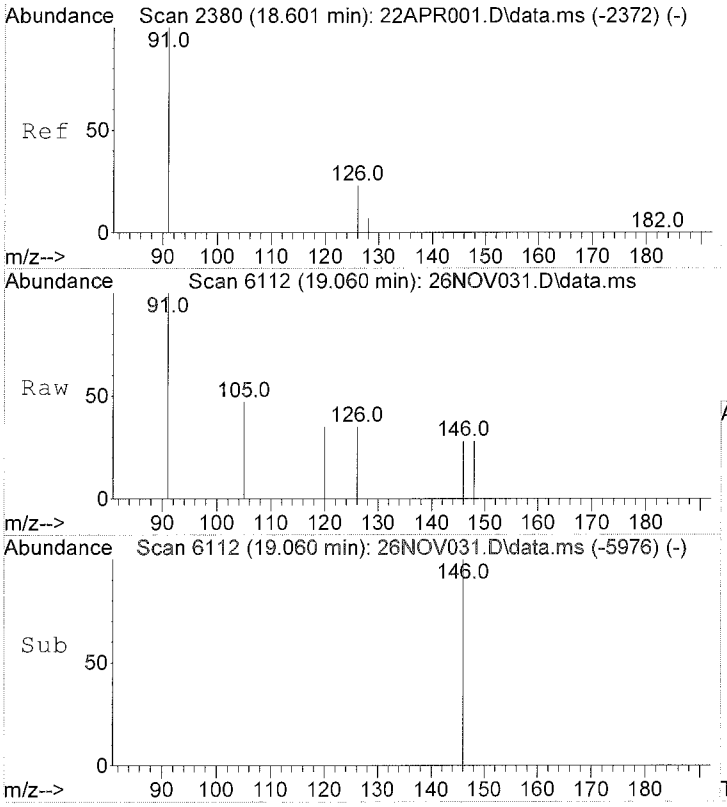


#44
1,4-Dichlorobenzene
Concen: 4.83 pptv
RT: 18.961 min Scan# 6078
Delta R.T. 0.006 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:146 Resp: 281

Ion	Ratio	Lower	Upper
146	100		
148	52.4	15.5	115.5

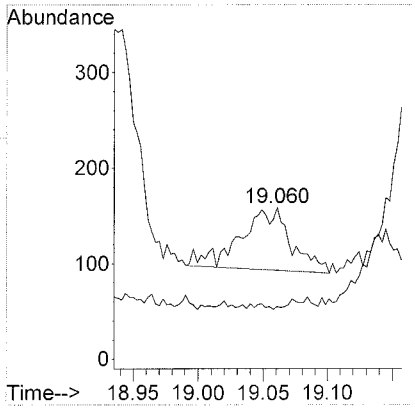


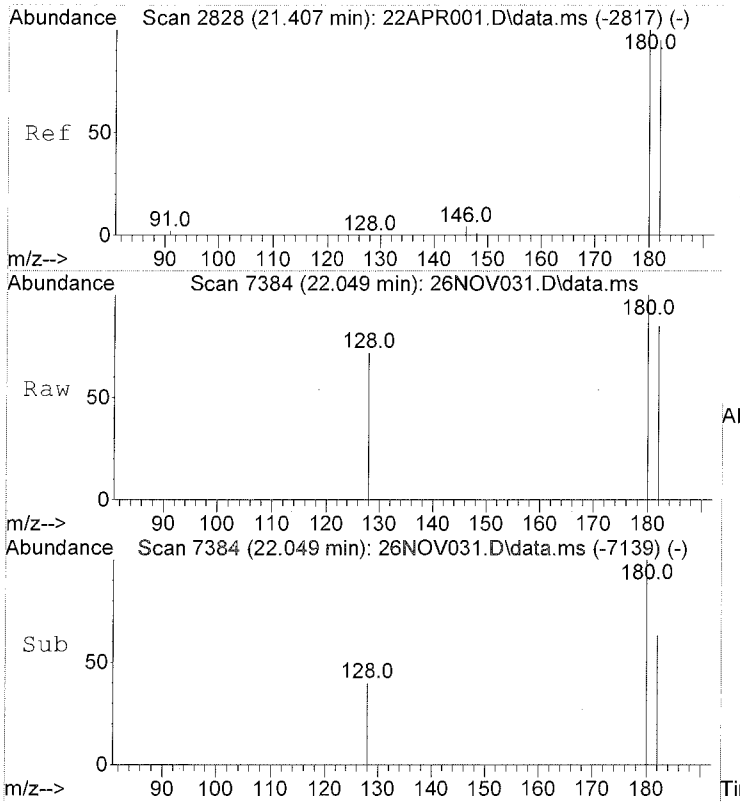


#45
Benzyl Chloride
Concen: 7.54 pptv
RT: 19.060 min Scan# 6112
Delta R.T. -0.003 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion: 91 Resp: 174

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.7	28.1#

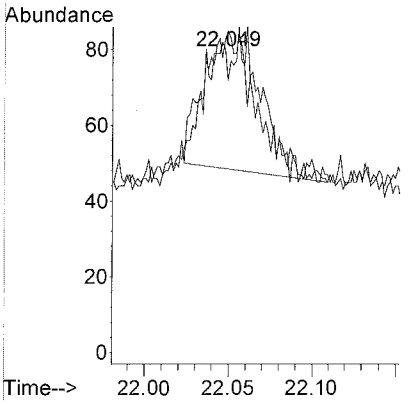


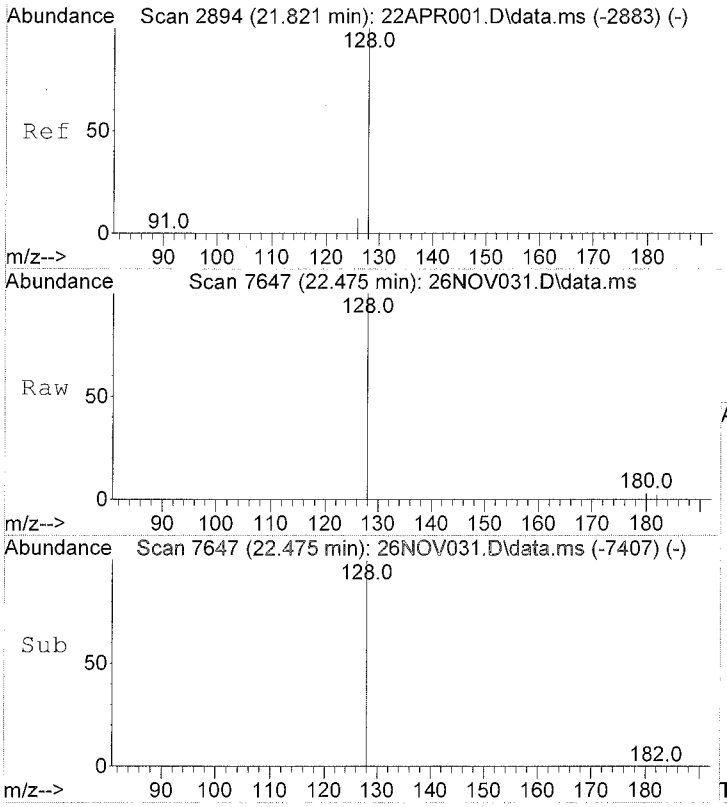


#47
1,2,4-Trichlorobenzene
Concen: 1.90 pptv
RT: 22.049 min Scan# 7384
Delta R.T. -0.003 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:180 Resp: 84

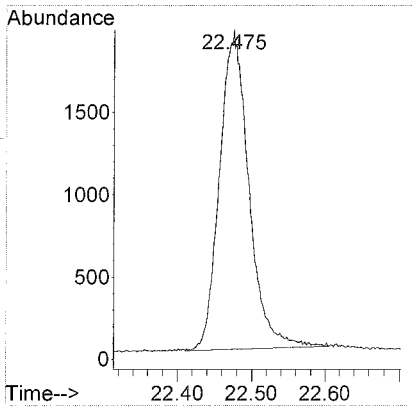
Ion	Ratio	Lower	Upper
180	100		
182	62.5	44.8	144.8





#48
Naphthalene
Concen: 61.33 pptv
RT: 22.475 min Scan# 7647
Delta R.T. -0.011 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:128 Resp: 5251



QC Report: Unit #1
Inject Time: 11/27/2018 06:50:30

QAQC Filename:QAQC\11272018\1_065030.asc

Autosampler Position: 09 Run 23 of 29
Sample Name : J110805-01
Method Filename: T15DESORB230.MTC

Volume Parameters:				
ISTD A Xfer Volume	set=50	Act=50	StartPress=14.9	EndPress=15.1
ISTD A Flow	set=50	Act=49.7		
ISTD A Trap Temp	set=22	hi=24	lo=22	avg=22
ISTD B Xfer Volume	set=0	Act=0	StartPress=0.0	EndPress=0.0
ISTD B Flow	set=0	Act=0.0		
ISTD B Trap Temp	Disabled			
ISTD C Xfer Volume	Disabled			
ISTD C Flow	Disabled			
ISTD C Trap Temp	Disabled			
Sample Xfer Volume	set=387	Act=387	StartPress=14.5	EndPress=13.6
Sample Xfer Flow	set=50	Act=49.7		
Smple Xfer Trap Temp	set=22	hi=22	lo=22	avg=22
Sweep Gas = Helium				
Dry Purge Parameters:				
Dry Purge Flow	set=70	Act=69.1		
Dry Purge Temp	set=25	hi=25	lo=25	avg=25
Dry Purge Time	set=12.00	act=12.00		
Desorb Parameters:				
Trap Desorb Temp	set=230	hi=243	lo=226	avg=230
Trap Desorb Time	set=4.50	act=4.50		
MCS Temp	Disabled			
Cryo Focuser Temp	set=-180	hi=-185	lo=-197	avg=-195
Inject Parameters:				
Cryo Union Temp	set=130	hi=130	lo=129	avg=130
Cryo Inject Temp	set=75	hi=76	lo=73	avg=75
Cryo Inject Time	set=2.50	act=2.50		
Bake Parameters:				
Trap Bake Temp	set=280	hi=282	lo=277	avg=279
Trap Bake Time	set=10.00	act=10.00		
MCS Bake Temp	Disabled			
System Regions:				
Manifold 1 Temp	set=130	avg=130		
Manifold 2 Temp	set=130	avg=130		
Oven 6 Port Temp	set=130	avg=130		
Oven 8 Port Temp	set=130	avg=130		
Oven 16 Port Temp	set=130	avg=130		
Bottom Of Trap Temp	set=130	avg=130		
Transfer Line Temp	set=130	avg=130		

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV032.D
Acq On : 27 Nov 2018 7:39 am
Operator : DT
Sample : J110805-02 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 08:03:59 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	9.339	130	119150	2000.00 pptv	0.00
21) 1,4-Difluorobenzene	10.685	114	411601	2000.00 pptv	0.00
31) Chlorobenzene-d5	15.208	117	217186	2000.00 pptv	0.00
System Monitoring Compounds					
23) 1,2-Dichloroethane-d4	10.099	65	178662	2566.56 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 128.33%		
29) Toluene-d8	12.935	98	271398	1856.05 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 92.80%		
42) 4-Bromofluorobenzene	17.183	95	107977	1979.19 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 98.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethan...	3.550	85	75427	534.39 pptv	99
3) Chloromethane	3.972	50	21097	448.89 pptv	100
4) Vinyl Chloride	4.198	62	182	3.95 pptv #	1
5) Bromomethane	4.885	96	579	28.46 pptv	96
6) Chloroethane	5.028	64	395	11.94 pptv #	1
7) Trichlorofluoromethane...	5.473	101	55340	291.99 pptv	100
8) 1,1,2-Cl 1,2,2-F ethan...	6.213	151	1029	7.29 pptv	98
9) Acetone	6.083	43	12416970	112340.39 pptv	96
11) Methylene Chloride	7.030	49	5703	82.06 pptv	67
12) t-Butyl Methyl Ether	7.351	73	644	4.51 pptv #	1
14) Hexane	7.759	57	76180	864.25 pptv	84
15) 1,1-Dichloroethane	8.077	63	308	2.97 pptv	59
16) 2-Butanone	8.613	72	11195	425.56 pptv	42
17) c-1,2-Dichloroethene	8.918	96	384	6.30 pptv	72
18) Chloroform	9.150	83	7938	65.97 pptv	93
19) 1,1,1-Trichloroethane	9.751	97	392	3.40 pptv #	1
20) Carbon Tetrachloride	10.148	117	8016	90.87 pptv	96
22) Benzene	10.328	78	201699	1292.32 pptv	86
24) 1,2-Dichloroethane	10.230	62	2093	28.67 pptv #	24
25) Trichloroethene	11.212	130	803	9.02 pptv #	1
26) 1,2-Dichloropropane	11.441	63	5742	111.49 pptv	72
27) 1,4-Dioxane	11.694	88	204	5.00 pptv #	14
28) Bromodichloromethane	11.844	83	4209	53.03 pptv	37
30) Toluene	13.041	91	2757320	17852.99 pptv	95
32) t-1,3-Dichloropropene	12.491	75	159	4.05 pptv	43
33) 1,1,2-Trichloroethane	13.542	97	55913	1095.00 pptv #	23
34) Tetrachloroethene	14.079	166	2884	37.51 pptv	100
35) 1,2-Dibromoethane	14.575	107	876	15.17 pptv #	1
36) Chlorobenzene	15.232	112	2569	26.78 pptv	48
37) Ethylbenzene	15.371	91	257511	2278.56 pptv	100
38) p,&m-Xylene	15.500	91	790366	9561.72 pptv	96
39) o-Xylene	16.186	91	340821	4475.63 pptv	97
40) Styrene	16.192	104	10740	217.81 pptv #	1
41) 1,1,2,2-Tetrachloroethane	16.848	83	4615	78.32 pptv	73
43) 1,3-Dichlorobenzene	18.833	146	82	1.38 pptv	82
44) 1,4-Dichlorobenzene	18.955	146	1071	17.32 pptv	91

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV032.D
Acq On : 27 Nov 2018 7:39 am
Operator : DT
Sample : J110805-02 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 08:03:59 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

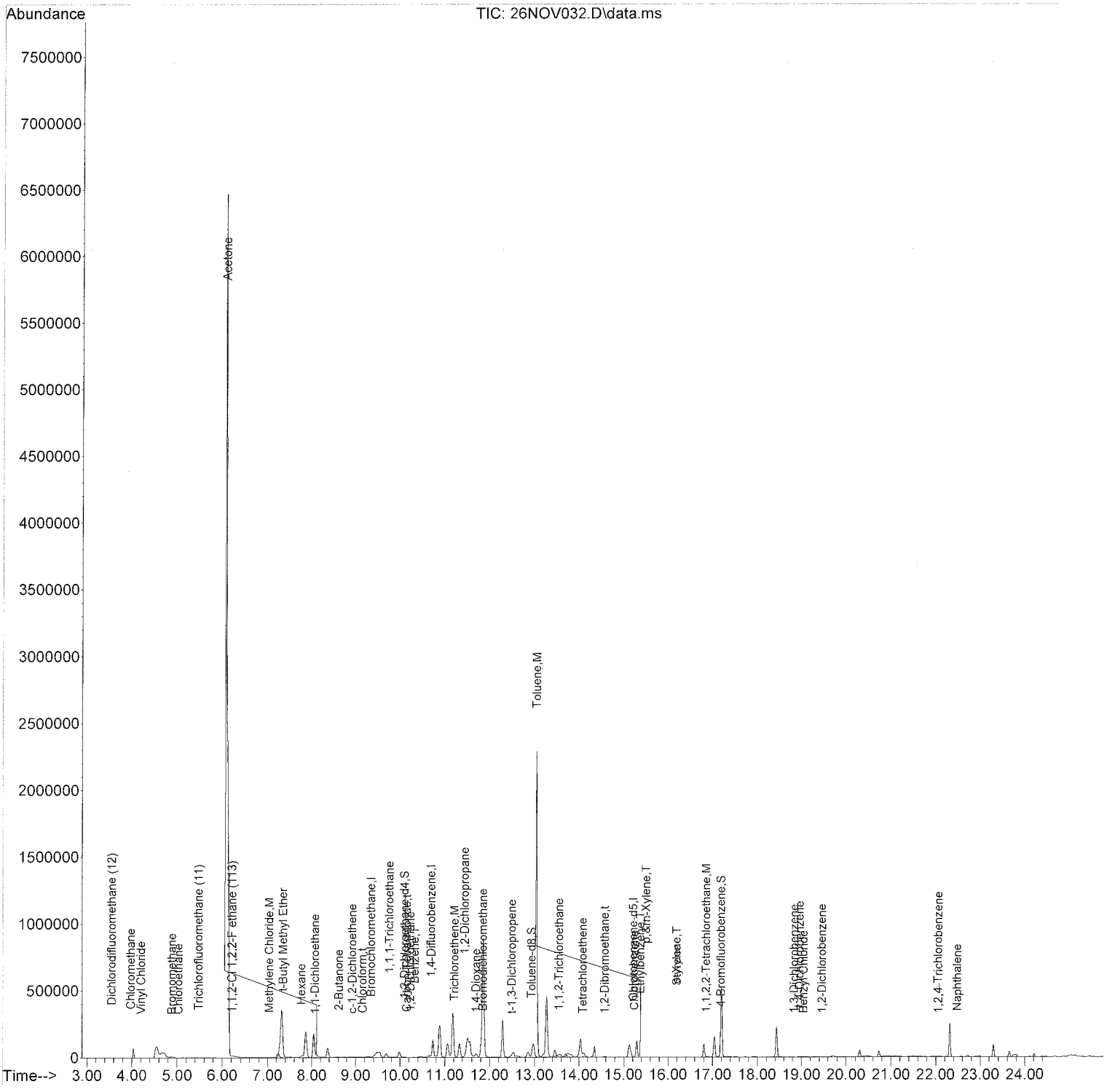
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Benzyl Chloride	19.040	91	1318	53.74	pptv	#	52
46) 1,2-Dichlorobenzene	19.456	146	82	1.48	pptv		52
47) 1,2,4-Trichlorobenzene	22.052	180	339	7.22	pptv		63
48) Naphthalene	22.470	128	47649	523.84	pptv		100

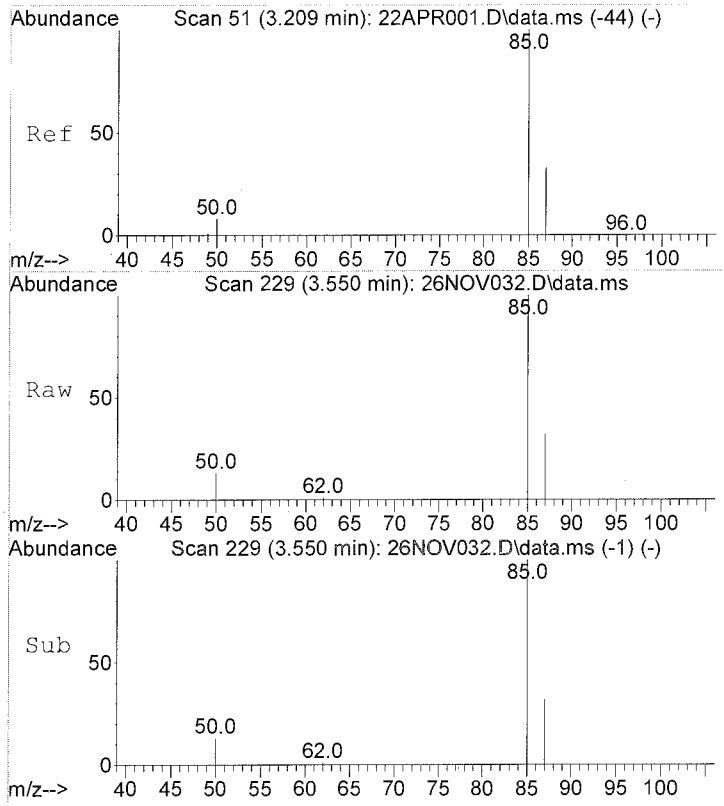
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV032.D
Acq On : 27 Nov 2018 7:39 am
Operator : DT
Sample : J110805-02 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 08:03:59 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

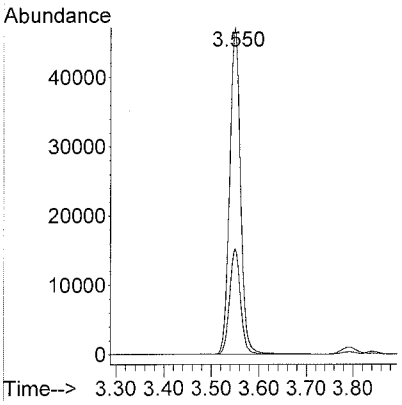


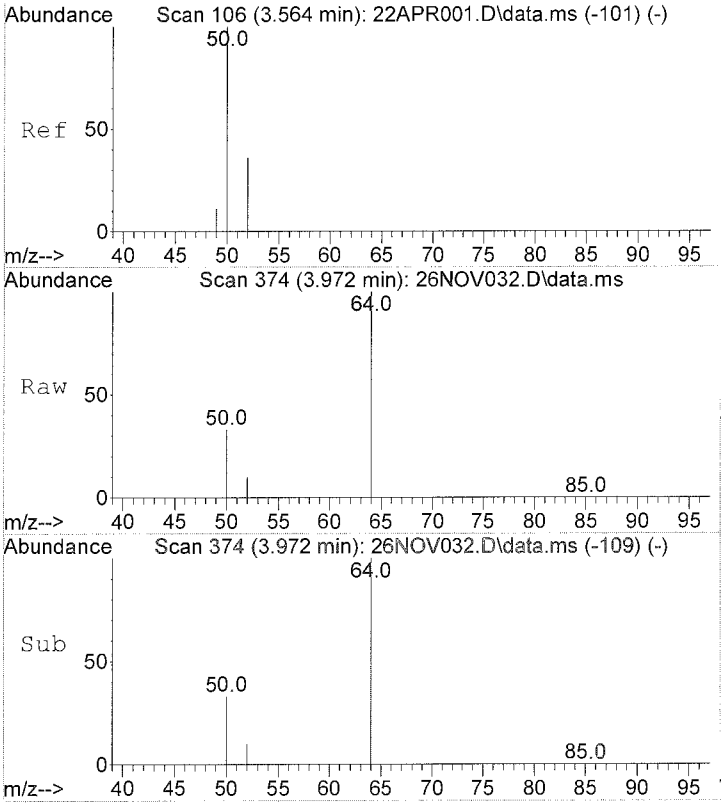


#2
Dichlorodifluoromethane (12)
Concen: 534.39 pptv
RT: 3.550 min Scan# 229
Delta R.T. -0.038 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 85 Resp: 75427

Ion	Ratio	Lower	Upper
85	100		
87	32.2	0.0	81.9

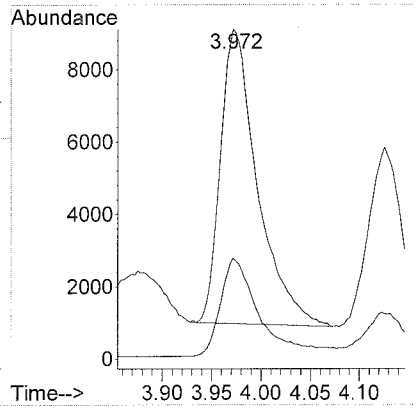


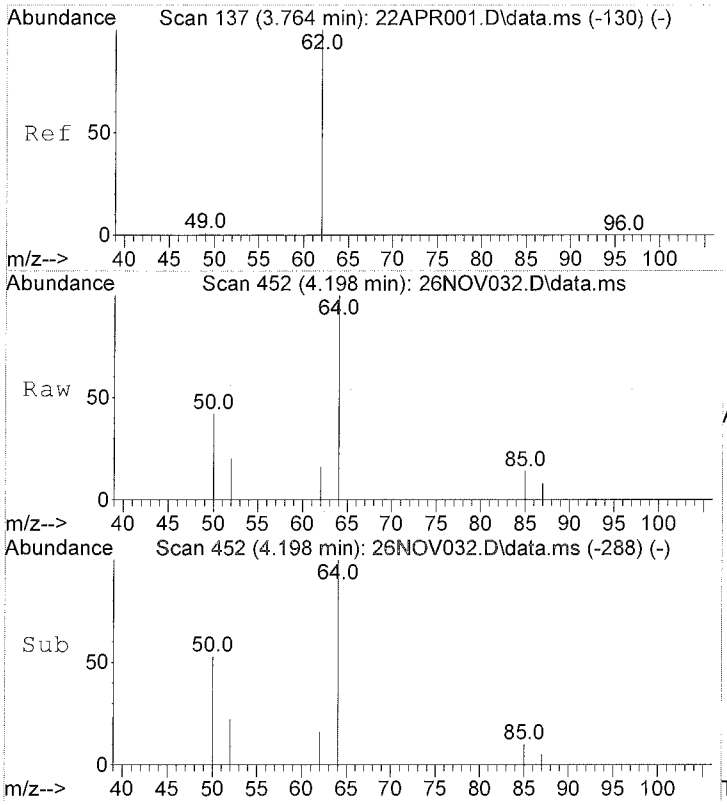


#3
Chloromethane
Concen: 448.89 pptv
RT: 3.972 min Scan# 374
Delta R.T. -0.029 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 50 Resp: 21097

Ion	Ratio	Lower	Upper
50	100		
52	32.9	3.0	63.0

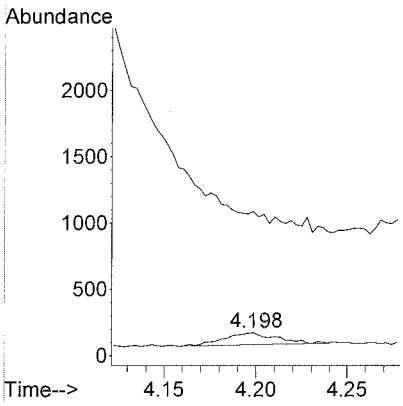


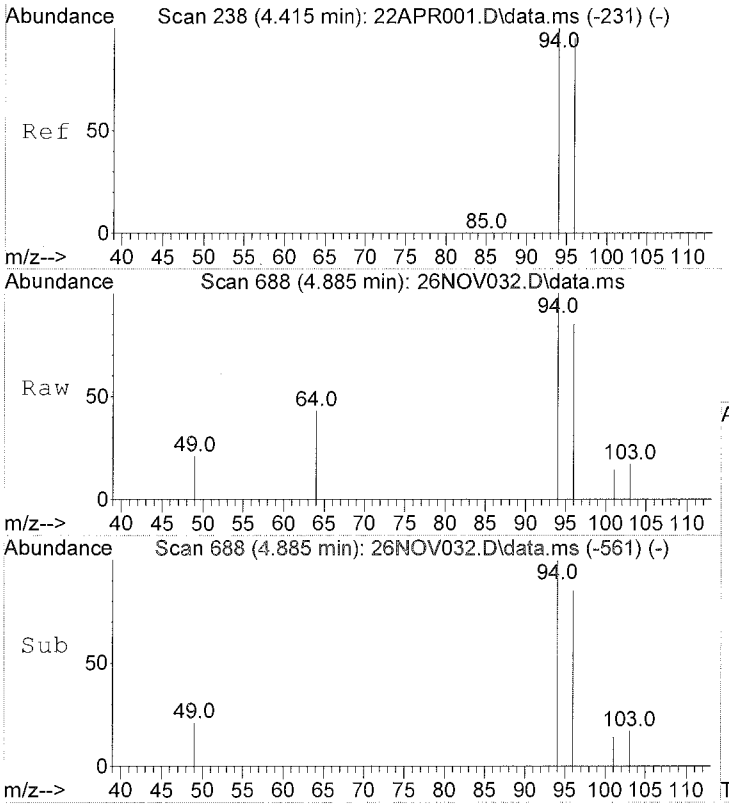


#4
Vinyl Chloride
Concen: 3.95 pptv
RT: 4.198 min Scan# 452
Delta R.T. -0.024 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 62 Resp: 182

Ion	Ratio	Lower	Upper
62	100		
64	148.5	0.0	82.1#

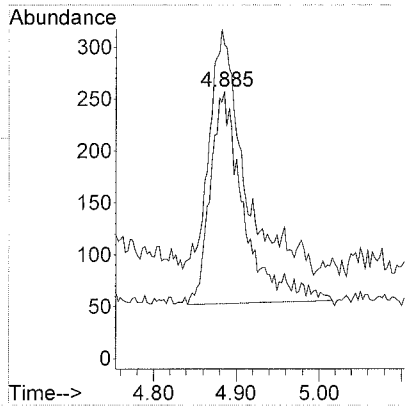


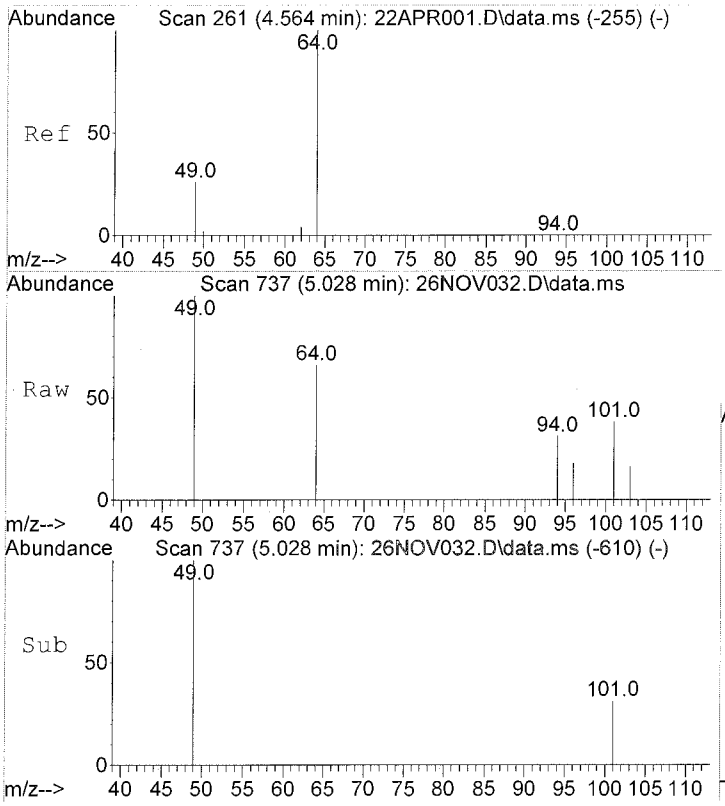


#5
Bromomethane
Concen: 28.46 pptv
RT: 4.885 min Scan# 688
Delta R.T. -0.029 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 96 Resp: 579

Ion	Ratio	Lower	Upper
96	100		
94	101.0	55.4	155.4

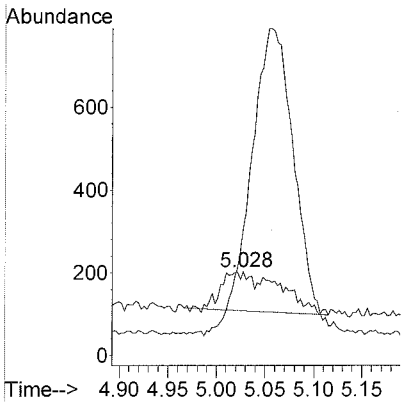


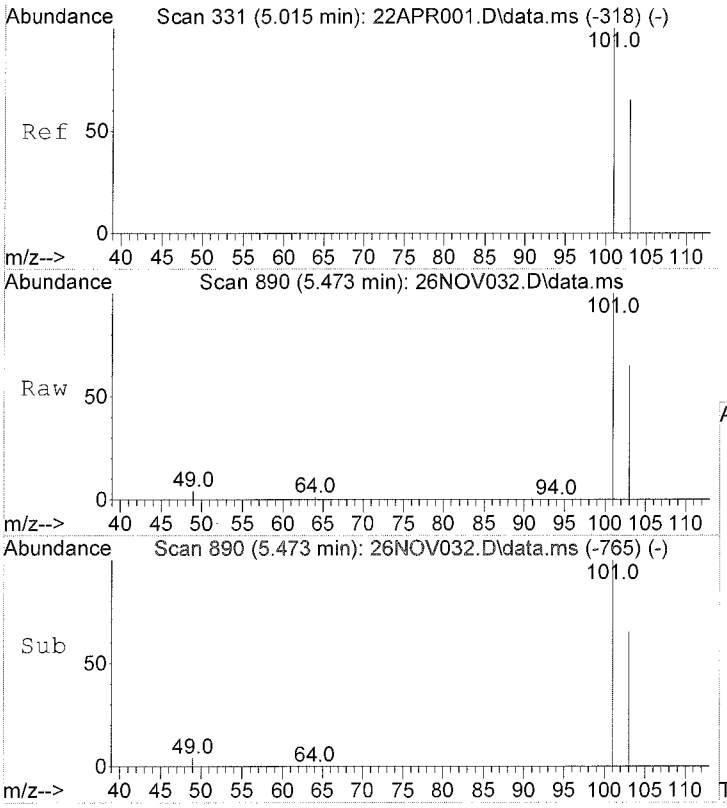


#6
Chloroethane
Concen: 11.94 pptv
RT: 5.028 min Scan# 737
Delta R.T. -0.029 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 64 Resp: 395

Ion	Ratio	Lower	Upper
64	100		
49	242.3	0.0	68.7#

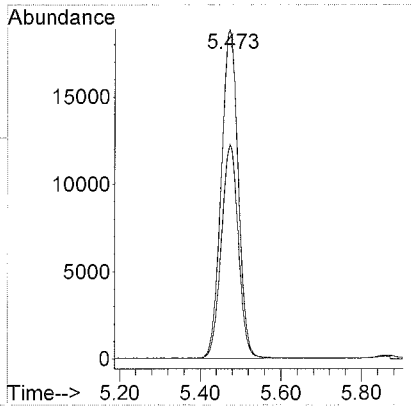


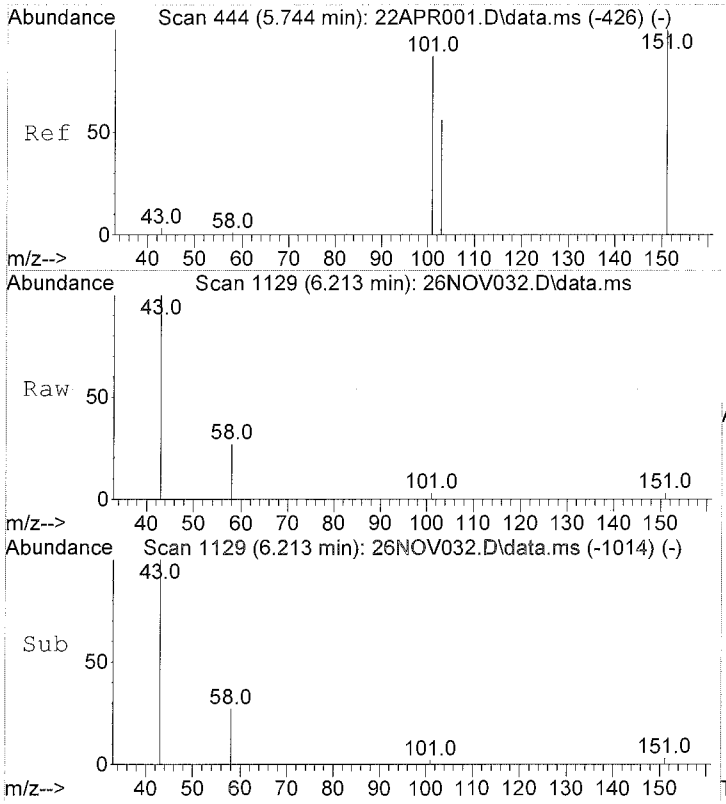


#7
Trichlorofluoromethane (11)
Concen: 291.99 pptv
RT: 5.473 min Scan# 890
Delta R.T. -0.035 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:101 Resp: 55340

Ion	Ratio	Lower	Upper
101	100		
103	65.0	14.6	114.6

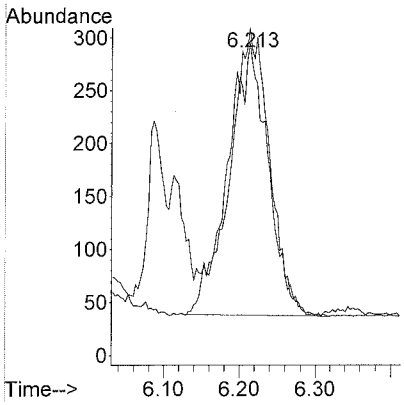


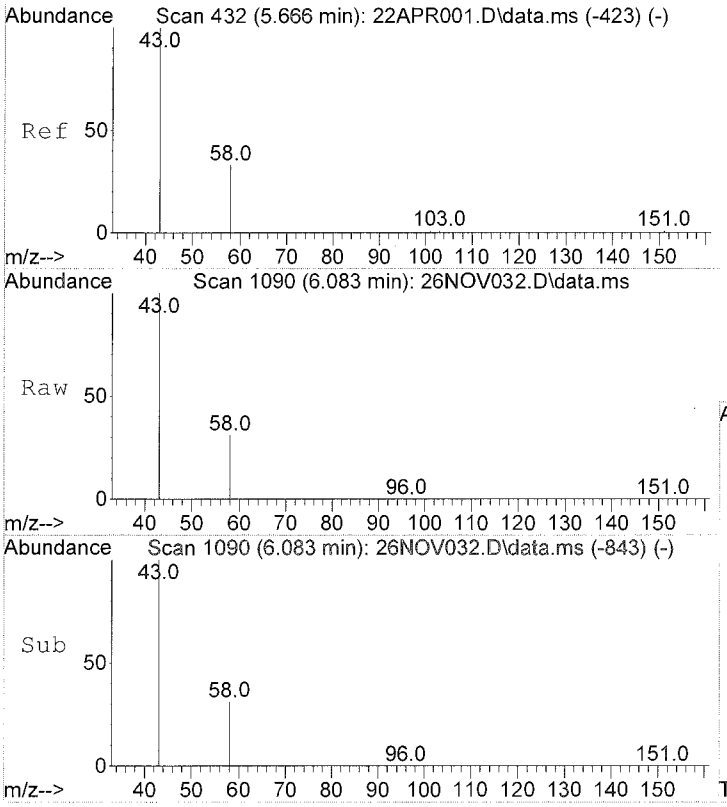


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 7.29 pptv
RT: 6.213 min Scan# 1129
Delta R.T. -0.020 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:151 Resp: 1029

Ion	Ratio	Lower	Upper
151	100		
101	93.8	41.5	141.5

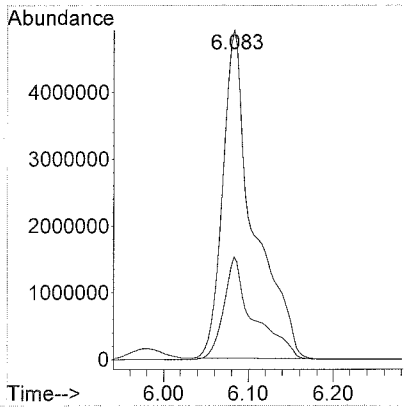


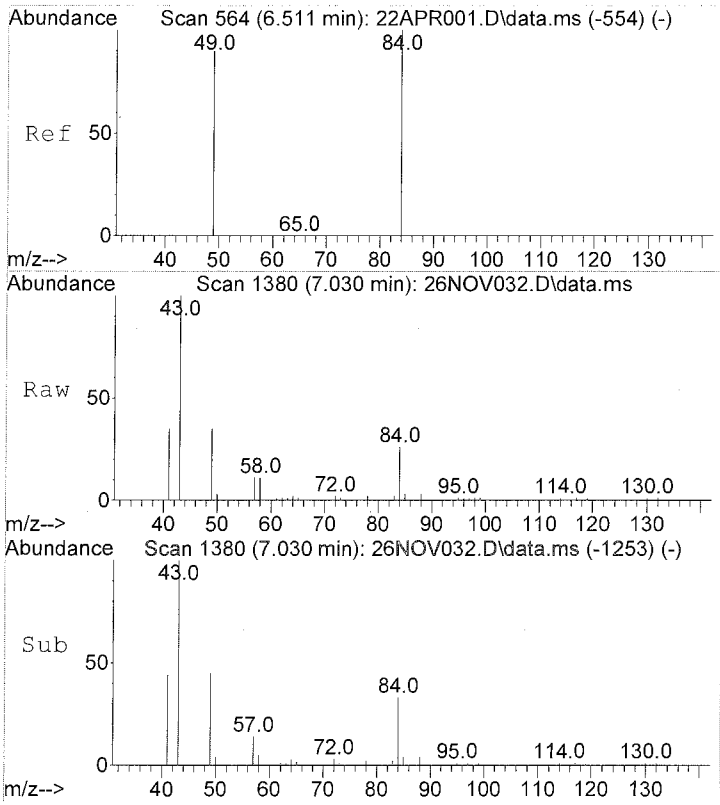


#9
Acetone
Concen: 112340.39 pptv
RT: 6.083 min Scan# 1090
Delta R.T. -0.053 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 43 Resp:12416970

Ion	Ratio	Lower	Upper
43	100		
58	31.1	13.4	53.4

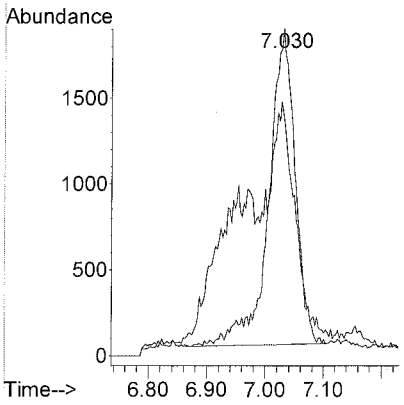


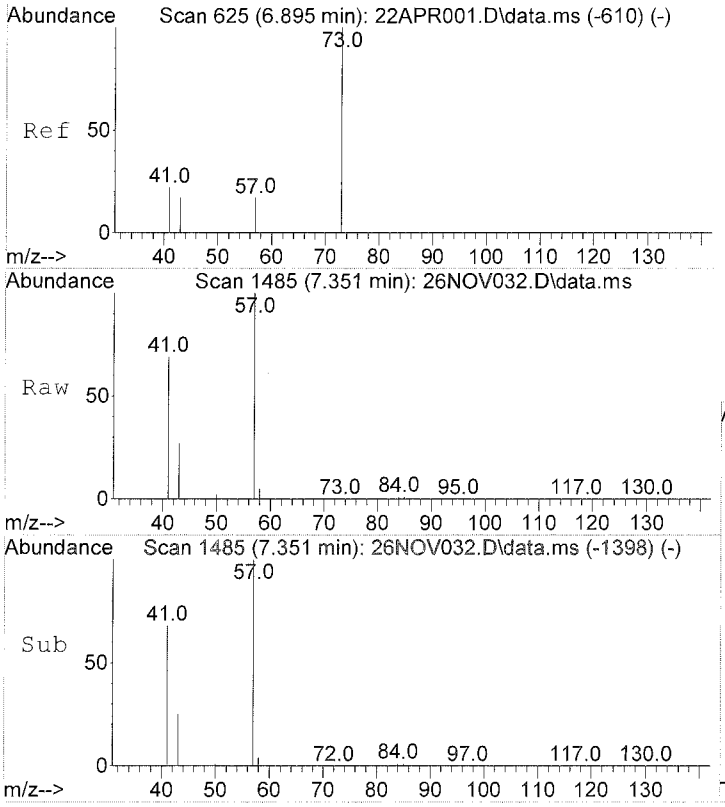


#11
Methylene Chloride
Concen: 82.06 pptv
RT: 7.030 min Scan# 1380
Delta R.T. 0.000 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 49 Resp: 5703

Ion	Ratio	Lower	Upper
49	100		
84	69.9	54.2	154.2

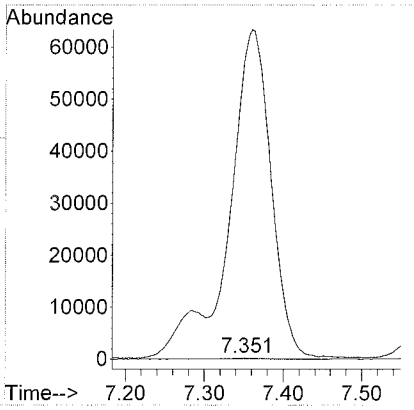


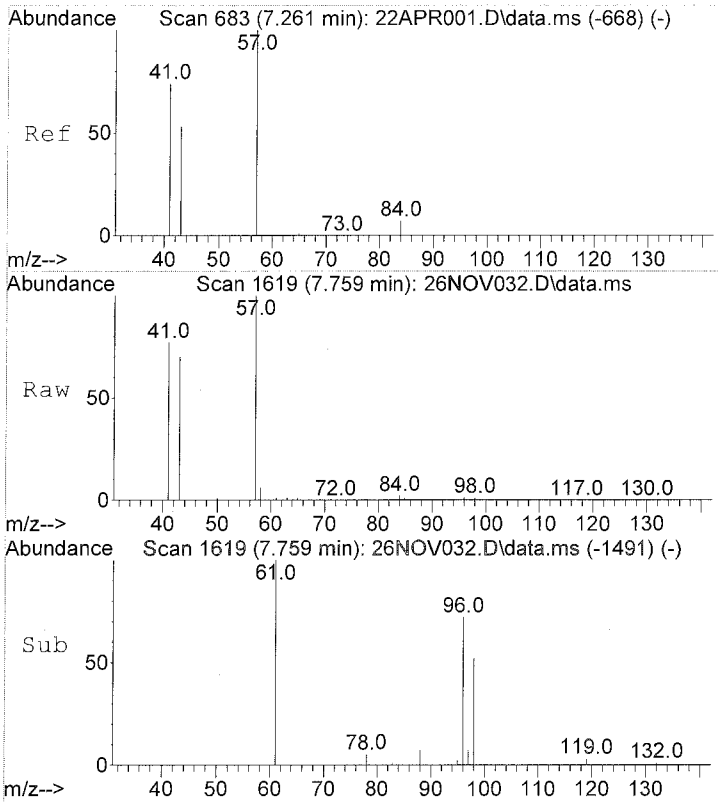


#12
t-Butyl Methyl Ether
Concen: 4.51 pptv
RT: 7.351 min Scan# 1485
Delta R.T. -0.034 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 73 Resp: 644

Ion	Ratio	Lower	Upper
73	100		
41	25574.9	0.0	516.4#

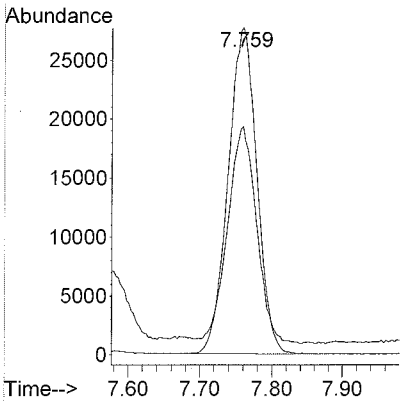


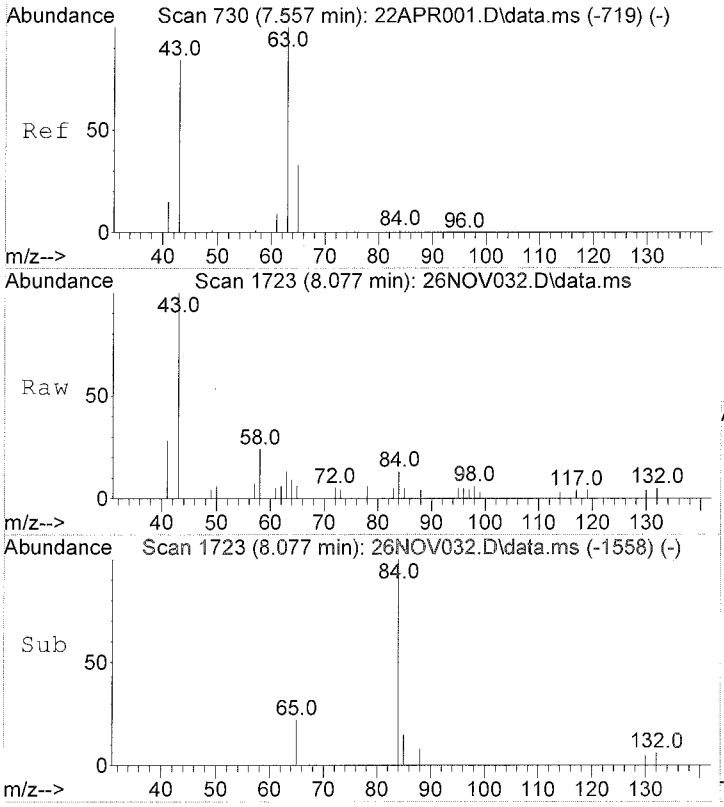


#14
Hexane
Concen: 864.25 pptv
RT: 7.759 min Scan# 1619
Delta R.T. -0.009 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 57 Resp: 76180

Ion	Ratio	Lower	Upper
57	100		
43	66.3	5.0	105.0

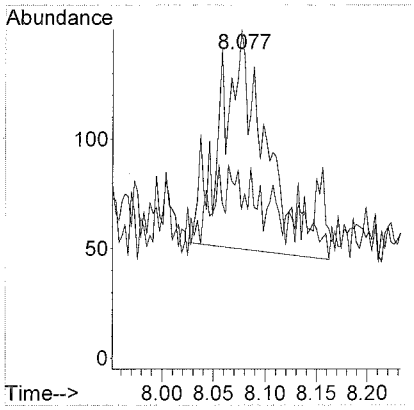


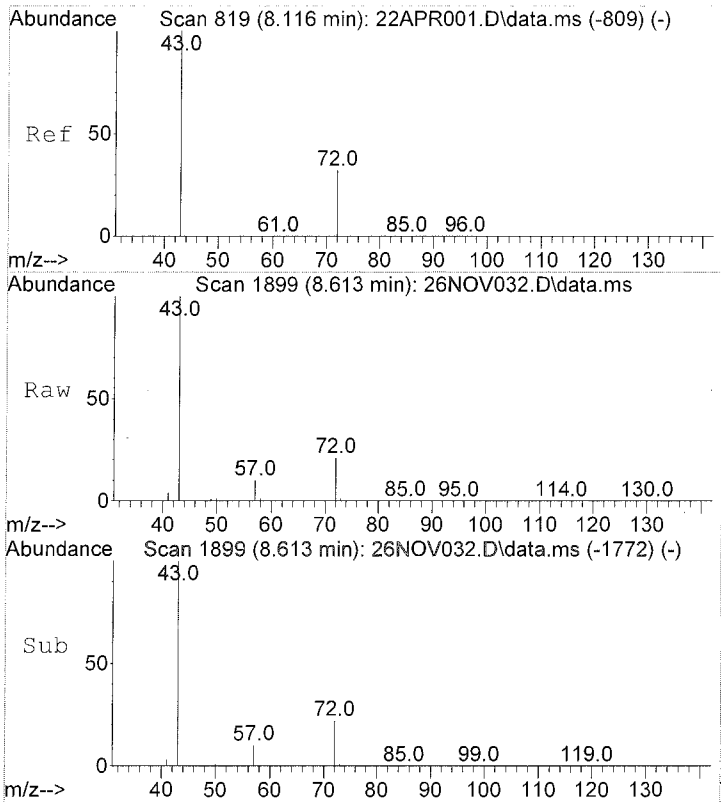


#15
1,1-Dichloroethane
Concen: 2.97 pptv
RT: 8.077 min Scan# 1723
Delta R.T. 0.003 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 63 Resp: 308

Ion	Ratio	Lower	Upper
63	100		
65	9.5	0.0	82.5

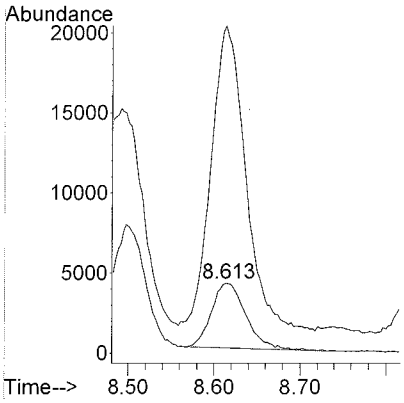


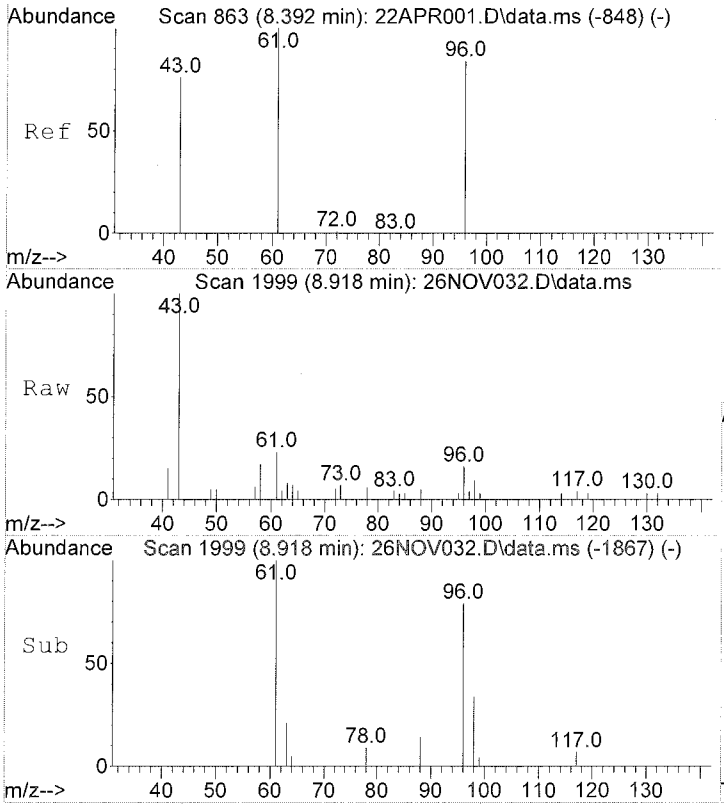


#16
2-Butanone
Concen: 425.56 pptv
RT: 8.613 min Scan# 1899
Delta R.T. -0.013 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 72 Resp: 11195

Ion	Ratio	Lower	Upper
72	100		
43	446.3	0.0	3591.5

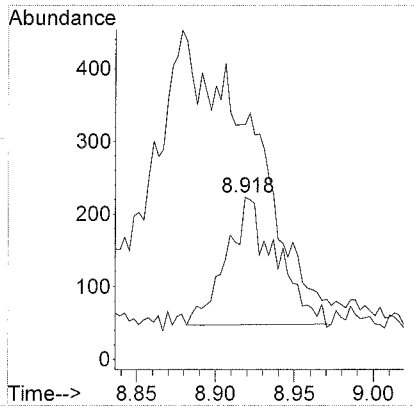


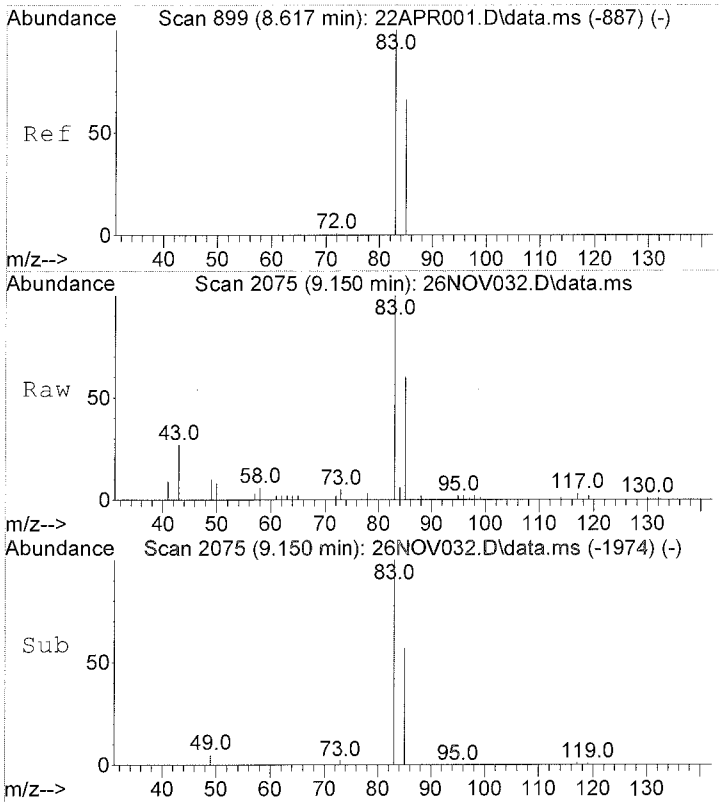


#17
c-1,2-Dichloroethene
Concen: 6.30 pptv
RT: 8.918 min Scan# 1999
Delta R.T. 0.003 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 96 Resp: 384

Ion	Ratio	Lower	Upper
96	100		
61	141.5	62.0	162.0

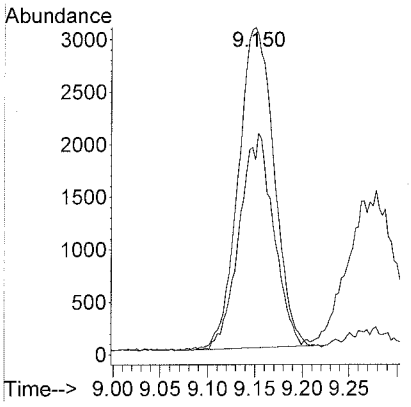


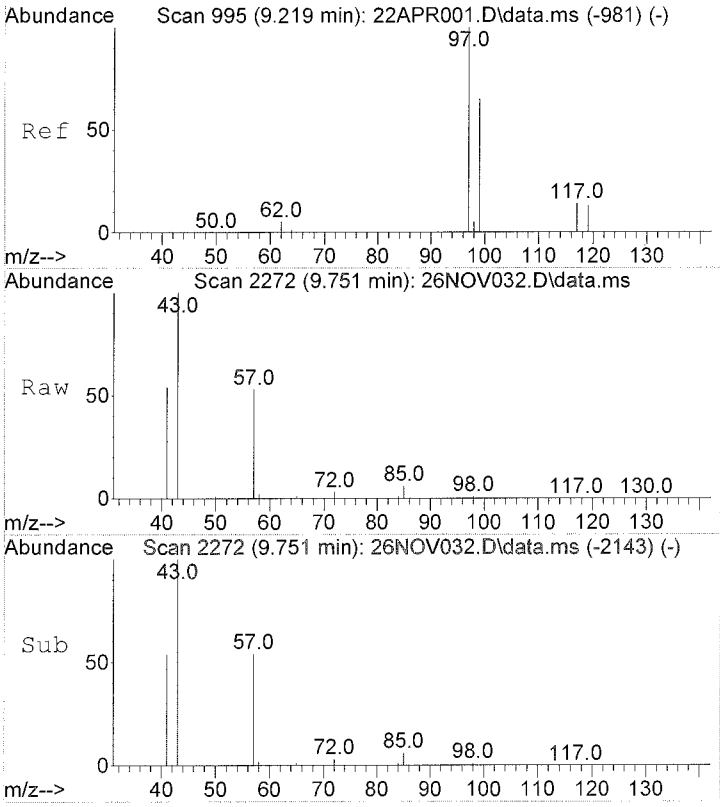


#18
Chloroform
Concen: 65.97 pptv
RT: 9.150 min Scan# 2075
Delta R.T. 0.009 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 83 Resp: 7938

Ion	Ratio	Lower	Upper
83	100		
85	59.0	14.9	114.9

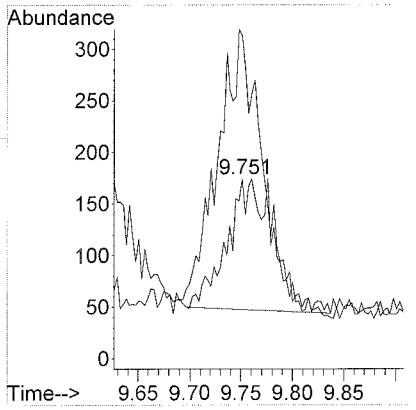


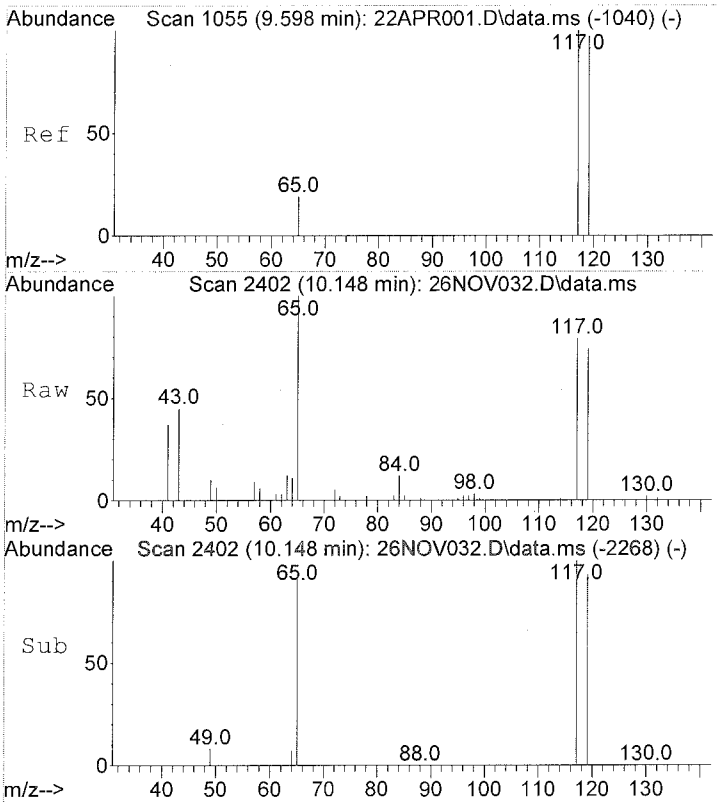


#19
1,1,1-Trichloroethane
Concen: 3.40 pptv
RT: 9.751 min Scan# 2272
Delta R.T. -0.006 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 97 Resp: 392

Ion	Ratio	Lower	Upper
97	100		
99	210.0	13.8	113.8#

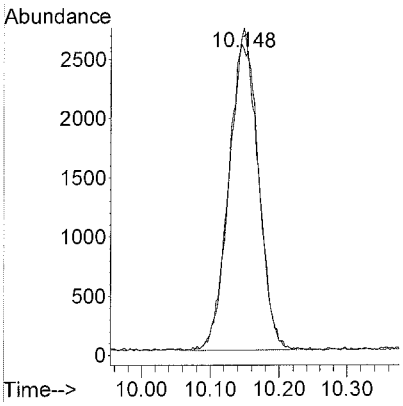


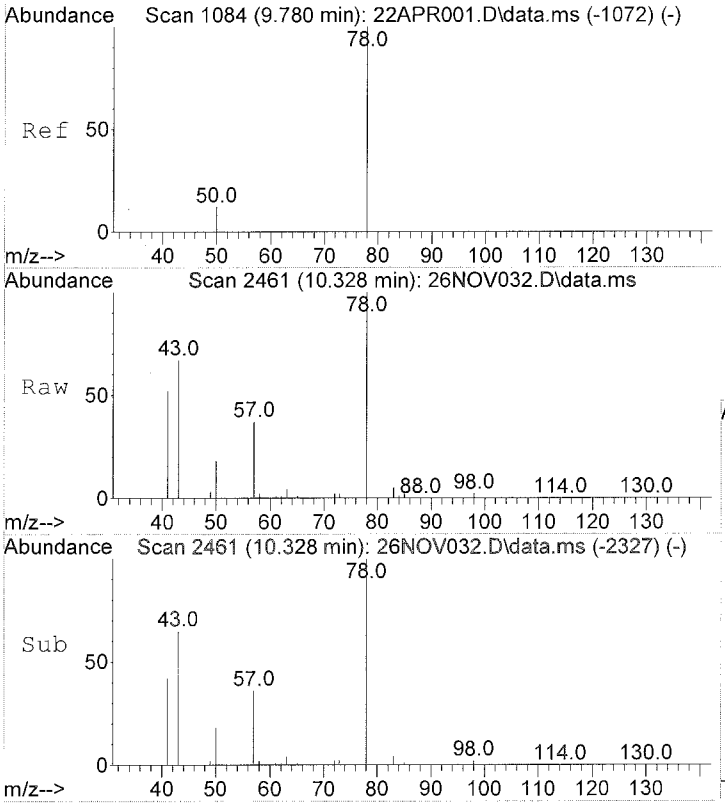


#20
Carbon Tetrachloride
Concen: 90.87 pptv
RT: 10.148 min Scan# 2402
Delta R.T. 0.009 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:117 Resp: 8016

Ion	Ratio	Lower	Upper
117	100		
119	93.2	47.1	147.1

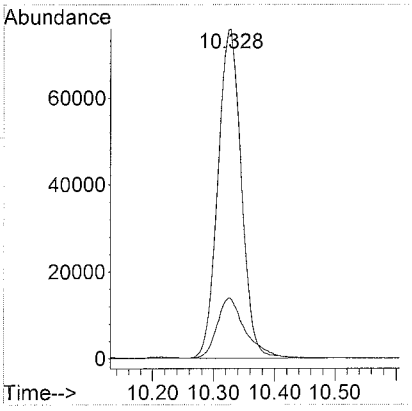


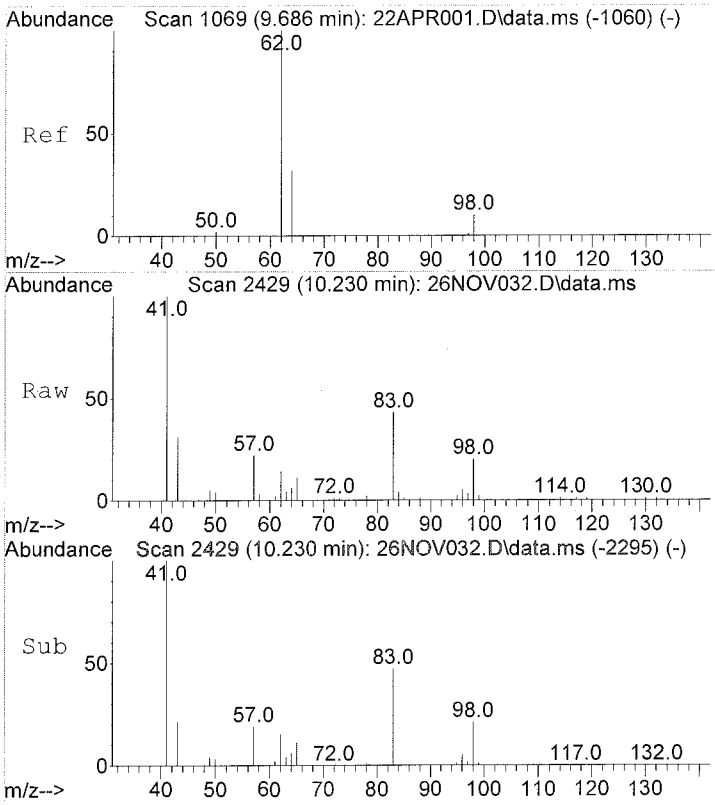


#22
Benzene
Concen: 1292.32 pptv
RT: 10.328 min Scan# 2461
Delta R.T. 0.009 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 78 Resp: 201699

Ion	Ratio	Lower	Upper
78	100		
50	18.0	0.0	62.6

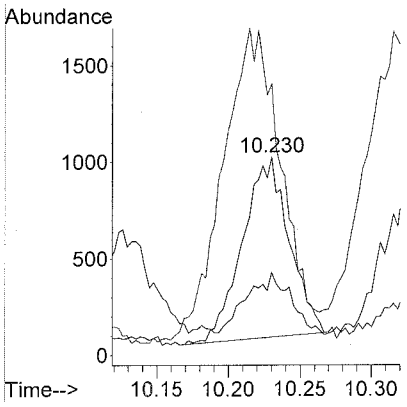


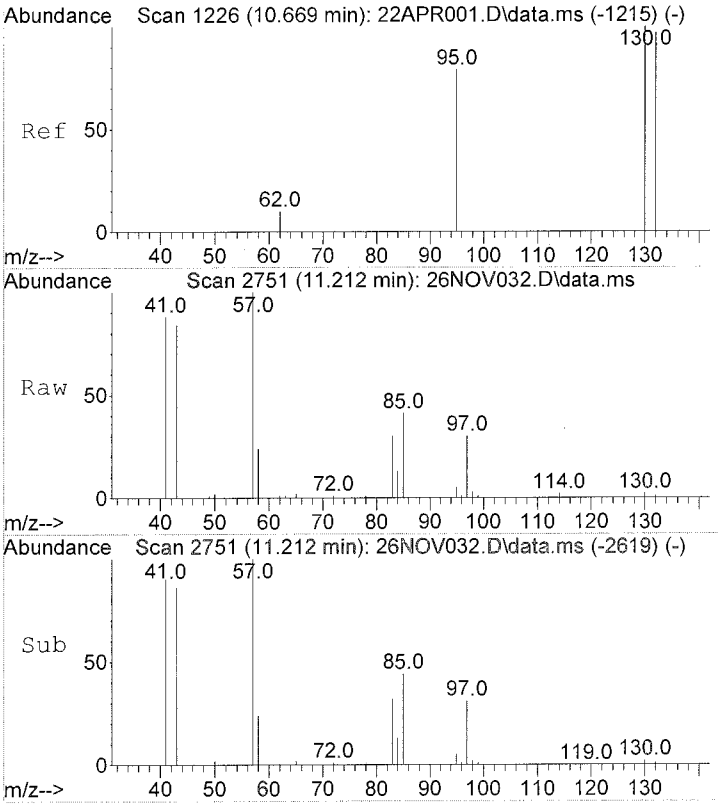


#24
1,2-Dichloroethane
Concen: 28.67 pptv
RT: 10.230 min Scan# 2429
Delta R.T. 0.009 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 62 Resp: 2093

Ion	Ratio	Lower	Upper
62	100		
64	32.6	0.0	83.0
98	125.3	0.0	61.0#

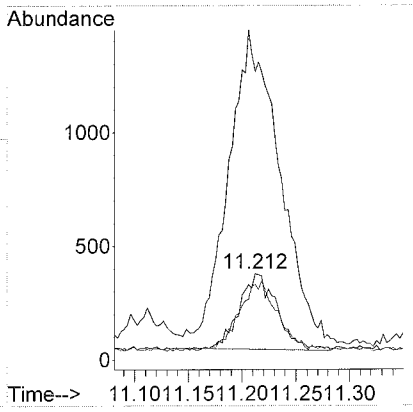


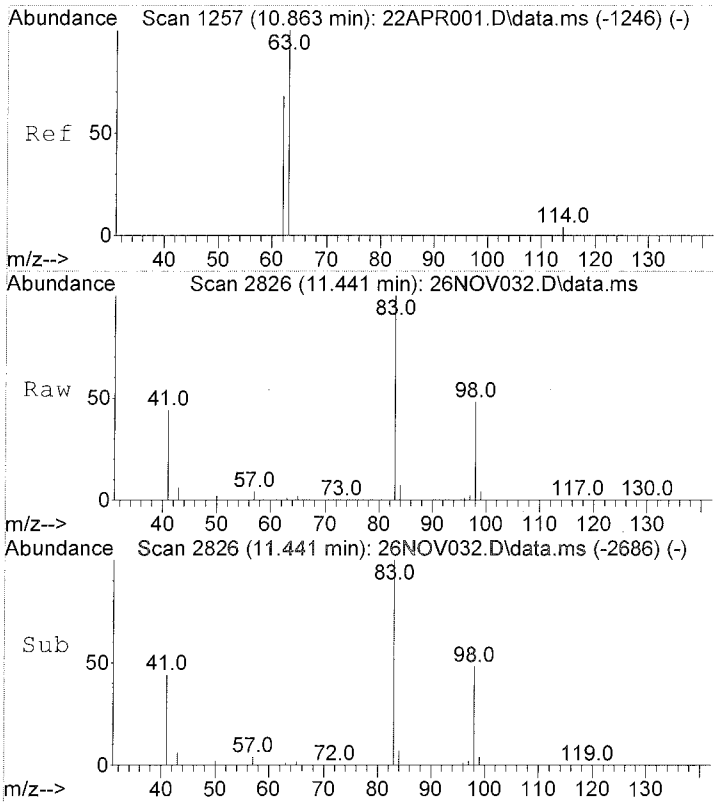


#25
Trichloroethene
Concen: 9.02 pptv
RT: 11.212 min Scan# 2751
Delta R.T. 0.003 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:130 Resp: 803

Ion	Ratio	Lower	Upper
130	100		
95	348.5	30.9	130.9#
132	84.3	46.0	146.0

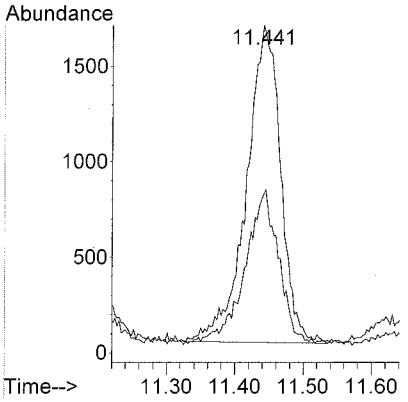


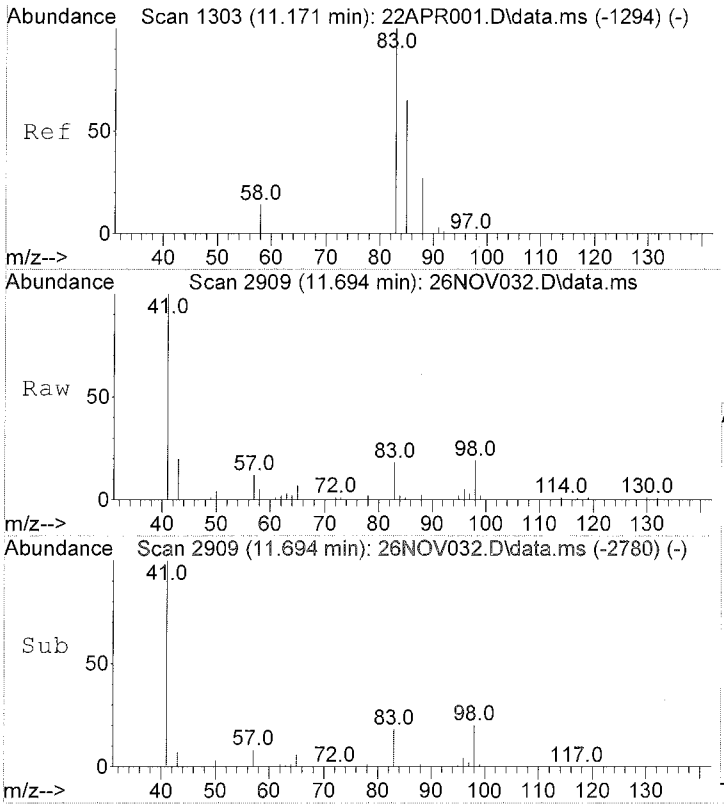


#26
1,2-Dichloropropane
Concen: 111.49 pptv
RT: 11.441 min Scan# 2826
Delta R.T. 0.027 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 63 Resp: 5742

Ion	Ratio	Lower	Upper
63	100		
62	47.0	20.3	120.3

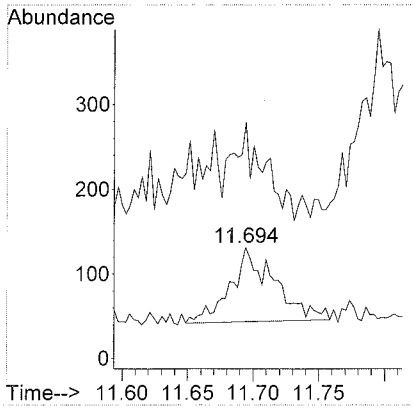


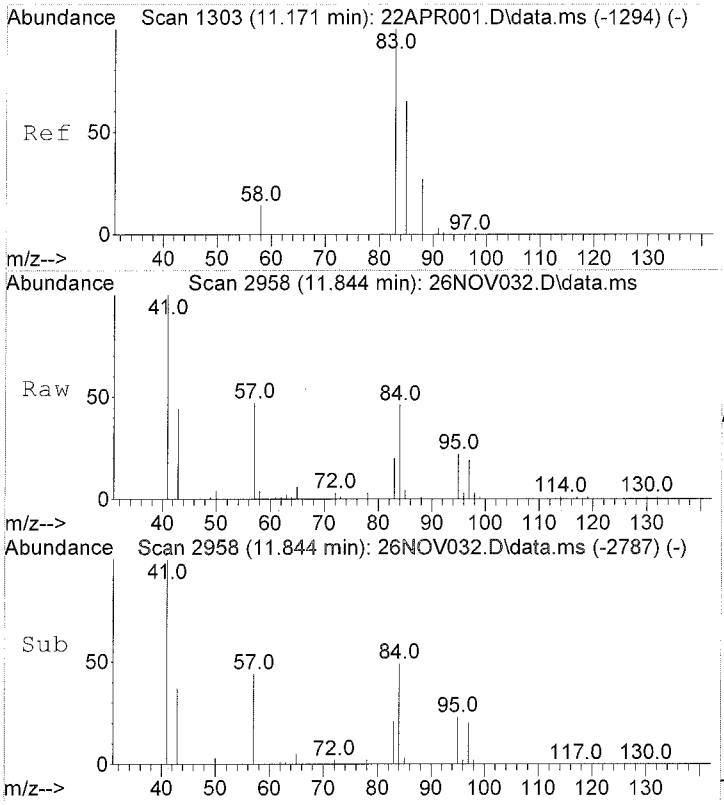


#27
1,4-Dioxane
Concen: 5.00 pptv
RT: 11.694 min Scan# 2909
Delta R.T. -0.006 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 88 Resp: 204

Ion	Ratio	Lower	Upper
88	100		
58	106.7	38.7	58.1#

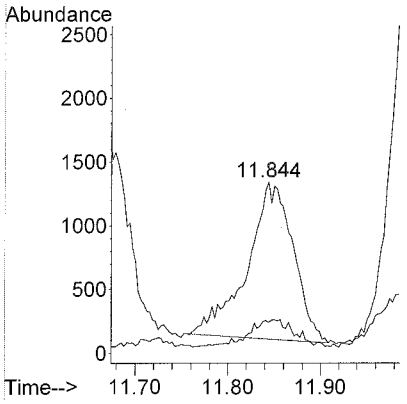


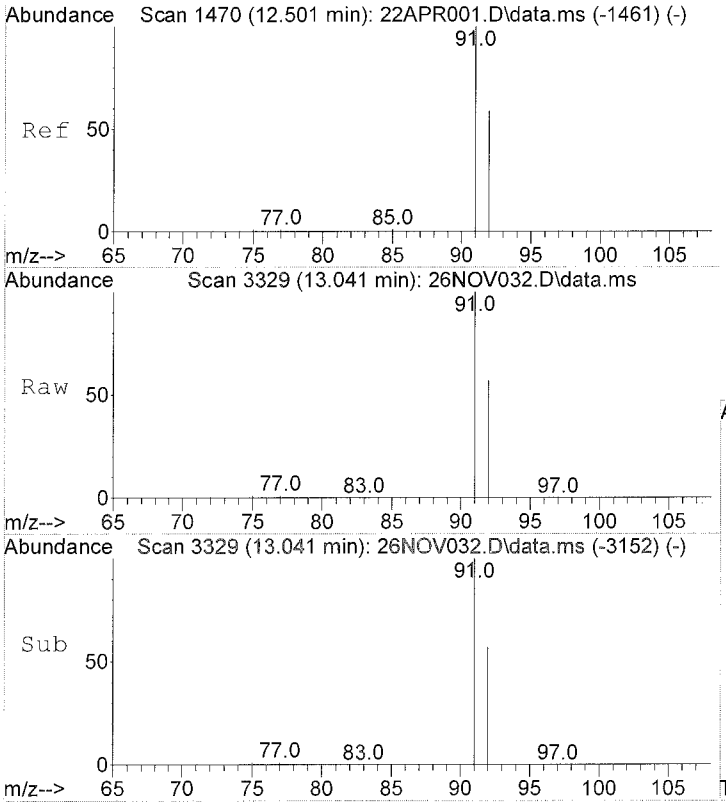


#28
Bromodichloromethane
Concen: 53.03 pptv
RT: 11.844 min Scan# 2958
Delta R.T. 0.122 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 83 Resp: 4209

Ion	Ratio	Lower	Upper
83	100		
85	14.5	13.9	113.9

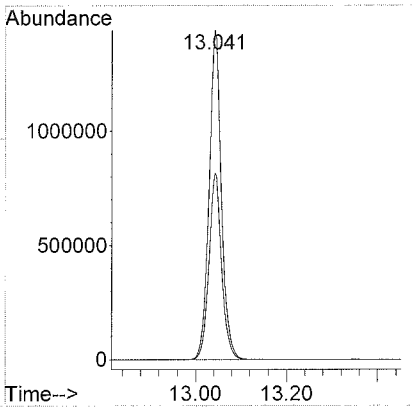


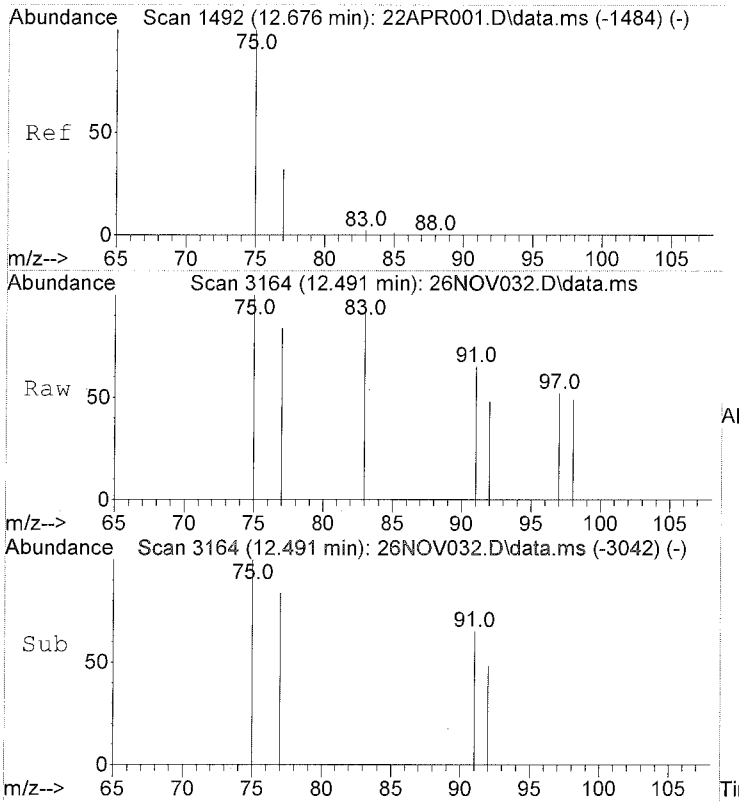


#30
Toluene
Concen: 17852.99 pptv
RT: 13.041 min Scan# 3329
Delta R.T. -0.011 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 91 Resp: 2757320

Ion	Ratio	Lower	Upper
91	100		
92	56.6	10.0	110.0

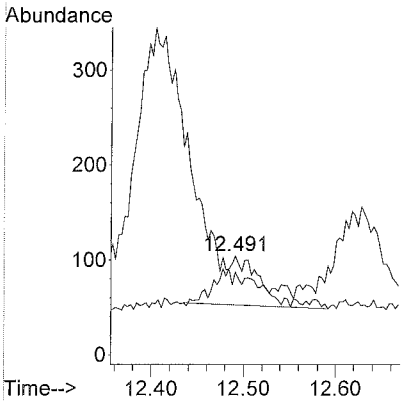


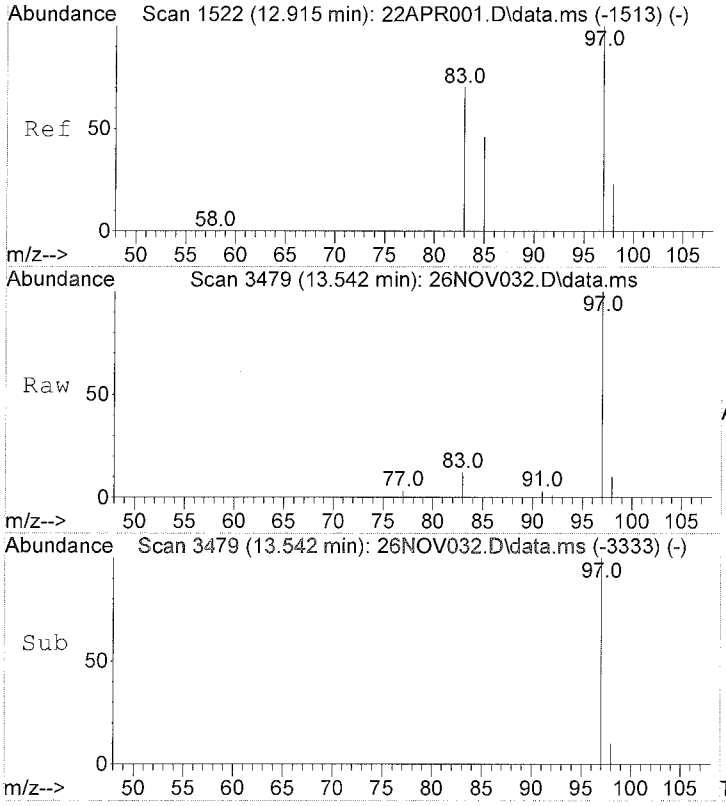


#32
t-1,3-Dichloropropene
Concen: 4.05 pptv
RT: 12.491 min Scan# 3164
Delta R.T. -0.010 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 75 Resp: 159

Ion	Ratio	Lower	Upper
75	100		
77	0.0	0.0	81.7

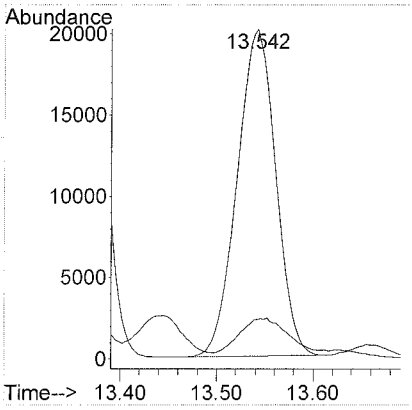


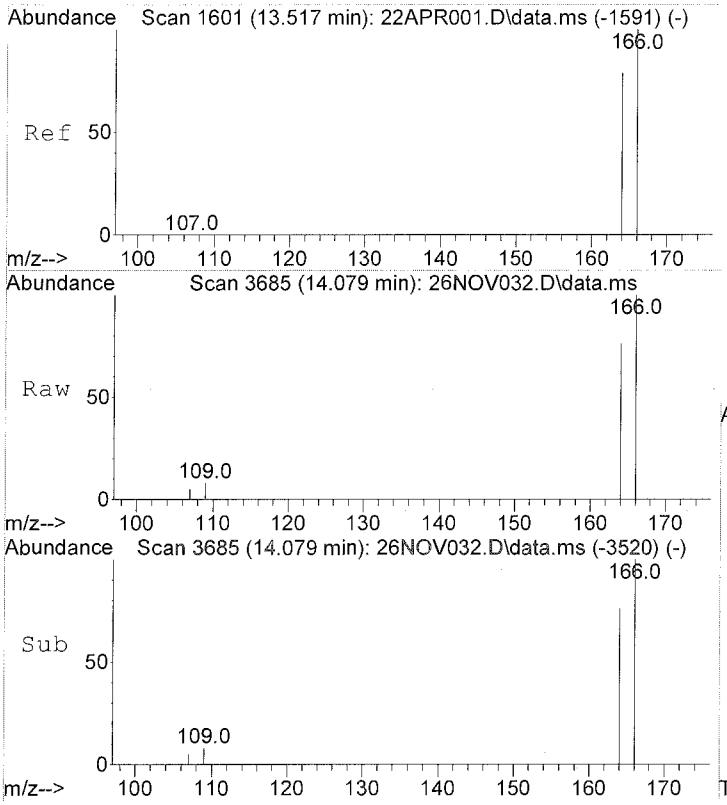


#33
1,1,2-Trichloroethane
Concen: 1095.00 pptv
RT: 13.542 min Scan# 3479
Delta R.T. 0.087 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 97 Resp: 55913

Ion	Ratio	Lower	Upper
97	100		
83	9.6	25.1	125.1#

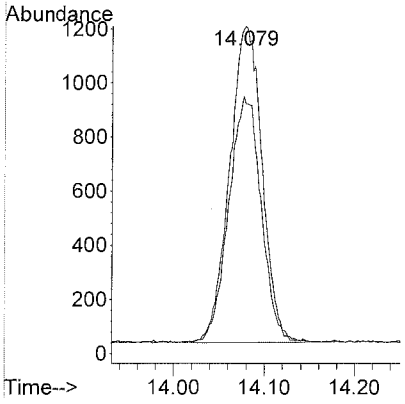


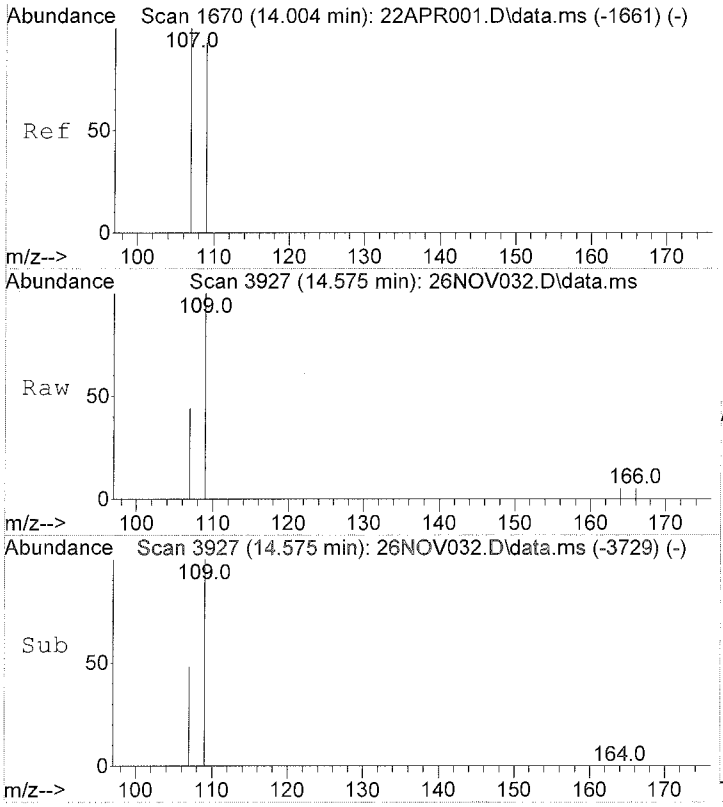


#34
Tetrachloroethene
Concen: 37.51 pptv
RT: 14.079 min Scan# 3685
Delta R.T. -0.000 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:166 Resp: 2884

Ion	Ratio	Lower	Upper
166	100		
164	75.0	25.3	125.3

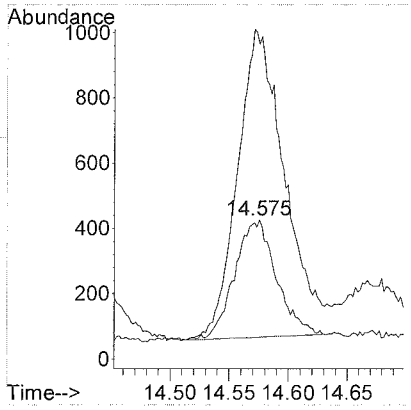


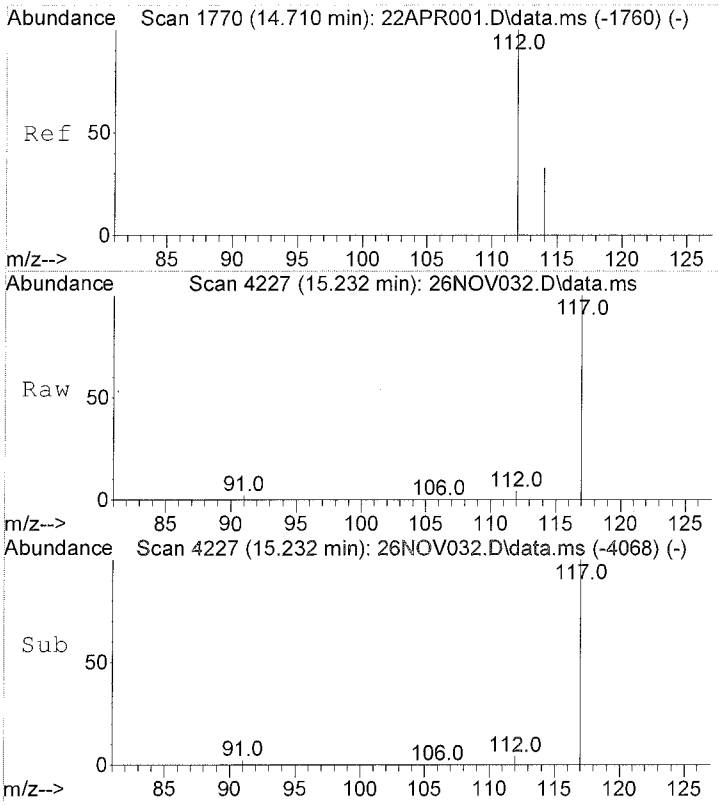


#35
1,2-Dibromoethane
Concen: 15.17 pptv
RT: 14.575 min Scan# 3927
Delta R.T. 0.006 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:107 Resp: 876

Ion	Ratio	Lower	Upper
107	100		
109	247.1	43.3	143.3#

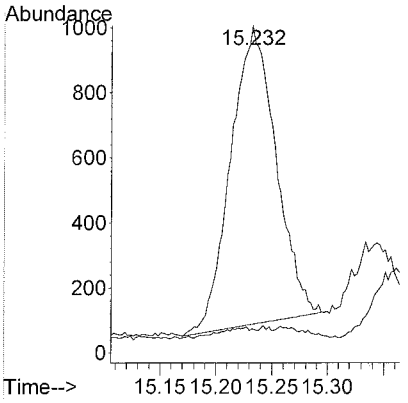


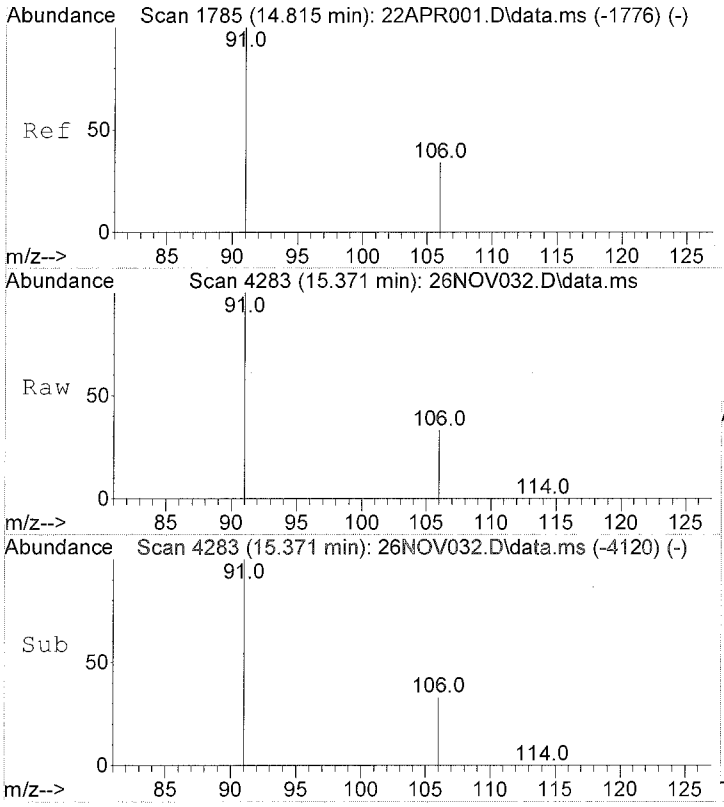


#36
Chlorobenzene
Concen: 26.78 pptv
RT: 15.232 min Scan# 4227
Delta R.T. -0.032 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:112 Resp: 2569

Ion	Ratio	Lower	Upper
112	100		
114	2.8	0.0	81.6

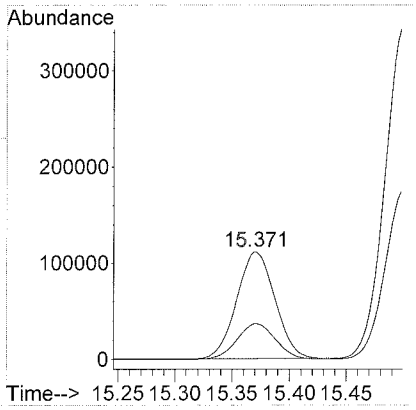


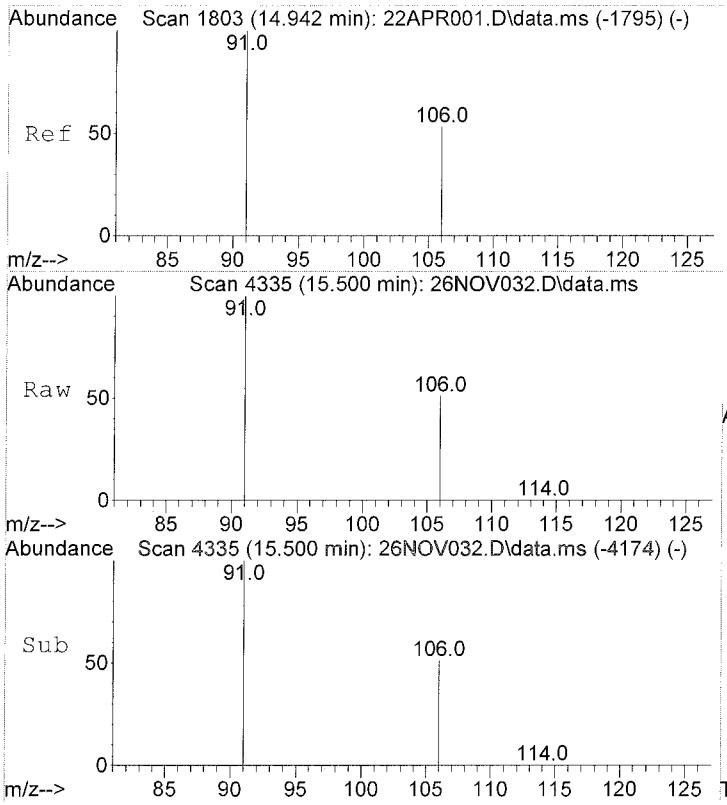


#37
Ethylbenzene
Concen: 2278.56 pptv
RT: 15.371 min Scan# 4283
Delta R.T. -0.000 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 91 Resp: 257511

Ion	Ratio	Lower	Upper
91	100		
106	33.3	0.0	83.4

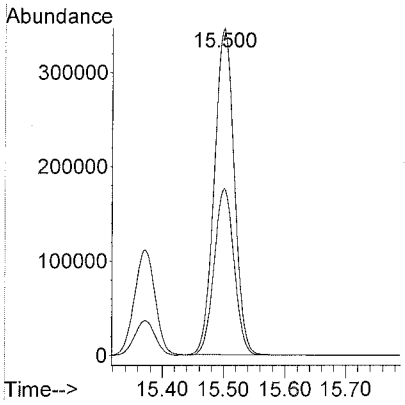


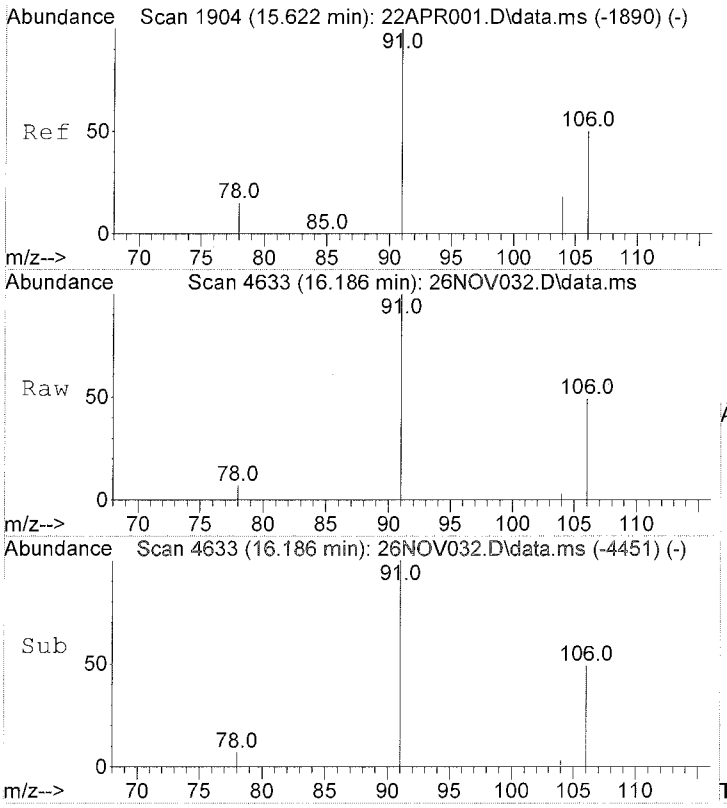


#38
p,&m-Xylene
Concen: 9561.72 pptv
RT: 15.500 min Scan# 4335
Delta R.T. -0.002 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 91 Resp: 790366

Ion	Ratio	Lower	Upper
91	100		
106	51.0	3.9	103.9

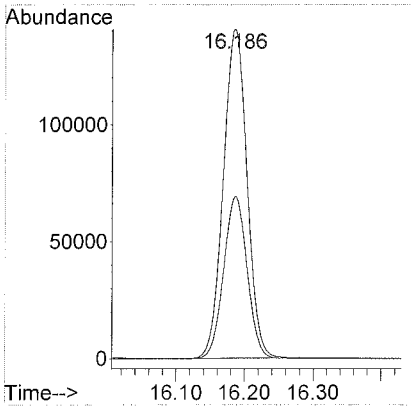


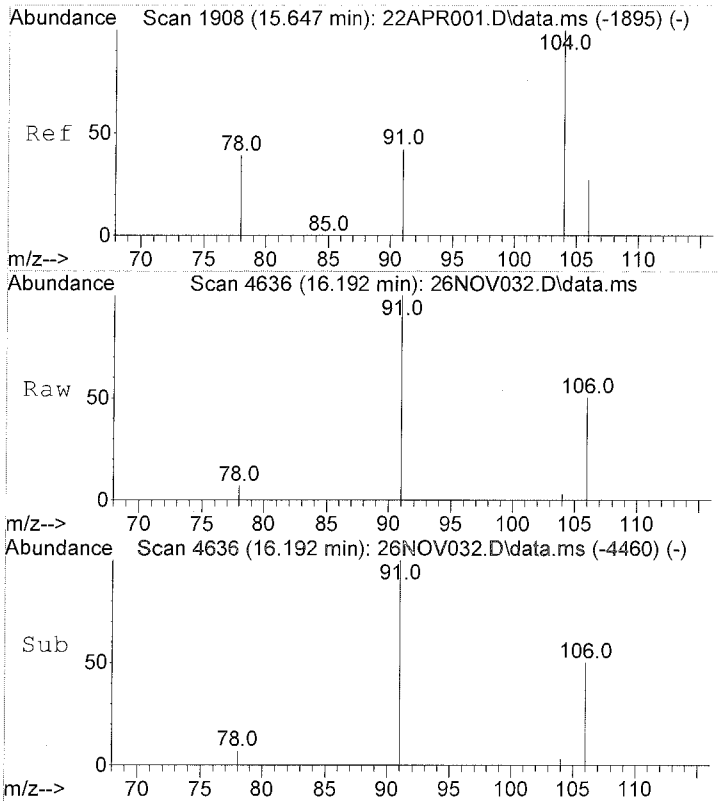


#39
o-Xylene
Concen: 4475.63 pptv
RT: 16.186 min Scan# 4633
Delta R.T. -0.002 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 91 Resp: 340821

Ion	Ratio	Lower	Upper
91	100		
106	49.3	0.0	97.3

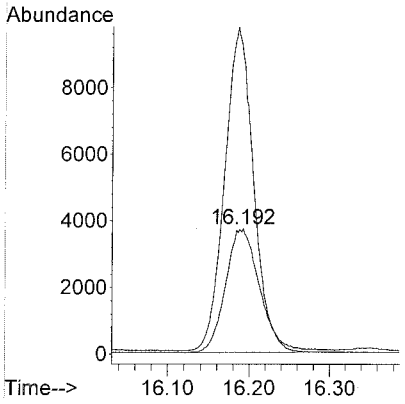


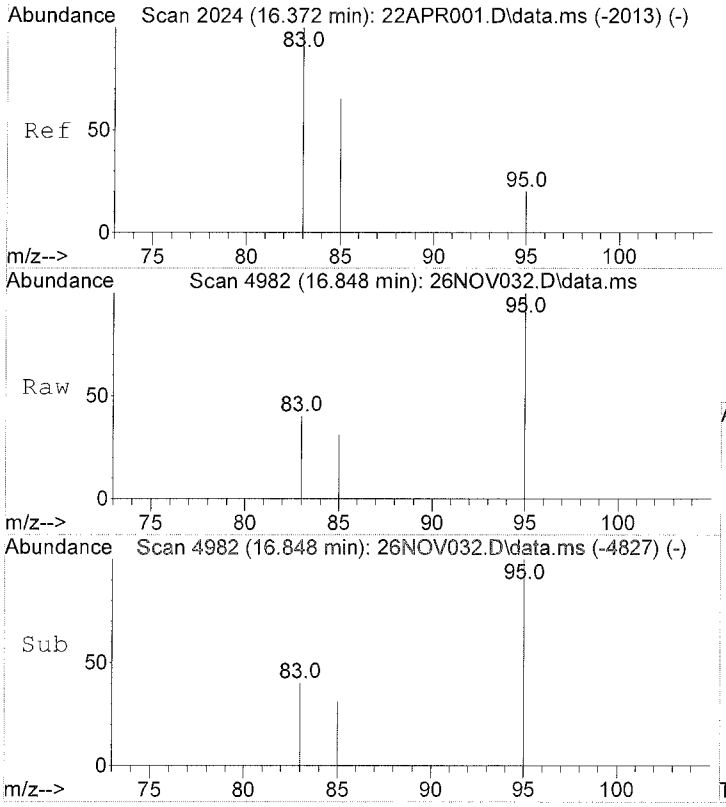


#40
Styrene
Concen: 217.81 pptv
RT: 16.192 min Scan# 4636
Delta R.T. -0.019 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:104 Resp: 10740

Ion	Ratio	Lower	Upper
104	100		
78	237.3	0.0	87.4#

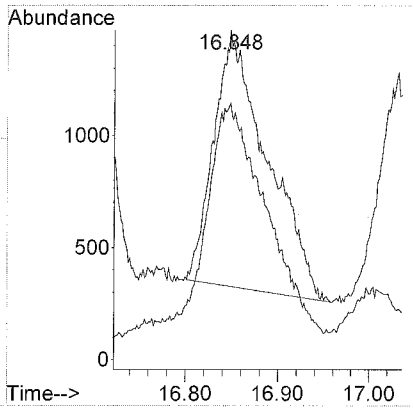


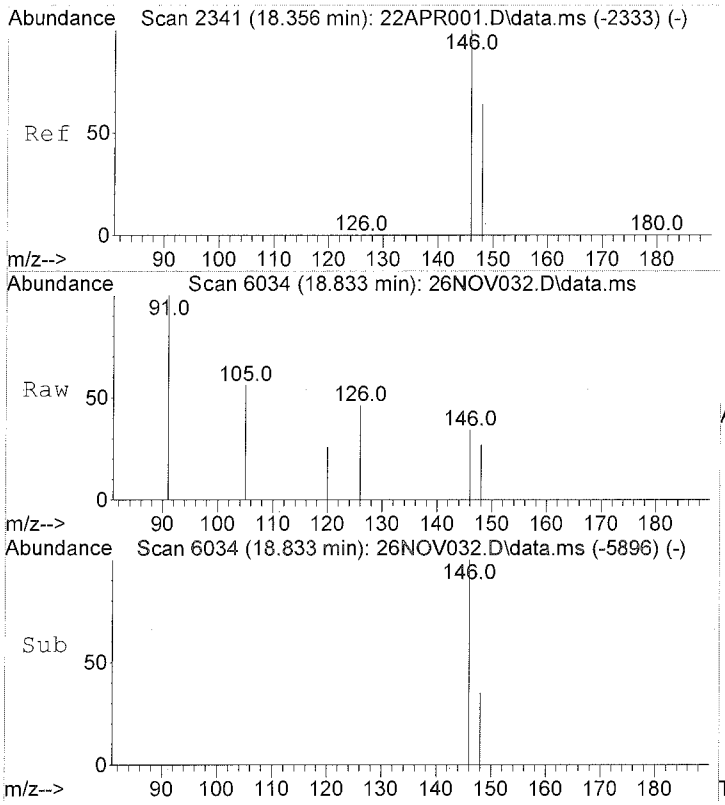


#41
1,1,2,2-Tetrachloroethane
Concen: 78.32 pptv
RT: 16.848 min Scan# 4982
Delta R.T. -0.136 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 83 Resp: 4615

Ion	Ratio	Lower	Upper
83	100		
85	84.3	13.6	113.6

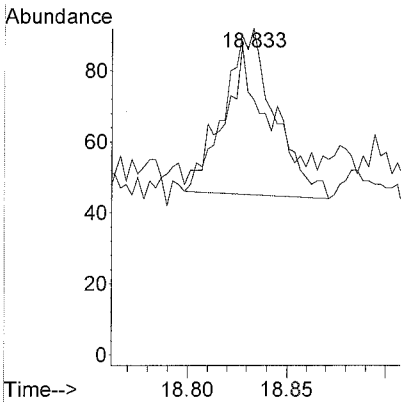


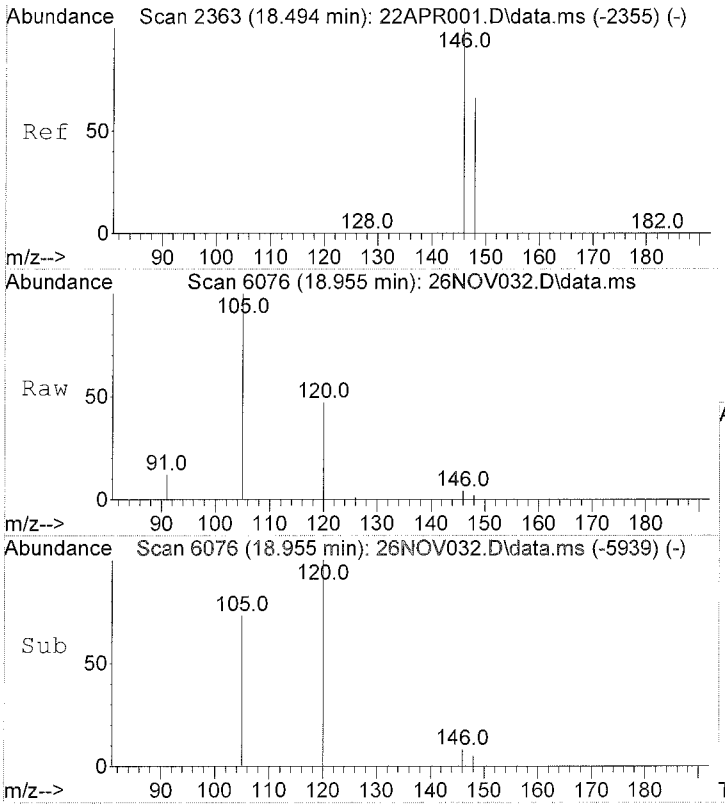


#43
1,3-Dichlorobenzene
Concen: 1.38 pptv
RT: 18.833 min Scan# 6034
Delta R.T. 0.003 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:146 Resp: 82

Ion	Ratio	Lower	Upper
146	100		
148	50.0	13.9	113.9

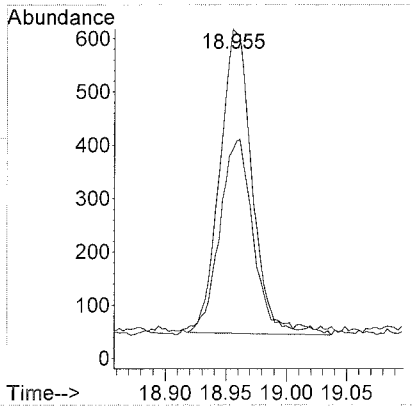


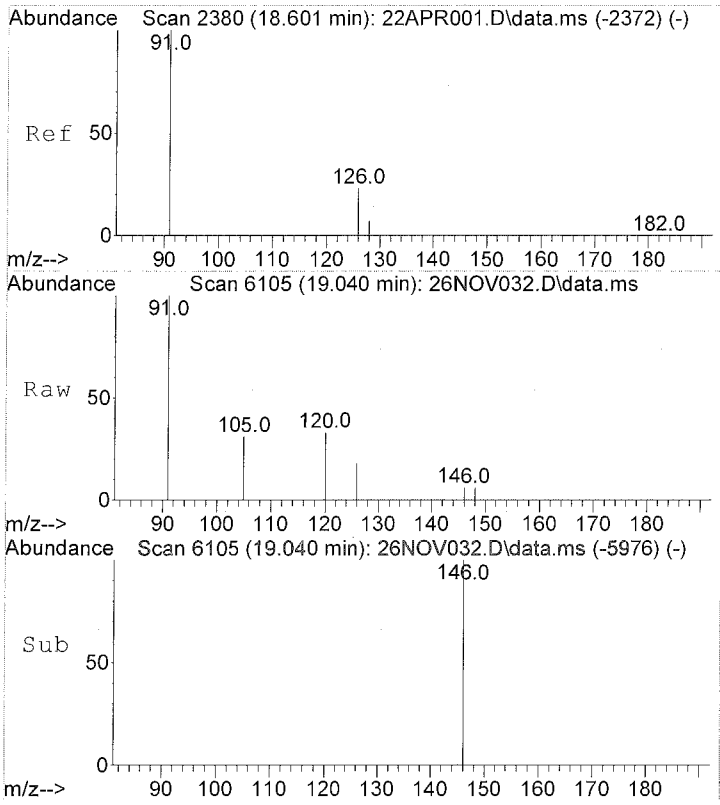


#44
1,4-Dichlorobenzene
Concen: 17.32 pptv
RT: 18.955 min Scan# 6076
Delta R.T. -0.000 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:146 Resp: 1071

Ion	Ratio	Lower	Upper
146	100		
148	58.3	15.5	115.5

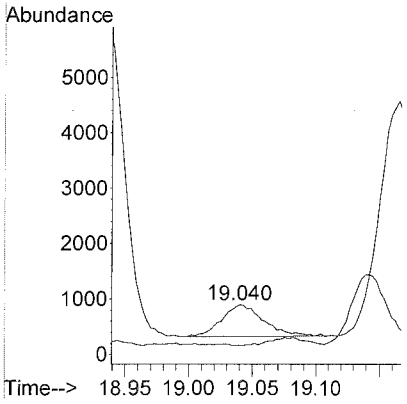


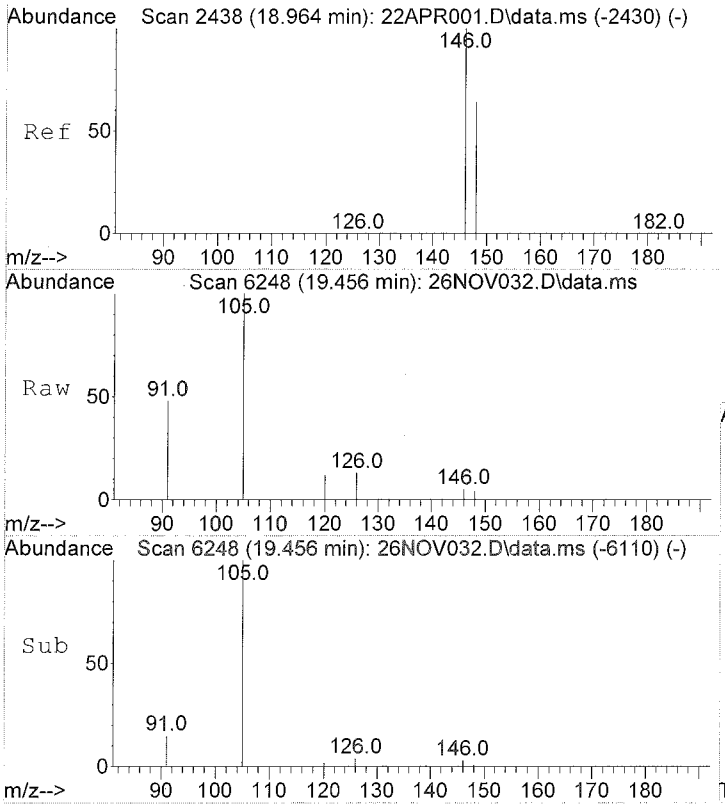


#45
Benzyl Chloride
Concen: 53.74 pptv
RT: 19.040 min Scan# 6105
Delta R.T. -0.023 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion: 91 Resp: 1318

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.7	28.1#

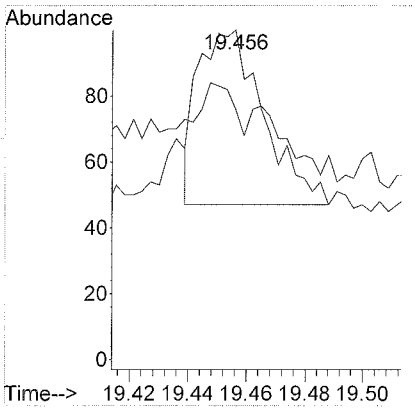


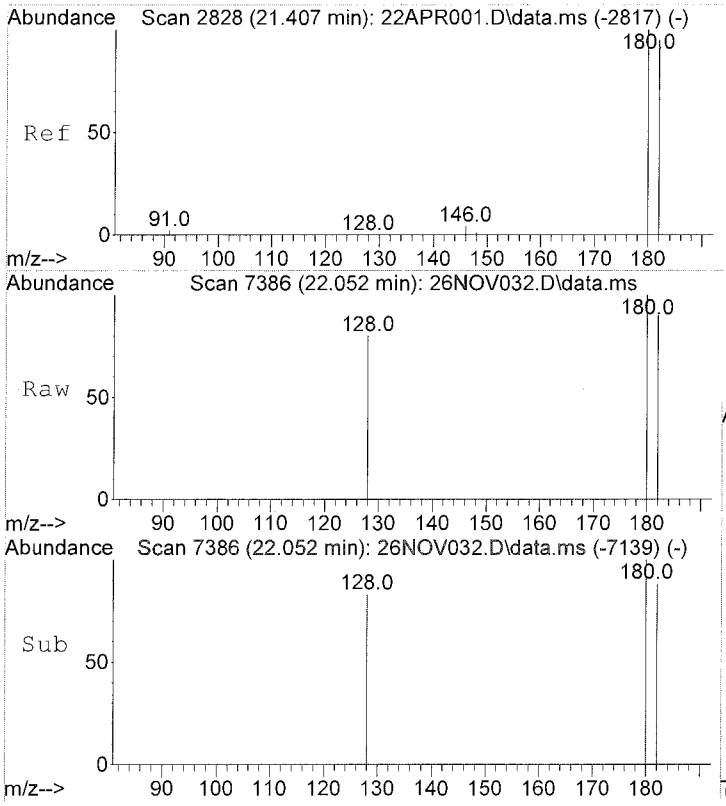


#46
1,2-Dichlorobenzene
Concen: 1.48 pptv
RT: 19.456 min Scan# 6248
Delta R.T. 0.003 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:146 Resp: 82

Ion	Ratio	Lower	Upper
146	100		
148	26.4	13.7	113.7

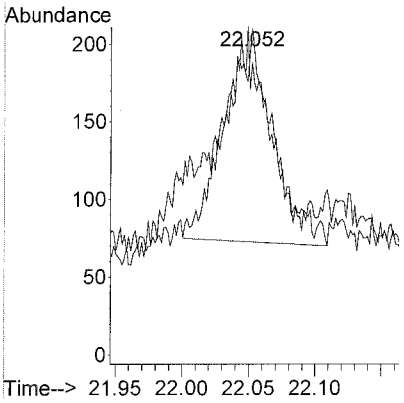


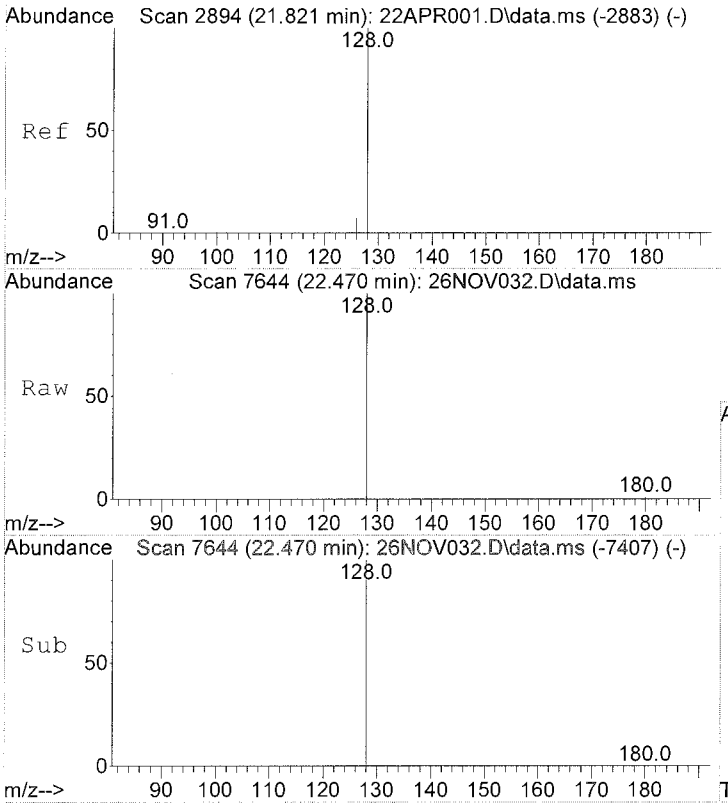


#47
1,2,4-Trichlorobenzene
Concen: 7.22 pptv
RT: 22.052 min Scan# 7386
Delta R.T. 0.000 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:180 Resp: 339

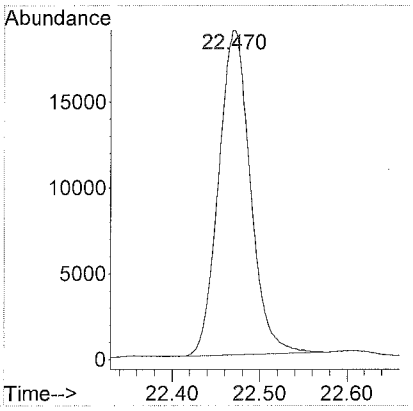
Ion	Ratio	Lower	Upper
180	100		
182	58.6	44.8	144.8





#48
Naphthalene
Concen: 523.84 pptv
RT: 22.470 min Scan# 7644
Delta R.T. -0.016 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:128 Resp: 47649



QC Report: Unit #1
Inject Time: 11/27/2018 07:39:23

QAQC Filename:QAQC\11272018\1_073923.asc

Autosampler Position: 10 / Run 24 of 29
Sample Name : J110805-02
Method Filename: T15DESORB230.MTC

Volume Parameters:				
ISTD A Xfer Volume	set=50	Act=50	StartPress=14.9	EndPress=15.1
ISTD A Flow	set=50	Act=49.7		
ISTD A Trap Temp	set=22	hi=24	lo=22	avg=22
ISTD B Xfer Volume	set=0	Act=0	StartPress=0.0	EndPress=0.0
ISTD B Flow	set=0	Act=0.0		
ISTD B Trap Temp	Disabled			
ISTD C Xfer Volume	Disabled			
ISTD C Flow	Disabled			
ISTD C Trap Temp	Disabled			
Sample Xfer Volume	set=420	Act=420	StartPress=13.7	EndPress=12.6
Sample Xfer Flow	set=50	Act=49.7		
Smple Xfer Trap Temp	set=22	hi=22	lo=22	avg=22
Sweep Gas = Helium				
Dry Purge Parameters:				
Dry Purge Flow	set=70	Act=69.1		
Dry Purge Temp	set=25	hi=25	lo=25	avg=25
Dry Purge Time	set=12.00	act=12.00		
Desorb Parameters:				
Trap Desorb Temp	set=230	hi=241	lo=226	avg=230
Trap Desorb Time	set=4.50	act=4.50		
MCS Temp	Disabled			
Cryo Focuser Temp	set=-180	hi=-184	lo=-198	avg=-187
Inject Parameters:				
Cryo Union Temp	set=130	hi=130	lo=129	avg=130
Cryo Inject Temp	set=75	hi=76	lo=73	avg=75
Cryo Inject Time	set=2.50	act=2.50		
Bake Parameters:				
Trap Bake Temp	set=280	hi=282	lo=278	avg=280
Trap Bake Time	set=10.00	act=10.00		
MCS Bake Temp	Disabled			
System Regions:				
Manifold 1 Temp	set=130	avg=130		
Manifold 2 Temp	set=130	avg=130		
Oven 6 Port Temp	set=130	avg=130		
Oven 8 Port Temp	set=130	avg=130		
Oven 16 Port Temp	set=130	avg=130		
Bottom Of Trap Temp	set=130	avg=130		
Transfer Line Temp	set=130	avg=130		

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV033.D
Acq On : 27 Nov 2018 8:24 am
Operator : DT
Sample : J110805-03 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 27 08:48:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	9.346	130	114405	2000.00 pptv	0.02
21) 1,4-Difluorobenzene	10.688	114	409053	2000.00 pptv	0.00
31) Chlorobenzene-d5	15.208	117	212473	2000.00 pptv	0.00
System Monitoring Compounds					
23) 1,2-Dichloroethane-d4	10.105	65	162500	2348.92 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 117.45%		
29) Toluene-d8	12.935	98	268722	1849.20 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 92.46%		
42) 4-Bromofluorobenzene	17.183	95	102594	1922.24 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 96.11%		
Target Compounds					Qvalue
2) Dichlorodifluoromethan...	3.544	85	76242	562.57 pptv	99
3) Chloromethane	3.969	50	37746	836.45 pptv	89
4) Vinyl Chloride	4.193	62	235	5.31 pptv #	1
5) Bromomethane	4.879	96	551	28.21 pptv	97
6) Chloroethane	5.153	64	59	1.86 pptv	85
7) Trichlorofluoromethane...	5.470	101	73446	403.59 pptv	100
8) 1,1,2-Cl 1,2,2-F ethan...	6.207	151	961	7.09 pptv	89
9) Acetone	6.133	43	7730529	72841.45 pptv	95
11) Methylene Chloride	7.036	49	502	7.52 pptv #	48
12) t-Butyl Methyl Ether	7.341	73	90	0.66 pptv #	1
14) Hexane	7.759	57	53290	629.64 pptv	92
15) 1,1-Dichloroethane	8.086	63	252	2.53 pptv	99
16) 2-Butanone	8.620	72	8815	348.99 pptv	61
17) c-1,2-Dichloroethene	8.934	96	801	13.69 pptv	98
18) Chloroform	9.159	83	11610	100.50 pptv	100
19) 1,1,1-Trichloroethane	9.763	97	416	3.76 pptv #	1
20) Carbon Tetrachloride	10.160	117	8080	95.39 pptv	96
22) Benzene	10.331	78	278615	1796.26 pptv	87
24) 1,2-Dichloroethane	10.230	62	2078	28.64 pptv #	1
25) Trichloroethene	11.215	130	512	5.79 pptv #	1
26) 1,2-Dichloropropane	11.447	63	9395	183.56 pptv	66
27) 1,4-Dioxane	11.700	88	251	6.19 pptv #	76
28) Bromodichloromethane	11.850	83	7667	97.19 pptv	38
30) Toluene	13.038	91	2880997	18769.96 pptv	94
32) t-1,3-Dichloropropene	12.491	75	162	4.22 pptv	57
33) 1,1,2-Trichloroethane	13.542	97	107083	2143.63 pptv #	22
34) Tetrachloroethene	14.081	166	5027	66.83 pptv	97
35) 1,2-Dibromoethane	14.569	107	712	12.61 pptv #	1
36) Chlorobenzene	15.232	112	4501	47.96 pptv	47
37) Ethylbenzene	15.371	91	445564	4029.97 pptv	100
38) p,&m-Xylene	15.497	91	1218163	15064.03 pptv	96
39) o-Xylene	16.186	91	588777	7903.27 pptv	97
40) Styrene	16.188	104	15640	324.22 pptv #	1
41) 1,1,2,2-Tetrachloroethane	17.029	83	2424	42.05 pptv	41
43) 1,3-Dichlorobenzene	18.955	146	1772	30.50 pptv	96
44) 1,4-Dichlorobenzene	18.955	146	1772	29.30 pptv	94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV033.D
Acq On : 27 Nov 2018 8:24 am
Operator : DT
Sample : J110805-03 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 27 08:48:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

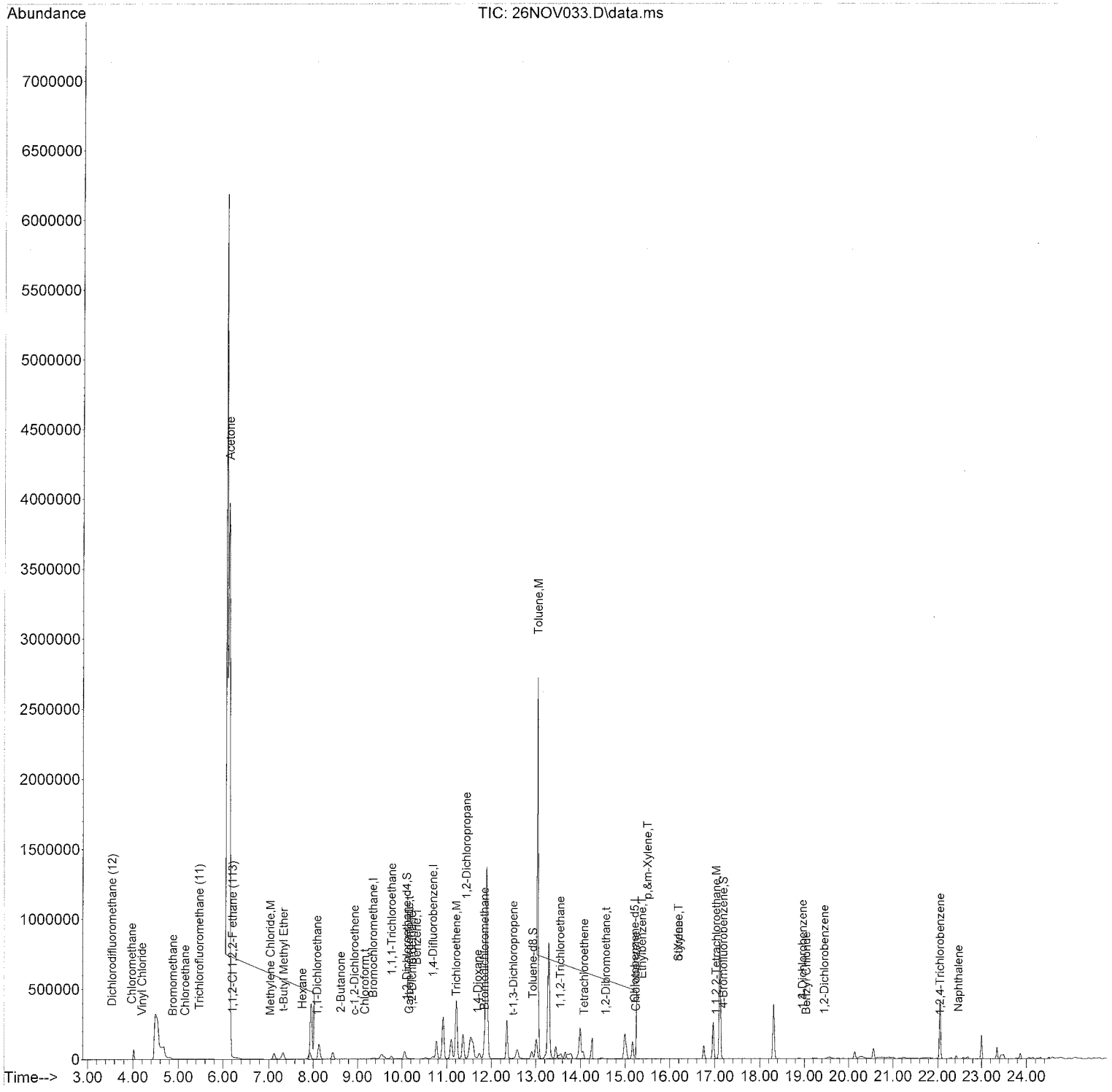
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Benzyl Chloride	19.040	91	2078	86.61	pptv	#	52
46) 1,2-Dichlorobenzene	19.456	146	172	3.18	pptv		90
47) 1,2,4-Trichlorobenzene	22.047	180	147	3.20	pptv	#	29
48) Naphthalene	22.472	128	63134	709.48	pptv		100

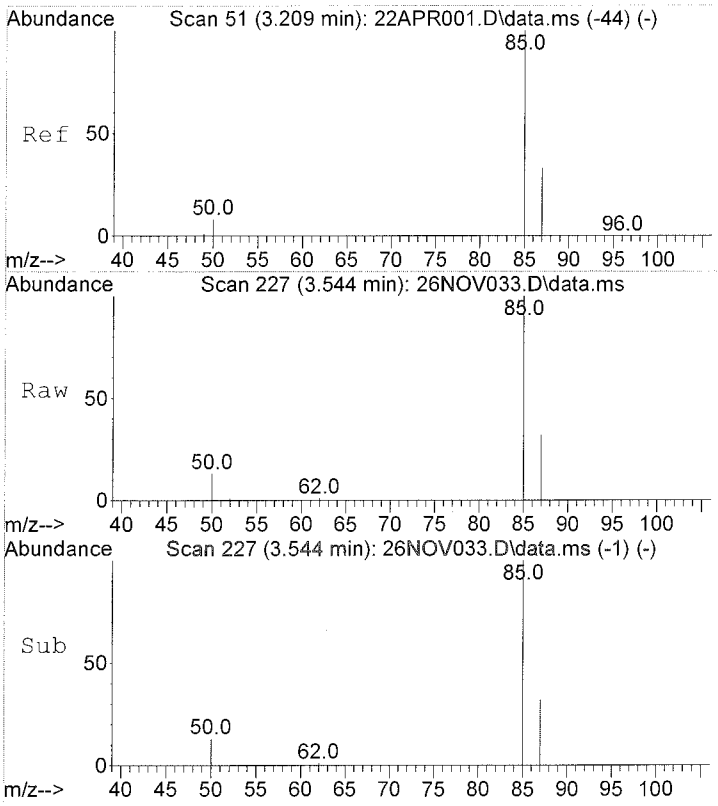
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV033.D
Acq On : 27 Nov 2018 8:24 am
Operator : DT
Sample : J110805-03 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 27 08:48:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

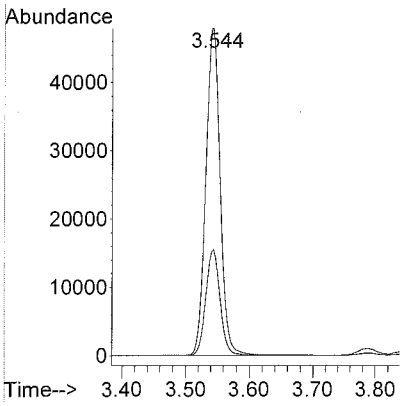


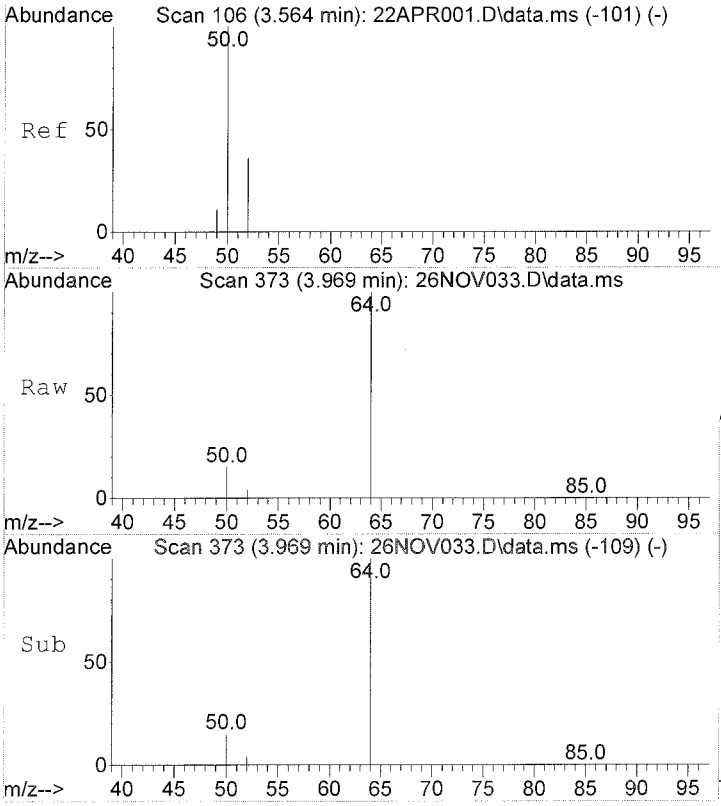


#2
Dichlorodifluoromethane (12)
Concen: 562.57 pptv
RT: 3.544 min Scan# 227
Delta R.T. -0.044 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 85 Resp: 76242

Ion	Ratio	Lower	Upper
85	100		
87	32.4	0.0	81.9

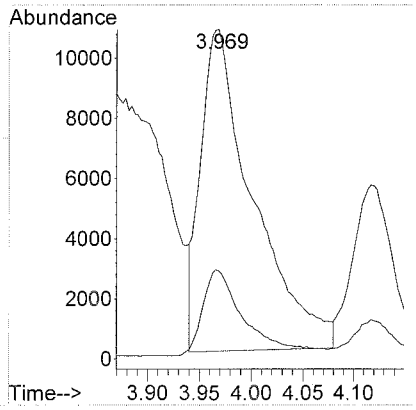


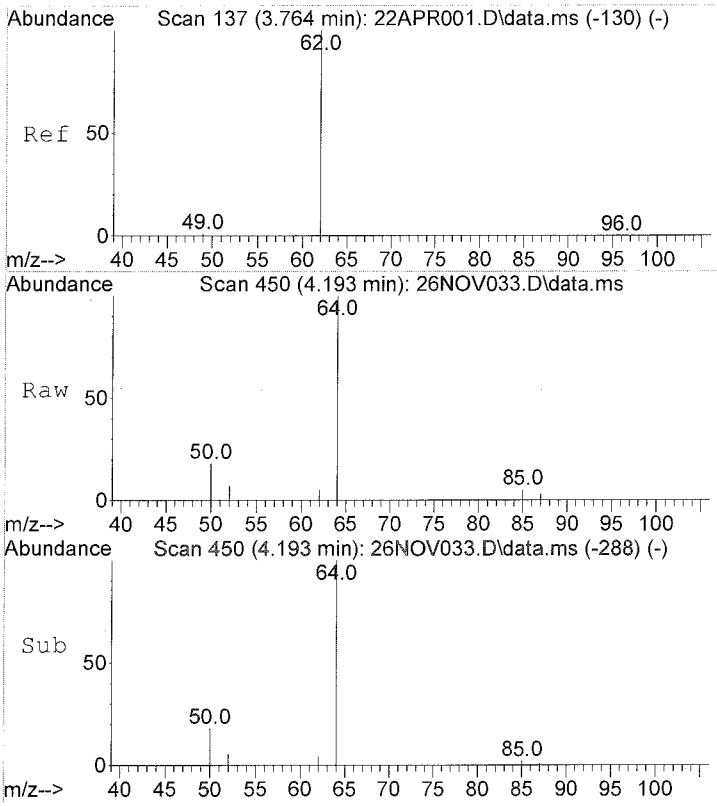


#3
Chloromethane
Concen: 836.45 pptv
RT: 3.969 min Scan# 373
Delta R.T. -0.032 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 50 Resp: 37746

Ion	Ratio	Lower	Upper
50	100		
52	27.0	3.0	63.0

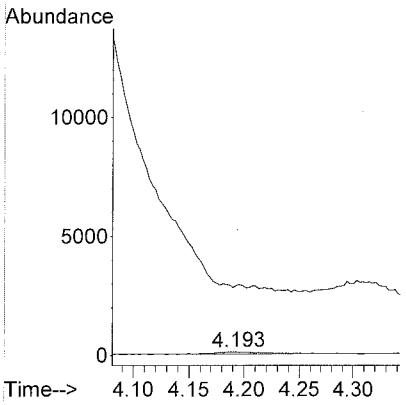


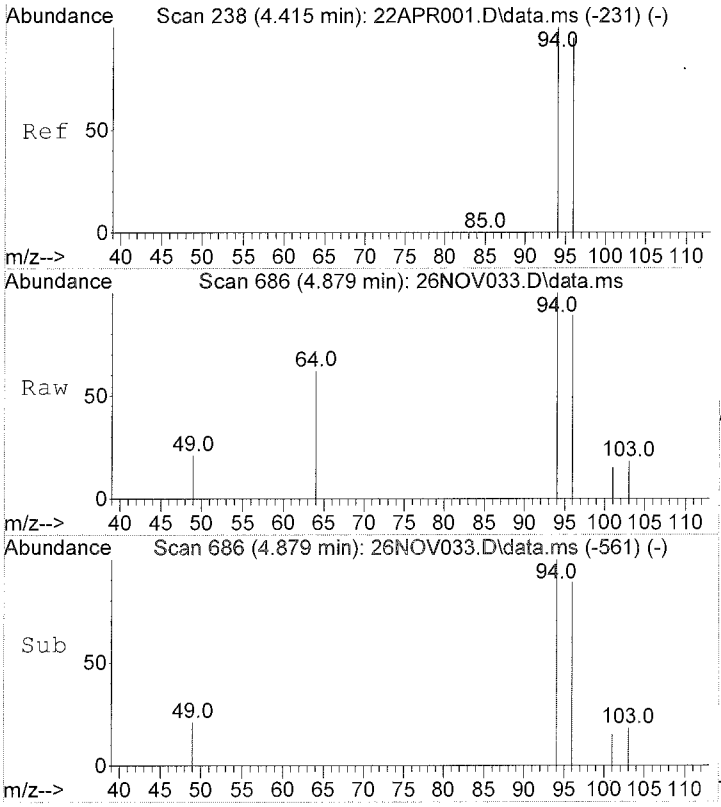


#4
Vinyl Chloride
Concen: 5.31 pptv
RT: 4.193 min Scan# 450
Delta R.T. -0.029 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 62 Resp: 235

Ion	Ratio	Lower	Upper
62	100		
64	164.0	0.0	82.1#

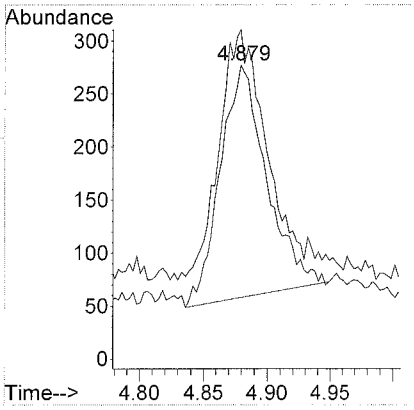


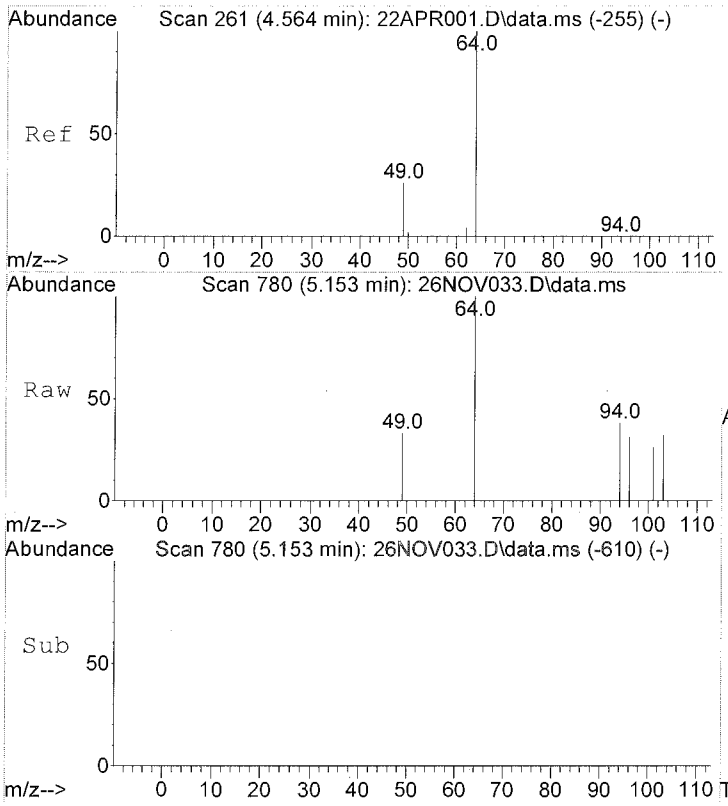


#5
Bromomethane
Concen: 28.21 pptv
RT: 4.879 min Scan# 686
Delta R.T. -0.035 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 96 Resp: 551

Ion	Ratio	Lower	Upper
96	100		
94	102.2	55.4	155.4

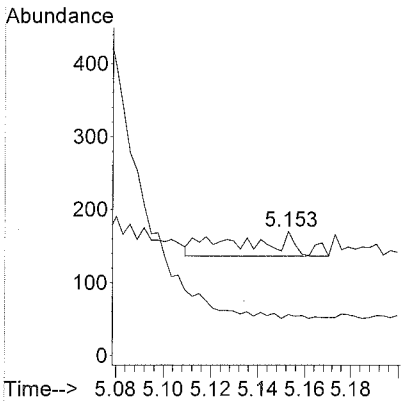


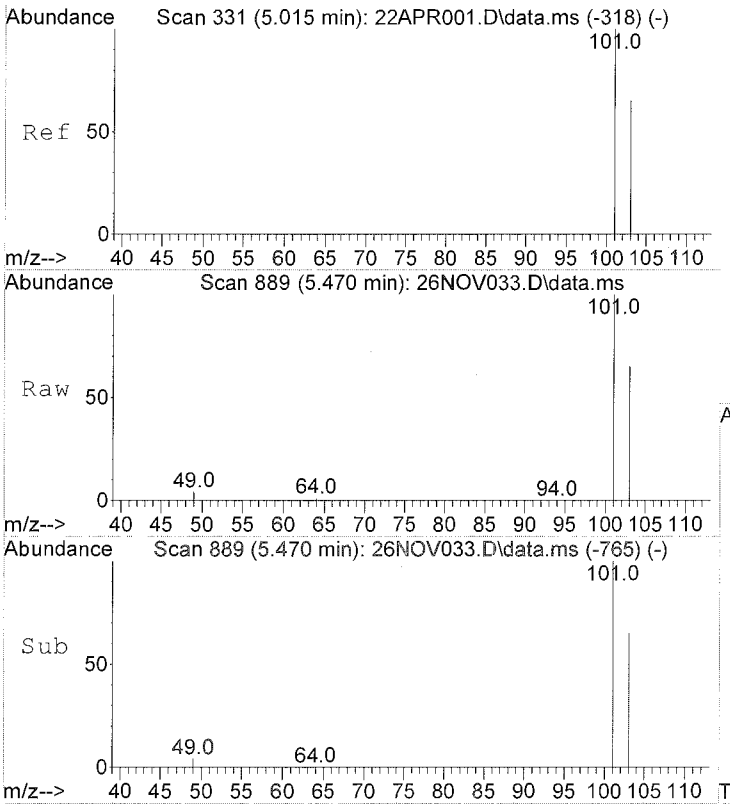


#6
Chloroethane
Concen: 1.86 pptv
RT: 5.153 min Scan# 780
Delta R.T. 0.096 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 64 Resp: 59

Ion	Ratio	Lower	Upper
64	100		
49	11.8	0.0	68.7

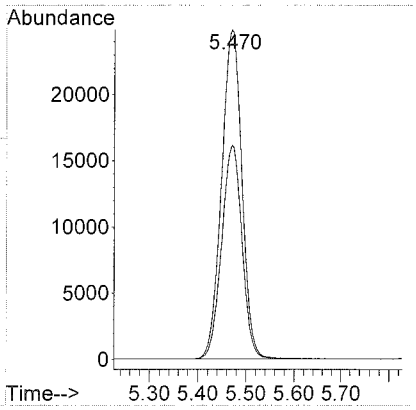


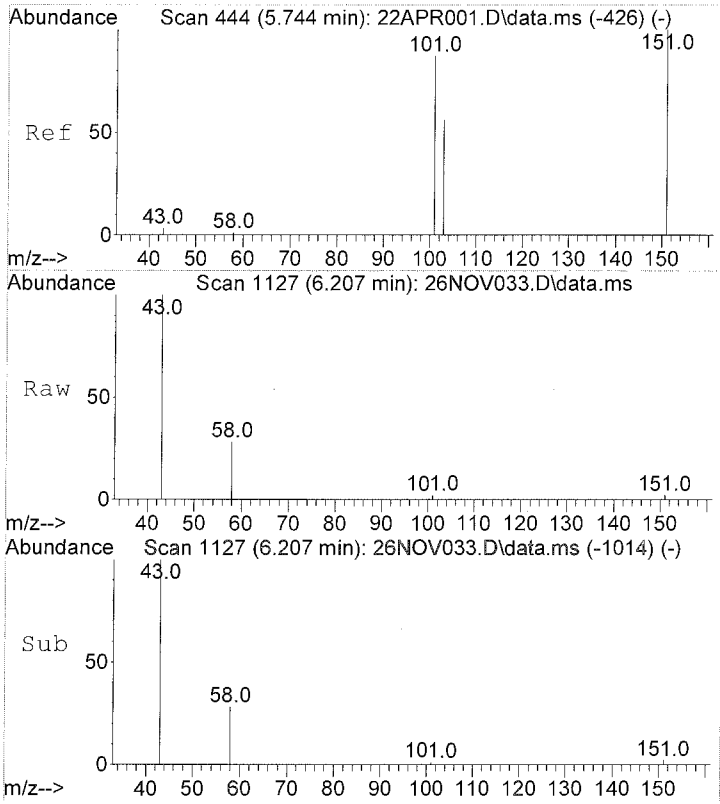


#7
Trichlorofluoromethane (11)
Concen: 403.59 pptv
RT: 5.470 min Scan# 889
Delta R.T. -0.038 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:101 Resp: 73446

Ion	Ratio	Lower	Upper
101	100		
103	64.9	14.6	114.6

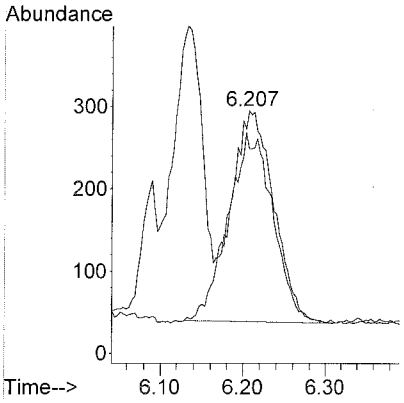


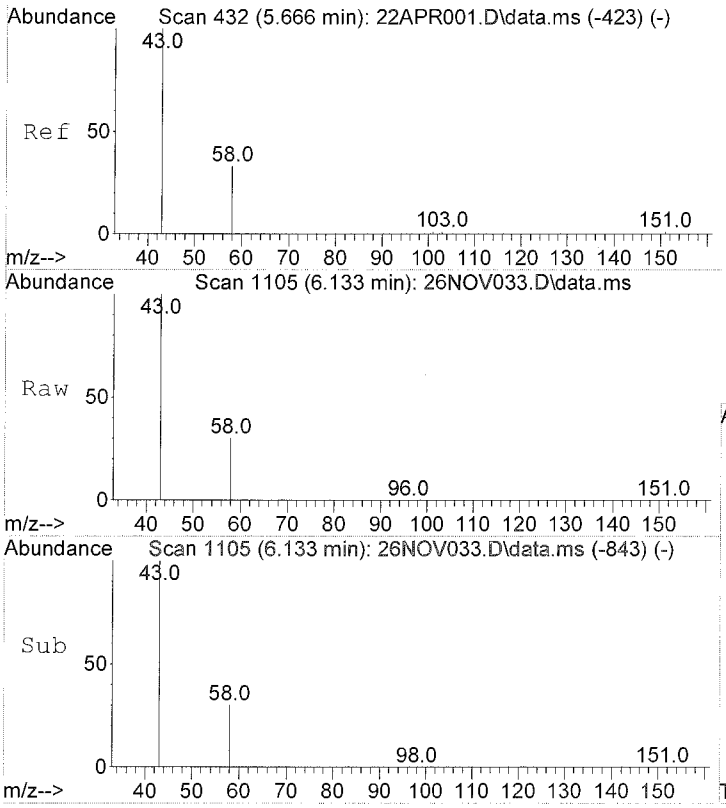


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 7.09 pptv
RT: 6.207 min Scan# 1127
Delta R.T. -0.026 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:151 Resp: 961

Ion	Ratio	Lower	Upper
151	100		
101	81.4	41.5	141.5

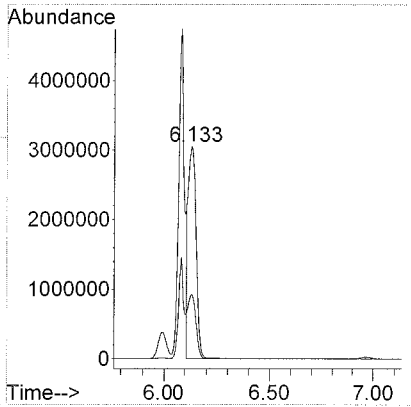


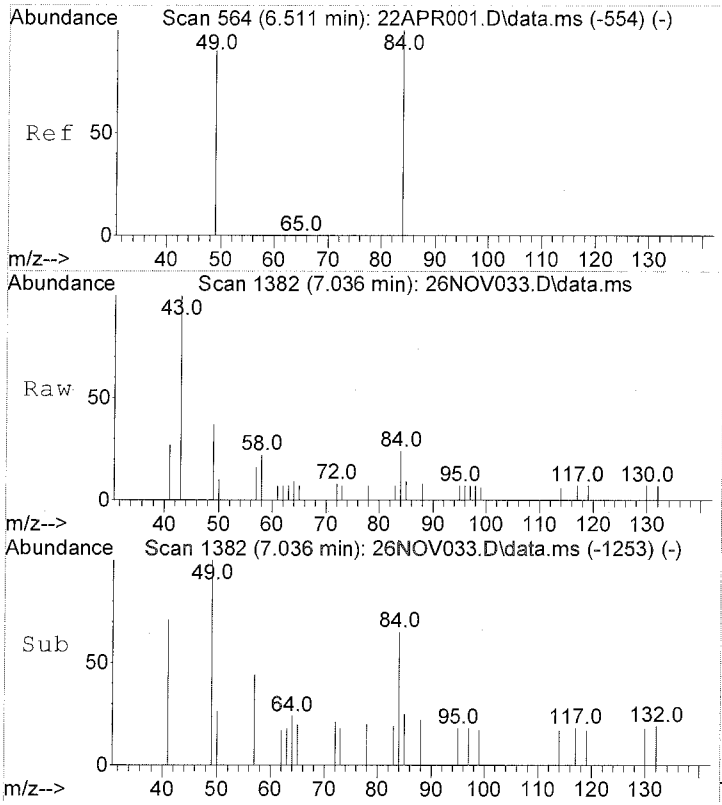


#9
Acetone
Concen: 72841.45 pptv
RT: 6.133 min Scan# 1105
Delta R.T. -0.003 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 43 Resp: 7730529

Ion	Ratio	Lower	Upper
43	100		
58	30.3	13.4	53.4

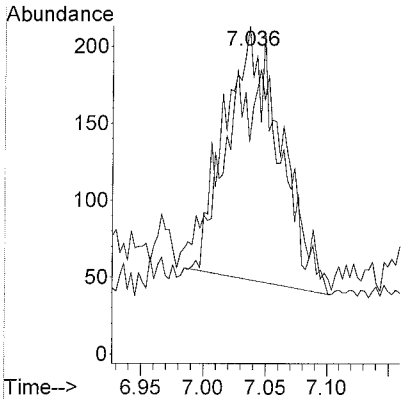


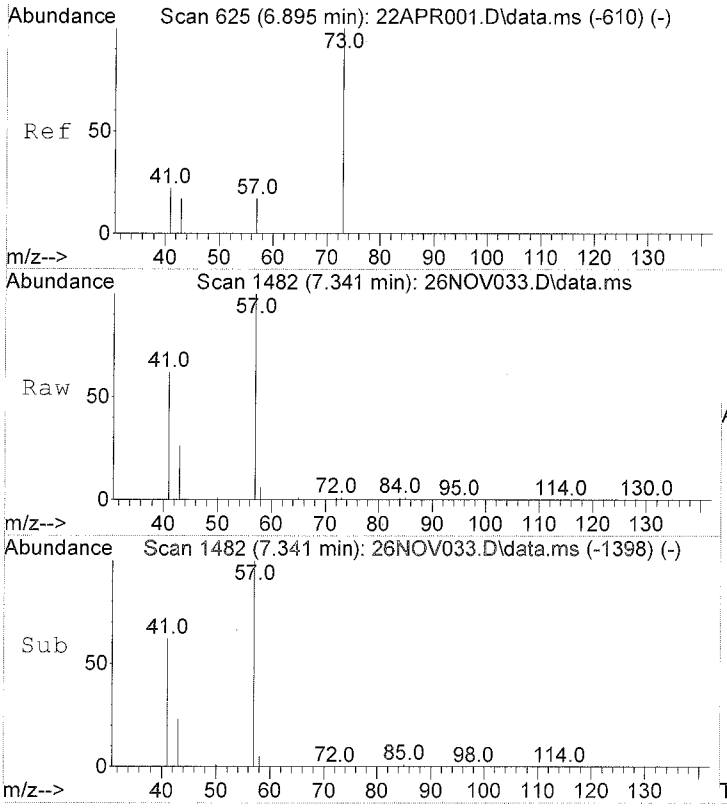


#11
Methylene Chloride
Concen: 7.52 pptv
RT: 7.036 min Scan# 1382
Delta R.T. 0.006 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 49 Resp: 502

Ion	Ratio	Lower	Upper
49	100		
84	51.1	54.2	154.2#

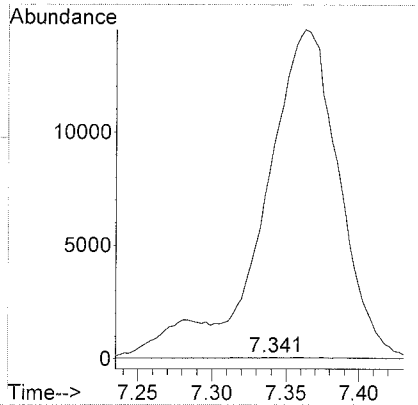


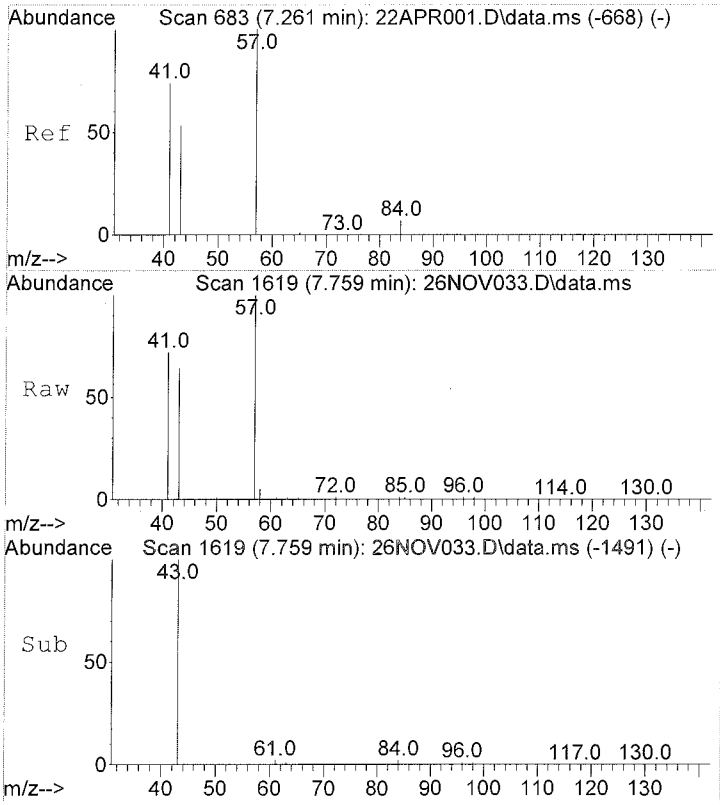


#12
t-Butyl Methyl Ether
Concen: 0.66 pptv
RT: 7.341 min Scan# 1482
Delta R.T. -0.043 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 73 Resp: 90

Ion	Ratio	Lower	Upper
73	100		
41	16366.0	0.0	516.4#

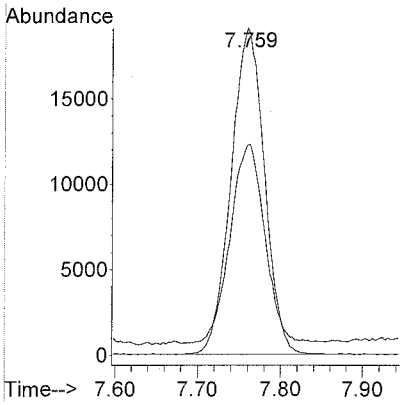


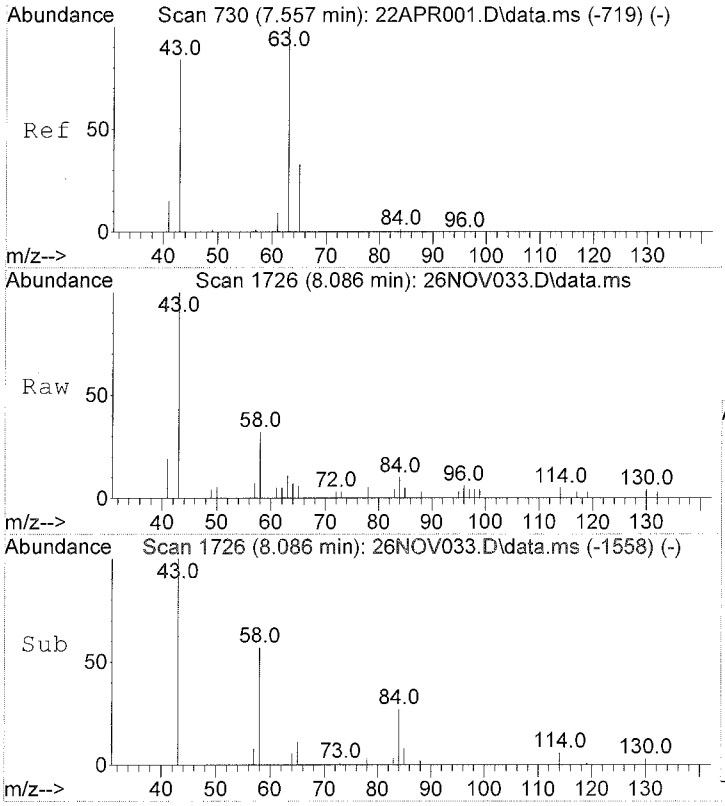


#14
Hexane
Concen: 629.64 pptv
RT: 7.759 min Scan# 1619
Delta R.T. -0.009 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 57 Resp: 53290

Ion	Ratio	Lower	Upper
57	100		
43	60.6	5.0	105.0

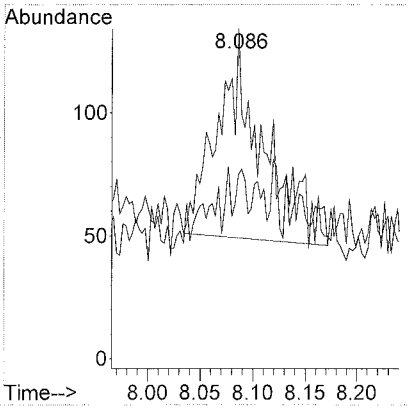


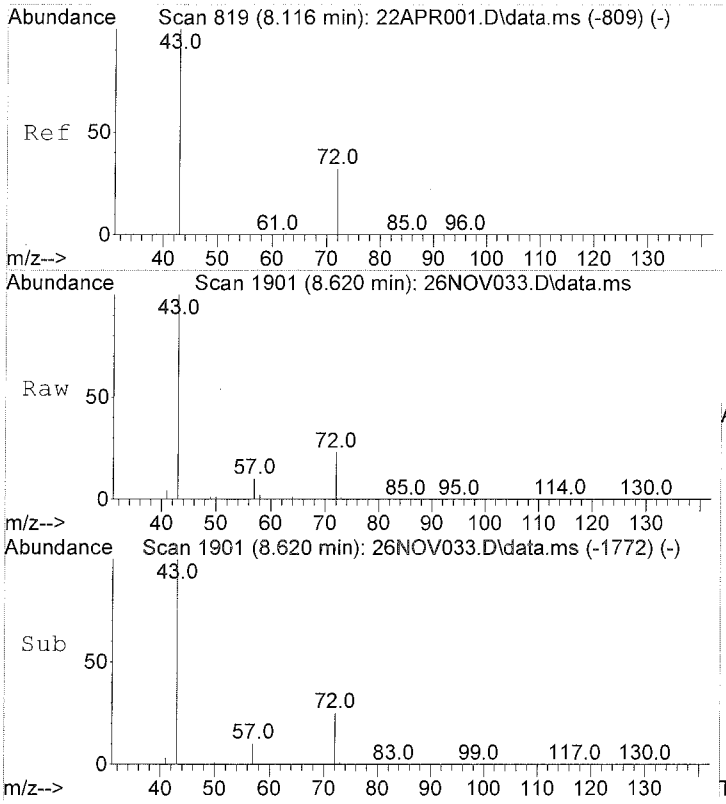


#15
1,1-Dichloroethane
Concen: 2.53 pptv
RT: 8.086 min Scan# 1726
Delta R.T. 0.012 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 63 Resp: 252

Ion	Ratio	Lower	Upper
63	100		
65	31.8	0.0	82.5

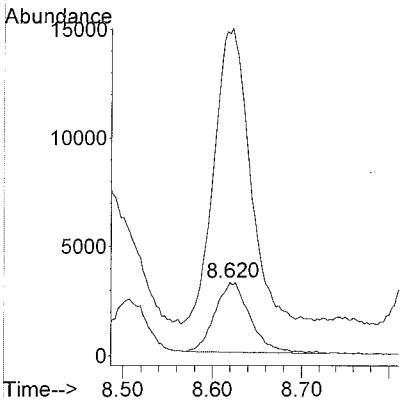


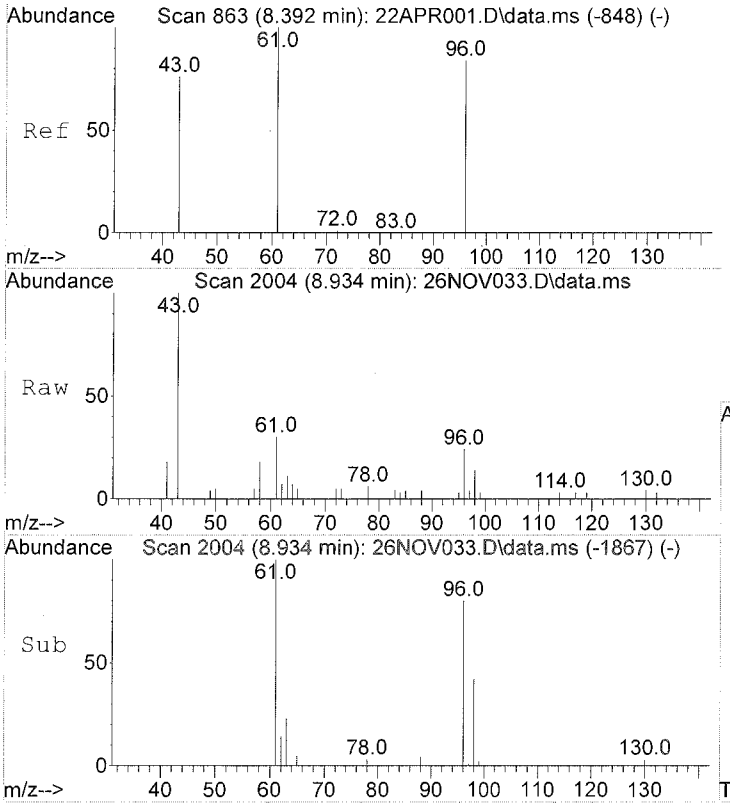


#16
2-Butanone
Concen: 348.99 pptv
RT: 8.620 min Scan# 1901
Delta R.T. -0.006 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 72 Resp: 8815

Ion	Ratio	Lower	Upper
72	100		
43	407.0	0.0	3591.5

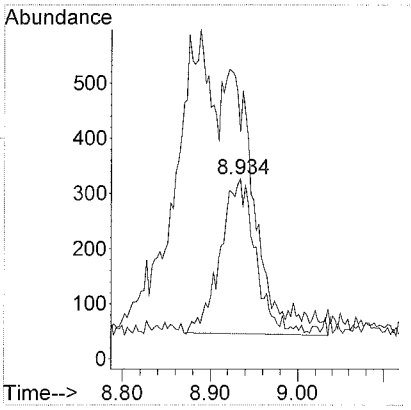


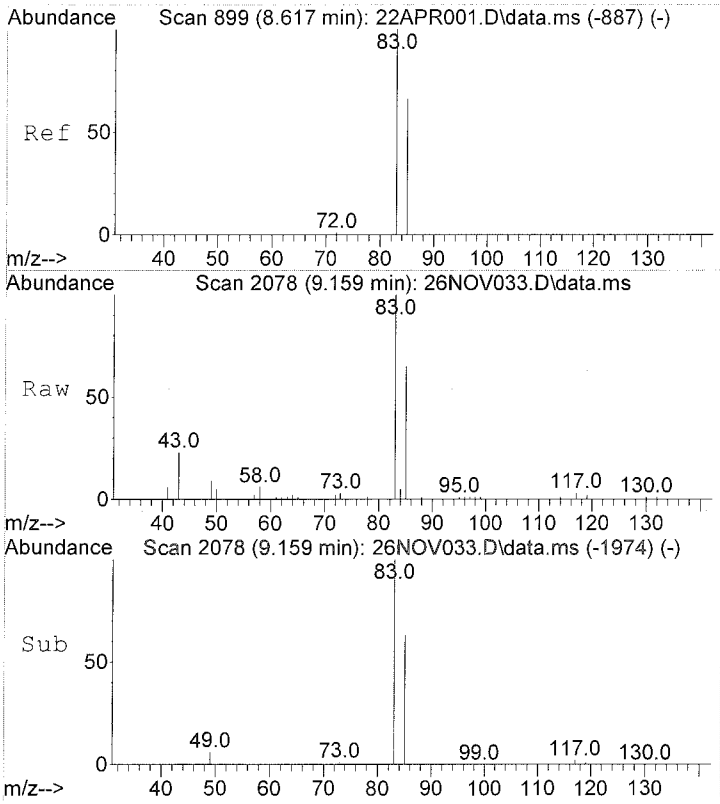


#17
c-1,2-Dichloroethene
Concen: 13.69 pptv
RT: 8.934 min Scan# 2004
Delta R.T. 0.018 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 96 Resp: 801

Ion	Ratio	Lower	Upper
96	100		
61	113.8	62.0	162.0

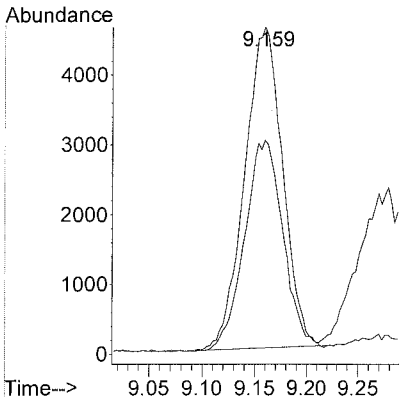


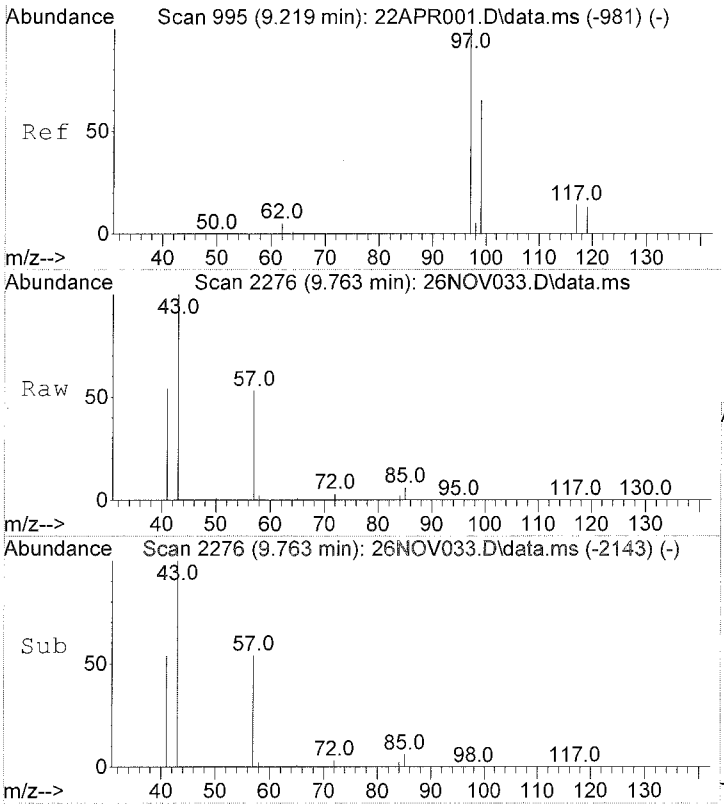


#18
Chloroform
Concen: 100.50 pptv
RT: 9.159 min Scan# 2078
Delta R.T. 0.018 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 83 Resp: 11610

Ion	Ratio	Lower	Upper
83	100		
85	65.2	14.9	114.9

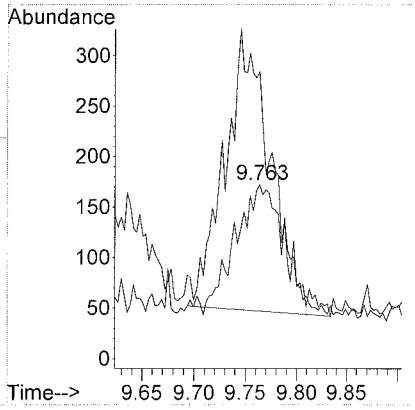


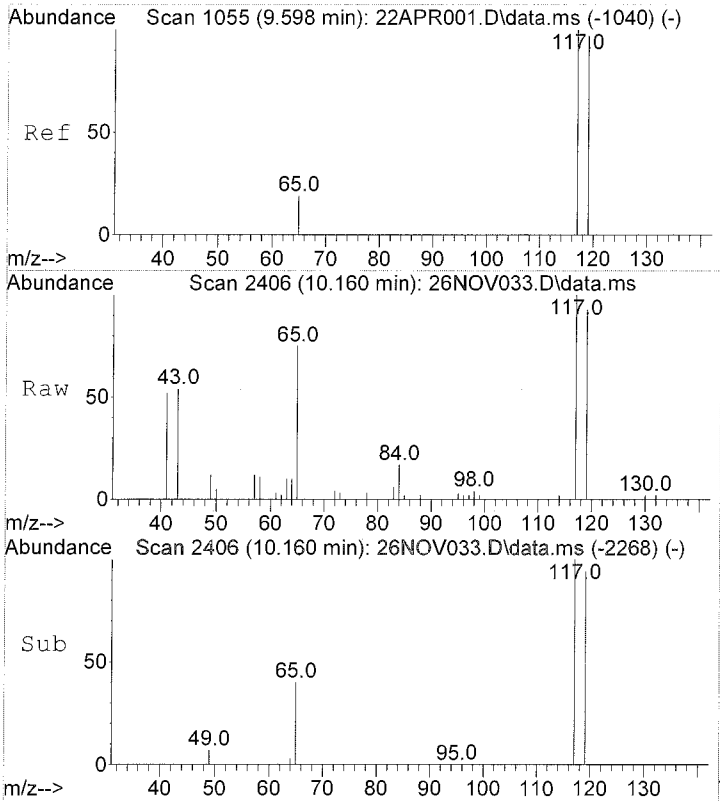


#19
1,1,1-Trichloroethane
Concen: 3.76 pptv
RT: 9.763 min Scan# 2276
Delta R.T. 0.006 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 97 Resp: 416

Ion	Ratio	Lower	Upper
97	100		
99	178.5	13.8	113.8#

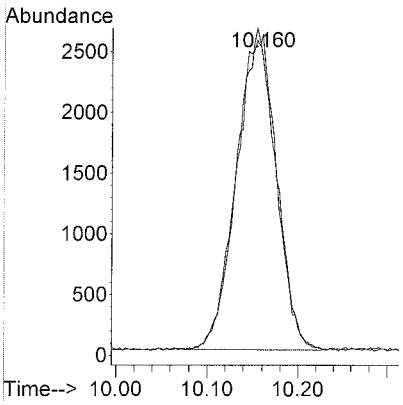


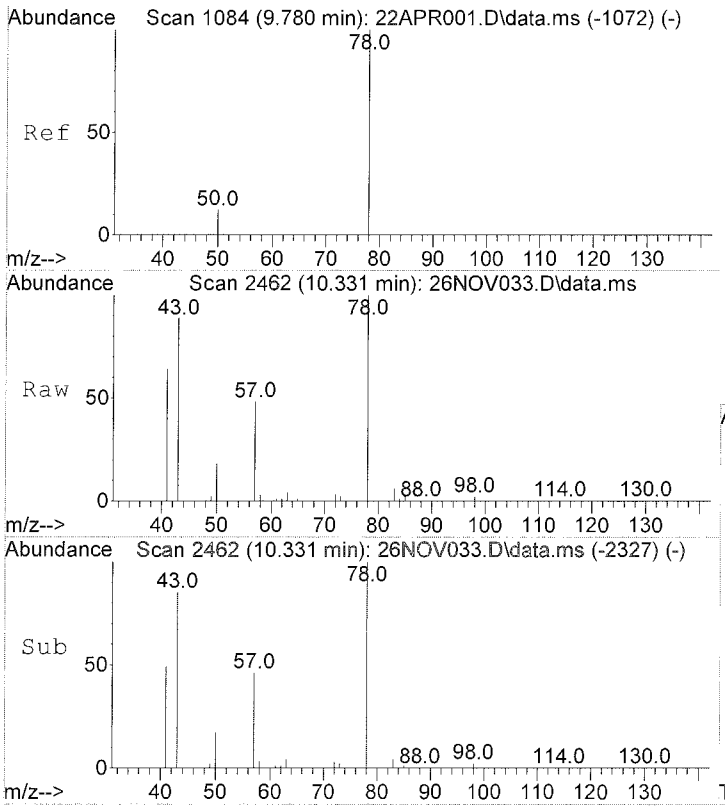


#20
Carbon Tetrachloride
Concen: 95.39 pptv
RT: 10.160 min Scan# 2406
Delta R.T. 0.021 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:117 Resp: 8080

Ion	Ratio	Lower	Upper
117	100		
119	92.9	47.1	147.1

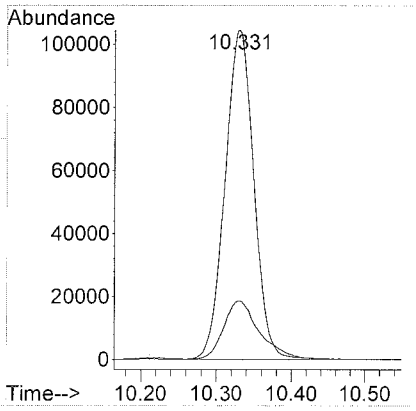


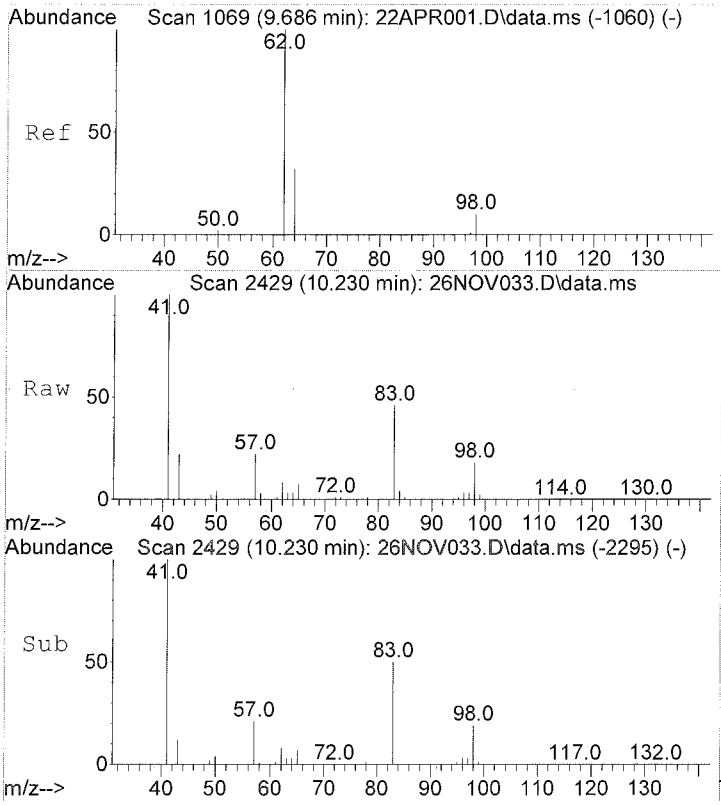


#22
Benzene
Concen: 1796.26 pptv
RT: 10.331 min Scan# 2462
Delta R.T. 0.012 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 78 Resp: 278615

Ion	Ratio	Lower	Upper
78	100		
50	17.8	0.0	62.6

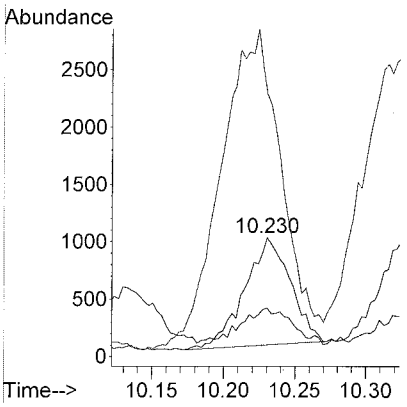


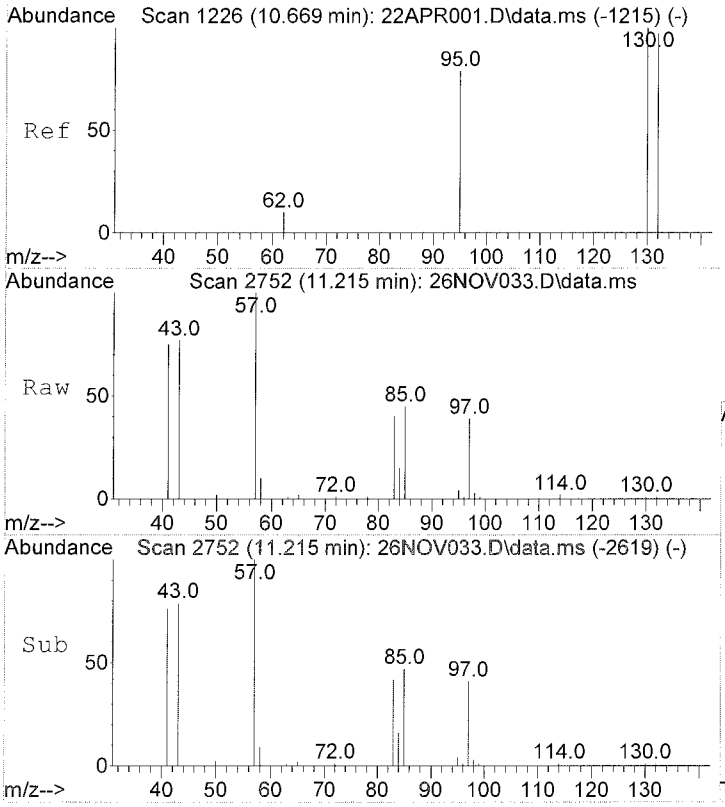


#24
1,2-Dichloroethane
Concen: 28.64 pptv
RT: 10.230 min Scan# 2429
Delta R.T. 0.009 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 62 Resp: 2078

Ion	Ratio	Lower	Upper
62	100		
64	31.5	0.0	83.0
98	211.8	0.0	61.0#

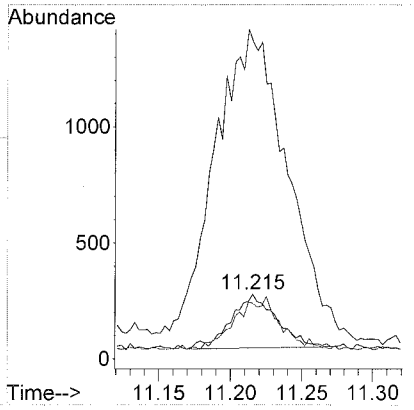


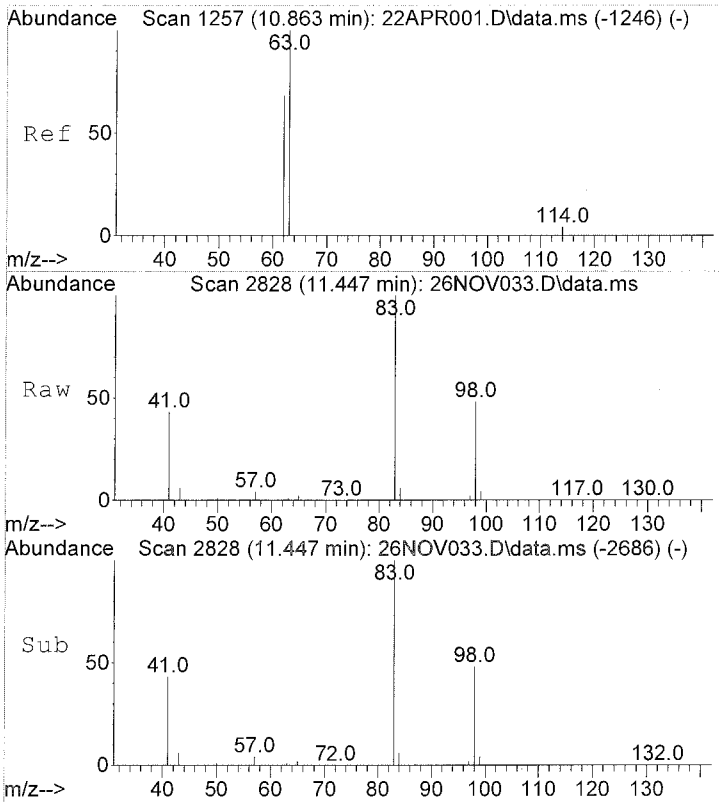


#25
Trichloroethene
Concen: 5.79 pptv
RT: 11.215 min Scan# 2752
Delta R.T. 0.006 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:130 Resp: 512

Ion	Ratio	Lower	Upper
130	100		
95	488.1	30.9	130.9#
132	83.8	46.0	146.0

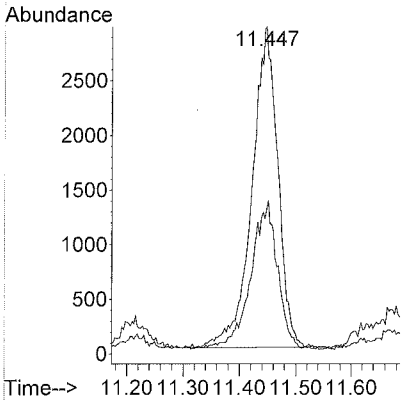


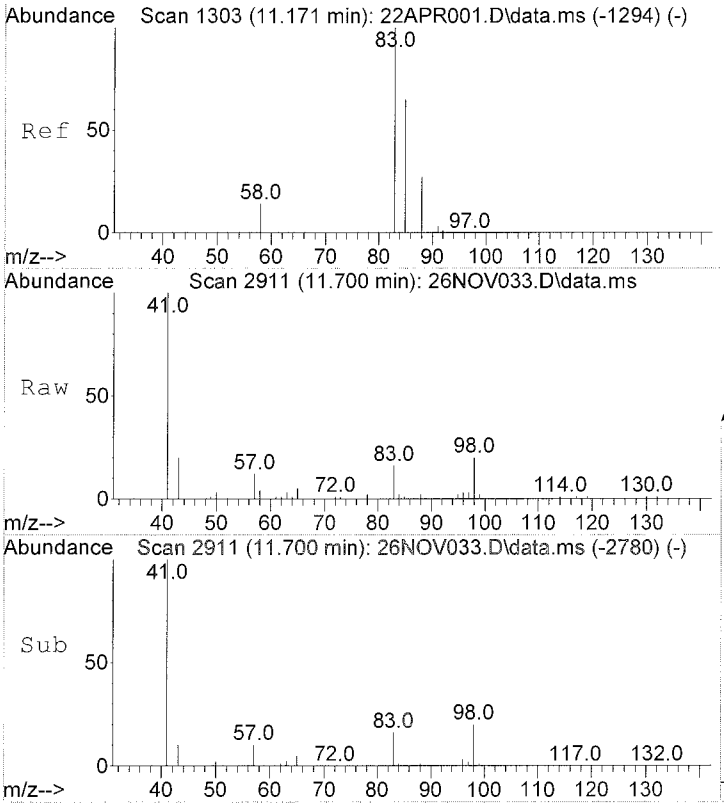


#26
1,2-Dichloropropane
Concen: 183.56 pptv
RT: 11.447 min Scan# 2828
Delta R.T. 0.034 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 63 Resp: 9395

Ion	Ratio	Lower	Upper
63	100		
62	42.7	20.3	120.3

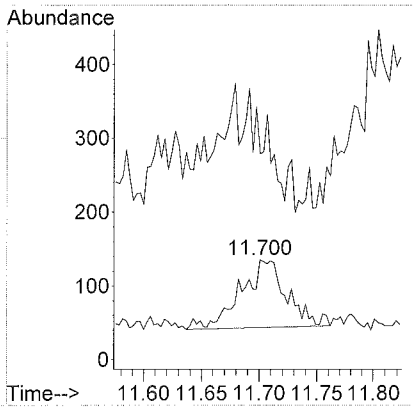


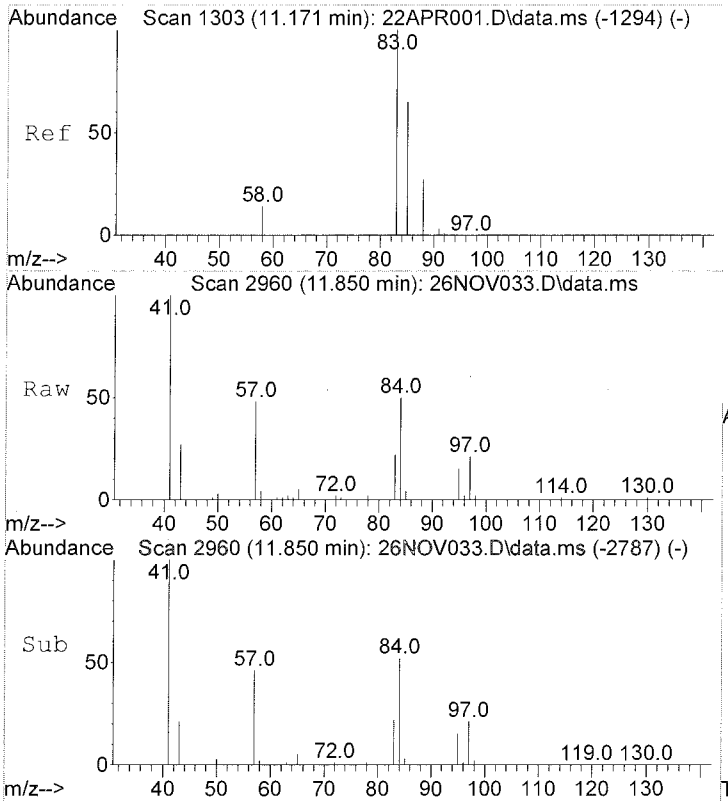


#27
1,4-Dioxane
Concen: 6.19 pptv
RT: 11.700 min Scan# 2911
Delta R.T. -0.000 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 88 Resp: 251

Ion	Ratio	Lower	Upper
88	100		
58	31.9	38.7	58.1#

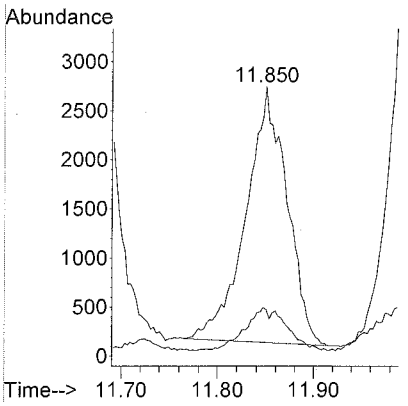


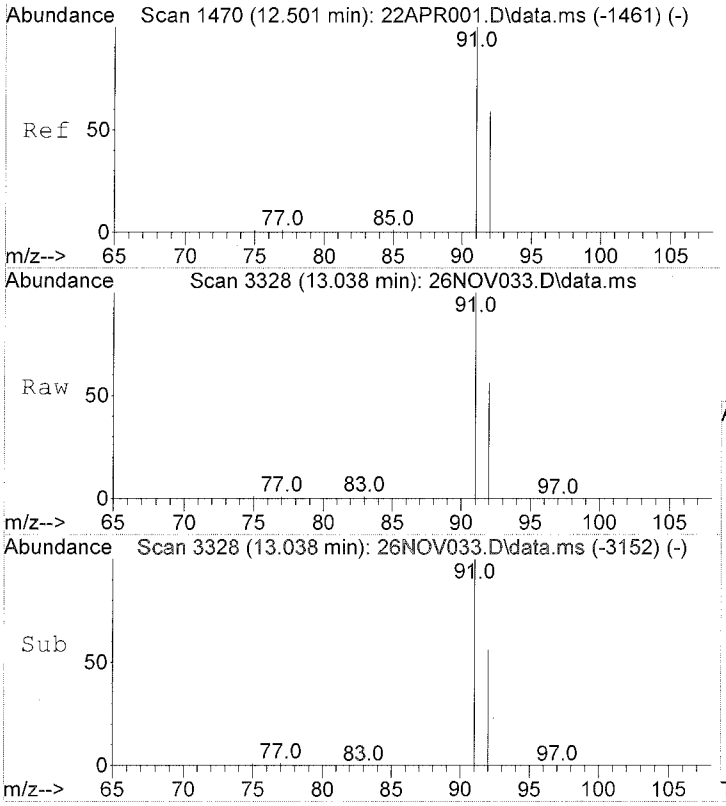


#28
Bromodichloromethane
Concen: 97.19 pptv
RT: 11.850 min Scan# 2960
Delta R.T. 0.128 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 83 Resp: 7667

Ion	Ratio	Lower	Upper
83	100		
85	15.8	13.9	113.9

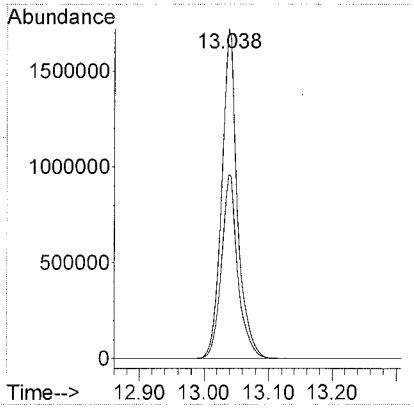


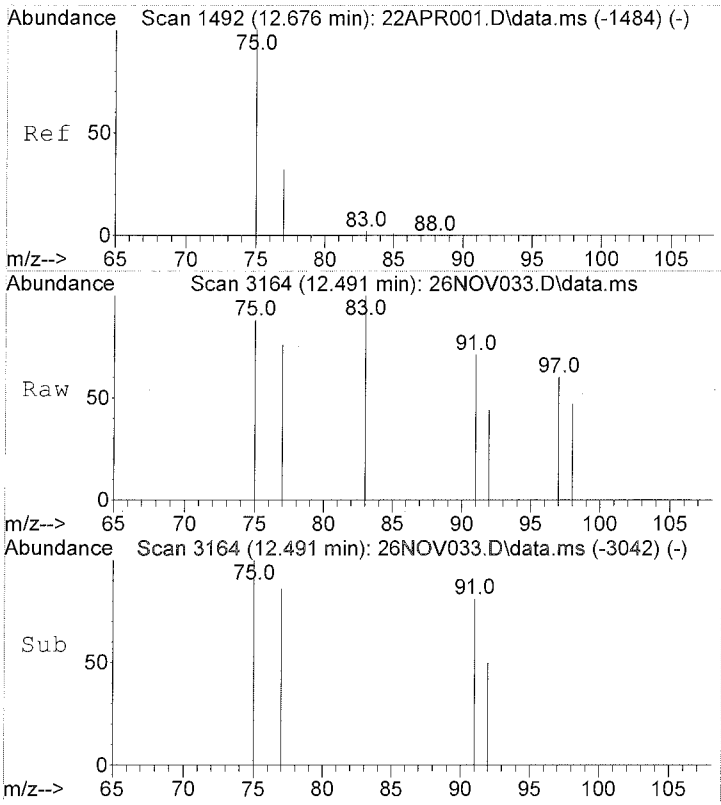


#30
Toluene
Concen: 18769.96 pptv
RT: 13.038 min Scan# 3328
Delta R.T. -0.014 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 91 Resp: 2880997

Ion	Ratio	Lower	Upper
91	100		
92	55.8	10.0	110.0

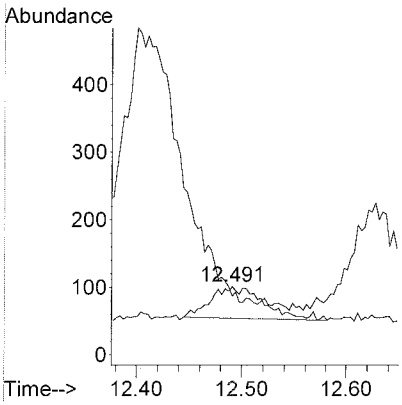


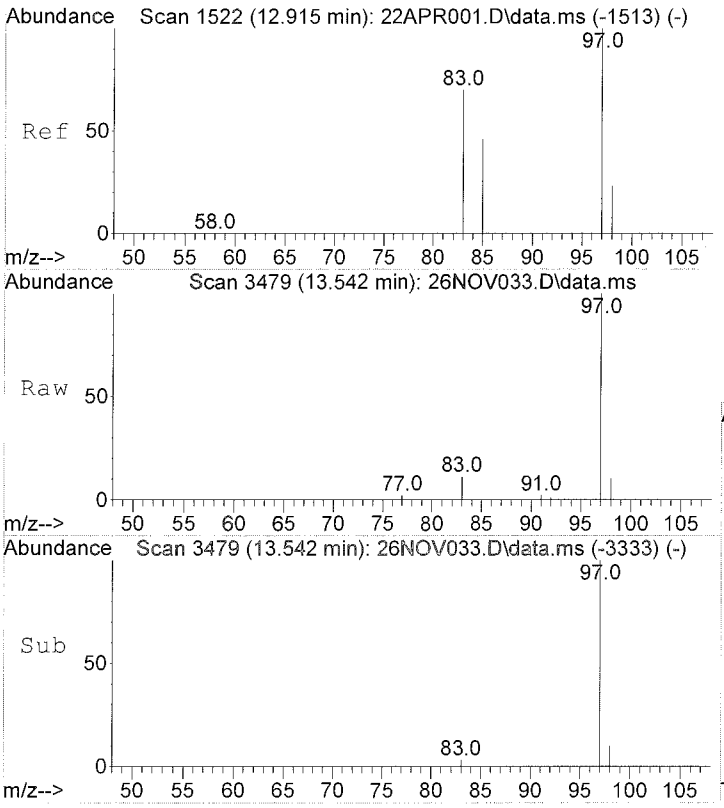


#32
t-1,3-Dichloropropene
Concen: 4.22 pptv
RT: 12.491 min Scan# 3164
Delta R.T. -0.010 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 75 Resp: 162

Ion	Ratio	Lower	Upper
75	100		
77	8.0	0.0	81.7

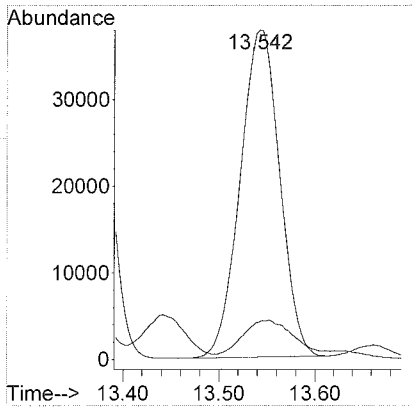


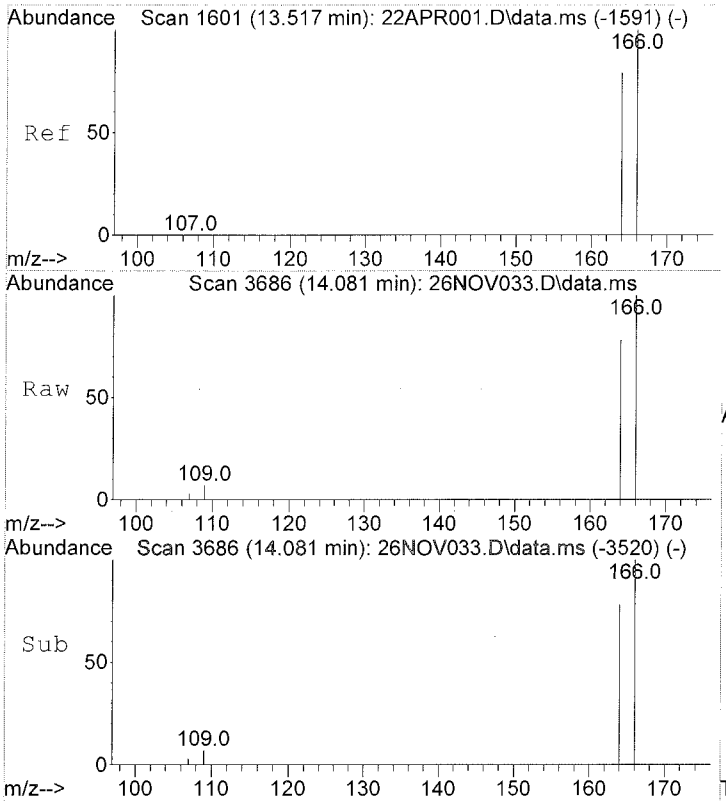


#33
1,1,2-Trichloroethane
Concen: 2143.63 pptv
RT: 13.542 min Scan# 3479
Delta R.T. 0.087 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 97 Resp: 107083

Ion	Ratio	Lower	Upper
97	100		
83	9.0	25.1	125.1#

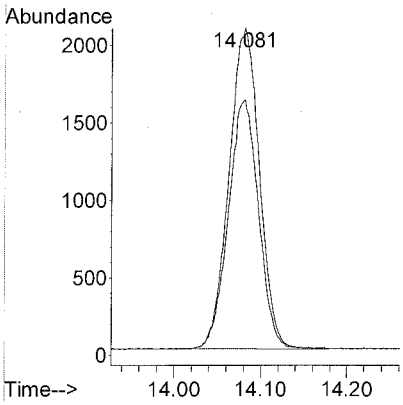


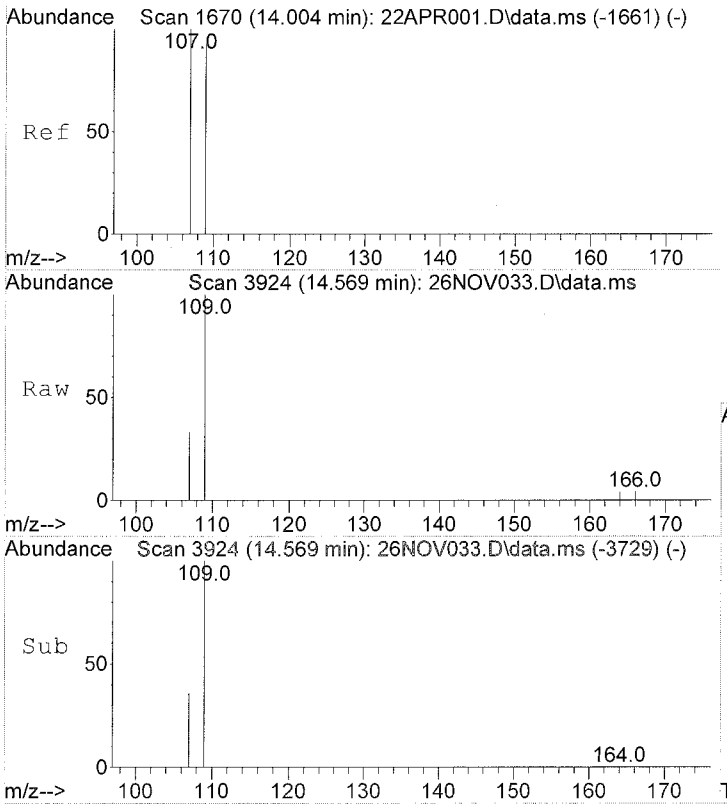


#34
Tetrachloroethene
Concen: 66.83 pptv
RT: 14.081 min Scan# 3686
Delta R.T. 0.002 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:166 Resp: 5027

Ion	Ratio	Lower	Upper
166	100		
164	77.5	25.3	125.3

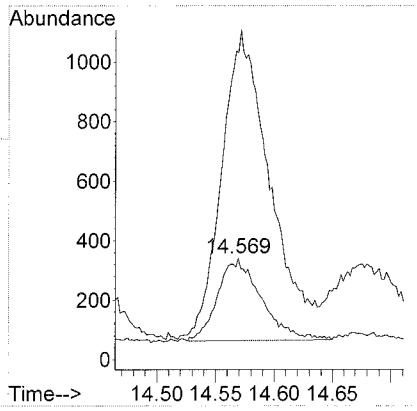


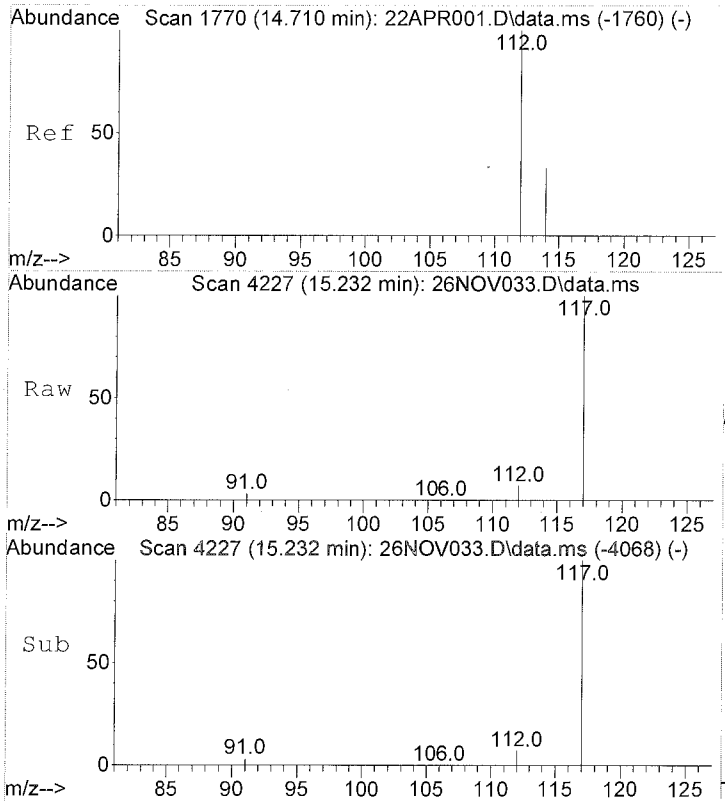


#35
1,2-Dibromoethane
Concen: 12.61 pptv
RT: 14.569 min Scan# 3924
Delta R.T. -0.000 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:107 Resp: 712

Ion	Ratio	Lower	Upper
107	100		
109	340.6	43.3	143.3#

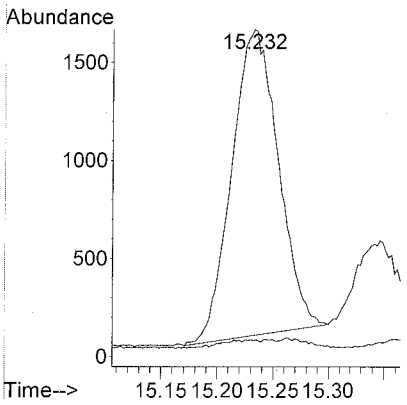


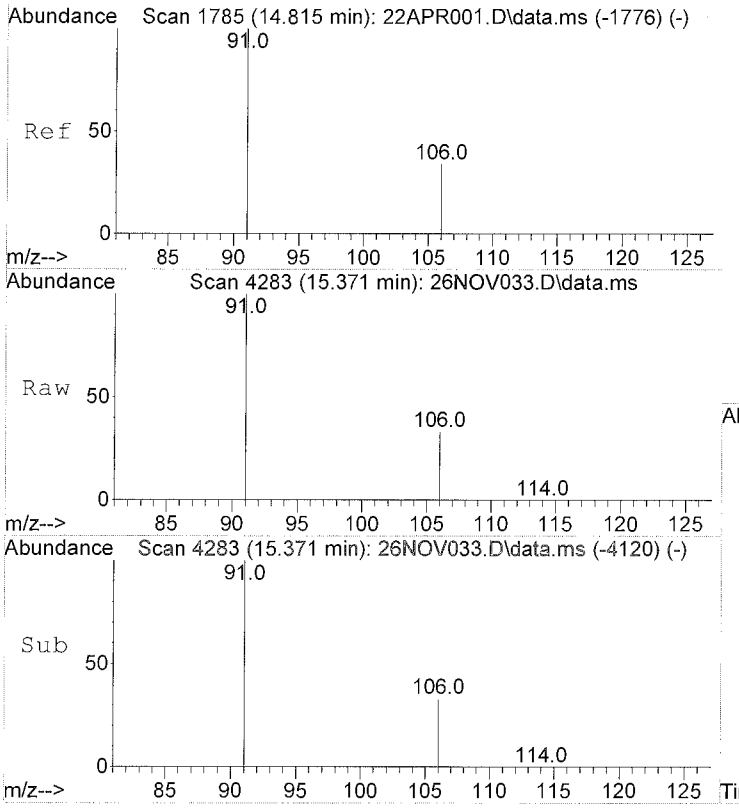


#36
Chlorobenzene
Concen: 47.96 pptv
RT: 15.232 min Scan# 4227
Delta R.T. -0.032 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:112 Resp: 4501

Ion	Ratio	Lower	Upper
112	100		
114	2.1	0.0	81.6

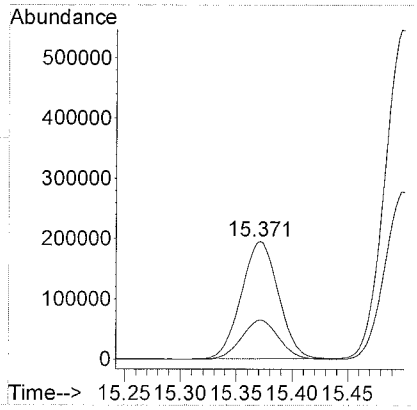


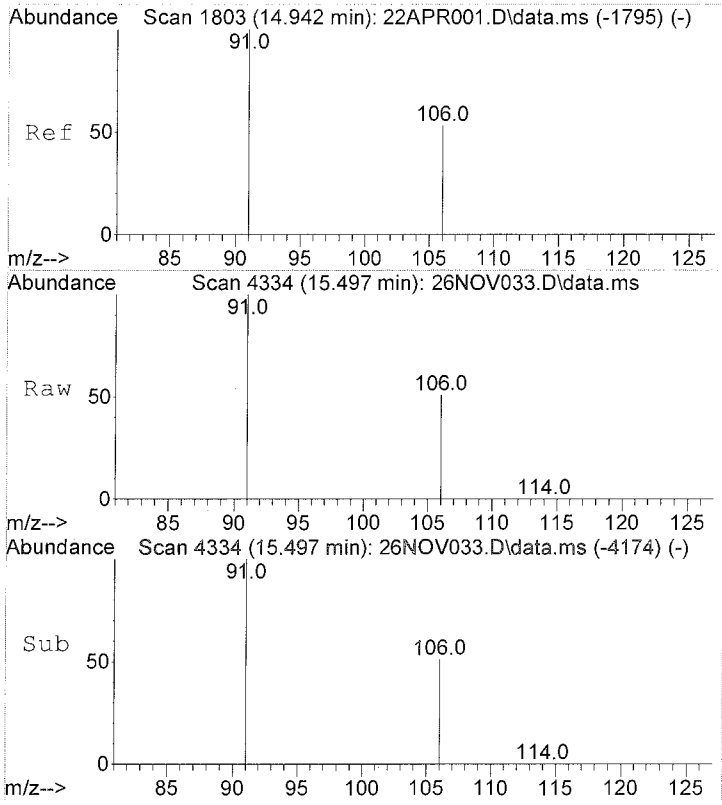


#37
Ethylbenzene
Concen: 4029.97 pptv
RT: 15.371 min Scan# 4283
Delta R.T. -0.000 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 91 Resp: 445564

Ion	Ratio	Lower	Upper
91	100		
106	33.3	0.0	83.4

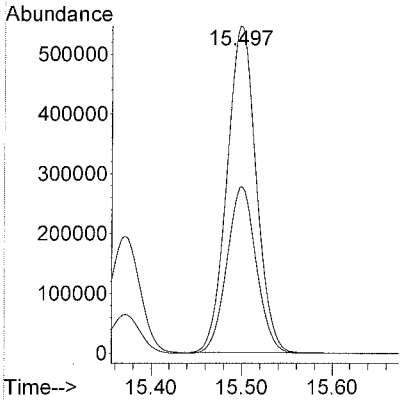


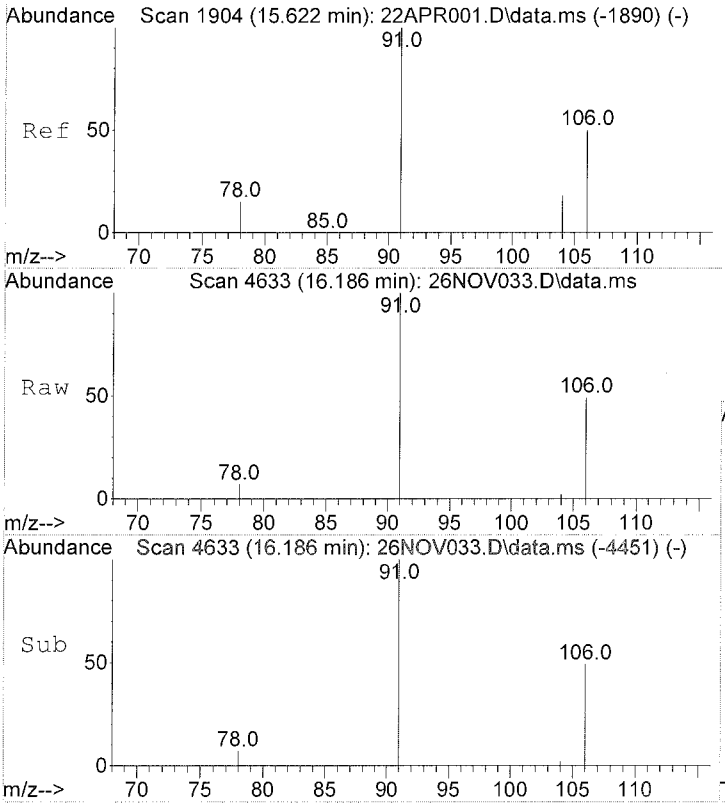


#38
p,&m-Xylene
Concen: 15064.03 pptv
RT: 15.497 min Scan# 4334
Delta R.T. -0.005 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 91 Resp: 1218163

Ion	Ratio	Lower	Upper
91	100		
106	50.8	3.9	103.9

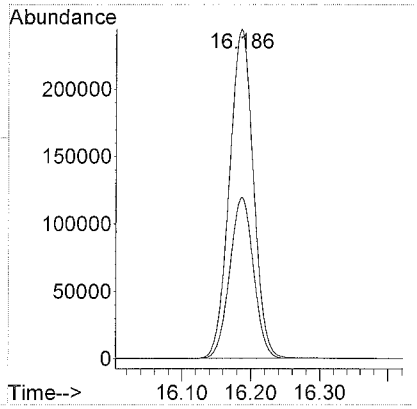


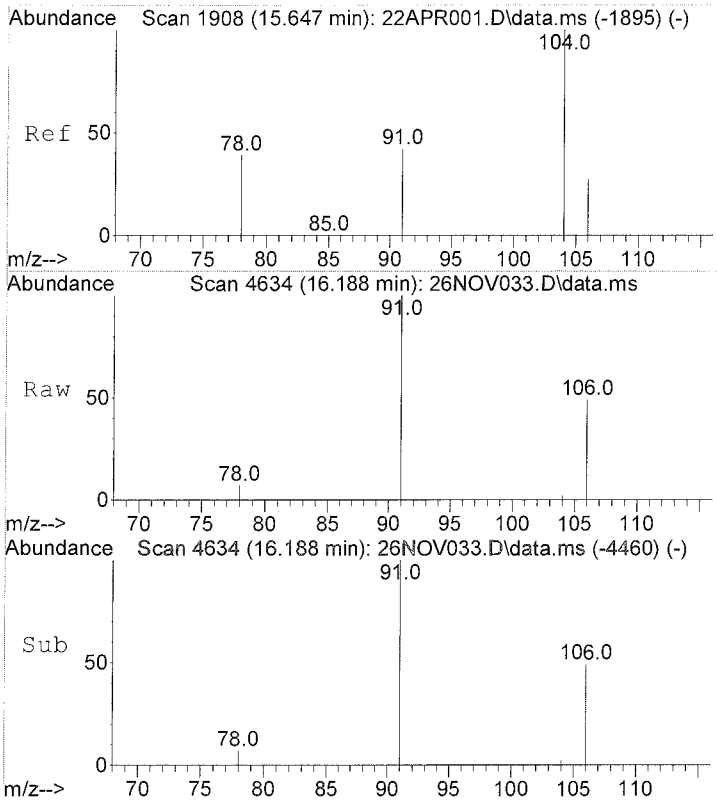


#39
o-Xylene
Concen: 7903.27 pptv
RT: 16.186 min Scan# 4633
Delta R.T. -0.002 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 91 Resp: 588777

Ion	Ratio	Lower	Upper
91	100		
106	49.1	0.0	97.3

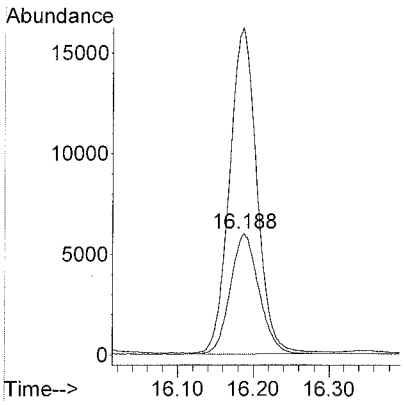


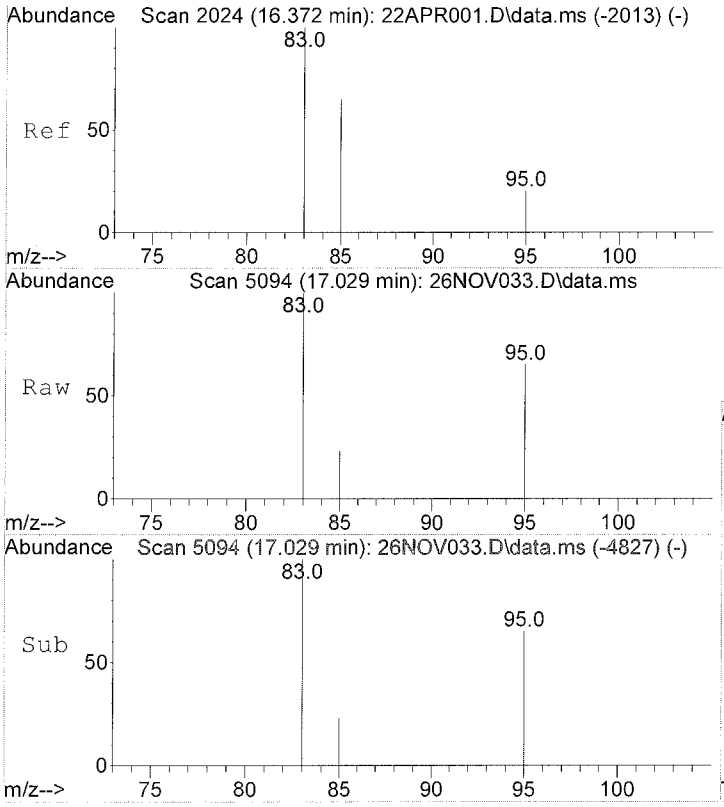


#40
Styrene
Concen: 324.22 pptv
RT: 16.188 min Scan# 4634
Delta R.T. -0.023 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:104 Resp: 15640

Ion	Ratio	Lower	Upper
104	100		
78	265.7	0.0	87.4#

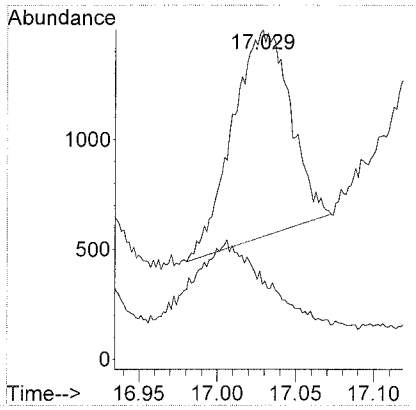


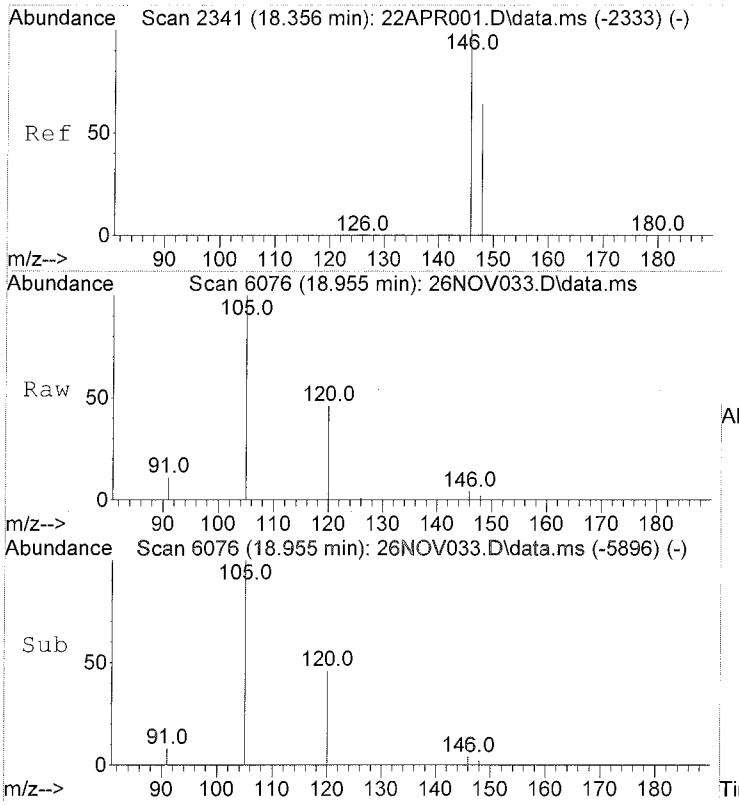


#41
1,1,2,2-Tetrachloroethane
Concen: 42.05 pptv
RT: 17.029 min Scan# 5094
Delta R.T. 0.045 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 83 Resp: 2424

Ion	Ratio	Lower	Upper
83	100		
85	17.6	13.6	113.6

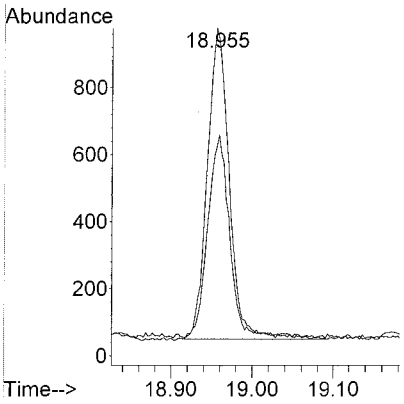


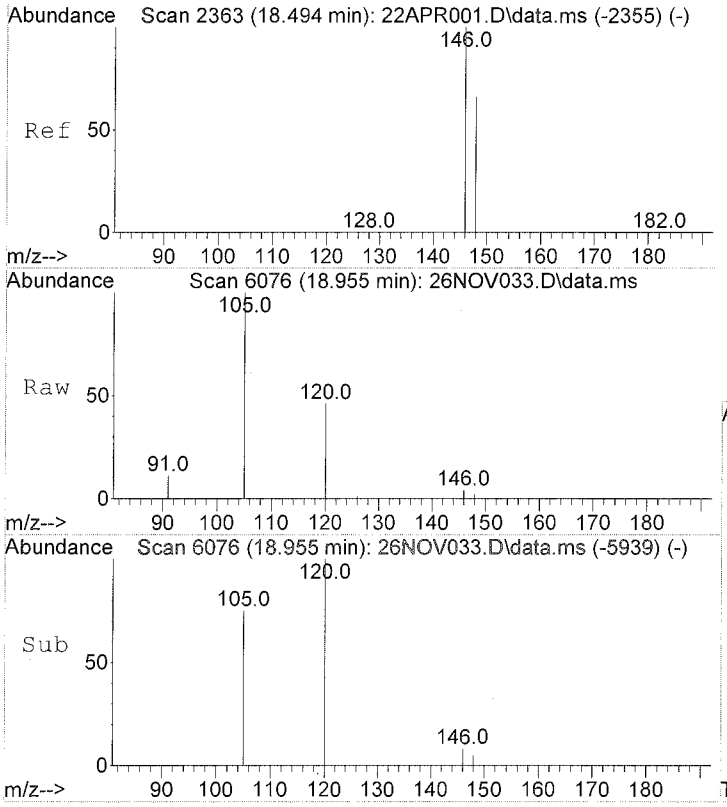


#43
1,3-Dichlorobenzene
Concen: 30.50 pptv
RT: 18.955 min Scan# 6076
Delta R.T. 0.125 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:146 Resp: 1772

Ion	Ratio	Lower	Upper
146	100		
148	61.0	13.9	113.9

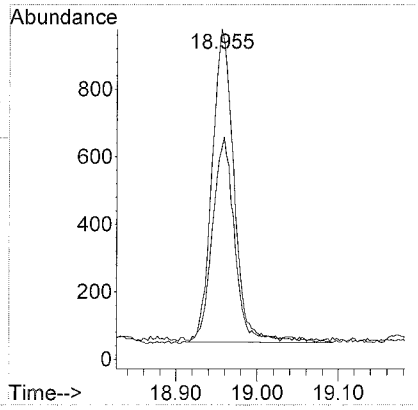


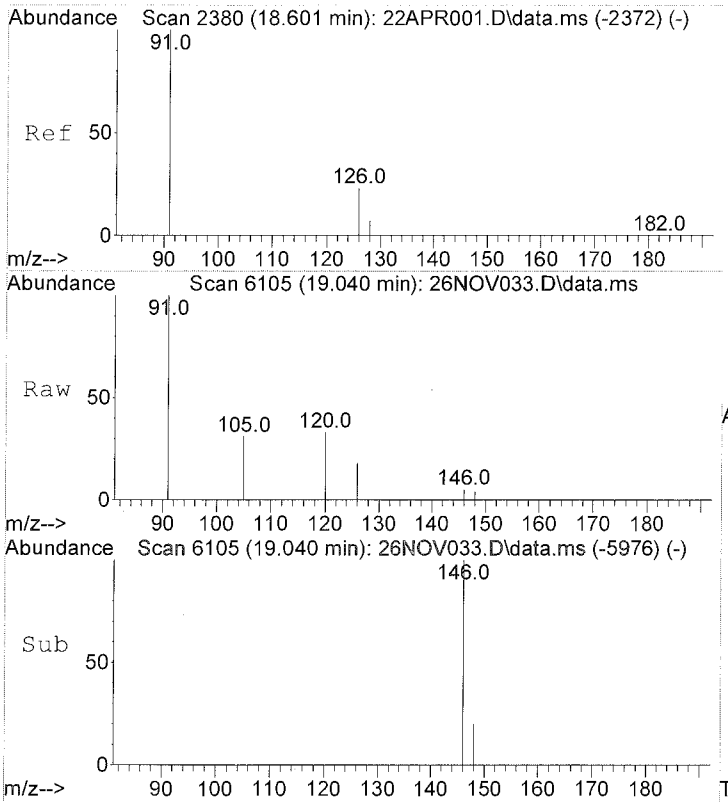


#44
1,4-Dichlorobenzene
Concen: 29.30 pptv
RT: 18.955 min Scan# 6076
Delta R.T. -0.000 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:146 Resp: 1772

Ion	Ratio	Lower	Upper
146	100		
148	61.0	15.5	115.5

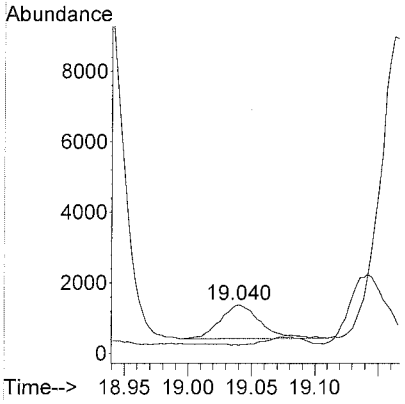


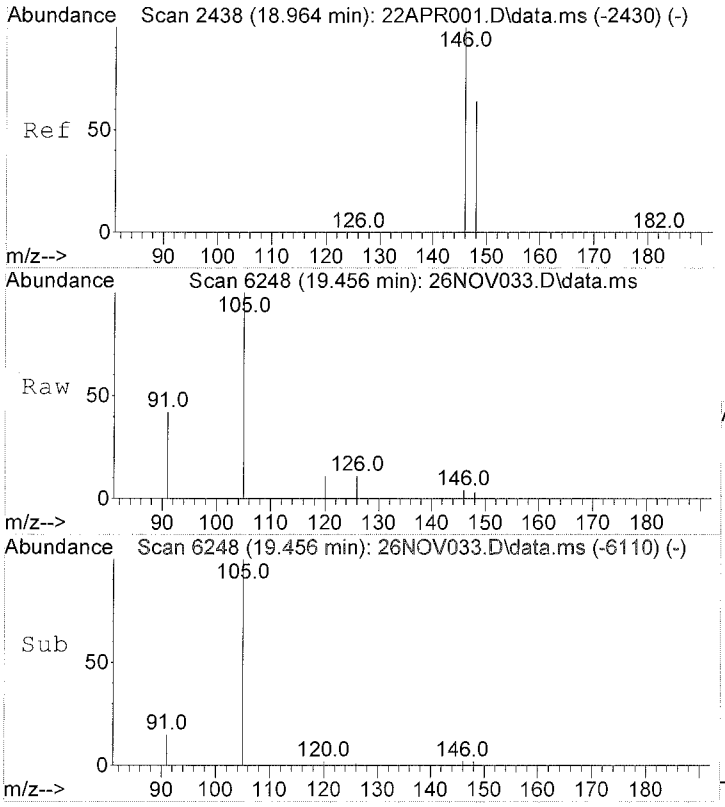


#45
Benzyl Chloride
Concen: 86.61 pptv
RT: 19.040 min Scan# 6105
Delta R.T. -0.023 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion: 91 Resp: 2078

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.7	28.1#

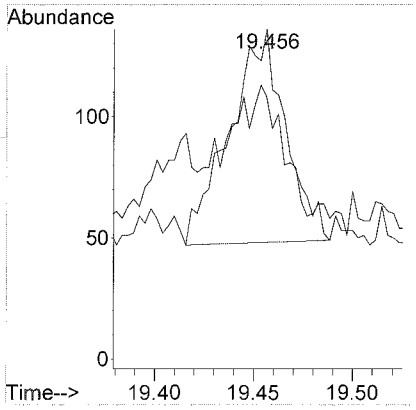


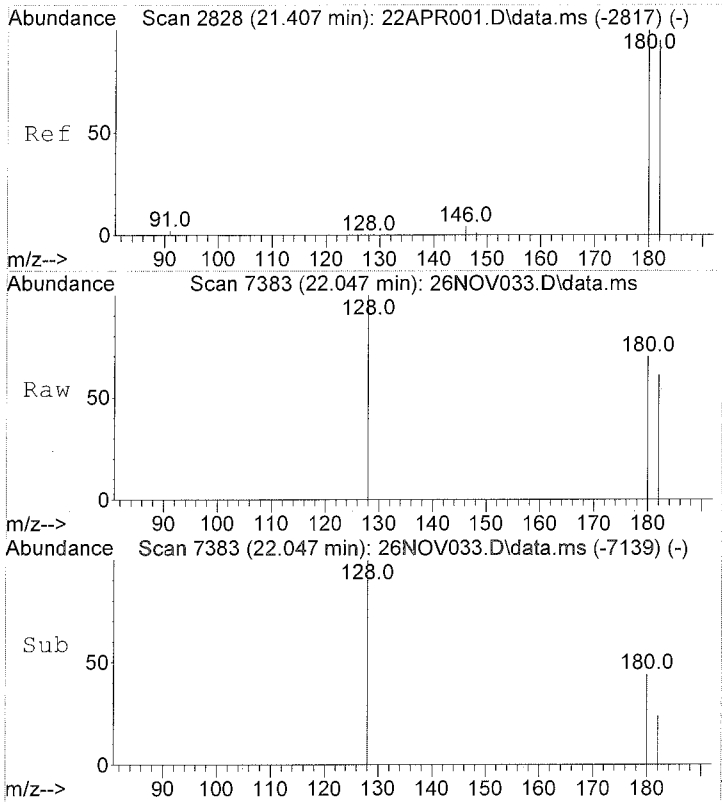


#46
1,2-Dichlorobenzene
Concen: 3.18 pptv
RT: 19.456 min Scan# 6248
Delta R.T. 0.003 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:146 Resp: 172

Ion	Ratio	Lower	Upper
146	100		
148	56.2	13.7	113.7

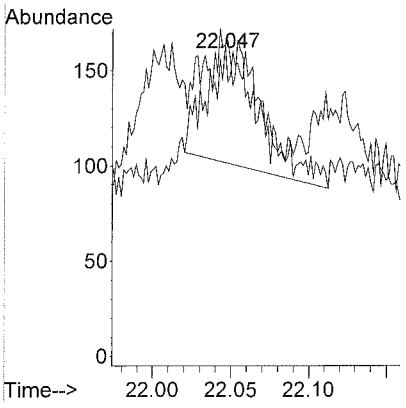


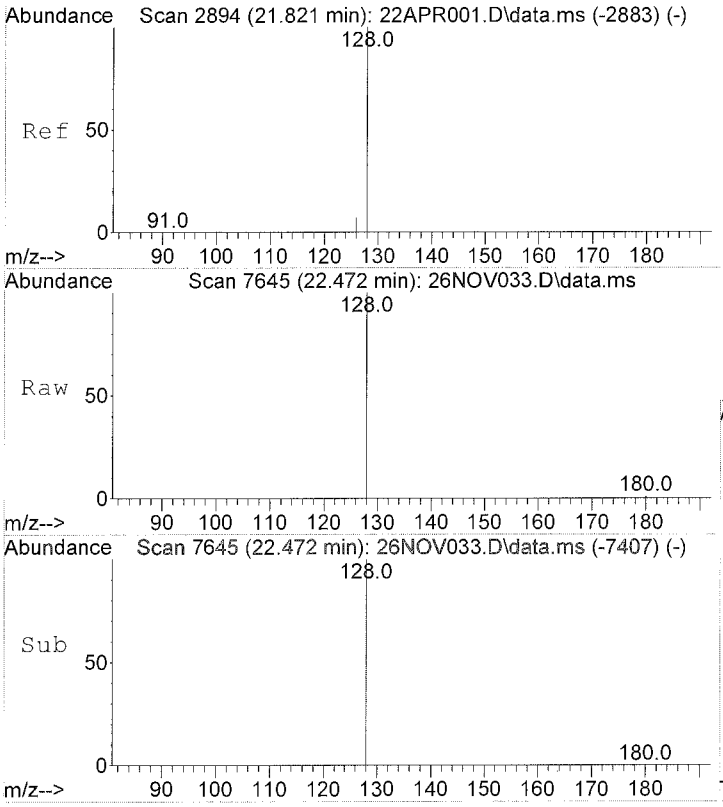


#47
1,2,4-Trichlorobenzene
Concen: 3.20 pptv
RT: 22.047 min Scan# 7383
Delta R.T. -0.005 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:180 Resp: 147

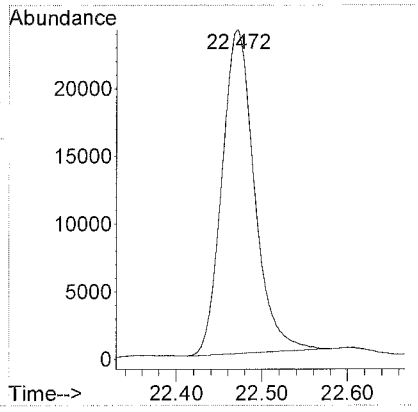
Ion	Ratio	Lower	Upper
180	100		
182	25.6	44.8	144.8#





#48
Naphthalene
Concen: 709.48 pptv
RT: 22.472 min Scan# 7645
Delta R.T. -0.014 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:128 Resp: 63134



QC Report: Unit #1
Inject Time: 11/27/2018 08:24:01

QAQC Filename:QAQC\11272018\1_082401.asc

Autosampler Position: 11 / Run 25 of 29
Sample Name : J110805-03
Method Filename: T15DESORB230.MTC

Volume Parameters:				
ISTD A Xfer Volume	set=50	Act=50	StartPress=15.1	EndPress=15.1
ISTD A Flow	set=50	Act=49.7		
ISTD A Trap Temp	set=22	hi=24	lo=22	avg=22
ISTD B Xfer Volume	set=0	Act=0	StartPress=0.0	EndPress=0.0
ISTD B Flow	set=0	Act=0.0		
ISTD B Trap Temp	Disabled			
ISTD C Xfer Volume	Disabled			
ISTD C Flow	Disabled			
ISTD C Trap Temp	Disabled			
Sample Xfer Volume	set=438	Act=438	StartPress=13.7	EndPress=12.7
Sample Xfer Flow	set=50	Act=49.7		
Smple Xfer Trap Temp	set=22	hi=22	lo=22	avg=22
Sweep Gas = Helium				
Dry Purge Parameters:				
Dry Purge Flow	set=70	Act=69.1		
Dry Purge Temp	set=25	hi=25	lo=25	avg=25
Dry Purge Time	set=12.00	act=12.00		
Desorb Parameters:				
Trap Desorb Temp	set=230	hi=243	lo=227	avg=230
Trap Desorb Time	set=4.50	act=4.50		
MCS Temp	Disabled			
Cryo Focuser Temp	set=-180	hi=-184	lo=-198	avg=-195
Inject Parameters:				
Cryo Union Temp	set=130	hi=130	lo=129	avg=130
Cryo Inject Temp	set=75	hi=75	lo=73	avg=74
Cryo Inject Time	set=2.50	act=2.50		
Bake Parameters:				
Trap Bake Temp	set=280	hi=282	lo=278	avg=280
Trap Bake Time	set=10.00	act=10.00		
MCS Bake Temp	Disabled			
System Regions:				
Manifold 1 Temp	set=130	avg=130		
Manifold 2 Temp	set=130	avg=130		
Oven 6 Port Temp	set=130	avg=130		
Oven 8 Port Temp	set=130	avg=130		
Oven 16 Port Temp	set=130	avg=130		
Bottom Of Trap Temp	set=130	avg=130		
Transfer Line Temp	set=130	avg=130		

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV034.D
Acq On : 27 Nov 2018 9:09 am
Operator : DT
Sample : J110805-04 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 27 09:33:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.343	130	113239	2000.00	pptv	0.01
21) 1,4-Difluorobenzene	10.688	114	405569	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.207	117	215794	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.102	65	163393	2382.12	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 119.11%			
29) Toluene-d8	12.934	98	265825	1844.98	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 92.25%			
42) 4-Bromofluorobenzene	17.183	95	105454	1945.42	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 97.27%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.550	85	75426	562.28	pptv	100
3) Chloromethane	3.975	50	47651	1066.82	pptv	84
4) Vinyl Chloride	4.190	62	260	5.94	pptv #	1
5) Bromomethane	4.876	96	587	30.36	pptv	98
6) Chloroethane	5.010	64	139	4.42	pptv	63
7) Trichlorofluoromethane...	5.470	101	95053	527.70	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.220	151	863	6.43	pptv	90
9) Acetone	6.089	43	12667240	120586.95	pptv	96
11) Methylene Chloride	7.043	49	2303	34.87	pptv	66
12) t-Butyl Methyl Ether	7.354	73	554	4.08	pptv #	1
14) Hexane	7.759	57	65651	783.68	pptv	87
15) 1,1-Dichloroethane	8.089	63	309	3.14	pptv	86
16) 2-Butanone	8.620	72	14460	578.37	pptv	58
17) c-1,2-Dichloroethene	8.928	96	459	7.93	pptv	85
18) Chloroform	9.156	83	9994	87.40	pptv	97
19) 1,1,1-Trichloroethane	9.770	97	396	3.62	pptv	72
20) Carbon Tetrachloride	10.151	117	8058	96.11	pptv	97
22) Benzene	10.331	78	183698	1194.49	pptv	87
24) 1,2-Dichloroethane	10.069	62	175	2.43	pptv	86
25) Trichloroethene	11.209	130	396	4.51	pptv #	1
26) 1,2-Dichloropropane	11.441	63	5290	104.24	pptv	74
27) 1,4-Dioxane	11.697	88	269	6.69	pptv #	29
28) Bromodichloromethane	11.856	83	4279	54.71	pptv	37
30) Toluene	13.041	91	2749087	18064.41	pptv	95
32) t-1,3-Dichloropropene	12.497	75	88	2.26	pptv	43
33) 1,1,2-Trichloroethane	13.542	97	57811	1139.47	pptv #	22
34) Tetrachloroethene	14.081	166	5813	76.09	pptv	99
35) 1,2-Dibromoethane	14.571	107	489	8.53	pptv #	1
36) Chlorobenzene	15.237	112	2730	28.64	pptv	46
37) Ethylbenzene	15.371	91	262187	2334.90	pptv	100
38) p,&m-Xylene	15.500	91	778353	9477.13	pptv	96
39) o-Xylene	16.186	91	340814	4504.41	pptv	97
40) Styrene	16.186	104	8855	180.74	pptv #	1
41) 1,1,2,2-Tetrachloroethane	17.028	83	1717	29.32	pptv	43
43) 1,3-Dichlorobenzene	18.958	146	1392	23.59	pptv	98
44) 1,4-Dichlorobenzene	18.958	146	1392	22.66	pptv	100

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV034.D
Acq On : 27 Nov 2018 9:09 am
Operator : DT
Sample : J110805-04 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 27 09:33:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

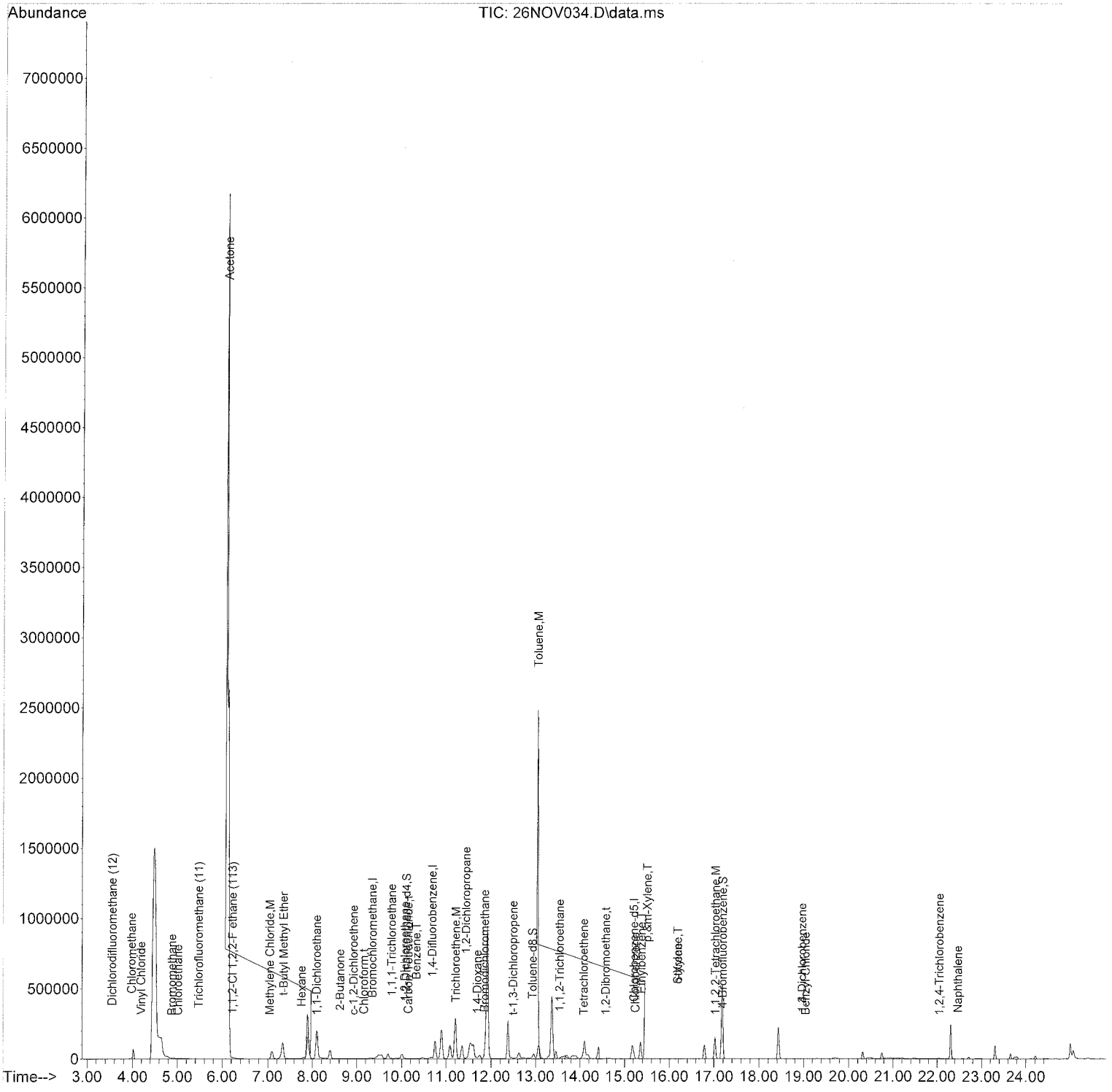
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
45) Benzyl Chloride	19.040	91	1198	49.16	pptv #	52
47) 1,2,4-Trichlorobenzene	22.047	180	103	2.21	pptv #	16
48) Naphthalene	22.468	128	44710	494.70	pptv	100

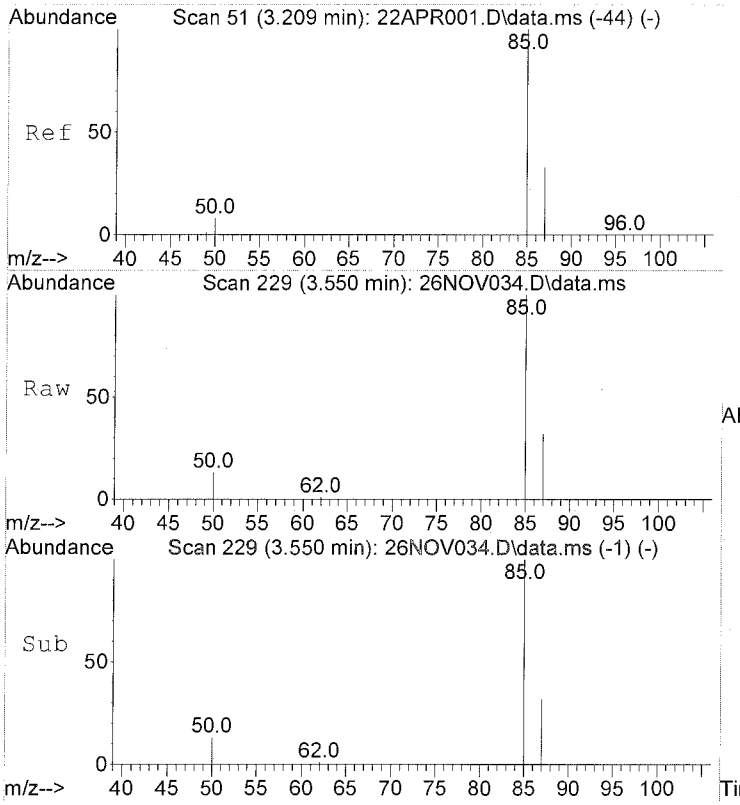
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV034.D
Acq On : 27 Nov 2018 9:09 am
Operator : DT
Sample : Jl10805-04 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 27 09:33:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

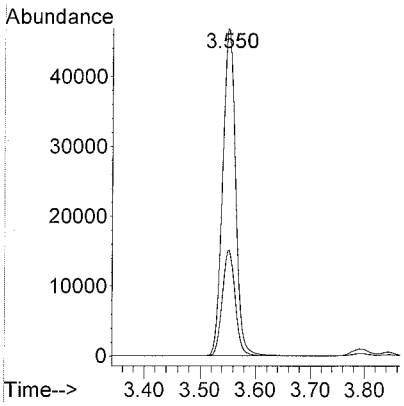


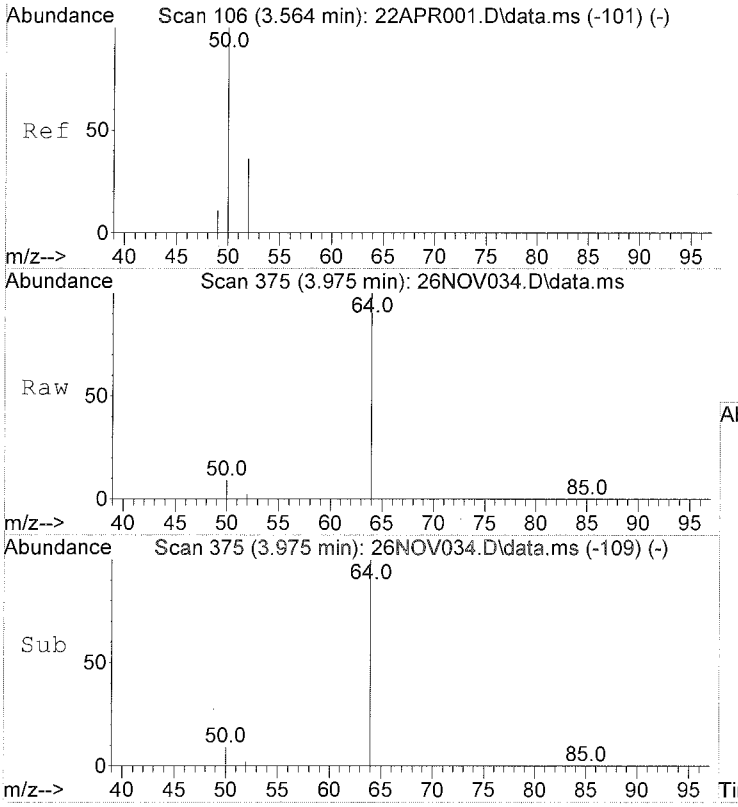


#2
Dichlorodifluoromethane (12)
Concen: 562.28 pptv
RT: 3.550 min Scan# 229
Delta R.T. -0.038 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 85 Resp: 75426

Ion	Ratio	Lower	Upper
85	100		
87	32.0	0.0	81.9

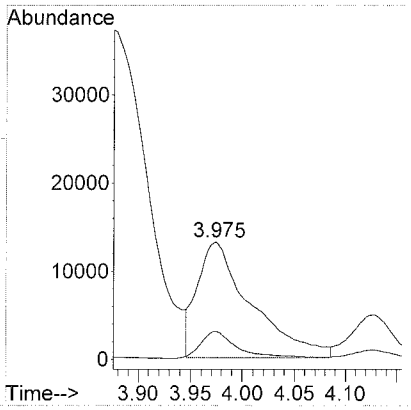


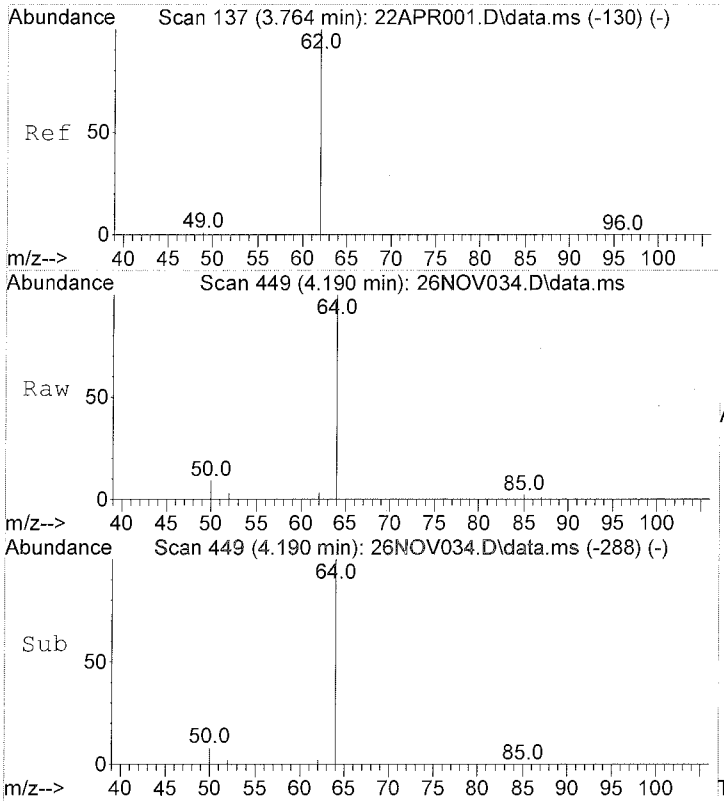


#3
Chloromethane
Concen: 1066.82 pptv
RT: 3.975 min Scan# 375
Delta R.T. -0.026 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 50 Resp: 47651

Ion	Ratio	Lower	Upper
50	100		
52	23.9	3.0	63.0

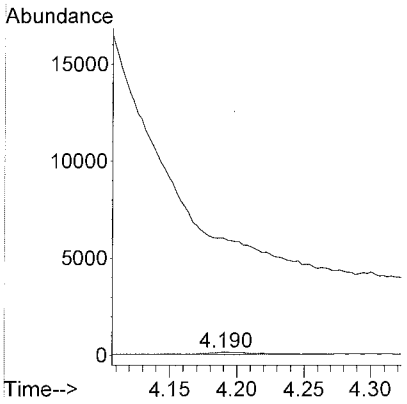


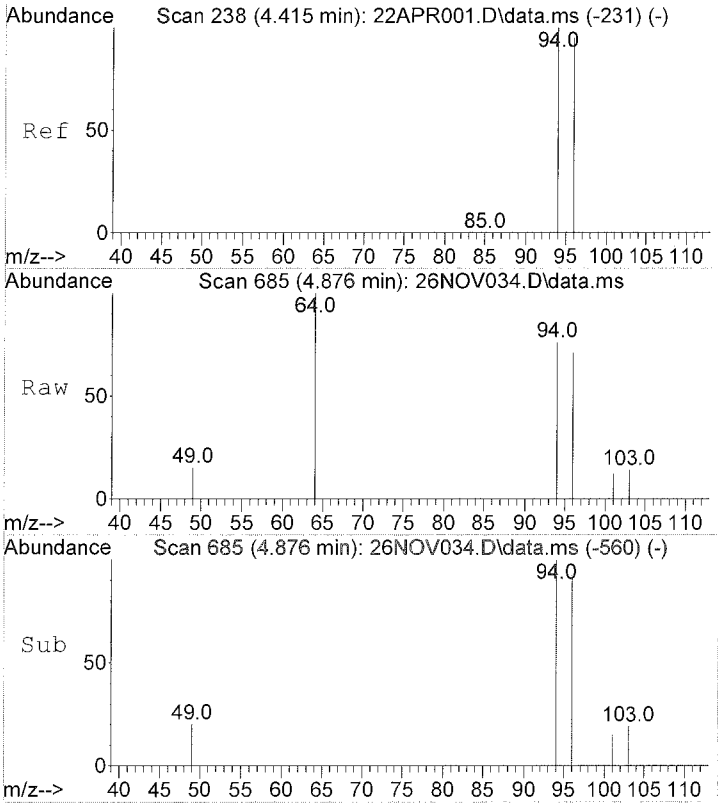


#4
Vinyl Chloride
Concen: 5.94 pptv
RT: 4.190 min Scan# 449
Delta R.T. -0.032 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 62 Resp: 260

Ion	Ratio	Lower	Upper
62	100		
64	1552.0	0.0	82.1#

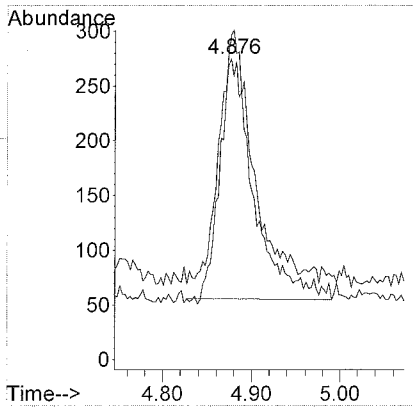


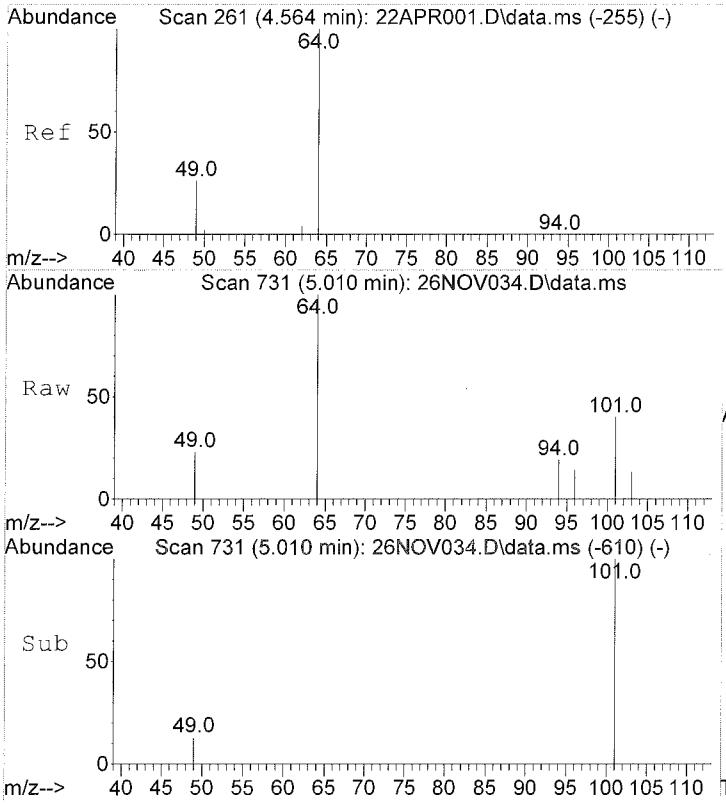


#5
Bromomethane
Concen: 30.36 pptv
RT: 4.876 min Scan# 685
Delta R.T. -0.038 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 96 Resp: 587

Ion	Ratio	Lower	Upper
96	100		
94	103.6	55.4	155.4

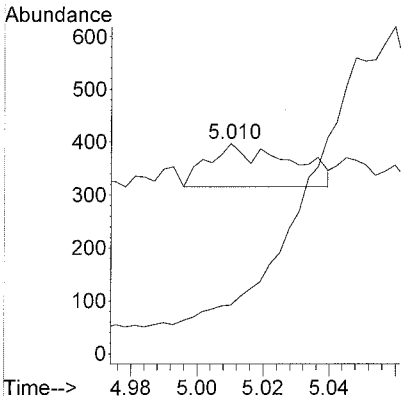


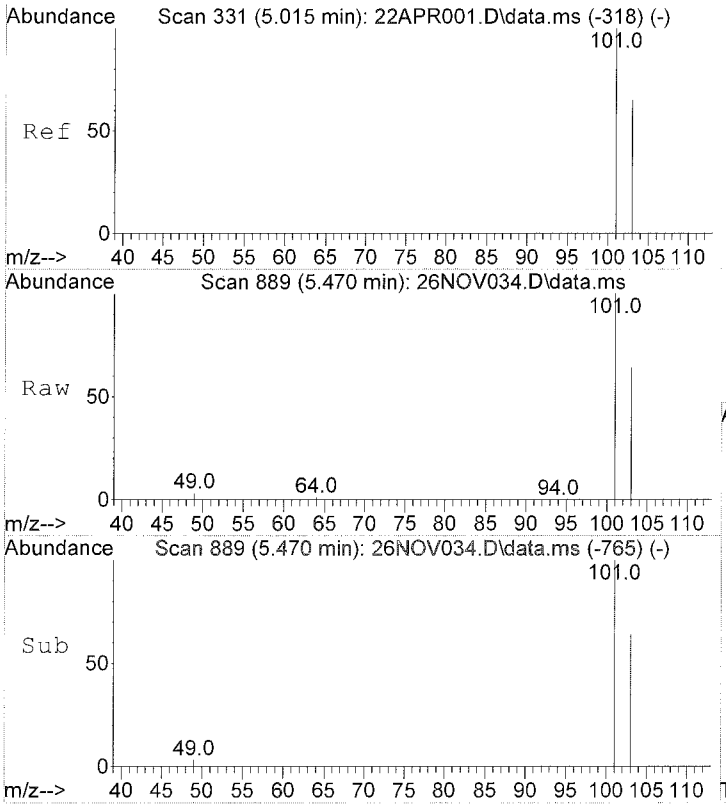


#6
Chloroethane
Concen: 4.42 pptv
RT: 5.010 min Scan# 731
Delta R.T. -0.047 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 64 Resp: 139

Ion	Ratio	Lower	Upper
64	100		
49	35.4	0.0	68.7

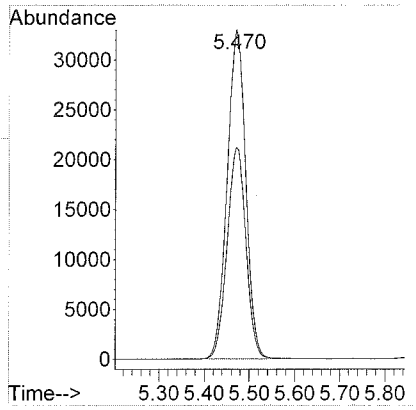


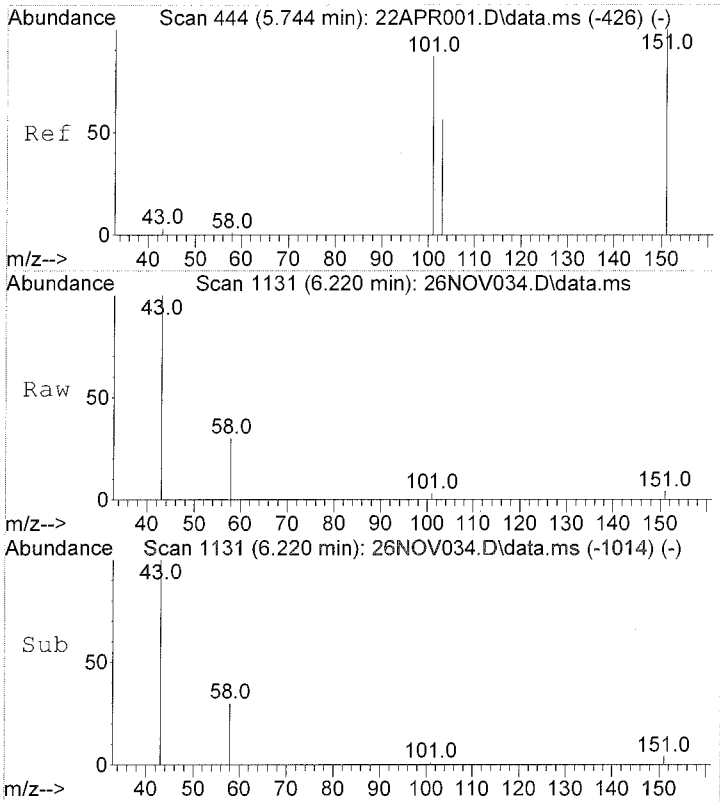


#7
Trichlorofluoromethane (11)
Concen: 527.70 pptv
RT: 5.470 min Scan# 889
Delta R.T. -0.038 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:101 Resp: 95053

Ion	Ratio	Lower	Upper
101	100		
103	64.2	14.6	114.6

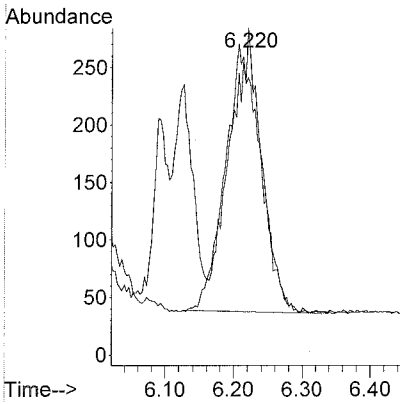


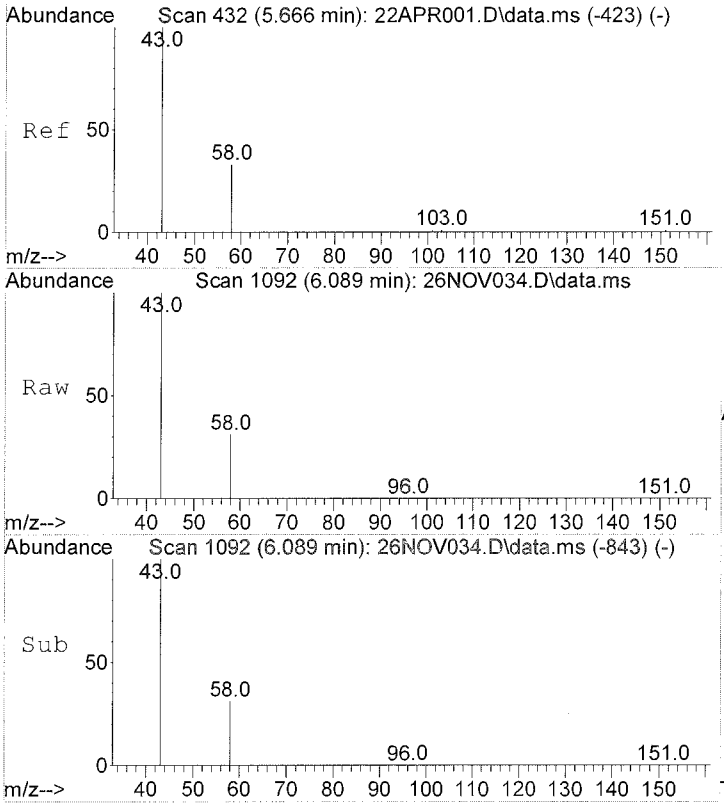


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 6.43 pptv
RT: 6.220 min Scan# 1131
Delta R.T. -0.013 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:151 Resp: 863

Ion	Ratio	Lower	Upper
151	100		
101	82.3	41.5	141.5

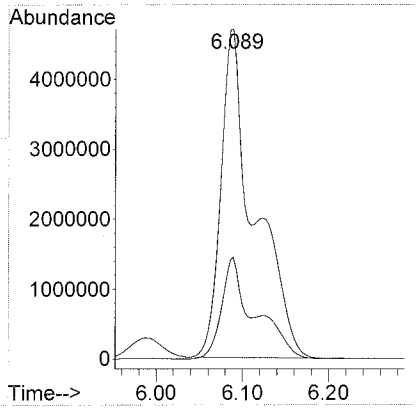


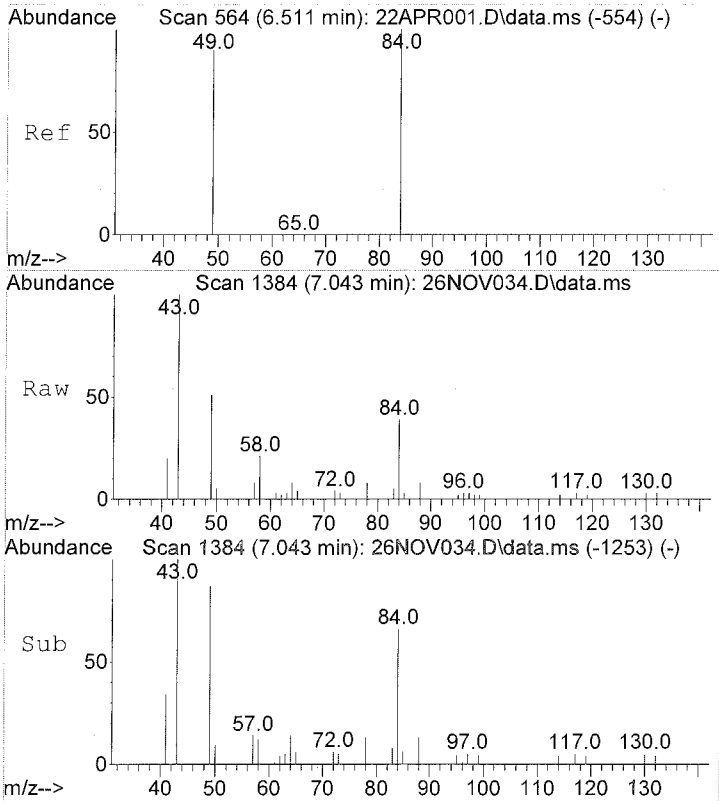


#9
Acetone
Concen: 120586.95 pptv
RT: 6.089 min Scan# 1092
Delta R.T. -0.047 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 43 Resp:12667240

Ion	Ratio	Lower	Upper
43	100		
58	31.0	13.4	53.4

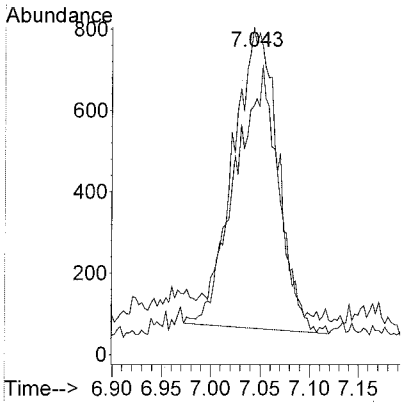


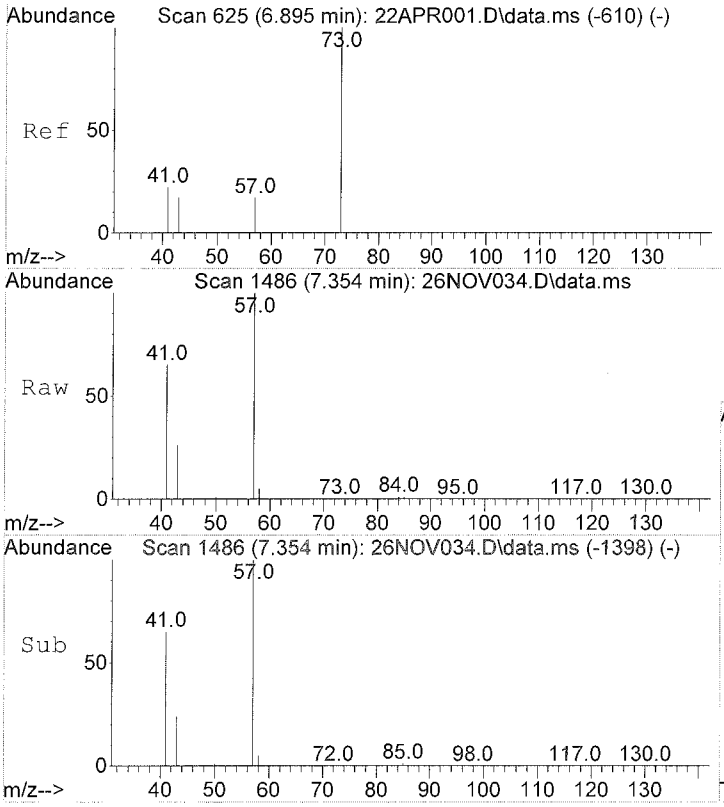


#11
Methylene Chloride
Concen: 34.87 pptv
RT: 7.043 min Scan# 1384
Delta R.T. 0.013 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 49 Resp: 2303

Ion	Ratio	Lower	Upper
49	100		
84	69.8	54.2	154.2

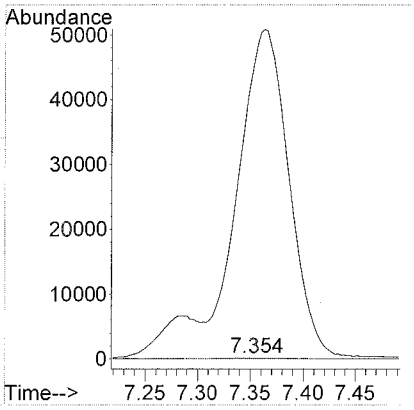


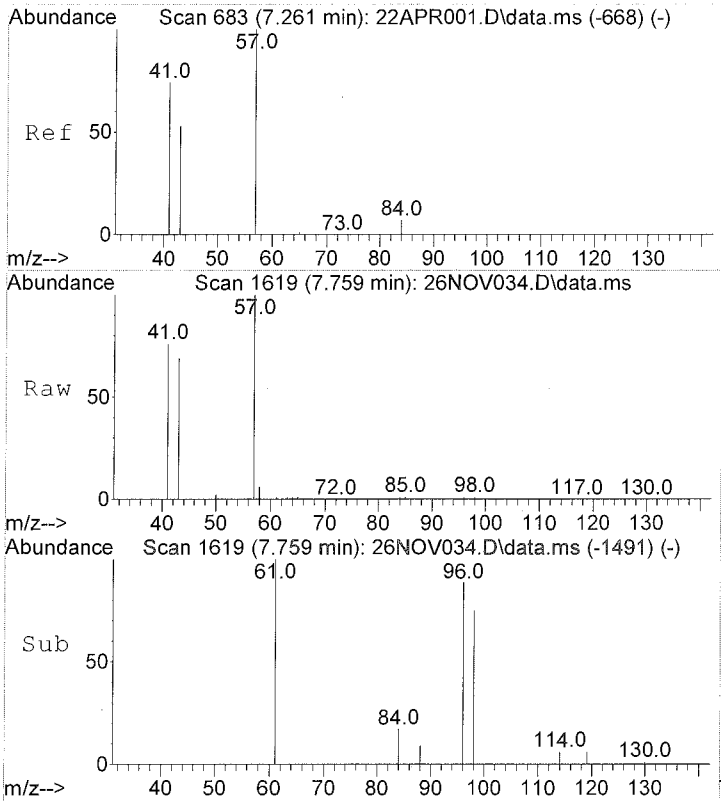


#12
t-Butyl Methyl Ether
Concen: 4.08 pptv
RT: 7.354 min Scan# 1486
Delta R.T. -0.031 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 73 Resp: 554

Ion	Ratio	Lower	Upper
73	100		
41	31217.5	0.0	516.4#

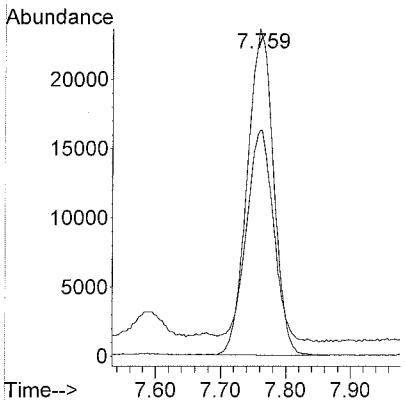


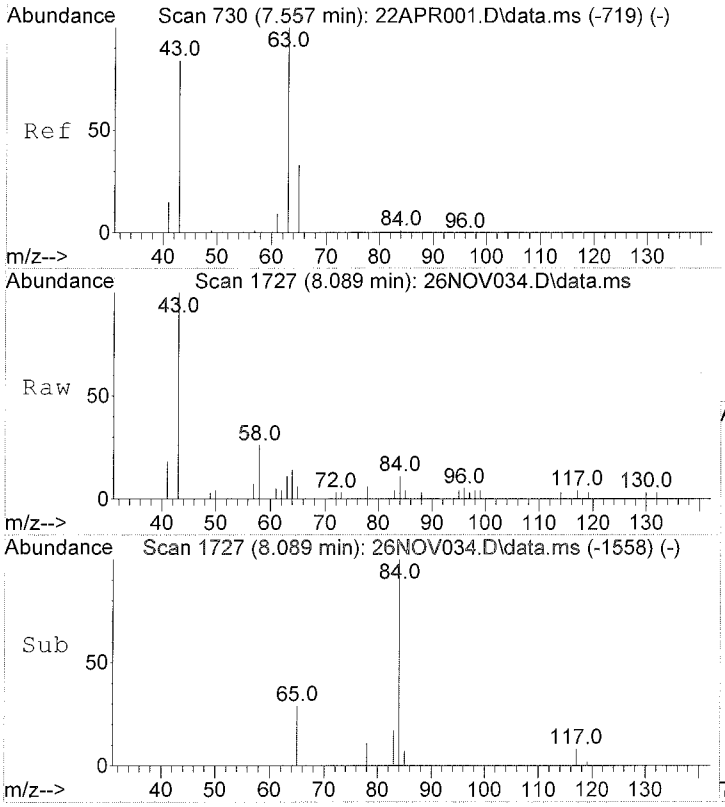


#14
Hexane
Concen: 783.68 pptv
RT: 7.759 min Scan# 1619
Delta R.T. -0.009 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 57 Resp: 65651

Ion	Ratio	Lower	Upper
57	100		
43	64.7	5.0	105.0

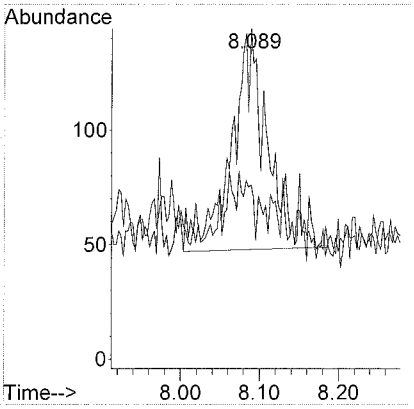


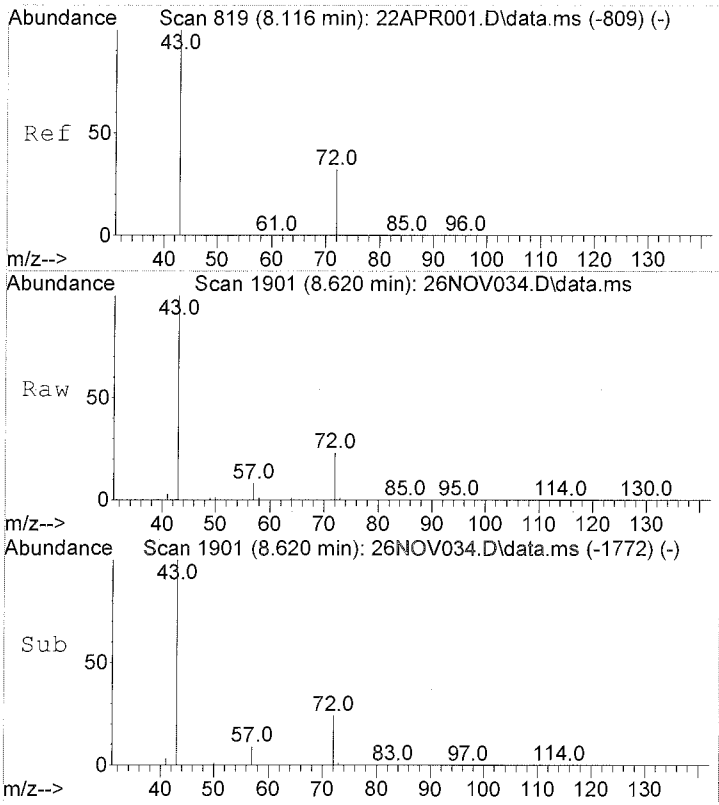


#15
1,1-Dichloroethane
Concen: 3.14 pptv
RT: 8.089 min Scan# 1727
Delta R.T. 0.015 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 63 Resp: 309

Ion	Ratio	Lower	Upper
63	100		
65	24.7	0.0	82.5

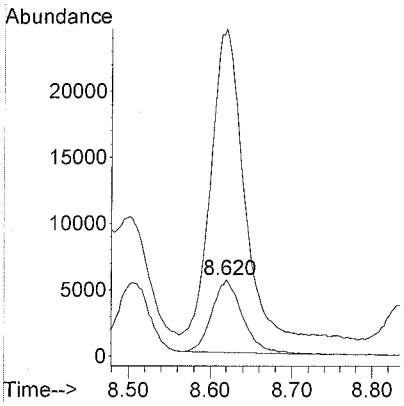


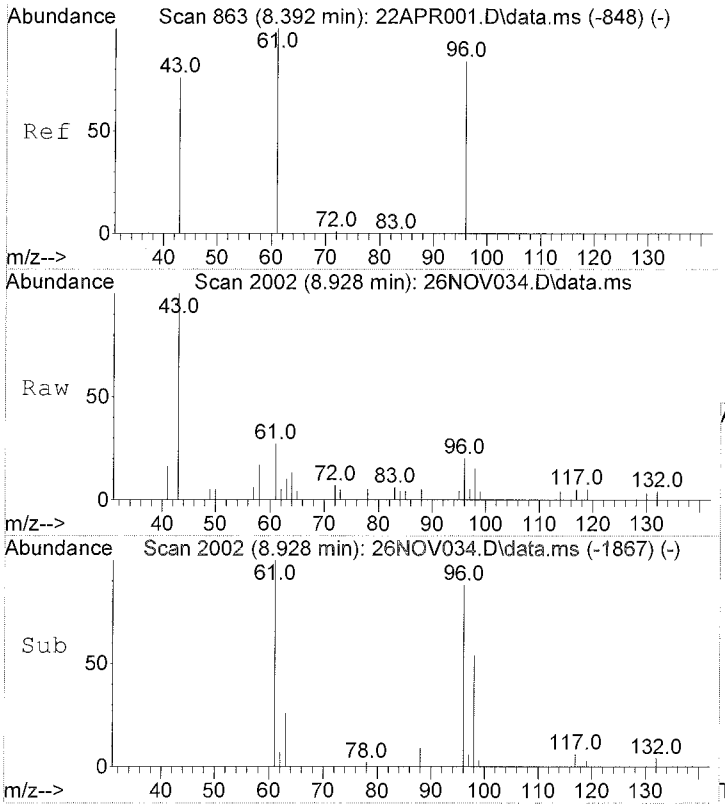


#16
2-Butanone
Concen: 578.37 pptv
RT: 8.620 min Scan# 1901
Delta R.T. -0.006 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 72 Resp: 14460

Ion	Ratio	Lower	Upper
72	100		
43	412.8	0.0	3591.5

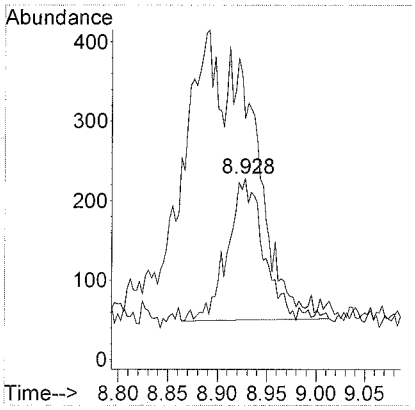


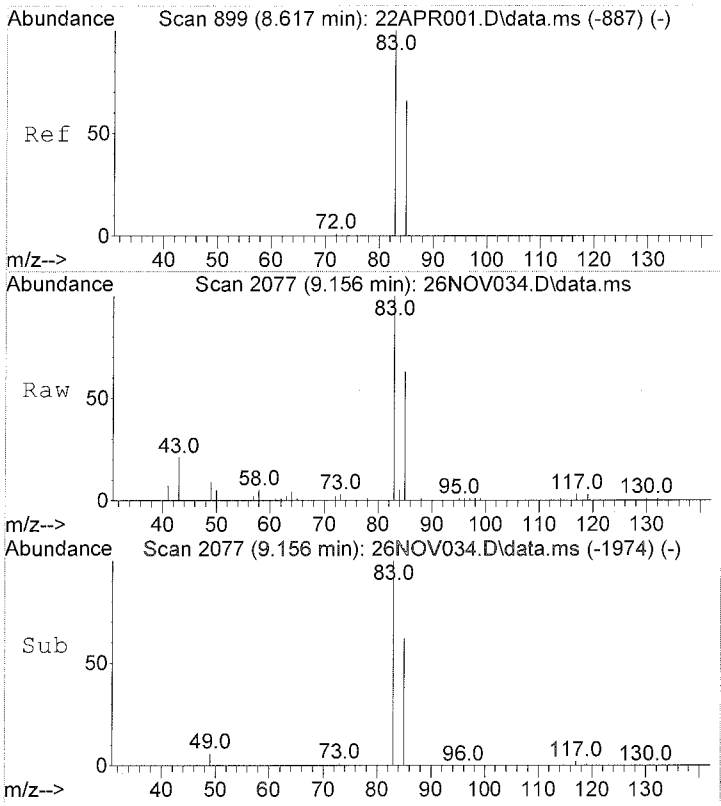


#17
c-1,2-Dichloroethene
Concen: 7.93 pptv
RT: 8.928 min Scan# 2002
Delta R.T. 0.012 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 96 Resp: 459

Ion	Ratio	Lower	Upper
96	100		
61	128.5	62.0	162.0

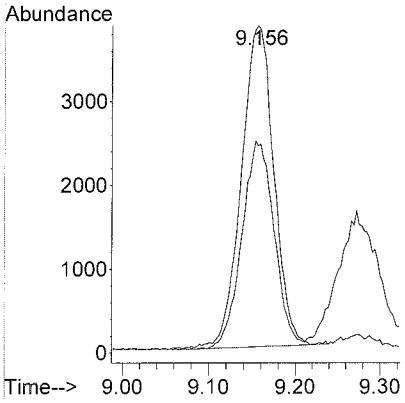


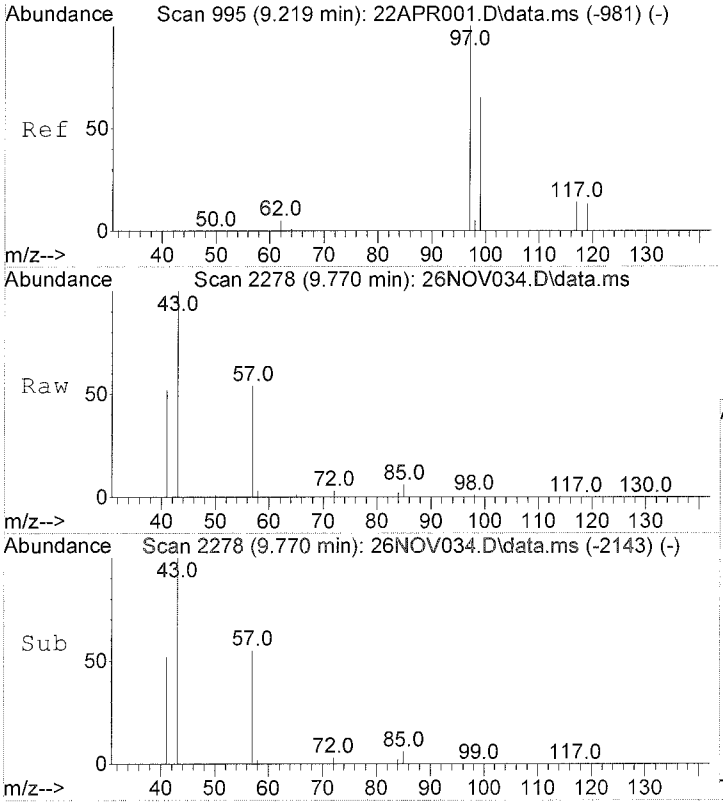


#18
Chloroform
Concen: 87.40 pptv
RT: 9.156 min Scan# 2077
Delta R.T. 0.015 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 83 Resp: 9994

Ion	Ratio	Lower	Upper
83	100		
85	62.6	14.9	114.9

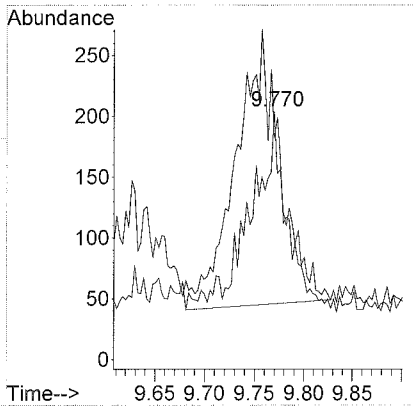


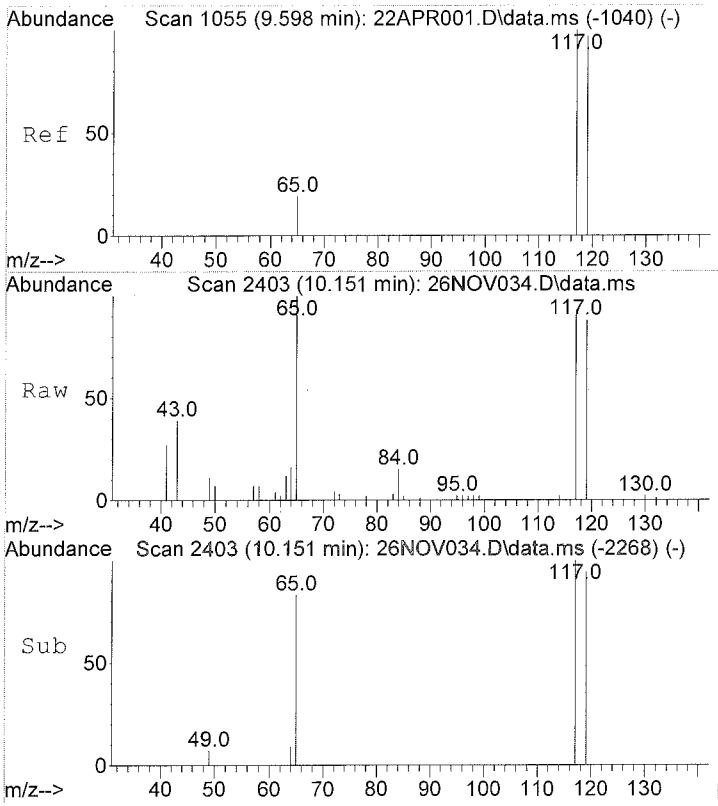


#19
1,1,1-Trichloroethane
Concen: 3.62 pptv
RT: 9.770 min Scan# 2278
Delta R.T. 0.012 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 97 Resp: 396

Ion	Ratio	Lower	Upper
97	100		
99	85.9	13.8	113.8

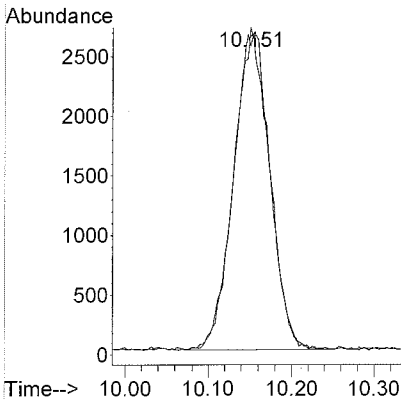


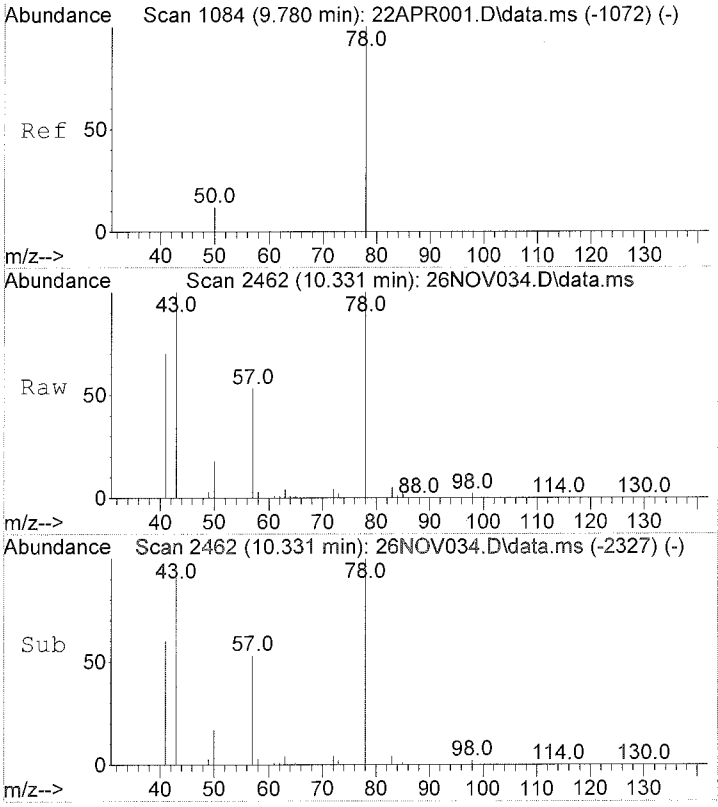


#20
Carbon Tetrachloride
Concen: 96.11 pptv
RT: 10.151 min Scan# 2403
Delta R.T. 0.012 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:117 Resp: 8058

Ion	Ratio	Lower	Upper
117	100		
119	94.1	47.1	147.1

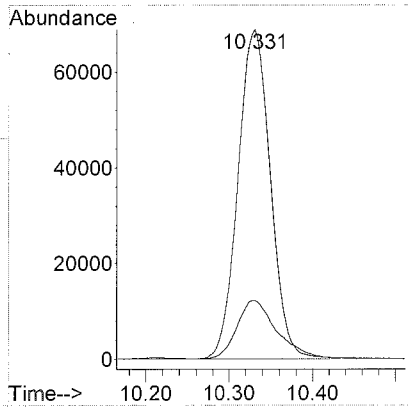


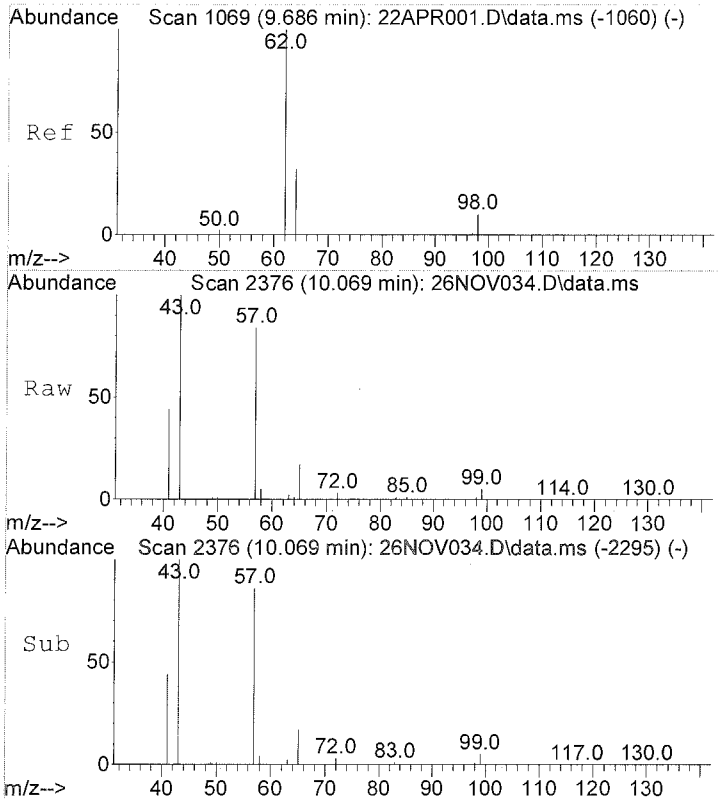


#22
Benzene
Concen: 1194.49 pptv
RT: 10.331 min Scan# 2462
Delta R.T. 0.012 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 78 Resp: 183698

Ion	Ratio	Lower	Upper
78	100		
50	17.6	0.0	62.6

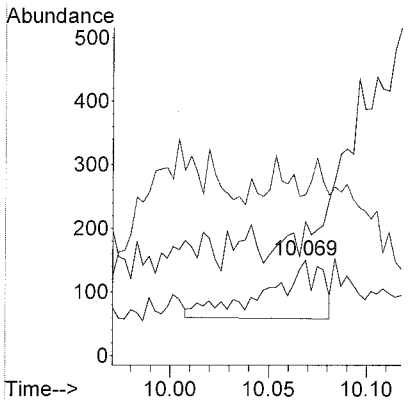


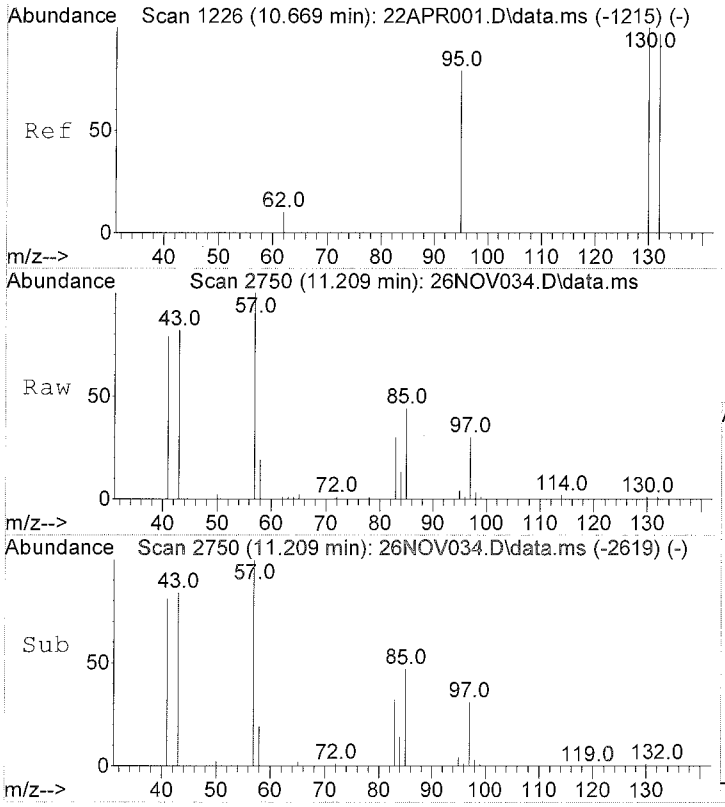


#24
1,2-Dichloroethane
Concen: 2.43 pptv
RT: 10.069 min Scan# 2376
Delta R.T. -0.153 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 62 Resp: 175

Ion	Ratio	Lower	Upper
62	100		
64	39.0	0.0	83.0
98	1.3	0.0	61.0

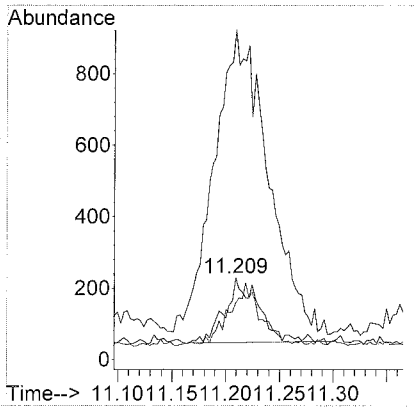


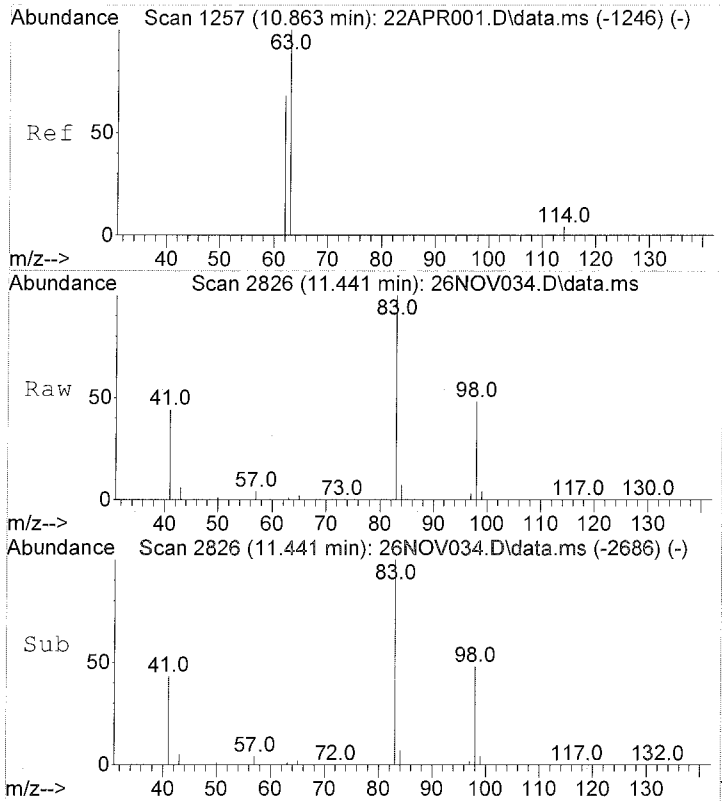


#25
Trichloroethene
Concen: 4.51 pptv
RT: 11.209 min Scan# 2750
Delta R.T. -0.000 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:130 Resp: 396

Ion	Ratio	Lower	Upper
130	100		
95	467.0	30.9	130.9#
132	62.6	46.0	146.0

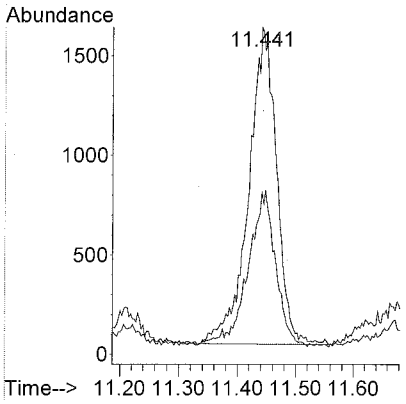


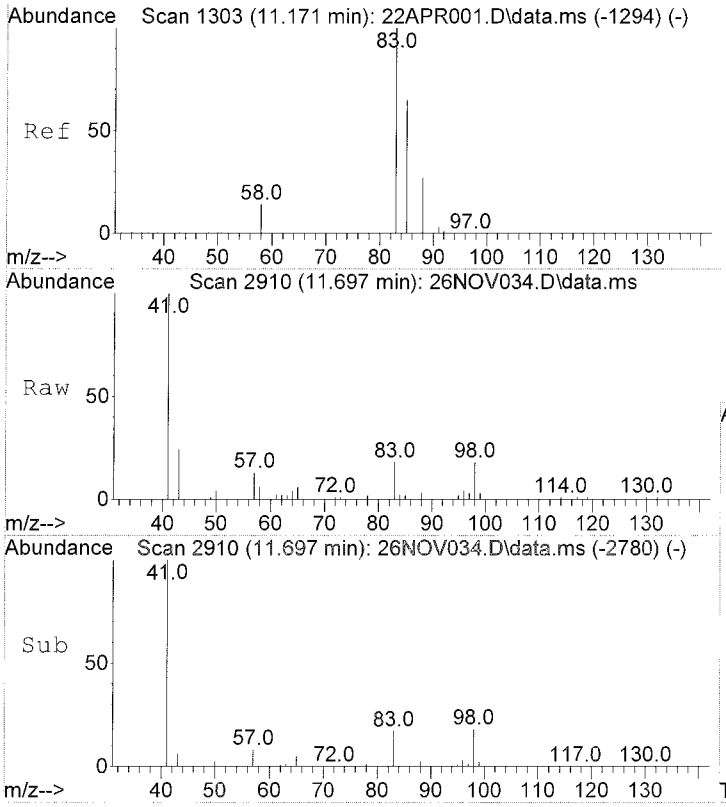


#26
1,2-Dichloropropane
Concen: 104.24 pptv
RT: 11.441 min Scan# 2826
Delta R.T. 0.027 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 63 Resp: 5290

Ion	Ratio	Lower	Upper
63	100		
62	48.8	20.3	120.3

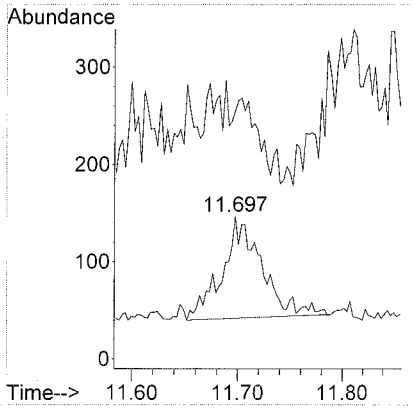


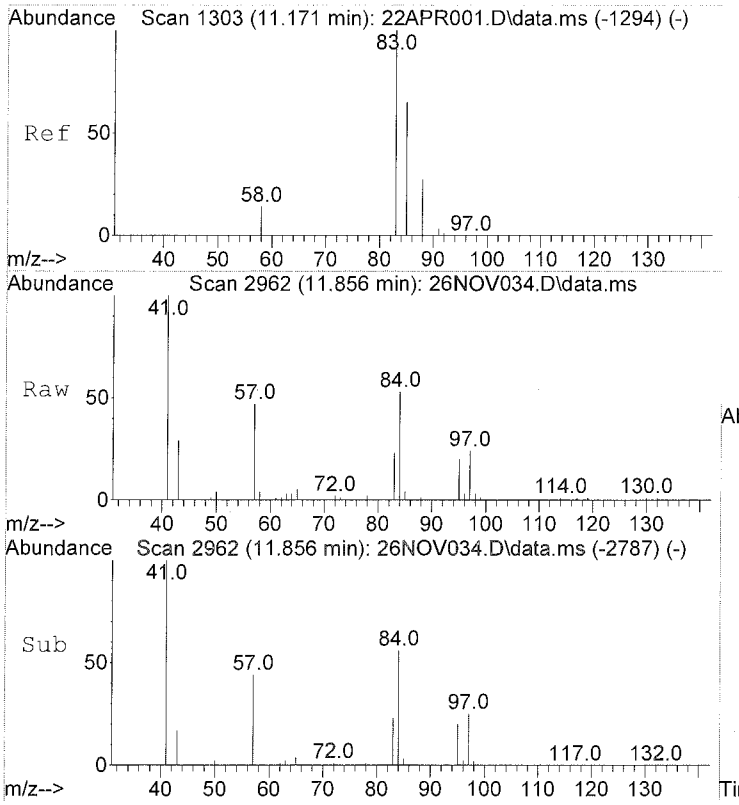


#27
1,4-Dioxane
Concen: 6.69 pptv
RT: 11.697 min Scan# 2910
Delta R.T. -0.003 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 88 Resp: 269

Ion	Ratio	Lower	Upper
88	100		
58	0.0	38.7	58.1#

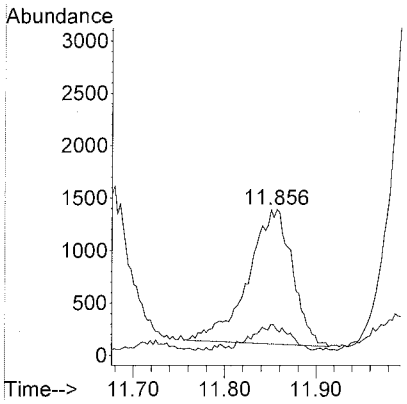


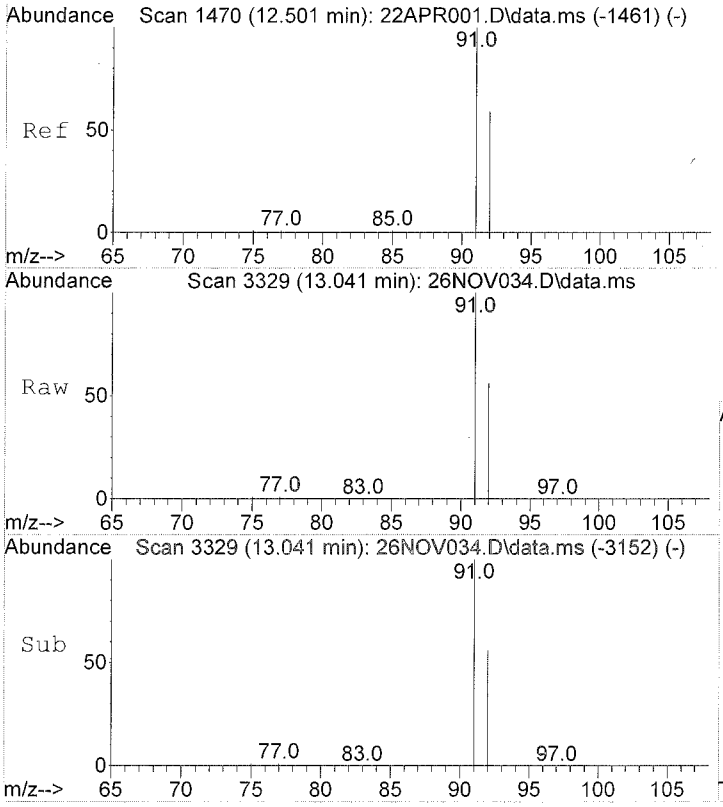


#28
Bromodichloromethane
Concen: 54.71 pptv
RT: 11.856 min Scan# 2962
Delta R.T. 0.134 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 83 Resp: 4279

Ion	Ratio	Lower	Upper
83	100		
85	14.6	13.9	113.9

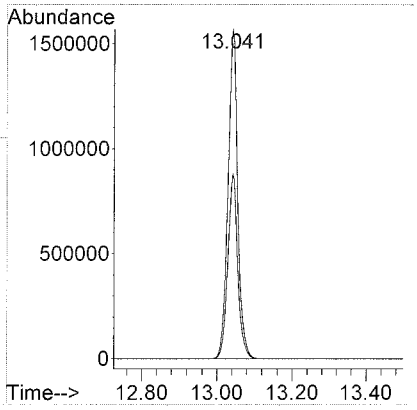


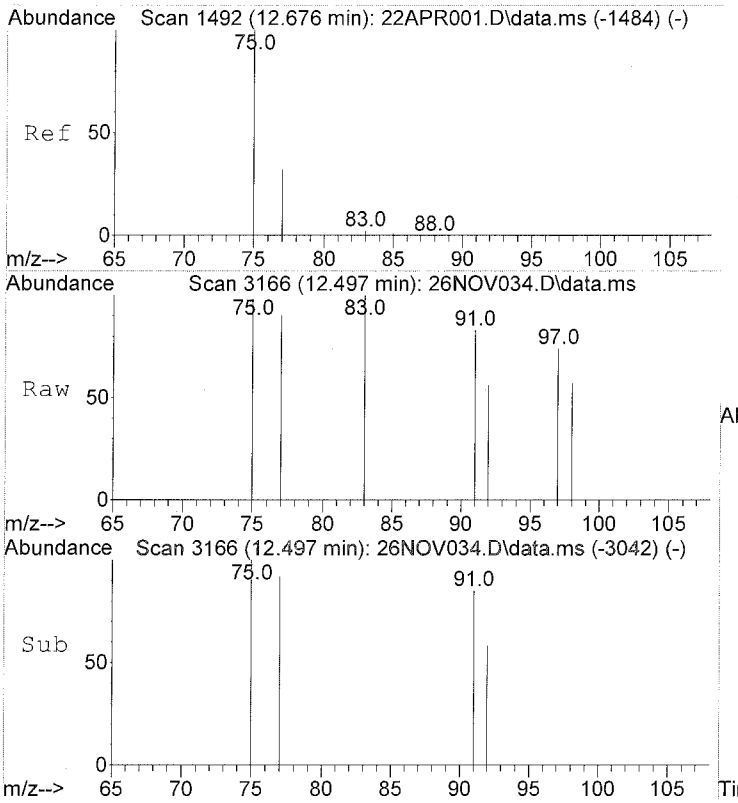


#30
Toluene
Concen: 18064.41 pptv
RT: 13.041 min Scan# 3329
Delta R.T. -0.011 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 91 Resp: 2749087

Ion	Ratio	Lower	Upper
91	100		
92	56.1	10.0	110.0

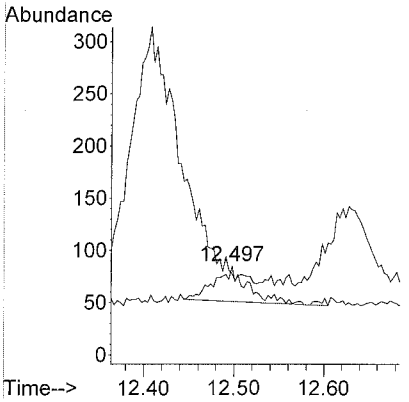


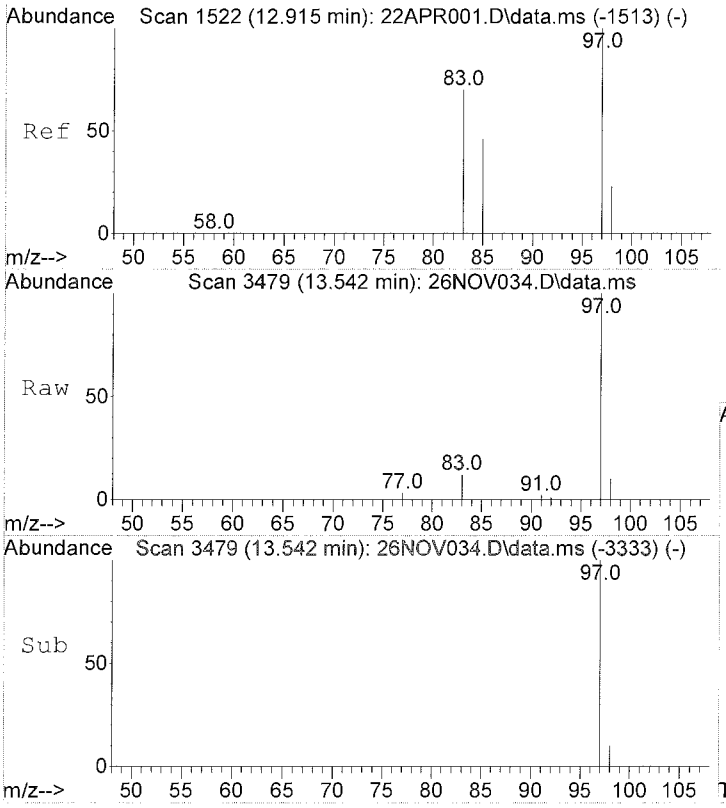


#32
t-1,3-Dichloropropene
Concen: 2.26 pptv
RT: 12.497 min Scan# 3166
Delta R.T. -0.004 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 75 Resp: 88

Ion	Ratio	Lower	Upper
75	100		
77	0.0	0.0	81.7

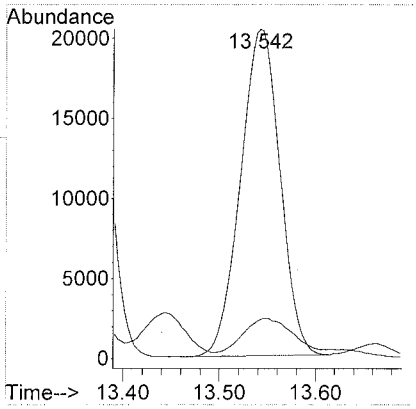


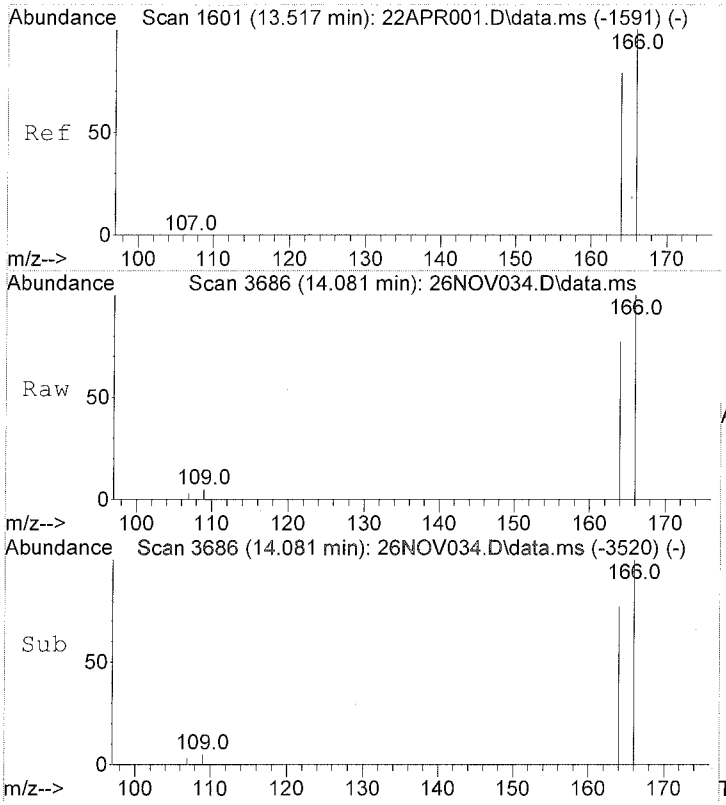


#33
1,1,2-Trichloroethane
Concen: 1139.47 pptv
RT: 13.542 min Scan# 3479
Delta R.T. 0.086 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 97 Resp: 57811

Ion	Ratio	Lower	Upper
97	100		
83	9.0	25.1	125.1#

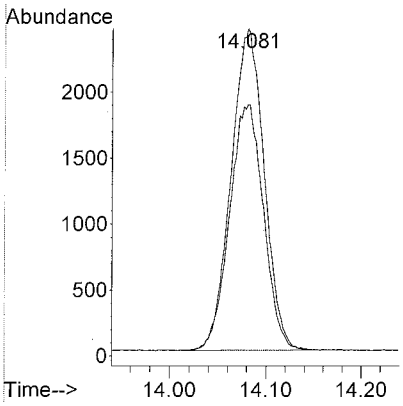


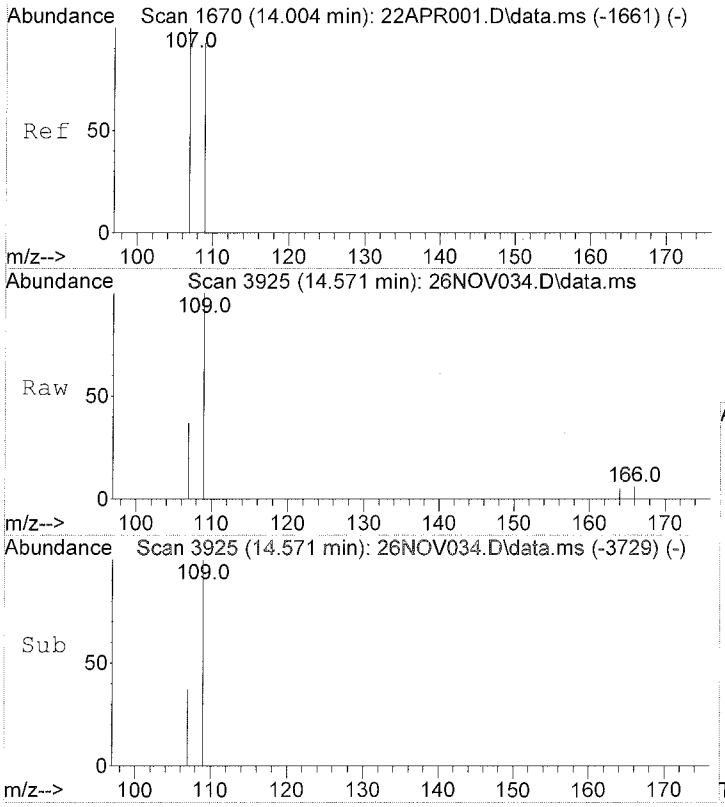


#34
Tetrachloroethene
Concen: 76.09 pptv
RT: 14.081 min Scan# 3686
Delta R.T. 0.002 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:166 Resp: 5813

Ion	Ratio	Lower	Upper
166	100		
164	76.3	25.3	125.3

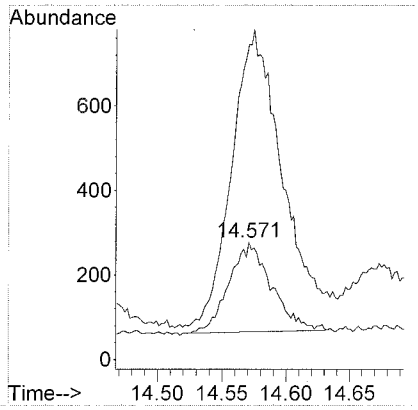


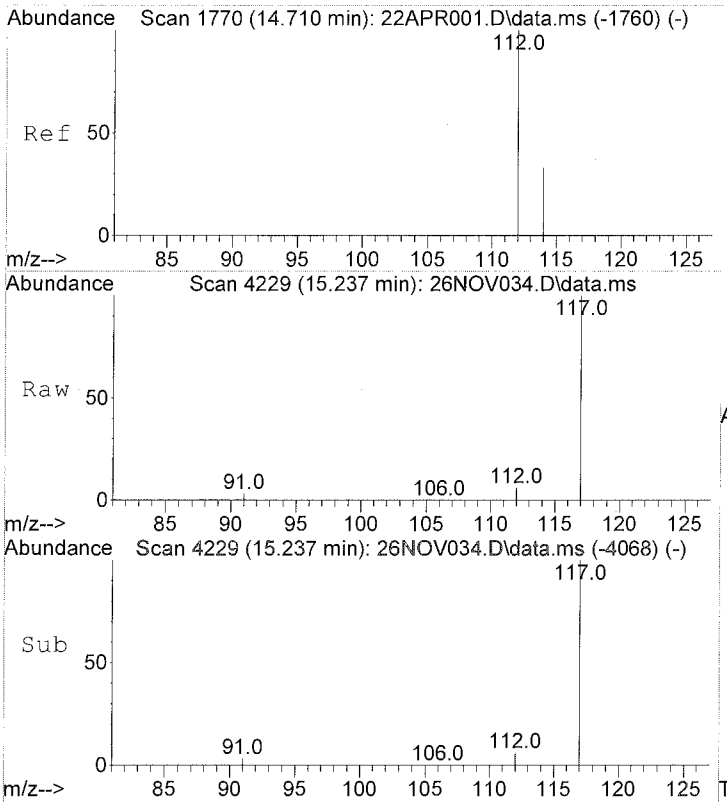


#35
1,2-Dibromoethane
Concen: 8.53 pptv
RT: 14.571 min Scan# 3925
Delta R.T. 0.002 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:107 Resp: 489

Ion	Ratio	Lower	Upper
107	100		
109	309.8	43.3	143.3#

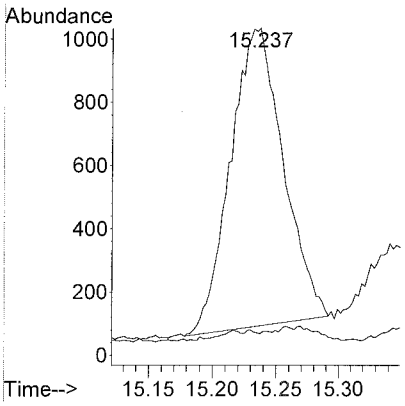


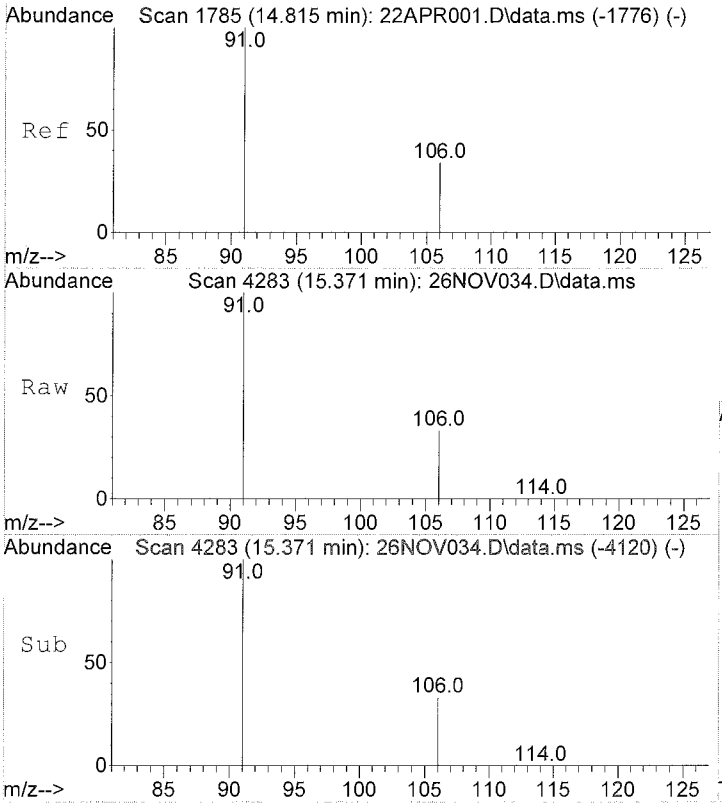


#36
Chlorobenzene
Concen: 28.64 pptv
RT: 15.237 min Scan# 4229
Delta R.T. -0.028 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:112 Resp: 2730

Ion	Ratio	Lower	Upper
112	100		
114	1.7	0.0	81.6

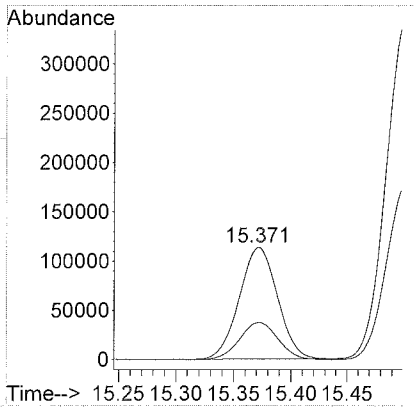


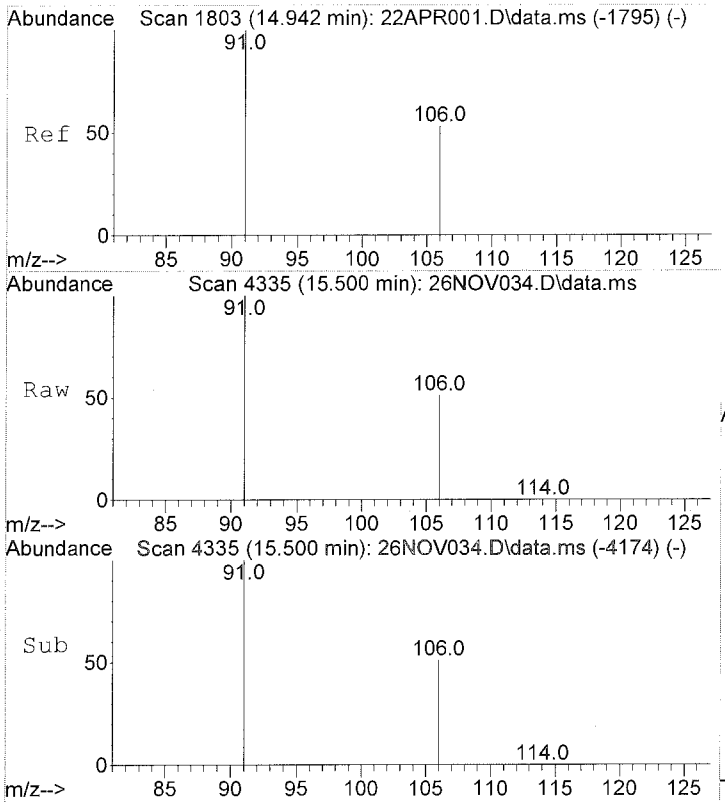


#37
Ethylbenzene
Concen: 2334.90 pptv
RT: 15.371 min Scan# 4283
Delta R.T. -0.000 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 91 Resp: 262187

Ion	Ratio	Lower	Upper
91	100		
106	33.3	0.0	83.4

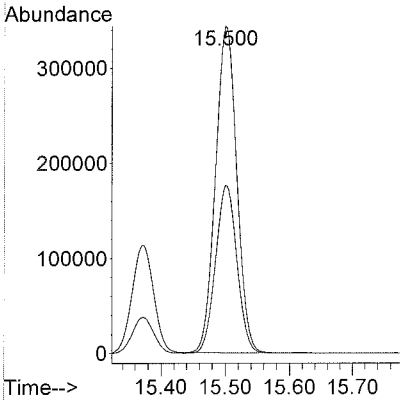


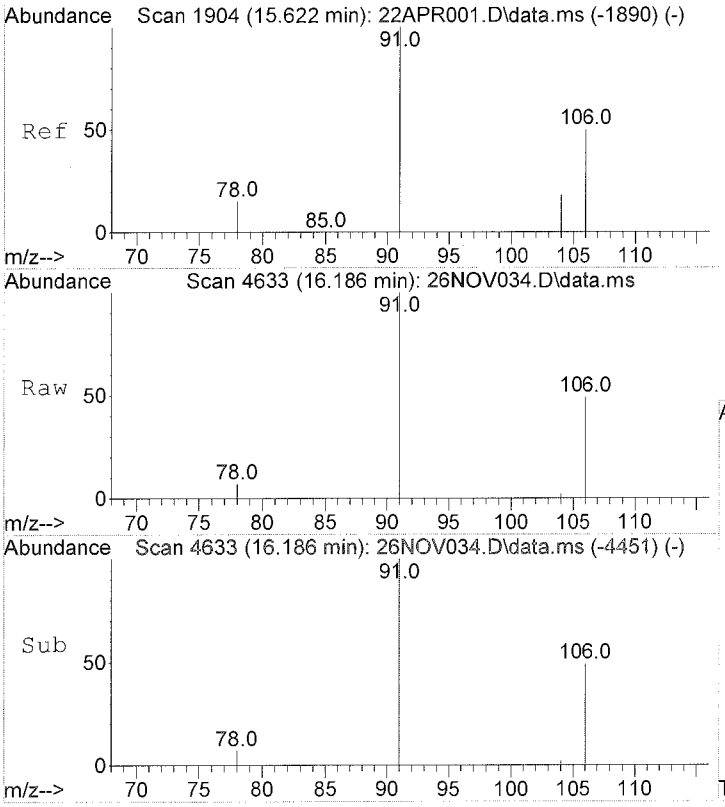


#38
p,&m-Xylene
Concen: 9477.13 pptv
RT: 15.500 min Scan# 4335
Delta R.T. -0.002 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 91 Resp: 778353

Ion	Ratio	Lower	Upper
91	100		
106	51.3	3.9	103.9

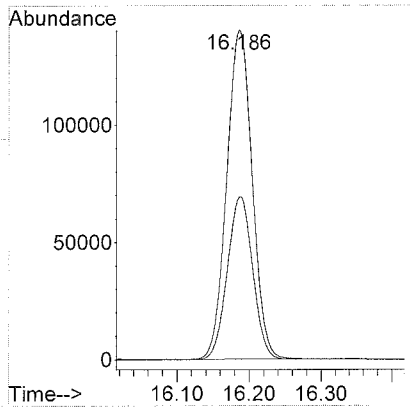


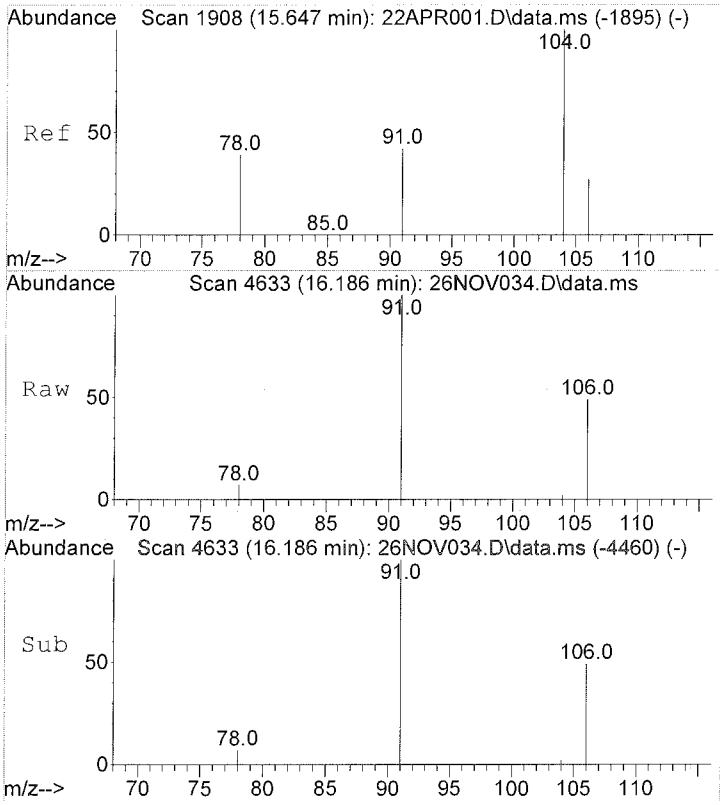


#39
o-Xylene
Concen: 4504.41 pptv
RT: 16.186 min Scan# 4633
Delta R.T. -0.002 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 91 Resp: 340814

Ion	Ratio	Lower	Upper
91	100		
106	49.3	0.0	97.3

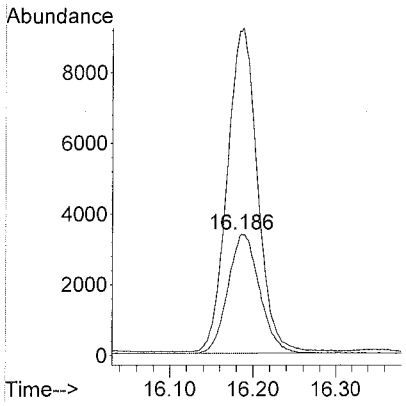


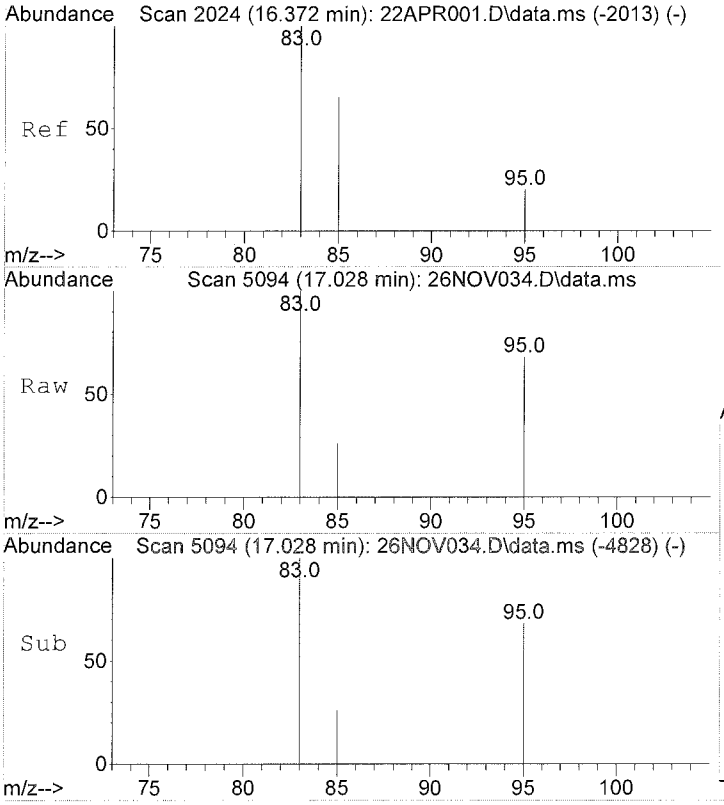


#40
Styrene
Concen: 180.74 pptv
RT: 16.186 min Scan# 4633
Delta R.T. -0.025 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:104 Resp: 8855

Ion	Ratio	Lower	Upper
104	100		
78	268.9	0.0	87.4#

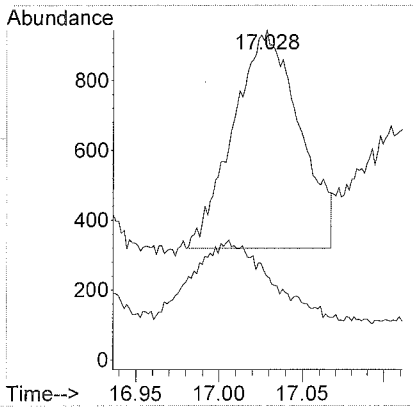


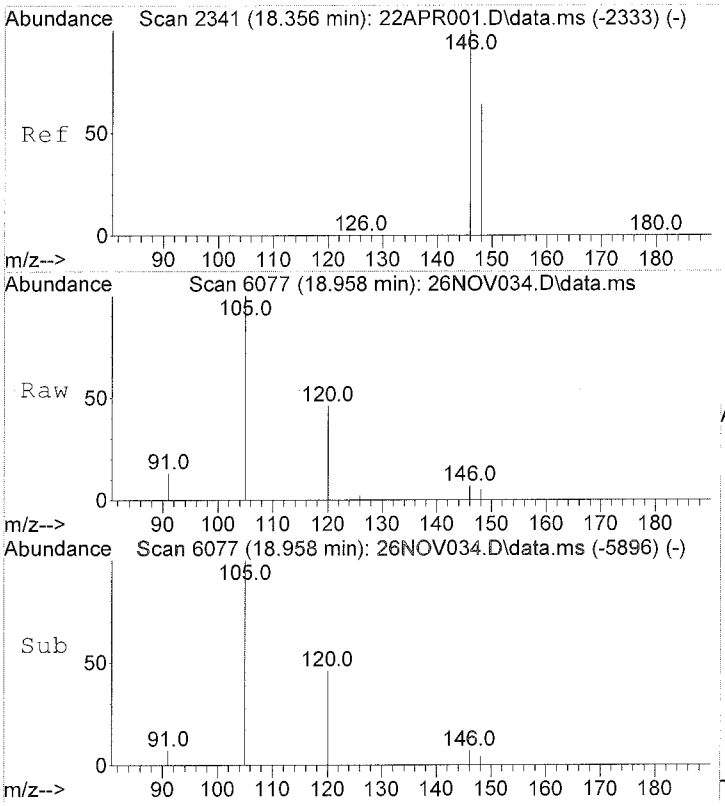


#41
1,1,2,2-Tetrachloroethane
Concen: 29.32 pptv
RT: 17.028 min Scan# 5094
Delta R.T. 0.045 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 83 Resp: 1717

Ion	Ratio	Lower	Upper
83	100		
85	19.2	13.6	113.6

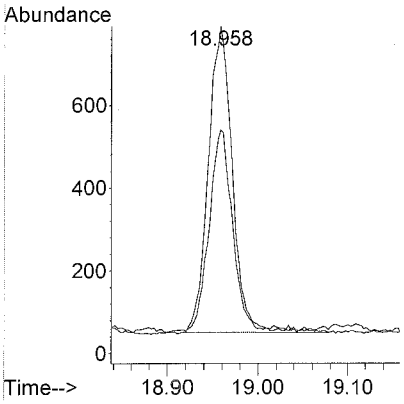


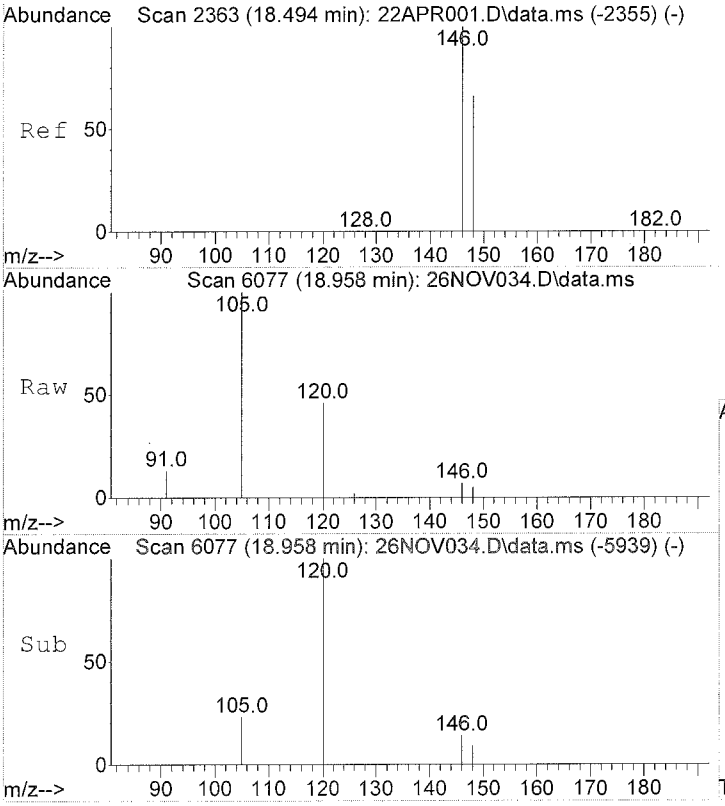


#43
1,3-Dichlorobenzene
Concen: 23.59 pptv
RT: 18.958 min Scan# 6077
Delta R.T. 0.128 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:146 Resp: 1392

Ion	Ratio	Lower	Upper
146	100		
148	65.3	13.9	113.9

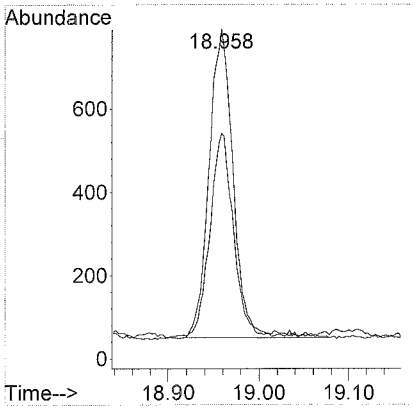


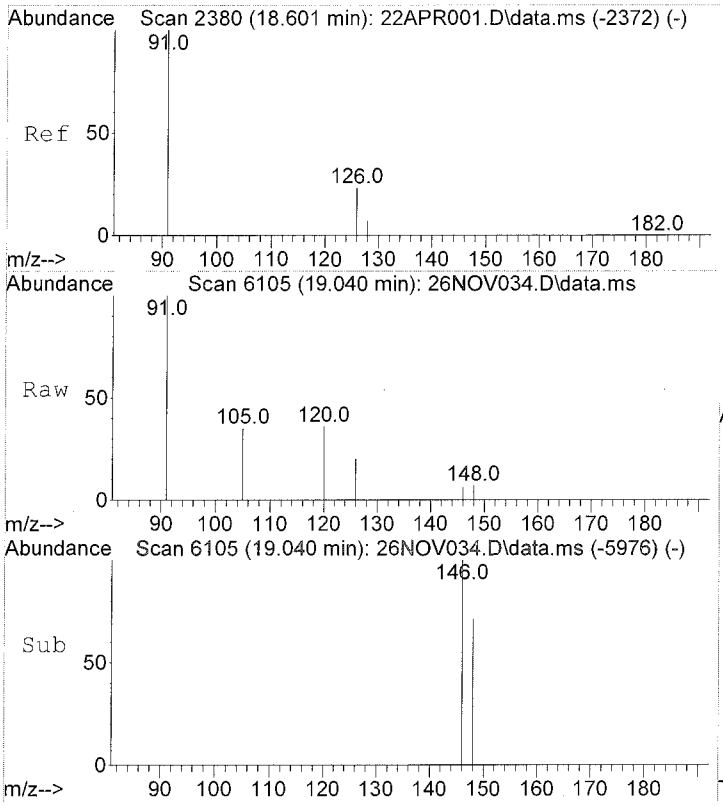


#44
1,4-Dichlorobenzene
Concen: 22.66 pptv
RT: 18.958 min Scan# 6077
Delta R.T. 0.003 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:146 Resp: 1392

Ion	Ratio	Lower	Upper
146	100		
148	65.3	15.5	115.5

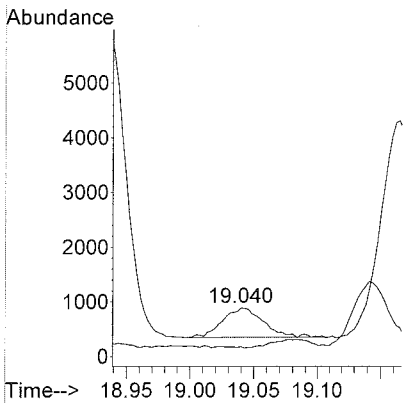


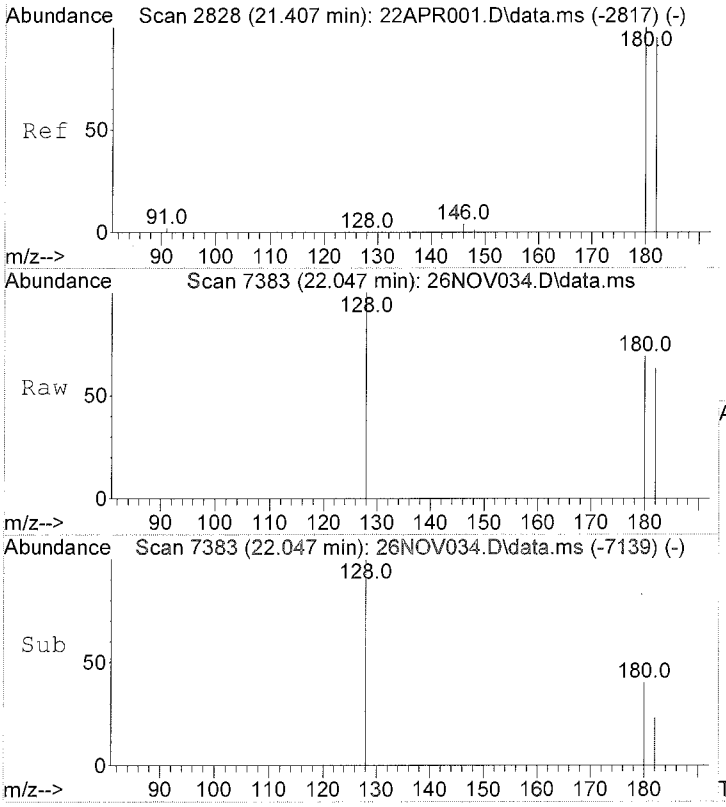


#45
Benzyl Chloride
Concen: 49.16 pptv
RT: 19.040 min Scan# 6105
Delta R.T. -0.024 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion: 91 Resp: 1198

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.7	28.1#

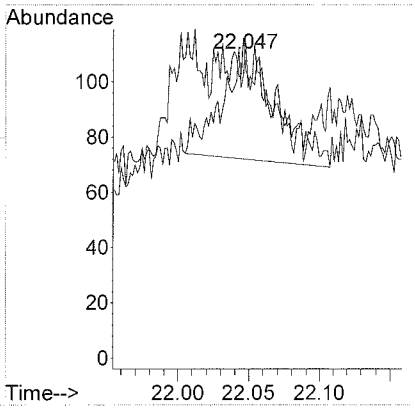


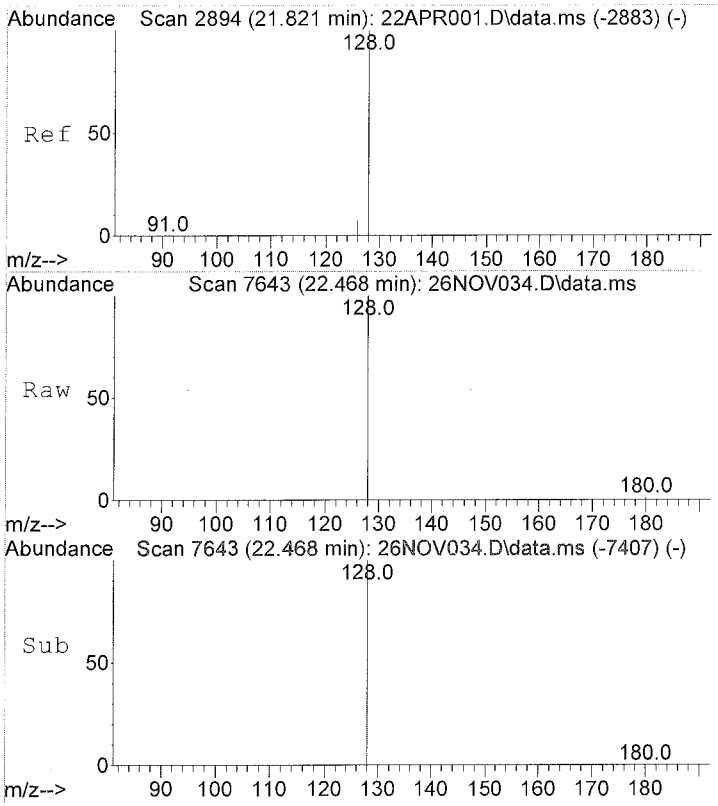


#47
1,2,4-Trichlorobenzene
Concen: 2.21 pptv
RT: 22.047 min Scan# 7383
Delta R.T. -0.005 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:180 Resp: 103

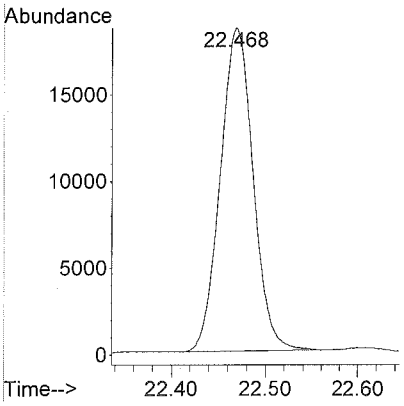
Ion	Ratio	Lower	Upper
180	100		
182	13.3	44.8	144.8#





#48
Naphthalene
Concen: 494.70 pptv
RT: 22.468 min Scan# 7643
Delta R.T. -0.018 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:128 Resp: 44710



QC Report: Unit #1
Inject Time: 11/27/2018 09:09:07

QAQC Filename:QAQC\11272018\1_090907.asc

Autosampler Position: 12 Run 26 of 29
Sample Name : J110805-04
Method Filename: T15DESORB230.MTC

Volume Parameters:				
ISTD A Xfer Volume	set=50	Act=50	StartPress=15.1	EndPress=15.0
ISTD A Flow	set=50	Act=49.7		
ISTD A Trap Temp	set=22	hi=25	lo=22	avg=22
ISTD B Xfer Volume	set=0	Act=0	StartPress=0.0	EndPress=0.0
ISTD B Flow	set=0	Act=0.0		
ISTD B Trap Temp	Disabled			
ISTD C Xfer Volume	Disabled			
ISTD C Flow	Disabled			
ISTD C Trap Temp	Disabled			
Sample Xfer Volume	set=438	Act=438	StartPress=15.0	EndPress=14.0
Sample Xfer Flow	set=50	Act=49.7		
Smple Xfer Trap Temp	set=22	hi=22	lo=22	avg=22
Sweep Gas = Helium				
Dry Purge Parameters:				
Dry Purge Flow	set=70	Act=69.0		
Dry Purge Temp	set=25	hi=25	lo=25	avg=25
Dry Purge Time	set=12.00	act=12.00		
Desorb Parameters:				
Trap Desorb Temp	set=230	hi=243	lo=226	avg=230
Trap Desorb Time	set=4.50	act=4.50		
MCS Temp	Disabled			
Cryo Focuser Temp	set=-180	hi=-184	lo=-198	avg=-189
Inject Parameters:				
Cryo Union Temp	set=130	hi=131	lo=129	avg=130
Cryo Inject Temp	set=75	hi=76	lo=73	avg=74
Cryo Inject Time	set=2.50	act=2.50		
Bake Parameters:				
Trap Bake Temp	set=280	hi=282	lo=278	avg=280
Trap Bake Time	set=10.00	act=10.00		
MCS Bake Temp	Disabled			
System Regions:				
Manifold 1 Temp	set=130	avg=130		
Manifold 2 Temp	set=130	avg=130		
Oven 6 Port Temp	set=130	avg=130		
Oven 8 Port Temp	set=130	avg=130		
Oven 16 Port Temp	set=130	avg=130		
Bottom Of Trap Temp	set=130	avg=130		
Transfer Line Temp	set=130	avg=130		

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV035.D
Acq On : 27 Nov 2018 9:53 am
Operator : DT
Sample : J110805-05 JACOBS
Misc : 403 ML, 19.6/12.17
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 27 10:18:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.345	130	110812	2000.00	pptv	0.02
21) 1,4-Difluorobenzene	10.691	114	394427	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	208966	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.102	65	157446	2360.26	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 118.01%			
29) Toluene-d8	12.934	98	256504	1830.57	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 91.53%			
42) 4-Bromofluorobenzene	17.185	95	103373	1969.34	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 98.47%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.556	85	66020	502.94	pptv	100
3) Chloromethane	3.974	50	17502	400.42	pptv	96
4) Vinyl Chloride	4.198	62	257	6.00	pptv #	1
5) Bromomethane	4.882	96	597	31.56	pptv	93
6) Chloroethane	5.019	64	167	5.43	pptv #	1
7) Trichlorofluoromethane...	5.476	101	66652	378.13	pptv	100
8) 1,1,2-Cl 1,2,2-F ethan...	6.216	151	789	6.01	pptv	91
9) Acetone	6.089	43	13363558	130001.89	pptv	95
11) Methylene Chloride	7.039	49	1652	25.56	pptv	70
12) t-Butyl Methyl Ether	7.366	73	494	3.72	pptv #	1
14) Hexane	7.762	57	65920	804.12	pptv	89
15) 1,1-Dichloroethane	8.076	63	278	2.88	pptv	60
16) 2-Butanone	8.622	72	16993	694.57	pptv	60
17) c-1,2-Dichloroethene	8.927	96	547	9.65	pptv #	52
18) Chloroform	9.156	83	31191	278.74	pptv	98
19) 1,1,1-Trichloroethane	9.766	97	352	3.29	pptv #	3
20) Carbon Tetrachloride	10.157	117	7369	89.82	pptv	99
22) Benzene	10.328	78	175332	1172.30	pptv	88
24) 1,2-Dichloroethane	10.230	62	3571	51.05	pptv #	47
25) Trichloroethene	11.215	130	795	9.32	pptv #	11
26) 1,2-Dichloropropane	11.444	63	5117	103.68	pptv	74
27) 1,4-Dioxane	11.694	88	292	7.47	pptv #	19
28) Bromodichloromethane	11.847	83	3658	48.09	pptv	40
30) Toluene	13.041	91	2731413	18455.29	pptv	94
32) t-1,3-Dichloropropene	12.501	75	235	6.22	pptv	72
33) 1,1,2-Trichloroethane	13.541	97	52151	1061.50	pptv #	22
34) Tetrachloroethene	14.078	166	7478	101.08	pptv	96
35) 1,2-Dibromoethane	14.569	107	596	10.73	pptv #	1
36) Chlorobenzene	15.235	112	2898	31.40	pptv	50
37) Ethylbenzene	15.373	91	232940	2142.22	pptv	100
38) p,&m-Xylene	15.499	91	702968	8838.92	pptv	96
39) o-Xylene	16.187	91	311607	4252.96	pptv	97
40) Styrene	16.194	104	9979	210.34	pptv #	1
41) 1,1,2,2-Tetrachloroethane	17.028	83	1877	33.11	pptv	51
43) 1,3-Dichlorobenzene	18.833	146	104	1.82	pptv	96
44) 1,4-Dichlorobenzene	18.955	146	4608	77.46	pptv	93

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV035.D
Acq On : 27 Nov 2018 9:53 am
Operator : DT
Sample : J110805-05 JACOBS
Misc : 403 ML, 19.6/12.17
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 27 10:18:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

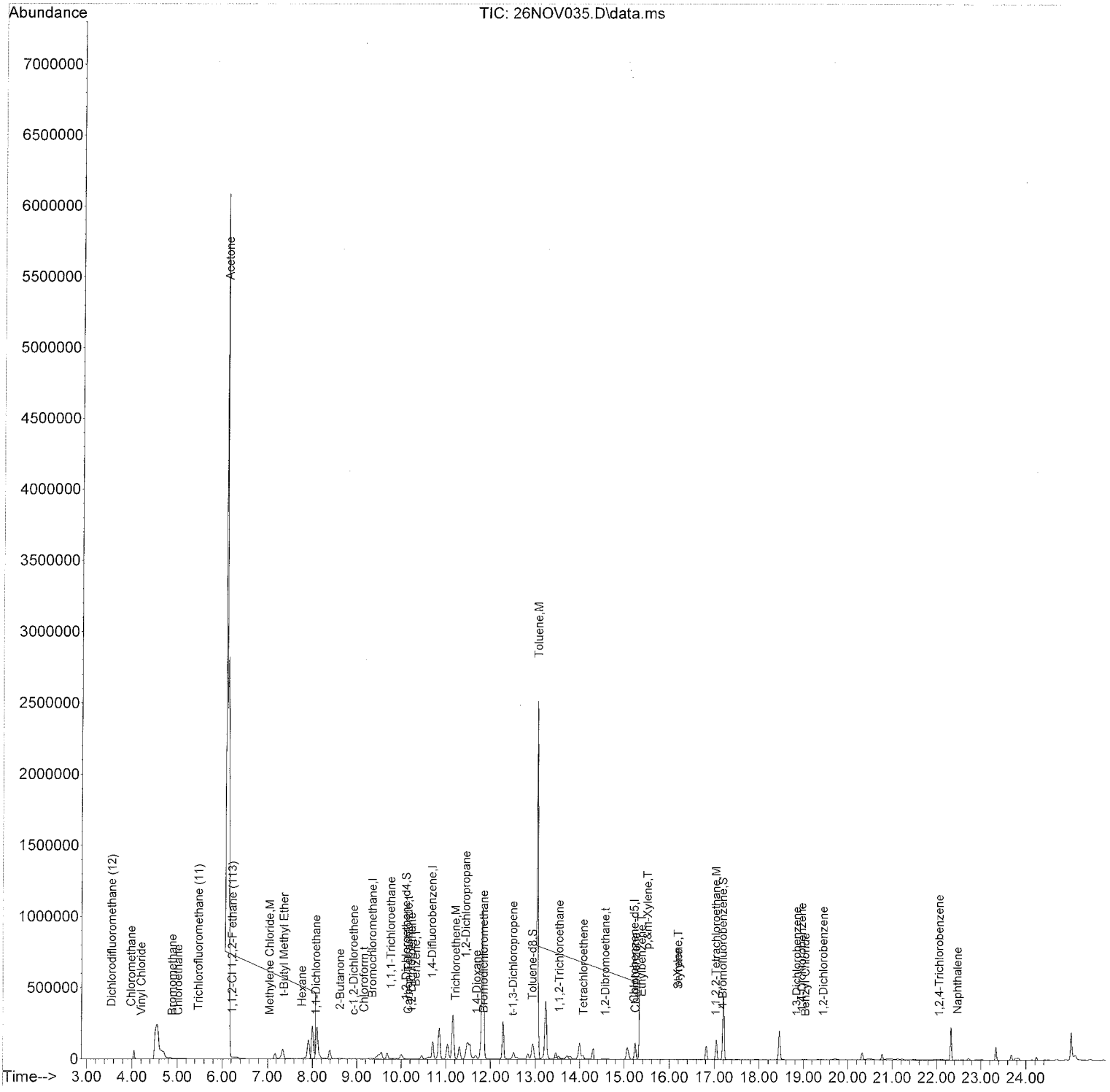
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Benzyl Chloride	19.042	91	1263	53.52	pptv	#	52
46) 1,2-Dichlorobenzene	19.450	146	75	1.41	pptv		70
47) 1,2,4-Trichlorobenzene	22.045	180	413	9.15	pptv		85
48) Naphthalene	22.468	128	43887	501.47	pptv		100

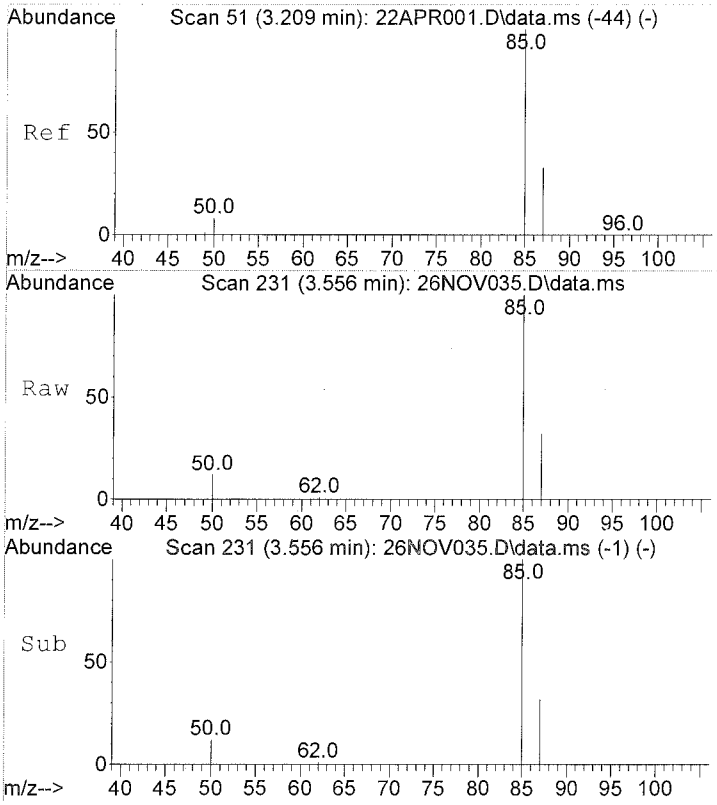
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV035.D
Acq On : 27 Nov 2018 9:53 am
Operator : DT
Sample : J110805-05 JACOBS
Misc : 403 ML, 19.6/12.17
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 27 10:18:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

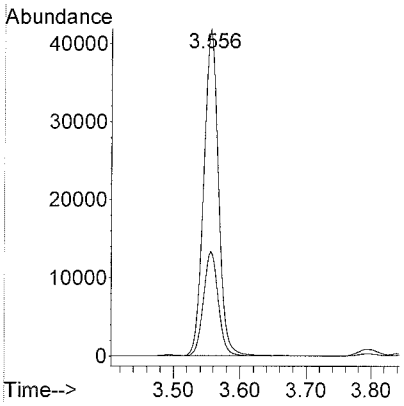


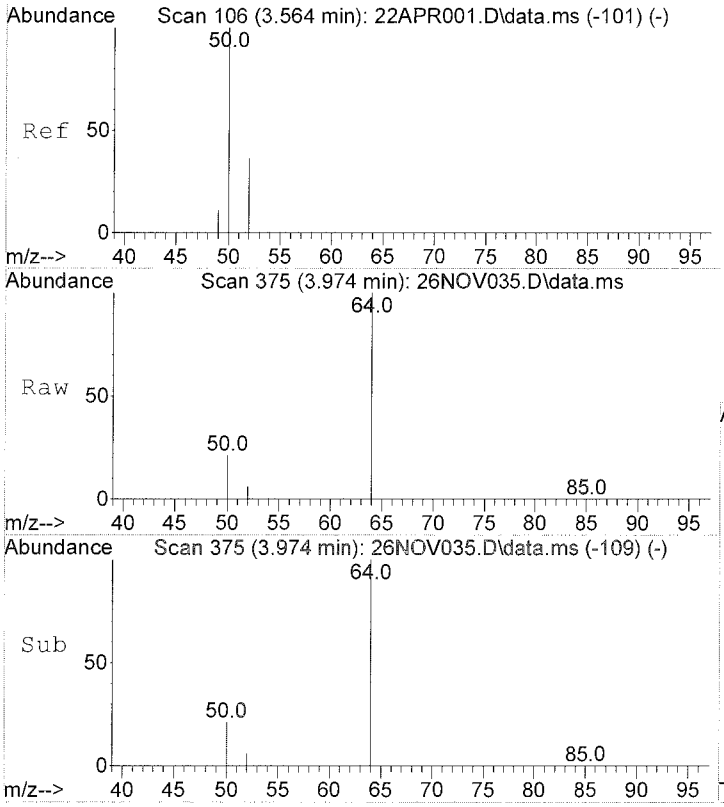


#2
Dichlorodifluoromethane (12)
Concen: 502.94 pptv
RT: 3.556 min Scan# 231
Delta R.T. -0.032 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 85 Resp: 66020

Ion	Ratio	Lower	Upper
85	100		
87	31.9	0.0	81.9

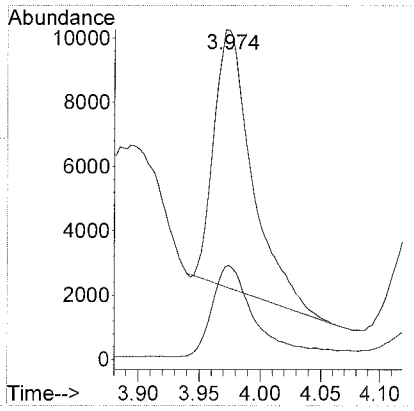


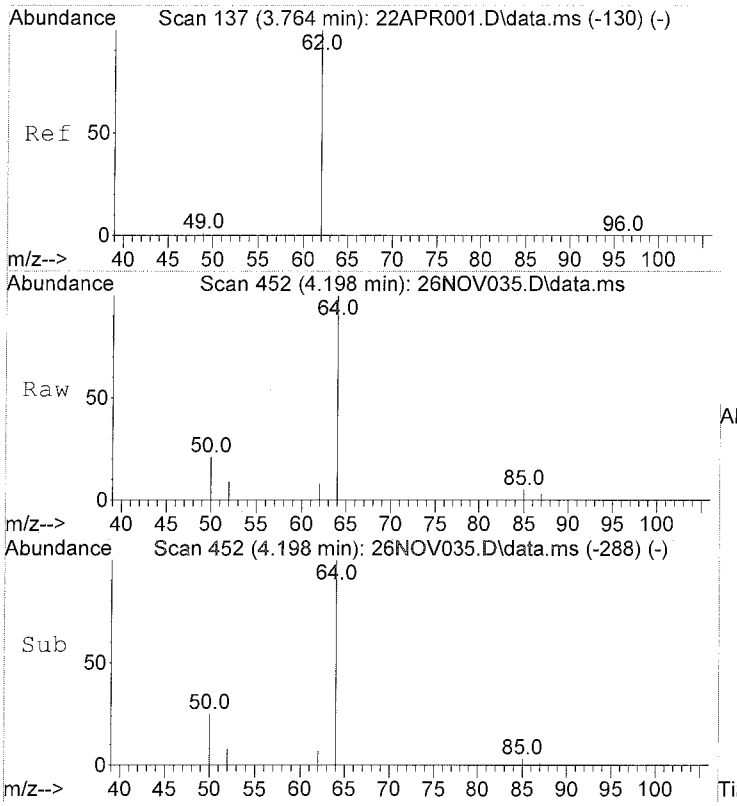


#3
Chloromethane
Concen: 400.42 pptv
RT: 3.974 min Scan# 375
Delta R.T. -0.027 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 50 Resp: 17502

Ion	Ratio	Lower	Upper
50	100		
52	30.9	3.0	63.0

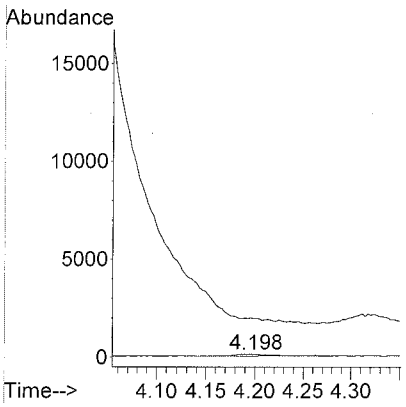


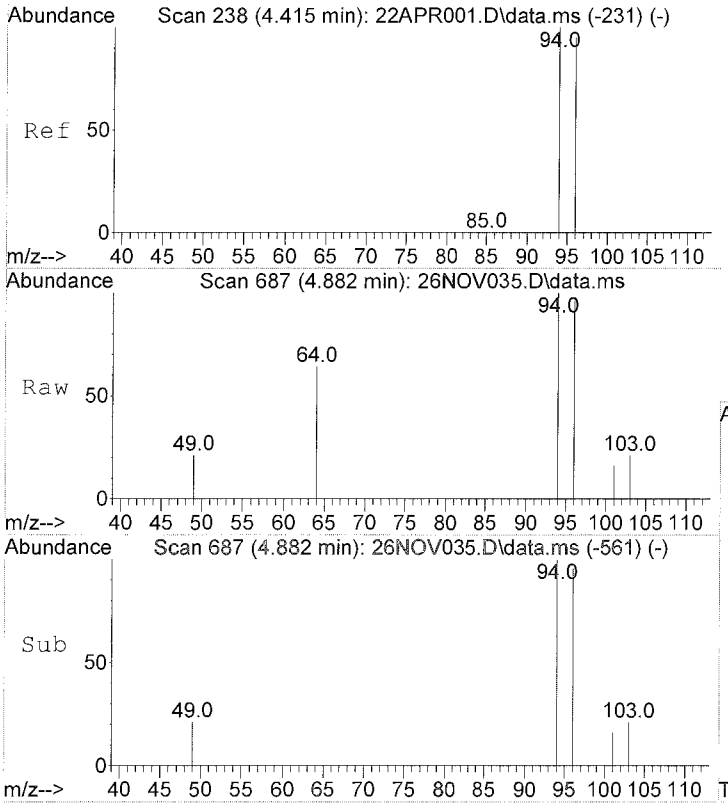


#4
Vinyl Chloride
Concen: 6.00 pptv
RT: 4.198 min Scan# 452
Delta R.T. -0.024 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 62 Resp: 257

Ion	Ratio	Lower	Upper
62	100		
64	222.9	0.0	82.1#

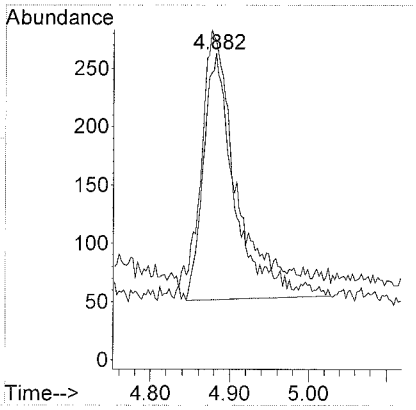


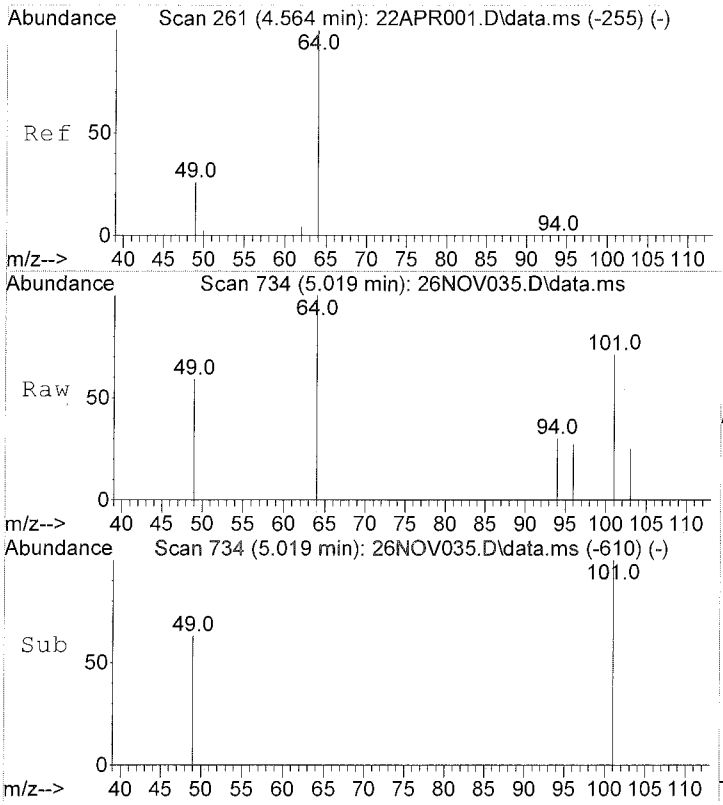


#5
Bromomethane
Concen: 31.56 pptv
RT: 4.882 min Scan# 687
Delta R.T. -0.032 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 96 Resp: 597

Ion	Ratio	Lower	Upper
96	100		
94	98.1	55.4	155.4

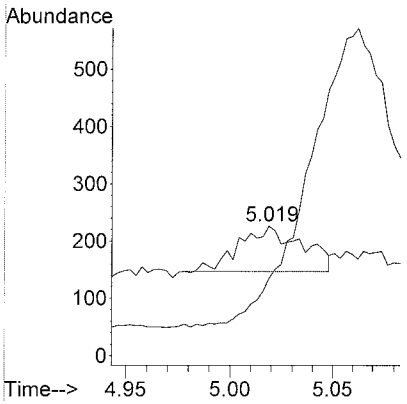


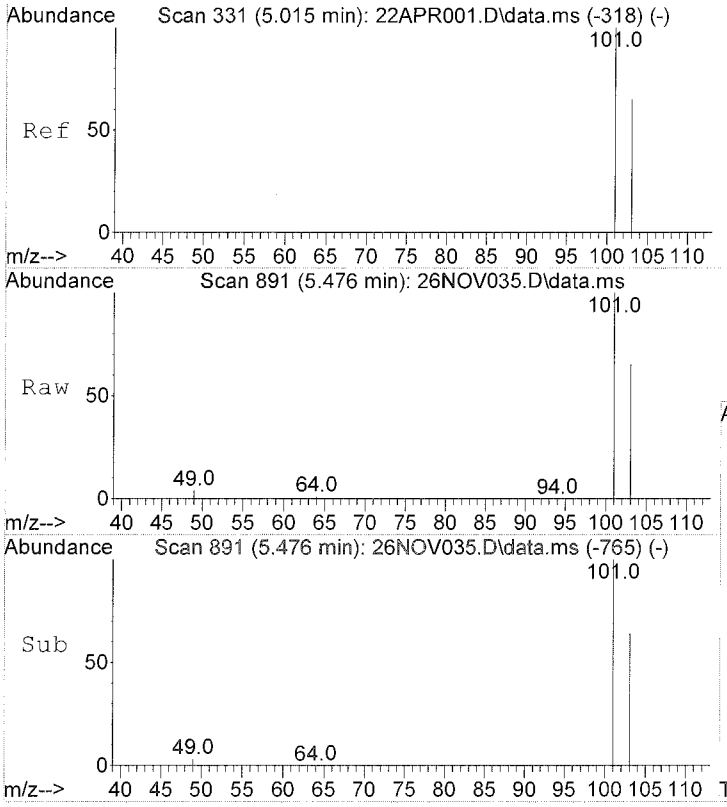


#6
Chloroethane
Concen: 5.43 pptv
RT: 5.019 min Scan# 734
Delta R.T. -0.038 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 64 Resp: 167

Ion	Ratio	Lower	Upper
64	100		
49	100.0	0.0	68.7#

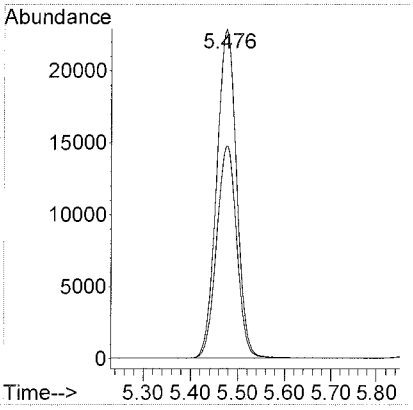


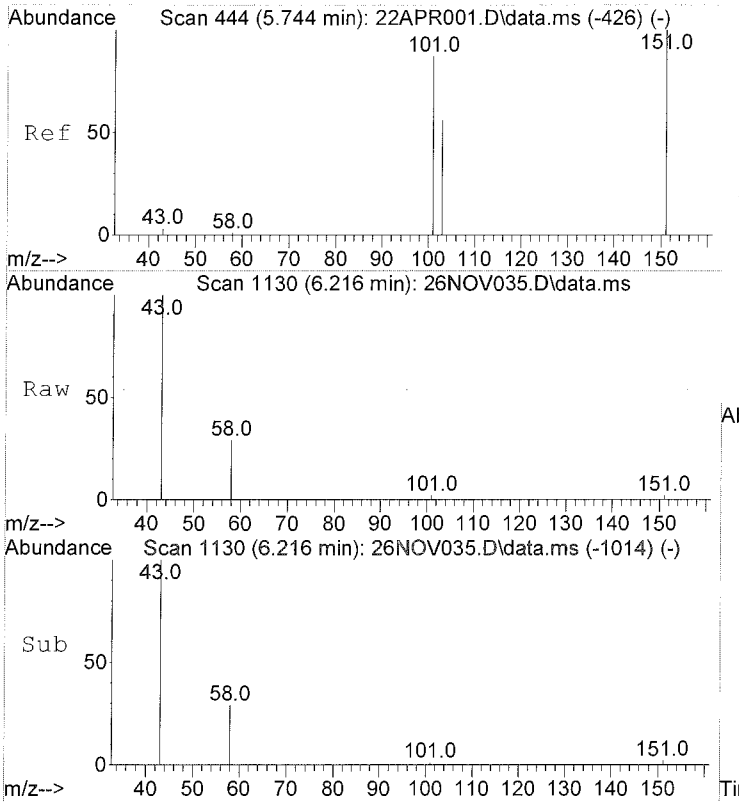


#7
Trichlorofluoromethane (11)
Concen: 378.13 pptv
RT: 5.476 min Scan# 891
Delta R.T. -0.032 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:101 Resp: 66652

Ion	Ratio	Lower	Upper
101	100		
103	64.4	14.6	114.6

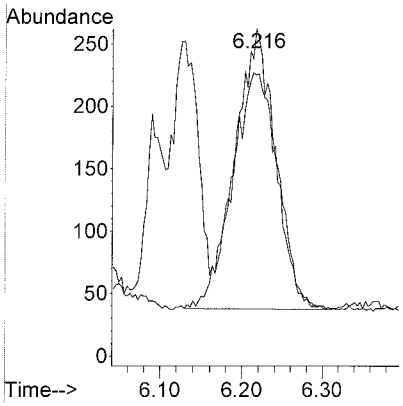


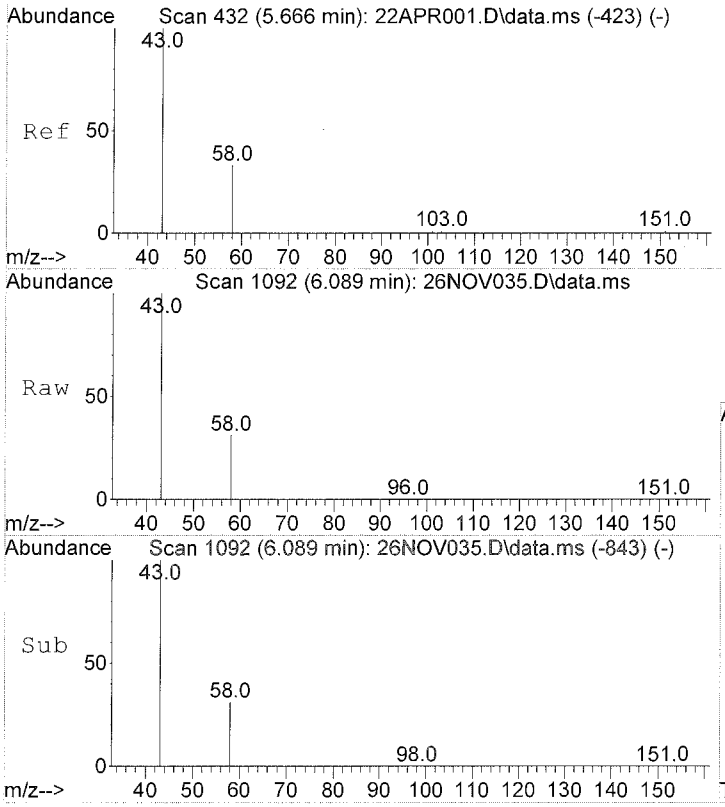


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 6.01 pptv
RT: 6.216 min Scan# 1130
Delta R.T. -0.016 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:151 Resp: 789

Ion	Ratio	Lower	Upper
151	100		
101	82.7	41.5	141.5

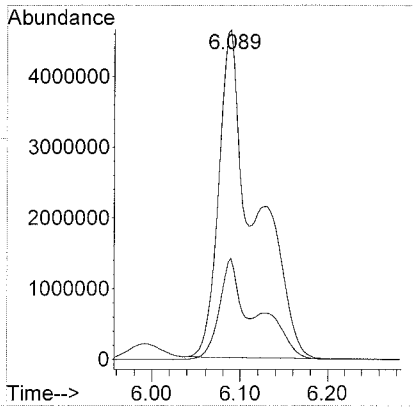


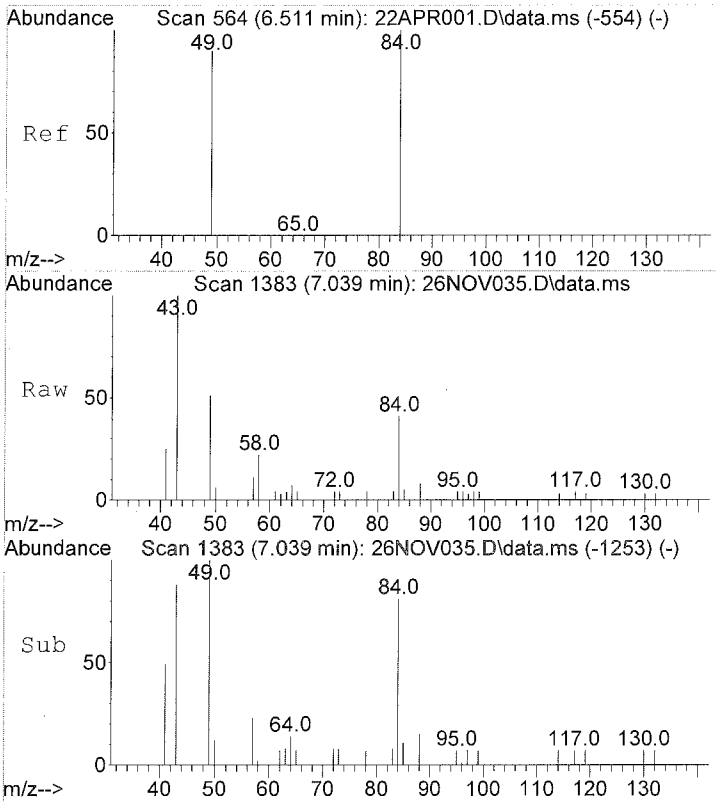


#9
Acetone
Concen: 130001.89 pptv
RT: 6.089 min Scan# 1092
Delta R.T. -0.047 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 43 Resp:13363558

Ion	Ratio	Lower	Upper
43	100		
58	30.6	13.4	53.4

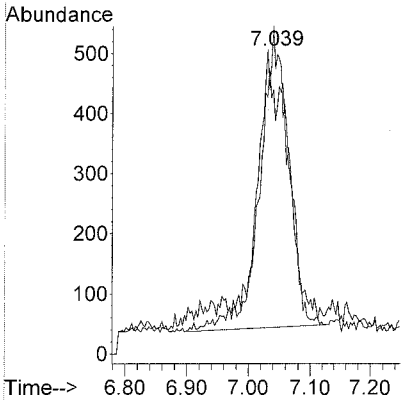


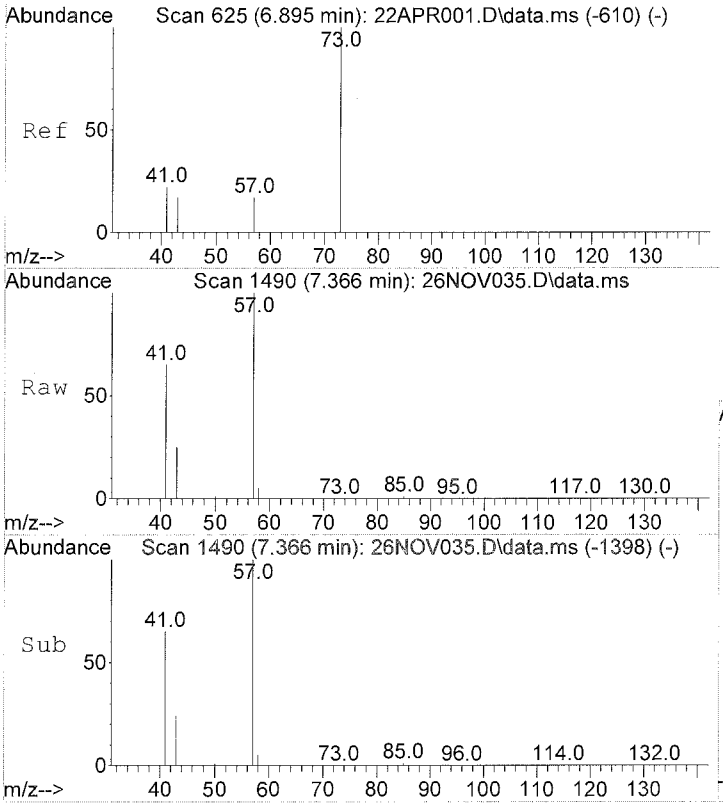


#11
Methylene Chloride
Concen: 25.56 pptv
RT: 7.039 min Scan# 1383
Delta R.T. 0.009 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 49 Resp: 1652

Ion	Ratio	Lower	Upper
49	100		
84	73.8	54.2	154.2

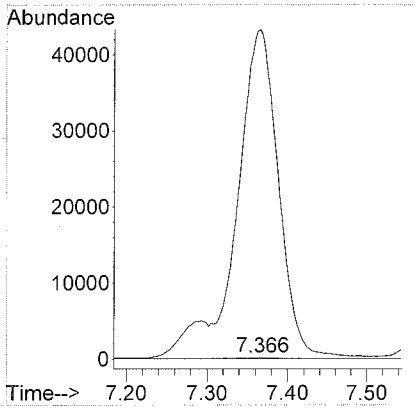


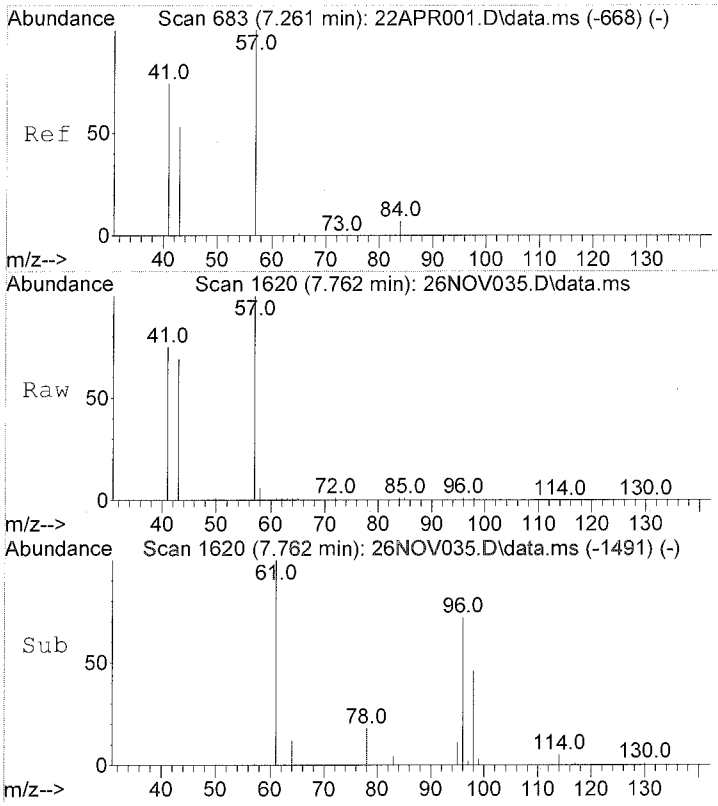


#12
t-Butyl Methyl Ether
Concen: 3.72 pptv
RT: 7.366 min Scan# 1490
Delta R.T. -0.019 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 73 Resp: 494

Ion	Ratio	Lower	Upper
73	100		
41	27859.5	0.0	516.4#

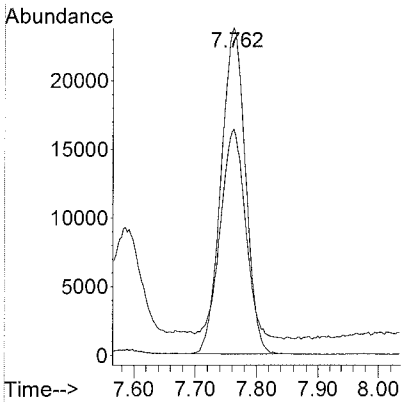


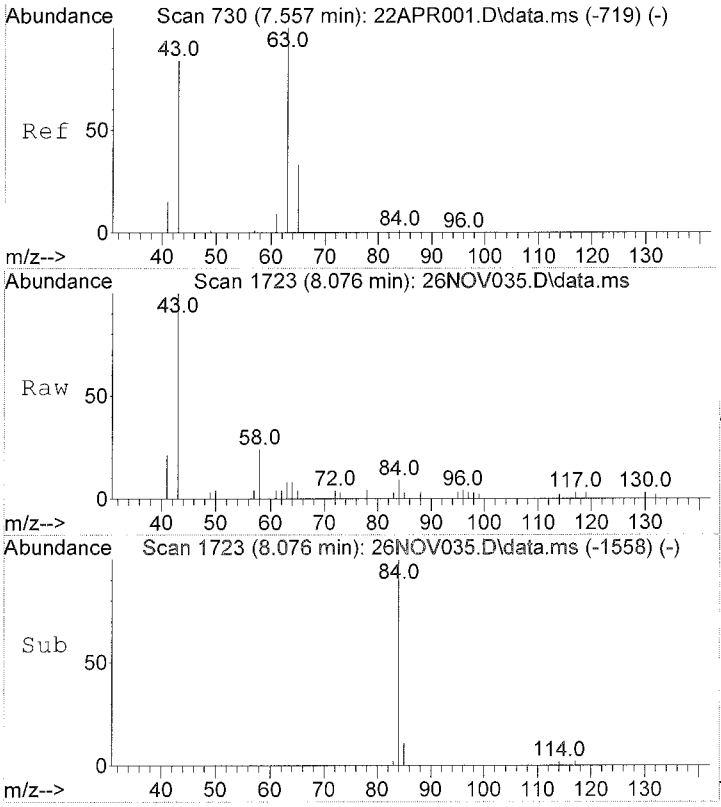


#14
Hexane
Concen: 804.12 pptv
RT: 7.762 min Scan# 1620
Delta R.T. -0.006 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 57 Resp: 65920

Ion	Ratio	Lower	Upper
57	100		
43	63.3	5.0	105.0

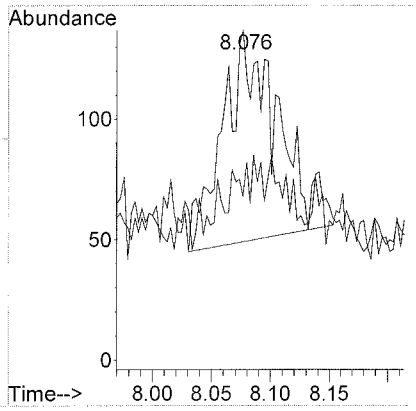


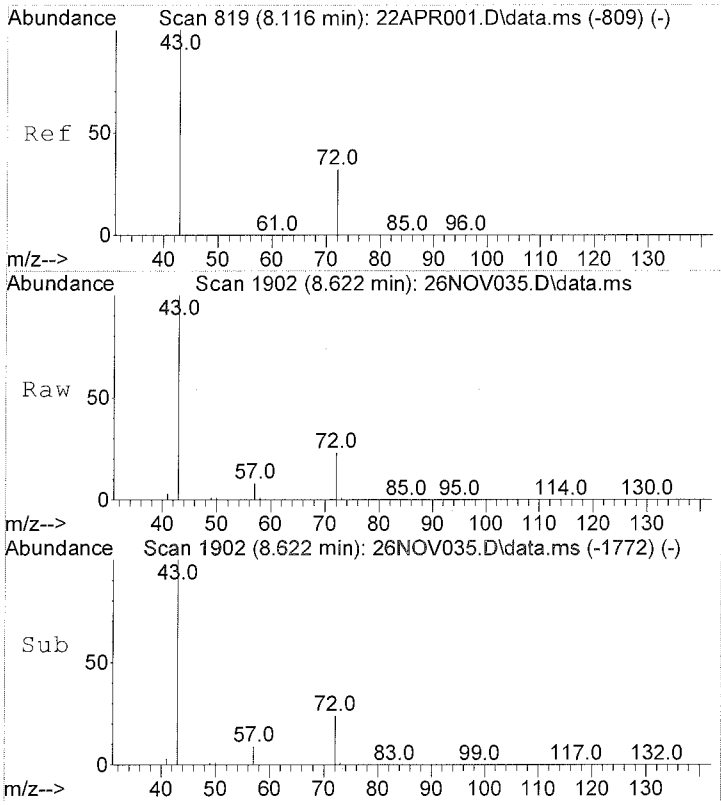


#15
1,1-Dichloroethane
Concen: 2.88 pptv
RT: 8.076 min Scan# 1723
Delta R.T. 0.003 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 63 Resp: 278

Ion	Ratio	Lower	Upper
63	100		
65	9.8	0.0	82.5

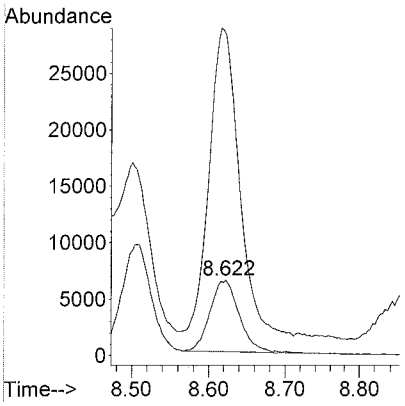


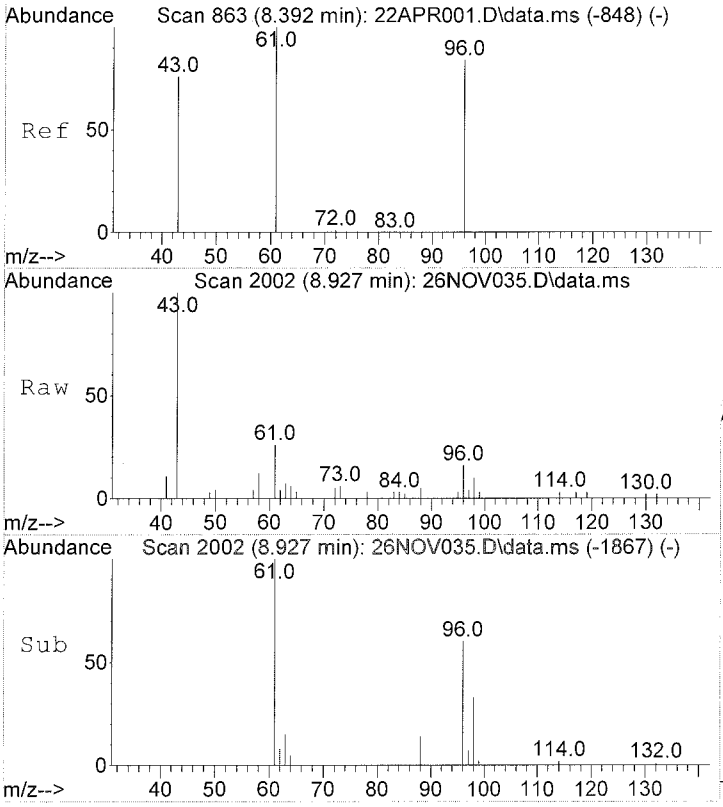


#16
2-Butanone
Concen: 694.57 pptv
RT: 8.622 min Scan# 1902
Delta R.T. -0.004 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 72 Resp: 16993

Ion	Ratio	Lower	Upper
72	100		
43	410.1	0.0	3591.5

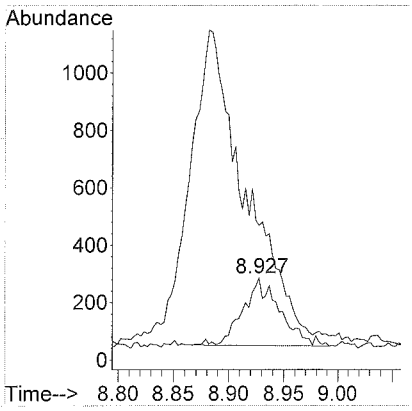


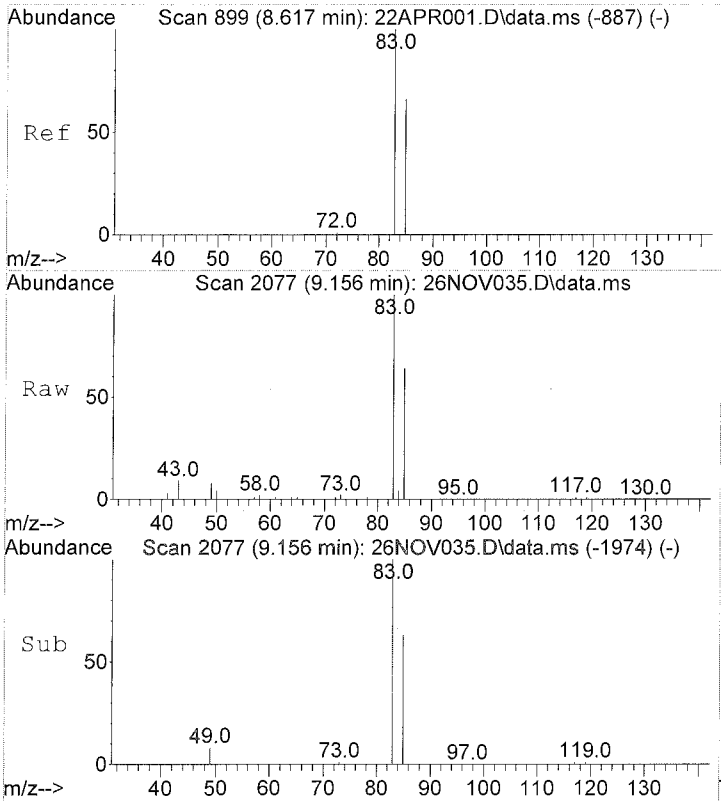


#17
c-1,2-Dichloroethene
Concen: 9.65 pptv
RT: 8.927 min Scan# 2002
Delta R.T. 0.012 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 96 Resp: 547

Ion	Ratio	Lower	Upper
96	100		
61	162.9	62.0	162.0#

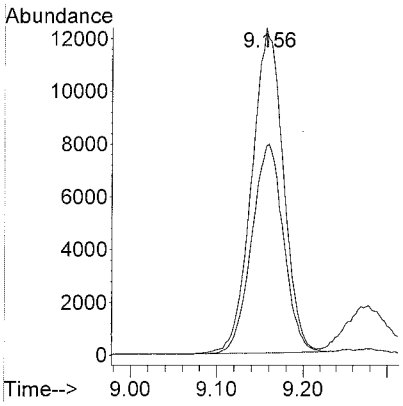


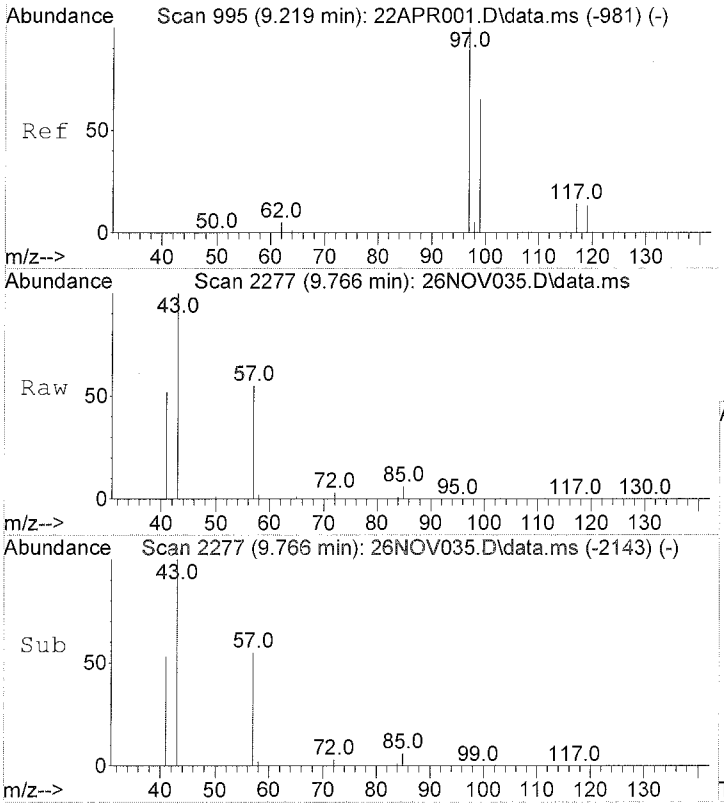


#18
Chloroform
Concen: 278.74 pptv
RT: 9.156 min Scan# 2077
Delta R.T. 0.015 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 83 Resp: 31191

Ion	Ratio	Lower	Upper
83	100		
85	63.6	14.9	114.9

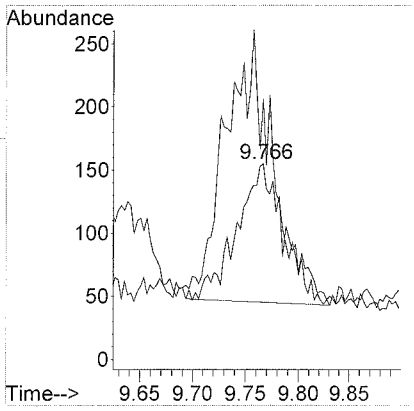


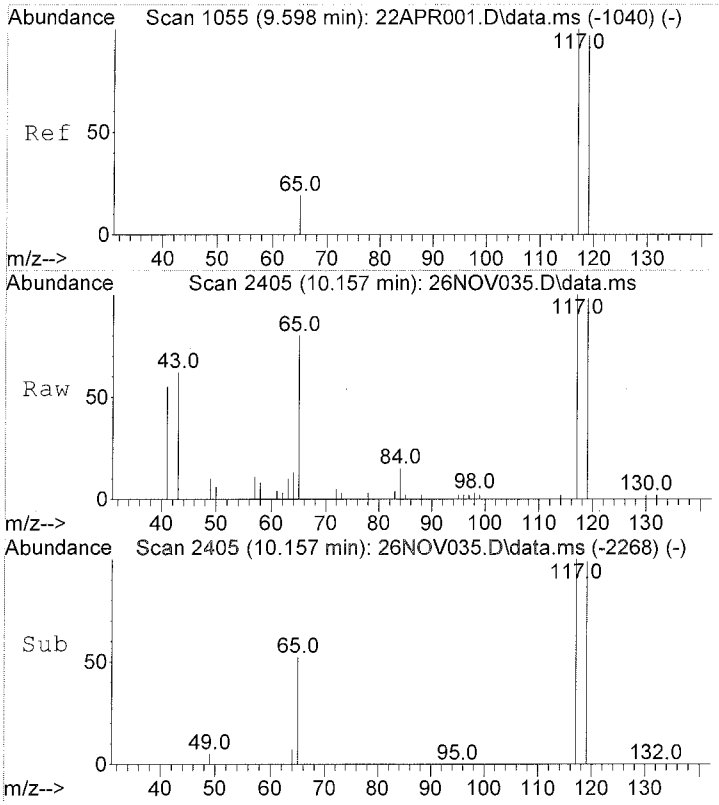


#19
1,1,1-Trichloroethane
Concen: 3.29 pptv
RT: 9.766 min Scan# 2277
Delta R.T. 0.009 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 97 Resp: 352

Ion	Ratio	Lower	Upper
97	100		
99	139.3	13.8	113.8#

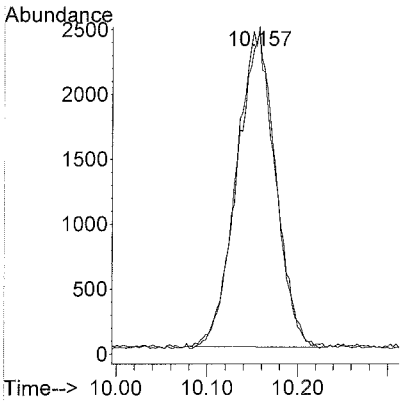


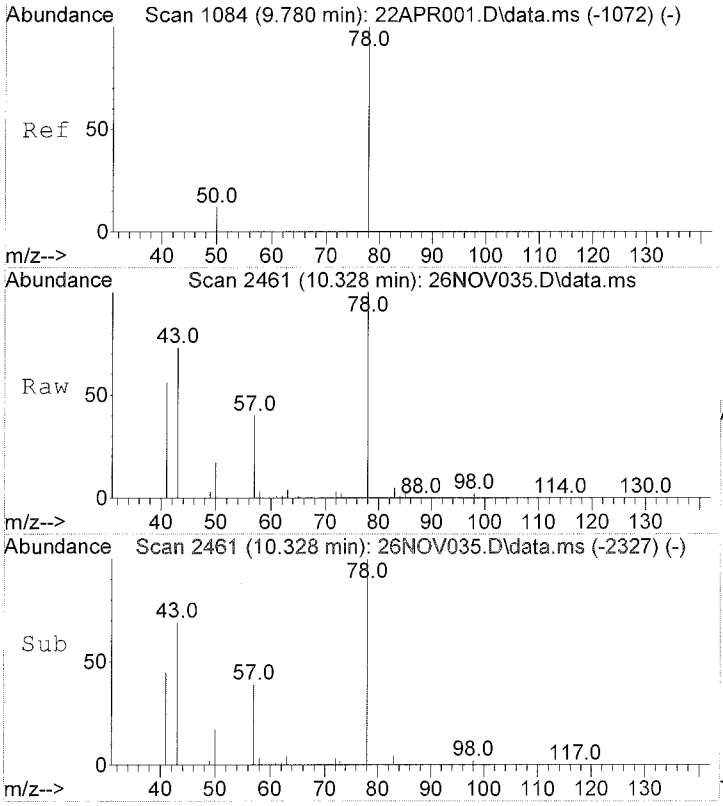


#20
Carbon Tetrachloride
Concen: 89.82 pptv
RT: 10.157 min Scan# 2405
Delta R.T. 0.018 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:117 Resp: 7369

Ion	Ratio	Lower	Upper
117	100		
119	98.1	47.1	147.1

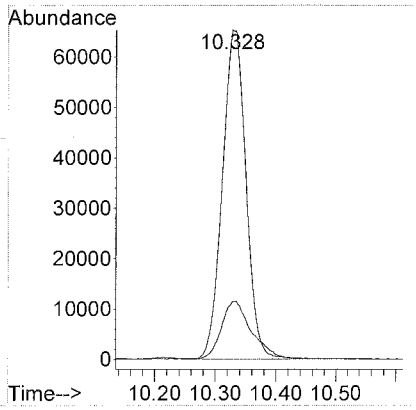


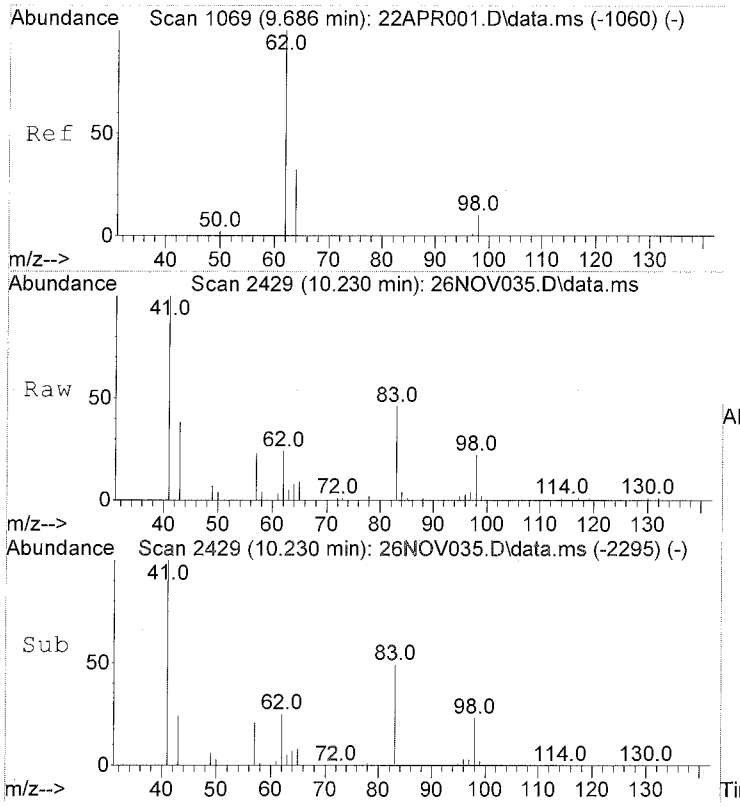


#22
Benzene
Concen: 1172.30 pptv
RT: 10.328 min Scan# 2461
Delta R.T. 0.009 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 78 Resp: 175332

Ion	Ratio	Lower	Upper
78	100		
50	17.2	0.0	62.6

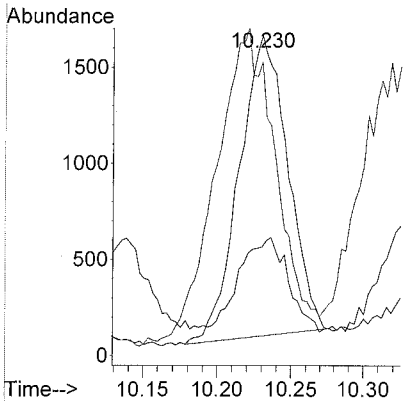


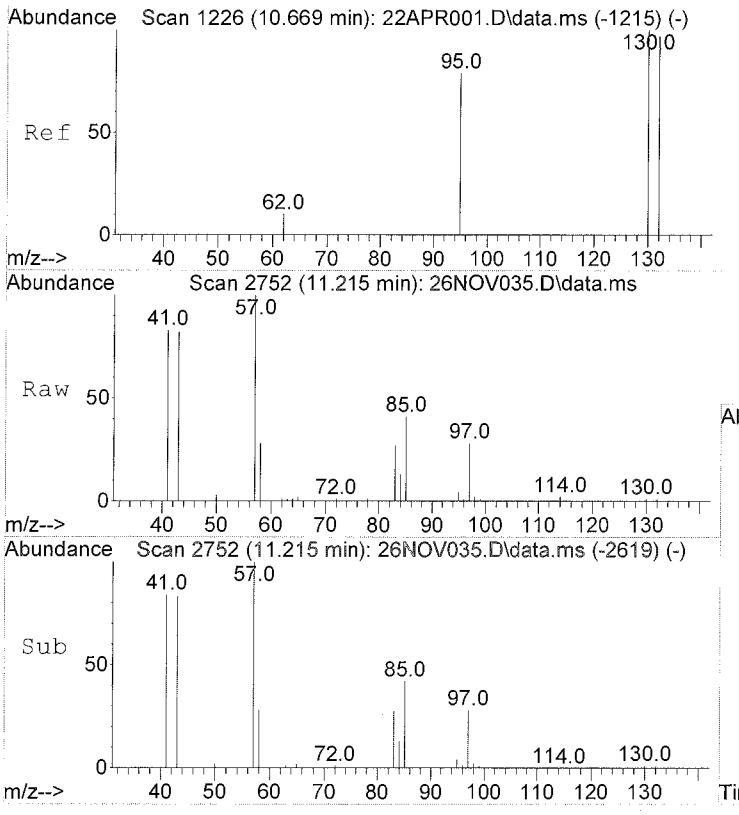


#24
1,2-Dichloroethane
Concen: 51.05 pptv
RT: 10.230 min Scan# 2429
Delta R.T. 0.009 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 62 Resp: 3571

Ion	Ratio	Lower	Upper
62	100		
64	26.2	0.0	83.0
98	78.4	0.0	61.0#

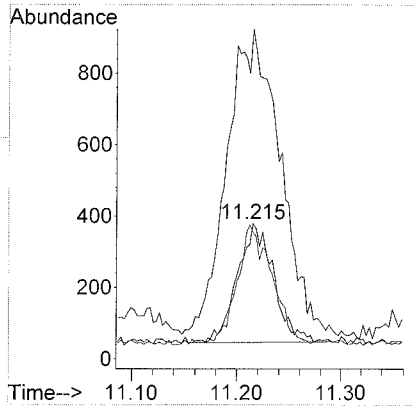


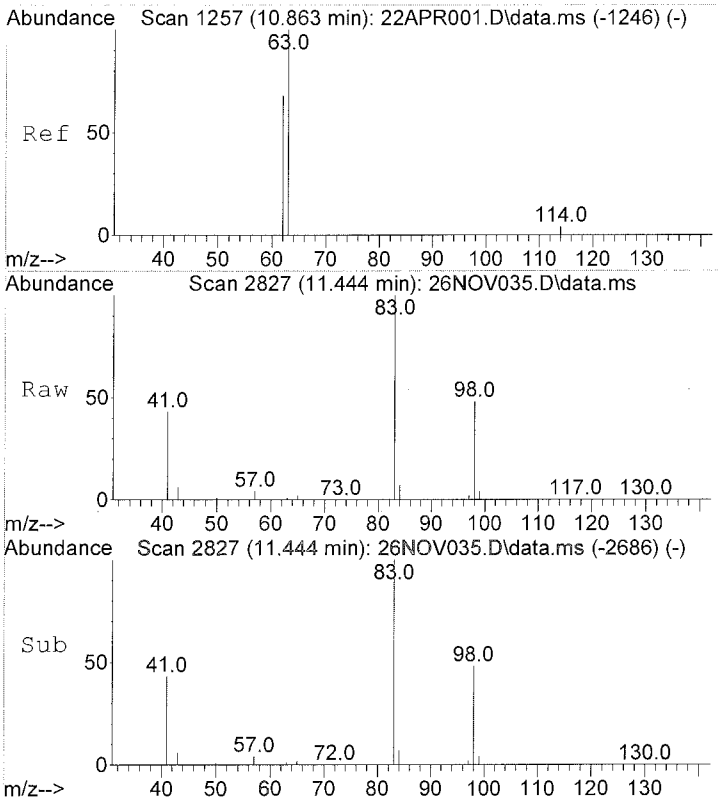


#25
Trichloroethene
Concen: 9.32 pptv
RT: 11.215 min Scan# 2752
Delta R.T. 0.006 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:130 Resp: 795

Ion	Ratio	Lower	Upper
130	100		
95	252.1	30.9	130.9#
132	93.7	46.0	146.0

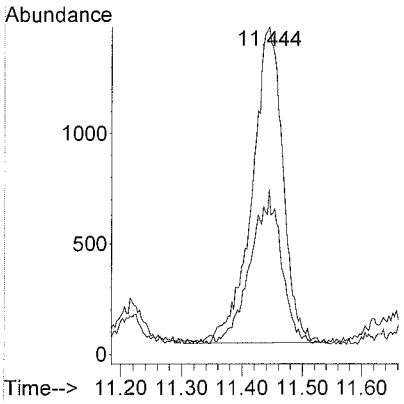


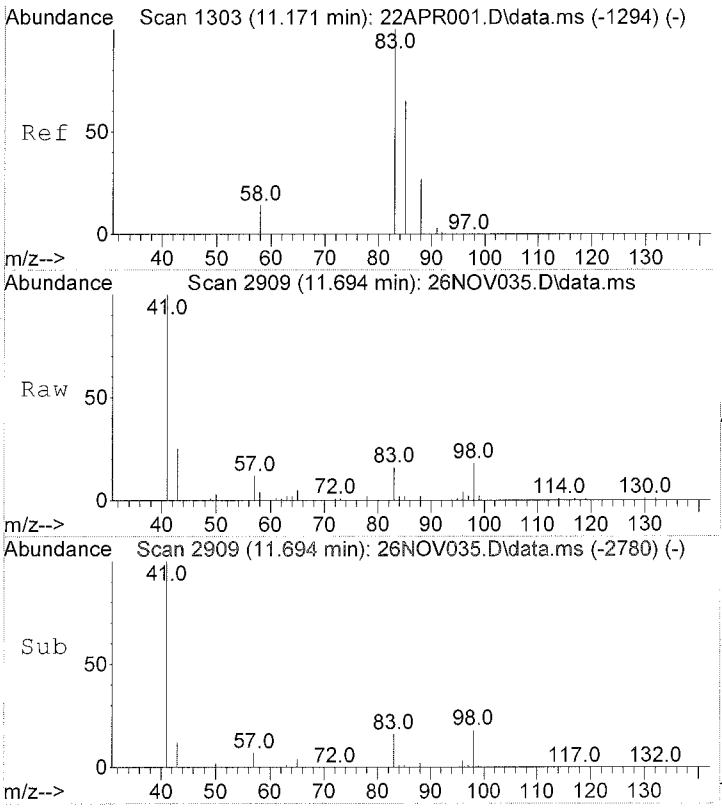


#26
1,2-Dichloropropane
Concen: 103.68 pptv
RT: 11.444 min Scan# 2827
Delta R.T. 0.030 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 63 Resp: 5117

Ion	Ratio	Lower	Upper
63	100		
62	48.6	20.3	120.3

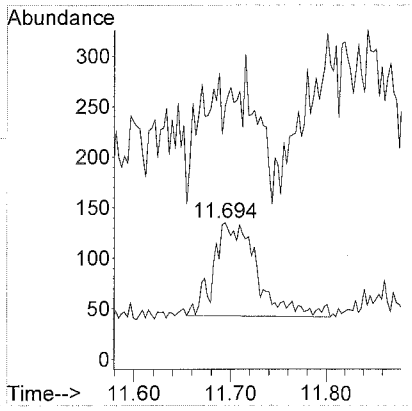


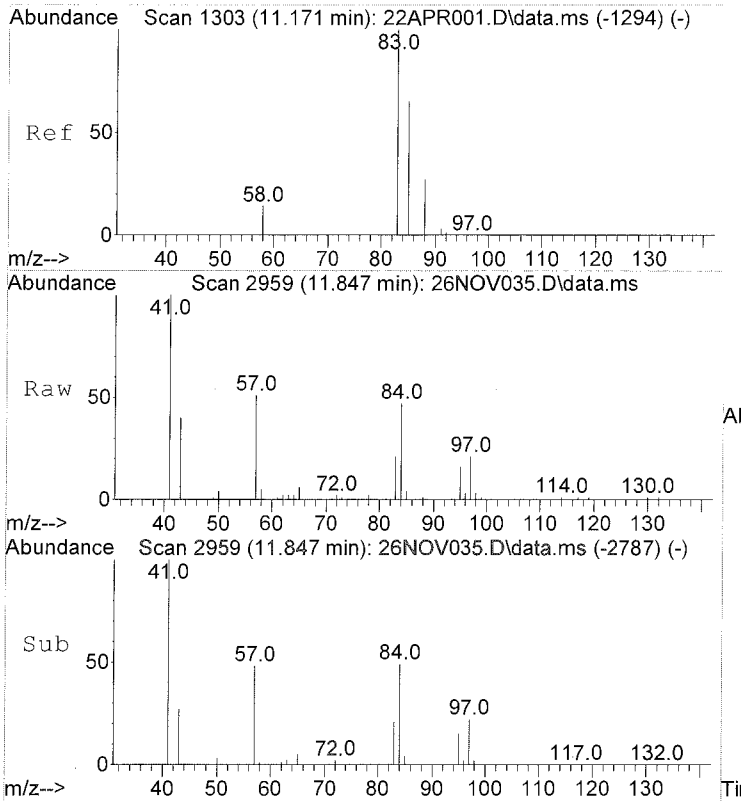


#27
1,4-Dioxane
Concen: 7.47 pptv
RT: 11.694 min Scan# 2909
Delta R.T. -0.006 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 88 Resp: 292

Ion	Ratio	Lower	Upper
88	100		
58	103.2	38.7	58.1#

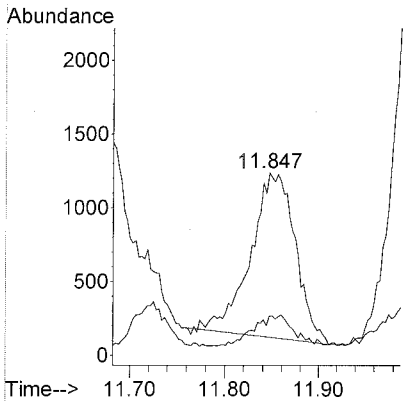


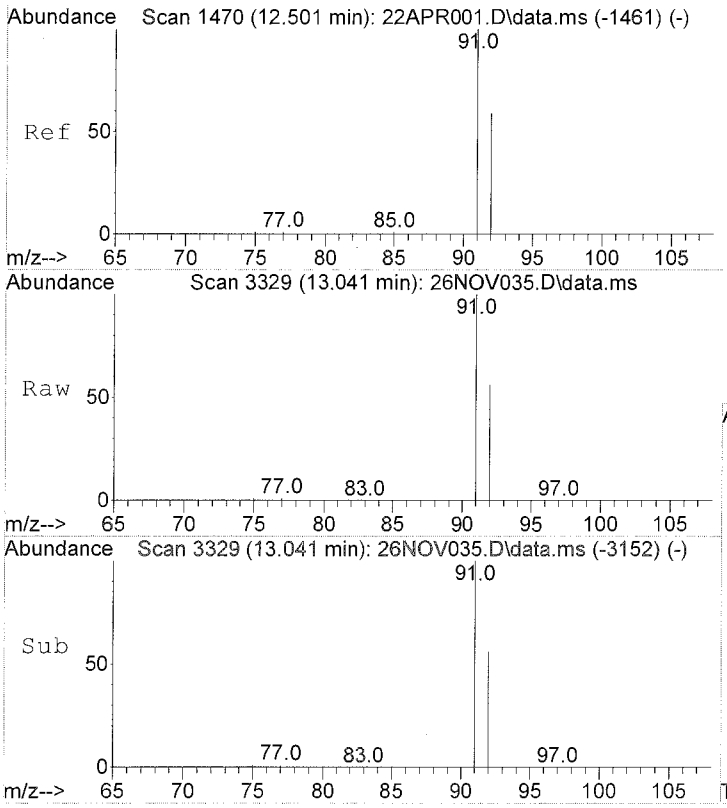


#28
Bromodichloromethane
Concen: 48.09 pptv
RT: 11.847 min Scan# 2959
Delta R.T. 0.125 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 83 Resp: 3658

Ion	Ratio	Lower	Upper
83	100		
85	16.6	13.9	113.9

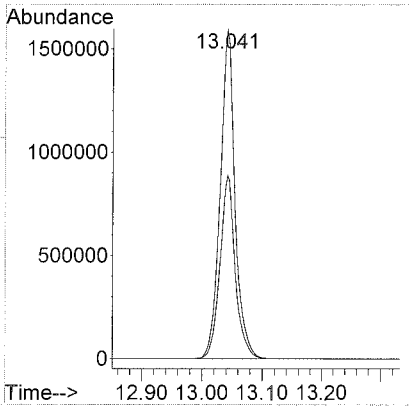


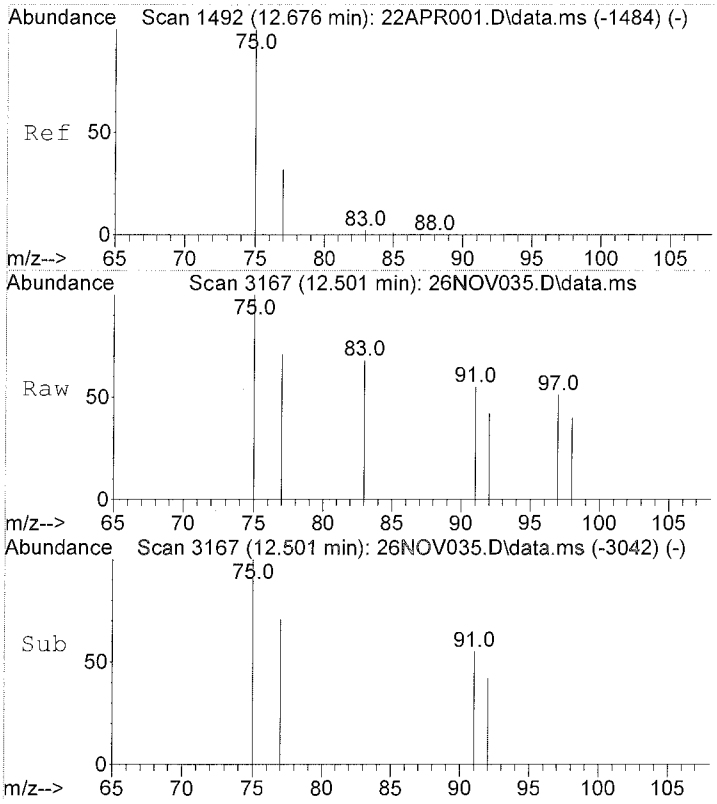


#30
Toluene
Concen: 18455.29 pptv
RT: 13.041 min Scan# 3329
Delta R.T. -0.011 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 91 Resp: 2731413

Ion	Ratio	Lower	Upper
91	100		
92	55.6	10.0	110.0

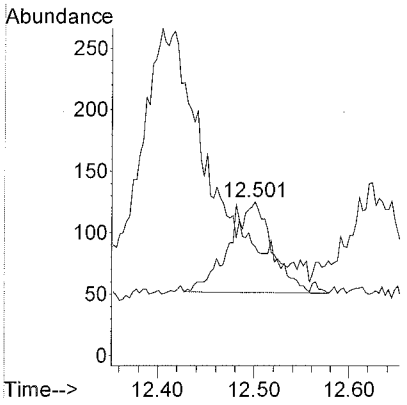


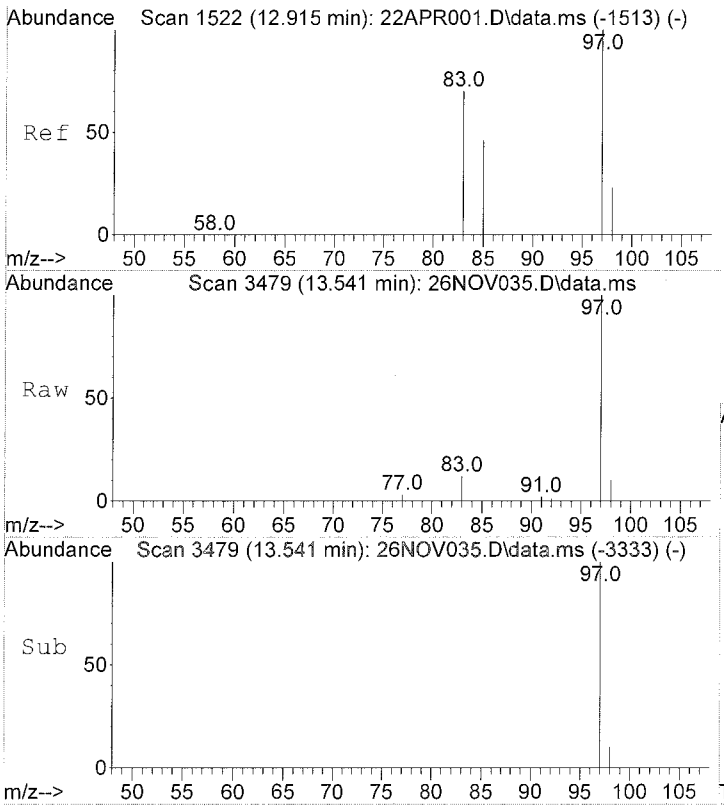


#32
t-1,3-Dichloropropene
Concen: 6.22 pptv
RT: 12.501 min Scan# 3167
Delta R.T. -0.000 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 75 Resp: 235

Ion	Ratio	Lower	Upper
75	100		
77	16.2	0.0	81.7

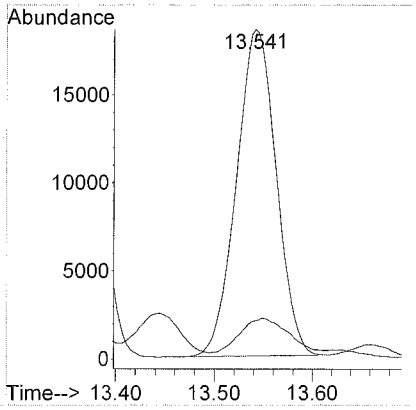


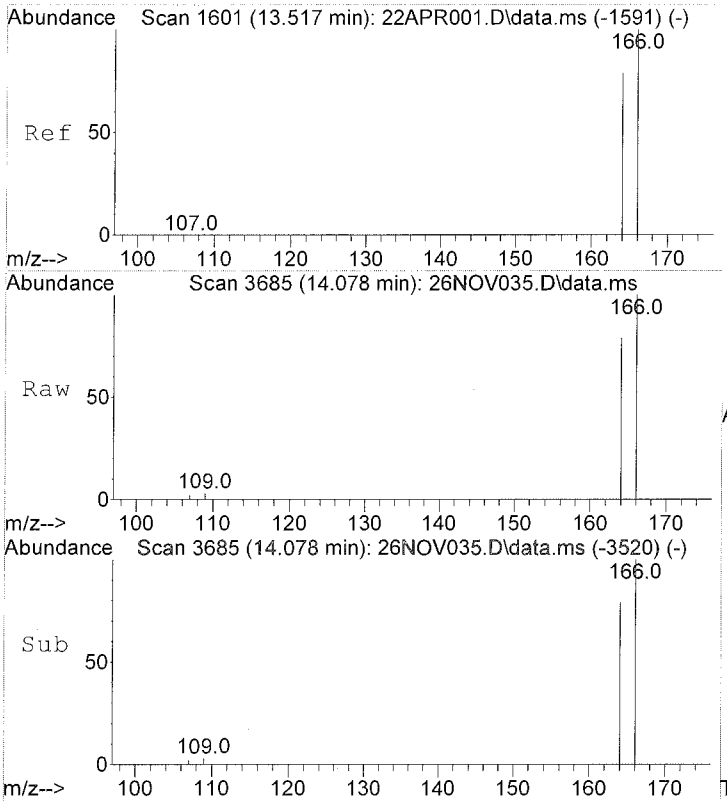


#33
1,1,2-Trichloroethane
Concen: 1061.50 pptv
RT: 13.541 min Scan# 3479
Delta R.T. 0.086 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 97 Resp: 52151

Ion	Ratio	Lower	Upper
97	100		
83	8.9	25.1	125.1#

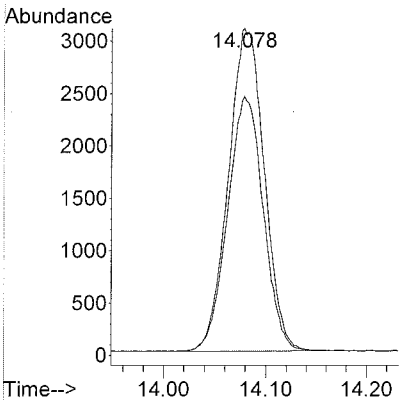


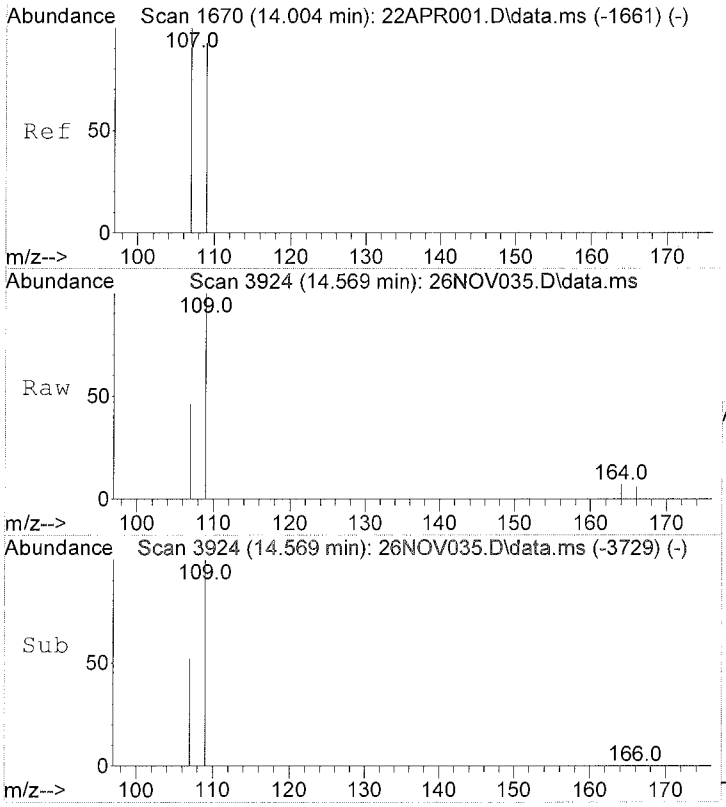


#34
Tetrachloroethene
Concen: 101.08 pptv
RT: 14.078 min Scan# 3685
Delta R.T. -0.001 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:166 Resp: 7478

Ion	Ratio	Lower	Upper
166	100		
164	78.7	25.3	125.3

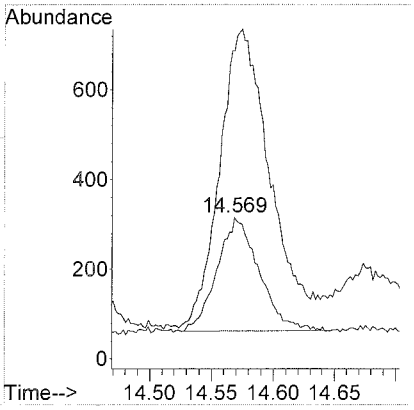


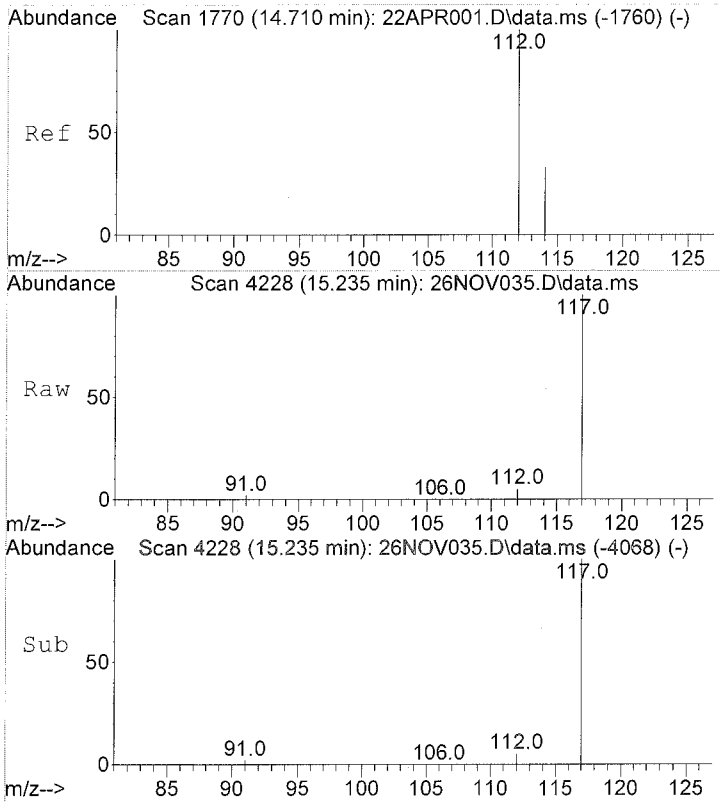


#35
1,2-Dibromoethane
Concen: 10.73 pptv
RT: 14.569 min Scan# 3924
Delta R.T. -0.000 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:107 Resp: 596

Ion	Ratio	Lower	Upper
107	100		
109	240.3	43.3	143.3#

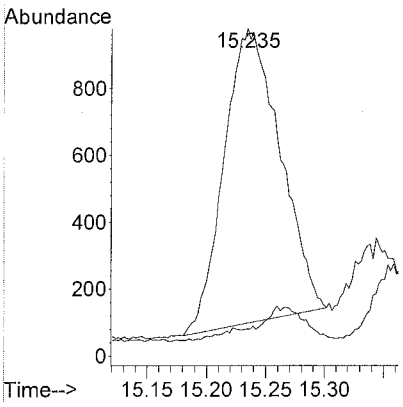


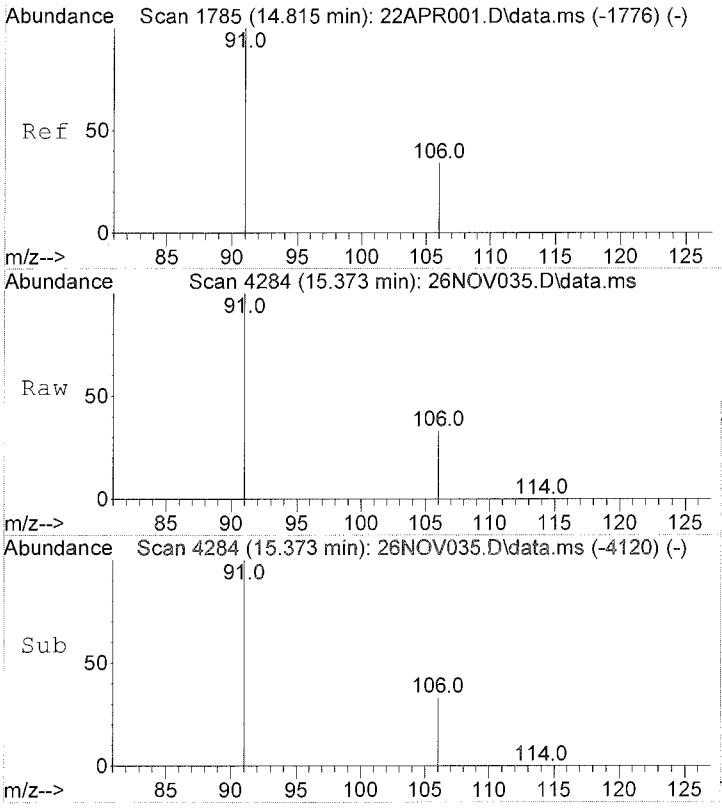


#36
Chlorobenzene
Concen: 31.40 pptv
RT: 15.235 min Scan# 4228
Delta R.T. -0.030 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:112 Resp: 2898

Ion	Ratio	Lower	Upper
112	100		
114	3.8	0.0	81.6

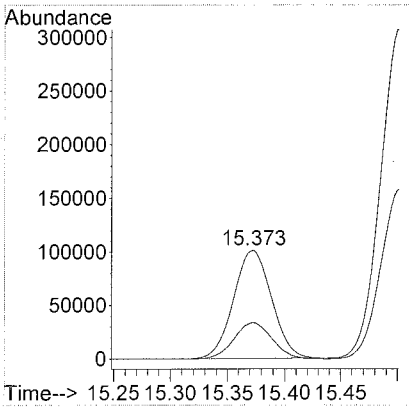


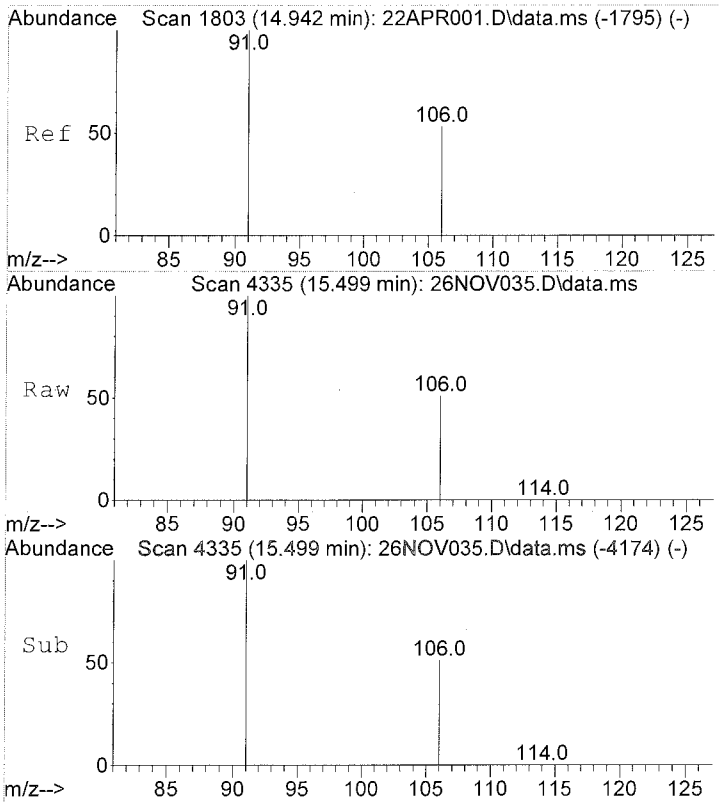


#37
Ethylbenzene
Concen: 2142.22 pptv
RT: 15.373 min Scan# 4284
Delta R.T. 0.002 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 91 Resp: 232940

Ion	Ratio	Lower	Upper
91	100		
106	33.5	0.0	83.4

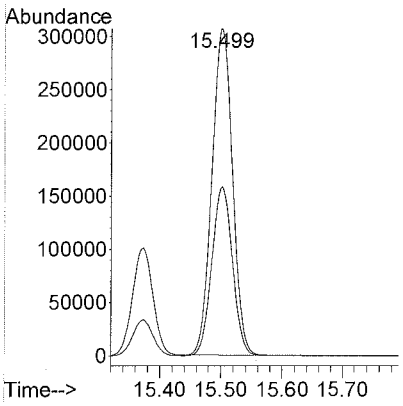


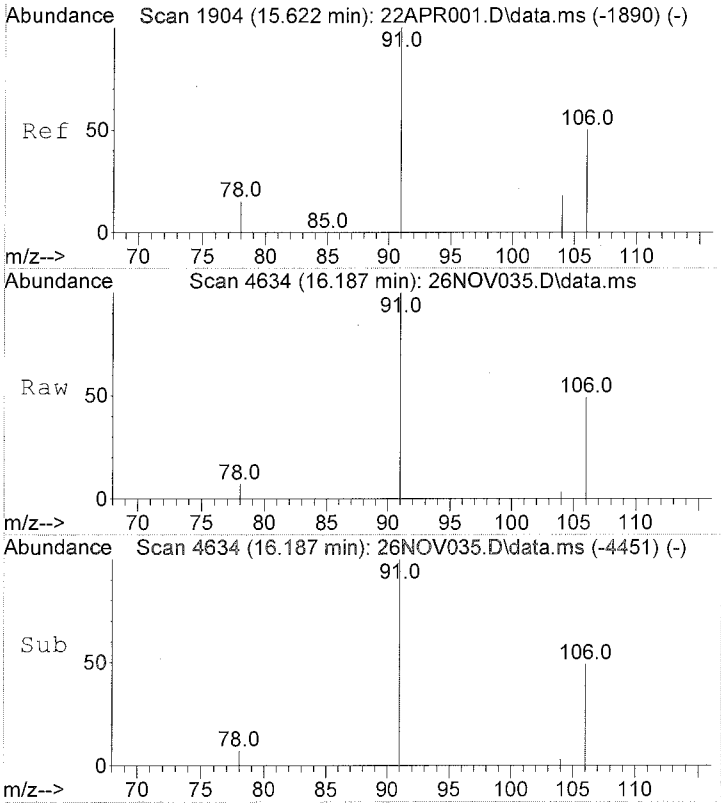


#38
p,&m-Xylene
Concen: 8838.92 pptv
RT: 15.499 min Scan# 4335
Delta R.T. -0.003 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 91 Resp: 702968

Ion	Ratio	Lower	Upper
91	100		
106	51.3	3.9	103.9

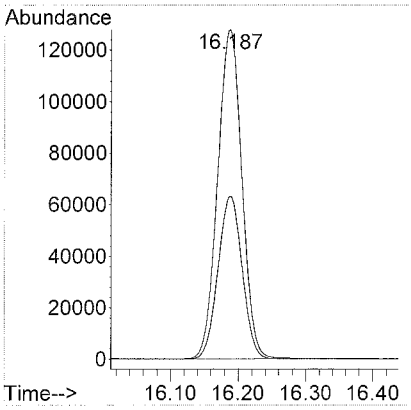


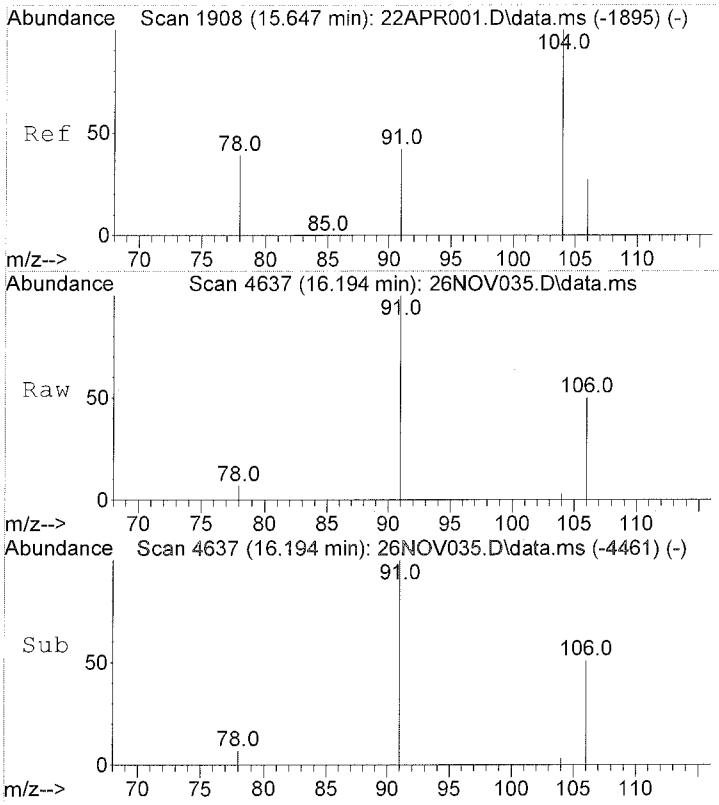


#39
o-Xylene
Concen: 4252.96 pptv
RT: 16.187 min Scan# 4634
Delta R.T. -0.001 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 91 Resp: 311607

Ion	Ratio	Lower	Upper
91	100		
106	49.4	0.0	97.3

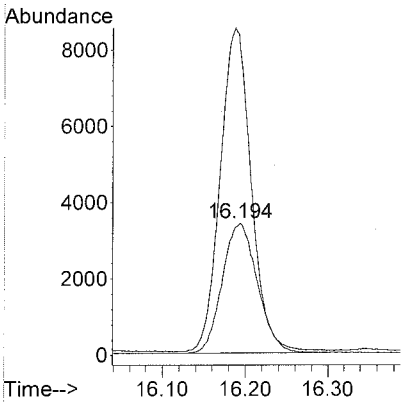


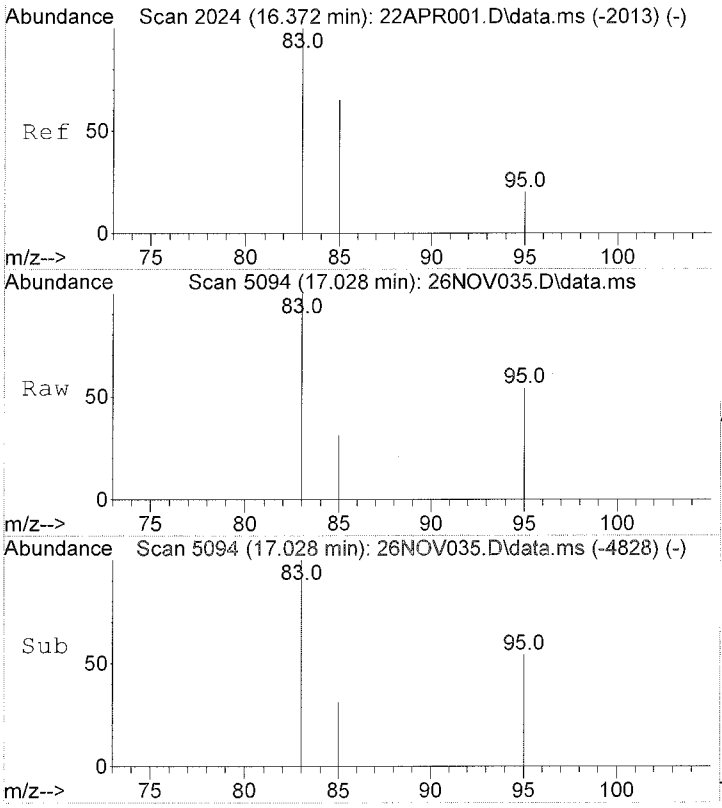


#40
Styrene
Concen: 210.34 pptv
RT: 16.194 min Scan# 4637
Delta R.T. -0.017 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:104 Resp: 9979

Ion	Ratio	Lower	Upper
104	100		
78	230.1	0.0	87.4#

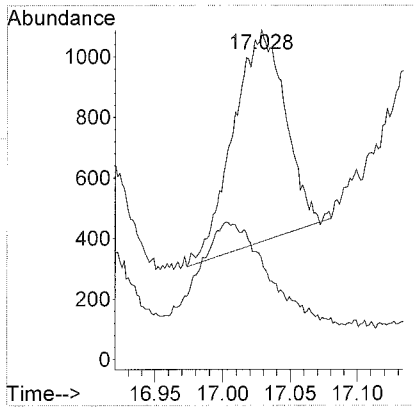


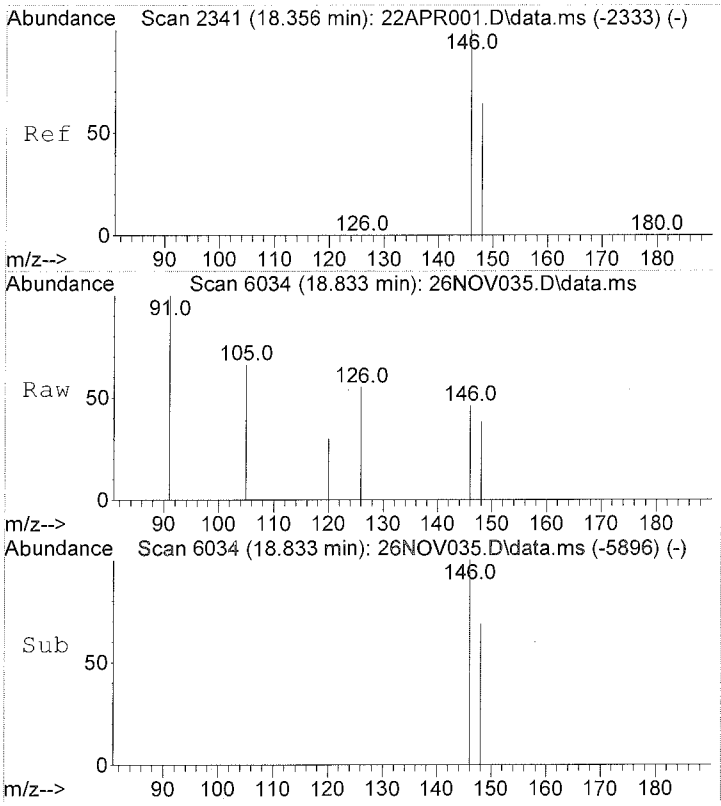


#41
1,1,2,2-Tetrachloroethane
Concen: 33.11 pptv
RT: 17.028 min Scan# 5094
Delta R.T. 0.045 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 83 Resp: 1877

Ion	Ratio	Lower	Upper
83	100		
85	25.6	13.6	113.6

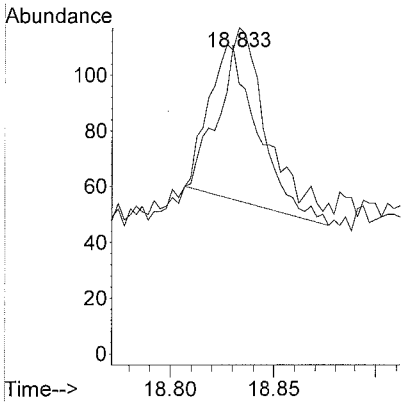


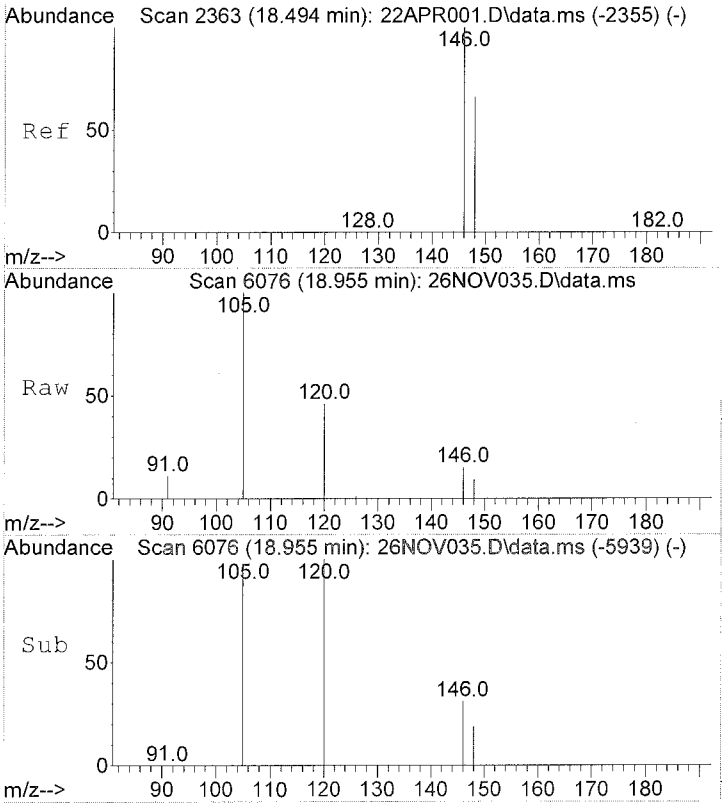


#43
1,3-Dichlorobenzene
Concen: 1.82 pptv
RT: 18.833 min Scan# 6034
Delta R.T. 0.002 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:146 Resp: 104

Ion	Ratio	Lower	Upper
146	100		
148	60.6	13.9	113.9

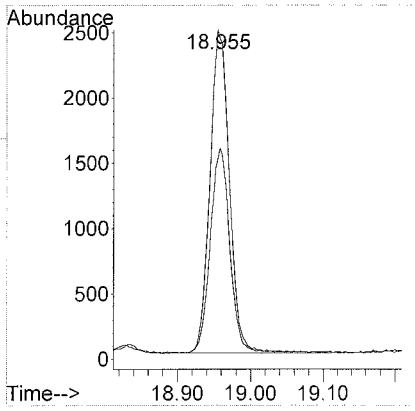


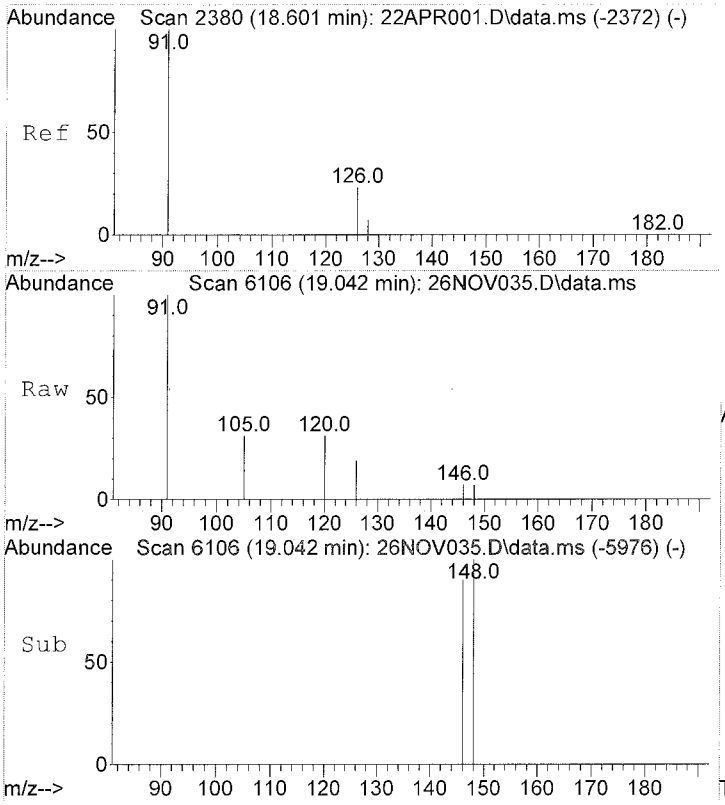


#44
1,4-Dichlorobenzene
Concen: 77.46 pptv
RT: 18.955 min Scan# 6076
Delta R.T. -0.000 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:146 Resp: 4608

Ion	Ratio	Lower	Upper
146	100		
148	59.6	15.5	115.5

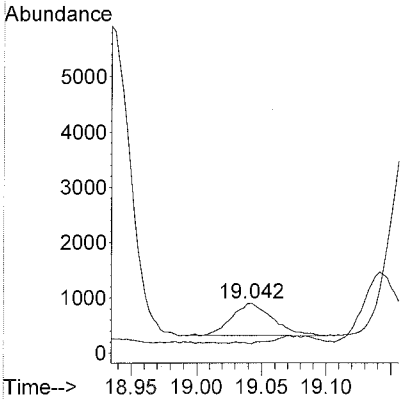


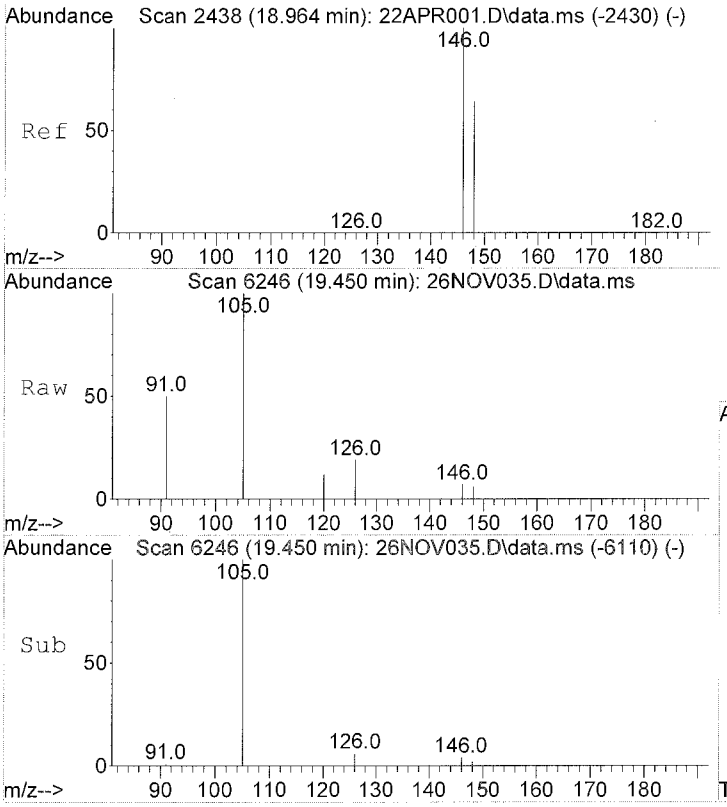


#45
Benzyl Chloride
Concen: 53.52 pptv
RT: 19.042 min Scan# 6106
Delta R.T. -0.021 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion: 91 Resp: 1263

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.7	28.1#

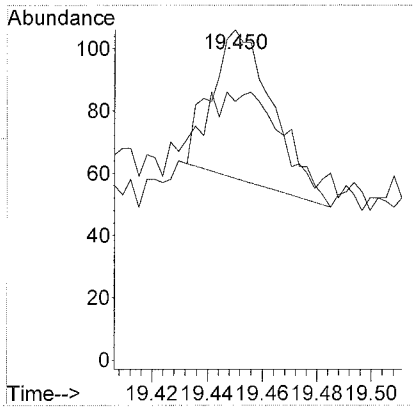


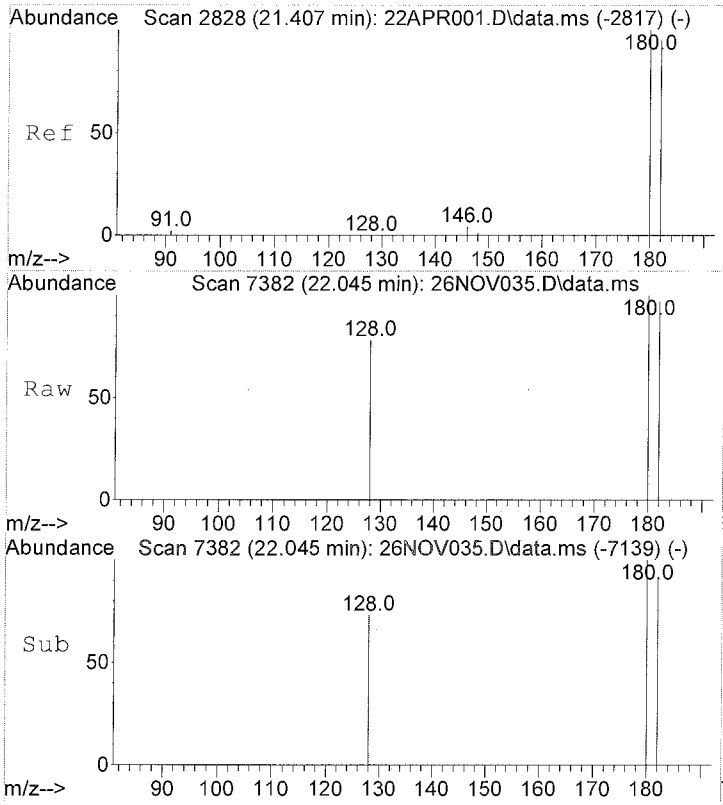


#46
1,2-Dichlorobenzene
Concen: 1.41 pptv
RT: 19.450 min Scan# 6246
Delta R.T. -0.003 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:146 Resp: 75

Ion	Ratio	Lower	Upper
146	100		
148	40.4	13.7	113.7

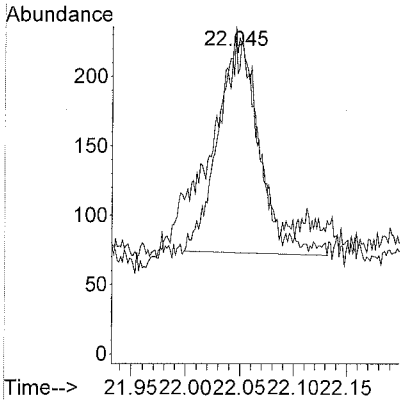


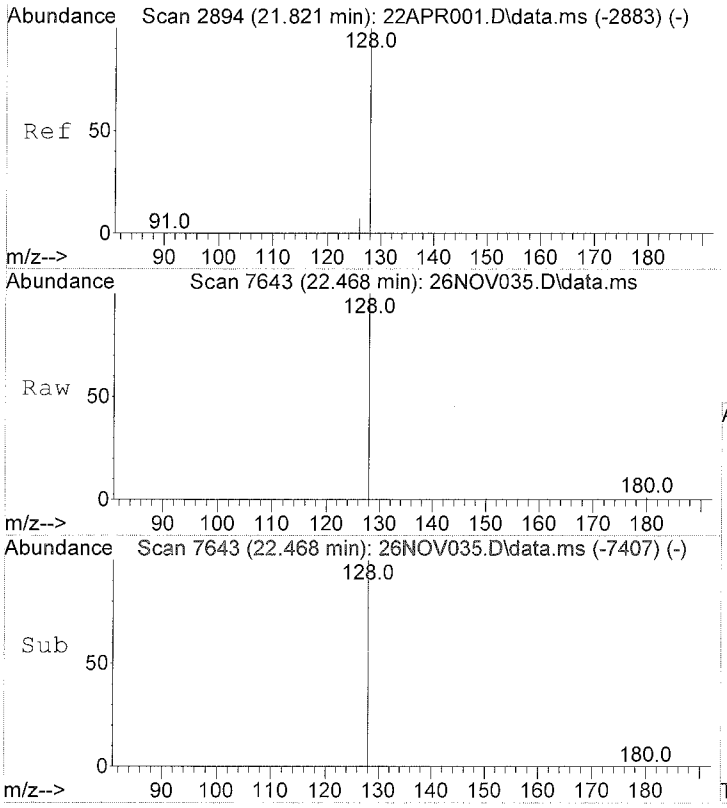


#47
1,2,4-Trichlorobenzene
Concen: 9.15 pptv
RT: 22.045 min Scan# 7382
Delta R.T. -0.007 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:180 Resp: 413

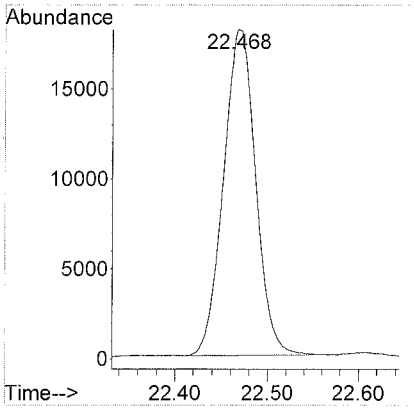
Ion	Ratio	Lower	Upper
180	100		
182	80.0	44.8	144.8





#48
Naphthalene
Concen: 501.47 pptv
RT: 22.468 min Scan# 7643
Delta R.T. -0.018 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:128 Resp: 43887



QC Report: Unit #1
Inject Time: 11/27/2018 09:53:45

QAQC Filename:QAQC\11272018\1_095345.asc

Autosampler Position: 13 / Run 27 of 29
Sample Name : J110805-05
Method Filename: T15DESORB230.MTC

Volume Parameters:				
ISTD A Xfer Volume	set=50	Act=50	StartPress=15.1	EndPress=15.1
ISTD A Flow	set=50	Act=49.7		
ISTD A Trap Temp	set=22	hi=24	lo=22	avg=22
ISTD B Xfer Volume	set=0	Act=0	StartPress=0.0	EndPress=0.0
ISTD B Flow	set=0	Act=0.0		
ISTD B Trap Temp	Disabled			
ISTD C Xfer Volume	Disabled			
ISTD C Flow	Disabled			
ISTD C Trap Temp	Disabled			
Sample Xfer Volume	set=403	Act=403	StartPress=13.4	EndPress=12.5
Sample Xfer Flow	set=50	Act=49.7		
Smple Xfer Trap Temp	set=22	hi=22	lo=22	avg=22

Sweep Gas = Helium

Dry Purge Parameters:				
Dry Purge Flow	set=70	Act=69.0		
Dry Purge Temp	set=25	hi=25	lo=25	avg=25
Dry Purge Time	set=12.00	act=12.00		
Desorb Parameters:				
Trap Desorb Temp	set=230	hi=240	lo=226	avg=230
Trap Desorb Time	set=4.50	act=4.50		
MCS Temp	Disabled			
Cryo Focuser Temp	set=-180	hi=-183	lo=-198	avg=-187
Inject Parameters:				
Cryo Union Temp	set=130	hi=130	lo=129	avg=130
Cryo Inject Temp	set=75	hi=77	lo=74	avg=74
Cryo Inject Time	set=2.50	act=2.50		
Bake Parameters:				
Trap Bake Temp	set=280	hi=282	lo=278	avg=281
Trap Bake Time	set=10.00	act=10.00		
MCS Bake Temp	Disabled			

System Regions:		
Manifold 1 Temp	set=130	avg=130
Manifold 2 Temp	set=130	avg=130
Oven 6 Port Temp	set=130	avg=130
Oven 8 Port Temp	set=130	avg=130
Oven 16 Port Temp	set=130	avg=130
Bottom Of Trap Temp	set=130	avg=130
Transfer Line Temp	set=130	avg=130

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV036.D
Acq On : 27 Nov 2018 10:38 am
Operator : DT
Sample : J110805-06 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 27 11:03:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.346	130	107849	2000.00	pptv	0.02
21) 1,4-Difluorobenzene	10.688	114	374240	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.208	117	201698	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.102	65	147426	2329.26	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 116.46%			
29) Toluene-d8	12.935	98	245163	1844.01	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 92.20%			
42) 4-Bromofluorobenzene	17.184	95	102261	2018.35	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 100.92%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.544	85	64071	501.50	pptv	99
3) Chloromethane	4.111	50	13002	305.64	pptv	75
4) Vinyl Chloride	4.149	62	258	6.19	pptv #	1
5) Bromomethane	4.844	96	572	31.06	pptv	94
6) Chloroethane	4.993	64	150	5.01	pptv	80
7) Trichlorofluoromethane...	5.464	101	63540	370.38	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.217	151	911	7.13	pptv	99
9) Acetone	6.086	43	12525953	125201.35	pptv	94
11) Methylene Chloride	7.046	49	1294	20.57	pptv	75
12) t-Butyl Methyl Ether	7.345	73	557	4.31	pptv #	1
14) Hexane	7.759	57	60872	762.94	pptv	88
15) 1,1-Dichloroethane	8.098	63	227	2.42	pptv	70
16) 2-Butanone	8.620	72	14199	596.31	pptv	54
17) c-1,2-Dichloroethene	8.931	96	459	8.32	pptv	71
18) Chloroform	9.156	83	35827	328.97	pptv	100
19) 1,1,1-Trichloroethane	9.767	97	377	3.62	pptv	50
20) Carbon Tetrachloride	10.154	117	7239	90.66	pptv	95
22) Benzene	10.331	78	159037	1120.71	pptv	87
24) 1,2-Dichloroethane	10.230	62	2665	40.15	pptv #	63
25) Trichloroethene	11.218	130	543	6.71	pptv #	1
26) 1,2-Dichloropropane	11.447	63	4342	92.72	pptv	69
27) 1,4-Dioxane	11.697	88	296	7.98	pptv	87
28) Bromodichloromethane	11.850	83	3366	46.64	pptv	37
30) Toluene	13.041	91	2589771	18442.14	pptv	94
32) t-1,3-Dichloropropene	12.491	75	163	4.47	pptv	50
33) 1,1,2-Trichloroethane	13.542	97	47542	1002.56	pptv #	23
34) Tetrachloroethene	14.081	166	7166	100.35	pptv	98
35) 1,2-Dibromoethane	14.573	107	387	7.22	pptv #	1
36) Chlorobenzene	15.235	112	2576	28.92	pptv	49
37) Ethylbenzene	15.371	91	210209	2002.84	pptv	100
38) p,&m-Xylene	15.502	91	636068	8285.93	pptv	97
39) o-Xylene	16.186	91	276574	3910.84	pptv	97
40) Styrene	16.194	104	8885	194.03	pptv #	1
41) 1,1,2,2-Tetrachloroethane	17.030	83	1489	27.21	pptv	43
43) 1,3-Dichlorobenzene	18.956	146	5455	98.92	pptv	100
44) 1,4-Dichlorobenzene	18.956	146	5455	95.01	pptv	98

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV036.D
Acq On : 27 Nov 2018 10:38 am
Operator : DT
Sample : J110805-06 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 14 Sample Multiplier: 1

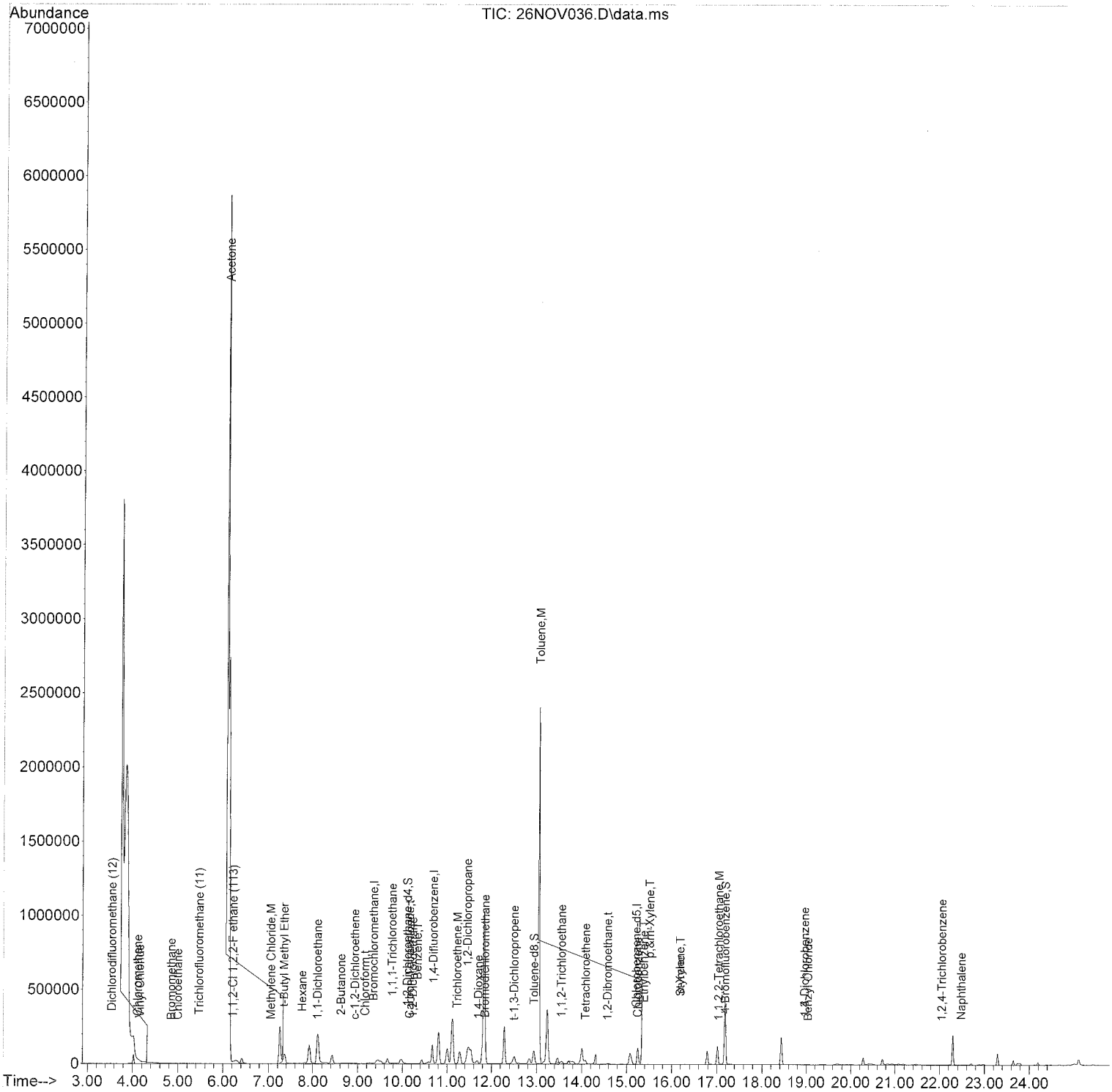
Quant Time: Nov 27 11:03:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

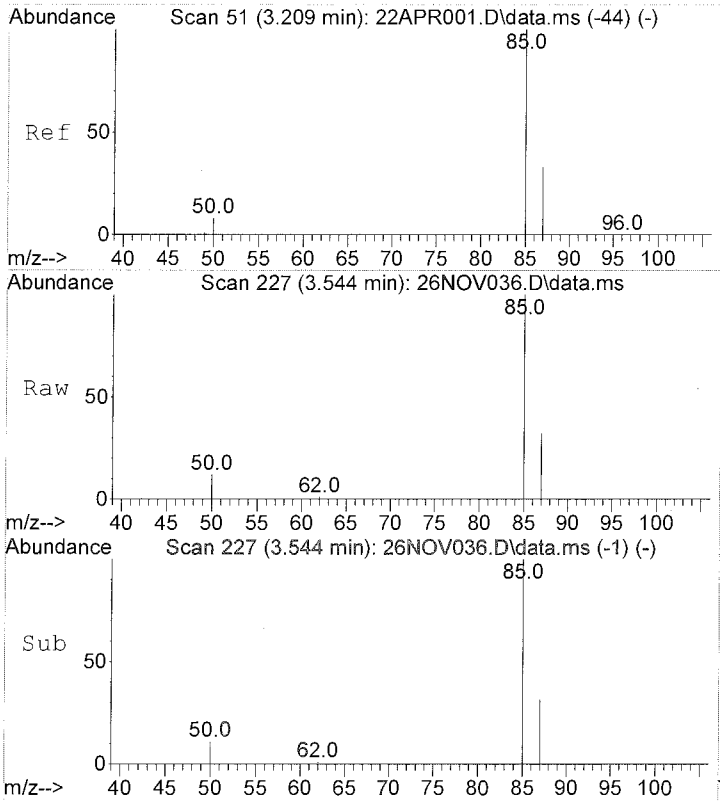
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
45) Benzyl Chloride	19.037	91	1135	49.83	pptv #	52
47) 1,2,4-Trichlorobenzene	22.043	180	136	3.12	pptv #	22
48) Naphthalene	22.473	128	28375	335.90	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV036.D
Acq On : 27 Nov 2018 10:38 am
Operator : DT
Sample : J110805-06 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 27 11:03:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

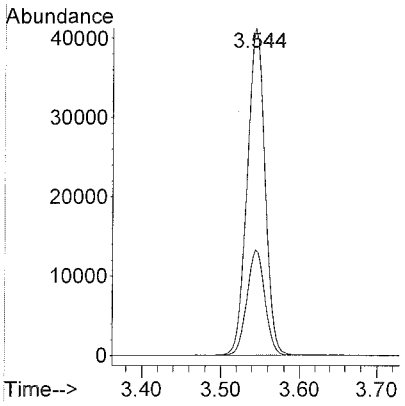


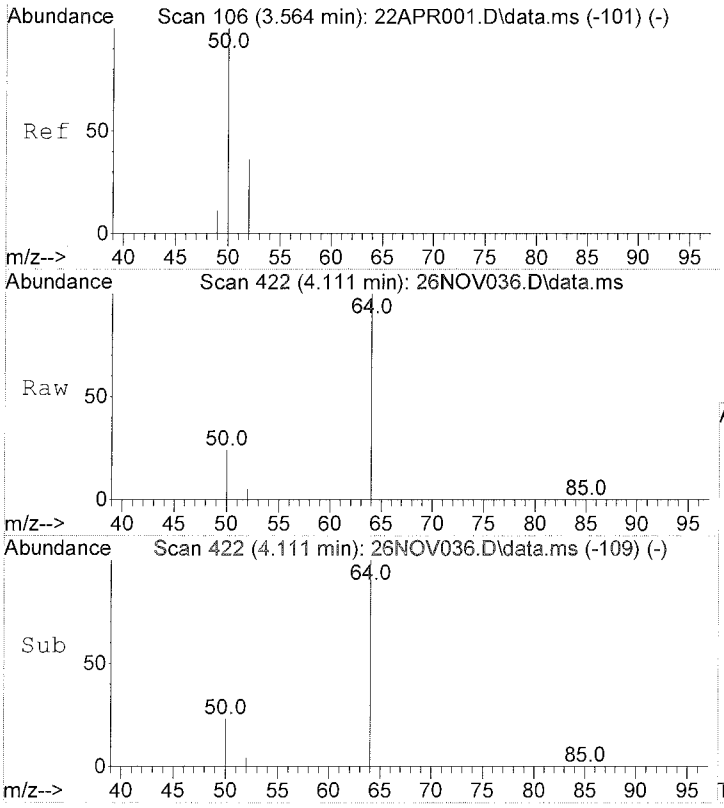


#2
Dichlorodifluoromethane (12)
Concen: 501.50 pptv
RT: 3.544 min Scan# 227
Delta R.T. -0.044 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 85 Resp: 64071

Ion	Ratio	Lower	Upper
85	100		
87	32.3	0.0	81.9

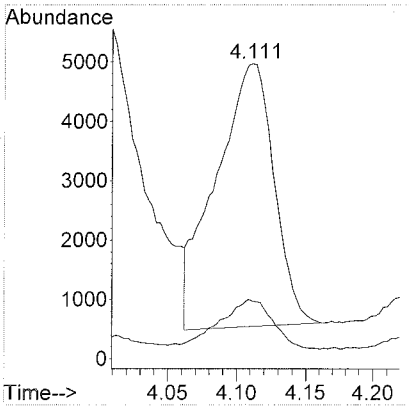


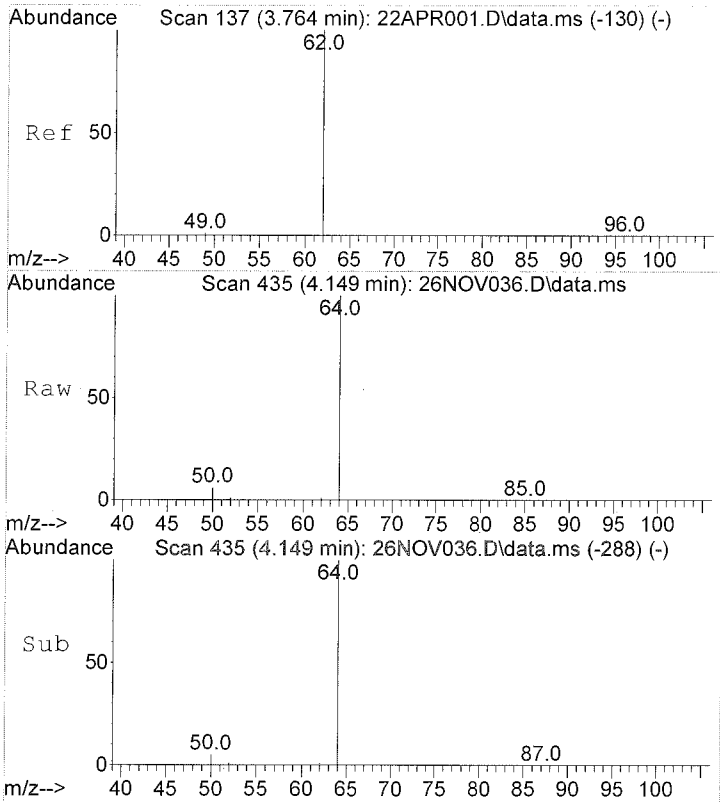


#3
Chloromethane
Concen: 305.64 pptv
RT: 4.111 min Scan# 422
Delta R.T. 0.110 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 50 Resp: 13002

Ion	Ratio	Lower	Upper
50	100		
52	18.6	3.0	63.0

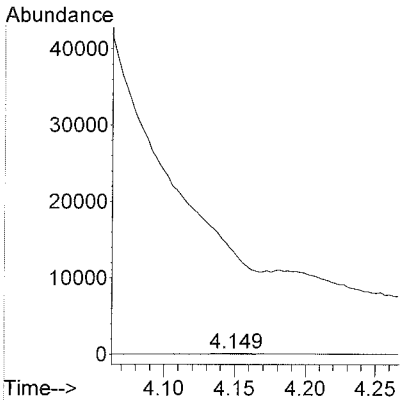


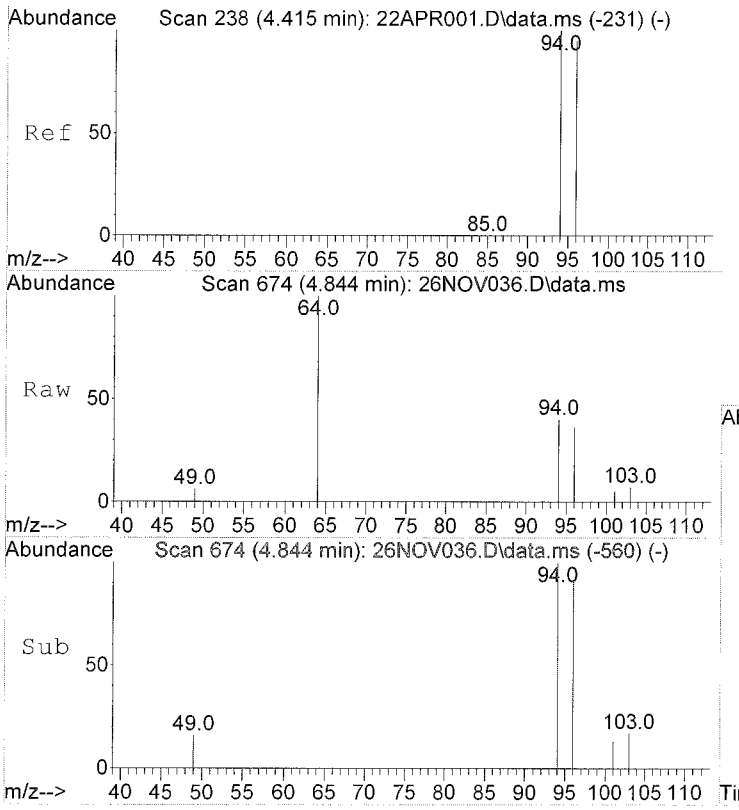


#4
Vinyl Chloride
Concen: 6.19 pptv
RT: 4.149 min Scan# 435
Delta R.T. -0.073 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 62 Resp: 258

Ion	Ratio	Lower	Upper
62	100		
64	2800.0	0.0	82.1#

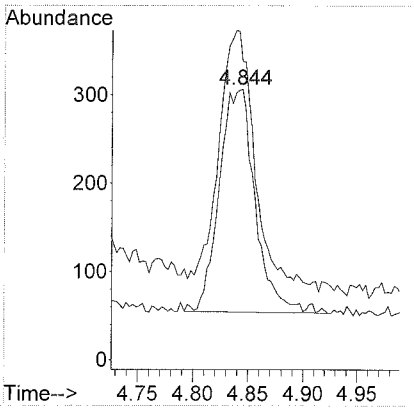


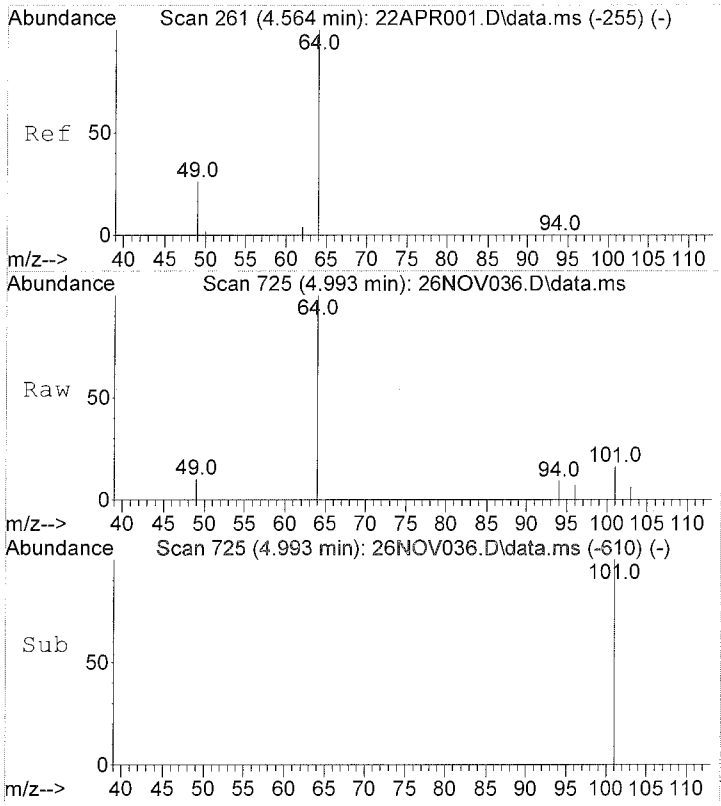


#5
Bromomethane
Concen: 31.06 pptv
RT: 4.844 min Scan# 674
Delta R.T. -0.070 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 96 Resp: 572

Ion	Ratio	Lower	Upper
96	100		
94	99.6	55.4	155.4

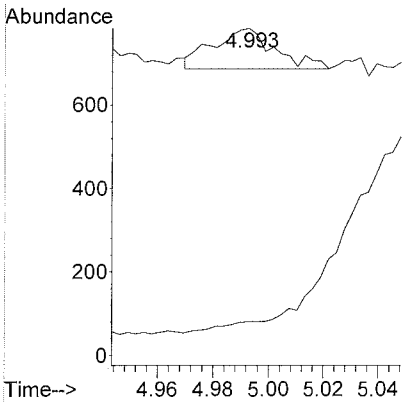


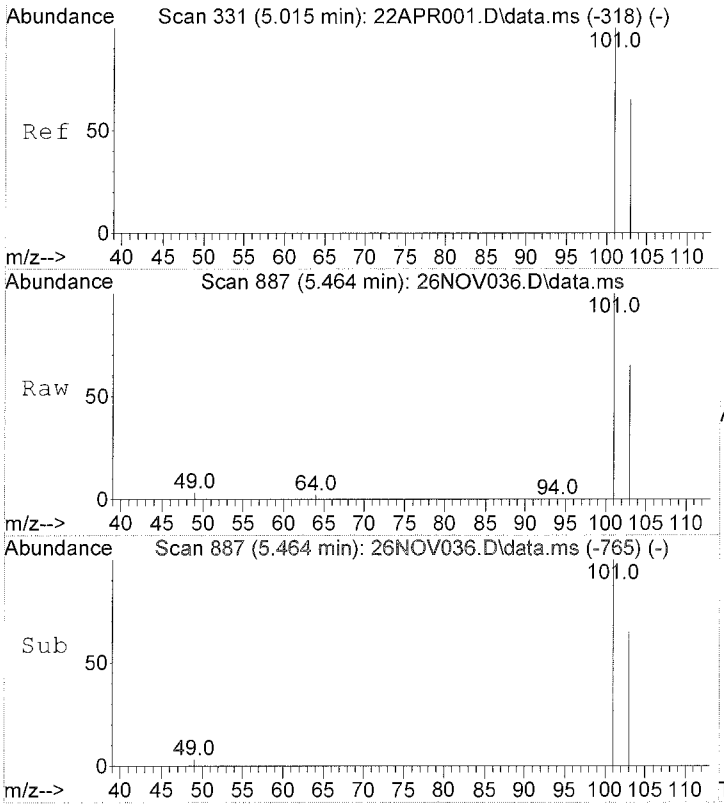


#6
Chloroethane
Concen: 5.01 pptv
RT: 4.993 min Scan# 725
Delta R.T. -0.064 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 64 Resp: 150

Ion	Ratio	Lower	Upper
64	100		
49	27.8	0.0	68.7

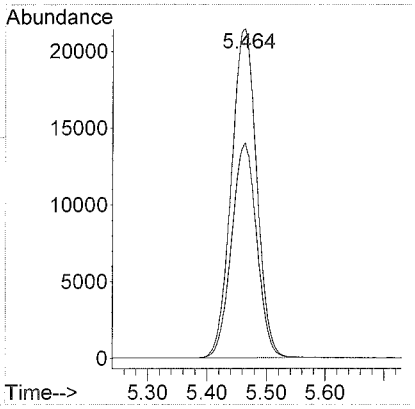


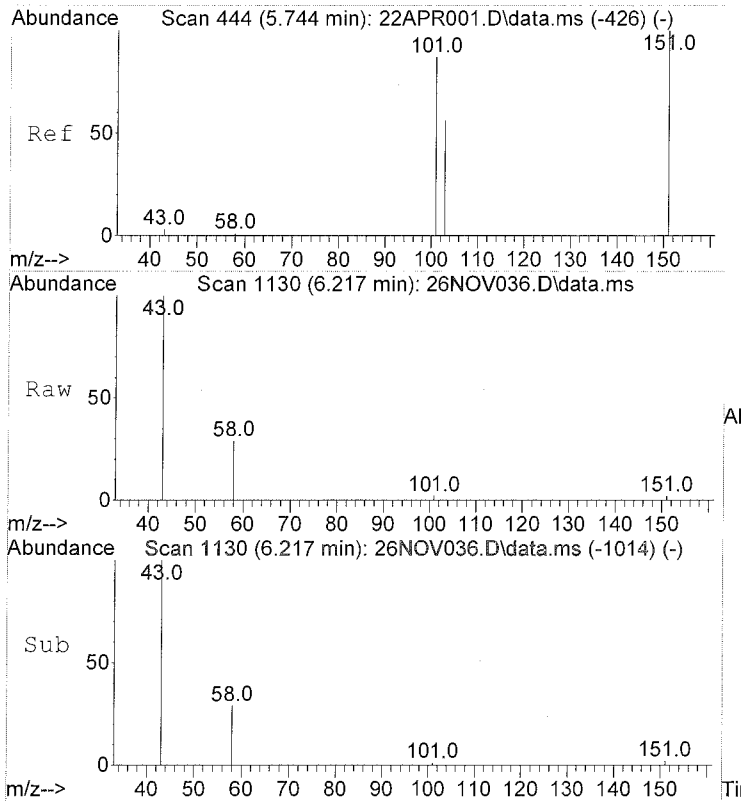


#7
Trichlorofluoromethane (11)
Concen: 370.38 pptv
RT: 5.464 min Scan# 887
Delta R.T. -0.044 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:101 Resp: 63540

Ion	Ratio	Lower	Upper
101	100		
103	65.4	14.6	114.6

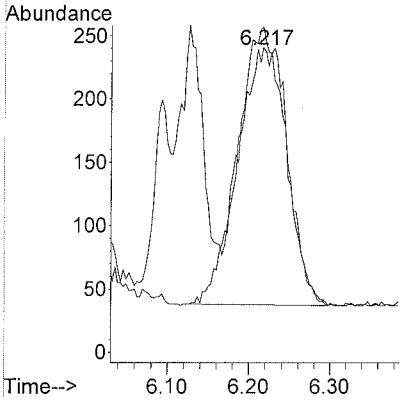


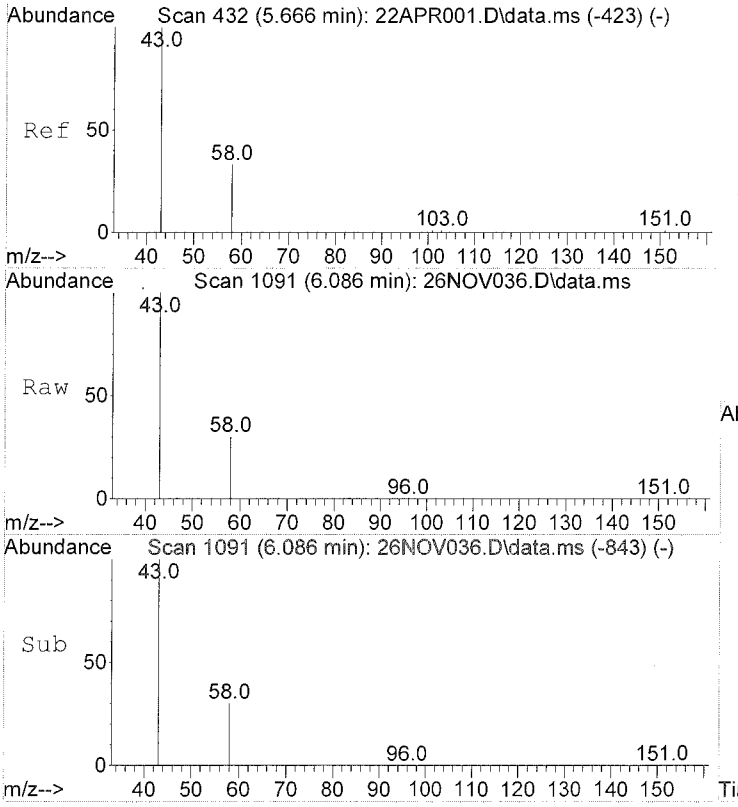


#8
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 7.13 pptv
RT: 6.217 min Scan# 1130
Delta R.T. -0.016 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:151 Resp: 911

Ion	Ratio	Lower	Upper
151	100		
101	92.7	41.5	141.5

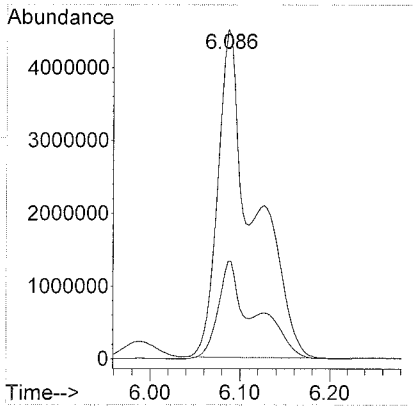


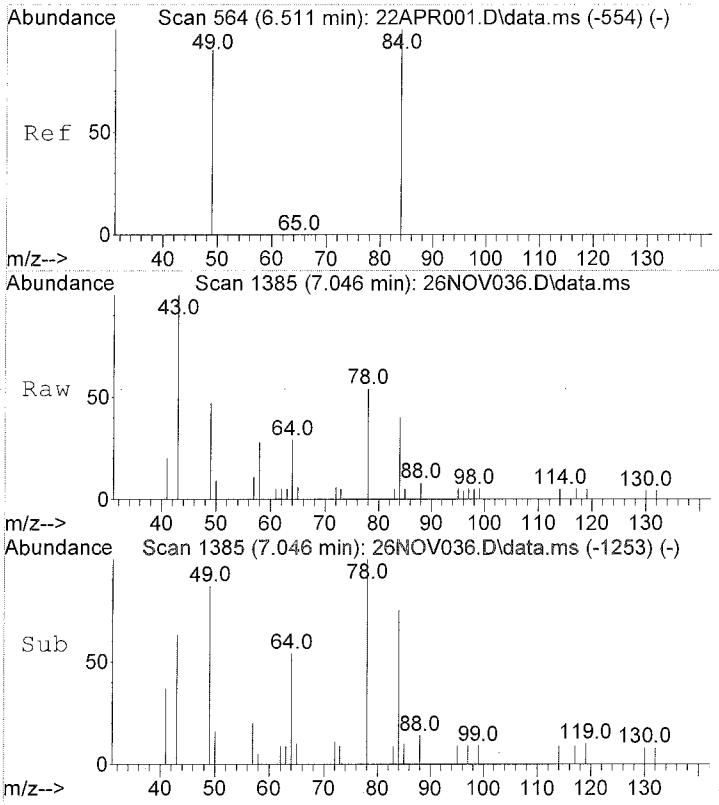


#9
Acetone
Concen: 125201.35 pptv
RT: 6.086 min Scan# 1091
Delta R.T. -0.050 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 43 Resp:12525953

Ion	Ratio	Lower	Upper
43	100		
58	29.7	13.4	53.4

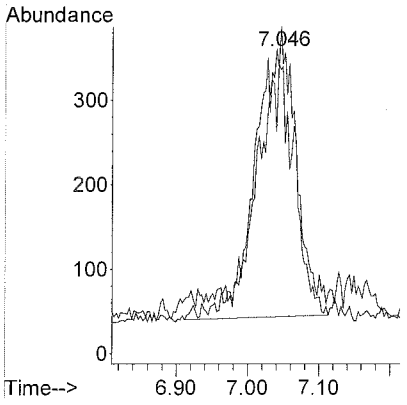


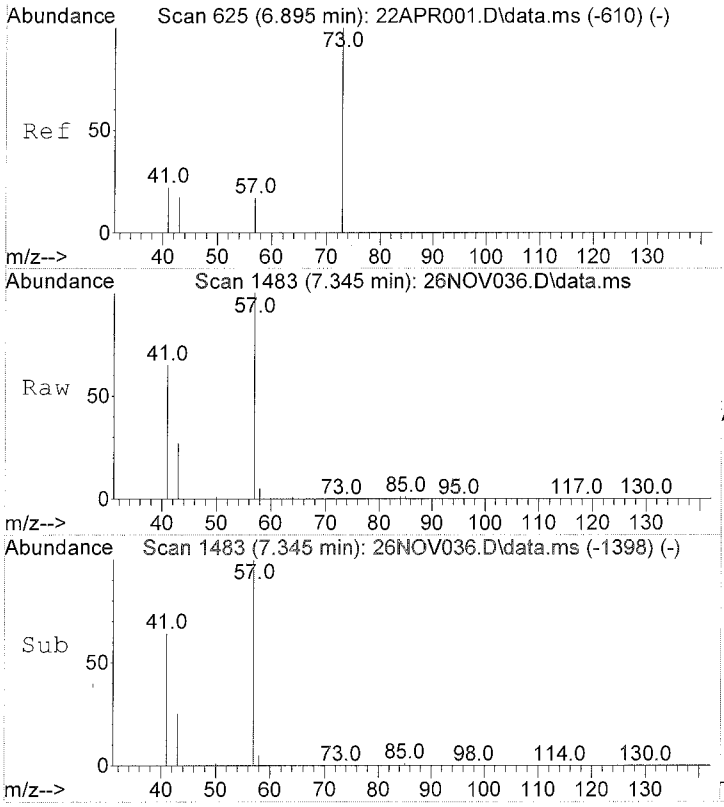


#11
Methylene Chloride
Concen: 20.57 pptv
RT: 7.046 min Scan# 1385
Delta R.T. 0.016 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 49 Resp: 1294

Ion	Ratio	Lower	Upper
49	100		
84	78.4	54.2	154.2

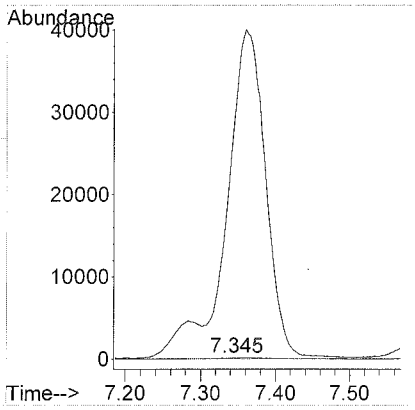


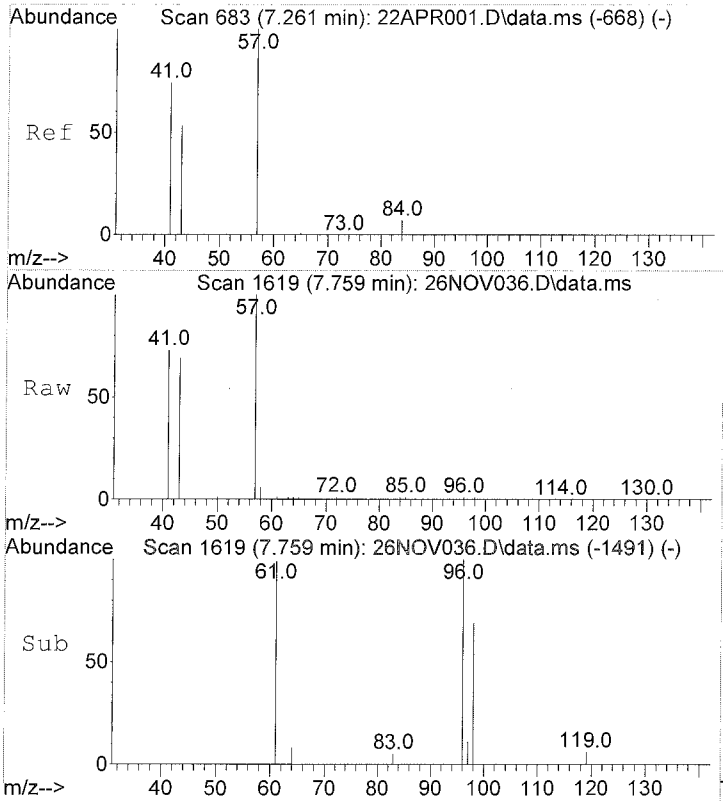


#12
t-Butyl Methyl Ether
Concen: 4.31 pptv
RT: 7.345 min Scan# 1483
Delta R.T. -0.040 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 73 Resp: 557

Ion	Ratio	Lower	Upper
73	100		
41	20968.9	0.0	516.4#

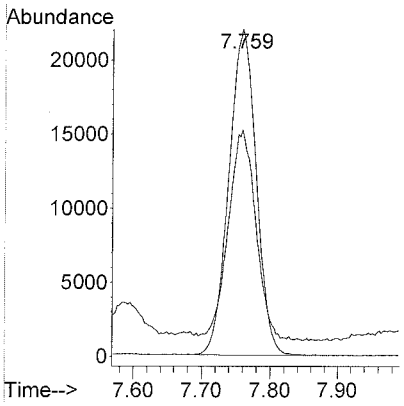


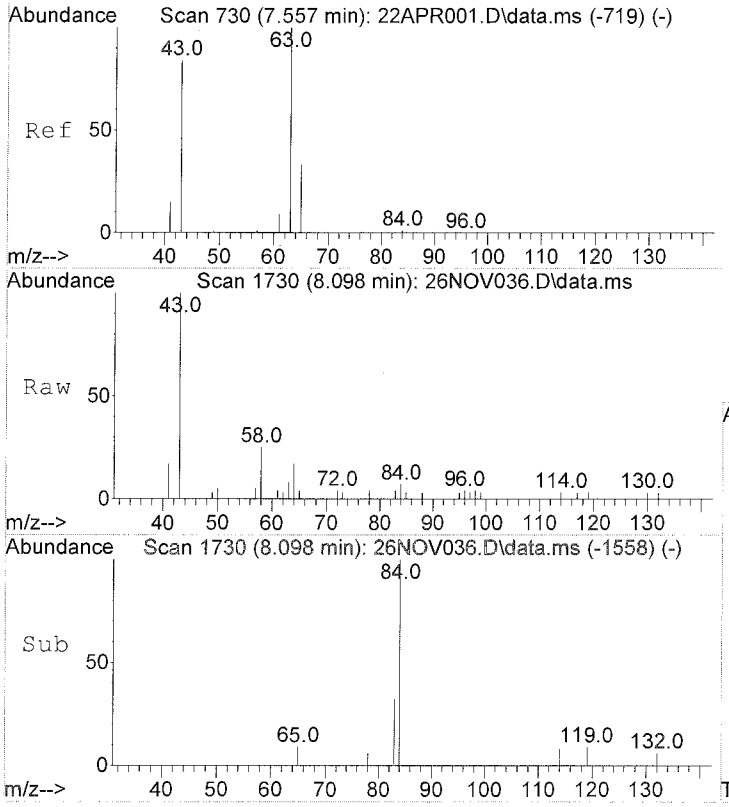


#14
Hexane
Concen: 762.94 pptv
RT: 7.759 min Scan# 1619
Delta R.T. -0.009 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 57 Resp: 60872

Ion	Ratio	Lower	Upper
57	100		
43	64.0	5.0	105.0

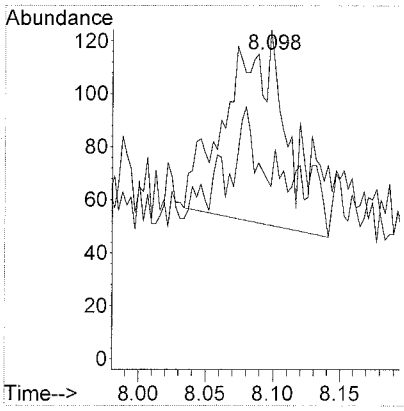


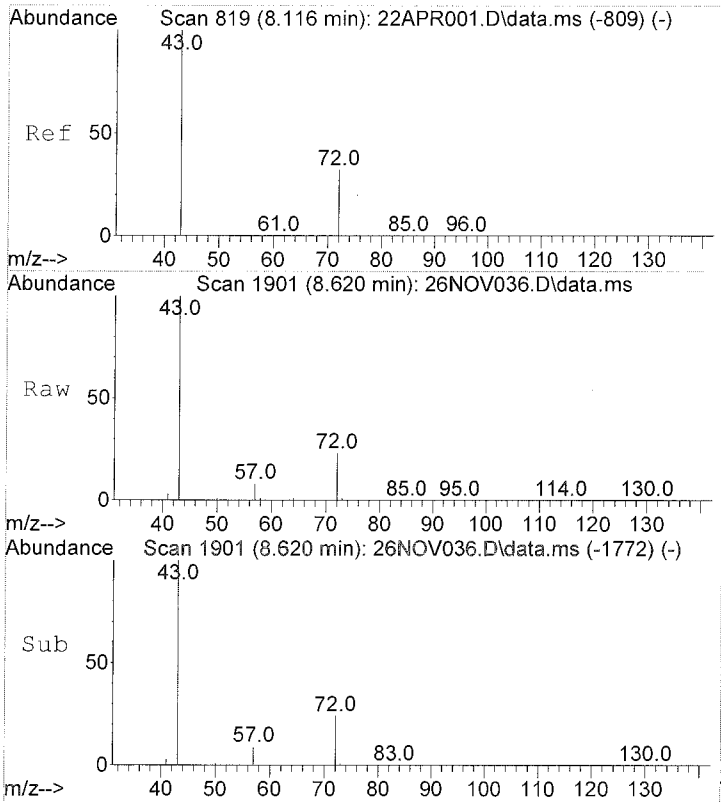


#15
1,1-Dichloroethane
Concen: 2.42 pptv
RT: 8.098 min Scan# 1730
Delta R.T. 0.024 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 63 Resp: 227

Ion	Ratio	Lower	Upper
63	100		
65	15.4	0.0	82.5

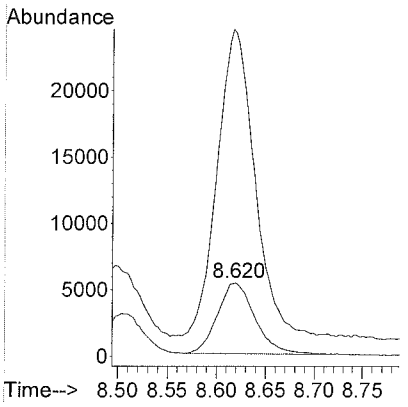


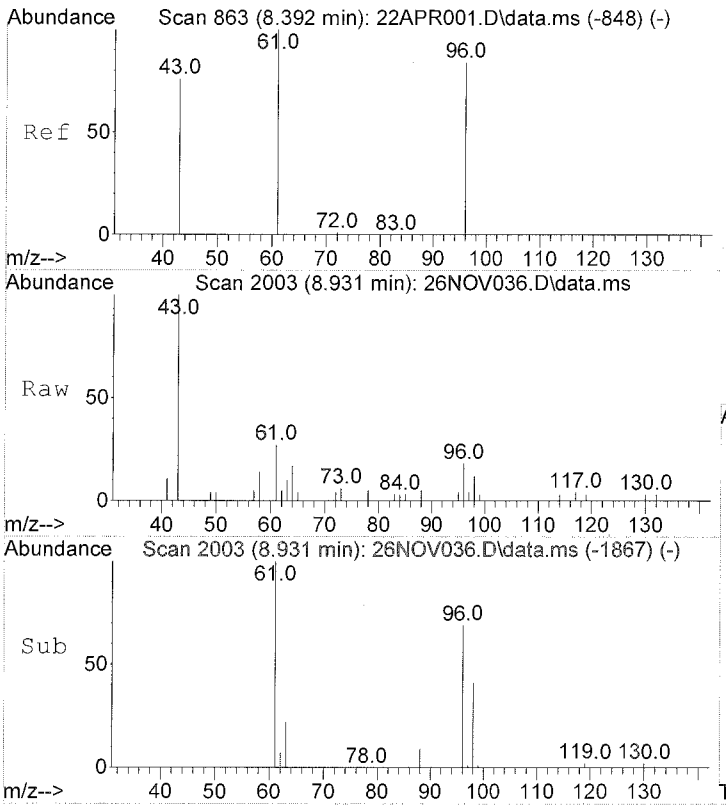


#16
2-Butanone
Concen: 596.31 pptv
RT: 8.620 min Scan# 1901
Delta R.T. -0.006 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 72 Resp: 14199

Ion	Ratio	Lower	Upper
72	100		
43	422.0	0.0	3591.5

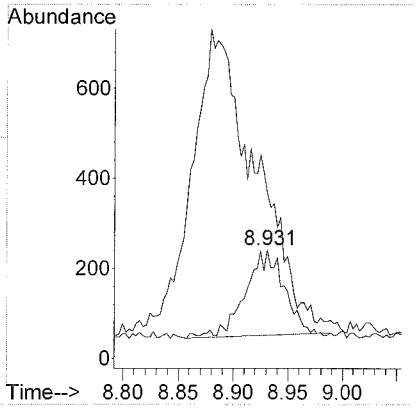


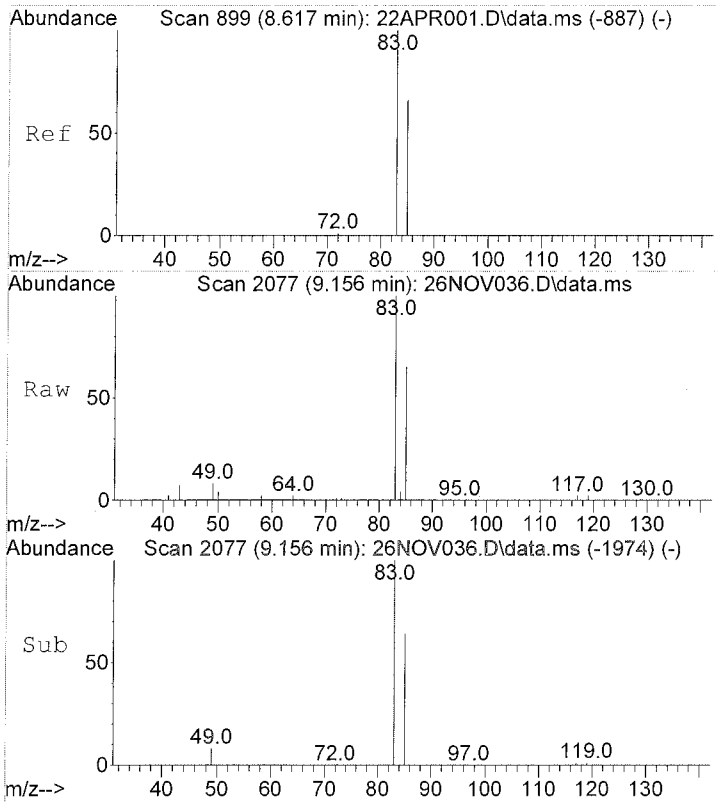


#17
c-1,2-Dichloroethene
Concen: 8.32 pptv
RT: 8.931 min Scan# 2003
Delta R.T. 0.015 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 96 Resp: 459

Ion	Ratio	Lower	Upper
96	100		
61	143.4	62.0	162.0

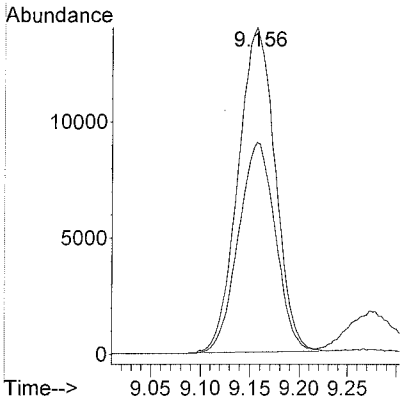


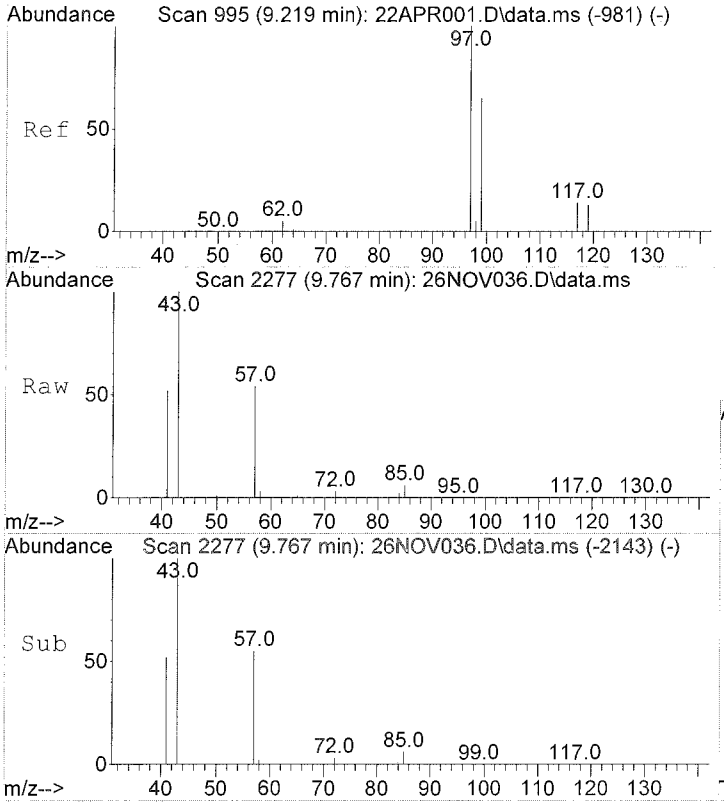


#18
Chloroform
Concen: 328.97 pptv
RT: 9.156 min Scan# 2077
Delta R.T. 0.015 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 83 Resp: 35827

Ion	Ratio	Lower	Upper
83	100		
85	64.7	14.9	114.9

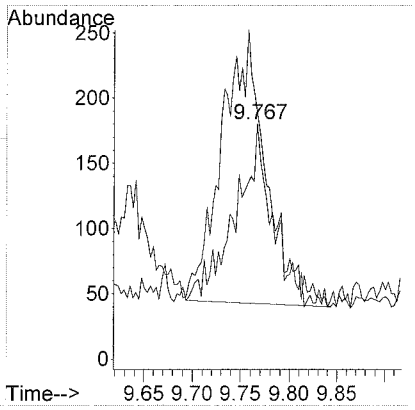


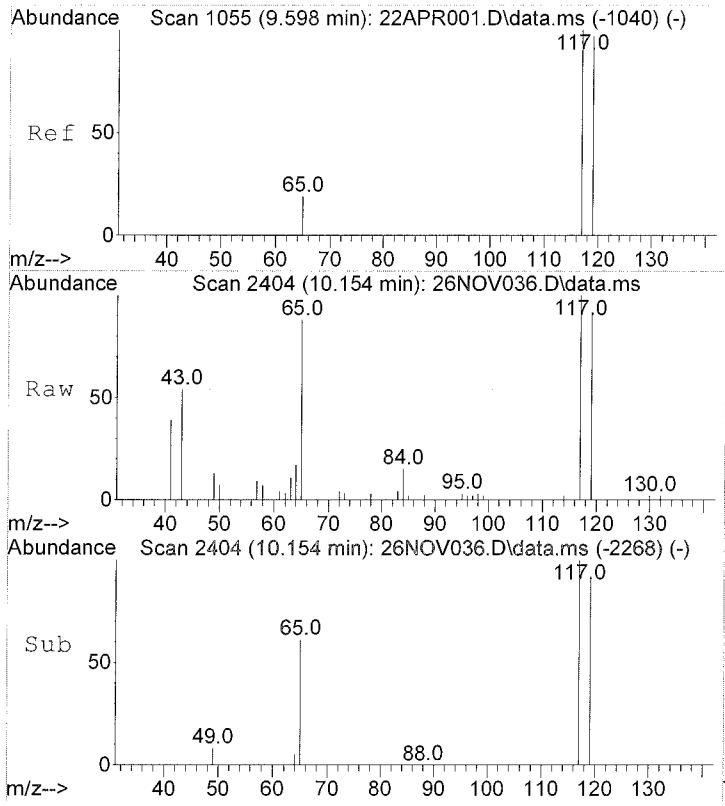


#19
1,1,1-Trichloroethane
Concen: 3.62 pptv
RT: 9.767 min Scan# 2277
Delta R.T. 0.009 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 97 Resp: 377

Ion	Ratio	Lower	Upper
97	100		
99	102.9	13.8	113.8

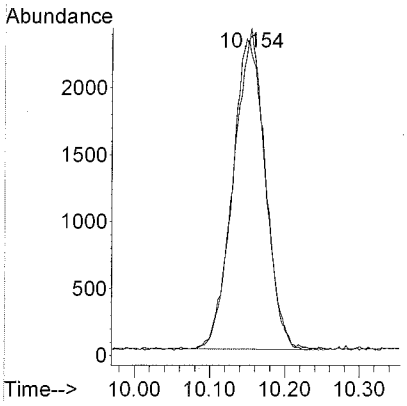


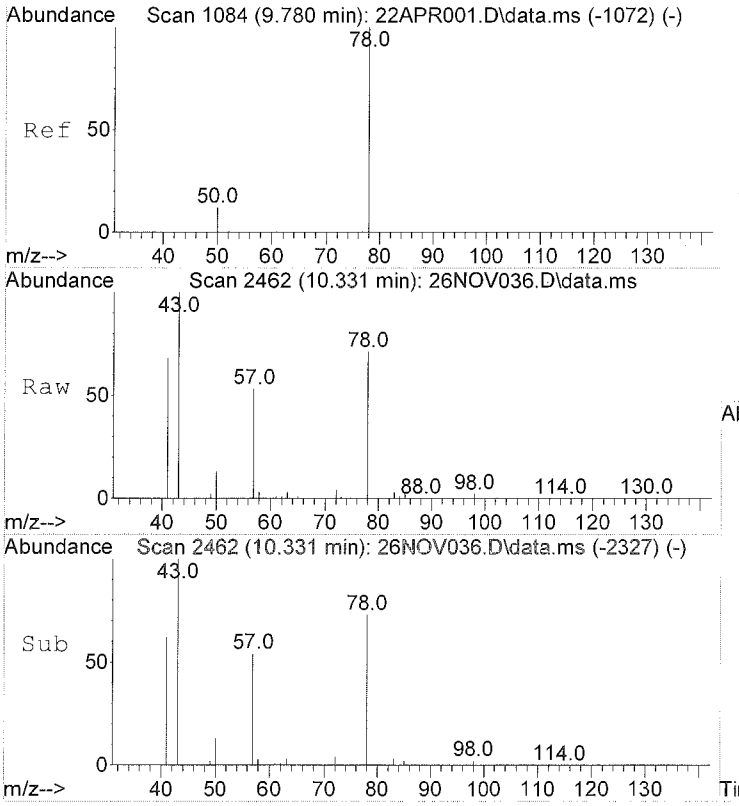


#20
Carbon Tetrachloride
Concen: 90.66 pptv
RT: 10.154 min Scan# 2404
Delta R.T. 0.015 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:117 Resp: 7239

Ion	Ratio	Lower	Upper
117	100		
119	91.9	47.1	147.1

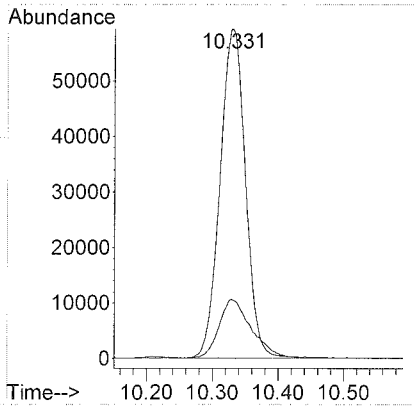


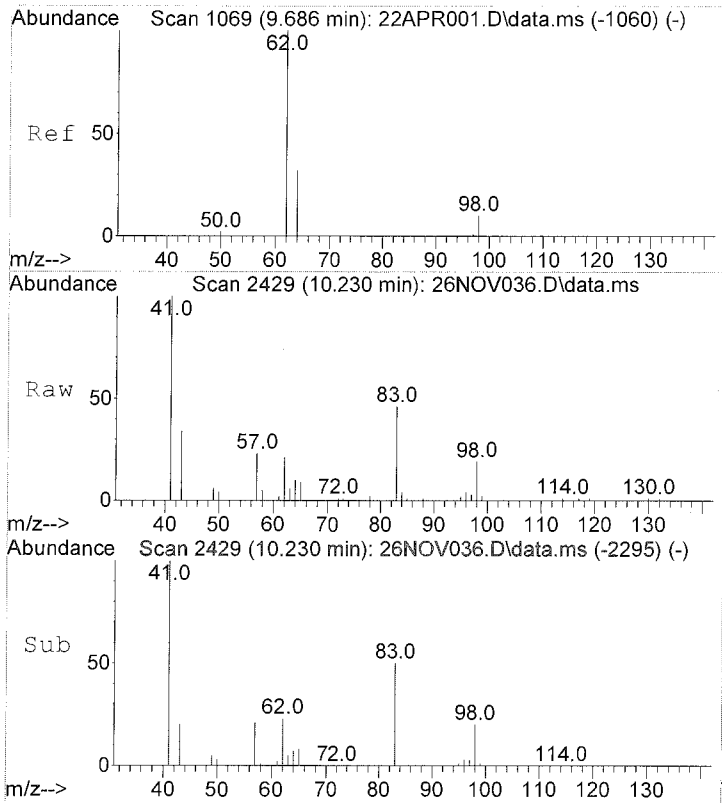


#22
Benzene
Concen: 1120.71 pptv
RT: 10.331 min Scan# 2462
Delta R.T. 0.012 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 78 Resp: 159037

Ion	Ratio	Lower	Upper
78	100		
50	17.6	0.0	62.6

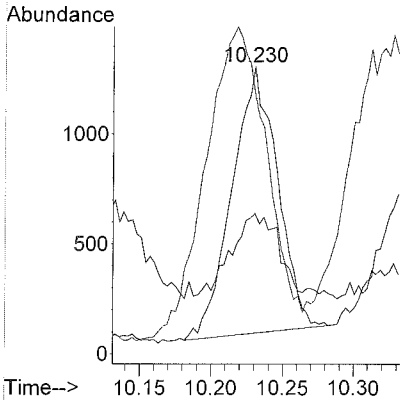


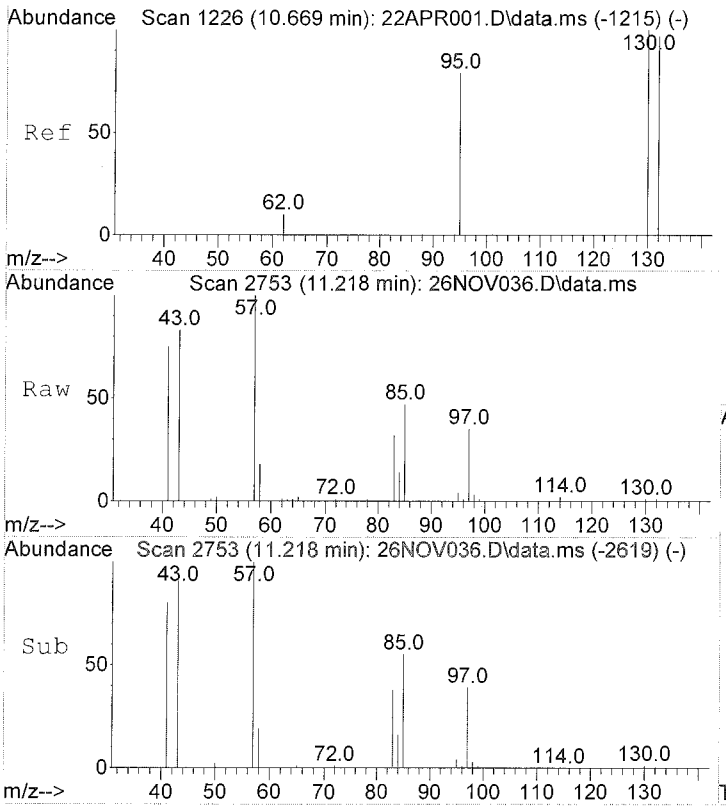


#24
1,2-Dichloroethane
Concen: 40.15 pptv
RT: 10.230 min Scan# 2429
Delta R.T. 0.009 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 62 Resp: 2665

Ion	Ratio	Lower	Upper
62	100		
64	31.0	0.0	83.0
98	63.6	0.0	61.0#

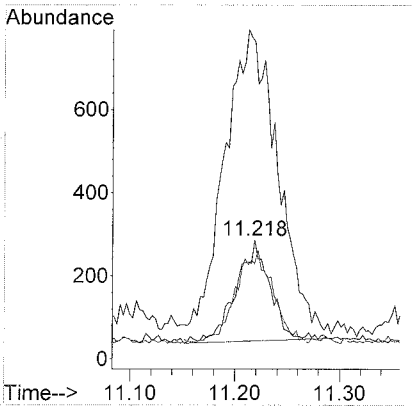


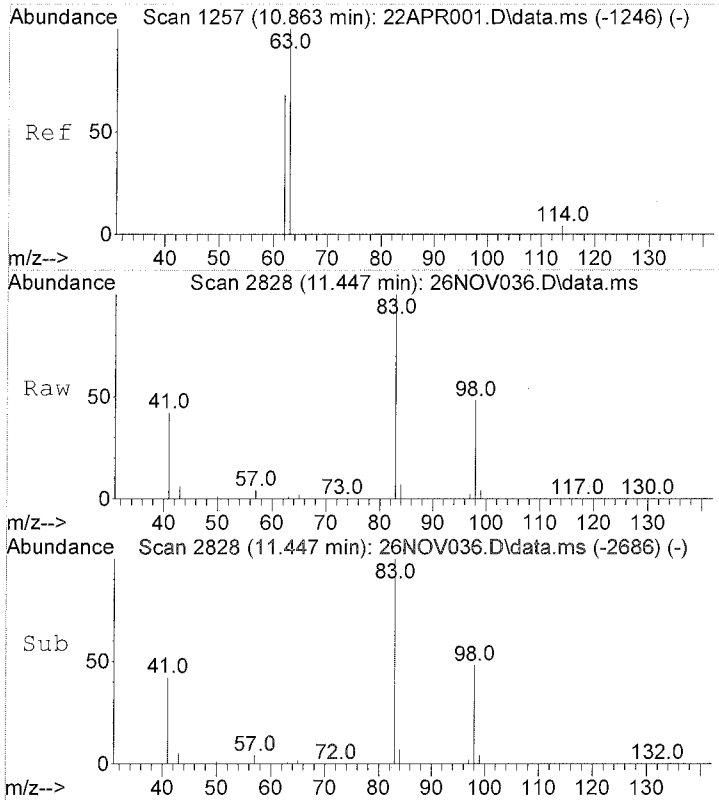


#25
Trichloroethene
Concen: 6.71 pptv
RT: 11.218 min Scan# 2753
Delta R.T. 0.009 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:130 Resp: 543

Ion	Ratio	Lower	Upper
130	100		
95	275.3	30.9	130.9#
132	74.1	46.0	146.0

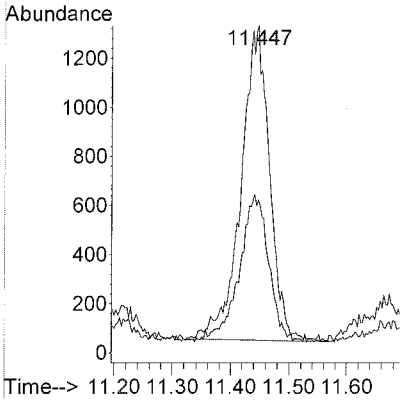


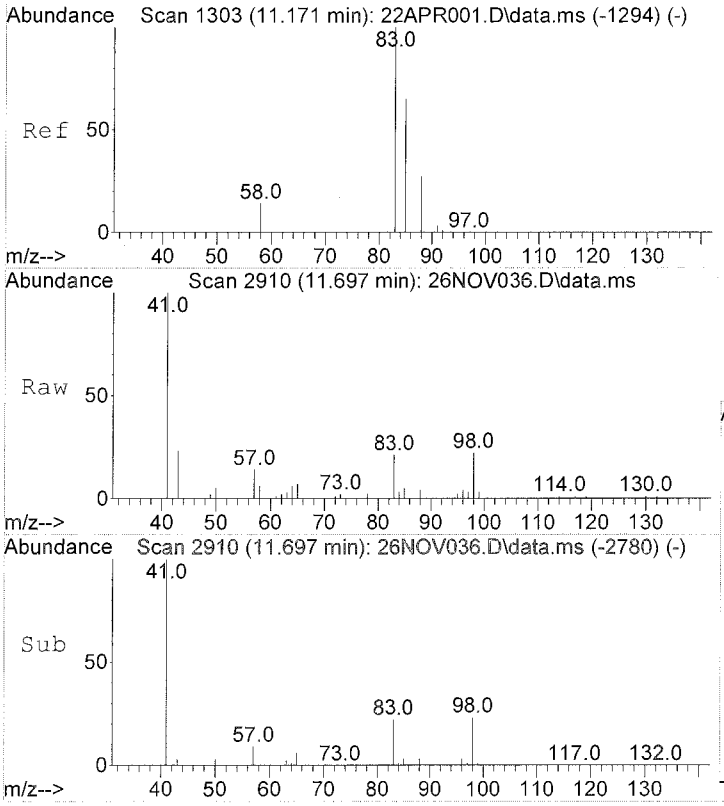


#26
1,2-Dichloropropane
Concen: 92.72 pptv
RT: 11.447 min Scan# 2828
Delta R.T. 0.034 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 63 Resp: 4342

Ion	Ratio	Lower	Upper
63	100		
62	44.4	20.3	120.3

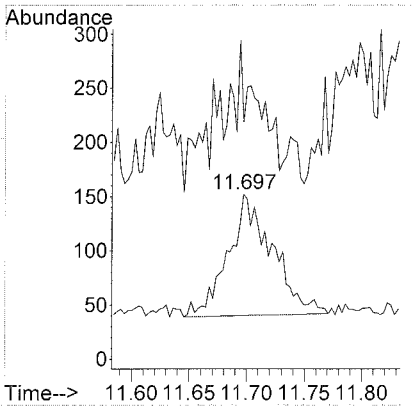


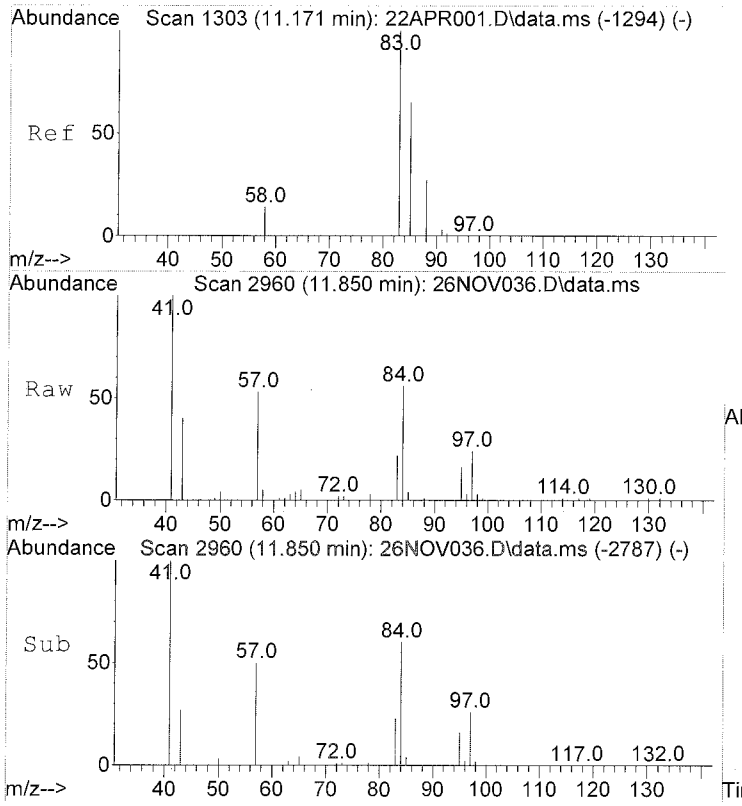


#27
1,4-Dioxane
Concen: 7.98 pptv
RT: 11.697 min Scan# 2910
Delta R.T. -0.003 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 88 Resp: 296

Ion	Ratio	Lower	Upper
88	100		
58	57.5	38.7	58.1

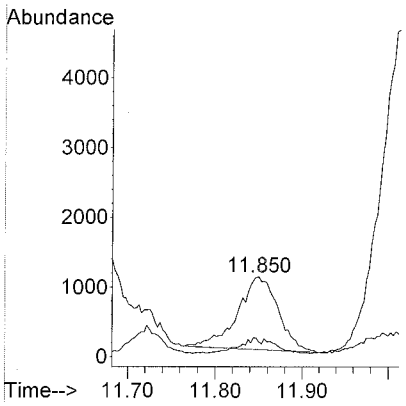


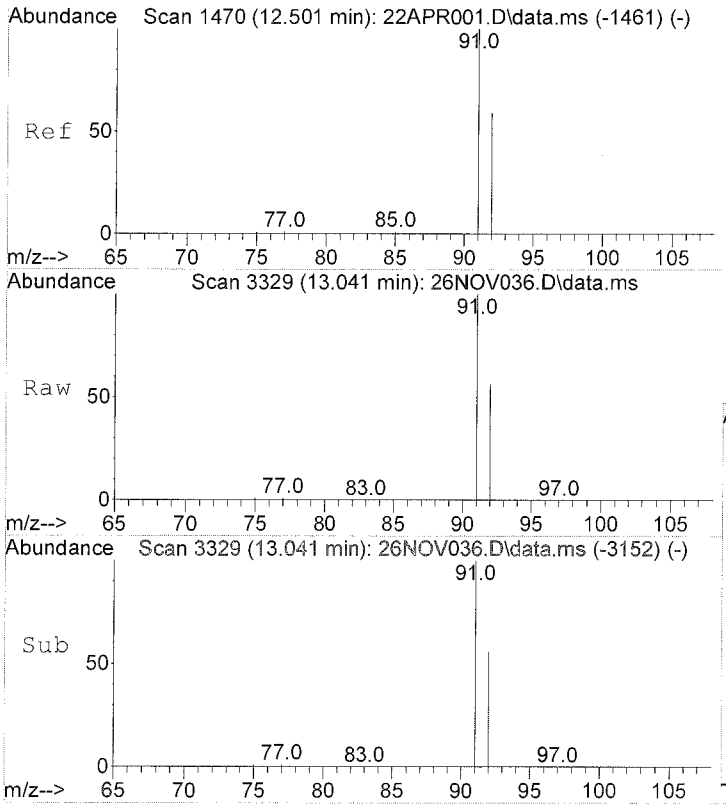


#28
Bromodichloromethane
Concen: 46.64 pptv
RT: 11.850 min Scan# 2960
Delta R.T. 0.128 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 83 Resp: 3366

Ion	Ratio	Lower	Upper
83	100		
85	14.3	13.9	113.9

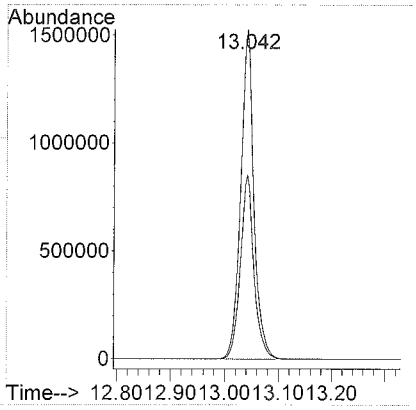


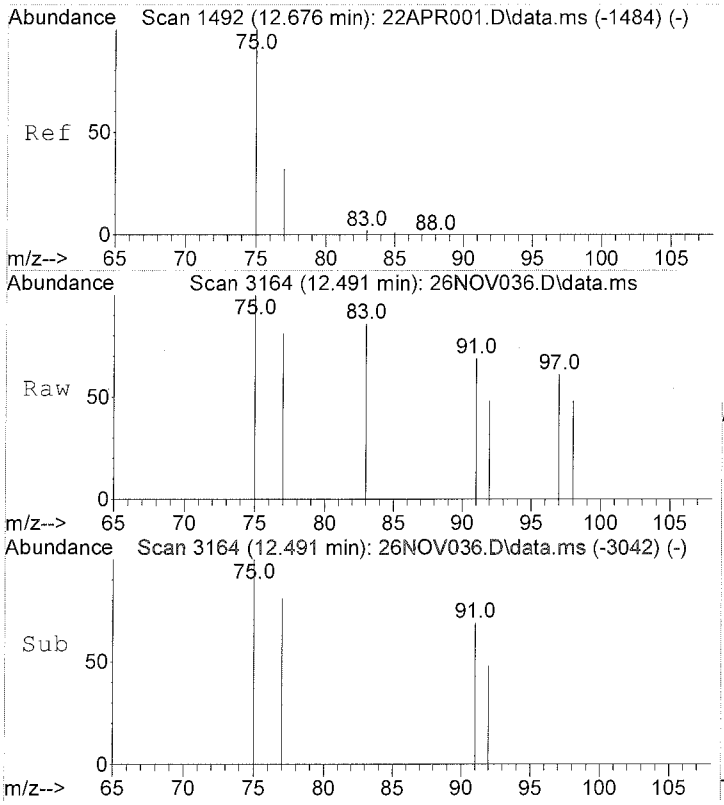


#30
Toluene
Concen: 18442.14 pptv
RT: 13.041 min Scan# 3329
Delta R.T. -0.011 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 91 Resp: 2589771

Ion	Ratio	Lower	Upper
91	100		
92	55.8	10.0	110.0

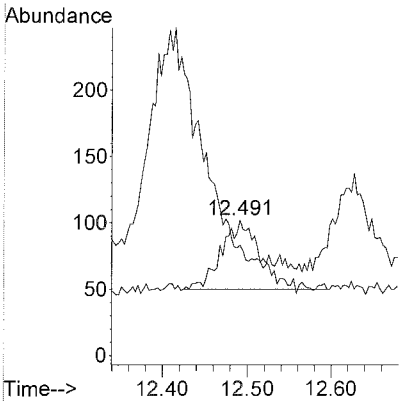


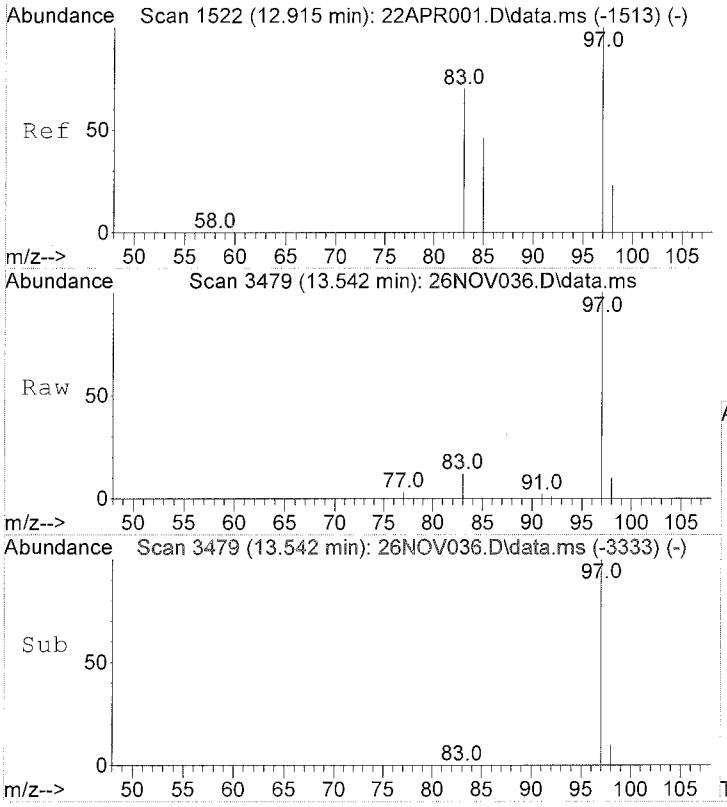


#32
t-1,3-Dichloropropene
Concen: 4.47 pptv
RT: 12.491 min Scan# 3164
Delta R.T. -0.010 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 75 Resp: 163

Ion	Ratio	Lower	Upper
75	100		
77	3.8	0.0	81.7

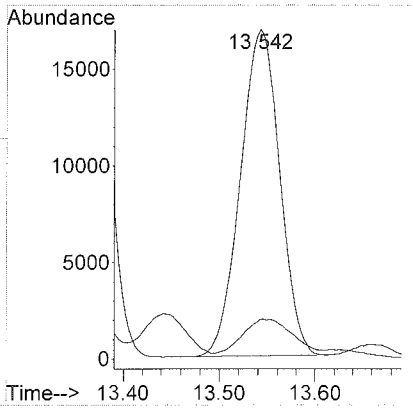


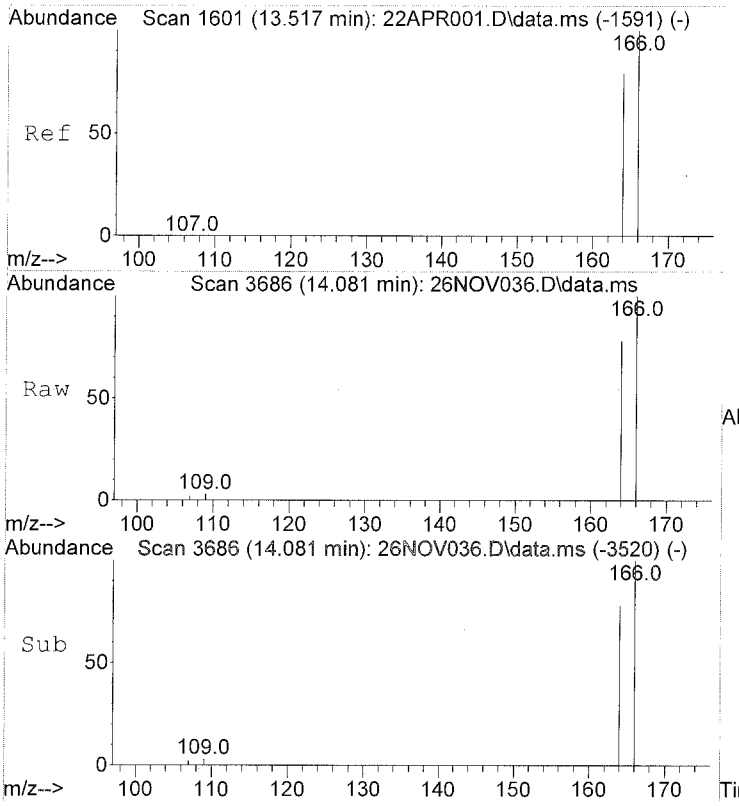


#33
1,1,2-Trichloroethane
Concen: 1002.56 pptv
RT: 13.542 min Scan# 3479
Delta R.T. 0.087 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 97 Resp: 47542

Ion	Ratio	Lower	Upper
97	100		
83	9.2	25.1	125.1#

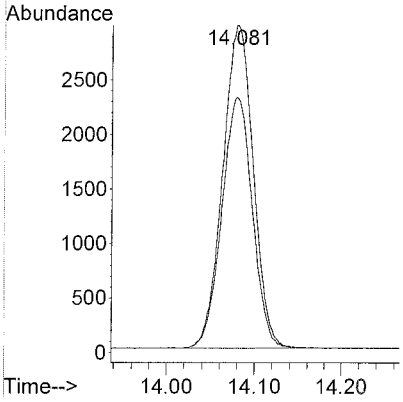


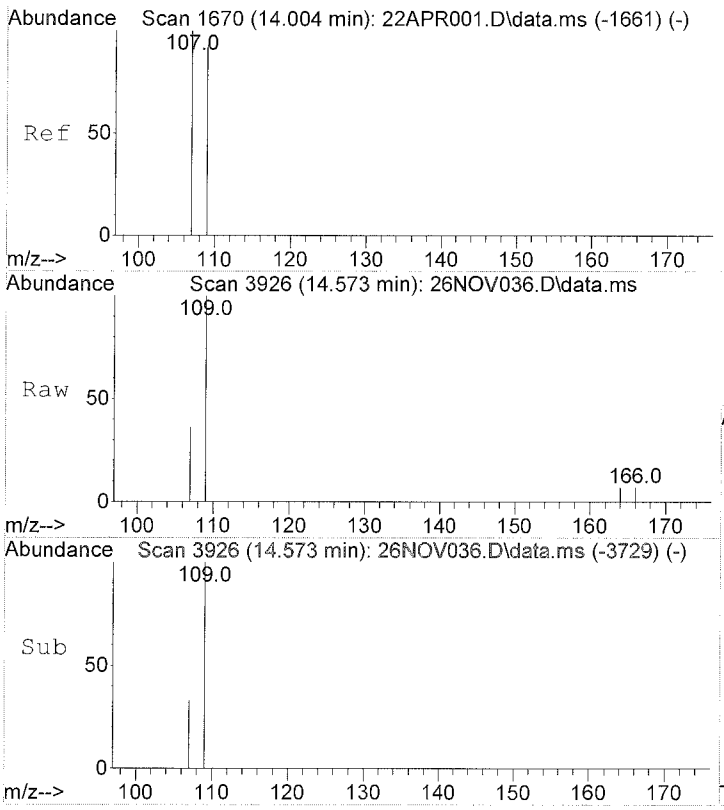


#34
Tetrachloroethene
Concen: 100.35 pptv
RT: 14.081 min Scan# 3686
Delta R.T. 0.002 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:166 Resp: 7166

Ion	Ratio	Lower	Upper
166	100		
164	77.2	25.3	125.3

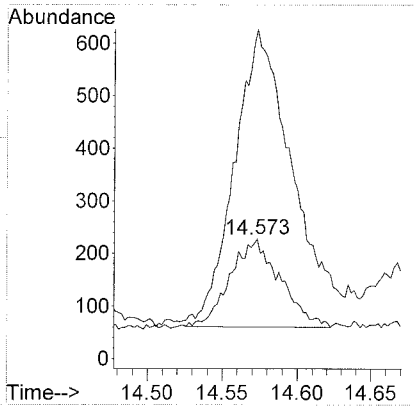


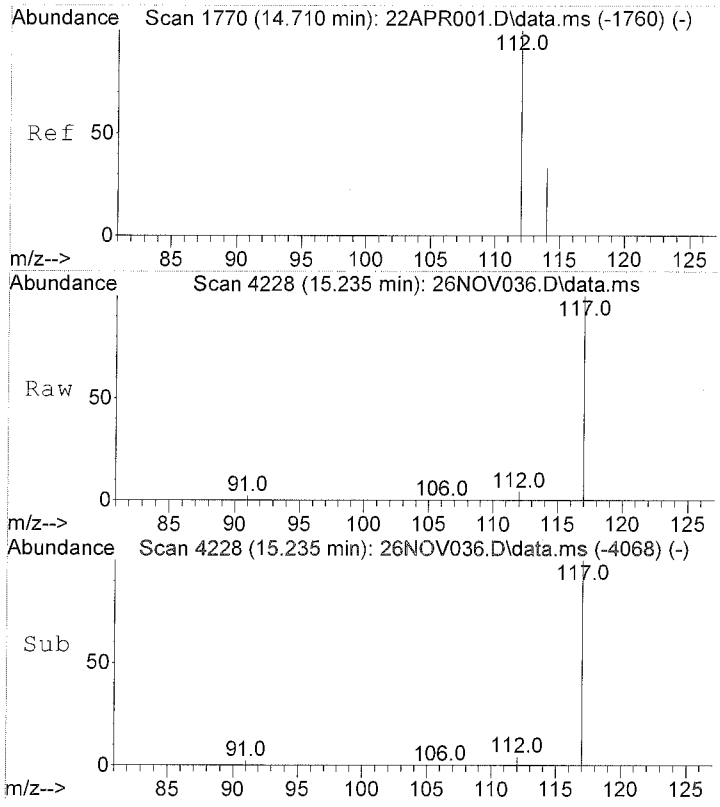


#35
1,2-Dibromoethane
Concen: 7.22 pptv
RT: 14.573 min Scan# 3926
Delta R.T. 0.004 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:107 Resp: 387

Ion	Ratio	Lower	Upper
107	100		
109	331.1	43.3	143.3#

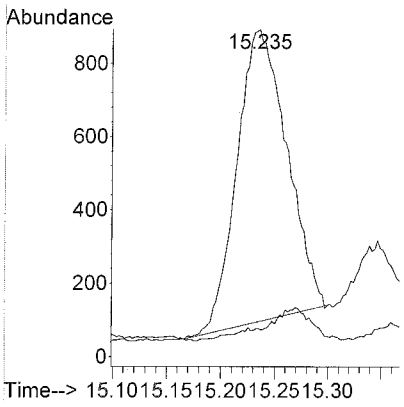


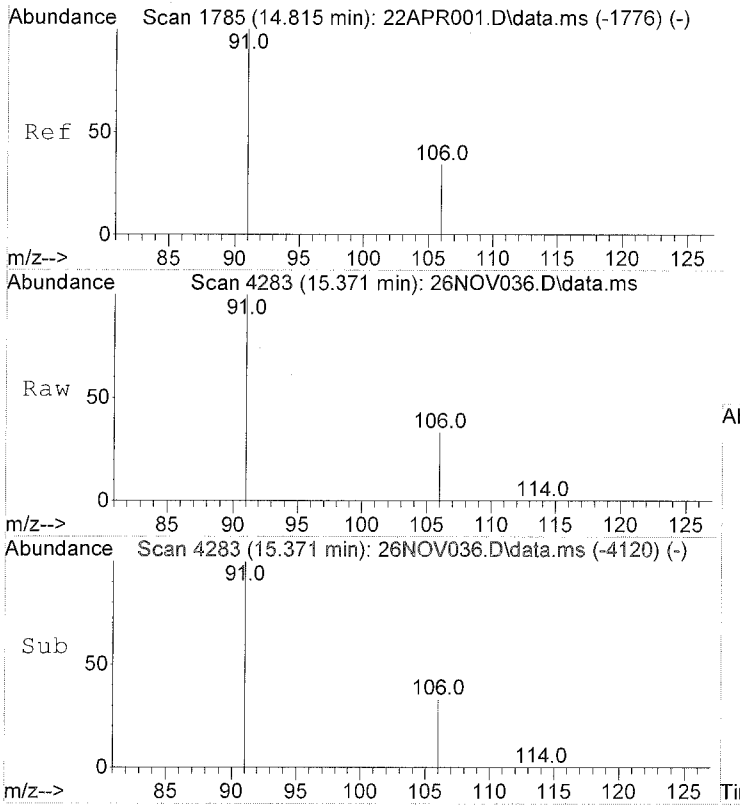


#36
Chlorobenzene
Concen: 28.92 pptv
RT: 15.235 min Scan# 4228
Delta R.T. -0.030 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:112 Resp: 2576

Ion	Ratio	Lower	Upper
112	100		
114	3.3	0.0	81.6

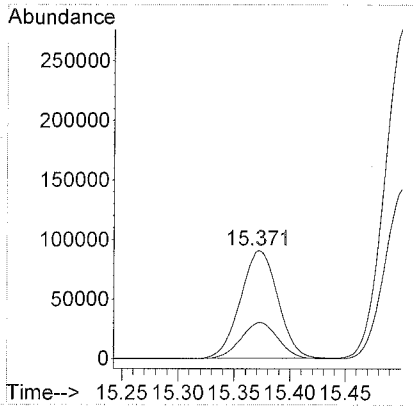


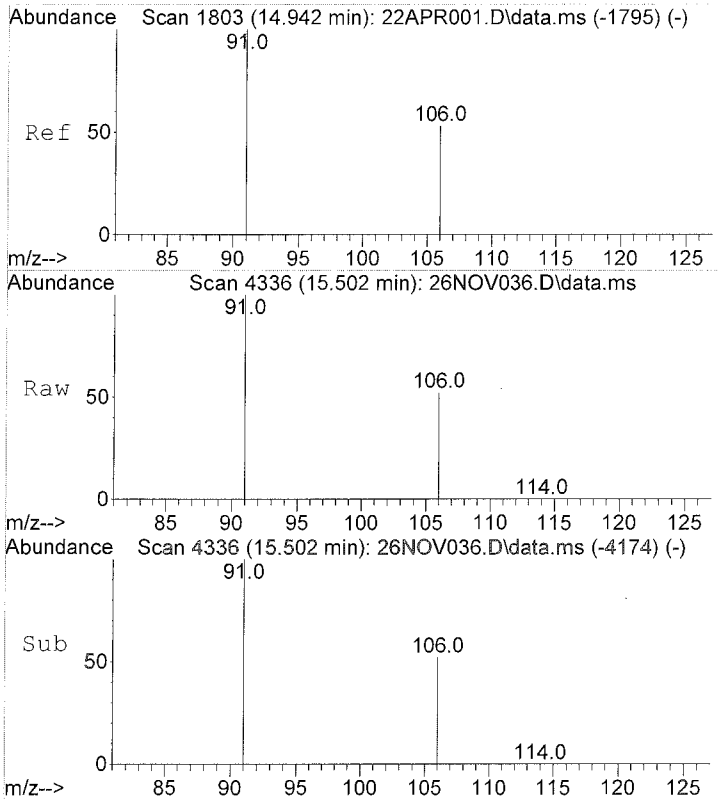


#37
Ethylbenzene
Concen: 2002.84 pptv
RT: 15.371 min Scan# 4283
Delta R.T. -0.000 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 91 Resp: 210209

Ion	Ratio	Lower	Upper
91	100		
106	33.4	0.0	83.4

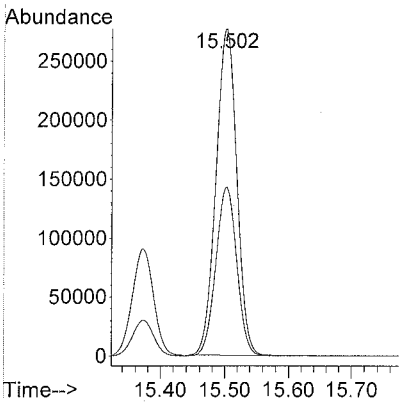


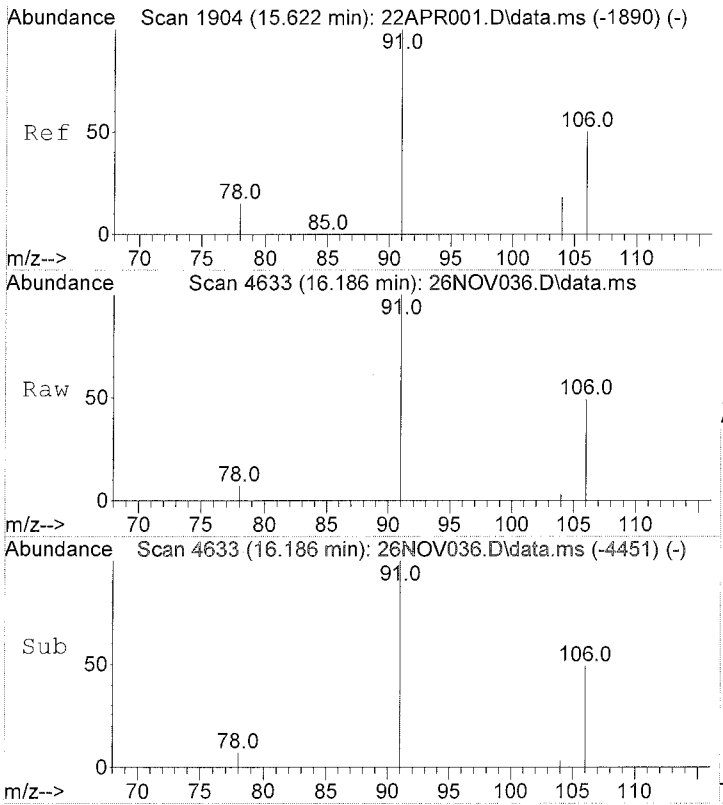


#38
p,&m-Xylene
Concen: 8285.93 pptv
RT: 15.502 min Scan# 4336
Delta R.T. 0.000 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 91 Resp: 636068

Ion	Ratio	Lower	Upper
91	100		
106	51.6	3.9	103.9

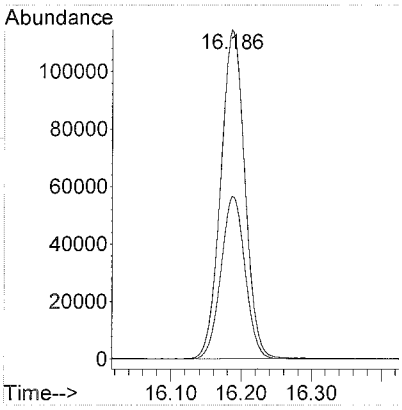


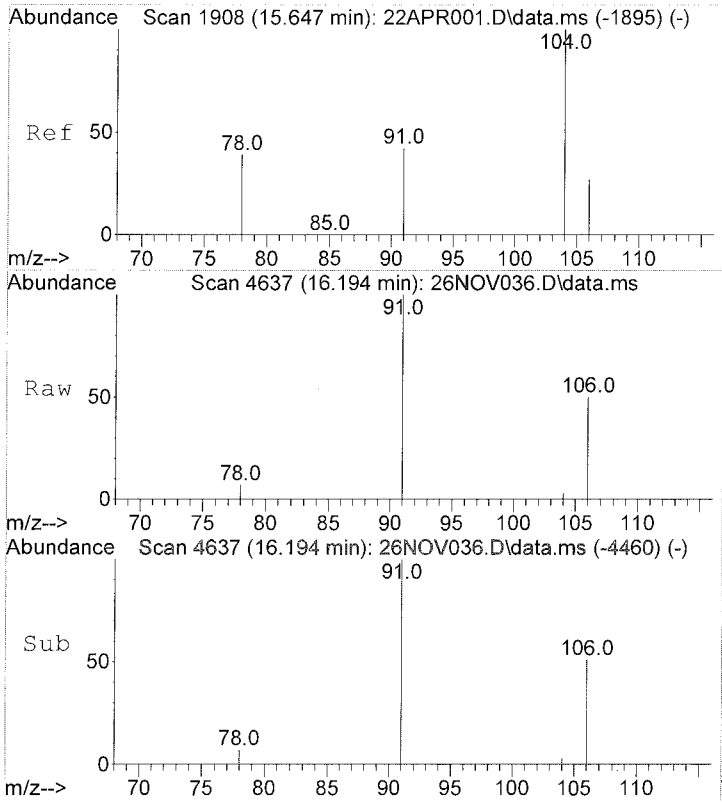


#39
o-Xylene
Concen: 3910.84 pptv
RT: 16.186 min Scan# 4633
Delta R.T. -0.002 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 91 Resp: 276574

Ion	Ratio	Lower	Upper
91	100		
106	49.4	0.0	97.3

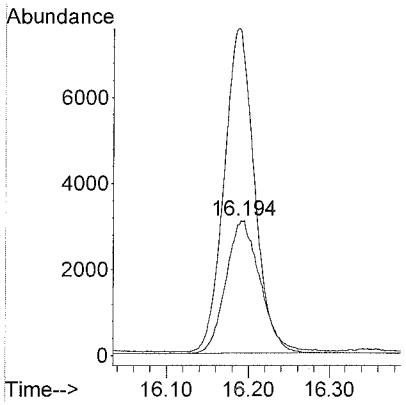


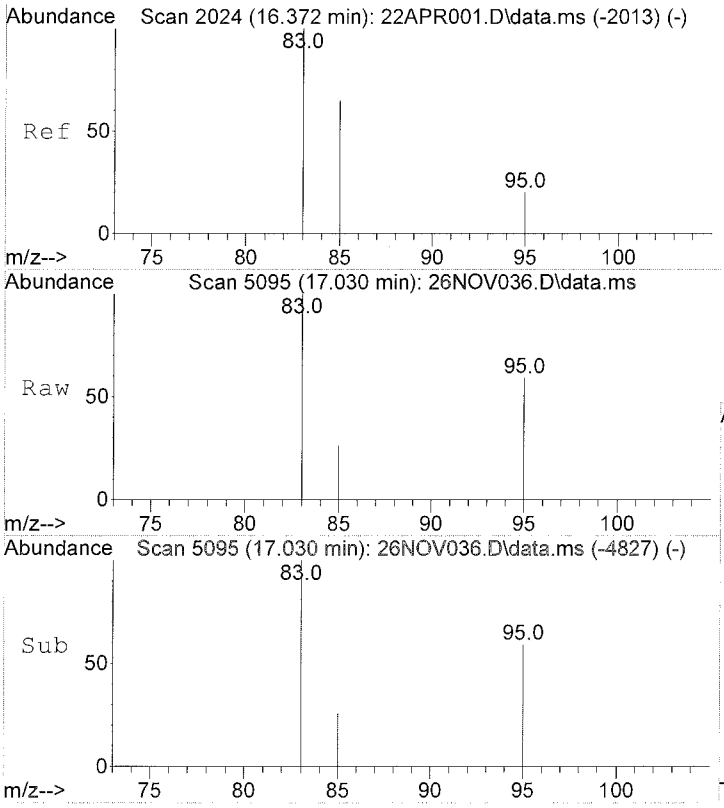


#40
Styrene
Concen: 194.03 pptv
RT: 16.194 min Scan# 4637
Delta R.T. -0.016 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:104 Resp: 8885

Ion	Ratio	Lower	Upper
104	100		
78	216.6	0.0	87.4#

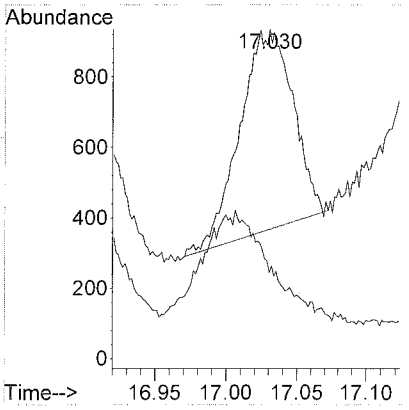


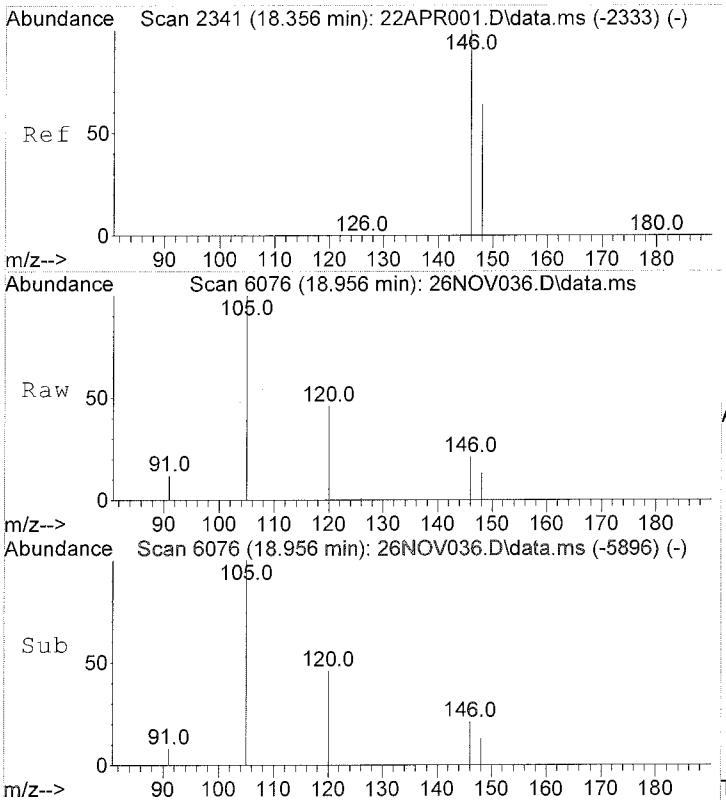


#41
1,1,2,2-Tetrachloroethane
Concen: 27.21 pptv
RT: 17.030 min Scan# 5095
Delta R.T. 0.047 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 83 Resp: 1489

Ion	Ratio	Lower	Upper
83	100		
85	19.1	13.6	113.6

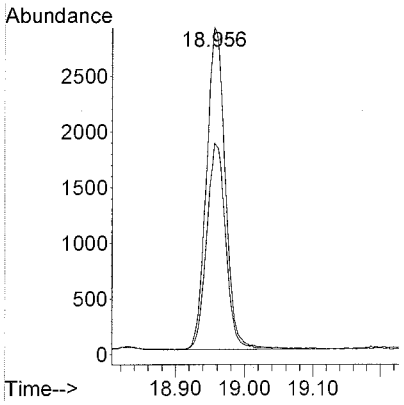


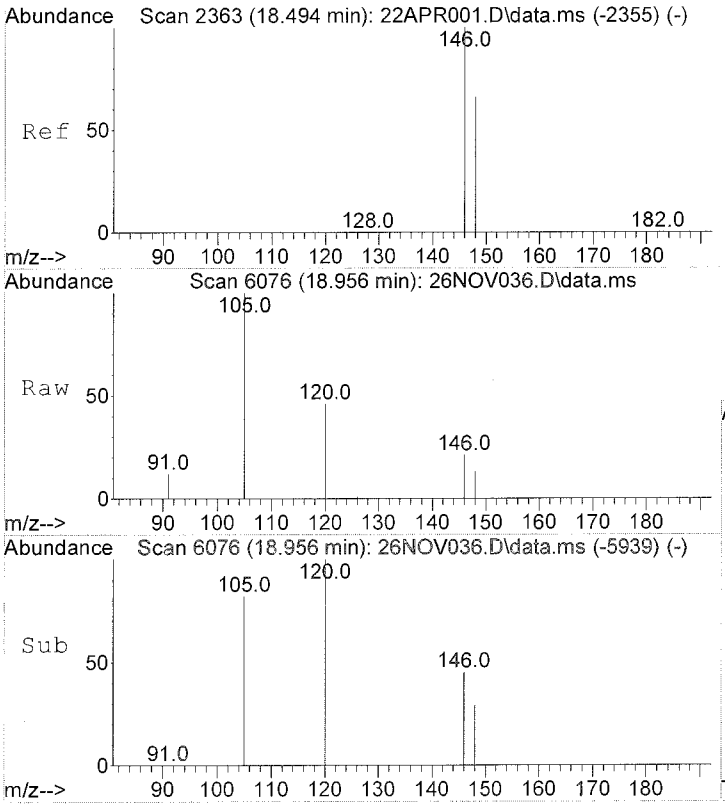


#43
1,3-Dichlorobenzene
Concen: 98.92 pptv
RT: 18.956 min Scan# 6076
Delta R.T. 0.125 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:146 Resp: 5455

Ion	Ratio	Lower	Upper
146	100		
148	63.9	13.9	113.9

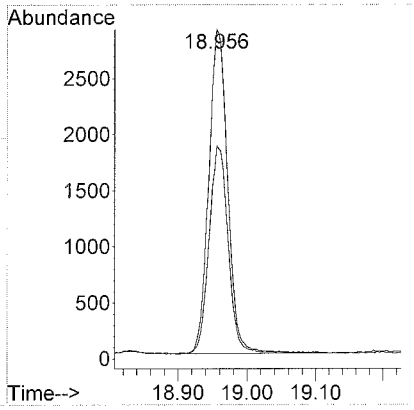


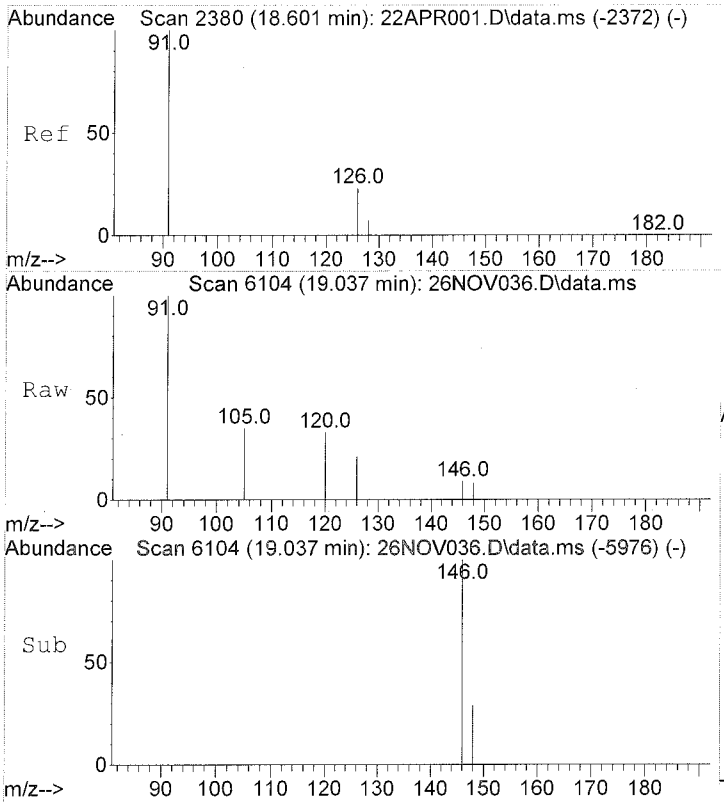


#44
1,4-Dichlorobenzene
Concen: 95.01 pptv
RT: 18.956 min Scan# 6076
Delta R.T. 0.000 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:146 Resp: 5455

Ion	Ratio	Lower	Upper
146	100		
148	63.9	15.5	115.5

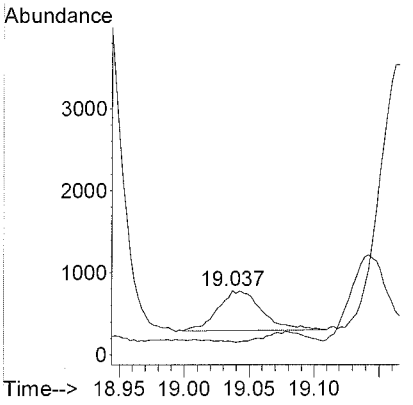


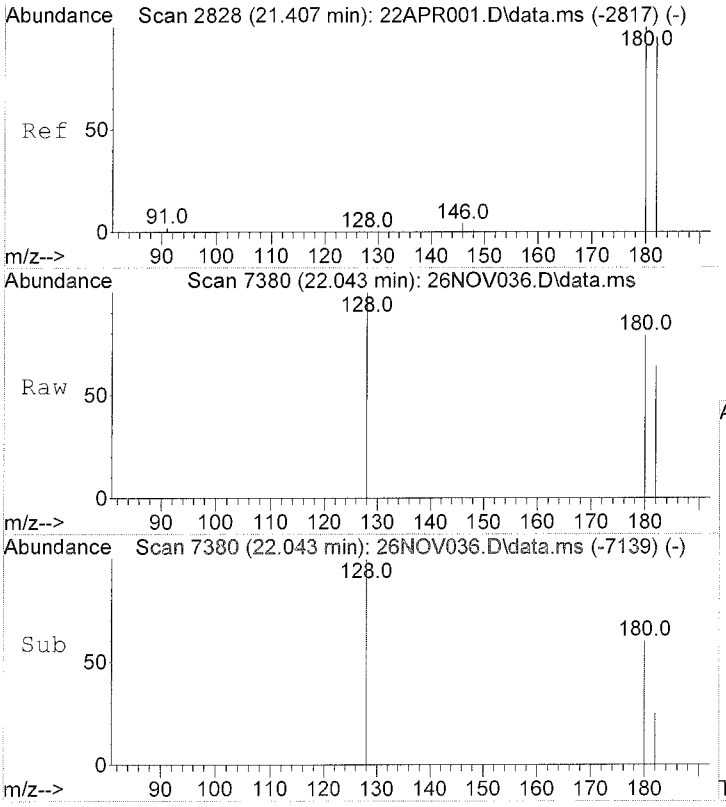


#45
Benzyl Chloride
Concen: 49.83 pptv
RT: 19.037 min Scan# 6104
Delta R.T. -0.026 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion: 91 Resp: 1135

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.7	28.1#

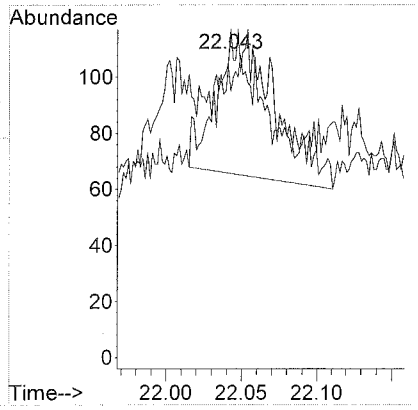


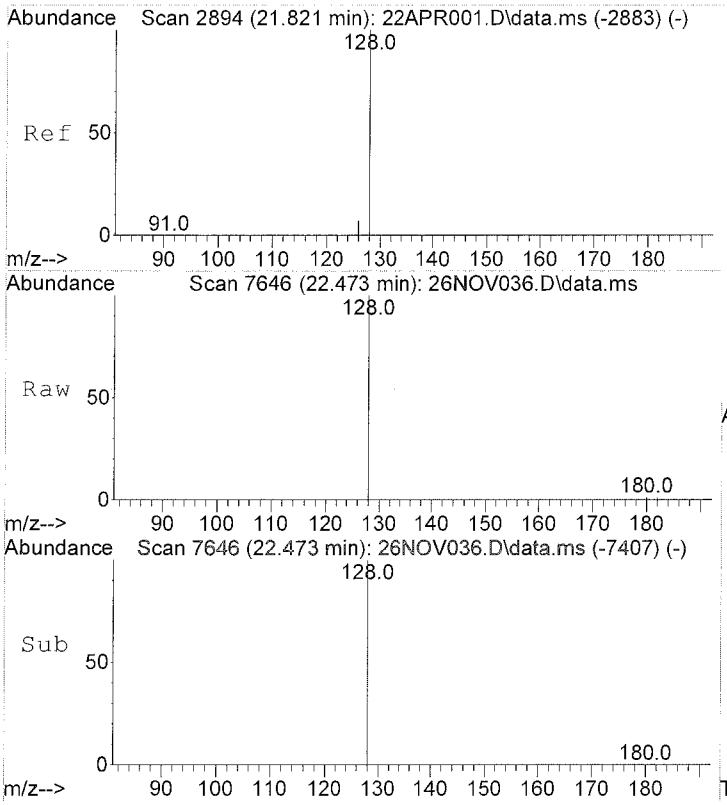


#47
1,2,4-Trichlorobenzene
Concen: 3.12 pptv
RT: 22.043 min Scan# 7380
Delta R.T. -0.009 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:180 Resp: 136

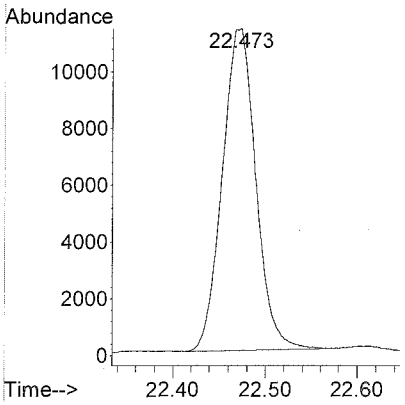
Ion	Ratio	Lower	Upper
180	100		
182	19.3	44.8	144.8#





#48
Naphthalene
Concen: 335.90 pptv
RT: 22.473 min Scan# 7646
Delta R.T. -0.013 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:128 Resp: 28375



QC Report: Unit #1
Inject Time: 11/27/2018 10:38:53

QAQC Filename:QAQC\11272018\1_103853.asc

Autosampler Position: 14 / Run 28 of 29
Sample Name : J110805-06
Method Filename: T15DESORB230.MTC

Volume Parameters:				
ISTD A Xfer Volume	set=50	Act=50	StartPress=15.0	EndPress=15.1
ISTD A Flow	set=50	Act=49.7		
ISTD A Trap Temp	set=22	hi=24	lo=22	avg=22
ISTD B Xfer Volume	set=0	Act=0	StartPress=0.0	EndPress=0.0
ISTD B Flow	set=0	Act=0.0		
ISTD B Trap Temp	Disabled			
ISTD C Xfer Volume	Disabled			
ISTD C Flow	Disabled			
ISTD C Trap Temp	Disabled			
Sample Xfer Volume	set=387	Act=387	StartPress=14.2	EndPress=13.3
Sample Xfer Flow	set=50	Act=49.7		
Smple Xfer Trap Temp	set=22	hi=22	lo=22	avg=22
Sweep Gas = Helium				
Dry Purge Parameters:				
Dry Purge Flow	set=70	Act=69.0		
Dry Purge Temp	set=25	hi=25	lo=25	avg=25
Dry Purge Time	set=12.00	act=12.00		
Desorb Parameters:				
Trap Desorb Temp	set=230	hi=238	lo=226	avg=230
Trap Desorb Time	set=4.50	act=4.50		
MCS Temp	Disabled			
Cryo Focuser Temp	set=-180	hi=-184	lo=-198	avg=-196
Inject Parameters:				
Cryo Union Temp	set=130	hi=130	lo=129	avg=130
Cryo Inject Temp	set=75	hi=76	lo=74	avg=74
Cryo Inject Time	set=2.50	act=2.50		
Bake Parameters:				
Trap Bake Temp	set=280	hi=282	lo=278	avg=280
Trap Bake Time	set=10.00	act=10.00		
MCS Bake Temp	Disabled			
System Regions:				
Manifold 1 Temp	set=130	avg=130		
Manifold 2 Temp	set=130	avg=130		
Oven 6 Port Temp	set=130	avg=130		
Oven 8 Port Temp	set=130	avg=130		
Oven 16 Port Temp	set=130	avg=130		
Bottom Of Trap Temp	set=130	avg=130		
Transfer Line Temp	set=130	avg=130		

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV031.D
Acq On : 27 Nov 2018 6:50 am
Operator : DT
Sample : J110805-01 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 12:13:20 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

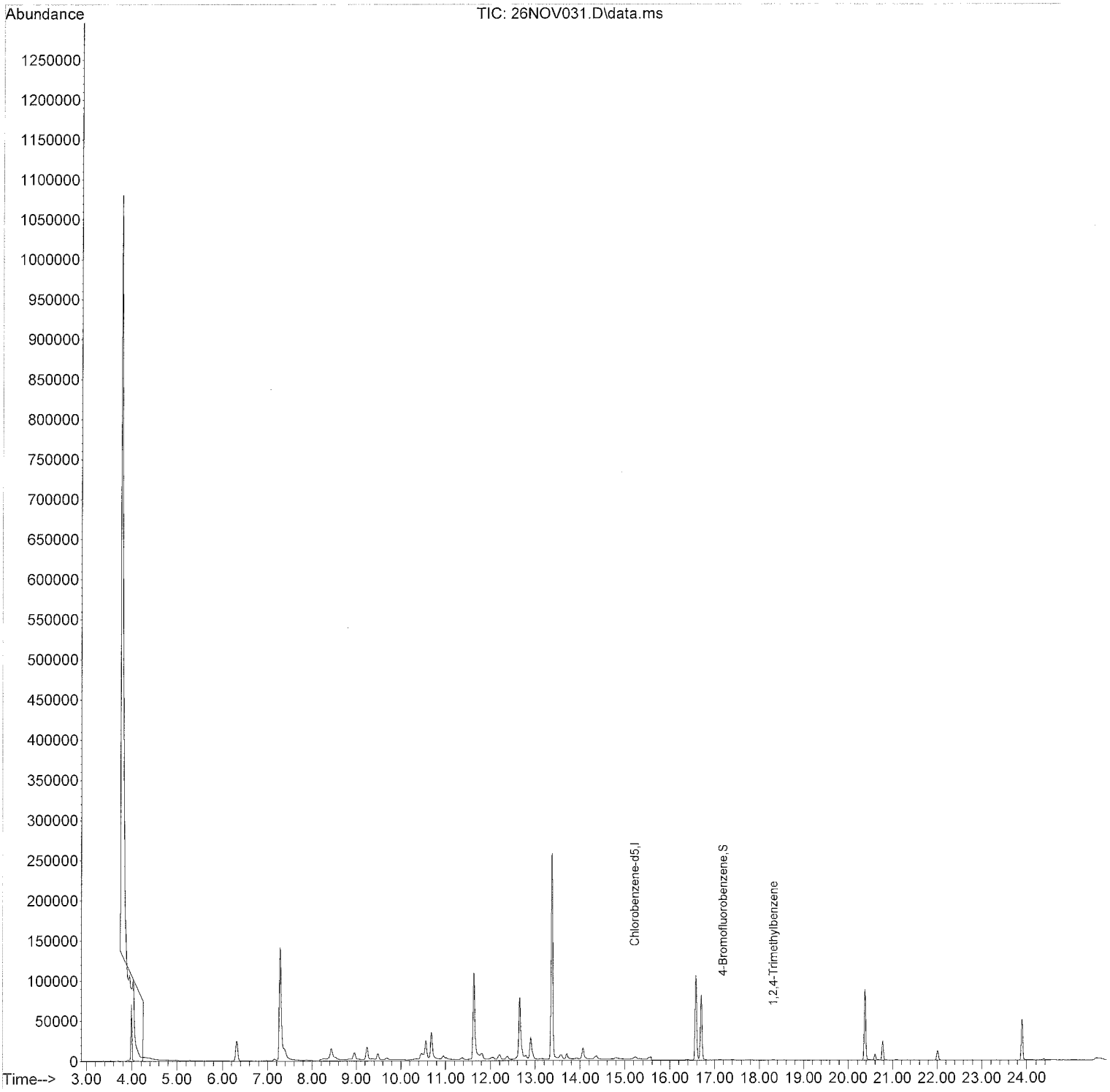
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.210	117	204397	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.184	95	114153	2227.27	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 111.36%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.306	120	7575	163.99	pptv	93

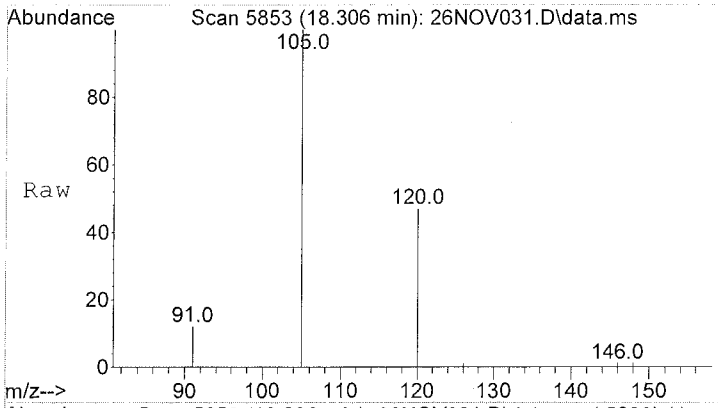
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV031.D
Acq On : 27 Nov 2018 6:50 am
Operator : DT
Sample : J110805-01 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 12:13:20 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

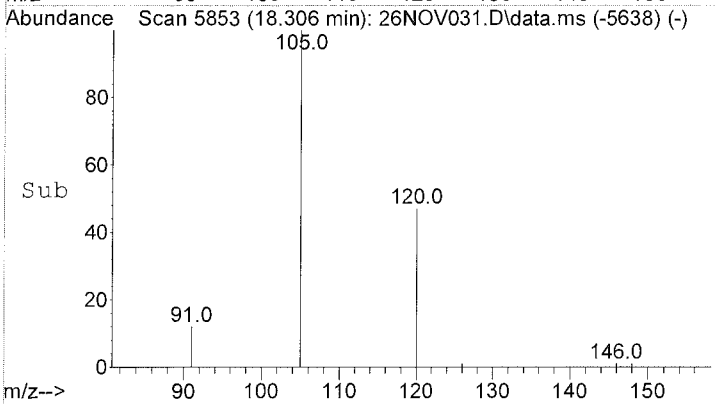


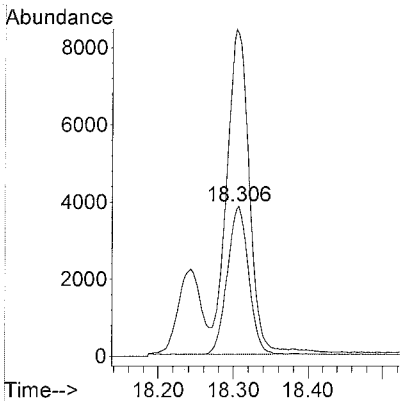


#3
1,2,4-Trimethylbenzene
Concen: 163.99 pptv
RT: 18.306 min Scan# 5853
Delta R.T. 0.000 min
Lab File: 26NOV031.D
Acq: 27 Nov 2018 6:50 am

Tgt Ion:120 Resp: 7575

Ion	Ratio	Lower	Upper
120	100		
105	200.3	168.8	253.2





Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV032.D
Acq On : 27 Nov 2018 7:39 am
Operator : DT
Sample : J110805-02 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 12:13:51 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

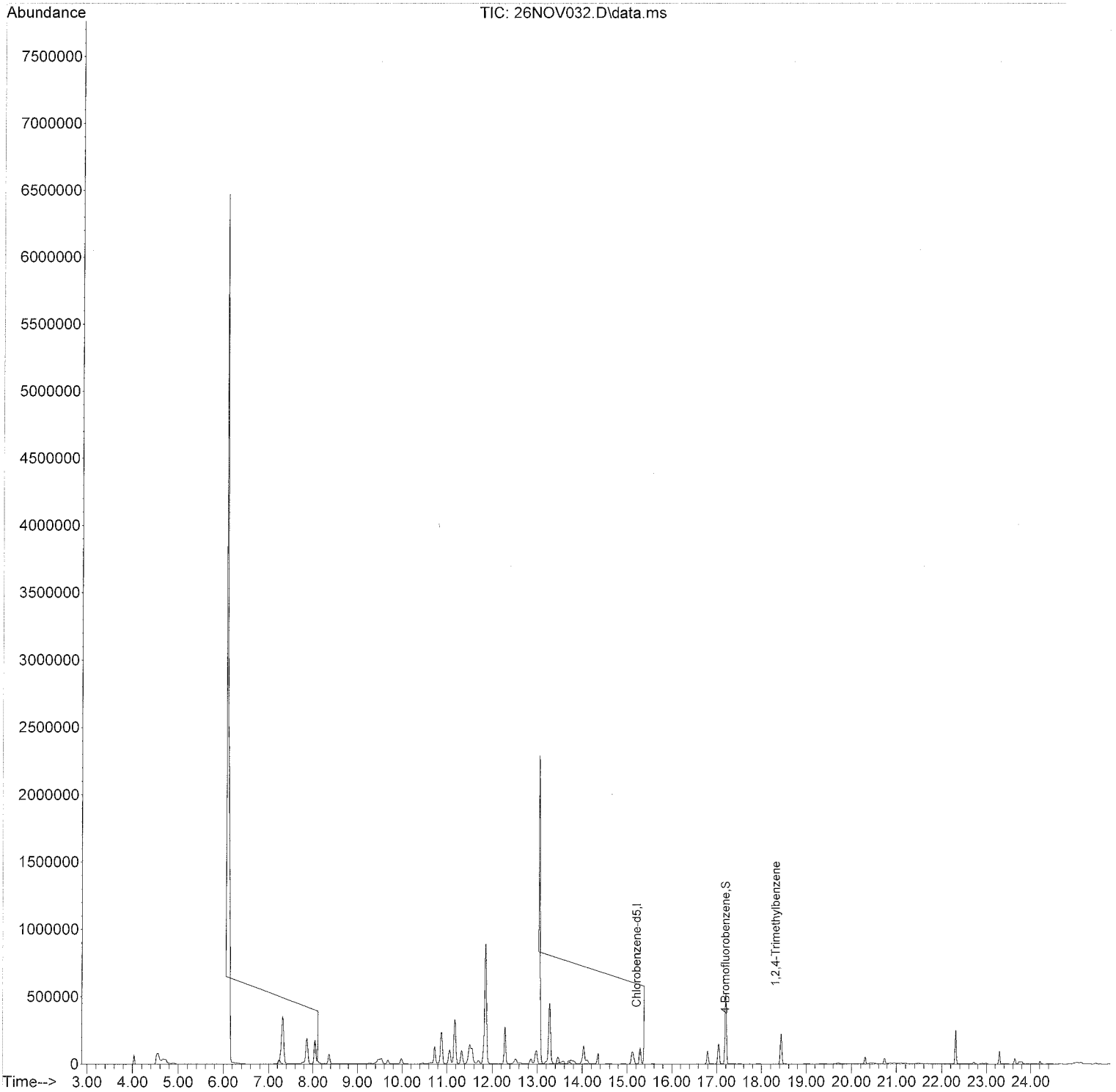
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.208	117	217186	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.183	95	107977	1982.71	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 99.14%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.303	120	142146	2896.08	pptv	100

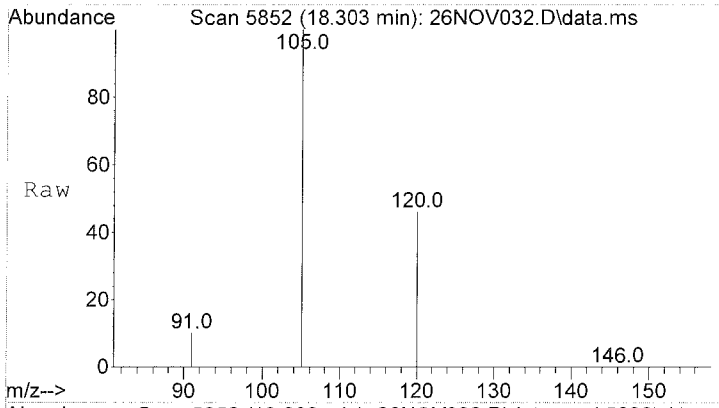
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV032.D
Acq On : 27 Nov 2018 7:39 am
Operator : DT
Sample : J110805-02 JACOBS
Misc : 420 ML, 19.6/11.68
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 12:13:51 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

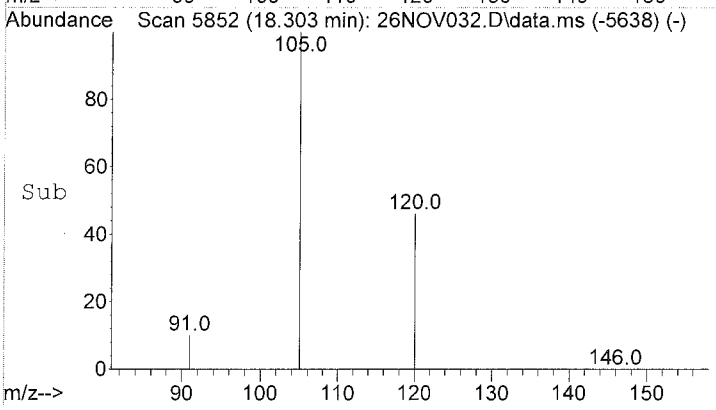


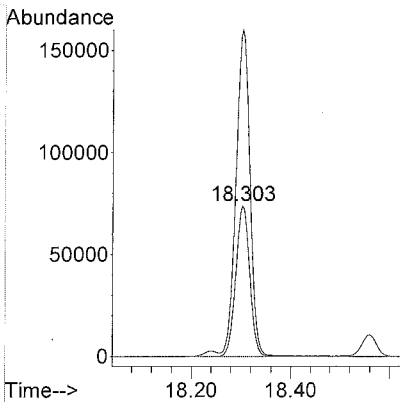


#3
1,2,4-Trimethylbenzene
Concen: 2896.08 pptv
RT: 18.303 min Scan# 5852
Delta R.T. -0.003 min
Lab File: 26NOV032.D
Acq: 27 Nov 2018 7:39 am

Tgt Ion:120 Resp: 142146

Ion	Ratio	Lower	Upper
120	100		
105	211.6	168.8	253.2





Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV033.D
Acq On : 27 Nov 2018 8:24 am
Operator : DT
Sample : J110805-03 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 27 12:14:37 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

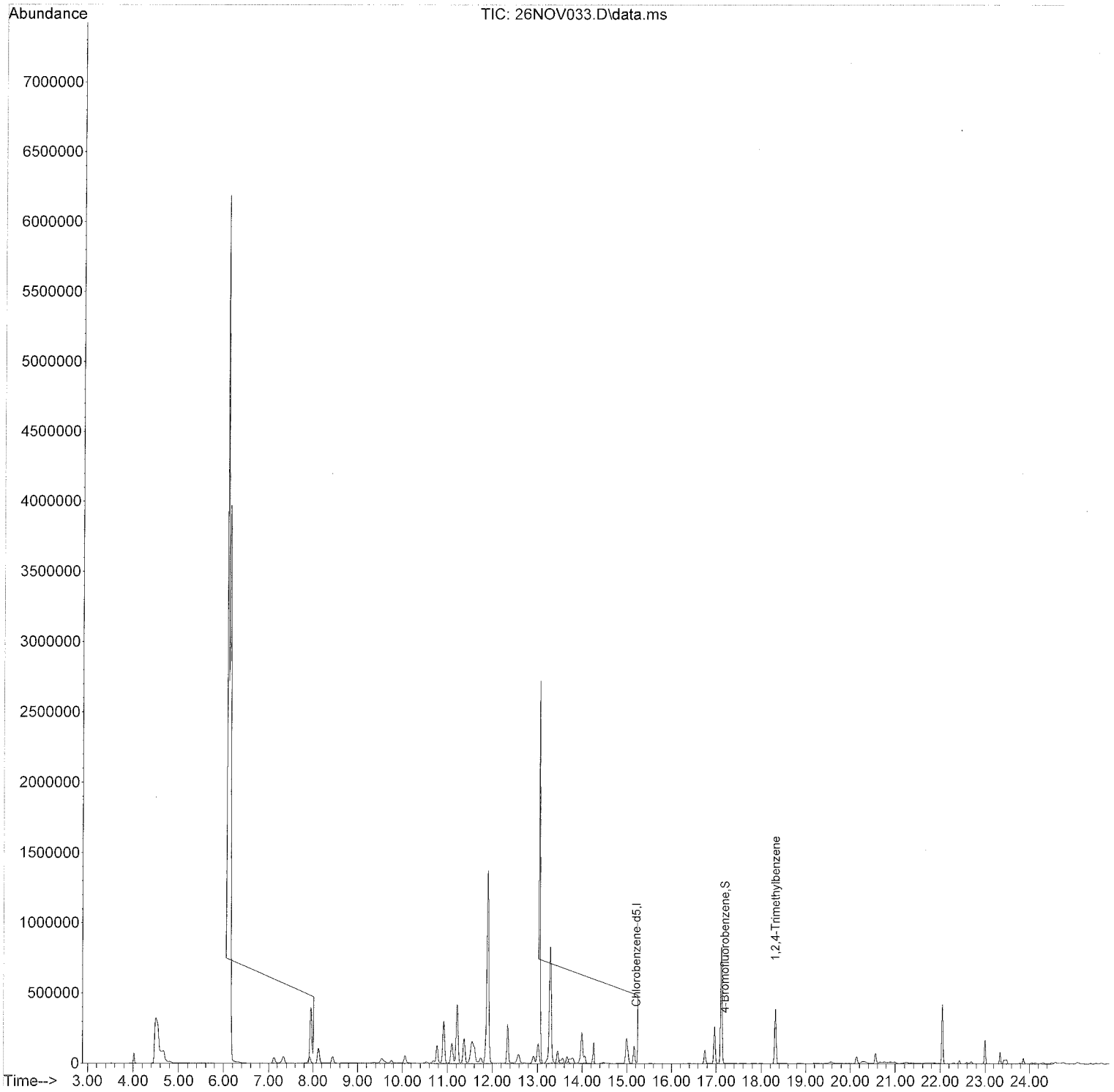
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.208	117	212421	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.183	95	102594	1926.13	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 96.31%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.303	120	241327	5027.09	pptv	95

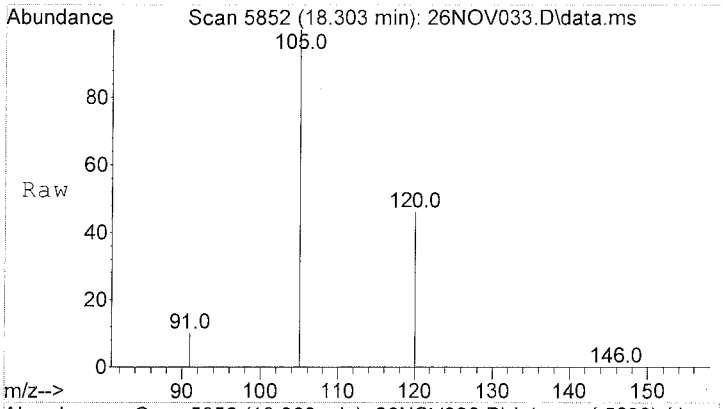
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV033.D
Acq On : 27 Nov 2018 8:24 am
Operator : DT
Sample : J110805-03 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 27 12:14:37 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

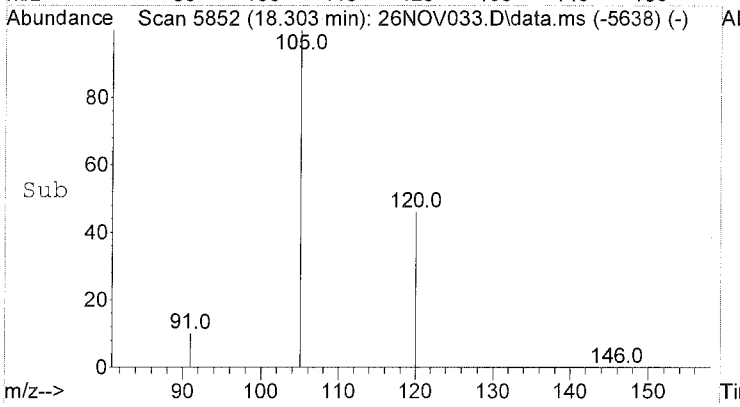


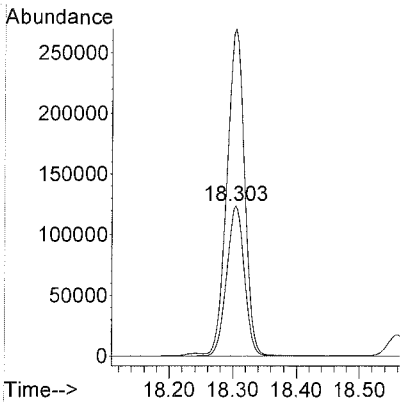


#3
1,2,4-Trimethylbenzene
Concen: 5027.09 pptv
RT: 18.303 min Scan# 5852
Delta R.T. -0.003 min
Lab File: 26NOV033.D
Acq: 27 Nov 2018 8:24 am

Tgt Ion:120 Resp: 241327

Ion	Ratio	Lower	Upper
120	100		
105	218.4	168.8	253.2





Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV034.D
Acq On : 27 Nov 2018 9:09 am
Operator : DT
Sample : J110805-04 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 27 12:14:54 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

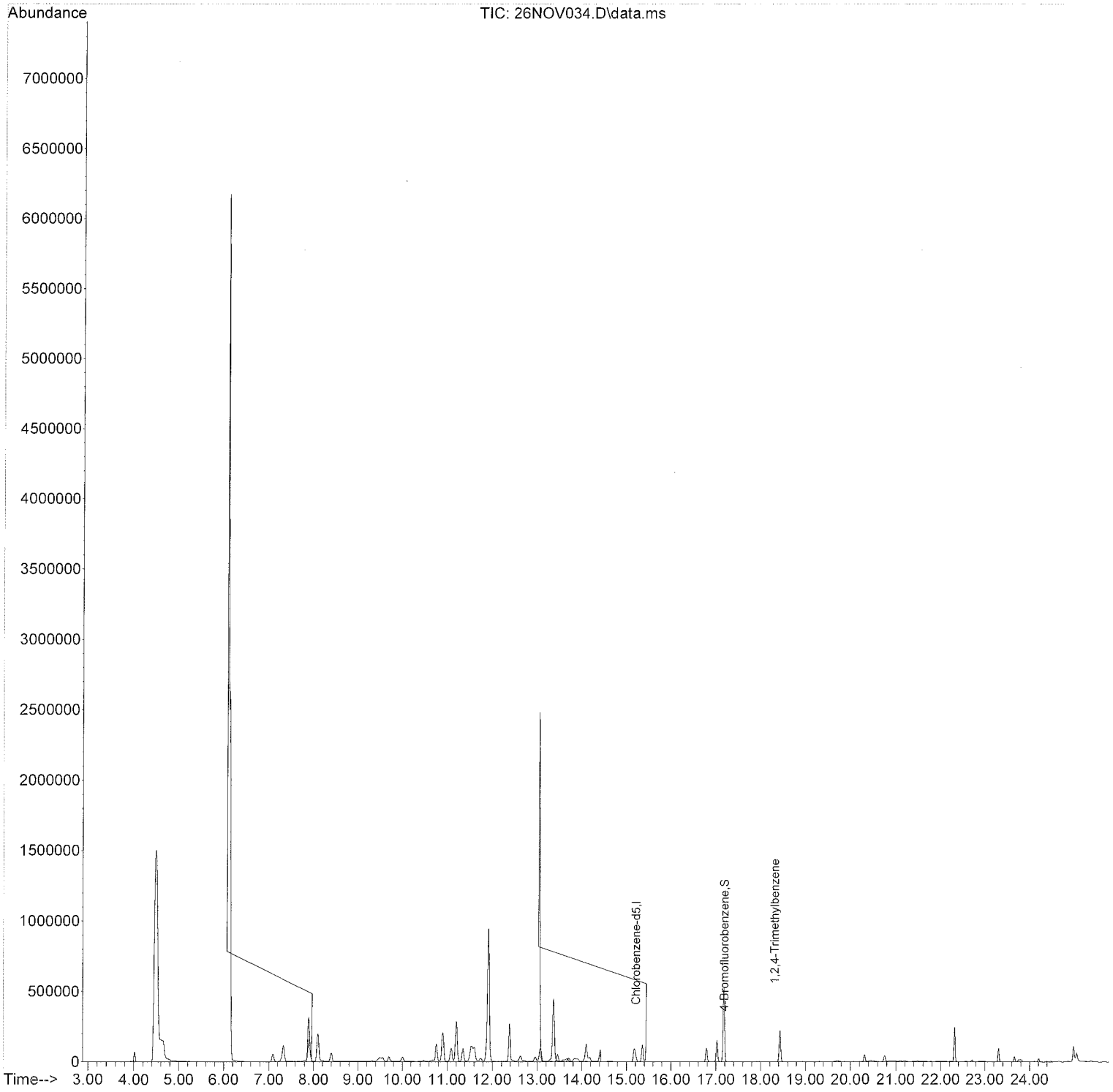
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.207	117	215777	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.183	95	105454	1949.03	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 97.45%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.303	120	140147	2874.00	pptv	100

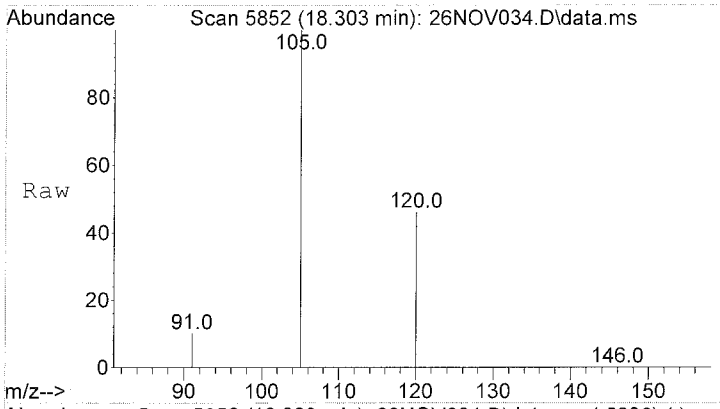
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV034.D
Acq On : 27 Nov 2018 9:09 am
Operator : DT
Sample : J110805-04 JACOBS
Misc : 438 ML, 19.6/11.19
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 27 12:14:54 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

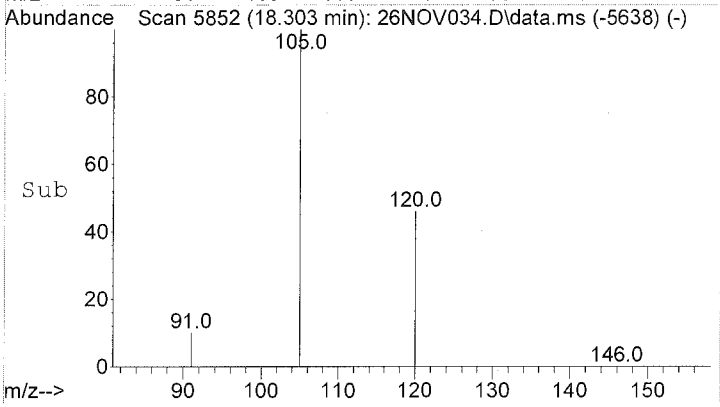


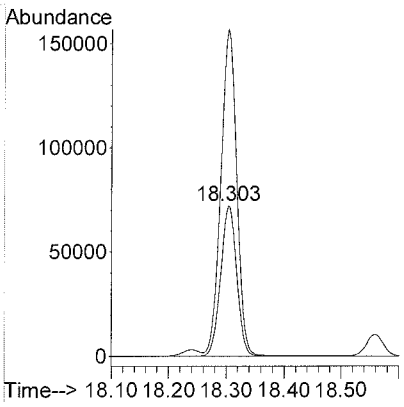


#3
1,2,4-Trimethylbenzene
Concen: 2874.00 pptv
RT: 18.303 min Scan# 5852
Delta R.T. -0.003 min
Lab File: 26NOV034.D
Acq: 27 Nov 2018 9:09 am

Tgt Ion:120 Resp: 140147

Ion	Ratio	Lower	Upper
120	100		
105	210.8	168.8	253.2





Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV035.D
Acq On : 27 Nov 2018 9:53 am
Operator : DT
Sample : J110805-05 JACOBS
Misc : 403 ML, 19.6/12.17
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 27 12:15:10 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

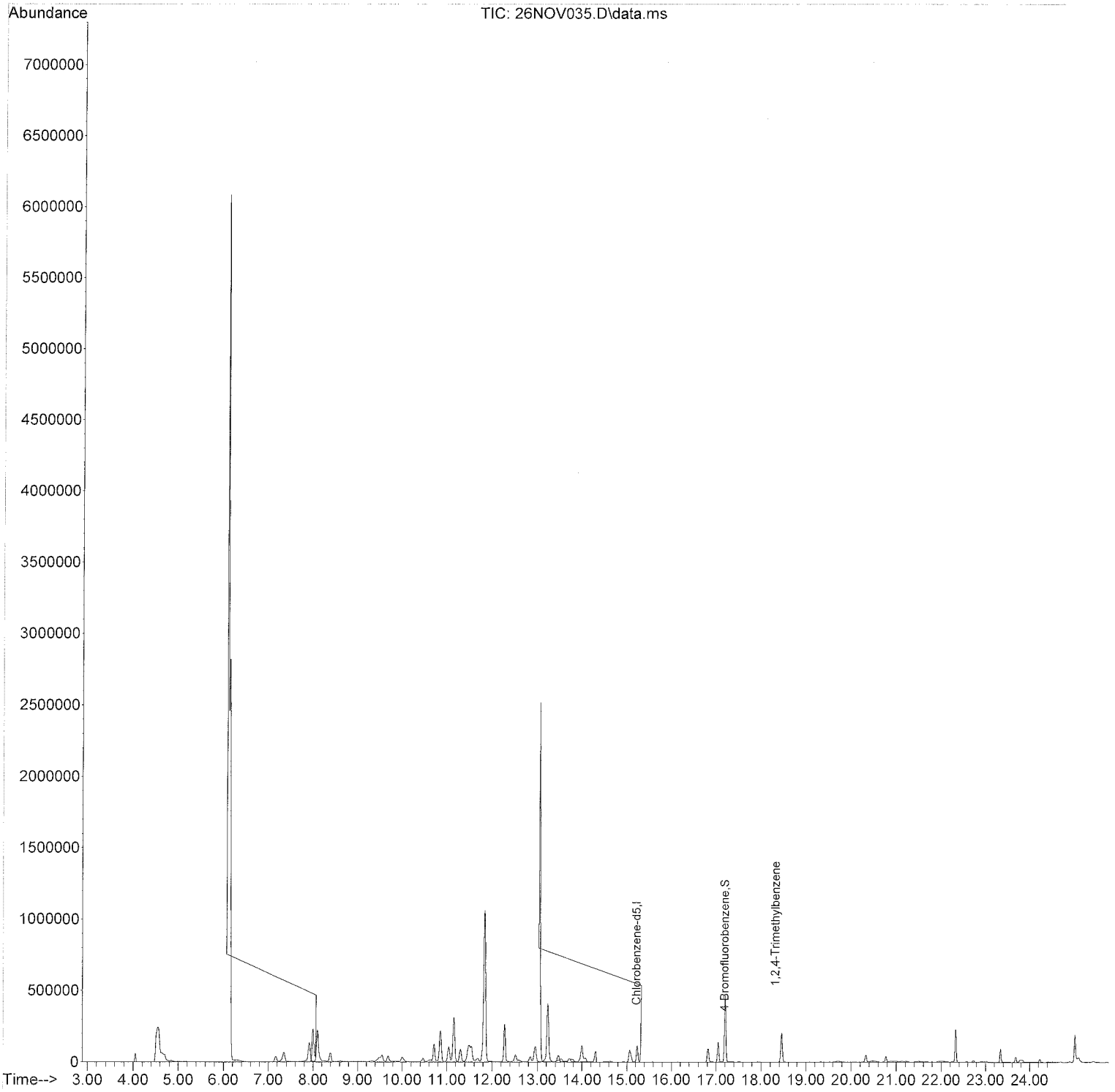
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.210	117	208927	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.185	95	103373	1973.21	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 98.66%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.306	120	133046	2817.83	pptv	99

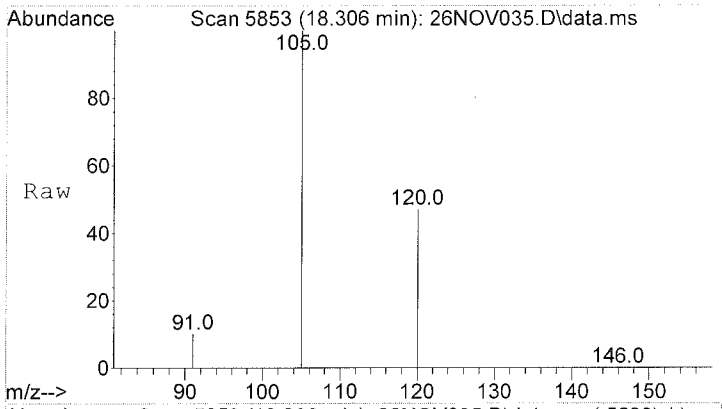
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV035.D
Acq On : 27 Nov 2018 9:53 am
Operator : DT
Sample : J110805-05 JACOBS
Misc : 403 ML, 19.6/12.17
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 27 12:15:10 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

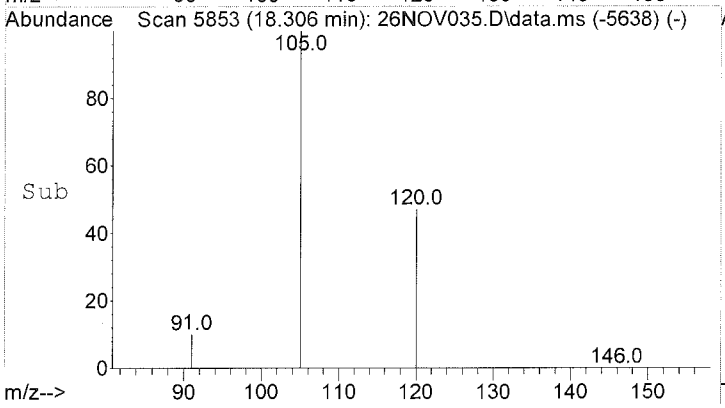


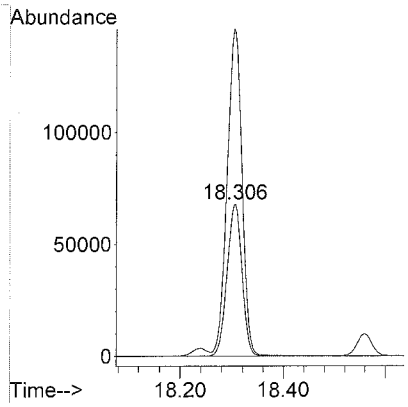


#3
1,2,4-Trimethylbenzene
Concen: 2817.83 pptv
RT: 18.306 min Scan# 5853
Delta R.T. -0.000 min
Lab File: 26NOV035.D
Acq: 27 Nov 2018 9:53 am

Tgt Ion:120 Resp: 133046

Ion	Ratio	Lower	Upper
120	100		
105	209.8	168.8	253.2





Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV036.D
Acq On : 27 Nov 2018 10:38 am
Operator : DT
Sample : J110805-06 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 27 12:15:28 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

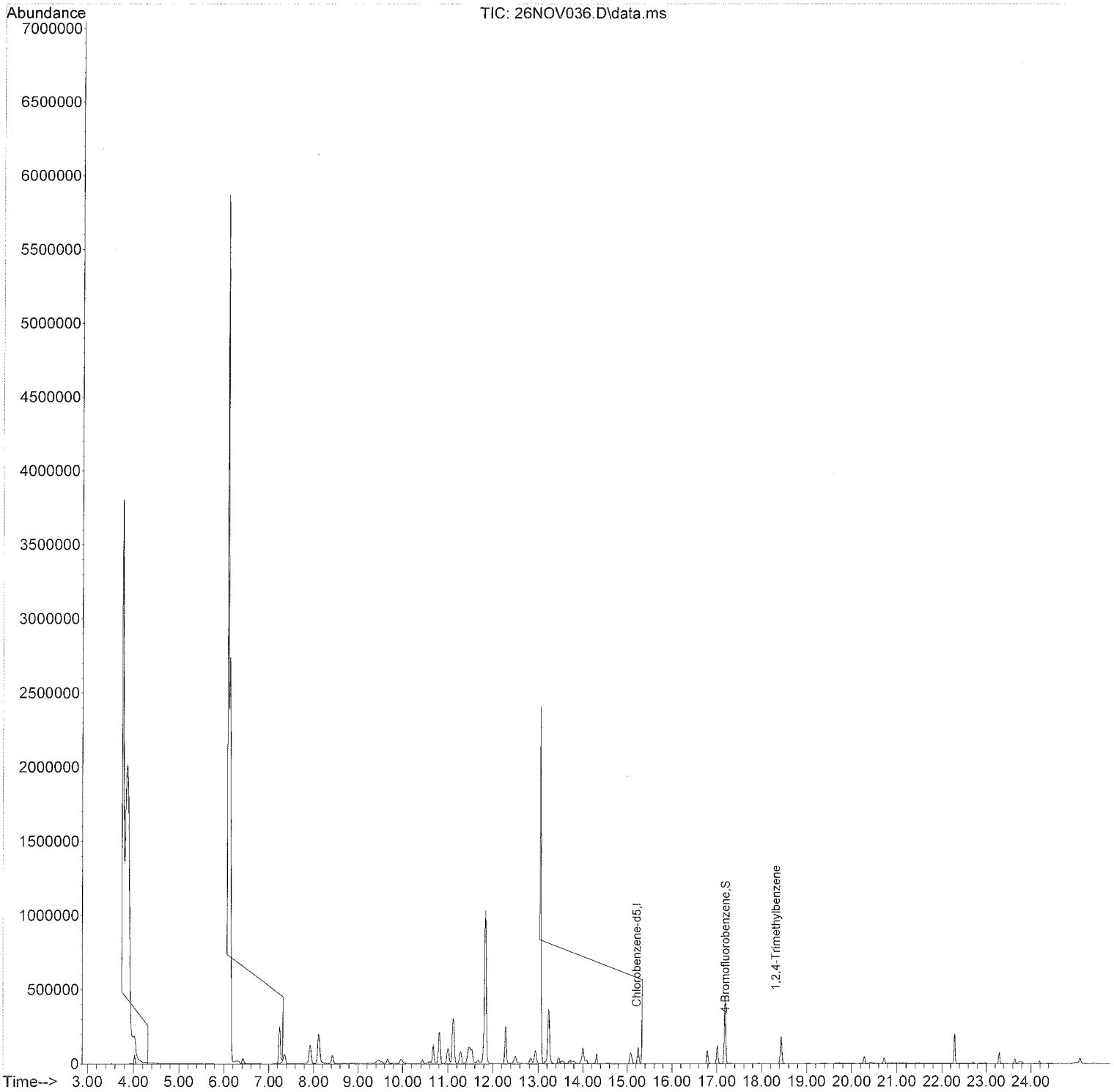
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.208	117	201685	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.184	95	102261	2022.07	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 101.10%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.303	120	115256	2528.70	pptv	99

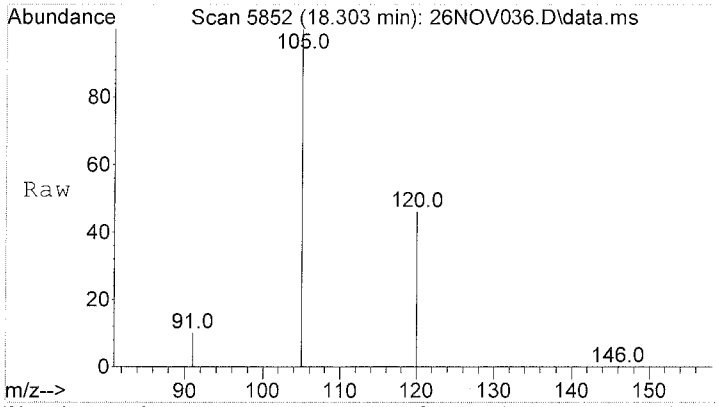
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV036.D
Acq On : 27 Nov 2018 10:38 am
Operator : DT
Sample : J110805-06 JACOBS
Misc : 387 ML, 19.6/12.65
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 27 12:15:28 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

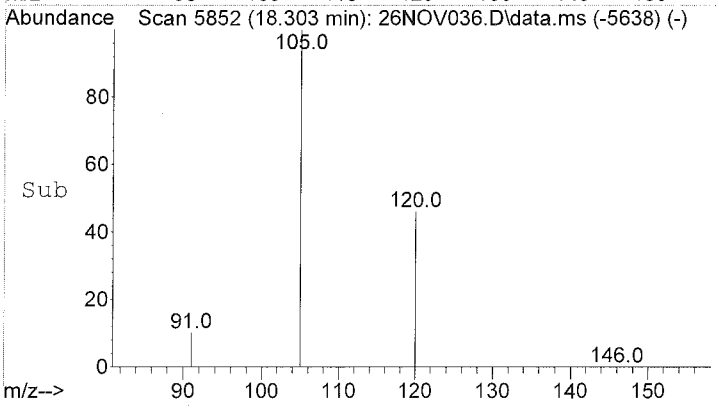


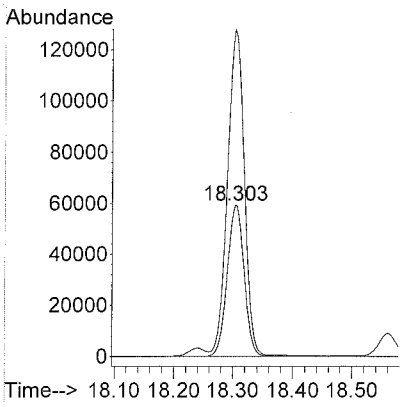


#3
1,2,4-Trimethylbenzene
Concen: 2528.70 pptv
RT: 18.303 min Scan# 5852
Delta R.T. -0.003 min
Lab File: 26NOV036.D
Acq: 27 Nov 2018 10:38 am

Tgt Ion:120 Resp: 115256

Ion	Ratio	Lower	Upper
120	100		
105	209.2	168.8	253.2





3. Initial Calibration

a. ICAL Summary
b. Results/Chromatograms

Default Initial Calibration Criteria:

90% of target compounds must have RSD <30%
All target compounds must have RSD <50%

(This criteria superceded by any project specific criteria)

Response Factor Report ms2

Method Path : C:\msdchem\1\methods\
Method File : SL181116.M
Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
Last Update : Fri Nov 16 10:52:33 2018
Response Via : Initial Calibration

Calibration Files
3.5 =16NOV002.D 5.0 =16NOV003.D 20 =16NOV005.D 50 =16NOV006.D 100 =16NOV007.D 200 =16NOV009.D 500 =16NOV010.D
1000=16NOV011.D 2000=16NOV012.D 10k =16NOV013.D

		Compound	3.5	5.0	20	50	100	200	500	1000	2000	10k	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------											
2)		Dichlorodifluo...			2.855	2.363	2.228	2.570	2.411	2.351	2.124	2.052	2.369	10.81
3)		Chloromethane			0.409	0.853	1.170	0.810	0.762	0.782	0.750	0.775	0.789	26.10
4)		Vinyl Chloride	0.614	0.720	0.743	0.708	0.717	0.927	0.823	0.856	0.800	0.827	0.773	11.64
5)		Bromomethane			0.468	0.329	0.238	0.344	0.326	0.184	0.499	0.343	0.341	30.72
6)		Chloroethane	0.739	0.622	0.612	0.474	0.490	0.578	0.546	0.494	0.498	0.499	0.555	15.08
7)		Trichlorofluor...	4.179	3.872	3.340	2.750	2.716	3.189	3.116	3.130	2.768	2.753	3.181	15.75
8)		1,1,2-Cl 1,2,2...	2.724	2.715	2.528	2.137	2.132	2.498	2.418	2.402	2.116	2.035	2.370	10.68
9)		Acetone						2.600	2.056	1.875	1.411	1.335	1.855	27.78
10)		1,1-Dichloroet...	1.418	1.373	1.278	1.065	1.085	1.234	1.204	1.188	1.017	0.978	1.184	12.48
11)	M	Methylene Chlo...			1.602	1.011	1.114	1.245	1.170	1.178	1.019	0.995	1.167	16.95
12)		t-Butyl Methyl...	3.189	2.512	2.458	2.055	2.051	2.454	2.395	2.425	2.231	2.190	2.396	13.59
13)		t-1,2-Dichloro...	1.404	1.349	1.295	1.080	1.091	1.234	1.202	1.171	1.017	0.978	1.182	11.98
14)		Hexane	2.505	1.860	1.572	1.214	1.145	1.379	1.352	1.369	1.213	1.187	1.480	28.35
15)		1,1-Dichloroet...	2.022	1.826	1.765	1.552	1.587	1.896	1.836	1.812	1.633	1.471	1.740	9.93
16)		2-Butanone				0.506	0.427	0.451	0.418	0.465	0.416	0.408	0.442	7.90
17)		c-1,2-Dichloro...	1.195	0.896	1.096	0.900	0.919	1.093	1.103	1.108	0.993	0.923	1.023	10.63
18)	t	Chloroform	2.106	2.083	2.118	1.804	1.805	2.194	2.161	2.159	1.921	1.846	2.020	7.80
19)		1,1,1-Trichlor...	2.171	1.910	1.878	1.697	1.724	2.096	2.022	2.056	1.902	1.879	1.933	7.95
20)	t	Carbon Tetrach...	1.288	1.315	1.323	1.223	1.258	1.614	1.612	1.697	1.701	1.777	1.481	14.67
21)	I	1,4-Difluorobenzene	----------ISTD----------											
22)	T	Benzene				0.850	0.758	0.829	0.773	0.758	0.728	0.613	0.758	10.16
23)	S	1,2-Dichloroet...	0.325	0.327	0.332	0.337	0.343	0.345	0.330	0.334	0.347	0.363	0.338	3.38
24)		1,2-Dichloroet...	0.456	0.335	0.313	0.337	0.323	0.389	0.372	0.340	0.345	0.335	0.355	11.87
25)	M	Trichloroethene	0.483	0.449	0.428	0.408	0.402	0.468	0.447	0.440	0.408	0.395	0.433	6.87
26)		1,2-Dichloropr...	0.282	0.294	0.243	0.231	0.216	0.258	0.249	0.248	0.243	0.238	0.250	9.16
27)		1,4-Dioxane	0.294	0.253	0.186	0.165	0.164	0.186	0.183	0.184	0.183	0.185	0.198	20.99
28)		Bromodichlorom...	0.337	0.321	0.290	0.316	0.320	0.419	0.420	0.446	0.489	0.500	0.386	20.19
29)	S	Toluene-d8	0.736	0.730	0.708	0.728	0.707	0.719	0.703	0.692	0.697	0.685	0.711	2.42
30)	M	Toluene			1.005	0.774	0.674	0.859	0.758	0.721	0.660	0.554	0.750	18.23
31)	I	Chlorobenzene-d5	----------ISTD----------											
32)		t-1,3-Dichloro...			0.296	0.235	0.258	0.357	0.395	0.464	0.525		0.361	29.76
33)		1,1,2-Trichlor...	0.548	0.442	0.463	0.420	0.423	0.493	0.482	0.493	0.468	0.471	0.470	8.02
34)		Tetrachloroethene	0.789	0.722	0.676	0.640	0.645	0.756	0.730	0.731	0.702	0.690	0.708	6.65
35)	t	1,2-Dibromoethane	0.455	0.449	0.428	0.419	0.424	0.556	0.574	0.629	0.665	0.717	0.532	20.95

Method Path : C:\msdchem\1\methods\
Method File : SL181116.M
Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm

J110805

36)		Chlorobenzene	1.068	0.982	0.866	0.842	0.812	0.952	0.903	0.893	0.832	0.683	0.883	11.86
37)	T	Ethylbenzene	1.443	1.208	0.992	0.912	0.884	1.096	1.061	1.057	0.996	0.756	1.041	18.12
38)	T	p,&m-Xylene		0.924	0.706	0.629	0.610	0.835	0.787	0.777	0.675	0.907	0.761	15.03
39)	T	o-Xylene	0.997	0.855	0.663	0.583	0.562	0.745	0.707	0.714	0.630	0.556	0.701	19.85
40)		Styrene	0.606	0.520	0.419	0.369	0.350	0.468	0.474	0.502	0.470	0.363	0.454	17.72
41)	M	1,1,2,2-Tetrac...	0.534	0.487	0.519	0.533	0.509	0.619	0.598	0.593	0.535	0.499	0.543	8.31
42)	S	4-Bromofluorob...	0.507	0.504	0.487	0.515	0.501	0.527	0.512	0.492	0.498	0.481	0.502	2.75
43)		1,3-Dichlorobe...	0.703	0.558	0.518	0.589	0.522	0.640	0.580	0.545	0.447	0.366	0.547	17.25
44)		1,4-Dichlorobe...	0.782	0.701	0.526	0.597	0.511	0.640	0.579	0.541	0.445	0.370	0.569	21.07
45)		Benzyl Chloride	0.143	0.176	0.164	0.170	0.158	0.304	0.286	0.299	0.311	0.246	0.226	30.84 ✓
46)		1,2-Dichlorobe...	0.591	0.450	0.512	0.588	0.527	0.631	0.557	0.514	0.402	0.325	0.510	18.38
47)		1,2,4-Trichlor...	0.479	0.396	0.269	0.355	0.339	0.593	0.527	0.499			0.432	25.33
48)		Naphthalene		0.907	0.536	0.681	0.599	1.138	1.006	0.996			0.838	27.63

(#) = Out of Range

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV002.D
Acq On : 16 Nov 2018 12:56 am
Operator : vm
Sample : 3.5 PPTV ICAL
Misc : 35 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 16 01:21:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.348	130	122937	2000.00	pptv	0.02
21) 1,4-Difluorobenzene	10.691	114	534631	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.213	117	331765	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.105	65	173940	2009.21	pptv	0.01
Spiked Amount 2000.000	Range 70 - 130		Recovery = 100.46%			
29) Toluene-d8	12.941	98	393398	1876.74	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 93.84%			
42) 4-Bromofluorobenzene	17.188	95	168117	1837.26	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 91.86%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.637	85	1049	6.11	pptv	96
3) Chloromethane	4.009	50	2720	50.29	pptv	52
4) Vinyl Chloride	4.289	62	132	3.06	pptv	43
5) Bromomethane	4.961	96	283	12.00	pptv	72
6) Chloroethane	5.112	64	159	4.84	pptv	88
7) Trichlorofluoromethane...	5.549	101	899	5.02	pptv	97
8) 1,1,2-Cl 1,2,2-F ethan...	6.263	151	586	4.29	pptv	83
9) Acetone	6.200	43	14106	90.87	pptv	90
10) 1,1-Dichloroethene	6.441	96	305	4.07	pptv	98
11) Methylene Chloride	7.064	49	583	7.32	pptv	67
12) t-Butyl Methyl Ether	7.424	73	686	4.29	pptv	55
13) t-1,2-Dichloroethene	6.441	96	302	4.07	pptv	76
14) Hexane	7.784	57	539	5.00	pptv	70
15) 1,1-Dichloroethane	8.092	63	435	3.83	pptv	100
16) 2-Butanone	8.674	72	375	10.93	pptv	94
17) c-1,2-Dichloroethene	8.949	96	257	3.86	pptv	68
18) Chloroform	9.156	83	453	3.59	pptv	89
19) 1,1,1-Trichloroethane	9.763	97	467	4.05	pptv	48
20) Carbon Tetrachloride	10.154	117	277	3.44	pptv	67
22) Benzene	10.337	78	3409	12.84	pptv	99
24) 1,2-Dichloroethane	10.236	62	427	4.81	pptv	96
25) Trichloroethene	11.224	130	452	3.88	pptv	88
26) 1,2-Dichloropropane	11.426	63	264	3.59	pptv	60
27) 1,4-Dioxane	11.725	88	275	5.05	pptv #	75
28) Bromodichloromethane	11.725	83	315	3.18	pptv	69
30) Toluene	13.058	91	2439	10.20	pptv	96
32) t-1,3-Dichloropropene	12.521	75	167	2.81	pptv	85
33) 1,1,2-Trichloroethane	13.465	97	318	4.59	pptv	85
34) Tetrachloroethene	14.077	166	458	3.95	pptv	98
35) 1,2-Dibromoethane	14.579	107	264	2.99	pptv	82
36) Chlorobenzene	15.272	112	620	3.96	pptv	95
37) Ethylbenzene	15.379	91	838	4.00	pptv	97
38) p,&m-Xylene	15.510	91	1301	8.80	pptv	98
39) o-Xylene	16.190	91	579	3.72	pptv	98
40) Styrene	16.223	104	352	3.47	pptv	89
41) 1,1,2,2-Tetrachloroethane	16.988	83	310	3.43	pptv	92

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV002.D
Acq On : 16 Nov 2018 12:56 am
Operator : vm
Sample : 3.5 PPTV ICAL
Misc : 35 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 16 01:21:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

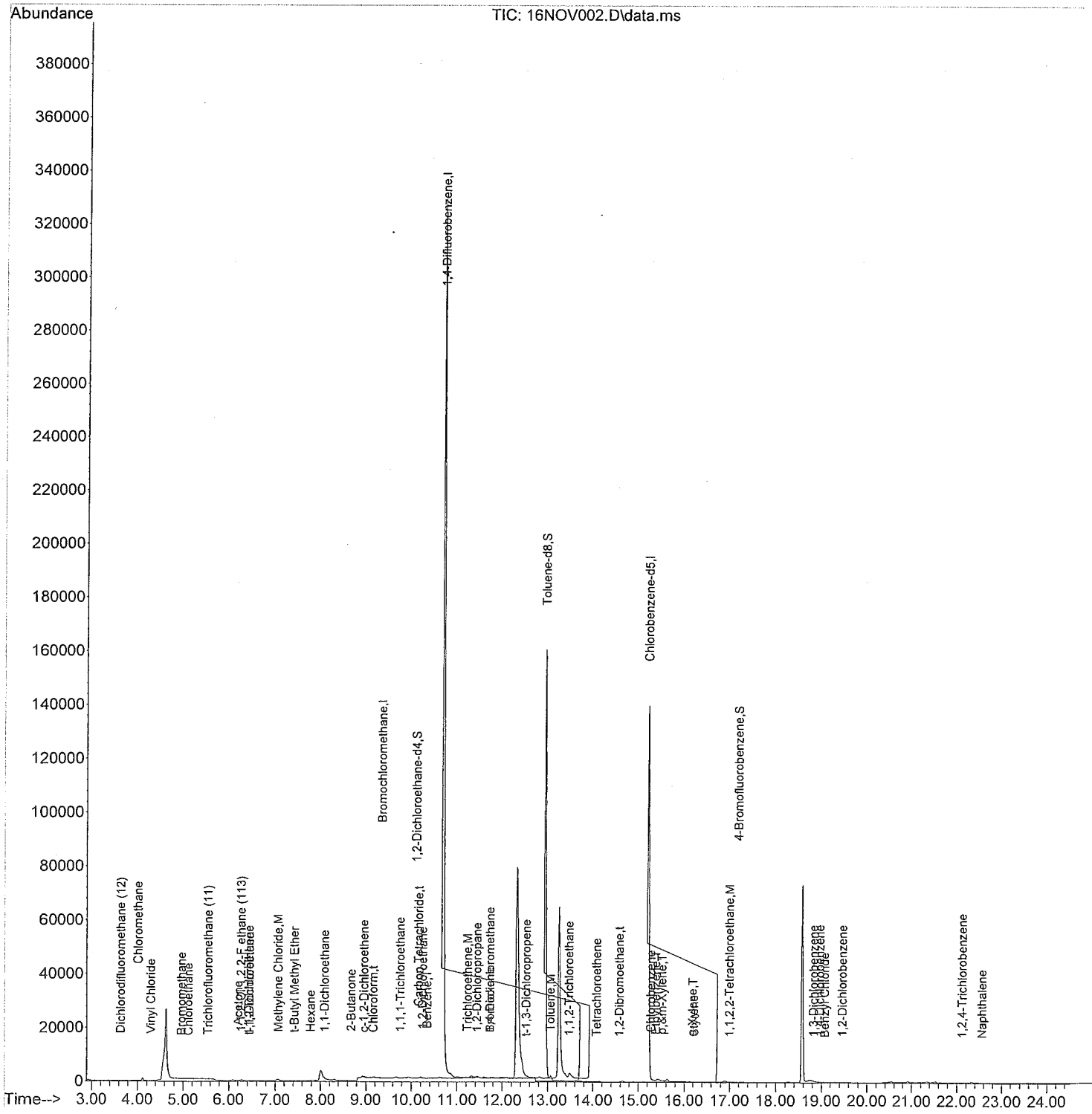
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	408	4.38	pptv	87
44) 1,4-Dichlorobenzene	18.964	146	454	5.00	pptv	91
45) Benzyl Chloride	19.072	91	83	2.05	pptv	98
46) 1,2-Dichlorobenzene	19.459	146	343	3.75	pptv	87
47) 1,2,4-Trichlorobenzene	22.111	180	278	4.73	pptv	78
48) Naphthalene	22.561	128	808	6.90	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV002.D
Acq On : 16 Nov 2018 12:56 am
Operator : vm
Sample : 3.5 PPTV ICAL
Misc : 35 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 16 01:21:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV003.D
Acq On : 16 Nov 2018 1:35 am
Operator : vm
Sample : 5.0 PPTV ICAL
Misc : 50 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 16 02:00:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.352	130	118296	2000.00	pptv	0.02
21) 1,4-Difluorobenzene	10.691	114	524629	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.213	117	324125	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.108	65	171312	2016.58	pptv	0.02
Spiked Amount 2000.000	Range 70 - 130		Recovery = 100.83%			
29) Toluene-d8	12.941	98	383211	1863.00	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 93.15%			
42) 4-Bromofluorobenzene	17.187	95	163286	1826.52	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 91.33%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.637	85	1250	7.57	pptv	99
3) Chloromethane	4.009	50	2777	53.36	pptv	52
4) Vinyl Chloride	4.289	62	213	5.13	pptv	26
5) Bromomethane	4.966	96	413	18.20	pptv	89
6) Chloroethane	5.106	64	184	5.82	pptv	84
7) Trichlorofluoromethane...	5.551	101	1145	6.64	pptv	97
8) 1,1,2-Cl 1,2,2-F ethan...	6.270	151	803	6.12	pptv	97
9) Acetone	6.203	43	14558	97.46	pptv	87
10) 1,1-Dichloroethene	6.451	96	406	5.63	pptv	87
11) Methylene Chloride	7.070	49	801	10.45	pptv	92
12) t-Butyl Methyl Ether	7.439	73	743	4.83	pptv	76
13) t-1,2-Dichloroethene	6.451	96	399	5.59	pptv	57
14) Hexane	7.793	57	550	5.30	pptv	85
15) 1,1-Dichloroethane	8.083	63	540	4.95	pptv	89
16) 2-Butanone	8.665	72	419	12.69	pptv	47
17) c-1,2-Dichloroethene	8.928	96	265	4.14	pptv	97
18) Chloroform	9.153	83	616	5.07	pptv	96
19) 1,1,1-Trichloroethane	9.766	97	565	5.10	pptv	80
20) Carbon Tetrachloride	10.151	117	389	5.02	pptv	75
22) Benzene	10.331	78	4208	16.15	pptv	95
24) 1,2-Dichloroethane	10.236	62	440	5.05	pptv	91
25) Trichloroethene	11.224	130	589	5.16	pptv	93
26) 1,2-Dichloropropane	11.426	63	385	5.33	pptv	58
27) 1,4-Dioxane	11.734	88	332	6.21	pptv #	86
28) Bromodichloromethane	11.731	83	421	4.33	pptv	86
30) Toluene	13.061	91	2623	11.17	pptv	100
32) t-1,3-Dichloropropene	12.518	75	199	3.43	pptv	90
33) 1,1,2-Trichloroethane	13.468	97	358	5.28	pptv	95
34) Tetrachloroethene	14.083	166	585	5.17	pptv	90
35) 1,2-Dibromoethane	14.577	107	364	4.22	pptv	98
36) Chlorobenzene	15.267	112	796	5.20	pptv	96
37) Ethylbenzene	15.376	91	979	4.78	pptv	97
38) p,&m-Xylene	15.505	91	1497	10.36	pptv	96
39) o-Xylene	16.190	91	693	4.56	pptv	98
40) Styrene	16.218	104	421	4.25	pptv	95
41) 1,1,2,2-Tetrachloroethane	16.988	83	395	4.47	pptv	91

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV003.D
Acq On : 16 Nov 2018 1:35 am
Operator : vm
Sample : 5.0 PPTV ICAL
Misc : 50 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 16 02:00:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

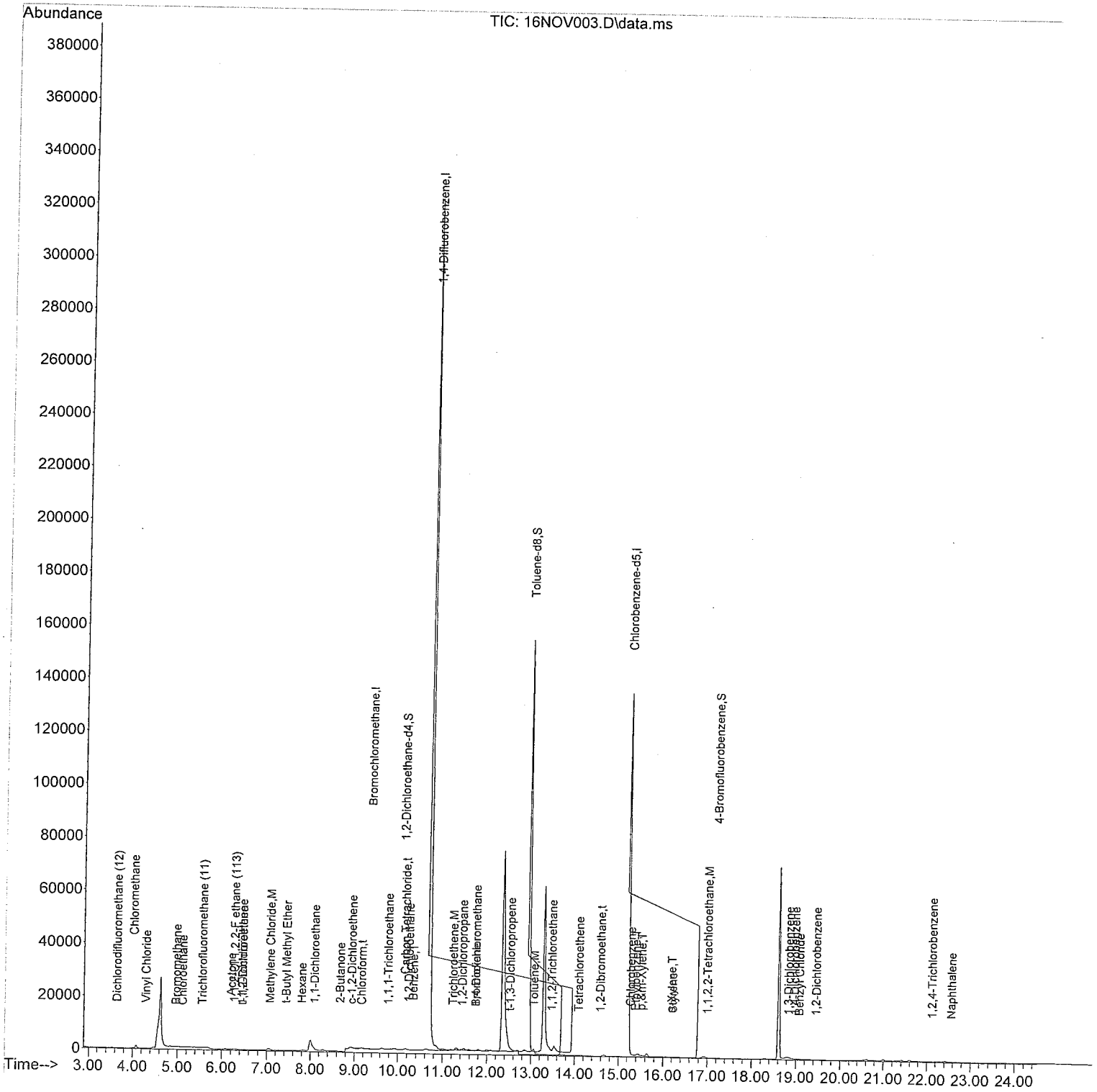
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.833	146	452	4.97	pptv	91
44) 1,4-Dichlorobenzene	18.967	146	568	6.41	pptv	90
45) Benzyl Chloride	19.072	91	143	3.62	pptv #	82
46) 1,2-Dichlorobenzene	19.456	146	365	4.08	pptv	93
47) 1,2,4-Trichlorobenzene	22.114	180	321	5.59	pptv	78
48) Naphthalene	22.559	128	735	6.43	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV003.D
Acq On : 16 Nov 2018 1:35 am
Operator : vm
Sample : 5.0 PPTV ICAL
Misc : 50 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 16 02:00:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration



SL181116.M Fri Nov 16 02:00:02 2018 GCMS1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV005.D
Acq On : 16 Nov 2018 2:55 am
Operator : vm
Sample : 20 PPTV ICAL
Misc : 200 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 16 03:19:47 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.349	130	113638	2000.00	pptv	0.02
21) 1,4-Difluorobenzene	10.691	114	523260	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	303327	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.105	65	173586	2048.69	pptv	0.01
Spiked Amount 2000.000	Range 70 - 130		Recovery = 102.43%			
29) Toluene-d8	12.941	98	370416	1805.51	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 90.28%			
42) 4-Bromofluorobenzene	17.187	95	147703	1765.50	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 88.28%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.626	85	3244	20.45	pptv	97
3) Chloromethane	4.184	50	465	9.30	pptv	97
4) Vinyl Chloride	4.268	62	844	21.17	pptv	46
5) Bromomethane	4.952	96	532	24.41	pptv	84
6) Chloroethane	5.092	64	695	22.90	pptv	86
7) Trichlorofluoromethane...	5.543	101	3796	22.92	pptv	97
8) 1,1,2-Cl 1,2,2-F ethan...	6.260	151	2873	22.78	pptv	96
9) Acetone	6.183	43	23137	161.24	pptv	93
10) 1,1-Dichloroethene	6.434	96	1452	20.96	pptv	84
11) Methylene Chloride	7.055	49	1820	24.71	pptv	61
12) t-Butyl Methyl Ether	7.421	73	2793	18.91	pptv	72
13) t-1,2-Dichloroethene	6.434	96	1472	21.46	pptv	58
14) Hexane	7.793	57	1786	17.92	pptv	87
15) 1,1-Dichloroethane	8.089	63	2006	19.13	pptv	97
16) 2-Butanone	8.665	72	1248	39.34	pptv	70
17) c-1,2-Dichloroethene	8.928	96	1246	20.25	pptv	82
18) Chloroform	9.153	83	2407	20.62	pptv	92
19) 1,1,1-Trichloroethane	9.763	97	2134	20.04	pptv	92
20) Carbon Tetrachloride	10.151	117	1503	20.20	pptv	82
22) Benzene	10.331	78	6657	25.62	pptv	85
24) 1,2-Dichloroethane	10.236	62	1639	18.87	pptv	93
25) Trichloroethene	11.218	130	2238	19.65	pptv	88
26) 1,2-Dichloropropane	11.423	63	1272	17.65	pptv	98
27) 1,4-Dioxane	11.716	88	974	18.26	pptv #	83
28) Bromodichloromethane	11.725	83	1518	15.65	pptv	95
30) Toluene	13.055	91	5261	22.47	pptv	98
32) t-1,3-Dichloropropene	12.514	75	899	16.56	pptv	93
33) 1,1,2-Trichloroethane	13.465	97	1404	22.14	pptv	99
34) Tetrachloroethene	14.083	166	2049	19.34	pptv	99
35) 1,2-Dibromoethane	14.585	107	1298	16.07	pptv	96
36) Chlorobenzene	15.270	112	2627	18.33	pptv	97
37) Ethylbenzene	15.379	91	3010	15.70	pptv	98
38) p,&m-Xylene	15.505	91	4284	31.69	pptv	97
39) o-Xylene	16.192	91	2011	14.14	pptv	94
40) Styrene	16.216	104	1270	13.71	pptv	95
41) 1,1,2,2-Tetrachloroethane	16.988	83	1575	19.06	pptv	100

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV005.D
Acq On : 16 Nov 2018 2:55 am
Operator : vm
Sample : 20 PPTV ICAL
Misc : 200 ML
ALS Vial : 5 Sample Multiplier: 1

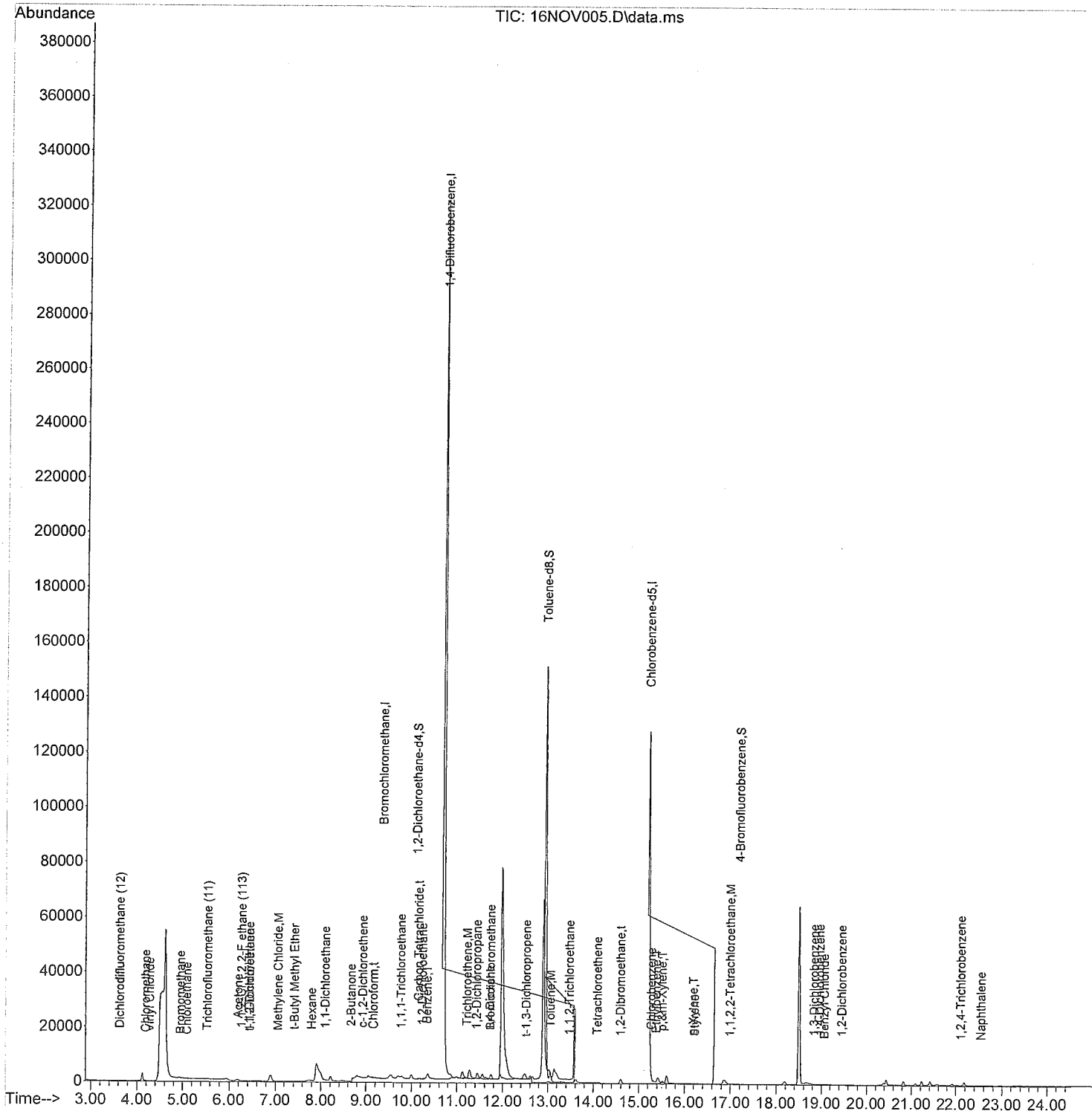
Quant Time: Nov 16 03:19:47 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.833	146	1570	18.45	pptv	97
44) 1,4-Dichlorobenzene	18.961	146	1595	19.23	pptv	93
45) Benzyl Chloride	19.066	91	497	13.45	pptv #	89
46) 1,2-Dichlorobenzene	19.456	146	1553	18.55	pptv	98
47) 1,2,4-Trichlorobenzene	22.104	180	817	15.21	pptv	85
48) Naphthalene	22.533	128	1626	15.19	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV005.D
Acq On : 16 Nov 2018 2:55 am
Operator : vm
Sample : 20 PPTV ICAL
Misc : 200 ML
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 16 03:19:47 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV006.D
Acq On : 16 Nov 2018 3:33 am
Operator : vm
Sample : 50 PPTV ICAL
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 16 03:58:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.345	130	120787	2000.00	pptv	0.02
21) 1,4-Difluorobenzene	10.691	114	512930	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	313119	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.102	65	172633	2078.48	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 103.92%			
29) Toluene-d8	12.938	98	373333	1856.37	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 92.82%			
42) 4-Bromofluorobenzene	17.183	95	161374	1868.58	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 93.43%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.623	85	7136	42.33	pptv	99
3) Chloromethane	4.012	50	2575	48.46	pptv	54
4) Vinyl Chloride	4.268	62	2138	50.44	pptv	89
5) Bromomethane	4.955	96	994	42.91	pptv	88
6) Chloroethane	5.092	64	1431	44.36	pptv	81
7) Trichlorofluoromethane...	5.543	101	8303	47.16	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.253	151	6453	48.13	pptv	90
9) Acetone	6.190	43	18404	120.67	pptv	92
10) 1,1-Dichloroethene	6.434	96	3215	43.67	pptv	82
11) Methylene Chloride	7.055	49	3054	39.01	pptv	69
12) t-Butyl Methyl Ether	7.412	73	6206	39.54	pptv	85
13) t-1,2-Dichloroethene	6.434	96	3261	44.73	pptv	56
14) Hexane	7.790	57	3666	34.61	pptv	98
15) 1,1-Dichloroethane	8.086	63	4687	42.06	pptv	96
16) 2-Butanone	8.668	72	1527	45.28	pptv	74
17) c-1,2-Dichloroethene	8.934	96	2717	41.54	pptv	79
18) Chloroform	9.150	83	5448	43.91	pptv	99
19) 1,1,1-Trichloroethane	9.766	97	5123	45.26	pptv	96
20) Carbon Tetrachloride	10.151	117	3693	46.70	pptv	95
22) Benzene	10.331	78	10902	42.80	pptv	95
24) 1,2-Dichloroethane	10.230	62	4326	50.82	pptv	96
25) Trichloroethene	11.221	130	5227	46.82	pptv	94
26) 1,2-Dichloropropane	11.420	63	2963	41.95	pptv	98
27) 1,4-Dioxane	11.716	88	2111	40.37	pptv #	83
28) Bromodichloromethane	11.731	83	4047	42.57	pptv	99
30) Toluene	13.055	91	9919	43.22	pptv	99
32) t-1,3-Dichloropropene	12.514	75	1836	32.76	pptv	97
33) 1,1,2-Trichloroethane	13.462	97	3289	50.25	pptv	93
34) Tetrachloroethene	14.079	166	5012	45.83	pptv	100
35) 1,2-Dibromoethane	14.577	107	3283	39.37	pptv	98
36) Chlorobenzene	15.270	112	6591	44.56	pptv	100
37) Ethylbenzene	15.376	91	7141	36.08	pptv	99
38) p,&m-Xylene	15.505	91	9843	70.54	pptv	98
39) o-Xylene	16.186	91	4560	31.06	pptv	98
40) Styrene	16.216	104	2887	30.19	pptv	98
41) 1,1,2,2-Tetrachloroethane	16.985	83	4173	48.91	pptv	99

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV006.D
Acq On : 16 Nov 2018 3:33 am
Operator : vm
Sample : 50 PPTV ICAL
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 16 03:58:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

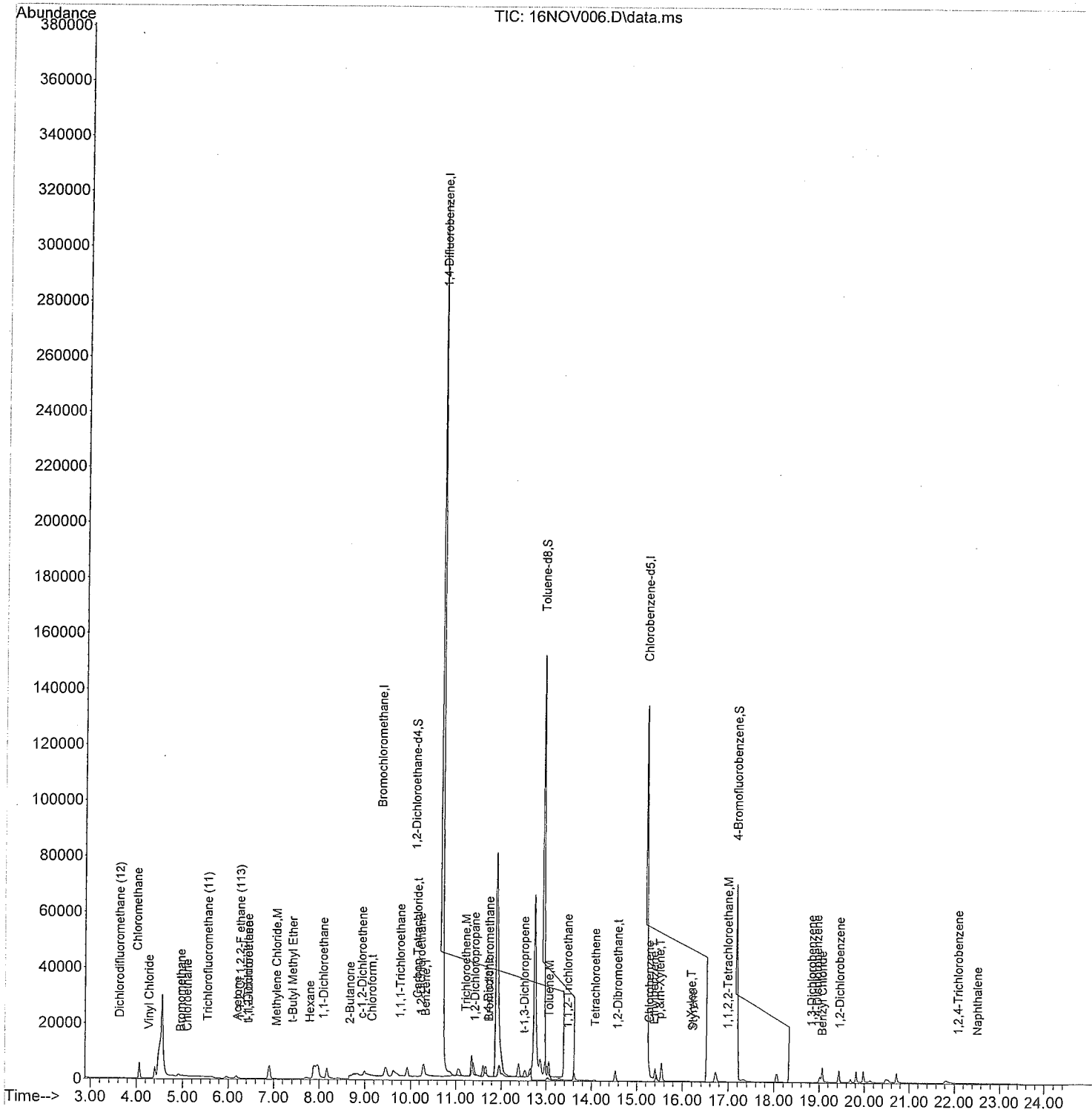
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.833	146	4611	52.49	pptv	100
44) 1,4-Dichlorobenzene	18.958	146	4671	54.54	pptv	99
45) Benzyl Chloride	19.066	91	1332	34.91	pptv #	82
46) 1,2-Dichlorobenzene	19.453	146	4601	53.24	pptv	96
47) 1,2,4-Trichlorobenzene	22.078	180	2782	50.16	pptv	98
48) Naphthalene	22.511	128	5332	48.25	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV006.D
Acq On : 16 Nov 2018 3:33 am
Operator : vm
Sample : 50 PPTV ICAL
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 16 03:58:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV007.D
Acq On : 16 Nov 2018 4:12 am
Operator : vm
Sample : 100 PPTV ICAL
Misc : 100 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 16 04:37:10 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.342	130	119099	2000.00	pptv	0.01
21) 1,4-Difluorobenzene	10.691	114	507741	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	298955	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.102	65	174308	2120.09	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 106.00%			
29) Toluene-d8	12.941	98	358865	1802.67	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 90.13%			
42) 4-Bromofluorobenzene	17.185	95	149687	1815.38	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 90.77%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.620	85	13268	79.82	pptv	98
3) Chloromethane	4.044	50	6970	133.02	pptv	96
4) Vinyl Chloride	4.265	62	4271	102.20	pptv	88
5) Bromomethane	4.946	96	1417	62.03	pptv	93
6) Chloroethane	5.086	64	2920	91.81	pptv	85
7) Trichlorofluoromethane...	5.537	101	16176	93.19	pptv	100
8) 1,1,2-Cl 1,2,2-F ethan...	6.253	151	12693	96.01	pptv	87
9) Acetone	6.176	43	24813	164.99	pptv	96
10) 1,1-Dichloroethene	6.431	96	6459	88.97	pptv	86
11) Methylene Chloride	7.058	49	6631	85.91	pptv	68
12) t-Butyl Methyl Ether	7.409	73	12213	78.91	pptv	78
13) t-1,2-Dichloroethene	6.431	96	6499	90.41	pptv	61
14) Hexane	7.790	57	6817	65.27	pptv	91
15) 1,1-Dichloroethane	8.089	63	9449	85.98	pptv	91
16) 2-Butanone	8.659	72	2540	76.39	pptv	52
17) c-1,2-Dichloroethene	8.931	96	5473	84.87	pptv	60
18) Chloroform	9.150	83	10746	87.84	pptv	100
19) 1,1,1-Trichloroethane	9.766	97	10269	92.01	pptv	96
20) Carbon Tetrachloride	10.148	117	7489	96.05	pptv	98
22) Benzene	10.331	78	19253	76.36	pptv	93
24) 1,2-Dichloroethane	10.233	62	8191	97.20	pptv	96
25) Trichloroethene	11.218	130	10198	92.28	pptv	98
26) 1,2-Dichloropropane	11.426	63	5496	78.61	pptv	89
27) 1,4-Dioxane	11.716	88	4171	80.59	pptv #	84
28) Bromodichloromethane	11.728	83	8126	86.36	pptv	98
30) Toluene	13.058	91	17100	75.27	pptv	99
32) t-1,3-Dichloropropene	12.511	75	3858	72.11	pptv	98
33) 1,1,2-Trichloroethane	13.465	97	6321	101.15	pptv	99
34) Tetrachloroethene	14.079	166	9645	92.37	pptv	97
35) 1,2-Dibromoethane	14.573	107	6342	79.66	pptv	96
36) Chlorobenzene	15.270	112	12143	85.98	pptv	98
37) Ethylbenzene	15.376	91	13219	69.95	pptv	98
38) p,&m-Xylene	15.507	91	18240	136.91	pptv	99
39) o-Xylene	16.190	91	8403	59.96	pptv	95
40) Styrene	16.214	104	5235	57.34	pptv	94
41) 1,1,2,2-Tetrachloroethane	16.983	83	7606	93.38	pptv	98

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV007.D
Acq On : 16 Nov 2018 4:12 am
Operator : vm
Sample : 100 PPTV ICAL
Misc : 100 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 16 04:37:10 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

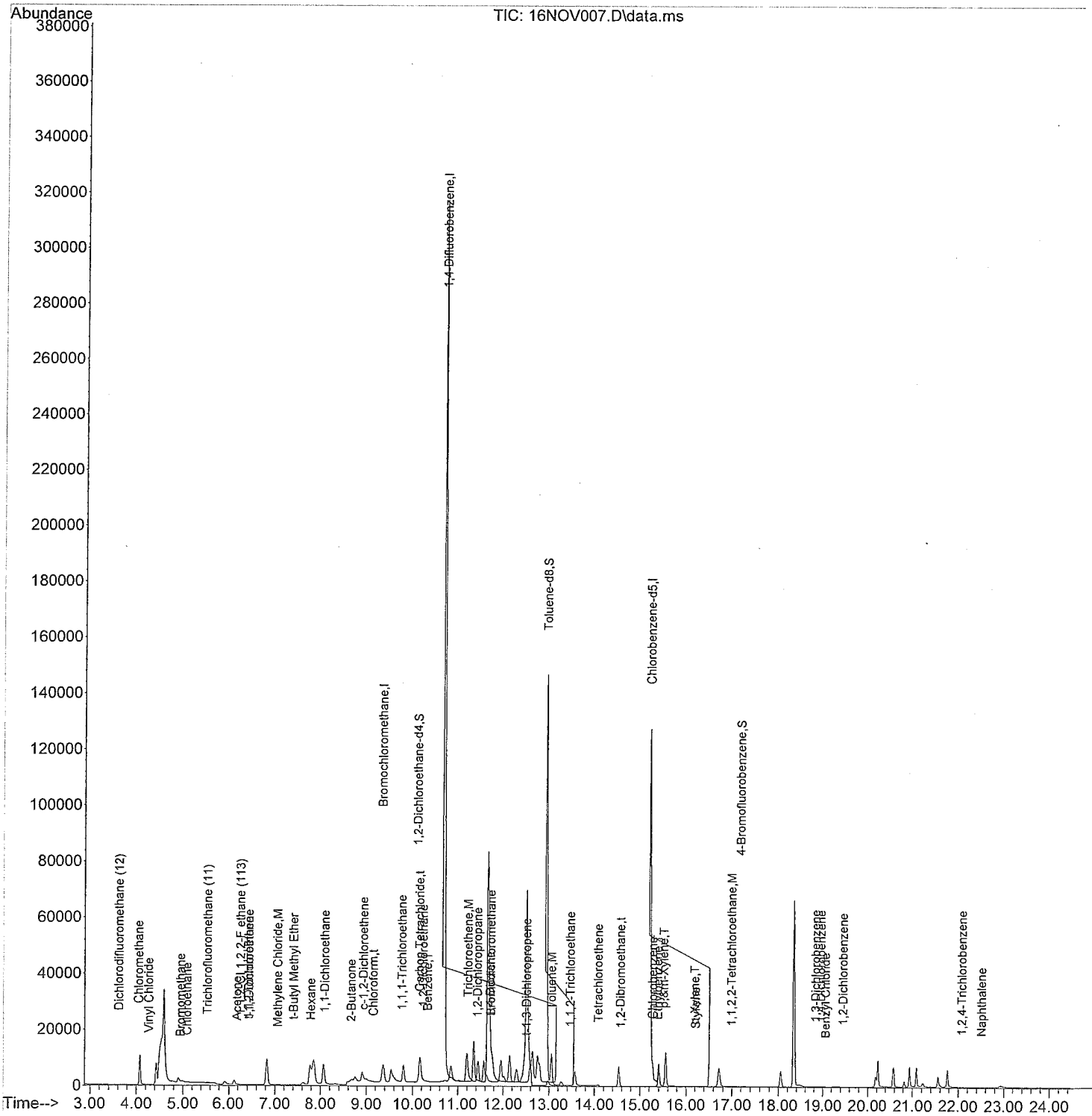
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
43) 1,3-Dichlorobenzene	18.833	146	7797	92.96	pptv		100
44) 1,4-Dichlorobenzene	18.961	146	7643	93.47	pptv		100
45) Benzyl Chloride	19.066	91	2366	64.95	pptv	#	86
46) 1,2-Dichlorobenzene	19.456	146	7875	95.45	pptv		96
47) 1,2,4-Trichlorobenzene	22.075	180	5062	95.59	pptv		96
48) Naphthalene	22.506	128	8948	84.81	pptv		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV007.D
Acq On : 16 Nov 2018 4:12 am
Operator : vm
Sample : 100 PPTV ICAL
Misc : 100 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 16 04:37:10 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV009.D
Acq On : 16 Nov 2018 5:31 am
Operator : vm
Sample : 200 PPTV ICAL
Misc : 50 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 16 10:40:31 2018
Quant Method : C:\msdchem\1\methods\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 09:38:14 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.336	130	120624	2000.00	pptv		0.00
21) 1,4-Difluorobenzene	10.685	114	504507	2000.00	pptv		0.00
31) Chlorobenzene-d5	15.208	117	304680	2000.00	pptv		0.00
System Monitoring Compounds							
23) 1,2-Dichloroethane-d4	10.096	65	173944	2039.26	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 101.96%				
29) Toluene-d8	12.938	98	362887	2024.79	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 101.24%				
42) 4-Bromofluorobenzene	17.184	95	160538	2096.70	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 104.83%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.599	85	30997	216.93	pptv		100
3) Chloromethane	4.021	50	9776	204.19	pptv		98
4) Vinyl Chloride	4.242	62	11176	242.59	pptv		98
5) Bromomethane	4.929	96	4152	200.66	pptv		97
6) Chloroethane	5.066	64	6972	208.20	pptv		81
7) Trichlorofluoromethane...	5.517	101	38469	200.49	pptv		100
8) 1,1,2-Cl 1,2,2-F ethan...	6.240	151	30130	210.77	pptv		89
9) Acetone	6.153	43	31357	279.81	pptv		100
10) 1,1-Dichloroethene	6.418	96	14887	208.57	pptv		80
11) Methylene Chloride	7.043	49	15016	212.67	pptv		64
12) t-Butyl Methyl Ether	7.387	73	29596	204.77	pptv		79
13) t-1,2-Dichloroethene	6.418	96	14887	209.24	pptv	#	52
14) Hexane	7.781	57	16635	186.36	pptv		94
15) 1,1-Dichloroethane	8.077	63	22866	217.89	pptv		98
16) 2-Butanone	8.644	72	5442	204.34	pptv		58
17) c-1,2-Dichloroethene	8.918	96	13186	214.39	pptv		60
18) Chloroform	9.144	83	26467	217.29	pptv		100
19) 1,1,1-Trichloroethane	9.754	97	25277	216.74	pptv		100
20) Carbon Tetrachloride	10.145	117	19464	217.98	pptv		95
22) Benzene	10.328	78	41810	218.33	pptv		94
24) 1,2-Dichloroethane	10.230	62	19646	219.57	pptv		92
25) Trichloroethene	11.215	130	23613	216.33	pptv		95
26) 1,2-Dichloropropane	11.417	63	13033	206.28	pptv		95
27) 1,4-Dioxane	11.703	88	9409	188.10	pptv	#	64
28) Bromodichloromethane	11.722	83	21131	217.20	pptv		99
30) Toluene	13.052	91	43337	228.78	pptv		99
32) t-1,3-Dichloropropene	12.504	75	10871	197.43	pptv		98
33) 1,1,2-Trichloroethane	13.459	97	15029	209.74	pptv		96
34) Tetrachloroethene	14.079	166	23039	213.58	pptv		96
35) 1,2-Dibromoethane	14.571	107	16926	209.11	pptv		99
36) Chlorobenzene	15.267	112	29003	215.53	pptv		98
37) Ethylbenzene	15.374	91	33406	210.70	pptv		99
38) p,&m-Xylene	15.502	91	50898	438.92	pptv		98
39) o-Xylene	16.186	91	22699	212.48	pptv		96
40) Styrene	16.210	104	14250	206.01	pptv		91
41) 1,1,2,2-Tetrachloroethane	16.983	83	18861	228.45	pptv		99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV009.D
Acq On : 16 Nov 2018 5:31 am
Operator : vm
Sample : 200 PPTV ICAL
Misc : 50 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 16 10:40:31 2018
Quant Method : C:\msdchem\1\methods\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 09:38:14 2018
Response via : Initial Calibration

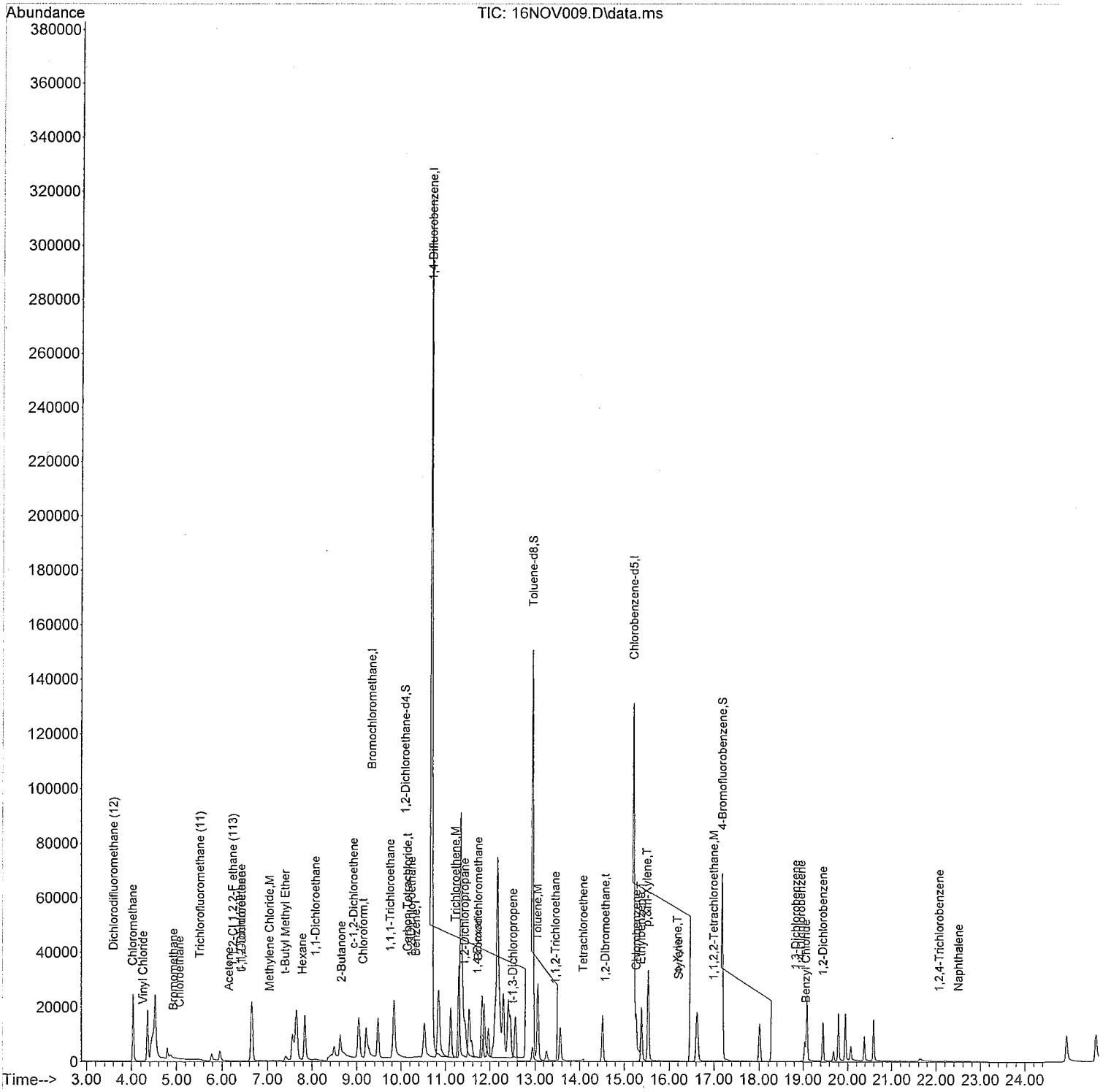
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	19511	234.21	pptv		99
44) 1,4-Dichlorobenzene	18.958	146	19513	224.98	pptv		97
45) Benzyl Chloride	19.066	91	9274	269.54	pptv	#	89
46) 1,2-Dichlorobenzene	19.453	146	19213	247.42	pptv		99
47) 1,2,4-Trichlorobenzene	22.069	180	18065	274.42	pptv		99
48) Naphthalene	22.496	128	34683	271.79	pptv		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV009.D
Acq On : 16 Nov 2018 5:31 am
Operator : vm
Sample : 200 PPTV ICAL
Misc : 50 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 16 10:40:31 2018
Quant Method : C:\msdchem\1\methods\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 09:38:14 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV010.D
Acq On : 16 Nov 2018 6:09 am
Operator : vm
Sample : 500 PPTV ICAL
Misc : 125 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 16 06:34:07 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.330	130	122220	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.685	114	512883	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.208	117	298716	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.096	65	169359	2039.24	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 101.96%			
29) Toluene-d8	12.935	98	360408	1792.27	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 89.61%			
42) 4-Bromofluorobenzene	17.182	95	153084	1858.06	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 92.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.588	85	73658	431.82	pptv	98
3) Chloromethane	4.001	50	23282	432.99	pptv	97
4) Vinyl Chloride	4.222	62	25162	586.70	pptv	98
5) Bromomethane	4.914	96	9956	424.73	pptv	98
6) Chloroethane	5.057	64	16689	511.31	pptv	84
7) Trichlorofluoromethane...	5.508	101	95208	534.47	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.233	151	73872	544.52	pptv	89
9) Acetone	6.136	43	62819	407.04	pptv	98
10) 1,1-Dichloroethene	6.408	96	36776	493.65	pptv	82
11) Methylene Chloride	7.030	49	35746	451.30	pptv	70
12) t-Butyl Methyl Ether	7.384	73	73186	460.80	pptv	80
13) t-1,2-Dichloroethene	6.408	96	36712	497.67	pptv	54
14) Hexane	7.769	57	41314	385.45	pptv	88
15) 1,1-Dichloroethane	8.074	63	56104	497.50	pptv	99
16) 2-Butanone	8.626	72	12769	374.22	pptv	44
17) c-1,2-Dichloroethene	8.915	96	33700	509.21	pptv	71
18) Chloroform	9.141	83	66033	526.00	pptv	99
19) 1,1,1-Trichloroethane	9.757	97	61768	539.30	pptv	100
20) Carbon Tetrachloride	10.139	117	49254	615.56	pptv	100
22) Benzene	10.319	78	99104	389.12	pptv	93
24) 1,2-Dichloroethane	10.221	62	47736	560.81	pptv	98
25) Trichloroethene	11.209	130	57261	512.96	pptv	97
26) 1,2-Dichloropropane	11.414	63	31910	451.86	pptv	100
27) 1,4-Dioxane	11.700	88	23416	447.89	pptv #	70
28) Bromodichloromethane	11.722	83	53794	565.97	pptv	98
30) Toluene	13.052	91	97132	423.27	pptv	99
32) t-1,3-Dichloropropene	12.501	75	29532	552.40	pptv	100
33) 1,1,2-Trichloroethane	13.455	97	35999	576.53	pptv	97
34) Tetrachloroethene	14.079	166	54510	522.45	pptv	98
35) 1,2-Dibromoethane	14.569	107	42857	538.76	pptv	98
36) Chlorobenzene	15.265	112	67404	477.64	pptv	99
37) Ethylbenzene	15.371	91	79271	419.83	pptv	98
38) p,&m-Xylene	15.502	91	117607	883.48	pptv	98
39) o-Xylene	16.188	91	52774	376.84	pptv	97
40) Styrene	16.210	104	35426	388.34	pptv	93
41) 1,1,2,2-Tetrachloroethane	16.983	83	44644	548.53	pptv	98

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV010.D
Acq On : 16 Nov 2018 6:09 am
Operator : vm
Sample : 500 PPTV ICAL
Misc : 125 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 16 06:34:07 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration

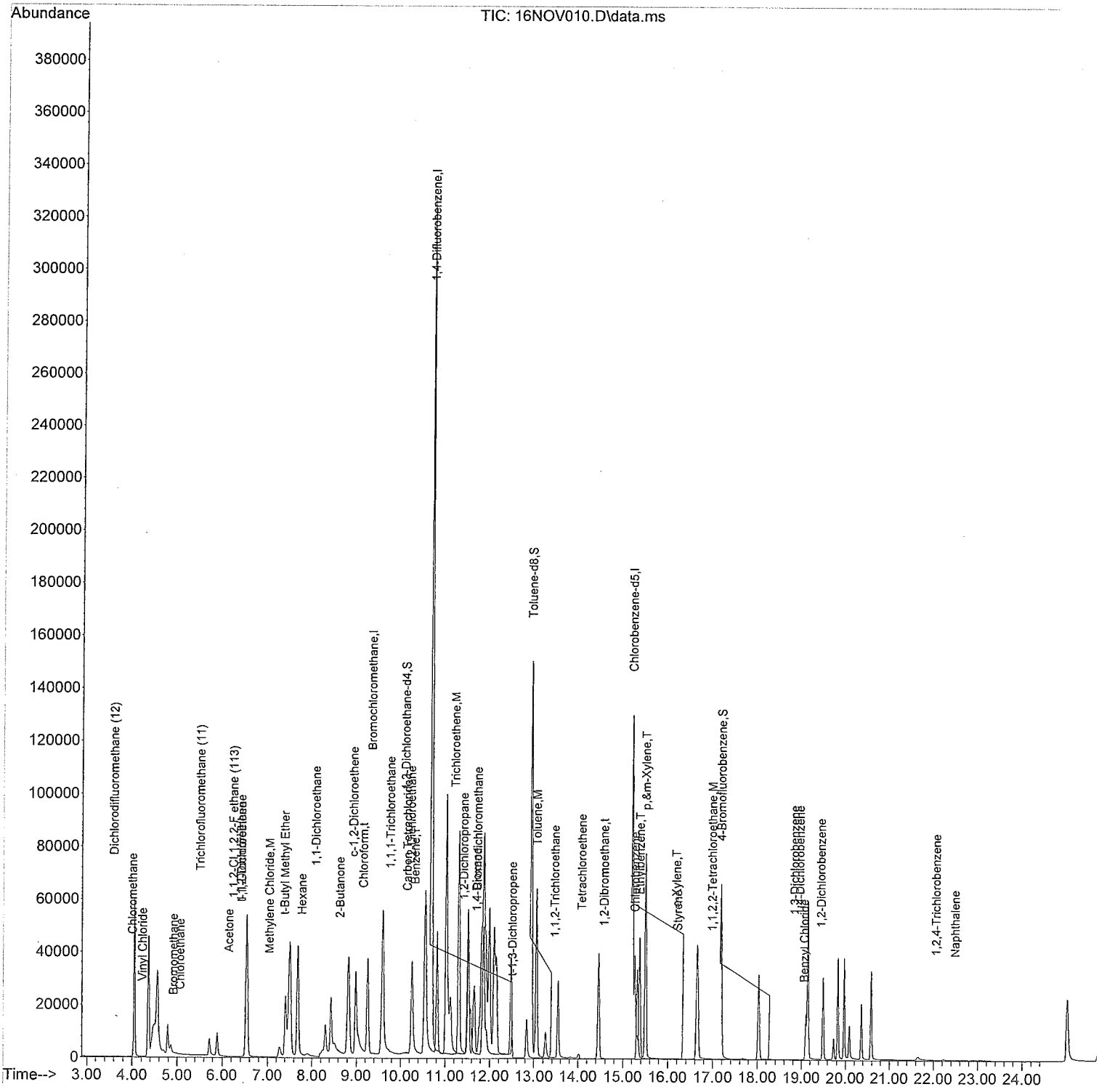
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	43320	516.92	pptv		99
44) 1,4-Dichlorobenzene	18.956	146	43262	529.51	pptv		97
45) Benzyl Chloride	19.063	91	21385	587.48	pptv	#	90
46) 1,2-Dichlorobenzene	19.453	146	41597	504.58	pptv		98
47) 1,2,4-Trichlorobenzene	22.052	180	39345	743.59	pptv		100
48) Naphthalene	22.486	128	75135	712.73	pptv		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV010.D
Acq On : 16 Nov 2018 6:09 am
Operator : vm
Sample : 500 PPTV ICAL
Misc : 125 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 16 06:34:07 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Tue Oct 30 12:11:21 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV011.D
Acq On : 16 Nov 2018 6:51 am
Operator : vm
Sample : 1000 PPTV ICAL
Misc : 250 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 16 10:43:44 2018
Quant Method : C:\msdchem\1\methods\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:41:12 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.327	130	123505	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.682	114	518118	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.208	117	292560	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.090	65	173224	1976.85	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery =	98.84%		
29) Toluene-d8	12.935	98	358321	1946.72	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery =	97.34%		
42) 4-Bromofluorobenzene	17.180	95	143940	1958.64	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery =	97.93%		
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.576	85	145211	992.53	pptv	98
3) Chloromethane	3.980	50	48286	985.01	pptv	99
4) Vinyl Chloride	4.201	62	52838	1106.36	pptv	99
5) Bromomethane	4.897	96	11337	537.65	pptv	98
6) Chloroethane	5.042	64	30534	890.56	pptv	83
7) Trichlorofluoromethane...	5.499	101	193315	984.01	pptv	98
8) 1,1,2-Cl 1,2,2-F ethan...	6.227	151	148299	1013.20	pptv	89
9) Acetone	6.126	43	115770	1009.97	pptv	98
10) 1,1-Dichloroethene	6.397	96	73358	1003.46	pptv	81
11) Methylene Chloride	7.027	49	72750	1009.85	pptv	70
12) t-Butyl Methyl Ether	7.375	73	149776	1012.26	pptv	78
13) t-1,2-Dichloroethene	6.397	96	72331m	991.00	pptv	
14) Hexane	7.768	57	84542	925.29	pptv	90
15) 1,1-Dichloroethane	8.070	63	111880	1041.28	pptv	98
16) 2-Butanone	8.613	72	28734	1053.76	pptv	48
17) c-1,2-Dichloroethene	8.909	96	68413	1083.39	pptv	71
18) Chloroform	9.141	83	133310	1068.90	pptv	99
19) 1,1,1-Trichloroethane	9.757	97	126933	1063.19	pptv	99
20) Carbon Tetrachloride	10.142	117	104824	1146.34	pptv	98
22) Benzene	10.319	78	196272	999.02	pptv	91
24) 1,2-Dichloroethane	10.218	62	88017	957.88	pptv	97
25) Trichloroethene	11.209	130	114023	1017.15	pptv	97
26) 1,2-Dichloropropane	11.408	63	64155	989.58	pptv	98
27) 1,4-Dioxane	11.697	88	47578	926.19	pptv #	74
28) Bromodichloromethane	11.719	83	115667	1157.60	pptv	98
30) Toluene	13.051	91	186806	960.86	pptv	100
32) t-1,3-Dichloropropene	12.498	75	67829	1282.95	pptv	99
33) 1,1,2-Trichloroethane	13.452	97	72095	1048.15	pptv	95
34) Tetrachloroethene	14.079	166	106875	1031.85	pptv	98
35) 1,2-Dibromoethane	14.565	107	91965	1182.66	pptv	97
36) Chlorobenzene	15.265	112	130649	1011.14	pptv	98
37) Ethylbenzene	15.371	91	154588	1015.45	pptv	98
38) p,&m-Xylene	15.500	91	227359	2041.91	pptv	100
39) o-Xylene	16.186	91	104480	1018.54	pptv	97
40) Styrene	16.206	104	73499	1106.57	pptv	90
41) 1,1,2,2-Tetrachloroethane	16.982	83	86729	1092.59	pptv	99

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV011.D
Acq On : 16 Nov 2018 6:51 am
Operator : vm
Sample : 1000 PPTV ICAL
Misc : 250 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 16 10:43:44 2018
Quant Method : C:\msdchem\1\methods\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:41:12 2018
Response via : Initial Calibration

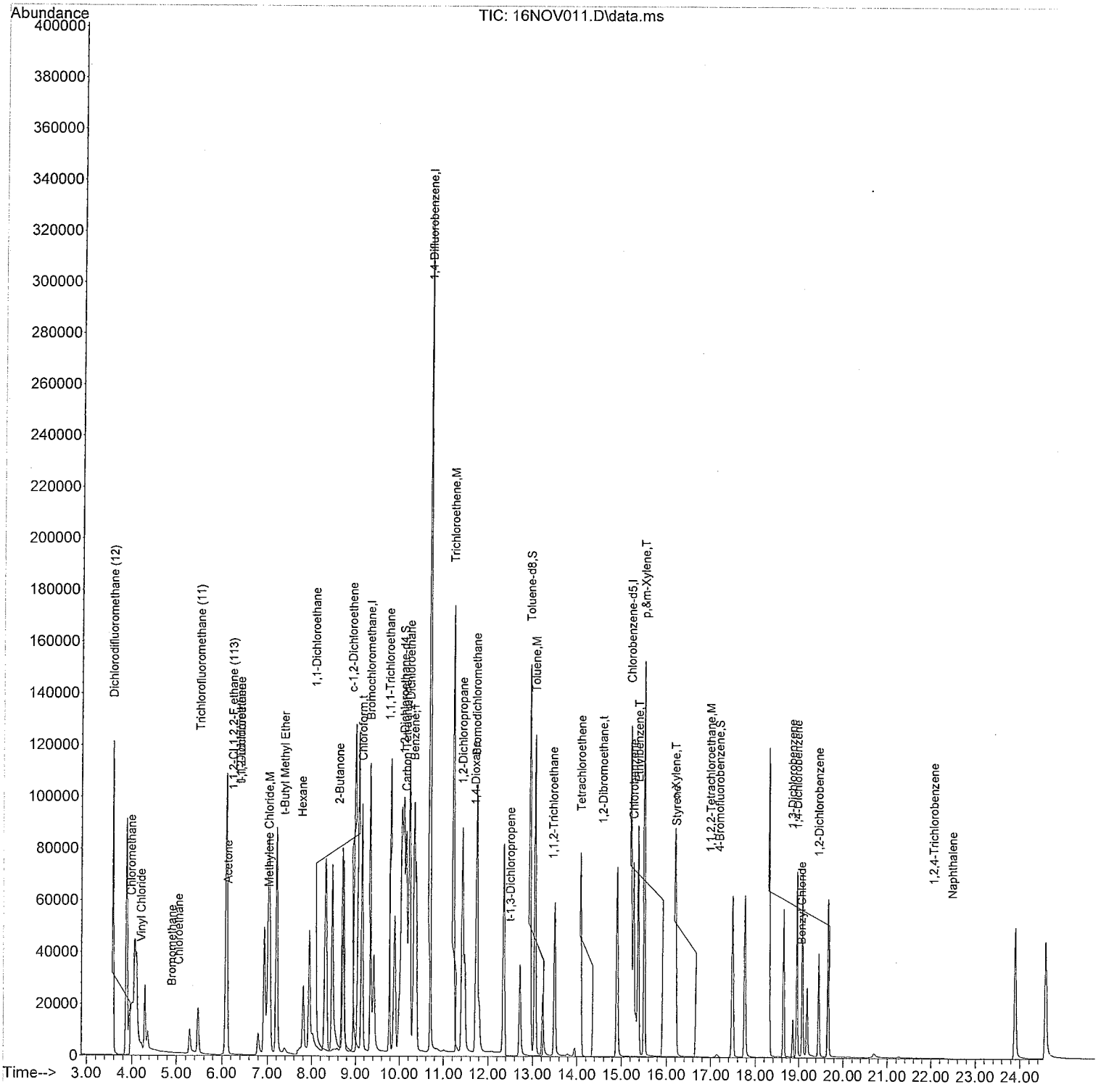
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	79765	997.21	pptv	99
44) 1,4-Dichlorobenzene	18.955	146	79172	950.65	pptv	99
45) Benzyl Chloride	19.063	91	43758	1324.48	pptv	91
46) 1,2-Dichlorobenzene	19.450	146	75261	1009.36	pptv	99
47) 1,2,4-Trichlorobenzene	22.049	180	72954	1154.18	pptv	100
48) Naphthalene	22.475	128	145702	1189.13	pptv	100

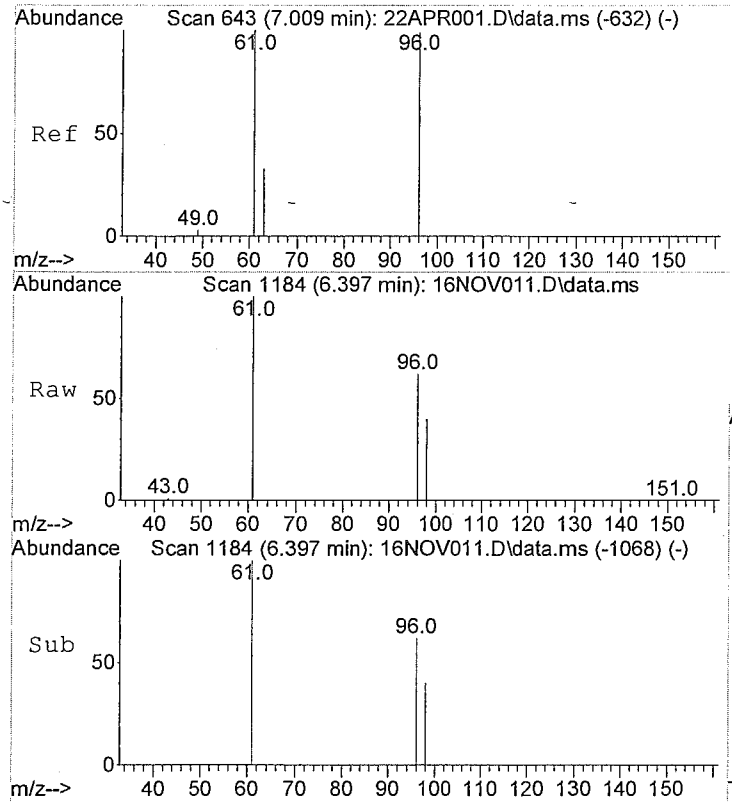
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV011.D
Acq On : 16 Nov 2018 6:51 am
Operator : vm
Sample : 1000 PPTV ICAL
Misc : 250 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 16 10:43:44 2018
Quant Method : C:\msdchem\1\methods\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:41:12 2018
Response via : Initial Calibration

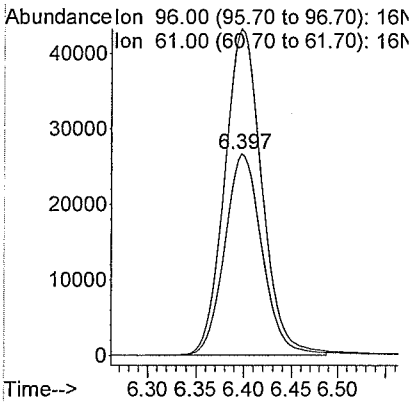




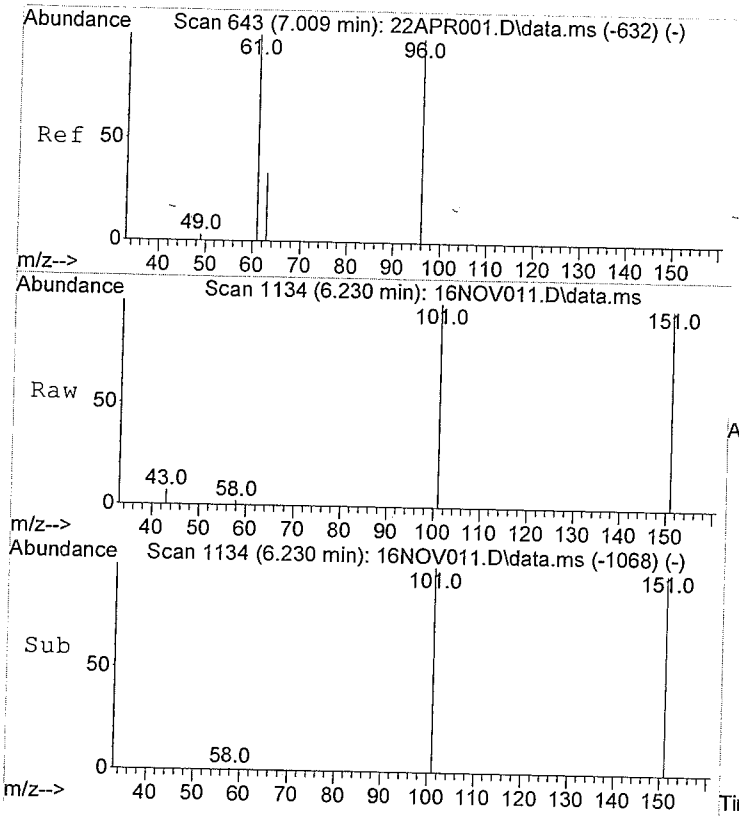
#13
t-1,2-Dichloroethene
Concen: 991.00 pptv m
RT: 6.397 min Scan# 1184
Delta R.T. -0.011 min
Lab File: 16NOV011.D
Acq: 16 Nov 2018 6:51 am

Tgt Ion: 96 Resp: 72331

Ion	Ratio	Lower	Upper
96	100		
61	162.0	61.4	161.4#



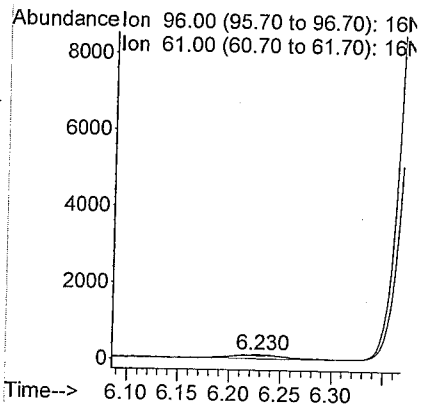
ML-3 mdl 11/16/18



#13
t-1,2-Dichloroethene
Concen: 5.60 pptv
RT: 6.230 min Scan# 1134
Delta R.T. -0.178 min
Lab File: 16NOV011.D
Acq: 16 Nov 2018 6:51 am

Tgt Ion: 96 Resp: 409

Ion	Ratio	Lower	Upper
96	100		
61	68.1	61.4	161.4



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV012.D
Acq On : 16 Nov 2018 7:29 am
Operator : vm
Sample : 2000 PPTV ICAL
Misc : 50 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 16 07:54:00 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 07:06:49 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.321	130	132866	2000.00	pptv		0.00
21) 1,4-Difluorobenzene	10.678	114	493719	2000.00	pptv		0.00
31) Chlorobenzene-d5	15.205	117	287150	2000.00	pptv		0.00
System Monitoring Compounds							
23) 1,2-Dichloroethane-d4	10.086	65	171209	2097.44	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 104.87%				
29) Toluene-d8	12.934	98	344307	1899.73	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 94.99%				
42) 4-Bromofluorobenzene	17.180	95	143026	1903.97	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 95.20%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.555	85	282221	1425.20	pptv		97
3) Chloromethane	3.951	50	99632	531.13	pptv		99
4) Vinyl Chloride	4.172	62	106272	2156.87	pptv		100
5) Bromomethane	4.870	96	66354	1958.21	pptv		98
6) Chloroethane	5.016	64	66103	1838.20	pptv		82
7) Trichlorofluoromethane...	5.481	101	367837	1800.93	pptv		99
8) 1,1,2-Cl 1,2,2-F ethan...	6.216	151	281084	1829.05	pptv		89
9) Acetone	6.109	43	187537	182.29	pptv		98
10) 1,1-Dichloroethene	6.387	96	135182	1731.72	pptv		82
11) Methylene Chloride	7.015	49	135329	1353.68	pptv		74
12) t-Butyl Methyl Ether	7.362	73	296438	1825.01	pptv		80
13) t-1,2-Dichloroethene	6.387	96	135182	1932.86	pptv		54
14) Hexane	7.762	57	161122	1573.36	pptv		91
15) 1,1-Dichloroethane	8.064	63	216960	1850.78	pptv		99
16) 2-Butanone	8.604	72	55262	1117.39	pptv		51
17) c-1,2-Dichloroethene	8.906	96	131882	1928.45	pptv		77
18) Chloroform	9.135	83	255200	1904.90	pptv		98
19) 1,1,1-Trichloroethane	9.748	97	252703	1976.46	pptv		97
20) Carbon Tetrachloride	10.135	117	226037	2411.55	pptv		99
22) Benzene	10.315	78	359191	1076.77	pptv		92
24) 1,2-Dichloroethane	10.215	62	170413	1990.60	pptv		97
25) Trichloroethene	11.206	130	201568	1922.45	pptv		97
26) 1,2-Dichloropropane	11.401	63	120210	1929.15	pptv		100
27) 1,4-Dioxane	11.694	88	90382	1842.49	pptv	#	74
28) Bromodichloromethane	11.712	83	241320	2634.25	pptv		98
30) Toluene	13.048	91	325799	1221.10	pptv		100
32) t-1,3-Dichloropropene	12.494	75	150759	3038.32	pptv		99
33) 1,1,2-Trichloroethane	13.451	97	134307	2083.29	pptv		97
34) Tetrachloroethene	14.074	166	201581	2059.89	pptv		97
35) 1,2-Dibromoethane	14.562	107	190897	2647.85	pptv		98
36) Chlorobenzene	15.262	112	238776	1890.64	pptv		98
37) Ethylbenzene	15.368	91	285870	1843.88	pptv		99
38) p,&m-Xylene	15.497	91	387894	3042.87	pptv		100
39) o-Xylene	16.185	91	180871	1683.76	pptv		96
40) Styrene	16.206	104	134888	1968.26	pptv		92
41) 1,1,2,2-Tetrachloroethane	16.980	83	153755	1967.57	pptv		99

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV012.D
Acq On : 16 Nov 2018 7:29 am
Operator : vm
Sample : 2000 PPTV ICAL
Misc : 50 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 16 07:54:00 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 07:06:49 2018
Response via : Initial Calibration

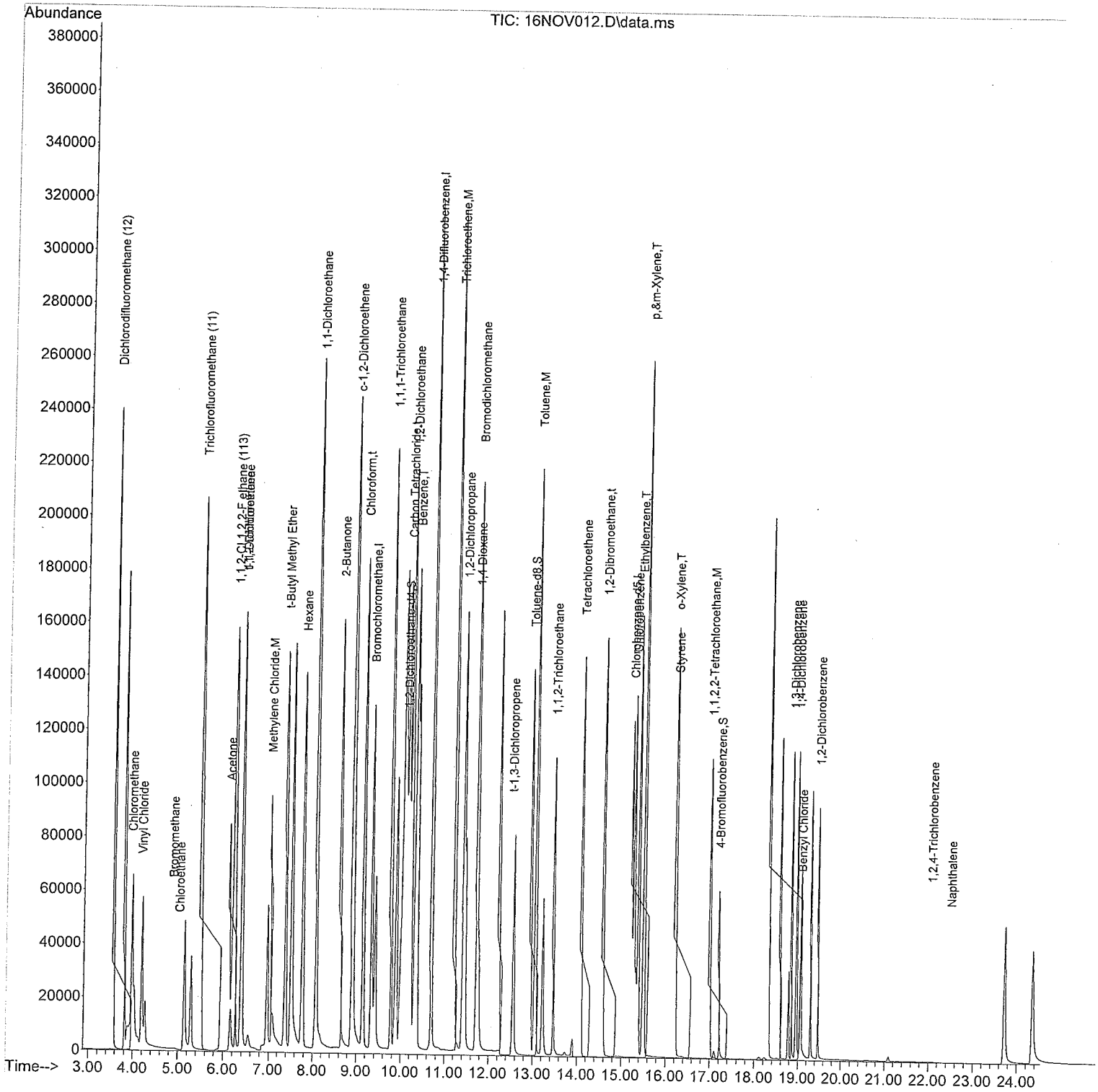
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.827	146	128429	1554.31	pptv	100
44) 1,4-Dichlorobenzene	18.955	146	127877	1500.19	pptv	99
45) Benzyl Chloride	19.063	91	89260	2658.19	pptv	92
46) 1,2-Dichlorobenzene	19.450	146	115509	1478.09	pptv	99
47) 1,2,4-Trichlorobenzene	22.049	180	81411	1415.86	pptv	100
48) Naphthalene	22.486	128	148978	1250.11	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181112\
Data File : 16NOV012.D
Acq On : 16 Nov 2018 7:29 am
Operator : vm
Sample : 2000 PPTV ICAL
Misc : 50 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 16 07:54:00 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 07:06:49 2018
Response via : Initial Calibration



SL181116.M Fri Nov 16 07:54:01 2018 GCMS1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV013.D
Acq On : 16 Nov 2018 8:10 am
Operator : vm
Sample : 10000 PPTV ICAL
Misc : 250 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 16 10:51:35 2018
Quant Method : C:\msdchem\1\methods\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:44:07 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	9.324	130	129330	2000.00 pptv	0.00
21) 1,4-Difluorobenzene	10.681	114	467849	2000.00 pptv	0.00
31) Chlorobenzene-d5	15.205	117	255966	2000.00 pptv	0.00
System Monitoring Compounds					
23) 1,2-Dichloroethane-d4	10.090	65	169779	2145.72 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 107.29%		
29) Toluene-d8	12.931	98	320637	1929.16 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 96.46%		
42) 4-Bromofluorobenzene	17.180	95	123095	1914.46 pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 95.72%		
Target Compounds					Qvalue
2) Dichlorodifluoromethan...	3.512	85	1326727	8659.86 pptv	96
3) Chloromethane	3.905	50	500837m	9756.69 pptv	
4) Vinyl Chloride	4.129	62	534510	10687.91 pptv	98
5) Bromomethane	4.838	96	222057	10056.55 pptv	98
6) Chloroethane	4.984	64	322663	8987.01 pptv	80
7) Trichlorofluoromethane...	5.458	101	1779977	8652.35 pptv	98
8) 1,1,2-Cl 1,2,2-F ethan...	6.200	151	1315904	8585.50 pptv	88
9) Acetone	6.096	43	863160	7194.60 pptv	100
10) 1,1-Dichloroethene	6.367	96	632236	8258.78 pptv	83
11) Methylene Chloride	7.003	49	643367	8528.42 pptv	73
12) t-Butyl Methyl Ether	7.357	73	1416369	9141.37 pptv	82
13) t-1,2-Dichloroethene	6.367	96	632251	8270.71 pptv	55
14) Hexane	7.753	57	767804	8024.95 pptv	91
15) 1,1-Dichloroethane	8.058	63	951066	8452.99 pptv	99
16) 2-Butanone	8.601	72	264148	9250.77 pptv	59
17) c-1,2-Dichloroethene	8.903	96	597130	9030.23 pptv	75
18) Chloroform	9.138	83	1193726	9140.42 pptv	98
19) 1,1,1-Trichloroethane	9.751	97	1215032	9718.70 pptv	97
20) Carbon Tetrachloride	10.138	117	1149384	12003.39 pptv	99
22) Benzene	10.315	78	1434633	8086.85 pptv	90
24) 1,2-Dichloroethane	10.218	62	784229	9451.70 pptv	99
25) Trichloroethene	11.206	130	923896	9127.27 pptv	96
26) 1,2-Dichloropropane	11.404	63	556392	9504.42 pptv	99
27) 1,4-Dioxane	11.694	88	432700	9328.30 pptv #	73
28) Bromodichloromethane	11.716	83	1169376	12960.69 pptv	98
30) Toluene	13.048	91	1295192	7377.83 pptv	99
32) t-1,3-Dichloropropene	12.494	75	792812	17139.48 pptv	98
33) 1,1,2-Trichloroethane	13.452	97	602589	10013.17 pptv	96
34) Tetrachloroethene	14.077	166	883288	9747.06 pptv	96
35) 1,2-Dibromoethane	14.563	107	918245	13496.77 pptv	98
36) Chlorobenzene	15.262	112	874461	7735.29 pptv	97
37) Ethylbenzene	15.366	91	968190	7268.99 pptv	97
38) p,&m-Xylene	15.495	91	1160432	11911.79 pptv	99
39) o-Xylene	16.182	91	712203	7935.63 pptv	95
40) Styrene	16.202	104	464361	7990.69 pptv	91
41) 1,1,2,2-Tetrachloroethane	16.980	83	638346	9191.36 pptv	97

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV013.D
Acq On : 16 Nov 2018 8:10 am
Operator : vm
Sample : 10000 PPTV ICAL
Misc : 250 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 16 10:51:35 2018
Quant Method : C:\msdchem\1\methods\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:44:07 2018
Response via : Initial Calibration

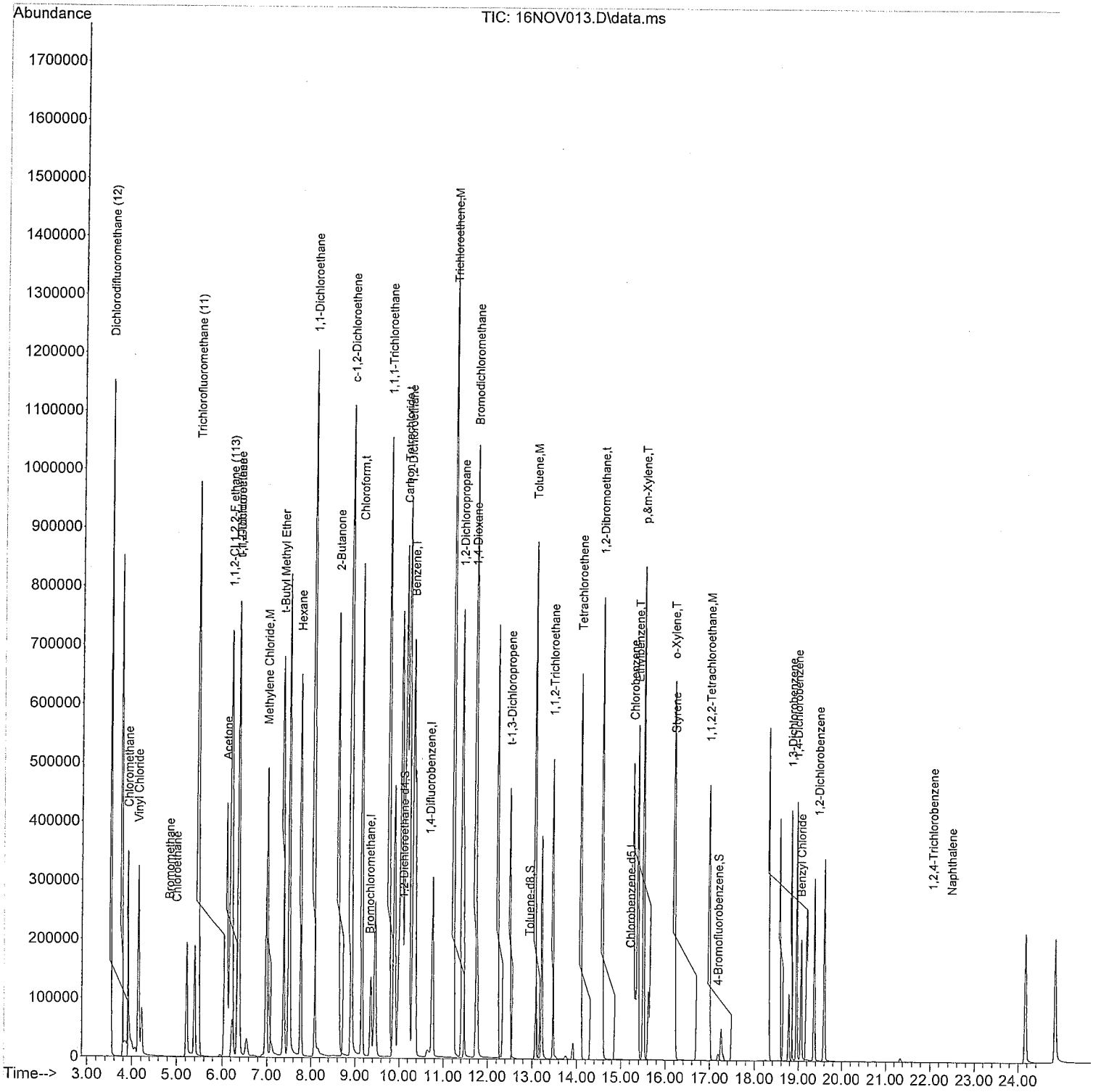
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.827	146	468885	6699.96 pptv	99
44) 1,4-Dichlorobenzene	18.952	146	473828	6502.83 pptv	98
45) Benzyl Chloride	19.057	91	314936	10895.41 pptv	95
46) 1,2-Dichlorobenzene	19.450	146	416100	6378.31 pptv	99
47) 1,2,4-Trichlorobenzene	22.046	180	295717	5347.28 pptv	100
48) Naphthalene	22.468	128	582111	5430.05 pptv	100

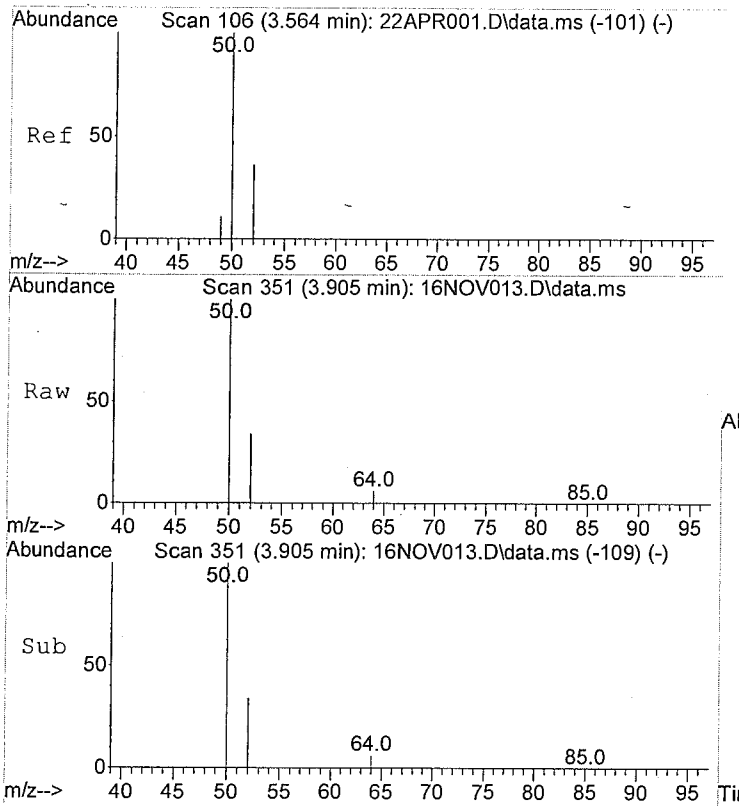
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV013.D
Acq On : 16 Nov 2018 8:10 am
Operator : vm
Sample : 10000 PPTV ICAL
Misc : 250 ML
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 16 10:51:35 2018
Quant Method : C:\msdchem\1\methods\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:44:07 2018
Response via : Initial Calibration

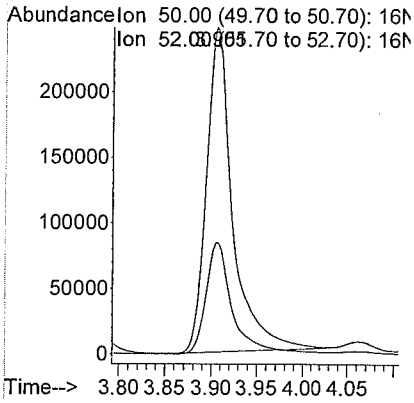




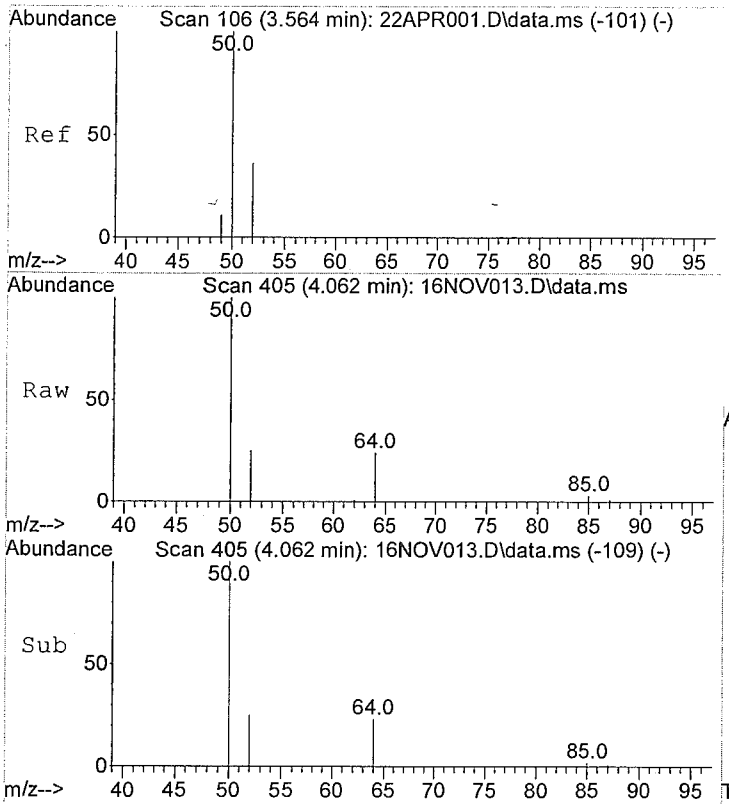
#3
Chloromethane
Concen: 9756.69 pptv m
RT: 3.905 min Scan# 351
Delta R.T. -0.096 min
Lab File: 16NOV013.D
Acq: 16 Nov 2018 8:10 am

Tgt Ion: 50 Resp: 500837

Ion	Ratio	Lower	Upper
50	100		
52	34.1	3.0	63.0



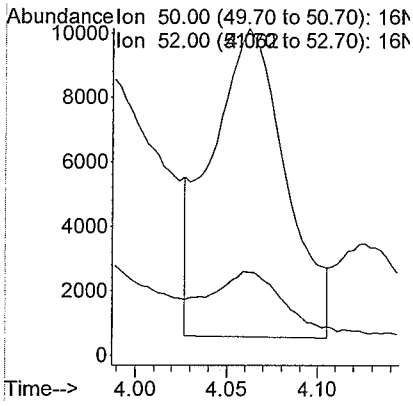
M1-3
11/16/18



#3
Chloromethane
Concen: 527.60 pptv
RT: 4.062 min Scan# 405
Delta R.T. 0.061 min
Lab File: 16NOV013.D
Acq: 16 Nov 2018 8:10 am

Tgt Ion: 50 Resp: 27083

Ion	Ratio	Lower	Upper
50	100		
52	22.6	3.0	63.0



4. Initial Calibration Verification

a. ICV Summary
b. Results/Chromatograms

Default Initial Calibration Criteria:

Target compounds must have %Diff <30%

(This criteria superseded by any project specific criteria)

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV017.D
Acq On : 16 Nov 2018 10:50 am
Operator : vm
Sample : ICV/LCS
Misc : 125 ML
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 16 15:15:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:52:36 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 40% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 175%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	72	0.00
2		Dichlorodifluoromethane (12	2.369	2.470	-4.3	74	0.00
3		Chloromethane	0.789	0.824	-4.4	78	0.00
4		Vinyl Chloride	0.773	0.830	-7.4	73	0.00
5		Bromomethane	0.341	0.281	17.6	62	0.00
6		Chloroethane	0.555	0.536	3.4	71	-0.01
7		Trichlorofluoromethane (11)	3.181	3.191	-0.3	74	0.00
8		1,1,2-Cl 1,2,2-F ethane (11	2.370	2.301	2.9	68	0.00
9		Acetone	1.855	2.070	-11.6	72	0.00
10		1,1-Dichloroethene	1.184	1.132	4.4	68	0.00
11	M	Methylene Chloride	1.167	1.162	0.4	71	0.00
12		t-Butyl Methyl Ether	2.396	2.357	1.6	71	0.00
13		t-1,2-Dichloroethene	1.182	1.099	7.0	66	0.00
14		Hexane	1.480	1.298	12.3	69	0.00
15		1,1-Dichloroethane	1.740	1.846	-6.1	72	0.00
16		2-Butanone	0.442	0.460	-4.1	79	0.00
17		c-1,2-Dichloroethene	1.023	1.108	-8.3	72	0.00
18	t	Chloroform	2.020	2.167	-7.3	72	0.00
19		1,1,1-Trichloroethane	1.933	2.103	-8.8	75	0.00
20	t	Carbon Tetrachloride	1.481	1.753	-18.4	78	0.00
21	I	1,4-Difluorobenzene	1.000	1.000	0.0	77	0.00
22	T	Benzene	0.758	0.731	3.6	73	0.00
23	S	1,2-Dichloroethane-d4	0.338	0.333	1.5	77	0.00
24		1,2-Dichloroethane	0.355	0.359	-1.1	74	0.00
25	M	Trichloroethene	0.433	0.447	-3.2	77	0.00
26		1,2-Dichloropropane	0.250	0.238	4.8	73	0.00
27		1,4-Dioxane	0.198	0.175	11.6	74	0.00
28		Bromodichloromethane	0.386	0.417	-8.0	76	0.00
29	S	Toluene-d8	0.711	0.713	-0.3	78	0.00
30	M	Toluene	0.750	0.678	9.6	69	0.00
31	I	Chlorobenzene-d5	1.000	1.000	0.0	79	0.00
32		t-1,3-Dichloropropene	0.361	0.389	-7.8	78	0.00
33		1,1,2-Trichloroethane	0.470	0.452	3.8	74	0.00
34		Tetrachloroethene	0.708	0.680	4.0	74	0.00
35	t	1,2-Dibromoethane	0.532	0.503	5.5	70	0.00
36		Chlorobenzene	0.883	0.867	1.8	76	0.00
37	T	Ethylbenzene	1.041	0.978	6.1	73	0.00
38	T	p,&m-Xylene	0.761	0.693	8.9	70	0.00
39	T	o-Xylene	0.701	0.657	6.3	74	0.00
40		Styrene	0.454	0.470	-3.5	79	0.00
41	M	1,1,2,2-Tetrachloroethane	0.543	0.571	-5.2	76	0.00
42	S	4-Bromofluorobenzene	0.502	0.534	-6.4	83	0.00
43		1,3-Dichlorobenzene	0.547	0.582	-6.4	80	0.00
44		1,4-Dichlorobenzene	0.569	0.590	-3.7	81	0.00

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV017.D
Acq On : 16 Nov 2018 10:50 am
Operator : vm
Sample : ICV/LCS
Misc : 125 ML
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 16 15:15:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:52:36 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 40% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 175%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
45	Benzyl Chloride	0.226	0.325	-43.8#	90	0.00
46	1,2-Dichlorobenzene	0.510	0.560	-9.8	80	0.00
47	1,2,4-Trichlorobenzene	0.432	0.567	-31.2#	85	0.00
48	Naphthalene	0.838	1.055	-25.9	83	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV017.D
Acq On : 16 Nov 2018 10:50 am
Operator : vm
Sample : ICV/LCS
Misc : 125 ML
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 16 15:15:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:52:36 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.330	130	87924	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.685	114	393511	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.208	117	237167	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.096	65	131144	1970.55	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 98.53%			
29) Toluene-d8	12.935	98	280506	2006.53	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 100.33%			
42) 4-Bromofluorobenzene	17.182	95	126582	2124.74	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 106.24%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.579	85	54286	521.21	pptv	99
3) Chloromethane	3.995	50	18108	522.13	pptv	98
4) Vinyl Chloride	4.213	62	18254	536.89	pptv	97
5) Bromomethane	4.905	96	6178	411.55	pptv	95
6) Chloroethane	5.045	64	11792	483.11	pptv	80
7) Trichlorofluoromethane...	5.505	101	70149	501.57	pptv	99
8) 1,1,2-Cl 1,2,2-F ethan...	6.230	151	50569	485.29	pptv	89
9) Acetone	6.133	43	45502	557.88	pptv	96
10) 1,1-Dichloroethene	6.404	96	24884	478.13	pptv	80
11) Methylene Chloride	7.030	49	25539	497.97	pptv	70
12) t-Butyl Methyl Ether	7.384	73	51808	491.84	pptv	80
13) t-1,2-Dichloroethene	6.404	96	24167m	465.01	pptv	
14) Hexane	7.768	57	28529	438.60	pptv	89
15) 1,1-Dichloroethane	8.070	63	40581	530.54	pptv	96
16) 2-Butanone	8.629	72	10116	521.11	pptv	53
17) c-1,2-Dichloroethene	8.915	96	24346	541.56	pptv	67
18) Chloroform	9.138	83	47628	536.43	pptv	100
19) 1,1,1-Trichloroethane	9.751	97	46237	544.00	pptv	99
20) Carbon Tetrachloride	10.142	117	38541	592.04	pptv	98
22) Benzene	10.322	78	71905	481.89	pptv	90
24) 1,2-Dichloroethane	10.224	62	35326	506.19	pptv	97
25) Trichloroethene	11.209	130	43958	516.30	pptv	97
26) 1,2-Dichloropropane	11.411	63	23421	475.66	pptv	99
27) 1,4-Dioxane	11.700	88	17221	441.39	pptv #	74
28) Bromodichloromethane	11.722	83	41013	540.44	pptv	99
30) Toluene	13.051	91	66670	451.52	pptv	99
32) t-1,3-Dichloropropene	12.501	75	23067	538.20	pptv	100
33) 1,1,2-Trichloroethane	13.455	97	26801	480.65	pptv	96
34) Tetrachloroethene	14.079	166	40317	480.16	pptv	97
35) 1,2-Dibromoethane	14.569	107	29802	472.76	pptv	97
36) Chlorobenzene	15.267	112	51408	490.79	pptv	97
37) Ethylbenzene	15.371	91	57962	469.66	pptv	99
38) p,&m-Xylene	15.502	91	82125	909.83	pptv	99
39) o-Xylene	16.188	91	38929	468.14	pptv	96
40) Styrene	16.210	104	27883	517.84	pptv	92
41) 1,1,2,2-Tetrachloroethane	16.983	83	33881	526.51	pptv	99

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV017.D
Acq On : 16 Nov 2018 10:50 am
Operator : vm
Sample : ICV/LCS
Misc : 125 ML
ALS Vial : 8 Sample Multiplier: 1

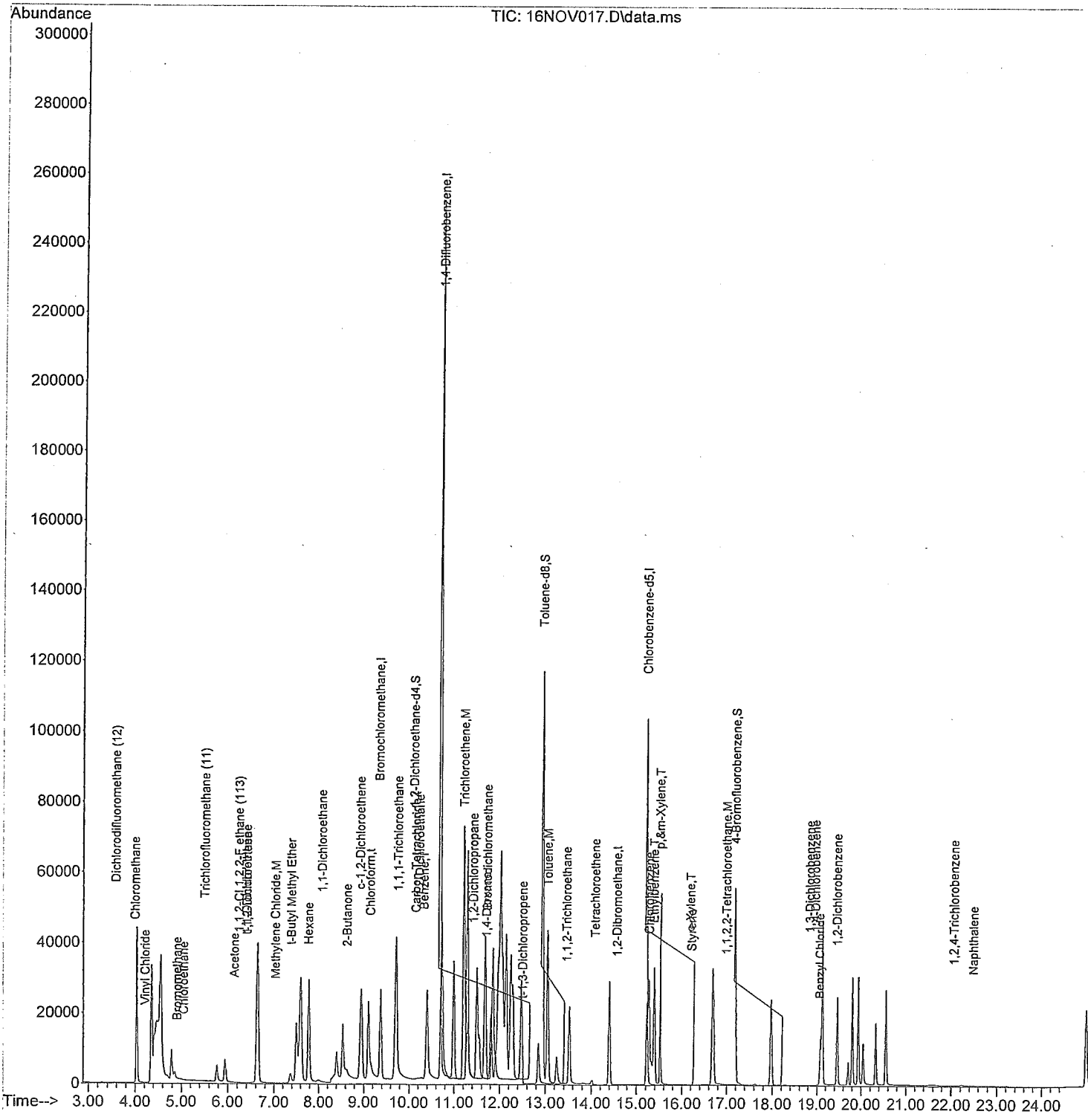
Quant Time: Nov 16 15:15:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:52:36 2018
Response via : Initial Calibration

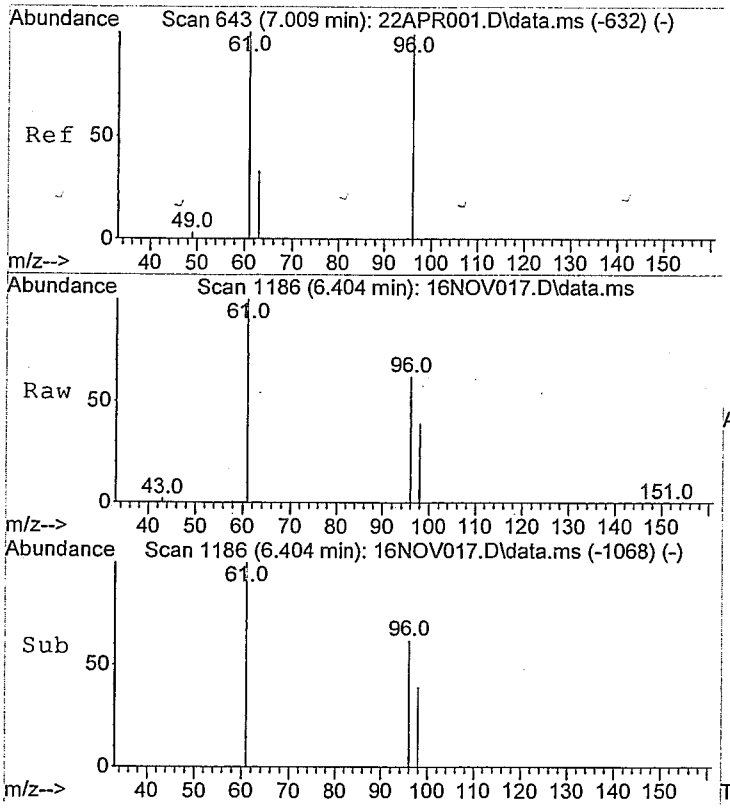
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	34532	532.54	pptv	100
44) 1,4-Dichlorobenzene	18.958	146	34977	518.07	pptv	99
45) Benzyl Chloride	19.063	91	19249	718.72	pptv	92
46) 1,2-Dichlorobenzene	19.450	146	33205	549.34	pptv	98
47) 1,2,4-Trichlorobenzene	22.051	180	33605	655.83	pptv	100
48) Naphthalene	22.485	128	62536	629.59	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\181112\
Data File : 16NOV017.D
Acq On : 16 Nov 2018 10:50 am
Operator : vm
Sample : ICV/LCS
Misc : 125 ML
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 16 15:15:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 10:52:36 2018
Response via : Initial Calibration

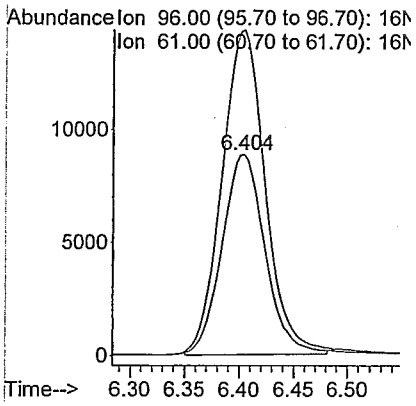




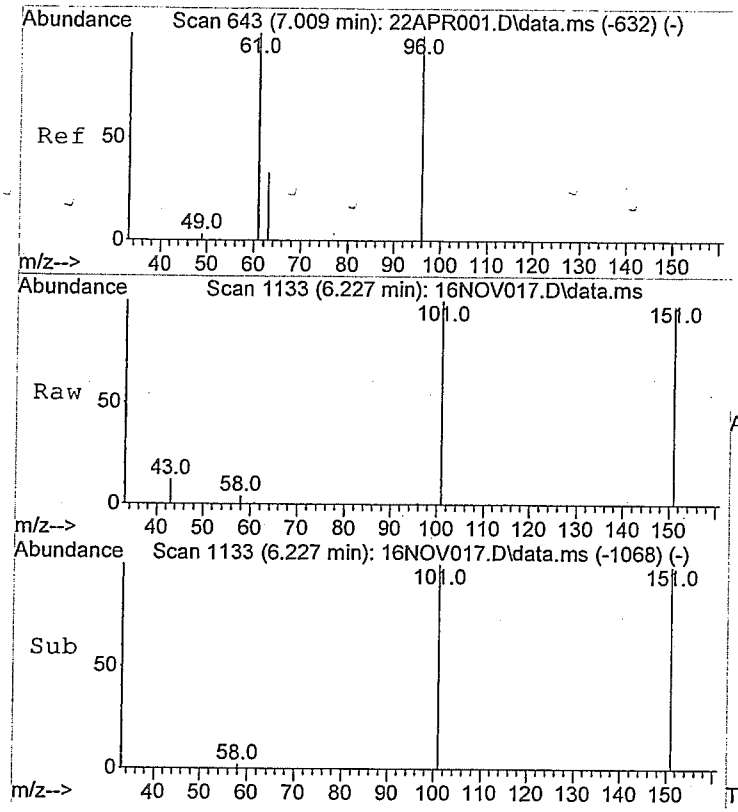
#13
t-1,2-Dichloroethene
Concen: 465.01 pptv m
RT: 6.404 min Scan# 1186
Delta R.T. -0.004 min
Lab File: 16NOV017.D
Acq: 16 Nov 2018 10:50 am

Tgt Ion: 96 Resp: 24167

Ion	Ratio	Lower	Upper
96	100		
61	162.2	61.4	161.4#



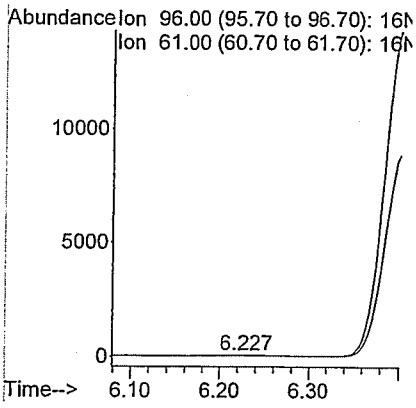
M1-3
W 11/16/18



#13
t-1,2-Dichloroethene
Concen: 2.75 pptv
RT: 6.227 min Scan# 1133
Delta R.T. -0.181 min
Lab File: 16NOV017.D
Acq: 16 Noy 2018 10:50 am

Tgt Ion: 96 Resp: 143

Ion	Ratio	Lower	Upper
96	100		
61	81.4	61.4	161.4



5. Continuing Calibration Verification

a. CCV Summary
b. Results/Chromatograms

Default Continuing Calibration Criteria:

90% of target compounds must have %Diff <30%
All target compounds must have %Diff <50%

(This criteria superceded by any project specific criteria)

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV005.D
Acq On : 26 Nov 2018 12:19 pm
Operator : DT
Sample : SIM CCV
Misc : 125 ML, EM 2471-2506
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 12:44:33 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 40% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 175%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	97	0.00
2		Dichlorodifluoromethane (12	2.369	2.595	-9.5	104	0.01
3		Chloromethane	0.789	0.752	4.7	95	0.02
4		Vinyl Chloride	0.773	0.873	-12.9	102	0.01
5		Bromomethane	0.341	0.291	14.7	86	0.01
6		Chloroethane	0.555	0.525	5.4	93	0.01
7		Trichlorofluoromethane (11)	3.181	3.087	3.0	96	0.01
8		1,1,2-Cl 1,2,2-F ethane (11	2.370	2.238	5.6	89	0.01
9		Acetone	1.855	2.504	-35.0#	118	0.02
10		1,1-Dichloroethene	1.184	1.122	5.2	90	0.00
11	M	Methylene Chloride	1.167	1.197	-2.6	99	0.02
12		t-Butyl Methyl Ether	2.396	2.198	8.3	89	0.01
13		t-1,2-Dichloroethene	1.182	1.117	5.5	90	0.00
14		Hexane	1.480	1.227	17.1	88	0.02
15		1,1-Dichloroethane	1.740	1.812	-4.1	95	0.00
16		2-Butanone	0.442	0.440	0.5	102	0.01
17		c-1,2-Dichloroethene	1.023	1.034	-1.1	91	0.00
18	t	Chloroform	2.020	2.102	-4.1	94	0.00
19		1,1,1-Trichloroethane	1.933	2.058	-6.5	98	0.00
20	t	Carbon Tetrachloride	1.481	1.682	-13.6	101	0.00
21	I	1,4-Difluorobenzene	1.000	1.000	0.0	90	0.00
22	T	Benzene	0.758	0.763	-0.7	89	0.00
23	S	1,2-Dichloroethane-d4	0.338	0.396	-17.2	108	0.00
24		1,2-Dichloroethane	0.355	0.401	-13.0	97	0.00
25	M	Trichloroethene	0.433	0.433	0.0	87	0.00
26		1,2-Dichloropropane	0.250	0.255	-2.0	92	0.00
27		1,4-Dioxane	0.198	0.183	7.6	90	0.00
28		Bromodichloromethane	0.386	0.444	-15.0	95	0.00
29	S	Toluene-d8	0.711	0.659	7.3	84	0.00
30	M	Toluene	0.750	0.642	14.4	76	0.00
31	I	Chlorobenzene-d5	1.000	1.000	0.0	87	0.00
32		t-1,3-Dichloropropene	0.361	0.445	-23.3	98	0.00
33		1,1,2-Trichloroethane	0.470	0.487	-3.6	88	0.00
34		Tetrachloroethene	0.708	0.652	7.9	78	0.00
35	t	1,2-Dibromoethane	0.532	0.580	-9.0	88	0.00
36		Chlorobenzene	0.883	0.799	9.5	77	0.00
37	T	Ethylbenzene	1.041	0.860	17.4	70	0.00
38	T	p,&m-Xylene	0.761	0.667	12.4	74	0.00
39	T	o-Xylene	0.701	0.626	10.7	77	0.00
40		Styrene	0.454	0.404	11.0	74	0.00
41	M	1,1,2,2-Tetrachloroethane	0.543	0.580	-6.8	84	0.00
42	S	4-Bromofluorobenzene	0.502	0.580	-15.5	98	0.00
43		1,3-Dichlorobenzene	0.547	0.555	-1.5	83	0.00
44		1,4-Dichlorobenzene	0.569	0.552	3.0	83	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV005.D
Acq On : 26 Nov 2018 12:19 pm
Operator : DT
Sample : SIM CCV
Misc : 125 ML, EM 2471-2506
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 12:44:33 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 40% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 175%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
45	Benzyl Chloride	0.226	0.311	-37.6#	94	0.00
46	1,2-Dichlorobenzene	0.510	0.544	-6.7	85	0.00
47	1,2,4-Trichlorobenzene	0.432	0.563	-30.3#	93	0.00
48	Naphthalene	0.838	1.116	-33.2#	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV005.D
Acq On : 26 Nov 2018 12:19 pm
Operator : DT
Sample : SIM CCV
Misc : 125 ML, EM 2471-2506
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 12:44:33 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.339	130	118089	2000.00	pptv	0.00
21) 1,4-Difluorobenzene	10.691	114	460413	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	259576	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.102	65	182293	2341.09	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 117.05%			
29) Toluene-d8	12.941	98	303594	1856.12	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 92.81%			
42) 4-Bromofluorobenzene	17.185	95	150511	2308.30	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 115.42%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.602	85	76596	547.55	pptv	99
3) Chloromethane	4.018	50	22199	476.58	pptv	97
4) Vinyl Chloride	4.236	62	25765	564.23	pptv	100
5) Bromomethane	4.926	96	8587	425.91	pptv	99
6) Chloroethane	5.068	64	15504	472.93	pptv	80
7) Trichlorofluoromethane...	5.519	101	91139	485.19	pptv	100
8) 1,1,2-Cl 1,2,2-F ethan...	6.243	151	66084	472.18	pptv	87
9) Acetone	6.153	43	73932	674.90	pptv	96
10) 1,1-Dichloroethene	6.417	96	33112	473.71	pptv	76
11) Methylene Chloride	7.045	49	35351	513.22	pptv	67
12) t-Butyl Methyl Ether	7.396	73	64893	458.69	pptv	75
13) t-1,2-Dichloroethene	6.417	96	32991	472.65	pptv #	45
14) Hexane	7.784	57	36218	414.58	pptv	91
15) 1,1-Dichloroethane	8.082	63	53509	520.85	pptv	97
16) 2-Butanone	8.638	72	12984	498.00	pptv	29
17) c-1,2-Dichloroethene	8.924	96	30536	505.75	pptv	63
18) Chloroform	9.150	83	62054	520.38	pptv	99
19) 1,1,1-Trichloroethane	9.763	97	60751	532.19	pptv	97
20) Carbon Tetrachloride	10.148	117	49642	567.78	pptv	98
22) Benzene	10.328	78	87878	503.36	pptv	89
24) 1,2-Dichloroethane	10.227	62	46195	565.74	pptv	96
25) Trichloroethene	11.215	130	49840	500.33	pptv	94
26) 1,2-Dichloropropane	11.413	63	29373	509.86	pptv	97
27) 1,4-Dioxane	11.703	88	21020	460.48	pptv #	70
28) Bromodichloromethane	11.728	83	51131	575.86	pptv	99
30) Toluene	13.058	91	73863	427.54	pptv	100
32) t-1,3-Dichloropropene	12.507	75	28882	615.70	pptv	99
33) 1,1,2-Trichloroethane	13.462	97	31606	517.89	pptv	97
34) Tetrachloroethene	14.081	166	42300	460.29	pptv	97
35) 1,2-Dibromoethane	14.573	107	37621	545.28	pptv	98
36) Chlorobenzene	15.269	112	51825	452.06	pptv	99
37) Ethylbenzene	15.376	91	55785	413.00	pptv	99
38) p,&m-Xylene	15.505	91	86510	875.67	pptv	98
39) o-Xylene	16.190	91	40643	446.56	pptv	98
40) Styrene	16.212	104	26205	444.66	pptv	89
41) 1,1,2,2-Tetrachloroethane	16.985	83	37645	534.50	pptv	99

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV005.D
Acq On : 26 Nov 2018 12:19 pm
Operator : DT
Sample : SIM CCV
Misc : 125 ML, EM 2471-2506
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 12:44:33 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

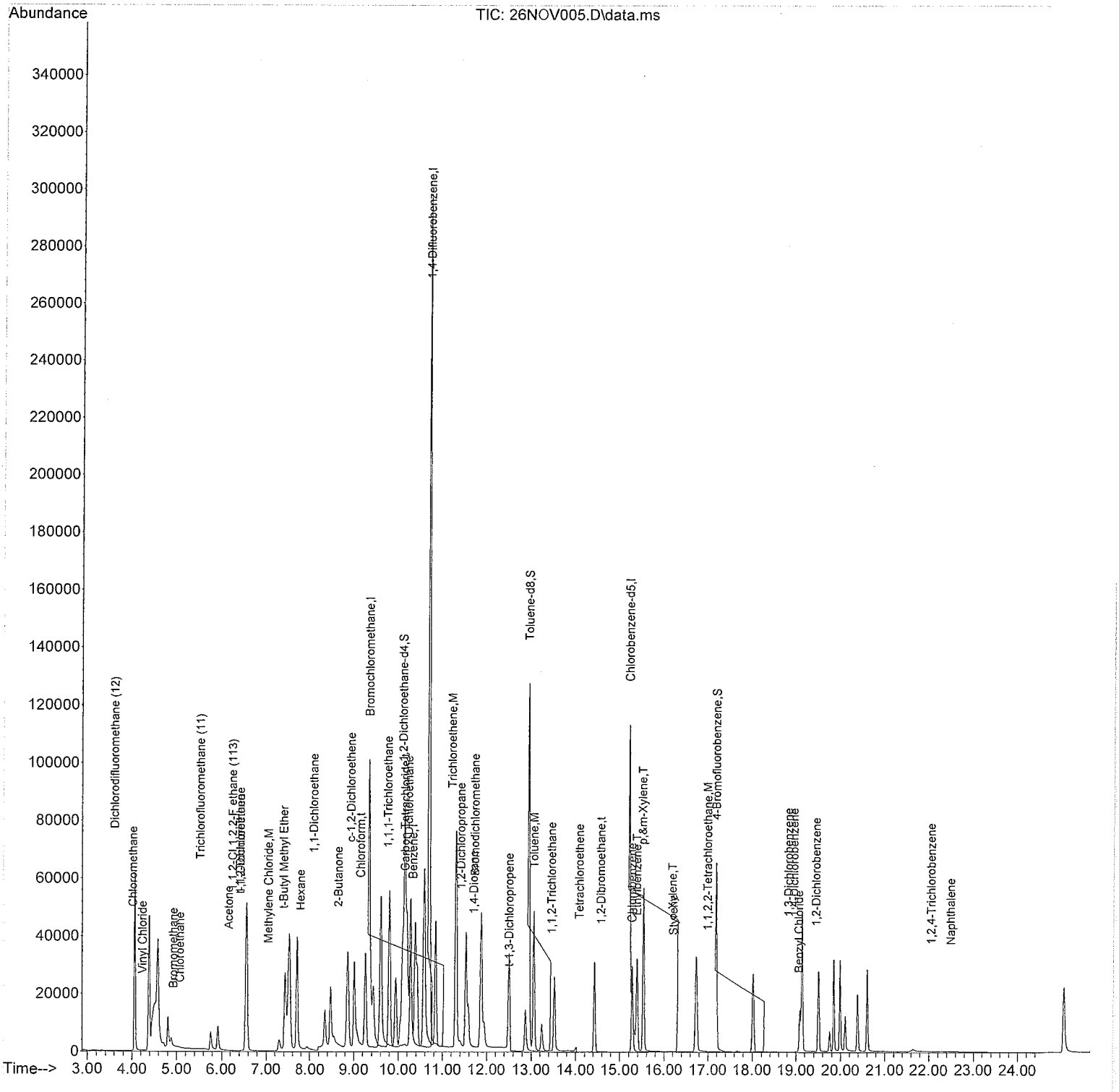
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	36017	507.49	pptv	100
44) 1,4-Dichlorobenzene	18.958	146	35851	485.18	pptv	99
45) Benzyl Chloride	19.066	91	20176	688.29	pptv	92
46) 1,2-Dichlorobenzene	19.453	146	35312	533.76	pptv	100
47) 1,2,4-Trichlorobenzene	22.050	180	36558	651.86	pptv	100
48) Naphthalene	22.486	128	72421	666.16	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV005.D
Acq On : 26 Nov 2018 12:19 pm
Operator : DT
Sample : SIM CCV
Misc : 125 ML, EM 2471-2506
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 12:44:33 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV005.D
Acq On : 26 Nov 2018 12:19 pm
Operator : DT
Sample : SIM CCV
Misc : 125 ML, EM 2471-2506
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 15:35:35 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 40% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 175%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Chlorobenzene-d5	1.000	1.000	0.0	87	0.00
2	S	4-Bromofluorobenzene	0.501	0.580	-15.8	100	0.00
3		1,2,4-Trimethylbenzene	0.452	0.510	-12.8	81	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV005.D
Acq On : 26 Nov 2018 12:19 pm
Operator : DT
Sample : SIM CCV
Misc : 125 ML, EM 2471-2506
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 15:35:35 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

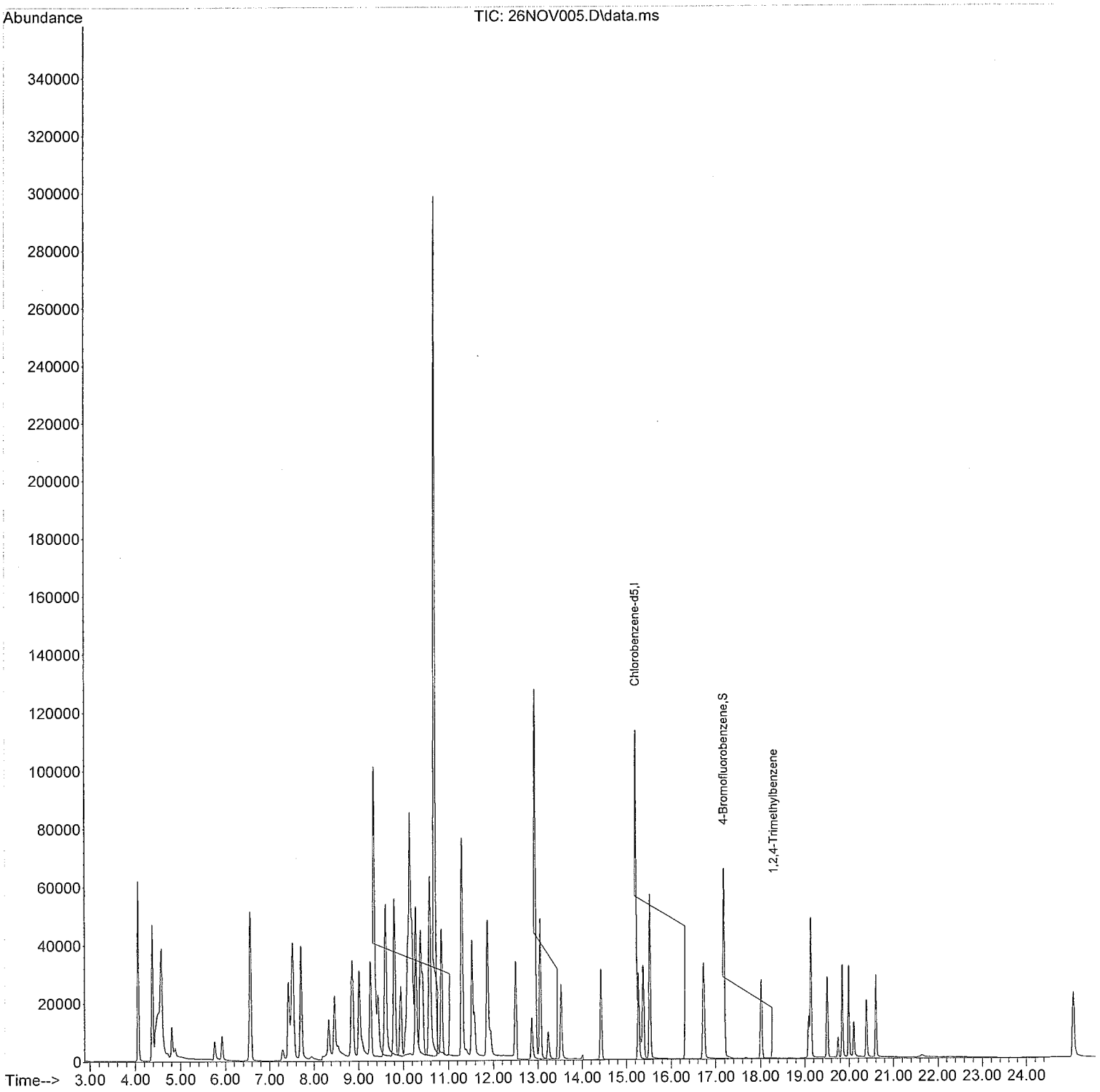
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.210	117	259403	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.185	95	150511	2313.95	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 115.70%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.306	120	33056	563.88	pptv	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV005.D
Acq On : 26 Nov 2018 12:19 pm
Operator : DT
Sample : SIM CCV
Misc : 125 ML, EM 2471-2506
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 15:35:35 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration



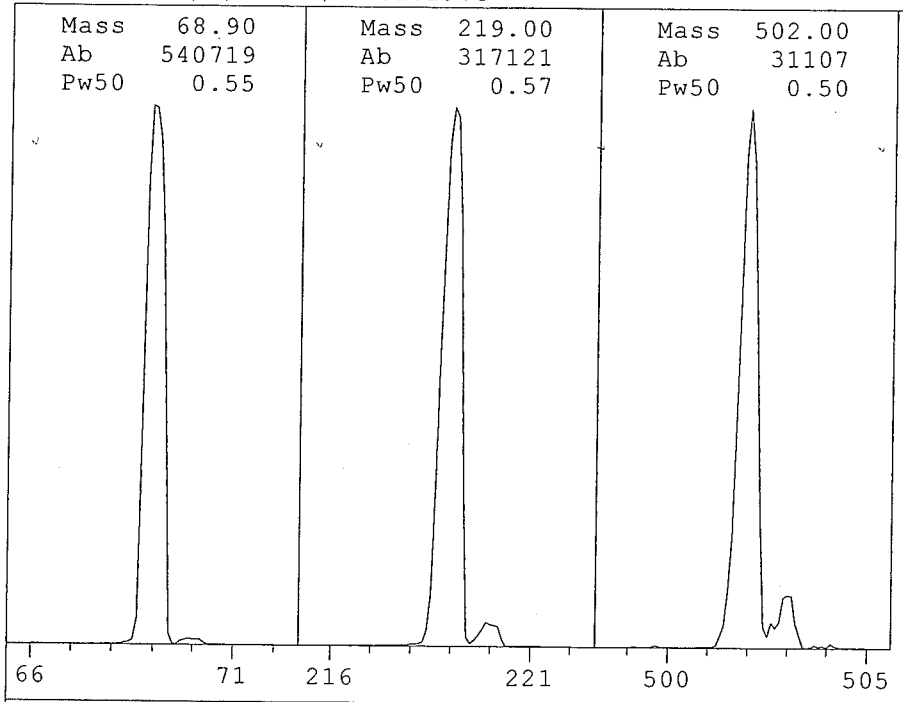
6. Tune Summaries

a. ICAL Summary
b. CCAL Tune Summary

Criteria as listed in report

Thu Nov 15 23:55:19 2018
C:\msdchem\1\5973N\SI181029.U

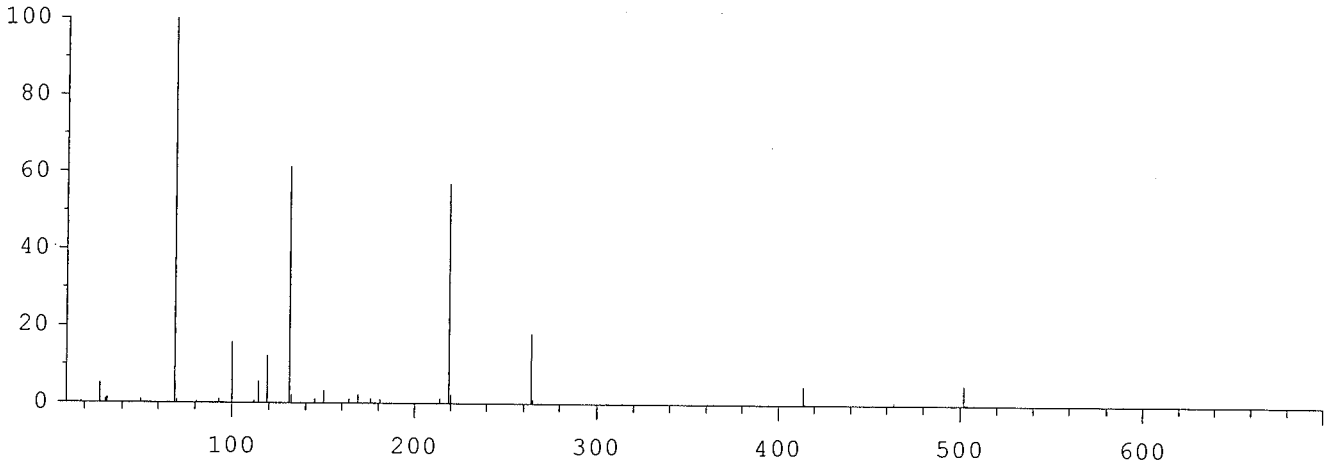
Instrument: ms2
US91422460



Ion Pol	Pos	MassGain	14
		MassOffs	-10
Emission	34.6	AmuGain	1981
EIEnrgy	69.9	AmuOffs	138
Filament	2	Wid219	0.029
		DC Pol	Pos
Repeller	19.90		
IonFcus	85.4	HEDEnab	On
EntLens	0.0	EMVolts	2247
EntOffs	Var		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:
MS Source 230 Turbo Speed100
MS Quad 150

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
155 peaks Base: 69.00 Abundance: 522432



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	522432	100.00	70.00	5127	0.98
219.00	297792	57.00	220.00	12419	4.17
502.00	26632	5.10	502.90	2419	9.08

Air/Water Check: H2O~0.49% N2~5.16% O2~1.40% CO2~0.23% N2/H2O~1047.69%

Column(1) Flow: 1.994 Column(2): 0 ml/min. Interface Temp: 280

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 502; EM Gain 448387
Repeller Maximum 20 volts using ion 219; Gain Factor 4.48

MassGain Values(Samples): 14(3) 16(2) 31(1) 84(0) 128(FS)

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	138.0	138.0	138.0	138.0	138.0	138.0	138.0
Entrance Lens Offset:	16.8	14.6	15.1	14.3	22.3	27.1	27.1
Target Abund(%):	1.0	100.0	55.0	45.0	3.5	2.5	
Actual Tune Abund(%):	0.9	100.0	61.5	57.0	4.7	5.1	

7. Method Blank

a. Results/Chromatograms

Method Blank Criteria:

All compounds < Reporting Limit

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV030.D
Acq On : 27 Nov 2018 6:06 am
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 27 06:31:06 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

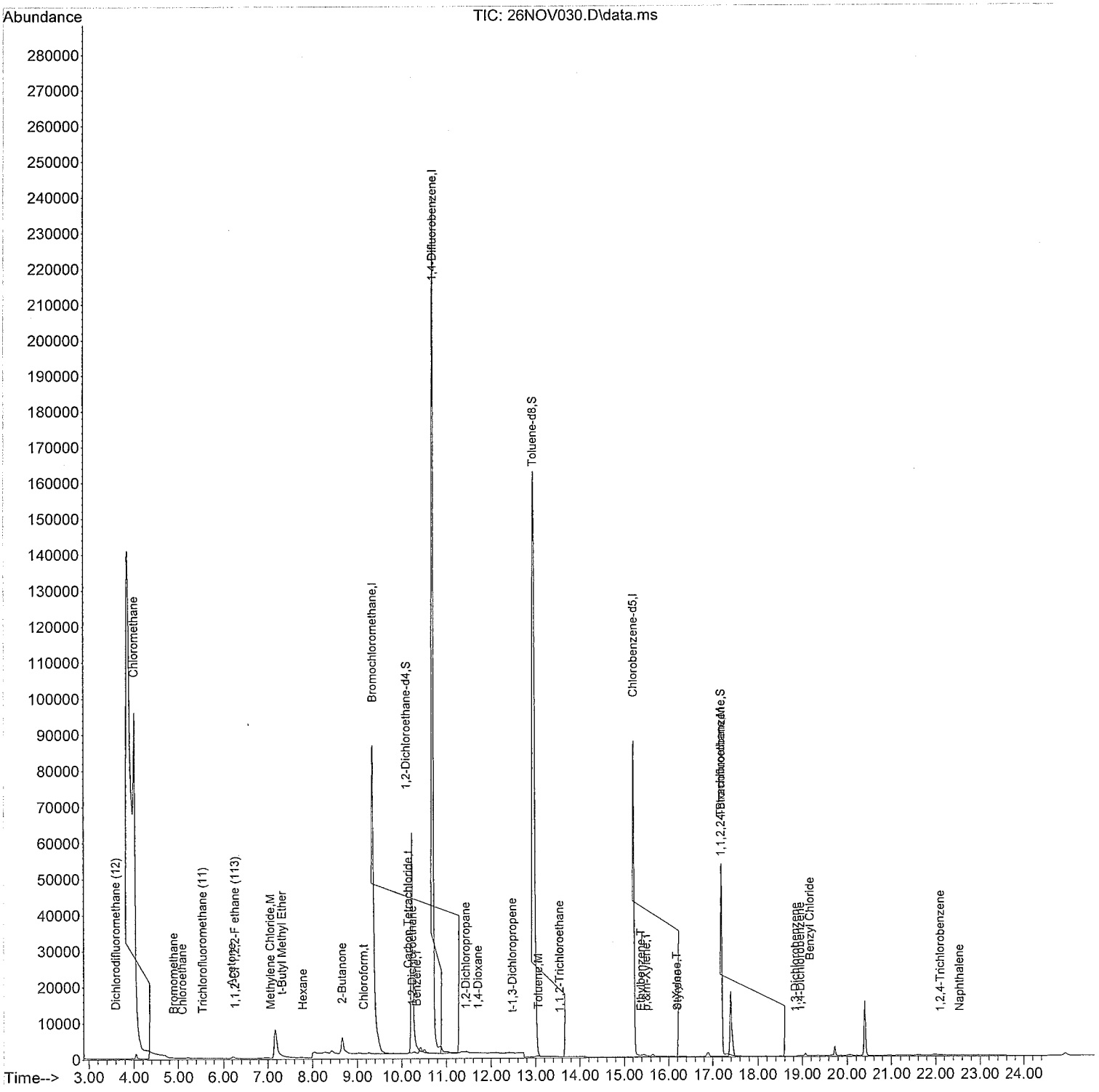
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.345	130	113890	2000.00	pptv	0.02
21) 1,4-Difluorobenzene	10.694	114	374676	2000.00	pptv	0.00
31) Chlorobenzene-d5	15.210	117	206519	2000.00	pptv	0.00
System Monitoring Compounds						
23) 1,2-Dichloroethane-d4	10.105	65	162337	2561.87	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 128.09%			
29) Toluene-d8	12.941	98	244823	1839.31	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 91.97%			
42) 4-Bromofluorobenzene	17.185	95	119927	2311.78	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 115.59%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.602	85	1342	9.95	pptv	98
3) Chloromethane	4.003	50	9141	203.48	pptv	50
5) Bromomethane	4.897	96	264	13.58	pptv	76
6) Chloroethane	5.092	64	53	1.68	pptv	58
7) Trichlorofluoromethane...	5.540	101	787	4.34	pptv	95
8) 1,1,2-Cl 1,2,2-F ethan...	6.263	151	169	1.25	pptv	88
9) Acetone	6.186	43	30484	288.54	pptv	97
11) Methylene Chloride	7.061	49	281	4.23	pptv #	51
12) t-Butyl Methyl Ether	7.317	73	1592	11.67	pptv	78
14) Hexane	7.784	57	327	3.88	pptv	82
16) 2-Butanone	8.662	72	975	38.77	pptv	70
18) Chloroform	9.144	83	131	1.14	pptv	71
20) Carbon Tetrachloride	10.148	117	142	1.68	pptv	69
22) Benzene	10.331	78	1957	13.77	pptv	88
24) 1,2-Dichloroethane	10.239	62	89	1.34	pptv	45
26) 1,2-Dichloropropane	11.432	63	57	1.22	pptv #	33
27) 1,4-Dioxane	11.706	88	131	3.53	pptv	87
30) Toluene	13.065	91	871	6.20	pptv	95
32) t-1,3-Dichloropropene	12.477	75	985	26.39	pptv	52
33) 1,1,2-Trichloroethane	13.545	97	59	1.22	pptv #	25
37) Ethylbenzene	15.381	91	352	3.28	pptv	90
38) p,&m-Xylene	15.500	91	759	9.66	pptv	93
39) o-Xylene	16.186	91	1700	23.48	pptv	99
40) Styrene	16.204	104	126	2.69	pptv	39
41) 1,1,2,2-Tetrachloroethane	17.175	83	67	1.20	pptv #	18
43) 1,3-Dichlorobenzene	18.836	146	50	0.89	pptv #	34
44) 1,4-Dichlorobenzene	18.958	146	154	2.62	pptv	96
45) Benzyl Chloride	19.174	91	613	26.28	pptv #	1
47) 1,2,4-Trichlorobenzene	22.101	180	66	1.48	pptv	85
48) Naphthalene	22.532	128	765	8.84	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV030.D
Acq On : 27 Nov 2018 6:06 am
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 27 06:31:06 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV030.D
Acq On : 27 Nov 2018 6:06 am
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 27 10:48:17 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

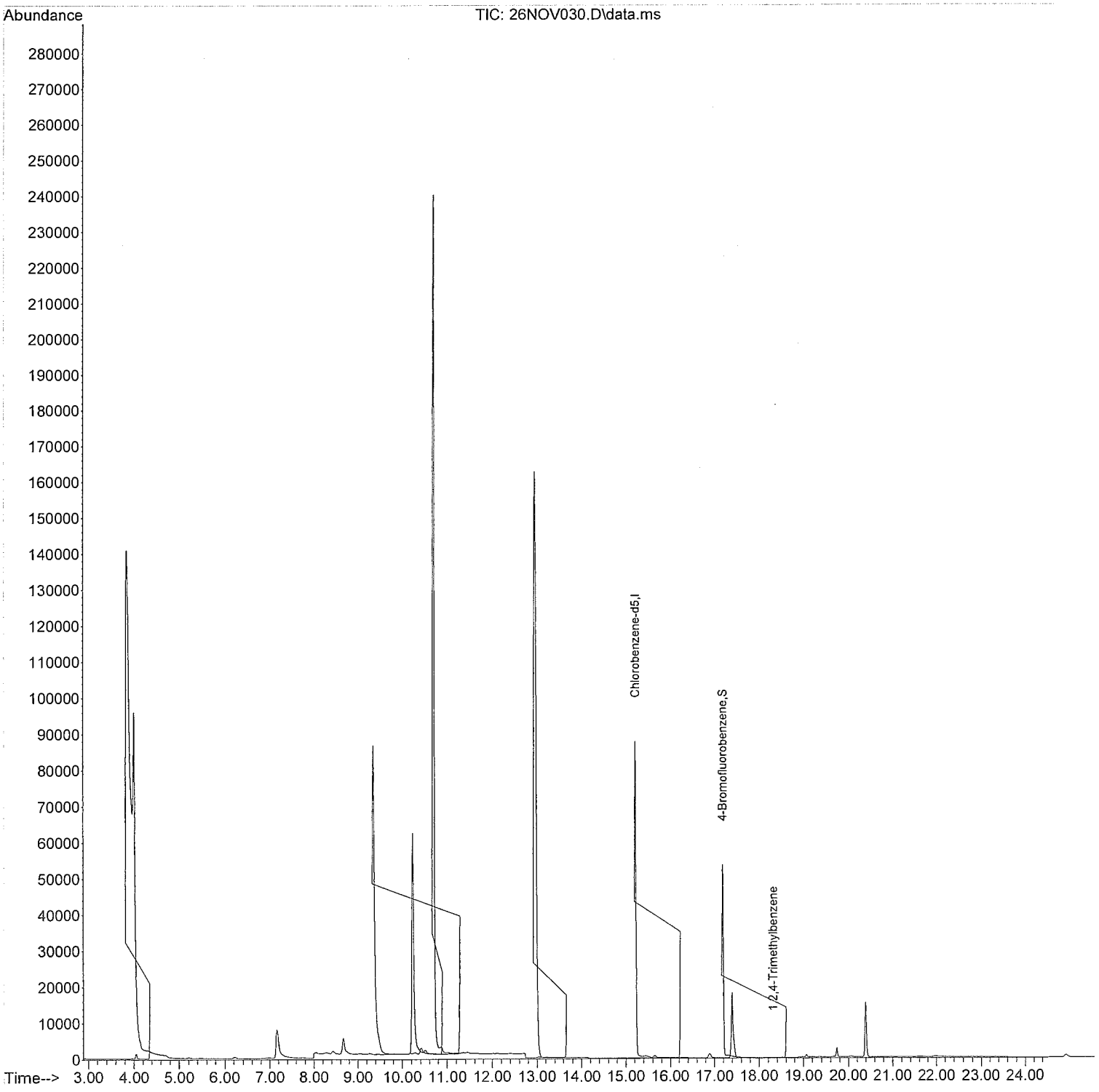
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.210	117	206519	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.185	95	119927	2315.89	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 115.79%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.309	120	414	8.87	pptv	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV030.D
Acq On : 27 Nov 2018 6:06 am
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 27 10:48:17 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration



8. LCS/LCSD

a. Results/Chromatograms

Criteria as listed on report

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV006.D
Acq On : 26 Nov 2018 1:24 pm
Operator : DT
Sample : SIM LCS
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 13:48:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.336	130	122893	2000.00	pptv		0.00
21) 1,4-Difluorobenzene	10.688	114	456132	2000.00	pptv		0.00
31) Chlorobenzene-d5	15.210	117	253418	2000.00	pptv		0.00
System Monitoring Compounds							
23) 1,2-Dichloroethane-d4	10.099	65	183616	2380.21	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 119.01%				
29) Toluene-d8	12.941	98	297911	1838.47	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 91.92%				
42) 4-Bromofluorobenzene	17.183	95	151369	2377.87	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 118.89%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.594	85	77654	533.41	pptv		99
3) Chloromethane	4.012	50	21473	442.98	pptv		98
4) Vinyl Chloride	4.230	62	25581	538.30	pptv		99
5) Bromomethane	4.920	96	11808	562.77	pptv		99
6) Chloroethane	5.063	64	15304	448.58	pptv		77
7) Trichlorofluoromethane...	5.517	101	90722	464.09	pptv		100
8) 1,1,2-Cl 1,2,2-F ethan...	6.240	151	60763	417.19	pptv		87
9) Acetone	6.146	43	73645	646.00	pptv		94
10) 1,1-Dichloroethene	6.414	96	31116	427.75	pptv		75
11) Methylene Chloride	7.039	49	34235	477.59	pptv		67
12) t-Butyl Methyl Ether	7.393	73	62693	425.82	pptv		72
13) t-1,2-Dichloroethene	6.414	96	31116	428.36	pptv	#	43
14) Hexane	7.781	57	33886	372.72	pptv		89
15) 1,1-Dichloroethane	8.083	63	51959	486.00	pptv		97
16) 2-Butanone	8.638	72	12649	466.19	pptv		40
17) c-1,2-Dichloroethene	8.918	96	30141	479.69	pptv		58
18) Chloroform	9.150	83	61547	495.95	pptv		99
19) 1,1,1-Trichloroethane	9.757	97	59634	501.98	pptv		96
20) Carbon Tetrachloride	10.145	117	48206	529.80	pptv		97
22) Benzene	10.328	78	87363	505.10	pptv		89
24) 1,2-Dichloroethane	10.230	62	45416	561.42	pptv		97
25) Trichloroethene	11.215	130	48897	495.47	pptv		96
26) 1,2-Dichloropropane	11.417	63	28892	506.22	pptv		98
27) 1,4-Dioxane	11.703	88	20725	458.27	pptv	#	70
28) Bromodichloromethane	11.725	83	52332	594.92	pptv		99
30) Toluene	13.055	91	67615	395.05	pptv		99
32) t-1,3-Dichloropropene	12.508	75	31400	685.65	pptv		99
33) 1,1,2-Trichloroethane	13.458	97	32043	537.81	pptv		95
34) Tetrachloroethene	14.081	166	41651	464.24	pptv		96
35) 1,2-Dibromoethane	14.571	107	40650	603.50	pptv		100
36) Chlorobenzene	15.267	112	50762	453.54	pptv		99
37) Ethylbenzene	15.376	91	53184	403.31	pptv		99
38) p,&m-Xylene	15.505	91	80632	836.01	pptv		97
39) o-Xylene	16.190	91	46925	528.11	pptv		97
40) Styrene	16.212	104	31705	551.06	pptv		89
41) 1,1,2,2-Tetrachloroethane	16.983	83	39812	579.01	pptv		98

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV006.D
Acq On : 26 Nov 2018 1:24 pm
Operator : DT
Sample : SIM LCS
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 13:48:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

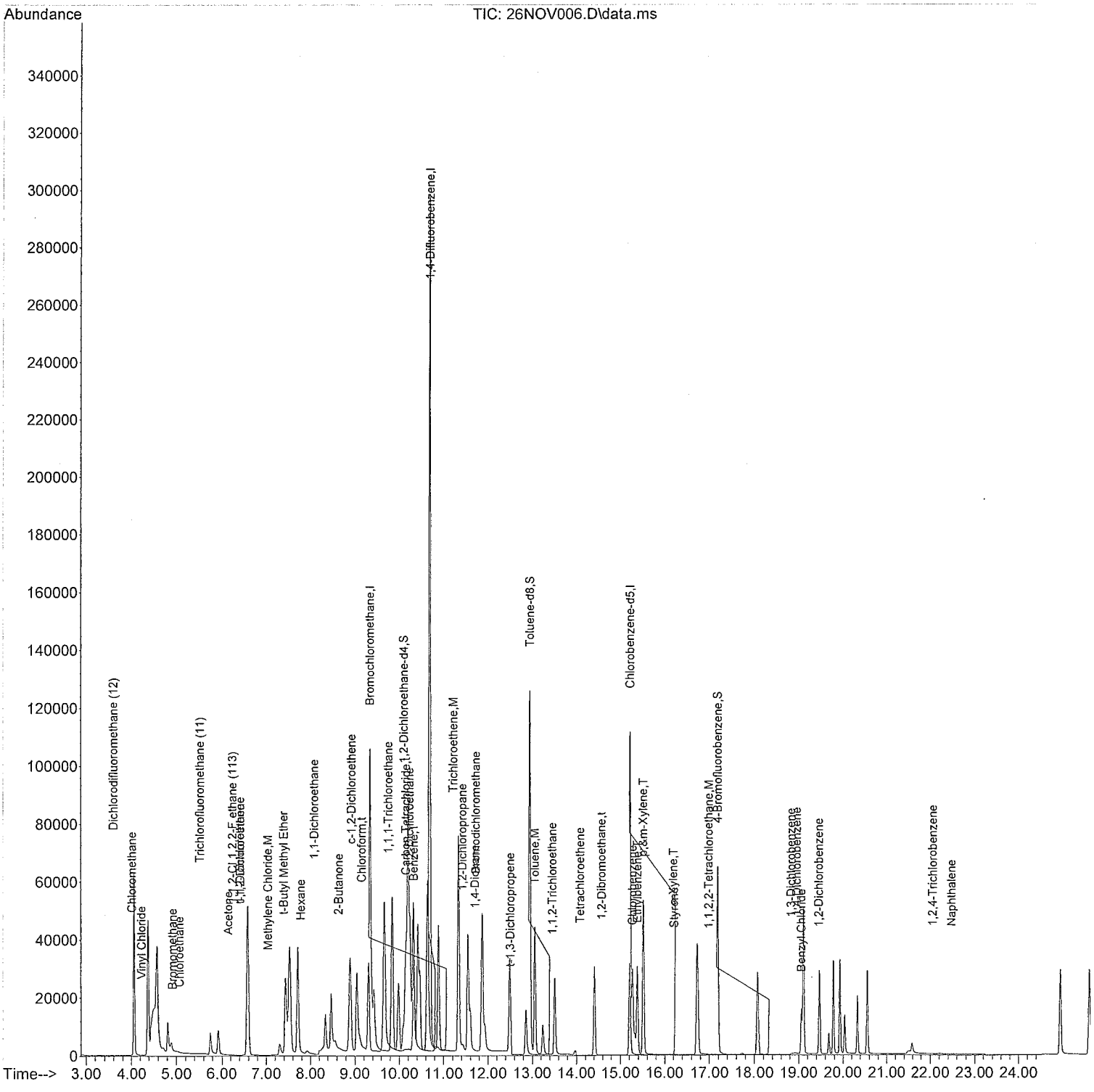
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.830	146	36447	526.03	pptv	99
44) 1,4-Dichlorobenzene	18.958	146	36178	501.50	pptv	97
45) Benzyl Chloride	19.063	91	21746	759.88	pptv	91
46) 1,2-Dichlorobenzene	19.456	146	35812	554.47	pptv	98
47) 1,2,4-Trichlorobenzene	22.051	180	40131	732.96	pptv	100
48) Naphthalene	22.473	128	80890	762.15	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV006.D
Acq On : 26 Nov 2018 1:24 pm
Operator : DT
Sample : SIM LCS
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 13:48:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV007.D
Acq On : 26 Nov 2018 2:03 pm
Operator : DT
Sample : SIM LCSD
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 14:27:51 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.339	130	122262	2000.00	pptv		0.00
21) 1,4-Difluorobenzene	10.690	114	446243	2000.00	pptv		0.00
31) Chlorobenzene-d5	15.210	117	248306	2000.00	pptv		0.00
System Monitoring Compounds							
23) 1,2-Dichloroethane-d4	10.099	65	170057	2253.30	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 112.67%				
29) Toluene-d8	12.941	98	290549	1832.77	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 91.64%				
42) 4-Bromofluorobenzene	17.185	95	145593	2334.22	pptv		0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 116.71%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.593	85	73675	508.69	pptv		100
3) Chloromethane	4.009	50	21056	436.61	pptv		98
4) Vinyl Chloride	4.230	62	19259	407.36	pptv		98
5) Bromomethane	4.920	96	12400	594.04	pptv		99
6) Chloroethane	5.062	64	14351	422.82	pptv		77
7) Trichlorofluoromethane...	5.516	101	86501	444.78	pptv		100
8) 1,1,2-Cl 1,2,2-F ethan...	6.236	151	58738	405.37	pptv		87
9) Acetone	6.146	43	69650	614.11	pptv		95
10) 1,1-Dichloroethene	6.414	96	28733	397.03	pptv		77
11) Methylene Chloride	7.042	49	32766	459.45	pptv		69
12) t-Butyl Methyl Ether	7.390	73	60783	414.98	pptv		72
13) t-1,2-Dichloroethene	6.414	96	28718	397.39	pptv	#	46
14) Hexane	7.774	57	32558	359.96	pptv		89
15) 1,1-Dichloroethane	8.079	63	50491	474.70	pptv		100
16) 2-Butanone	8.641	72	12500	463.07	pptv		53
17) c-1,2-Dichloroethene	8.921	96	28824	461.10	pptv		60
18) Chloroform	9.150	83	59056	478.34	pptv		99
19) 1,1,1-Trichloroethane	9.760	97	58107	491.65	pptv		98
20) Carbon Tetrachloride	10.144	117	47256	522.04	pptv		99
22) Benzene	10.324	78	83699	494.64	pptv		90
24) 1,2-Dichloroethane	10.227	62	43691	552.07	pptv		96
25) Trichloroethene	11.215	130	45871	475.11	pptv		96
26) 1,2-Dichloropropane	11.416	63	27746	496.91	pptv		97
27) 1,4-Dioxane	11.706	88	19630	443.68	pptv	#	68
28) Bromodichloromethane	11.721	83	50129	582.50	pptv		98
30) Toluene	13.058	91	63944	381.88	pptv		98
32) t-1,3-Dichloropropene	12.507	75	30165	672.24	pptv		100
33) 1,1,2-Trichloroethane	13.458	97	30602	524.20	pptv		96
34) Tetrachloroethene	14.082	166	39645	450.98	pptv		97
35) 1,2-Dibromoethane	14.572	107	39422	597.32	pptv		99
36) Chlorobenzene	15.269	112	48019	437.87	pptv		99
37) Ethylbenzene	15.376	91	50044	387.31	pptv		100
38) p,&m-Xylene	15.504	91	75967	803.85	pptv		98
39) o-Xylene	16.189	91	38312	440.06	pptv		97
40) Styrene	16.214	104	26097	462.93	pptv		91
41) 1,1,2,2-Tetrachloroethane	16.986	83	37693	559.47	pptv		99

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV007.D
Acq On : 26 Nov 2018 2:03 pm
Operator : DT
Sample : SIM LCSD
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 14:27:51 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration

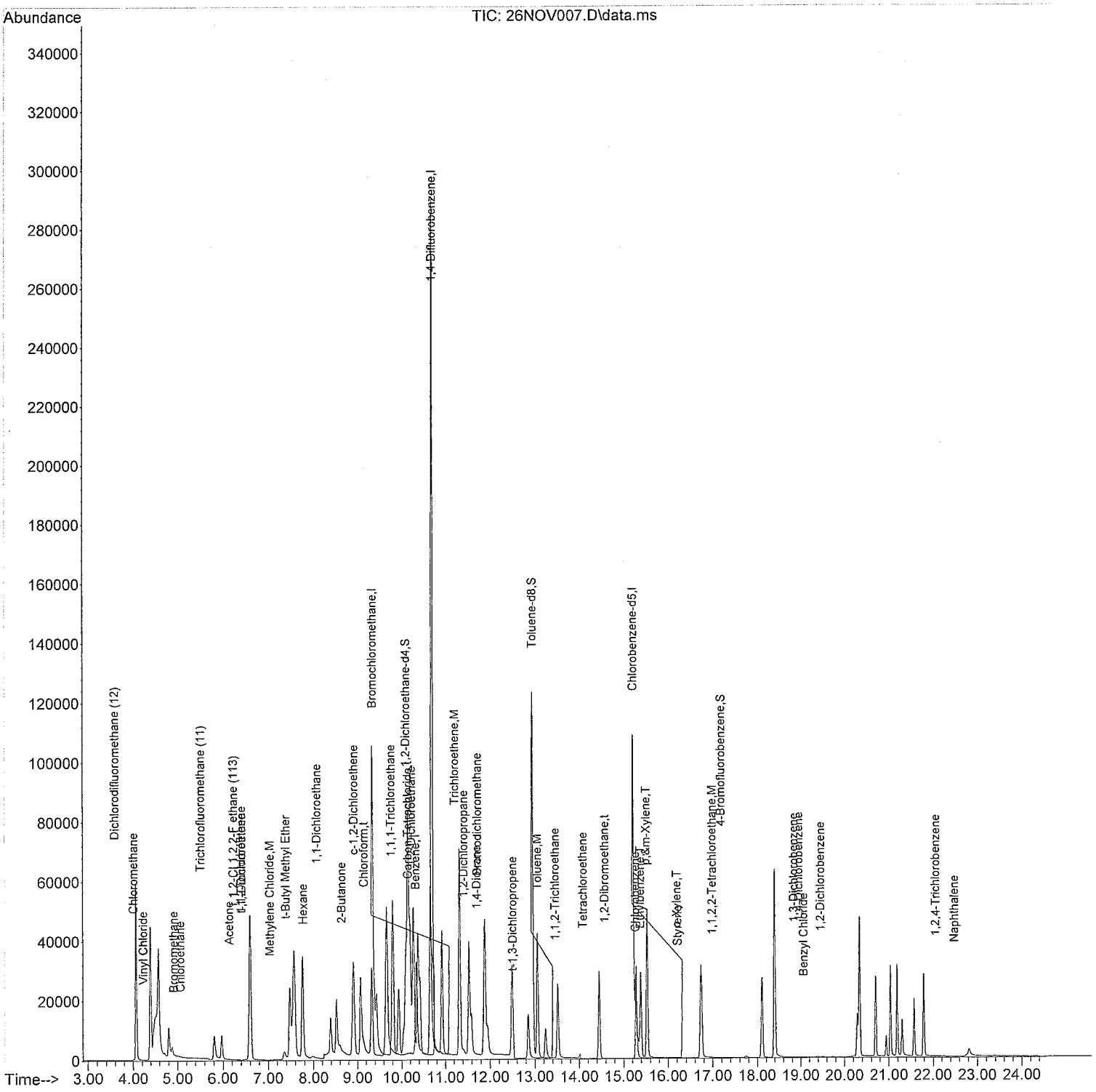
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,3-Dichlorobenzene	18.833	146	34355	506.05	pptv	99
44) 1,4-Dichlorobenzene	18.958	146	34124	482.77	pptv	98
45) Benzyl Chloride	19.066	91	20332	725.10	pptv	91
46) 1,2-Dichlorobenzene	19.453	146	34229	540.88	pptv	100
47) 1,2,4-Trichlorobenzene	22.048	180	39096	728.76	pptv	99
48) Naphthalene	22.481	128	75356	724.62	pptv	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV007.D
Acq On : 26 Nov 2018 2:03 pm
Operator : DT
Sample : SIM LCSD
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 14:27:51 2018
Quant Method : C:\MSDCHEM\1\METHODS\SL181116.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 15:19:42 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV006.D
Acq On : 26 Nov 2018 1:24 pm
Operator : DT
Sample : SIM LCS
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 15:36:00 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

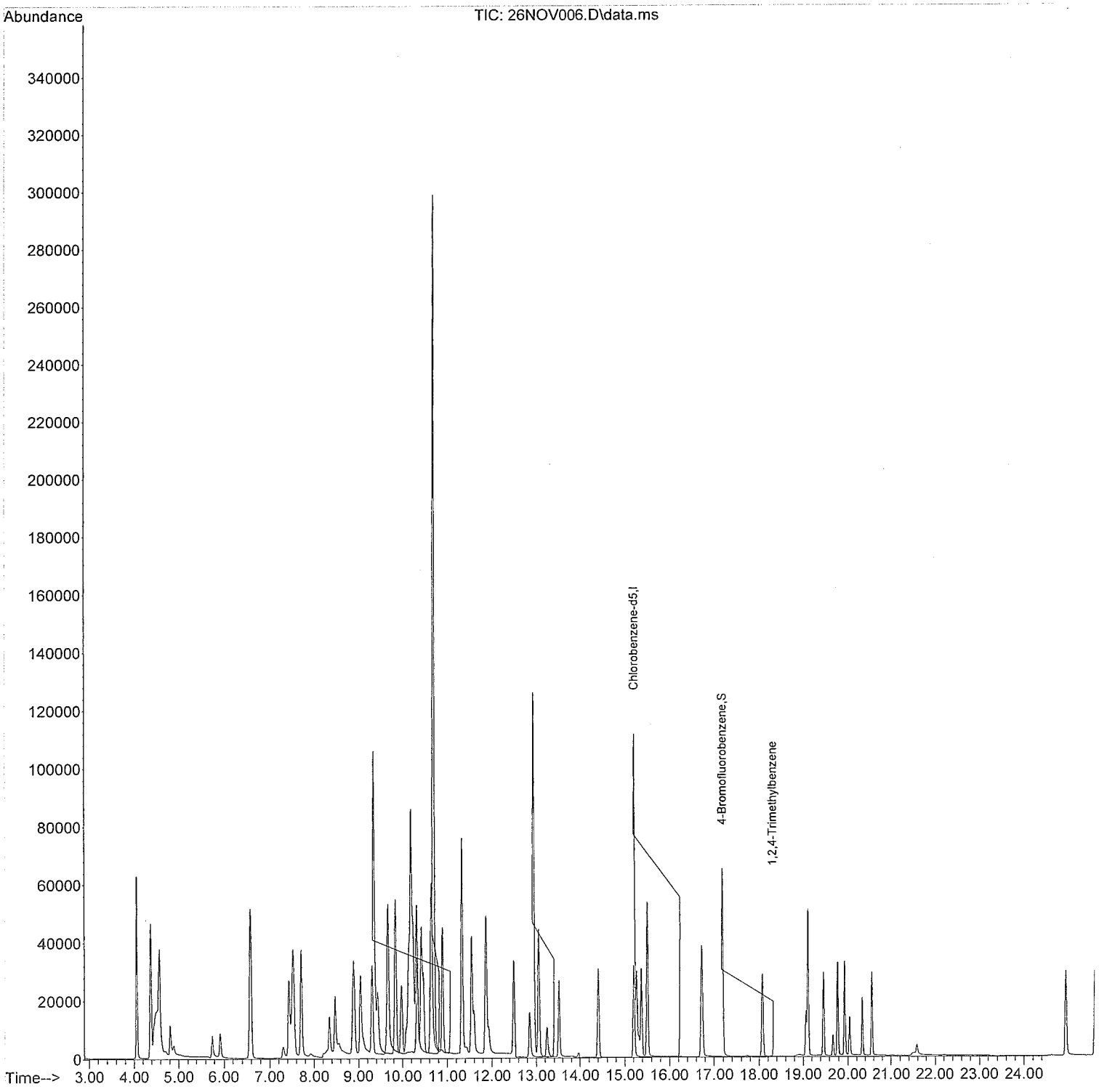
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.210	117	253455	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.183	95	151369	2381.75	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 119.09%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.306	120	34417	600.87	pptv	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV006.D
Acq On : 26 Nov 2018 1:24 pm
Operator : DT
Sample : SIM LCS
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 15:36:00 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV007.D
Acq On : 26 Nov 2018 2:03 pm
Operator : DT
Sample : SIM LCSD
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 15:36:09 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration

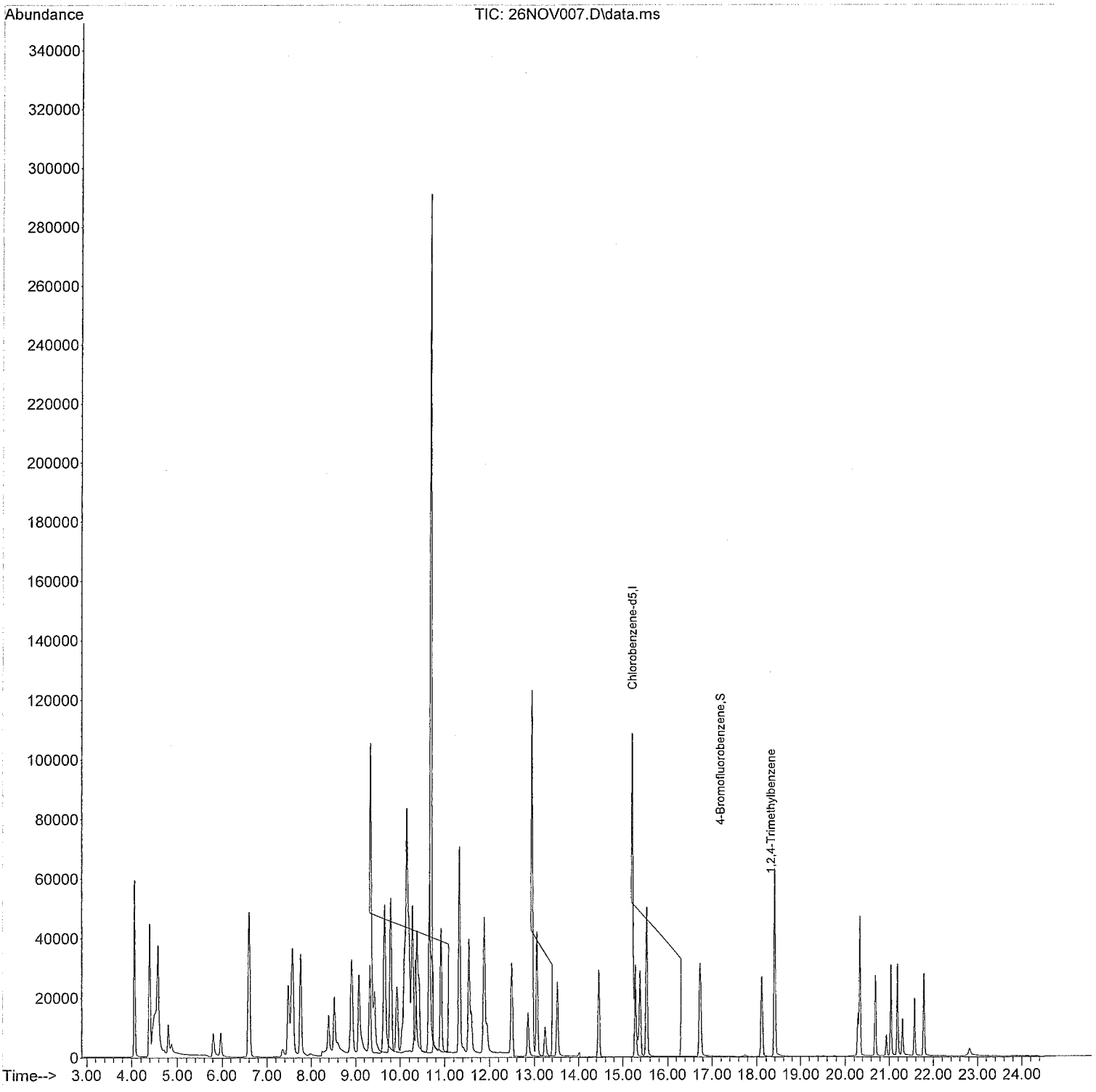
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Chlorobenzene-d5	15.210	117	248005	2000.00	pptv	0.00
System Monitoring Compounds						
2) 4-Bromofluorobenzene	17.185	95	145593	2341.21	pptv	0.00
Spiked Amount 2000.000	Range 70 - 130		Recovery = 117.06%			
Target Compounds						Qvalue
3) 1,2,4-Trimethylbenzene	18.309	120	32461	579.17	pptv	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV007.D
Acq On : 26 Nov 2018 2:03 pm
Operator : DT
Sample : SIM LCSD
Misc : 125 ML
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 15:36:09 2018
Quant Method : C:\msdchem\1\methods\124TMB.M
Quant Title : EPA TO-15 SIM MS2 RTxVolatiles 0.32mm
QLast Update : Fri Nov 16 11:15:04 2018
Response via : Initial Calibration



GC/MS Raw Data Index
General Information

Lab Project No.: J110805 TO15 Scan

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Conventions and Conversions

1 ppbv = 0.001 ppmv = 0.0000001% v/v
1% v/v = 10,000 ppmv = 10,000,000 ppbv

1 ug/m^3 = 1 ng/L = ppbv x MW/24.45
1 ug/L = 1 mg/m^3 = ppmv x MW/24.45

Where **MW** is the molecular weight of the compound and 24.45 is the molar volume of ideal gas at 1 atmosphere and 25° C.

1 atmosphere = 14.6 psia = 0 psig
30" Hg = 0 psia = -14.6 psig

Standard pressure is taken as 14.6 psia at Air Technology Labs' facility.

1. Supporting Documents

a. Pressurization log (if applicable)

b. ICAL run log

c. CCAL/QC/Samples run log

d. Miscellaneous documents

PRESSURIZATION LOGBOOK

	Date	Sample ID	Can #	Initial Pressure	Final Pressure	Dilution Gas	Dilution Gas Lot #	Initials	ETR #	Client/ Comments	He Prefill	
1	11/9/18	J110708-01	1466	2"Hg	10psig	He	27W802	VTT	8996	FOSH	YES	
2		-02	3670	1"Hg								
3		-03	3595	1"Hg								
4		-04	1461	1"Hg								
5	11/9/18	J110810-01	3150	5"Hg	10psig	He	27W802	VTT	9028	WEAVER	YES	
6		-02	5849	5"Hg								
7		-03	5464	6"Hg								
8		-04	1454	6"Hg								
9	11/9/18	J110811-01	7130	6"Hg	5psig	N_2	250N8124	VTT	9038	SCS/GKK	NO	
10		-02	6012	4"Hg								
11		-03	5957	6"Hg								
12		-04	5199	3.5"Hg								
13	11/9/18	J110805-01	1423	4"Hg	5psig	N_2	250N8124	VTT	9026	JACOBS	NO	38
14		-02	1471	6"Hg								Y2
15		-03	4425	7"Hg								Y38
16		-04	5469	7"Hg								438
17		-05	1456	5"Hg								Y03
18		-06	1453	4"Hg								312
19		-07	5810	4"Hg	10psig		250N8124			12:55	11:96	
20		-08	A7648	4"Hg	↓		↓				↓	"
21												
22												
23												
24												
25												
26												
27												
28												

Approved by/Date:_____ Air Technology Laboratories Inc. Logbook #17

J110805

Instrument ID: GCMS2

Analytical Method: TO 181024 / TO 181031

Datafile Directory: 181029

GCMS Injection Logbook

Chemist: DS

Blank Lot #: 13PN8112

IS/Surr Standard Code: AW13I0818

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	10/31/18	10:15	31oct001	BFB	AW13I0818	150	—	—	1.0	—	No		181031MS2A1
2		11:09	002	BFB	↓	↓				—	OK	EM 1906	
3		11:51	003	CCV	AW13I0919	50				B	NO	New ICAL	
4		12:43	004	1.0 ppbv ICAL	AW13I0918	50				1	No		
5		13:22	005	1.0		↓					OK		
6		14:03	006	2.5		125							
7		14:44	007	5.0		250				↓			
8		15:24	008	7.0	AW13I0919	35				B			
9		16:04	009	10		50							
10		16:44	010	25		125							
11		17:24	011	100	AW13I0817	50				13			
12		18:06	012	250		125							
13		18:46	013	Blank	—	250			0.2	3			
14		19:26	014	ICV/LCS	AW13I0804	50			1.0	C			
15		20:07	015	LCSD	↓	↓			↓	C			
16		20:47	016	Siloxanes	7K	↓			↓	16	OK		
17		21:24	017	Method Bl	—	250			0.2	3	OK		
18		22:04	018	J103109-01	Kangji	50			1.0	2	OK		
19		22:44	019	J103006-01	Zalco	50			↓	↓	↓		
20	↓	23:24	↓ 020	↓ -02	↓	↓	↓	↓	↓	4	↓		↓

Approved by/Date:_____

Logbook GCMS2 #35

Air Technology Laboratories

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J110805

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: 70181031
Datafile Directory: 181119 / 181126

Chemist: JL
Blank Lot #: 138N8112
IS/Surr Standard Code: AW131312

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	11/23/18	14:02	23NOV0010	J112106-03	Asset	50	-	-	1.0	3	OK		181123MS2A
2		14:41	11	-04						4			
3		15:21	12	-05						5			
4		16:01	13	Toxaues	TK	50				16			
5		16:46	14	Blank	-	250			0.2	6			
6		17:25	15	J111407-01	Evonik	50	24.6/10.22		2.407	7			
7		18:04	16	J111902-01	Cornerst	50	24.6/9.27	1000/20	133	8			
8		18:43	17	-02						9			
9	11/26/18	08:46	26NOV001	BFB	AW131312	15	-	-	1.0	-	OK		181126MS2A
10		09:32	002	ccv	AW131411					6	OK		
11		10:45	003	Blank	-	250			0.2	6	OK		
12		11:24	004	Sim ccv	AW131202	125			1.0	1	NO		181126MS2A2
13		12:19	005	ccv						1	OK	EM 247 → 2506	
14		13:24	006	Lcs	AW131203					2		Naphthalene ↑	
15		14:03	007	Lcs D						2		↓	
16		14:44	008	Method Bl	-	250			1.0	6	NO	replaced the can	
17		15:41	009	Lcs	AW131412	50			1.0	6	OK		181126MS2A
18		16:21	010	Lcs D					1.0	6	OK		
19		17:02	011	Method Bl	-	250			0.2	6	OK		
20		17:41	012	J110805-07	Jacobs	50	24.6/12.65		1.944	1	OK		

Approved by/Date:_____
Logbook GCMS2 #36

Air Technology Laboratories

J110805

GCMS Injection Logbook

Instrument ID: GCMS2
Analytical Method: TO/181031 / SC/181116
Datafile Directory: 181126

Chemist: DT
Blank Lot #: 138N8112
IS/Surr Standard Code: AN131312

	Date	Time	Data File	Lab Number/ Standard Type	Client/ Std Code	Sample Volume	Press. Dilution	Sample dilution	DF	Line #	Status	Comments	QC Batch
1	11/26/18	18:24	26NOV 013	J110805-08	Jacobs	50	24.6 / 12.65	—	1.944	2	OK		181126MS2#1
2		19:10	14	J111203-04	#GS	447	19.6 / 10.95		0.2	3	OK		
3		19:55	15	05		438	11.19			4			
4		20:40	16	04DL			11.19			4			
5		21:19	17	CCV	AN131411	50	—	↓	1.0	6	OK		
6		21:59	18	Blank	—	250	—	—	1.0	6			181126MS2#2
7		22:39	19	— " —						7			
8	↓	23:20	20	— " —	↓	↓				7			
9	11/27/18	00:00	21	MDL 1	AN131204	200				5	OK		
10		00:41	22	2									
11		01:24	23	3									
12		02:04	24	4									
13		02:46	25	5									
14		03:26	26	6									
15		04:07	27	7									
16		04:47	28	8	↓	↓				4	↓		
17		05:25	29	LOD	AN131204	35				8	OK		
18		06:06	30	Method Bl	—	200	↓			7	OK		
19		06:50	31	J110805-01	Jacobs	387	19.6 / 11.68			9	OK		
20	↓	07:39	32	-02	↓	420	↓ 11.68	↓	↓	10	↓		

Approved by/Date:_____
Logbook GCMS2 #36

Air Technology Laboratories

2. Sample Raw Data

a. Results/Chromatograms/Spectra

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\181126\26NOV001.D
Tune Time : 26 Nov 2018 8:46 am

Daily Calibration File : C:\msdchem\1\data\181126\26NOV002.D

					Internal Standard Responses		
					111871	411421	208452
File	Sample	Surrogate Recovery %					
26NOV009.D							
	LCS	112	75	94	116045	417030	212704
26NOV010.D							
	LCSD	116	77	93	112483	399338	209670
26NOV011.D							
	METHOD BLANK	117	77	118	115462	371137	193069
26NOV012.D							
	J110805-07	119	80	119	114568	372813	201967
26NOV013.D							
	J110805-08	113	83	109	105318	380990	204526

(fails) - fails 24hr time check * - fails criteria

Created: Tue Dec 04 11:31:44 2018 ms2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV012.D
Acq On : 26 Nov 2018 5:41 pm
Operator : DT
Sample : J110805-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

Quant Time: Nov 26 18:06:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.334	130	114568	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.688	114	372813	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.207	117	201967	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.098	65	278621	11.92	ppbv		0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 119.20%				
34) Toluene-d8	12.938	98	274253	7.96	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 79.60%				
53) 4-Bromofluorobenzene	17.181	174	128890	11.89	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 118.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.585	85	84965	2.10	ppbv		88
3) Chloromethane	3.939	50	2727	0.15	ppbv	#	44
6) Bromomethane	4.936	94	207	0.04	ppbv	#	10
7) Chloroethane	4.933	66	102	0.04	ppbv	#	1
8) Trichlorofluoromethane...	5.491	101	1113586	24.58	ppbv		99
10) Carbon Disulfide	7.137	76	29042	0.95	ppbv		93
11) 1,1,2-Cl 1,2,2-F ethan...	6.245	151	521	0.02	ppbv	#	1
12) Acetone	6.150	43	223717	6.08	ppbv		93
14) t-1,2-Dichloroethene	7.609	96	260	0.02	ppbv	#	1
18) 2-Butanone	8.583	72	367	0.06	ppbv		1
19) t-Butyl Methyl Ether	7.324	73	617	0.01	ppbv		58
23) Carbon Tetrachloride	10.144	117	977	0.04	ppbv	#	18
25) Benzene	10.334	78	6076	0.19	ppbv		74
28) Trichloroethene	11.197	130	599	0.04	ppbv	#	1
31) Dibromomethane	11.780	93	230	0.02	ppbv	#	60
33) 4-Methyl-2-Pentanone	12.233	43	538	0.02	ppbv		44
35) Toluene	13.049	91	13416	0.48	ppbv		79
40) Tetrachloroethene	14.076	166	20772	1.51	ppbv		78
41) 2-Hexanone	13.495	58	100	0.01	ppbv		1
42) Dibromochloromethane	14.072	129	14663	1.01	ppbv	#	16
46) Ethylbenzene	15.384	91	1859	0.07	ppbv		45
47) p,&m-Xylene	15.502	91	9260	0.48	ppbv		66
48) o-Xylene	16.191	91	2969	0.16	ppbv	#	24
49) Styrene	16.214	104	128	0.01	ppbv	#	31
52) 1,1,2,2-Tetrachloroethane	17.034	83	7566	0.51	ppbv	#	34
54) Benzyl Chloride	18.952	91	100	0.01	ppbv		65
56) n-Propyl Benzene	17.483	91	762	0.04	ppbv	#	53
58) 4-Ethyl Toluene	17.676	105	440	0.02	ppbv		52
59) 1,3,5-Trimethylbenzene	17.739	105	2528	0.11	ppbv		78
61) 4-Chlorotoluene	17.706	91	327	0.03	ppbv	#	49
62) tert-Butylbenzene	18.306	119	471	0.03	ppbv	#	79
63) 1,2,4-Trimethylbenzene	18.306	105	5569	0.25	ppbv		51
65) p-Isopropyltoluene	18.729	119	6025	0.46	ppbv		85
66) 1,3-Dichlorobenzene	18.936	146	203	0.02	ppbv	#	24
67) 1,4-Dichlorobenzene	18.936	146	203	0.02	ppbv	#	27
68) n-Butylbenzene	19.283	91	606	0.04	ppbv	#	83

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV012.D
Acq On : 26 Nov 2018 5:41 pm
Operator : DT
Sample : J110805-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

Quant Time: Nov 26 18:06:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

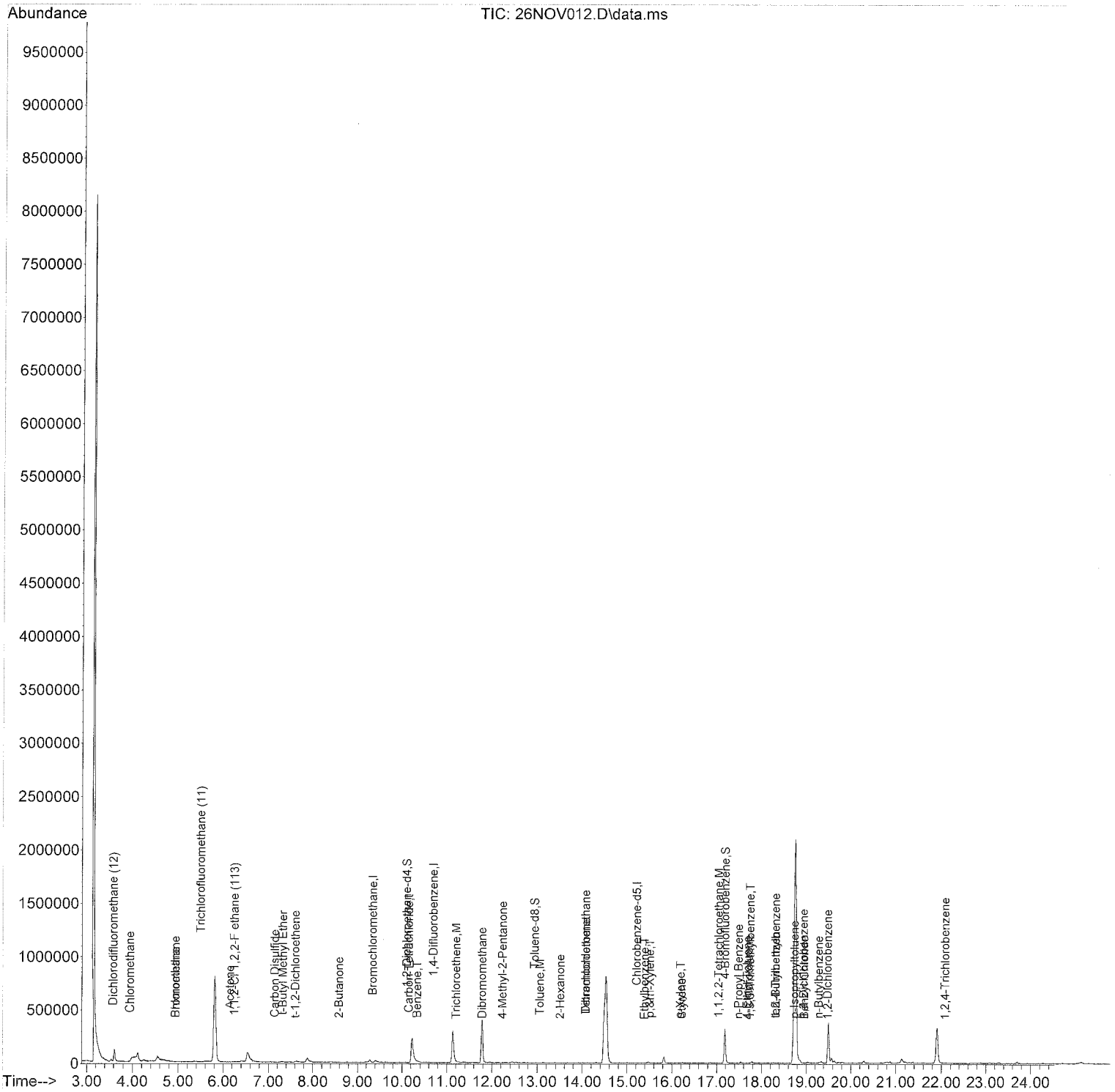
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
69) 1,2-Dichlorobenzene	19.480	146	129	0.01 ppbv #	26
71) 1,2,4-Trichlorobenzene	22.074	180	103	0.01 ppbv #	23

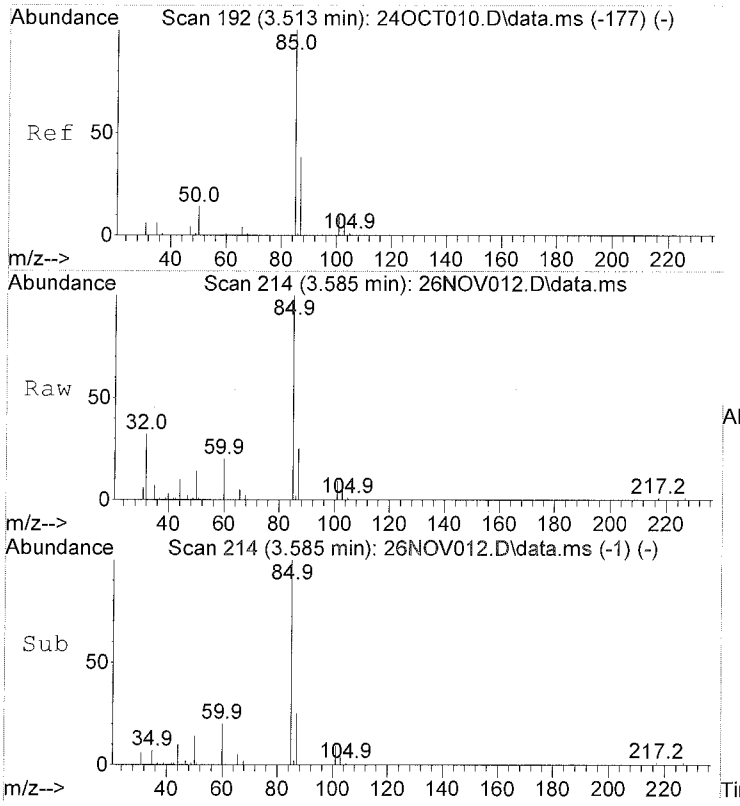
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV012.D
Acq On : 26 Nov 2018 5:41 pm
Operator : DT
Sample : J110805-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

Quant Time: Nov 26 18:06:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

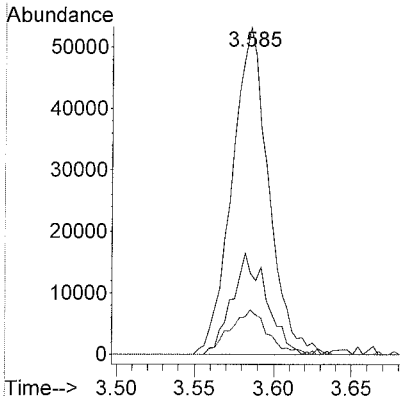


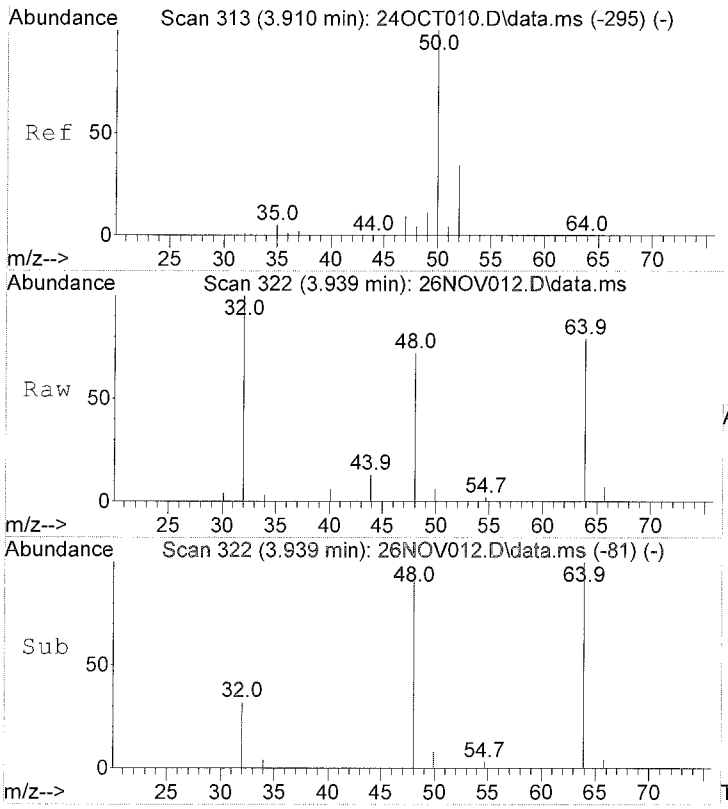


#2
Dichlorodifluoromethane (12)
Concen: 2.10 ppbv
RT: 3.585 min Scan# 214
Delta R.T. 0.032 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 85 Resp: 84965

Ion	Ratio	Lower	Upper
85	100		
87	24.8	0.0	83.5
50	14.9	0.0	63.3

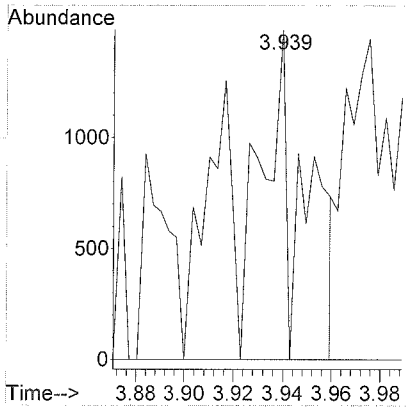


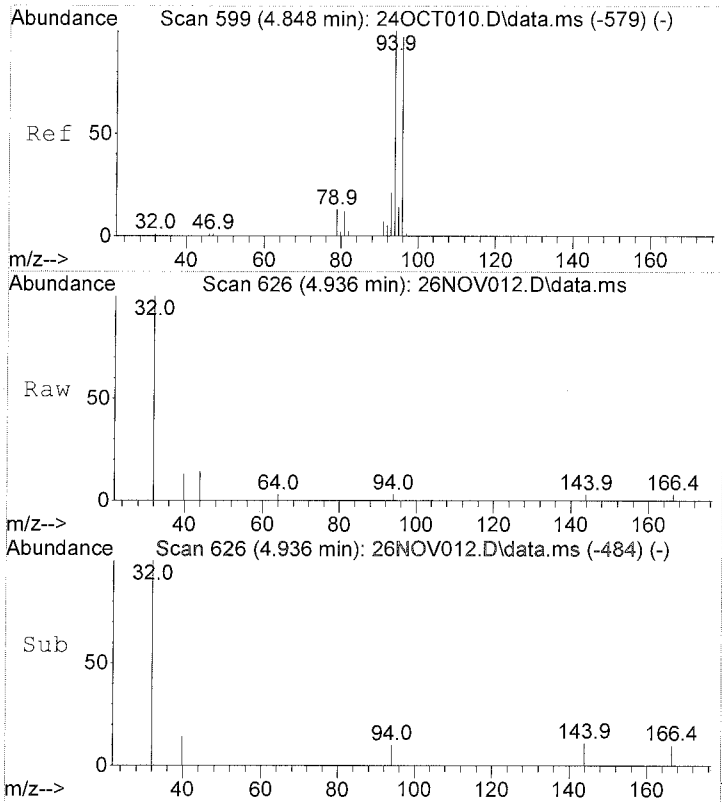


#3
Chloromethane
Concen: 0.15 ppbv
RT: 3.939 min Scan# 322
Delta R.T. -0.010 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 50 Resp: 2727

Ion	Ratio	Lower	Upper
50	100		
52	0.0	0.4	60.4#

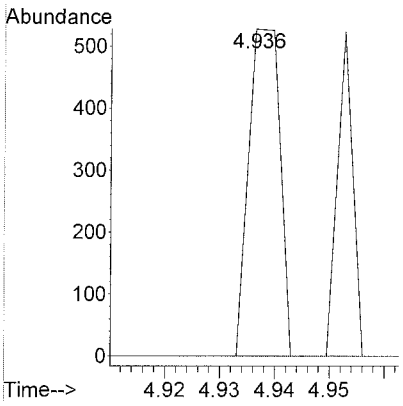


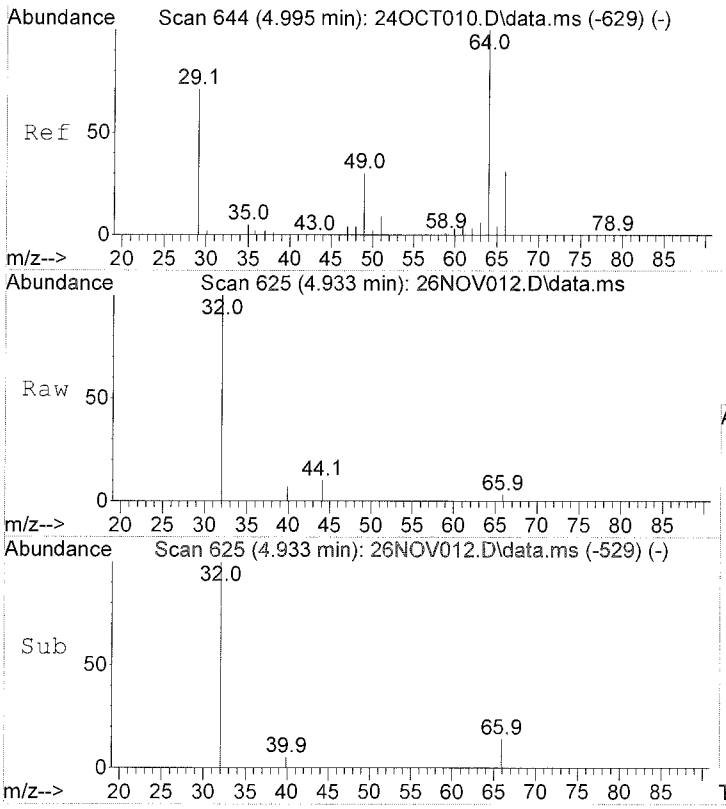


#6
Bromomethane
Concen: 0.04 ppbv
RT: 4.936 min Scan# 626
Delta R.T. 0.065 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 94 Resp: 207

Ion	Ratio	Lower	Upper
94	100		
96	0.0	48.0	148.0#
79	0.0	0.0	69.2

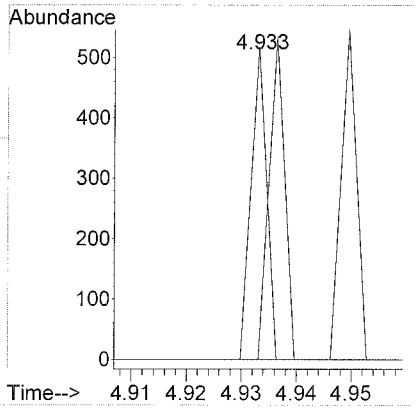


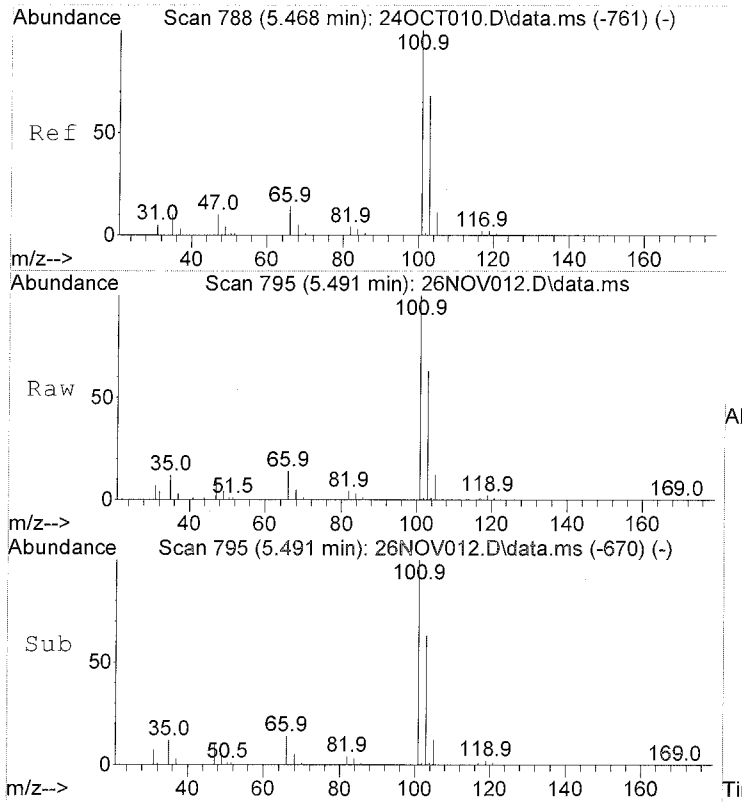


#7
Chloroethane
Concen: 0.04 ppbv
RT: 4.933 min Scan# 625
Delta R.T. -0.086 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 66 Resp: 102

Ion	Ratio	Lower	Upper
66	100		
64	0.0	157.9	257.9#
49	0.0	34.4	134.4#

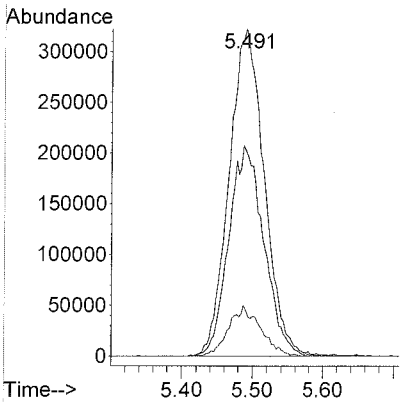


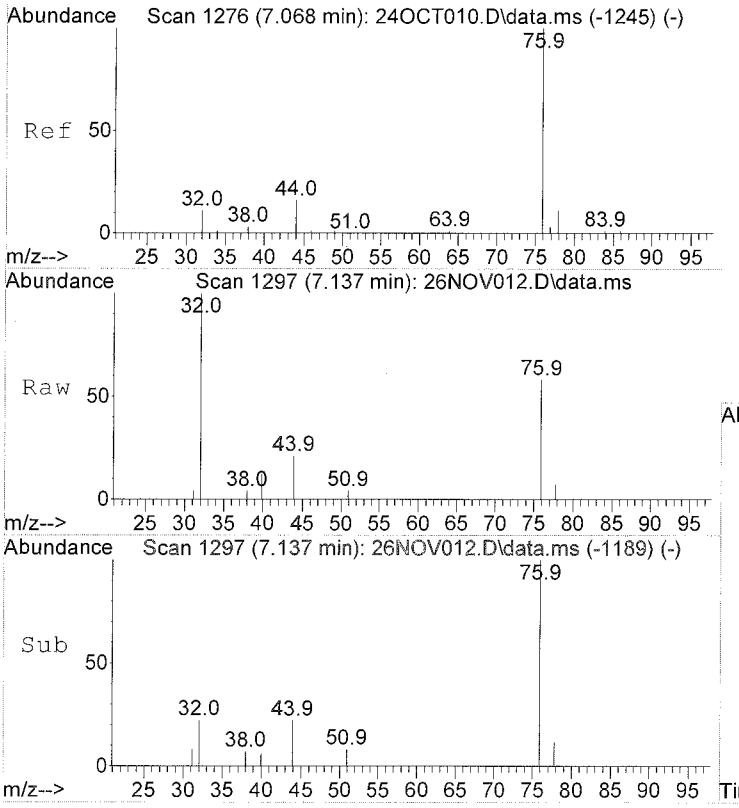


#8
Trichlorofluoromethane (11)
Concen: 24.58 ppbv
RT: 5.491 min Scan# 795
Delta R.T. 0.010 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:101 Resp: 1113586

Ion	Ratio	Lower	Upper
101	100		
103	62.6	13.0	113.0
66	13.9	0.0	65.0

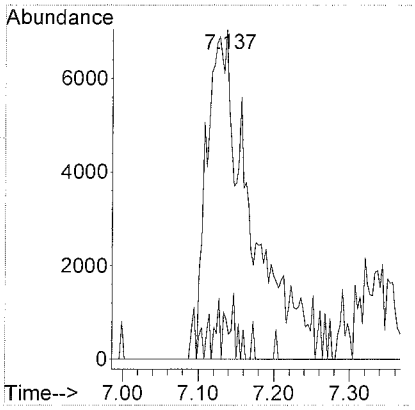


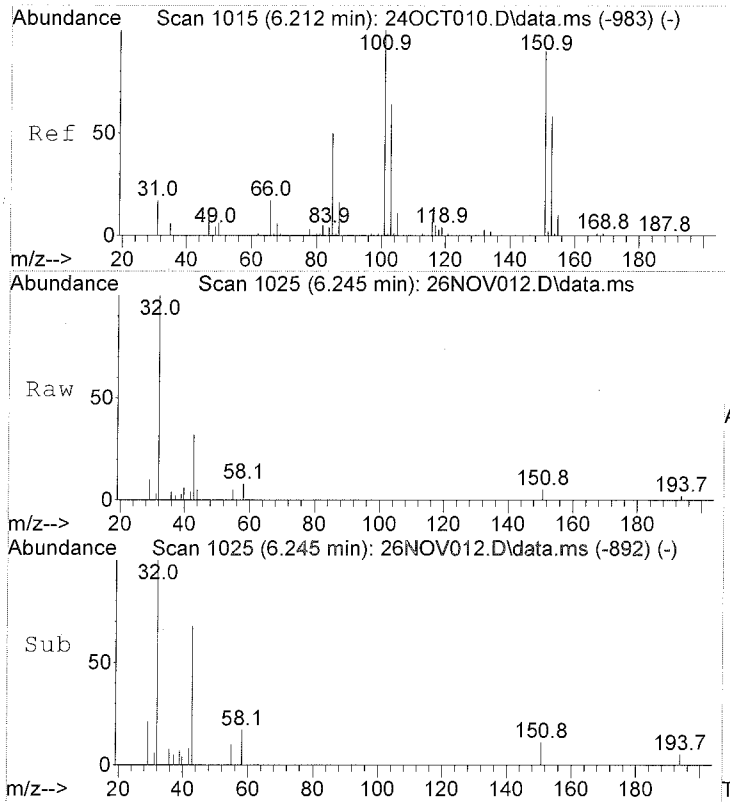


#10
Carbon Disulfide
Concen: 0.95 ppbv
RT: 7.137 min Scan# 1297
Delta R.T. 0.053 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 76 Resp: 29042

Ion	Ratio	Lower	Upper
76	100		
78	12.1	0.0	59.5

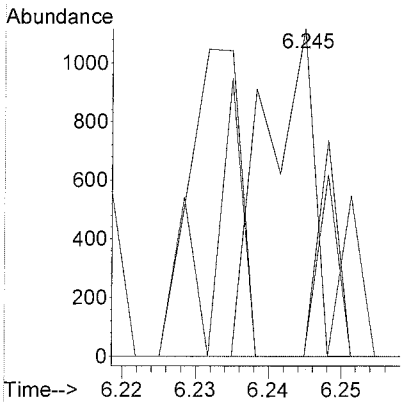


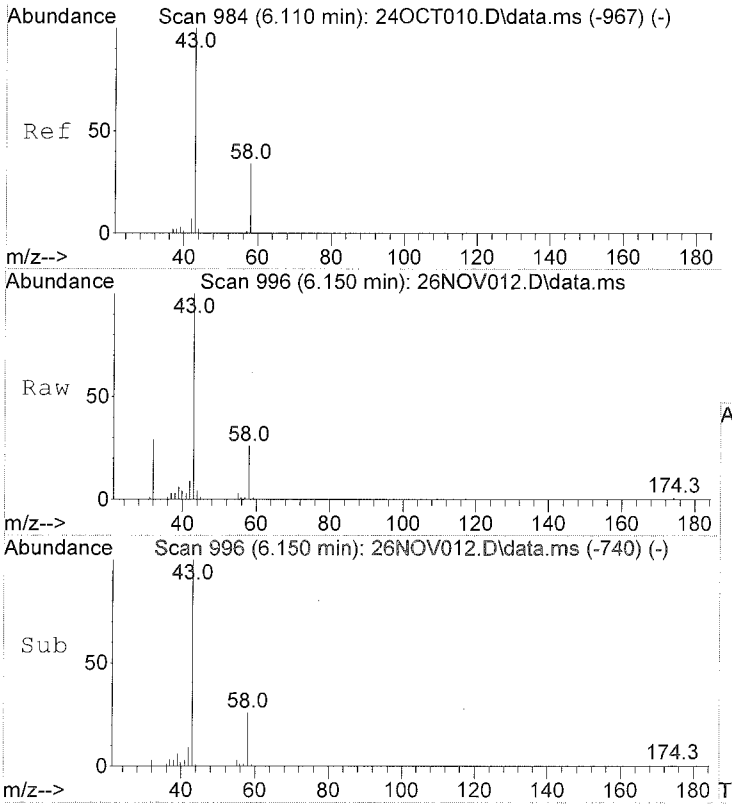


#11
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 0.02 ppbv
RT: 6.245 min Scan# 1025
Delta R.T. 0.036 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:151 Resp: 521

Ion	Ratio	Lower	Upper
151	100		
101	0.0	85.1	185.1#
103	0.0	46.7	146.7#
85	0.0	16.8	116.8#

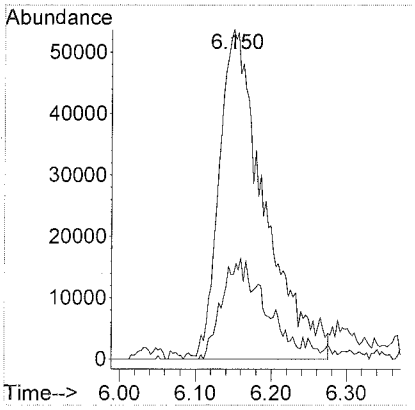


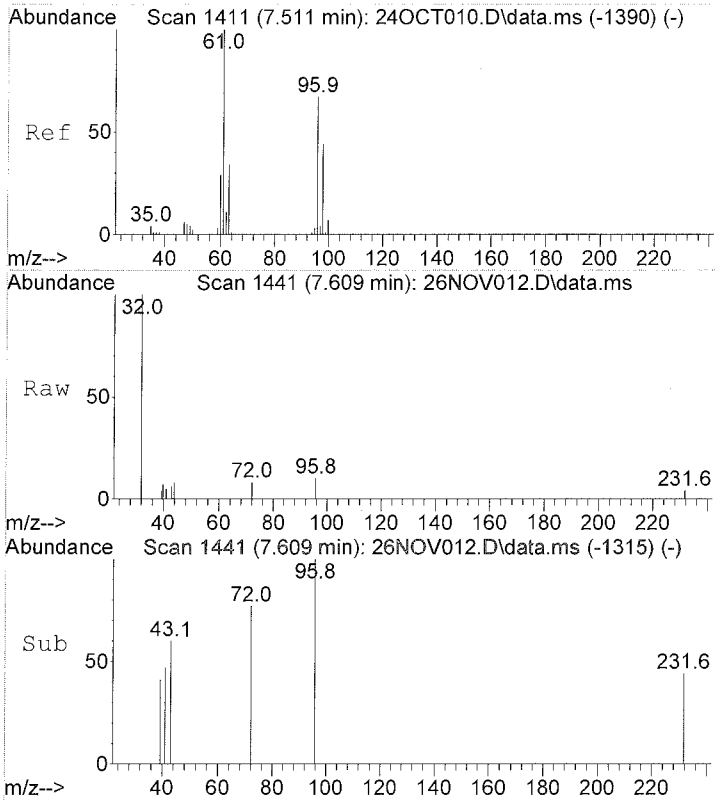


#12
Acetone
Concen: 6.08 ppbv
RT: 6.150 min Scan# 996
Delta R.T. 0.039 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 43 Resp: 223717

Ion	Ratio	Lower	Upper
43	100		
58	25.7	9.3	49.3

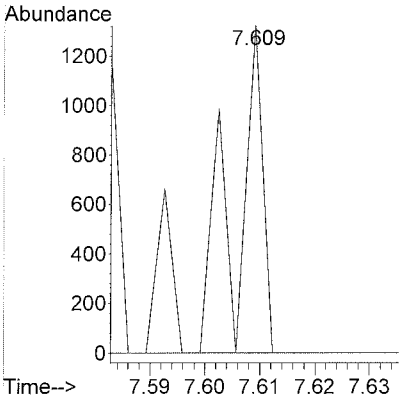


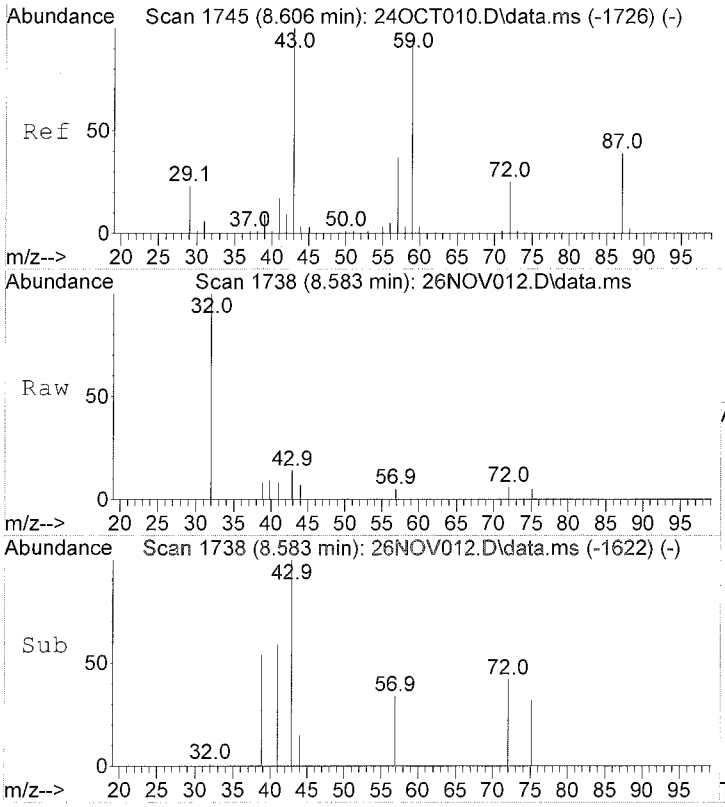


#14
t-1,2-Dichloroethene
Concen: 0.02 ppbv
RT: 7.609 min Scan# 1441
Delta R.T. 0.013 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 96 Resp: 260

Ion	Ratio	Lower	Upper
96	100		
61	0.0	98.0	198.0#
98	0.0	21.0	121.0#
63	0.0	2.1	102.1#

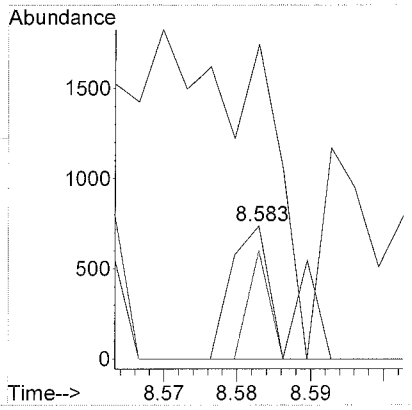


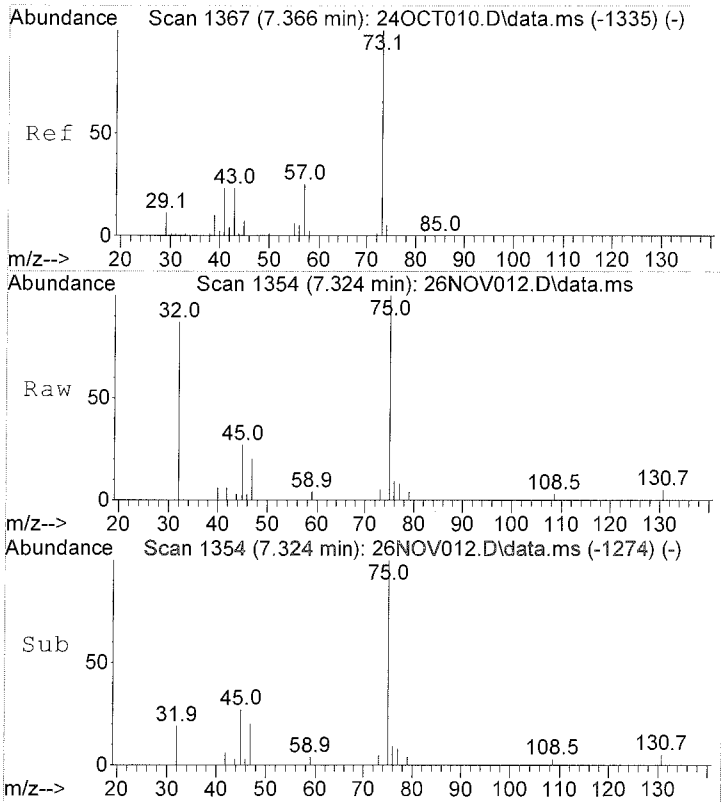


#18
2-Butanone
Concen: 0.06 ppbv
RT: 8.583 min Scan# 1738
Delta R.T. -0.020 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 72 Resp: 367

Ion	Ratio	Lower	Upper
72	100		
43	78.0	0.0	1397.7
57	81.4	47.5	247.5

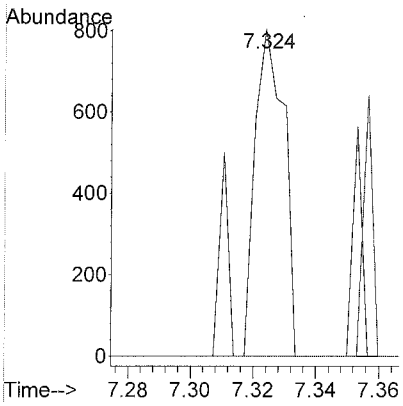


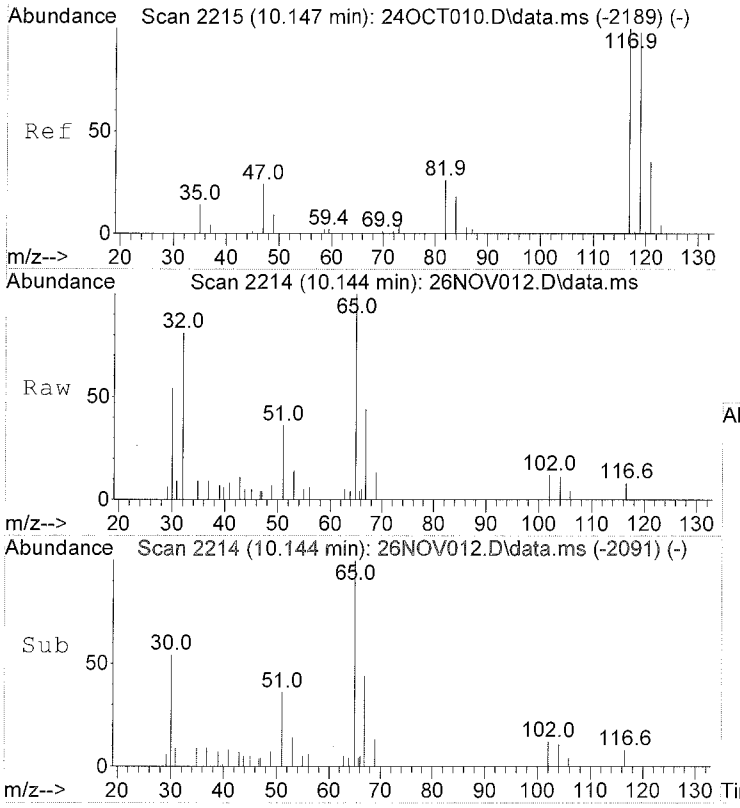


#19
t-Butyl Methyl Ether
Concen: 0.01 ppbv
RT: 7.324 min Scan# 1354
Delta R.T. -0.036 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 73 Resp: 617

Ion	Ratio	Lower	Upper
73	100		
41	0.0	0.0	519.2
57	0.0	0.0	519.0

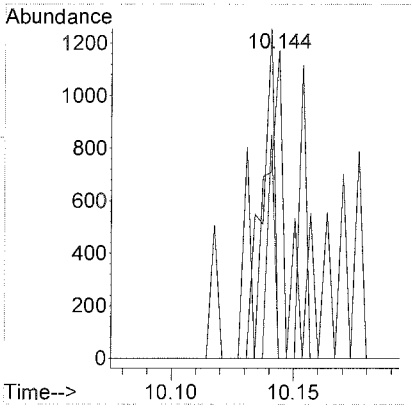


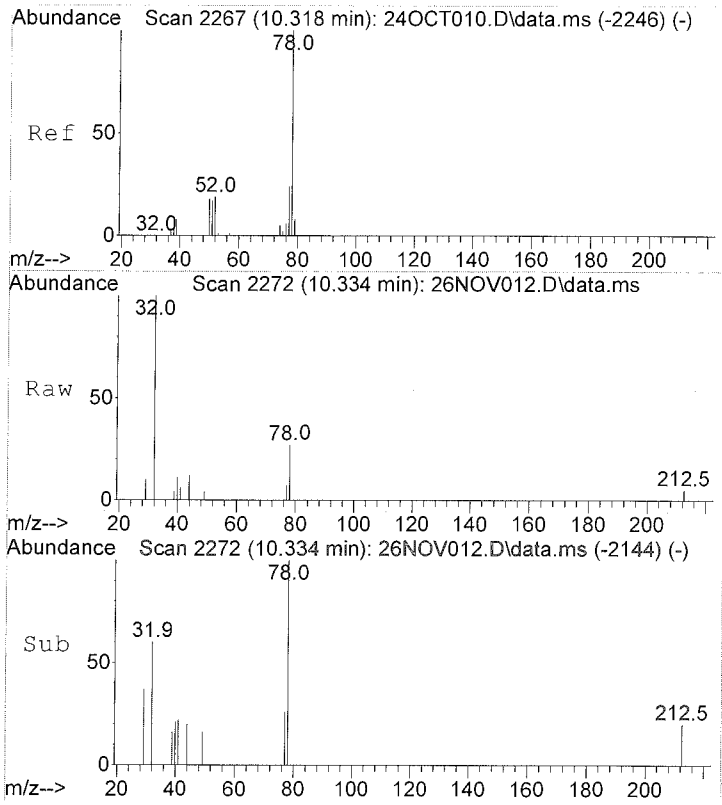


#23
Carbon Tetrachloride
Concen: 0.04 ppbv
RT: 10.144 min Scan# 2214
Delta R.T. 0.003 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:117 Resp: 977

Ion	Ratio	Lower	Upper
117	100		
119	0.0	46.1	146.1#
82	0.0	0.0	79.2
121	0.0	0.0	80.5

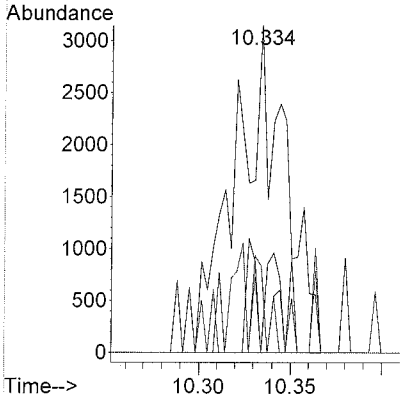


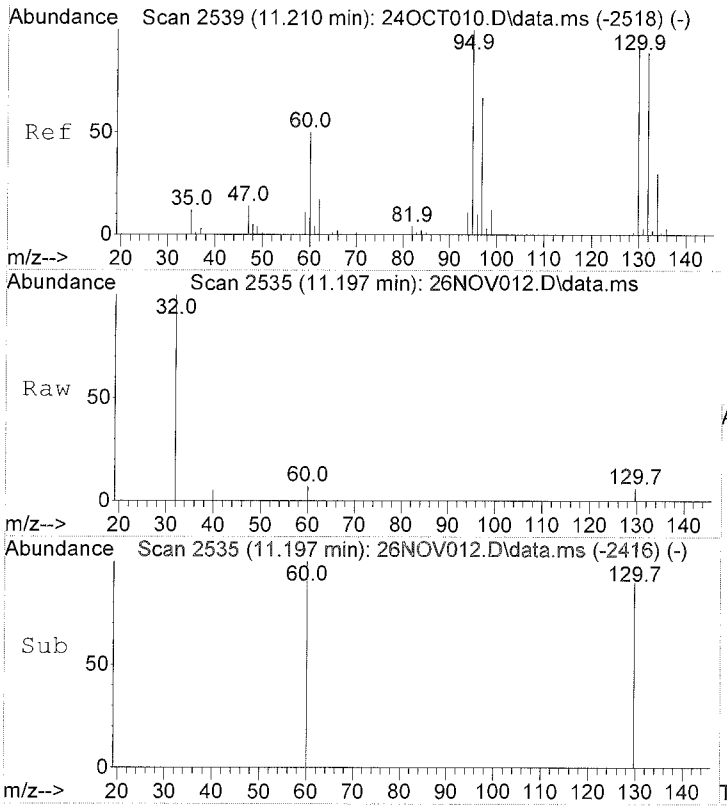


#25
Benzene
Concen: 0.19 ppbv
RT: 10.334 min Scan# 2272
Delta R.T. 0.019 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 78 Resp: 6076

Ion	Ratio	Lower	Upper
78	100		
50	0.0	0.0	66.6
52	0.0	0.0	64.9
77	26.4	0.0	71.7

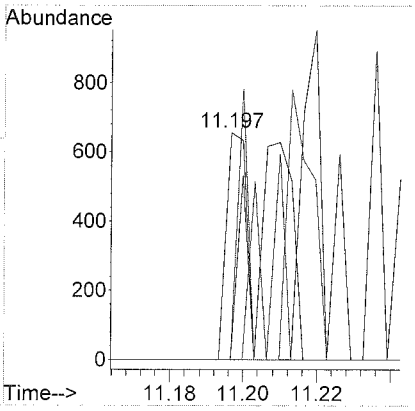


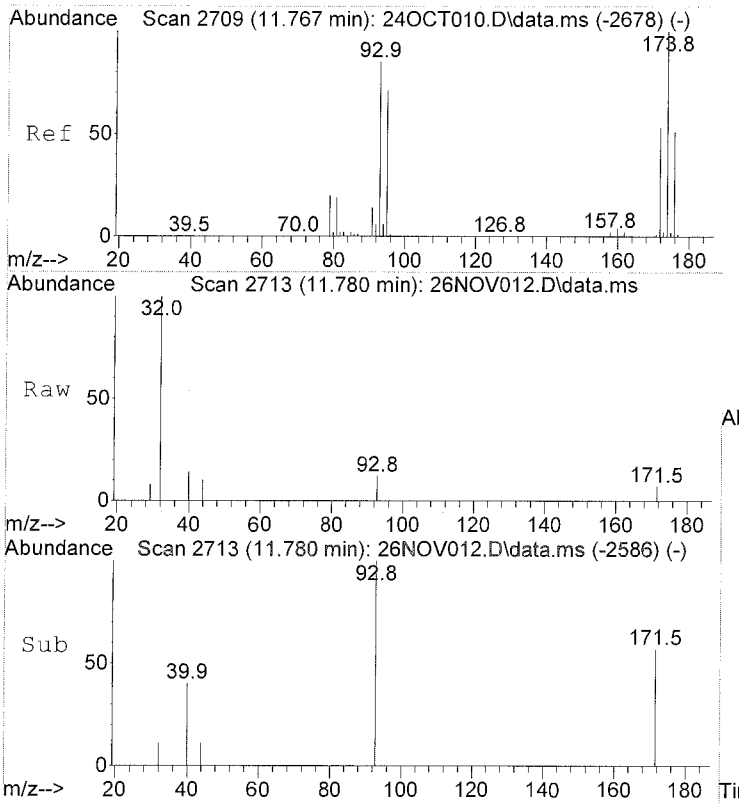


#28
Trichloroethene
Concen: 0.04 ppbv
RT: 11.197 min Scan# 2535
Delta R.T. -0.010 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:130 Resp: 599

Ion	Ratio	Lower	Upper
130	100		
95	0.0	78.2	178.2#
132	0.0	46.5	146.5#
97	0.0	30.8	130.8#

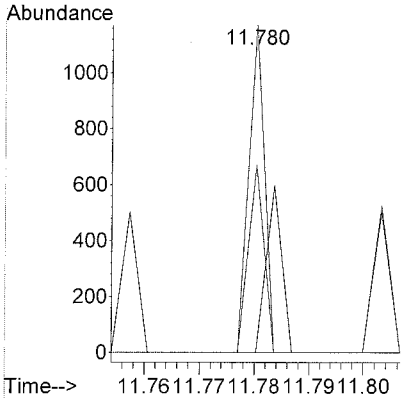


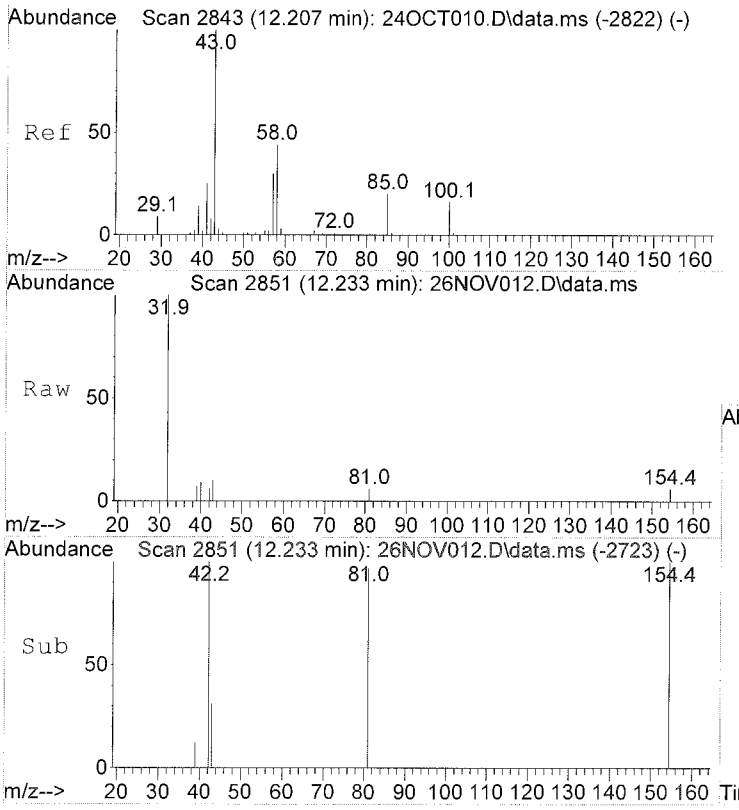


#31
Dibromomethane
Concen: 0.02 ppbv
RT: 11.780 min Scan# 2713
Delta R.T. 0.016 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 93 Resp: 230

Ion	Ratio	Lower	Upper
93	100		
174	0.0	65.0	105.0#
93	100.0	80.0	120.0
172	57.3	20.9	60.9

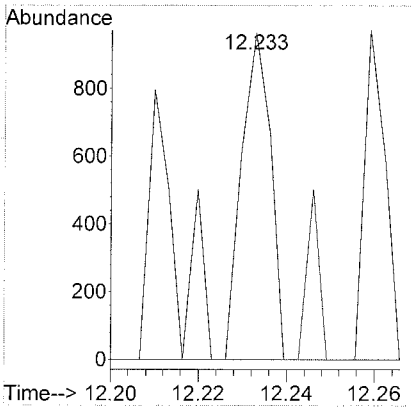


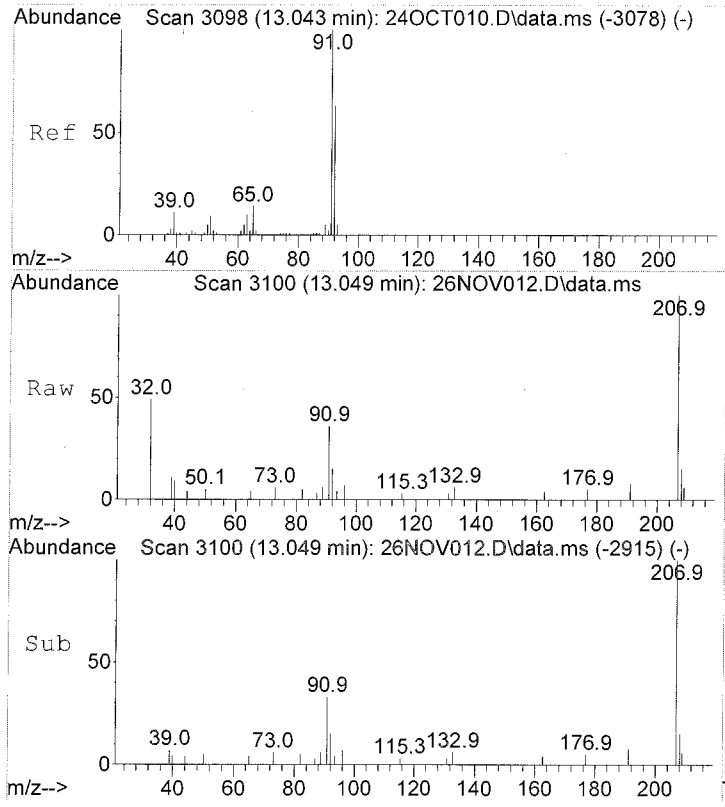


#33
4-Methyl-2-Pentanone
Concen: 0.02 ppbv
RT: 12.233 min Scan# 2851
Delta R.T. 0.020 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 43 Resp: 538

Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	94.4
100	0.0	0.0	64.3
85	0.0	0.0	72.4

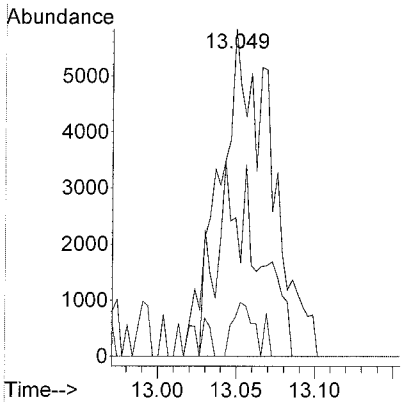


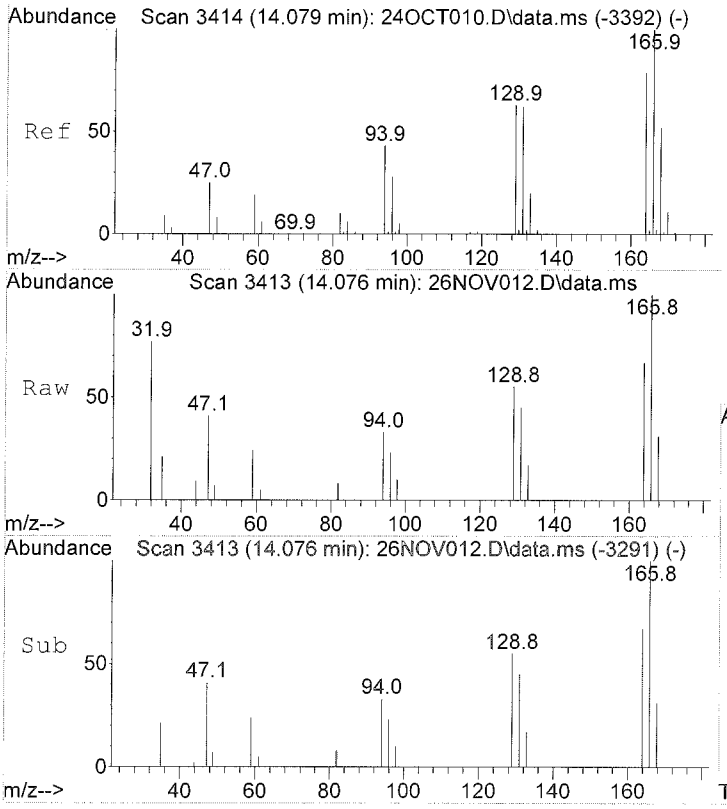


#35
Toluene
Concen: 0.48 ppbv
RT: 13.049 min Scan# 3100
Delta R.T. 0.006 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 91 Resp: 13416

Ion	Ratio	Lower	Upper
91	100		
92	42.4	10.8	110.8
65	11.9	0.0	63.4

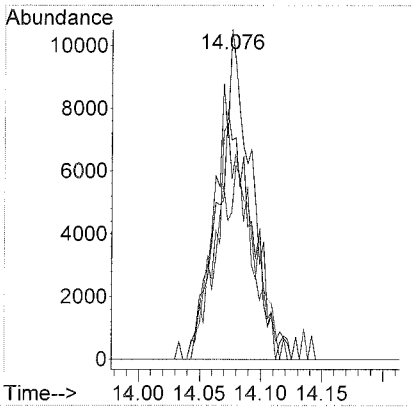


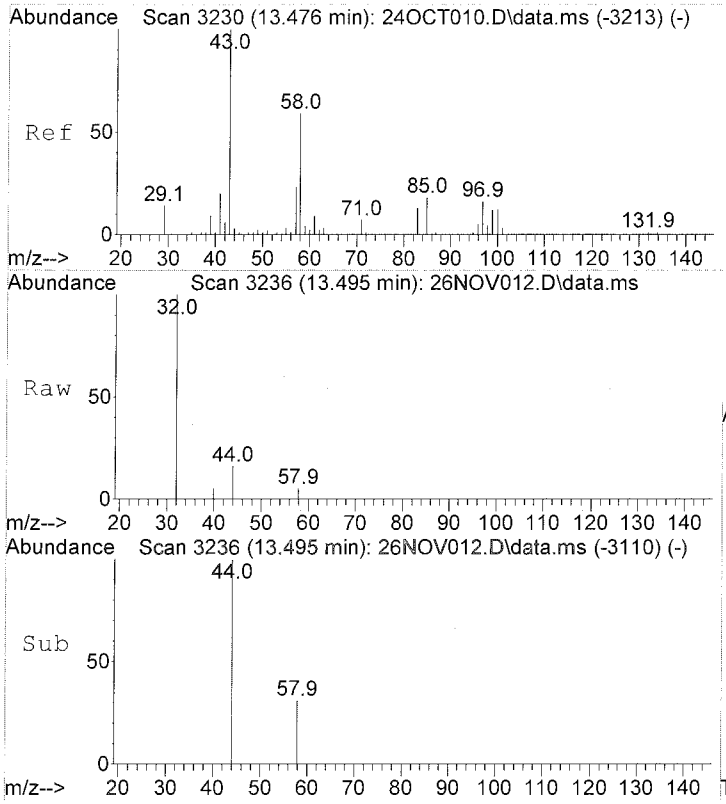


#40
Tetrachloroethene
Concen: 1.51 ppbv
RT: 14.076 min Scan# 3413
Delta R.T. -0.000 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:166 Resp: 20772

Ion	Ratio	Lower	Upper
166	100		
164	66.6	29.5	129.5
131	44.6	18.1	118.1
129	54.8	23.3	123.3

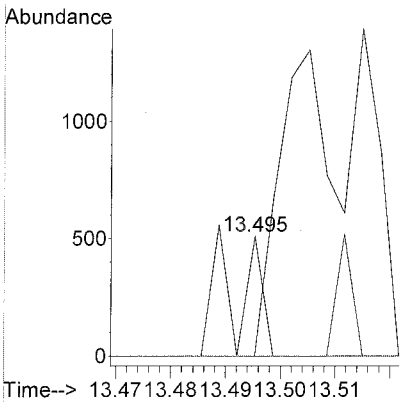


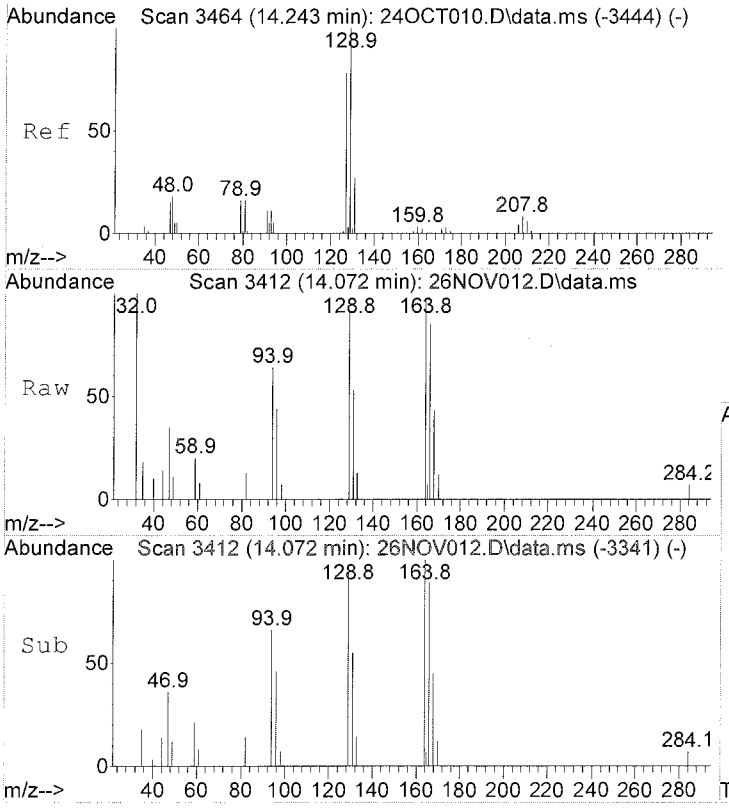


#41
2-Hexanone
Concen: 0.01 ppbv
RT: 13.495 min Scan# 3236
Delta R.T. 0.013 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 58 Resp: 100

Ion	Ratio	Lower	Upper
58	100		
43	0.0	0.0	682.6
57	0.0	0.0	535.8
100	0.0	0.0	69.5

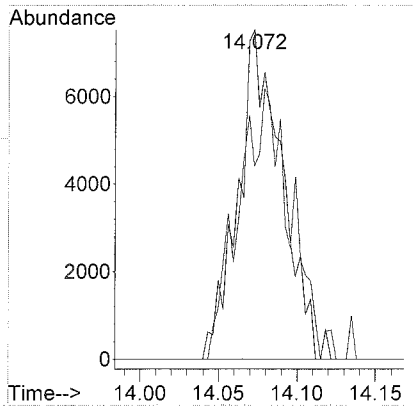


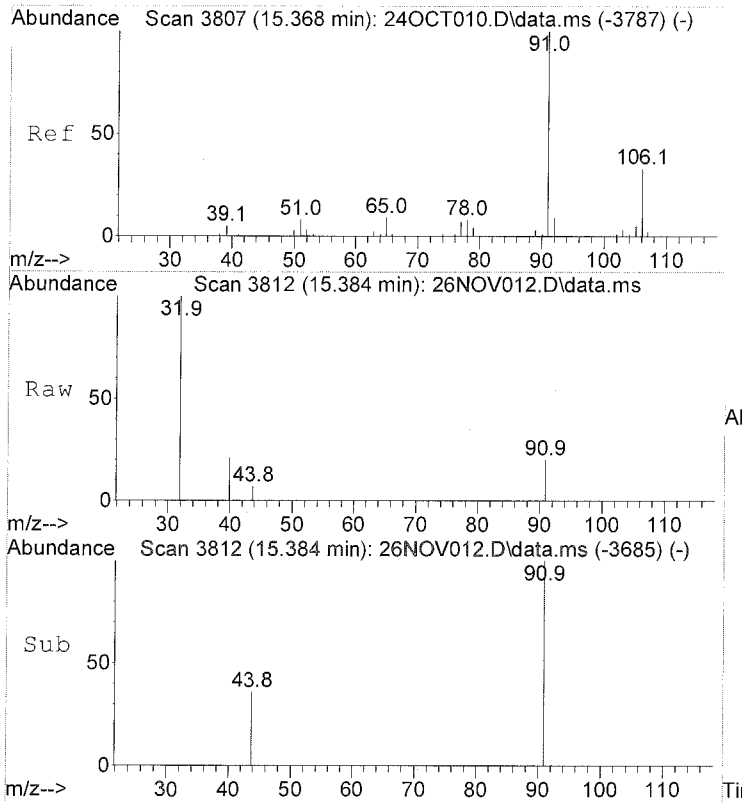


#42
Dibromochloromethane
Concen: 1.01 ppbv
RT: 14.072 min Scan# 3412
Delta R.T. -0.168 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:129 Resp: 14663

Ion	Ratio	Lower	Upper
129	100		
127	0.0	24.3	124.3#
131	58.7	0.0	72.9

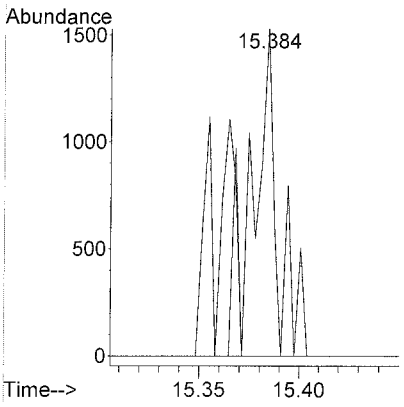


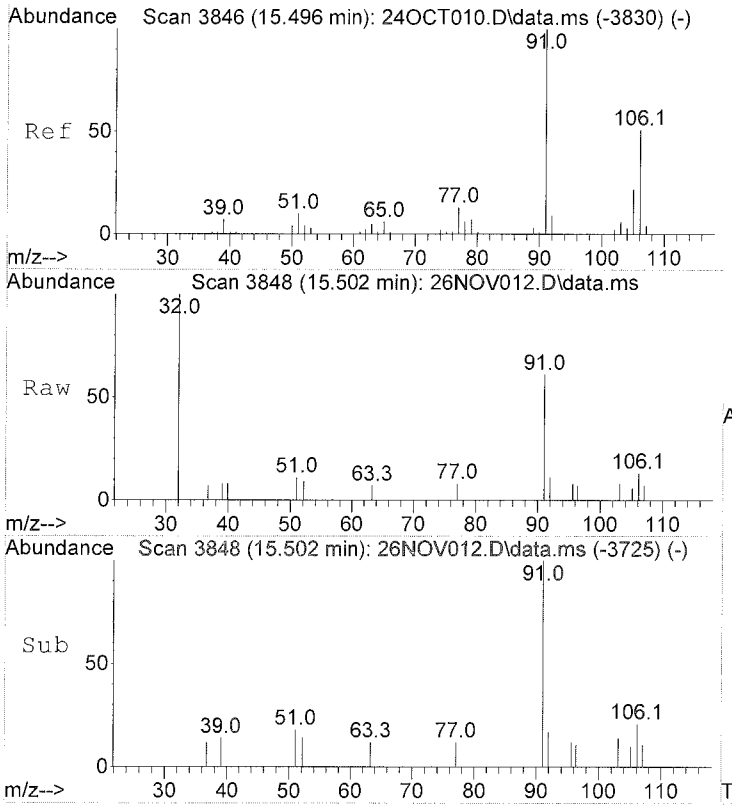


#46
Ethylbenzene
Concen: 0.07 ppbv
RT: 15.384 min Scan# 3812
Delta R.T. 0.016 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 91 Resp: 1859

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.0	79.5

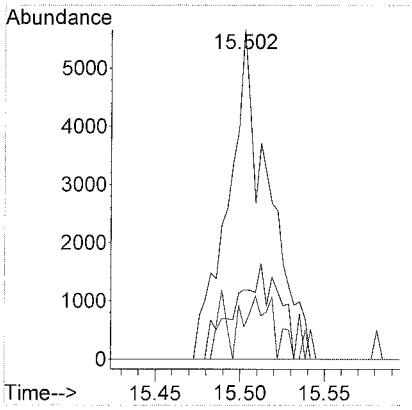


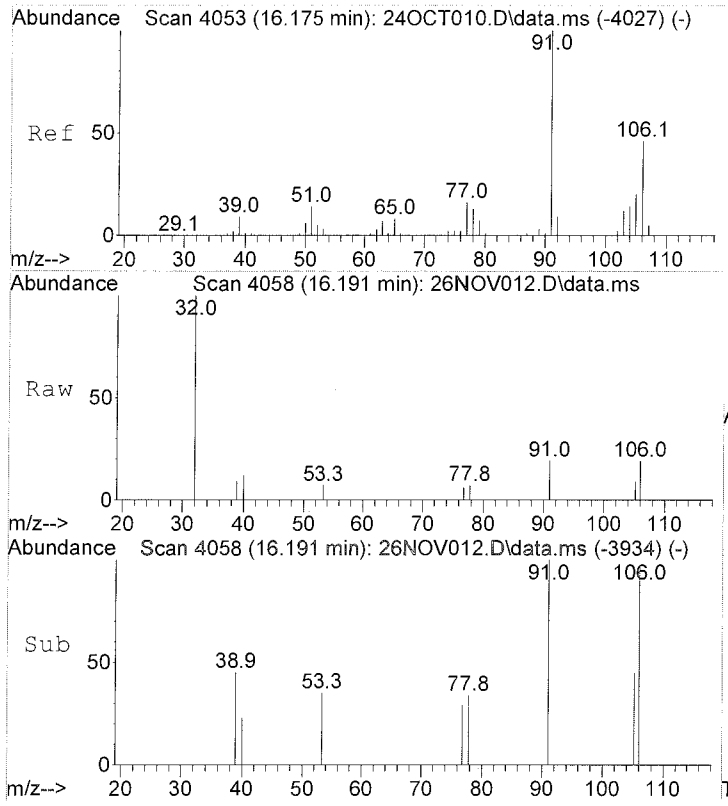


#47
p,&m-Xylene
Concen: 0.48 ppbv
RT: 15.502 min Scan# 3848
Delta R.T. 0.003 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 91 Resp: 9260

Ion	Ratio	Lower	Upper
91	100		
106	21.1	0.0	96.6
105	9.9	0.0	70.6

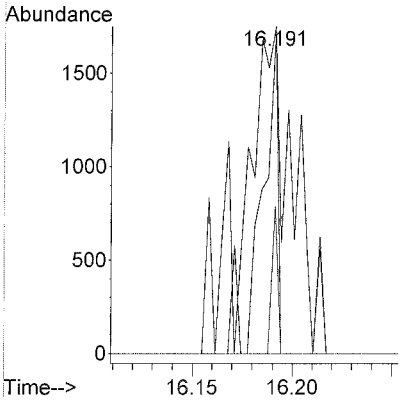


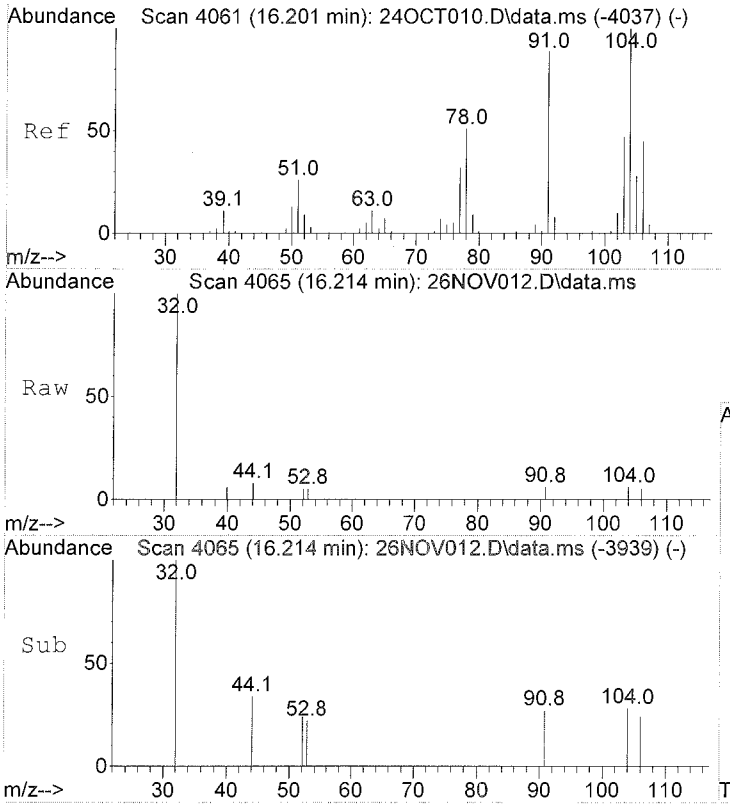


#48
o-Xylene
Concen: 0.16 ppbv
RT: 16.191 min Scan# 4058
Delta R.T. 0.006 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 91 Resp: 2969

Ion	Ratio	Lower	Upper
91	100		
106	97.8	0.0	93.9#
105	45.1	0.0	69.1

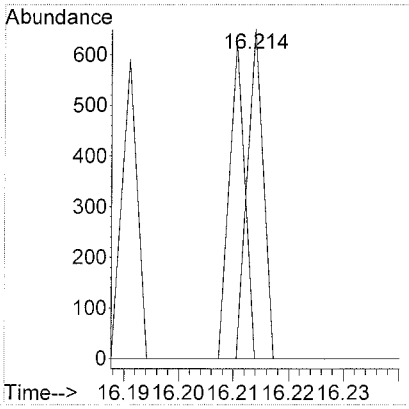


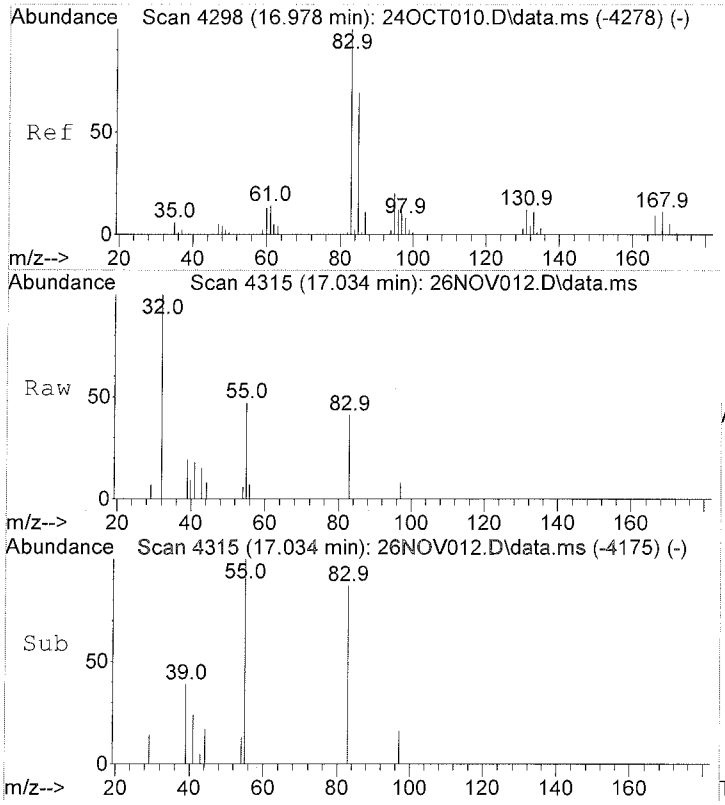


#49
Styrene
Concen: 0.01 ppbv
RT: 16.214 min Scan# 4065
Delta R.T. 0.013 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:104 Resp: 128

Ion	Ratio	Lower	Upper
104	100		
78	0.0	5.4	105.4#
103	0.0	0.0	97.9
50	0.0	0.0	66.2

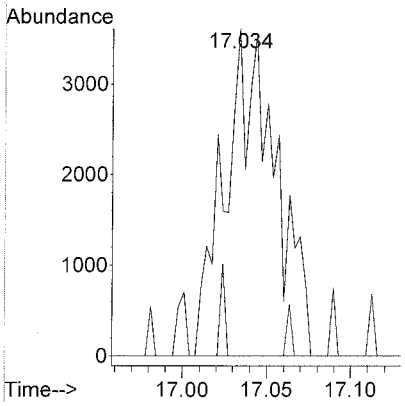


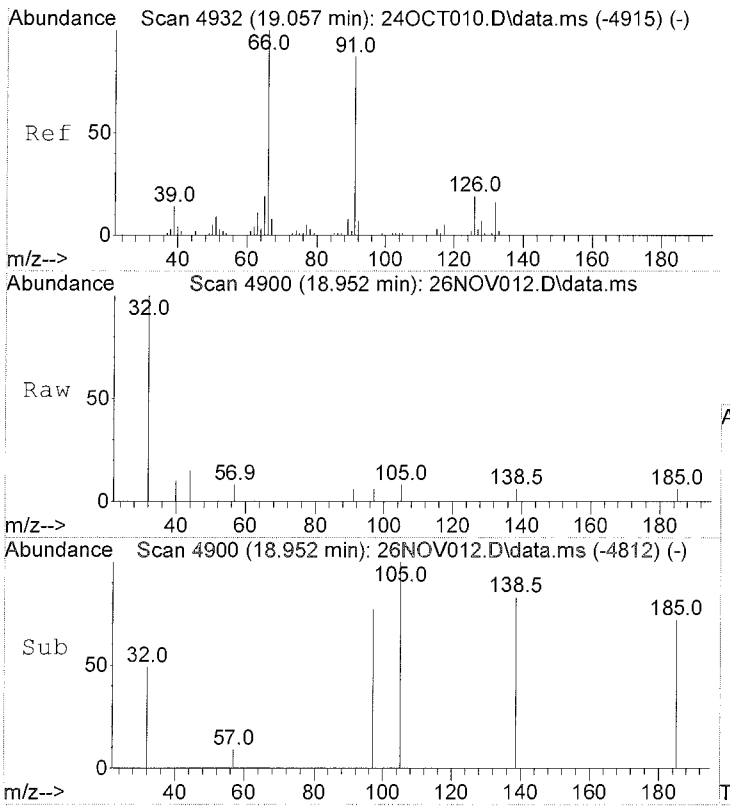


#52
1,1,2,2-Tetrachloroethane
Concen: 0.51 ppbv
RT: 17.034 min Scan# 4315
Delta R.T. 0.059 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 83 Resp: 7566

Ion	Ratio	Lower	Upper
83	100		
85	0.0	11.1	111.1#
60	0.0	0.0	64.6
61	0.0	0.0	65.1

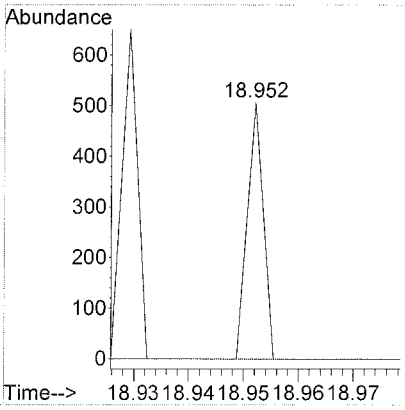


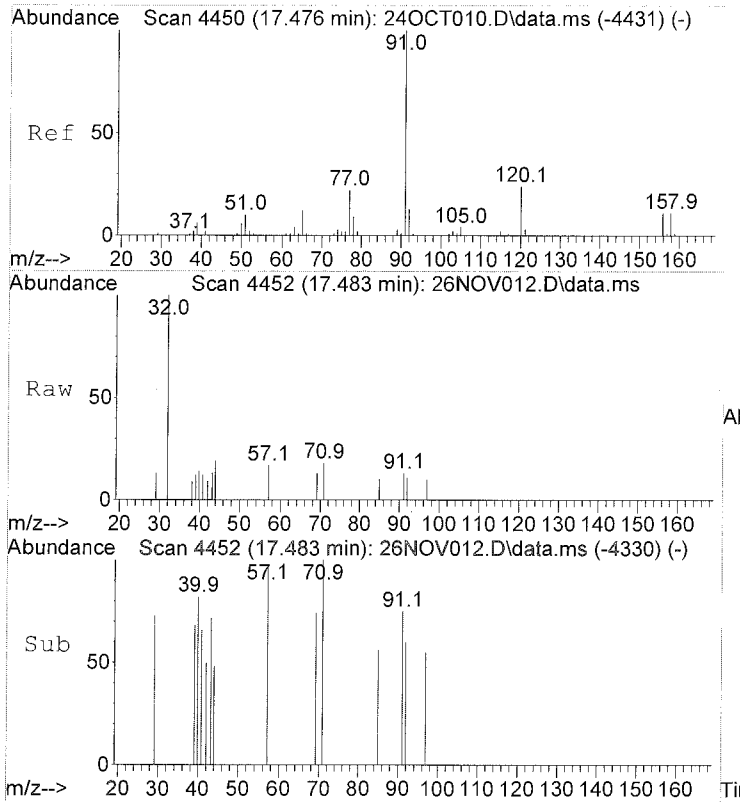


#54
Benzyl Chloride
Concen: 0.01 ppbv
RT: 18.952 min Scan# 4900
Delta R.T. -0.112 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 91 Resp: 100

Ion	Ratio	Lower	Upper
91	100		
126	0.0	0.0	66.1
63	0.0	0.0	62.0

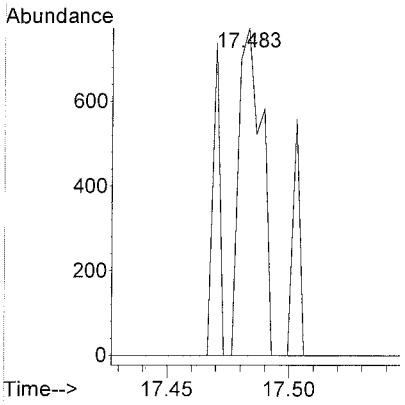


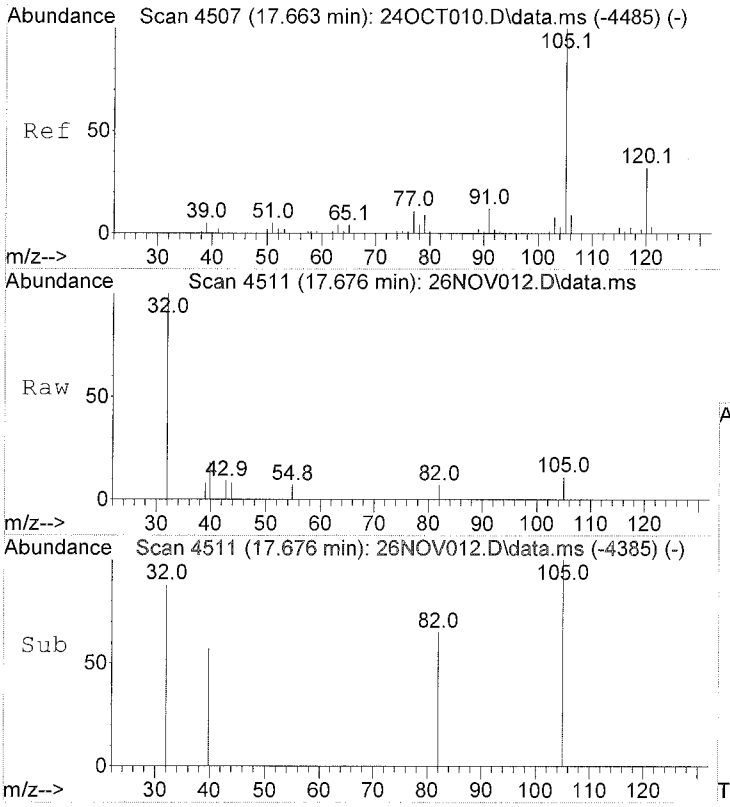


#56
n-Propyl Benzene
Concen: 0.04 ppbv
RT: 17.483 min Scan# 4452
Delta R.T. -0.000 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 91 Resp: 762

Ion	Ratio	Lower	Upper
91	100		
120	0.0	2.6	42.6#

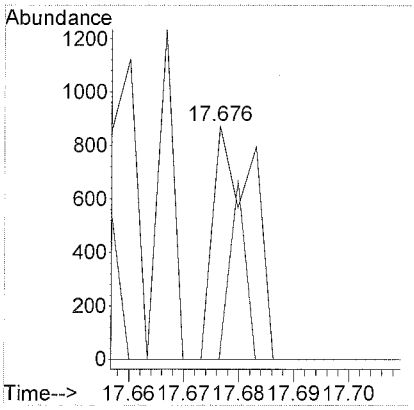


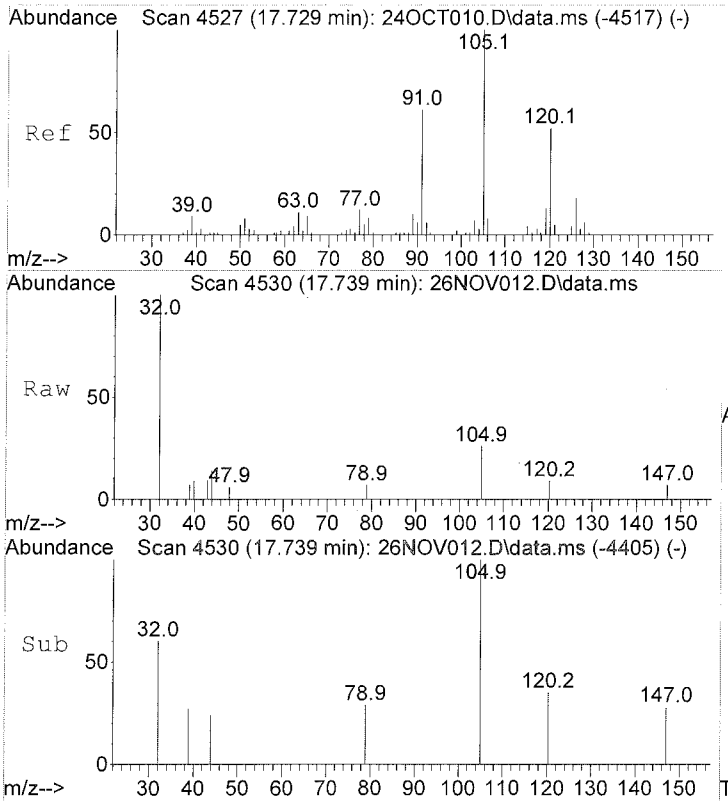


#58
4-Ethyl Toluene
Concen: 0.02 ppbv
RT: 17.676 min Scan# 4511
Delta R.T. 0.013 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:105 Resp: 440

Ion	Ratio	Lower	Upper
105	100		
120	0.0	0.0	78.8
77	0.0	0.0	64.5

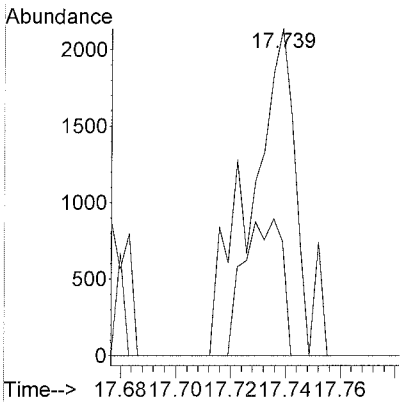


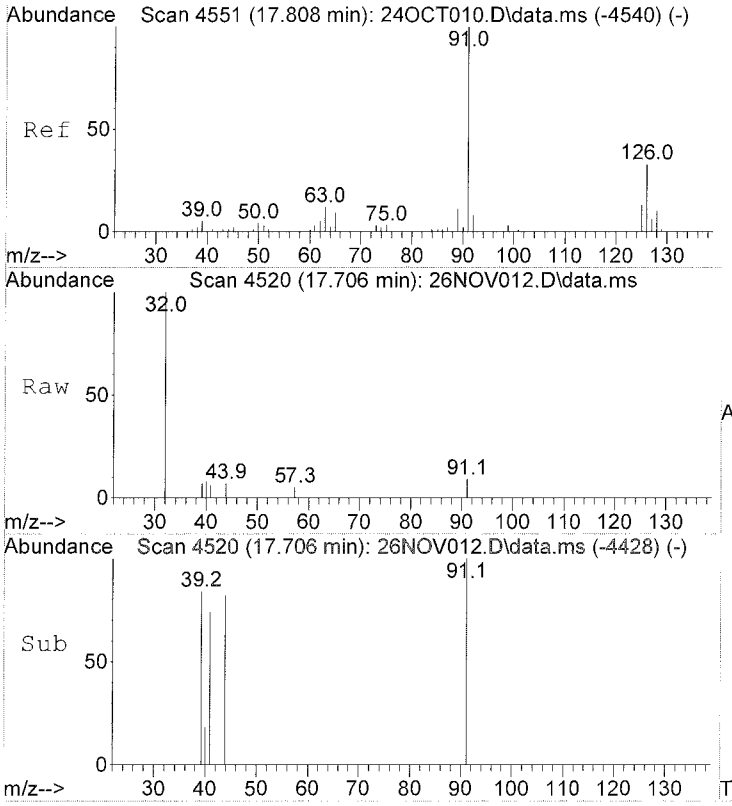


#59
1,3,5-Trimethylbenzene
Concen: 0.11 ppbv
RT: 17.739 min Scan# 4530
Delta R.T. 0.010 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:105 Resp: 2528

Ion	Ratio	Lower	Upper
105	100		
120	34.8	0.0	95.4
77	0.0	0.0	65.8

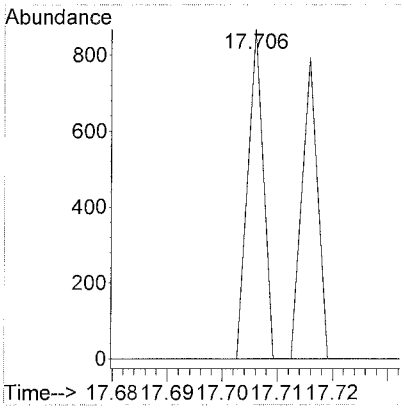


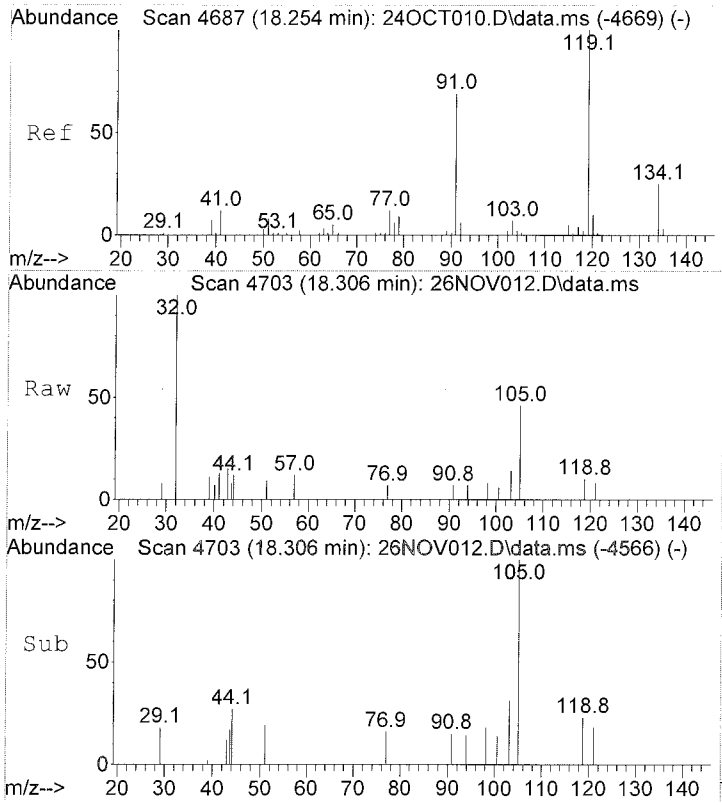


#61
4-Chlorotoluene
Concen: 0.03 ppbv
RT: 17.706 min Scan# 4520
Delta R.T. -0.099 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 91 Resp: 327

Ion	Ratio	Lower	Upper
91	100		
126	0.0	6.4	46.4#

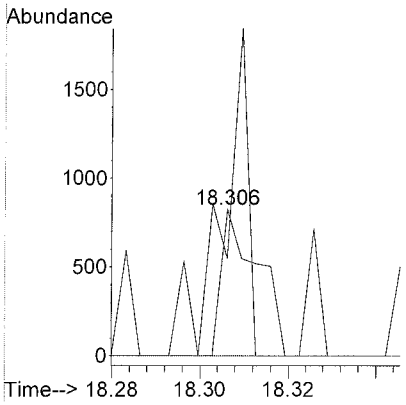


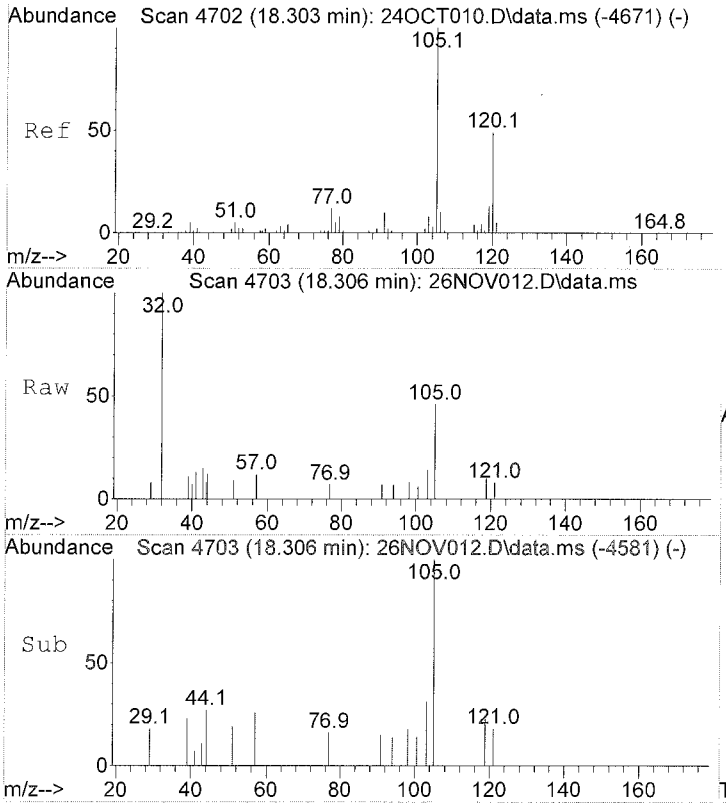


#62
tert-Butylbenzene
Concen: 0.03 ppbv
RT: 18.306 min Scan# 4703
Delta R.T. 0.049 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:119 Resp: 471

Ion	Ratio	Lower	Upper
119	100		
91	66.6	59.5	99.5
134	0.0	1.8	41.8#

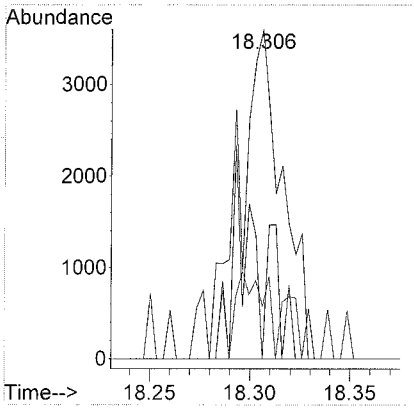


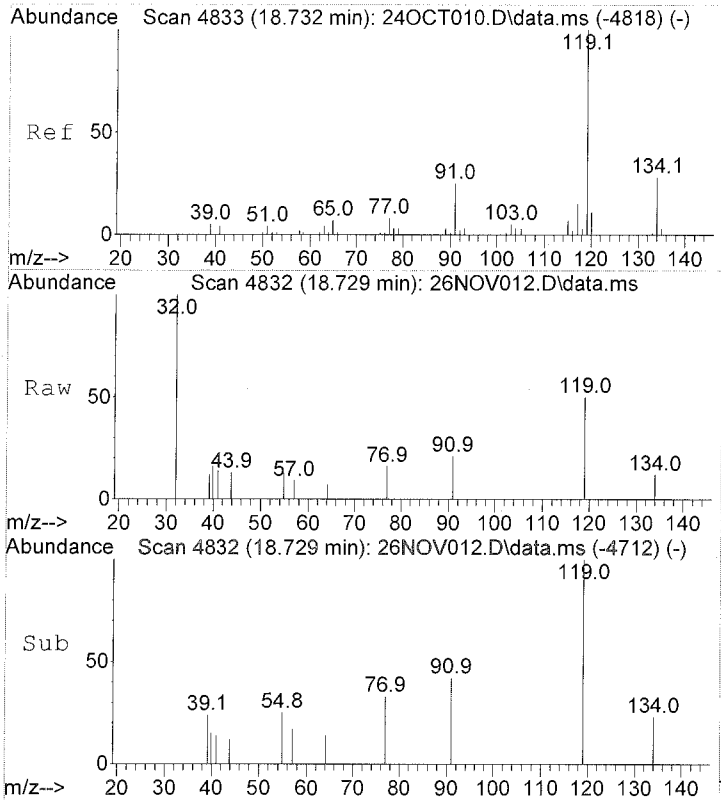


#63
1,2,4-Trimethylbenzene
Concen: 0.25 ppbv
RT: 18.306 min Scan# 4703
Delta R.T. 0.000 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:105 Resp: 5569

Ion	Ratio	Lower	Upper
105	100		
120	0.0	0.0	91.2
77	16.0	0.0	65.1

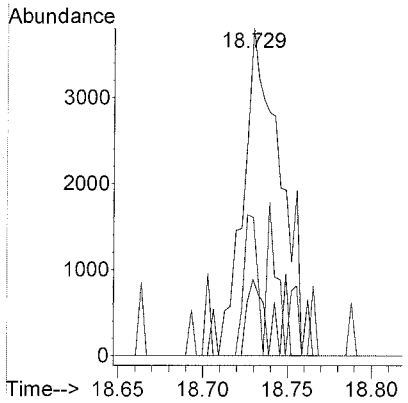


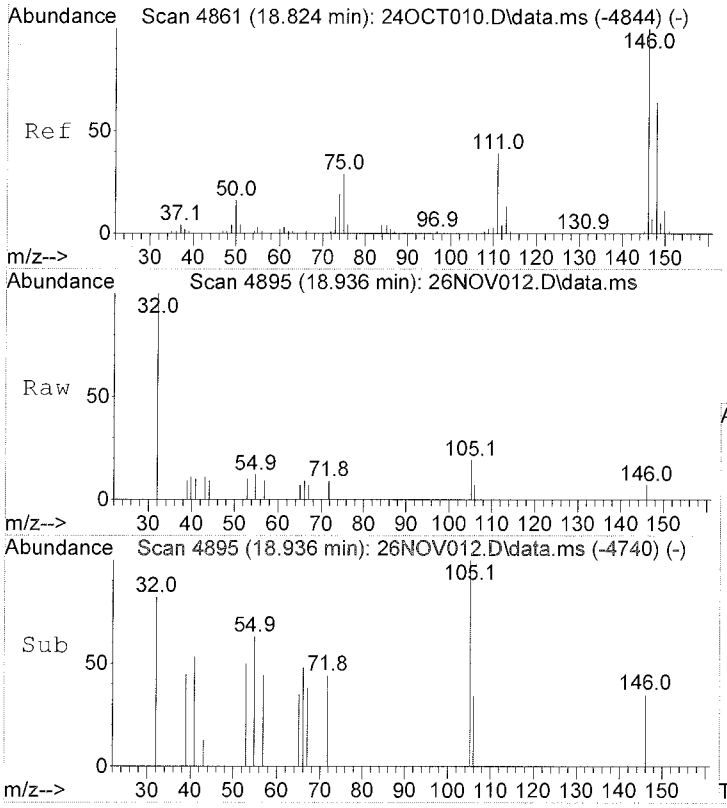


#65
p-Isopropyltoluene
Concen: 0.46 ppbv
RT: 18.729 min Scan# 4832
Delta R.T. -0.007 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:119 Resp: 6025

Ion	Ratio	Lower	Upper
119	100		
134	23.4	2.1	42.1
91	42.3	9.6	49.6

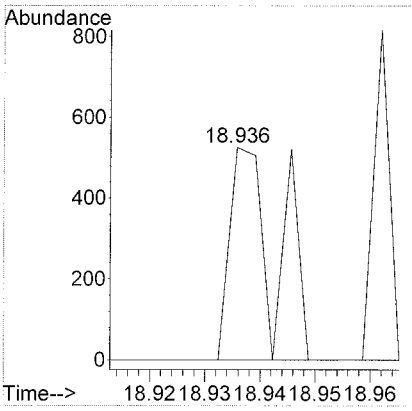


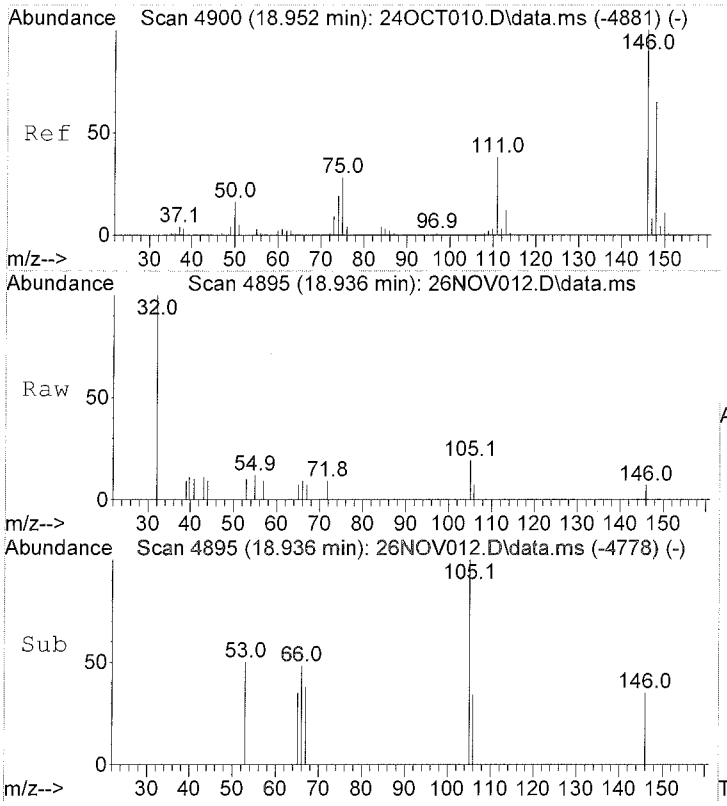


#66
1,3-Dichlorobenzene
Concen: 0.02 ppbv
RT: 18.936 min Scan# 4895
Delta R.T. 0.108 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:146 Resp: 203

Ion	Ratio	Lower	Upper
146	100		
148	0.0	16.8	116.8#
75	0.0	0.0	94.5
111	0.0	1.8	101.8#

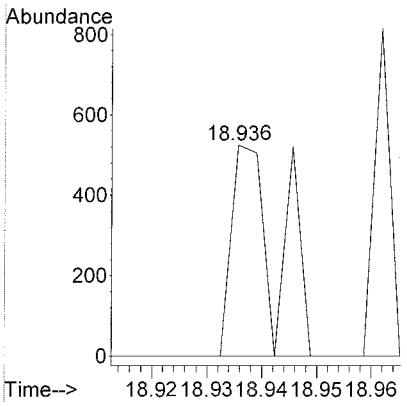


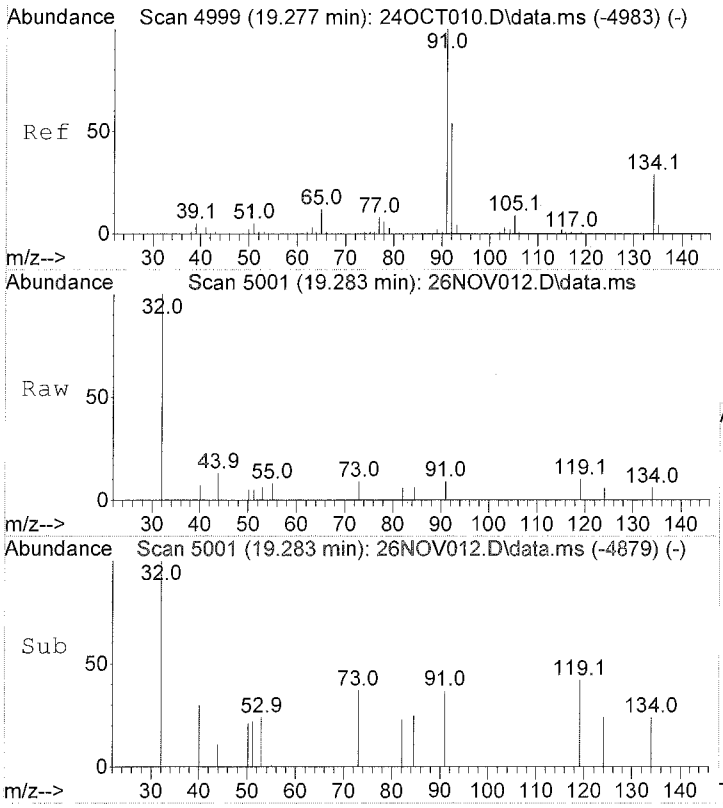


#67
1,4-Dichlorobenzene
Concen: 0.02 ppbv
RT: 18.936 min Scan# 4895
Delta R.T. -0.016 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:146 Resp: 203

Ion	Ratio	Lower	Upper
146	100		
148	0.0	13.0	113.0#
111	0.0	0.0	94.9
75	0.0	0.0	89.4

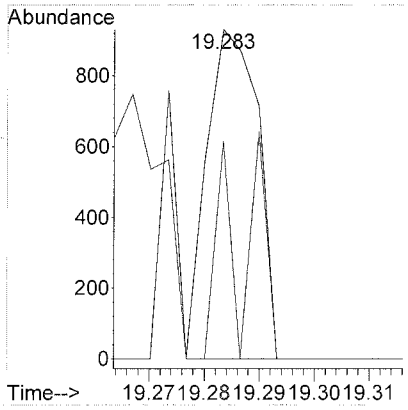


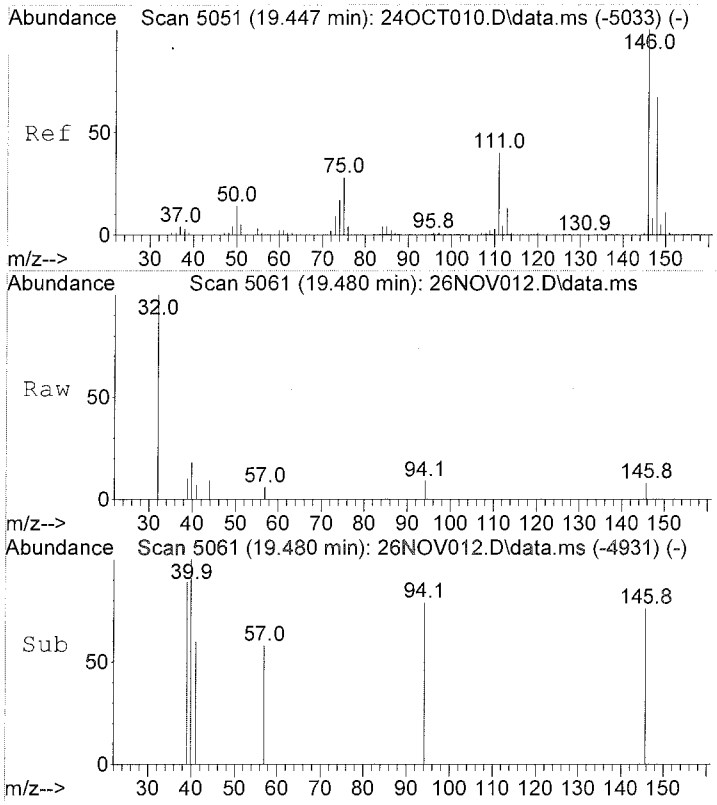


#68
n-Butylbenzene
Concen: 0.04 ppbv
RT: 19.283 min Scan# 5001
Delta R.T. 0.000 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 91 Resp: 606

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
134	66.0	0.9	40.9#

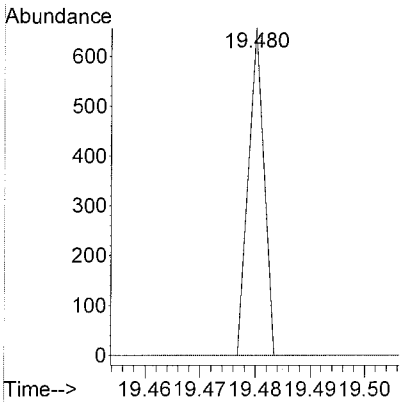


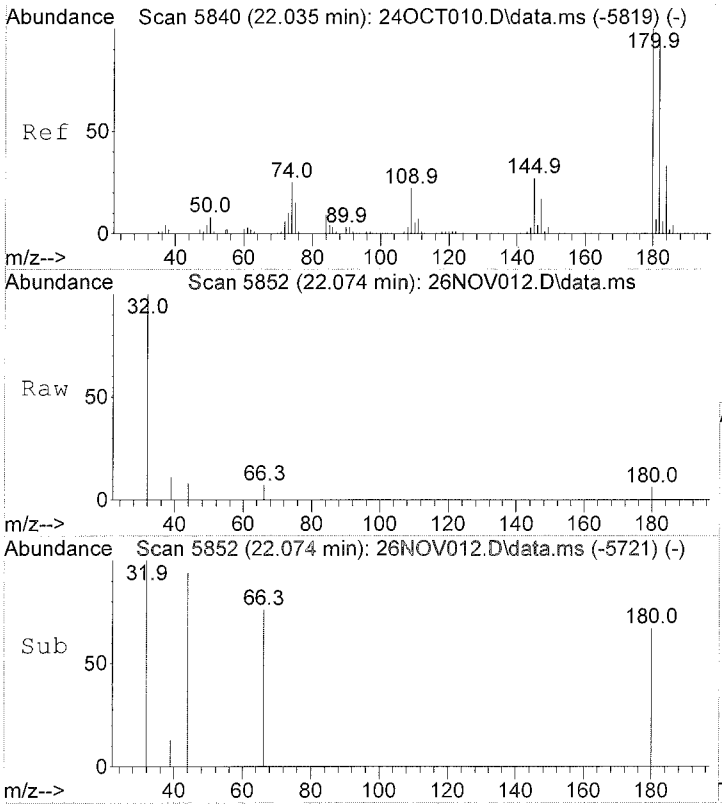


#69
1,2-Dichlorobenzene
Concen: 0.01 ppbv
RT: 19.480 min Scan# 5061
Delta R.T. 0.026 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:146 Resp: 129

Ion	Ratio	Lower	Upper
146	100		
148	0.0	11.6	111.6#
111	0.0	0.0	96.4
75	0.0	0.0	93.8

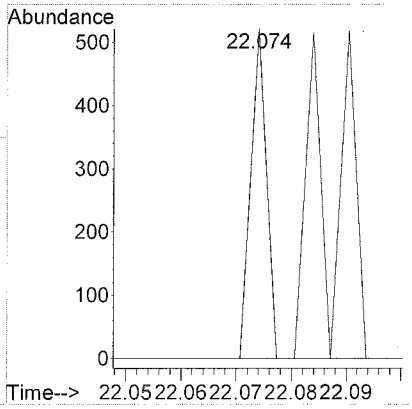




#71
1,2,4-Trichlorobenzene
Concen: 0.01 ppbv
RT: 22.074 min Scan# 5852
Delta R.T. 0.029 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion:180 Resp: 103

Ion	Ratio	Lower	Upper
180	100		
182	0.0	33.4	133.4#
109	0.0	0.0	82.3
145	0.0	0.0	81.1



QC Report: Unit #1
Inject Time: 11/26/2018 17:41:38

QAQC Filename:QAQC\11262018\1_174138.asc

Autosampler Position: 01 / Run 04 of 29
Sample Name : J110805-07
Method Filename: T15DESORB220.MTC

Volume Parameters:				
ISTD A Xfer Volume	set=50	Act=50	StartPress=14.7	EndPress=14.8
ISTD A Flow	set=50	Act=49.7		
ISTD A Trap Temp	set=22	hi=24	lo=22	avg=22
ISTD B Xfer Volume	set=0	Act=0	StartPress=0.0	EndPress=0.0
ISTD B Flow	set=0	Act=0.0		
ISTD B Trap Temp	Disabled			
ISTD C Xfer Volume	Disabled			
ISTD C Flow	Disabled			
ISTD C Trap Temp	Disabled			
Sample Xfer Volume	set=50	Act=50	StartPress=22.4	EndPress=21.9
Sample Xfer Flow	set=50	Act=49.7		
Smple Xfer Trap Temp	set=22	hi=22	lo=22	avg=22
Sweep Gas = Helium				
Dry Purge Parameters:				
Dry Purge Flow	set=70	Act=69.0		
Dry Purge Temp	set=25	hi=25	lo=25	avg=25
Dry Purge Time	set=12.00	act=12.00		
Desorb Parameters:				
Trap Desorb Temp	set=220	hi=234	lo=217	avg=220
Trap Desorb Time	set=4.50	act=4.50		
MCS Temp	Disabled			
Cryo Focuser Temp	set=-180	hi=-183	lo=-197	avg=-192
Inject Parameters:				
Cryo Union Temp	set=130	hi=130	lo=129	avg=130
Cryo Inject Temp	set=75	hi=76	lo=73	avg=75
Cryo Inject Time	set=2.50	act=2.50		
Bake Parameters:				
Trap Bake Temp	set=280	hi=282	lo=278	avg=279
Trap Bake Time	set=10.00	act=10.00		
MCS Bake Temp	Disabled			
System Regions:				
Manifold 1 Temp	set=130	avg=130		
Manifold 2 Temp	set=130	avg=130		
Oven 6 Port Temp	set=130	avg=130		
Oven 8 Port Temp	set=130	avg=130		
Oven 16 Port Temp	set=130	avg=130		
Bottom Of Trap Temp	set=130	avg=130		
Transfer Line Temp	set=130	avg=130		

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV013.D
Acq On : 26 Nov 2018 6:21 pm
Operator : DT
Sample : J110805-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Nov 26 18:46:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.334	130	105318	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.682	114	380990	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.204	117	204526	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.098	65	270209	11.31	ppbv		0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 113.10%				
34) Toluene-d8	12.935	98	292137	8.30	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 83.00%				
53) 4-Bromofluorobenzene	17.181	174	119650	10.90	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 109.00%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.621	85	14533	0.39	ppbv		94
3) Chloromethane	4.021	50	6477	0.39	ppbv		96
6) Bromomethane	4.681	94	130	0.02	ppbv	#	1
8) Trichlorofluoromethane...	5.500	101	2517	0.06	ppbv		63
10) Carbon Disulfide	7.120	76	540912	19.24	ppbv		97
11) 1,1,2-Cl 1,2,2-F ethan...	6.284	151	247	0.01	ppbv	#	1
12) Acetone	6.143	43	471692	13.95	ppbv		83
13) Methylene Chloride	6.999	84	252	0.02	ppbv	#	28
14) t-1,2-Dichloroethene	7.740	96	117	0.01	ppbv	#	1
18) 2-Butanone	8.642	72	3244	0.59	ppbv	#	38
19) t-Butyl Methyl Ether	7.409	73	17896	0.46	ppbv		1
25) Benzene	10.328	78	58626	1.78	ppbv		89
30) Bromodichloromethane	11.666	83	383	0.01	ppbv	#	25
31) Dibromomethane	11.705	93	220	0.02	ppbv	#	53
35) Toluene	13.053	91	325853	11.30	ppbv		100
37) t-1,3-Dichloropropene	13.040	75	2739	0.26	ppbv	#	1
38) 1,1,2-Trichloroethane	13.377	97	787	0.08	ppbv	#	9
40) Tetrachloroethene	14.079	166	4259	0.31	ppbv	#	62
42) Dibromochloromethane	14.089	129	1268	0.09	ppbv	#	1
45) 1,1,1,2-Tetrachloroethane	15.250	131	113	0.02	ppbv	#	1
46) Ethylbenzene	15.378	91	43589	1.68	ppbv		99
47) p,&m-Xylene	15.502	91	258822	13.13	ppbv		95
48) o-Xylene	16.188	91	117755	6.35	ppbv		99
49) Styrene	16.194	104	1536	0.14	ppbv	#	1
50) Bromoform	16.522	173	222	0.02	ppbv	#	32
51) Isopropyl benzene	16.817	105	2025	0.11	ppbv	#	46
52) 1,1,2,2-Tetrachloroethane	17.014	83	311	0.02	ppbv		84
54) Benzyl Chloride	19.077	91	267	0.03	ppbv		65
55) 1,2,3-Trichloropropane	17.135	110	135	0.03	ppbv	#	1
56) n-Propyl Benzene	17.490	91	8793	0.45	ppbv		82
57) Bromobenzene	17.503	77	390	0.03	ppbv	#	32
58) 4-Ethyl Toluene	17.634	105	97469	4.67	ppbv		95
59) 1,3,5-Trimethylbenzene	17.729	105	69783	2.97	ppbv		90
60) 2-Chlorotoluene	17.729	91	8003	0.48	ppbv	#	51
62) tert-Butylbenzene	18.309	119	17855	1.03	ppbv	#	63
63) 1,2,4-Trimethylbenzene	18.303	105	166931	7.54	ppbv		94

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV013.D
Acq On : 26 Nov 2018 6:21 pm
Operator : DT
Sample : J110805-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Nov 26 18:46:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

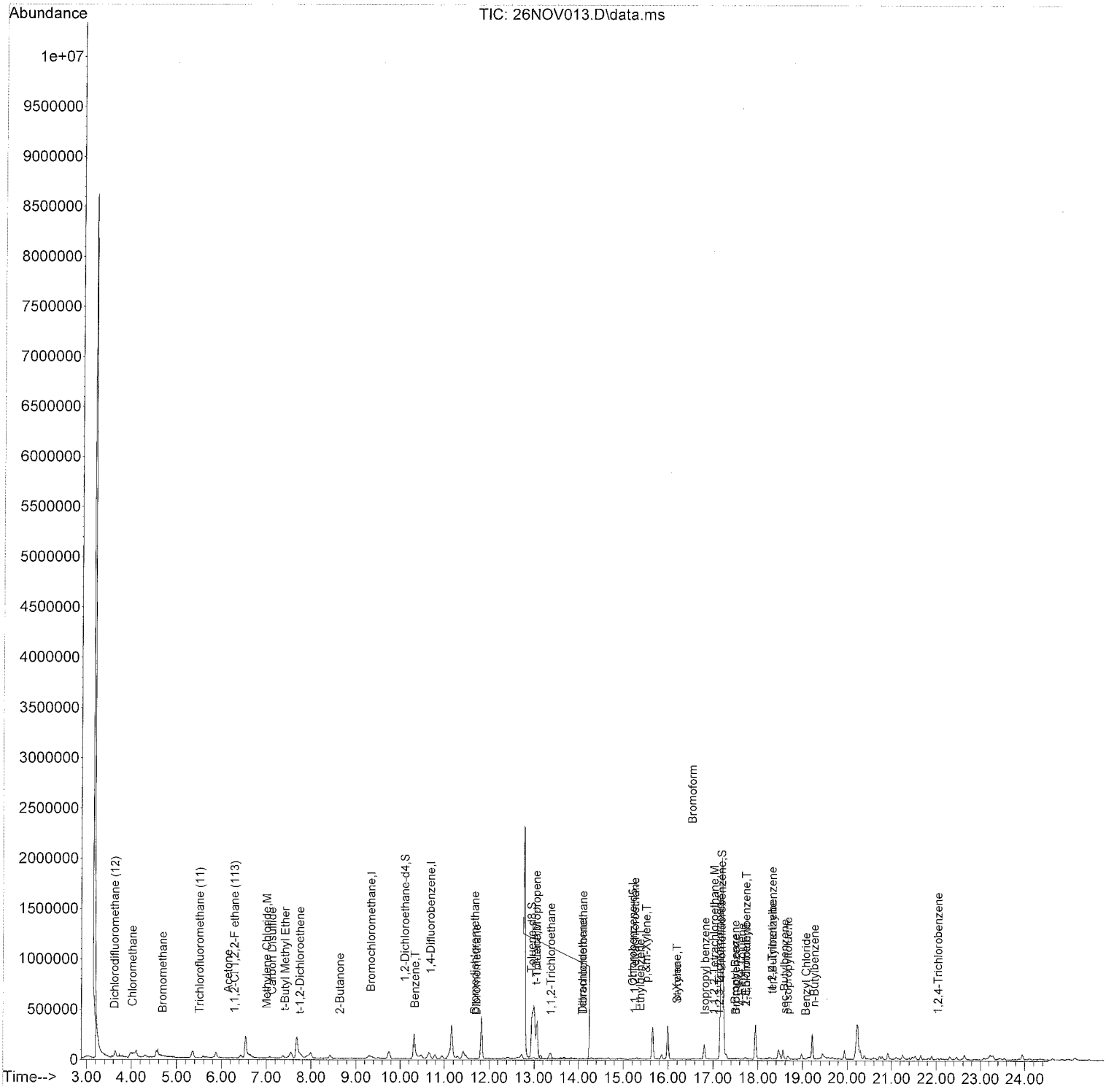
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
64) sec-Butylbenzene	18.575	105	315	0.02	ppbv		60
65) p-Isopropyltoluene	18.664	119	2519	0.19	ppbv		73
68) n-Butylbenzene	19.264	91	16552	1.17	ppbv	#	83
71) 1,2,4-Trichlorobenzene	22.035	180	368	0.04	ppbv		72

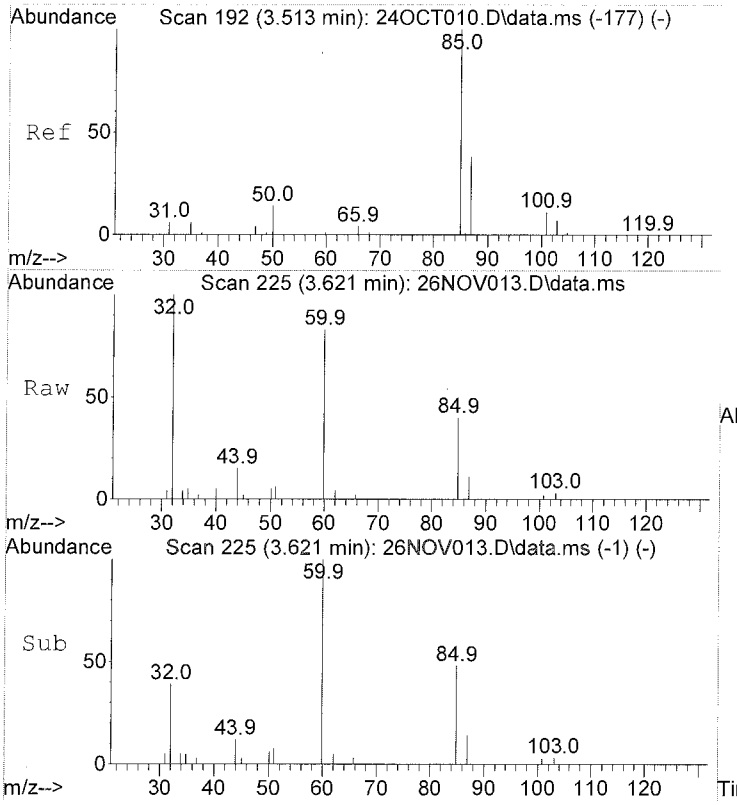
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV013.D
Acq On : 26 Nov 2018 6:21 pm
Operator : DT
Sample : J110805-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Nov 26 18:46:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

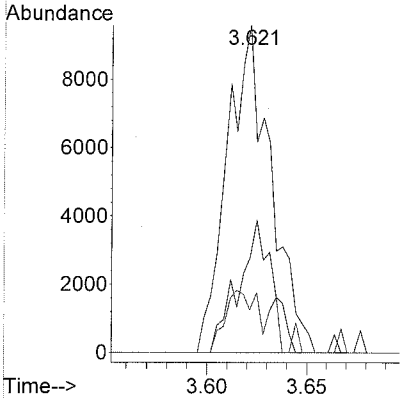


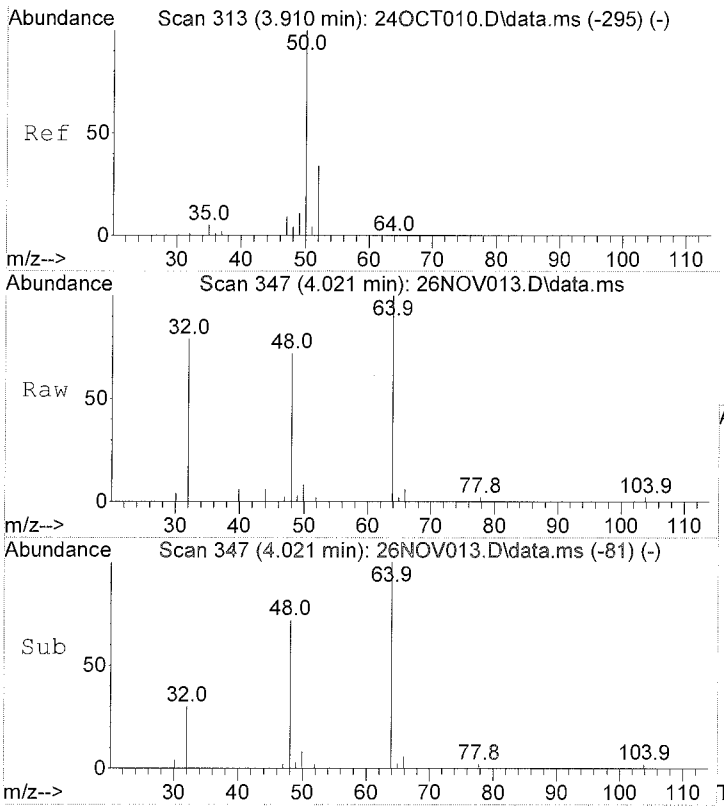


#2
Dichlorodifluoromethane (12)
Concen: 0.39 ppbv
RT: 3.621 min Scan# 225
Delta R.T. 0.068 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 85 Resp: 14533

Ion	Ratio	Lower	Upper
85	100		
87	28.9	0.0	83.5
50	13.1	0.0	63.3

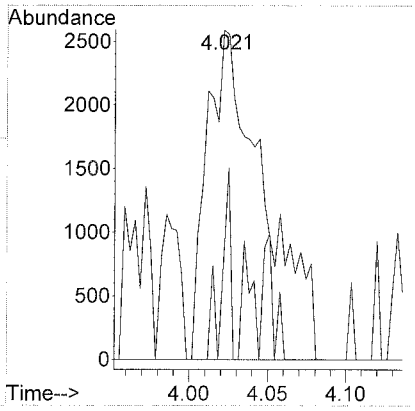


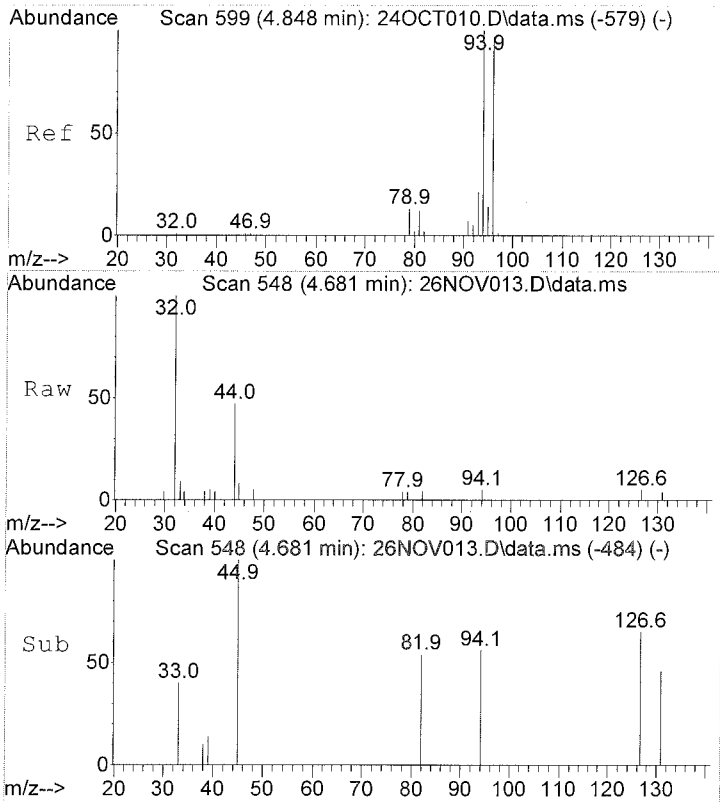


#3
Chloromethane
Concen: 0.39 ppbv
RT: 4.021 min Scan# 347
Delta R.T. 0.072 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 50 Resp: 6477

Ion	Ratio	Lower	Upper
50	100		
52	28.5	0.4	60.4

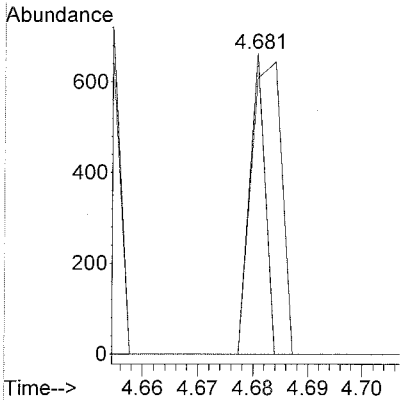


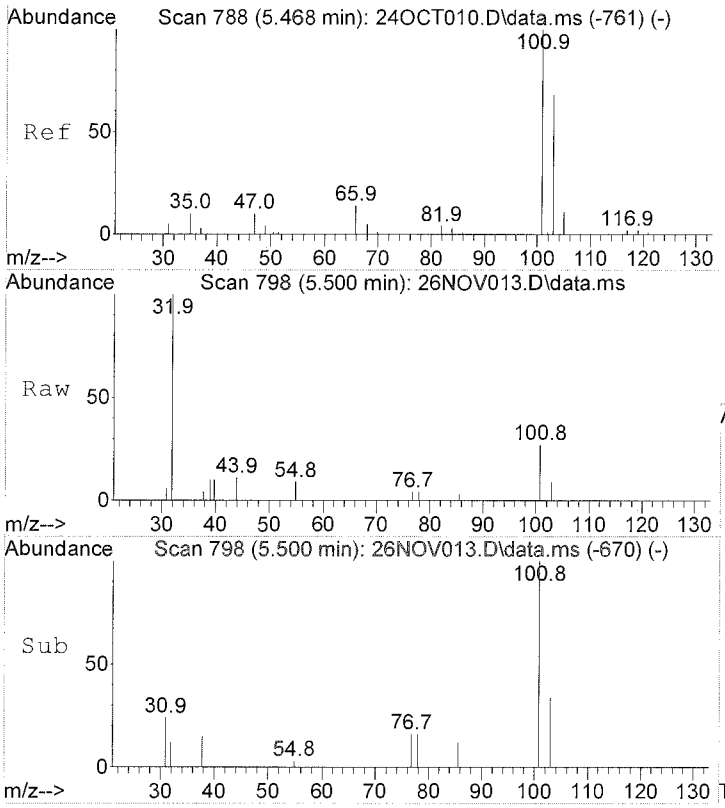


#6
Bromomethane
Concen: 0.02 ppbv
RT: 4.681 min Scan# 548
Delta R.T. -0.190 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 94 Resp: 130

Ion	Ratio	Lower	Upper
94	100		
96	0.0	48.0	148.0#
79	91.8	0.0	69.2#

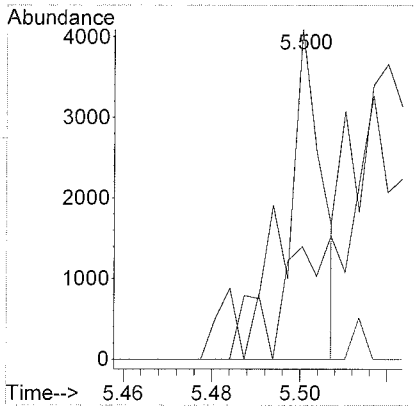


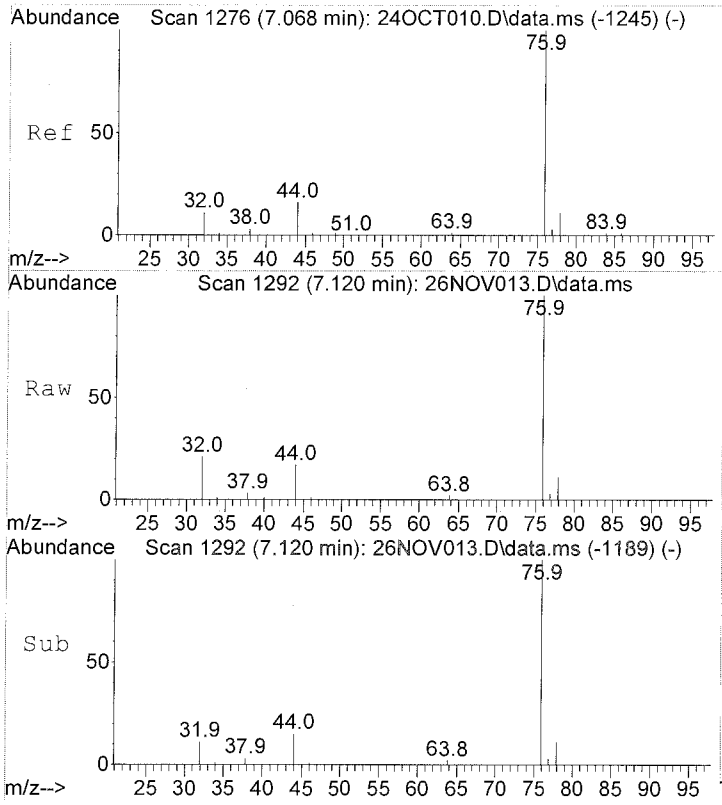


#8
Trichlorofluoromethane (11)
Concen: 0.06 ppbv
RT: 5.500 min Scan# 798
Delta R.T. 0.019 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:101 Resp: 2517

Ion	Ratio	Lower	Upper
101	100		
103	34.2	13.0	113.0
66	0.0	0.0	65.0

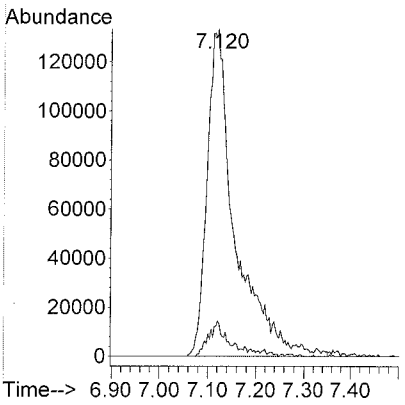


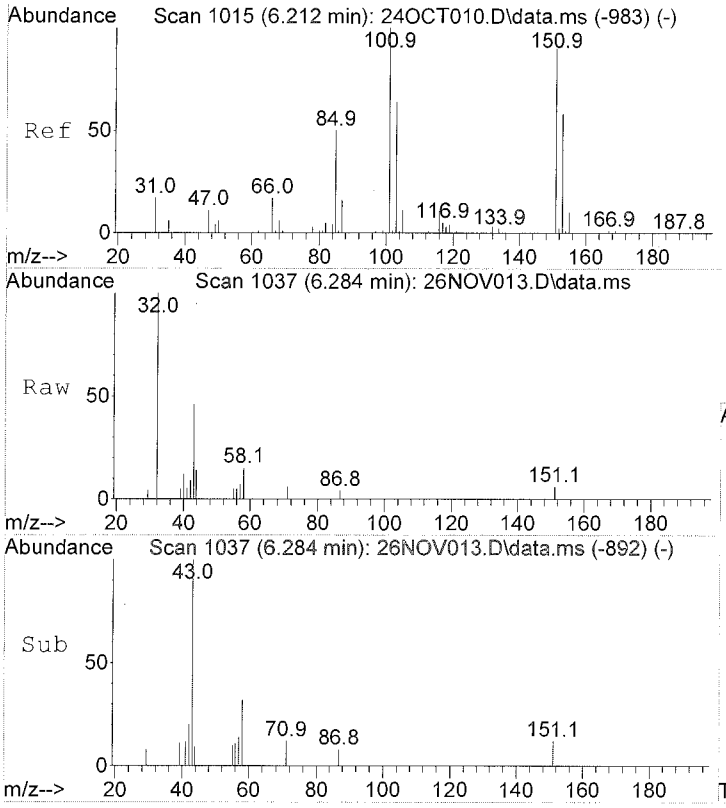


#10
Carbon Disulfide
Concen: 19.24 ppbv
RT: 7.120 min Scan# 1292
Delta R.T. 0.036 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 76 Resp: 540912

Ion	Ratio	Lower	Upper
76	100		
78	10.7	0.0	59.5

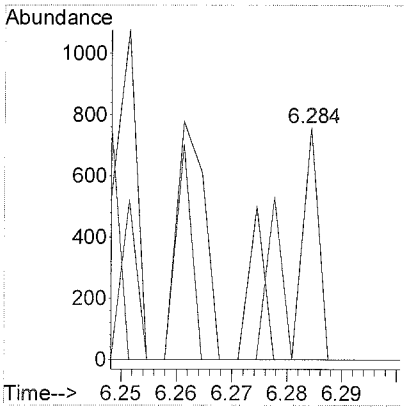


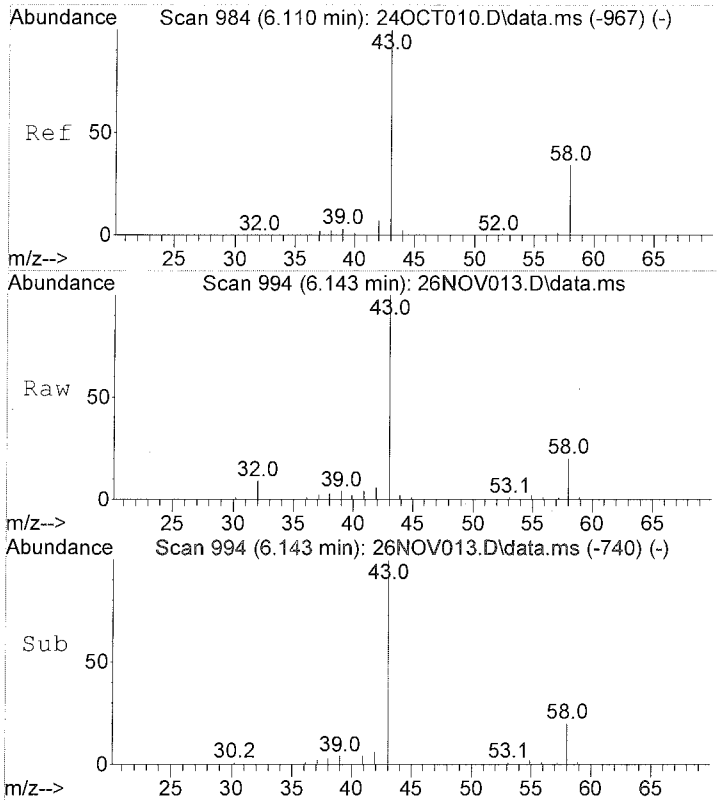


#11
1,1,2-Cl 1,2,2-F ethane (113)
Concen: 0.01 ppbv
RT: 6.284 min Scan# 1037
Delta R.T. 0.075 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:151 Resp: 247

Ion	Ratio	Lower	Upper
151	100		
101	0.0	85.1	185.1#
103	0.0	46.7	146.7#
85	0.0	16.8	116.8#

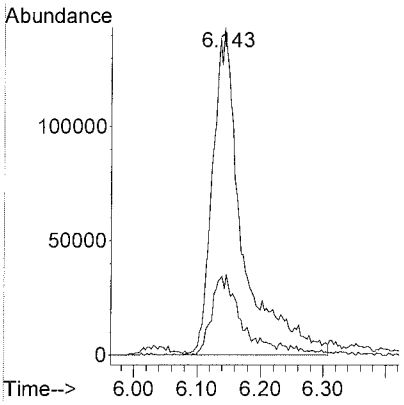


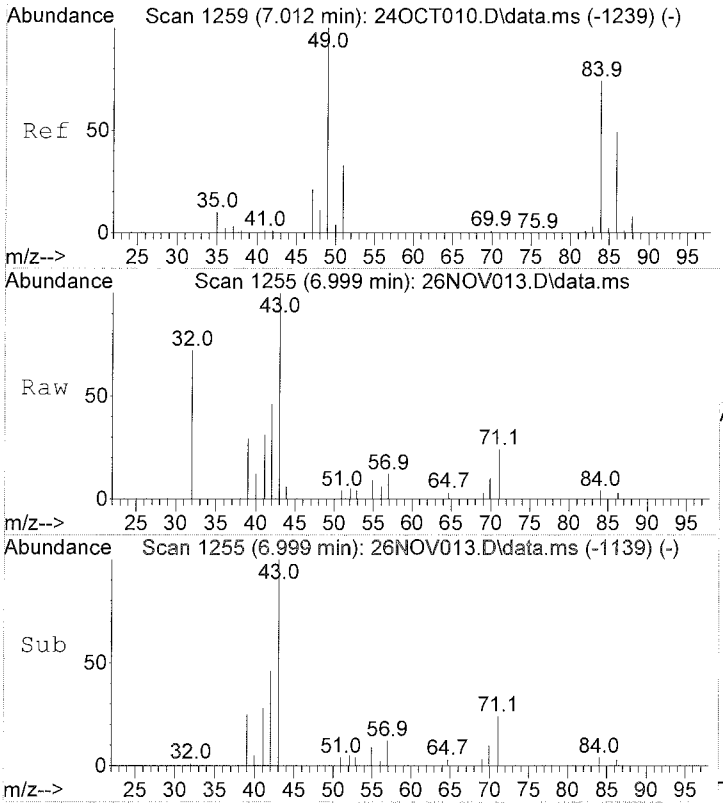


#12
Acetone
Concen: 13.95 ppbv
RT: 6.143 min Scan# 994
Delta R.T. 0.032 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 43 Resp: 471692

Ion	Ratio	Lower	Upper
43	100		
58	20.3	9.3	49.3

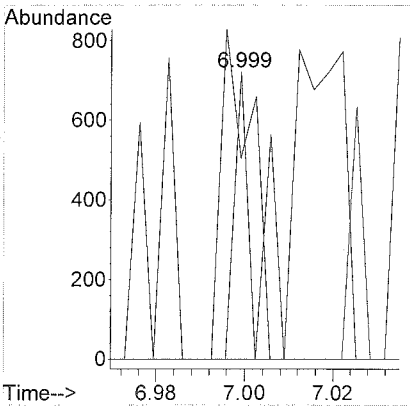


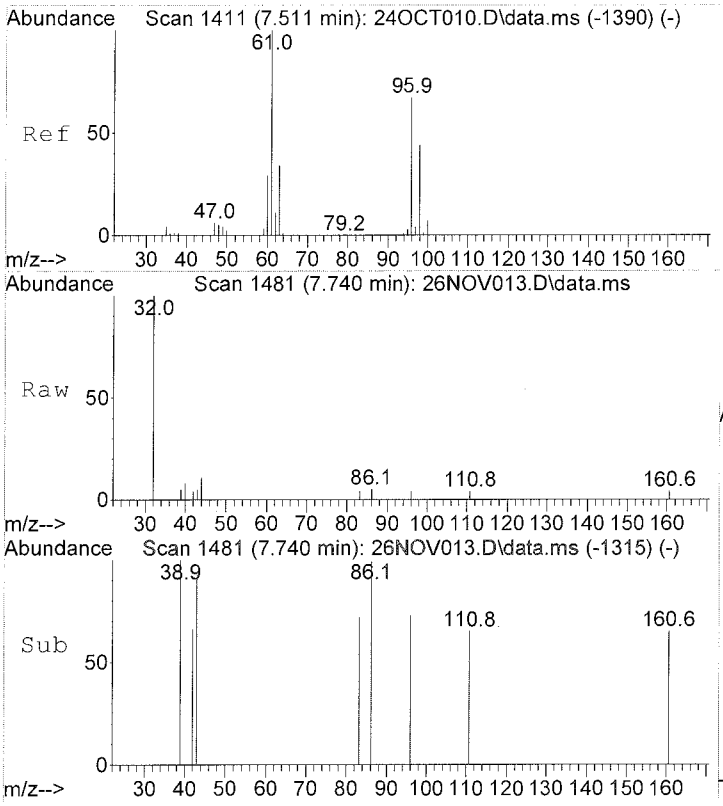


#13
Methylene Chloride
Concen: 0.02 ppbv
RT: 6.999 min Scan# 1255
Delta R.T. -0.020 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 84 Resp: 252

Ion	Ratio	Lower	Upper
84	100		
86	70.1	19.3	119.3
49	0.0	58.2	198.2#

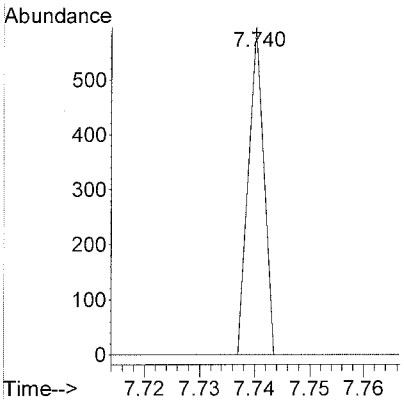


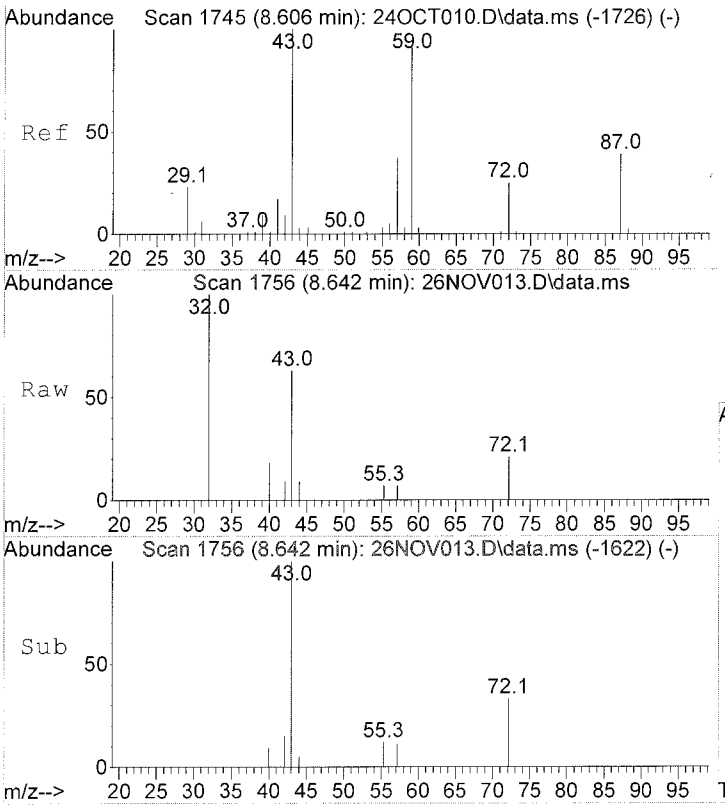


#14
t-1,2-Dichloroethene
Concen: 0.01 ppbv
RT: 7.740 min Scan# 1481
Delta R.T. 0.144 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 96 Resp: 117

Ion	Ratio	Lower	Upper
96	100		
61	0.0	98.0	198.0#
98	0.0	21.0	121.0#
63	0.0	2.1	102.1#

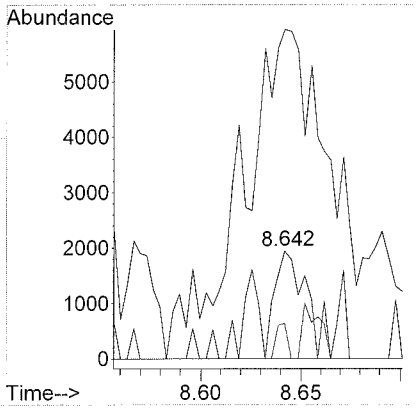


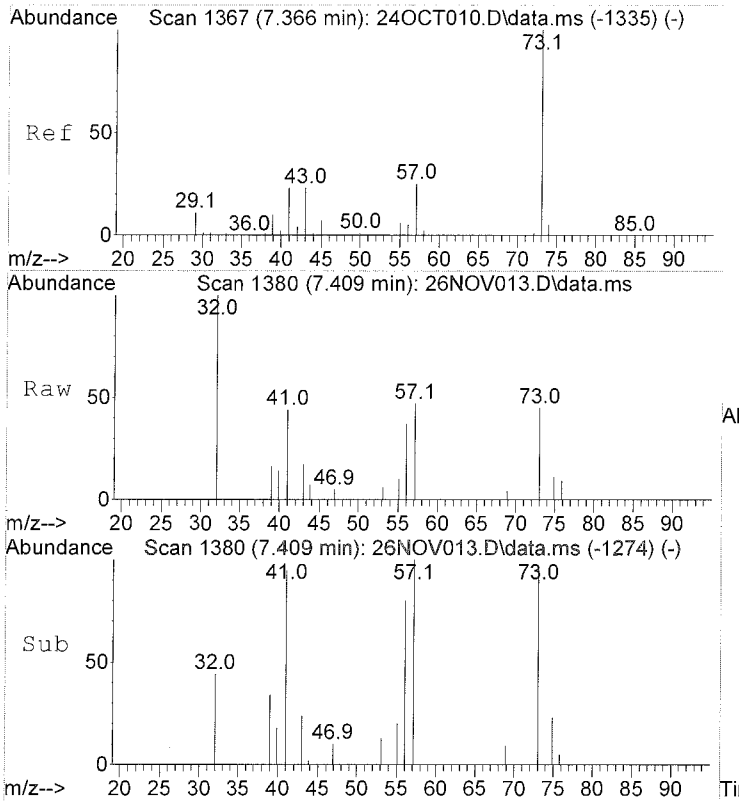


#18
2-Butanone
Concen: 0.59 ppbv
RT: 8.642 min Scan# 1756
Delta R.T. 0.039 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 72 Resp: 3244

Ion	Ratio	Lower	Upper
72	100		
43	276.3	0.0	1397.7
57	32.9	47.5	247.5#

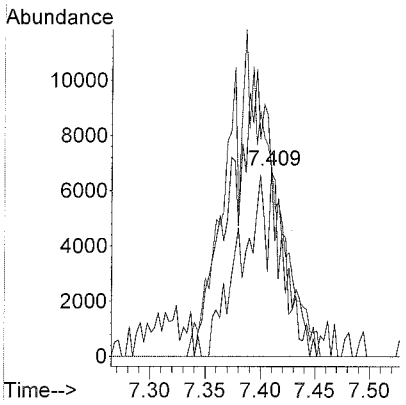


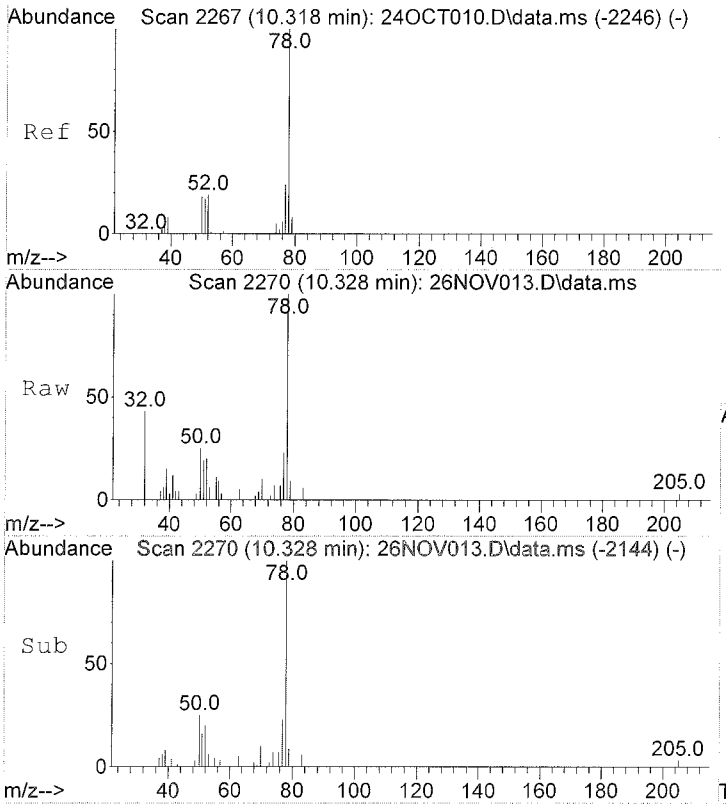


#19
t-Butyl Methyl Ether
Concen: 0.46 ppbv
RT: 7.409 min Scan# 1380
Delta R.T. 0.049 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 73 Resp: 17896

Ion	Ratio	Lower	Upper
73	100		
41	83.1	0.0	519.2
57	104.3	0.0	519.0

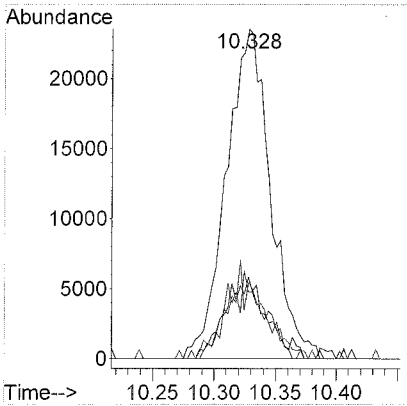


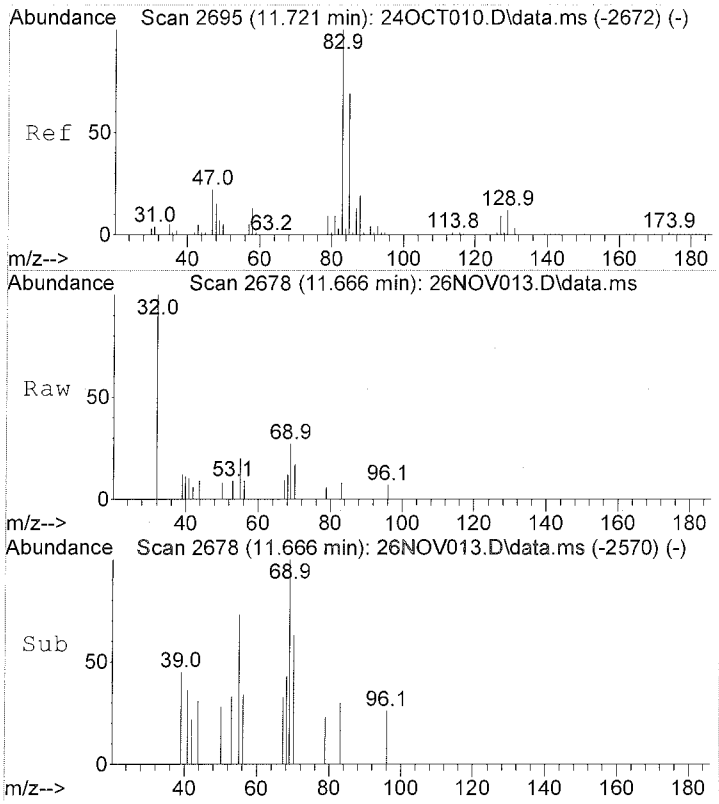


#25
Benzene
Concen: 1.78 ppbv
RT: 10.328 min Scan# 2270
Delta R.T. 0.013 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 78 Resp: 58626

Ion	Ratio	Lower	Upper
78	100		
50	24.7	0.0	66.6
52	20.3	0.0	64.9
77	23.3	0.0	71.7

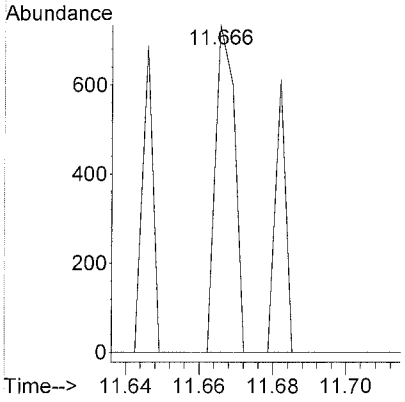


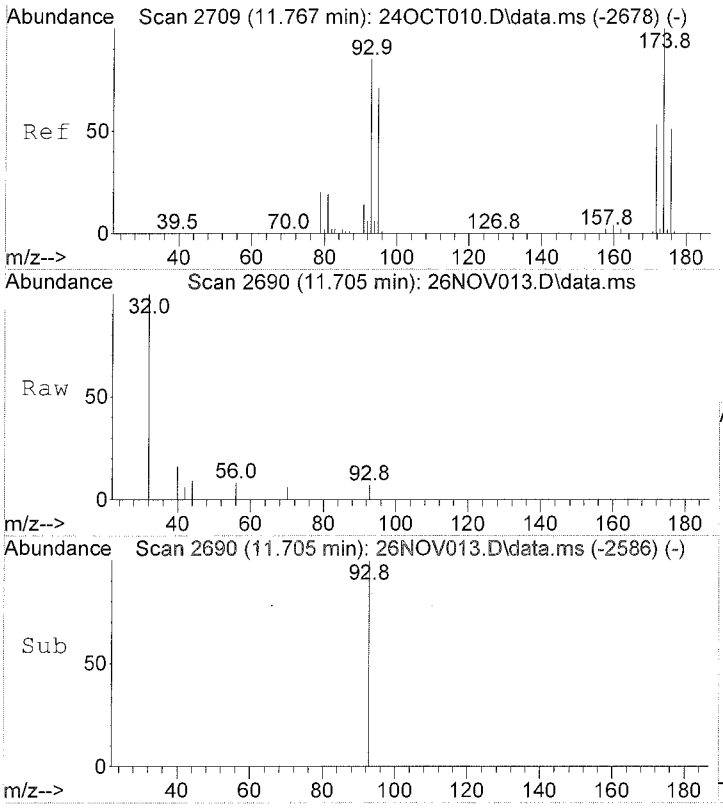


#30
Bromodichloromethane
Concen: 0.01 ppbv
RT: 11.666 min Scan# 2678
Delta R.T. -0.046 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 83 Resp: 383

Ion	Ratio	Lower	Upper
83	100		
85	0.0	14.5	114.5#
129	0.0	0.0	60.6

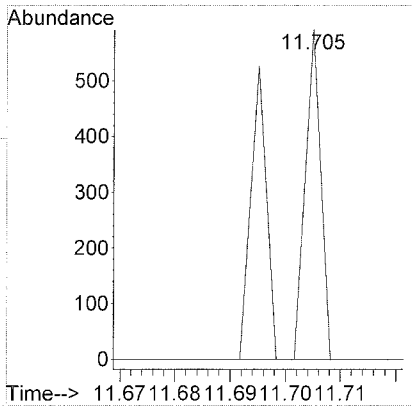


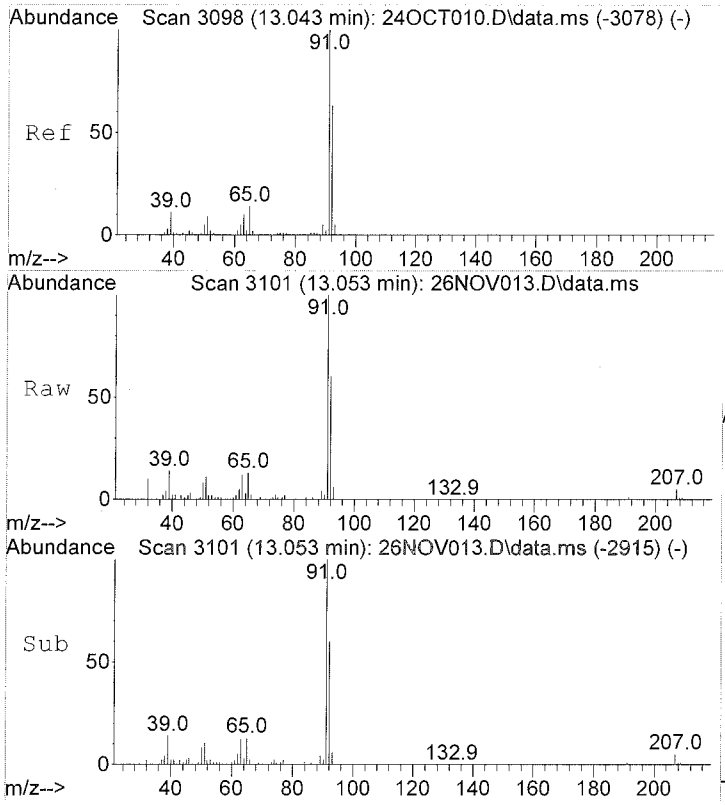


#31
Dibromomethane
Concen: 0.02 ppbv
RT: 11.705 min Scan# 2690
Delta R.T. -0.059 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 93 Resp: 220

Ion	Ratio	Lower	Upper
93	100		
174	0.0	65.0	105.0#
93	100.0	80.0	120.0
172	0.0	20.9	60.9#

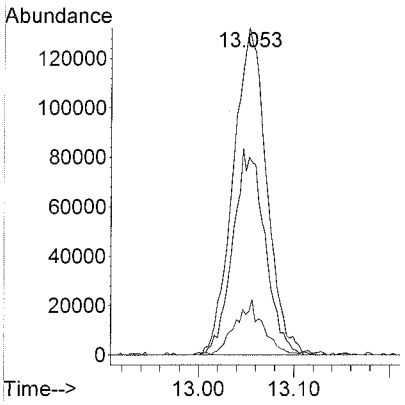


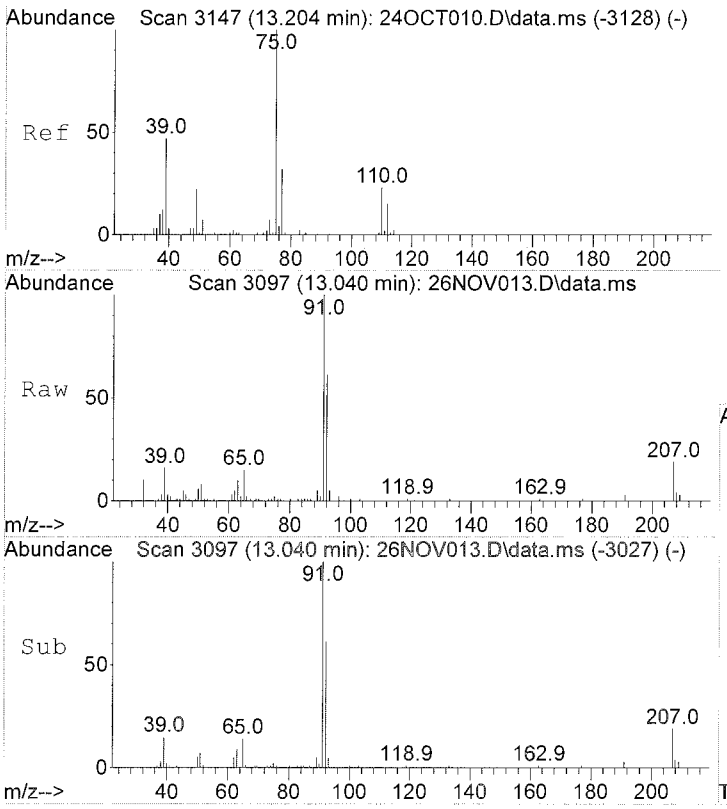


#35
Toluene
Concen: 11.30 ppbv
RT: 13.053 min Scan# 3101
Delta R.T. 0.010 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 91 Resp: 325853

Ion	Ratio	Lower	Upper
91	100		
92	60.4	10.8	110.8
65	13.3	0.0	63.4

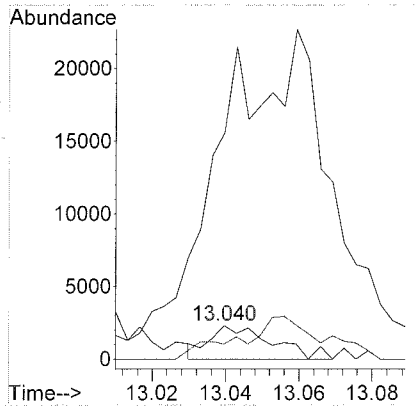


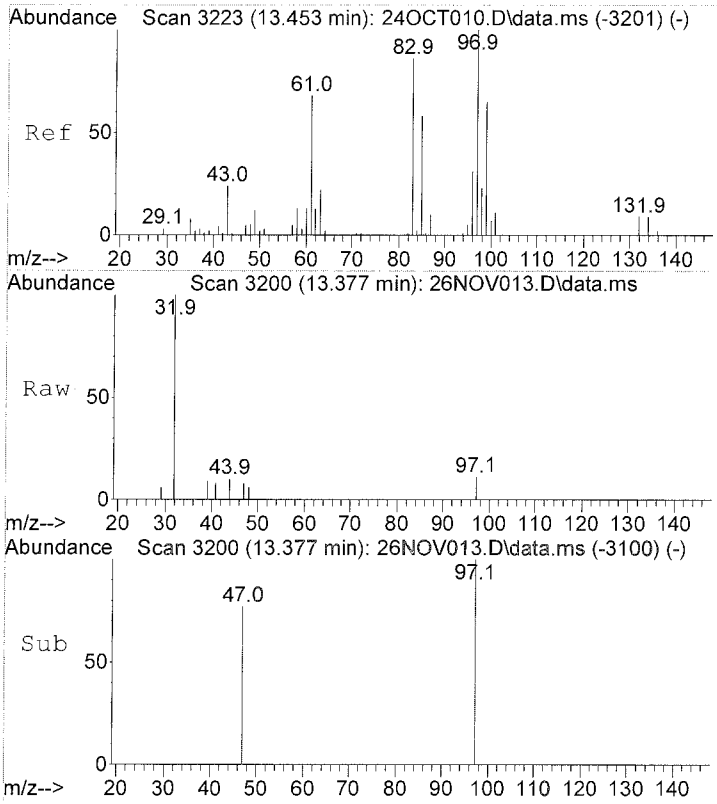


#37
t-1,3-Dichloropropene
Concen: 0.26 ppbv
RT: 13.040 min Scan# 3097
Delta R.T. -0.170 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 75 Resp: 2739

Ion	Ratio	Lower	Upper
75	100		
39	371.8	0.0	99.5#
77	20.4	0.0	79.9

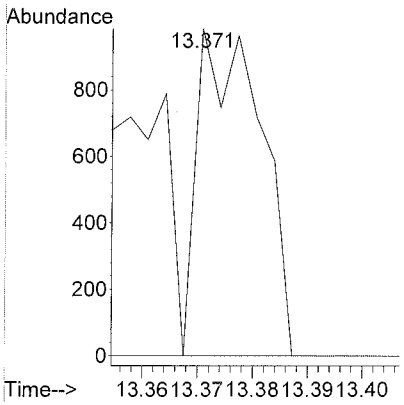


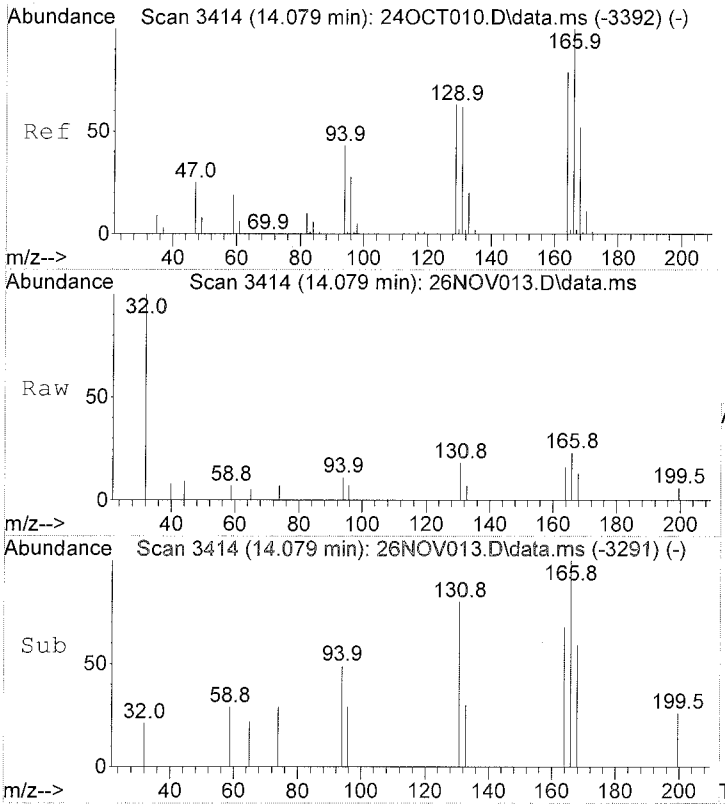


#38
1,1,2-Trichloroethane
Concen: 0.08 ppbv
RT: 13.377 min Scan# 3200
Delta R.T. -0.073 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 97 Resp: 787

Ion	Ratio	Lower	Upper
97	100		
83	0.0	37.9	137.9#
61	0.0	24.7	124.7#

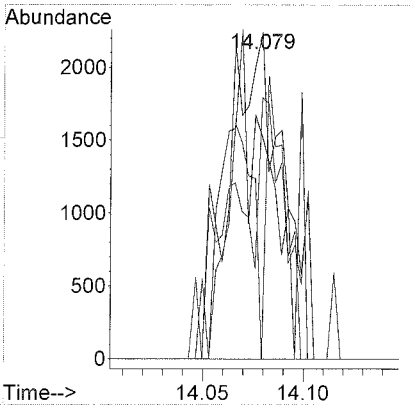


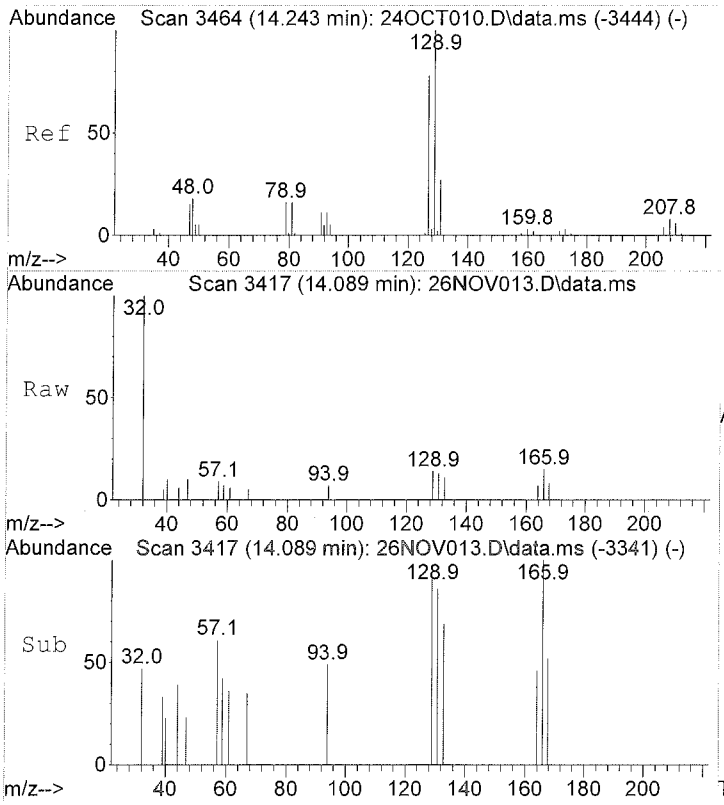


#40
Tetrachloroethene
Concen: 0.31 ppbv
RT: 14.079 min Scan# 3414
Delta R.T. 0.003 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:166 Resp: 4259

Ion	Ratio	Lower	Upper
166	100		
164	68.0	29.5	129.5
131	80.1	18.1	118.1
129	0.0	23.3	123.3#

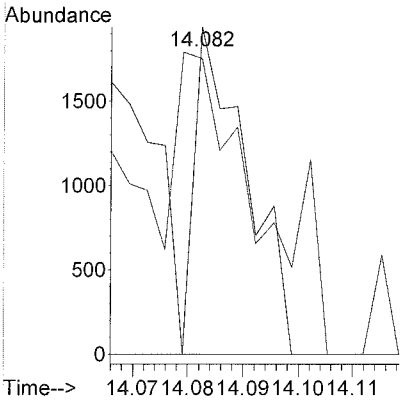


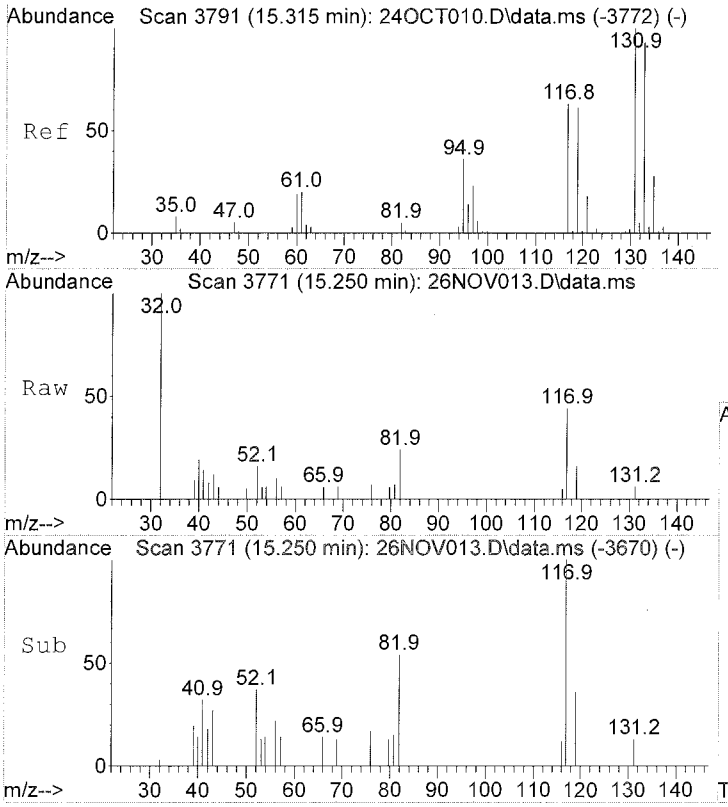


#42
Dibromochloromethane
Concen: 0.09 ppbv
RT: 14.089 min Scan# 3417
Delta R.T. -0.151 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:129 Resp: 1268

Ion	Ratio	Lower	Upper
129	100		
127	0.0	24.3	124.3#
131	91.6	0.0	72.9#

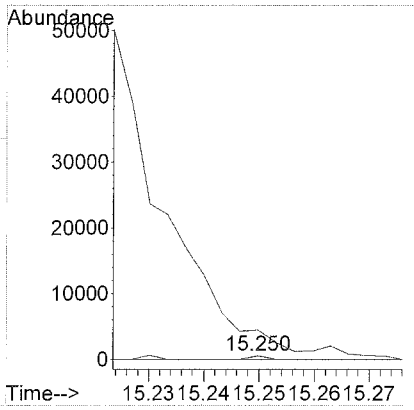


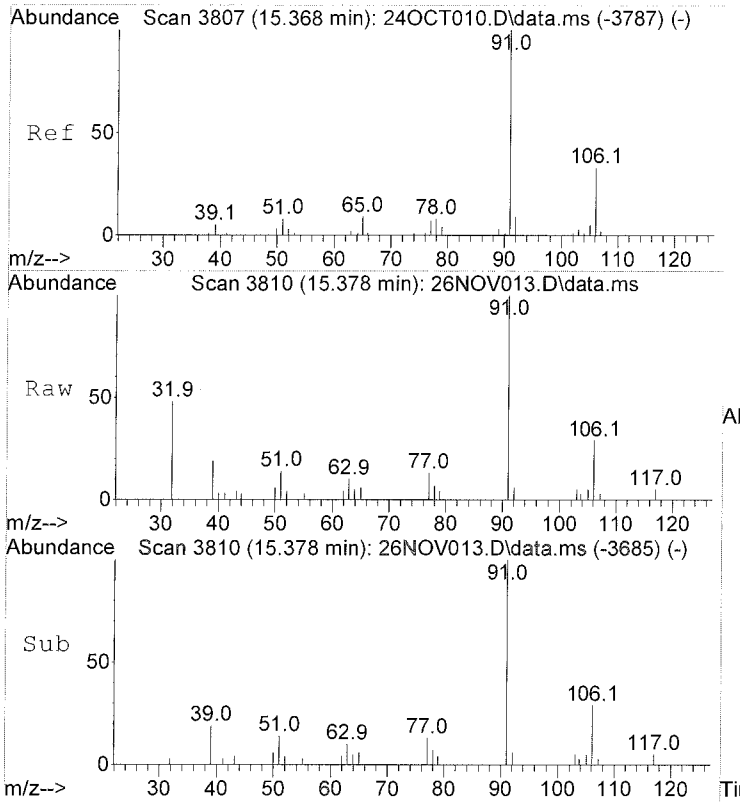


#45
1,1,1,2-Tetrachloroethane
Concen: 0.02 ppbv
RT: 15.250 min Scan# 3771
Delta R.T. -0.069 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:131 Resp: 113

Ion	Ratio	Lower	Upper
131	100		
133	0.0	73.3	113.3#
117	416.6	43.3	83.3#
95	0.0	29.1	69.1#

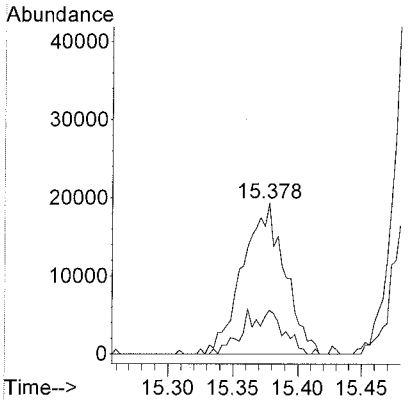


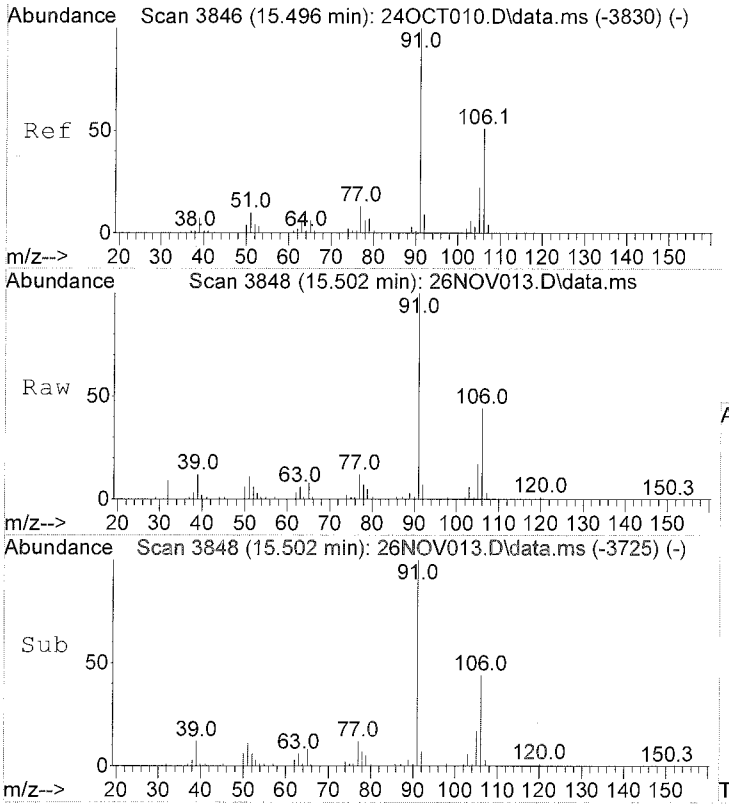


#46
Ethylbenzene
Concen: 1.68 ppbv
RT: 15.378 min Scan# 3810
Delta R.T. 0.010 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 91 Resp: 43589

Ion	Ratio	Lower	Upper
91	100		
106	29.0	0.0	79.5

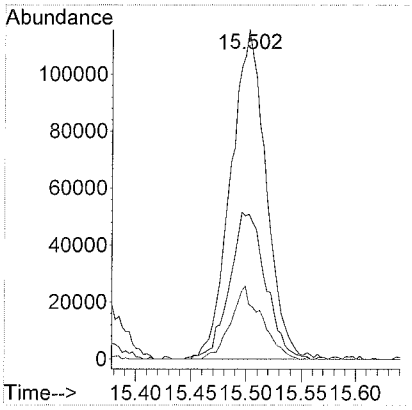


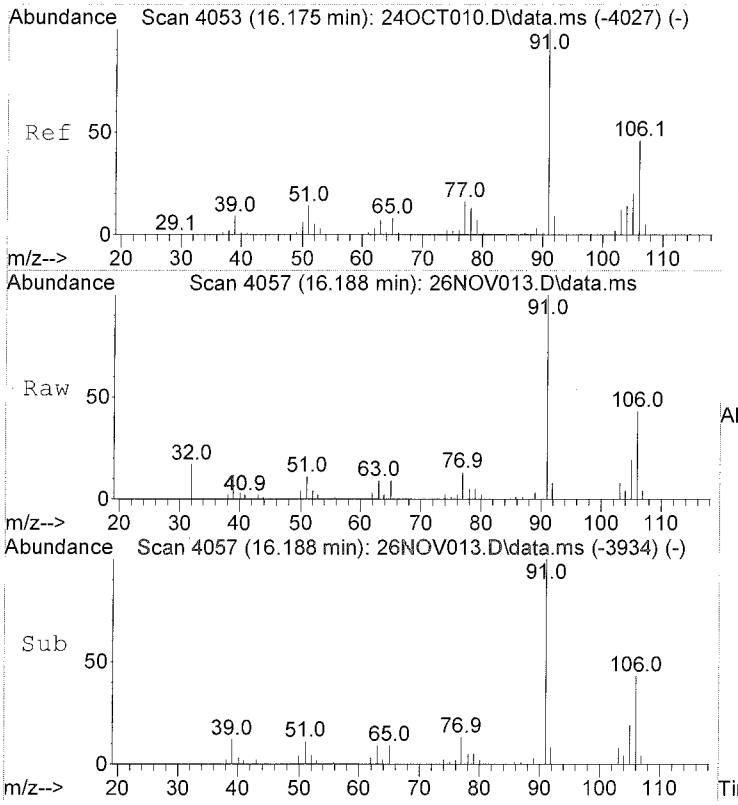


#47
p,&m-Xylene
Concen: 13.13 ppbv
RT: 15.502 min Scan# 3848
Delta R.T. 0.003 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 91 Resp: 258822

Ion	Ratio	Lower	Upper
91	100		
106	44.0	0.0	96.6
105	16.7	0.0	70.6

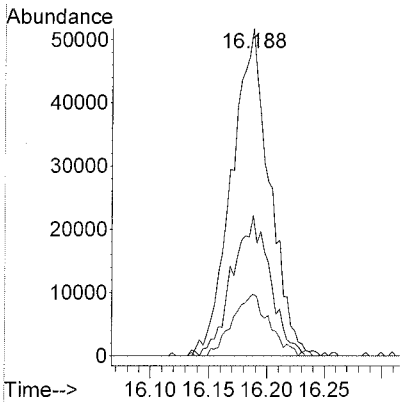


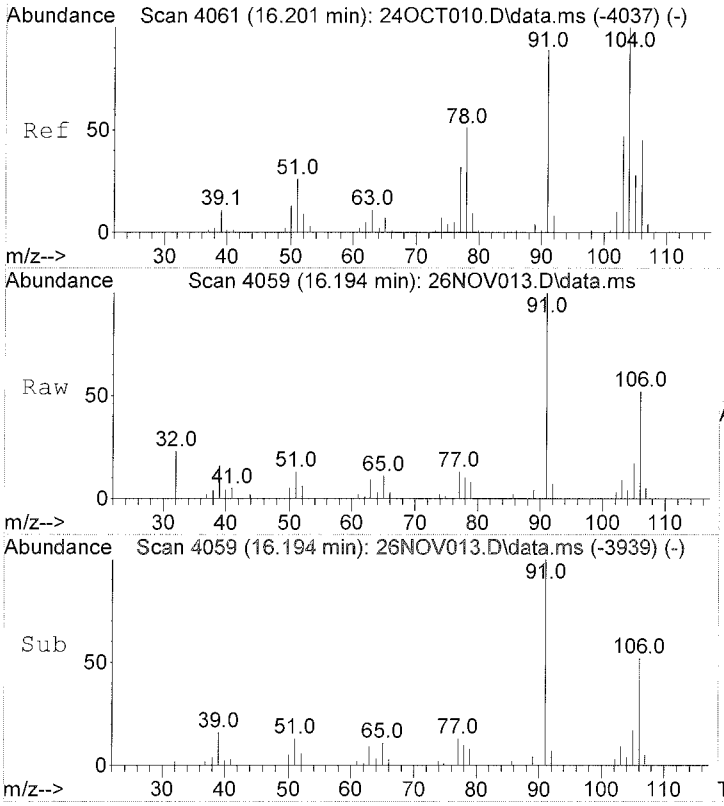


#48
o-Xylene
Concen: 6.35 ppbv
RT: 16.188 min Scan# 4057
Delta R.T. 0.003 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 91 Resp: 117755

Ion	Ratio	Lower	Upper
91	100		
106	42.8	0.0	93.9
105	18.9	0.0	69.1

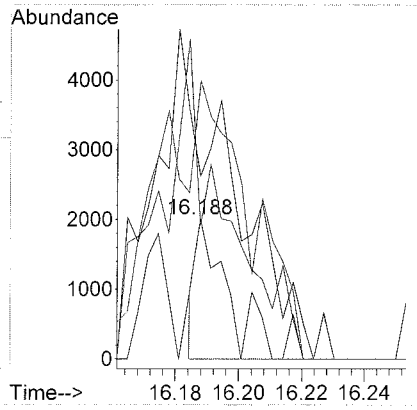


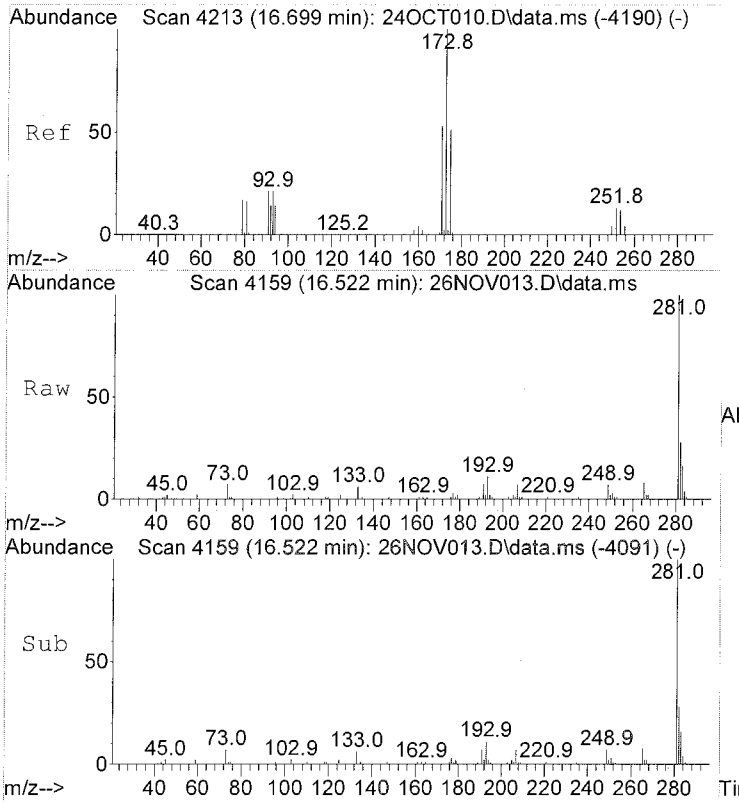


#49
Styrene
Concen: 0.14 ppbv
RT: 16.194 min Scan# 4059
Delta R.T. -0.007 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:104 Resp: 1536

Ion	Ratio	Lower	Upper
104	100		
78	264.0	5.4	105.4#
103	230.5	0.0	97.9#
50	143.1	0.0	66.2#

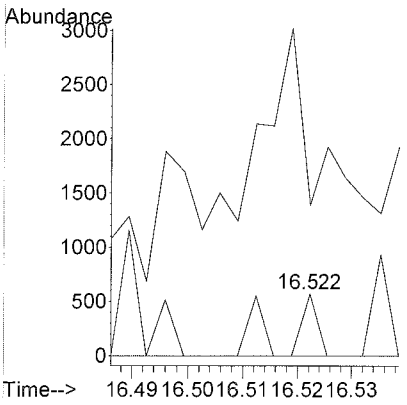


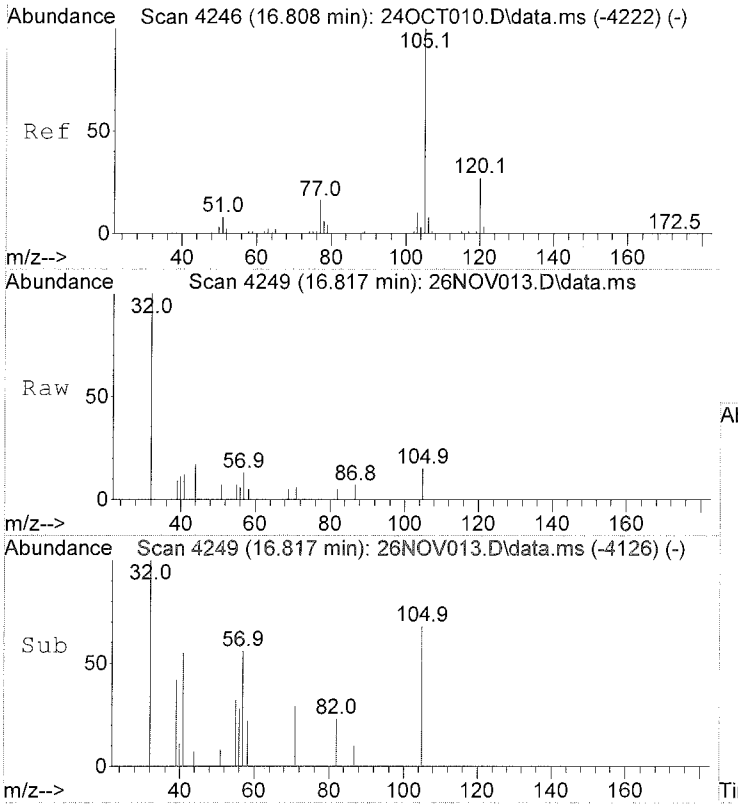


#50
Bromoform
Concen: 0.02 ppbv
RT: 16.522 min Scan# 4159
Delta R.T. -0.177 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:173 Resp: 222

Ion	Ratio	Lower	Upper
173	100		
175	0.0	0.0	97.5
171	0.0	1.4	101.4#
93	0.0	0.0	77.6

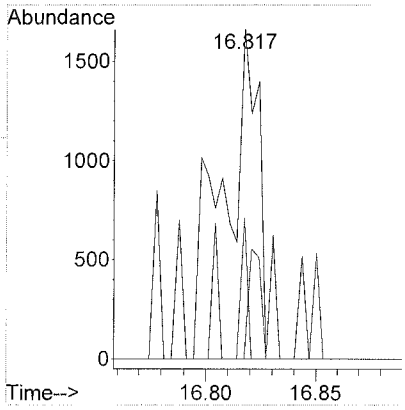


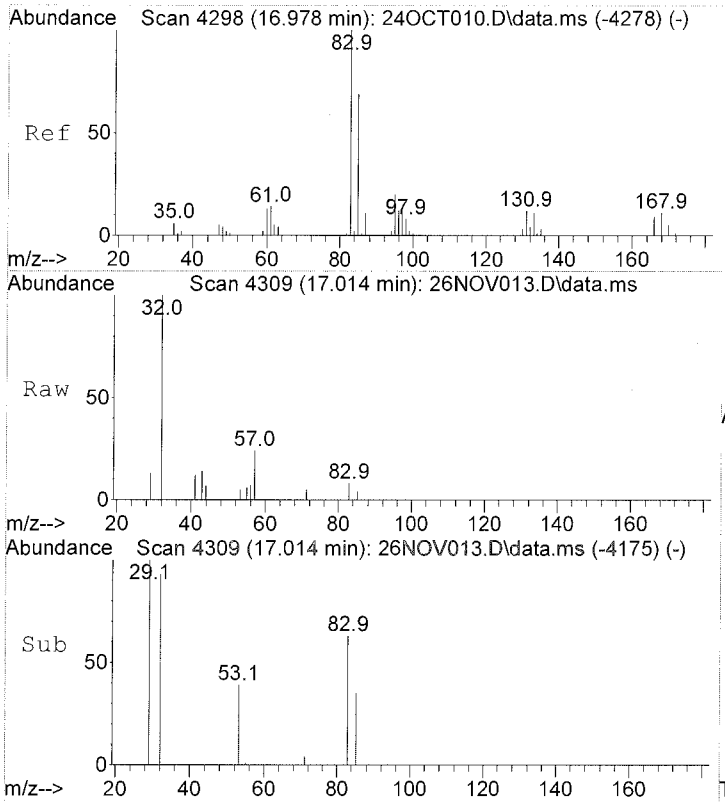


#51
Isopropyl benzene
Concen: 0.11 ppbv
RT: 16.817 min Scan# 4249
Delta R.T. 0.003 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:105 Resp: 2025

Ion	Ratio	Lower	Upper
105	100		
120	0.0	3.8	43.8#
77	0.0	0.0	38.7
51	42.8	0.0	30.4#

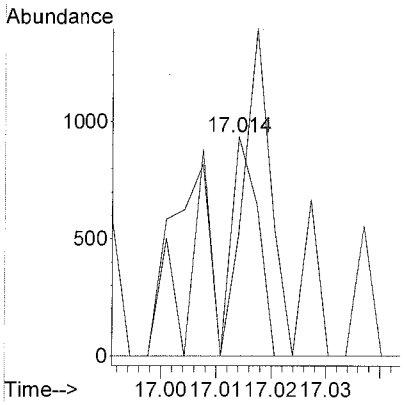


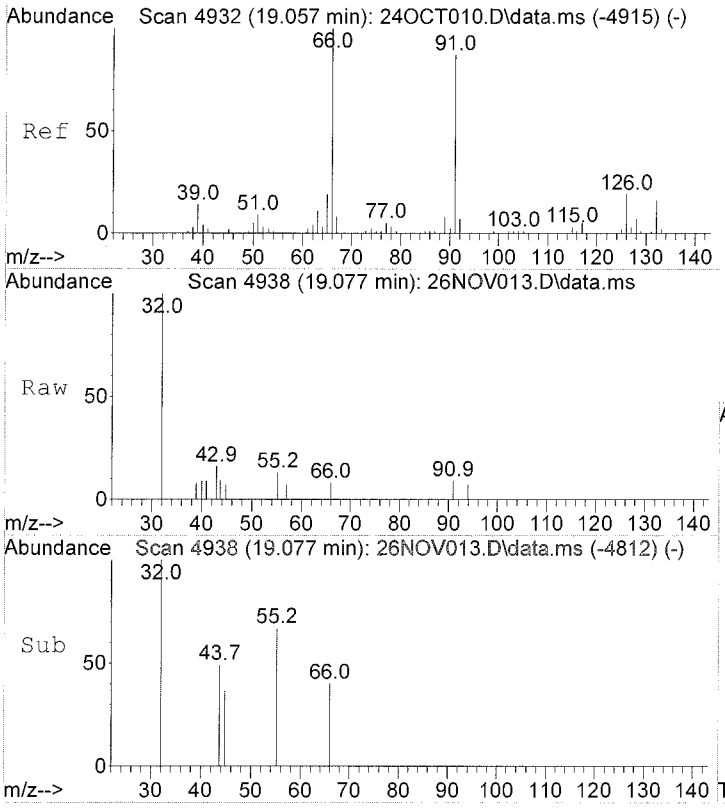


#52
1,1,2,2-Tetrachloroethane
Concen: 0.02 ppbv
RT: 17.014 min Scan# 4309
Delta R.T. 0.039 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 83 Resp: 311

Ion	Ratio	Lower	Upper
83	100		
85	55.7	11.1	111.1
60	0.0	0.0	64.6
61	0.0	0.0	65.1

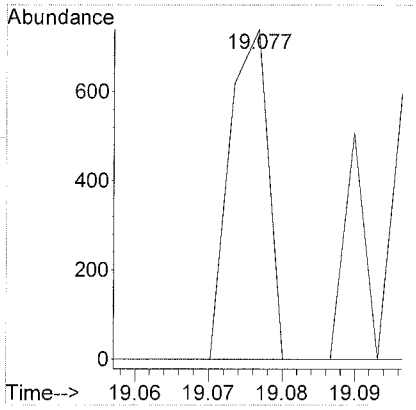


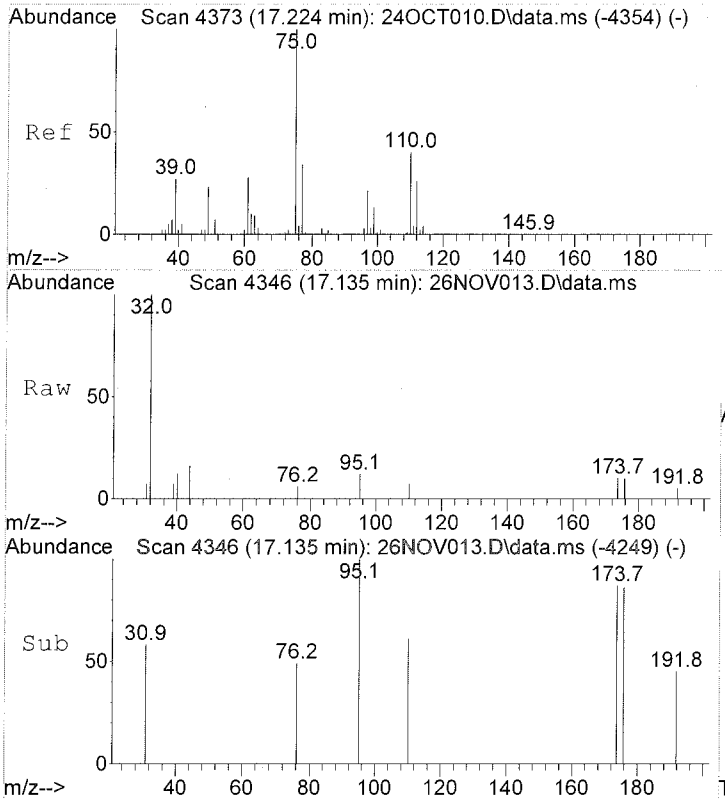


#54
Benzyl Chloride
Concen: 0.03 ppbv
RT: 19.077 min Scan# 4938
Delta R.T. 0.013 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 91 Resp: 267

Ion	Ratio	Lower	Upper
91	100		
126	0.0	0.0	66.1
63	0.0	0.0	62.0

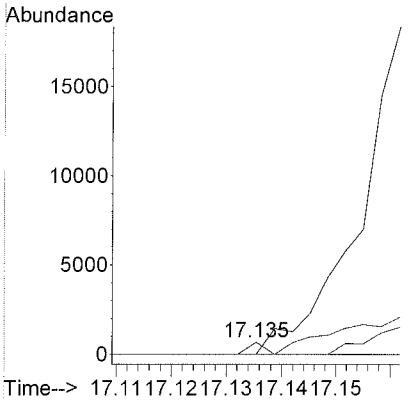


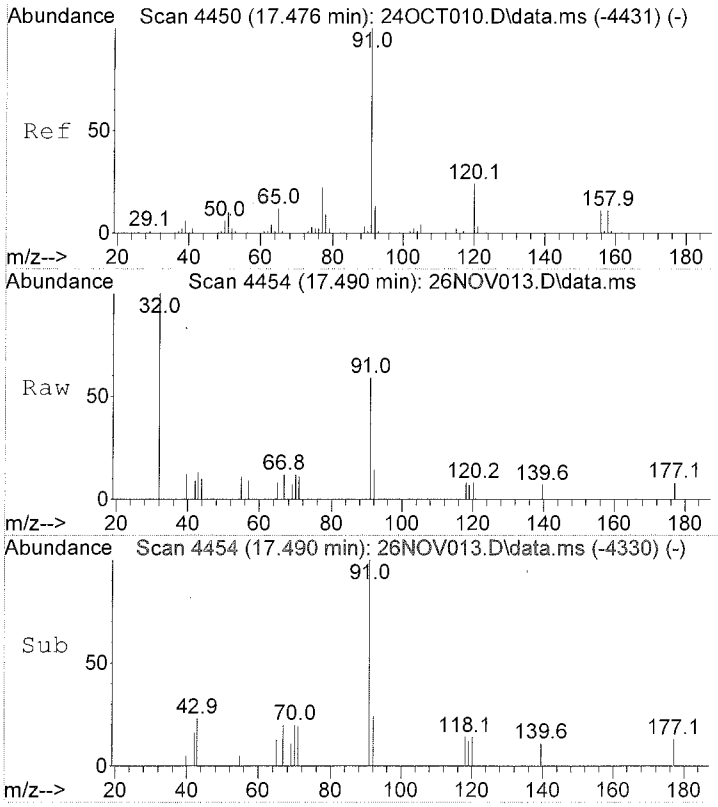


#55
1,2,3-Trichloropropane
Concen: 0.03 ppbv
RT: 17.135 min Scan# 4346
Delta R.T. -0.083 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:110 Resp: 135

Ion	Ratio	Lower	Upper
110	100		
75	0.0	252.4	292.4#
61	0.0	44.1	84.1#
49	0.0	34.3	74.3#

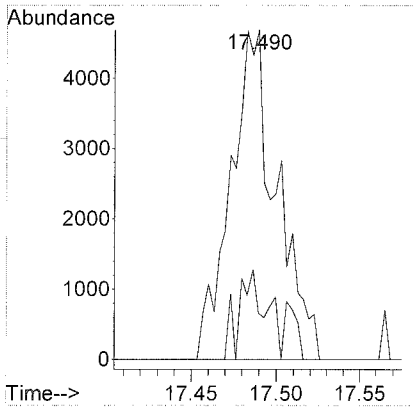


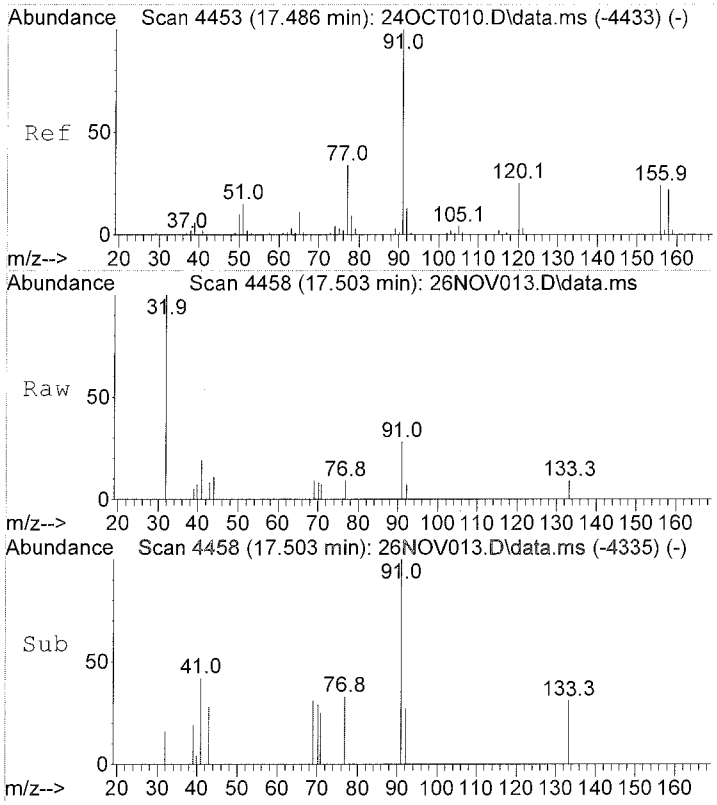


#56
n-Propyl Benzene
Concen: 0.45 ppbv
RT: 17.490 min Scan# 4454
Delta R.T. 0.007 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 91 Resp: 8793

Ion	Ratio	Lower	Upper
91	100		
120	14.1	2.6	42.6

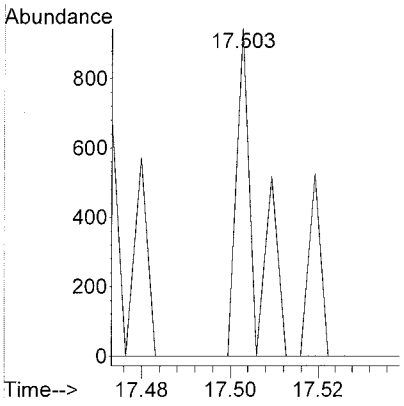


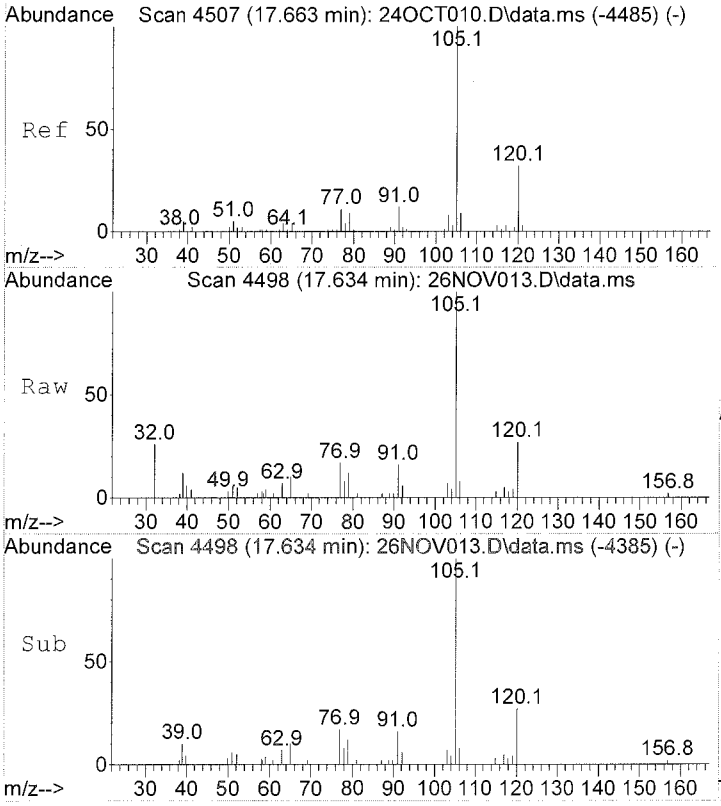


#57
Bromobenzene
Concen: 0.03 ppbv
RT: 17.503 min Scan# 4458
Delta R.T. 0.003 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 77 Resp: 390

Ion	Ratio	Lower	Upper
77	100		
156	0.0	23.3	63.3#
158	0.0	23.9	63.9#

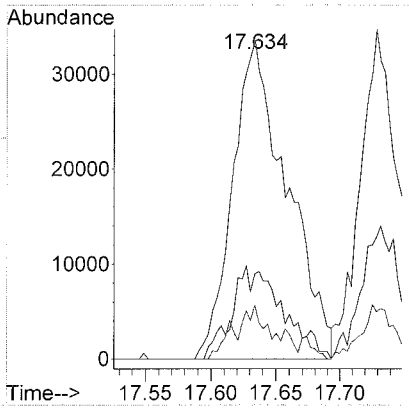


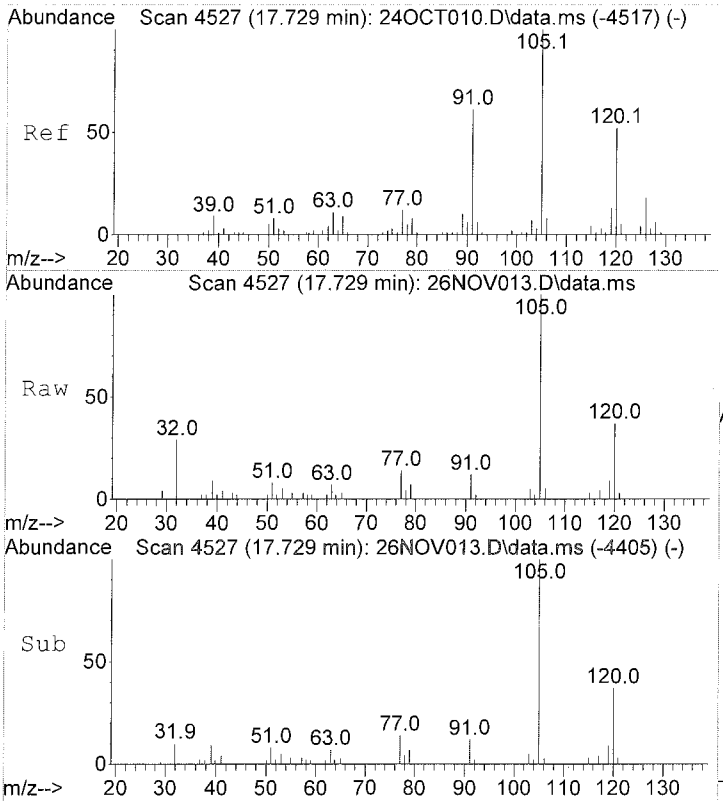


#58
4-Ethyl Toluene
Concen: 4.67 ppbv
RT: 17.634 min Scan# 4498
Delta R.T. -0.029 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:105 Resp: 97469

Ion	Ratio	Lower	Upper
105	100		
120	26.7	0.0	78.8
77	16.9	0.0	64.5

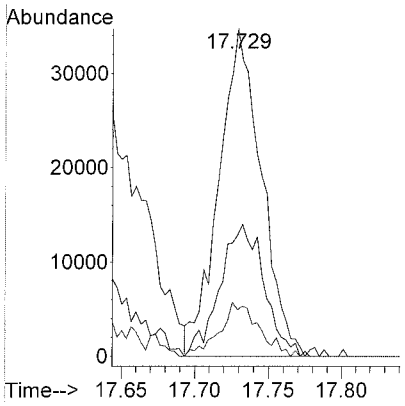


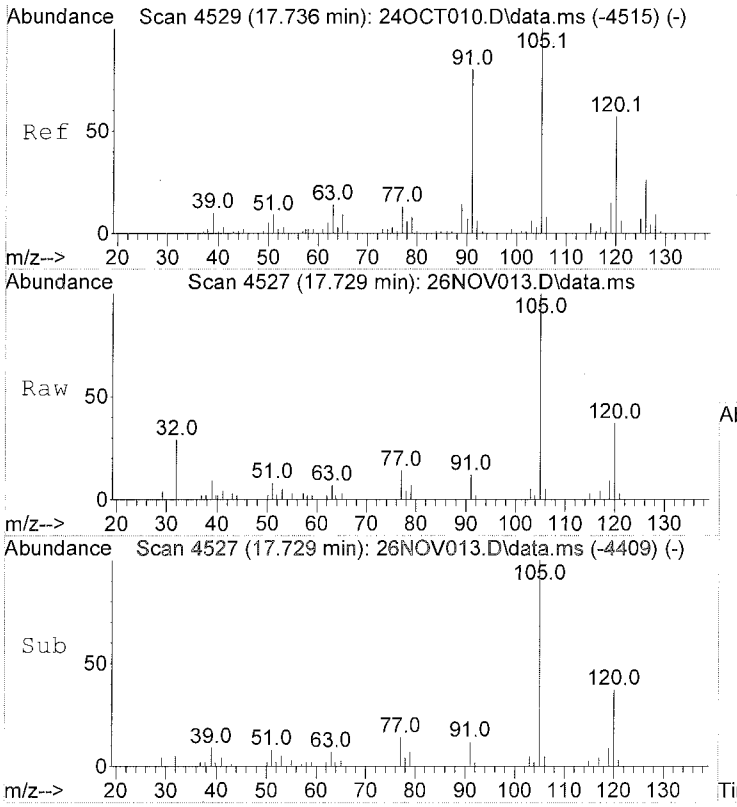


#59
1,3,5-Trimethylbenzene
Concen: 2.97 ppbv
RT: 17.729 min Scan# 4527
Delta R.T. -0.000 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:105 Resp: 69783

Ion	Ratio	Lower	Upper
105	100		
120	37.1	0.0	95.4
77	14.2	0.0	65.8

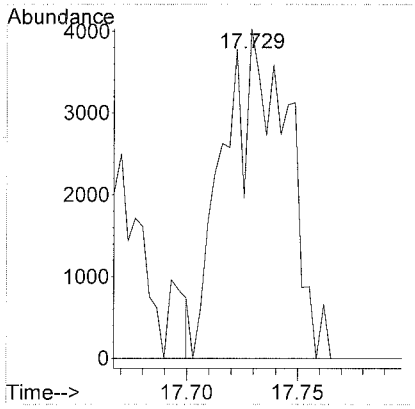


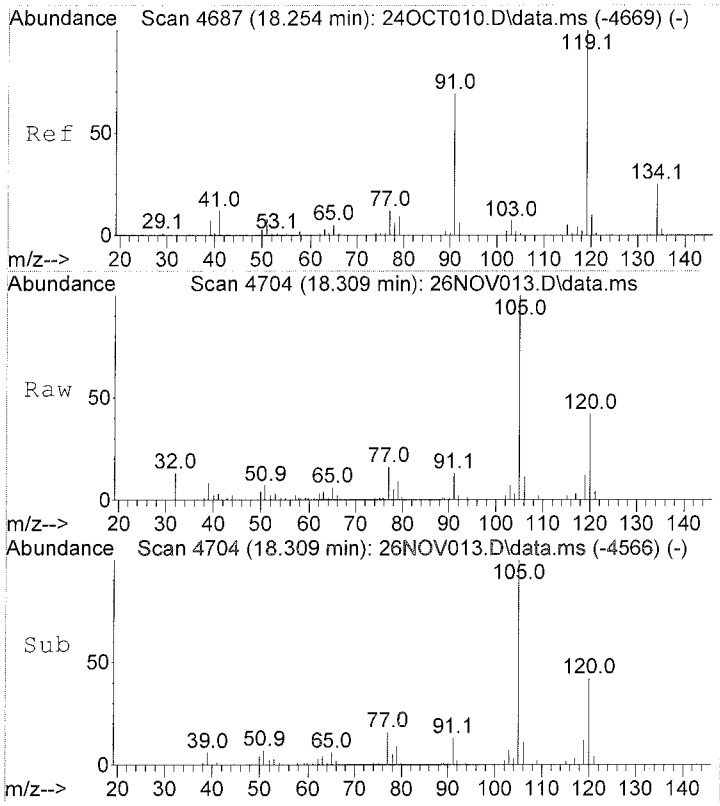


#60
2-Chlorotoluene
Concen: 0.48 ppbv
RT: 17.729 min Scan# 4527
Delta R.T. -0.013 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 91 Resp: 8003

Ion	Ratio	Lower	Upper
91	100		
126	0.0	4.4	44.4#

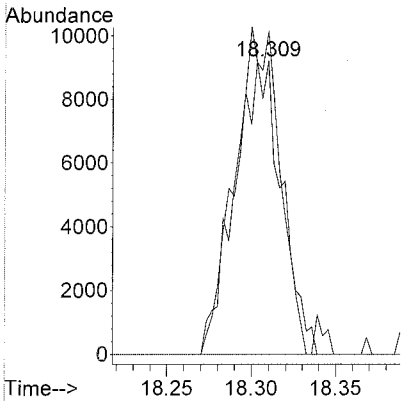


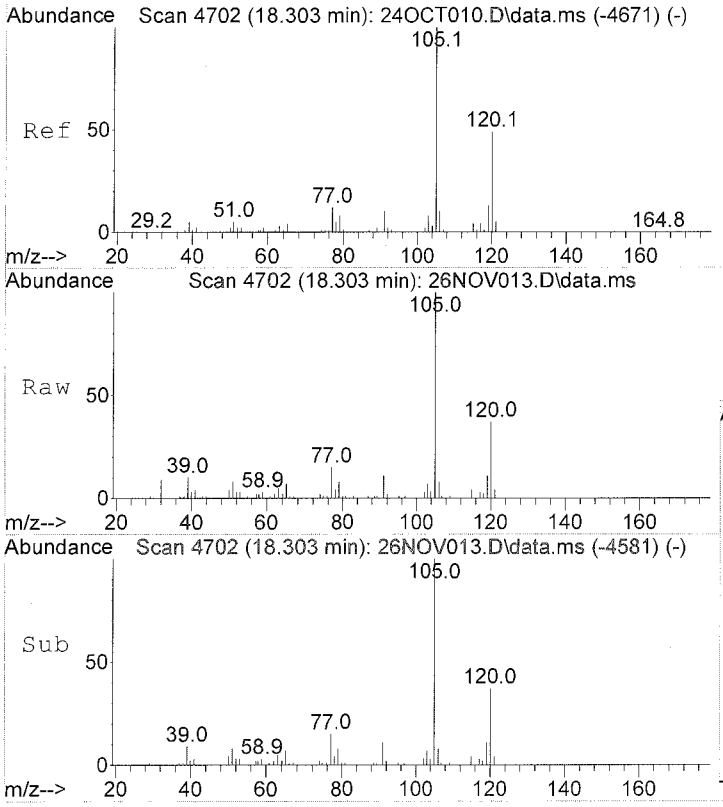


#62
tert-Butylbenzene
Concen: 1.03 ppbv
RT: 18.309 min Scan# 4704
Delta R.T. 0.052 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:119 Resp: 17855

Ion	Ratio	Lower	Upper
119	100		
91	110.2	59.5	99.5#
134	0.0	1.8	41.8#

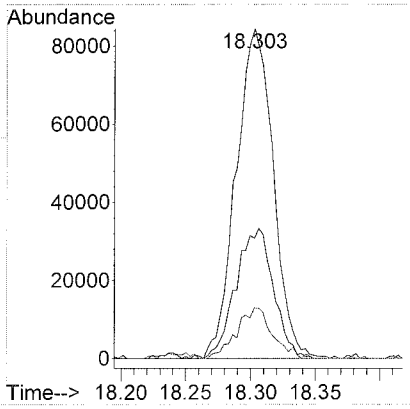


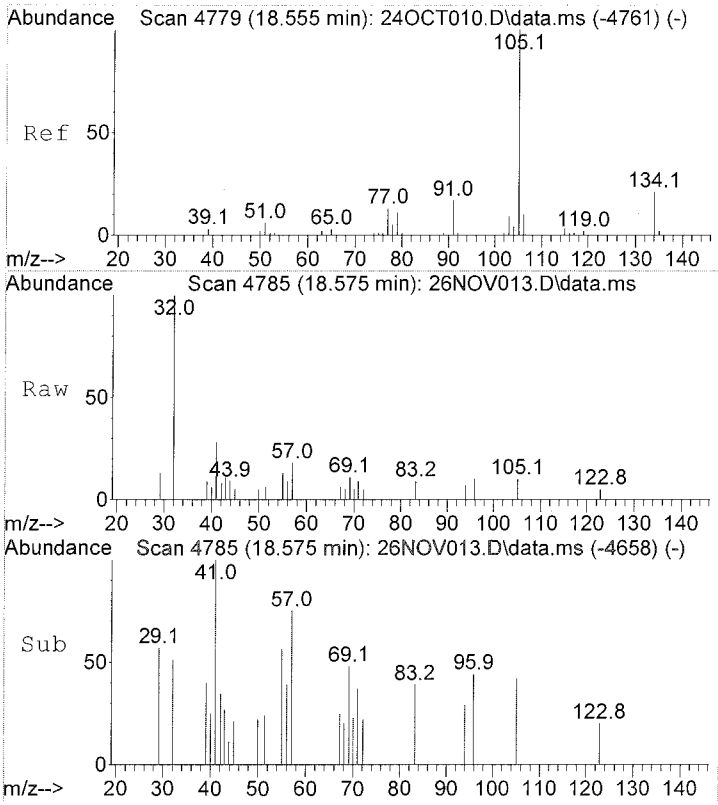


#63
1,2,4-Trimethylbenzene
Concen: 7.54 ppbv
RT: 18.303 min Scan# 4702
Delta R.T. -0.003 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:105 Resp: 166931

Ion	Ratio	Lower	Upper
105	100		
120	36.5	0.0	91.2
77	15.3	0.0	65.1

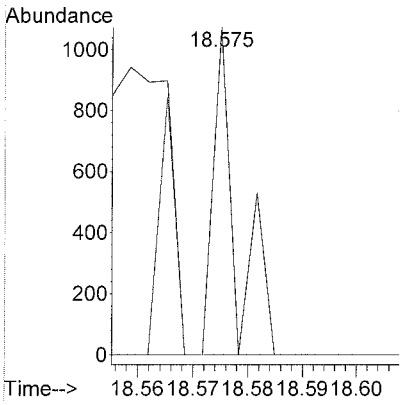


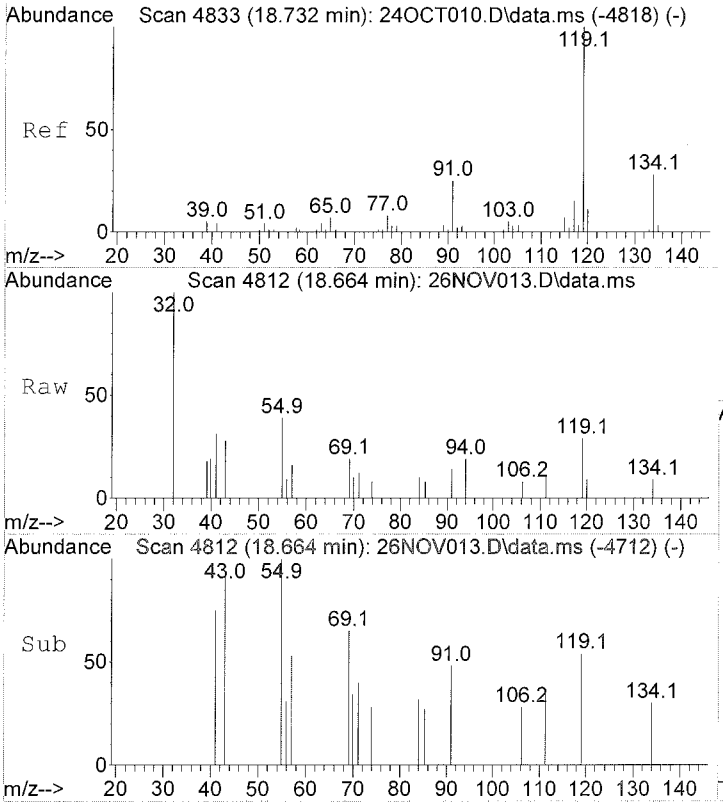


#64
sec-Butylbenzene
Concen: 0.02 ppbv
RT: 18.575 min Scan# 4785
Delta R.T. 0.016 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:105 Resp: 315

Ion	Ratio	Lower	Upper
105	100		
134	0.0	0.0	37.6
91	0.0	0.0	37.3

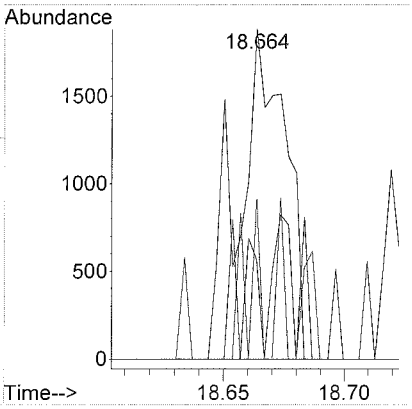


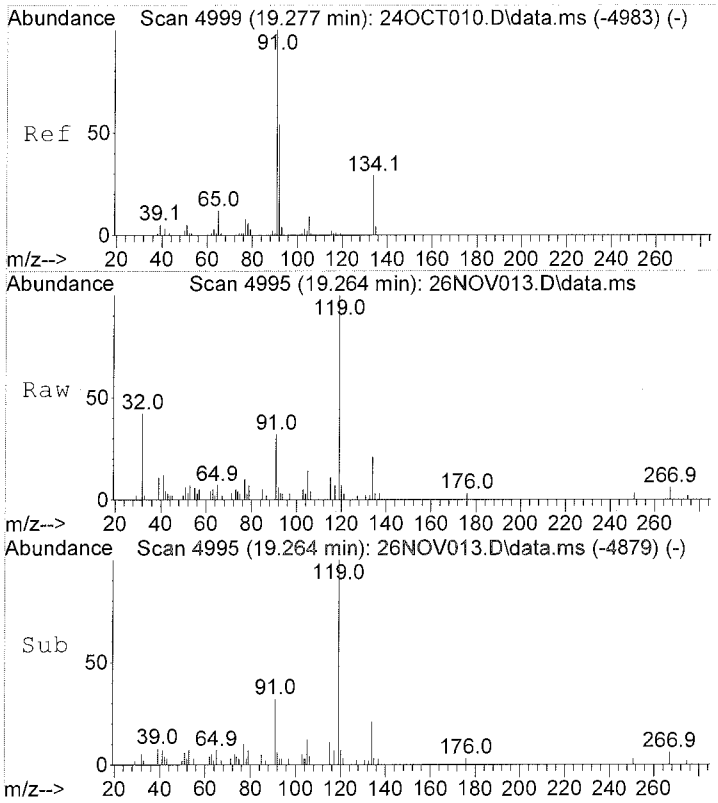


#65
p-Isopropyltoluene
Concen: 0.19 ppbv
RT: 18.664 min Scan# 4812
Delta R.T. -0.072 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:119 Resp: 2519

Ion	Ratio	Lower	Upper
119	100		
134	30.0	2.1	42.1
91	48.4	9.6	49.6

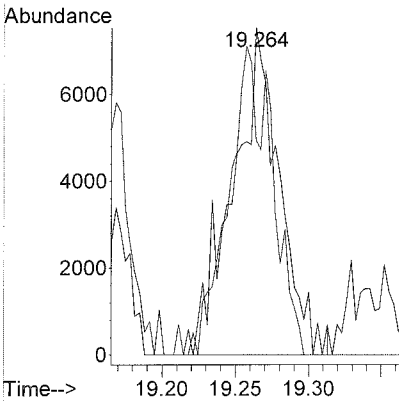


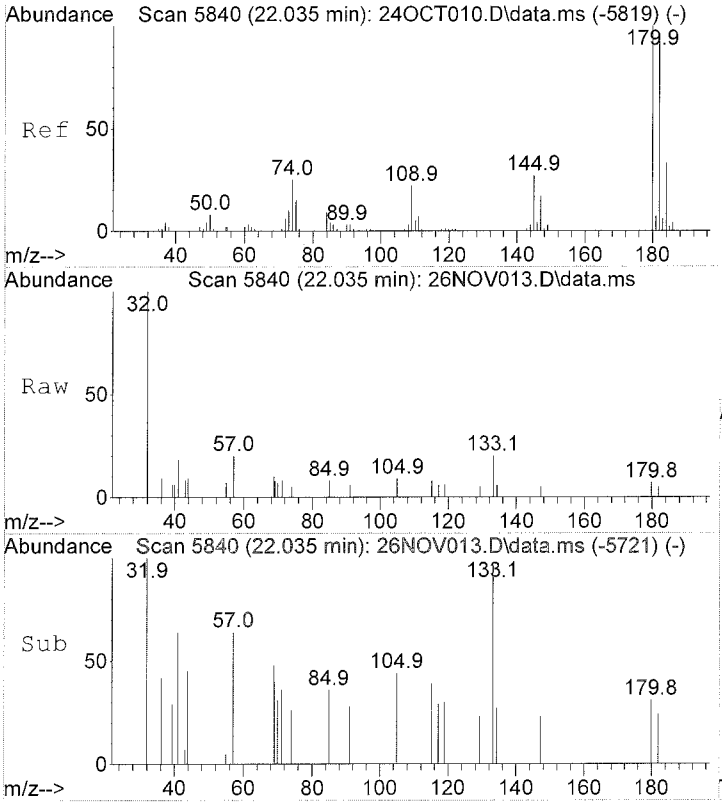


#68
n-Butylbenzene
Concen: 1.17 ppbv
RT: 19.264 min Scan# 4995
Delta R.T. -0.019 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 91 Resp: 16552

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
134	65.7	0.9	40.9#

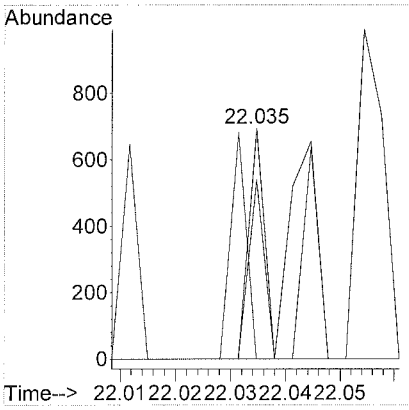




#71
1,2,4-Trichlorobenzene
Concen: 0.04 ppbv
RT: 22.035 min Scan# 5840
Delta R.T. -0.010 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:180 Resp: 368

Ion	Ratio	Lower	Upper
180	100		
182	77.6	33.4	133.4
109	0.0	0.0	82.3
145	0.0	0.0	81.1



QC Report: Unit #1
Inject Time: 11/26/2018 18:21:37

QAQC Filename:QAQC\11262018\1_182137.asc

Autosampler Position: 02 / Run 05 of 29
Sample Name : J110805-08
Method Filename: T15DESORB220.MTC

Volume Parameters:

ISTD A Xfer Volume	set=50	Act=50	StartPress=14.7	EndPress=14.9
ISTD A Flow	set=50	Act=49.7		
ISTD A Trap Temp	set=22	hi=24	lo=22	avg=22
ISTD B Xfer Volume	set=0	Act=0	StartPress=0.0	EndPress=0.0
ISTD B Flow	set=0	Act=0.0		
ISTD B Trap Temp	Disabled			
ISTD C Xfer Volume	Disabled			
ISTD C Flow	Disabled			
ISTD C Trap Temp	Disabled			
Sample Xfer Volume	set=50	Act=50	StartPress=23.0	EndPress=22.6
Sample Xfer Flow	set=50	Act=49.7		
Smple Xfer Trap Temp	set=22	hi=22	lo=22	avg=22

Sweep Gas = Helium

Dry Purge Parameters:

Dry Purge Flow	set=70	Act=69.1		
Dry Purge Temp	set=25	hi=25	lo=25	avg=25
Dry Purge Time	set=12.00	act=12.00		

Desorb Parameters:

Trap Desorb Temp	set=220	hi=234	lo=217	avg=221
Trap Desorb Time	set=4.50	act=4.50		
MCS Temp	Disabled			
Cryo Focuser Temp	set=-180	hi=-185	lo=-198	avg=-189

Inject Parameters:

Cryo Union Temp	set=130	hi=140	lo=129	avg=130
Cryo Inject Temp	set=75	hi=76	lo=73	avg=75
Cryo Inject Time	set=2.50	act=2.50		

Bake Parameters:

Trap Bake Temp	set=280	hi=282	lo=277	avg=280
Trap Bake Time	set=10.00	act=10.00		
MCS Bake Temp	Disabled			

System Regions:

Manifold 1 Temp	set=130	avg=130
Manifold 2 Temp	set=130	avg=130
Oven 6 Port Temp	set=130	avg=130
Oven 8 Port Temp	set=130	avg=130
Oven 16 Port Temp	set=130	avg=130
Bottom Of Trap Temp	set=130	avg=130
Transfer Line Temp	set=130	avg=130

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV012.D
Acq On : 26 Nov 2018 5:41 pm
Operator : DT
Sample : J110805-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

Quant Time: Nov 27 10:38:10 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

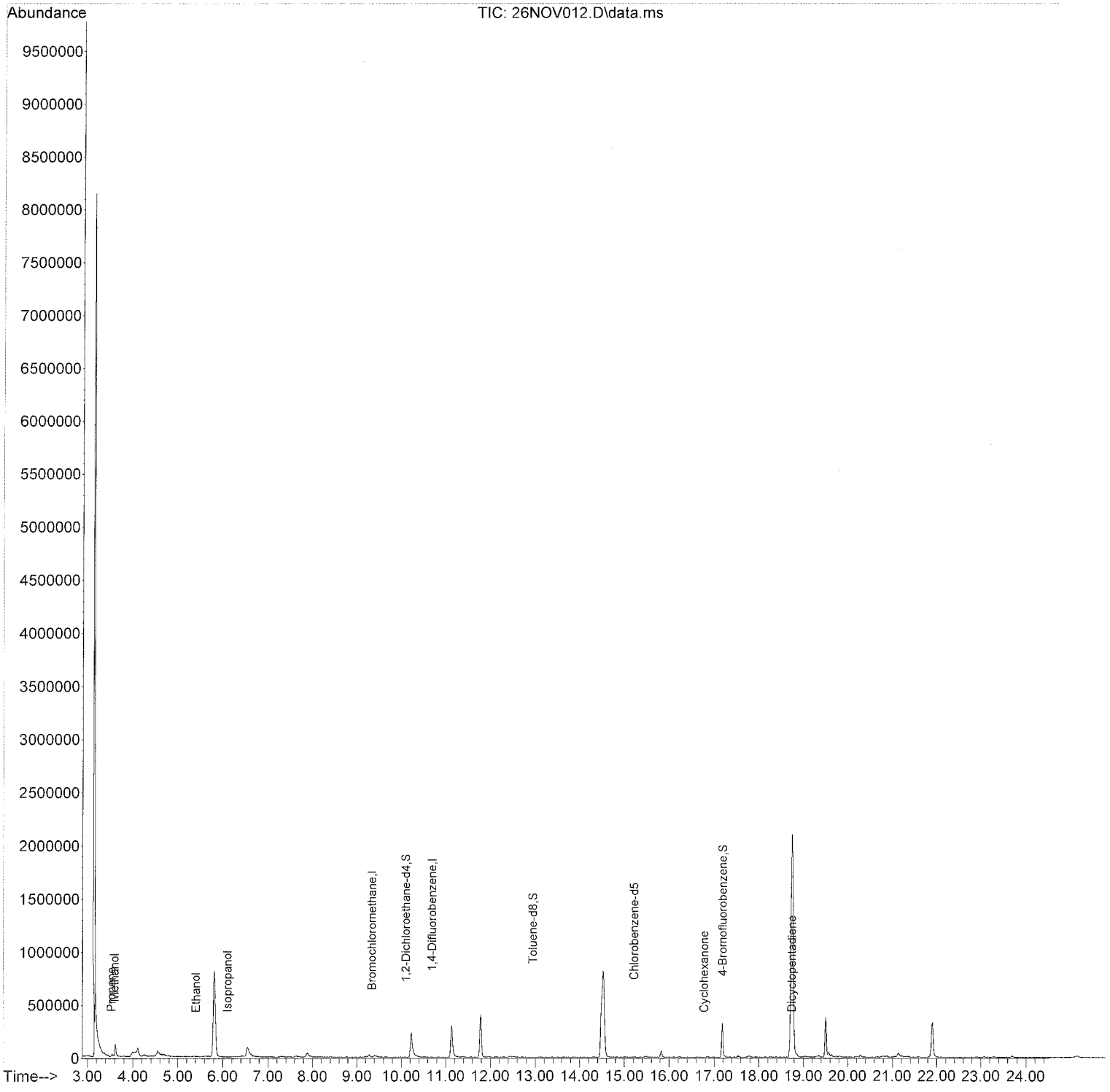
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	114568	10.00	ppbv	# 0.00
23) 1,4-Difluorobenzene	10.688	114	375513	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.207	117	201967	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.098	65	279642	11.83	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 118.30%			
29) Toluene-d8	12.938	98	274370	7.90	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 79.00%#			
32) 4-Bromofluorobenzene	17.185	95	171214	12.73	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 127.30%#			
Target Compounds						Qvalue
2) Propene	3.530	41	7536	0.62	ppbv #	25
5) Methanol	3.589	31	6441	3.06	ppbv #	53
7) Ethanol	5.402	45	3536	0.49	ppbv	98
9) Isopropanol	6.104	45	4746	0.17	ppbv	92
31) Cyclohexanone	16.768	55	3988	0.51	ppbv #	61
33) Dicyclopentadiene	18.739	66	192	0.81	ppbv #	85

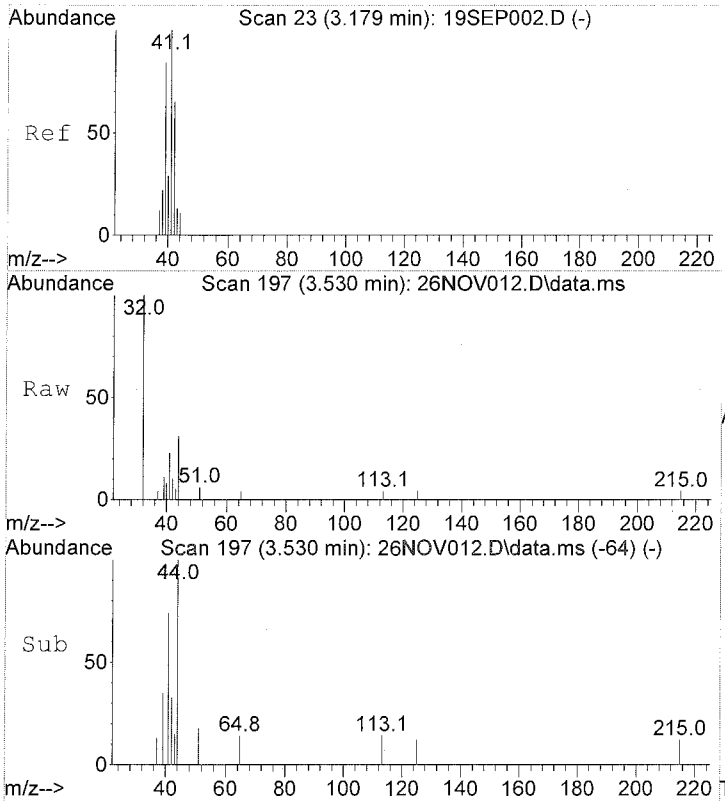
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV012.D
Acq On : 26 Nov 2018 5:41 pm
Operator : DT
Sample : J110805-07 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 1 Sample Multiplier: 1.944

Quant Time: Nov 27 10:38:10 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

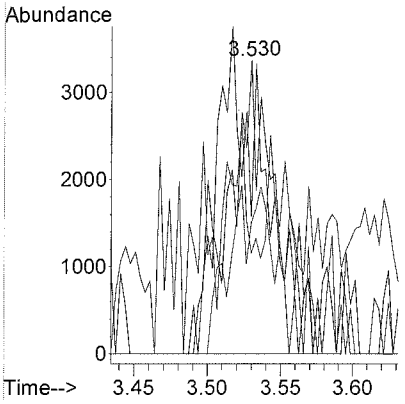


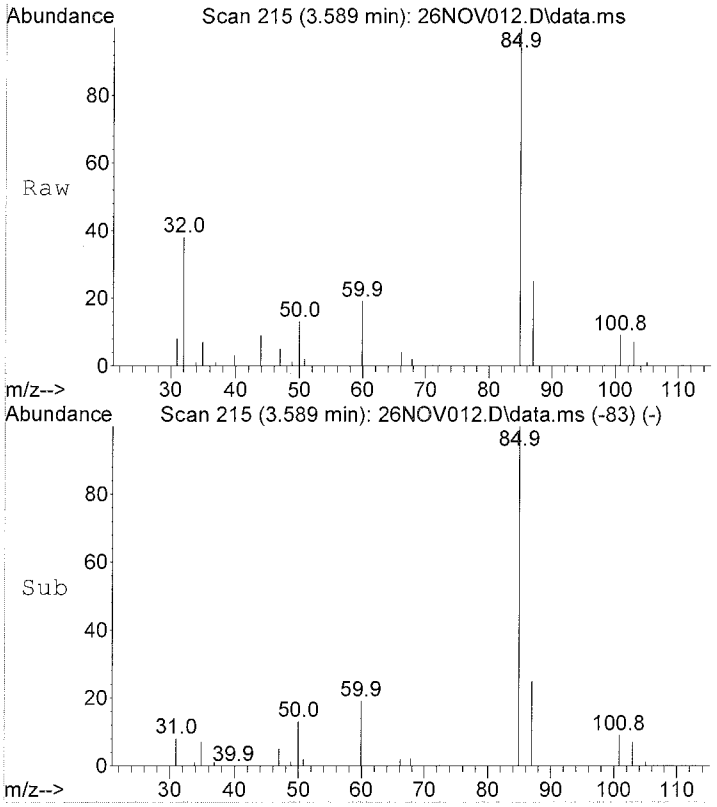


#2
Propene
Concen: 0.62 ppbv
RT: 3.530 min Scan# 197
Delta R.T. 0.036 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 41 Resp: 7536

Ion	Ratio	Lower	Upper
41	100		
39	0.0	65.4	98.0#
42	0.0	53.8	80.6#
40	29.1	21.2	31.8

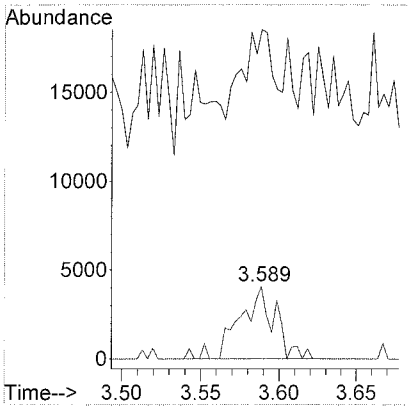


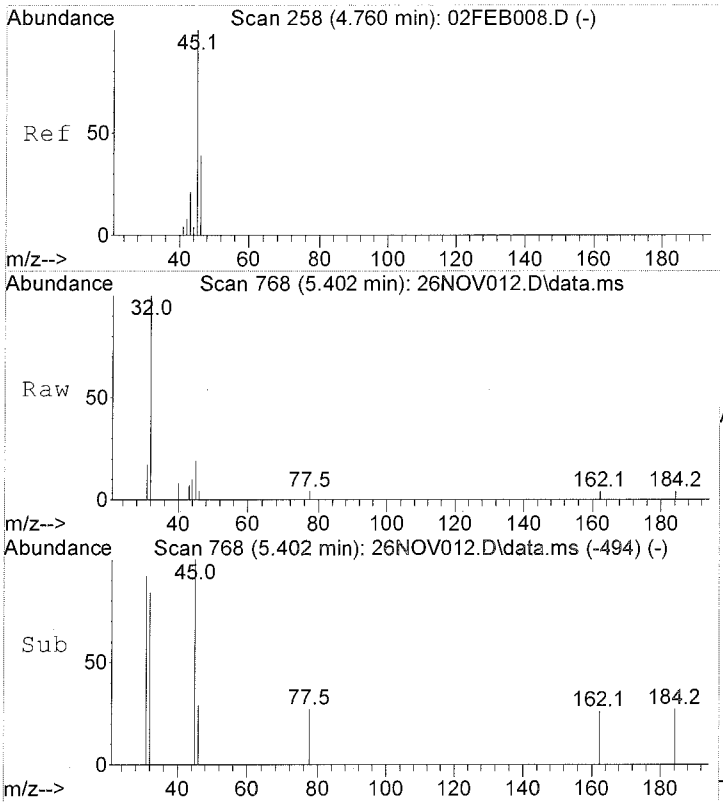


#5
Methanol
Concen: 3.06 ppbv
RT: 3.589 min Scan# 215
Delta R.T. 0.033 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 31 Resp: 6441

Ion	Ratio	Lower	Upper
31	100		
32	96.4	63.7	95.5#
31	100.0	10.2	15.2#

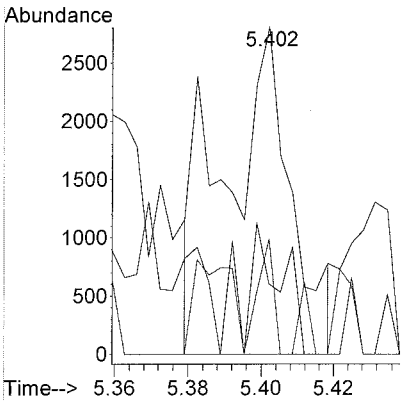


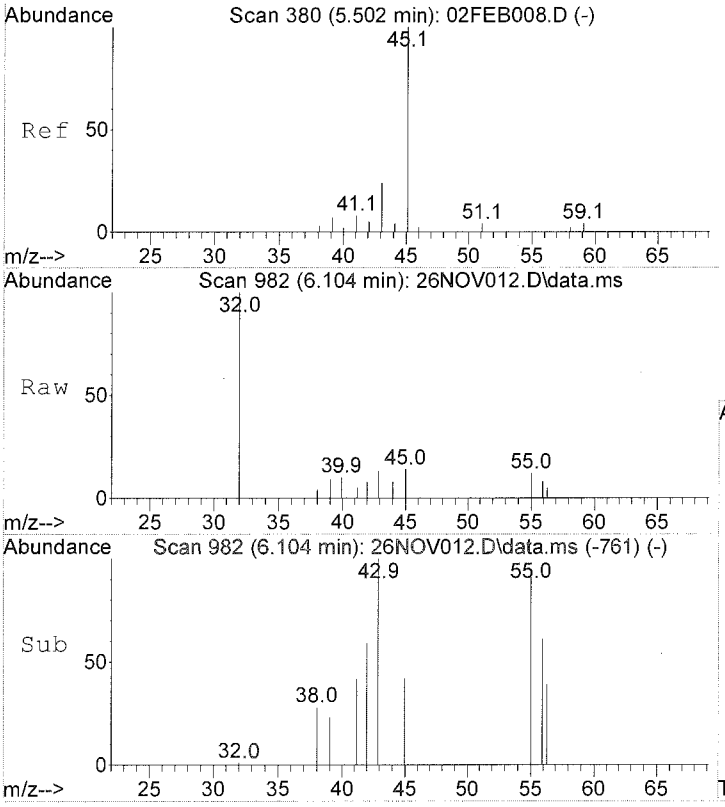


#7
Ethanol
Concen: 0.49 ppbv
RT: 5.402 min Scan# 768
Delta R.T. 0.098 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 45 Resp: 3536

Ion	Ratio	Lower	Upper
45	100		
46	39.3	30.1	45.1
43	25.0	20.2	30.2

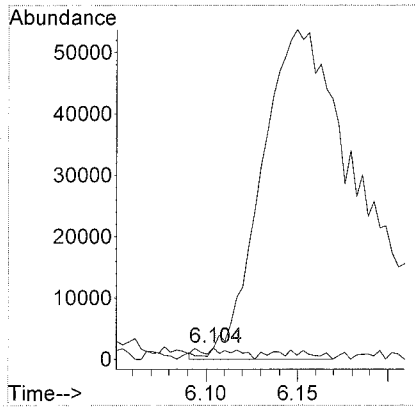


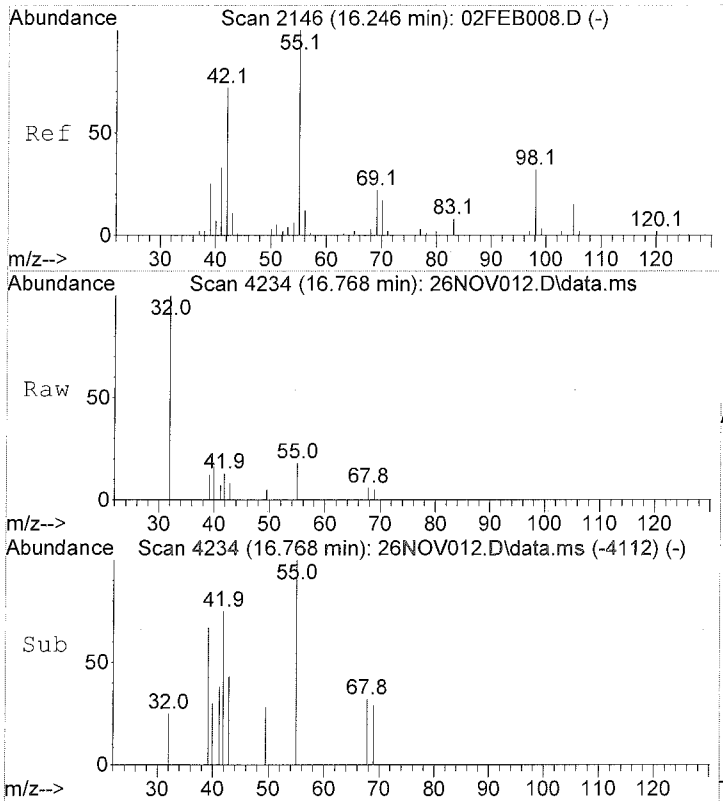


#9
Isopropanol
Concen: 0.17 ppbv
RT: 6.104 min Scan# 982
Delta R.T. 0.125 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 45 Resp: 4746

Ion	Ratio	Lower	Upper
45	100		
43	19.4	18.8	28.2

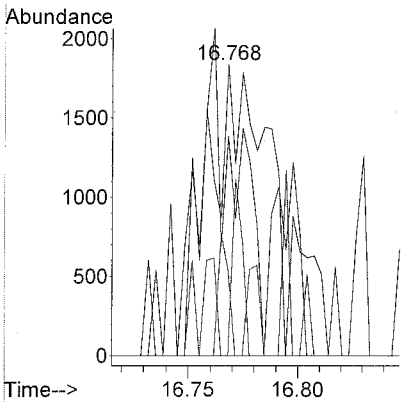


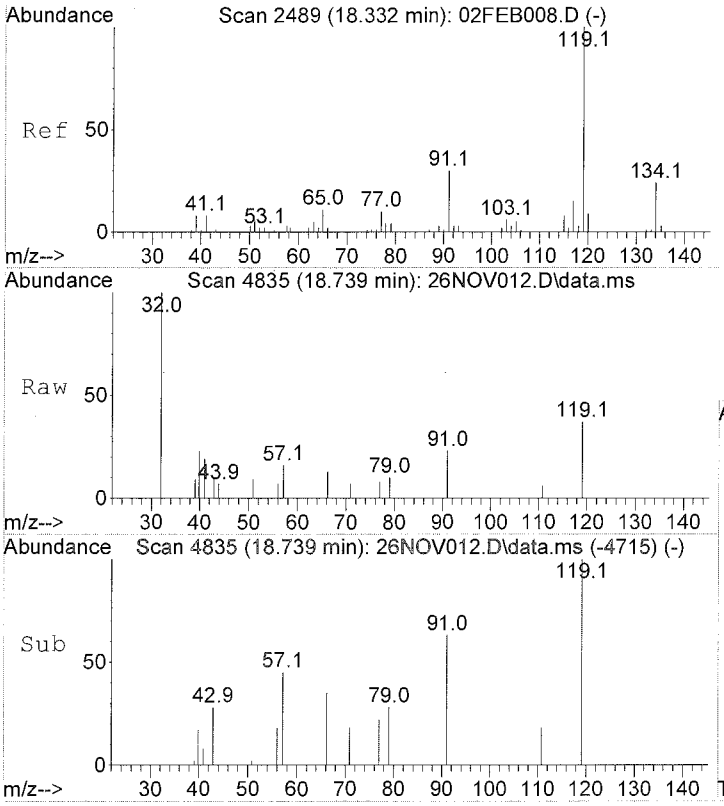


#31
Cyclohexanone
Concen: 0.51 ppbv
RT: 16.768 min Scan# 4234
Delta R.T. 0.000 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 55 Resp: 3988

Ion	Ratio	Lower	Upper
55	100		
42	92.5	56.6	85.0#
69	11.9	25.0	37.4#
98	9.0	39.7	59.5#

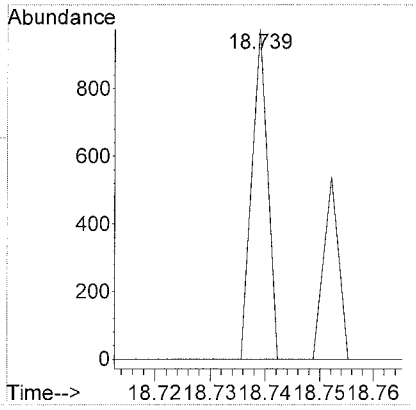




#33
Dicyclopentadiene
Concen: 0.81 ppbv
RT: 18.739 min Scan# 4835
Delta R.T. -0.006 min
Lab File: 26NOV012.D
Acq: 26 Nov 2018 5:41 pm

Tgt Ion: 66 Resp: 192

Ion	Ratio	Lower	Upper
66	100		
133	55.2	36.5	54.7#



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV013.D
Acq On : 26 Nov 2018 6:21 pm
Operator : DT
Sample : J110805-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Nov 27 10:38:20 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

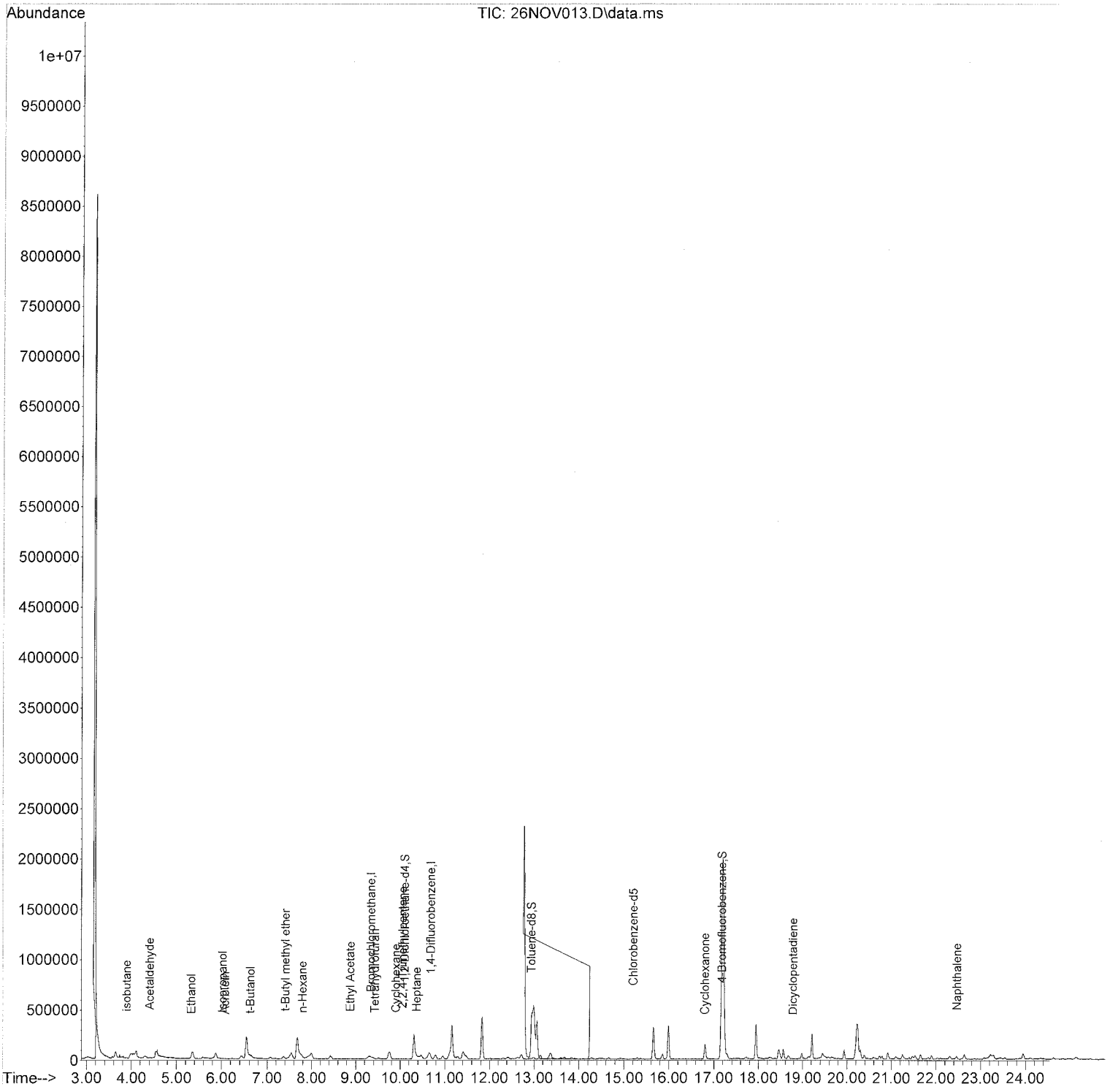
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	105318	10.00	ppbv	# 0.00
23) 1,4-Difluorobenzene	10.682	114	382487	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.204	117	204526	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.098	65	275580	11.44	ppbv	0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 114.40%			
29) Toluene-d8	12.935	98	290588	8.22	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 82.20%			
32) 4-Bromofluorobenzene	17.175	95	160419	11.77	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 117.70%			
Target Compounds						Qvalue
3) isobutane	3.894	41	3224	0.54	ppbv #	17
6) Acetaldehyde	4.412	43	17955	2.29	ppbv #	69
7) Ethanol	5.323	45	9063	1.36	ppbv #	52
9) Isopropanol	6.025	45	36505	1.41	ppbv #	83
10) Acrolein	6.078	56	1452	0.21	ppbv #	19
11) t-Butanol	6.619	59	2693	0.11	ppbv	90
14) t-Butyl methyl ether	7.409	73	17758	0.47	ppbv #	1
15) n-Hexane	7.789	57	16511	0.76	ppbv #	81
18) Ethyl Acetate	8.875	70	496	0.16	ppbv #	1
20) Tetrahydrofuran	9.422	72	1970	0.29	ppbv #	10
21) Cyclohexane	9.898	56	18549	0.74	ppbv #	73
22) 2,2,4-Trimethylpentane	10.052	57	99390	1.67	ppbv	85
26) Heptane	10.367	71	6568	0.68	ppbv #	51
31) Cyclohexanone	16.798	55	1711	0.22	ppbv #	43
33) Dicyclopentadiene	18.775	66	245	1.02	ppbv #	31
34) Naphthalene	22.464	128	61352	4.57	ppbv	99

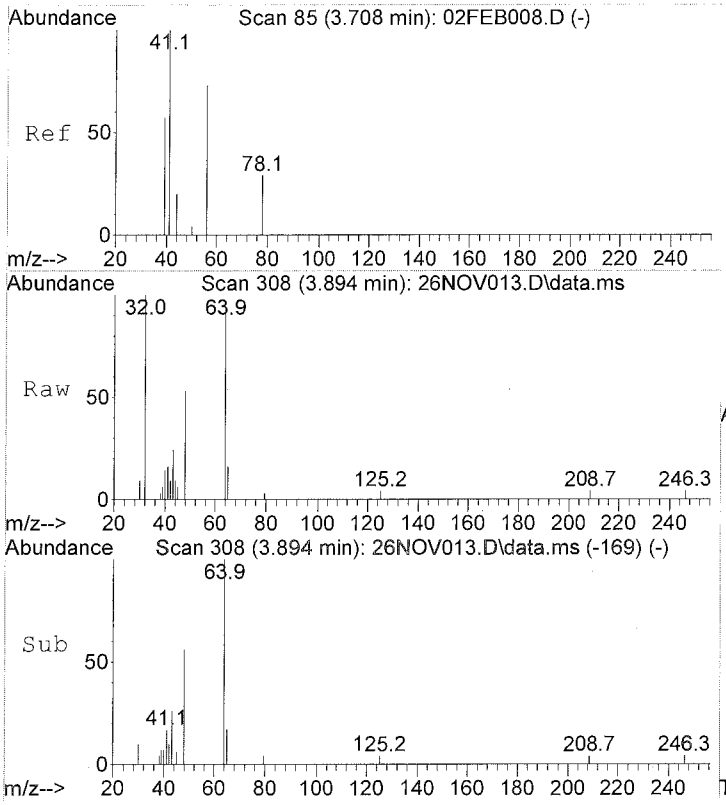
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV013.D
Acq On : 26 Nov 2018 6:21 pm
Operator : DT
Sample : J110805-08 JACOBS
Misc : 50 ML, 24.6/12.65
ALS Vial : 2 Sample Multiplier: 1.944

Quant Time: Nov 27 10:38:20 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

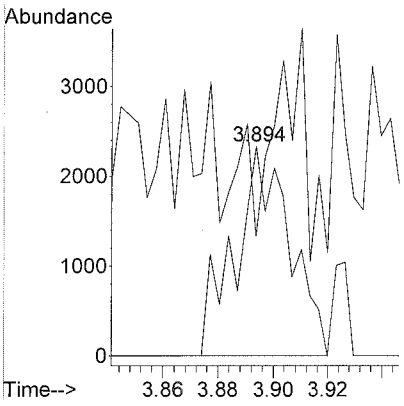


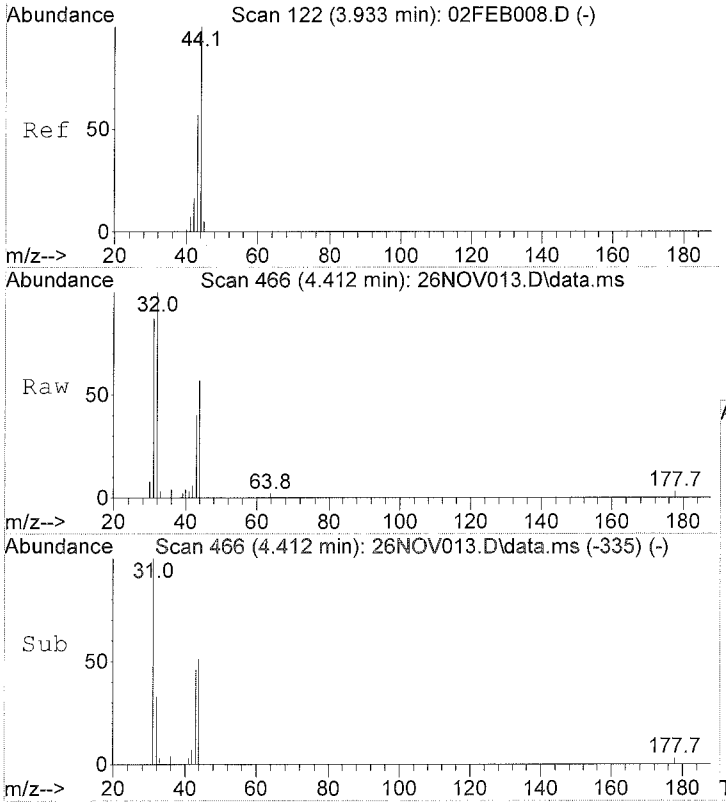


#3
isobutane
Concen: 0.54 ppbv
RT: 3.894 min Scan# 308
Delta R.T. 0.056 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 41 Resp: 3224

Ion	Ratio	Lower	Upper
41	100		
44	61.9	144.0	216.0#

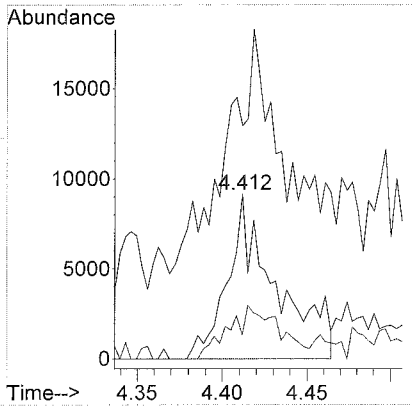


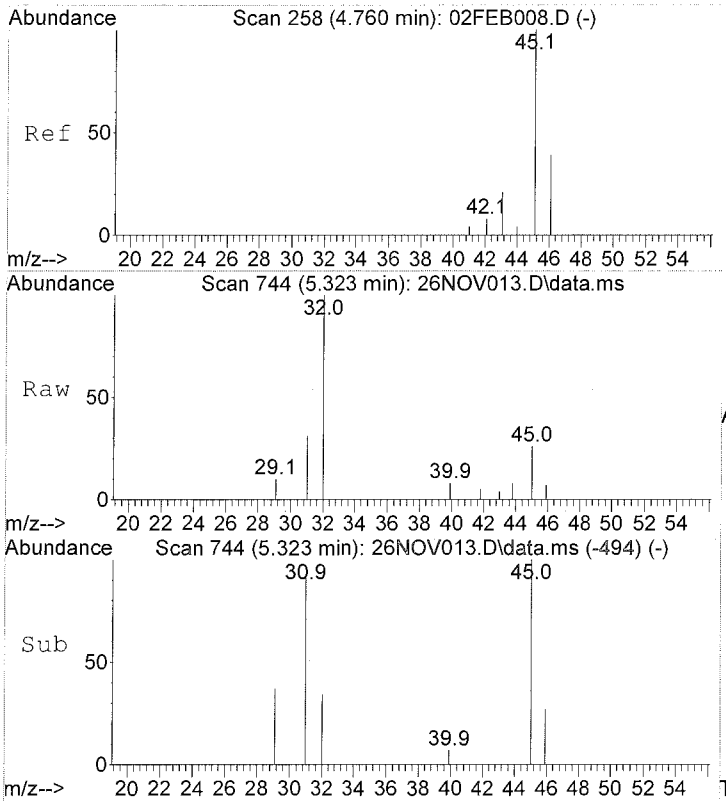


#6
Acetaldehyde
Concen: 2.29 ppbv
RT: 4.412 min Scan# 466
Delta R.T. 0.030 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 43 Resp: 17955

Ion	Ratio	Lower	Upper
43	100		
44	183.9	223.3	263.3#
42	34.1	12.1	52.1

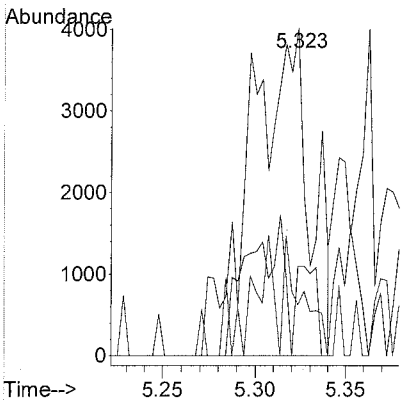


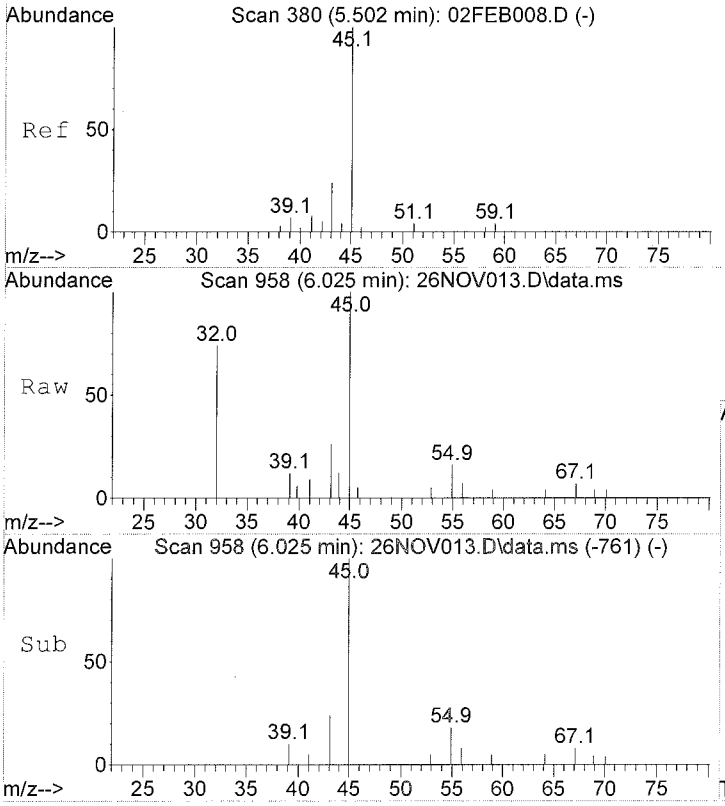


#7
Ethanol
Concen: 1.36 ppbv
RT: 5.323 min Scan# 744
Delta R.T. 0.020 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 45 Resp: 9063

Ion	Ratio	Lower	Upper
45	100		
46	0.0	30.1	45.1#
43	11.5	20.2	30.2#

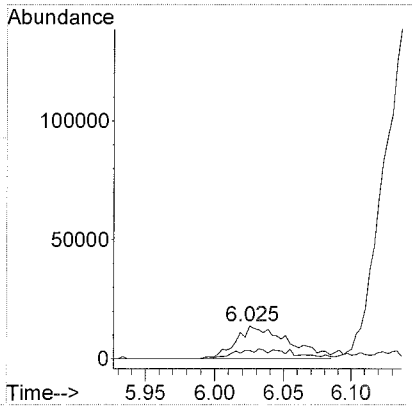


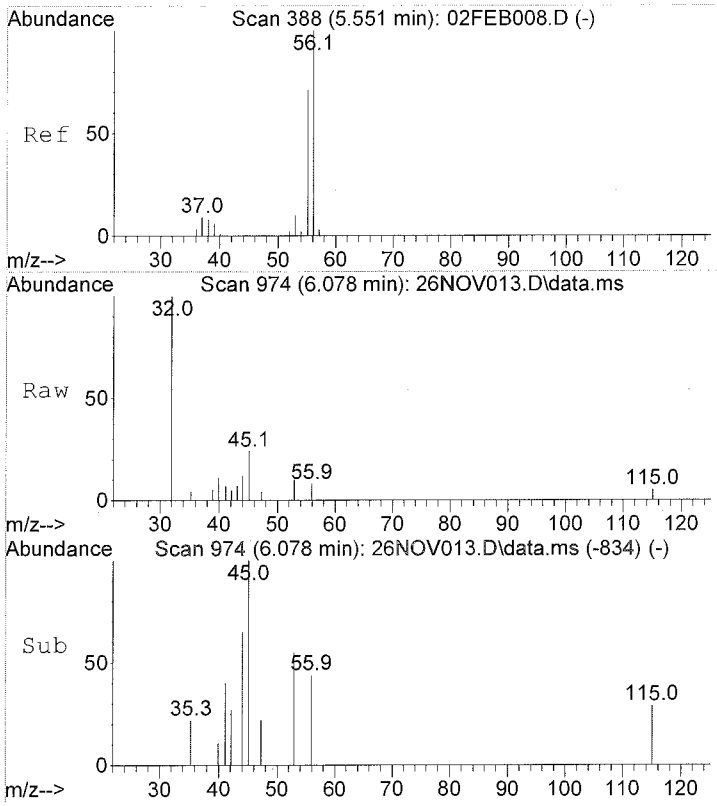


#9
Isopropanol
Concen: 1.41 ppbv
RT: 6.025 min Scan# 958
Delta R.T. 0.046 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 45 Resp: 36505

Ion	Ratio	Lower	Upper
45	100		
43	31.6	18.8	28.2#

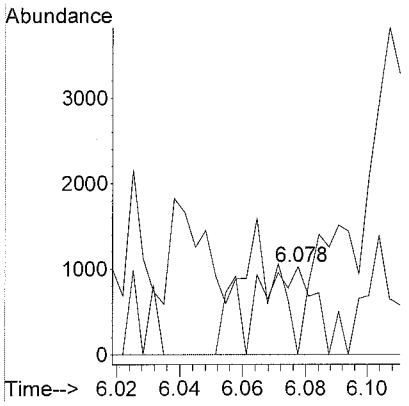


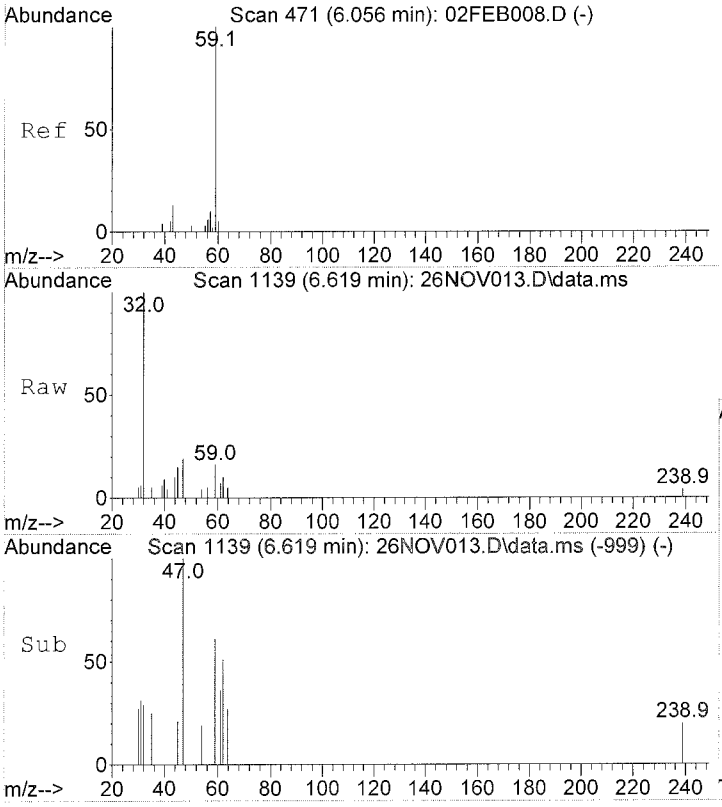


#10
Acrolein
Concen: 0.21 ppbv
RT: 6.078 min Scan# 974
Delta R.T. 0.060 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 56 Resp: 1452

Ion	Ratio	Lower	Upper
56	100		
55	0.0	56.1	84.1#
57	0.0	3.8	5.8#

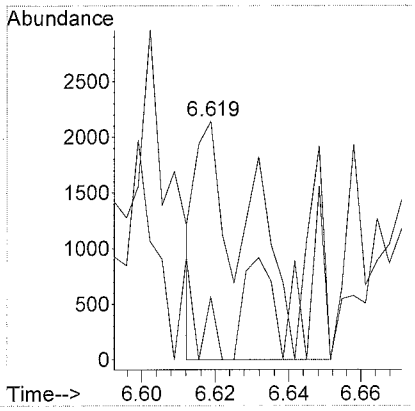


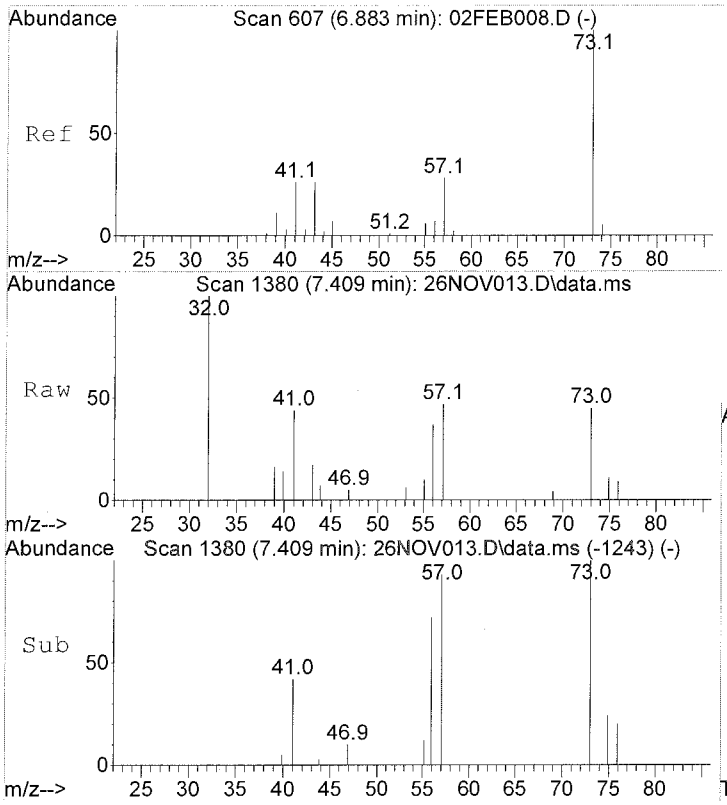


#11
t-Butanol
Concen: 0.11 ppbv
RT: 6.619 min Scan# 1139
Delta R.T. 0.059 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 59 Resp: 2693

Ion	Ratio	Lower	Upper
59	100		
41	24.1	23.5	35.3

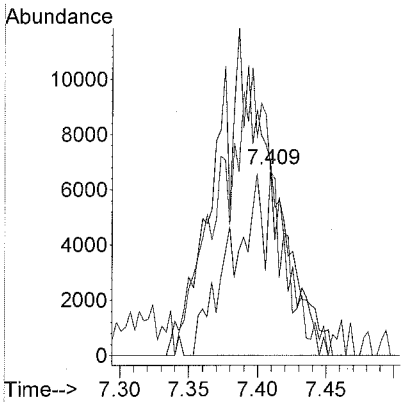


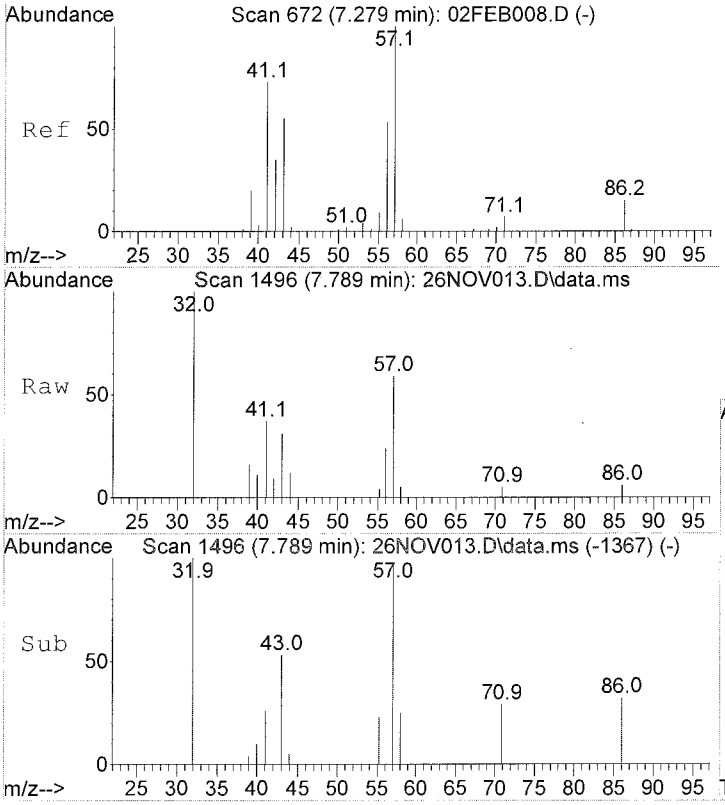


#14
t-Butyl methyl ether
Concen: 0.47 ppbv
RT: 7.409 min Scan# 1380
Delta R.T. 0.049 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 73 Resp: 17758

Ion	Ratio	Lower	Upper
73	100		
57	194.3	15.6	23.4#
41	171.8	17.6	26.4#

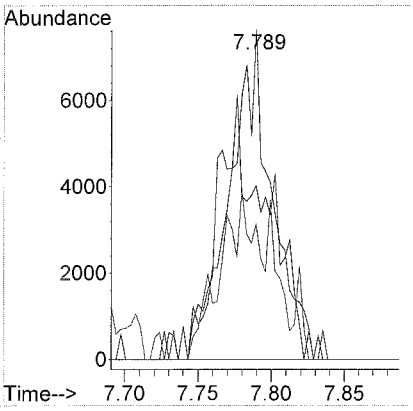


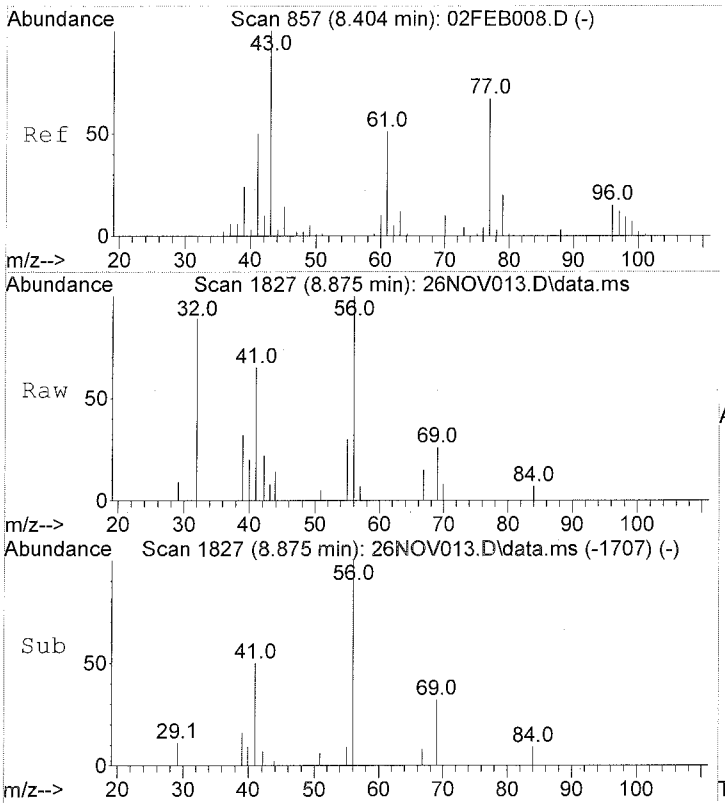


#15
n-Hexane
Concen: 0.76 ppbv
RT: 7.789 min Scan# 1496
Delta R.T. 0.023 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 57 Resp: 16511

Ion	Ratio	Lower	Upper
57	100		
43	81.4	37.5	77.5#
56	58.8	34.5	74.5

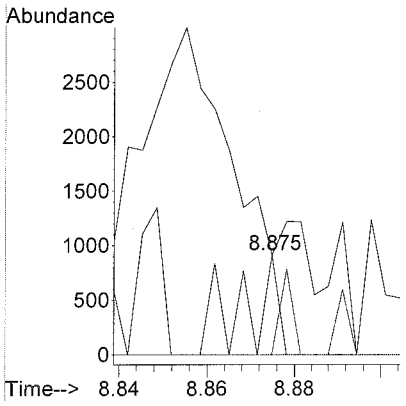


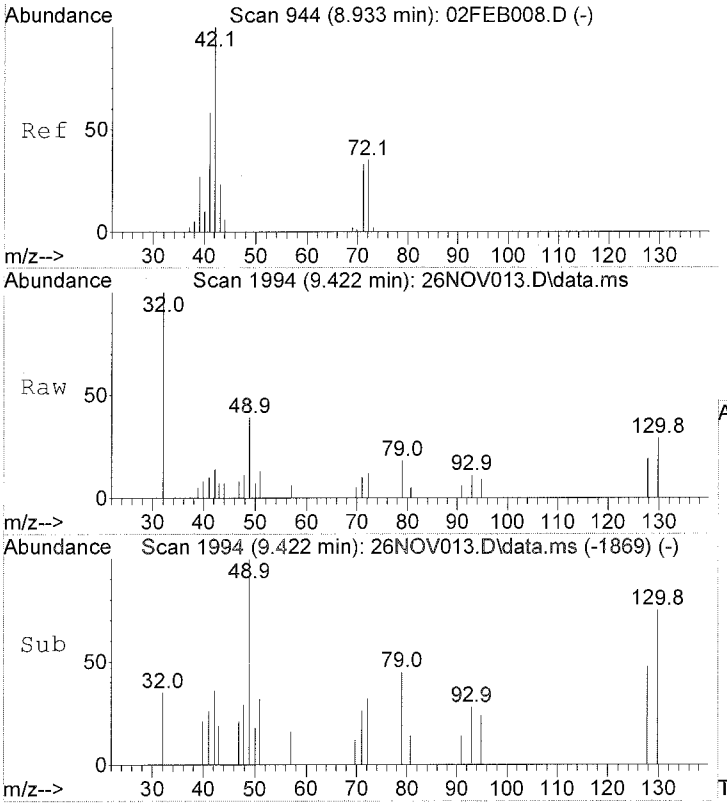


#18
Ethyl Acetate
Concen: 0.16 ppbv
RT: 8.875 min Scan# 1827
Delta R.T. -0.006 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 70 Resp: 496

Ion	Ratio	Lower	Upper
70	100		
43	0.0	624.8	937.2#
45	0.0	87.0	130.6#

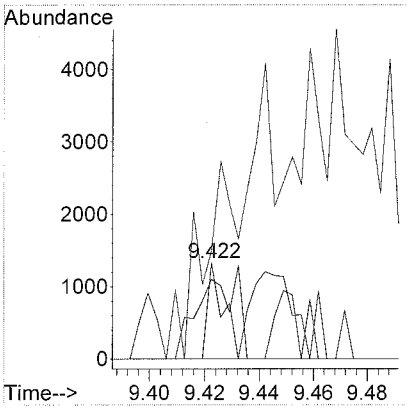


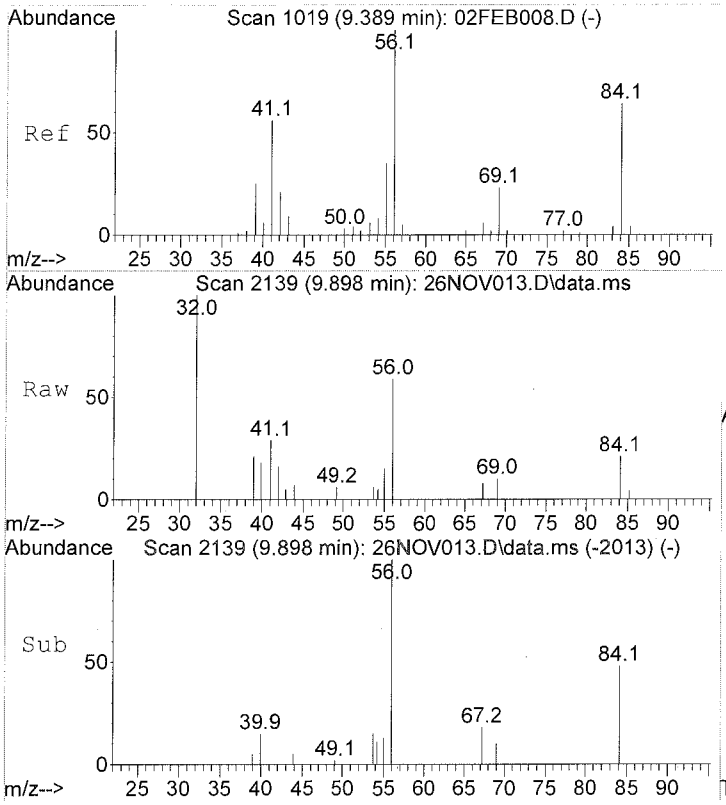


#20
Tetrahydrofuran
Concen: 0.29 ppbv
RT: 9.422 min Scan# 1994
Delta R.T. 0.009 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 72 Resp: 1970

Ion	Ratio	Lower	Upper
72	100		
71	59.6	75.3	112.9#
42	19.5	153.0	229.6#

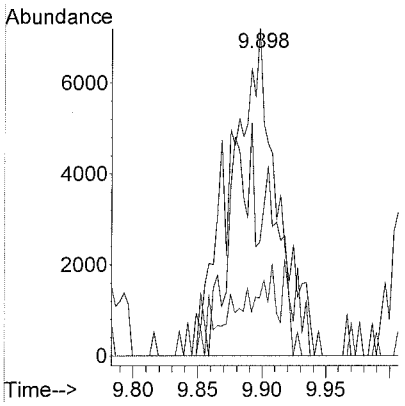


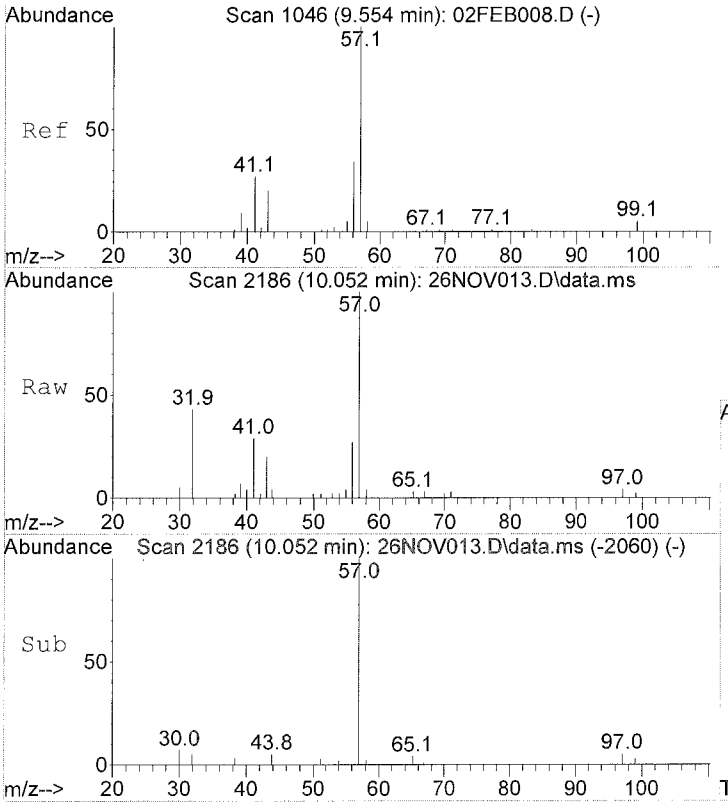


#21
Cyclohexane
Concen: 0.74 ppbv
RT: 9.898 min Scan# 2139
Delta R.T. 0.013 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 56 Resp: 18549

Ion	Ratio	Lower	Upper
56	100		
84	65.8	74.9	112.3#
69	20.9	27.0	40.6#

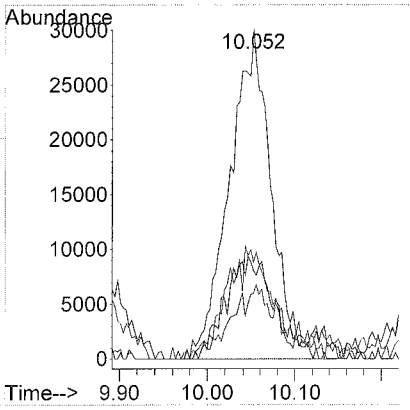


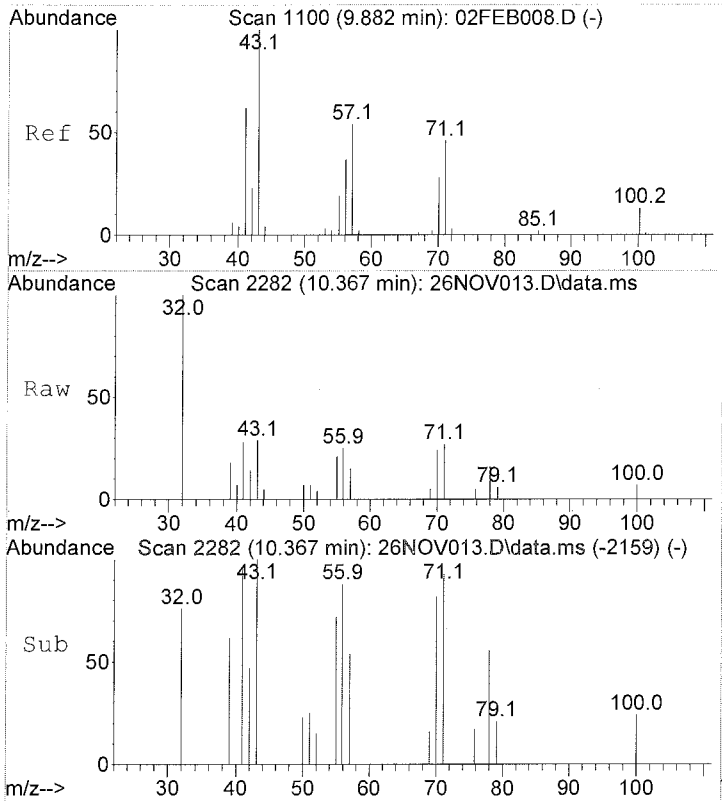


#22
2,2,4-Trimethylpentane
Concen: 1.67 ppbv
RT: 10.052 min Scan# 2186
Delta R.T. 0.013 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 57 Resp: 99390

Ion	Ratio	Lower	Upper
57	100		
56	34.2	11.7	51.7
41	39.6	8.8	48.8
43	27.8	0.0	37.1

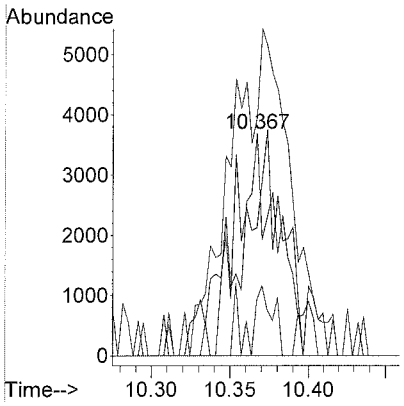


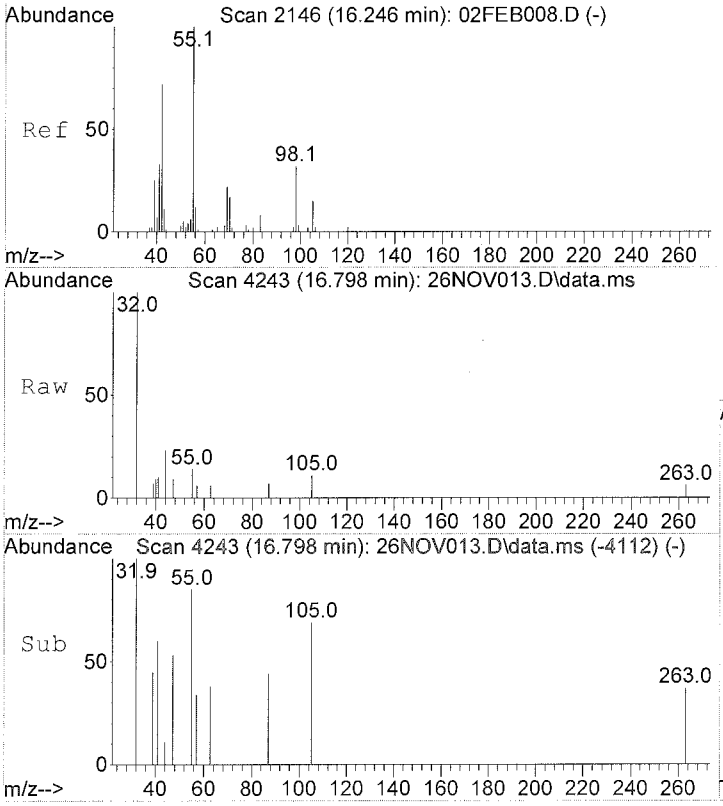


#26
Heptane
Concen: 0.68 ppbv
RT: 10.367 min Scan# 2282
Delta R.T. 0.003 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 71 Resp: 6568

Ion	Ratio	Lower	Upper
71	100		
57	66.1	50.4	117.6
43	220.0	84.7	197.7#
100	0.0	17.8	41.4#

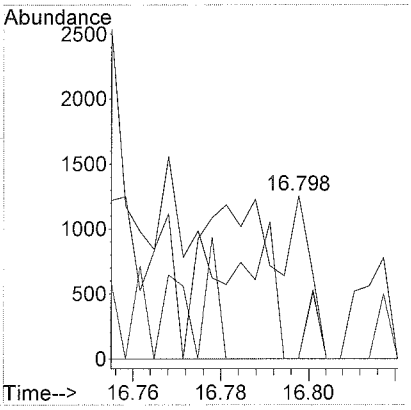


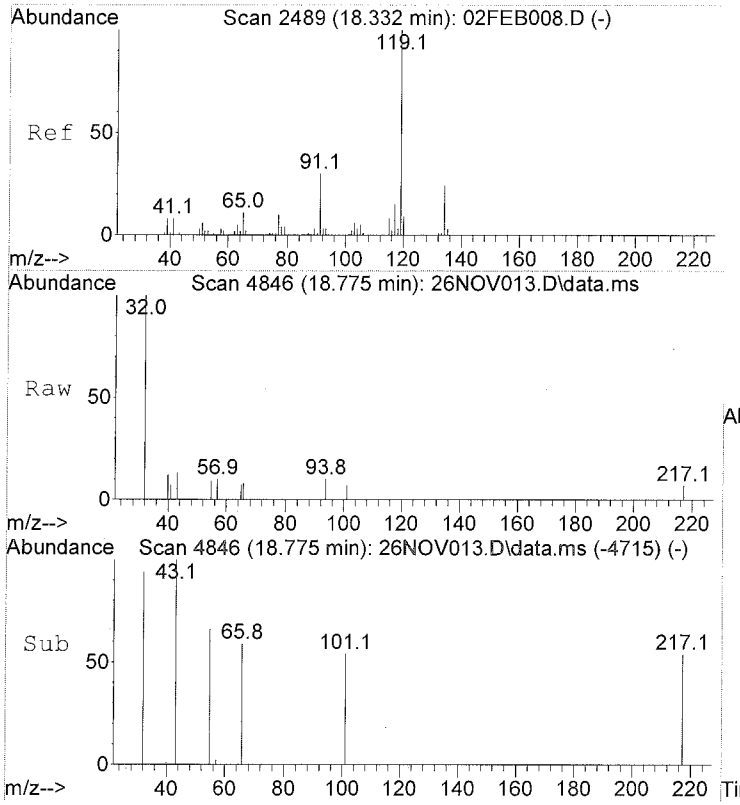


#31
Cyclohexanone
Concen: 0.22 ppbv
RT: 16.798 min Scan# 4243
Delta R.T. 0.030 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 55 Resp: 1711

Ion	Ratio	Lower	Upper
55	100		
42	143.1	56.6	85.0#
69	21.1	25.0	37.4#
98	24.7	39.7	59.5#

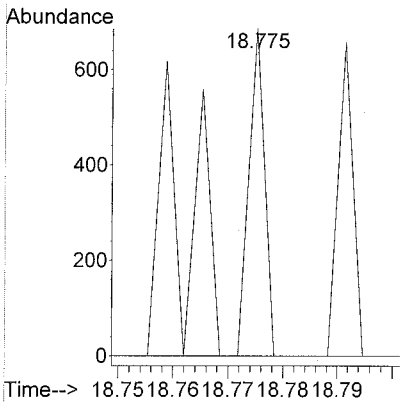


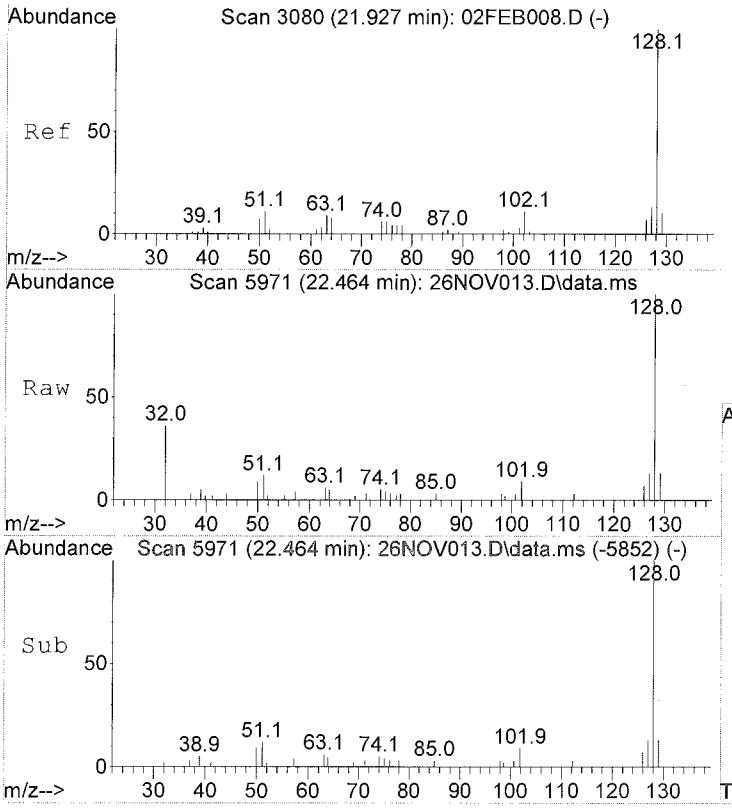


#33
Dicyclopentadiene
Concen: 1.02 ppbv
RT: 18.775 min Scan# 4846
Delta R.T. 0.030 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion: 66 Resp: 245

Ion	Ratio	Lower	Upper
66	100		
133	0.0	36.5	54.7#

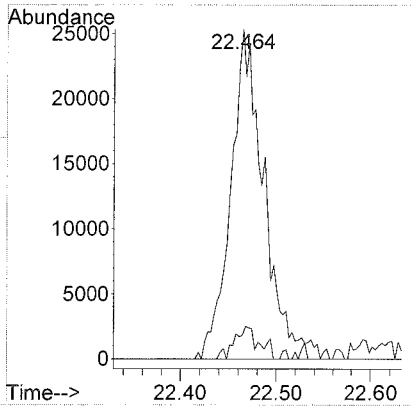




#34
Naphthalene
Concen: 4.57 ppbv
RT: 22.464 min Scan# 5971
Delta R.T. -0.010 min
Lab File: 26NOV013.D
Acq: 26 Nov 2018 6:21 pm

Tgt Ion:128 Resp: 61352

Ion	Ratio	Lower	Upper
128	100		
126	7.3	5.4	8.2



3. Initial Calibration

a. ICAL Summary
b. Results/Chromatograms

Default Initial Calibration Criteria:

90% of target compounds must have RSD <30%
All target compounds must have RSD <50%

(This criteria superceded by any project specific criteria)

Response Factor Report ms2

Method Path : C:\msdchem\1\methods\
Method File : TO181031.M
Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
Last Update : Thu Nov 01 09:46:12 2018
Response Via : Initial Calibration

Calibration Files
1.0 =31OCT005.D 2.5 =31OCT006.D 5 =31OCT007.D 7 =31OCT008.D 10 =31OCT009.D 25 =31OCT010.D 100 =31OCT011.D
250 =31OCT014.D

		Compound	1.0	2.5	5	7	10	25	100	250	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------									
2)		Dichlorodifluo...	3.816	4.076	4.323	3.535	3.571	3.183	2.217		3.531	19.53
3)		Chloromethane	1.805	1.566	1.821	1.628	1.759	1.515	1.379	1.178	1.581	14.14
4)		1,2-Cl-1,1,2,2...	3.337	3.462	3.918	3.261	3.247	2.879	2.648	1.864	3.077	20.12
5)		Vinyl Chloride	0.945	1.314	1.420	1.374	1.415	1.291	1.270	1.050	1.260	13.75
6)		Bromomethane	0.274	0.387	0.305	0.586	0.688	0.503	0.738	0.476	0.495	34.31
7)		Chloroethane	0.262	0.269	0.281	0.251	0.267	0.227	0.231	0.199	0.248	11.01
8)		Trichlorofluor...	4.128	4.662	5.098	4.025	4.131	3.718	3.418	2.455	3.954	20.20
9)	M	1,1-Dichloroet...	3.015	3.438	3.616	2.978	2.931	2.728	2.353	1.439	2.812	24.13
0)		Carbon Disulfide	2.758	2.433	3.379	2.900	2.881	2.649	2.679	1.674	2.669	18.22
1)		1,1,2-Cl 1,2,2...	1.938	2.284	2.464	2.025	2.024	1.870	1.744	1.307	1.957	17.80
2)		Acetone	2.738	4.309	4.276	3.035	2.902	2.544	2.677		3.212	23.51
3)	M	Methylene Chlo...	1.032	1.128	1.262	1.032	1.040	1.037	1.000	0.641	1.022	17.16
4)		t-1,2-Dichloro...	0.979	1.106	1.238	1.101	1.094	1.059	0.986	0.597	1.020	18.54
5)		1,1-Dichloroet...	2.978	3.303	3.397	2.951	3.005	2.663	1.691		2.855	19.88
6)		Vinyl Acetate	4.922	5.813	6.285	5.937	5.939	5.610	3.906	2.126	5.067	27.78
7)		c-1,2-Dichloro...	1.119	1.311	1.500	1.318	1.358	1.226	0.878	0.504	1.152	27.80
8)		2-Butanone	0.486	0.588	0.642	0.605	0.605	0.584	0.459	0.236	0.526	25.24
9)		t-Butyl Methyl...	4.024	4.236	4.589	3.855	3.931	3.553	3.167	1.916	3.659	22.48
0)	t	Chloroform	3.171	3.402	3.756	3.319	3.257	2.979	2.678	1.648	3.026	21.11
1)		1,1,1-Trichlor...	2.826	3.038	3.336	2.910	3.014	2.773	2.512	2.229	2.830	11.99
2)		1,1-Dichloropr...	1.803	2.148	2.130	1.828	1.871	1.675	1.458	0.894	1.726	23.45
3)	t	Carbon Tetrach...	1.732	2.520	2.386	2.094	2.185	2.105	2.092	1.409	2.065	17.05
4)	I	1,4-Difluorobenzene	----------ISTD----------									
5)	T	Benzene	1.170	0.986	0.982	0.957	0.995	0.877	0.557	0.403	0.866	29.45
6)	S	1,2-Dichloroet...	0.601	0.608	0.624	0.619	0.634	0.644	0.643	0.644	0.627	2.65
7)		1,2-Dichloroet...	0.646	0.591	0.603	0.634	0.638	0.621	0.513	0.351	0.575	17.35
8)	M	Trichloroethene	0.386	0.370	0.389	0.374	0.372	0.365	0.345	0.293	0.362	8.60
9)		1,2-Dichloropr...	0.311	0.355	0.369	0.386	0.382	0.371	0.358	0.304	0.355	8.69
0)		Bromodichlorom...	0.680	0.615	0.673	0.734	0.752	0.755	0.706	0.522	0.680	11.60
1)		Dibromomethane	0.335	0.306	0.307	0.318	0.324	0.325	0.306	0.197	0.302	14.49
2)		c-1,3-Dichloro...	0.345	0.354	0.413	0.458	0.492	0.497	0.446	0.341	0.418	15.49
3)		4-Methyl-2-Pen...	0.776	0.789	0.775	0.837	0.836	0.801	0.606	0.385	0.726	21.45
4)	S	Toluene-d8	0.914	0.904	0.931	0.921	0.901	0.900	0.933	0.988	0.924	3.13
5)	M	Toluene	0.904	0.831	0.811	0.892	0.897	0.794	0.531	0.395	0.757	25.02

Method Path : C:\msdchem\1\methods\
Method File : TO181031.M
Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm

6)	I	Chlorobenzene-d5	----------ISTD----------									
7)		t-1,3-Dichloro...	0.363	0.476	0.493	0.581	0.622	0.714	0.464	0.374	0.511	23.73
8)		1,1,2-Trichlor...	0.498	0.532	0.483	0.524	0.530	0.535	0.480	0.311	0.487	15.23
9)		1,3-Dichloropr...	0.667	0.708	0.699	0.693	0.678	0.696	0.640	0.422	0.650	14.58
0)		Tetrachloroethene	0.699	0.712	0.647	0.702	0.732	0.716	0.687	0.552	0.681	8.49
1)		2-Hexanone	0.480	0.471	0.529	0.572	0.594	0.586	0.393	0.320	0.493	19.80
2)		Dibromochlorom...	0.544	0.674	0.693	0.740	0.792	0.835	0.867	0.622	0.721	15.20
3)	t	1,2-Dibromoethane	0.654	0.643	0.667	0.754	0.746	0.783	0.779	0.659	0.711	8.46
4)		Chlorobenzene	0.877	0.831	0.770	0.844	0.858	0.777	0.496	0.480	0.742	21.70
5)		1,1,1,2-Tetrac...	0.368	0.389	0.381	0.351	0.361	0.347	0.186	0.241	0.328	22.40
6)	T	Ethylbenzene	1.358	1.467	1.395	1.511	1.507	1.349	0.674	0.873	1.267	24.87
7)	T	p,&m-Xylene	1.107	1.078	1.051	1.051	1.043	0.901	0.871	0.606	0.964	17.35
8)	T	o-Xylene	1.023	1.020	0.990	1.047	1.066	0.989	0.593	0.529	0.907	23.80
9)		Styrene	0.590	0.563	0.554	0.614	0.654	0.545	0.307	0.366	0.524	23.29
0)		Bromoform	0.518	0.537	0.555	0.651	0.691	0.739	0.743	0.506	0.617	16.18
1)		Isopropyl benzene	1.150	1.147	1.058	1.016	1.061	0.984	0.476	0.578	0.934	27.73
2)	M	1,1,2,2-Tetrac...	0.926	0.759	0.777	0.766	0.780	0.784	0.512	0.568	0.734	17.96
3)	S	4-Bromofluorob...	0.556	0.565	0.535	0.549	0.546	0.557	0.539	0.446	0.537	7.06
4)		Benzyl Chloride	0.447	0.424	0.453	0.439	0.444	0.489	0.309	0.591	0.449	17.25
5)		1,2,3-Trichlor...	0.229	0.231	0.204	0.202	0.202	0.198	0.172	0.132	0.196	16.28
6)		n-Propyl Benzene	1.095	1.149	1.085	1.023	1.028	0.978	0.670	0.650	0.960	20.06
7)		Bromobenzene	0.754	0.732	0.662	0.630	0.638	0.586	0.325	0.389	0.590	26.18
8)		4-Ethyl Toluene	1.086	1.210	1.132	1.139	1.149	1.101	0.557	0.790	1.020	22.15
9)	T	1,3,5-Trimethy...	1.288	1.410	1.404	1.353	1.296	1.083	0.526	0.823	1.148	27.84
0)		2-Chlorotoluene	1.012	1.022	0.990	0.910	0.906	0.712	0.352	0.587	0.811	29.69
1)		4-Chlorotoluene	0.723	0.819	0.747	0.672	0.709	0.553	0.298	0.535	0.632	26.15
2)		tert-Butylbenzene	0.946	1.060	1.029	0.919	0.940	0.896	0.396	0.577	0.845	27.60
3)		1,2,4-Trimethy...	1.262	1.326	1.277	1.209	1.178	1.045	0.503	0.860	1.082	25.68
4)		sec-Butylbenzene	1.052	1.029	0.971	0.877	0.904	0.844	0.379	0.519	0.822	29.65
5)		p-Isopropylto1...	0.796	0.717	0.714	0.696	0.675	0.678	0.422	0.455	0.644	20.60
6)		1,3-Dichlorobe...	0.533	0.547	0.531	0.467	0.471	0.482	0.338	0.439	0.476	14.16
7)		1,4-Dichlorobe...	0.552	0.555	0.496	0.457	0.460	0.464	0.306	0.482	0.471	16.43
8)		n-Butylbenzene	0.843	0.817	0.772	0.759	0.739	0.739	0.338	0.536	0.693	24.59
9)		1,2-Dichlorobe...	0.492	0.539	0.512	0.425	0.415	0.441	0.305	0.450	0.447	16.08
0)		1,2-Dibromo-3-...	0.205	0.194	0.178	0.199	0.192	0.191	0.213	0.164	0.192	8.00
1)		1,2,4-Trichlor...	0.471	0.419	0.415	0.383	0.387	0.392	0.455	0.413	0.417	7.66
2)		Hexachlorobuta...	0.466	0.526	0.483	0.354	0.361	0.335	0.373	0.269	0.396	21.94

#) = Out of Range

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 13:52:35 2018
Quant Method : C:\msdchem\1\methods\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:32:56 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	86719	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.688	114	385237	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.210	117	245211	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.098	65	231675	11.61	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 116.10%			
34) Toluene-d8	12.934	98	352125	10.14	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.40%			
53) 4-Bromofluorobenzene	17.178	174	136424	11.04	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.618	85	33089	1.39	ppbv	93
3) Chloromethane	4.041	50	15650	2.04	ppbv	81
4) 1,2-Cl-1,1,2,2-F ethan...	3.854	85	28939	1.32	ppbv	87
5) Vinyl Chloride	4.254	62	8197	1.10	ppbv	90
6) Bromomethane	4.943	94	2376	0.79	ppbv	60
7) Chloroethane	5.090	66	2273m	1.39	ppbv	
8) Trichlorofluoromethane...	5.533	101	35796	1.43	ppbv	78
9) 1,1-Dichloroethene	6.428	61	26145	1.55	ppbv	80
10) Carbon Disulfide	7.143	76	23917m	1.19	ppbv	
11) 1,1,2-Cl 1,2,2-F ethan...	6.241	151	16804	1.10	ppbv	73
12) Acetone	6.176	43	23740	1.37	ppbv	95
13) Methylene Chloride	7.051	84	8946	1.13	ppbv	88
14) t-1,2-Dichloroethene	7.547	96	8490m	1.06	ppbv	
15) 1,1-Dichloroethane	8.084	63	25826	1.41	ppbv	84
16) Vinyl Acetate	8.107	43	42685	1.20	ppbv	81
17) c-1,2-Dichloroethene	8.940	96	9701	0.98	ppbv	74
18) 2-Butanone	8.658	72	4212	0.93	ppbv	9
19) t-Butyl Methyl Ether	7.392	73	34896	1.41	ppbv	89
20) Chloroform	9.150	83	27500	1.34	ppbv	88
21) 1,1,1-Trichloroethane	9.760	97	24503	1.29	ppbv	81
22) 1,1-Dichloropropene	10.009	75	15639	1.42	ppbv	89
23) Carbon Tetrachloride	10.163	117	15024	0.98	ppbv	66
25) Benzene	10.324	78	45077	1.30	ppbv	93
27) 1,2-Dichloroethane	10.229	62	24894	1.31	ppbv	84
28) Trichloroethene	11.206	130	14858	1.02	ppbv	72
29) 1,2-Dichloropropane	11.433	63	11998	0.96	ppbv	89
30) Bromodichloromethane	11.738	83	26183	1.08	ppbv	77
31) Dibromomethane	11.783	93	12895	1.03	ppbv #	84
32) c-1,3-Dichloropropene	12.508	75	13287	0.74	ppbv	78
33) 4-Methyl-2-Pentanone	12.229	43	29903	1.16	ppbv	85
35) Toluene	13.053	91	34816	1.14	ppbv	94
37) t-1,3-Dichloropropene	13.217	75	8889m	0.55	ppbv	
38) 1,1,2-Trichloroethane	13.459	97	12215	0.97	ppbv	69
39) 1,3-Dichloropropane	13.826	76	16365	1.02	ppbv	97
40) Tetrachloroethene	14.079	166	17136	0.91	ppbv	71
41) 2-Hexanone	13.502	58	11778	0.96	ppbv	87

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 13:52:35 2018
Quant Method : C:\msdchem\1\methods\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:32:56 2018
Response via : Initial Calibration

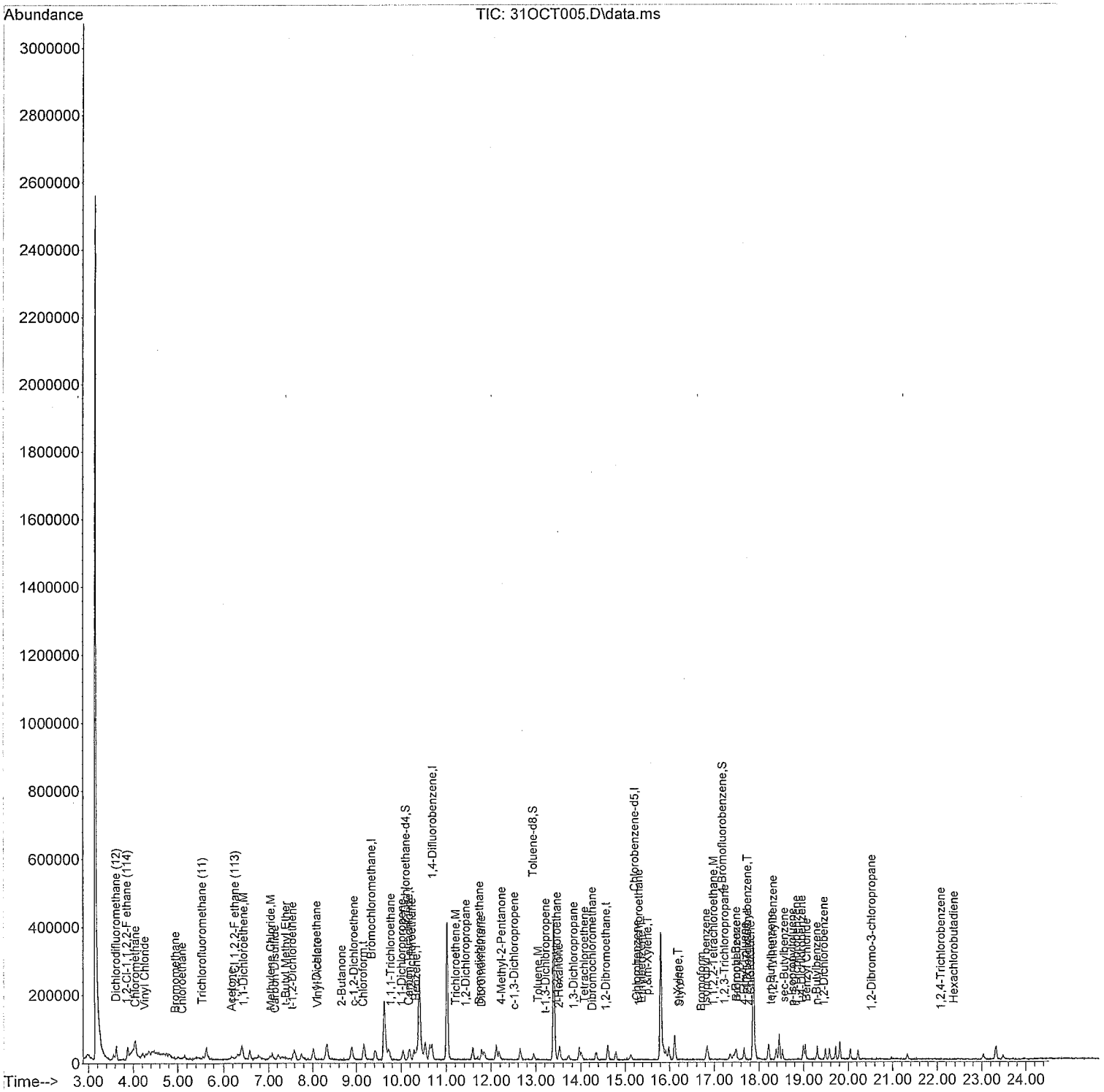
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.259	129	13329	0.72	ppbv		60
43) 1,2-Dibromoethane	14.571	107	16037	0.87	ppbv		79
44) Chlorobenzene	15.259	112	21516	1.15	ppbv		70
45) 1,1,1,2-Tetrachloroethane	15.309	131	9026	0.98	ppbv	#	81
46) Ethylbenzene	15.374	91	33296	0.92	ppbv		88
47) p,&m-Xylene	15.509	91	54314	2.26	ppbv		88
48) o-Xylene	16.184	91	25084	1.03	ppbv		87
49) Styrene	16.214	104	14476	1.16	ppbv		82
50) Bromoform	16.706	173	12705	0.91	ppbv		76
51) Isopropyl benzene	16.814	105	28207	1.13	ppbv		83
52) 1,1,2,2-Tetrachloroethane	16.981	83	22703	1.26	ppbv		77
54) Benzyl Chloride	19.067	91	10969	0.81	ppbv		78
55) 1,2,3-Trichloropropane	17.227	110	5621	1.20	ppbv	#	53
56) n-Propyl Benzene	17.489	91	26850	1.09	ppbv		95
57) Bromobenzene	17.499	77	18478	1.41	ppbv		96
58) 4-Ethyl Toluene	17.667	105	26622	0.92	ppbv		95
59) 1,3,5-Trimethylbenzene	17.735	105	31583	0.90	ppbv		92
60) 2-Chlorotoluene	17.742	91	24811	1.05	ppbv		89
61) 4-Chlorotoluene	17.811	91	17732	0.96	ppbv		97
62) tert-Butylbenzene	18.253	119	23208	0.93	ppbv	#	75
63) 1,2,4-Trimethylbenzene	18.303	105	30939	0.94	ppbv		95
64) sec-Butylbenzene	18.562	105	25790	1.16	ppbv		83
65) p-Isopropyltoluene	18.742	119	19520	0.89	ppbv		97
66) 1,3-Dichlorobenzene	18.831	146	13076	0.99	ppbv		73
67) 1,4-Dichlorobenzene	18.955	146	13538	1.03	ppbv		80
68) n-Butylbenzene	19.286	91	20672	0.92	ppbv		98
69) 1,2-Dichlorobenzene	19.450	146	12060	0.93	ppbv		90
70) 1,2-Dibromo-3-chloropr...	20.523	157	5032	1.04	ppbv	#	84
71) 1,2,4-Trichlorobenzene	22.077	180	11560m	0.76	ppbv		
72) Hexachlorobutadiene	22.366	225	11435	0.93	ppbv		71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Via1 : 1 Sample Multiplier: 1

Quant Time: Oct 31 13:52:35 2018
Quant Method : C:\msdchem\1\methods\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:32:56 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 13:49:12 2018
Quant Method : C:\msdchem\1\methods\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:32:56 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	86719	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.688	114	385237	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.210	117	245211	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.098	65	231675	11.61	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 116.10%			
34) Toluene-d8	12.934	98	352125	10.14	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.40%			
53) 4-Bromofluorobenzene	17.178	174	136424	11.04	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.618	85	33089	1.39	ppbv	93
3) Chloromethane	4.041	50	15650	2.04	ppbv	81
4) 1,2-Cl-1,1,2,2-F ethan...	3.854	85	28939	1.32	ppbv	87
5) Vinyl Chloride	4.254	62	8197	1.10	ppbv	90
6) Bromomethane	4.943	94	2376	0.79	ppbv	60
7) Chloroethane	5.067	66	627	0.38	ppbv	72
8) Trichlorofluoromethane...	5.533	101	35796	1.43	ppbv	78
9) 1,1-Dichloroethene	6.428	61	26145	1.55	ppbv	80
10) Carbon Disulfide	7.143	76	16844	0.84	ppbv	74
11) 1,1,2-Cl 1,2,2-F ethan...	6.241	151	16804	1.10	ppbv	73
12) Acetone	6.176	43	23740	1.37	ppbv	95
13) Methylene Chloride	7.051	84	8946	1.13	ppbv	88
14) t-1,2-Dichloroethene	7.547	96	6622	0.82	ppbv	72
15) 1,1-Dichloroethane	8.084	63	25826	1.41	ppbv	84
16) Vinyl Acetate	8.107	43	42685	1.20	ppbv	81
17) c-1,2-Dichloroethene	8.940	96	9701	0.98	ppbv	74
18) 2-Butanone	8.658	72	4212	0.93	ppbv	9
19) t-Butyl Methyl Ether	7.392	73	34896	1.41	ppbv	89
20) Chloroform	9.150	83	27500	1.34	ppbv	88
21) 1,1,1-Trichloroethane	9.760	97	24503	1.29	ppbv	81
22) 1,1-Dichloropropene	10.009	75	15639	1.42	ppbv	89
23) Carbon Tetrachloride	10.163	117	15024	0.98	ppbv	66
25) Benzene	10.324	78	45077	1.30	ppbv	93
27) 1,2-Dichloroethane	10.229	62	24894	1.31	ppbv	84
28) Trichloroethene	11.206	130	14858	1.02	ppbv	72
29) 1,2-Dichloropropane	11.433	63	11998	0.96	ppbv	89
30) Bromodichloromethane	11.738	83	26183	1.08	ppbv	77
31) Dibromomethane	11.783	93	12895	1.03	ppbv #	84
32) c-1,3-Dichloropropene	12.508	75	13287	0.74	ppbv	78
33) 4-Methyl-2-Pentanone	12.229	43	29903	1.16	ppbv	85
35) Toluene	13.053	91	34816	1.14	ppbv	94
37) t-1,3-Dichloropropene	13.217	75	8101	0.50	ppbv	58
38) 1,1,2-Trichloroethane	13.459	97	12215	0.97	ppbv	69
39) 1,3-Dichloropropane	13.826	76	16365	1.02	ppbv	97
40) Tetrachloroethene	14.079	166	17136	0.91	ppbv	71
41) 2-Hexanone	13.502	58	11778	0.96	ppbv	87

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 13:49:12 2018
Quant Method : C:\msdchem\1\methods\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:32:56 2018
Response via : Initial Calibration

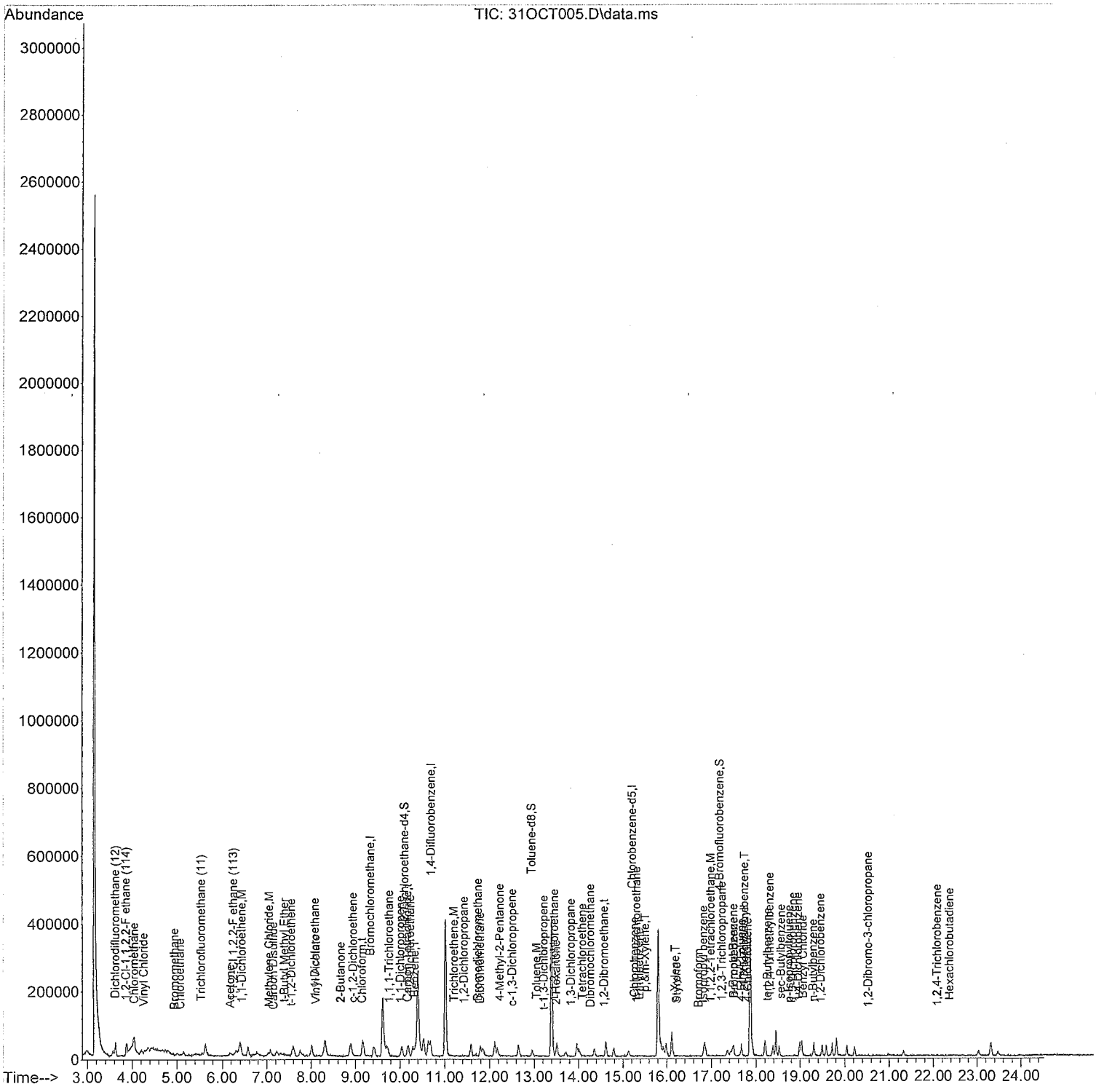
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.259	129	13329	0.72	ppbv		60
43) 1,2-Dibromoethane	14.571	107	16037	0.87	ppbv		79
44) Chlorobenzene	15.259	112	21516	1.15	ppbv		70
45) 1,1,1,2-Tetrachloroethane	15.309	131	9026	0.98	ppbv	#	81
46) Ethylbenzene	15.374	91	33296	0.92	ppbv		88
47) p,&m-Xylene	15.509	91	54314	2.26	ppbv		88
48) o-Xylene	16.184	91	25084	1.03	ppbv		87
49) Styrene	16.214	104	14476	1.16	ppbv		82
50) Bromoform	16.706	173	12705	0.91	ppbv		76
51) Isopropyl benzene	16.814	105	28207	1.13	ppbv		83
52) 1,1,2,2-Tetrachloroethane	16.981	83	22703	1.26	ppbv		77
54) Benzyl Chloride	19.067	91	10969	0.81	ppbv		78
55) 1,2,3-Trichloropropane	17.227	110	5621	1.20	ppbv	#	53
56) n-Propyl Benzene	17.489	91	26850	1.09	ppbv		95
57) Bromobenzene	17.499	77	18478	1.41	ppbv		96
58) 4-Ethyl Toluene	17.667	105	26622	0.92	ppbv		95
59) 1,3,5-Trimethylbenzene	17.735	105	31583	0.90	ppbv		92
60) 2-Chlorotoluene	17.742	91	24811	1.05	ppbv		89
61) 4-Chlorotoluene	17.811	91	17732	0.96	ppbv		97
62) tert-Butylbenzene	18.253	119	23208	0.93	ppbv	#	75
63) 1,2,4-Trimethylbenzene	18.303	105	30939	0.94	ppbv		95
64) sec-Butylbenzene	18.562	105	25790	1.16	ppbv		83
65) p-Isopropyltoluene	18.742	119	19520	0.89	ppbv		97
66) 1,3-Dichlorobenzene	18.831	146	13076	0.99	ppbv		73
67) 1,4-Dichlorobenzene	18.955	146	13538	1.03	ppbv		80
68) n-Butylbenzene	19.286	91	20672	0.92	ppbv		98
69) 1,2-Dichlorobenzene	19.450	146	12060	0.93	ppbv		90
70) 1,2-Dibromo-3-chloropr...	20.523	157	5032	1.04	ppbv	#	84
71) 1,2,4-Trichlorobenzene	22.077	180	7763	0.51	ppbv		80
72) Hexachlorobutadiene	22.366	225	11435	0.93	ppbv		71

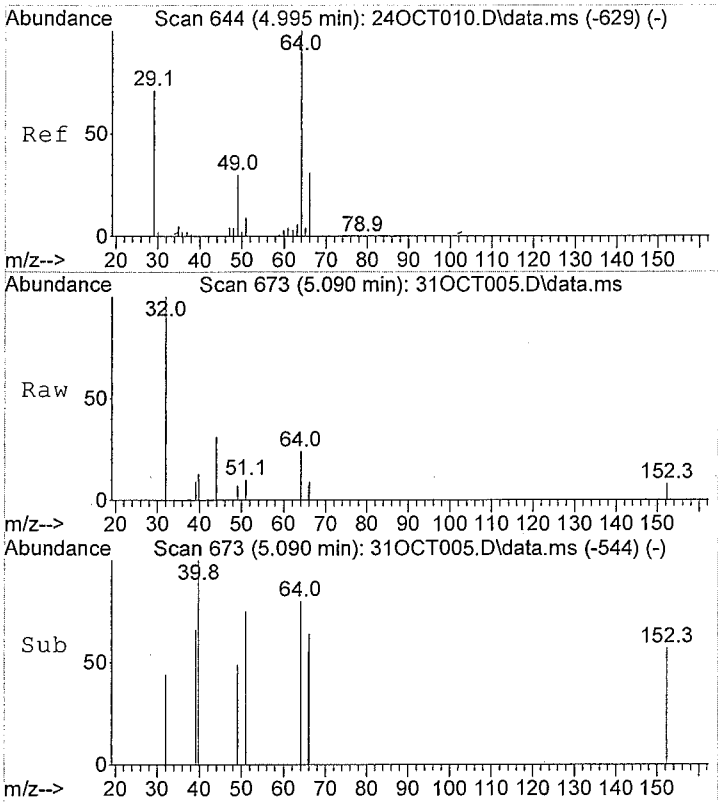
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 13:49:12 2018
Quant Method : C:\msdchem\1\methods\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:32:56 2018
Response via : Initial Calibration

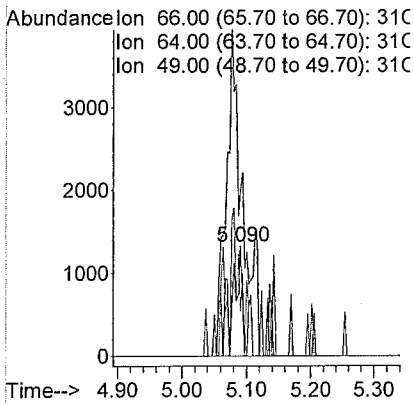




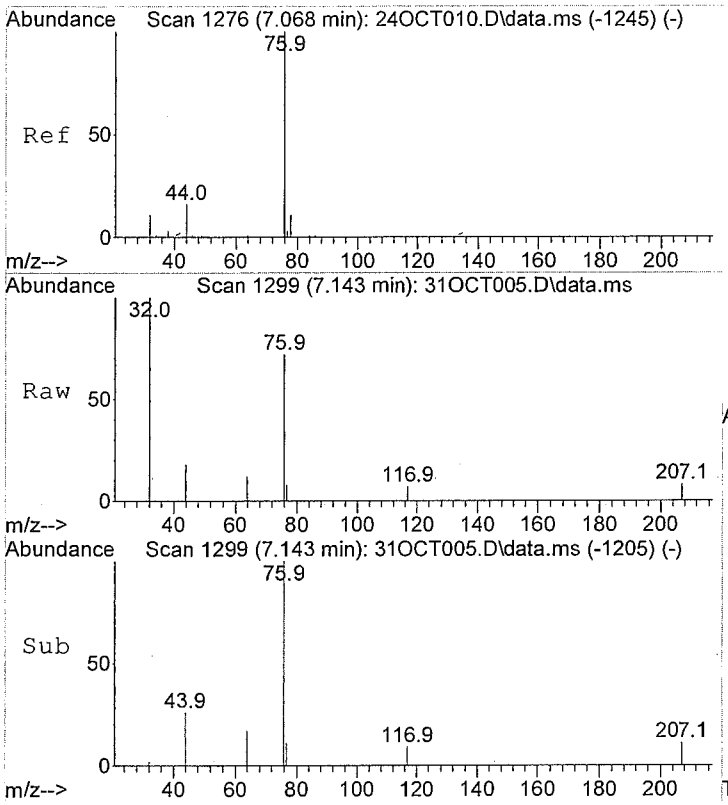
#7
Chloroethane
Concen: 1.39 ppbv m
RT: 5.090 min Scan# 673
Delta R.T. 0.023 min
Lab File: 31OCT005.D
Acq: 31 Oct 2018 1:22 pm

Tgt Ion: 66 Resp: 2273

Ion	Ratio	Lower	Upper
66	100		
64	281.5	157.9	257.9#
49	76.3	34.4	134.4



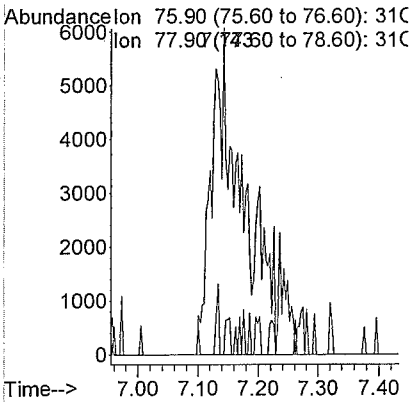
MI - 3
D 10/31/18



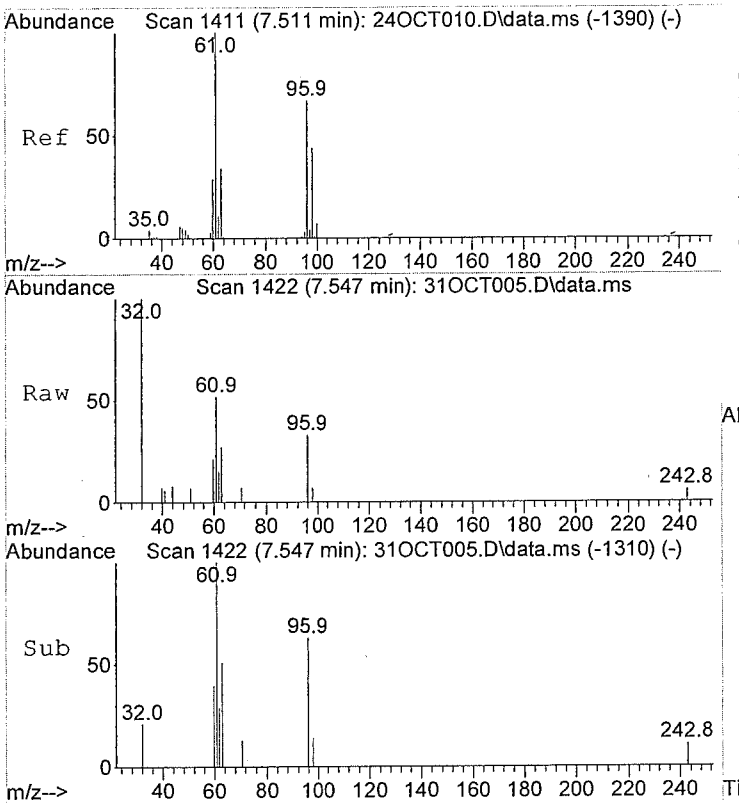
#10
Carbon Disulfide
Concen: 1.19 ppbv m
RT: 7.143 min Scan# 1299
Delta R.T. 0.010 min
Lab File: 31OCT005.D
Acq: 31 Oct 2018 1:22 pm

Tgt Ion: 76 Resp: 23917

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	59.5



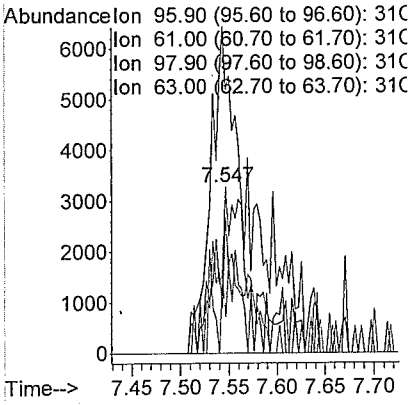
ME-3
D-10/31/18



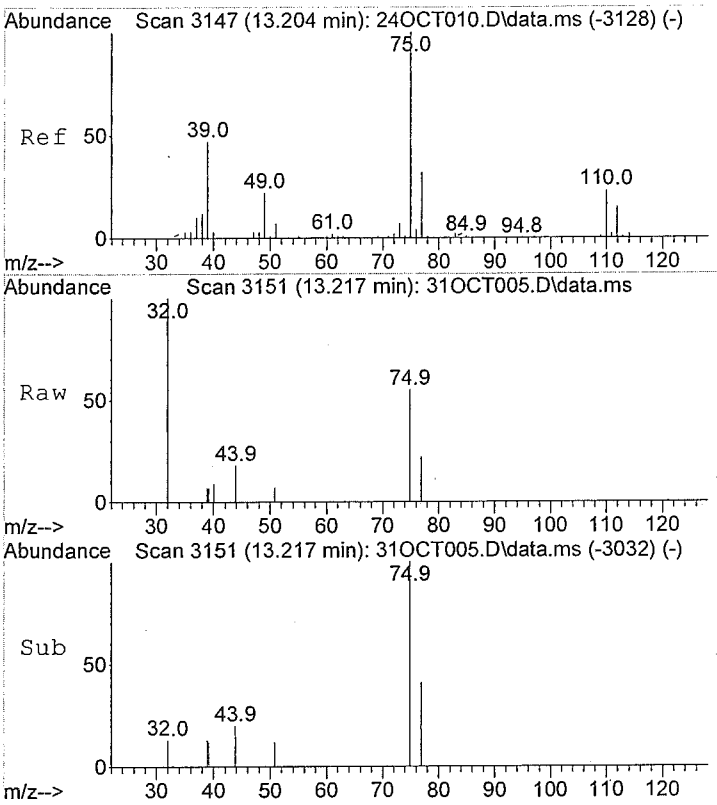
#14
t-1,2-Dichloroethene
Concen: 1.06 ppbv m
RT: 7.547 min Scan# 1422
Delta R.T. -0.033 min
Lab File: 31OCT005.D
Acq: 31 Oct 2018 1:22 pm

Tgt Ion: 96 Resp: 8490

Ion	Ratio	Lower	Upper
96	100		
61	158.9	98.0	198.0
98	22.1	21.0	121.0
63	81.5	2.1	102.1



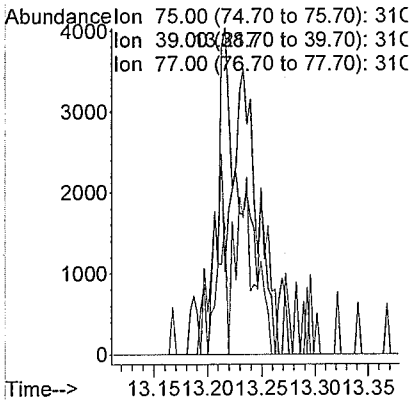
ME-3
JF 10/31/18



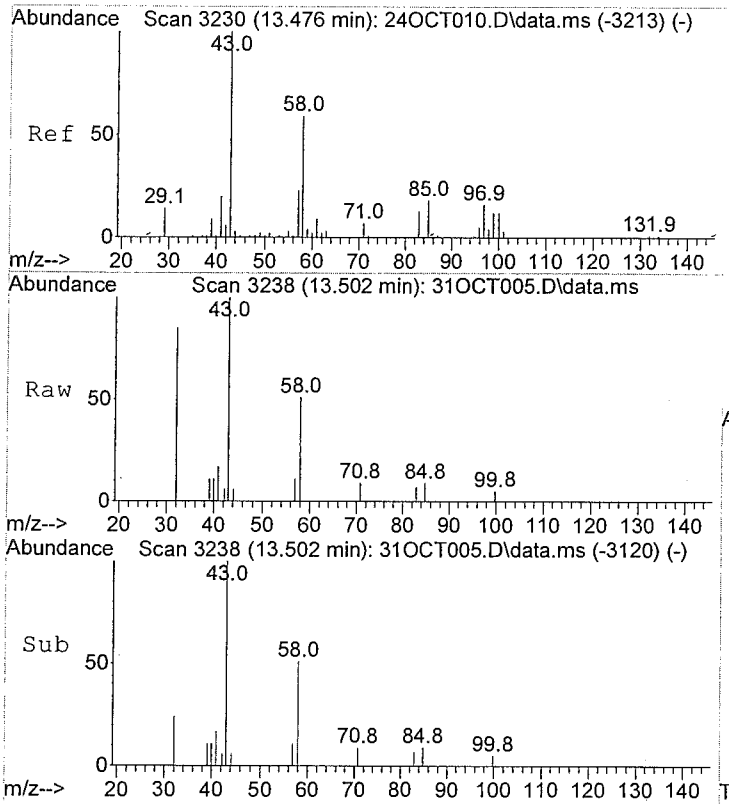
#37
t-1,3-Dichloropropene
Concen: 0.55 ppbv m
RT: 13.217 min Scan# 3151
Delta R.T. -0.010 min
Lab File: 31OCT005.D
Acq: 31 Oct 2018 1:22 pm

Tgt Ion: 75 Resp: 8889

Ion	Ratio	Lower	Upper
75	100		
39	12.9	0.0	99.5
77	40.6	0.0	79.9



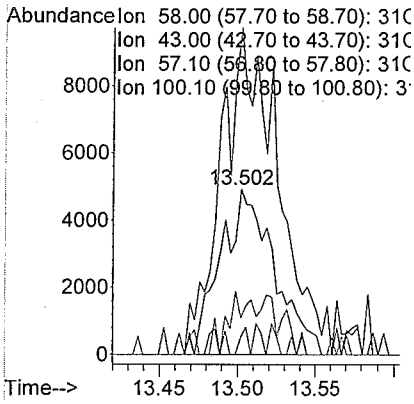
ME-3
JS 10/31/18



#41
2-Hexanone
Concen: 0.96 ppbv
RT: 13.502 min Scan# 3238
Delta R.T. -0.013 min
Lab File: 31OCT005.D
Acq: 31 Oct 2018 1:22 pm

Tgt Ion: 58 Resp: 11778

Ion	Ratio	Lower	Upper
58	100		
43	197.9	0.0	682.6
57	22.3	0.0	535.8
100	10.4	0.0	69.5



ME-3
DJ 10/31/18

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT006.D
Acq On : 31 Oct 2018 2:03 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 14:27:49 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.334	130	80625	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.685	114	389071	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.207	117	237840	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.091	65	236676	11.75	ppbv		-0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 117.50%				
34) Toluene-d8	12.931	98	351578	10.02	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.20%				
53) 4-Bromofluorobenzene	17.181	174	134496	11.22	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 112.20%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.589	85	82153	3.72	ppbv		94
3) Chloromethane	4.002	50	31555	4.42	ppbv		96
4) 1,2-Cl-1,1,2,2-F ethan...	3.825	85	69791	3.42	ppbv		93
5) Vinyl Chloride	4.231	62	26482	3.82	ppbv		100
6) Bromomethane	4.907	94	7800	2.79	ppbv	#	43
7) Chloroethane	5.058	66	5432	3.58	ppbv	#	34
8) Trichlorofluoromethane...	5.513	101	93972	4.05	ppbv		97
9) 1,1-Dichloroethene	6.402	61	69292	4.41	ppbv		82
10) Carbon Disulfide	7.114	76	49037	2.62	ppbv		96
11) 1,1,2-Cl 1,2,2-F ethan...	6.232	151	46034	3.25	ppbv		76
12) Acetone	6.140	43	86857	5.39	ppbv		90
13) Methylene Chloride	7.025	84	22743	3.09	ppbv		71
14) t-1,2-Dichloroethene	7.537	96	22290	2.98	ppbv		85
15) 1,1-Dichloroethane	8.071	63	66573	3.91	ppbv		93
16) Vinyl Acetate	8.088	43	117175	3.54	ppbv		95
17) c-1,2-Dichloroethene	8.927	96	26423	2.86	ppbv		88
18) 2-Butanone	8.622	72	11846	2.82	ppbv		93
19) t-Butyl Methyl Ether	7.383	73	85378	3.70	ppbv		82
20) Chloroform	9.147	83	68568	3.60	ppbv		98
21) 1,1,1-Trichloroethane	9.754	97	61244	3.46	ppbv		87
22) 1,1-Dichloropropene	9.986	75	43299	4.24	ppbv		90
23) Carbon Tetrachloride	10.137	117	40636	2.85	ppbv		86
25) Benzene	10.328	78	95907	2.73	ppbv		97
27) 1,2-Dichloroethane	10.223	62	57491	3.01	ppbv		93
28) Trichloroethene	11.210	130	36031	2.46	ppbv		77
29) 1,2-Dichloropropane	11.416	63	34516	2.75	ppbv		86
30) Bromodichloromethane	11.725	83	59847	2.45	ppbv		88
31) Dibromomethane	11.774	93	29740	2.35	ppbv		99
32) c-1,3-Dichloropropene	12.502	75	34456	1.89	ppbv		80
33) 4-Methyl-2-Pentanone	12.216	43	76769	2.96	ppbv		79
35) Toluene	13.053	91	80819	2.62	ppbv		93
37) t-1,3-Dichloropropene	13.223	75	28281	1.80	ppbv		91
38) 1,1,2-Trichloroethane	13.453	97	31610	2.60	ppbv		97
39) 1,3-Dichloropropane	13.820	76	42112	2.71	ppbv	#	88
40) Tetrachloroethene	14.076	166	42306	2.32	ppbv		77
41) 2-Hexanone	13.505	58	28016	2.35	ppbv		95

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT006.D
Acq On : 31 Oct 2018 2:03 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 14:27:49 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

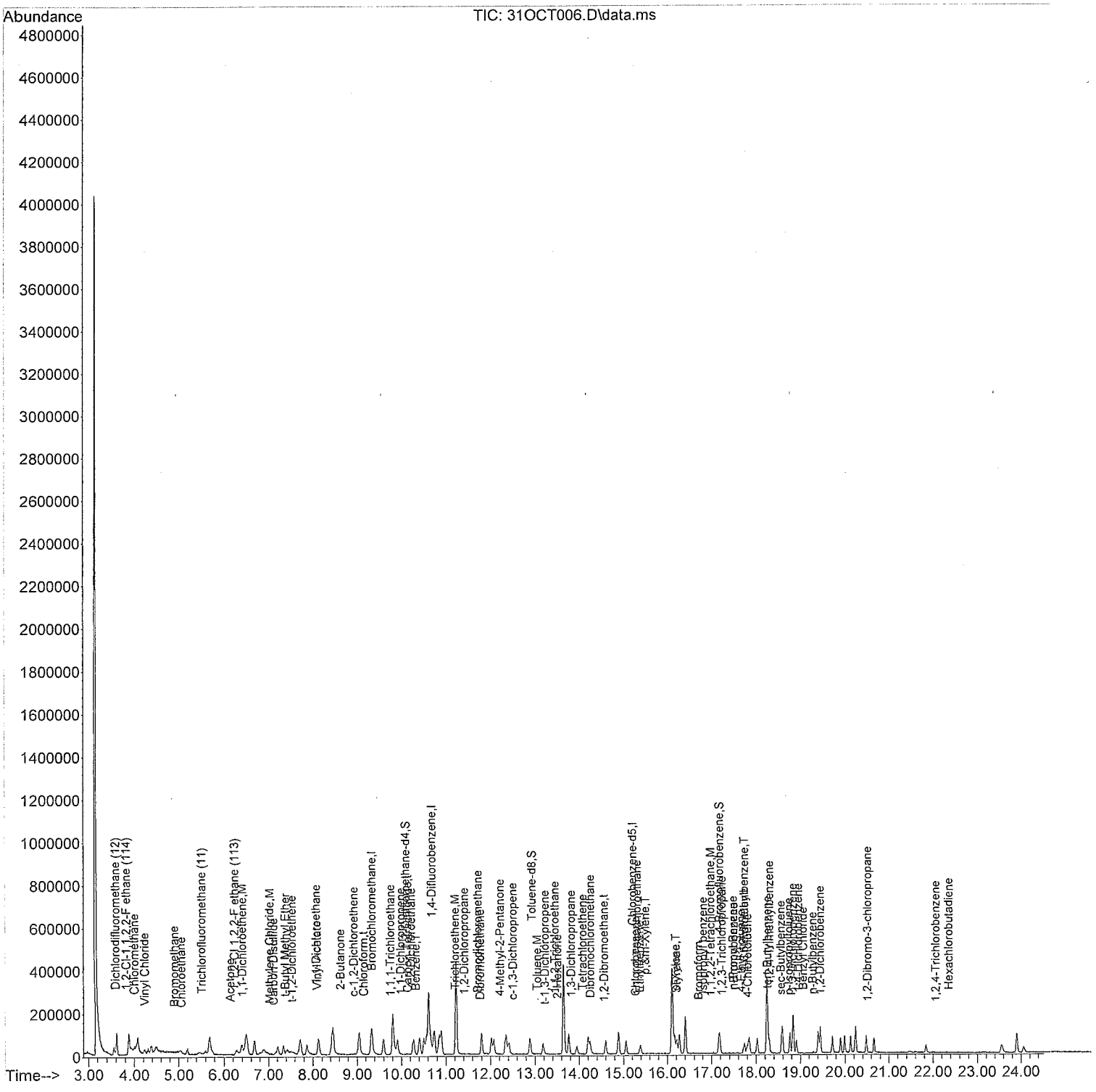
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.250	129	40071	2.24	ppbv		79
43) 1,2-Dibromoethane	14.561	107	38251	2.15	ppbv		79
44) Chlorobenzene	15.276	112	49410	2.72	ppbv		81
45) 1,1,1,2-Tetrachloroethane	15.315	131	23144	2.58	ppbv	#	78
46) Ethylbenzene	15.378	91	87247	2.49	ppbv		99
47) p,&m-Xylene	15.502	91	128198	5.49	ppbv		92
48) o-Xylene	16.188	91	60639	2.56	ppbv		83
49) Styrene	16.207	104	33463	2.77	ppbv		74
50) Bromoform	16.706	173	31904	2.36	ppbv		82
51) Isopropyl benzene	16.814	105	68204	2.83	ppbv		87
52) 1,1,2,2-Tetrachloroethane	16.985	83	45137	2.59	ppbv		93
54) Benzyl Chloride	19.067	91	25222	1.91	ppbv		80
55) 1,2,3-Trichloropropane	17.230	110	13764	3.02	ppbv	#	72
56) n-Propyl Benzene	17.486	91	68345	2.86	ppbv		88
57) Bromobenzene	17.496	77	43508	3.42	ppbv		86
58) 4-Ethyl Toluene	17.663	105	71941	2.57	ppbv		91
59) 1,3,5-Trimethylbenzene	17.732	105	83825	2.45	ppbv		96
60) 2-Chlorotoluene	17.739	91	60767	2.66	ppbv		98
61) 4-Chlorotoluene	17.808	91	48696	2.72	ppbv		92
62) tert-Butylbenzene	18.257	119	63056	2.59	ppbv		85
63) 1,2,4-Trimethylbenzene	18.299	105	78826	2.46	ppbv		98
64) sec-Butylbenzene	18.555	105	61176	2.83	ppbv		90
65) p-Isopropyltoluene	18.739	119	42651	2.01	ppbv		89
66) 1,3-Dichlorobenzene	18.827	146	32522	2.55	ppbv		79
67) 1,4-Dichlorobenzene	18.955	146	32997	2.58	ppbv		93
68) n-Butylbenzene	19.283	91	48571	2.22	ppbv		99
69) 1,2-Dichlorobenzene	19.451	146	32029	2.54	ppbv		85
70) 1,2-Dibromo-3-chloropr...	20.513	157	11528	2.46	ppbv	#	67
71) 1,2,4-Trichlorobenzene	22.061	180	24906	1.68	ppbv		85
72) Hexachlorobutadiene	22.359	225	31291	2.61	ppbv		85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT006.D
Acq On : 31 Oct 2018 2:03 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 14:27:49 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT007.D
Acq On : 31 Oct 2018 2:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 15:09:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	78090	10.00	ppbv	# 0.00
24) 1,4-Difluorobenzene	10.685	114	396390	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.201	117	246149	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.091	65	247372	12.05	ppbv	-0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 120.50%			
34) Toluene-d8	12.935	98	369034	10.33	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 103.30%			
53) 4-Bromofluorobenzene	17.181	174	131773	10.62	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.585	85	168799	7.89	ppbv	97
3) Chloromethane	3.992	50	71109	10.28	ppbv	98
4) 1,2-Cl-1,1,2,2-F ethan...	3.825	85	152969	7.74	ppbv	96
5) Vinyl Chloride	4.215	62	55460	8.26	ppbv	79
6) Bromomethane	4.897	94	11926	4.41	ppbv	69
7) Chloroethane	5.058	66	10967	7.47	ppbv	96
8) Trichlorofluoromethane...	5.500	101	199038	8.86	ppbv	87
9) 1,1-Dichloroethene	6.399	61	141204	9.29	ppbv	83
10) Carbon Disulfide	7.111	76	131942	7.27	ppbv	97
11) 1,1,2-Cl 1,2,2-F ethan...	6.242	151	96220	7.01	ppbv	79
12) Acetone	6.130	43	166964	10.71	ppbv	94
13) Methylene Chloride	7.038	84	49293	6.92	ppbv	81
14) t-1,2-Dichloroethene	7.534	96	48341	6.67	ppbv	84
15) 1,1-Dichloroethane	8.078	63	132639	8.04	ppbv	93
16) Vinyl Acetate	8.078	43	245397	7.65	ppbv	93
17) c-1,2-Dichloroethene	8.917	96	58582	6.55	ppbv	82
18) 2-Butanone	8.622	72	25050	6.15	ppbv	62
19) t-Butyl Methyl Ether	7.393	73	179194	8.02	ppbv	97
20) Chloroform	9.147	83	146656	7.96	ppbv	94
21) 1,1,1-Trichloroethane	9.757	97	130268	7.60	ppbv	88
22) 1,1-Dichloropropene	9.983	75	83180	8.40	ppbv	96
23) Carbon Tetrachloride	10.141	117	93168	6.74	ppbv	81
25) Benzene	10.318	78	194680	5.44	ppbv	94
27) 1,2-Dichloroethane	10.226	62	119524	6.13	ppbv	97
28) Trichloroethene	11.210	130	77152	5.17	ppbv	83
29) 1,2-Dichloropropane	11.406	63	73160	5.71	ppbv	84
30) Bromodichloromethane	11.721	83	133338	5.35	ppbv	98
31) Dibromomethane	11.764	93	60837	4.71	ppbv	96
32) c-1,3-Dichloropropene	12.498	75	81765	4.40	ppbv	96
33) 4-Methyl-2-Pentanone	12.223	43	153505	5.81	ppbv	91
35) Toluene	13.053	91	160679	5.11	ppbv	96
37) t-1,3-Dichloropropene	13.223	75	60646	3.72	ppbv	97
38) 1,1,2-Trichloroethane	13.456	97	59461	4.72	ppbv	91
39) 1,3-Dichloropropane	13.823	76	86054	5.36	ppbv #	82
40) Tetrachloroethene	14.072	166	79657	4.21	ppbv	94
41) 2-Hexanone	13.495	58	65045	5.27	ppbv	89

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT007.D
Acq On : 31 Oct 2018 2:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 15:09:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

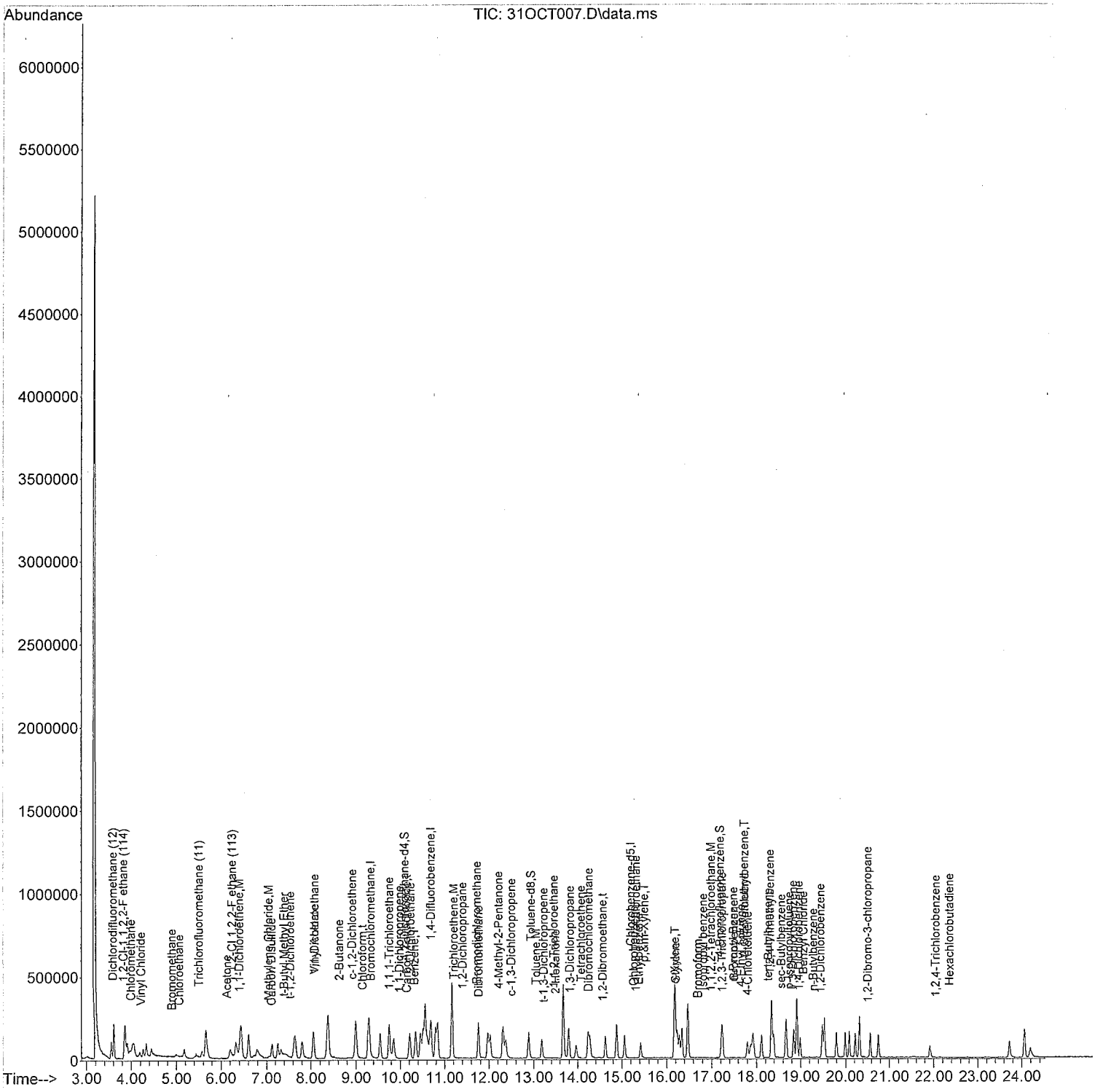
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	85350	4.61	ppbv		92
43) 1,2-Dibromoethane	14.561	107	82097	4.46	ppbv		89
44) Chlorobenzene	15.266	112	94733	5.05	ppbv		96
45) 1,1,1,2-Tetrachloroethane	15.312	131	46940	5.06	ppbv		84
46) Ethylbenzene	15.374	91	171654	4.74	ppbv		94
47) p,&m-Xylene	15.496	91	258812	10.70	ppbv		92
48) o-Xylene	16.184	91	121857	4.97	ppbv		89
49) Styrene	16.201	104	68186	5.45	ppbv		91
50) Bromoform	16.699	173	68305	4.89	ppbv		83
51) Isopropyl benzene	16.814	105	130154	5.21	ppbv		92
52) 1,1,2,2-Tetrachloroethane	16.985	83	95670	5.30	ppbv		95
54) Benzyl Chloride	19.060	91	55764	4.08	ppbv		88
55) 1,2,3-Trichloropropane	17.227	110	25115	5.33	ppbv	#	83
56) n-Propyl Benzene	17.486	91	133522	5.40	ppbv		93
57) Bromobenzene	17.503	77	81525	6.18	ppbv		89
58) 4-Ethyl Toluene	17.660	105	139337	4.82	ppbv		79
59) 1,3,5-Trimethylbenzene	17.732	105	172851	4.89	ppbv		96
60) 2-Chlorotoluene	17.739	91	121858	5.16	ppbv		99
61) 4-Chlorotoluene	17.804	91	91888	4.97	ppbv		92
62) tert-Butylbenzene	18.260	119	126593	5.03	ppbv		94
63) 1,2,4-Trimethylbenzene	18.303	105	157121	4.73	ppbv		99
64) sec-Butylbenzene	18.559	105	119513	5.35	ppbv		98
65) p-Isopropyltoluene	18.736	119	87872	4.01	ppbv		94
66) 1,3-Dichlorobenzene	18.824	146	65361	4.95	ppbv		87
67) 1,4-Dichlorobenzene	18.955	146	61045	4.61	ppbv		89
68) n-Butylbenzene	19.283	91	94966	4.19	ppbv		100
69) 1,2-Dichlorobenzene	19.444	146	62953	4.82	ppbv		87
70) 1,2-Dibromo-3-chloropr...	20.513	157	21933	4.53	ppbv	#	65
71) 1,2,4-Trichlorobenzene	22.044	180	51084	3.34	ppbv		87
72) Hexachlorobutadiene	22.353	225	59443	4.79	ppbv		84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT007.D
Acq On : 31 Oct 2018 2:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 15:09:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 15:48:52 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.331	130	92047	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.679	114	398420	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.207	117	256702	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.092	65	246447	11.94	ppbv	-0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 119.40%			
34) Toluene-d8	12.931	98	366959	10.21	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.10%			
53) 4-Bromofluorobenzene	17.185	174	140868	10.88	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 108.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.569	85	227742	9.03	ppbv	96
3) Chloromethane	3.976	50	104917	12.87	ppbv	94
4) 1,2-Cl-1,1,2,2-F ethan...	3.802	85	210091	9.01	ppbv	98
5) Vinyl Chloride	4.294	62	2537	0.32	ppbv	38
6) Bromomethane	4.894	94	37759	11.83	ppbv	89
7) Chloroethane	5.028	66	16170	9.35	ppbv	97
8) Trichlorofluoromethane...	5.487	101	259364	9.79	ppbv	92
9) 1,1-Dichloroethene	6.392	61	191857	10.71	ppbv	84
10) Carbon Disulfide	7.104	76	186858	8.73	ppbv	96
11) 1,1,2-Cl 1,2,2-F ethan...	6.232	151	130474	8.06	ppbv	91
12) Acetone	6.124	43	195533	10.64	ppbv	92
13) Methylene Chloride	7.029	84	66503	7.92	ppbv	93
14) t-1,2-Dichloroethene	7.524	96	70931	8.30	ppbv	83
15) 1,1-Dichloroethane	8.071	63	190126	9.78	ppbv	91
16) Vinyl Acetate	8.062	43	382559	10.12	ppbv	99
17) c-1,2-Dichloroethene	8.908	96	84954	8.06	ppbv	86
18) 2-Butanone	8.616	72	38987	8.12	ppbv	68
19) t-Butyl Methyl Ether	7.370	73	248420	9.44	ppbv	85
20) Chloroform	9.144	83	213840	9.85	ppbv	96
21) 1,1,1-Trichloroethane	9.754	97	187521	9.28	ppbv	91
22) 1,1-Dichloropropene	9.980	75	117807	10.09	ppbv	98
23) Carbon Tetrachloride	10.141	117	134893	8.28	ppbv	90
25) Benzene	10.321	78	267019	7.43	ppbv	92
27) 1,2-Dichloroethane	10.216	62	176717	9.02	ppbv	94
28) Trichloroethene	11.213	130	104431	6.96	ppbv	85
29) 1,2-Dichloropropane	11.403	63	107698	8.36	ppbv	93
30) Bromodichloromethane	11.715	83	204611	8.17	ppbv	97
31) Dibromomethane	11.767	93	88683	6.83	ppbv	89
32) c-1,3-Dichloropropene	12.495	75	127778	6.84	ppbv	89
33) 4-Methyl-2-Pentanone	12.213	43	233415	8.79	ppbv	87
35) Toluene	13.046	91	248648	7.87	ppbv	88
37) t-1,3-Dichloropropene	13.213	75	104342	6.14	ppbv	97
38) 1,1,2-Trichloroethane	13.459	97	94121	7.16	ppbv	85
39) 1,3-Dichloropropane	13.827	76	124588	7.43	ppbv	94
40) Tetrachloroethene	14.079	166	126144	6.40	ppbv	82
41) 2-Hexanone	13.492	58	102791	7.98	ppbv	98

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 15:48:52 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

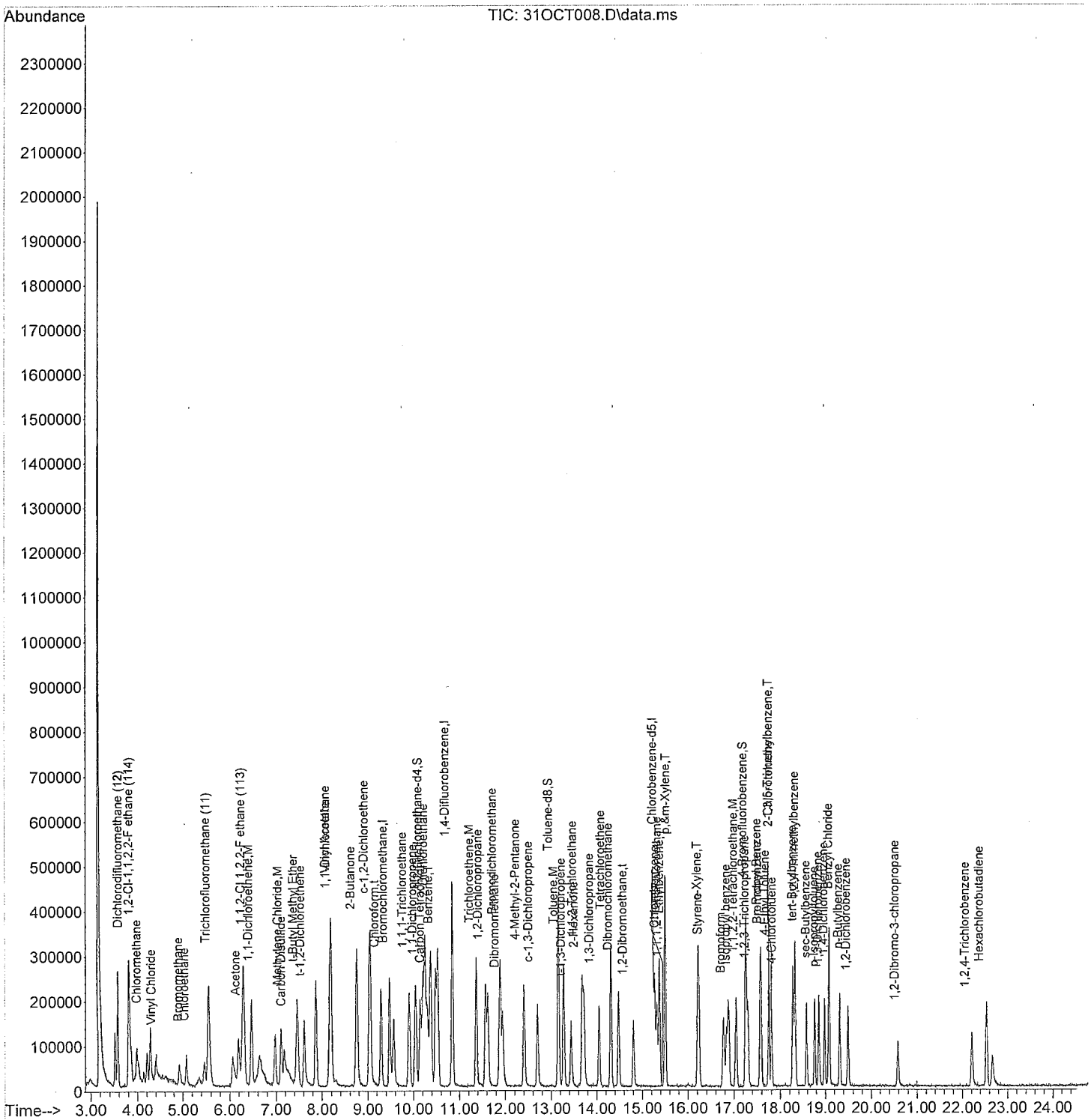
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.246	129	132967	6.89	ppbv		93
43) 1,2-Dibromoethane	14.565	107	135546	7.05	ppbv		97
44) Chlorobenzene	15.263	112	151654	7.75	ppbv		98
45) 1,1,1,2-Tetrachloroethane	15.312	131	63009	6.51	ppbv	#	85
46) Ethylbenzene	15.371	91	271544	7.19	ppbv		97
47) p,&m-Xylene	15.502	91	377873	14.99	ppbv		93
48) o-Xylene	16.188	91	188175	7.36	ppbv		88
49) Styrene	16.207	104	110332	8.46	ppbv		98
50) Bromoform	16.703	173	117030	8.03	ppbv		95
51) Isopropyl benzene	16.817	105	182590	7.01	ppbv		96
52) 1,1,2,2-Tetrachloroethane	16.978	83	137696	7.31	ppbv		97
54) Benzyl Chloride	19.060	91	78897	5.53	ppbv		83
55) 1,2,3-Trichloropropane	17.227	110	36378	7.40	ppbv	#	82
56) n-Propyl Benzene	17.486	91	183877	7.14	ppbv		92
57) Bromobenzene	17.503	77	113249	8.24	ppbv		93
58) 4-Ethyl Toluene	17.663	105	204631	6.79	ppbv		96
59) 1,3,5-Trimethylbenzene	17.732	105	243056	6.59	ppbv		85
60) 2-Chlorotoluene	17.736	91	163559	6.64	ppbv		99
61) 4-Chlorotoluene	17.808	91	120685	6.25	ppbv		96
62) tert-Butylbenzene	18.254	119	165057	6.29	ppbv		98
63) 1,2,4-Trimethylbenzene	18.300	105	217289	6.27	ppbv		93
64) sec-Butylbenzene	18.559	105	157508	6.76	ppbv		89
65) p-Isopropyltoluene	18.742	119	125086	5.47	ppbv		97
66) 1,3-Dichlorobenzene	18.834	146	83975	6.10	ppbv		80
67) 1,4-Dichlorobenzene	18.956	146	82078	5.95	ppbv		91
68) n-Butylbenzene	19.280	91	136436	5.78	ppbv		99
69) 1,2-Dichlorobenzene	19.444	146	76359	5.60	ppbv		84
70) 1,2-Dibromo-3-chloropr...	20.507	157	35731	7.08	ppbv	#	70
71) 1,2,4-Trichlorobenzene	22.048	180	68811	4.31	ppbv		90
72) Hexachlorobutadiene	22.366	225	63640	4.92	ppbv		91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 15:48:52 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 16:04:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.331	130	92047	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.679	114	398420	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.207	117	256702	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.092	65	246447	11.94	ppbv	-0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 119.40%			
34) Toluene-d8	12.931	98	366959	10.21	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 102.10%			
53) 4-Bromofluorobenzene	17.185	174	140868	10.88	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 108.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.569	85	227742	9.03	ppbv	96
3) Chloromethane	3.976	50	104917	12.87	ppbv	94
4) 1,2-Cl-1,1,2,2-F ethan...	3.802	85	210091	9.01	ppbv	98
5) Vinyl Chloride	4.189	62	88554m	11.19	ppbv	
6) Bromomethane	4.894	94	37759	11.83	ppbv	89
7) Chloroethane	5.028	66	16170	9.35	ppbv	97
8) Trichlorofluoromethane...	5.487	101	259364	9.79	ppbv	92
9) 1,1-Dichloroethene	6.392	61	191857	10.71	ppbv	84
10) Carbon Disulfide	7.104	76	186858	8.73	ppbv	96
11) 1,1,2-Cl 1,2,2-F ethan...	6.232	151	130474	8.06	ppbv	91
12) Acetone	6.124	43	195533	10.64	ppbv	92
13) Methylene Chloride	7.029	84	66503	7.92	ppbv	93
14) t-1,2-Dichloroethene	7.524	96	70931	8.30	ppbv	83
15) 1,1-Dichloroethane	8.071	63	190126	9.78	ppbv	91
16) Vinyl Acetate	8.062	43	382559	10.12	ppbv	99
17) c-1,2-Dichloroethene	8.908	96	84954	8.06	ppbv	86
18) 2-Butanone	8.616	72	38987	8.12	ppbv	68
19) t-Butyl Methyl Ether	7.370	73	248420	9.44	ppbv	85
20) Chloroform	9.144	83	213840	9.85	ppbv	96
21) 1,1,1-Trichloroethane	9.754	97	187521	9.28	ppbv	91
22) 1,1-Dichloropropene	9.980	75	117807	10.09	ppbv	98
23) Carbon Tetrachloride	10.141	117	134893	8.28	ppbv	90
25) Benzene	10.321	78	267019	7.43	ppbv	92
27) 1,2-Dichloroethane	10.216	62	176717	9.02	ppbv	94
28) Trichloroethene	11.213	130	104431	6.96	ppbv	85
29) 1,2-Dichloropropane	11.403	63	107698	8.36	ppbv	93
30) Bromodichloromethane	11.715	83	204611	8.17	ppbv	97
31) Dibromomethane	11.767	93	88683	6.83	ppbv	89
32) c-1,3-Dichloropropene	12.495	75	127778	6.84	ppbv	89
33) 4-Methyl-2-Pentanone	12.213	43	233415	8.79	ppbv	87
35) Toluene	13.046	91	248648	7.87	ppbv	88
37) t-1,3-Dichloropropene	13.213	75	104342	6.14	ppbv	97
38) 1,1,2-Trichloroethane	13.459	97	94121	7.16	ppbv	85
39) 1,3-Dichloropropane	13.827	76	124588	7.43	ppbv	94
40) Tetrachloroethene	14.079	166	126144	6.40	ppbv	82
41) 2-Hexanone	13.492	58	102791	7.98	ppbv	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 16:04:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

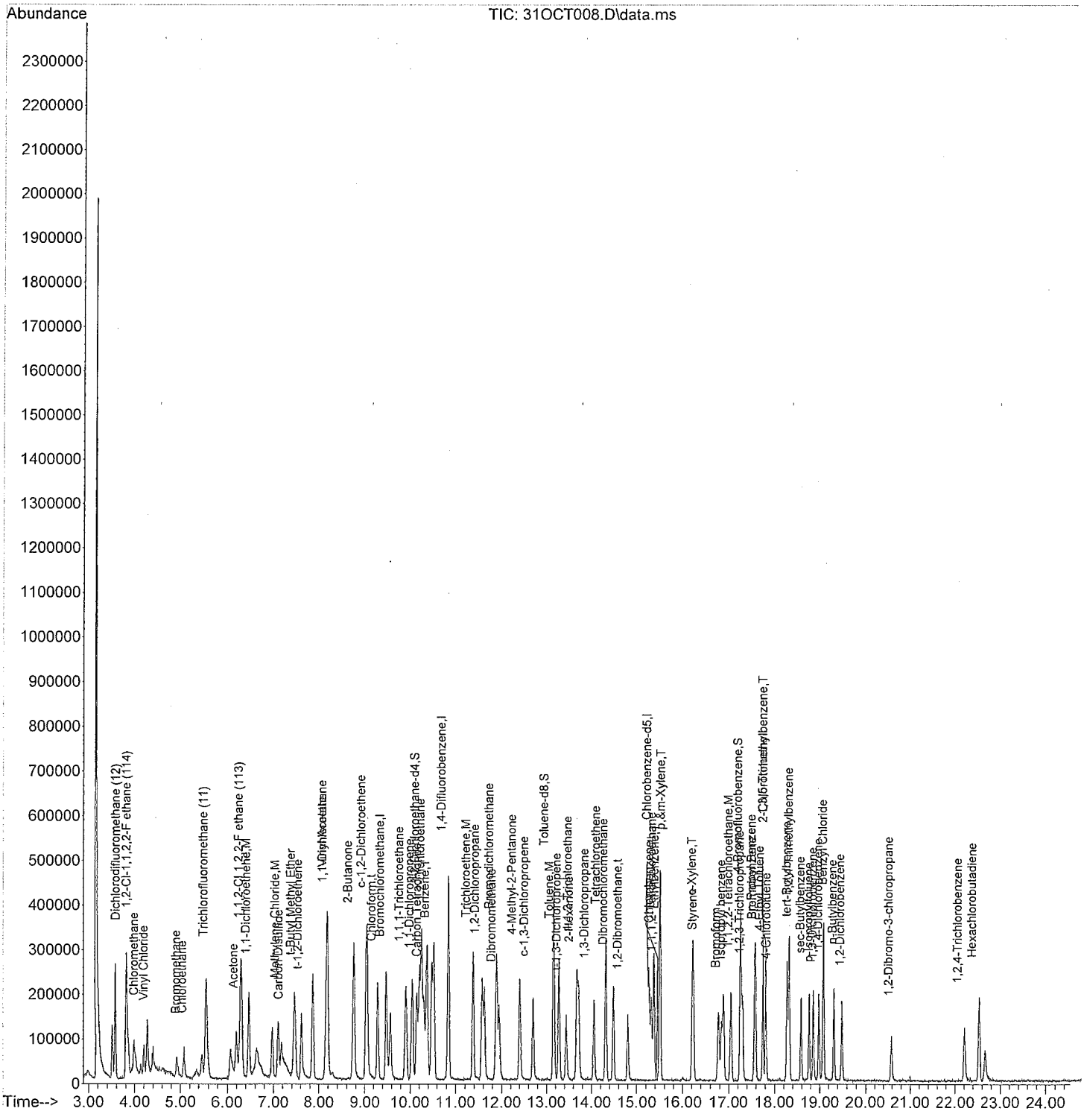
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.246	129	132967	6.89	ppbv		93
43) 1,2-Dibromoethane	14.565	107	135546	7.05	ppbv		97
44) Chlorobenzene	15.263	112	151654	7.75	ppbv		98
45) 1,1,1,2-Tetrachloroethane	15.312	131	63009	6.51	ppbv	#	85
46) Ethylbenzene	15.371	91	271544	7.19	ppbv		97
47) p,&m-Xylene	15.502	91	377873	14.99	ppbv		93
48) o-Xylene	16.188	91	188175	7.36	ppbv		88
49) Styrene	16.207	104	110332	8.46	ppbv		98
50) Bromoform	16.703	173	117030	8.03	ppbv		95
51) Isopropyl benzene	16.817	105	182590	7.01	ppbv		96
52) 1,1,2,2-Tetrachloroethane	16.978	83	137696	7.31	ppbv		97
54) Benzyl Chloride	19.060	91	78897	5.53	ppbv		83
55) 1,2,3-Trichloropropane	17.227	110	36378	7.40	ppbv	#	82
56) n-Propyl Benzene	17.486	91	183877	7.14	ppbv		92
57) Bromobenzene	17.503	77	113249	8.24	ppbv		93
58) 4-Ethyl Toluene	17.663	105	204631	6.79	ppbv		96
59) 1,3,5-Trimethylbenzene	17.732	105	243056	6.59	ppbv		85
60) 2-Chlorotoluene	17.736	91	163559	6.64	ppbv		99
61) 4-Chlorotoluene	17.808	91	120685	6.25	ppbv		96
62) tert-Butylbenzene	18.254	119	165057	6.29	ppbv		98
63) 1,2,4-Trimethylbenzene	18.300	105	217289	6.27	ppbv		93
64) sec-Butylbenzene	18.559	105	157508	6.76	ppbv		89
65) p-Isopropyltoluene	18.742	119	125086	5.47	ppbv		97
66) 1,3-Dichlorobenzene	18.834	146	83975	6.10	ppbv		80
67) 1,4-Dichlorobenzene	18.956	146	82078	5.95	ppbv		91
68) n-Butylbenzene	19.280	91	136436	5.78	ppbv		99
69) 1,2-Dichlorobenzene	19.444	146	76359	5.60	ppbv		84
70) 1,2-Dibromo-3-chloropr...	20.507	157	35731	7.08	ppbv	#	70
71) 1,2,4-Trichlorobenzene	22.048	180	68811	4.31	ppbv		90
72) Hexachlorobutadiene	22.366	225	63640	4.92	ppbv		91

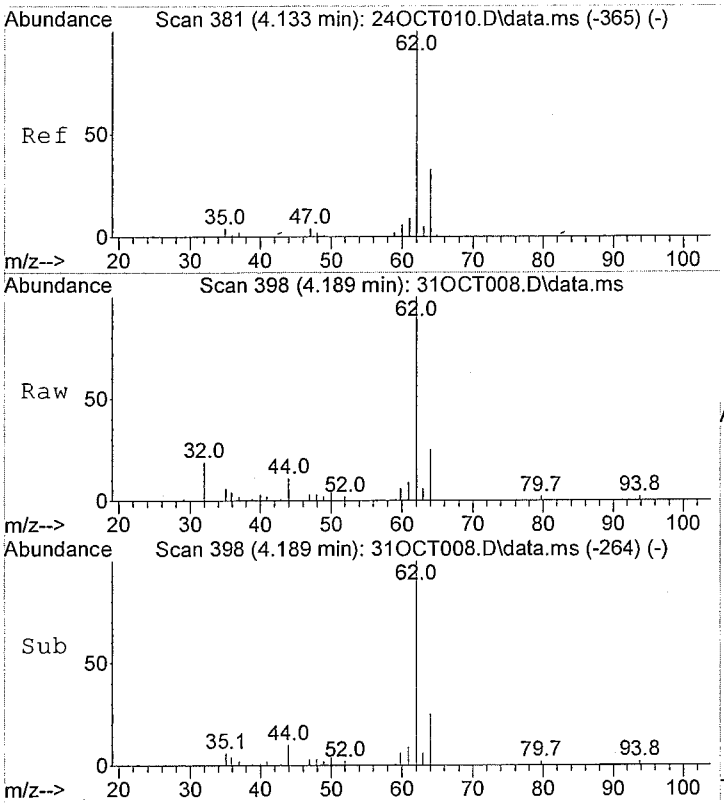
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 16:04:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

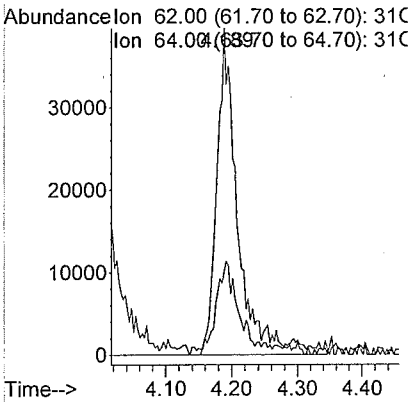




#5
Vinyl Chloride
Concen: 11.19 ppbv m
RT: 4.189 min Scan# 398
Delta R.T. -0.062 min
Lab File: 31OCT008.D
Acq: 31 Oct 2018 3:24 pm

Tgt Ion: 62 Resp: 88554

Ion	Ratio	Lower	Upper
62	100		
64	25.5	0.0	80.9



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 16:28:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.327	130	90809	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.685	114	387392	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.201	117	247493	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.088	65	245420	12.23	ppbv	-0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 122.30%			
34) Toluene-d8	12.931	98	349110	9.99	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.90%			
53) 4-Bromofluorobenzene	17.181	174	135146	10.83	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 108.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.559	85	324263	13.03	ppbv	98
3) Chloromethane	4.074	50	4543	0.56	ppbv	62
4) 1,2-Cl-1,1,2,2-F ethan...	3.795	85	294857	12.82	ppbv	94
5) Vinyl Chloride	4.254	62	8835	1.13	ppbv	76
6) Bromomethane	4.999	94	1852	0.59	ppbv	52
7) Chloroethane	5.025	66	24270	14.22	ppbv	72
8) Trichlorofluoromethane...	5.487	101	375164	14.36	ppbv	97
9) 1,1-Dichloroethene	6.389	61	266161	15.06	ppbv	86
10) Carbon Disulfide	7.084	76	261576	12.39	ppbv	93
11) 1,1,2-Cl 1,2,2-F ethan...	6.218	151	183798	11.51	ppbv	93
12) Acetone	6.110	43	263555	14.53	ppbv	89
13) Methylene Chloride	7.028	84	94447	11.40	ppbv	89
14) t-1,2-Dichloroethene	7.511	96	99378	11.79	ppbv	84
15) 1,1-Dichloroethane	8.065	63	272849	14.22	ppbv	94
16) Vinyl Acetate	8.058	43	539280	14.45	ppbv	94
17) c-1,2-Dichloroethene	8.904	96	123303	11.85	ppbv	81
18) 2-Butanone	8.612	72	54944	11.60	ppbv	61
19) t-Butyl Methyl Ether	7.360	73	356971	13.74	ppbv	91
20) Chloroform	9.134	83	295784	13.81	ppbv	90
21) 1,1,1-Trichloroethane	9.754	97	273692	13.73	ppbv	93
22) 1,1-Dichloropropene	9.986	75	169874	14.75	ppbv	91
23) Carbon Tetrachloride	10.141	117	198387	12.35	ppbv	91
25) Benzene	10.321	78	385568	11.03	ppbv	91
27) 1,2-Dichloroethane	10.216	62	247271	12.98	ppbv	98
28) Trichloroethene	11.210	130	144219	9.88	ppbv	86
29) 1,2-Dichloropropane	11.413	63	148167	11.84	ppbv	94
30) Bromodichloromethane	11.715	83	291302	11.97	ppbv	95
31) Dibromomethane	11.770	93	125525	9.94	ppbv	91
32) c-1,3-Dichloropropene	12.498	75	190472	10.48	ppbv	88
33) 4-Methyl-2-Pentanone	12.213	43	324036	12.55	ppbv	89
35) Toluene	13.049	91	347524	11.31	ppbv	97
37) t-1,3-Dichloropropene	13.213	75	153891	9.39	ppbv	90
38) 1,1,2-Trichloroethane	13.446	97	131135	10.35	ppbv	93
39) 1,3-Dichloropropane	13.817	76	167760	10.38	ppbv #	90
40) Tetrachloroethene	14.072	166	181066	9.53	ppbv	85
41) 2-Hexanone	13.485	58	146999	11.84	ppbv	95

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 16:28:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

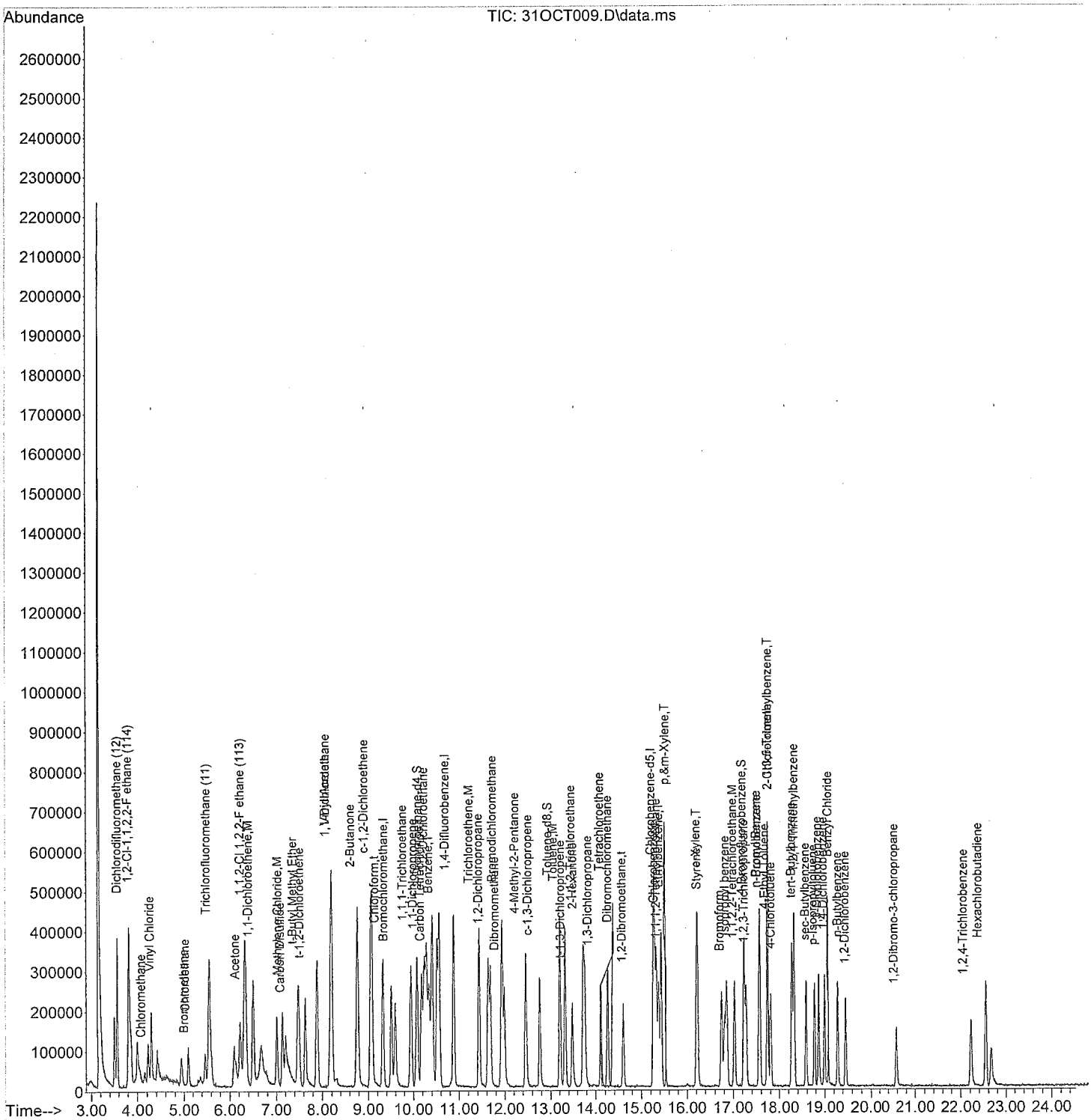
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	195961	10.54	ppbv		91
43) 1,2-Dibromoethane	14.561	107	184584	9.96	ppbv		94
44) Chlorobenzene	15.263	112	212384	11.26	ppbv		97
45) 1,1,1,2-Tetrachloroethane	15.315	131	89233	9.57	ppbv		96
46) Ethylbenzene	15.371	91	372964	10.24	ppbv		98
47) p,&m-Xylene	15.502	91	516121	21.23	ppbv		99
48) o-Xylene	16.188	91	263840	10.71	ppbv		88
49) Styrene	16.204	104	161800	12.86	ppbv		89
50) Bromoform	16.696	173	171057	12.18	ppbv		92
51) Isopropyl benzene	16.811	105	262680	10.46	ppbv		92
52) 1,1,2,2-Tetrachloroethane	16.978	83	193037	10.63	ppbv		99
54) Benzyl Chloride	19.060	91	109808	7.99	ppbv		95
55) 1,2,3-Trichloropropane	17.224	110	49990	10.55	ppbv	#	83
56) n-Propyl Benzene	17.486	91	254312	10.24	ppbv		89
57) Bromobenzene	17.499	77	157985	11.92	ppbv		90
58) 4-Ethyl Toluene	17.667	105	284330	9.78	ppbv		89
59) 1,3,5-Trimethylbenzene	17.732	105	320777	9.02	ppbv		94
60) 2-Chlorotoluene	17.739	91	224311	9.45	ppbv		94
61) 4-Chlorotoluene	17.804	91	175406	9.43	ppbv		97
62) tert-Butylbenzene	18.257	119	232692	9.19	ppbv		91
63) 1,2,4-Trimethylbenzene	18.306	105	291649	8.73	ppbv		97
64) sec-Butylbenzene	18.555	105	223693	9.95	ppbv		93
65) p-Isopropyltoluene	18.732	119	167080	7.57	ppbv		96
66) 1,3-Dichlorobenzene	18.827	146	116572	8.79	ppbv		91
67) 1,4-Dichlorobenzene	18.955	146	113875	8.56	ppbv		93
68) n-Butylbenzene	19.277	91	183018	8.04	ppbv		99
69) 1,2-Dichlorobenzene	19.441	146	102816	7.82	ppbv		95
70) 1,2-Dibromo-3-chloropr...	20.516	157	47599	9.78	ppbv	#	90
71) 1,2,4-Trichlorobenzene	22.044	180	95683	6.22	ppbv		89
72) Hexachlorobutadiene	22.356	225	89281	7.16	ppbv		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 16:28:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 16:28:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.327	130	90809	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.685	114	387392	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.201	117	247493	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.088	65	245420	12.23	ppbv	-0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 122.30%			
34) Toluene-d8	12.931	98	349110	9.99	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.90%			
53) 4-Bromofluorobenzene	17.181	174	135146	10.83	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 108.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.559	85	324263	13.03	ppbv	98
3) Chloromethane	4.074	50	4543	0.56	ppbv	62
4) 1,2-Cl-1,1,2,2-F ethan...	3.795	85	294857	12.82	ppbv	94
5) Vinyl Chloride	4.254	62	8835	1.13	ppbv	76
6) Bromomethane	4.999	94	1852	0.59	ppbv	52
7) Chloroethane	5.025	66	24270	14.22	ppbv	72
8) Trichlorofluoromethane...	5.487	101	375164	14.36	ppbv	97
9) 1,1-Dichloroethene	6.389	61	266161	15.06	ppbv	86
10) Carbon Disulfide	7.084	76	261576	12.39	ppbv	93
11) 1,1,2-Cl 1,2,2-F ethan...	6.218	151	183798	11.51	ppbv	93
12) Acetone	6.110	43	263555	14.53	ppbv	89
13) Methylene Chloride	7.028	84	94447	11.40	ppbv	89
14) t-1,2-Dichloroethene	7.511	96	99378	11.79	ppbv	84
15) 1,1-Dichloroethane	8.065	63	272849	14.22	ppbv	94
16) Vinyl Acetate	8.058	43	539280	14.45	ppbv	94
17) c-1,2-Dichloroethene	8.904	96	123303	11.85	ppbv	81
18) 2-Butanone	8.612	72	54944	11.60	ppbv	61
19) t-Butyl Methyl Ether	7.360	73	356971	13.74	ppbv	91
20) Chloroform	9.134	83	295784	13.81	ppbv	90
21) 1,1,1-Trichloroethane	9.754	97	273692	13.73	ppbv	93
22) 1,1-Dichloropropene	9.986	75	169874	14.75	ppbv	91
23) Carbon Tetrachloride	10.141	117	198387	12.35	ppbv	91
25) Benzene	10.321	78	385568	11.03	ppbv	91
27) 1,2-Dichloroethane	10.216	62	247271	12.98	ppbv	98
28) Trichloroethene	11.210	130	144219	9.88	ppbv	86
29) 1,2-Dichloropropane	11.413	63	148167	11.84	ppbv	94
30) Bromodichloromethane	11.715	83	291302	11.97	ppbv	95
31) Dibromomethane	11.770	93	125525	9.94	ppbv	91
32) c-1,3-Dichloropropene	12.498	75	190472	10.48	ppbv	88
33) 4-Methyl-2-Pentanone	12.213	43	324036	12.55	ppbv	89
35) Toluene	13.049	91	347524	11.31	ppbv	97
37) t-1,3-Dichloropropene	13.213	75	153891	9.39	ppbv	90
38) 1,1,2-Trichloroethane	13.446	97	131135	10.35	ppbv	93
39) 1,3-Dichloropropane	13.817	76	167760	10.38	ppbv #	90
40) Tetrachloroethene	14.072	166	181066	9.53	ppbv	85
41) 2-Hexanone	13.485	58	146999	11.84	ppbv	95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 16:28:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

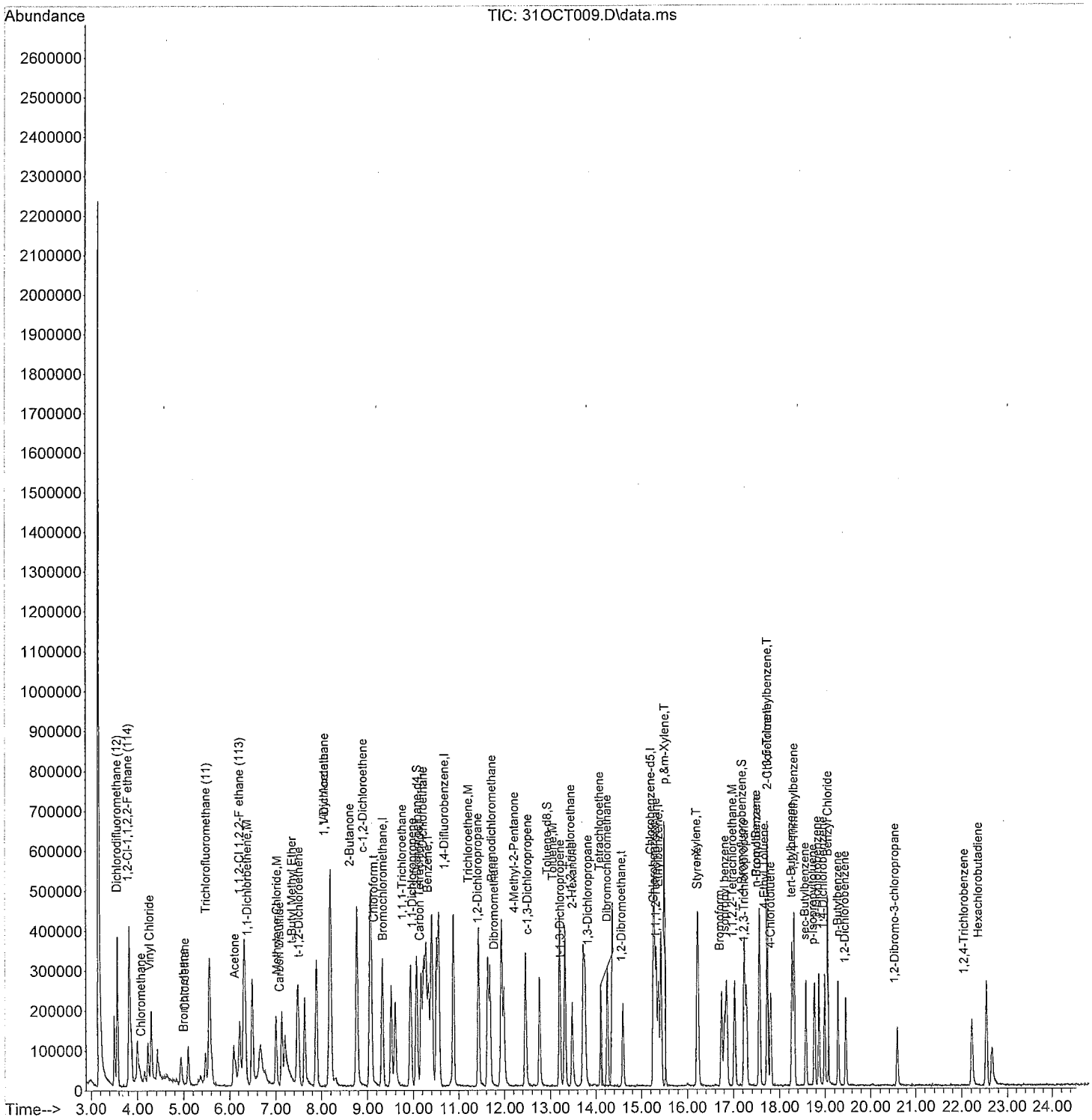
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	195961	10.54	ppbv		91
43) 1,2-Dibromoethane	14.561	107	184584	9.96	ppbv		94
44) Chlorobenzene	15.263	112	212384	11.26	ppbv		97
45) 1,1,1,2-Tetrachloroethane	15.315	131	89233	9.57	ppbv		96
46) Ethylbenzene	15.371	91	372964	10.24	ppbv		98
47) p,&m-Xylene	15.502	91	516121	21.23	ppbv		99
48) o-Xylene	16.188	91	263840	10.71	ppbv		88
49) Styrene	16.204	104	161800	12.86	ppbv		89
50) Bromoform	16.696	173	171057	12.18	ppbv		92
51) Isopropyl benzene	16.811	105	262680	10.46	ppbv		92
52) 1,1,2,2-Tetrachloroethane	16.978	83	193037	10.63	ppbv		99
54) Benzyl Chloride	19.060	91	109808	7.99	ppbv		95
55) 1,2,3-Trichloropropane	17.224	110	49990	10.55	ppbv	#	83
56) n-Propyl Benzene	17.486	91	254312	10.24	ppbv		89
57) Bromobenzene	17.499	77	157985	11.92	ppbv		90
58) 4-Ethyl Toluene	17.667	105	284330	9.78	ppbv		89
59) 1,3,5-Trimethylbenzene	17.732	105	320777	9.02	ppbv		94
60) 2-Chlorotoluene	17.739	91	224311	9.45	ppbv		94
61) 4-Chlorotoluene	17.804	91	175406	9.43	ppbv		97
62) tert-Butylbenzene	18.257	119	232692	9.19	ppbv		91
63) 1,2,4-Trimethylbenzene	18.306	105	291649	8.73	ppbv		97
64) sec-Butylbenzene	18.555	105	223693	9.95	ppbv		93
65) p-Isopropyltoluene	18.732	119	167080	7.57	ppbv		96
66) 1,3-Dichlorobenzene	18.827	146	116572	8.79	ppbv		91
67) 1,4-Dichlorobenzene	18.955	146	113875	8.56	ppbv		93
68) n-Butylbenzene	19.277	91	183018	8.04	ppbv		99
69) 1,2-Dichlorobenzene	19.441	146	102816	7.82	ppbv		95
70) 1,2-Dibromo-3-chloropr...	20.516	157	47599	9.78	ppbv	#	90
71) 1,2,4-Trichlorobenzene	22.044	180	95683	6.22	ppbv		89
72) Hexachlorobutadiene	22.356	225	89281	7.16	ppbv		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 16:28:42 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 17:20:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.324	130	99785	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.682	114	403604	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.207	117	243153	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.088	65	259787	12.43	ppbv	-0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 124.30%			
34) Toluene-d8	12.931	98	363415	9.99	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.90%			
53) 4-Bromofluorobenzene	17.185	174	135493	11.05	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.533	85	794134m	29.03	ppbv	
3) Chloromethane	3.936	50	378040	42.78	ppbv	98
4) 1,2-Cl-1,1,2,2-F ethan...	3.769	85	718150	28.42	ppbv	96
5) Vinyl Chloride	4.153	62	322163m	37.56	ppbv	
6) Bromomethane	4.851	94	125380m	36.25	ppbv	
7) Chloroethane	4.995	66	56628m	30.19	ppbv	
8) Trichlorofluoromethane...	5.468	101	927475	32.30	ppbv	95
9) 1,1-Dichloroethene	6.379	61	680586	35.03	ppbv	90
10) Carbon Disulfide	7.065	76	660721	28.47	ppbv	98
11) 1,1,2-Cl 1,2,2-F ethan...	6.205	151	466419	26.58	ppbv	93
12) Acetone	6.107	43	634687	31.85	ppbv	96
13) Methylene Chloride	7.009	84	258766	28.43	ppbv	75
14) t-1,2-Dichloroethene	7.511	96	264127	28.53	ppbv	81
15) 1,1-Dichloroethane	8.065	63	664311	31.51	ppbv	99
16) Vinyl Acetate	8.048	43	1399451	34.14	ppbv	95
17) c-1,2-Dichloroethene	8.904	96	305841	26.75	ppbv	86
18) 2-Butanone	8.606	72	145722	28.01	ppbv	49
19) t-Butyl Methyl Ether	7.363	73	886365	31.06	ppbv	83
20) Chloroform	9.137	83	743182	31.57	ppbv	95
21) 1,1,1-Trichloroethane	9.747	97	691843	31.59	ppbv	93
22) 1,1-Dichloropropene	9.977	75	417786	33.02	ppbv	94
23) Carbon Tetrachloride	10.137	117	525218	29.75	ppbv	97
25) Benzene	10.321	78	884662	24.29	ppbv	92
27) 1,2-Dichloroethane	10.219	62	626892	31.60	ppbv	97
28) Trichloroethene	11.206	130	368629	24.25	ppbv	87
29) 1,2-Dichloropropane	11.406	63	374566	28.72	ppbv	98
30) Bromodichloromethane	11.711	83	761931	30.05	ppbv	99
31) Dibromomethane	11.764	93	328259	24.96	ppbv #	87
32) c-1,3-Dichloropropene	12.492	75	501548	26.48	ppbv	90
33) 4-Methyl-2-Pentanone	12.213	43	807966	30.03	ppbv	88
35) Toluene	13.046	91	800824	25.02	ppbv	99
37) t-1,3-Dichloropropene	13.207	75	433945	26.95	ppbv	90
38) 1,1,2-Trichloroethane	13.449	97	325096	26.12	ppbv	95
39) 1,3-Dichloropropane	13.823	76	422931	26.64	ppbv #	90
40) Tetrachloroethene	14.079	166	435389	23.32	ppbv	86
41) 2-Hexanone	13.482	58	356117	29.20	ppbv	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 17:20:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

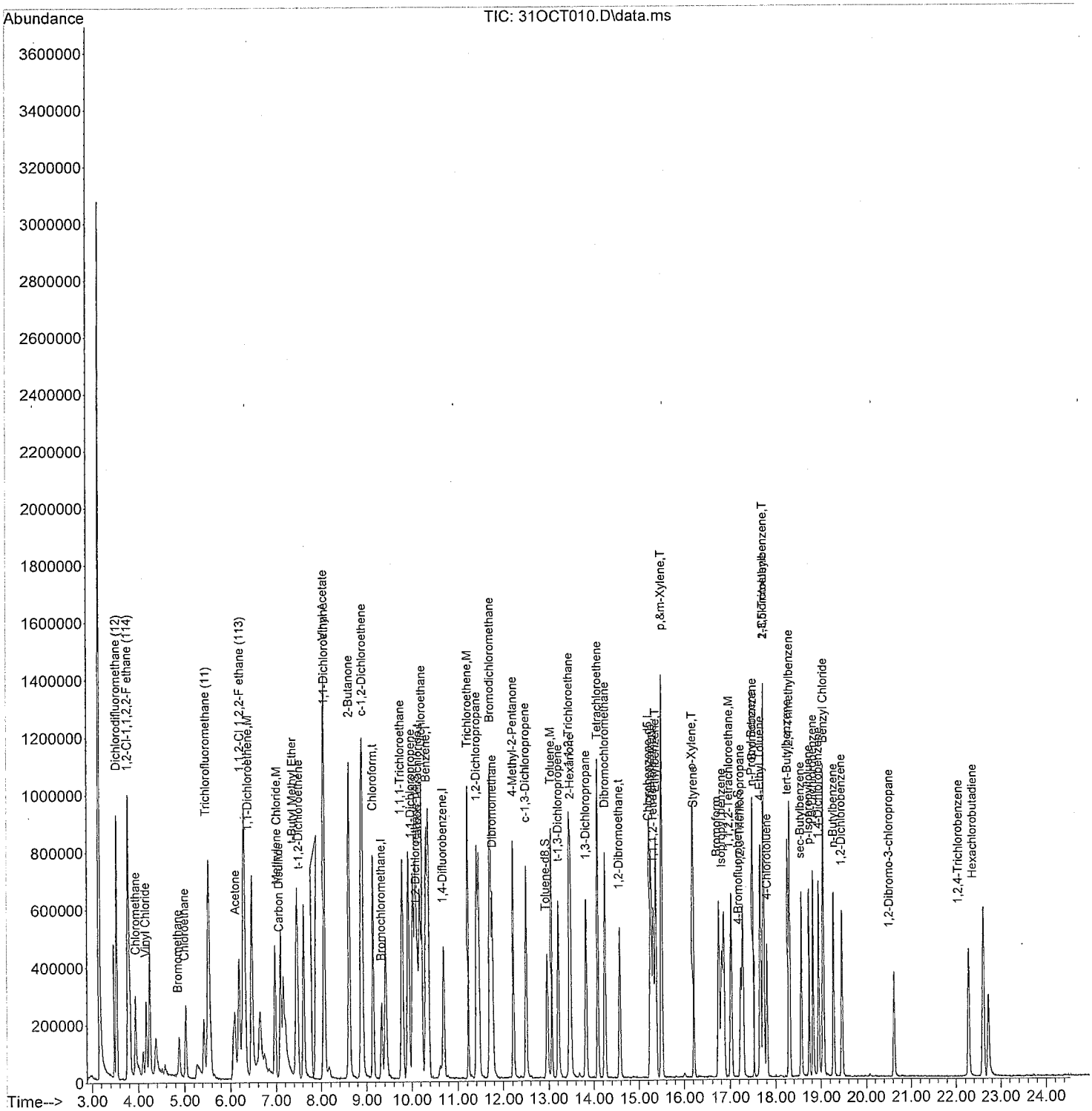
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) Dibromochloromethane	14.243	129	507750	27.79	ppbv	96
43) 1,2-Dibromoethane	14.558	107	476069	26.16	ppbv	92
44) Chlorobenzene	15.260	112	472441	25.48	ppbv	97
45) 1,1,1,2-Tetrachloroethane	15.315	131	210939	23.02	ppbv	97
46) Ethylbenzene	15.368	91	819860	22.91	ppbv	99
47) p,&m-Xylene	15.496	91	1095093	45.85	ppbv	98
48) o-Xylene	16.181	91	601068	24.83	ppbv	97
49) Styrene	16.204	104	331430	26.82	ppbv	95
50) Bromoform	16.699	173	449248	32.55	ppbv	93
51) Isopropyl benzene	16.814	105	597875	24.23	ppbv	94
52) 1,1,2,2-Tetrachloroethane	16.978	83	476746	26.73	ppbv	94
54) Benzyl Chloride	19.060	91	297170	22.01	ppbv	91
55) 1,2,3-Trichloropropane	17.227	110	120199	25.82	ppbv	92
56) n-Propyl Benzene	17.483	91	594461	24.35	ppbv	99
57) Bromobenzene	17.496	77	356230	27.35	ppbv	94
58) 4-Ethyl Toluene	17.663	105	669375	23.43	ppbv	94
59) 1,3,5-Trimethylbenzene	17.732	105	658451	18.84	ppbv	98
60) 2-Chlorotoluene	17.732	91	432902	18.56	ppbv	99
61) 4-Chlorotoluene	17.808	91	335861	18.37	ppbv	99
62) tert-Butylbenzene	18.254	119	544806	21.91	ppbv	98
63) 1,2,4-Trimethylbenzene	18.300	105	635152	19.36	ppbv	99
64) sec-Butylbenzene	18.552	105	513274	23.25	ppbv	98
65) p-Isopropyltoluene	18.736	119	412075	19.01	ppbv	97
66) 1,3-Dichlorobenzene	18.824	146	292857	22.47	ppbv	91
67) 1,4-Dichlorobenzene	18.952	146	281791	21.56	ppbv	97
68) n-Butylbenzene	19.280	91	449178	20.08	ppbv	99
69) 1,2-Dichlorobenzene	19.447	146	268017	20.75	ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.513	157	116061	24.27	ppbv	91
71) 1,2,4-Trichlorobenzene	22.041	180	238096	15.75	ppbv	90
72) Hexachlorobutadiene	22.366	225	203496	16.60	ppbv	95

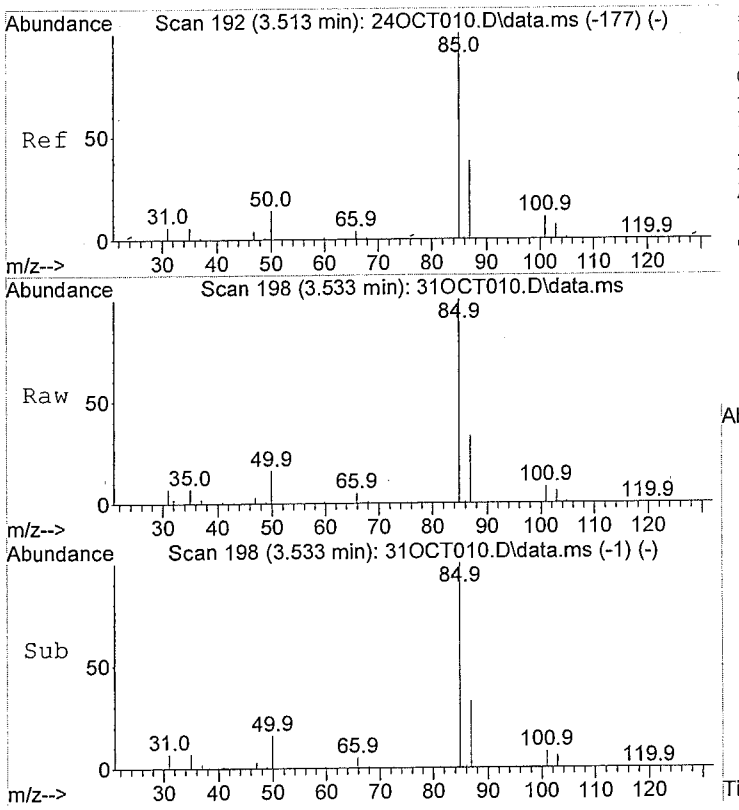
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 17:20:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

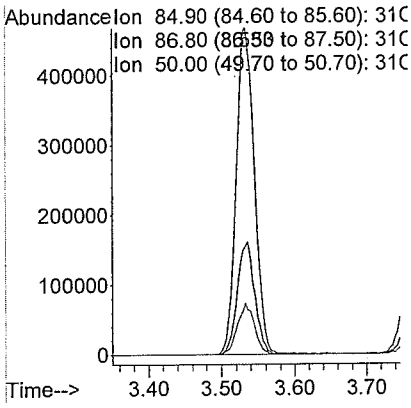




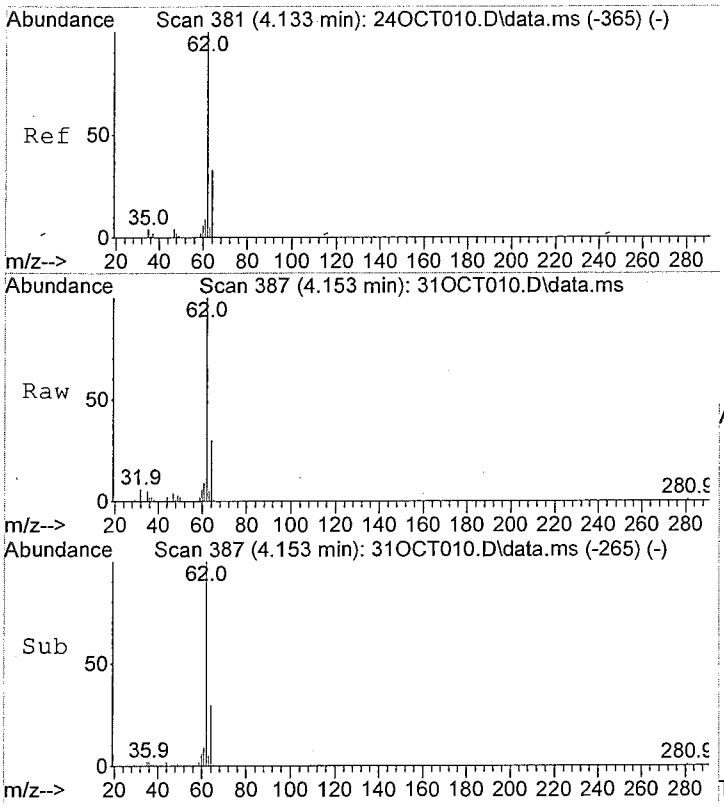
#2
Dichlorodifluoromethane (12)
Concen: 29.03 ppbv m
RT: 3.533 min Scan# 198
Delta R.T. -0.075 min
Lab File: 31OCT010.D
Acq: 31 Oct 2018 4:44 pm

Tgt Ion: 85 Resp: 794134

Ion	Ratio	Lower	Upper
85	100		
87	33.1	0.0	83.5
50	15.6	0.0	63.3



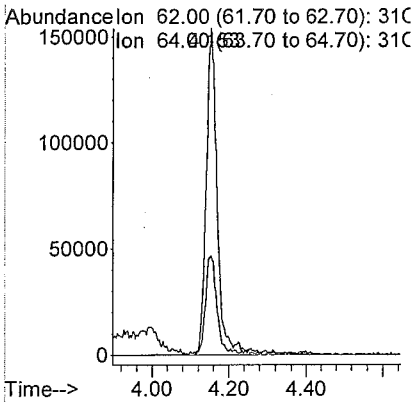
ME 3
JT 11/1/18



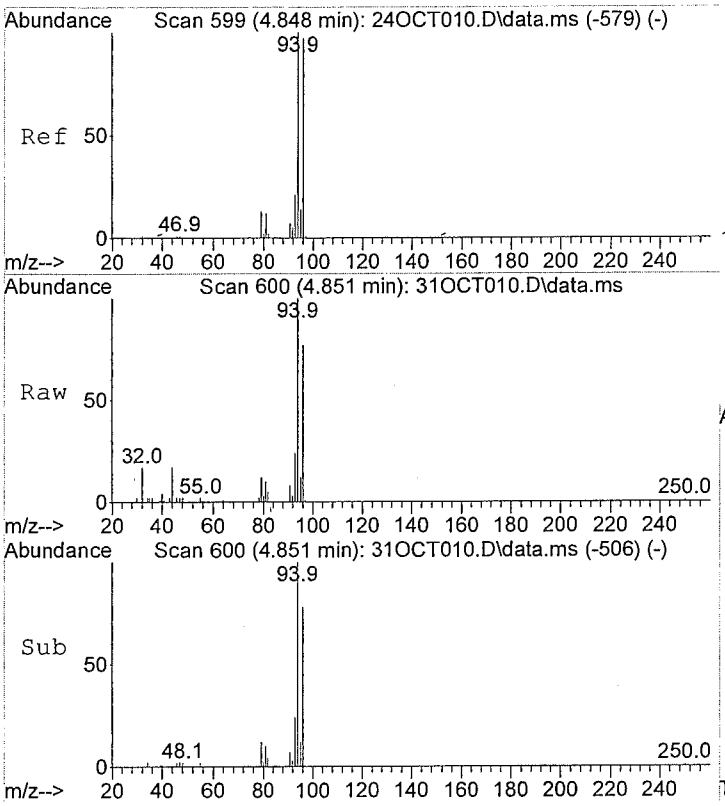
#5
Vinyl Chloride
Concen: 37.56 ppbv m
RT: 4.153 min Scan# 387
Delta R.T. -0.098 min
Lab File: 31OCT010.D
Acq: 31 Oct 2018 4:44 pm

Tgt Ion: 62 Resp: 322163

Ion	Ratio	Lower	Upper
62	100		
64	30.4	0.0	80.9



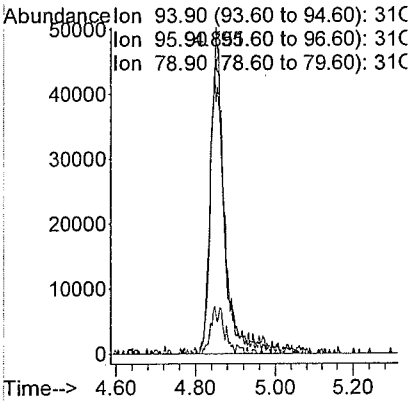
ME-3
11/01/18



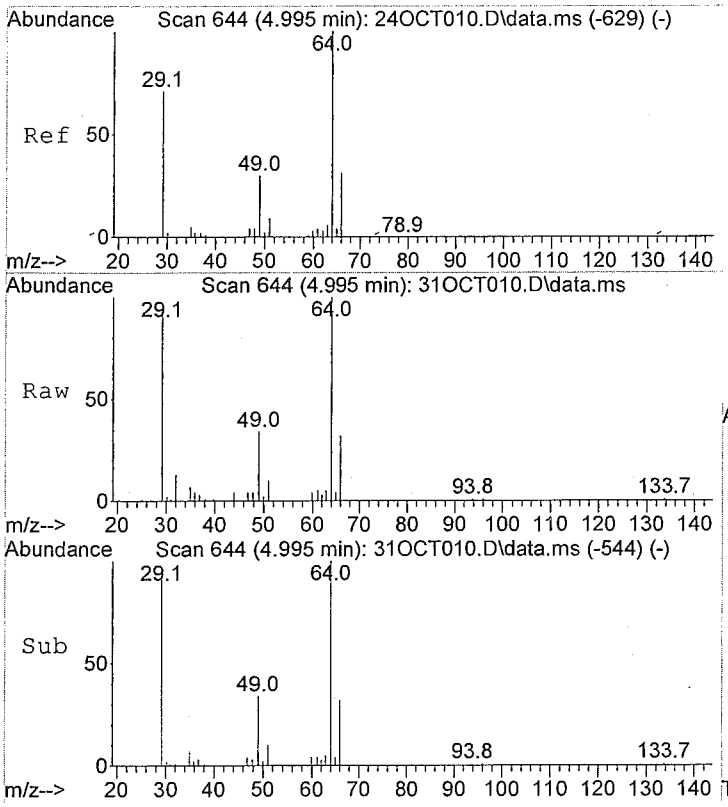
#6
Bromomethane
Concen: 36.25 ppbv m
RT: 4.851 min Scan# 600
Delta R.T. -0.092 min
Lab File: 31OCT010.D
Acq: 31 Oct 2018 4:44 pm

Tgt Ion: 94 Resp: 125380

Ion	Ratio	Lower	Upper
94	100		
96	77.1	48.0	148.0
79	11.8	0.0	69.2



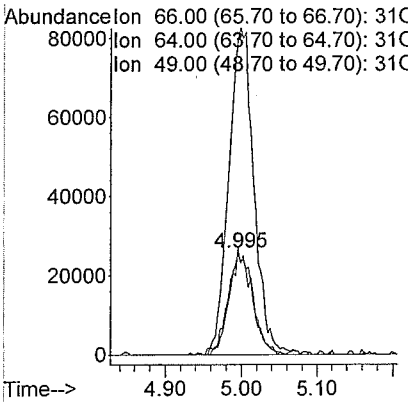
MI -3
DT 11/01/18



#7
Chloroethane
Concen: 30.19 ppbv m
RT: 4.995 min Scan# 644
Delta R.T. -0.072 min
Lab File: 31OCT010.D
Acq: 31 Oct 2018 4:44 pm

Tgt Ion: 66 Resp: 56628

Ion	Ratio	Lower	Upper
66	100		
64	309.9	157.9	257.9#
49	105.5	34.4	134.4



MI-3
DT 11/01/18

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 17:09:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.324	130	99785	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.682	114	403604	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.207	117	243153	10.00	ppbv	0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.088	65	259787	12.43	ppbv	-0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 124.30%			
34) Toluene-d8	12.931	98	363415	9.99	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.90%			
53) 4-Bromofluorobenzene	17.185	174	135493	11.05	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.608	85	1180	0.04	ppbv	48
3) Chloromethane	3.936	50	378040	42.78	ppbv	98
4) 1,2-Cl-1,1,2,2-F ethan...	3.769	85	718150	28.42	ppbv	96
5) Vinyl Chloride	4.258	62	4840	0.56	ppbv	44
6) Bromomethane	4.959	94	3771	1.09	ppbv	79
7) Chloroethane	5.091	66	148	0.08	ppbv #	21
8) Trichlorofluoromethane...	5.468	101	927475	32.30	ppbv	95
9) 1,1-Dichloroethene	6.379	61	680586	35.03	ppbv	90
10) Carbon Disulfide	7.065	76	660721	28.47	ppbv	98
11) 1,1,2-Cl 1,2,2-F ethan...	6.205	151	466419	26.58	ppbv	93
12) Acetone	6.107	43	634687	31.85	ppbv	96
13) Methylene Chloride	7.009	84	258766	28.43	ppbv	75
14) t-1,2-Dichloroethene	7.511	96	264127	28.53	ppbv	81
15) 1,1-Dichloroethane	8.065	63	664311	31.51	ppbv	99
16) Vinyl Acetate	8.048	43	1399451	34.14	ppbv	95
17) c-1,2-Dichloroethene	8.904	96	305841	26.75	ppbv	86
18) 2-Butanone	8.606	72	145722	28.01	ppbv	49
19) t-Butyl Methyl Ether	7.363	73	886365	31.06	ppbv	83
20) Chloroform	9.137	83	743182	31.57	ppbv	95
21) 1,1,1-Trichloroethane	9.747	97	691843	31.59	ppbv	93
22) 1,1-Dichloropropene	9.977	75	417786	33.02	ppbv	94
23) Carbon Tetrachloride	10.137	117	525218	29.75	ppbv	97
25) Benzene	10.321	78	884662	24.29	ppbv	92
27) 1,2-Dichloroethane	10.219	62	626892	31.60	ppbv	97
28) Trichloroethene	11.206	130	368629	24.25	ppbv	87
29) 1,2-Dichloropropane	11.406	63	374566	28.72	ppbv	98
30) Bromodichloromethane	11.711	83	761931	30.05	ppbv	99
31) Dibromomethane	11.764	93	328259	24.96	ppbv #	87
32) c-1,3-Dichloropropene	12.492	75	501548	26.48	ppbv	90
33) 4-Methyl-2-Pentanone	12.213	43	807966	30.03	ppbv	88
35) Toluene	13.046	91	800824	25.02	ppbv	99
37) t-1,3-Dichloropropene	13.207	75	433945	26.95	ppbv	90
38) 1,1,2-Trichloroethane	13.449	97	325096	26.12	ppbv	95
39) 1,3-Dichloropropane	13.823	76	422931	26.64	ppbv #	90
40) Tetrachloroethene	14.079	166	435389	23.32	ppbv	86
41) 2-Hexanone	13.482	58	356117	29.20	ppbv	97

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 17:09:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

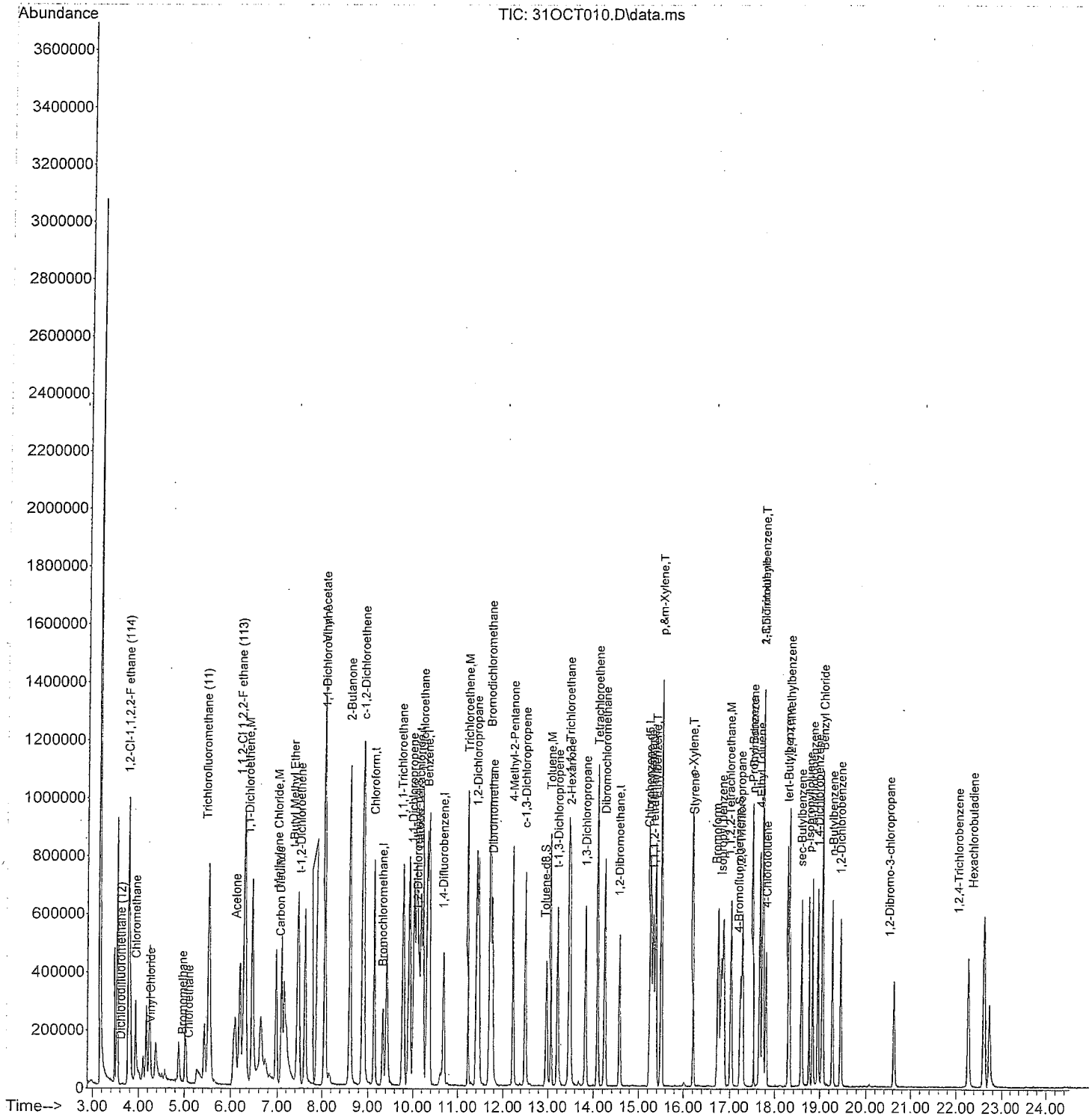
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
42) Dibromochloromethane	14.243	129	507750	27.79 ppbv	96
43) 1,2-Dibromoethane	14.558	107	476069	26.16 ppbv	92
44) Chlorobenzene	15.260	112	472441	25.48 ppbv	97
45) 1,1,1,2-Tetrachloroethane	15.315	131	210939	23.02 ppbv	97
46) Ethylbenzene	15.368	91	819860	22.91 ppbv	99
47) p,&m-Xylene	15.496	91	1095093	45.85 ppbv	98
48) o-Xylene	16.181	91	601068	24.83 ppbv	97
49) Styrene	16.204	104	331430	26.82 ppbv	95
50) Bromoform	16.699	173	449248	32.55 ppbv	93
51) Isopropyl benzene	16.814	105	597875	24.23 ppbv	94
52) 1,1,2,2-Tetrachloroethane	16.978	83	476746	26.73 ppbv	94
54) Benzyl Chloride	19.060	91	297170	22.01 ppbv	91
55) 1,2,3-Trichloropropane	17.227	110	120199	25.82 ppbv	92
56) n-Propyl Benzene	17.483	91	594461	24.35 ppbv	99
57) Bromobenzene	17.496	77	356230	27.35 ppbv	94
58) 4-Ethyl Toluene	17.663	105	669375	23.43 ppbv	94
59) 1,3,5-Trimethylbenzene	17.732	105	658451	18.84 ppbv	98
60) 2-Chlorotoluene	17.732	91	432902	18.56 ppbv	99
61) 4-Chlorotoluene	17.808	91	335861	18.37 ppbv	99
62) tert-Butylbenzene	18.254	119	544806	21.91 ppbv	98
63) 1,2,4-Trimethylbenzene	18.300	105	635152	19.36 ppbv	99
64) sec-Butylbenzene	18.552	105	513274	23.25 ppbv	98
65) p-Isopropyltoluene	18.736	119	412075	19.01 ppbv	97
66) 1,3-Dichlorobenzene	18.824	146	292857	22.47 ppbv	91
67) 1,4-Dichlorobenzene	18.952	146	281791	21.56 ppbv	97
68) n-Butylbenzene	19.280	91	449178	20.08 ppbv	99
69) 1,2-Dichlorobenzene	19.447	146	268017	20.75 ppbv	92
70) 1,2-Dibromo-3-chloropr...	20.513	157	116061	24.27 ppbv	91
71) 1,2,4-Trichlorobenzene	22.041	180	238096	15.75 ppbv	90
72) Hexachlorobutadiene	22.366	225	203496	16.60 ppbv	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 17:09:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 31 17:54:44 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.331	130	110875	10.00	ppbv	0.00
24) 1,4-Difluorobenzene	10.685	114	411044	10.00	ppbv	0.00
36) Chlorobenzene-d5	15.204	117	255405	10.00	ppbv	# 0.00
System Monitoring Compounds						
26) 1,2-Dichloroethane-d4	10.095	65	264348	12.42	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 124.20%			
34) Toluene-d8	12.935	98	383387	10.34	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 103.40%			
53) 4-Bromofluorobenzene	17.175	174	137597	10.69	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	3.516	85	2457986m	80.88	ppbv	
3) Chloromethane	3.913	50	1528790m	155.69	ppbv	
4) 1,2-Cl-1,1,2,2-F ethan...	3.766	85	2935554	104.55	ppbv	97
5) Vinyl Chloride	4.139	62	1407863m	147.73	ppbv	
6) Bromomethane	4.844	94	818795	213.05	ppbv	91
7) Chloroethane	5.002	66	256095m	122.89	ppbv	
8) Trichlorofluoromethane...	5.471	101	3789932	118.80	ppbv	98
9) 1,1-Dichloroethene	6.376	61	2608741	120.86	ppbv	94
10) Carbon Disulfide	7.068	76	2969790m	115.19	ppbv	
11) 1,1,2-Cl 1,2,2-F ethan...	6.215	151	1933165	99.15	ppbv	95
12) Acetone	6.110	43	2967833m	134.04	ppbv	
13) Methylene Chloride	7.009	84	1108314	109.58	ppbv	77
14) t-1,2-Dichloroethene	7.511	96	1093447	106.29	ppbv	81
15) 1,1-Dichloroethane	8.068	63	1874639	80.02	ppbv	95
16) Vinyl Acetate	8.052	43	4330829	95.07	ppbv	98
17) c-1,2-Dichloroethene	8.911	96	973481	76.63	ppbv	89
18) 2-Butanone	8.612	72	508879	88.03	ppbv	76
19) t-Butyl Methyl Ether	7.366	73	3511616	110.73	ppbv	80
20) Chloroform	9.150	83	2969454	113.51	ppbv	93
21) 1,1,1-Trichloroethane	9.760	97	2785123	114.46	ppbv	93
22) 1,1-Dichloropropene	9.990	75	1617111	115.02	ppbv	91
23) Carbon Tetrachloride	10.147	117	2319176	118.24	ppbv	98
25) Benzene	10.318	78	2289724	61.73	ppbv	92
27) 1,2-Dichloroethane	10.226	62	2108399	104.34	ppbv	95
28) Trichloroethene	11.213	130	1416188	91.47	ppbv	93
29) 1,2-Dichloropropane	11.413	63	1470228	110.68	ppbv	98
30) Bromodichloromethane	11.721	83	2902331	112.39	ppbv	98
31) Dibromomethane	11.767	93	1255825	93.75	ppbv	88
32) c-1,3-Dichloropropene	12.495	75	1834456	95.11	ppbv	87
33) 4-Methyl-2-Pentanone	12.210	43	2489927	90.86	ppbv	94
35) Toluene	13.043	91	2182009	66.92	ppbv	96
37) t-1,3-Dichloropropene	13.210	75	1184532	70.04	ppbv	91
38) 1,1,2-Trichloroethane	13.449	97	1225295	93.74	ppbv	96
39) 1,3-Dichloropropane	13.826	76	1634277m	98.02	ppbv	
40) Tetrachloroethene	14.079	166	1755776	89.53	ppbv	91
41) 2-Hexanone	13.479	58	1003666	78.35	ppbv	98

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 31 17:54:44 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

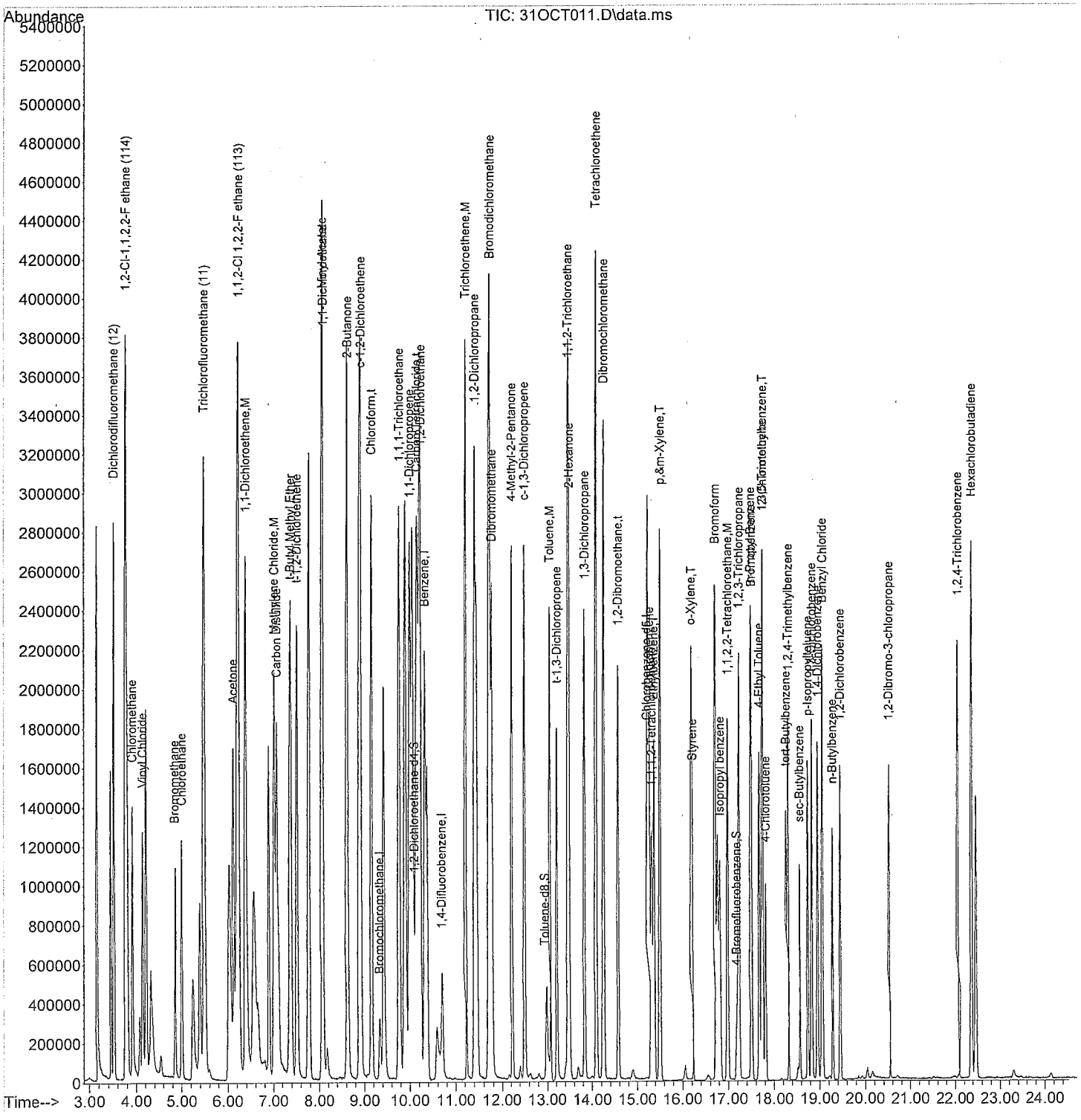
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	2214190	115.35	ppbv		95
43) 1,2-Dibromoethane	14.568	107	1988542	104.02	ppbv		100
44) Chlorobenzene	15.266	112	1267547	65.09	ppbv		95
45) 1,1,1,2-Tetrachloroethane	15.319	131	476095	49.47	ppbv		94
46) Ethylbenzene	15.368	91	1722398	45.81	ppbv		96
47) p,&m-Xylene	15.499	91	2224778	88.69	ppbv		95
48) o-Xylene	16.174	91	1515066	59.60	ppbv		100
49) Styrene	16.207	104	784774	60.45	ppbv		94
50) Bromoform	16.699	173	1897292	130.86	ppbv		94
51) Isopropyl benzene	16.811	105	1215146	46.88	ppbv		97
52) 1,1,2,2-Tetrachloroethane	16.981	83	1308695	69.86	ppbv		96
54) Benzyl Chloride	19.060	91	788568	55.59	ppbv		95
55) 1,2,3-Trichloropropane	17.224	110	439575	89.89	ppbv		90
56) n-Propyl Benzene	17.480	91	1710157	66.70	ppbv		99
57) Bromobenzene	17.493	77	829070	60.60	ppbv		78
58) 4-Ethyl Toluene	17.663	105	1422722	47.42	ppbv		98
59) 1,3,5-Trimethylbenzene	17.732	105	1342271	36.56	ppbv		97
60) 2-Chlorotoluene	17.735	91	898891	36.68	ppbv		93
61) 4-Chlorotoluene	17.808	91	760960	39.63	ppbv		87
62) tert-Butylbenzene	18.257	119	1011418	38.72	ppbv		90
63) 1,2,4-Trimethylbenzene	18.303	105	1284691	37.28	ppbv		94
64) sec-Butylbenzene	18.559	105	969197	41.80	ppbv		96
65) p-Isopropyltoluene	18.736	119	1078230	47.37	ppbv		96
66) 1,3-Dichlorobenzene	18.824	146	863635	63.09	ppbv		90
67) 1,4-Dichlorobenzene	18.955	146	781227	56.91	ppbv		91
68) n-Butylbenzene	19.277	91	863991	36.77	ppbv		98
69) 1,2-Dichlorobenzene	19.447	146	779330	57.45	ppbv		91
70) 1,2-Dibromo-3-chloropr...	20.510	157	543049	108.13	ppbv	#	83
71) 1,2,4-Trichlorobenzene	22.041	180	1161563	73.17	ppbv		85
72) Hexachlorobutadiene	22.356	225	951881	73.93	ppbv		96

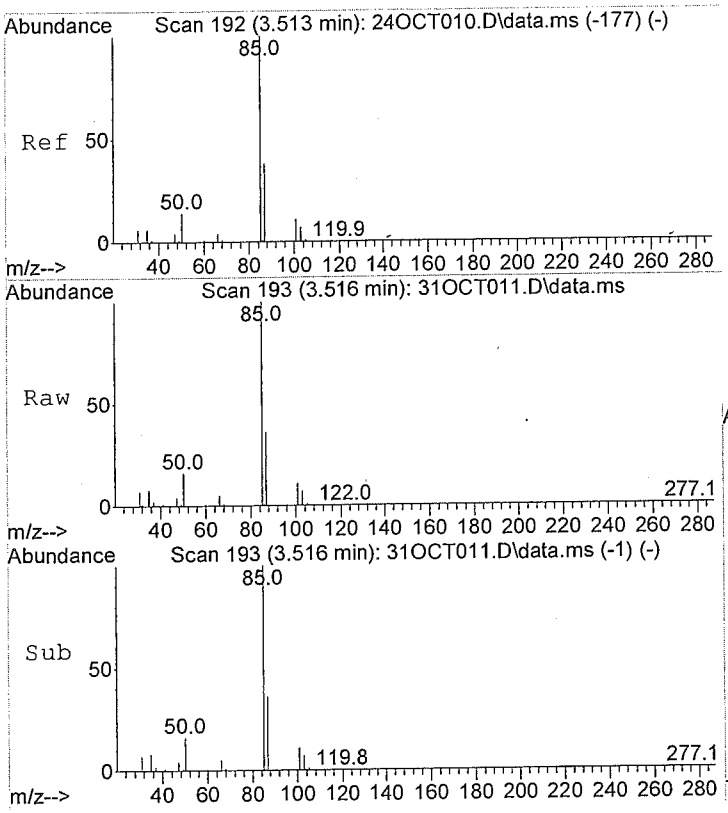
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 31 17:54:44 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

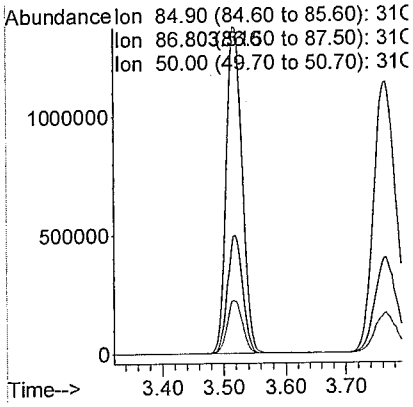




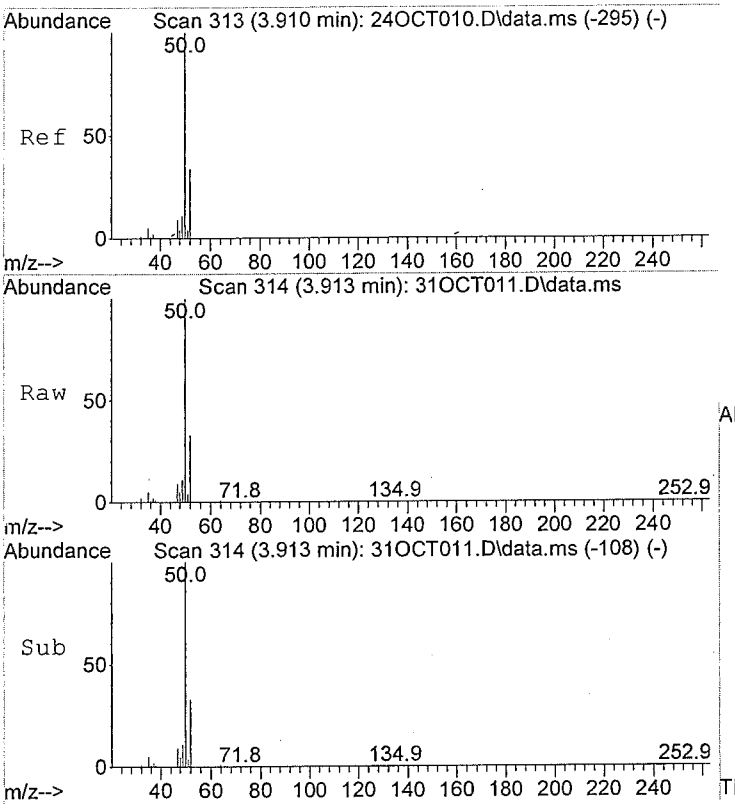
#2
Dichlorodifluoromethane (12)
Concen: 80.88 ppbv m
RT: 3.516 min Scan# 193
Delta R.T. -0.092 min
Lab File: 31OCT011.D
Acq: 31 Oct 2018 5:24 pm

Tgt Ion: 85 Resp: 2457986

Ion	Ratio	Lower	Upper
85	100		
87	35.9	0.0	83.5
50	16.2	0.0	63.3



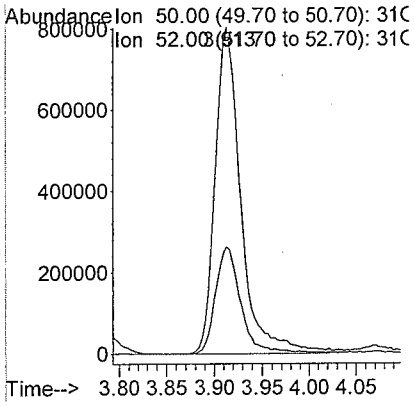
MI - 3
D 11/01/18



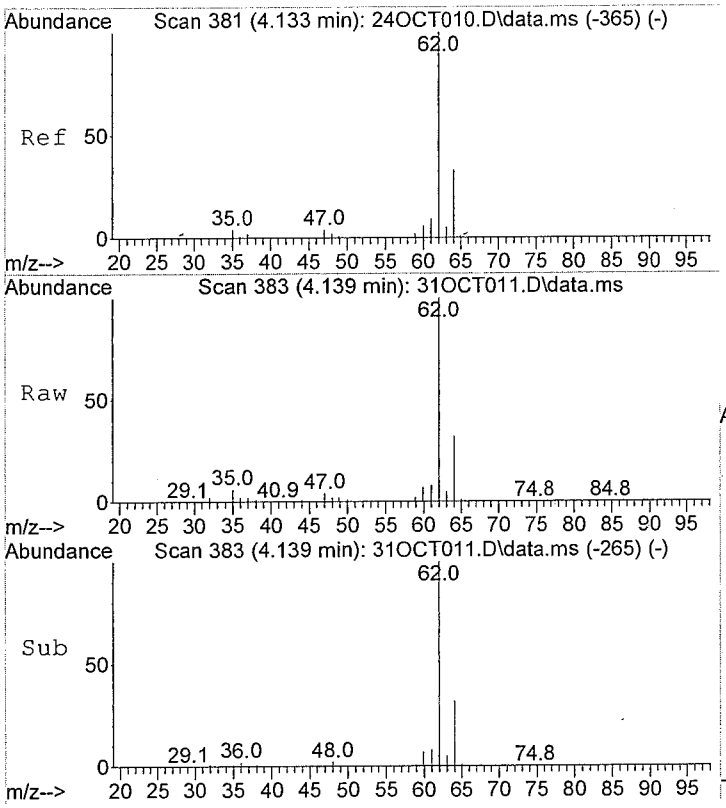
#3
Chloromethane
Concen: 155.69 ppbv m
RT: 3.913 min Scan# 314
Delta R.T. -0.125 min
Lab File: 31OCT011.D
Acq: 31 Oct 2018 5:24 pm

Tgt Ion: 50 Resp: 1528790

Ion	Ratio	Lower	Upper
50	100		
52	32.7	0.4	60.4



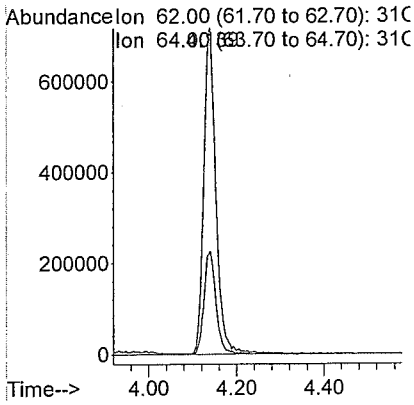
MT-3
11/01/18



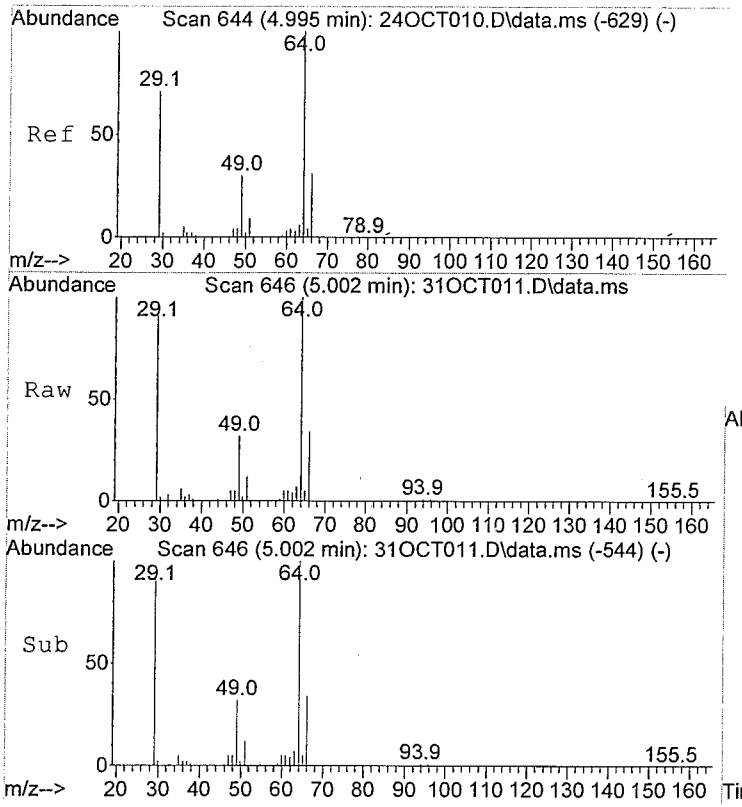
#5
Vinyl Chloride
Concen: 147.73 ppbv m
RT: 4.139 min Scan# 383
Delta R.T. -0.112 min
Lab File: 31OCT011.D
Acq: 31 Oct 2018 5:24 pm

Tgt Ion: 62 Resp: 1407863

Ion	Ratio	Lower	Upper
62	100		
64	31.6	0.0	80.9



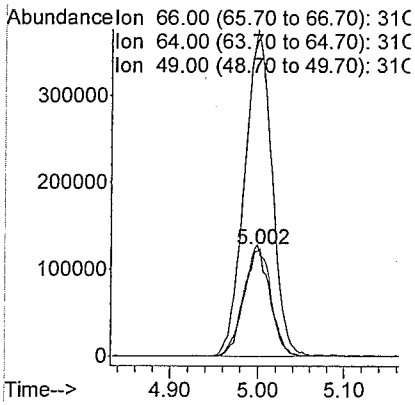
MI -3
D 11/01/18



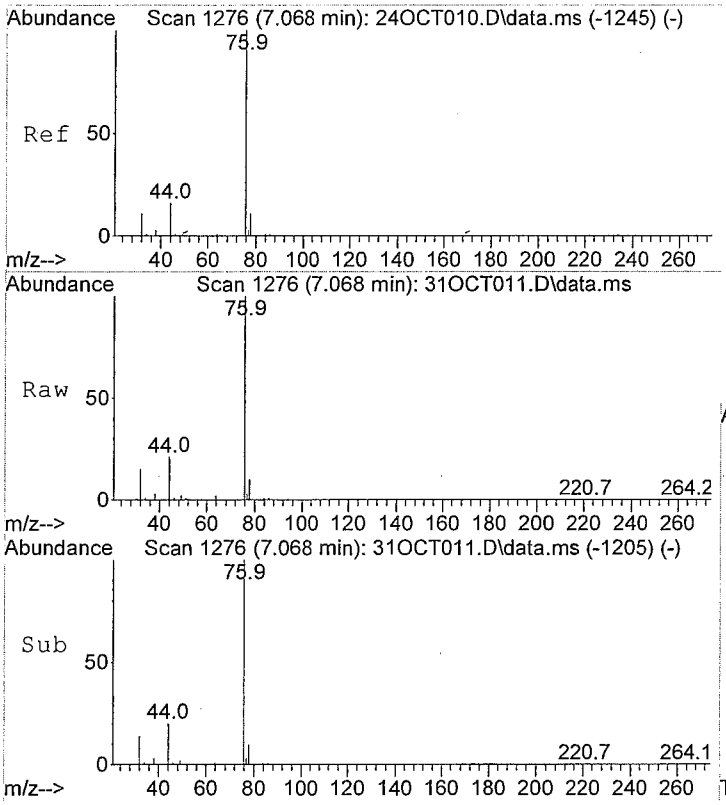
#7
Chloroethane
Concen: 122.89 ppbv m
RT: 5.002 min Scan# 646
Delta R.T. -0.066 min
Lab File: 31OCT011.D
Acq: 31 Oct 2018 5:24 pm

Tgt Ion: 66 Resp: 256095

Ion	Ratio	Lower	Upper
66	100		
64	290.8	157.9	257.9#
49	93.6	34.4	134.4



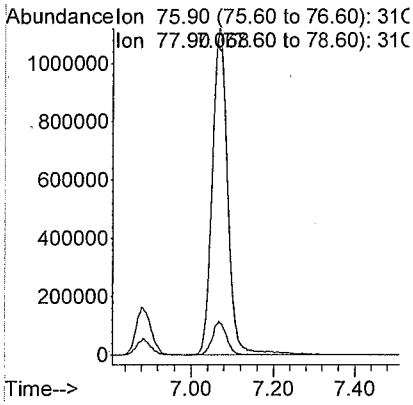
MI-3
D 11/01/18



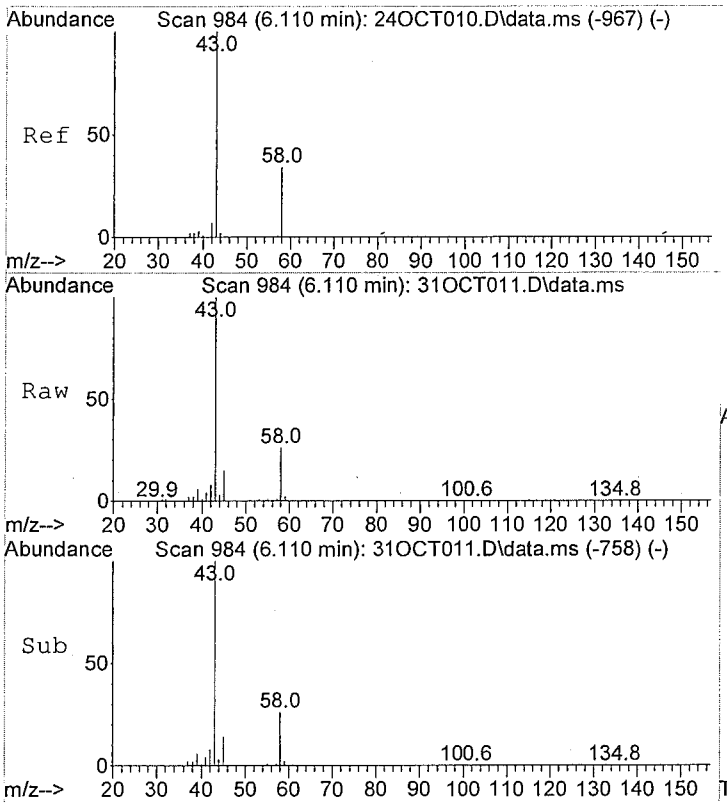
#10
Carbon Disulfide
Concen: 115.19 ppbv m
RT: 7.068 min Scan# 1276
Delta R.T. -0.066 min
Lab File: 31OCT011.D
Acq: 31 Oct 2018 5:24 pm

Tgt Ion: 76 Resp: 2969790

Ion	Ratio	Lower	Upper
76	100		
78	10.4	0.0	59.5



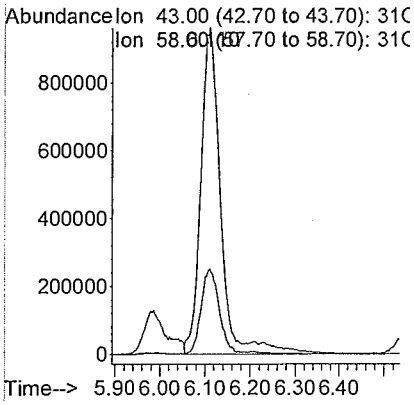
11/07/18



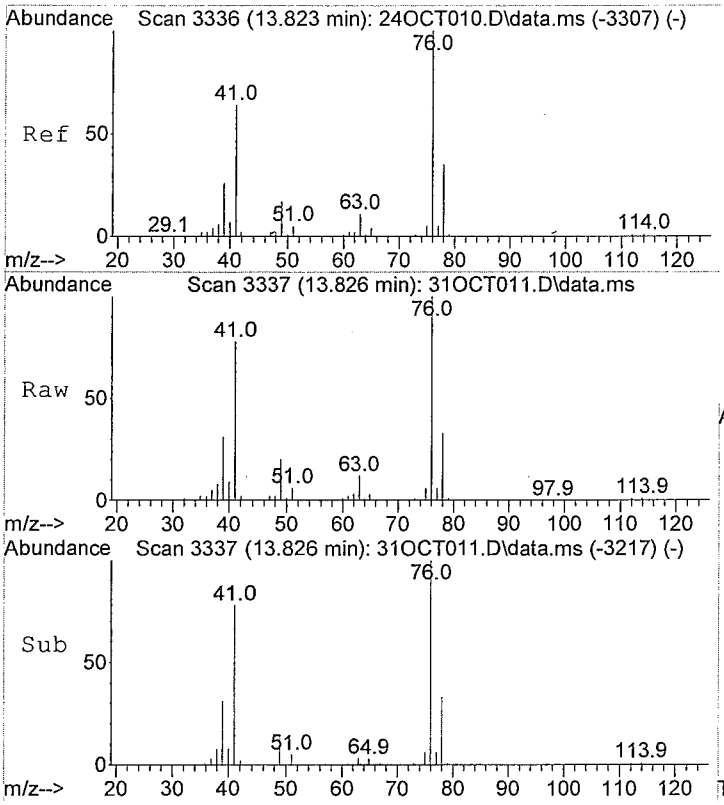
#12
Acetone
Concen: 134.04 ppbv m
RT: 6.110 min Scan# 984
Delta R.T. -0.059 min
Lab File: 31OCT011.D
Acq: 31 Oct 2018 5:24 pm

Tgt Ion: 43 Resp: 2967833

Ion	Ratio	Lower	Upper
43	100		
58	26.1	9.3	49.3



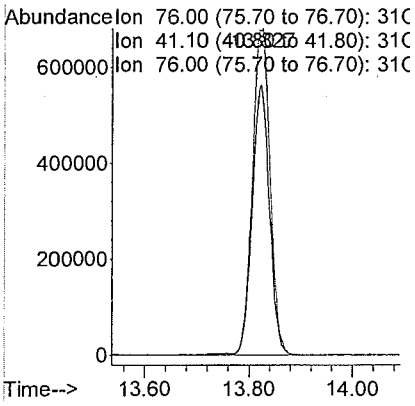
MI = 3
JS 11/01/18



#39
1,3-Dichloropropane
Concen: 98.02 ppbv m
RT: 13.826 min Scan# 3337
Delta R.T. -0.007 min
Lab File: 31OCT011.D
Acq: 31 Oct 2018 5:24 pm

Tgt Ion: 76 Resp: 1634277

Ion	Ratio	Lower	Upper
76	100		
41	77.9	38.5	71.5#
76	100.0	80.0	120.0



MC - 3
D - 11/01/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 01 10:31:30 2018
Quant Method : C:\msdchem\1\methods\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 17:20:30 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.331	130	110875	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.685	114	411044	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.204	117	255405	10.00	ppbv	#	0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.095	65	264348	12.42	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 124.20%				
34) Toluene-d8	12.935	98	383387	10.34	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 103.40%				
53) 4-Bromofluorobenzene	17.175	174	137597	10.69	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.651	85	2644	0.09	ppbv		45
3) Chloromethane	4.071	50	48954	4.99	ppbv		99
4) 1,2-Cl-1,1,2,2-F ethan...	3.766	85	2935554	104.55	ppbv		97
5) Vinyl Chloride	4.261	62	911	0.10	ppbv		97
6) Bromomethane	4.844	94	818795	213.05	ppbv		91
7) Chloroethane	5.087	66	558	0.27	ppbv	#	29
8) Trichlorofluoromethane...	5.471	101	3789932	118.80	ppbv		98
9) 1,1-Dichloroethene	6.376	61	2608741	120.86	ppbv		94
10) Carbon Disulfide	7.186	76	35810	1.39	ppbv		78
11) 1,1,2-Cl 1,2,2-F ethan...	6.215	151	1933165	99.15	ppbv		95
12) Acetone	6.209	43	165784	7.49	ppbv		77
13) Methylene Chloride	7.009	84	1108314	109.58	ppbv		77
14) t-1,2-Dichloroethene	7.511	96	1093447	106.29	ppbv		81
15) 1,1-Dichloroethane	8.068	63	1874639	80.02	ppbv		95
16) Vinyl Acetate	8.052	43	4330829	95.07	ppbv		98
17) c-1,2-Dichloroethene	8.911	96	973481	76.63	ppbv		89
18) 2-Butanone	8.612	72	508879	88.03	ppbv		76
19) t-Butyl Methyl Ether	7.366	73	3511616	110.73	ppbv		80
20) Chloroform	9.150	83	2969454	113.51	ppbv		93
21) 1,1,1-Trichloroethane	9.760	97	2785123	114.46	ppbv		93
22) 1,1-Dichloropropene	9.990	75	1617111	115.02	ppbv		91
23) Carbon Tetrachloride	10.147	117	2319176	118.24	ppbv		98
25) Benzene	10.318	78	2289724	61.73	ppbv		92
27) 1,2-Dichloroethane	10.226	62	2108399	104.34	ppbv		95
28) Trichloroethene	11.213	130	1416188	91.47	ppbv		93
29) 1,2-Dichloropropane	11.413	63	1470228	110.68	ppbv		98
30) Bromodichloromethane	11.721	83	2902331	112.39	ppbv		98
31) Dibromomethane	11.767	93	1255825	93.75	ppbv		88
32) c-1,3-Dichloropropene	12.495	75	1834456	95.11	ppbv		87
33) 4-Methyl-2-Pentanone	12.210	43	2489927	90.86	ppbv		94
35) Toluene	13.043	91	2182009	66.92	ppbv		96
37) t-1,3-Dichloropropene	13.210	75	1184532	70.04	ppbv		91
38) 1,1,2-Trichloroethane	13.449	97	1225295	93.74	ppbv		96
39) 1,3-Dichloropropane	13.997	76	695	0.04	ppbv		93
40) Tetrachloroethene	14.079	166	1755776	89.53	ppbv		91
41) 2-Hexanone	13.479	58	1003666	78.35	ppbv		98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 01 10:31:30 2018
Quant Method : C:\msdchem\1\methods\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 17:20:30 2018
Response via : Initial Calibration

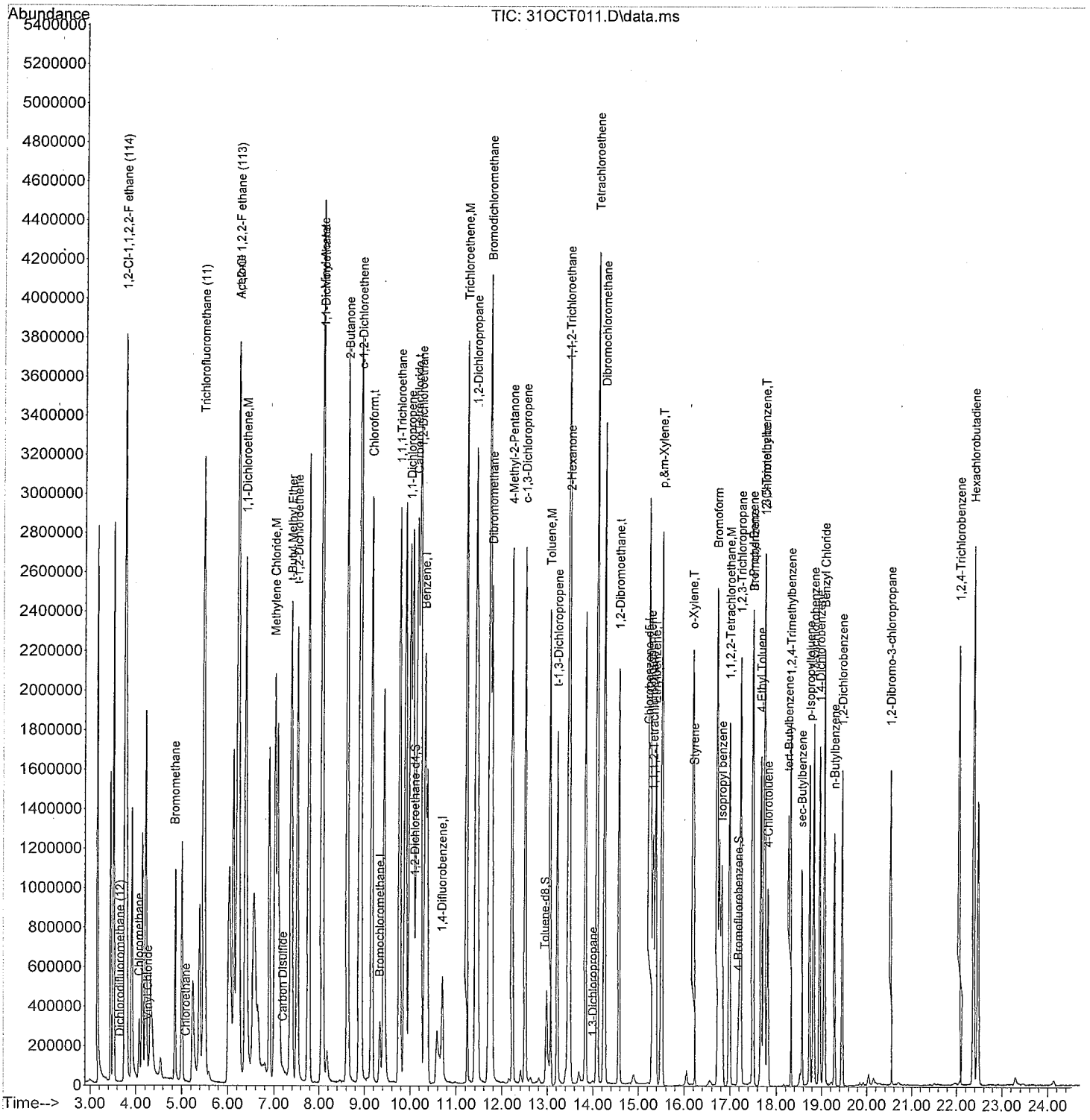
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.243	129	2214190	115.35	ppbv		95
43) 1,2-Dibromoethane	14.568	107	1988542	104.02	ppbv		100
44) Chlorobenzene	15.266	112	1267547	65.09	ppbv		95
45) 1,1,1,2-Tetrachloroethane	15.319	131	476095	49.47	ppbv		94
46) Ethylbenzene	15.368	91	1722398	45.81	ppbv		96
47) p,&m-Xylene	15.499	91	2224778	88.69	ppbv		95
48) o-Xylene	16.174	91	1515066	59.60	ppbv		100
49) Styrene	16.207	104	784774	60.45	ppbv		94
50) Bromoform	16.699	173	1897292	130.86	ppbv		94
51) Isopropyl benzene	16.811	105	1215146	46.88	ppbv		97
52) 1,1,2,2-Tetrachloroethane	16.981	83	1308695	69.86	ppbv		96
54) Benzyl Chloride	19.060	91	788568	55.59	ppbv		95
55) 1,2,3-Trichloropropane	17.224	110	439575	89.89	ppbv		90
56) n-Propyl Benzene	17.480	91	1710157	66.70	ppbv		99
57) Bromobenzene	17.493	77	829070	60.60	ppbv		78
58) 4-Ethyl Toluene	17.663	105	1422722	47.42	ppbv		98
59) 1,3,5-Trimethylbenzene	17.732	105	1342271	36.56	ppbv		97
60) 2-Chlorotoluene	17.735	91	898891	36.68	ppbv		93
61) 4-Chlorotoluene	17.808	91	760960	39.63	ppbv		87
62) tert-Butylbenzene	18.257	119	1011418	38.72	ppbv		90
63) 1,2,4-Trimethylbenzene	18.303	105	1284691	37.28	ppbv		94
64) sec-Butylbenzene	18.559	105	969197	41.80	ppbv		96
65) p-Isopropyltoluene	18.736	119	1078230	47.37	ppbv		96
66) 1,3-Dichlorobenzene	18.824	146	863635	63.09	ppbv		90
67) 1,4-Dichlorobenzene	18.955	146	781227	56.91	ppbv		91
68) n-Butylbenzene	19.277	91	863991	36.77	ppbv		98
69) 1,2-Dichlorobenzene	19.447	146	779330	57.45	ppbv		91
70) 1,2-Dibromo-3-chloropr...	20.510	157	543049	108.13	ppbv	#	83
71) 1,2,4-Trichlorobenzene	22.041	180	1161563	73.17	ppbv		85
72) Hexachlorobutadiene	22.356	225	951881	73.93	ppbv		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 01 10:31:30 2018
Quant Method : C:\msdchem\1\methods\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 17:20:30 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT012.D
Acq On : 31 Oct 2018 6:06 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 31 21:01:30 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.344	130	134357	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.695	114	360111	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.207	117	210492	10.00	ppbv	#	0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.108	65	231732	12.43	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 124.30%				
34) Toluene-d8	12.941	98	355911	10.96	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 109.60%				
53) 4-Bromofluorobenzene	17.178	174	93948	8.85	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 88.50%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.513	85	3497979m	94.98	ppbv		
3) Chloromethane	3.910	50	3955266m	332.40	ppbv		
4) 1,2-Cl-1,1,2,2-F ethan...	3.766	85	6259874m	183.98	ppbv		
5) Vinyl Chloride	4.136	62	3526342m	305.36	ppbv		
6) Bromomethane	4.851	94	1597949	343.12	ppbv		96
7) Chloroethane	5.008	66	668797	264.84	ppbv	#	48
8) Trichlorofluoromethane...	5.477	101	8247511	213.34	ppbv		90
9) 1,1-Dichloroethene	6.379	61	4834635	184.83	ppbv		95
10) Carbon Disulfide	7.074	76	5624239	180.02	ppbv		96
11) 1,1,2-Cl 1,2,2-F ethan...	6.219	151	4389416	185.78	ppbv		97
12) Acetone	6.120	43	5190854	193.46	ppbv		100
13) Methylene Chloride	7.019	84	2154693	175.81	ppbv		81
14) t-1,2-Dichloroethene	7.514	96	2004576	160.79	ppbv		87
15) 1,1-Dichloroethane	8.078	63	3145690	110.81	ppbv		95
16) Vinyl Acetate	8.058	43	7141135m	129.37	ppbv		
17) c-1,2-Dichloroethene	8.917	96	1694453	110.08	ppbv		91
18) 2-Butanone	8.609	72	793469m	113.27	ppbv		
19) t-Butyl Methyl Ether	7.379	73	6436929	167.50	ppbv		80
20) Chloroform	9.154	83	5535970	174.64	ppbv		90
21) 1,1,1-Trichloroethane	9.770	97	7485670	253.88	ppbv		85
22) 1,1-Dichloropropene	9.993	75	3001476	176.18	ppbv		91
23) Carbon Tetrachloride	10.154	117	4734063	199.18	ppbv		98
25) Benzene	10.328	78	3629563	111.70	ppbv		94
27) 1,2-Dichloroethane	10.236	62	3161895	178.60	ppbv		94
28) Trichloroethene	11.216	130	2633752	194.18	ppbv		91
29) 1,2-Dichloropropane	11.416	63	2740709	235.51	ppbv		97
30) Bromodichloromethane	11.724	83	4702404	207.85	ppbv		95
31) Dibromomethane	11.774	93	1773802	151.15	ppbv	#	78
32) c-1,3-Dichloropropene	12.498	75	3073939	181.92	ppbv		90
33) 4-Methyl-2-Pentanone	12.207	43	3466903	144.40	ppbv		95
35) Toluene	13.049	91	3558608	124.58	ppbv		98
37) t-1,3-Dichloropropene	13.213	75	1970028	141.34	ppbv		93
38) 1,1,2-Trichloroethane	13.456	97	1639086	152.15	ppbv		97
39) 1,3-Dichloropropane	13.827	76	2220833m	161.62	ppbv		
40) Tetrachloroethene	14.082	166	2903277	179.64	ppbv		91
41) 2-Hexanone	13.485	58	1685824	159.69	ppbv		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT012.D
Acq On : 31 Oct 2018 6:06 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 31 21:01:30 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

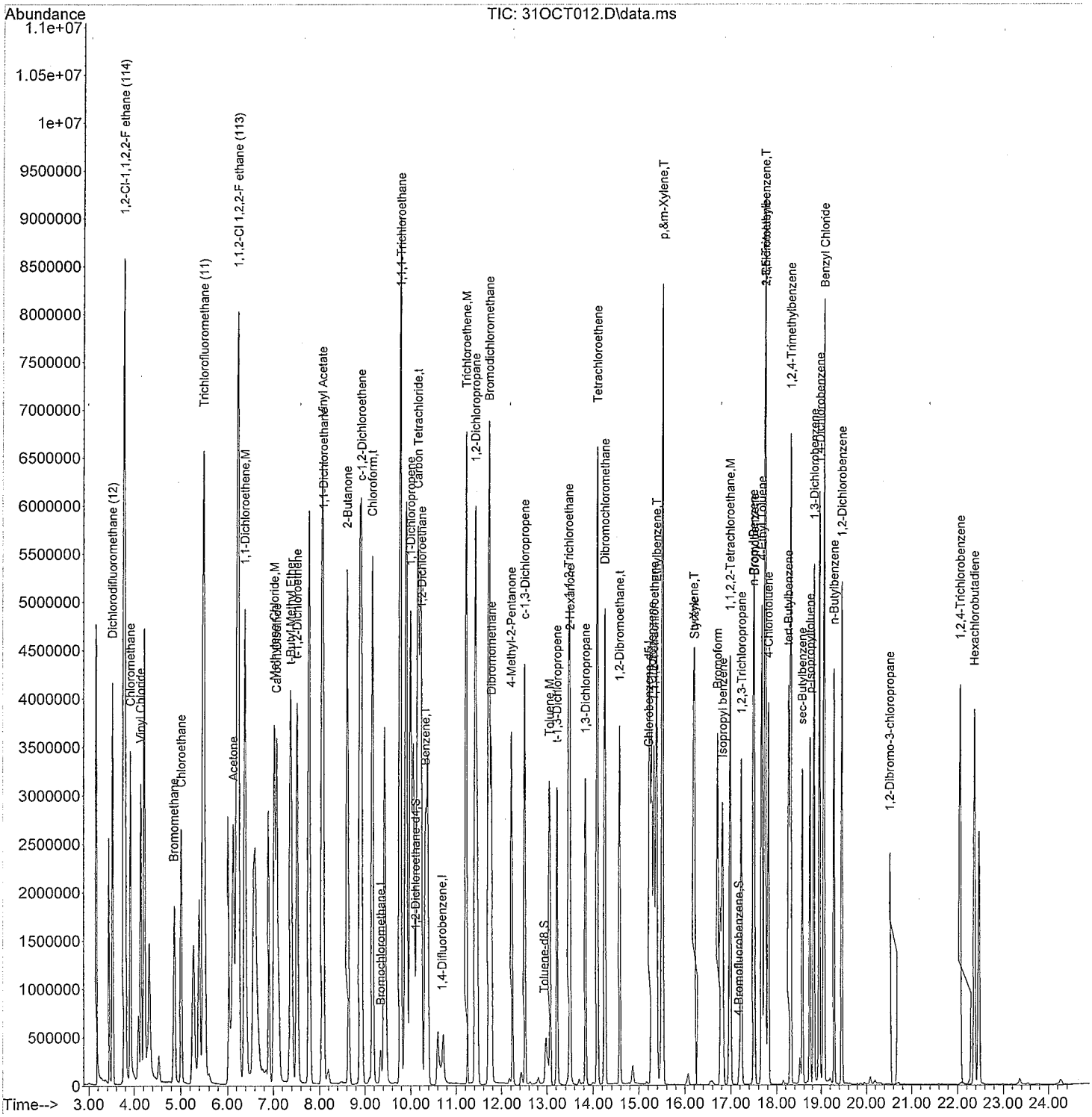
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.246	129	3272006	206.83	ppbv		96
43) 1,2-Dibromoethane	14.568	107	3469860	220.23	ppbv		98
44) Chlorobenzene	15.269	112	2523966	157.27	ppbv		96
45) 1,1,1,2-Tetrachloroethane	15.322	131	1266840	159.72	ppbv		95
46) Ethylbenzene	15.374	91	4594667	148.29	ppbv		91
47) p,&m-Xylene	15.506	91	6379669	308.58	ppbv		88
48) o-Xylene	16.188	91	2782143	132.79	ppbv		92
49) Styrene	16.207	104	1923721	179.79	ppbv		98
50) Bromoform	16.702	173	2661406	222.74	ppbv		94
51) Isopropyl benzene	16.817	105	3043268	142.47	ppbv		96
52) 1,1,2,2-Tetrachloroethane	16.981	83	2987954	193.53	ppbv		93
54) Benzyl Chloride	19.064	91	3107574	265.83	ppbv		92
55) 1,2,3-Trichloropropane	17.230	110	695354	172.53	ppbv		92
56) n-Propyl Benzene	17.486	91	3418022	161.76	ppbv		99
57) Bromobenzene	17.506	77	2048680	181.71	ppbv	#	69
58) 4-Ethyl Toluene	17.667	105	4156724	168.10	ppbv		96
59) 1,3,5-Trimethylbenzene	17.735	105	4332585	143.21	ppbv		97
60) 2-Chlorotoluene	17.742	91	3090409	153.02	ppbv		91
61) 4-Chlorotoluene	17.811	91	2817316	178.03	ppbv		89
62) tert-Butylbenzene	18.257	119	3034190	140.95	ppbv		94
63) 1,2,4-Trimethylbenzene	18.306	105	4527578	159.43	ppbv		93
64) sec-Butylbenzene	18.559	105	2729735	142.83	ppbv		96
65) p-Isopropyltoluene	18.739	119	2392291	127.52	ppbv		93
66) 1,3-Dichlorobenzene	18.831	146	2312305	204.97	ppbv		92
67) 1,4-Dichlorobenzene	18.959	146	2538540	224.38	ppbv		97
68) n-Butylbenzene	19.280	91	2818812	145.56	ppbv		98
69) 1,2-Dichlorobenzene	19.451	146	2369515	211.96	ppbv		94
70) 1,2-Dibromo-3-chloropr...	20.510	157	860767	207.96	ppbv	#	80
71) 1,2,4-Trichlorobenzene	22.044	180	2170848	165.93	ppbv		87
72) Hexachlorobutadiene	22.356	225	1417609	133.59	ppbv		97

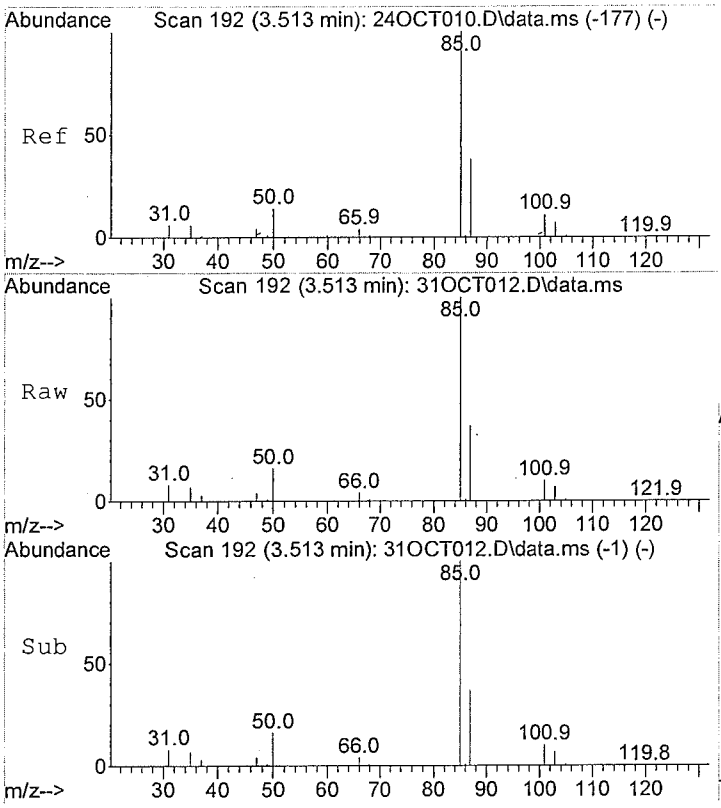
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT012.D
Acq On : 31 Oct 2018 6:06 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 31 21:01:30 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181024.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Wed Oct 31 13:33:01 2018
Response via : Initial Calibration

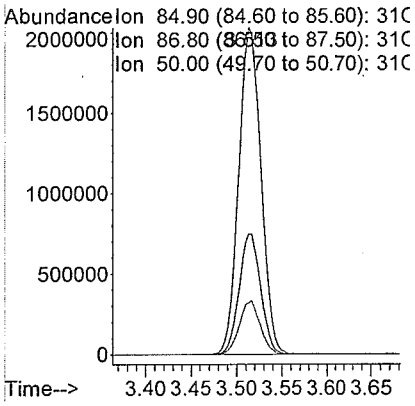




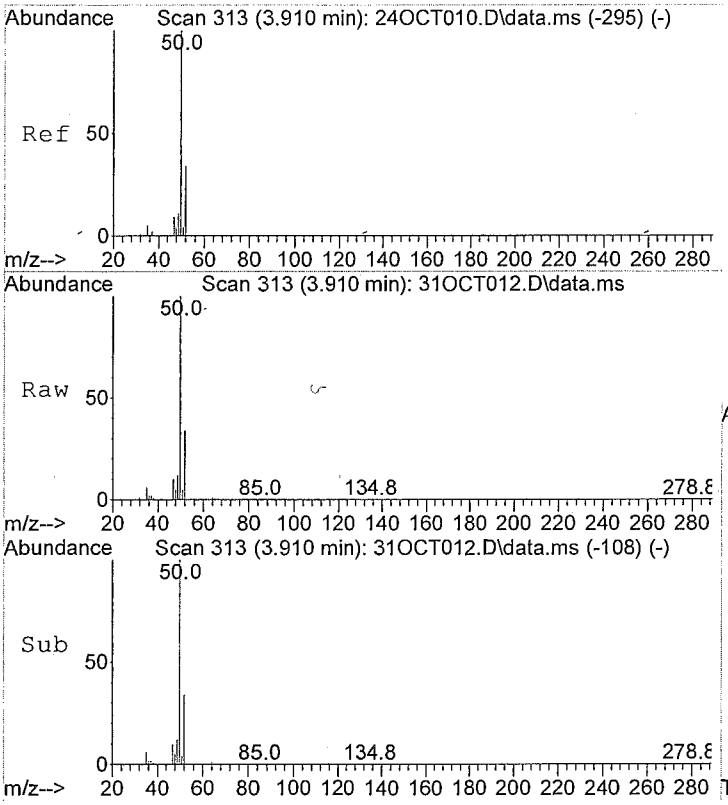
#2
Dichlorodifluoromethane (12)
Concen: 94.98 ppbv m
RT: 3.513 min Scan# 192
Delta R.T. -0.095 min
Lab File: 31OCT012.D
Acq: 31 Oct 2018 6:06 pm

Tgt Ion: 85 Resp: 3497979

Ion	Ratio	Lower	Upper
85	100		
87	36.9	0.0	83.5
50	15.9	0.0	63.3



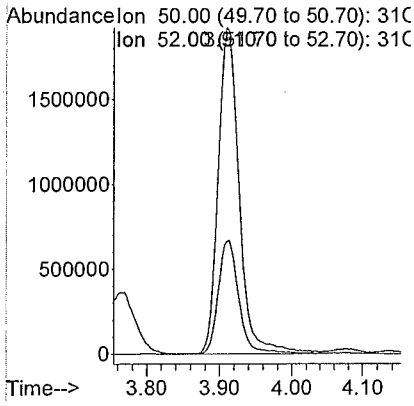
MI - 3
D 11/01/18



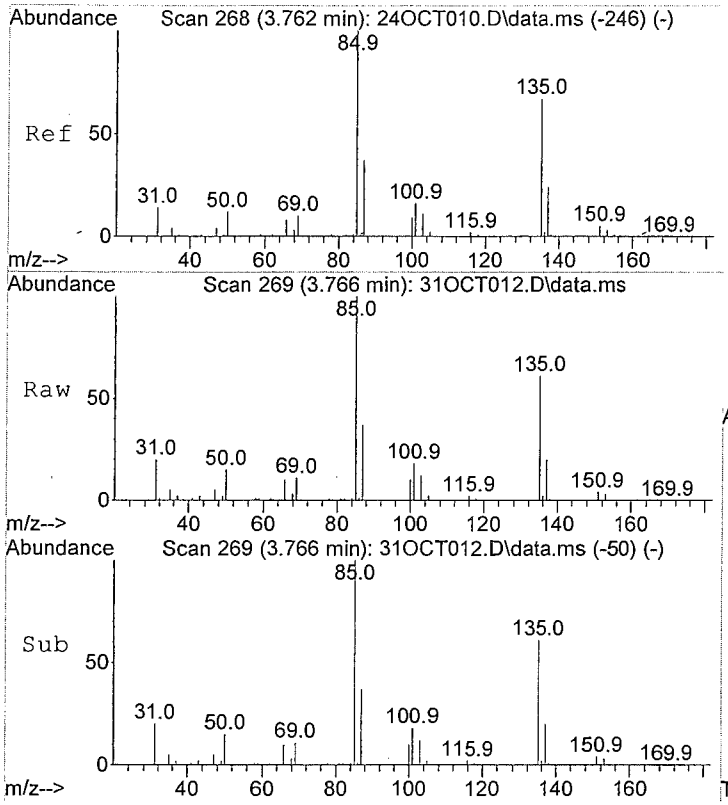
#3
Chloromethane
Concen: 332.40 ppbv m
RT: 3.910 min Scan# 313
Delta R.T. -0.128 min
Lab File: 31OCT012.D
Acq: 31 Oct 2018 6:06 pm

Tgt Ion: 50 Resp: 3955266

Ion	Ratio	Lower	Upper
50	100		
52	34.4	0.4	60.4



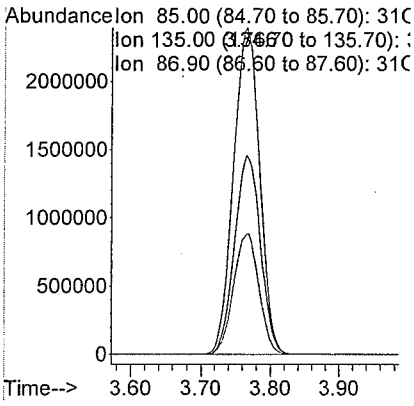
MI-3
JT 11/01/18



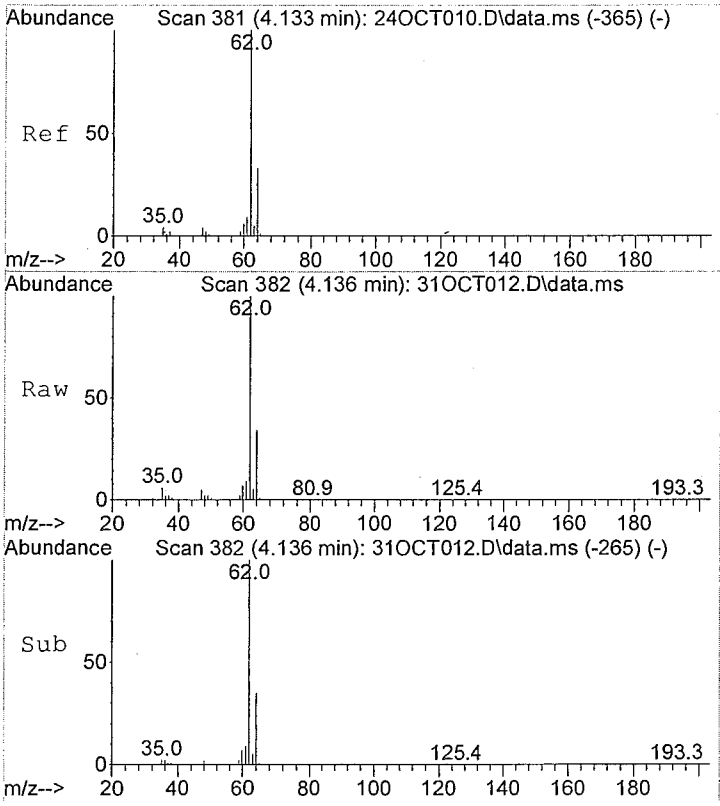
#4
1,2-Cl-1,1,2,2-F ethane (114)
Concen: 183.98 ppbv m
RT: 3.766 min Scan# 269
Delta R.T. -0.082 min
Lab File: 31OCT012.D
Acq: 31 Oct 2018 6:06 pm

Tgt Ion: 85 Resp: 6259874

Ion	Ratio	Lower	Upper
85	100		
135	60.9	4.9	104.9
87	36.7	0.0	82.3



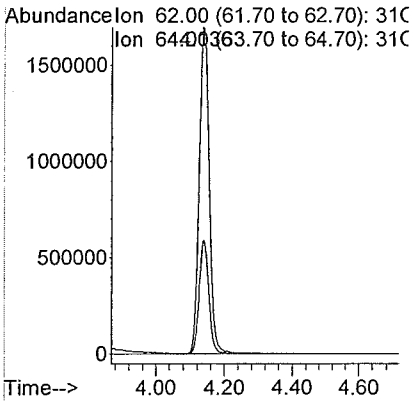
MI-3
JS 11/01/18



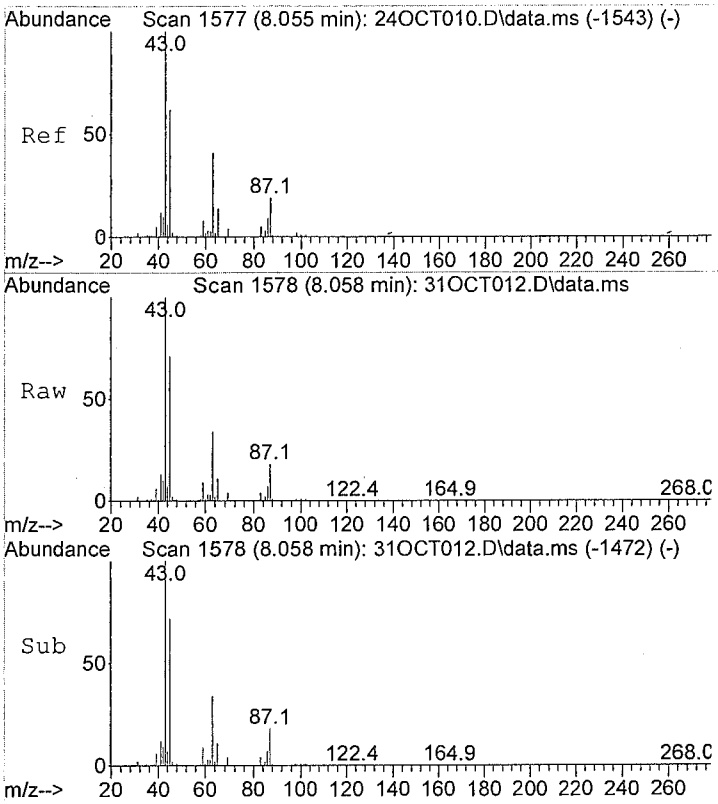
#5
Vinyl Chloride
Concen: 305.36 ppbv m
RT: 4.136 min Scan# 382
Delta R.T. -0.115 min
Lab File: 31OCT012.D
Acq: 31 Oct 2018 6:06 pm

Tgt Ion: 62 Resp: 3526342

Ion	Ratio	Lower	Upper
62	100		
64	34.3	0.0	80.9



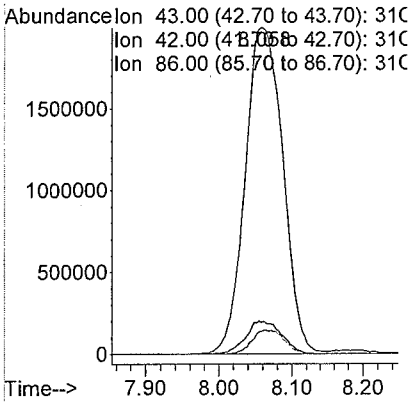
ME-3
D- 11/01/18



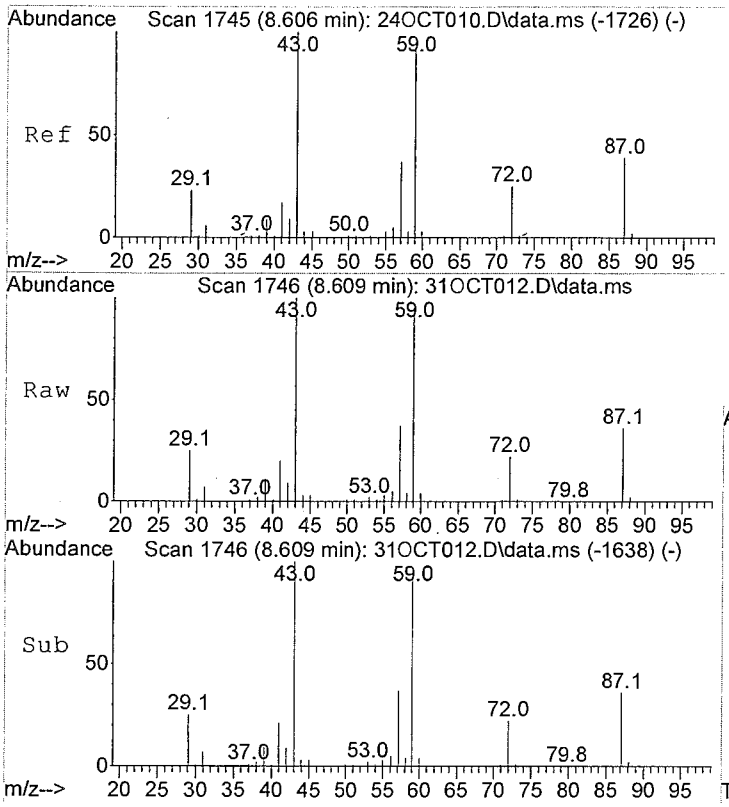
#16
Vinyl Acetate
Concen: 129.37 ppbv m
RT: 8.058 min Scan# 1578
Delta R.T. -0.052 min
Lab File: 31OCT012.D
Acq: 31 Oct 2018 6:06 pm

Tgt Ion: 43 Resp: 7141135

Ion	Ratio	Lower	Upper
43	100		
42	9.6	0.0	59.8
86	7.0	0.0	57.5



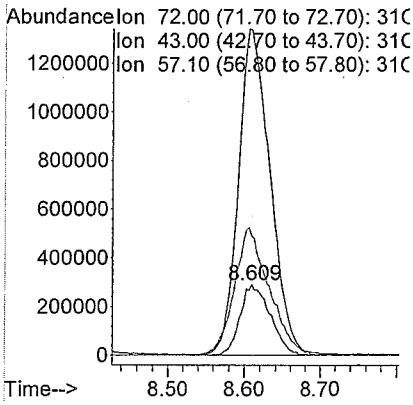
ME-3
D 11/01/18



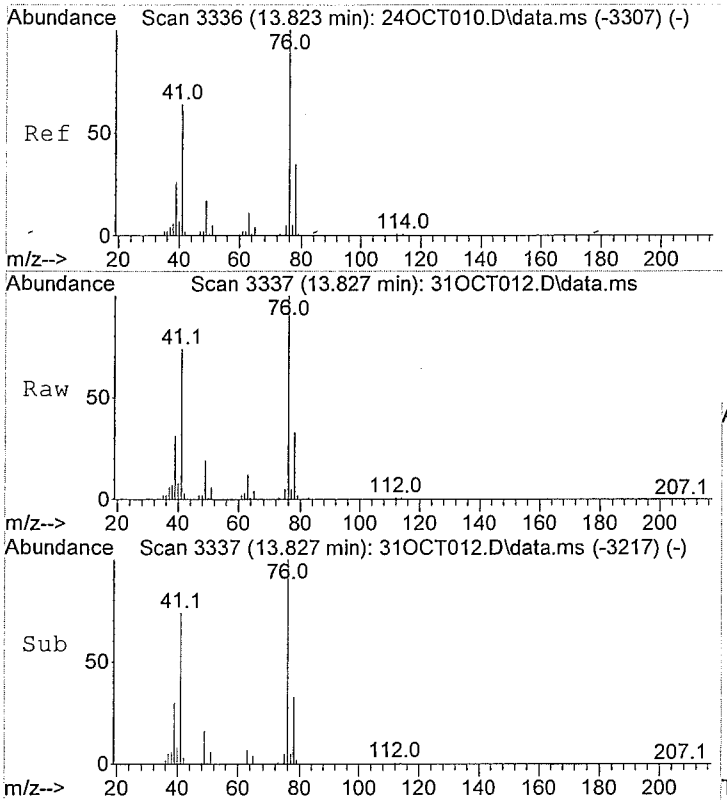
#18
2-Butanone
Concen: 113.27 ppbv m
RT: 8.609 min Scan# 1746
Delta R.T. -0.046 min
Lab File: 31OCT012.D
Acq: 31 Oct 2018 6:06 pm

Tgt Ion: 72 Resp: 793469

Ion	Ratio	Lower	Upper
72	100		
43	461.8	0.0	1397.7
57	169.5	47.5	247.5



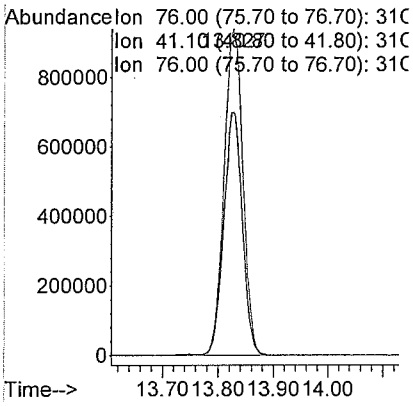
ME-3
D- 11/01/18



#39
1,3-Dichloropropane
Concen: 161.62 ppbv m
RT: 13.827 min Scan# 3337
Delta R.T. -0.007 min
Lab File: 31OCT012.D
Acq: 31 Oct 2018 6:06 pm

Tgt Ion: 76 Resp: 2220833

Ion	Ratio	Lower	Upper
76	100		
41	74.3	38.5	71.5#
76	100.0	80.0	120.0



MT -3
JS - 11/01/18

Response Factor Report ms2

Method Path : C:\msdchem\1\methods\
Method File : AL181031.M
Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
Last Update : Fri Nov 02 18:25:44 2018
Response Via : Initial Calibration

Calibration Files
1 =31OCT005.D 2.5 =31OCT006.D 5 =31OCT007.D 7 =31OCT008.D 10 =31OCT009.D 25 =31OCT010.D 100 =31OCT011.D
250 =31OCT012.D

		Compound	1	2.5	5	7	10	25	100	250	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------									
2)		Propene	1.364	1.234	1.271	0.986	1.023	0.888	0.666		1.062	23.04
3)		isobutane	0.695	0.646	0.687	0.570	0.527	0.524	0.511	0.388	0.569	18.28
4)		1,3-Butadiene	0.880	0.808	1.016	1.019	0.995	0.957	0.958	0.789	0.928	9.82
5)		Methanol	0.335	0.214	0.002	0.237	0.238	0.210	0.157	0.075	0.183	56.73
6)		Acetaldehyde		1.094	0.932	0.793	0.534	0.370			0.745	39.38
7)		Ethanol	0.784	0.882	0.873	0.549	0.540	0.520	0.436	0.486	0.634	28.67
8)		Vinyl Bromide	0.877	0.706	0.820	0.696	0.726	0.704	0.721	0.554	0.725	13.10
9)		Isopropanol	3.002	2.964	3.097	2.700	2.769	1.644	1.960	1.489	2.453	26.53
10)		Acrolein	0.788	0.773	0.823	0.634	0.626	0.498	0.500		0.663	20.33
11)		t-Butanol	2.369	2.584	2.724	2.465	2.460	2.316	2.419	1.773	2.389	11.71
12)		Allyl Chloride	1.526	1.531	1.711	1.536	1.530	1.497	1.274	0.723	1.416	21.46
13)		Acrylonitrile		1.288	1.371	1.105	1.147	0.977	0.744		1.105	20.33
14)		t-Butyl methyl...	4.032	4.071	4.329	3.783	3.862	3.553	3.152	1.916	3.587	21.28
15)		n-Hexane	2.124	2.334	2.425	2.203	2.232	2.052	1.869	1.255	2.062	17.84
16)		Isopropyl ether	4.784	4.886	5.145	4.300	4.284	3.887	2.998		4.326	16.75
17)		t-Butyl ethyl ...	1.416	1.509	1.593	1.335	1.261	1.198	0.940		1.322	16.42
18)		Ethyl Acetate	0.272	0.309	0.341	0.322	0.308	0.313	0.296	0.192	0.294	15.50
19)		2,2-Dichloropr...	1.525	1.504	1.724	1.593	1.655	1.562	1.281	0.743	1.448	21.62
20)		Tetrahydrofuran	0.756	0.795	0.714	0.638	0.641	0.631	0.596	0.414	0.648	17.99
21)		Cyclohexane	2.760	2.637	2.816	2.451	2.536	2.323	2.047	1.423	2.374	19.24
22)		2,2,4-Trimethy...	6.448	6.500	6.540	5.631	5.531	4.898	3.961		5.644	17.09
23)	I	1,4-Difluorobenzene	----------ISTD----------									
24)	S	1,2-Dichloroet...	0.613	0.617	0.618	0.616	0.636	0.645	0.644	0.649	0.630	2.37
25)		t-Amyl methyl ...	0.707	0.685	0.704	0.637	0.662	0.633	0.605	0.472	0.638	11.92
26)		Heptane	0.305	0.279	0.263	0.282	0.284	0.245	0.122		0.254	24.05
27)		1,4-Dioxane	0.219	0.212	0.219	0.229	0.246	0.231	0.250	0.209	0.227	6.60
28)		2-chloroethylv...			0.001	0.000	0.000	0.000	0.000	0.000	0.000	31.31
29)	S	Toluene-d8	0.920	0.907	0.929	0.916	0.901	0.900	0.934	0.988	0.924	3.10
30)		Chlorobenzene-d5	----------ISTD----------									
31)		Cyclohexanone			0.396	0.451	0.472	0.457	0.300	0.227	0.384	25.93
32)	S	4-Bromofluorob...	0.676	0.713	0.655	0.703	0.706	0.723	0.641	0.511	0.666	10.37
33)		Dicyclopentadiene	0.013	0.014	0.017	0.010	0.013	0.009	0.008	0.009	0.012	28.07
34)		Naphthalene	0.724	0.743	0.744	0.605	0.652	0.599	0.625	0.561	0.657	10.90
35)		1,2,3-Trichlor...	0.317	0.419	0.415	0.381	0.386	0.392	0.454	0.412	0.397	10.05

Method Path : C:\msdchem\1\methods\
Method File : AL181031.M
Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm

(#) = Out of Range

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:17:54 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

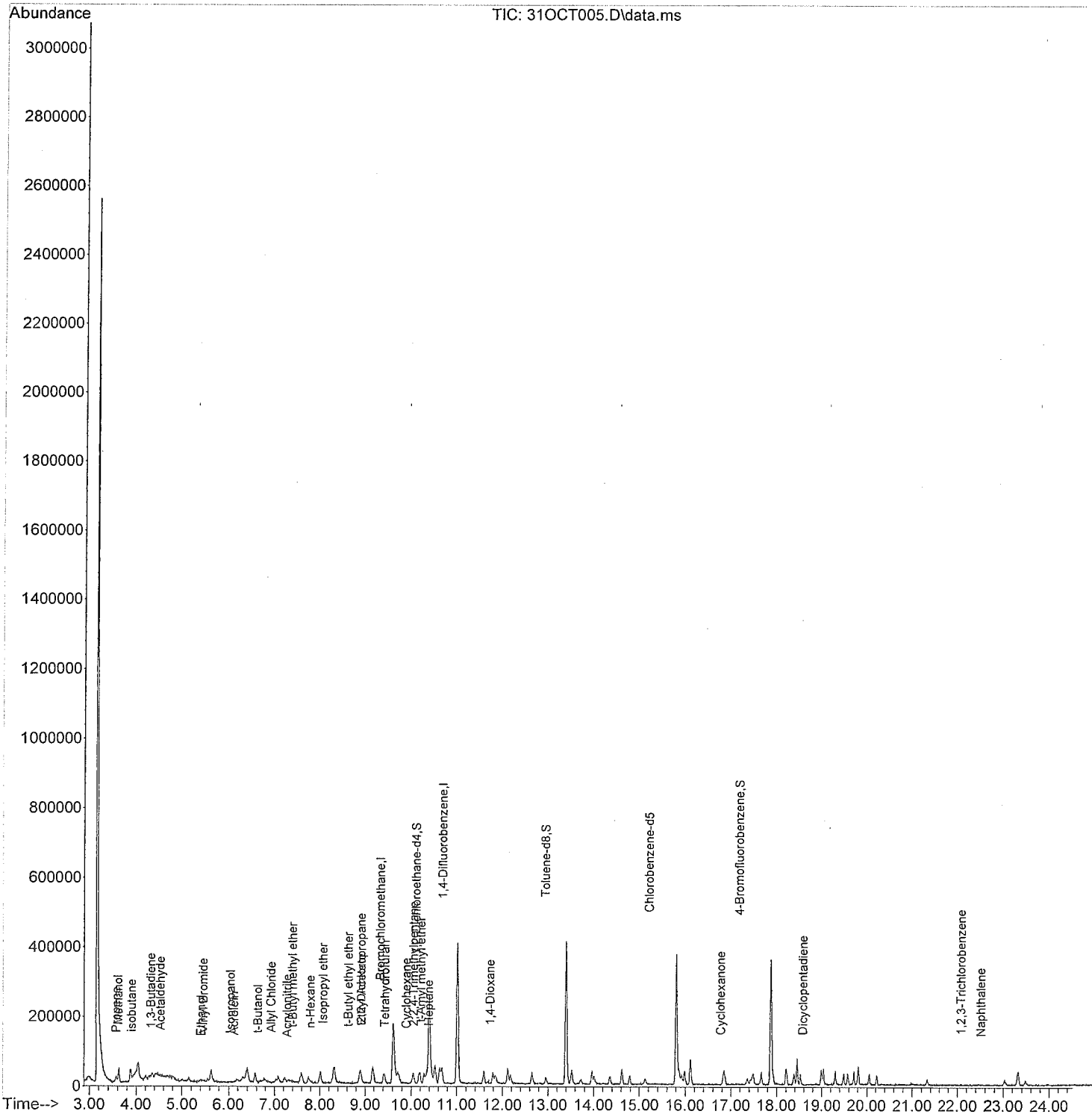
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Bromochloromethane		9.334	130	86546	10.00	ppbv	# 0.02
23) 1,4-Difluorobenzene		10.688	114	382579	10.00	ppbv	0.01
30) Chlorobenzene-d5		15.210	117	245211	10.00	ppbv	0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4		10.098	65	234701	11.11	ppbv	0.02
Spiked Amount	10.000	Range 80 - 120		Recovery = 111.10%			
29) Toluene-d8		12.934	98	352125	9.10	ppbv	0.00
Spiked Amount	10.000	Range 80 - 120		Recovery = 91.00%			
32) 4-Bromofluorobenzene		17.178	95	165834	7.75	ppbv	0.00
Spiked Amount	10.000	Range 80 - 120		Recovery = 77.50%#			
Target Compounds							Qvalue
2) Propene		3.566	41	11801	1.08	ppbv	93
3) isobutane		3.897	41	6019	1.07	ppbv #	1
4) 1,3-Butadiene		4.323	54	7617	1.19	ppbv	88
5) Methanol		3.608	31	2901	1.30	ppbv #	1
6) Acetaldehyde		4.530	43	16202m	3.55	ppbv	
7) Ethanol		5.405	45	6783m	1.46	ppbv	
8) Vinyl Bromide		5.451	106	7592m	1.34	ppbv	
9) Isopropanol		6.035	45	25981m	1.20	ppbv	
10) Acrolein		6.107	56	6819m	1.54	ppbv	
11) t-Butanol		6.628	59	20507m	1.24	ppbv	
12) Allyl Chloride		6.924	41	13206	1.18	ppbv #	80
13) Acrylonitrile		7.274	53	8593m	1.01	ppbv	
14) t-Butyl methyl ether		7.392	73	34896	1.25	ppbv #	81
15) n-Hexane		7.789	57	18380	1.06	ppbv #	79
16) Isopropyl ether		8.071	45	41402m	1.23	ppbv	
17) t-Butyl ethyl ether		8.622	87	12255	1.38	ppbv #	50
18) Ethyl Acetate		8.917	70	2357m	0.84	ppbv	
19) 2,2-Dichloropropane		8.911	77	13195	0.87	ppbv #	59
20) Tetrahydrofuran		9.435	72	6543	1.15	ppbv #	50
21) Cyclohexane		9.891	56	23889	1.29	ppbv #	52
22) 2,2,4-Trimethylpentane		10.045	57	55801	1.06	ppbv	95
25) t-Amyl methyl ether		10.213	73	27050	1.36	ppbv	94
26) Heptane		10.383	71	11666	0.99	ppbv #	63
27) 1,4-Dioxane		11.728	88	8396	1.11	ppbv #	57
31) Cyclohexanone		16.768	55	9147	1.20	ppbv #	87
33) Dicyclopentadiene		18.578	66	326	0.62	ppbv	97
34) Naphthalene		22.507	128	17765m	0.77	ppbv	
35) 1,2,3-Trichlorobenzene		22.077	180	7763	0.73	ppbv #	63

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:17:54 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT006.D
Acq On : 31 Oct 2018 2:03 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

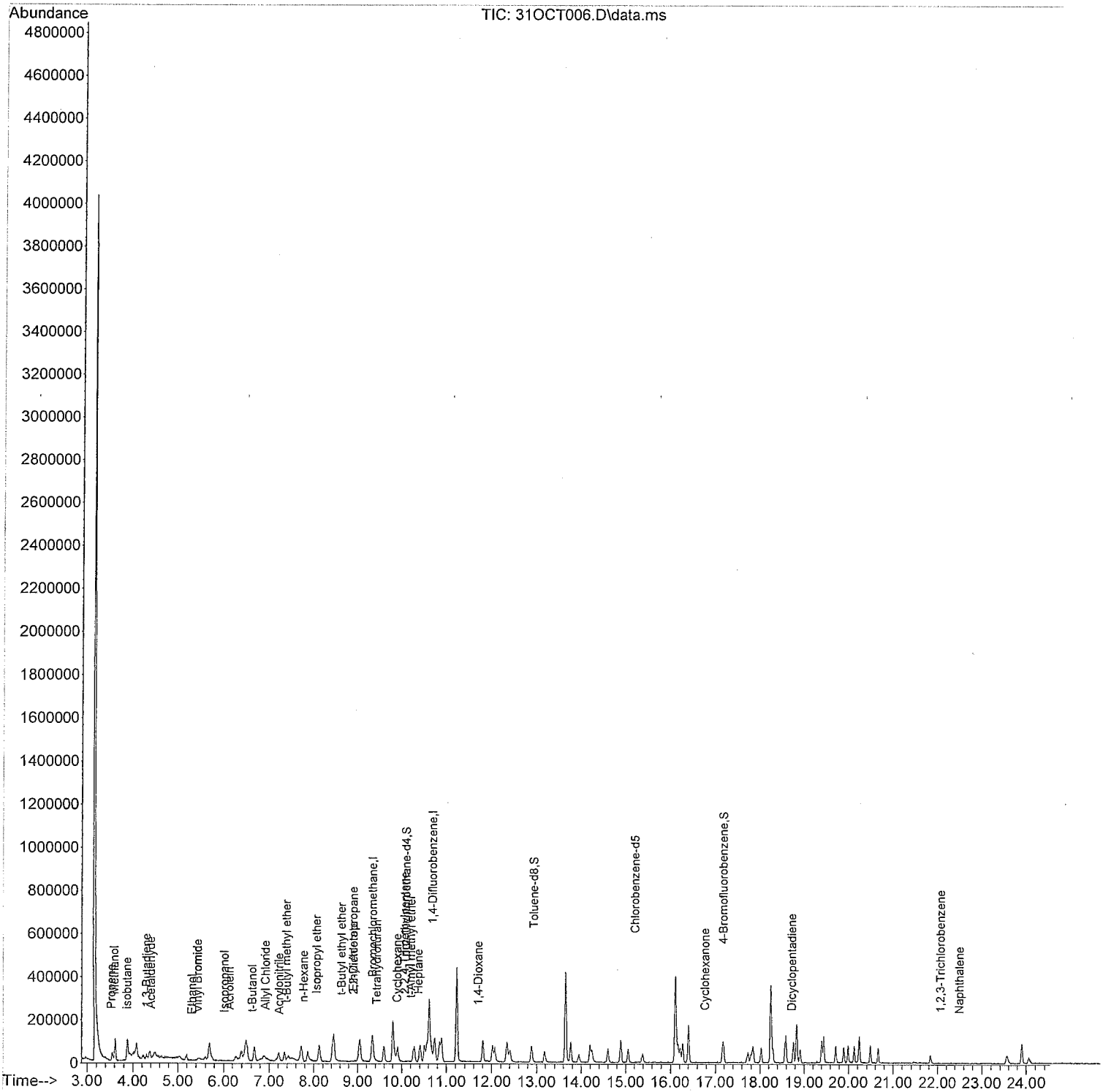
Quant Time: Nov 02 18:15:48 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	83996	10.00	ppbv	# 0.02
23) 1,4-Difluorobenzene	10.685	114	387740	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.207	117	237856	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.091	65	239269	11.18	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 111.80%			
29) Toluene-d8	12.931	98	351578	8.97	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 89.70%			
32) 4-Bromofluorobenzene	17.178	95	169661	8.18	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 81.80%			
Target Compounds						Qvalue
2) Propene	3.523	41	25913	2.45	ppbv #	91
3) isobutane	3.867	41	13567	2.48	ppbv #	1
4) 1,3-Butadiene	4.297	54	16966	2.74	ppbv #	84
5) Methanol	3.589	31	4486	2.07	ppbv #	1
6) Acetaldehyde	4.399	43	22981m	5.18	ppbv	
7) Ethanol	5.307	45	18518m	4.11	ppbv	
8) Vinyl Bromide	5.425	106	14834	2.69	ppbv #	91
9) Isopropanol	6.015	45	62237m	2.95	ppbv	
10) Acrolein	6.127	56	16236m	3.79	ppbv	
11) t-Butanol	6.625	59	54255m	3.39	ppbv	
12) Allyl Chloride	6.917	41	32140	2.96	ppbv #	82
13) Acrylonitrile	7.219	53	27045m	3.27	ppbv	
14) t-Butyl methyl ether	7.383	73	85487	3.15	ppbv #	85
15) n-Hexane	7.766	57	49016	2.91	ppbv	90
16) Isopropyl ether	8.058	45	102609	3.13	ppbv #	85
17) t-Butyl ethyl ether	8.629	87	31697	3.68	ppbv #	58
18) Ethyl Acetate	8.901	70	6499	2.40	ppbv #	1
19) 2,2-Dichloropropane	8.904	77	31574	2.14	ppbv #	66
20) Tetrahydrofuran	9.429	72	16684	3.02	ppbv #	59
21) Cyclohexane	9.898	56	55371	3.07	ppbv #	77
22) 2,2,4-Trimethylpentane	10.062	57	136492	2.68	ppbv	98
25) t-Amyl methyl ether	10.203	73	66370	3.29	ppbv	99
26) Heptane	10.367	71	27057	2.27	ppbv #	52
27) 1,4-Dioxane	11.698	88	20578m	2.69	ppbv	
31) Cyclohexanone	16.768	55	22831m	3.10	ppbv	
33) Dicyclopentadiene	18.723	66	838	1.65	ppbv #	31
34) Naphthalene	22.494	128	44175m	1.97	ppbv	
35) 1,2,3-Trichlorobenzene	22.061	180	24903	2.40	ppbv #	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT006.D
Acq On : 31 Oct 2018 2:03 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:15:48 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT007.D
Acq On : 31 Oct 2018 2:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:13:53 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

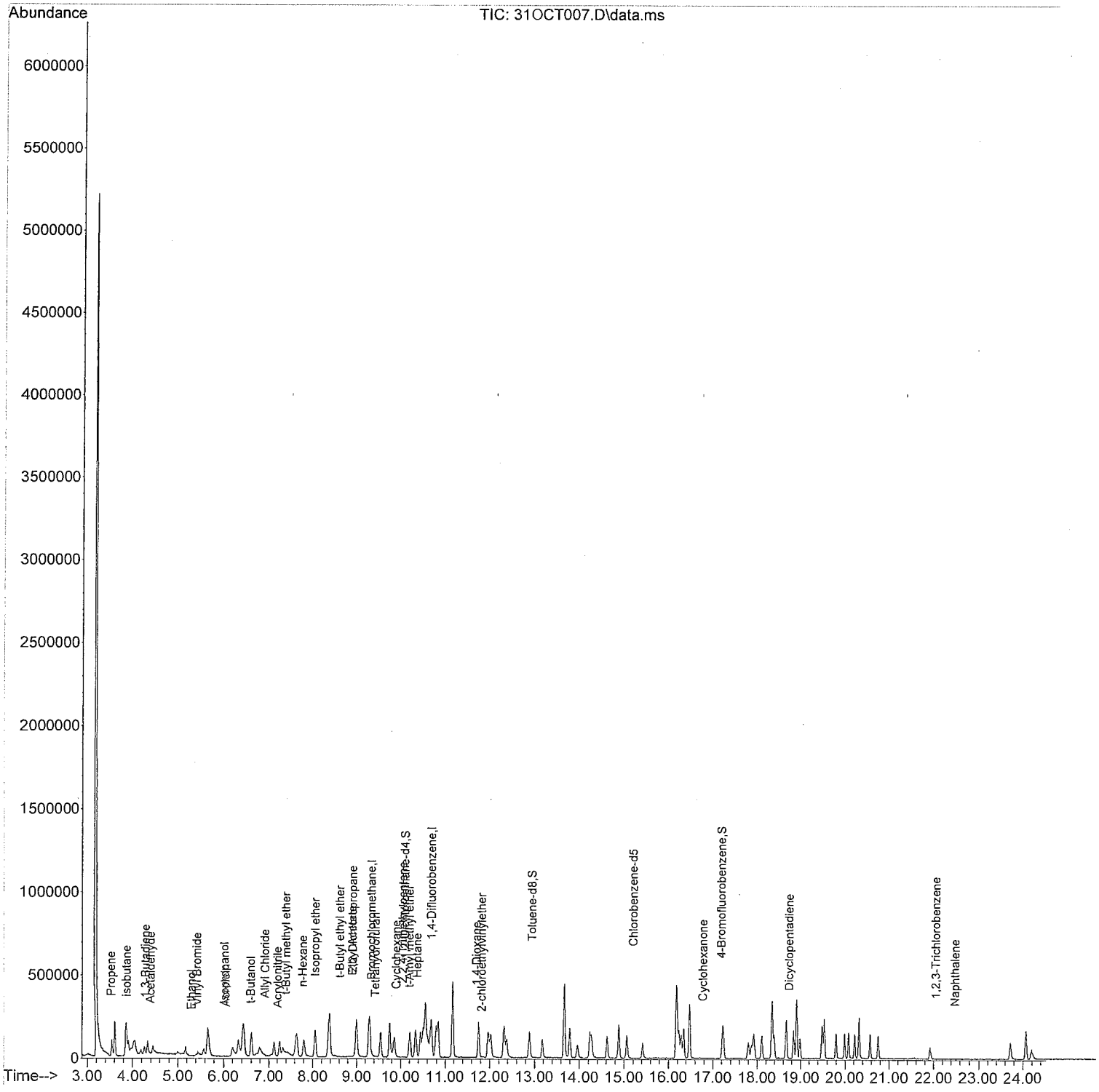
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	82685	10.00	ppbv	# 0.02
23) 1,4-Difluorobenzene	10.685	114	397025	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.201	117	246347	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.091	65	245461	11.20	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 112.00%			
29) Toluene-d8	12.935	98	369034	9.19	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 91.90%			
32) 4-Bromofluorobenzene	17.185	95	161445	7.51	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 75.10%#			
Target Compounds						Qvalue
2) Propene	3.523	41	52548	5.05	ppbv #	97
3) isobutane	3.867	41	28418	5.27	ppbv #	1
4) 1,3-Butadiene	4.280	54	42010	6.88	ppbv	97
6) Acetaldehyde	4.395	43	38526m	8.83	ppbv	
7) Ethanol	5.300	45	36105m	8.13	ppbv	
8) Vinyl Bromide	5.415	106	33884	6.25	ppbv #	95
9) Isopropanol	6.015	45	128053m	6.17	ppbv	
10) Acrolein	6.041	56	34005m	8.06	ppbv	
11) t-Butanol	6.589	59	112613m	7.14	ppbv	
12) Allyl Chloride	6.907	41	70749	6.63	ppbv #	84
13) Acrylonitrile	7.202	53	56681m	6.96	ppbv	
14) t-Butyl methyl ether	7.393	73	178967	6.70	ppbv #	81
15) n-Hexane	7.773	57	100251	6.04	ppbv	90
16) Isopropyl ether	8.055	45	212696	6.59	ppbv #	86
17) t-Butyl ethyl ether	8.616	87	65838	7.76	ppbv #	67
18) Ethyl Acetate	8.894	70	14079	5.28	ppbv #	1
19) 2,2-Dichloropropane	8.904	77	71254	4.90	ppbv #	75
20) Tetrahydrofuran	9.429	72	29503	5.43	ppbv #	42
21) Cyclohexane	9.895	56	116418	6.57	ppbv #	76
22) 2,2,4-Trimethylpentane	10.045	57	270373	5.39	ppbv	97
25) t-Amyl methyl ether	10.196	73	139826	6.78	ppbv	95
26) Heptane	10.373	71	52115	4.28	ppbv #	45
27) 1,4-Dioxane	11.705	88	43564	5.56	ppbv #	69
28) 2-chloroethylvinylether	11.823	63	104	0.86	ppbv #	100
31) Cyclohexanone	16.771	55	48737	6.38	ppbv #	91
33) Dicyclopentadiene	18.732	66	2130m	4.05	ppbv	
34) Naphthalene	22.487	128	91668m	3.94	ppbv	
35) 1,2,3-Trichlorobenzene	22.044	180	51084	4.76	ppbv #	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT007.D
Acq On : 31 Oct 2018 2:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:13:53 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:11:45 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

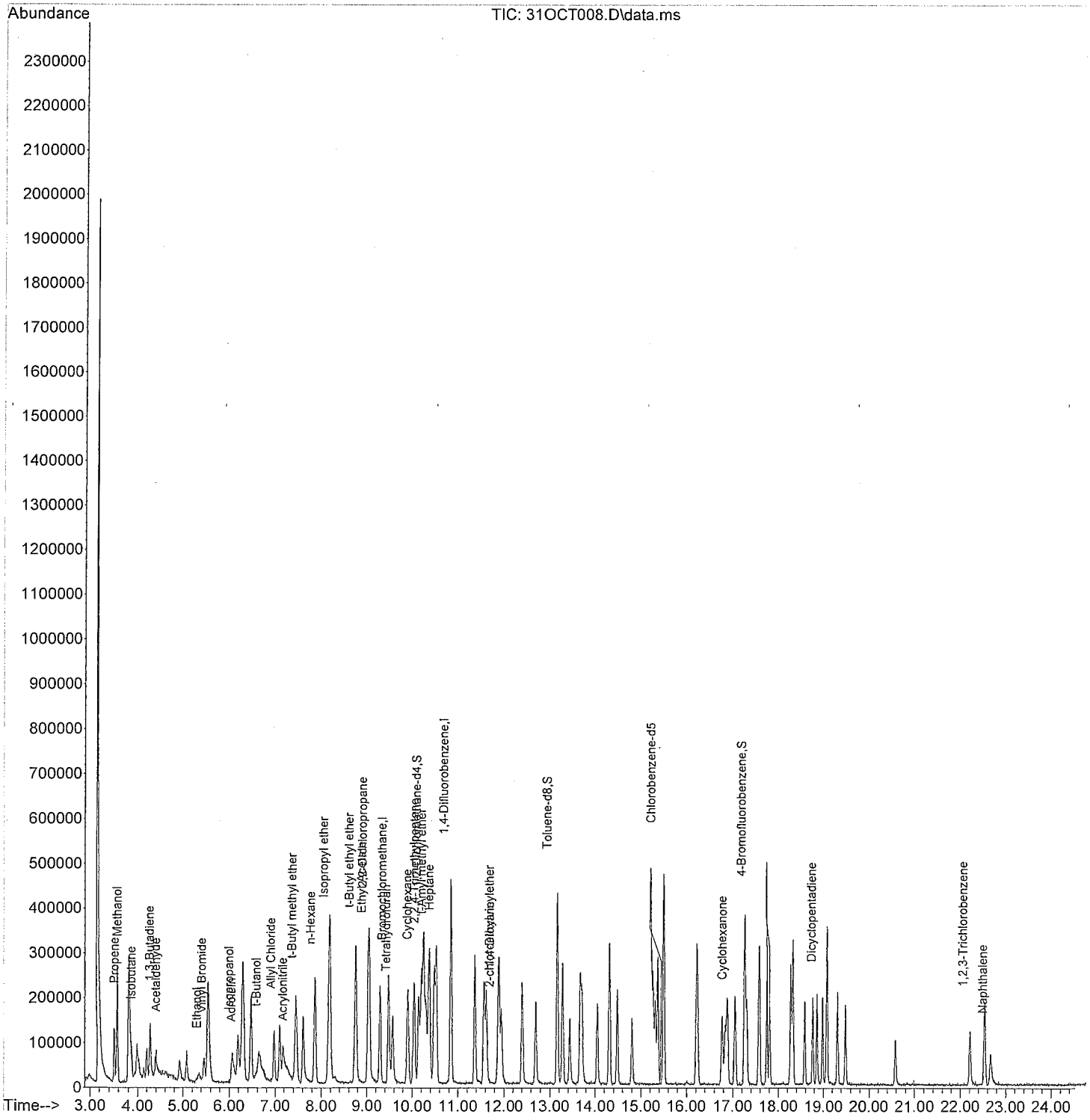
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.331	130	93758	10.00	ppbv	#	0.02
23) 1,4-Difluorobenzene	10.679	114	399629	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.207	117	256835	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.092	65	246179	11.16	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 111.60%				
29) Toluene-d8	12.931	98	366110	9.06	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 90.60%				
32) 4-Bromofluorobenzene	17.178	95	180513	8.06	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 80.60%				
Target Compounds							Qvalue
2) Propene	3.507	41	64717	5.48	ppbv	#	94
3) isobutane	3.854	41	37390m	6.11	ppbv		
4) 1,3-Butadiene	4.261	54	66848	9.66	ppbv		94
5) Methanol	3.562	31	15587	6.44	ppbv	#	1
6) Acetaldehyde	4.392	43	52076m	10.52	ppbv		
7) Ethanol	5.300	45	36060m	7.16	ppbv		
8) Vinyl Bromide	5.409	106	45663	7.42	ppbv		99
9) Isopropanol	5.992	45	177204m	7.53	ppbv		
10) Acrolein	6.042	56	41638m	8.71	ppbv		
11) t-Butanol	6.573	59	161810m	9.05	ppbv		
12) Allyl Chloride	6.894	41	100784	8.32	ppbv	#	86
13) Acrylonitrile	7.166	53	72533m	7.86	ppbv		
14) t-Butyl methyl ether	7.370	73	248293	8.20	ppbv	#	86
15) n-Hexane	7.770	57	144575	7.68	ppbv		93
16) Isopropyl ether	8.049	45	282194	7.71	ppbv	#	91
17) t-Butyl ethyl ether	8.606	87	87588	9.11	ppbv	#	65
18) Ethyl Acetate	8.881	70	21133	6.99	ppbv	#	14
19) 2,2-Dichloropropane	8.898	77	104536	6.34	ppbv	#	73
20) Tetrahydrofuran	9.419	72	41865	6.79	ppbv	#	46
21) Cyclohexane	9.888	56	160859	8.00	ppbv	#	76
22) 2,2,4-Trimethylpentane	10.046	57	369560	6.50	ppbv		97
25) t-Amyl methyl ether	10.203	73	178321	8.59	ppbv		99
26) Heptane	10.367	71	78939	6.44	ppbv	#	51
27) 1,4-Dioxane	11.692	88	64180m	8.14	ppbv		
28) 2-chloroethylvinylether	11.685	63	104	0.85	ppbv	#	100
31) Cyclohexanone	16.765	55	81125	10.19	ppbv	#	85
33) Dicyclopentadiene	18.729	66	1870	3.41	ppbv		94
34) Naphthalene	22.491	128	108840m	4.48	ppbv		
35) 1,2,3-Trichlorobenzene	22.048	180	68576	6.12	ppbv	#	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:11:45 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:23:13 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

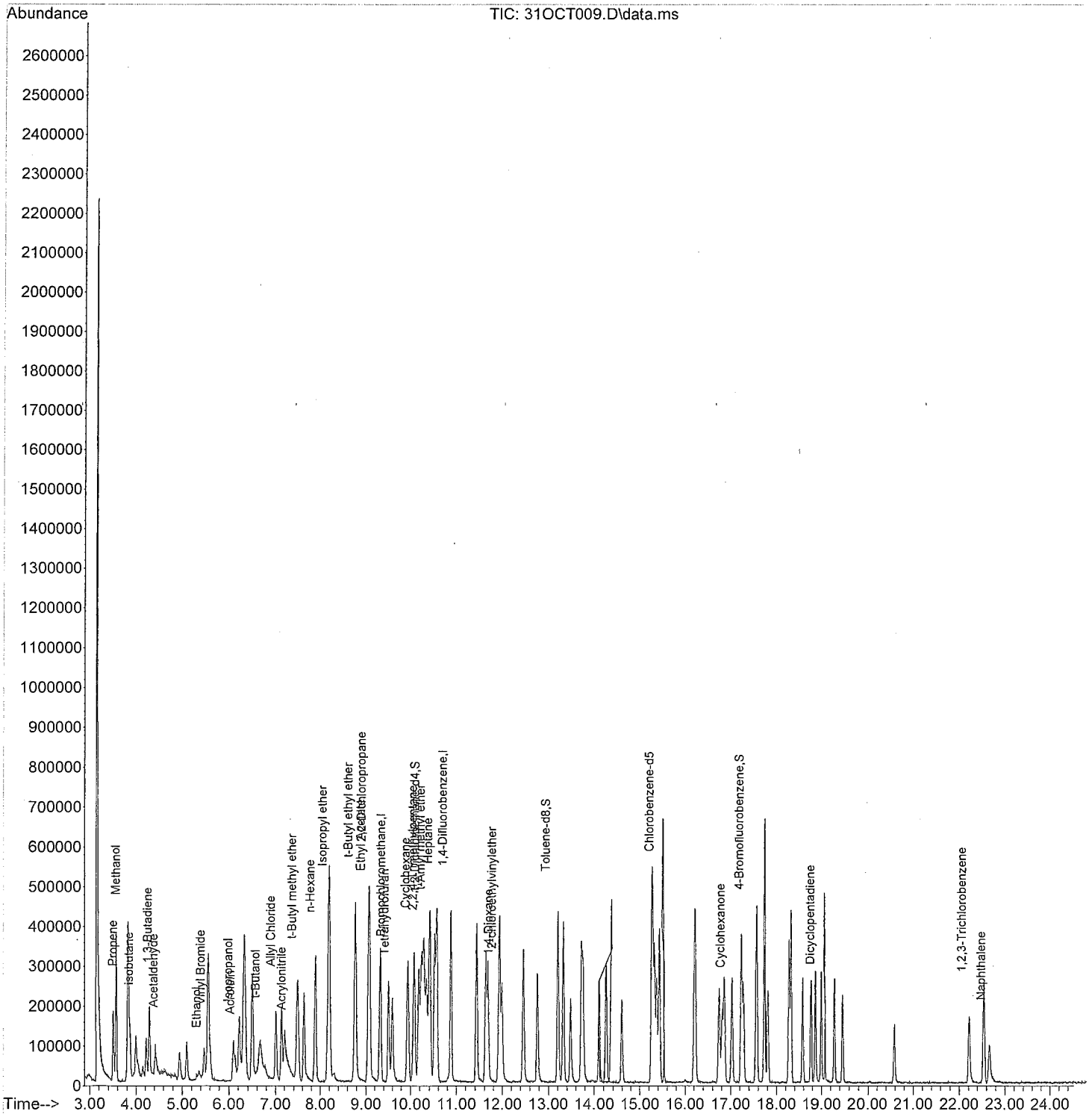
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.327	130	92431	10.00	ppbv	#	0.01
23) 1,4-Difluorobenzene	10.685	114	387710	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.201	117	247595	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	246452	11.52	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 115.20%				
29) Toluene-d8	12.931	98	349278	8.91	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 89.10%				
32) 4-Bromofluorobenzene	17.178	95	174910	8.10	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 81.00%				
Target Compounds							Qvalue
2) Propene	3.493	41	94593	8.13	ppbv	#	97
3) isobutane	3.838	41	48747m	8.09	ppbv		
4) 1,3-Butadiene	4.251	54	91934	13.47	ppbv		96
5) Methanol	3.556	31	21962	9.21	ppbv	#	1
6) Acetaldehyde	4.382	43	49384m	10.12	ppbv		
7) Ethanol	5.304	45	49926m	10.06	ppbv		
8) Vinyl Bromide	5.392	106	67062	11.06	ppbv	#	96
9) Isopropanol	5.979	45	255959m	11.03	ppbv		
10) Acrolein	6.018	56	57860m	12.27	ppbv		
11) t-Butanol	6.560	59	227406m	12.90	ppbv		
12) Allyl Chloride	6.891	41	141391	11.84	ppbv	#	89
13) Acrylonitrile	7.127	53	106045m	11.65	ppbv		
14) t-Butyl methyl ether	7.360	73	356971	11.96	ppbv	#	85
15) n-Hexane	7.766	57	206300	11.11	ppbv		93
16) Isopropyl ether	8.042	45	396001	10.98	ppbv	#	91
17) t-Butyl ethyl ether	8.609	87	116575m	12.29	ppbv		
18) Ethyl Acetate	8.881	70	28433	9.54	ppbv	#	1
19) 2,2-Dichloropropane	8.891	77	152936	9.40	ppbv	#	76
20) Tetrahydrofuran	9.413	72	59245	9.75	ppbv	#	45
21) Cyclohexane	9.885	56	234390	11.83	ppbv	#	76
22) 2,2,4-Trimethylpentane	10.039	57	511251	9.12	ppbv		97
25) t-Amyl methyl ether	10.200	73	256554	12.74	ppbv		98
26) Heptane	10.364	71	110158	9.26	ppbv	#	50
27) 1,4-Dioxane	11.688	88	95529m	12.49	ppbv		
28) 2-chloroethylvinylether	11.757	63	113	0.95	ppbv	#	100
31) Cyclohexanone	16.768	55	116957	15.24	ppbv	#	86
33) Dicyclopentadiene	18.745	66	3314	6.27	ppbv	#	42
34) Naphthalene	22.474	128	161530m	6.90	ppbv		
35) 1,2,3-Trichlorobenzene	22.044	180	95683	8.86	ppbv	#	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:23:13 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:07:07 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

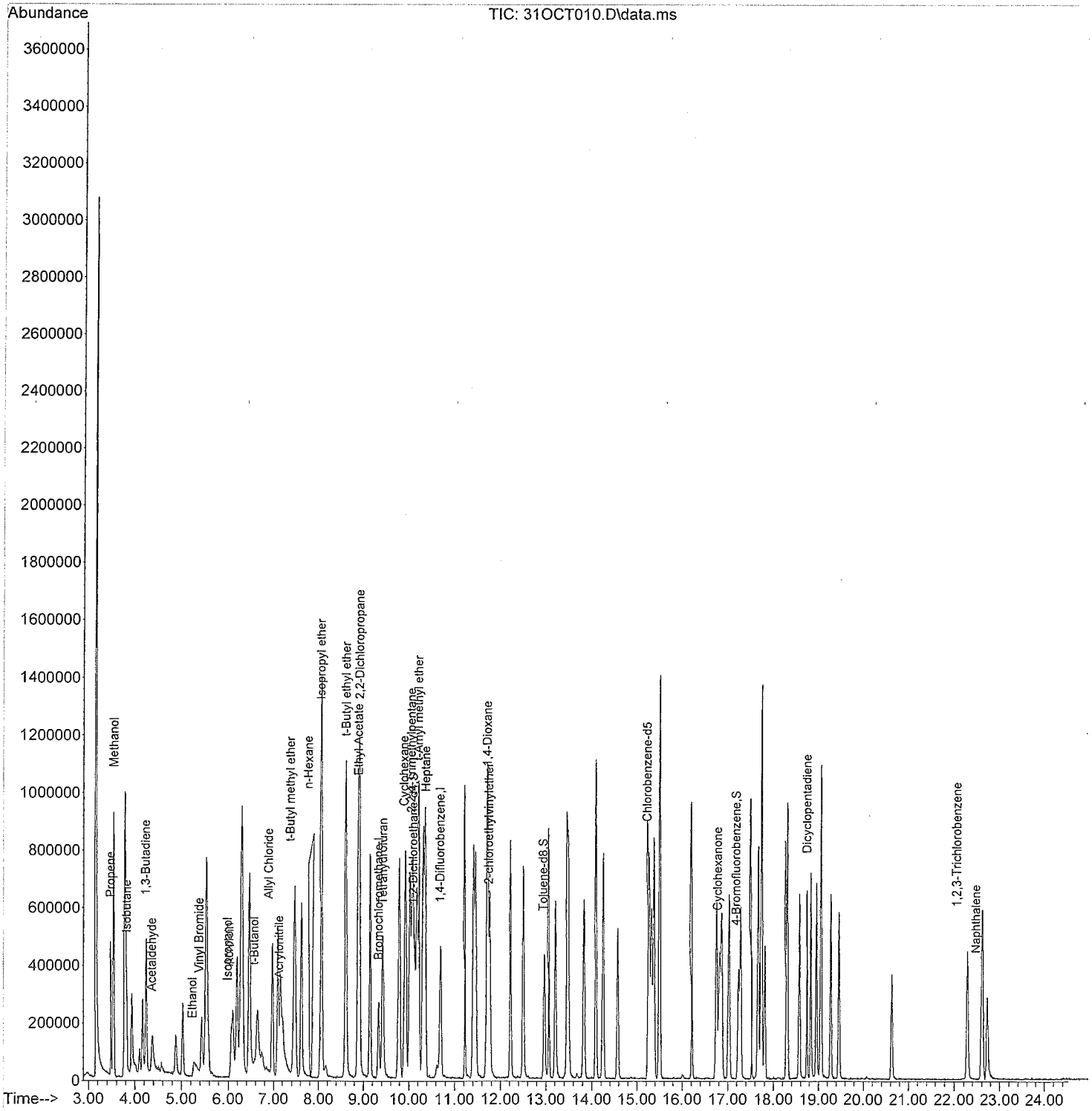
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	99785	10.00	ppbv	#	0.01
23) 1,4-Difluorobenzene	10.682	114	403819	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.207	117	243153	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	260383	11.68	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 116.80%				
29) Toluene-d8	12.931	98	363404	8.90	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 89.00%				
32) 4-Bromofluorobenzene	17.178	95	175818	8.29	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 82.90%				
Target Compounds							Qvalue
2) Propene	3.467	41	221401	17.63	ppbv		97
3) isobutane	3.815	41	130665	20.08	ppbv	#	1
4) 1,3-Butadiene	4.221	54	238792	32.41	ppbv		99
5) Methanol	3.533	31	52322	20.32	ppbv	#	7
6) Acetaldehyde	4.356	43	92393	17.54	ppbv	#	66
7) Ethanol	5.228	45	129703m	24.21	ppbv		
8) Vinyl Bromide	5.373	106	175510	26.81	ppbv	#	97
9) Isopropanol	5.979	45	410143	16.37	ppbv		99
10) Acrolein	6.009	56	124307	24.42	ppbv		94
11) t-Butanol	6.563	59	577673m	30.35	ppbv		
12) Allyl Chloride	6.881	41	373510	28.98	ppbv	#	86
13) Acrylonitrile	7.117	53	243758	24.81	ppbv		92
14) t-Butyl methyl ether	7.363	73	886365	27.51	ppbv	#	85
15) n-Hexane	7.760	57	512017	25.54	ppbv		92
16) Isopropyl ether	8.039	45	969601	24.90	ppbv	#	86
17) t-Butyl ethyl ether	8.596	87	298856	29.19	ppbv	#	63
18) Ethyl Acetate	8.872	70	78138	24.28	ppbv	#	5
19) 2,2-Dichloropropane	8.895	77	389556	22.19	ppbv	#	80
20) Tetrahydrofuran	9.416	72	157522	24.02	ppbv	#	54
21) Cyclohexane	9.878	56	579577	27.09	ppbv	#	79
22) 2,2,4-Trimethylpentane	10.042	57	1221818	20.20	ppbv		97
25) t-Amyl methyl ether	10.200	73	638721	30.44	ppbv		100
26) Heptane	10.370	71	247153	19.95	ppbv	#	52
27) 1,4-Dioxane	11.702	88	233688	29.33	ppbv	#	71
28) 2-chloroethylvinylether	11.738	63	245	1.99	ppbv	#	100
31) Cyclohexanone	16.765	55	277795	36.86	ppbv	#	89
33) Dicyclopentadiene	18.732	66	5408	10.41	ppbv		95
34) Naphthalene	22.464	128	363894	15.84	ppbv		98
35) 1,2,3-Trichlorobenzene	22.041	180	238429	22.49	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:07:07 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 18:05:39 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

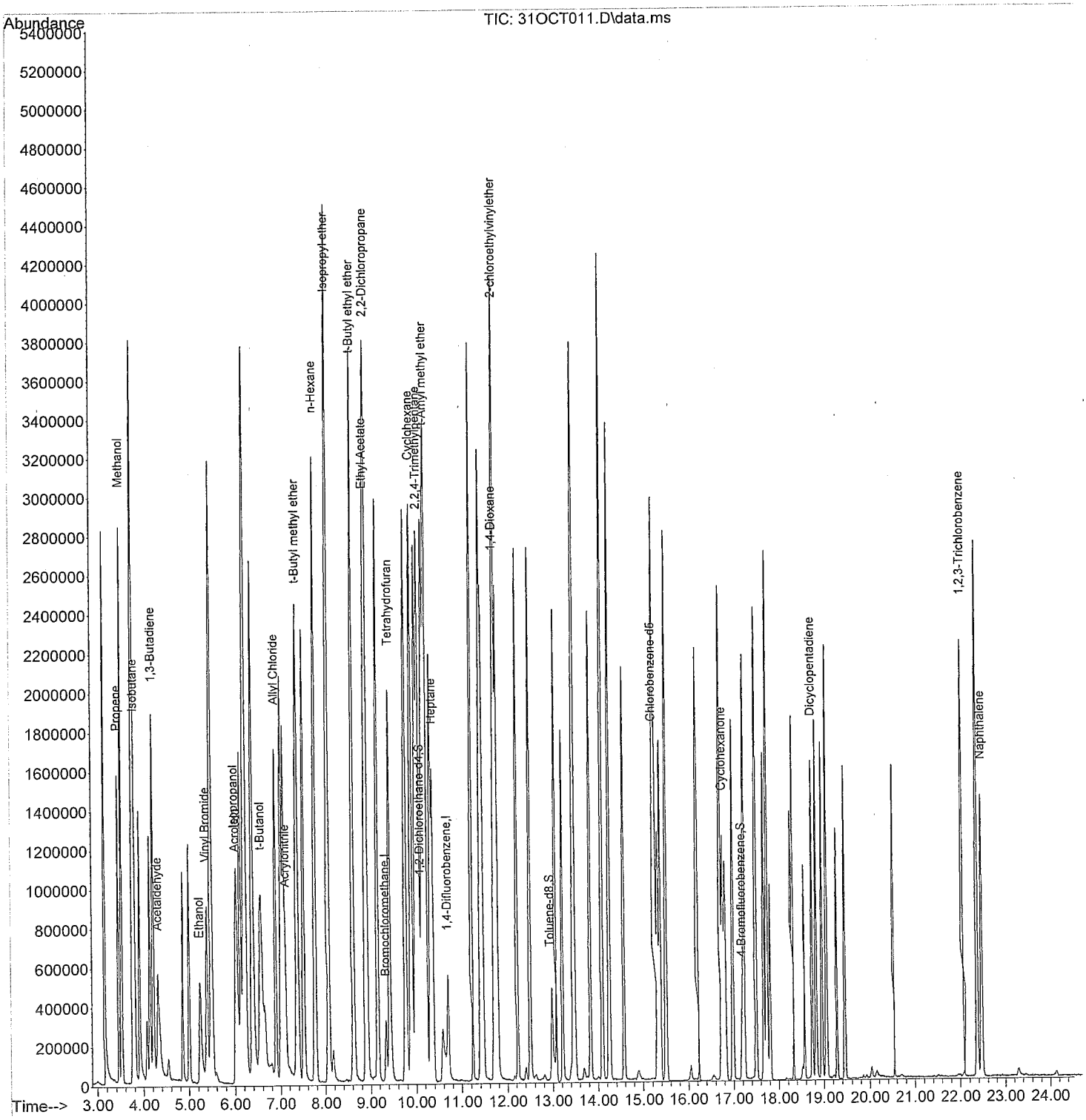
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.331	130	111396	10.00	ppbv	#	0.02
23) 1,4-Difluorobenzene	10.685	114	410431	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	255254	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.095	65	264143	11.66	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 116.60%				
29) Toluene-d8	12.935	98	383387	9.24	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 92.40%				
32) 4-Bromofluorobenzene	17.181	95	163677	7.35	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 73.50%#				
Target Compounds							Qvalue
2) Propene	3.447	41	741769	52.91	ppbv		99
3) isobutane	3.805	41	569487m	78.38	ppbv		
4) 1,3-Butadiene	4.208	54	1066743	129.70	ppbv		98
5) Methanol	3.520	31	174469	60.69	ppbv	#	3
6) Acetaldehyde	4.317	43	415905	70.74	ppbv	#	65
7) Ethanol	5.228	45	486006	81.25	ppbv		97
8) Vinyl Bromide	5.369	106	802710	109.84	ppbv	#	98
9) Isopropanol	5.986	45	2183402	78.05	ppbv		94
10) Acrolein	6.009	56	557082	98.04	ppbv		94
11) t-Butanol	6.563	59	2694572	126.82	ppbv		95
12) Allyl Chloride	6.884	41	1419311	98.66	ppbv	#	88
13) Acrylonitrile	7.114	53	828949	75.57	ppbv		98
14) t-Butyl methyl ether	7.366	73	3511616	97.62	ppbv	#	84
15) n-Hexane	7.763	57	2081541	93.02	ppbv		93
16) Isopropyl ether	8.048	45	3339926	76.83	ppbv	#	96
17) t-Butyl ethyl ether	8.606	87	1046600	91.58	ppbv	#	70
18) Ethyl Acetate	8.868	70	329591	91.73	ppbv	#	37
19) 2,2-Dichloropropane	8.904	77	1426566	72.79	ppbv		89
20) Tetrahydrofuran	9.416	72	664211	90.73	ppbv	#	57
21) Cyclohexane	9.891	56	2279771	95.46	ppbv	#	79
22) 2,2,4-Trimethylpentane	10.049	57	4412699	65.35	ppbv		95
25) t-Amyl methyl ether	10.200	73	2483746	116.47	ppbv		99
26) Heptane	10.367	71	501732	39.85	ppbv		79
27) 1,4-Dioxane	11.695	88	1024304	126.50	ppbv	#	71
28) 2-chloroethylvinylether	11.724	63	1723	13.74	ppbv	#	100
31) Cyclohexanone	16.758	55	764711	96.65	ppbv	#	92
33) Dicyclopentadiene	18.736	66	19680	36.09	ppbv		96
34) Naphthalene	22.464	128	1596094	66.16	ppbv		98
35) 1,2,3-Trichlorobenzene	22.041	180	1159458	104.16	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 18:05:39 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT012.D
Acq On : 31 Oct 2018 6:06 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 18:04:28 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

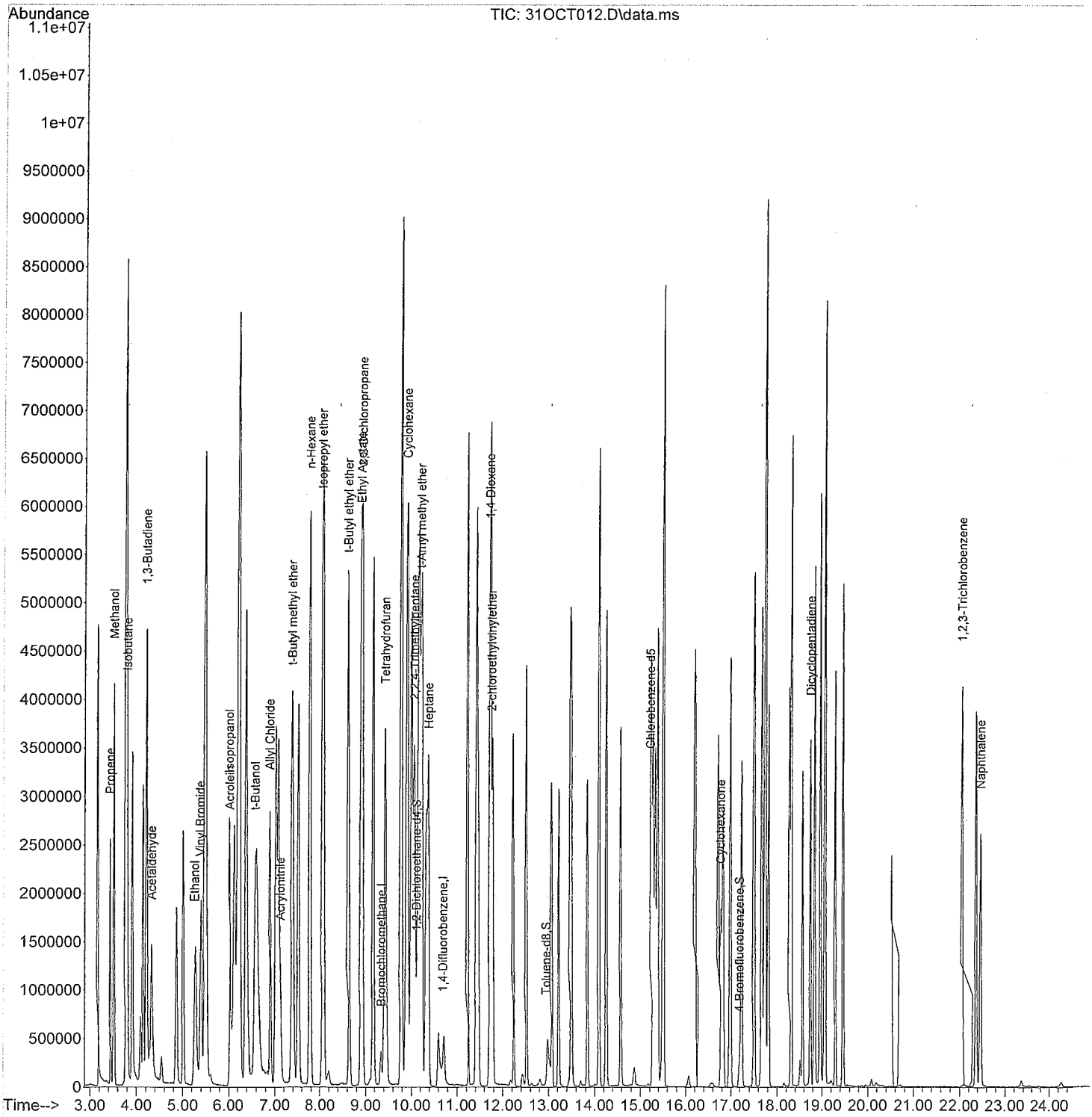
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.344	130	134364	10.00	ppbv	#	0.03
23) 1,4-Difluorobenzene	10.695	114	360111	10.00	ppbv		0.02
30) Chlorobenzene-d5	15.207	117	210698	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.108	65	233675	11.76	ppbv		0.03
Spiked Amount 10.000	Range 80 - 120		Recovery = 117.60%				
29) Toluene-d8	12.941	98	355911	9.77	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.70%				
32) 4-Bromofluorobenzene	17.185	95	107624	5.86	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 58.60%#				
Target Compounds							Qvalue
2) Propene	3.428	41	1328108	78.54	ppbv		99
3) isobutane	3.802	41	1304737	148.88	ppbv	#	1
4) 1,3-Butadiene	4.215	54	2651693	267.29	ppbv		97
5) Methanol	3.513	31	250984	72.38	ppbv	#	1
6) Acetaldehyde	4.326	43	971723m	137.02	ppbv		
7) Ethanol	5.254	45	1631241	226.10	ppbv		95
8) Vinyl Bromide	5.376	106	1859346	210.94	ppbv	#	98
9) Isopropanol	6.002	45	5001344	148.22	ppbv	#	86
10) Acrolein	6.012	56	955803	139.46	ppbv		99
11) t-Butanol	6.576	59	5954786	232.36	ppbv		97
12) Allyl Chloride	6.884	41	2429582	140.01	ppbv	#	89
13) Acrylonitrile	7.117	53	1241813	93.85	ppbv		98
14) t-Butyl methyl ether	7.379	73	6436929	148.35	ppbv	#	85
15) n-Hexane	7.770	57	4214921	156.17	ppbv		94
16) Isopropyl ether	8.045	45	5641201	107.58	ppbv	#	95
17) t-Butyl ethyl ether	8.606	87	1642468	119.15	ppbv		79
18) Ethyl Acetate	8.885	70	646063	149.08	ppbv	#	68
19) 2,2-Dichloropropane	8.914	77	2496121	105.60	ppbv		93
20) Tetrahydrofuran	9.422	72	1391713	157.61	ppbv	#	64
21) Cyclohexane	9.898	56	4778968	165.90	ppbv	#	82
22) 2,2,4-Trimethylpentane	10.055	57	6187317	75.97	ppbv		97
25) t-Amyl methyl ether	10.203	73	4251149	227.20	ppbv		97
26) Heptane	10.377	71	1030231	93.26	ppbv		80
27) 1,4-Dioxane	11.705	88	1879492	264.55	ppbv	#	76
28) 2-chloroethylvinylether	11.747	63	2268	20.62	ppbv	#	100
31) Cyclohexanone	16.765	55	1196550	183.21	ppbv		94
33) Dicyclopentadiene	18.739	66	46562	103.45	ppbv		89
34) Naphthalene	22.464	128	2953795	148.34	ppbv		98
35) 1,2,3-Trichlorobenzene	22.044	180	2171730	236.36	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT012.D
Acq On : 31 Oct 2018 6:06 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 18:04:28 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:02:20 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

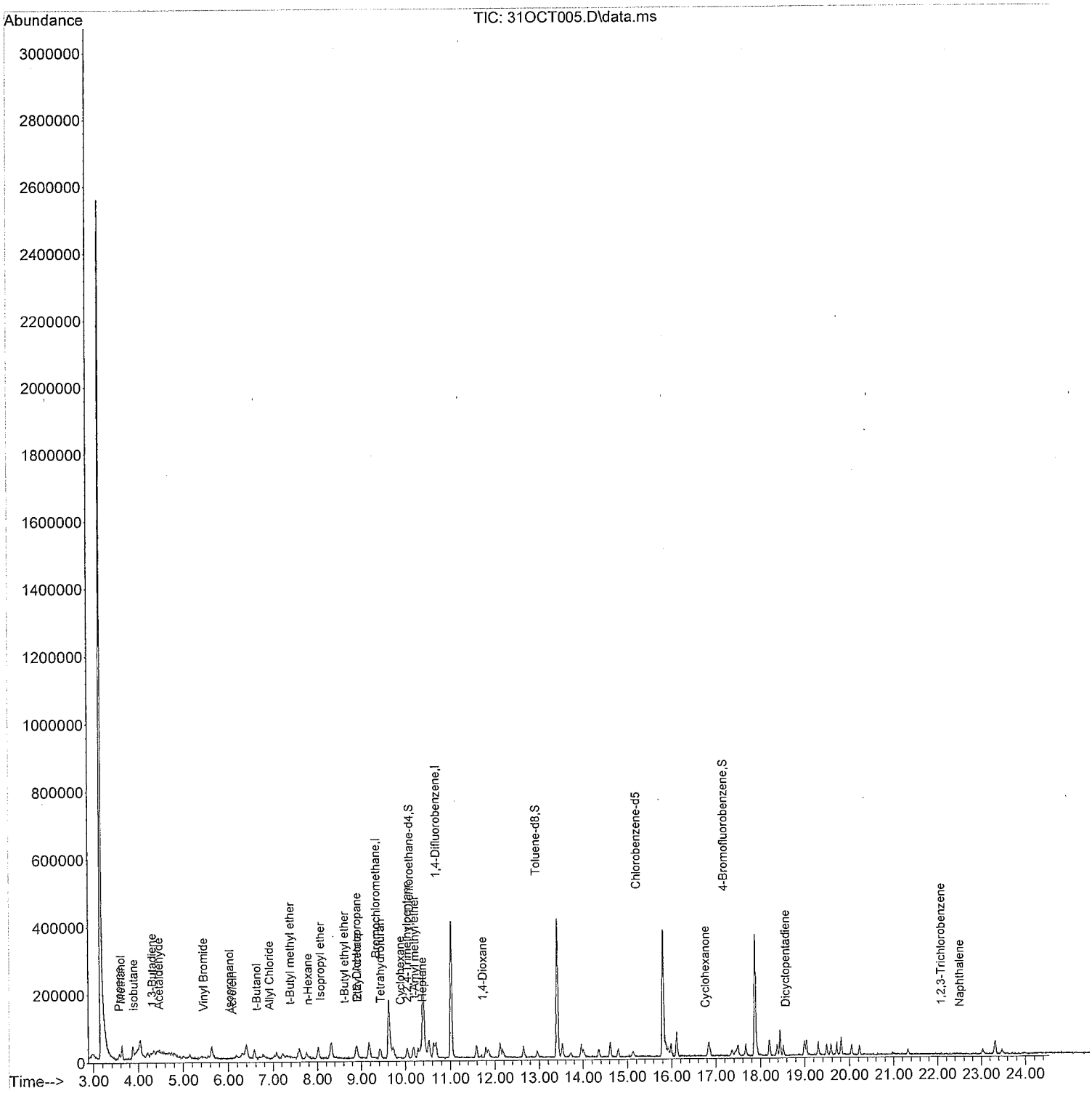
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	86546	10.00	ppbv	# 0.02
23) 1,4-Difluorobenzene	10.688	114	382579	10.00	ppbv	0.01
30) Chlorobenzene-d5	15.210	117	245211	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.098	65	234701	11.11	ppbv	0.02
Spiked Amount 10.000	Range 80 - 120		Recovery = 111.10%			
29) Toluene-d8	12.934	98	352125	9.10	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 91.00%			
32) 4-Bromofluorobenzene	17.178	95	165834	7.75	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 77.50%#			
Target Compounds						Qvalue
2) Propene	3.566	41	11801	1.08	ppbv	93
3) isobutane	3.897	41	6019	1.07	ppbv #	1
4) 1,3-Butadiene	4.323	54	7617	1.19	ppbv	88
5) Methanol	3.608	31	2901	1.30	ppbv #	1
6) Acetaldehyde	4.471	43	2846	0.62	ppbv	94
8) Vinyl Bromide	5.451	106	5176	0.91	ppbv #	88
9) Isopropanol	6.035	45	13104	0.60	ppbv #	77
10) Acrolein	6.091	56	809	0.18	ppbv #	19
11) t-Butanol	6.628	59	14826	0.90	ppbv #	65
12) Allyl Chloride	6.924	41	13206	1.18	ppbv #	80
14) t-Butyl methyl ether	7.392	73	34896	1.25	ppbv #	81
15) n-Hexane	7.789	57	18380	1.06	ppbv #	79
16) Isopropyl ether	8.071	45	40981	1.21	ppbv #	79
17) t-Butyl ethyl ether	8.622	87	12255	1.38	ppbv #	50
18) Ethyl Acetate	8.917	70	1841	0.66	ppbv #	1
19) 2,2-Dichloropropane	8.911	77	13195	0.87	ppbv #	59
20) Tetrahydrofuran	9.435	72	6543	1.15	ppbv #	50
21) Cyclohexane	9.891	56	23889	1.29	ppbv #	52
22) 2,2,4-Trimethylpentane	10.045	57	55801	1.06	ppbv	95
25) t-Amyl methyl ether	10.213	73	27050	1.36	ppbv	94
26) Heptane	10.383	71	11666	0.99	ppbv #	63
27) 1,4-Dioxane	11.728	88	8396	1.11	ppbv #	57
31) Cyclohexanone	16.768	55	9147	1.20	ppbv #	87
33) Dicyclopentadiene	18.578	66	326	0.62	ppbv	97
34) Naphthalene	22.507	128	12727	0.55	ppbv #	86
35) 1,2,3-Trichlorobenzene	22.077	180	7763	0.73	ppbv #	63

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT005.D
Acq On : 31 Oct 2018 1:22 pm
Operator : DT
Sample : 1.0 PPBV ICAL
Misc : 50 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:02:20 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT006.D
Acq On : 31 Oct 2018 2:03 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:02:43 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

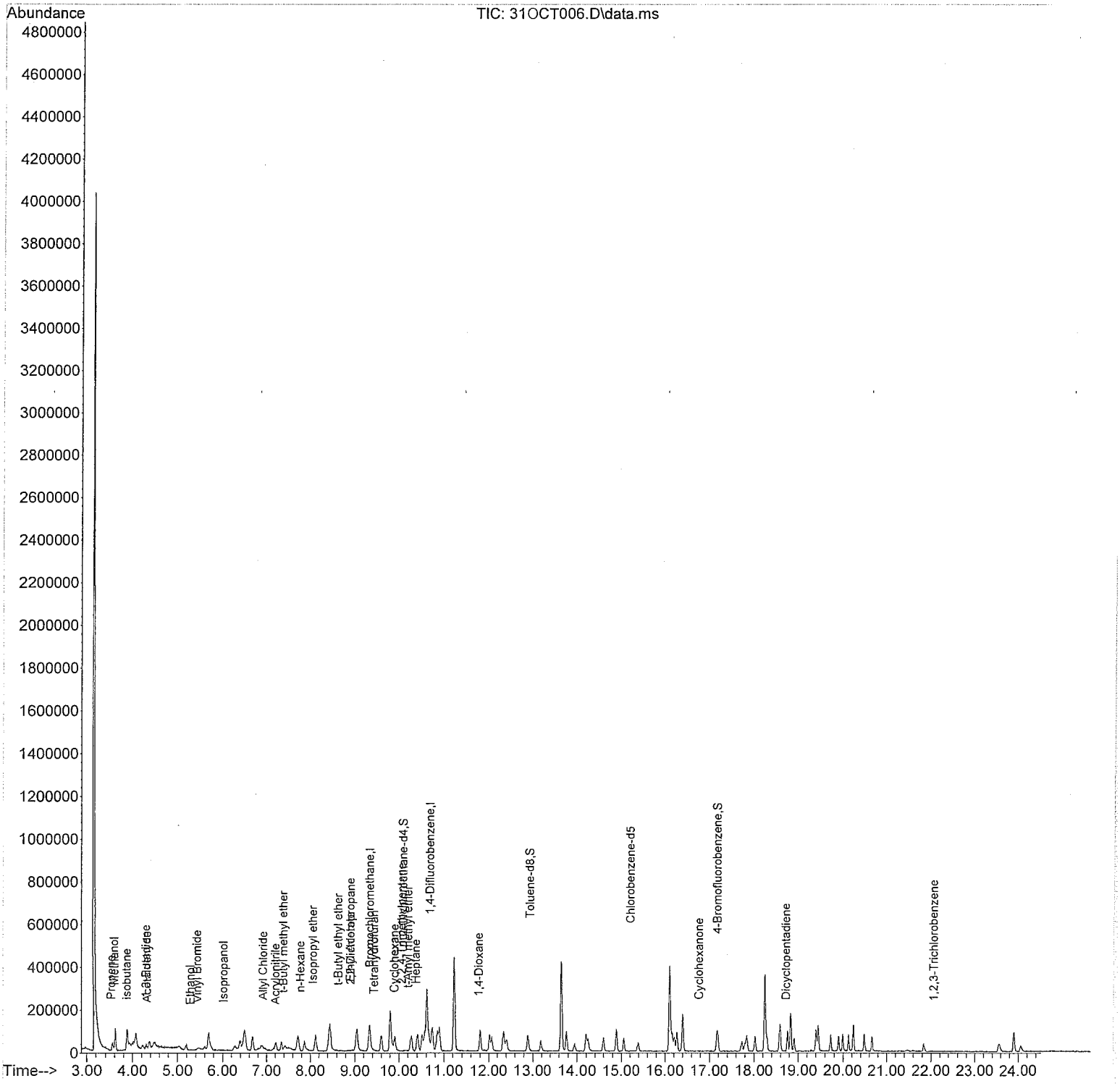
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.334	130	83996	10.00	ppbv	# 0.02
23) 1,4-Difluorobenzene	10.685	114	387740	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.207	117	237856	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.091	65	239269	11.18	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 111.80%			
29) Toluene-d8	12.931	98	351578	8.97	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 89.70%			
32) 4-Bromofluorobenzene	17.178	95	169661	8.18	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 81.80%			
Target Compounds						Qvalue
2) Propene	3.523	41	25913	2.45	ppbv #	91
3) isobutane	3.867	41	13567	2.48	ppbv #	1
4) 1,3-Butadiene	4.297	54	16966	2.74	ppbv #	84
5) Methanol	3.589	31	4486	2.07	ppbv #	1
6) Acetaldehyde	4.323	43	661	0.15	ppbv #	1
7) Ethanol	5.281	45	2790	0.62	ppbv #	42
8) Vinyl Bromide	5.425	106	14834	2.69	ppbv #	91
9) Isopropanol	6.015	45	43297	2.05	ppbv	95
12) Allyl Chloride	6.917	41	32140	2.96	ppbv #	82
13) Acrylonitrile	7.202	53	6276	0.76	ppbv	82
14) t-Butyl methyl ether	7.383	73	85487	3.15	ppbv #	85
15) n-Hexane	7.766	57	49016	2.91	ppbv	90
16) Isopropyl ether	8.058	45	102609	3.13	ppbv #	85
17) t-Butyl ethyl ether	8.629	87	31697	3.68	ppbv #	58
18) Ethyl Acetate	8.901	70	6499	2.40	ppbv #	1
19) 2,2-Dichloropropane	8.904	77	31574	2.14	ppbv #	66
20) Tetrahydrofuran	9.429	72	16684	3.02	ppbv #	59
21) Cyclohexane	9.898	56	55371	3.07	ppbv #	77
22) 2,2,4-Trimethylpentane	10.062	57	136492	2.68	ppbv	98
25) t-Amyl methyl ether	10.203	73	66370	3.29	ppbv	99
26) Heptane	10.367	71	27057	2.27	ppbv #	52
27) 1,4-Dioxane	11.770	88	819	0.11	ppbv	87
31) Cyclohexanone	16.768	55	22553	3.06	ppbv #	83
33) Dicyclopentadiene	18.723	66	838	1.65	ppbv #	31
35) 1,2,3-Trichlorobenzene	22.061	180	24903	2.40	ppbv #	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT006.D
Acq On : 31 Oct 2018 2:03 pm
Operator : DT
Sample : 2.5 PPBV ICAL
Misc : 125 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:02:43 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT007.D
Acq On : 31 Oct 2018 2:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:02:47 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

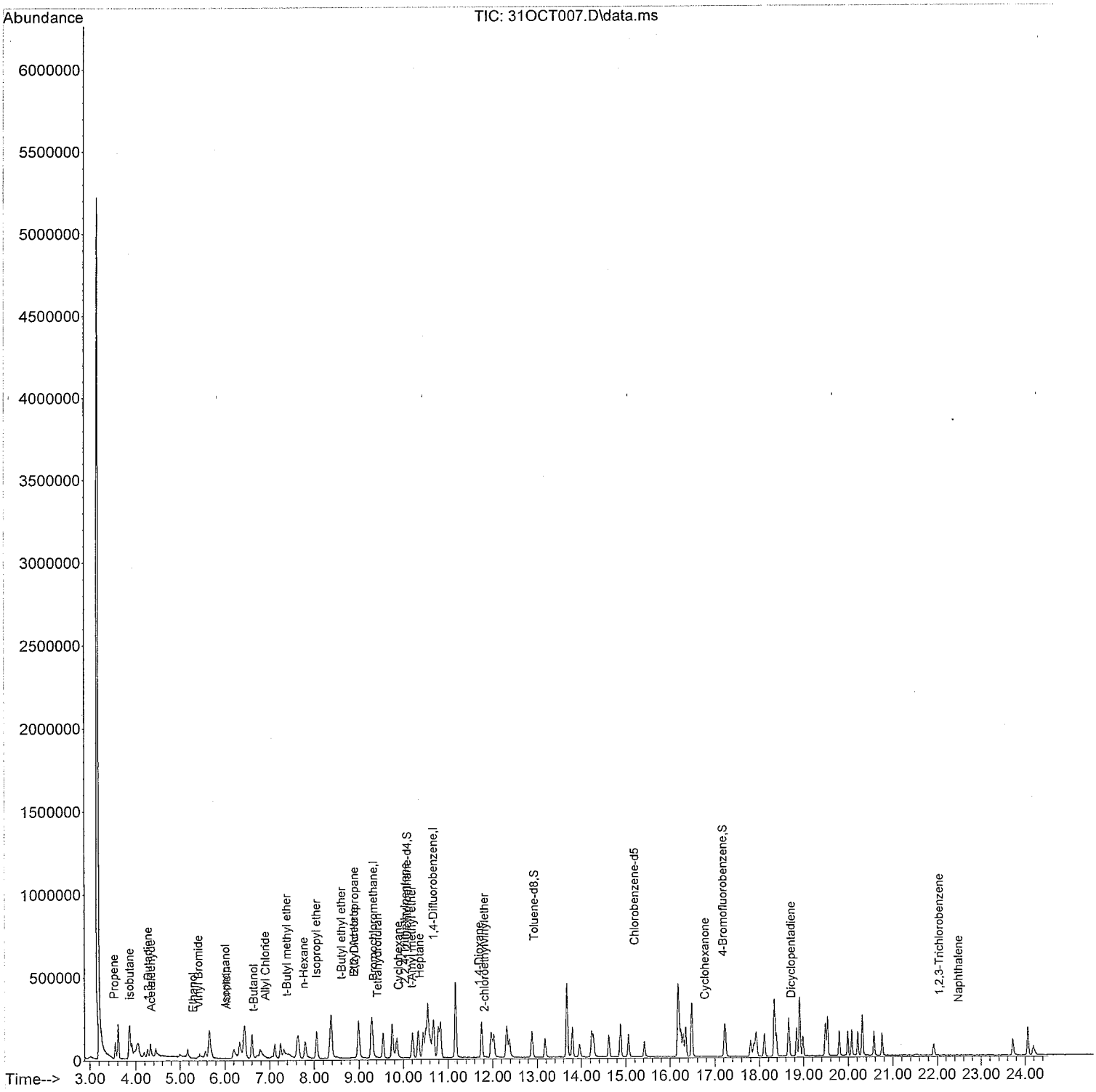
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.334	130	82685	10.00	ppbv	#	0.02
23) 1,4-Difluorobenzene	10.685	114	397025	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.201	117	246347	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.091	65	245461	11.20	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 112.00%				
29) Toluene-d8	12.935	98	369034	9.19	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 91.90%				
32) 4-Bromofluorobenzene	17.185	95	161445	7.51	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 75.10%#				
Target Compounds							Qvalue
2) Propene	3.523	41	52548	5.05	ppbv	#	97
3) isobutane	3.867	41	28418	5.27	ppbv	#	1
4) 1,3-Butadiene	4.280	54	42010	6.88	ppbv		97
6) Acetaldehyde	4.349	43	558	0.13	ppbv	#	1
7) Ethanol	5.300	45	17148	3.86	ppbv	#	74
8) Vinyl Bromide	5.415	106	33884	6.25	ppbv	#	95
9) Isopropanol	6.015	45	97156	4.68	ppbv		97
10) Acrolein	6.041	56	24920	5.91	ppbv	#	83
11) t-Butanol	6.642	59	38511	2.44	ppbv		100
12) Allyl Chloride	6.907	41	70749	6.63	ppbv	#	84
14) t-Butyl methyl ether	7.393	73	178967	6.70	ppbv	#	81
15) n-Hexane	7.773	57	100251	6.04	ppbv		90
16) Isopropyl ether	8.055	45	212696	6.59	ppbv	#	86
17) t-Butyl ethyl ether	8.616	87	65838	7.76	ppbv	#	67
18) Ethyl Acetate	8.894	70	14079	5.28	ppbv	#	1
19) 2,2-Dichloropropane	8.904	77	71254	4.90	ppbv	#	75
20) Tetrahydrofuran	9.429	72	29503	5.43	ppbv	#	42
21) Cyclohexane	9.895	56	116418	6.57	ppbv	#	76
22) 2,2,4-Trimethylpentane	10.045	57	270373	5.39	ppbv		97
25) t-Amyl methyl ether	10.196	73	139826	6.78	ppbv		95
26) Heptane	10.373	71	52115	4.28	ppbv	#	45
27) 1,4-Dioxane	11.705	88	43564	5.56	ppbv	#	69
28) 2-chloroethylvinylether	11.823	63	104	0.86	ppbv	#	100
31) Cyclohexanone	16.771	55	48737	6.38	ppbv	#	91
33) Dicyclopentadiene	18.723	66	868	1.65	ppbv	#	31
34) Naphthalene	22.487	128	81296	3.49	ppbv	#	91
35) 1,2,3-Trichlorobenzene	22.044	180	51084	4.76	ppbv	#	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT007.D
Acq On : 31 Oct 2018 2:44 pm
Operator : DT
Sample : 5.0 PPBV ICAL
Misc : 250 ML
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 02 18:02:47 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:02:50 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

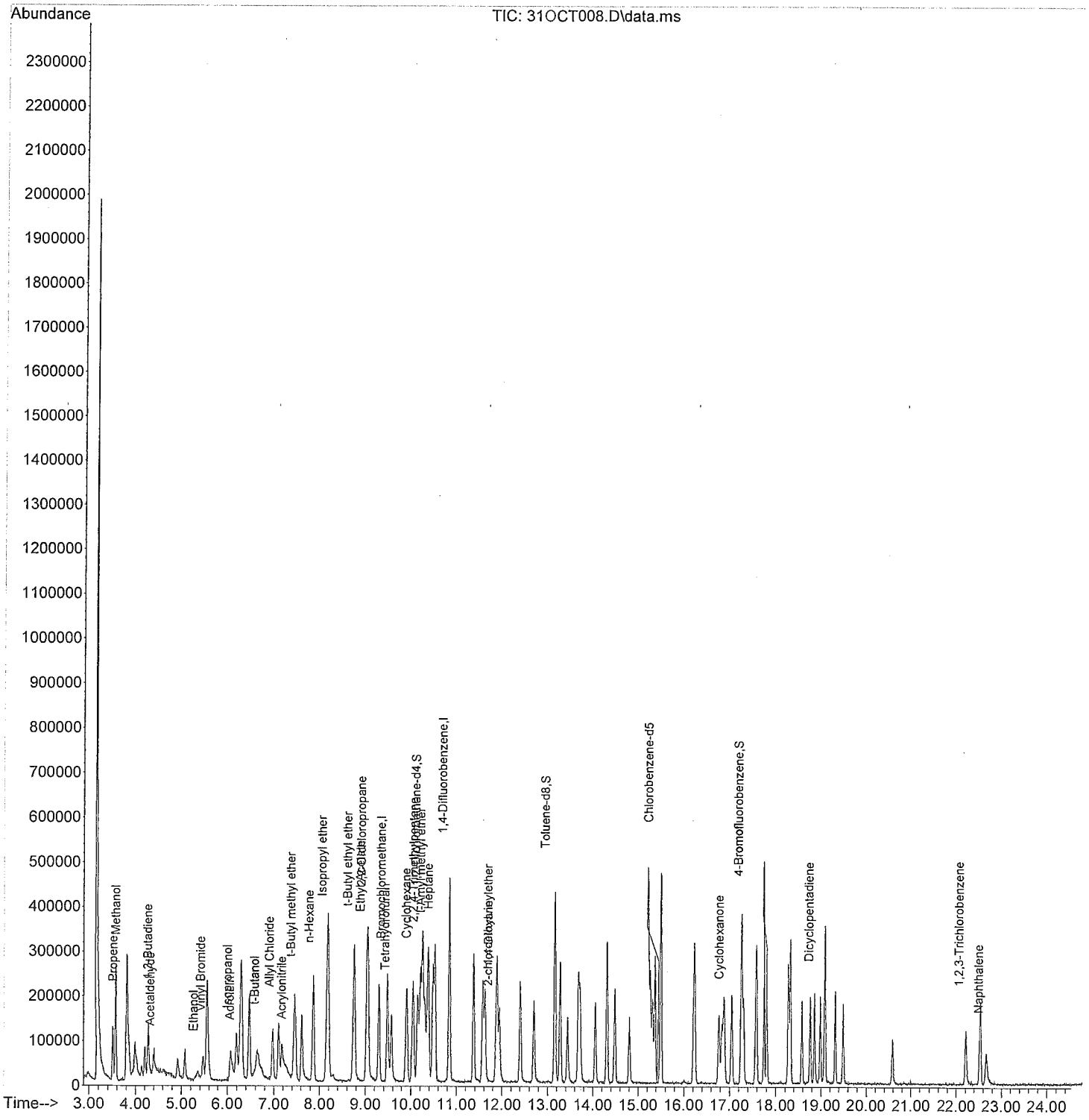
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.331	130	93758	10.00	ppbv	#	0.02
23) 1,4-Difluorobenzene	10.679	114	399629	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.207	117	256835	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.092	65	246179	11.16	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 111.60%				
29) Toluene-d8	12.931	98	366110	9.06	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 90.60%				
32) 4-Bromofluorobenzene	17.178	95	180513	8.06	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 80.60%				
Target Compounds							Qvalue
2) Propene	3.507	41	64717	5.48	ppbv	#	94
4) 1,3-Butadiene	4.261	54	66848	9.66	ppbv		94
5) Methanol	3.562	31	15587	6.44	ppbv	#	1
6) Acetaldehyde	4.310	43	650	0.13	ppbv	#	1
7) Ethanol	5.255	45	3328	0.66	ppbv	#	70
8) Vinyl Bromide	5.409	106	45663	7.42	ppbv		99
9) Isopropanol	5.992	45	114366	4.86	ppbv		97
10) Acrolein	6.042	56	21100	4.41	ppbv	#	92
11) t-Butanol	6.573	59	151140	8.45	ppbv	#	24
12) Allyl Chloride	6.894	41	100784	8.32	ppbv	#	86
13) Acrylonitrile	7.166	53	24777	2.68	ppbv	#	15
14) t-Butyl methyl ether	7.370	73	248293	8.20	ppbv	#	86
15) n-Hexane	7.770	57	144575	7.68	ppbv		93
16) Isopropyl ether	8.049	45	282194	7.71	ppbv	#	91
17) t-Butyl ethyl ether	8.606	87	87588	9.11	ppbv	#	65
18) Ethyl Acetate	8.881	70	21133	6.99	ppbv	#	14
19) 2,2-Dichloropropane	8.898	77	104536	6.34	ppbv	#	73
20) Tetrahydrofuran	9.419	72	41865	6.79	ppbv	#	46
21) Cyclohexane	9.888	56	160859	8.00	ppbv	#	76
22) 2,2,4-Trimethylpentane	10.046	57	369560	6.50	ppbv		97
25) t-Amyl methyl ether	10.203	73	178321	8.59	ppbv		99
26) Heptane	10.367	71	78939	6.44	ppbv	#	51
27) 1,4-Dioxane	11.692	88	60143	7.63	ppbv	#	68
28) 2-chloroethylvinylether	11.685	63	104	0.85	ppbv	#	100
31) Cyclohexanone	16.765	55	81125	10.19	ppbv	#	85
33) Dicyclopentadiene	18.729	66	1870	3.41	ppbv		94
34) Naphthalene	22.491	128	97820	4.03	ppbv		98
35) 1,2,3-Trichlorobenzene	22.048	180	68576	6.12	ppbv	#	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT008.D
Acq On : 31 Oct 2018 3:24 pm
Operator : DT
Sample : 7.0 PPBV ICAL
Misc : 35 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:02:50 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:02:53 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

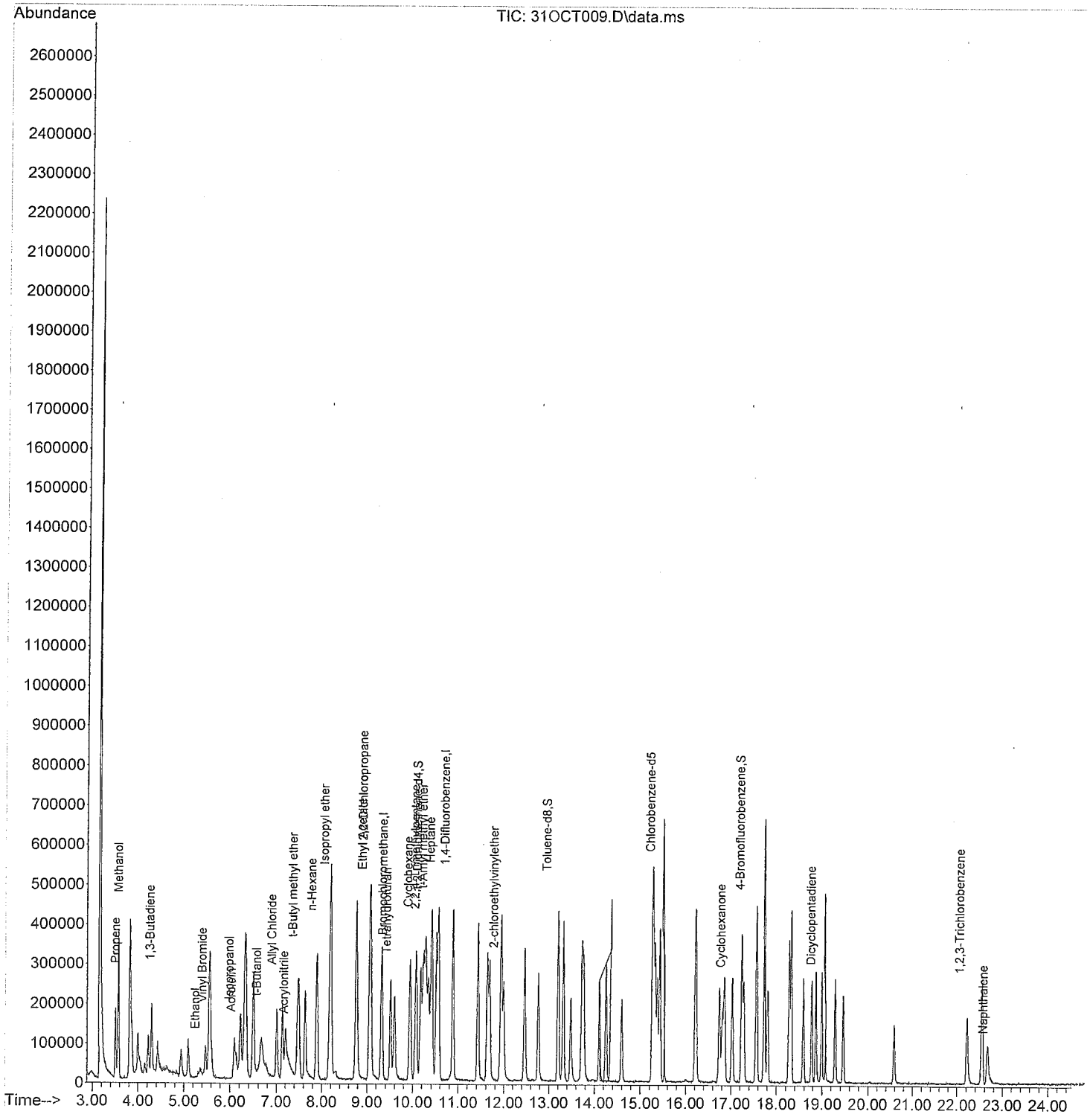
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.327	130	92431	10.00	ppbv	# 0.01
23) 1,4-Difluorobenzene	10.685	114	387710	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.201	117	247595	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.088	65	246452	11.52	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 115.20%			
29) Toluene-d8	12.931	98	349278	8.91	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 89.10%			
32) 4-Bromofluorobenzene	17.178	95	174910	8.10	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 81.00%			
Target Compounds						Qvalue
2) Propene	3.493	41	94593	8.13	ppbv #	97
4) 1,3-Butadiene	4.251	54	91934	13.47	ppbv	96
5) Methanol	3.556	31	21962	9.21	ppbv #	1
7) Ethanol	5.241	45	6379	1.29	ppbv #	78
8) Vinyl Bromide	5.392	106	67062	11.06	ppbv #	96
9) Isopropanol	5.979	45	178793	7.70	ppbv	96
10) Acrolein	6.018	56	41010	8.70	ppbv #	87
11) t-Butanol	6.560	59	162491	9.22	ppbv	90
12) Allyl Chloride	6.891	41	141391	11.84	ppbv #	89
13) Acrylonitrile	7.160	53	53215	5.85	ppbv	84
14) t-Butyl methyl ether	7.360	73	356971	11.96	ppbv #	85
15) n-Hexane	7.766	57	206300	11.11	ppbv	93
16) Isopropyl ether	8.042	45	396001	10.98	ppbv #	91
18) Ethyl Acetate	8.881	70	28433	9.54	ppbv #	1
19) 2,2-Dichloropropane	8.891	77	152936	9.40	ppbv #	76
20) Tetrahydrofuran	9.413	72	59245	9.75	ppbv #	45
21) Cyclohexane	9.885	56	234390	11.83	ppbv #	76
22) 2,2,4-Trimethylpentane	10.039	57	511251	9.12	ppbv	97
25) t-Amyl methyl ether	10.200	73	256554	12.74	ppbv	98
26) Heptane	10.364	71	110158	9.26	ppbv #	50
28) 2-chloroethylvinylether	11.757	63	113	0.95	ppbv #	100
31) Cyclohexanone	16.768	55	116957	15.24	ppbv #	86
33) Dicyclopentadiene	18.745	66	3314	6.27	ppbv #	42
34) Naphthalene	22.559	128	13187	0.56	ppbv	96
35) 1,2,3-Trichlorobenzene	22.044	180	95683	8.86	ppbv #	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT009.D
Acq On : 31 Oct 2018 4:04 pm
Operator : DT
Sample : 10 PPBV ICAL
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:02:53 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:02:56 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

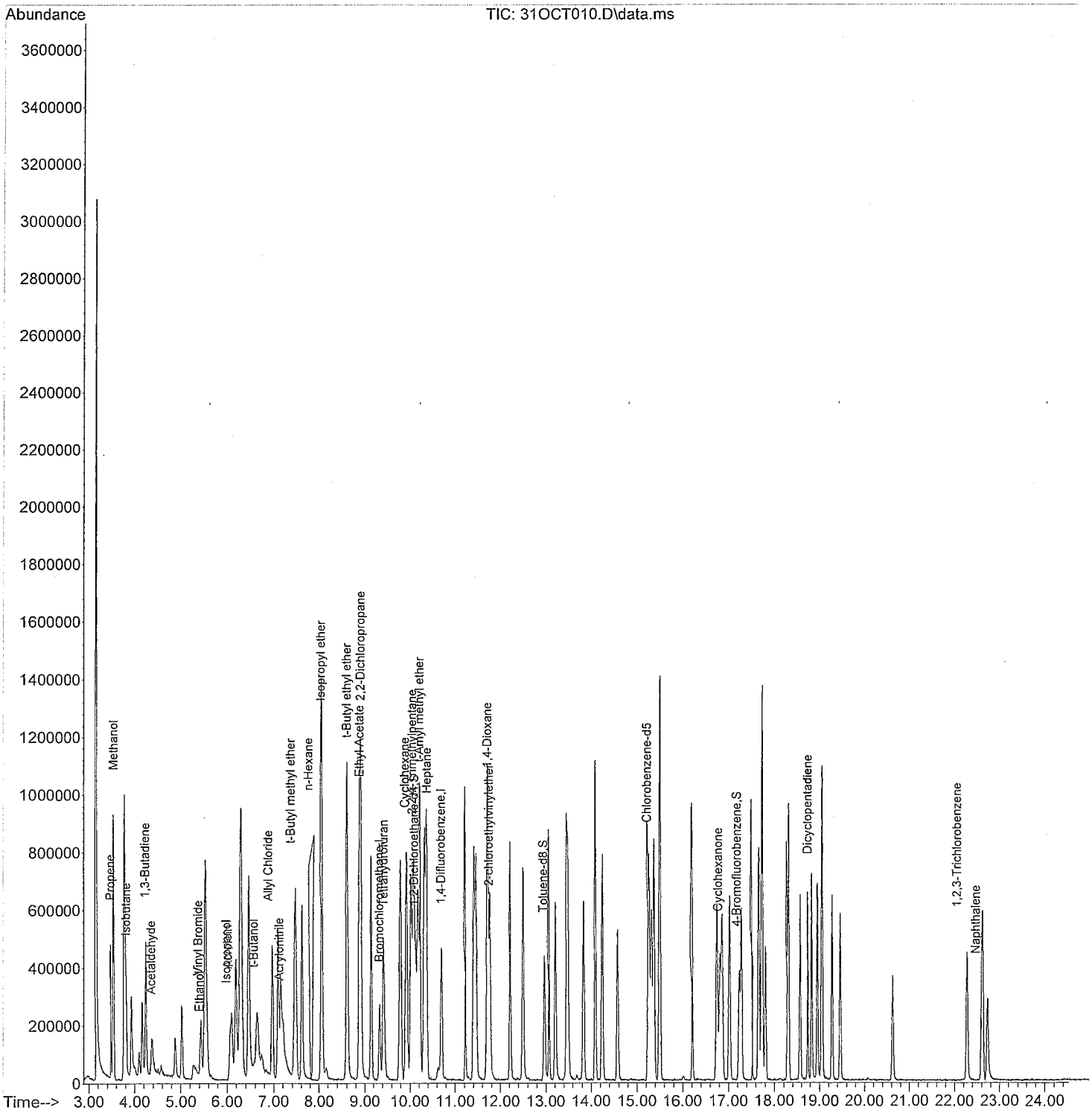
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	99785	10.00	ppbv	#	0.01
23) 1,4-Difluorobenzene	10.682	114	403819	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.207	117	243153	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	260383	11.68	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 116.80%				
29) Toluene-d8	12.931	98	363404	8.90	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 89.00%				
32) 4-Bromofluorobenzene	17.178	95	175818	8.29	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 82.90%				
Target Compounds							Qvalue
2) Propene	3.467	41	221401	17.63	ppbv		97
3) isobutane	3.815	41	130665	20.08	ppbv	#	1
4) 1,3-Butadiene	4.221	54	238792	32.41	ppbv		99
5) Methanol	3.533	31	52322	20.32	ppbv	#	7
6) Acetaldehyde	4.356	43	92393	17.54	ppbv	#	66
7) Ethanol	5.399	45	25686	4.79	ppbv		95
8) Vinyl Bromide	5.373	106	175510	26.81	ppbv	#	97
9) Isopropanol	5.979	45	410143	16.37	ppbv		99
10) Acrolein	6.009	56	124307	24.42	ppbv		94
11) t-Butanol	6.563	59	379125	19.92	ppbv		100
12) Allyl Chloride	6.881	41	373510	28.98	ppbv	#	86
13) Acrylonitrile	7.117	53	243758	24.81	ppbv		92
14) t-Butyl methyl ether	7.363	73	886365	27.51	ppbv	#	85
15) n-Hexane	7.760	57	512017	25.54	ppbv		92
16) Isopropyl ether	8.039	45	969601	24.90	ppbv	#	86
17) t-Butyl ethyl ether	8.596	87	298856	29.19	ppbv	#	63
18) Ethyl Acetate	8.872	70	78138	24.28	ppbv	#	5
19) 2,2-Dichloropropane	8.895	77	389556	22.19	ppbv	#	80
20) Tetrahydrofuran	9.416	72	157522	24.02	ppbv	#	54
21) Cyclohexane	9.878	56	579577	27.09	ppbv	#	79
22) 2,2,4-Trimethylpentane	10.042	57	1221818	20.20	ppbv		97
25) t-Amyl methyl ether	10.200	73	638721	30.44	ppbv		100
26) Heptane	10.370	71	247153	19.95	ppbv	#	52
27) 1,4-Dioxane	11.702	88	233688	29.33	ppbv	#	71
28) 2-chloroethylvinylether	11.738	63	245	1.99	ppbv	#	100
31) Cyclohexanone	16.765	55	277795	36.86	ppbv	#	89
33) Dicyclopentadiene	18.732	66	5408	10.41	ppbv		95
34) Naphthalene	22.464	128	363894	15.84	ppbv		98
35) 1,2,3-Trichlorobenzene	22.041	180	238429	22.49	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT010.D
Acq On : 31 Oct 2018 4:44 pm
Operator : DT
Sample : 25 PPBV ICAL
Misc : 125 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 02 18:02:56 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 18:02:59 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

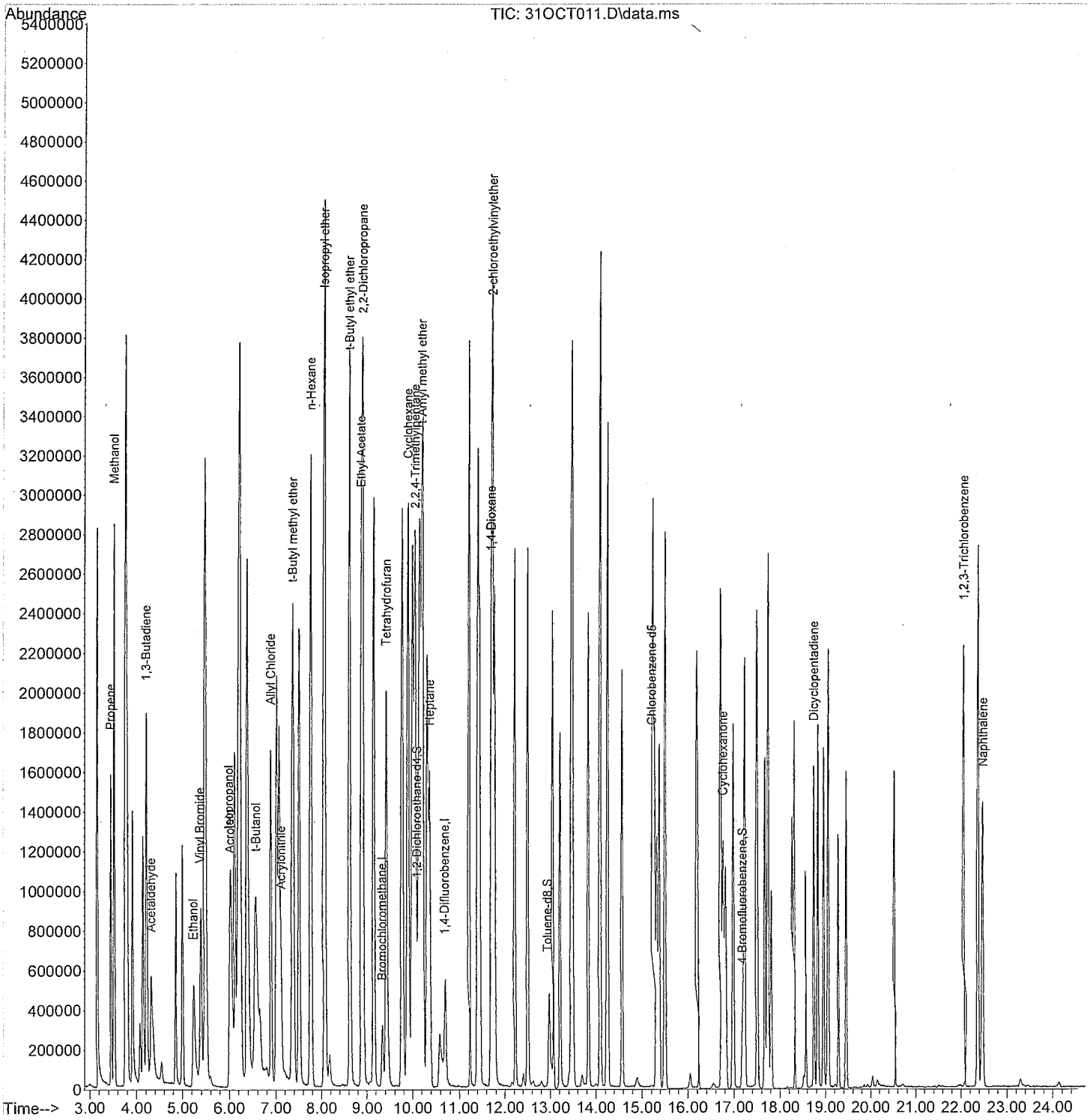
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.331	130	111396	10.00	ppbv	#	0.02
23) 1,4-Difluorobenzene	10.685	114	410431	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	255254	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.095	65	264143	11.66	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 116.60%				
29) Toluene-d8	12.935	98	383387	9.24	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 92.40%				
32) 4-Bromofluorobenzene	17.181	95	163677	7.35	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 73.50%#				
Target Compounds							Qvalue
2) Propene	3.447	41	741769	52.91	ppbv		99
4) 1,3-Butadiene	4.208	54	1066743	129.70	ppbv		98
5) Methanol	3.520	31	174469	60.69	ppbv	#	3
6) Acetaldehyde	4.317	43	415905	70.74	ppbv	#	65
7) Ethanol	5.228	45	486006	81.25	ppbv		97
8) Vinyl Bromide	5.369	106	802710	109.84	ppbv	#	98
9) Isopropanol	5.986	45	2183402	78.05	ppbv		94
10) Acrolein	6.009	56	557082	98.04	ppbv		94
11) t-Butanol	6.563	59	2694572	126.82	ppbv		95
12) Allyl Chloride	6.884	41	1419311	98.66	ppbv	#	88
13) Acrylonitrile	7.114	53	828949	75.57	ppbv		98
14) t-Butyl methyl ether	7.366	73	3511616	97.62	ppbv	#	84
15) n-Hexane	7.763	57	2081541	93.02	ppbv		93
16) Isopropyl ether	8.048	45	3339926	76.83	ppbv	#	96
17) t-Butyl ethyl ether	8.606	87	1046600	91.58	ppbv	#	70
18) Ethyl Acetate	8.868	70	329591	91.73	ppbv	#	37
19) 2,2-Dichloropropane	8.904	77	1426566	72.79	ppbv		89
20) Tetrahydrofuran	9.416	72	664211	90.73	ppbv	#	57
21) Cyclohexane	9.891	56	2279771	95.46	ppbv	#	79
22) 2,2,4-Trimethylpentane	10.049	57	4412699	65.35	ppbv		95
25) t-Amyl methyl ether	10.200	73	2483746	116.47	ppbv		99
26) Heptane	10.367	71	501732	39.85	ppbv		79
27) 1,4-Dioxane	11.695	88	1024304	126.50	ppbv	#	71
28) 2-chloroethylvinylether	11.724	63	1723	13.74	ppbv	#	100
31) Cyclohexanone	16.758	55	764711	96.65	ppbv	#	92
33) Dicyclopentadiene	18.736	66	19680	36.09	ppbv		96
34) Naphthalene	22.464	128	1596094	66.16	ppbv		98
35) 1,2,3-Trichlorobenzene	22.041	180	1159458	104.16	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT011.D
Acq On : 31 Oct 2018 5:24 pm
Operator : DT
Sample : 100 PPBV ICAL
Misc : 50 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 18:02:59 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT012.D
Acq On : 31 Oct 2018 6:06 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 18:03:02 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration

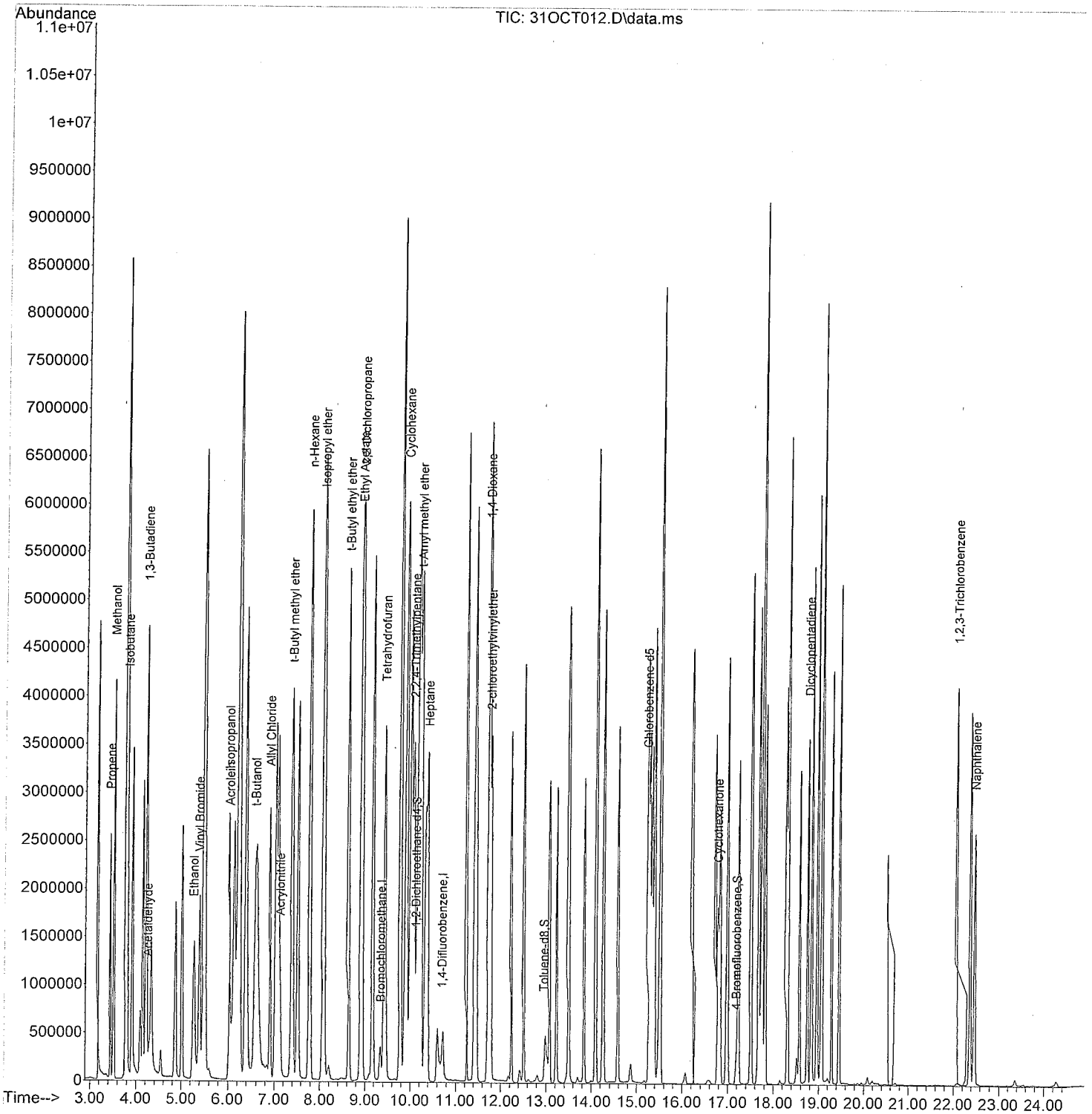
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.344	130	134364	10.00	ppbv	#	0.03
23) 1,4-Difluorobenzene	10.695	114	360111	10.00	ppbv		0.02
30) Chlorobenzene-d5	15.207	117	210698	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.108	65	233675	11.76	ppbv		0.03
Spiked Amount 10.000	Range 80 - 120		Recovery = 117.60%				
29) Toluene-d8	12.941	98	355911	9.77	ppbv		0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.70%				
32) 4-Bromofluorobenzene	17.185	95	107624	5.86	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 58.60%#				
Target Compounds							Qvalue
2) Propene	3.428	41	1328108	78.54	ppbv		99
3) isobutane	3.802	41	1304737	148.88	ppbv	#	1
4) 1,3-Butadiene	4.215	54	2651693	267.29	ppbv		97
5) Methanol	3.513	31	250984	72.38	ppbv	#	1
6) Acetaldehyde	4.244	43	1223	0.17	ppbv		89
7) Ethanol	5.254	45	1631241	226.10	ppbv		95
8) Vinyl Bromide	5.376	106	1859346	210.94	ppbv	#	98
9) Isopropanol	6.002	45	5001344	148.22	ppbv	#	86
10) Acrolein	6.012	56	955803	139.46	ppbv		99
11) t-Butanol	6.576	59	5954786	232.36	ppbv		97
12) Allyl Chloride	6.884	41	2429582	140.01	ppbv	#	89
13) Acrylonitrile	7.117	53	1241813	93.85	ppbv		98
14) t-Butyl methyl ether	7.379	73	6436929	148.35	ppbv	#	85
15) n-Hexane	7.770	57	4214921	156.17	ppbv		94
16) Isopropyl ether	8.045	45	5641201	107.58	ppbv	#	95
17) t-Butyl ethyl ether	8.606	87	1642468	119.15	ppbv		79
18) Ethyl Acetate	8.885	70	646063	149.08	ppbv	#	68
19) 2,2-Dichloropropane	8.914	77	2496121	105.60	ppbv		93
20) Tetrahydrofuran	9.422	72	1391713	157.61	ppbv	#	64
21) Cyclohexane	9.898	56	4778968	165.90	ppbv	#	82
22) 2,2,4-Trimethylpentane	10.055	57	6187317	75.97	ppbv		97
25) t-Amyl methyl ether	10.203	73	4251149	227.20	ppbv		97
26) Heptane	10.377	71	1030231	93.26	ppbv		80
27) 1,4-Dioxane	11.705	88	1879492	264.55	ppbv	#	76
28) 2-chloroethylvinylether	11.747	63	2268	20.62	ppbv	#	100
31) Cyclohexanone	16.765	55	1196550	183.21	ppbv		94
33) Dicyclopentadiene	18.739	66	46562	103.45	ppbv		89
34) Naphthalene	22.464	128	2953795	148.34	ppbv		98
35) 1,2,3-Trichlorobenzene	22.044	180	2171730	236.36	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT012.D
Acq On : 31 Oct 2018 6:06 pm
Operator : DT
Sample : 250 PPBV ICAL
Misc : 125 ML
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 18:03:02 2018
Quant Method : C:\msdchem\1\methods\AL181018.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Wed Oct 24 11:30:17 2018
Response via : Initial Calibration



4. Initial Calibration Verification

a. ICV Summary
b. Results/Chromatograms

Default Initial Calibration Criteria:

Target compounds must have %Diff <30%

(This criteria superseded by any project specific criteria)

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 10:46:44 2018
Quant Method : C:\msdchem\1\methods\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	108	0.00
2		Dichlorodifluoromethane (12	3.531	3.059	13.4	93	0.00
3		Chloromethane	1.581	1.389	12.1	85	0.00
4		1,2-Cl-1,1,2,2-F ethane (11	3.077	2.845	7.5	95	0.00
5		Vinyl Chloride	1.260	1.117	11.3	85	0.00
6		Bromomethane	0.495	0.711	-43.6#	112	0.00
7		Chloroethane	0.248	0.214	13.7	87	0.00
8		Trichlorofluoromethane (11)	3.954	3.421	13.5	90	0.00
9	M	1,1-Dichloroethene	2.812	2.420	13.9	89	0.00
10		Carbon Disulfide	2.669	2.410	9.7	91	0.00
11		1,1,2-Cl 1,2,2-F ethane (11	1.957	1.615	17.5	86	0.00
12		Acetone	3.212	4.026	-25.3	150#	0.00
13	M	Methylene Chloride	1.022	0.950	7.0	99	0.00
14		t-1,2-Dichloroethene	1.020	0.953	6.6	94	-0.09
15		1,1-Dichloroethane	2.855	2.609	8.6	94	0.00
16		Vinyl Acetate	5.067	5.331	-5.2	97	0.00
17		c-1,2-Dichloroethene	1.152	1.161	-0.8	93	0.00
18		2-Butanone	0.526	0.634	-20.5	113	0.00
19		t-Butyl Methyl Ether	3.659	3.276	10.5	90	0.00
20	t	Chloroform	3.026	2.841	6.1	94	0.00
21		1,1,1-Trichloroethane	2.830	2.619	7.5	94	0.00
22		1,1-Dichloropropene	1.726	1.629	5.6	94	0.00
23	t	Carbon Tetrachloride	2.065	1.967	4.7	97	0.00
24	I	1,4-Difluorobenzene	1.000	1.000	0.0	102	0.00
25	T	Benzene	0.866	0.921	-6.4	94	0.00
26	S	1,2-Dichloroethane-d4	0.627	0.604	3.7	97	0.00
27		1,2-Dichloroethane	0.575	0.602	-4.7	96	0.00
28	M	Trichloroethene	0.362	0.349	3.6	95	0.00
29		1,2-Dichloropropane	0.355	0.367	-3.4	98	0.00
30		Bromodichloromethane	0.680	0.714	-5.0	97	0.00
31		Dibromomethane	0.302	0.322	-6.6	101	0.00
32		c-1,3-Dichloropropene	0.418	0.485	-16.0	101	0.00
33		4-Methyl-2-Pentanone	0.726	0.802	-10.5	98	0.00
34	S	Toluene-d8	0.924	0.898	2.8	101	0.00
35	M	Toluene	0.757	0.886	-17.0	101	0.00
36	I	Chlorobenzene-d5	1.000	1.000	0.0	99	0.00
37		t-1,3-Dichloropropene	0.511	0.651	-27.4	104	0.00
38		1,1,2-Trichloroethane	0.487	0.524	-7.6	98	0.00
39		1,3-Dichloropropane	0.650	0.656	-0.9	96	0.00
40		Tetrachloroethene	0.681	0.732	-7.5	99	0.00
41		2-Hexanone	0.493	0.624	-26.6	104	0.00
42		Dibromochloromethane	0.721	0.821	-13.9	103	0.00
43	t	1,2-Dibromoethane	0.711	0.794	-11.7	106	0.00
44		Chlorobenzene	0.742	0.867	-16.8	100	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 10:46:44 2018
Quant Method : C:\msdchem\1\methods\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
45		1,1,1,2-Tetrachloroethane	0.328	0.376	-14.6	104	0.00
46	T	Ethylbenzene	1.267	1.499	-18.3	99	0.00
47	T	p,&m-Xylene	0.964	1.053	-9.2	100	0.00
48	T	o-Xylene	0.907	1.054	-16.2	98	0.00
49		Styrene	0.524	0.639	-21.9	97	0.00
50		Bromoform	0.617	0.720	-16.7	103	0.00
51		Isopropyl benzene	0.934	1.022	-9.4	96	0.00
52	M	1,1,2,2-Tetrachloroethane	0.734	0.839	-14.3	107	0.00
53	S	4-Bromofluorobenzene	0.537	0.565	-5.2	103	0.00
54		Benzyl Chloride	0.449	0.480	-6.9	107	0.00
55		1,2,3-Trichloropropane	0.196	0.217	-10.7	107	0.00
56		n-Propyl Benzene	0.960	1.008	-5.0	97	0.00
57		Bromobenzene	0.590	0.644	-9.2	100	0.00
58		4-Ethyl Toluene	1.020	1.195	-17.2	103	0.00
59	T	1,3,5-Trimethylbenzene	1.148	1.398	-21.8	107	0.00
60		2-Chlorotoluene	0.811	0.889	-9.6	97	0.00
61		4-Chlorotoluene	0.632	0.714	-13.0	100	0.00
62		tert-Butylbenzene	0.845	0.934	-10.5	99	0.00
63		1,2,4-Trimethylbenzene	1.082	1.343	-24.1	113	0.00
64		sec-Butylbenzene	0.822	0.888	-8.0	98	0.00
65		p-Isopropyltoluene	0.644	0.728	-13.0	107	0.00
66		1,3-Dichlorobenzene	0.476	0.535	-12.4	113	0.00
67		1,4-Dichlorobenzene	0.471	0.549	-16.6	118	0.00
68		n-Butylbenzene	0.693	0.824	-18.9	111	0.00
69		1,2-Dichlorobenzene	0.447	0.506	-13.2	121	0.00
70		1,2-Dibromo-3-chloropropane	0.192	0.210	-9.4	108	0.00
71		1,2,4-Trichlorobenzene	0.417	0.607	-45.6#	156#	0.00
72		Hexachlorobutadiene	0.396	0.489	-23.5	134	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 10:46:44 2018
Quant Method : C:\msdchem\1\methods\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	98303	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.685	114	394474	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.201	117	245641	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.085	65	238089	9.63	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.30%				
34) Toluene-d8	12.928	98	354160	9.72	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.20%				
53) 4-Bromofluorobenzene	17.185	174	138890	10.53	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.30%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.553	85	300711	8.66	ppbv		98
3) Chloromethane	3.949	50	136580	8.79	ppbv		97
4) 1,2-Cl-1,1,2,2-F ethan...	3.789	85	279638	9.25	ppbv		94
5) Vinyl Chloride	4.172	62	109811	8.87	ppbv		90
6) Bromomethane	4.871	94	69905	14.38	ppbv		86
7) Chloroethane	5.019	66	21034	8.61	ppbv	#	32
8) Trichlorofluoromethane...	5.481	101	336276	8.65	ppbv		95
9) 1,1-Dichloroethene	6.383	61	237894	8.61	ppbv		85
10) Carbon Disulfide	7.084	76	236899	9.03	ppbv		96
11) 1,1,2-Cl 1,2,2-F ethan...	6.209	151	158754	8.25	ppbv		89
12) Acetone	6.111	43	395772	12.54	ppbv		93
13) Methylene Chloride	7.019	84	93352	9.30	ppbv		87
14) t-1,2-Dichloroethene	7.511	96	93658m	9.34	ppbv		
15) 1,1-Dichloroethane	8.068	63	256439	9.14	ppbv		94
16) Vinyl Acetate	8.058	43	524055	10.52	ppbv		96
17) c-1,2-Dichloroethene	8.898	96	114088	10.08	ppbv		84
18) 2-Butanone	8.603	72	62286	12.06	ppbv		55
19) t-Butyl Methyl Ether	7.360	73	322072	8.95	ppbv		88
20) Chloroform	9.134	83	279318	9.39	ppbv		95
21) 1,1,1-Trichloroethane	9.754	97	257486	9.26	ppbv		92
22) 1,1-Dichloropropene	9.974	75	160125	9.44	ppbv		91
23) Carbon Tetrachloride	10.141	117	193317	9.52	ppbv		95
25) Benzene	10.315	78	363258	10.63	ppbv		93
27) 1,2-Dichloroethane	10.213	62	237409	10.47	ppbv		98
28) Trichloroethene	11.207	130	137497	9.63	ppbv		89
29) 1,2-Dichloropropane	11.410	63	144632	10.34	ppbv		89
30) Bromodichloromethane	11.712	83	281807	10.51	ppbv		91
31) Dibromomethane	11.764	93	126855	10.64	ppbv		92
32) c-1,3-Dichloropropene	12.495	75	191465	11.60	ppbv		84
33) 4-Methyl-2-Pentanone	12.213	43	316516	11.06	ppbv		87
35) Toluene	13.043	91	349458	11.71	ppbv		91
37) t-1,3-Dichloropropene	13.210	75	159875	12.74	ppbv		90
38) 1,1,2-Trichloroethane	13.450	97	128754	10.77	ppbv		90
39) 1,3-Dichloropropane	13.820	76	161018	10.08	ppbv	#	84
40) Tetrachloroethene	14.076	166	179847	10.75	ppbv		85
41) 2-Hexanone	13.482	58	153191	12.65	ppbv		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 10:46:44 2018
Quant Method : C:\msdchem\1\methods\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

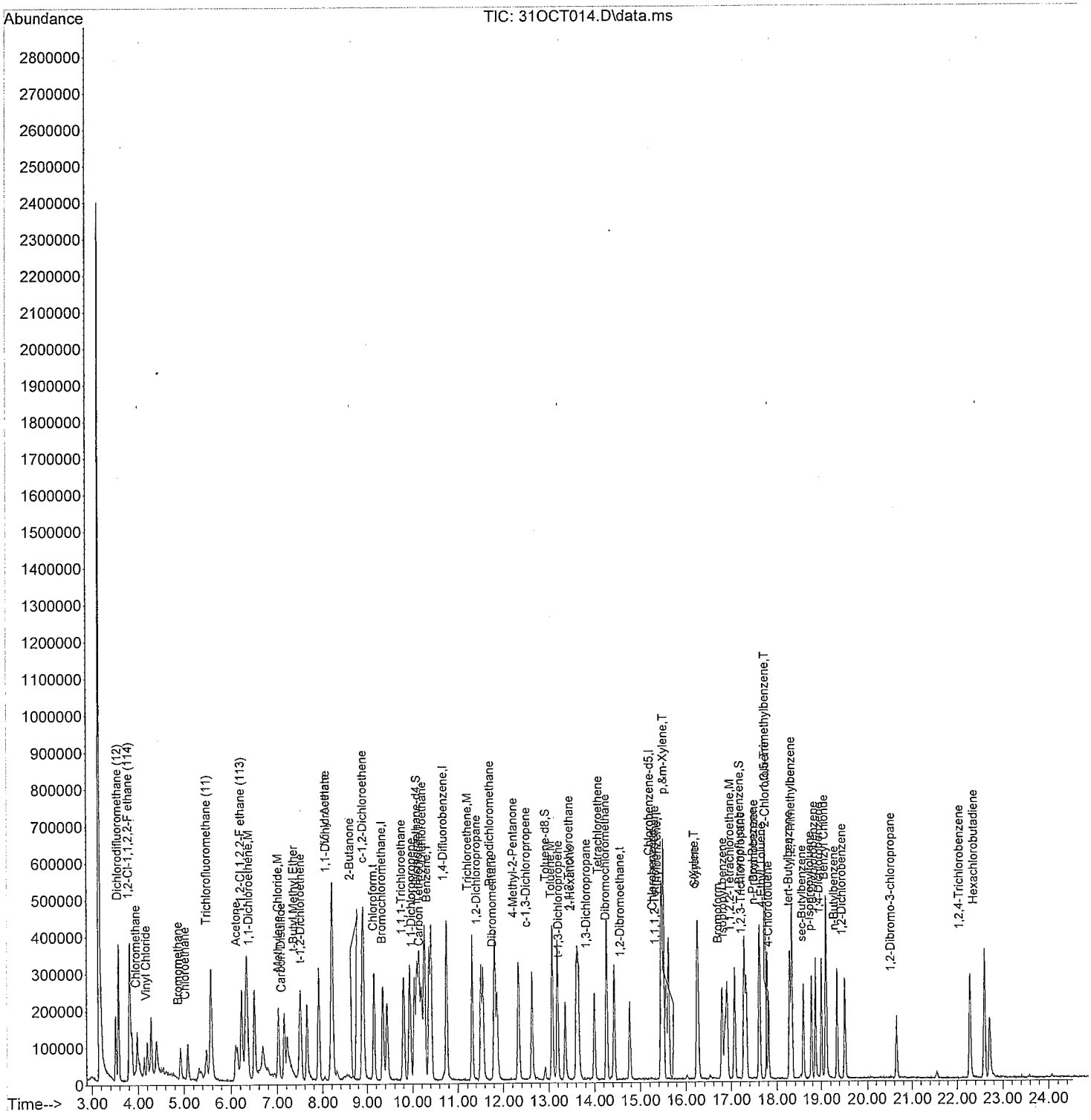
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.240	129	201552	11.38	ppbv		98
43) 1,2-Dibromoethane	14.565	107	194937	11.17	ppbv		97
44) Chlorobenzene	15.266	112	213082	11.70	ppbv		93
45) 1,1,1,2-Tetrachloroethane	15.319	131	92456	11.47	ppbv		95
46) Ethylbenzene	15.368	91	368106	11.83	ppbv		99
47) p,&m-Xylene	15.499	91	517111	21.85	ppbv		98
48) o-Xylene	16.185	91	258827	11.62	ppbv		97
49) Styrene	16.201	104	157048	12.20	ppbv		95
50) Bromoform	16.699	173	176781	11.66	ppbv		95
51) Isopropyl benzene	16.814	105	251164	10.95	ppbv		91
52) 1,1,2,2-Tetrachloroethane	16.975	83	206141	11.43	ppbv		92
54) Benzyl Chloride	19.064	91	117883	10.68	ppbv		96
55) 1,2,3-Trichloropropane	17.218	110	53294	11.05	ppbv	#	81
56) n-Propyl Benzene	17.483	91	247684	10.51	ppbv		95
57) Bromobenzene	17.500	77	158308	10.93	ppbv		89
58) 4-Ethyl Toluene	17.663	105	293505	11.71	ppbv		90
59) 1,3,5-Trimethylbenzene	17.729	105	343288	12.17	ppbv		94
60) 2-Chlorotoluene	17.742	91	218307	10.95	ppbv		97
61) 4-Chlorotoluene	17.805	91	175358	11.30	ppbv		98
62) tert-Butylbenzene	18.257	119	229450	11.05	ppbv		95
63) 1,2,4-Trimethylbenzene	18.306	105	329918	12.41	ppbv		97
64) sec-Butylbenzene	18.559	105	218168	10.81	ppbv		91
65) p-Isopropyltoluene	18.736	119	178791	11.30	ppbv		99
66) 1,3-Dichlorobenzene	18.828	146	131437	11.24	ppbv		83
67) 1,4-Dichlorobenzene	18.952	146	134823	11.64	ppbv		99
68) n-Butylbenzene	19.283	91	202352	11.89	ppbv		99
69) 1,2-Dichlorobenzene	19.454	146	124192	11.30	ppbv		94
70) 1,2-Dibromo-3-chloropr...	20.516	157	51566	10.94	ppbv	#	86
71) 1,2,4-Trichlorobenzene	22.045	180	149150	14.57	ppbv		84
72) Hexachlorobutadiene	22.356	225	120020	12.34	ppbv		98

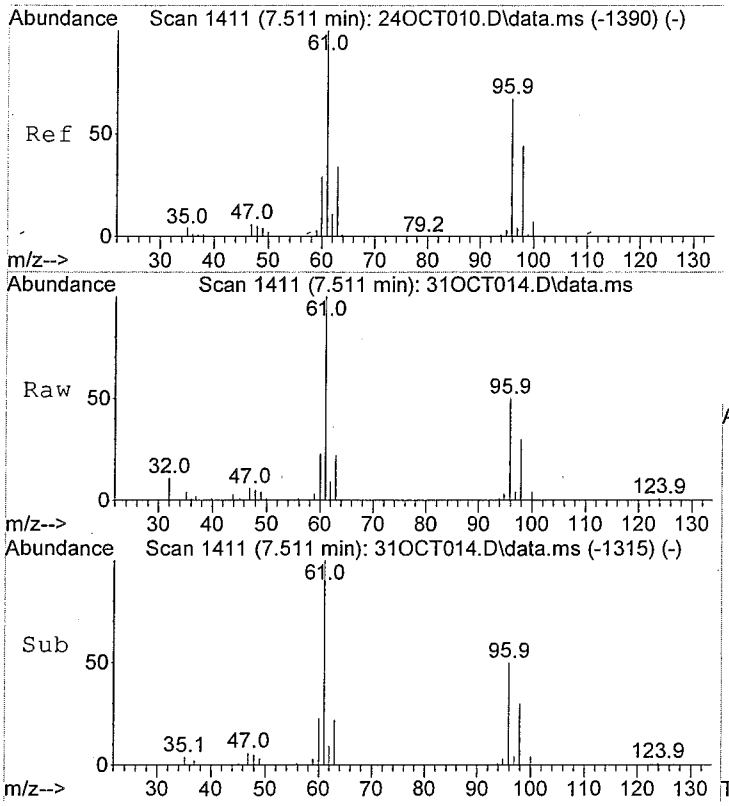
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 10:46:44 2018
Quant Method : C:\msdchem\1\methods\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

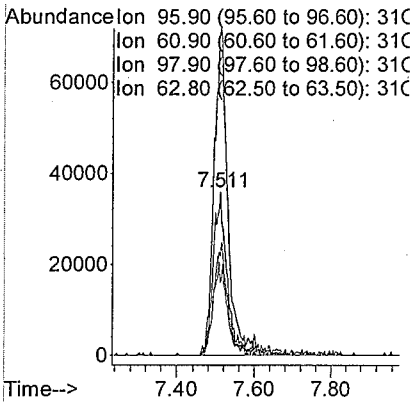




#14
t-1,2-Dichloroethene
Concen: 9.34 ppbv m
RT: 7.511 min Scan# 1411
Delta R.T. -0.085 min
Lab File: 31OCT014.D
Acq: 31 Oct 2018 7:26 pm

Tgt Ion: 96 Resp: 93658

Ion	Ratio	Lower	Upper
96	100		
61	200.3	98.0	198.0#
98	60.9	21.0	121.0
63	44.8	2.1	102.1



MI - 3
D - 11/1/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 10:32:29 2018
Quant Method : C:\msdchem\1\methods\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	98303	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.685	114	394474	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.201	117	245641	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.085	65	238089	9.63	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.30%				
34) Toluene-d8	12.928	98	354160	9.72	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.20%				
53) 4-Bromofluorobenzene	17.185	174	138890	10.53	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.30%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.553	85	300711	8.66	ppbv		98
3) Chloromethane	3.949	50	136580	8.79	ppbv		97
4) 1,2-Cl-1,1,2,2-F ethan...	3.789	85	279638	9.25	ppbv		94
5) Vinyl Chloride	4.172	62	109811	8.87	ppbv		90
6) Bromomethane	4.871	94	69905	14.38	ppbv		86
7) Chloroethane	5.019	66	21034	8.61	ppbv	#	32
8) Trichlorofluoromethane...	5.481	101	336276	8.65	ppbv		95
9) 1,1-Dichloroethene	6.383	61	237894	8.61	ppbv		85
10) Carbon Disulfide	7.084	76	236899	9.03	ppbv		96
11) 1,1,2-Cl 1,2,2-F ethan...	6.209	151	158754	8.25	ppbv		89
12) Acetone	6.111	43	395772	12.54	ppbv		93
13) Methylene Chloride	7.019	84	93352	9.30	ppbv		87
14) t-1,2-Dichloroethene	7.596	96	4333	0.43	ppbv	#	30
15) 1,1-Dichloroethane	8.068	63	256439	9.14	ppbv		94
16) Vinyl Acetate	8.058	43	524055	10.52	ppbv		96
17) c-1,2-Dichloroethene	8.898	96	114088	10.08	ppbv		84
18) 2-Butanone	8.603	72	62286	12.06	ppbv		55
19) t-Butyl Methyl Ether	7.360	73	322072	8.95	ppbv		88
20) Chloroform	9.134	83	279318	9.39	ppbv		95
21) 1,1,1-Trichloroethane	9.754	97	257486	9.26	ppbv		92
22) 1,1-Dichloropropene	9.974	75	160125	9.44	ppbv		91
23) Carbon Tetrachloride	10.141	117	193317	9.52	ppbv		95
25) Benzene	10.315	78	363258	10.63	ppbv		93
27) 1,2-Dichloroethane	10.213	62	237409	10.47	ppbv		98
28) Trichloroethene	11.207	130	137497	9.63	ppbv		89
29) 1,2-Dichloropropane	11.410	63	144632	10.34	ppbv		89
30) Bromodichloromethane	11.712	83	281807	10.51	ppbv		91
31) Dibromomethane	11.764	93	126855	10.64	ppbv		92
32) c-1,3-Dichloropropene	12.495	75	191465	11.60	ppbv		84
33) 4-Methyl-2-Pentanone	12.213	43	316516	11.06	ppbv		87
35) Toluene	13.043	91	349458	11.71	ppbv		91
37) t-1,3-Dichloropropene	13.210	75	159875	12.74	ppbv		90
38) 1,1,2-Trichloroethane	13.450	97	128754	10.77	ppbv		90
39) 1,3-Dichloropropane	13.820	76	161018	10.08	ppbv	#	84
40) Tetrachloroethene	14.076	166	179847	10.75	ppbv		85
41) 2-Hexanone	13.482	58	153191	12.65	ppbv		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 10:32:29 2018
Quant Method : C:\msdchem\1\methods\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

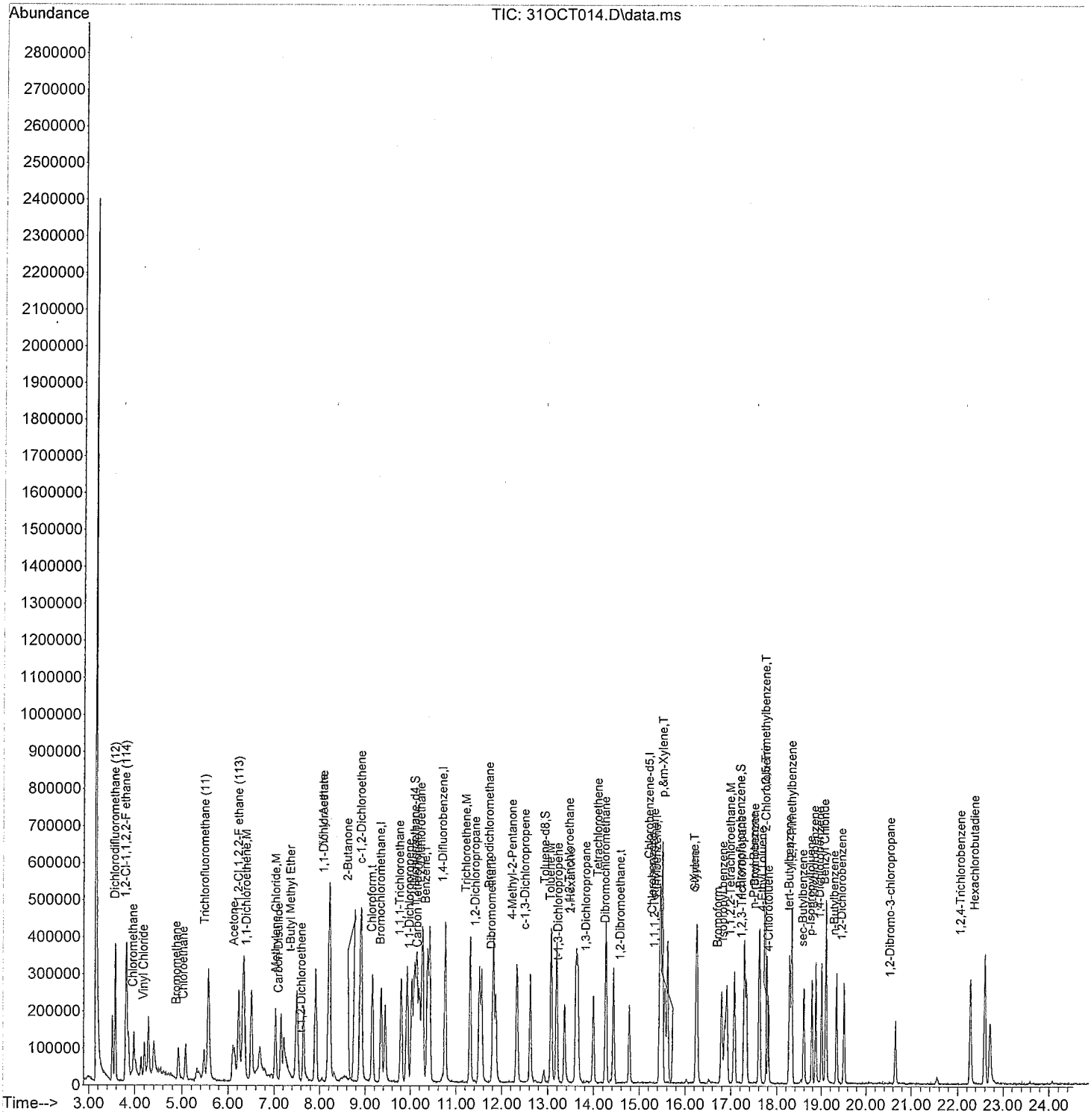
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.240	129	201552	11.38	ppbv		98
43) 1,2-Dibromoethane	14.565	107	194937	11.17	ppbv		97
44) Chlorobenzene	15.266	112	213082	11.70	ppbv		93
45) 1,1,1,2-Tetrachloroethane	15.319	131	92456	11.47	ppbv		95
46) Ethylbenzene	15.368	91	368106	11.83	ppbv		99
47) p,&m-Xylene	15.499	91	517111	21.85	ppbv		98
48) o-Xylene	16.185	91	258827	11.62	ppbv		97
49) Styrene	16.201	104	157048	12.20	ppbv		95
50) Bromoform	16.699	173	176781	11.66	ppbv		95
51) Isopropyl benzene	16.814	105	251164	10.95	ppbv		91
52) 1,1,2,2-Tetrachloroethane	16.975	83	206141	11.43	ppbv		92
54) Benzyl Chloride	19.064	91	117883	10.68	ppbv		96
55) 1,2,3-Trichloropropane	17.218	110	53294	11.05	ppbv	#	81
56) n-Propyl Benzene	17.483	91	247684	10.51	ppbv		95
57) Bromobenzene	17.500	77	158308	10.93	ppbv		89
58) 4-Ethyl Toluene	17.663	105	293505	11.71	ppbv		90
59) 1,3,5-Trimethylbenzene	17.729	105	343288	12.17	ppbv		94
60) 2-Chlorotoluene	17.742	91	218307	10.95	ppbv		97
61) 4-Chlorotoluene	17.805	91	175358	11.30	ppbv		98
62) tert-Butylbenzene	18.257	119	229450	11.05	ppbv		95
63) 1,2,4-Trimethylbenzene	18.306	105	329918	12.41	ppbv		97
64) sec-Butylbenzene	18.559	105	218168	10.81	ppbv		91
65) p-Isopropyltoluene	18.736	119	178791	11.30	ppbv		99
66) 1,3-Dichlorobenzene	18.828	146	131437	11.24	ppbv		83
67) 1,4-Dichlorobenzene	18.952	146	134823	11.64	ppbv		99
68) n-Butylbenzene	19.283	91	202352	11.89	ppbv		99
69) 1,2-Dichlorobenzene	19.454	146	124192	11.30	ppbv		94
70) 1,2-Dibromo-3-chloropr...	20.516	157	51566	10.94	ppbv	#	86
71) 1,2,4-Trichlorobenzene	22.045	180	149150	14.57	ppbv		84
72) Hexachlorobutadiene	22.356	225	120020	12.34	ppbv		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 10:32:29 2018
Quant Method : C:\msdchem\1\methods\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 14 11:04:55 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

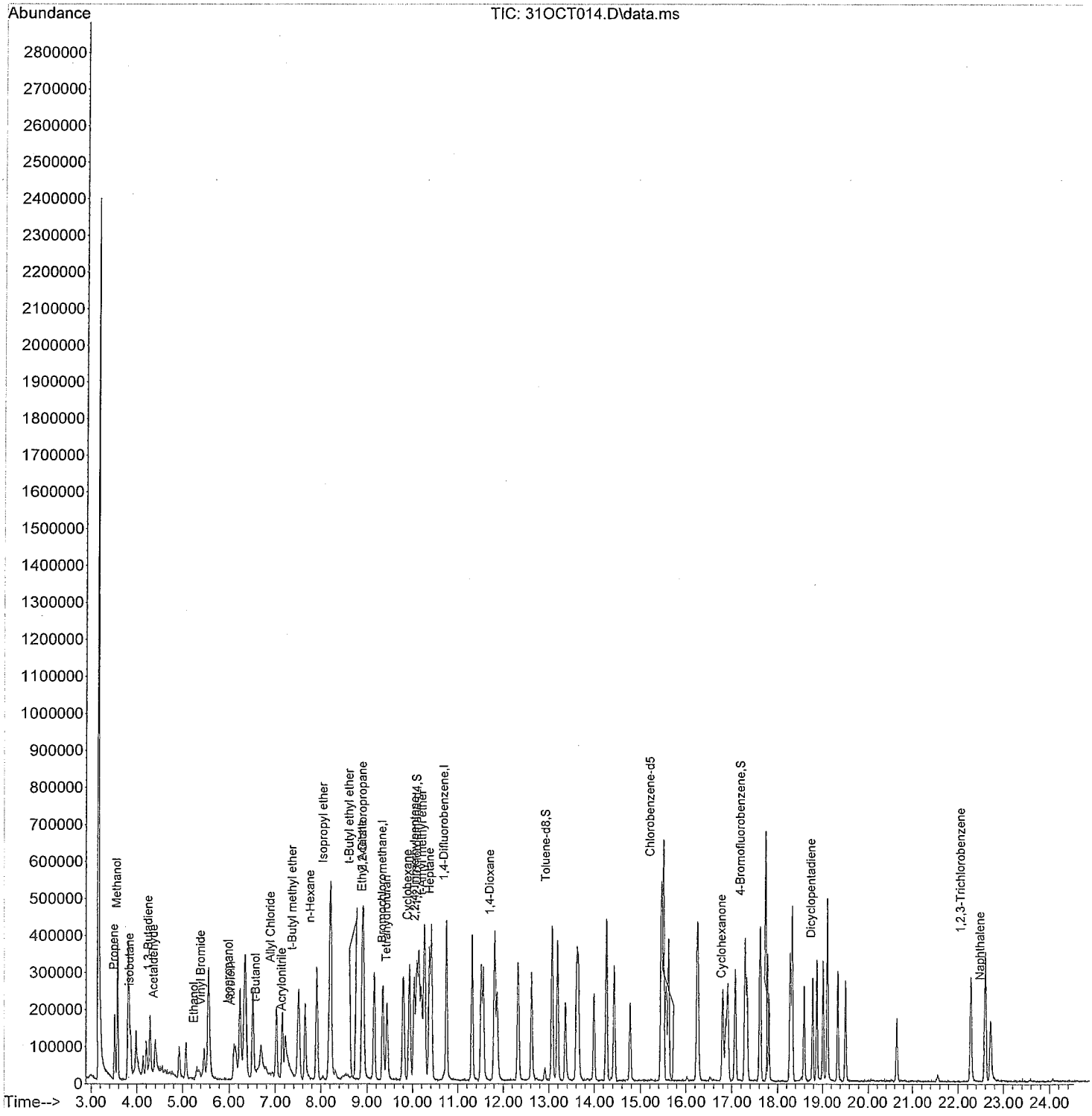
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.324	130	96516	10.00	ppbv	# 0.00
23) 1,4-Difluorobenzene	10.685	114	393771	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.201	117	245641	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.085	65	237920	9.59	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 95.90%			
29) Toluene-d8	12.928	98	353579	9.71	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.10%			
32) 4-Bromofluorobenzene	17.178	95	169377	10.35	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.50%			
Target Compounds						Qvalue
2) Propene	3.487	41	95672	9.34	ppbv #	94
3) isobutane	3.831	41	51162	9.32	ppbv #	1
4) 1,3-Butadiene	4.241	54	84595	9.45	ppbv	98
5) Methanol	3.549	31	20655	11.67	ppbv #	56
6) Acetaldehyde	4.356	43	86236m	12.00	ppbv	
7) Ethanol	5.245	45	68237m	11.16	ppbv	
8) Vinyl Bromide	5.396	106	65813	9.40	ppbv #	96
9) Isopropanol	5.976	45	272164m	11.49	ppbv	
10) Acrolein	6.019	56	84622	13.22	ppbv #	89
11) t-Butanol	6.560	59	209614m	9.09	ppbv	
12) Allyl Chloride	6.888	41	143381	10.49	ppbv #	90
13) Acrylonitrile	7.130	53	103317m	9.68	ppbv	
14) t-Butyl methyl ether	7.360	73	322072	9.30	ppbv #	84
15) n-Hexane	7.757	57	190822	9.59	ppbv	93
16) Isopropyl ether	8.042	45	397938	9.53	ppbv #	94
17) t-Butyl ethyl ether	8.606	87	123233	9.66	ppbv #	66
18) Ethyl Acetate	8.878	70	28319	9.97	ppbv #	9
19) 2,2-Dichloropropane	8.888	77	163973	11.73	ppbv	81
20) Tetrahydrofuran	9.419	72	58395	9.34	ppbv #	47
21) Cyclohexane	9.885	56	216819	9.46	ppbv #	78
22) 2,2,4-Trimethylpentane	10.039	57	496584	9.12	ppbv	96
25) t-Amyl methyl ether	10.200	73	253982	10.11	ppbv	99
26) Heptane	10.367	71	106271	10.61	ppbv #	53
27) 1,4-Dioxane	11.698	88	92593	10.35	ppbv #	71
31) Cyclohexanone	16.762	55	106966	11.34	ppbv #	88
33) Dicyclopentadiene	18.733	66	5011	17.38	ppbv #	49
34) Naphthalene	22.478	128	220425	13.66	ppbv	99
35) 1,2,3-Trichlorobenzene	22.045	180	149150	15.29	ppbv #	98

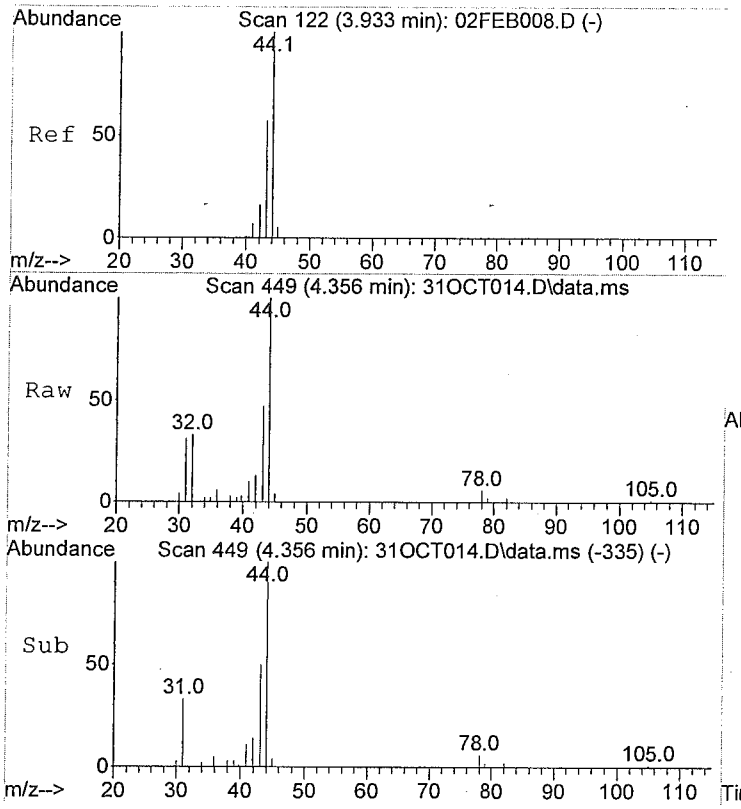
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 14 11:04:55 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

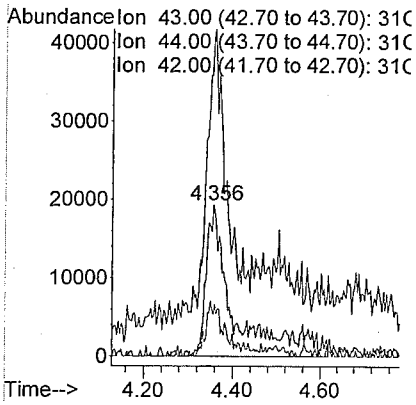




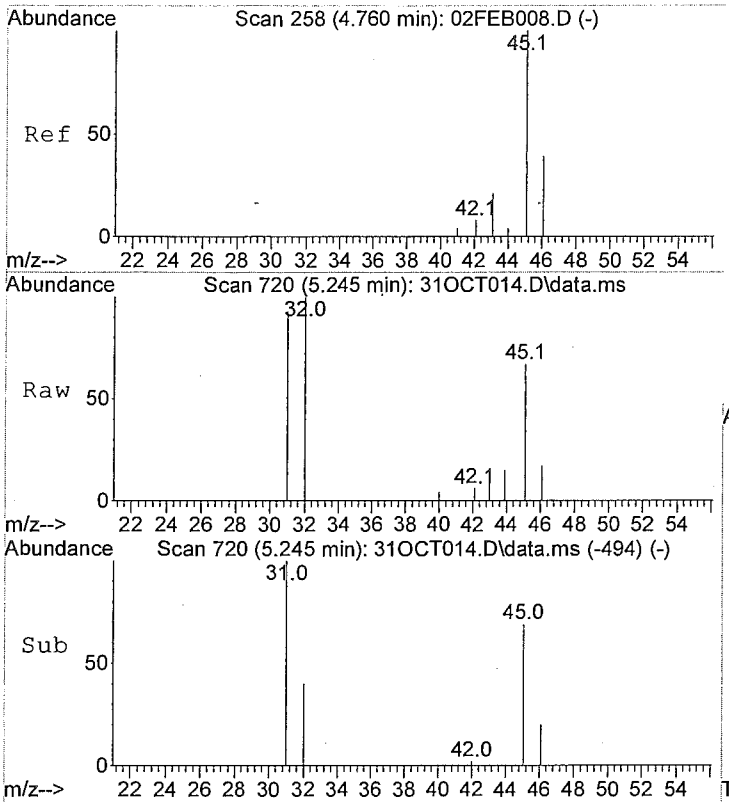
#6
Acetaldehyde
Concen: 12.00 ppbv m /
RT: 4.356 min Scan# 449
Delta R.T. -0.026 min
Lab File: 31OCT014.D
Acq: 31 Oct 2018 7:26 pm

Tgt Ion: 43 Resp: 86236

Ion	Ratio	Lower	Upper
43	100		
44	148.9	223.3	263.3#
42	20.8	12.1	52.1



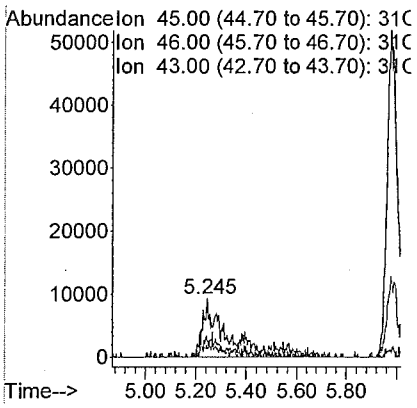
ME-3
JS 11/14/18



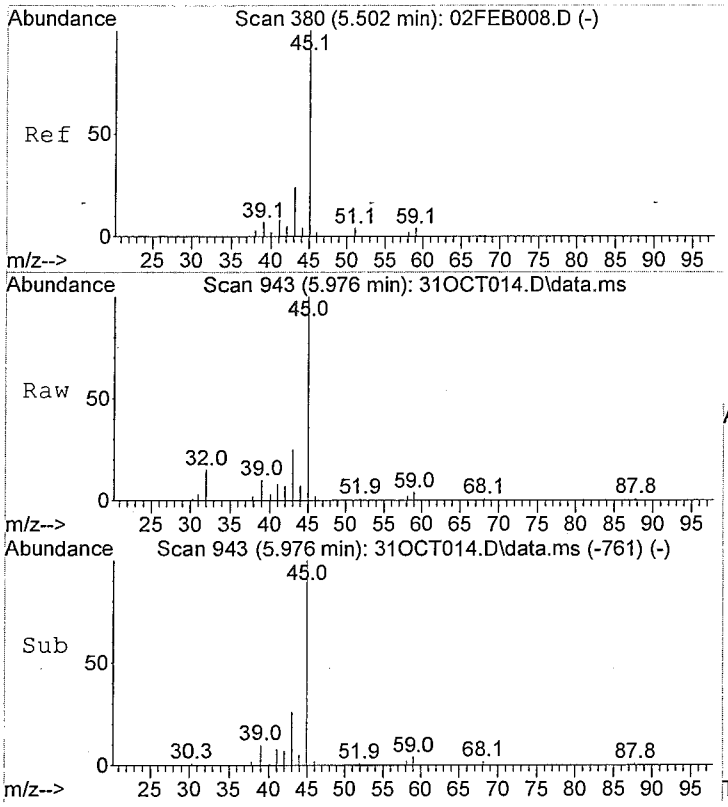
#7
Ethanol
Concen: 11.16 ppbv m
RT: 5.245 min Scan# 720
Delta R.T. -0.059 min
Lab File: 31OCT014.D
Acq: 31 Oct 2018 7:26 pm

Tgt Ion: 45 Resp: 68237

Ion	Ratio	Lower	Upper
45	100		
46	6.8	30.1	45.1#
43	0.0	20.2	30.2#



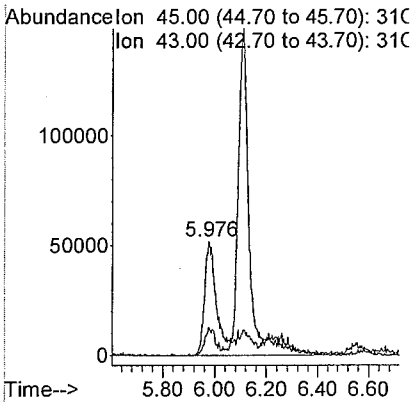
MI -3
DT - 11/14/18



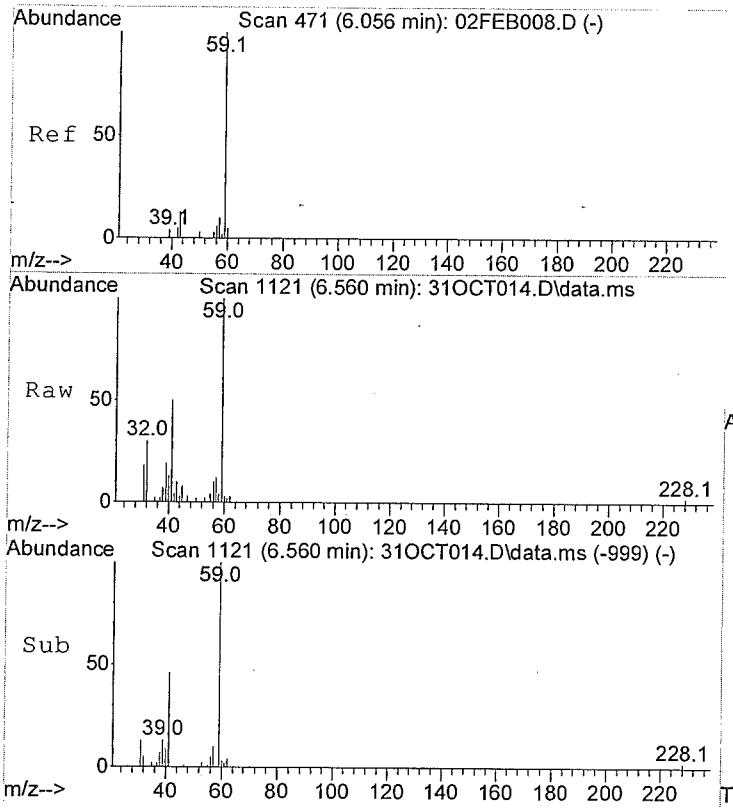
#9
Isopropanol
Concen: 11.49 ppbv m
RT: 5.976 min Scan# 943
Delta R.T. -0.003 min
Lab File: 31OCT014.D
Acq: 31 Oct 2018 7:26 pm

Tgt Ion: 45 Resp: 272164

Ion	Ratio	Lower	Upper
45	100		
43	14.9	18.8	28.2#



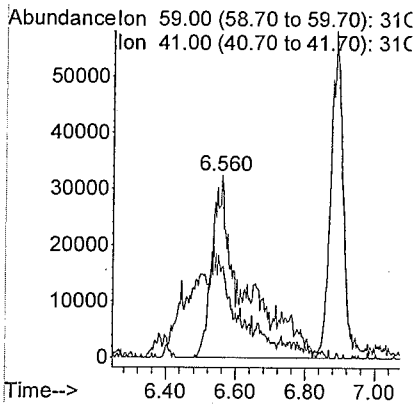
MP -3
DT 11/14/18



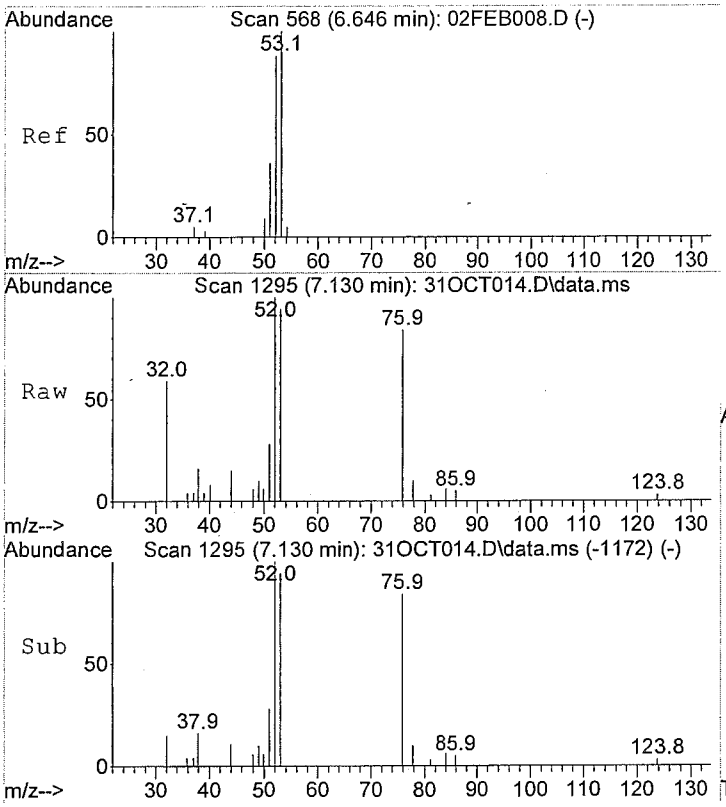
#11
t-Butanol
Concen: 9.09 ppbv m
RT: 6.560 min Scan# 1121
Delta R.T. -0.000 min
Lab File: 31OCT014.D
Acq: 31 Oct 2018 7:26 pm

Tgt Ion: 59 Resp: 209614

Ion	Ratio	Lower	Upper
59	100		
41	39.9	23.5	35.3#



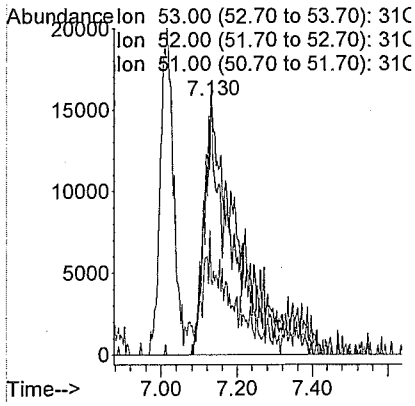
ME-3
DT-11/14/18



#13
Acrylonitrile
Concen: 9.68 ppbv m
RT: 7.130 min Scan# 1295
Delta R.T. 0.003 min
Lab File: 31OCT014.D
Acq: 31 Oct 2018 7:26 pm

Tgt Ion: 53 Resp: 103317

Ion	Ratio	Lower	Upper
53	100		
52	66.3	64.3	104.3
51	19.7	21.9	61.9#



ME-3
D- 11/14/18

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 14 11:04:11 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

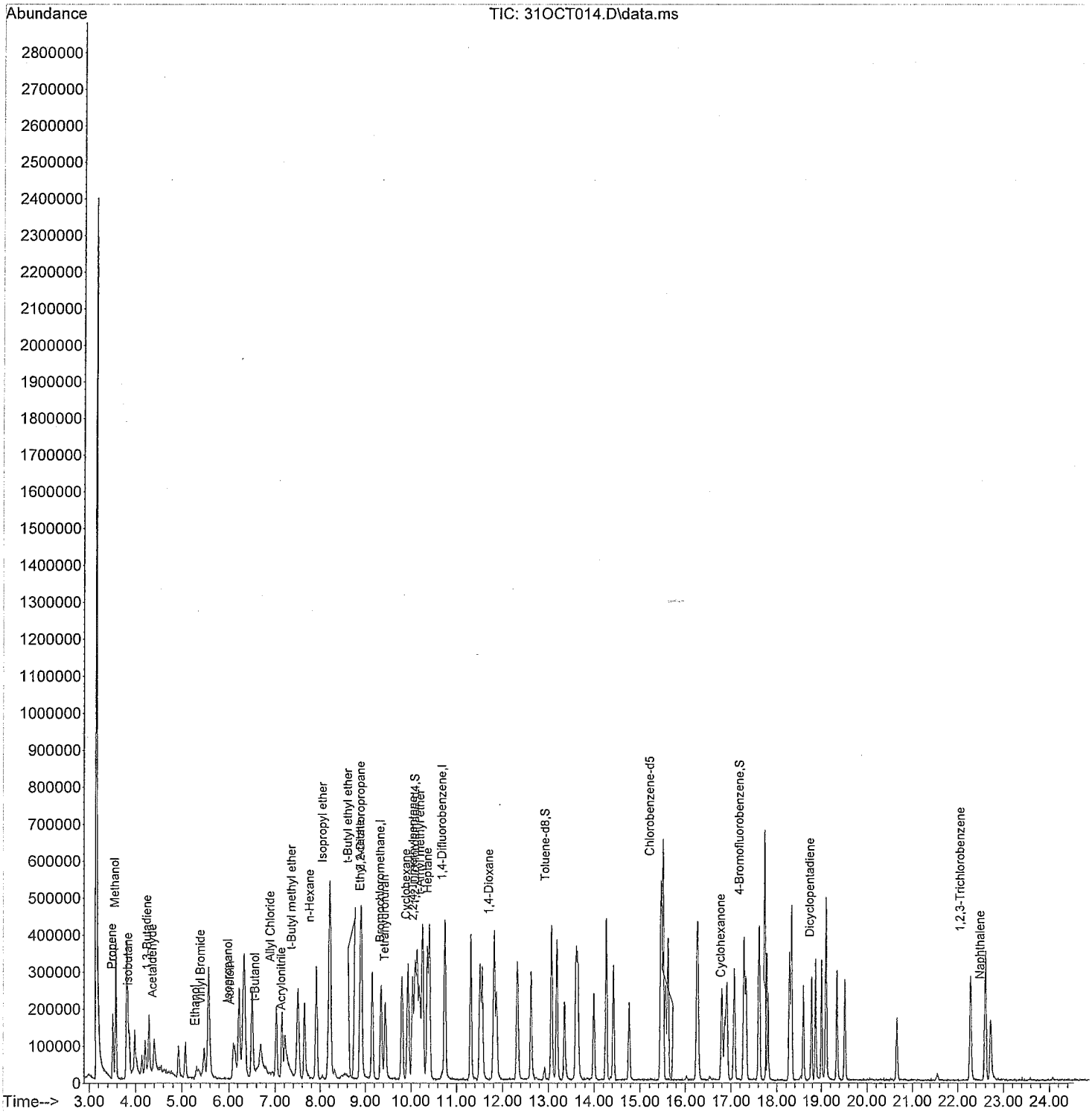
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	96516	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.685	114	393771	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.201	117	245641	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.085	65	237920	9.59	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 95.90%				
29) Toluene-d8	12.928	98	353579	9.71	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.10%				
32) 4-Bromofluorobenzene	17.178	95	169377	10.35	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.50%				
Target Compounds							Qvalue
2) Propene	3.487	41	95672	9.34	ppbv	#	94
3) isobutane	3.831	41	51162	9.32	ppbv	#	1
4) 1,3-Butadiene	4.241	54	84595	9.45	ppbv		98
5) Methanol	3.549	31	20655	11.67	ppbv	#	56
6) Acetaldehyde	4.356	43	57855	8.05	ppbv	#	89
7) Ethanol	5.281	45	6586	1.08	ppbv	#	47
8) Vinyl Bromide	5.396	106	65813	9.40	ppbv	#	96
9) Isopropanol	5.976	45	165253	6.98	ppbv		98
10) Acrolein	6.019	56	84622	13.22	ppbv	#	89
11) t-Butanol	6.560	59	111520	4.84	ppbv	#	15
12) Allyl Chloride	6.888	41	143381	10.49	ppbv	#	90
13) Acrylonitrile	7.130	53	70535	6.61	ppbv		84
14) t-Butyl methyl ether	7.360	73	322072	9.30	ppbv	#	84
15) n-Hexane	7.757	57	190822	9.59	ppbv		93
16) Isopropyl ether	8.042	45	397938	9.53	ppbv	#	94
17) t-Butyl ethyl ether	8.606	87	123233	9.66	ppbv	#	66
18) Ethyl Acetate	8.878	70	28319	9.97	ppbv	#	9
19) 2,2-Dichloropropane	8.888	77	163973	11.73	ppbv		81
20) Tetrahydrofuran	9.419	72	58395	9.34	ppbv	#	47
21) Cyclohexane	9.885	56	216819	9.46	ppbv	#	78
22) 2,2,4-Trimethylpentane	10.039	57	496584	9.12	ppbv		96
25) t-Amyl methyl ether	10.200	73	253982	10.11	ppbv		99
26) Heptane	10.367	71	106271	10.61	ppbv	#	53
27) 1,4-Dioxane	11.698	88	92593	10.35	ppbv	#	71
31) Cyclohexanone	16.762	55	106966	11.34	ppbv	#	88
33) Dicyclopentadiene	18.733	66	5011	17.38	ppbv	#	49
34) Naphthalene	22.478	128	220425	13.66	ppbv		99
35) 1,2,3-Trichlorobenzene	22.045	180	149150	15.29	ppbv	#	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT014.D
Acq On : 31 Oct 2018 7:26 pm
Operator : DT
Sample : ICV/LCS
Misc : 50 ML
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 14 11:04:11 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration



5. Continuing Calibration Verification

a. CCV Summary
b. Results/Chromatograms

Default Continuing Calibration Criteria:

90% of target compounds must have %Diff <30%
All target compounds must have %Diff <50%

(This criteria superceded by any project specific criteria)

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV002.D
Acq On : 26 Nov 2018 9:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 09:56:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	123	0.00
2		Dichlorodifluoromethane (12	3.531	4.207	-19.1	145#	0.00
3		Chloromethane	1.581	1.366	13.6	96	0.01
4		1,2-Cl-1,1,2,2-F ethane (11	3.077	3.765	-22.4	143#	0.00
5		Vinyl Chloride	1.260	1.210	4.0	105	0.00
6		Bromomethane	0.495	0.507	-2.4	91	0.00
7		Chloroethane	0.248	0.243	2.0	112	0.00
8		Trichlorofluoromethane (11)	3.954	4.239	-7.2	126	0.00
9	M	1,1-Dichloroethene	2.812	2.935	-4.4	123	0.00
10		Carbon Disulfide	2.669	2.979	-11.6	127	0.00
11		1,1,2-Cl 1,2,2-F ethane (11	1.957	2.044	-4.4	124	0.00
12		Acetone	3.212	3.192	0.6	136	0.00
13	M	Methylene Chloride	1.022	1.095	-7.1	130	0.00
14		t-1,2-Dichloroethene	1.020	1.113	-9.1	125	-0.08
15		1,1-Dichloroethane	2.855	2.914	-2.1	119	0.00
16		Vinyl Acetate	5.067	5.131	-1.3	106	0.00
17		c-1,2-Dichloroethene	1.152	1.326	-15.1	120	0.00
18		2-Butanone	0.526	0.594	-12.9	121	0.00
19		t-Butyl Methyl Ether	3.659	3.401	7.1	107	0.01
20	t	Chloroform	3.026	3.195	-5.6	121	0.00
21		1,1,1-Trichloroethane	2.830	3.010	-6.4	123	0.00
22		1,1-Dichloropropene	1.726	1.574	8.8	104	0.00
23	t	Carbon Tetrachloride	2.065	2.608	-26.3	147#	0.00
24	I	1,4-Difluorobenzene	1.000	1.000	0.0	106	0.00
25	T	Benzene	0.866	0.962	-11.1	103	0.00
26	S	1,2-Dichloroethane-d4	0.627	0.697	-11.2	117	0.00
27		1,2-Dichloroethane	0.575	0.711	-23.7	118	0.00
28	M	Trichloroethene	0.362	0.409	-13.0	117	0.00
29		1,2-Dichloropropane	0.355	0.362	-2.0	100	0.00
30		Bromodichloromethane	0.680	0.837	-23.1	118	0.00
31		Dibromomethane	0.302	0.377	-24.8	124	0.00
32		c-1,3-Dichloropropene	0.418	0.447	-6.9	97	0.00
33		4-Methyl-2-Pentanone	0.726	0.706	2.8	90	0.00
34	S	Toluene-d8	0.924	0.704	23.8	83	0.00
35	M	Toluene	0.757	0.653	13.7	77	0.00
36	I	Chlorobenzene-d5	1.000	1.000	0.0	84	0.00
37		t-1,3-Dichloropropene	0.511	0.657	-28.6	89	0.00
38		1,1,2-Trichloroethane	0.487	0.619	-27.1	98	0.00
39		1,3-Dichloropropane	0.650	0.723	-11.2	90	0.00
40		Tetrachloroethene	0.681	0.726	-6.6	84	0.00
41		2-Hexanone	0.493	0.599	-21.5	85	0.00
42		Dibromochloromethane	0.721	1.060	-47.0#	113	0.00
43	t	1,2-Dibromoethane	0.711	0.817	-14.9	92	0.00
44		Chlorobenzene	0.742	0.791	-6.6	78	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\l81126\
Data File : 26NOV002.D
Acq On : 26 Nov 2018 9:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 09:56:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Min. RRF : 0.100 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
45		1,1,1,2-Tetrachloroethane	0.328	0.494	~~-50.6#~~ NA	115	-0.01
46	T	Ethylbenzene	1.267	1.063	16.1	59#	0.00
47	T	p,&m-Xylene	0.964	0.790	18.0	64	0.00
48	T	o-Xylene	0.907	0.772	14.9	61	0.00
49		Styrene	0.524	0.457	12.8	59#	0.00
50		Bromoform	0.617	0.792	-28.4	96	0.00
51		Isopropyl benzene	0.934	0.764	18.2	61	0.00
52	M	1,1,2,2-Tetrachloroethane	0.734	0.769	-4.8	83	0.00
53	S	4-Bromofluorobenzene	0.537	0.533	0.7	82	0.00
54		Benzyl Chloride	0.449	0.509	-13.4	97	0.00
55		1,2,3-Trichloropropane	0.196	0.204	-4.1	85	0.00
56		n-Propyl Benzene	0.960	0.763	20.5	63	0.00
57		Bromobenzene	0.590	0.509	13.7	67	0.00
58		4-Ethyl Toluene	1.020	0.862	15.5	63	0.00
59	T	1,3,5-Trimethylbenzene	1.148	1.356	-18.1	88	0.00
60		2-Chlorotoluene	0.811	0.789	2.7	73	0.00
61		4-Chlorotoluene	0.632	0.596	5.7	71	0.00
62		tert-Butylbenzene	0.845	0.921	-9.0	82	0.00
63		1,2,4-Trimethylbenzene	1.082	1.148	-6.1	82	0.00
64		sec-Butylbenzene	0.822	0.920	-11.9	86	0.00
65		p-Isopropyltoluene	0.644	0.737	-14.4	92	0.00
66		1,3-Dichlorobenzene	0.476	0.408	14.3	73	0.00
67		1,4-Dichlorobenzene	0.471	0.413	12.3	76	0.00
68		n-Butylbenzene	0.693	0.957	~~-38.1#~~ NA	109	0.00
69		1,2-Dichlorobenzene	0.447	0.395	11.6	80	0.00
70		1,2-Dibromo-3-chloropropane	0.192	0.237	-23.4	104	0.00
71		1,2,4-Trichlorobenzene	0.417	0.503	-20.6	110	0.00
72		Hexachlorobutadiene	0.396	0.502	-26.8	117	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

DS 11/26/18

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV002.D
Acq On : 26 Nov 2018 9:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 09:56:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.321	130	111871	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.679	114	411421	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.207	117	208452	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.088	65	286663	11.11	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 111.10%				
34) Toluene-d8	12.928	98	289704	7.62	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 76.20%				
53) 4-Bromofluorobenzene	17.181	174	111199	9.94	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.40%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.556	85	470679	11.91	ppbv		98
3) Chloromethane	3.959	50	152825	8.64	ppbv		99
4) 1,2-Cl-1,1,2,2-F ethan...	3.789	85	421149	12.24	ppbv		99
5) Vinyl Chloride	4.176	62	135334	9.60	ppbv		96
6) Bromomethane	4.874	94	56719	10.25	ppbv		88
7) Chloroethane	5.022	66	27221	9.79	ppbv	#	55
8) Trichlorofluoromethane...	5.491	101	474262	10.72	ppbv		97
9) 1,1-Dichloroethene	6.386	61	328319	10.44	ppbv		86
10) Carbon Disulfide	7.091	76	333286	11.16	ppbv		98
11) 1,1,2-Cl 1,2,2-F ethan...	6.219	151	228641	10.44	ppbv		88
12) Acetone	6.117	43	357137	9.94	ppbv		85
13) Methylene Chloride	7.019	84	122539	10.72	ppbv		69
14) t-1,2-Dichloroethene	7.514	96	124543	10.91	ppbv		84
15) 1,1-Dichloroethane	8.065	63	325945	10.20	ppbv		96
16) Vinyl Acetate	8.062	43	573971	10.13	ppbv		92
17) c-1,2-Dichloroethene	8.901	96	148295	11.51	ppbv		92
18) 2-Butanone	8.609	72	66439	11.30	ppbv		33
19) t-Butyl Methyl Ether	7.373	73	380458	9.29	ppbv		91
20) Chloroform	9.131	83	357397	10.56	ppbv		94
21) 1,1,1-Trichloroethane	9.747	97	336784	10.64	ppbv		90
22) 1,1-Dichloropropene	9.980	75	176039	9.12	ppbv		92
23) Carbon Tetrachloride	10.134	117	291771	12.63	ppbv		98
25) Benzene	10.315	78	395947	11.11	ppbv		87
27) 1,2-Dichloroethane	10.213	62	292671	12.38	ppbv		91
28) Trichloroethene	11.207	130	168095	11.29	ppbv		97
29) 1,2-Dichloropropane	11.403	63	148811	10.20	ppbv		98
30) Bromodichloromethane	11.715	83	344344	12.32	ppbv		92
31) Dibromomethane	11.764	93	155193	12.48	ppbv		96
32) c-1,3-Dichloropropene	12.492	75	183821	10.68	ppbv		79
33) 4-Methyl-2-Pentanone	12.217	43	290386	9.73	ppbv		83
35) Toluene	13.053	91	268665	8.63	ppbv		97
37) t-1,3-Dichloropropene	13.210	75	136975	12.87	ppbv		85
38) 1,1,2-Trichloroethane	13.450	97	129123	12.73	ppbv		95
39) 1,3-Dichloropropane	13.817	76	150771	11.12	ppbv	#	83
40) Tetrachloroethene	14.069	166	151289	10.66	ppbv		98
41) 2-Hexanone	13.486	58	124783	12.14	ppbv		90

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV002.D
Acq On : 26 Nov 2018 9:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 09:56:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

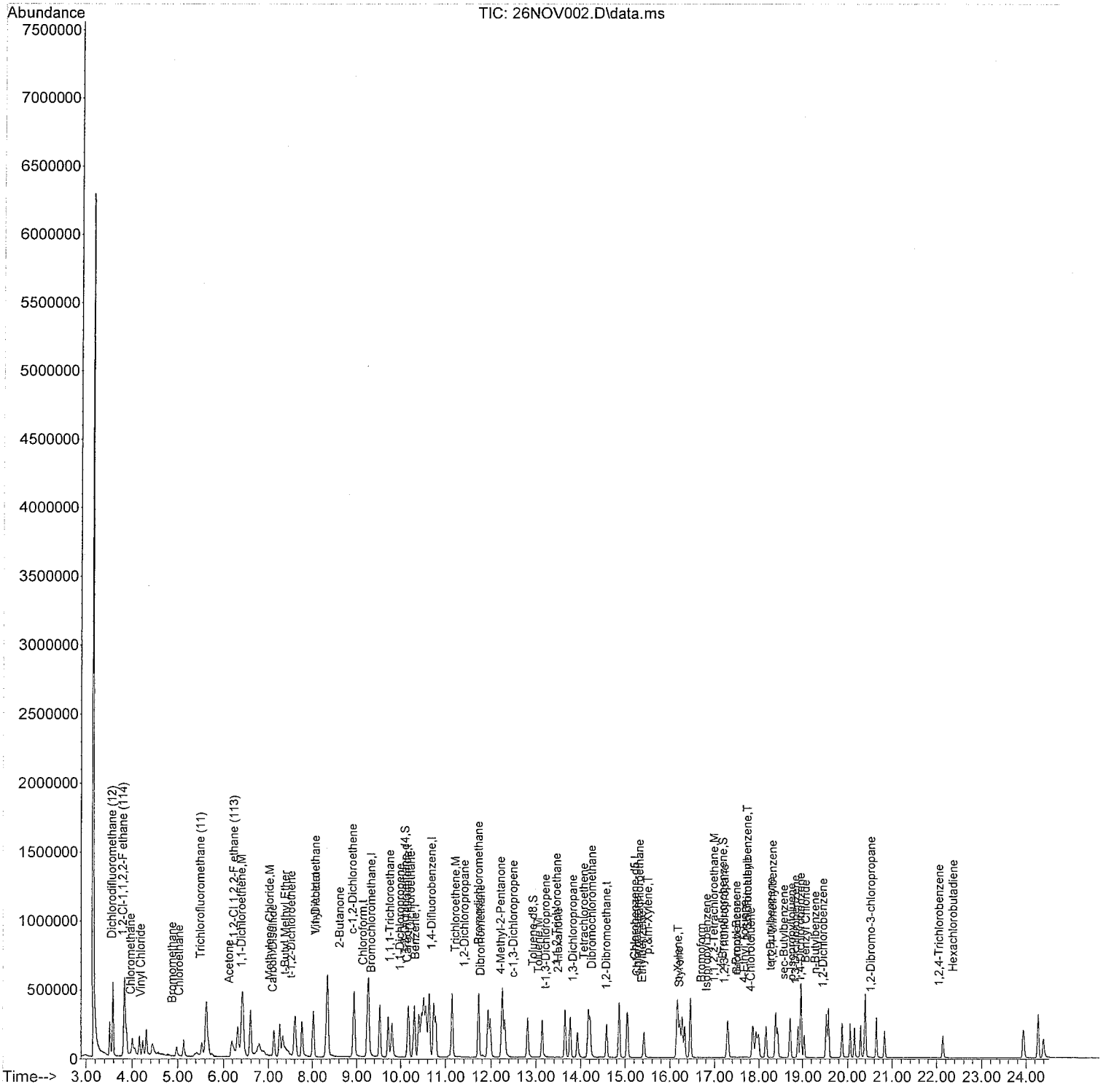
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.237	129	221020	14.71	ppbv		98
43) 1,2-Dibromoethane	14.561	107	170342	11.50	ppbv		89
44) Chlorobenzene	15.263	112	164976	10.67	ppbv		95
45) 1,1,1,2-Tetrachloroethane	15.309	131	103001	15.06	ppbv		90
46) Ethylbenzene	15.371	91	221681	8.40	ppbv		99
47) p,&m-Xylene	15.499	91	329299	16.39	ppbv		91
48) o-Xylene	16.181	91	160907	8.51	ppbv		95
49) Styrene	16.207	104	95229	8.72	ppbv		89
50) Bromoform	16.693	173	165002	12.82	ppbv		94
51) Isopropyl benzene	16.814	105	159236	8.18	ppbv		93
52) 1,1,2,2-Tetrachloroethane	16.978	83	160326	10.48	ppbv		95
54) Benzyl Chloride	19.064	91	106119	11.33	ppbv		93
55) 1,2,3-Trichloropropane	17.221	110	42529	10.39	ppbv	#	80
56) n-Propyl Benzene	17.490	91	159094	7.95	ppbv		79
57) Bromobenzene	17.496	77	106060	8.63	ppbv		94
58) 4-Ethyl Toluene	17.663	105	179746	8.45	ppbv		97
59) 1,3,5-Trimethylbenzene	17.729	105	282688	11.81	ppbv		93
60) 2-Chlorotoluene	17.736	91	164388	9.72	ppbv		97
61) 4-Chlorotoluene	17.808	91	124274	9.44	ppbv		99
62) tert-Butylbenzene	18.254	119	191889	10.89	ppbv		94
63) 1,2,4-Trimethylbenzene	18.300	105	239228	10.60	ppbv		95
64) sec-Butylbenzene	18.555	105	191857	11.20	ppbv		99
65) p-Isopropyltoluene	18.736	119	153667	11.44	ppbv		97
66) 1,3-Dichlorobenzene	18.824	146	85035	8.57	ppbv		85
67) 1,4-Dichlorobenzene	18.952	146	86119	8.76	ppbv		95
68) n-Butylbenzene	19.277	91	199470	13.81	ppbv		100
69) 1,2-Dichlorobenzene	19.447	146	82242	8.82	ppbv		91
70) 1,2-Dibromo-3-chloropr...	20.513	157	49323	12.33	ppbv		97
71) 1,2,4-Trichlorobenzene	22.041	180	104892	12.07	ppbv		86
72) Hexachlorobutadiene	22.353	225	104715	12.69	ppbv		91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV002.D
Acq On : 26 Nov 2018 9:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 09:56:45 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV002.D
Acq On : 26 Nov 2018 9:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 10:13:40 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

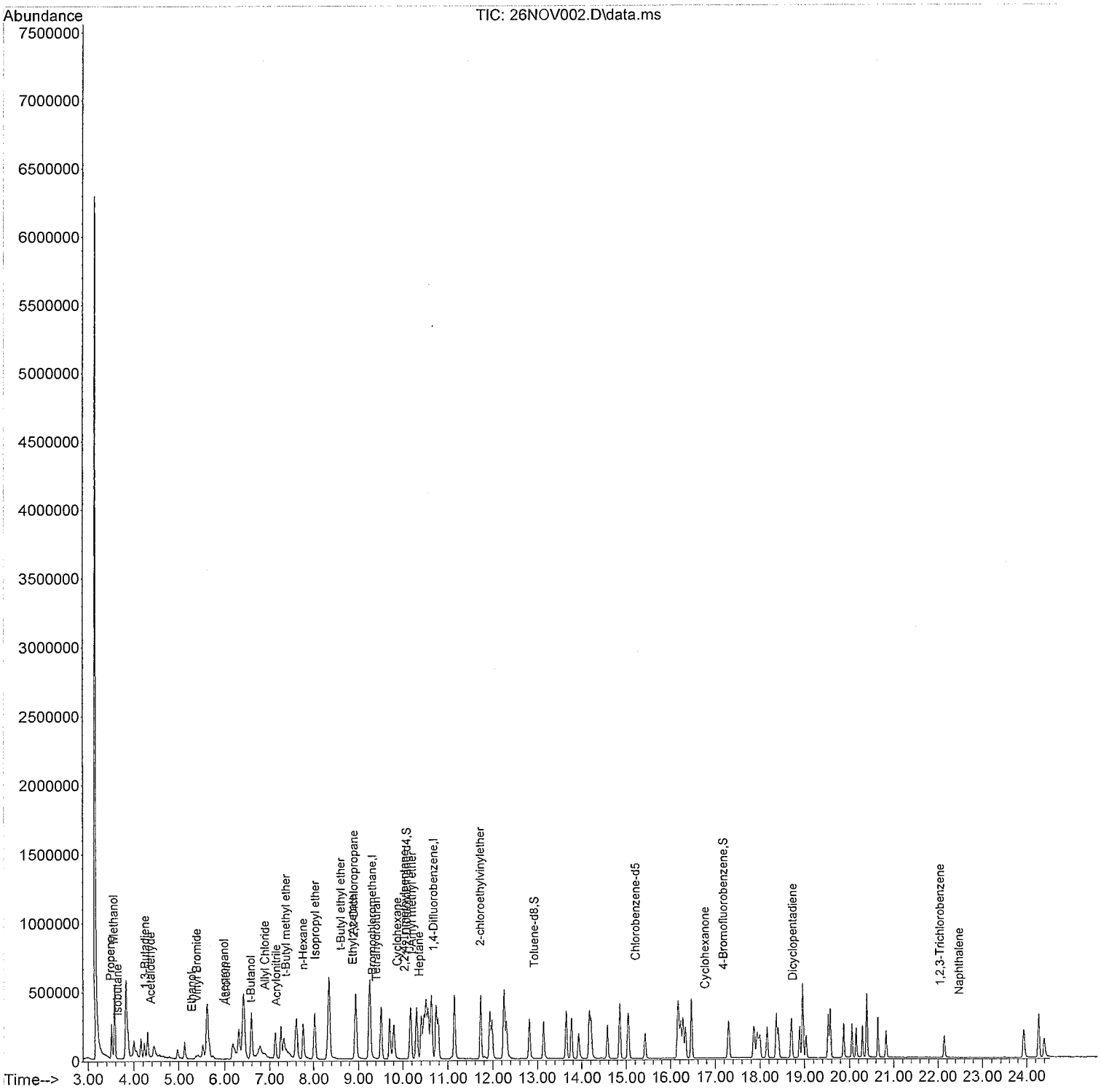
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.321	130	116848	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.679	114	411437	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.207	117	208452	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.088	65	287254	11.09	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 110.90%				
29) Toluene-d8	12.928	98	289876	7.62	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 76.20%#				
32) 4-Bromofluorobenzene	17.181	95	147379	10.61	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 106.10%				
Target Compounds							Qvalue
2) Propene	3.490	41	134296	10.83	ppbv		100
3) isobutane	3.644	41	911	0.14	ppbv		82
4) 1,3-Butadiene	4.248	54	100278	9.25	ppbv		95
5) Methanol	3.559	31	30933	14.43	ppbv	#	9
6) Acetaldehyde	4.376	43	56902	6.54	ppbv	#	62
7) Ethanol	5.287	45	18981	2.56	ppbv	#	57
8) Vinyl Bromide	5.396	106	85891	10.14	ppbv	#	95
9) Isopropanol	5.986	45	216656	7.56	ppbv		97
10) Acrolein	6.029	56	53269	6.87	ppbv	#	88
11) t-Butanol	6.579	59	154208	5.52	ppbv	#	1
12) Allyl Chloride	6.898	41	167037	10.10	ppbv	#	90
13) Acrylonitrile	7.150	53	33297	2.58	ppbv	#	86
14) t-Butyl methyl ether	7.373	73	379856	9.06	ppbv	#	83
15) n-Hexane	7.763	57	196778	8.17	ppbv		91
16) Isopropyl ether	8.039	45	382157	7.56	ppbv	#	80
17) t-Butyl ethyl ether	8.606	87	115335	7.47	ppbv	#	55
18) Ethyl Acetate	8.872	70	33842	9.85	ppbv	#	1
19) 2,2-Dichloropropane	8.898	77	159325	9.42	ppbv		81
20) Tetrahydrofuran	9.413	72	72372	9.56	ppbv	#	55
21) Cyclohexane	9.878	56	244432	8.81	ppbv	#	79
22) 2,2,4-Trimethylpentane	10.039	57	483768	7.34	ppbv		95
25) t-Amyl methyl ether	10.203	73	246509	9.39	ppbv		98
26) Heptane	10.357	71	72876	6.97	ppbv	#	53
28) 2-chloroethylvinylether	11.715	63	187	12.98	ppbv	#	100
31) Cyclohexanone	16.762	55	111499	13.94	ppbv	#	83
33) Dicyclopentadiene	18.736	66	2749	11.23	ppbv	#	65
34) Naphthalene	22.477	128	193946	14.17	ppbv		99
35) 1,2,3-Trichlorobenzene	22.041	180	104892	12.67	ppbv	#	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV002.D
Acq On : 26 Nov 2018 9:32 am
Operator : MJ
Sample : CCV
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 10:13:40 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration



6. Tune Summaries

a. ICAL Summary
b. CCAL Tune Summary

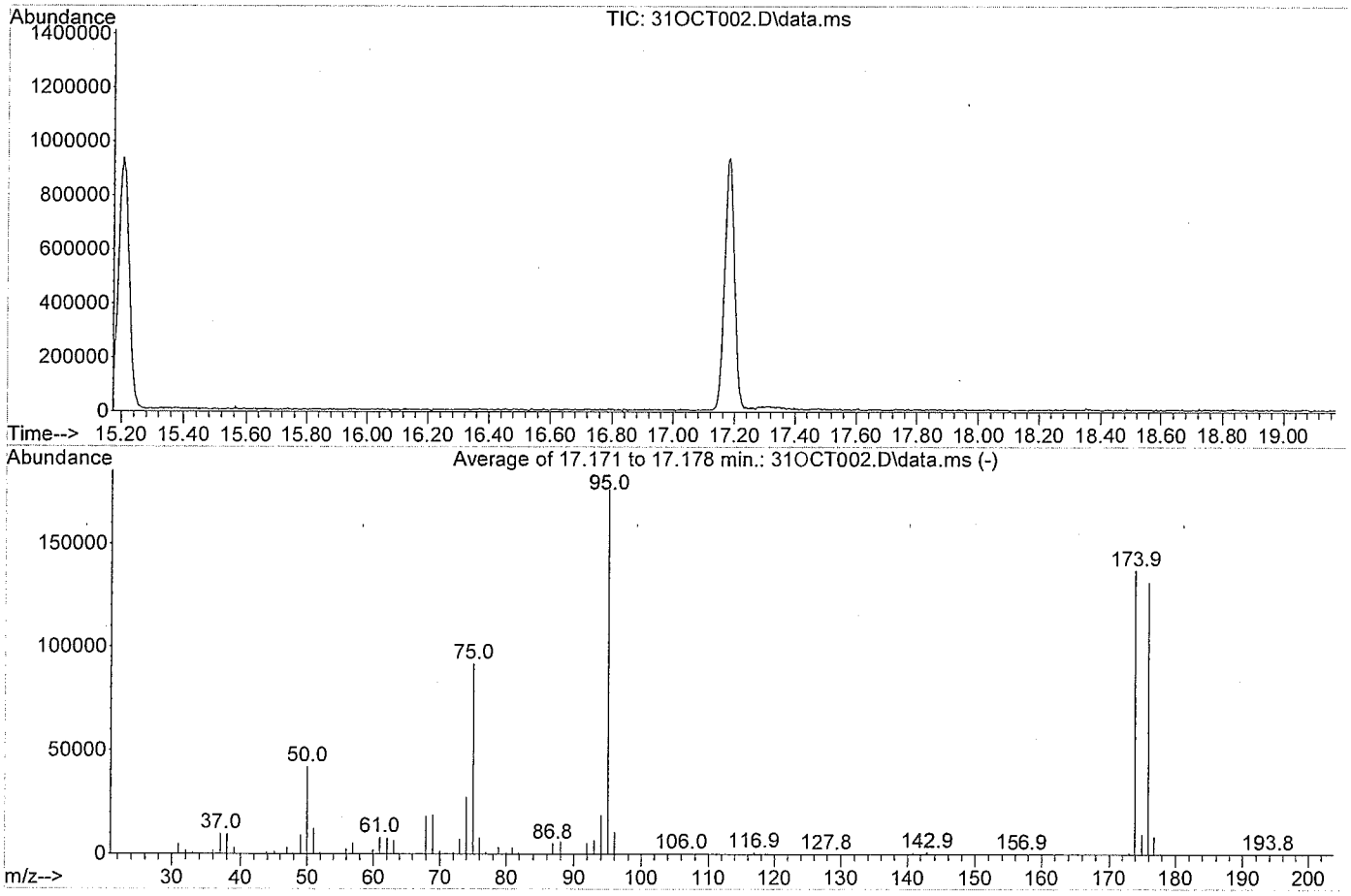
Criteria as listed in report

BFB (TO-14/15 Criteria)

Data Path : C:\msdchem\1\data\181029\
Data File : 31OCT002.D
Acq On : 31 Oct 2018 11:09 am
Operator : DT
Sample : BFB
Misc : 150ML
ALS Vial : 4 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\TO181024.M
Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
Last Update : Wed Oct 31 13:32:56 2018



AutoFind: Scans 4357, 4358, 4359; Background Corrected with Scan 4340

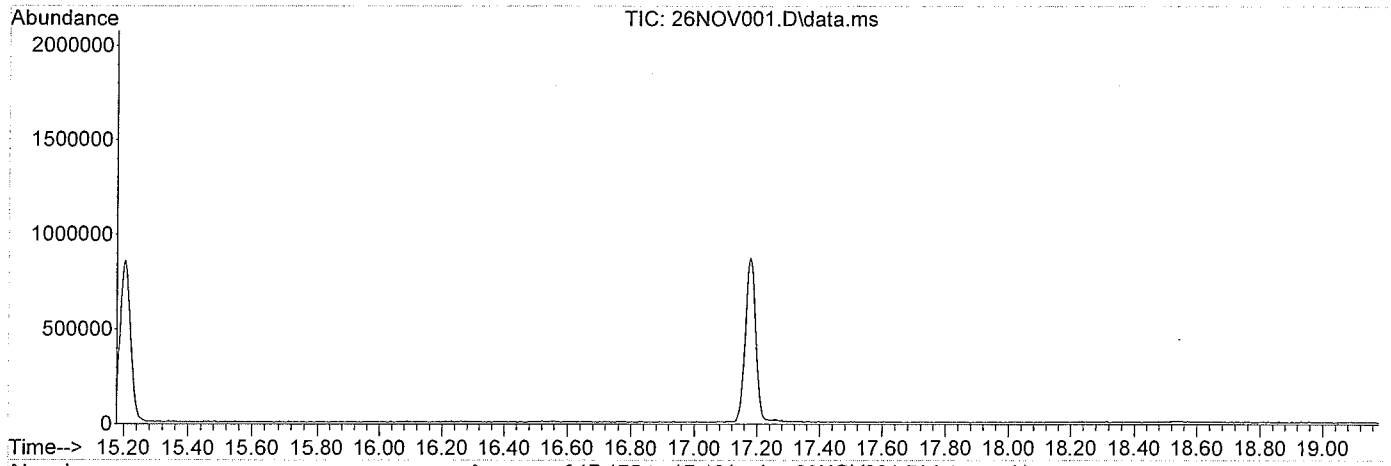
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.9	42256	PASS
75	95	30	60	52.0	91880	PASS
95	95	100	100	100.0	176747	PASS
96	95	5	9	6.0	10636	PASS
173	174	0.00	2	0.7	940	PASS
174	95	50	100	77.7	137400	PASS
175	174	5	9	7.0	9660	PASS
176	174	95	101	95.8	131619	PASS
177	176	5	9	6.5	8522	PASS

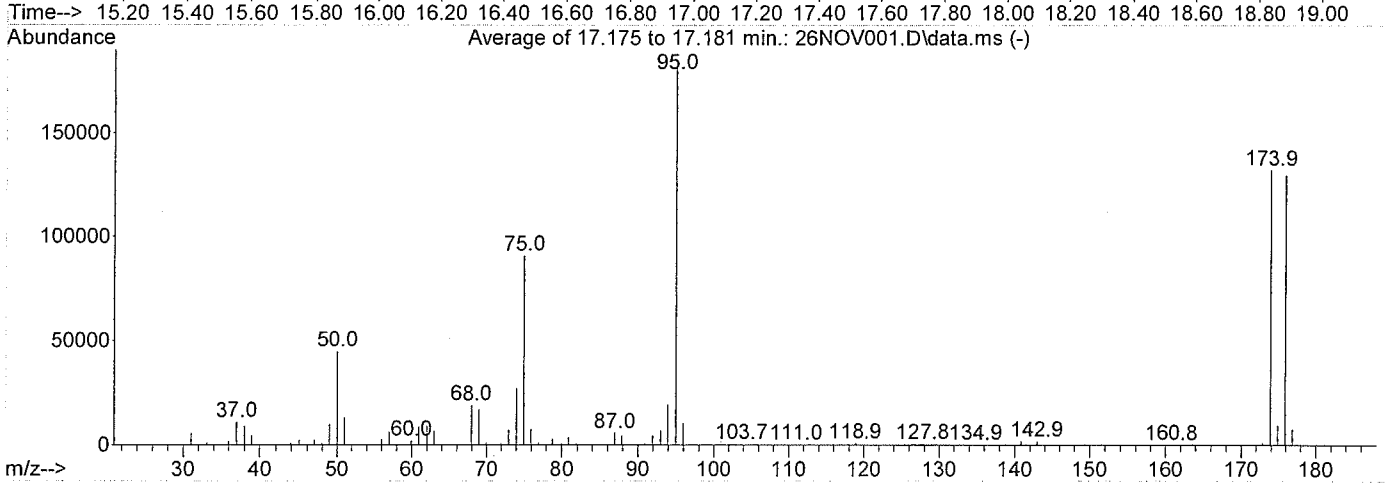
BFB (TO-14/15 Criteria)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV001.D
Acq On : 26 Nov 2018 8:46 am
Operator : MJ
Sample : BFB
Misc : 150 ml EM = 2682
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\TO181031.M
Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
Last Update : Thu Nov 01 09:46:12 2018





AutoFind: Scans 4358, 4359, 4360; Background Corrected with Scan 4338

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.7	44781	PASS
75	95	30	60	50.2	90893	PASS
95	95	100	100	100.0	181205	PASS
96	95	5	9	5.9	10679	PASS
173	174	0.00	2	0.9	1199	PASS
174	95	50	100	73.0	132259	PASS
175	174	5	9	7.1	9441	PASS
176	174	95	101	98.1	129741	PASS
177	176	5	9	6.0	7740	PASS

7. Method Blank

a. Results/Chromatograms

Method Blank Criteria:

All compounds < Reporting Limit

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV011.D
Acq On : 26 Nov 2018 5:02 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: Nov 27 10:12:49 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

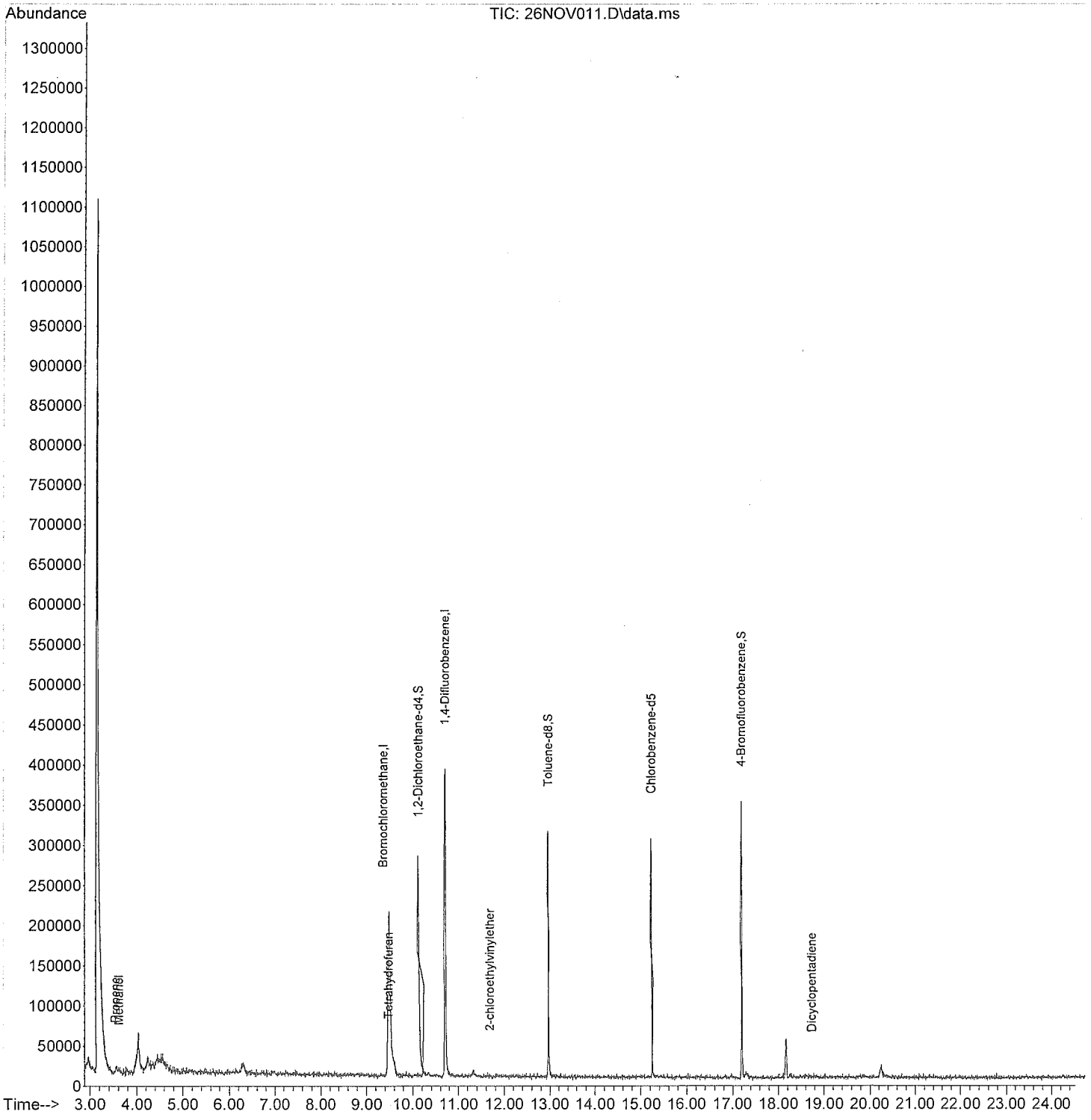
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	9.350	130	115022	10.00	ppbv	# 0.02
23) 1,4-Difluorobenzene	10.692	114	377356	10.00	ppbv	0.00
30) Chlorobenzene-d5	15.207	117	193069	10.00	ppbv	0.00
System Monitoring Compounds						
24) 1,2-Dichloroethane-d4	10.108	65	265890	11.19	ppbv	0.02
Spiked Amount 10.000	Range 80 - 120		Recovery = 111.90%			
29) Toluene-d8	12.945	98	261280	7.49	ppbv	0.01
Spiked Amount 10.000	Range 80 - 120		Recovery = 74.90%#			
32) 4-Bromofluorobenzene	17.178	95	160558	12.48	ppbv	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 124.80%#			
Target Compounds						Qvalue
2) Propene	3.536	41	2544	0.21	ppbv #	34
5) Methanol	3.605	31	231	0.11	ppbv #	1
20) Tetrahydrofuran	9.468	72	955	0.13	ppbv #	1
28) 2-chloroethylvinylether	11.675	63	105	7.94	ppbv #	100
33) Dicyclopentadiene	18.726	66	126	0.56	ppbv #	31

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV011.D
Acq On : 26 Nov 2018 5:02 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: Nov 27 10:12:49 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV011.D
Acq On : 26 Nov 2018 5:02 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 0.2

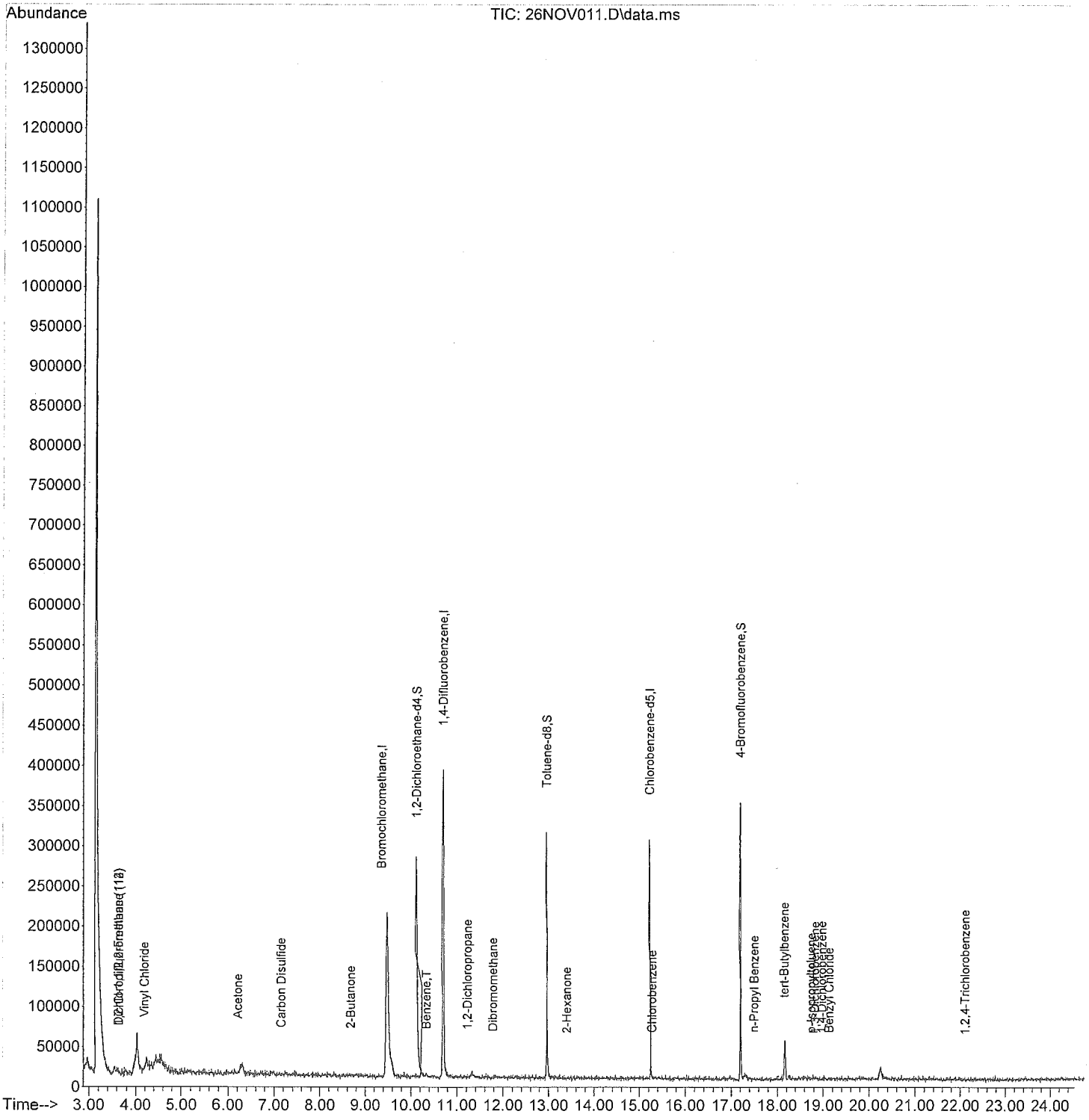
Quant Time: Nov 26 17:26:39 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.350	130	115462	10.00	ppbv		0.03
24) 1,4-Difluorobenzene	10.692	114	371137	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.207	117	193069	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.108	65	272061	11.69	ppbv		0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 116.90%				
34) Toluene-d8	12.945	98	262744	7.66	ppbv		0.02
Spiked Amount 10.000	Range 70 - 130		Recovery = 76.60%				
53) 4-Bromofluorobenzene	17.181	174	122139	11.79	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 117.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.638	85	620	0.02	ppbv		48
4) 1,2-Cl-1,1,2,2-F ethan...	3.638	85	620	0.02	ppbv	#	31
5) Vinyl Chloride	4.189	62	160	0.01	ppbv		44
10) Carbon Disulfide	7.157	76	995	0.03	ppbv		74
12) Acetone	6.212	43	23978	0.65	ppbv		97
18) 2-Butanone	8.678	72	228	0.04	ppbv	#	1
25) Benzene	10.331	78	945	0.03	ppbv		59
29) 1,2-Dichloropropane	11.220	63	135	0.01	ppbv	#	20
31) Dibromomethane	11.777	93	310	0.03	ppbv	#	53
41) 2-Hexanone	13.391	58	104	0.01	ppbv		1
44) Chlorobenzene	15.273	112	338	0.02	ppbv	#	24
54) Benzyl Chloride	19.129	91	107	0.01	ppbv		65
56) n-Propyl Benzene	17.500	91	242	0.01	ppbv	#	53
62) tert-Butylbenzene	18.146	119	1315	0.08	ppbv	#	1
65) p-Isopropyltoluene	18.739	119	1393	0.11	ppbv	#	49
66) 1,3-Dichlorobenzene	18.821	146	225	0.02	ppbv	#	24
67) 1,4-Dichlorobenzene	18.978	146	99	0.01	ppbv	#	27
71) 1,2,4-Trichlorobenzene	22.107	180	103	0.01	ppbv	#	40

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV011.D
Acq On : 26 Nov 2018 5:02 pm
Operator : DT
Sample : METHOD BLANK
Misc : 250 ML
ALS Vial : 6 Sample Multiplier: 0.2

Quant Time: Nov 26 17:26:39 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration



8. LCS/LCSD

a. Results/Chromatograms

Criteria as listed on report

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV009.D
Acq On : 26 Nov 2018 3:41 pm
Operator : DT
Sample : LCS
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 16:05:56 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.327	130	116045	10.00	ppbv		0.00
24) 1,4-Difluorobenzene	10.682	114	417030	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.204	117	212704	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.085	65	293619	11.23	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 112.30%				
34) Toluene-d8	12.931	98	290167	7.53	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 75.30%				
53) 4-Bromofluorobenzene	17.185	174	107282	9.40	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 94.00%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.553	85	484702	11.83	ppbv		97
3) Chloromethane	3.956	50	149726	8.16	ppbv		96
4) 1,2-Cl-1,1,2,2-F ethan...	3.785	85	428890	12.01	ppbv		97
5) Vinyl Chloride	4.172	62	130873	8.95	ppbv		89
6) Bromomethane	4.868	94	66309	11.55	ppbv		84
7) Chloroethane	5.015	66	27182	9.43	ppbv	#	77
8) Trichlorofluoromethane...	5.481	101	498049	10.85	ppbv		95
9) 1,1-Dichloroethene	6.386	61	349579	10.71	ppbv		83
10) Carbon Disulfide	7.088	76	401545	12.96	ppbv		99
11) 1,1,2-Cl 1,2,2-F ethan...	6.222	151	237511	10.46	ppbv		91
12) Acetone	6.110	43	398942	10.70	ppbv		91
13) Methylene Chloride	7.009	84	130647	11.02	ppbv		75
14) t-1,2-Dichloroethene	7.514	96	131811	11.14	ppbv		88
15) 1,1-Dichloroethane	8.068	63	332359	10.03	ppbv		93
16) Vinyl Acetate	8.055	43	596567	10.15	ppbv		97
17) c-1,2-Dichloroethene	8.901	96	155323	11.62	ppbv		87
18) 2-Butanone	8.609	72	66038	10.83	ppbv		51
19) t-Butyl Methyl Ether	7.363	73	387891	9.14	ppbv		82
20) Chloroform	9.134	83	363729	10.36	ppbv		97
21) 1,1,1-Trichloroethane	9.751	97	351147	10.69	ppbv		90
22) 1,1-Dichloropropene	9.977	75	194917	9.73	ppbv		86
23) Carbon Tetrachloride	10.134	117	298196	12.44	ppbv		96
25) Benzene	10.315	78	423222	11.72	ppbv		91
27) 1,2-Dichloroethane	10.216	62	302983	12.64	ppbv		96
28) Trichloroethene	11.203	130	174550	11.57	ppbv		93
29) 1,2-Dichloropropane	11.403	63	155954	10.54	ppbv		94
30) Bromodichloromethane	11.708	83	347429	12.26	ppbv		97
31) Dibromomethane	11.761	93	163137	12.95	ppbv		97
32) c-1,3-Dichloropropene	12.495	75	194600	11.16	ppbv		79
33) 4-Methyl-2-Pentanone	12.213	43	296501	9.80	ppbv		86
35) Toluene	13.050	91	287253	9.10	ppbv		95
37) t-1,3-Dichloropropene	13.207	75	136462	12.56	ppbv		91
38) 1,1,2-Trichloroethane	13.450	97	144209	13.93	ppbv		94
39) 1,3-Dichloropropane	13.817	76	166155	12.01	ppbv	#	85
40) Tetrachloroethene	14.076	166	160729	11.10	ppbv		91
41) 2-Hexanone	13.482	58	118850	11.33	ppbv		85

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV009.D
Acq On : 26 Nov 2018 3:41 pm
Operator : DT
Sample : LCS
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 16:05:56 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

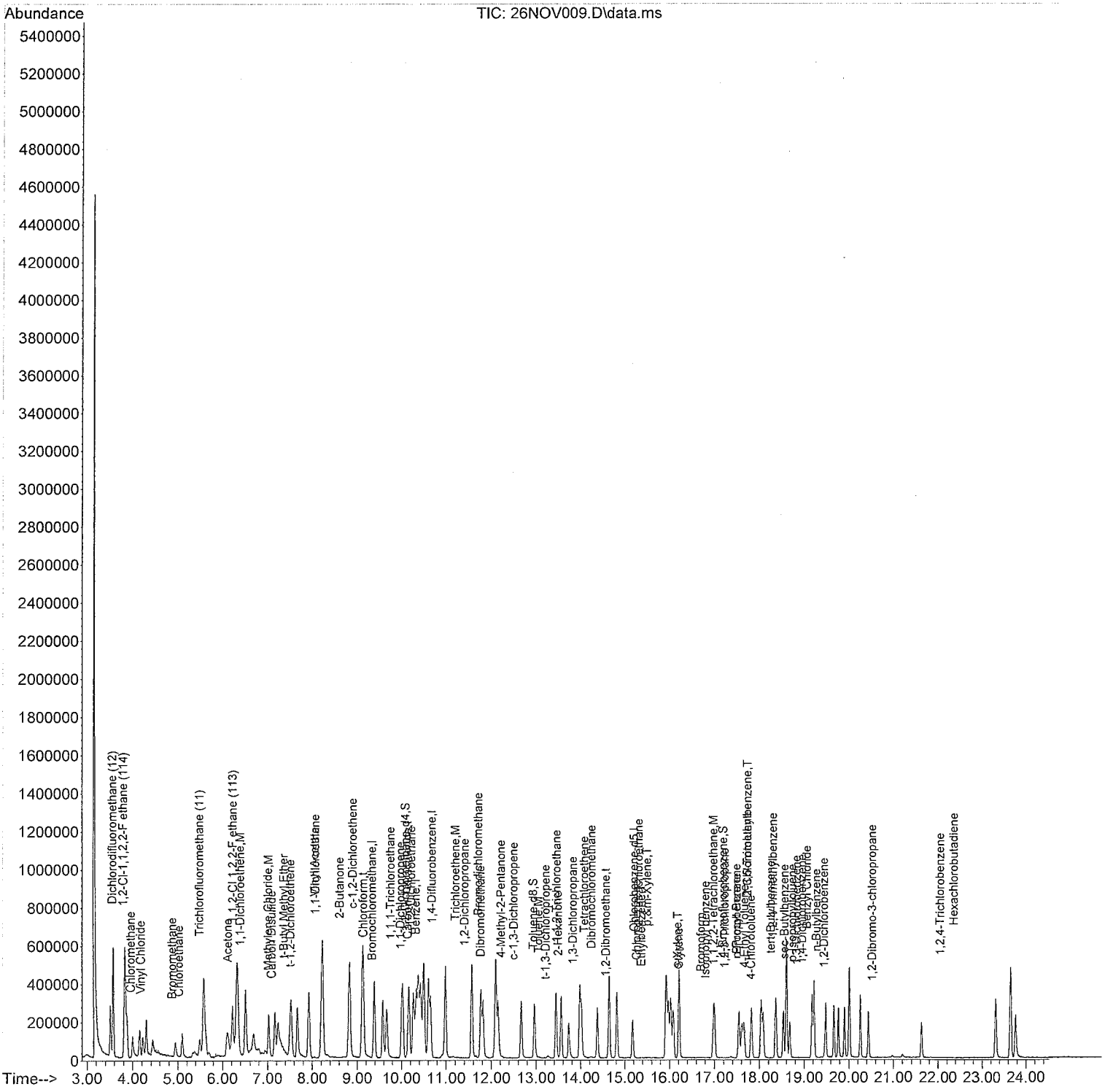
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) Dibromochloromethane	14.240	129	226115	14.75	ppbv	93
43) 1,2-Dibromoethane	14.561	107	182771	12.09	ppbv	99
44) Chlorobenzene	15.263	112	180183	11.42	ppbv	98
45) 1,1,1,2-Tetrachloroethane	15.309	131	110562	15.85	ppbv	90
46) Ethylbenzene	15.368	91	236487	8.78	ppbv	97
47) p,&m-Xylene	15.496	91	349922	17.07	ppbv	92
48) o-Xylene	16.178	91	178213	9.24	ppbv	95
49) Styrene	16.204	104	103782	9.31	ppbv	96
50) Bromoform	16.706	173	166778	12.70	ppbv	93
51) Isopropyl benzene	16.804	105	177443	8.93	ppbv	89
52) 1,1,2,2-Tetrachloroethane	16.978	83	179131	11.47	ppbv	99
54) Benzyl Chloride	19.060	91	93861	9.82	ppbv	86
55) 1,2,3-Trichloropropane	17.224	110	47870	11.46	ppbv #	91
56) n-Propyl Benzene	17.486	91	171877	8.42	ppbv	97
57) Bromobenzene	17.493	77	114758	9.15	ppbv	89
58) 4-Ethyl Toluene	17.663	105	192915	8.89	ppbv	97
59) 1,3,5-Trimethylbenzene	17.729	105	318715	13.05	ppbv	92
60) 2-Chlorotoluene	17.732	91	191137	11.07	ppbv	97
61) 4-Chlorotoluene	17.811	91	139115	10.35	ppbv	100
62) tert-Butylbenzene	18.250	119	208819	11.61	ppbv	97
63) 1,2,4-Trimethylbenzene	18.300	105	272070	11.82	ppbv	93
64) sec-Butylbenzene	18.555	105	219465	12.55	ppbv	96
65) p-Isopropyltoluene	18.733	119	169255	12.35	ppbv	96
66) 1,3-Dichlorobenzene	18.824	146	101388	10.01	ppbv	92
67) 1,4-Dichlorobenzene	18.952	146	102385	10.21	ppbv	94
68) n-Butylbenzene	19.277	91	221581	15.03	ppbv	99
69) 1,2-Dichlorobenzene	19.447	146	97566	10.25	ppbv	91
70) 1,2-Dibromo-3-chloropr...	20.516	157	56218	13.77	ppbv	91
71) 1,2,4-Trichlorobenzene	22.045	180	153230	17.29	ppbv	89
72) Hexachlorobutadiene	22.356	225	157373	18.69	ppbv	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV009.D
Acq On : 26 Nov 2018 3:41 pm
Operator : DT
Sample : LCS
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 16:05:56 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV010.D
Acq On : 26 Nov 2018 4:21 pm
Operator : DT
Sample : LCSD
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 16:45:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	112483	10.00	ppbv	#	0.00
24) 1,4-Difluorobenzene	10.678	114	399338	10.00	ppbv		0.00
36) Chlorobenzene-d5	15.204	117	209670	10.00	ppbv		0.00
System Monitoring Compounds							
26) 1,2-Dichloroethane-d4	10.091	65	289759	11.57	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 115.70%				
34) Toluene-d8	12.928	98	282316	7.65	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 76.50%				
53) 4-Bromofluorobenzene	17.181	174	104872	9.32	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 93.20%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	3.556	85	458573	11.54	ppbv		96
3) Chloromethane	3.953	50	147295	8.28	ppbv		96
4) 1,2-Cl-1,1,2,2-F ethan...	3.785	85	406391	11.74	ppbv		90
5) Vinyl Chloride	4.176	62	125872	8.88	ppbv		92
6) Bromomethane	4.877	94	66448	11.94	ppbv		97
7) Chloroethane	5.025	66	25976	9.29	ppbv	#	70
8) Trichlorofluoromethane...	5.484	101	466385	10.48	ppbv		95
9) 1,1-Dichloroethene	6.392	61	332286	10.50	ppbv		91
10) Carbon Disulfide	7.088	76	381471	12.71	ppbv		97
11) 1,1,2-Cl 1,2,2-F ethan...	6.215	151	224400	10.19	ppbv		90
12) Acetone	6.114	43	361518	10.01	ppbv		89
13) Methylene Chloride	7.019	84	116999	10.18	ppbv		78
14) t-1,2-Dichloroethene	7.514	96	118377	10.32	ppbv		89
15) 1,1-Dichloroethane	8.062	63	317521	9.89	ppbv		94
16) Vinyl Acetate	8.055	43	562909	9.88	ppbv		94
17) c-1,2-Dichloroethene	8.908	96	150536	11.62	ppbv		95
18) 2-Butanone	8.603	72	63884	10.81	ppbv		61
19) t-Butyl Methyl Ether	7.366	73	374782	9.11	ppbv		78
20) Chloroform	9.134	83	351228	10.32	ppbv		91
21) 1,1,1-Trichloroethane	9.754	97	328218	10.31	ppbv		88
22) 1,1-Dichloropropene	9.977	75	188414	9.70	ppbv		92
23) Carbon Tetrachloride	10.137	117	277102	11.93	ppbv		95
25) Benzene	10.314	78	398823	11.53	ppbv		94
27) 1,2-Dichloroethane	10.216	62	289037	12.59	ppbv		90
28) Trichloroethene	11.197	130	168446	11.66	ppbv		87
29) 1,2-Dichloropropane	11.397	63	148999	10.52	ppbv		95
30) Bromodichloromethane	11.715	83	333519	12.29	ppbv		90
31) Dibromomethane	11.761	93	156856	13.00	ppbv		92
32) c-1,3-Dichloropropene	12.498	75	186440	11.16	ppbv		86
33) 4-Methyl-2-Pentanone	12.213	43	279723	9.65	ppbv		85
35) Toluene	13.049	91	271894	9.00	ppbv		97
37) t-1,3-Dichloropropene	13.210	75	125124	11.69	ppbv		77
38) 1,1,2-Trichloroethane	13.449	97	138694	13.59	ppbv		92
39) 1,3-Dichloropropane	13.820	76	164835	12.09	ppbv	#	89
40) Tetrachloroethene	14.076	166	154202	10.80	ppbv		88
41) 2-Hexanone	13.482	58	120775	11.68	ppbv		94

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV010.D
Acq On : 26 Nov 2018 4:21 pm
Operator : DT
Sample : LCSD
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 16:45:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration

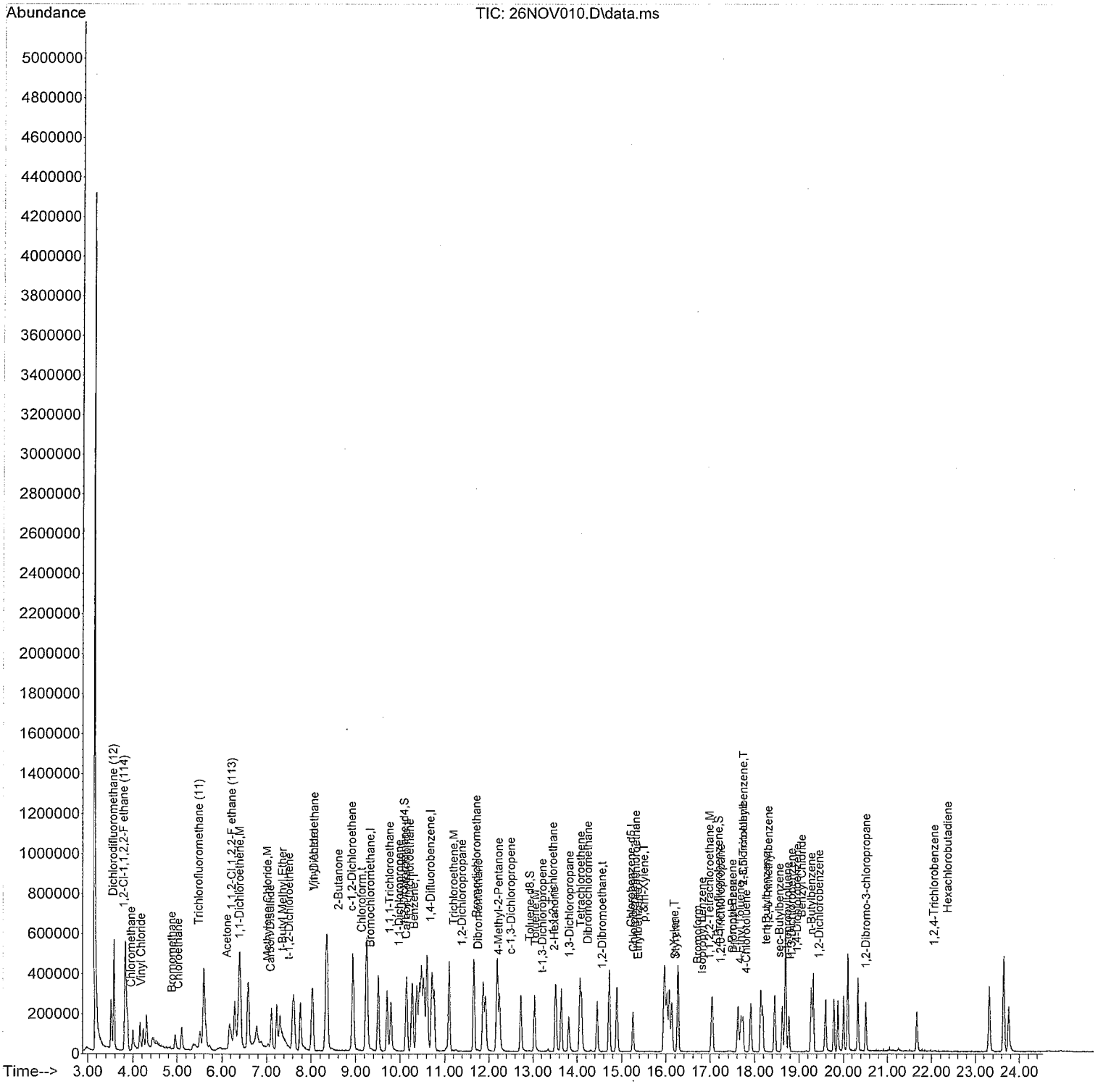
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) Dibromochloromethane	14.240	129	216650	14.33	ppbv		96
43) 1,2-Dibromoethane	14.561	107	172967	11.61	ppbv		98
44) Chlorobenzene	15.260	112	174297	11.21	ppbv		87
45) 1,1,1,2-Tetrachloroethane	15.312	131	104305	15.17	ppbv		96
46) Ethylbenzene	15.368	91	226793	8.54	ppbv		96
47) p,&m-Xylene	15.499	91	342825	16.97	ppbv		95
48) o-Xylene	16.184	91	169065	8.89	ppbv		97
49) Styrene	16.204	104	98640	8.98	ppbv		95
50) Bromoform	16.702	173	160870	12.43	ppbv		91
51) Isopropyl benzene	16.811	105	168619	8.61	ppbv		96
52) 1,1,2,2-Tetrachloroethane	16.978	83	174626	11.34	ppbv		95
54) Benzyl Chloride	19.060	91	97952	10.39	ppbv		87
55) 1,2,3-Trichloropropane	17.227	110	46421	11.27	ppbv	#	80
56) n-Propyl Benzene	17.486	91	161645	8.03	ppbv		89
57) Bromobenzene	17.499	77	108203	8.75	ppbv		90
58) 4-Ethyl Toluene	17.663	105	181478	8.48	ppbv		96
59) 1,3,5-Trimethylbenzene	17.732	105	311237	12.93	ppbv		93
60) 2-Chlorotoluene	17.732	91	181257	10.65	ppbv		92
61) 4-Chlorotoluene	17.804	91	131122	9.90	ppbv		99
62) tert-Butylbenzene	18.257	119	195222	11.01	ppbv		97
63) 1,2,4-Trimethylbenzene	18.303	105	257329	11.34	ppbv		98
64) sec-Butylbenzene	18.555	105	198978	11.55	ppbv		93
65) p-Isopropyltoluene	18.739	119	161860	11.98	ppbv		94
66) 1,3-Dichlorobenzene	18.827	146	100325	10.05	ppbv		95
67) 1,4-Dichlorobenzene	18.952	146	107565	10.88	ppbv		97
68) n-Butylbenzene	19.280	91	232466	16.00	ppbv		99
69) 1,2-Dichlorobenzene	19.447	146	96799	10.32	ppbv		94
70) 1,2-Dibromo-3-chloropr...	20.513	157	63804	15.85	ppbv	#	75
71) 1,2,4-Trichlorobenzene	22.048	180	159857	18.29	ppbv		91
72) Hexachlorobutadiene	22.356	225	158939	19.15	ppbv		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\181126\
Data File : 26NOV010.D
Acq On : 26 Nov 2018 4:21 pm
Operator : DT
Sample : LCSD
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 26 16:45:38 2018
Quant Method : C:\MSDCHEM\1\METHODS\TO181031.M
Quant Title : EPA TO-14/TO-15 Scan MS2 RTxVolatiles 0.32mm
QLast Update : Thu Nov 01 09:46:12 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV009.D
Acq On : 26 Nov 2018 3:41 pm
Operator : DT
Sample : LCS
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 10:13:04 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

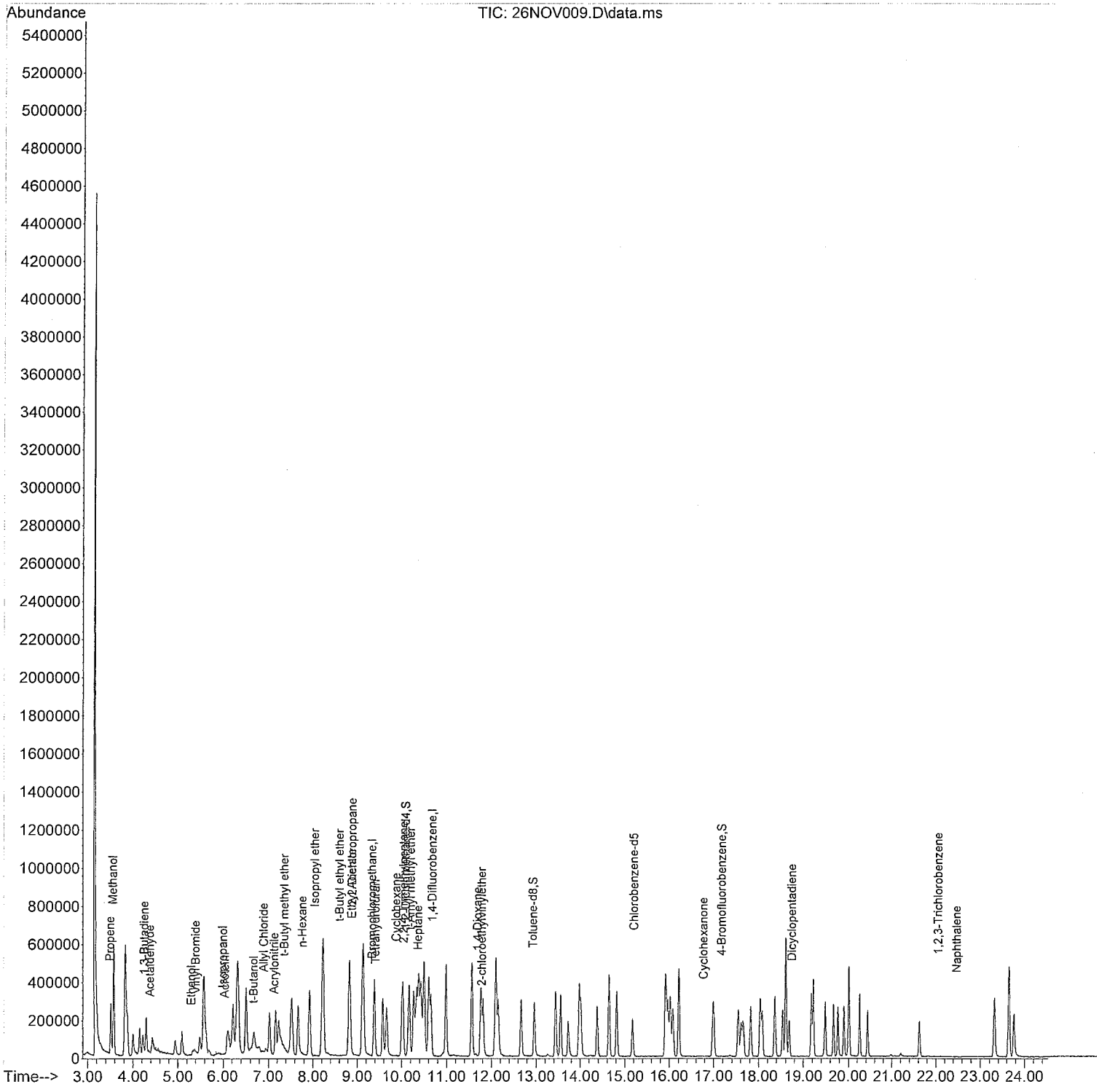
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.327	130	116179	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.682	114	418873	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	212704	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.085	65	296107	11.23	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 112.30%				
29) Toluene-d8	12.931	98	290715	7.51	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 75.10%#				
32) 4-Bromofluorobenzene	17.175	95	139939	9.88	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 98.80%				
Target Compounds							Qvalue
2) Propene	3.490	41	139911	11.34	ppbv		99
4) 1,3-Butadiene	4.251	54	99776	9.26	ppbv		96
5) Methanol	3.556	31	34500	16.19	ppbv	#	27
6) Acetaldehyde	4.379	43	20420	2.36	ppbv	#	47
7) Ethanol	5.297	45	28145	3.82	ppbv		92
8) Vinyl Bromide	5.399	106	86555	10.27	ppbv	#	96
9) Isopropanol	5.992	45	240040	8.42	ppbv		94
10) Acrolein	6.035	56	55484	7.20	ppbv	#	83
11) t-Butanol	6.675	59	52095	1.88	ppbv		97
12) Allyl Chloride	6.894	41	183431	11.15	ppbv	#	90
13) Acrylonitrile	7.130	53	48242	3.76	ppbv		89
14) t-Butyl methyl ether	7.363	73	387874	9.31	ppbv	#	82
15) n-Hexane	7.763	57	195559	8.16	ppbv		87
16) Isopropyl ether	8.045	45	423500	8.43	ppbv	#	88
17) t-Butyl ethyl ether	8.603	87	125865	8.20	ppbv	#	55
18) Ethyl Acetate	8.882	70	29998	8.78	ppbv	#	1
19) 2,2-Dichloropropane	8.888	77	163387	9.71	ppbv	#	78
20) Tetrahydrofuran	9.406	72	72815	9.67	ppbv	#	46
21) Cyclohexane	9.878	56	256347	9.29	ppbv	#	76
22) 2,2,4-Trimethylpentane	10.042	57	508950	7.76	ppbv		94
25) t-Amyl methyl ether	10.197	73	267389	10.00	ppbv		98
26) Heptane	10.357	71	74578	7.00	ppbv	#	47
27) 1,4-Dioxane	11.692	88	103114	10.84	ppbv	#	67
28) 2-chloroethylvinylether	11.784	63	113	7.70	ppbv	#	100
31) Cyclohexanone	16.772	55	110740	13.56	ppbv	#	84
33) Dicyclopentadiene	18.736	66	4307	17.25	ppbv	#	64
34) Naphthalene	22.474	128	262672	18.80	ppbv		99
35) 1,2,3-Trichlorobenzene	22.045	180	153230	18.14	ppbv	#	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV009.D
Acq On : 26 Nov 2018 3:41 pm
Operator : DT
Sample : LCS
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 10:13:04 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV010.D
Acq On : 26 Nov 2018 4:21 pm
Operator : DT
Sample : LCSD
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 10:13:22 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration

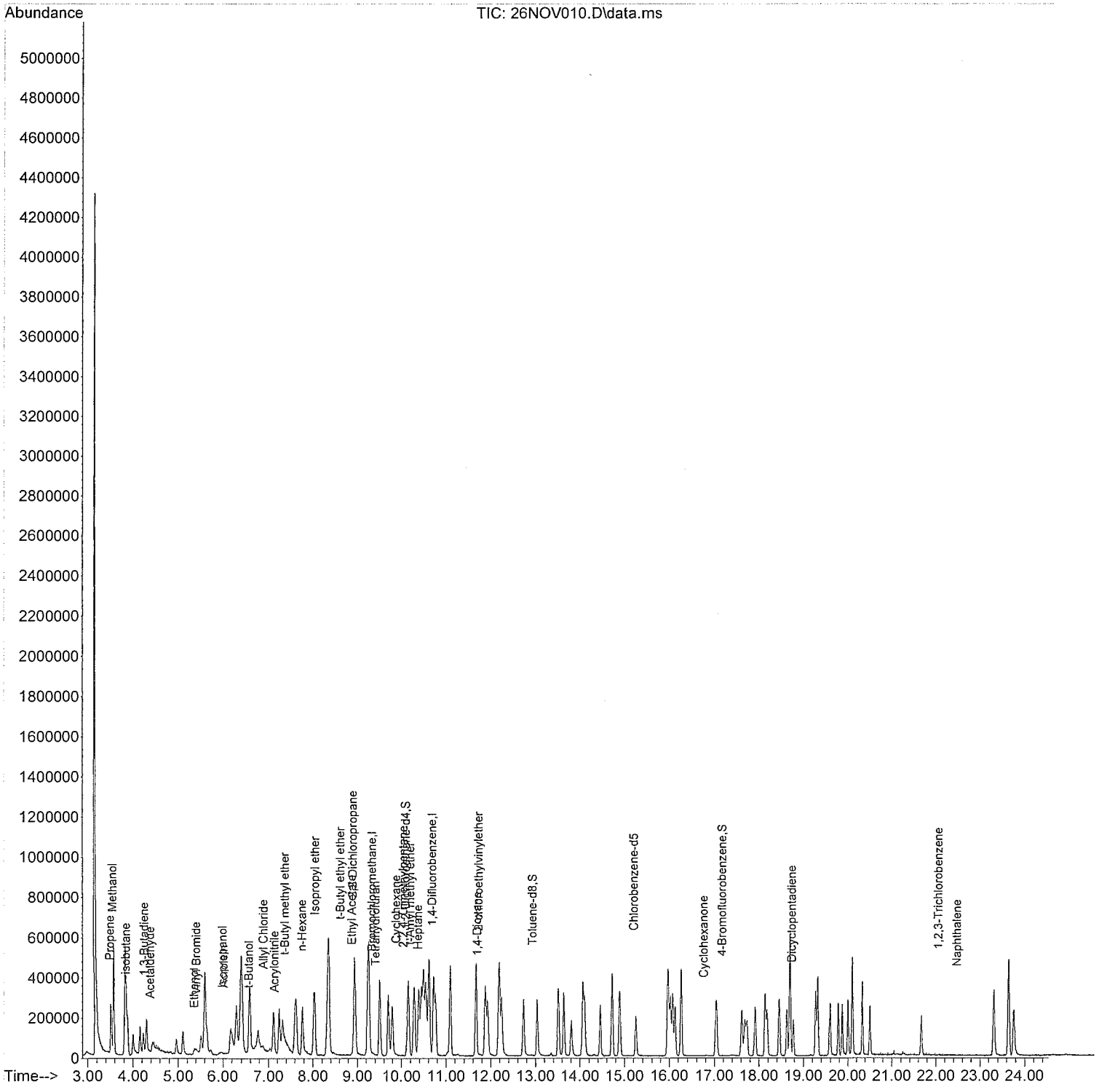
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	9.324	130	112483	10.00	ppbv	#	0.00
23) 1,4-Difluorobenzene	10.678	114	397616	10.00	ppbv		0.00
30) Chlorobenzene-d5	15.204	117	209670	10.00	ppbv		0.00
System Monitoring Compounds							
24) 1,2-Dichloroethane-d4	10.091	65	288800	11.53	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 115.30%				
29) Toluene-d8	12.928	98	282888	7.70	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 77.00%#				
32) 4-Bromofluorobenzene	17.171	95	144393	10.34	ppbv		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.40%				
Target Compounds							Qvalue
2) Propene	3.490	41	133000	11.14	ppbv		95
3) isobutane	3.838	41	70861	11.08	ppbv	#	1
4) 1,3-Butadiene	4.248	54	95199	9.12	ppbv		95
5) Methanol	3.549	31	33559	16.27	ppbv	#	18
6) Acetaldehyde	4.385	43	7916	0.94	ppbv	#	1
7) Ethanol	5.359	45	9332	1.31	ppbv		92
8) Vinyl Bromide	5.405	106	81750	10.02	ppbv		97
9) Isopropanol	5.989	45	226306	8.20	ppbv		96
10) Acrolein	6.015	56	51457	6.90	ppbv	#	65
11) t-Butanol	6.566	59	153724	5.72	ppbv	#	71
12) Allyl Chloride	6.891	41	180810	11.35	ppbv	#	86
13) Acrylonitrile	7.133	53	43623	3.51	ppbv	#	67
14) t-Butyl methyl ether	7.366	73	374782	9.29	ppbv	#	82
15) n-Hexane	7.760	57	192474	8.30	ppbv		89
16) Isopropyl ether	8.042	45	407476	8.37	ppbv	#	89
17) t-Butyl ethyl ether	8.612	87	120373	8.10	ppbv	#	57
18) Ethyl Acetate	8.871	70	28533	8.62	ppbv	#	1
19) 2,2-Dichloropropane	8.894	77	154248	9.47	ppbv	#	76
20) Tetrahydrofuran	9.409	72	64616	8.86	ppbv	#	43
21) Cyclohexane	9.882	56	241436	9.04	ppbv	#	76
22) 2,2,4-Trimethylpentane	10.039	57	485497	7.65	ppbv		95
25) t-Amyl methyl ether	10.193	73	252421	9.95	ppbv		99
26) Heptane	10.360	71	70675	6.99	ppbv	#	47
27) 1,4-Dioxane	11.692	88	100562	11.14	ppbv	#	76
28) 2-chloroethylvinylether	11.721	63	110	7.90	ppbv	#	100
31) Cyclohexanone	16.758	55	108653	13.50	ppbv	#	85
33) Dicyclopentadiene	18.739	66	3038	12.34	ppbv		95
34) Naphthalene	22.471	128	284274	20.64	ppbv		99
35) 1,2,3-Trichlorobenzene	22.048	180	159857	19.20	ppbv	#	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\181126\
Data File : 26NOV010.D
Acq On : 26 Nov 2018 4:21 pm
Operator : DT
Sample : LCSD
Misc : 50 ML
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 10:13:22 2018
Quant Method : C:\msdchem\1\methods\AL181031.M
Quant Title : EPA TO-15(09/27/05),GC Column:RTxVolatiles 0.32mm
QLast Update : Fri Nov 02 18:25:44 2018
Response via : Initial Calibration



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Appendix C
Baseline Risk Assessment Calculations

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Appendix C-1
Baseline Risk Assessment Tables

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Table C-1.1. COPC Selection for Mixed-Zone Soil, 0 to 15 feet bgs - Future Indoor Industrial Worker, Future Outdoor Industrial Worker, Future Construction Worker, and Hypothetical Future Residential Exposure Scenarios

Human Health Risk Assessment, Site DP009, JBER, Alaska

Analytical Group	Analyte Name[a]	CAS Number	Number of Samples	Number of Detection	Detection Frequency	Maximum Detected Concentration (mg/kg)	SL[b,c] (mg/kg)	Maximum Detected Concentration Exceeds SL?	COPC[d]	Notes
Hydrocarbons	DRO	PHCD	27	18	67%	746	10250	No	No	
Hydrocarbons	GRO	PHCG	27	12	44%	108	1400	No	No	
Hydrocarbons	RRO	MOIL	11	7	64%	520	10000	No	No	
Metals	**Aluminum**	**7429-90-5**	**5**	**5**	**100%**	**15800**	**7700**	**Yes**	**Yes**	
Metals	Antimony	7440-36-0	5	5	100%	0.387	3.1	No	No	
Metals	**Arsenic**	**7440-38-2**	**5**	**5**	**100%**	**8.32**	**0.68**	**Yes**	**Yes**	
Metals	Barium	7440-39-3	5	5	100%	58.9	1500	No	No	
Metals	Beryllium	7440-41-7	5	5	100%	0.418	16	No	No	
Metals	Cadmium	7440-43-9	5	5	100%	0.282	0.71	No	No	
Metals	Chromium	7440-47-3	5	5	100%	302	12000	No	No	
Metals	**Cobalt**	**7440-48-4**	**5**	**5**	**100%**	**11.7**	**2.3**	**Yes**	**Yes**	
Metals	Copper	7440-50-8	5	5	100%	38.3	310	No	No	
Metals	**Iron**	**7439-89-6**	**5**	**5**	**100%**	**33000**	**5500**	**Yes**	**Yes**	
Metals	Lead	7439-92-1	5	5	100%	16.5	400	No	No	
Metals	**Manganese**	**7439-96-5**	**5**	**5**	**100%**	**635**	**180**	**Yes**	**Yes**	
Metals	**Mercury**	**7439-97-6**	**5**	**5**	**100%**	**2.2**	**1.1**	**Yes**	**Yes**	
Metals	Molybdenum	7439-98-7	5	5	100%	0.68	39	No	No	
Metals	Nickel	7440-02-0	5	5	100%	68.7	150	No	No	
Metals	Selenium	7782-49-2	5	5	100%	0.171	39	No	No	
Metals	Silver	7440-22-4	5	5	100%	0.474	39	No	No	
Metals	**Vanadium**	**7440-62-2**	**5**	**5**	**100%**	**61.2**	**39**	**Yes**	**Yes**	
Metals	Zinc	7440-66-6	5	5	100%	64.5	2300	No	No	
SVOCs	1-Methylnaphthalene	90-12-0	7	3	43%	0.0304	18	No	No	
SVOCs	2-Methylnaphthalene	91-57-6	7	3	43%	0.0481	24	No	No	
SVOCs	Anthracene	120-12-7	7	2	29%	0.003	1800	No	No	
SVOCs	Benzo(a)anthracene	56-55-3	7	3	43%	0.0035	1.1	No	No	
SVOCs	Benzo(a)pyrene	50-32-8	7	2	29%	0.00324	0.11	No	No	
SVOCs	Benzo(b)fluoranthene	205-99-2	7	1	14%	0.00709	1.1	No	No	
SVOCs	Benzo(g,h,i)perylene	191-24-2	7	3	43%	0.0031	180	No	No	Pyrene SL is used as surrogate
SVOCs	Benzo(k)fluoranthene	207-08-9	7	1	14%	0.00169	11	No	No	
SVOCs	Chrysene	218-01-9	7	3	43%	0.00398	110	No	No	
SVOCs	Fluoranthene	206-44-0	7	3	43%	0.00564	240	No	No	
SVOCs	Fluorene	86-73-7	7	2	29%	0.00268	240	No	No	
SVOCs	Indeno(1,2,3-cd)pyrene	193-39-5	7	1	14%	0.0024	1.1	No	No	
SVOCs	Phenanthrene	85-01-8	7	4	57%	0.0132	180	No	No	Pyrene SL is used as surrogate
SVOCs	Pyrene	129-00-0	7	4	57%	0.00565	180	No	No	
VOCs	1,2,4-Trimethylbenzene	95-63-6	15	4	27%	0.583	30	No	No	
VOCs	1,2-Dichlorobenzene	95-50-1	11	1	9%	0.0017	180	No	No	
VOCs	1,2-Dichloroethane	107-06-2	15	1	7%	9.50E-04	0.46	No	No	
VOCs	1,3,5-Trimethylbenzene	108-67-8	11	3	27%	0.296	27	No	No	
VOCs	1,4-Dichlorobenzene	106-46-7	11	1	9%	0.0012	2.6	No	No	
VOCs	2-Butanone (MEK)	78-93-3	11	1	9%	0.014	2700	No	No	
VOCs	Acetone	67-64-1	11	5	45%	0.082	7000	No	No	
VOCs	Benzene	71-43-2	24	14	58%	0.17	1.2	No	No	
VOCs	Carbon Disulfide	75-15-0	11	2	18%	0.0023	77	No	No	
VOCs	Ethylbenzene	100-41-4	11	3	27%	0.0742	5.8	No	No	
VOCs	Isopropylbenzene	98-82-8	11	2	18%	0.0333	190	No	No	

Table C-1.1. COPC Selection for Mixed-Zone Soil, 0 to 15 feet bgs - Future Indoor Industrial Worker, Future Outdoor Industrial Worker, Future Construction Worker, and Hypothetical Future Residential Exposure Scenarios

Human Health Risk Assessment, Site DP009, JBER, Alaska

Analytical Group	Analyte Name[a]	CAS Number	Number of Samples	Number of Detection	Detection Frequency	Maximum Detected Concentration (mg/kg)	SL[b,c] (mg/kg)	Maximum Detected Concentration Exceeds SL?	COPC[d]	Notes
VOCs	m- & p-Xylene	179601-23-1	11	3	27%	0.213	55	No	No	m-Xylene SL is used
VOCs	Naphthalene	91-20-3	25	9	36%	0.121	2	No	No	
VOCs	n-Butylbenzene	104-51-8	11	4	36%	0.219	390	No	No	
VOCs	n-Hexane	110-54-3	11	1	9%	0.0393	61	No	No	
VOCs	n-Propylbenzene	103-65-1	11	2	18%	0.0749	380	No	No	
VOCs	o-Xylene	95-47-6	11	3	27%	0.0456	64	No	No	
VOCs	p-Isopropyltoluene	99-87-6	11	3	27%	0.127	190	No	No	Cumene SL is used
VOCs	sec-Butylbenzene	135-98-8	11	2	18%	0.0808	780	No	No	
VOCs	Tetrachloroethene (PCE)	127-18-4	11	2	18%	0.039	8.1	No	No	
VOCs	Toluene	108-88-3	11	5	45%	0.231	490	No	No	
VOCs	Total Xylenes	1330-20-7	11	3	27%	0.259	58	No	No	
VOCs	Trichloroethene (TCE)	79-01-6	15	3	20%	0.029	0.41	No	No	

Notes:

[a] Only detected analytes are presented. Calcium, magnesium, potassium and sodium are not included as they are essential nutrients.

[b] EPA RSLs for residential soil based on target ELCR of 1×10^{-6} and HQ of 0.1 (EPA 2023b).

[c] For hydrocarbons (DRO, GRO, and RRO), the most stringent of ADEC Table B2 inhalation/ingestion cleanup levels for soil (ADEC 2023).

[d] Analyte whose maximum detected concentration exceeds its SL is identified as a COPC.

Bold indicates analyte is retained as a COPC in the risk assessment.

Acronyms:
ADEC = Alaska Department of Environmental Conservation
bgs = below ground surface
CAS = Chemical Abstracts Service
COPC = chemical of potential concern
DRO = diesel-range organics
ELCR = excess lifetime cancer risk
EPA = U.S. Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
JBER = Joint Base Elmendorf-Richardson
RRO = residual-range organics
RSL = Regional Screening Level
SL = screening level
SVOC = semivolatile organic compound
VOC = volatile organic compound

Units:
% = percent
mg/kg = milligram(s) per kilogram

Table C-1.2. COPC Selection and Risk Estimates for Groundwater - Hypothetical Future Residential Exposure Scenario

Human Health Risk Assessment, Site DP009, JBER, Alaska

Analytical Group	Analyte[a]	CAS Number	Maximum Detected Concentration[a] (µg/L)	Data Qualifier[b]	SL[c,d] (µg/L)	Maximum Detected Concentration > SL?	COPC[e]	Future Residential Exposure Scenario			
								RBC[f] (µg/L)		Cancer Risk	Non-cancer Hazard
								Cancer	Non-cancer		
Hydrocarbons	DRO	PHCD	35.3	B	1.5E+03	No	No	--	--	NA	NA
SVOCs	2-Methylnaphthalene	91-57-6	0.0037	B	3.6E+00	No	No	--	--	NA	NA
SVOCs	Phenanthrene[g]	85-01-8	0.0026	B	1.2E+01	No	No	--	--	NA	NA
VOCs	Chloroform	67-66-3	0.52		2.2E-01	Yes	Yes	0.22	97	2.4E-06	0.005
VOCs	Naphthalene	91-20-3	0.0693	B	1.2E-01	No	No	--	--	NA	NA
									Total Risk and Hazard	**2E-06**	0.005

Notes:

[a] Detected analytes are presented from monitoring well AP-3648

[b] Data Qualifier: B = The analyte was detected in the associated method and/or calibration blank.

[c] EPA RSLs for tap water based on target ELCR of 1×10^{-6} and HQ of 0.1 (EPA 2023b).

[d] For hydrocarbons (DRO), the most stringent of ADEC Table C for groundwater (ADEC 2023).

[e] Analyte whose maximum detected concentration exceeds its SL is identified as a COPC.

[f] RBCs are based on target risk of 1×10^{-6} and hazard quotient of 1.

[g] Pyrene SL is used as surrogate for phenanthrene.

Bold indicates total cancer risk exceeds $1x10^{-6}$ or HI exceeds 1.

-- = not available

Acronyms:
CAS = Chemical Abstracts Service
COPC = contaminant of potential concern
DRO = diesel-range organics
ELCR = excess lifetime cancer risk
EPA = U.S. Environmental Protection Agency
HI = hazard index
HQ = hazard quotient
JBER = Joint Base Elmendorf-Richardson
NA = not applicable
RBC = risk-based concentration
RSL = Regional Screening Level
SL = screening level
SVOC = semivolatile organic compound
VOC = volatile organic compound

Units:
µg/L = microgram(s) per liter

Table C-1.3. COPC Selection and Sample-Specific Risk Estimates for Indoor Air - Current Indoor Industrial Worker Exposure Scenario (at Building 986)

Human Health Risk Assessment, Site DP009, JBER, Alaska

Sample Location	Sampling Date	Sample Type[a]	Sampling Depth (feet bgs)	CAS Number	Analytle[b]	Detected Concentration (µg/m^3)	Data Qualifier[c]	SL[d] (µg/m^3)	Detected Concentration > SL?	COPC[e]	Current Indoor Industrial Worker at Building 968			
											RBC[f] (µg/m^3)		Cancer Risk	Non-cancer Hazard
											Cancer	Non-cancer		
DP009-IA01	7/25/2018	N	0 - 0	71-43-2	Benzene	0.24		3.6E-01	No	No	--	--	NA	NA
				107-06-2	1,2-Dichloroethane	0.047		1.1E-01	No	No	--	--	NA	NA
				91-20-3	Naphthalene	0.34	J	8.3E-02	Yes	Yes	0.36	13	9.4E-07	0.03
				127-18-4	Tetrachloroethene (PCE)	0.048	J	4.2E+00	No	No	--	--	NA	NA
												Total Risk and Hazard	9E-07	0.03
DP009-IA01	11/6/2018	N	0 - 0	71-43-2	Benzene	4.1		3.6E-01	Yes	Yes	1.6	130	**2.6E-06**	0.03
				91-20-3	Naphthalene	2.7	J	8.3E-02	Yes	Yes	0.36	13	**7.5E-06**	0.2
				127-18-4	Tetrachloroethene (PCE)	0.25		4.2E+00	No	No	--	--	NA	NA
				79-01-6	Trichloroethene (TCE)	0.048	J	2.1E-01	No	No	--	--	NA	NA
				95-63-6	1,2,4-Trimethylbenzene	14		6.3E+00	Yes	Yes		260	NA	0.05
												Total Risk and Hazard	**1E-05**	0.3
DP009-IA02	7/25/2018	N	0 - 0	71-43-2	Benzene	0.2		3.6E-01	No	No	--	--	NA	NA
				107-06-2	1,2-Dichloroethane	0.075		1.1E-01	No	No	--	--	NA	NA
				91-20-3	Naphthalene	0.32	J	8.3E-02	Yes	Yes	0.36	13	8.9E-07	0.02
				127-18-4	Tetrachloroethene (PCE)	0.034	J	4.2E+00	No	No	--	--	NA	NA
												Total Risk and Hazard	9E-07	0.02
DP009-IA02	11/6/2018	N	0 - 0	71-43-2	Benzene	5.7		3.6E-01	Yes	Yes	1.6	130	**3.6E-06**	0.04
				91-20-3	Naphthalene	3.7	J	8.3E-02	Yes	Yes	0.36	13	**1.0E-05**	0.3
				127-18-4	Tetrachloroethene (PCE)	0.45		4.2E+00	No	No	--	--	NA	NA
				79-01-6	Trichloroethene (TCE)	0.031	J	2.1E-01	No	No	--	--	NA	NA
				95-63-6	1,2,4-Trimethylbenzene	25		6.3E+00	Yes	Yes		260	NA	0.1
												Total Risk and Hazard	**1E-05**	0.4
DP009-IA03	7/25/2018	N	0 - 0	71-43-2	Benzene	0.37		3.6E-01	Yes	Yes	1.6	130	2.3E-07	0.003
				107-06-2	1,2-Dichloroethane	0.064		1.1E-01	No	No	--	--	NA	NA
				91-20-3	Naphthalene	0.72	J	8.3E-02	Yes	Yes	0.36	13	**2.0E-06**	0.06
				127-18-4	Tetrachloroethene (PCE)	0.049	J	4.2E+00	No	No	--	--	NA	NA
				79-01-6	Trichloroethene (TCE)	0.013	J	2.1E-01	No	No	--	--	NA	NA
												Total Risk and Hazard	**2E-06**	0.1
DP009-IA03	11/6/2018	N	0 - 0	71-43-2	Benzene	3.8		3.6E-01	Yes	Yes	1.6	130	**2.4E-06**	0.03
				91-20-3	Naphthalene	2.6	J	8.3E-02	Yes	Yes	0.36	13	**7.2E-06**	0.2
				127-18-4	Tetrachloroethene (PCE)	0.52		4.2E+00	No	No	--	--	NA	NA
				79-01-6	Trichloroethene (TCE)	0.024	J	2.1E-01	No	No	--	--	NA	NA
				95-63-6	1,2,4-Trimethylbenzene	14		6.3E+00	Yes	Yes		260	NA	0.05
												Total Risk and Hazard	**1E-05**	0.3

Table C-1.3. COPC Selection and Sample-Specific Risk Estimates for Indoor Air - Current Indoor Industrial Worker Exposure Scenario (at Building 986)

Human Health Risk Assessment, Site DP009, JBER, Alaska

Sample Location	Sampling Date	Sample Type[a]	Sampling Depth (feet bgs)	CAS Number	Analytle[b]	Detected Concentration (µg/m^3)	Data Qualifier[c]	SL[d] (µg/m^3)	Detected Concentration > SL?	COPC[e]	Current Indoor Industrial Worker at Building 968			
											RBC[f] (µg/m^3)		Cancer Risk	Non-cancer Hazard
											Cancer	Non-cancer		
DP009-IA04	7/25/2018	FD	0 - 0	71-43-2	Benzene	0.21		3.6E-01	No	No	--	--	NA	NA
				107-06-2	1,2-Dichloroethane	0.061		1.1E-01	No	No	--	--	NA	NA
				91-20-3	Naphthalene	0.24	J	8.3E-02	Yes	Yes	0.36	13	6.7E-07	0.02
				79-01-6	Trichloroethene (TCE)	0.0064	J	2.1E-01	No	No	--	--	NA	NA
												Total Risk and Hazard	7E-07	0.02
DP009-IA04	7/25/2018	N	0 - 0	71-43-2	Benzene	0.19		3.6E-01	No	No	--	--	NA	NA
				107-06-2	1,2-Dichloroethane	0.06		1.1E-01	No	No	--	--	NA	NA
				91-20-3	Naphthalene	0.26	J	8.3E-02	Yes	Yes	0.36	13	7.2E-07	0.02
				127-18-4	Tetrachloroethene (PCE)	0.036	J	4.2E+00	No	No	--	--	NA	NA
				79-01-6	Trichloroethene (TCE)	0.0057	J	2.1E-01	No	No	--	--	NA	NA
												Total Risk and Hazard	7E-07	0.02
DP009-IA04	11/6/2018	FD	0 - 0	71-43-2	Benzene	3.6		3.6E-01	Yes	Yes	1.6	130	**2.3E-06**	0.03
				107-06-2	1,2-Dichloroethane	0.16		1.1E-01	Yes	Yes	0.47	31	3.4E-07	0.005
				91-20-3	Naphthalene	1.8	J	8.3E-02	Yes	Yes	0.36	13	**5.0E-06**	0.1
				127-18-4	Tetrachloroethene (PCE)	0.68		4.2E+00	No	No	--	--	NA	NA
				79-01-6	Trichloroethene (TCE)	0.036	J	2.1E-01	No	No	--	--	NA	NA
				95-63-6	1,2,4-Trimethylbenzene	12		6.3E+00	Yes	Yes		260	NA	0.05
												Total Risk and Hazard	**8E-06**	0.2
DP009-IA04	11/6/2018	N	0 - 0	71-43-2	Benzene	3.7		3.6E-01	Yes	Yes	1.6	130	**2.3E-06**	0.03
				91-20-3	Naphthalene	2.6	J	8.3E-02	Yes	Yes	0.36	13	**7.2E-06**	0.2
				127-18-4	Tetrachloroethene (PCE)	0.69		4.2E+00	No	No	--	--	NA	NA
				79-01-6	Trichloroethene (TCE)	0.05	J	2.1E-01	No	No	--	--	NA	NA
				95-63-6	1,2,4-Trimethylbenzene	14		6.3E+00	Yes	Yes		260	NA	0.05
												Total Risk and Hazard	**1E-05**	0.3

Notes:

a Sample Type: N = normal sample; FD = field duplicate sample

[b] Only detected analytes are presented.

[c] Data Qualifier: J = estimated concentration

[d] EPA RSLs for residential air based on target ELCR of 1×10^{-6} and HQ of 0.1 (EPA 2023b).

[e] Analyte whose detected concentration exceeds its SL is identified as a COPC.

[f] RBCs are EPA industrial air RSL based on target ELCR of 1×10^{-6} and HQ of 1.

Bold indicates total cancer risk exceeds $1x10^{-6}$ or HI exceeds 1.

-- = not available

Acronyms:

bgs = below ground surface
CAS = Chemical Abstracts Service
COPC = contaminant of potential concern
ELCR = excess lifetime cancer risk
EPA = U.S. Environmental Protection Agency
HI = hazard index
HQ = hazard quotient
JBER = Joint Base Elmendorf-Richardson
RBC = risk-based concentration
RSL = Regional Screening Level
SL = screening level

Units:

µg/m^3 = microgram(s) per cubic meter

Table C-1.4. COPC Selection and Sample-Specific Risk Estimates for Subslab Soil Gas - Future Indoor Industrial Worker Exposure Scenario (at Building 986)

Human Health Risk Assessment, Site DP009, JBER, Alaska

Sample Location	Sampling Date	Sample Type[a]	Sampling Depth (feet bgs)	CAS Number	Analyte[b]	Detected Concentration (µg/m³)	Data Qualifier[c]	SL[d] (µg/m³)	Detected Concentration > SL?	COPC[e]	Future Indoor Industrial Worker at Building 968					
											Industrial Air RSL[f] (µg/m³)		RBC[f] (µg/m³)		Cancer Risk	Non-cancer Hazard
											Cancer	Non-cancer	Cancer	Non-cancer		
DP009-SS01	7/24/2018	N	0 - 0	127-18-4	Tetrachloroethene (PCE)	5.6	J	1.4E+02	No	No	--	--	NA	NA	NA	NA
				95-63-6	1,2,4-Trimethylbenzene	9.1	J	2.1E+02	No	No	--	--	NA	NA	NA	NA
															Total Risk and Hazard	NA	NA
DP009-SS01	11/5/2018	N	0 - 0	127-18-4	Tetrachloroethene (PCE)	20		1.4E+02	No	No	--	--	NA	NA	NA	NA
															Total Risk and Hazard	NA	NA
DP009-SS02	7/24/2018	N	0 - 0	127-18-4	Tetrachloroethene (PCE)	3.7	J	1.4E+02	No	No	--	--	NA	NA	NA	NA
															Total Risk and Hazard	NA	NA
DP009-SS02	11/5/2018	N	0 - 0	71-43-2	Benzene	11		1.2E+01	No	No	--	--	NA	NA	NA	NA
				91-20-3	Naphthalene	47	J	2.8E+00	Yes	Yes	0.36	13	12	433	**3.9E-06**	0.1
				127-18-4	Tetrachloroethene (PCE)	4	J	1.4E+02	No	No	--	--	NA	NA	NA	NA
				95-63-6	1,2,4-Trimethylbenzene	72		2.1E+02	No	No	--	--	NA	NA	NA	NA
															Total Risk and Hazard	**4E-06**	0.1

Notes:

[a] Sample Type: N = normal sample

[b] Only detected analytes are presented.

[c] Data Qualifier: J = estimated concentration

[d] EPA residential air RSL/soil gas to indoor air default attenuation factor of 0.03.
EPA RSLs for residential air used for soil gas SL calculation are based on target ELCR of 1×10^{-6} and HQ of 0.1 (EPA 2023b).

[e] Analyte whose detected concentration exceeds its SL is identified as a COPC.

[f] RBCs are EPA industrial air RSL/soil gas to indoor air default attenuation factor of 0.03.
EPA RSLs for industrial air used for RBC calculation are based on target ELCR of 1×10^{-6} and HQ of 1 (EPA 2023b).

Bold indicates total cancer risk exceeds 1×10^{-6} or HI exceeds 1.

-- = not available

Acronyms:
bgs = below ground surface
CAS = Chemical Abstracts Service
COPC = contaminant of potential concern
ELCR = excess lifetime cancer risk
EPA = U.S. Environmental Protection Agency
HI = hazard index
HQ = hazard quotient
JBER = Joint Base Elmendorf-Richardson
RBC = risk-based concentration
RSL = Regional Screening Level
SL = screening level

Units:
µg/m³ = microgram(s) per cubic meter

Table C-1.5. COPC Selection for Source Area Exterior Soil Gas - Future Indoor Industrial Worker (at Future Buildings) and Hypothetical Future Residential Exposure Scenarios

Human Health Risk Assessment, Site DP009, JBER, Alaska

Sample Location	Sampling Date	Sample Type[a]	Sampling Depth (feet bgs)	CAS Number	Analyte[b,c]	Detected Concentration (µg/m^3)	Data Qualifier[d]	SL[e] (µg/m^3)	Detected Concentration > SL?	COPC[f]
DP009-SV03	8/13/2014	N	7 - 8	100-41-4	Ethylbenzene	4.59		3.7E+01	No	No
				1330-20-7	Total Xylenes	4.9		3.3E+02	No	No
				127-18-4	Tetrachloroethene (PCE)	44		1.4E+02	No	No
				108-88-3	Toluene	2.61	J	1.7E+04	No	No
				79-01-6	Trichloroethene (TCE)	4.21	J	7.0E+00	No	No
DP009-SV03	8/13/2014	FD	7 - 8	100-41-4	Ethylbenzene	4.2	J	3.7E+01	No	No
				1330-20-7	Total Xylenes	5.08		3.3E+02	No	No
				127-18-4	Tetrachloroethene (PCE)	45.3		1.4E+02	No	No
				108-88-3	Toluene	3.11	J	1.7E+04	No	No
				79-01-6	Trichloroethene (TCE)	3	J	7.0E+00	No	No
DP009-SV06	8/13/2014	N	7 - 8	100-41-4	Ethylbenzene	6.58		3.7E+01	No	No
				1330-20-7	Total Xylenes	7.46		3.3E+02	No	No
				127-18-4	Tetrachloroethene (PCE)	5.93	J	1.4E+02	No	No
				108-88-3	Toluene	3.6		1.7E+04	No	No
				79-01-6	Trichloroethene (TCE)	2.84	J	7.0E+00	No	No

Notes:

[a] Sample Type: N = normal sample; FD = field duplicate sample

[b] Only detected analytes are presented.

[c] Xylenes are evaluated as total xylenes. Results for o-xylenes and m,p-xylenes are not included to avoid duplication in risk calculations.

[d] Data Qualifier: J = estimated concentration

[e] Soil gas screening level = Residential air RSL/soil gas to indoor air default attenuation factor of 0.03.

[f] Analyte whose detected concentration exceeds its SL is identified as a COPC.

EPA RSLs for residential air used for soil gas screening levels calculation (discussed above) are based on target ELCR of 1×10^{-6} and HQ of 0.1 (EPA 2023b).

Acronyms:
bgs = below ground surface
CAS = Chemical Abstracts Service
COPC = contaminant of potential concern
ELCR = excess lifetime cancer risk
EPA = U.S. Environmental Protection Agency
HI = hazard index
HQ = hazard quotient
JBER = Joint Base Elmendorf-Richardson
RSL = Regional Screening Level
SL = screening level

Units:
µg/m^3 = microgram(s) per cubic meter

Table C-1.6. Risk Estimates for COPCs in Mixed-zone Soil, 0 to 15 feet bgs - Future Indoor Industrial Worker, Future Outdoor Industrial Worker, Future Construction Worker, and Hypothetical Future Residential Exposure Scenarios

Human Health Risk Assessment, Site DP-009, JBER, Alaska

Analyte Group	COPC	CAS	Maximum Detected Concentration (mg/kg)	EPC (mg/kg)	EPC Basis[b]	Background Concentration (mg/kg)	Future Indoor Industrial Worker				Future Outdoor Industrial Worker				Future Construction				Hypothetical Future Residents				
							RBC[c] (mg/kg)		Cancer Risk	Non-cancer Hazard	RBC[c] (mg/kg)		Cancer Risk	Non-cancer Hazard	RBC[c] (mg/kg)		Cancer Risk	Non-cancer Hazard	RBC[c] (mg/kg)		Cancer Risk	Non-cancer Hazard	Target Organ/Effect
							Cancer	Non-cancer			Cancer	Non-cancer			Cancer	Non-cancer			Cancer	Non-cancer			
Metals	Aluminum[a]	7429-90-5	15800	15800	Maximum	21393	-	2.2E+06	-	0.007	-	1.3E+06	-	0.01	-	2.4E+05	--	0.07	-	7.7E+04	**-**	0.2	Nervous
Metals	Arsenic	7440-38-2	8.32	8.32	Maximum	7.78	7.3E+00	1.2E+03	1.1E-06	0.007	3.3E+00	5.3E+02	1.1E-06	0.02	6.5E+01	1.4E+02	1.3E-07	0.06	6.8E-01	3.5E+01	1.2E-05	0.2	Dermal, Cardiovascular
Metals	Cobalt[a]	7440-48-4	11.7	11.7	Maximum	13.8	1.9E+03	6.9E+02	6.3E-09	0.02	2.1E+03	3.9E+02	6.3E-09	0.03	3.8E+03	7.8E+02	3.1E-09	0.02	4.2E+02	2.3E+01	2.8E-08	0.5	Thyroid
Metals	Iron	7439-89-6	33000	33000	Maximum	30235	-	1.6E+06	-	0.02	-	9.1E+05	-	0.04	-	2.4E+05	--	0.1	-	5.5E+04	**-**	0.6	GI Tract
Metals	Manganese	7439-96-5	635	635	Maximum	585.8	-	4.7E+04	-	0.01	-	2.9E+04	-	0.02	-	4.1E+03	--	0.2	-	1.8E+03	**-**	0.4	Nervous
Metals	Mercury	7439-97-6	2.2	2.2	Maximum	0.11	-	4.6E+01	-	0.05	-	5.1E+01	-	0.04	-	5.7E+00	--	0.4	-	1.1E+01	**-**	0.2	Immune, Urinary
Metals	Vanadium	7440-62-2	61.2	61.2	Maximum	49.9	-	1.2E+04	-	0.005	-	6.5E+03	-	0.009	-	2.8E+03	--	0.02	-	3.9E+02	**-**	0.2	Dermal
						Total Risk and Hazard:			1E-06	0.1			1E-06	0.2			1E-07	0.8			**1E-05**	**2**	

Notes:

[a] Maximum detected concentration is below background; not a site-related COPC.

[b] EPCs are based on maximum detected concentration.

[c] RBCs are based on target ELCR of 1×10^{-6} and HQ of 1.

Bold indicates total cancer risk exceeds $1x10^{-6}$ or HI exceeds 1.

-- = not available

Total GI Tract Effect Hazard =	0.6
Total Nervous Effect Hazard =	0.6
Total Thyroid Effect Hazard =	0.5
Total Dermal Effect Hazard =	0.4
Total Cardiovascular Effect Hazard =	0.2
Total Immune Effect Hazard =	0.2
Total Urinary Effect Hazard =	0.2

Acronyms:

bgs = below ground surface
CAS = Chemical Abstracts Service
COPC = contaminant of potential concern
ELCR = excess lifetime cancer risk
EPC = Exposure Point Concentration
GI = gastrointestinal
HI = hazard index
HQ = hazard quotient
JBER = Joint Base Elmendorf-Richardson
RBC = risk-based concentration

Units:

mg/kg = milligram(s) per kilogram

Table C-1.7. Human Health Evaluation Summary by Exposure Scenario and Medium

Human Health Risk Assessment, Site DP009, JBER, Alaska

Exposure Scenario	Exposure Medium	ELCR	Hazard Index	COCs[d]
Current Indoor Industrial Worker at Building 986	Soil 0 to 2 feet bgs	-- [a]	-- [a]	None
	Indoor Air[b,c]	**1E-05** (7E-07 - **1E-05**)	0.4 (0.02 - 0.4)	None
	Total[b]:	**1E-05**	0.4	
Future Indoor Industrial Worker at Building 986	Soil 0 to 15 feet bgs	1E-06	0.1	None
	Soil Gas (Subslab Soilg Gas)[b]	**4E-06**	0.1	None
	Total[b]:	**4E-06**	0.1	
Future Indoor Industrial Worker at Future Buildings	Soil 0 to 15 feet bgs	1E-06	0.1	None
	Soil Gas (Source Area Exterior Soil Gas)	No COPCs		None
	Total:	1E-06	0.1	
Current Outdoor Worker	Soil 0 to 2 feet bgs	-- [a]	-- [a]	None
Future Outdoor Worker	Soil 0 to 15 feet bgs	1E-06	0.2	None
	Total:	1E-06	0.2	
Future Construction Worker	Soil 0 to 15 feet bgs	1E-07	0.8	None
	Total:	1E-07	0.8	
Future Hypothetical Residents	Soil 0 to 15 feet bgs	**1E-05**	**2** (The highest target-organ-specific HI = 0.6: GI tract and Nervous effects)	None
	Groundwater	**2E-06**	0.005	None
	Soil Gas (Source Area Exterior Soil Gas)	No COPCs		None
	Total:	**1E-05**	**2**	

Notes:

[a] The depth of the source of soil contamination (that is, the dry well) was 15 feet bgs, and TPH, VOCs, and SVOCs were not detected above screening levels in soil samples collected in the interval from 0 to 5 feet bgs. Therefore, risk from exposure to surface soil is considered insignificant.

[b] Maximum risk from sample-specific evaluation. The maximum risk estimates were used in the calculation of total ELCR and HI.

[c] The range of ELCR and noncancer HI estimates are presented in the parentheses for indoor air as ELCR and noncancer HI was estimated for multiple samples.

[d] No COCs are identified because total ELCR or HI (in the case of the hypothetical future residential exposure scenario, target-organ-specific HIs) for any of the exposure scenarios evaluated in the risk assessment did not exceed the threshold values (ELCR of $1x10^{-4}$ or HI of 1, respectively).

Bold indicates ELCR exceeds $1x10^{-6}$ or HI exceeds 1.

Table C-1.7. Human Health Evaluation Summary by Exposure Scenario and Medium

Human Health Risk Assessment, Site DP009, JBER, Alaska

Exposure Scenario	Exposure Medium	ELCR	Hazard Index	COCs[d]

Acronyms:
bgs = below ground surface
COC = chemical of concern
ELCR = excess lifetime cancer risk
ELCR = excess lifetime cancer risk
GI = gastrointestinal
HI = hazard index
HQ = hazard quotient
JBER = Joint Base Elmendorf-Richardson
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbons
VOC = volatile organic compound

Appendix C-2
Conceptual Site Models

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Print Form

Appendix A - Human Health Conceptual Site Model Scoping Form and Standardized Graphic

Site Name: JBER DP009 Building 986 Dry Well

File Number: 2102.38.001.02

Completed by: Paragon-Jacobs JV

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources *(check potential sources at the site)*

- ☐ USTs
- ☐ ASTs
- ☐ Dispensers/fuel loading racks
- ☐ Drums
- ☐ Vehicles
- ☐ Landfills
- ☐ Transformers
- ☒ Other: Dry well

Release Mechanisms *(check potential release mechanisms at the site)*

- ☐ Spills
- ☐ Leaks
- ☒ Direct discharge
- ☐ Burning
- ☐ Other:

Impacted Media *(check potentially-impacted media at the site)*

- ☐ Surface soil (0-2 feet bgs*)
- ☒ Subsurface soil (>2 feet bgs)
- ☒ Air
- ☐ Sediment
- ☒ Groundwater
- ☐ Surface water
- ☐ Biota
- ☐ Other:

Receptors *(check receptors that could be affected by contamination at the site)*

- ☒ Residents (adult or child)
- ☒ Commercial or industrial worker
- ☒ Construction worker
- ☐ Subsistence harvester (i.e. gathers wild foods)
- ☐ Subsistence consumer (i.e. eats wild foods)
- ☒ Site visitor
- ☐ Trespasser
- ☐ Recreational user
- ☐ Farmer
- ☐ Other:

* bgs - below ground surface

2. Exposure Pathways: *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.) ☒

If the box is checked, label this pathway complete: Complete

Comments:

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future? ☒

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the ground-water is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350. ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future? ☐

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities). ☐

If both boxes are checked, label this pathway complete: Incomplete

Comments:

3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods? ☐

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)? ☐

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.) ☐

If all of the boxes are checked, label this pathway complete: Incomplete

Comments:

c) Inhalation-

1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Are the contaminants in soil volatile (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminted soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures) ☒

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

3. **Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

Check the box if further evaluation of this pathway is needed: ☒

Comments:

Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

Check the box if further evaluation of this pathway is needed: ☒

Comments:

Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM_{10}). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

Print Form

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: JBER DP009 Building 986 Dry Well

Completed By: Paragon-Jacobs JV

Date Completed: 6/27/2023

***Instructions*: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.**

(1) *Check the media that could be directly affected by the release.*

(2) *For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.*

(3) *Check all exposure media identified in (2).*

(4) *Check all pathways that could be complete. The pathways identified in this column **must** agree with Sections 2 and 3 of the Human Health CSM Scoping Form.*

(5) *Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.*

Media	Transport Mechanisms	Exposure Media	Exposure Pathway/Route	Current & Future Receptors: Residents (adults or children)	Commercial or industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☐ Surface Soil (0-2 ft bgs)	☐ Direct release to surface soil — check soil	☑ soil	☑ Incidental Soil Ingestion	F	C/F	C/F	F			
	☐ Migration to subsurface — check soil		☑ Dermal Absorption of Contaminants from Soil	F	C/F	C/F	F			
	☐ Migration to groundwater — check groundwater		☑ Inhalation of Fugitive Dust	F	C/F	C/F	F			
	☐ Volatilization — check air									
	☐ Runoff or erosion — check surface water									
	☐ Uptake by plants or animals — check biota									
	☐ Other (list):									
☑ Subsurface Soil (2-15 ft bgs)	☑ Direct release to subsurface soil — check soil	☑ groundwater	☑ Ingestion of Groundwater	F	F	F				
	☑ Migration to groundwater — check groundwater		☑ Dermal Absorption of Contaminants in Groundwater	F	I	I				
	☑ Volatilization — check air		☑ Inhalation of Volatile Compounds in Tap Water	F	I	I				
	☐ Uptake by plants or animals — check biota									
	☐ Other (list):									
☑ Ground-water	☑ Direct release to groundwater — check groundwater	☑ air	☑ Inhalation of Outdoor Air	F	C/F	C/F	F			
	☑ Volatilization — check air		☑ Inhalation of Indoor Air	F	C/F	C/F				
	☐ Flow to surface water body — check surface water		☑ Inhalation of Fugitive Dust	F	C/F	C/F	F			
	☐ Flow to sediment — check sediment									
	☐ Uptake by plants or animals — check biota									
	☐ Other (list):									
☐ Surface Water	☐ Direct release to surface water — check surface water	☐ surface water	☐ Ingestion of Surface Water							
	☐ Volatilization — check air		☐ Dermal Absorption of Contaminants in Surface Water							
	☐ Sedimentation — check sediment		☐ Inhalation of Volatile Compounds in Tap Water							
	☐ Uptake by plants or animals — check biota									
	☐ Other (list):									
☐ Sediment	☐ Direct release to sediment — check sediment	☐ sediment	☐ Direct Contact with Sediment							
	☐ Resuspension, runoff, or erosion — check surface water									
	☐ Uptake by plants or animals — check biota	☐ biota	☐ Ingestion of Wild or Farmed Foods							
	☐ Other (list):									

Revised, 10/01/2010

Appendix C-3
Risk-Based Concentrations

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Default
Indoor Worker Soil Inputs
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Variable	Value
THQ (target hazard quotient) unitless	1
AT_{ind} (averaging time - indoor worker)	365
EF_{ind} (exposure frequency - indoor worker) day/year	250
ED_{ind} (exposure duration - indoor worker) year	25
ET_{ind} (exposure time - indoor worker) hour	8
LT (lifetime) year	70
BW_{ind} (body weight - indoor worker)	80
IRS_{ind} (soil ingestion rate - indoor worker) mg/day	50
TR (target cancer risk) unitless	0.000001
City (PEF Climate Zone) Selection	Default
A_s (PEF acres)	0.5
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77
PEF (particulate emission factor) m^3/kg	1359344438
A (PEF Dispersion Constant)	16.2302
B (PEF Dispersion Constant)	18.7762
C (PEF Dispersion Constant)	216.108
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.69
U_t (equivalent threshold value)	11.32
F(x) (function dependent on U_m/U_t) unitless	0.194
City (VF Climate Zone) Selection	Default
A_s (VF acres)	0.5
Q/C_{vol} (g/m^2-s per kg/m^3)	68.18
foc (fraction organic carbon in soil) g/g	0.006
p_b (dry soil bulk density) g/cm^3	1.5
p_s (soil particle density) g/cm^3	2.65
n (total soil porosity) L_{pore}/L_{soil}	0.43396
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	819936000
A (VF Dispersion Constant)	11.911
B (VF Dispersion Constant)	18.4385
C (VF Dispersion Constant)	209.7845
d_s (depth of source) m	0
T_w (groundwater temperature) Celsius	25

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Default
Indoor Worker Risk-Based Regional Screening Levels (RSL) for Soil
Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	RBA	Soil Saturation Concentration (mg/kg)	S (mg/L)	K_{oc} (cm^3/g)	K_d (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Normal Boiling Point BP (K)	BP Ref
Aluminum	7429-90-5	No	No	Inorganics	-		-		1.00E+00	P	5.00E-03	P	1.00E+00	-	-	-	1.50E+03	-	-		2.79E+03	CRC
Arsenic, Inorganic	7440-38-2	No	No	Inorganics	1.50E+00	I	4.30E-03	I	3.00E-04	I	1.50E-05	C	6.00E-01	-	-	-	2.90E+01	-	-		8.88E+02	PHYSPROP
Cobalt	7440-48-4	No	No	Inorganics	-		9.00E-03	P	3.00E-04	P	6.00E-06	P	1.00E+00	-	-	-	4.50E+01	-	-		3.20E+03	CRC
Iron	7439-89-6	No	No	Inorganics	-		-		7.00E-01	P	-		1.00E+00	-	-	-	2.50E+01	-	-		3.27E+03	PERRY
Manganese (Non-diet)	7439-96-5	No	No	Inorganics	-		-		2.40E-02	G	5.00E-05	I	1.00E+00	-	-	-	6.50E+01	-	-		2.37E+03	PHYSPROP
Mercury (elemental)	7439-97-6	No	Yes	Inorganics	-		-		-		3.00E-04	I	1.00E+00	3.13E+00	6.00E-02	-	5.20E+01	8.62E-03	3.52E-01	PHYSPROP VP/S	6.30E+02	PHYSPROP
Vanadium and Compounds	7440-62-2	No	No	Inorganics	-		-		5.04E-03	G	1.00E-04	A	1.00E+00	-	-	-	1.00E+03	-	-		3.68E+03	CRC

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Indoor Worker Risk-Based Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	Critical Temperature T_C (K)	T_C Ref	Chemical Type	D_{ia} (cm^2/s)	D_{iw} (cm^2/s)	D_A (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)	Ingestion SL TR=1E-06 (mg/kg)	Inhalation SL TR=1E-06 (mg/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)	Screening Level (mg/kg)
Aluminum	6.70E+03	CRC	INORGANIC	-	-	-	1.36E+09	-	-	-	-	-	-	2.34E+06	2.98E+07	2.17E+06	2.17E+06 nc max
Arsenic, Inorganic	1.67E+03	CRC	INORGANIC	-	-	-	1.36E+09	-	-	-	7.27E+00	3.88E+03	7.25E+00	1.17E+03	8.93E+04	1.15E+03	7.25E+00 ca
Cobalt	7.40E+03	YAWS	INORGANIC	-	-	-	1.36E+09	-	-	-	-	1.85E+03	1.85E+03	7.01E+02	3.57E+04	6.87E+02	6.87E+02 nc
Iron	9.34E+03	CRC	INORGANIC	-	-	-	1.36E+09	-	-	-	-	-	-	1.64E+06	-	1.64E+06	1.64E+06 nc max
Manganese (Non-diet)	4.33E+03	CRC	INORGANIC	-	-	-	1.36E+09	-	-	-	-	-	-	5.61E+04	2.98E+05	4.72E+04	4.72E+04 nc
Mercury (elemental)	1.76E+03	CRC	INORGANIC	3.07E-02	6.30E-06	1.10E-05	1.36E+09	3.47E+04	-	3.47E+04	-	-	-	-	4.56E+01	4.56E+01	4.56E+01 nc sat
Vanadium and Compounds	1.13E+04	YAWS	INORGANIC	-	-	-	1.36E+09	-	-	-	-	-	-	1.18E+04	5.95E+05	1.15E+04	1.15E+04 nc

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Default

Outdoor Worker Soil Inputs

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Variable	Value
EW_{out} (weeks worked - outdoor worker) weeks/year	0
DW_{out} (days worked - outdoor worker) days/week	0
THQ (target hazard quotient) unitless	1
AT_{out} (averaging time - outdoor worker)	365
AT_{out-a} (averaging time - outdoor worker)	365
EF_{out} (exposure frequency - outdoor worker) day/yr	225
ED_{out} (exposure duration - outdoor worker) yr	25
ET_{out} (exposure time - outdoor worker) hr	8
LT (lifetime) yr	70
BW_{out} (body weight - outdoor worker)	80
IRS_{out} (soil ingestion rate - outdoor worker) mg/day	100
SA_{out} (surface area - outdoor worker) cm^2/day	3527
AF_{out} (skin adherence factor - outdoor worker) mg/cm^2	0.12
TR (target cancer risk) unitless	0.000001
City (PEF Climate Zone) Selection	Default
A_s (PEF acres)	0.5
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77
PEF (particulate emission factor) m^3/kg	1359344438
A (PEF Dispersion Constant)	16.2302
B (PEF Dispersion Constant)	18.7762
C (PEF Dispersion Constant)	216.108
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.69
U_t (equivalent threshold value)	11.32
F(x) (function dependent on U_m/U_t) unitless	0.194
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A_s (VF acres)	0.5
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foc (fraction organic carbon in soil) g/g	0.006
p_b (dry soil bulk density) g/cm^3	1.5
p_s (soil particle density) g/cm^3	2.65
n (total soil porosity) L_{pore}/L_{soil}	0.43396
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	819936000
A (VF Dispersion Constant)	11.911
B (VF Dispersion Constant)	18.4385
C (VF Dispersion Constant)	209.7845
d_s (depth of source) m	0
T_w (groundwater temperature) Celsius	25

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Default

Outdoor Worker Risk-Based Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA	Soil Saturation Concentration (mg/kg)	S (mg/L)
Aluminum	7429-90-5	No	No	Inorganics	-		-		1.00E+00	P	5.00E-03	P	1.00E+00	-	1.00E+00	-	-
Arsenic, Inorganic	7440-38-2	No	No	Inorganics	1.50E+00	I	4.30E-03	I	3.00E-04	I	1.50E-05	C	1.00E+00	3.00E-02	6.00E-01	-	-
Cobalt	7440-48-4	No	No	Inorganics	-		9.00E-03	P	3.00E-04	P	6.00E-06	P	1.00E+00	-	1.00E+00	-	-
Iron	7439-89-6	No	No	Inorganics	-		-		7.00E-01	P	-		1.00E+00	-	1.00E+00	-	-
Manganese (Non-diet)	7439-96-5	No	No	Inorganics	-		-		2.40E-02	G	5.00E-05	I	4.00E-02	-	1.00E+00	-	-
Mercury (elemental)	7439-97-6	No	Yes	Inorganics	-		-		-		3.00E-04	I	1.00E+00	-	1.00E+00	3.13E+00	6.00E-02
Vanadium and Compounds	7440-62-2	No	No	Inorganics	-		-		5.04E-03	G	1.00E-04	A	2.60E-02	-	1.00E+00	-	-

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Default

Outdoor Worker Risk-Based Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	K_{oc} (cm^3/g)	K_d (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_C (K)	T_C Ref	Chemical Type	D_{ia} (cm^2/s)	D_{iw} (cm^2/s)	D_A (cm^2/s)	Particulate Emission Factor (m^3/kg)
Aluminum	-	1.50E+03	-	-		2.79E+03	CRC	6.70E+03	CRC	INORGANIC	-	-	-	1.36E+09
Arsenic, Inorganic	-	2.90E+01	-	-		8.88E+02	PHYSPROP	1.67E+03	CRC	INORGANIC	-	-	-	1.36E+09
Cobalt	-	4.50E+01	-	-		3.20E+03	CRC	7.40E+03	YAWS	INORGANIC	-	-	-	1.36E+09
Iron	-	2.50E+01	-	-		3.27E+03	PERRY	9.34E+03	CRC	INORGANIC	-	-	-	1.36E+09
Manganese (Non-diet)	-	6.50E+01	-	-		2.37E+03	PHYSPROP	4.33E+03	CRC	INORGANIC	-	-	-	1.36E+09
Mercury (elemental)	-	5.20E+01	8.62E-03	3.52E-01	PHYSPROP VP/S	6.30E+02	PHYSPROP	1.76E+03	CRC	INORGANIC	3.07E-02	6.30E-06	1.10E-05	1.36E+09
Vanadium and Compounds	-	1.00E+03	-	-		3.68E+03	CRC	1.13E+04	YAWS	INORGANIC	-	-	-	1.36E+09

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Default

Outdoor Worker Risk-Based Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user guide;
U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)	Ingestion SL TR=1E-06 (mg/kg)	Dermal SL TR=1E-06 (mg/kg)	Inhalation SL TR=1E-06 (mg/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)	Screening Level (mg/kg)
Aluminum	-	-	-	-	-	-	-	1.30E+06	-	3.31E+07	1.25E+06	1.25E+06 nc max
Arsenic, Inorganic	-	-	-	4.04E+00	1.91E+01	4.31E+03	3.33E+00	6.49E+02	3.07E+03	9.92E+04	5.33E+02	3.33E+00 ca
Cobalt	-	-	-	-	-	2.06E+03	2.06E+03	3.89E+02	-	3.97E+04	3.86E+02	3.86E+02 nc
Iron	-	-	-	-	-	-	-	9.08E+05	-	-	9.08E+05	9.08E+05 nc max
Manganese (Non-diet)	-	-	-	-	-	-	-	3.11E+04	-	3.31E+05	2.85E+04	2.85E+04 nc
Mercury (elemental)	3.47E+04	-	3.47E+04	-	-	-	-	-	-	5.07E+01	5.07E+01	5.07E+01 nc sat
Vanadium and Compounds	-	-	-	-	-	-	-	6.54E+03	-	6.62E+05	6.48E+03	6.48E+03 nc

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Site-specific
Construction Worker Inputs
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Variable	Construction Worker Soil - Other Default Value	Site-Specific Value
$A_{c\text{-}doz}$ (areal extent of dozing) acres	0	0.1
A_{excav} (area of excavation site) m^2	0	405
$A_{c\text{-}grade}$ (areal extent of grading) acres	0	0.1
A (PEF Dispersion Constant)	2.4538	2.4538
A_{surf} (areal extent of site) m^2	2023.43	2023.43
A_{till} (areal extent of tilling) acres	0	0.1
A (VF Dispersion Constant)	2.4538	2.4538
B_l (dozing blade length) m	0	3.7
B_l (grading blade length) m	0	3.7
B (PEF Dispersion Constant)	17.566	17.566
B (VF Dispersion Constant)	17.566	17.566
C (PEF Dispersion Constant)	189.0426	189.0426
C (VF Dispersion Constant)	189.0426	189.0426
d_{excav} (average depth of excavation site) m	0	4.6
F_D Unitless Dispersion Correction Factor	0.185837208	0.18696935
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependant on U_m/U_t derived using Cowherd et al. (1985))	0.194	0.194
$J`_T$ (g/m^2s)	0	1.93005E-06
M_{doz} (dust emitted from dozing operations) g	0	3.250095441
M_{excav} (dust emitted from excavation soil dumping) g	0	763.3146878
M_{grade} (dust emitted from grading operations) g	0	47.76177522
$M_{m\text{-}doz}$ (Gravimetric soil moisture content) %	7.9	7.9
$M_{m\text{-}excav}$ (Gravimetric soil moisture content) %	12	12
M_{till} (dust emitted from tilling operations) g	0	504.3353249
M_{wind} (dust emitted by wind erosion) g	8803.913546	8803.913546
$N_{A\text{-}doz}$ (number of times site was dozed)	0	1
$N_{A\text{-}dump}$ (number of times soil is dumped)	2	2
$N_{A\text{-}grade}$ (number of times site was graded)	0	1
$N_{A\text{-}till}$ (number of times soil is tilled)	2	2
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_b (dry soil bulk density) g/cm^3	1.5	1.5
p_b (dry soil bulk density - mass limit) g/cm^3	1.5	1.5
p_s (soil particle density) g/cm^3	2.65	2.65
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31406677
Q/C_{vol} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
p_{soil} (density) g/cm^3 - chemical-specific	1.68	1.68
A_s ($VF_{mlim\text{-}sc}$ acres)	0.5	0.5
A_s ($VF_{ulim\text{-}sc}$ acres)	0.5	0.5
s_{doz} (soil silt content) %	6.9	6.9
AF_{con} (skin adherence factor - construction worker) mg/cm^2	0.3	0.3
AT_{con} (averaging time - construction worker) days	365	365
$AT_{con\text{-}a}$ (averaging time - construction worker) days	350	126
BW_{con} (body weight - construction worker) kg	80	80
ED_{con} (exposure duration - construction worker) yr	1	1
EF_{con} (exposure frequency - construction worker) day/yr	250	90
ET_{con} (exposure time - construction worker) hr/day	8	8
THQ (target hazard quotient) unitless	0.1	1
IRS_{con} (soil ingestion rate - construction worker) mg/day	330	330
LT (lifetime) yr	70	70
SA_{con} (surface area - construction worker) cm^2/day	3527	3527
TR (target cancer risk) unitless	0.000001	0.000001
S_{doz} (dozing speed) kph	11.4	11.4
S_{grade} (dozing speed) kph	11.4	11.4
s_{till} (soil silt content) %	18	18
t_c (overall duration of construction) hours	8400	3024
T_c (overall duration of construction) s	30240000	10886400
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (time over which traffic occurs) s	7200000	2592000
T_t (overall duration of traffic) s	7200000	2592000
U_m (mean annual wind speed) m/s	4.69	4.69
U_t (equivalent threshold value) m/s	11.32	11.32
$VF_{mlim\text{-}sc}$ (volitization factor) m^3_{air}/kg_{soil}	0	0
VKT_{doz} (sum of fleet vehicle km traveled) km	0	0.109378378
VKT_{grade} (sum of fleet vehicle km traveled) km	0	0.109378378
V (fraction of vegetative cover)	0	0

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Site-specific

Construction Worker Risk-Based Regional Screening Levels (RSL) for Soil - Other Construction Activities

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Subchronic toxicity values will be used where available. RfC and RfD references will be followed by either 'Chronic' or 'Subchronic' to indicate which toxicity value was used.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA	Soil Saturation Concentration (mg/kg)	S (mg/L)	K_{oc} (cm^3/g)	K_d (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref
Aluminum	7429-90-5	No	No	Inorganics	-		-		1.00E+00	A /Subchronic	5.00E-03	P /Chronic	1.00E+00	-	1.00E+00	-	-	-	1.50E+03	-	-	
Arsenic, Inorganic	7440-38-2	No	No	Inorganics	1.50E+00	I	4.30E-03	I	3.00E-04	I /Chronic	1.50E-05	C /Chronic	1.00E+00	3.00E-02	6.00E-01	-	-	-	2.90E+01	-	-	
Cobalt	7440-48-4	No	No	Inorganics	-		9.00E-03	P	3.00E-03	P /Subchronic	2.00E-05	P /Subchronic	1.00E+00	-	1.00E+00	-	-	-	4.50E+01	-	-	
Iron	7439-89-6	No	No	Inorganics	-		-		7.00E-01	P /Subchronic	-		1.00E+00	-	1.00E+00	-	-	-	2.50E+01	-	-	
Manganese (Non-diet)	7439-96-5	No	No	Inorganics	-		-		2.40E-02	G /Chronic	5.00E-05	I /Chronic	4.00E-02	-	1.00E+00	-	-	-	6.50E+01	-	-	
Mercury (elemental)	7439-97-6	No	Yes	Inorganics	-		-		-		3.00E-04	H /Subchronic	1.00E+00	-	1.00E+00	3.13E+00	6.00E-02	-	5.20E+01	8.62E-03	3.52E-01	PHYSPROP VP/S
Vanadium and Compounds	7440-62-2	No	No	Inorganics	-		-		1.00E-02	A /Subchronic	1.00E-04	A /Chronic	2.60E-02	-	1.00E+00	-	-	-	1.00E+03	-	-	

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Site-specific

Construction Worker Risk-Based Regional Screening Levels (RSL) for Soil - Other Construction Activities

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Subchronic toxicity values will be used where available. RfC and RfD references will be followed by either 'Chronic' or 'Subchronic' to indicate which toxicity value was used.

Chemical	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_C (K)	T_C Ref	Chemical Type	D_{ia} (cm^2/s)	D_{iw} (cm^2/s)	D_A (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)	Ingestion SL TR=1E-06 (mg/kg)	Dermal SL TR=1E-06 (mg/kg)	Inhalation SL TR=1E-06 (mg/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)	Screening Level (mg/kg)
Aluminum	2.79E+03	CRC	6.70E+03	CRC	INORGANIC	-	-	-	3.97E+07	-	-	-	-	-	-	-	3.39E+05	-	8.33E+05	2.41E+05	2.41E+05 nc max
Arsenic, Inorganic	8.88E+02	PHYSPROP	1.67E+03	CRC	INORGANIC	-	-	-	3.97E+07	-	-	-	7.65E+01	4.77E+02	7.86E+03	6.54E+01	1.70E+02	1.06E+03	2.50E+03	1.38E+02	6.54E+01 ca**
Cobalt	3.20E+03	CRC	7.40E+03	YAWS	INORGANIC	-	-	-	3.97E+07	-	-	-	-	-	3.75E+03	3.75E+03	1.02E+03	-	3.33E+03	7.80E+02	7.80E+02 nc
Iron	3.27E+03	PERRY	9.34E+03	CRC	INORGANIC	-	-	-	3.97E+07	-	-	-	-	-	-	-	2.38E+05	-	-	2.38E+05	2.38E+05 nc max
Manganese (Non-diet)	2.37E+03	PHYSPROP	4.33E+03	CRC	INORGANIC	-	-	-	3.97E+07	-	-	-	-	-	-	-	8.15E+03	-	8.33E+03	4.12E+03	4.12E+03 nc
Mercury (elemental)	6.30E+02	PHYSPROP	1.76E+03	CRC	INORGANIC	3.07E-02	6.30E-06	1.10E-05	3.97E+07	-	-	4.49E+03	-	-	-	-	-	-	5.66E+00	5.66E+00	5.66E+00 nc sat
Vanadium and Compounds	3.68E+03	CRC	1.13E+04	YAWS	INORGANIC	-	-	-	3.97E+07	-	-	-	-	-	-	-	3.39E+03	-	1.67E+04	2.82E+03	2.82E+03 nc

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Appendix D
Migration to Groundwater Calculations

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Appendix D-1
Input Parameters

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DP009 MIGRATION TO GROUNDWATER PARAMETERS

DP009 is in the outwash area of JBER, which consists of gravel and sand, generally well bedded and well sorted according to the Generalized Geologic Map of Anchorage and Vicinity, Alaska (USGS 1972).

Parameter	Description (units)	Proposed Value	Discussion
Primary Parameters			
MC_{gw}	Maximum groundwater concentration (mg/L)	0.52 µg/L	Chloroform was the only analyte detected in groundwater above the EPA tapwater RSL of 0.22 µg/L at 0.52 µg/L.
I	Infiltration Rate (m/year)	0.081 m/yr	JBER-specific infiltration rate, based on 20% of average annual rainfall (approximately 16 inches per year for Anchorage) (USAF 2022).
L	Source length parallel to ground water flow (m)	5 m	Determined from source dimensions.
i	hydraulic gradient (m/m)	0.025 m/m	Estimated from groundwater contours presented in the JBER Conceptual Site Model Technical Memorandum, Figure 16 (USAF 2018). Measured a 10-foot elevation decrease over 400 feet.
K	Aquifer hydraulic conductivity (feet/day [m/year in SSL model])	3,600 m/year	Location-specific information from Record of Decision for Operable Units A and B (Army 1997).
θ_w	Water-filled soil porosity above the water table (L_{water}/L_{soil})	0.061	Location-specific value measured from the outwash area of JBER presented in Table D-2.
ρ_s	Soil particle density (kg/L)	2.65 kg/L (default)	The default value is the density of quartz and is representative of most soils. The SSL Calculator is relatively insensitive to this parameter.
ρ_b	Dry soil bulk density (kg/L)	2.0	Location-specific value measured from the outwash area of JBER presented in Table D-2.
H'	Dimensionless Henry Law Constant (unitless)	0.15	Accepted value from EPA.
K_{oc}	Soil organic carbon/water partition coefficient (L/kg)	31.8	Accepted value from EPA.
f_{oc}	Fraction organic carbon in soil (g/g)	0.002 g/g (default)	Use EPA default value of 0.002 g/g, which is consistent with values measured on JBER when a 95% lower confidence limit is calculated.

Parameter	Description (units)	Proposed Value	Discussion
d_a	Aquifer thickness (m)	2.9	Submerged screen length from monitoring wells AP-3648.
Derived Parameters			
C_w	Target soil leachate concentration (mg/L)	MC_{gw} × DAF	Contaminated water draining from the vadose zone is diluted in the mixing zone, as embodied in the DAF.
n	Total soil porosity(L_{pore}/L_{soil})	= 1-(ρ_b/ρ_s)	The SSL model assumes that all porosity is interconnected.
θ_a	Air-filled soil porosity (L_{air}/L_{soil})	= n-θ_w	Proposed values of primary parameters yield 0.134 for θ_a.
K_d	Soil-water partition coefficient (L/kg)	= K_{oc} × f_{oc} for organics	If metals are to be evaluated, use tabulated K_ds (EPA 2002 App C).
d	Mixing zone depth (m)	0.53	Calculated site-specific value.
DAF	Dilution attenuation factor (unitless)	119.6	Calculated site-specific value.

References:

U.S. Air Force (USAF) 2018. JBER Conceptual Site Model Technical Memorandum.

USAF. 2022.

U.S. Army (Army). 1997. *Record of Decision for Operable Units A and B, Fort Richardson, Anchorage, Alaska*. August.

U.S. Environmental Protection Agency (EPA) 2002. *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*. OSWER 9355.4-24. December.

United States Geological Survey (USGS). 1972. *Generalized Geologic Map of Anchorage and Vicinity, Alaska*. Department of the Interior.

Notes:

µg/L = microgram(s) per liter

EPA = U.S. Environmental Protection Agency

g = gram(s)

JBER = Joint Base Elmendorf-Richardson

kg/L = kilogram(s) per liter

m = meter(s)

mg/L = milligram(s) per liter

L/kg = liter(s) per kilogram

RSL = Regional Screening Level

SSL = soil screening level

Appendix D-2
Hydrogeolgic Properties

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Table D-1 Hydrogeologic Properties of JBER Soil Types

Soil Type	Site	Boring Number	Screen Depth or Sample Depth	Date	Hydraulic Conductivity (cm/sec)	Hydraulic Conductivity (m/year)	Notes	Method	Reference
Ground Moraine	CG702 (ST702)	702WL15	7.5	2001	5.4E-04	1.7E+02		Flexible Wall Permeameter	1
Ground Moraine	CG702 (ST702)	702WL14	14.5	2001	5.2E-07	1.6E-01		Flexible Wall Permeameter	1
Ground Moraine	CG702 (ST702)	702WL17	14.5	2001	3.1E-06	9.8E-01		Flexible Wall Permeameter	1
					1.8E-04	**5.7E+01**	**Average**		
					9.5E-06	**3.0E+00**	**Geometric Mean**		
Outwash	ST020	ST20-MW06	90-105	10/23/1992	3.0E-02	9.5E+03	geometric mean	pneumatic test, AQTESOLVE, Bouwer& Rice	2
Outwash	ST020	ST20-MW07	53-63	10/12/1992	4.0E-02	1.3E+04	geometric mean	slug test, AQTESOLVE, Bouwer& Rice	2
Outwash	ST020	ST20-MW07	53-63	10/12/1992	3.1E-02	9.8E+03		pneumatic test, AQTESOLVE, Bouwer& Rice	2
Outwash	ST020	ST20-MW09	47-62	10/12/1992	1.6E-02	5.0E+03	geometric mean	slug test, AQTESOLVE, Bouwer& Rice	2
Outwash	ST020	ST20-MW10	23-28	10/12/1992	1.8E-02	5.7E+03	geometric mean	slug test, AQTESOLVE, Bouwer& Rice	2
Outwash	ST020	ST20-MW11	18-33	10/12/1992	1.6E-02	5.0E+03	geometric mean	slug test, AQTESOLVE, Bouwer& Rice	2
Outwash	OU3	PT-03	-	1988	1.1E-01	3.5E+04	observation well (pumping PT-01)	pump test, AQTESOLVE, Neuman	3
Outwash	OU3	GW-3A	23 - 33	1988	2.0E-01	6.3E+04	observation well (pumping PT-01)	pump test, AQTESOLVE, Neuman	3
Outwash	OU3	PT-04	-	1988	2.9E-01	9.2E+04	observation well (pumping PT-01)	pump test, AQTESOLVE, Neuman	3
Outwash	OU5	OU5MW1	34.5 - 43.8	~1991	1.4E-01	4.4E+04	corrected mean	slug test, AQTESOLVE, Bouwer& Rice	4
Outwash	OU5	OU5MW5	24.1 - 38.1	~1991	1.0E-01	3.2E+04	corrected mean	slug test, AQTESOLVE, Bouwer& Rice	4
Outwash	OU5	OU5MW3	32.3 - 45.1	~1991	8.9E-02	2.8E+04	corrected mean	slug test, AQTESOLVE, Bouwer& Rice	4
					9.0E-02	**2.8E+04**	**Average**		
					5.8E-02	**1.8E+04**	**Geometric Mean**		
Ship Creek Alluvium	OU5	OU5MW14	8.8 - 12.9	~1991	7.1E-01	2.2E+05	corrected mean	slug test, AQTESOLVE, Bouwer& Rice	4
Ship Creek Alluvium	OU5	OU5MW12	8.0 - 11.9	~1991	2.1E-01	6.6E+04	corrected mean	slug test, AQTESOLVE, Bouwer& Rice	4
Ship Creek Alluvium	OU5	OU5MW10	1.1 - 5.4	~1991	3.5E-02	1.1E+04	mean	slug test, AQTESOLVE, Bouwer& Rice	4
Ship Creek Alluvium	OU5	OU5MW13	3.4 - 8.1	~1991	3.2E-02	1.0E+04	mean	slug test, AQTESOLVE, Bouwer& Rice	4
Ship Creek Alluvium	OU5	OU5MW8	15.0 - 20.2	~1991	1.2E-01	3.8E+04	corrected mean	slug test, AQTESOLVE, Bouwer& Rice	4
Ship Creek Alluvium	OU5	OU5MW15	9.3 - 13.0	~1991	1.2E-01	3.8E+04	corrected mean	slug test, AQTESOLVE, Bouwer& Rice	4
Ship Creek Alluvium	OU5	OU5MW31	2.8 - 7.8	~1991	1.1E-02	3.5E+03	mean	slug test, AQTESOLVE, Bouwer& Rice	4
Ship Creek Alluvium	OU5	OU5MW16	-	~1991	3.0E-03	9.5E+02	corrected mean	slug test, AQTESOLVE, Bouwer& Rice	4
					1.6E-01	**4.9E+04**	**Average**		
					5.5E-02	**1.7E+04**	**Geometric Mean**		

References:

1 USAF. 2002. SERA Phase IX Release Investigation Report, ST702/8/9, MAC Chalet, STMP 495. May.

2 USAF. 1994a. OU2 Remedial Investigation/Feasibility Study Report. March.

3 USAF. 1995b. Operable Unit 3 Remedial Investigation/Feasibility Study Report. March.

4 USAF. 1994b. Operable Unit 5 Remedial Investigation/Feasibility Study. March.

Notes:

cm/sec = centimeter(s) per second

m/year = meter(s) per year

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Appendix D-3
Geotechnical Properties

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Table D-2. Geotechnical Properties of JBER Soil Types
JBER Location-specific Data: Bulk Density, Specific Gravity, and Moisture Content

Soil Type	Site	Boring Number	Sample Number	Sample Depth	Year	Bulk Density (Dry Unit Weight; lbs/ft^3)	Bulk Density (Dry Unit Weight; g/cm^3)	Specific Gravity (ASTM D854)	Moisture Content (% of dry weight)	Reference
Glacio-Fluvial	ST036	13ST036-SB01	5	24-25	2013	141.7	2.27	2.756	1.8%	9
Glacio-Fluvial	ST036	13ST036-SB01	6	49-50	2013	118.7	1.90	2.735	2.7%	9
					Average	**130.2**	**2.09**	**2.7**	**2.2%**	
Ground Moraine	ST041	ST41-BH11-15-GT	4	15	1992	136.8	2.19	-	8.2%	1
Ground Moraine	ST041	ST41-BH04-5-GT	5	5	1992	103.3	1.66	-	15.9%	1
Ground Moraine	ST041	ST41-BH11-5-GT	6	5	1992	115.1	1.84	-	18.7%	1
Ground Moraine	ST041	ST41-BH12-15-GT	7	15	1992	110.0	1.76	-	8.0%	1
Ground Moraine	ST041	ST41-BH04-10-GT	8	10	1992	123.9	1.99	-	13.1%	1
Ground Moraine	ST041	ST41-MW37BR-65AGT	1	65	1992	111.2	1.78	-	16.7%	1
Ground Moraine	ST702	702WL15	-	7.5	2001	130.4	2.09	2.76	2.1%	3
Ground Moraine	ST702	702WL14	-	14.5	2001	141.6	2.27	2.705	7.6%	3
Ground Moraine	ST702	702WL17	-	14.5	2001	144.0	2.31	2.752	7.1%	3
Ground Moraine or Glacio-Fluvial	CG523	13CG523-SB05	1	4-5	2013	103.5	1.66	2.61	15.0%	4
Ground Moraine or Glacio-Fluvial	CG523	13CG523-SB05	2	9-10	2013	146.1	2.34	2.725	6.5%	4
Ground Moraine or Glacio-Fluvial	ST061	13ST061-SB05	3	4-5	2013	77.7	1.25	2.56	34.0%	5
Ground Moraine or Glacio-Fluvial	ST061	13ST061-SB05	4	9-10	2013	135.5	2.17	2.768	8.6%	5
					Average	**121.5**	**1.95**	**2.7**	**12.4%**	
Outwash	ST048	13ST048-SB03	1534		2013	129.2	2.07	2.686	6.0%	10
Outwash	CG527	13CG527-SB08	1535		2013	133.1	2.13	2.729	3.0%	8
Outwash	ST048	13ST048-SB03	1536		2013	130.5	2.09	2.718	2.0%	10
Outwash	CG527	13CG527-SB08	1537		2013	138.7	2.22	2.766	3.0%	8
Outwash	SO512	13SO512-SB07	1694	14-15	2013	133.4	2.14	2.751	3.6%	6
Outwash	SO512	13SO512-SB07	1695	23-24	2013	127.4	2.04	2.756	3.0%	6
Outwash	CG516	13SO516-SB24	1696	7-10	2013	128.7	2.06	2.742	2.5%	7
Outwash	CG516	13SO516-SB24	1697	17-18	2013	135.2	2.17	2.758	4.3%	7
Outwash	ST020	ST20-BH01-84-GT	10	84	1992	112.5	1.80	-	18.8%	1
Outwash	ST020	ST20-BH08-20-GT	11	20	1992	110.3	1.77	-	14.6%	1
Outwash	ST020	ST20-BH11-15-GT	12	35	1992	128.5	2.06	-	6.6%	1
Outwash	OU3	E316-MW-10-09	9	4-6.5	1993	131.7	2.11	2.77	-	2
Outwash	OU3	E316-SB-14-08	8	7.5-14	1993	108.6	1.74	2.56	-	2
Outwash	OU3	E316-SB-17-08	8	7.5-10	1993	120.4	1.93	2.7	-	2
Outwash	OU3	E316-SB-19-08	8	7.5-9	1993	105.5	1.69	2.69	-	2
Outwash	OU3	E321-MW-06-09	9		1993	106.7	1.71	2.57	-	2
Outwash	OU3	E321-SB-08-08	8	6-7.5	1993	106.1	1.70	2.62	-	2
Outwash	OU3	E331-MW-03-08	8		1993	127.9	2.05	2.74	-	2
					Average	**123.0**	**1.97**	**2.7**	**6.1%**	
Ship Creek Alluvial Fan	ST409	409WL01	-	27.5	2001	146.4	2.35	2.697	5%	3
Ship Creek Alluvial Fan	ST409	409WL02	-	11	2001	127.8	2.05	2.718	30%	3
Ship Creek Alluvial Fan	ST409	409WL03	-	3.5	2001	120.8	1.94	2.705	3%	3
					Average	**131.7**	**2.11**	**2.7**	**12.7%**	

References:

1 USAF. 1994a. OU2 Remedial Investigation/Feasibility Study Report. March.
2 USAF. 1994b. Operable Unit 5 Remedial Investigation/Feasibility Study. March.
3 USAF. 2002. SERA Phase IX Release Investigation Report, ST702/8/9, MAC Chalet, STMP 495. May.
4 USAF. 2014a. Site Characterization and Risk Evaluation Report CG523 (ST703). July.
5 USAF. 2014b. Site Characterization and Risk Evaluation Report ST061. July.
6 USAF. 2014c. Site Characterization and Risk Evaluation Report SO512 (ST421). July.
7 USAF. 2014d. Site Characterization and Risk Evaluation Report CG516 (South Apron). August.
8 USAF. 2014e. Site Characterization and Risk Evaluation Report CG527 (ST538). December.
9 USAF. 2015a. Site Characterization and Risk Evaluation Report ST036. August.
10 USAF. 2015b. Site Characterization and Risk Evaluation Report ST048. March.

Notes:

g/cm3 = gram(s) per cubic centimeter

lbs/ft3 = pound(s) per cubic foot

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Appendix D-4
1972 Anchorage Geo Map

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DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

FOLIO OF
ANCHORAGE AND VICINITY, ALASKA
MAP I-787-A

DESCRIPTION OF THE MAP

This map is simplified from a standard detailed geologic map of Anchorage and vicinity currently being prepared. Deposits are grouped into fewer map units so that this map is easier to read than the standard geologic map. Age relations are not distinguished, and deposits with similar characteristics are combined into single map units; features of the standard geologic map that are essential to a general understanding of the geology remain unaltered. Additional maps to follow will relate the geology to specific uses and to activities of man.

An earlier geologic map and report described the surficial geology of Anchorage and vicinity (Miller and Dobrovolny, 1959). The 1964 Alaska earthquake brought about increased awareness of the usefulness of such geologic information, and consequently the Greater Anchorage Area Borough requested that a program be started to prepare new geologic and interpretive maps of the entire borough; a map of a small area including the town of Eagle River was open filed (Schmoll and others, 1971). The map presented here encompasses much of the same area as the 1959 map, but at a larger scale and in greater detail made possible in part by many new exposures of geologic materials created by rapid urban development.

The Anchorage and vicinity map area is between Turnagain Arm and Knik Arm at the edge of the Cook Inlet basin. The southeastern part of the map area is within the Chugach Mountains, which rise abruptly to elevations of more than 3,500 feet above sea level. The remainder of the area is a lowland which declines in elevation from about 1,000 feet at the mountain front through a series of ridges and isolated hills to a broad trough about 50 feet above sea level that extends from the city of Anchorage southward to Turnagain Arm. The Anchorage plain is a large alluvial fan that rises gently northeastward from the trough to an elevation of 500 feet just east of the map area. West of the trough and north of the Anchorage plain hummocky topography rises to heights of more than 300 feet. The entire lowland is separated from the sea by steep bluffs that range from less than 60 to more than 300 feet high. Only in relatively narrow valleys along the principal streams does the land approach sea level with a gentle gradient. The lower parts of these valleys are incised beneath the general lowland surface and separated from it by steep valley walls comparable to the sea bluffs.

Relatively hard but intensely fractured metamorphic rocks constitute the bedrock in the mountains and in isolated patches west of the mountain front. The lowland is underlain by a wedge of surficial deposits that thickens from zero at the mountain front to at least 600 feet near Point Woronzof (W. W. Barnwell, oral commun., 1972). Relatively soft sedimentary rocks underlie the surficial deposits but were not observed at the surface within the map area.

Most of the surficial materials were deposited during the last of several glaciations that occurred in the Anchorage area. Three main agents of deposition were involved: glacier ice, flowing water in streams and on deltas, and still water in small lakes and ponds or in the ancestral Cook Inlet. Other deposits resulted from downward movement of loose material on slopes, and from wind. In general the deposits from the glacier ice are in two belts, one along the Chugach Mountain front and another in the northern part of the map area (including the Elmendorf Moraine). Stream and delta deposits dominate the area between these two belts as well as the hummocky region between Point Woronzof and Point Campbell. The deposits of ancestral Cook Inlet cherrily unterlie the broad low trough. Ponds and lake deposits are scattered throughout the map area.

Interplay of the three main depositional agents produce a complexly interrelated series of deposits that vary widely in character. Although many deposits are single large bodies of easily described materials with distinct boundaries, other deposits consist of various interlayered materials, and still others change imperceptibly in characters over relatively short distances. The materials in these latter two situations are difficult to classify and describe in a simple straightforward way. Users of the map are thus cautioned that although in many localities the descriptions indeed match closely what exists on land in the ground, at other places departures from the generalized descriptions are to be expected. Likewise, although many of the sharply drawn boundaries between map units correspond to an abrupt change in materials, others of these boundaries indicate a gradual change between materials.

Descriptions of deposits are based largely on examinations of natural and man-made exposures that are unevenly distributed. Thus the reliability of the information presented varies from place to place on the map. Most of the contacts between units are the boundaries of landforms that are visible on aerial photographs. Although these boundaries are not as reliable as indicators of change in geologic materials in some places as they are in many other places, the generalized geologic map can provide much useful information. The descriptions of the deposits emphasize gradational relationships and other uncertainties in differentiating between deposits, and these characteristics should be carefully noted by the user.

The 80 or so map units of the standard detailed geologic map are here combined into 16 units according to origin and composition of the deposits. Two overprint patterns indicate modifications to the map units. The map units representing surficial deposits are grouped in the explanation according to their grain size and sorting (sorting is an expression that indicates the range of grain sizes in a material; most of the grains in a well-sorted material are similar in size, whereas the grains in a poorly sorted material extend over a wide range of sizes): (1) coarse-grained materials, chiefly gravel and sand, generally rather well sorted; (2) fine-grained materials, chiefly silt and clay without much coarse material, relatively well sorted; (3) mixtures of coarse- and fine-grained material, consisting of either alternating beds of relatively well sorted materials of different sizes, or single beds of poorly sorted material that may include boulders, gravel, sand, silt, and clay. Such poorly sorted material is called diamicton, a relatively new word coined because of the lack of a suitable textural term for this material (Flint, 1971, p. 154). Diamicton is fairly common in Anchorage and vicinity; some diamicton accumulated from glaciers and is called till; other diamicton formed in marine waters or lakes, or on slopes as colluvium.

Certain symbols on the map indicate localities where the materials represented by a particular map unit are well exposed and may be examined in detail. The quality of such exposures changes rapidly with time, so that good exposures may become poor within a few years; also, man removes exposed material in many places such as gravel pits. New exposures are likely to develop in other places, however, and if some indicated localities vanish, new ones nearby may take their place.

DESCRIPTION OF MAP UNITS

COARSE-GRAINED SURFICIAL DEPOSITS

as — Alluvium of the Anchorage plain. Gravel and sand, generally well bedded and well sorted. Chiefly gravel in the eastern part of the map area, grading into sand westward; chiefly sand at Spenard and Turnagain Heights. At western end of the deposit the sand grades imperceptibly into material mapped as unit sl. Commonly overlain by 1-5 feet of silt similar to silty material mapped as unit y, but in built-up areas much of this silt has been removed

al — Alluvium in abandoned stream channels and in terraces along modern streams. Gravel and sand, generally well bedded and well sorted. Deposits in large channels and in other broad areas are chiefly gravel and are thicker than deposits in small narrow channels and terraces, which contain chiefly sand and gravel; some channels and broad areas on the map overprinted by the red line pattern (peat) contain significant amounts of silt and clay

af — Deposits in alluvial fans, alluvial cones, and emerged deltas. Dominantly gravel in most areas, but mostly sand with conspicuous coal fragments between Point Woronzof and Point Campbell. Generally well bedded and well sorted except for small alluvial cones in the mountains where the material is less well sorted and contains some silt and clay. These latter deposits are contiguous with and grade into materials mapped as unit t

gc — Glacial alluvium in irregular-shaped hills (including kames, eskers, and kame terraces) deposited in and near glacier ice; includes similar deposits that may be marine rather than glacial in origin. Chiefly gravel and sand, moderately well bedded and moderately well sorted; includes some beds of diamicton, and generally consists of more heterogeneous materials than other alluvial deposits. In places materials mapped as unit gc are difficult to distinguish from materials mapped as units gs and mg

sb — Sand deposits in broad low hills, and windblown sand deposits in cliffhead dunes near Point Campbell. Almost exclusively sand, very well sorted and well bedded. The broad low hills are generally underlain by the Bootlegger Cove Clay (bg) at depths of 40 feet or more. Deposits of unit sb commonly are well drained

sl — Sand deposits in a wide low-lying belt centered around Connors Lake. Chiefly sand, well bedded and well sorted, and small amounts of gravel; commonly contains coal fragments. Deposits grade laterally into material mapped as unit gs from which it is not readily distinguishable. Contacts with materials mapped as units bg and t are not well defined; the deposits are probably complexly interrelated. Generally underlain by Bootlegger Cove Clay (bg) at depths of 20 feet or less and overlain by varying thicknesses of peat. Deposits of unit sl are commonly poorly drained. Includes small patches of modern beach sand

FINE-GRAINED SURFICIAL DEPOSITS

Peat — Many relatively low lying areas are covered by a few feet of peat. This overprint pattern is used in conjunction with other map units where the peat is probably more than 2 feet thick. Peat commonly ranges from 5 to 10 feet thick and in places it is as much as 30 feet thick. Pond deposits (l) may occur at the base of the peat. Peat commonly is removed or buried by fill during construction and urban development, but such areas are not shown on the map

l — Lake and pond sediments. Lowland deposits, exposed in few places, are chiefly silt and clay, with some sand; may be considerably thinner than overlying peat deposits. Near the mountains chiefly silt and clay with some fine sand, and sand and gravel accumulated in former ice-dammed lakes; may be several tens of feet thick

y — Silt. Near International Airport fine sand and some clay interbedded locally where the deposits, which may be more than 40 feet thick, occur in irregular hills. The boundary with materials mapped as unit sl is approximate; the two types of material may grade into one another. Between Point Woronzof and Point Campbell the deposit includes clay and is somewhat similar to material mapped as Bootlegger Cove Clay (bc), but is only about 10 feet thick; materials similar to adjacent deposits mapped as unit sl underlie unit y. Also includes sediments in the tidal zone and in adjacent areas no longer or only rarely covered by tidal water

bc — Bootlegger Cove Clay. Chiefly clay and silt, locally containing pebbles, cobbles, and boulders. Near Anchorage exposed mostly in sea bluffs and valley walls, extends continuously at depth from near Cairn Point to an area of surface exposure at Turnagain Arm. Thicknesses of about 60 feet of the Bootlegger Cove Clay are exposed in the sea bluffs, but in the central part of the lowland area wells penetrate as much as 200 feet. Interbeds of fine sand are generally thin in the north, but thicker beds of sand in the south are similar to materials mapped as unit sl; there the boundary between the two deposits is obscure. The western margin of this deposit interfingers at depth with material mapped as unit sl, and on the east side it may merge at depth with material mapped as unit mg

MIXED COARSE- AND FINE-GRAINED SURFICIAL DEPOSITS

m — Morainal deposits, generally in long ridges marking the margins of former glaciers. The topography on the Elmendorf Moraine in the northern part of the map area is notably hummocky, whereas the topography north of the moraine and along the mountain front is more subdued. Chiefly till, including diamicton and poorly sorted gravel; better sorted gravel and sand may be present locally; the deposit is not everywhere clearly distinguishable from materials mapped as unit ga

go — Glacial and (or) marine deposits, typically in elongate hills. These features consist chiefly of diamicton, but they include some beds of fine sand and silt; thin beds of gravel and sand occur locally. May grade into deposits mapped as unit mg

mg — Marine, glacial, and (or) lacustrine deposits, typically in broad low areas adjacent to the hills mapped as unit go, and in isolated hills farther west; deposits consist of a variety of interbedded materials that generally have much fine-grained material and include diamicton, stony silt, silt, fine-grained sand, and some clay. Silty materials are more common in the eastern part of the map unit and sandy materials in the western part. The isolated hills are the intermediate member of a series, the end members of which are the sharply defined hills mapped as unit go (diamicton) to the east, and the broad low hills mapped as unit sb (sand) to the west. It is not always possible to determine precisely into which of these three map units the materials in some of the intermediate hills should be placed. In addition, some of the hills may contain silt and clay resembling Bootlegger Cove Clay (bg)

c — Colluvium (slope deposits). Extensive deposits on mountain sides and in narrow bands along sea bluffs and valley walls in the lowland. Chiefly diamicton and poorly sorted to well-sorted gravel with some sand, silt, and clay; crude bedding is common parallel to the slope. The material reflects the composition of upslope deposits. Bedrock (b) may be encountered locally at shallow depth in the mountains; the boundary with bedrock (b) is actually a broad zone approximated by the contact on the map

h — Deposits of landslides of the 1964 earthquake and older landslides, chiefly block-glides. Most of the slides involved large blocks consisting of beds of gravel and sand (gs) lying on beds of clay and silt (bc). Those blocks moved laterally from their original positions behind former bluffs to new locations at lower elevations. In places the blocks moved intact and so remain, but particularly at the outer parts of the slides most of the blocks broke into heterogeneous mixtures of gravel, sand, silt, and clay

f — Manmade fill. Chiefly gravel and sand, but includes some silt- and clay-size material. Mapped only where unusually high embankments or very broad fills were emplaced

Areas containing numerous manmade cuts and fills. Overprint pattern is used in conjunction with other map units, where topography is extensively altered and underlying deposits are obscured as a result of major construction activity

BEDROCK

b — Metamorphic rocks, principally the McHugh Complex comprising weakly metamorphosed siltstones, gray-wacke, arkose, conglomeratic sandstone, and greenstones commonly associated with chert and argillite. Near the mouth of Little Rabbit Creek, rocks of another complex include marble, greenstone, and shardy argillite. These descriptions are based on recent mapping by S. H. B. Clark (written commun., 1972). Bedrock locally is mantled by colluvium (c) and by morainal deposits (m); the boundary between bedrock and adjacent deposits is commonly a broad zone only approximated by the contact on the map

Contact — Ranges from sharp to approximately located or gradational; dotted where concealed beneath water

b •gm — Locality where good exposures of a particular deposit (indicated by letters) may be examined

REFERENCES

Flint, R. F., 1971, Glacial and Quaternary geology: New York, John Wiley and Sons, 892 p.

Miller, R. D., and Dobrovolny, Ernest, 1959, Surficial geology of Anchorage and vicinity, Alaska: U.S. Geol. Survey Bull. 1093, 128 p.

Schmoll, H. R., Dobrovolny, Ernest, and Yeend, Chester, 1971, Generalized geologic map of the Eagle River – Birchwood area, Greater Anchorage Area Borough, Alaska: U.S. Geol. Survey open-file map.

Map shows pre-1964 topography and shoreline. Dotted line indicates approximate position of shoreline immediately following 1964 landslide. Subsequently shoreline has returned to near position shown on map.

MAP LOCATION

Base from U.S. Geological Survey, 1962; modified in 1971
10,000-foot grid based on Alaska coordinate system, zone 4
1000-meter Universal Transverse Mercator grid ticks, zone 6, shown in blue

SCALE 1:24 000
1 MILE
1 KILOMETER

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

Modified from geologic mapped by H. R. Schmoll and Ernest Dobrovolny, 1965–71; contacts between bedrock and surficial deposits in part from geology mapped by S. H. B. Clark, 1969–71

GENERALIZED GEOLOGIC MAP OF ANCHORAGE AND VICINITY, ALASKA

By
Henry R. Schmoll and Ernest Dobrovolny

1972

For sale by U.S. Geological Survey, price 75 cents

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Appendix D-5
Regional Screening Level Outputs

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Site-specific
Soil to Groundwater Inputs

Variable	Default Value	Site-Specific Value
d (mixing zone depth) m - site-specific	.	0.53364677
d_a (aquifer thickness) m - site-specific	.	2.9
DAF (dilution attenuation factor) unitless	1	119.588171
DAF (dilution attenuation factor) unitless	1	119.588171
ED_{res} (exposure duration) yr	70	70
foc (fraction organic carbon in soil) g/g	0.002	0.002
i (hydraulic gradient) m/m	.	0.025
I (infiltration rate) m/yr	0.18	0.081
K (aquifer hydraulic conductivity) m/yr	.	3600
L (source length parallel to ground water flow) m	.	5
Soil to Groundwater Method	1	1
n (soil porosity) L_{pore}/L_{soil}	0.434	0.24528301
p_b (dry soil bulk density) kg/L	1.5	2.0
p_s (soil particle density) kg/L	2.65	2.65
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil} }	0.134	0.18428301
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.3	0.061
BW_{0-2} (mutagenic body weight) kg	15	15
BW_{2-6} (mutagenic body weight) kg	15	15
BW_{6-16} (mutagenic body weight) kg	80	80
BW_{16-26} (mutagenic body weight) kg	80	80
BW_{res-a} (body weight - adult) kg	80	80
BW_{res-c} (body weight - child) kg	15	15
$DFW_{res-adj}$ (age-adjusted dermal factor) cm^2-event/kg	2610650	2610650
$DFWM_{res-adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	8191633	8191633
ED_{res} (exposure duration - resident) years	26	26
ED_{0-2} (mutagenic exposure duration first phase) years	2	2
ED_{2-6} (mutagenic exposure duration second phase) years	4	4
ED_{6-16} (mutagenic exposure duration third phase) years	10	10
ED_{16-26} (mutagenic exposure duration fourth phase) years	10	10
ED_{res-a} (exposure duration - adult) years	20	20
ED_{res-c} (exposure duration - child) years	6	6
EF_{res} (exposure frequency) days/year	350	350
EF_{0-2} (mutagenic exposure frequency first phase) days/year	350	350

Output generated 08FEB2023:21:13:13

Site-specific
Soil to Groundwater Inputs

Variable	Default Value	Site-Specific Value
EF_{2-6} (mutagenic exposure frequency second phase) days/year	350	350
EF_{6-16} (mutagenic exposure frequency third phase) days/year	350	350
EF_{16-26} (mutagenic exposure frequency fourth phase) days/year	350	350
EF_{res-a} (exposure frequency - adult) days/year	350	350
EF_{res-c} (exposure frequency - child) days/year	350	350
ET_{res} (exposure time) hours/day	24	24
$ET_{event-res-adj}$ (age-adjusted exposure time) hours/event	0.67077	0.67077
$ET_{event-res-madj}$ (mutagenic age-adjusted exposure time) hours/event	0.67077	0.67077
ET_{0-2} (mutagenic dermal exposure time first phase) hours/event	0.54	0.54
ET_{2-6} (mutagenic dermal exposure time second phase) hours/event	0.54	0.54
ET_{6-16} (mutagenic dermal exposure time third phase) hours/event	0.71	0.71
ET_{16-26} (mutagenic dermal exposure time fourth phase) hours/event	0.71	0.71
ET_{res-a} (dermal exposure time - adult) hours/event	0.71	0.71
ET_{res-c} (dermal exposure time - child) hours/event	0.54	0.54
ET_{0-2} (mutagenic inhalation exposure time first phase) hours/day	24	24
ET_{2-6} (mutagenic inhalation exposure time second phase) hours/day	24	24
ET_{6-16} (mutagenic inhalation exposure time third phase) hours/day	24	24
ET_{16-26} (mutagenic inhalation exposure time fourth phase) hours/day	24	24
ET_{res-a} (inhalation exposure time - adult) hours/day	24	24
ET_{res-c} (inhalation exposure time - child) hours/day	24	24
EV_{0-2} (mutagenic events) per day	1	1
EV_{2-6} (mutagenic events) per day	1	1
EV_{6-16} (mutagenic events) per day	1	1
EV_{16-26} (mutagenic events) per day	1	1
EV_{res-a} (events - adult) per day	1	1
EV_{res-c} (events - child) per day	1	1
THQ (target hazard quotient) unitless	0.1	1
$IFW_{res-adj}$ (adjusted intake factor) L/kg	327.95	327.95
$IFWM_{res-adj}$ (mutagenic adjusted intake factor) L/kg	1019.9	1019.9
IRW_{0-2} (mutagenic water intake rate) L/day	0.78	0.78
IRW_{2-6} (mutagenic water intake rate) L/day	0.78	0.78
IRW_{6-16} (mutagenic water intake rate) L/day	2.5	2.5
IRW_{16-26} (mutagenic water intake rate) L/day	2.5	2.5

Site-specific
Soil to Groundwater Inputs

Variable	Default Value	Site-Specific Value
IRW_{res-a} (water intake rate - adult) L/day	2.5	2.5
IRW_{res-c} (water intake rate - child) L/day	0.78	0.78
K (volatilization factor of Andelman) L/m^3	0.5	0.5
LT (lifetime) years	70	70
SA_{0-2} (mutagenic skin surface area) cm^2	6365	6365
SA_{2-6} (mutagenic skin surface area) cm^2	6365	6365
SA_{6-16} (mutagenic skin surface area) cm^2	19652	19652
SA_{16-26} (mutagenic skin surface area) cm^2	19652	19652
SA_{res-a} (skin surface area - adult) cm^2	19652	19652
SA_{res-c} (skin surface area - child) cm^2	6365	6365
l_{sc} (apparent thickness of stratum corneum) cm	0.001	0.001
TR (target risk) unitless	1.0E-06	1.0E-04
T_w (groundwater temperature) Celsius	25	8

Site-specific

Risk-Based Regional Screening Levels (RSL) for Soil to Groundwater

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	S (mg/L)
Chloroform	67-66-3	No	Yes	Organics	3.10E-02	U	2.30E-05	U	1.00E-02	U	9.77E-02	U	1	-	7950

K_d \ (cm^3/g)	K_{oc} \ (cm^3/g)	Dilution Attenuation Factor (DAF) (unitless)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (8 ℃) (unitless)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$ \ (cal/mol)	Exponent for $\Delta H_{v,gw}$	Normal Boiling Point BP (K)	BP Ref
6.36E-02	3.18E+01	119.58817169750961	0.00367	1.50E-01	0.0734168	7.34E-02	U	7577.6029	0.3454646	334.25	U

Critical Temperature T_c \ (K)	T_c \ Ref	Noncarcinogenic SL Adult THI=1 (ug/L)	Noncarcinogenic SL Child THI=1 (ug/L)	Carcinogenic SL TR=0.0001 (ug/L)	Water Concentration (Adult) (mg/L)	Water Concentration (Child) (mg/L)	Water Concentration (Cancer) (mg/L)	Maximum Contaminant Level (MCL) (ug/L)
536	U	1.22E+02	9.72E+01	2.21E+01	1.46E+01	1.16E+01	2.64E+00	8.00E+01

Water Concentration (MCL) (mg/L)	MCL-based SL (mg/kg)	Noncarcinogenic Adult SL THI=1 (mg/kg)	Noncarcinogenic Child SL THI=1 (mg/kg)	Carcinogenic SL (mg/kg)	Risk-Based SL (mg/kg)
9.57E+00	9.65E-01	1.48E+00	1.17E+00	2.66E-01	2.66E-01 ca

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