UNITED STATES AIR FORCE
EIELSON AIR FORCE BASE
ALASKA

INSTALLATION RESTORATION PROGRAM

SS035 REMEDIAL INVESTIGATION/ FEASIBILITY STUDY MANAGEMENT PLAN

FINAL

AUGUST 2018

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EIELSON AIR FORCE BASE, ALASKA

Prepared for
Air Force Civil Engineer Center

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Executive Summary

This Remedial Investigation (RI)/Feasibility Study (FS) management plan describes the RI/FS activities to be conducted at SS035, the Asphalt Mixing Area (Hazard ID 392), located on Eielson Air Force Base (AFB), Alaska. Work will be performed by CH2M HILL, Inc. (CH2M) for Air Force Civil Engineer Center (AFCEC) under Contract Number FA8903-16-D-0026, Task Order (TO) FA8903-17-F-0068.

This RI/FS management plan is the primary planning document prepared to ensure that the project goals and objectives are met and includes the project work plan, field sampling plan, quality assurance project plan (QAPP), and health and safety plan. Community relations activities will be conducted consistent with the Eielson AFB Community Involvement Plan adopted in August 2014 (USAF, 2014d).

This document was prepared in accordance with the Eielson AFB Federal Facility Agreement (FFA) and U.S. Air Force (USAF) guidelines as well as the regulations set forth under Section 121 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (U.S. Code Title 42, §103); the Department of Defense (DoD) Quality Systems Manual for Environmental Laboratories version 5.1 (QSM v 5v5.1), and USAF and Unites States Environmental Protection Agency (EPA) guidance documents for writing Uniform Federal Policy QAPPs (UFP-QAPPs).

The UFP-QAPP structure follows guidance provided by the Intergovernmental Data Quality Task Force (IDQTF), a working group made up of representatives from the EPA, the DoD, and the Department of Energy (IDQTF, 2005). Updates to the UFP-QAPP concerning the optimization of the worksheets were published in March 2012 (IDQTF, 2012).

Eielson AFB Background

Eielson AFB (or Base) is located within the urban center of the Fairbanks North Star Borough, a county-scale municipality, approximately 23 miles southeast of Fairbanks, 9 miles southeast of the city of North Pole, and approximately 2.9 miles southeast of Moose Creek. It is in the Tanana River Valley on a low, relatively flat floodplain terrace approximately 2 miles from the active river channel. The Base extends for 19,700 acres, most of which is forest, wetlands, lakes, and ponds beyond the approximately 3,650 acres that have been improved or partially improved and are used for the bulk of Base activities (AECOM, 2013).

Eielson AFB is an active military installation established in 1944 to train and equip personnel for close air support of ground troops in an arctic environment.

Eielson AFB was placed on the National Priorities List on November 21, 1989. This listing designated the facility as a federal Superfund site subject to the remedial response requirements of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986. This listing designated the facility as a federal Superfund site subject to the remedial response requirements of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). In May 1991, the USAF, the Alaska Department of Environmental Conservation (ADEC), and EPA entered into an FFA (USAF, 1991a) under CERCLA Section 120, which established the procedural framework and schedule for developing, implementing, and monitoring CERCLA response actions.

SS035 Description

SS035 is part of operable unit (OU) 4 and is located within an industrial area in the central area of Eielson AFB, west of Central Avenue. The investigation area includes Garrison Slough Pond (GSP), the surrounding grassy area extending to the east of Central Avenue and west of Buildings 3460 and 3462, and the area adjacent to the water treatment plant (WTP) (Buildings 3226, 3227, and 3228). It is bounded to the northeast by ST011. GSP and the surrounding investigation area is approximately

22 acres, with a relatively flat surface gradient. GSP is approximately 7.8 acres with a relatively steep shoreline. The depth of water in GSP is approximately 10 feet but varies seasonally. Garrison Slough (Hazard ID 386), an engineered drainage channel that runs through the developed portion of Eielson AFB, flows north into the southern portion of GSP and then flows from GSP to the northeast. Additional drainage to GSP occurs from the east and the west. GSP has also historically received small volumes of overflow water from the WTP pond, located northeast of GSP.

A utility conduit (utilidor) runs roughly parallel to and east of Central Avenue and west of Buildings 3460 and 3462. A utility conduit appears to intersect GSP and continue offsite towards the southeast where it intersects the larger utilidor.

SS035 was historically used as a mixing area for asphalt and a base for road oiling activities, and it may have been used for mixing pesticides and cleaning pesticide-spraying equipment (USAF, 1982). The former asphalt mixing area now consists of a grass-covered field. Empty asphalt-cement drums were reportedly disposed along the shoreline of GSP (USAF, 1982; 1991b). Over 1,000 drums were deposited in layers, at least three drums high, within GSP and along the shoreline (BEM, 2014).

A remedy was selected for SS035 under CERCLA in the Record of Decision (ROD) for OUs 3, 4, and 5 (USAF, 1995b) and amended in 2001 (USAF, 2001). Sediment and a total of 1,120 drums were subsequently removed in 1997, 2003, 2014, and 2016. Additional drums and debris remain within GSP and along the shoreline. In 2016, polychlorinated biphenyls (PCBs) were detected in soil during expansion of the WTP, and soil was excavated during building construction (Bristol, 2017). Institutional controls are in place and prevent fishing onsite (USAF, 2014c).

Based on previous investigations, the subsurface profile at SS035 consists of a surficial fill layer, or disturbed soil underlain by native alluvial soil. The fill or disturbed soil is typically 10 feet thick and varies from sandy silt to sandy gravel, with silty sand and sandy silt being the most common soil types. The relative density of the disturbed soil or fill is typically loose or very loose. Organic material, treated wood scraps, and other debris were observed in the fill material during historical boring activities. The alluvium beneath the fill consists of loose to dense sand and gravel to the depths explored (USAF, 2014c).

The fill material varies in thickness from 5 to 12 feet, and consists of fine sand and silt with some gravel, mostly poorly graded. The alluvium underlying the fill is well-graded and coarser-grained than the fill, consisting of the following variants: gravel with sand, sand with gravel, and gravel with silt and sand. The groundwater table is typically located in the sand and gravel alluvium or in fine-medium sand fill material directly overlying it.

Groundwater is the principal source of potable and non-potable water at Eielson AFB and in nearby communities. Eight groundwater drinking wells are located on Eielson AFB. Groundwater beneath the site is encountered at approximately 6 to 11 feet below ground surface (bgs) with interpreted flow to the north-northwest along the northern and eastern portions of Source Area SS035 and localized westward flow to Garrison Slough.

Previous Site Activities

Investigation activities, including geophysical surveys and soil, sediment, surface water and groundwater sampling, and drum removal activities, have been conducted at SS035 since 1988.

1988 to 1990 Field Investigations and Geophysical Surveys

Early investigations of SS035 were performed under the Installation Restoration Program and included geophysical and soil-gas surveys, installation of monitoring wells, and slug tests; and collection of soil, sediment, surface water, and groundwater samples (USAF, 1995a). Total petroleum hydrocarbons (TPH),

pesticides, and lead were detected in soil, and TPH was detected in sediment. Toluene and cyanide were detected in groundwater, and trichloroethene and benzene were detected in both groundwater and surface water.

The geophysical surveys identified three anomalies (A, B, and C) along the east and southeast shorelines of GSP where buried drums and other materials exist.

A fourth drum burial area was identified near the Building 3460 and the Central Avenue utilidor connection. Sample results from one of the drums reported compounds indicative of waste oils and waste solvent mixtures used in historic road oiling operations (BEM, 2014).

1989 Drum Removal Activities

In the spring of 1989, a contractor working on a building project adjacent to the site and to the northeast uncovered several drums buried along the Central Avenue utilidor. An unknown number of drums were removed, and the likelihood that additional drums were buried along the utilidor was noted (USAF, 1992).

Remedial Investigation/Feasibility Study

In 1992, an RI was conducted at SS035 as part of the larger OUs 3,4,5 RI (USAF, 1995b). Eight surface soil samples and twelve groundwater samples were collected and analyzed for volatile organic compounds (VOCs), pesticides, PCBs, TPH, and lead. The groundwater samples were also analyzed for arsenic. The groundwater samples were collected from four temporary groundwater probes and eight monitoring wells.

Neither VOCs, pesticides, or PCBs were detected in groundwater above the method detection limits (MDLs). Lead was detected in several samples at concentrations up to the federal drinking water action level (15 micrograms per liter). However, these detections did not account for background lead present at Eielson AFB. In soil, TPH, dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), and/or lead were detected at several locations. The lead results were less than the background threshold value (BTV) for lead at Eielson AFB. DDT was detected at concentrations exceeding the preliminary remediation goals, which were the more conservative of either Alaska drinking water standards or EPA water quality criteria (USAF, 1995c).

The results of the RI were used to develop remedial alternatives for the OUs 3, 4, and 5 FS (USAF, 1995c). Alternatives included no action, institutional controls, soil capping, and soil and drum removal.

1995 Record of Decision

SS035 is part of OU4 and included in the ROD for OUs 3, 4, and 5 (USAF, 1995a). DDD, DDE, DDT, aldrin, alpha-benzene hexachloride (BHC), chlordane, and heptachlor epoxide were identified as contaminants of concern (COCs) in soil and 1,2-dichloroethane, DDT, benzene, and beta-BHC in groundwater. The selected remedy for SS035 was installation of a soil cover over the surface soil contamination; future removal of drums if they were determined to be a continuing source of contamination; monitoring of surface water, sediments, and aquatic organisms to verify effectiveness of the soil cover; and monitoring of groundwater to verify contaminant concentrations remained below cleanup levels.

1996, 1998, and 1999 Sediment and Surface Water Sample Collection

In 1996, surface water and sediment samples were collected from GSP and analyzed for pesticides (BEM, 2014). Pesticides were not detected above laboratory MDLs. However, DDT, DDD, and DDE were detected in sediment samples at concentrations above their respective reporting limits (BEM, 2014). Additional sampling conducted in 1998 and 1999 also detected DDD, DDE, and DDT above the reporting limit.

1997 Drum Removal Activities

In 1997, nineteen 55-gallon drums containing sediment and water were removed from GSP. The exact location of the removed drums was not documented. One of the drums contained petroleum-related VOCs (toluene, ethylbenzene, and xylenes), chlorinated solvents (tetrachloroethene, 1,1,1-trichloroethane, and 1,1-dichloroethene), and metals (barium, cadmium, and lead) (USAF, 1998).

1998 ROD Amendment

In 1998, the OUs 3, 4, and 5 ROD was amended (USAF, 2001), removing the soil cover from the remedy. Continued monitoring of surface water, sediments and aquatic organisms at the site was required to confirm contaminant concentrations remained at levels that are protective of human health and the environment.

2002 Sediment and Surface Water Sample Collection

In 2002, both sediment and surface water samples were collected along a transect running along the center of GSP. DDD was detected in one surface water sample and low-level concentrations of DDT, DDE, and DDD were detected in the sediment samples (BEM, 2014).

2003 Drum Removal Activities

In 2003, two unlabeled drums of asphalt emulsion were removed from an area along the eastern edge of the pond. Four additional drums discovered at the time were left in place (EA, 2003). Samples from the two removed drums contained petroleum-related VOCs, semi-volatile organic compounds (SVOCs), metals, and DDT (EA, 2003; USAF, 2014c).

2014 Conceptual Site Model Update

A field investigation was conducted in 2012 and 2013 to further characterize the source area and facilitate a conceptual site model (CSM) update to support future remedial actions in compliance with the USAF accelerated site completion policy (USAF, 2014c). Tasks included geophysical and bathymetric surveys; installation of five additional monitoring wells (six active monitoring wells and one inactive monitoring well previously existed at the site); collection and analysis of groundwater, surface water, surface soil, and sediment samples; and a passive soil vapor survey (USAF, 2014c).

Several pesticides, including DDD, DDE, and DDT, plus petroleum hydrocarbons and metals were detected in surface soil, sediment, surface water, and groundwater at concentrations above one or more of their respective project-specific screening levels.

Three anomalies were reinterpreted based on the 2012 geophysical results. Anomaly A, located within and along the southeast shoreline of GSP, consists of buried drums or a mix of debris and drums. Anomaly B was interpreted to be primarily a utility conduit. The conduit appears to intersect the pond and continue offsite towards the southeast where it intersects a larger utility conduit that runs roughly parallel to Central Avenue. Anomaly C, located on the eastern shoreline of GSP, appears to contain drums.

2014 Drum Removal and Shore Stabilization

Drum removal activities conducted in September 2014 included clearing and stabilizing approximately 5,900 square feet of vegetation along the eastern shoreline of GSP; installing a 10-millimeter oil-resistant, polyethylene liner 3 feet below GSP water surface at the shoreline; removing 50 submerged drums; and collecting and analyzing surface water, sediment, and waste characterization samples (BEM, 2014).

Drums were removed using a dive crew to maneuver each submerged drum into an overpack container, sealing the lid of the overpack container underwater, and lifting the overpack drum from the pond bottom using a floatation device. Drums had approximately 3-inch holes on the sides and an asphalt/tar-like substance on the interior. Several drums also contained thick oil and emitted a strong petroleum odor (BEM, 2014).

Sediment and surface water samples were collected to evaluate if the interim removal actions resulted in the dispersion of contaminated sediment to the surrounding areas of GSP located outside the silt curtain surrounding the removal area (BEM, 2014). In surface water, samples were analyzed for diesel range organics (DRO); residual range organics (RRO), VOCs, polycyclic aromatic hydrocarbons (PAHs), metals, pesticides, and PCBs. VOCs were detected at concentrations below their surface water screening criteria. PAHs, pesticides, PCBs, and metals were detected at concentrations above at least one of their respective surface water screening criteria, but below the lowest ecological screening criteria. In sediment, VOCs were detected at concentrations below their screening criteria. No PAHs, pesticides, or PCBs were detected in sediment above their respective detection limits; however, the laboratory detection limits were above the National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Tables Threshold Effect Level (TEL) and Probable Effect Level. Six PAHs were detected in sediment at concentrations exceeding their respective NOAA TEL. Several metals, including arsenic, cadmium, and zinc, were detected in sediment at concentrations exceeding the NOAA screening levels.

2016 Drum Removal and Test Pit Sampling

During drum and sediment removal activities in 2016, a total of 1,045 drums were removed from Area A and Area C (within GSP). Of these drums, 1,042 were identified as 1976 Resource Conservation and Recovery Act (RCRA) -empty and recycled. Two asphaltic waste drums were identified as nonhazardous waste. One drum with Earl Foam was identified as hazardous waste. In addition to drum removal, a total of 1,040 tons of contaminated soil and sediment were excavated from Areas A and C. Additional drums and debris remain within GSP along the eastern and northern shoreline and Area A.

Samples were collected to characterize the excavation limits and contaminants remaining in soil and sediment. Petroleum hydrocarbons, pesticides, VOCs, and SVOCs/PAHs were detected at Areas A and C at concentrations above screening levels.

A total of 10 test pits were advanced to investigate anomalies and characterize potential contamination along the eastern perimeter of GSP, both inside and outside of the Area C boundary. One soil sample was collected from each test pit at depths between 6 and 11 feet bgs. Petroleum hydrocarbons, pesticides, VOCs, and SVOCs/PAHs were detected at concentrations above screening levels.

Granular Activated Carbon Construction at the Water Treatment Plant

In 2016, before the expansion of the water treatment plant located adjacent to GSP, a soil investigation was conducted. Twenty-two soil borings were advanced to a depth of 7 feet bgs within and around the proposed granular activated carbon (GAC) facility building footprint, and soil samples were collected and analyzed for per- and polyfluoroalkyl substances (PFAS), PAHs, pesticides, VOCs, and PCBs. VOCs and pesticides were detected at concentrations above the ADEC migration to groundwater cleanup levels. PFAS and PCBs were detected at concentrations above ADEC human health cleanup levels (ADEC, 2017a).

Between June 5 and 19, 2017, 167 cubic yards of contaminated soil was excavated from 0 to 3 feet bgs in areas overlying the previous soil boring locations with concentrations above ADEC cleanup levels (Bristol, 2017). Confirmation samples were collected from the bottom and sidewalls of the excavations, but no survey data was collected for the sample locations. PCBs and select PAHs were detected at concentrations above the ADEC human health cleanup level. Naphthalene, perfluorooctanoic acid

(PFOA), and PFOS were detected at concentrations above the ADEC migration to groundwater cleanup levels. Because of the presence of contamination within the sidewall, an additional 188 cubic yards of potentially contaminated soil was excavated between July 17 and 20, 2017, from areas within or surrounding the edge of the planned building footprint. Confirmation samples were not collected from the additional excavations.

ST011

ST011 is located to the east of the northern end of GSP and northeast of the WTP and is a part of OU2. Diesel contamination was identified at ST011 in 1975, likely originating from a 4-inch fuel pipeline that extended from the bakery to several diesel tanks located to the east of Central Avenue. In 1977, three passive skimming trenches and three culverts were installed between Facility 3224 and Garrison Slough, and the 4-inch fuel pipeline was removed. Four monitoring wells were installed at ST011. The OU2 ROD specified that wells be sampled for 5 years under the sitewide program to confirm the absence of contamination (USAF, 1994). Groundwater sampling results remained below the final remediation goals selected in the ROD, and the site was recommended for closure in 2002 (USAF, 2003).

Groundwater samples collected in 2012 under the Installation-wide Management Program (IWMP) contained benzene and DRO above groundwater cleanup levels. Results from the 2015 IWMP identified DRO and benzene contamination in two wells located upgradient of the skimming system (USAF, 2017c).

In 2016, three vertical aluminum culverts and several pieces of piping remaining on the ground surface and subsurface piping near the culverts were decommissioned, revealing an unregulated underground storage tank (UST) and associated waste materials. Three primary analytical soil samples were collected from the floor following removal of the UST: one from below the center of the UST and two from the locations of highest photoionization detection (PID) readings, which were also located below the UST. The confirmation soil samples were analyzed for gasoline range organics (GRO), DRO, RRO, VOCs, PAHs, and RCRA metals.

Naphthalene and DRO were detected at concentrations above the ADEC migration to groundwater cleanup levels (0.038 milligrams per kilogram [mg/kg] and 250 mg/kg, respectively) in three analytical soil samples collected from the floor of the excavation. DRO results ranged from 6,200 to 14,000 mg/kg, with the highest concentration originating from the sample collected below the center of the UST. Naphthalene results ranged from 0.12 to 0.36 mg/kg, with the highest concentration originating from the sample collected below the southwest end of the tank. Sample results for the excavation were also above ADEC cleanup levels for arsenic, chromium, and iron but were below the background level established for fluvial soil at Eielson AFB (USAF, 2014b).

Explanation of Significant Differences

In 2017, an explanation of significant differences (ESD) (USAF, 2018b) was prepared for SS035 and the OUs 3, 4, and 5 ROD (USAF, 1995a) and amended ROD (USAF, 2001). The ESD reinstated the provision for drum removal at SS035, which was originally included in the OUs 3, 4, and 5 ROD.

Data Gaps

Evaluation of previous investigations and historical data indicate the following data gaps remain at the site:

- Lateral and vertical extent of soil contamination
- Lateral and vertical extent of sediment contamination within GSP
- Nature and extent of groundwater contamination

- Nature of surface water contamination within GSP
- The potential for vapor intrusion (VI) to impact indoor air
- Data to support baseline risk assessment
- Data to support an FS

Project Objectives

The overarching project objective is to complete a supplemental RI and FS for SS035 and to provide the project team with information necessary to determine whether remedial action is necessary to protect human health and the environment. The RI will be conducted to (1) delineate the nature and extent of contaminants in soil, sediment, and groundwater; (2) characterize the current nature of contaminants in surface water within GSP; (3) assess whether VOCs in soil or groundwater are or potentially can impact indoor air through the VI pathway; and (4) evaluate whether soil, sediment, surface water, groundwater, and/or indoor air pose unacceptable risks to human health or the environment.

The objective of the FS is to develop and evaluate remedial action alternatives to support selection of an appropriate remedy if it is determined that contaminants pose an unacceptable risk to human health or the environment.

Investigation Approach

RI field activities will be completed as five sampling events and one temporary monitoring well decommissioning event, as summarized in the following paragraphs.

Phase 1: 2018 Soil, Surface Water, and Groundwater Sampling

- **Surface Soil Sampling SS035-SS01 through -SS26:** A total of 26 primary surface soil samples will be collected from a depth of 0 to 2 feet bgs. Twenty locations are collocated with subsurface soil samples (see next bullet) and five are discrete sampling locations. Samples will be analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAHs, pesticides, PCBs, metals, dioxins, and PFAS. Three samples will also be analyzed for pH to support the ecological risk assessment (ERA).
- **Soil Borings SS035-SB01 through -SB29**: A total of 64 primary subsurface soil samples will be collected from 29 soil borings, two from each boring at various depths from 2.5 to a maximum depth of 10 feet bgs or the top of the water table and additional intervals at six select borings to further define vertical extent (64 total primary samples). The sample intervals may be adjusted in the field based on the highest field screening results and water table elevation. Samples will be analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAHs, pesticides, PCBs, metals, dioxins, and PFAS.
- **Permanent Monitoring Wells SS035-MW01 through -MW04**: Four permanent monitoring wells will be installed and developed. Two soil samples will be collected from each of the borings, and an additional interval will be collected from one select boring to further define vertical extent (nine total primary soil samples). Samples will be analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAHs, pesticides, PCBs, metals, and PFAS. In addition, select soil samples will be collected and analyzed for geotechnical parameters (fraction of organic carbon, bulk density, particle size, and moisture content).
- **Temporary Wells SS035-TMW01 through -TMW09:** Nine temporary wells will be installed. Two soil samples will be collected from each of the temporary well borings and an additional interval will be collected from three select borings to further define vertical extent (21 total primary soil samples). Samples will be analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAHs, pesticides, PCBs, metals, and PFAS. In addition, select soil samples will be collected and analyzed for geotechnical parameters.

- **Groundwater Elevation Measurements**: Once the new wells are installed, synoptic groundwater elevation measurements will be collected from the four new permanent wells, nine new temporary wells, and ten existing wells (35M01, 35M02, 35M04, 35M05, 35M06, 35M08, 35M10, 35M12, 35M14, and 1211MW07) to refine the local groundwater flow direction at the site.
- **Groundwater Sampling**: Groundwater samples will be collected from 23 monitoring wells: the 4 new permanent wells (SS035-MW01 to –MW04), the 9 new temporary monitoring wells (SS035-TMW01 through -TMW09), and 10 existing monitoring wells (35M01, 35M02, 35M04, 35M05, 35M06, 35M08, 35M10, 35M12, 35M14, and 1211MW07). Samples will be analyzed for GRO, DRO, RRO, VOCs, ethylene dibromide (EDB), SVOCs, PAHs, pesticides, PCBs, metals, 1,4-dioxane, and PFAS.
- **Estimating Aquifer Hydraulic Properties (pump testing of monitoring wells):** Single well rising head tests, commonly refered to as slug tests, will be performed at eight new or existing wells to estimate aquifer properties (following groundwater sampling). Tests will be conducted one at a time, and wells will be selected based on location to account for spatial variability. Aquifer response will be measured with a data recording pressure transducer and a handheld water level indicator.
- **Surface Water Sampling:** Surface water samples will be collected from 11 locations at GSP, and one composite sample will be collected. Samples will be analyzed for GRO, DRO, and RRO; VOCs; EDB; SVOCs; PAHs; pesticides; PCBs; dissolved metals; 1;4-dioxane; and PFAS. The composite surface water sample will be analyzed for hardness to support the ERA.

Phase 2: Second Surface Water and Groundwater Sampling Event

A second surface water and groundwater sampling event will occur approximately 1 month after the initial sampling event. Surface water samples will be collected from the same 11 locations that were sampled during the first sampling event. Groundwater samples will be collected from the same 23 wells sampled during the first event: the 4 new permanent wells (SS035-MW01 to –MW04), the 9 new temporary monitoring wells (SS035-TMW01 through -TMW09), and 10 existing monitoring wells (35M01, 35M02, 35M04, 35M05, 35M06, 35M08, 35M10, 35M12, 35M14, and 1211MW07). Depth-to-groundwater will be measured at all new temporary and existing monitoring wells before beginning sampling.

Phase 3: First VI Sampling Event

VI investigations will be performed at three existing buildings at SS035 where the VI pathway is potentially complete (Buildings 3228, 3460, and 3462). Building 3228 is likely located less than 100 feet from known VOC contamination. VOCs, including naphthalene, were detected in excavated soil during the 2016 investigation associated with expanding the water treatment plant. Additional confirmation samples were not collected, so, as a conservative approach, Building 3228 is included in the VI investigation. Buildings 3460 and 3462 are located further than 100 feet from known VOC contamination, but the utilidor connecting to these buildings cuts through areas of known and potential VOC soil contamination, including an area where it is believed to intersect GSP. As such, the utilidor represents a potential preferential VI pathway from VOC sources to Buildings 3460 and 3462.

The VI investigation at Buildings 3228, 3460, and 3462 will include two sampling events, one in the winter and one in the fall or spring (depending on timing of approval of this RI/FS management plan). Building surveys will be performed before the first sampling event. Each event will include collection of indoor air, subslab soil vapor, and outdoor air samples and submittal for laboratory analysis following EPA Method TO-15 procedures for VOCs. Indoor/outdoor air and subslab soil vapor samples will be collected using Summa canisters. For indoor and outdoor samples, 6-liter Summa canisters will be fitted with 24-hour flow controllers; subslab soil vapor will be collected using 1-liter canisters and 30-minute flow controllers. The

analytical list for air samples will be limited to the volatile compounds detected (1) in soil above the most conservative ADEC 18 Alaska Administrative Code (AAC) 75 cleanup levels at SS035 and (2) in groundwater above vapor intrusion screening levels.

The number of indoor air samples planned for each building is in accordance with ADEC's *Vapor Intrusion Guidance for Contaminated Sites* (2017h): one indoor air sample per approximately 1,000 square feet of floor space. Six indoor air samples are planned at Building 3228, 17 locations are planned for Building 3460, and 10 are planned for Building 3462.

In addition to indoor air samples, subslab soil vapor samples will be collected at each indoor air sample location and two outdoor air samples will be collected—one will be located upwind of Buildings 3460 and 3462, the other will be placed upwind of Building 3228.

Concurrent with sampling, additional subslab soil vapor probes will be installed in each building to measure the differential pressure between the primary building compartment and the subslab. Differential pressure will be measured over at least a 24-hour period and for up to 7 days (depending on logistic coordination) in three locations at Building 3460, two locations at Building 3462, and one location in Building 3228.

Phase 4: VI HAPSITE Investigation

Following the first and before the second VI sampling event, HAPSITE real-time gas chromatograph-mass spectrometer (GC-MS) investigations will be performed to assess if the detections are from an interior background source(s) at locations where compounds are detected above their respective screening levels in indoor air samples. If no compounds are detected at levels greater than a project screening level (PSL), then a HAPSITE investigation will not be completed. Regardless of the results of the first sampling event, a second sampling event will be performed (see Phase 5, below).

If necessary and where possible, pressure cycling using a blower door will be used in conjunction with the HAPSITE in building compartments that are less than 20,000 cubic feet in volume to help assess if indoor air detections are being caused by interior sources or VI. HAPSITE and pressure cycling investigations will be performed in accordance with SOP-25.

The use of a HAPSITE portable GC-MS allows for the identification of interior sources in real time, such as those that may not have ingredients listed, those with an incomplete ingredients list, or those related to the activities occurring within a building. If no interior sources are identified, building compartments will be pressure cycled using a blower door, if possible. The intent of the pressure cycling method is to measure indoor air concentrations (using a HAPSITE) under known and uniform negative or positive pressure conditions. Two target negative and one positive differential pressure steps will be established (-5 Pascal, -10 Pascal, and +5 Pascal). The negative pressure steps simulate worst case VI conditions. Up to 2.5 air exchanges will be achieved during each step. Throughout each pressure step, the HAPSITE will be used to analyze indoor air samples at multiple locations in the building compartment to measure indoor air concentrations in real time and identify potential vapor entry points.

Phase 5: Sediment Sampling, Step-out Sampling, and Second VI Sampling Event

- **Sediment Borings:** Sediment samples will be collected within and along the shoreline of GSP through the ice during the winter when GSP is frozen to allow drill rig access. A total of 23 sediment borings (SS035-SD01 to -SD23) will be drilled to a depth of 10 feet bgs (below the pond bottom). Two discrete sediment samples will be collected from each boring at various depths and additional intervals at select borings to further define vertical extent below the sediment surface (total of 52 primary sediment samples). Up to five sediment samples will be submitted for chromium speciation (approximately 10 percent of primary sediment samples). Samples will be analyzed for

GRO, DRO, RRO, VOCs, SVOCs, PAHs, pesticides, PCBs, metals, dioxins, and PFAS. Four surface sediment samples (0 to 0.5 feet bgs) will also be analyzed for total organic carbon (TOC), and three sediment samples for pH to support the ERA. Hexavalent chromium will also be analyzed for in approximately 10 percent of the sediment samples.

- **Step-out Sampling**: Step-out soil and groundwater samples will be collected, as needed to fill data gaps based on Phase 1 results.
- **Indoor air sampling**, **outdoor air sampling, and sub-slab soil vapor sampling** will be conducted at Buildings 3228, 3460, and 3462 at the locations sampled during the first VI sampling event. Differential pressure will also be monitored at the same locations as the first VI sampling event.

Temporary Monitoring Well Decommissioning

Decommission temporary wells.

Schedule

The key project schedule dates are presented in Table ES-1, but are subject to change pending RI/FS management plan reviews and approvals.

Table ES-1 SS035 RI/FS Management Plan Project Schedule

Activity	Responsible Party	Planned Start Date	Planned Completion Date	Deliverable(s)	Deliverable Due Dates
Prepare RI/FS management plan	CH2M, AFCEC, EPA, ADEC	July 2017	August 2018	Draft RI/FS management plan to regulators	04/17/2018
				RTCs and red-lined Draft Final RI/FS management plan to regulators	06/25/2018
				Final RI/FS management plan	07/27/2018
Field Work					
Soil/Groundwater/ Surface Water Sampling/Aquifer Test	CH2M	August 2018	November 2018	ERPIMS Submittal	11/24/2018
Second Groundwater/ Surface Water Sampling Event	CH2M	September 2018	December 2018	ERPIMS Submittal	12/24/2018
First VI Sampling Event	CH2M	October 2018	February 2019	ERPIMS Submittal	02/15/2019
VI Follow-Up	CH2M	January 2019	January 2019	N/A	N/A
Sediment/Step-out Sampling Event	CH2M	February 2019	May 2019	ERPIMS Submittal	05/22/2019
Second VI Event	CH2M	January 2019	May 2019	ERPIMS Submittal	05/23/2019
Temporary Well Decommissioning	CH2M	June 2019	June 2019	N/A	N/A

Table ES-1 SS035 RI/FS Management Plan Project Schedule

Activity	Responsible Party	Planned Start Date	Planned Completion Date	Deliverable(s)	Deliverable Due Dates
Prepare RI Report	CH2M, AFCEC, EPA, ADEC	March 2019	January 2020	Draft RI/FS Report to regulators	09/26/2019
				RTCs and red-lined Draft-Final RI/FS Report to regulators	11/24/2019
				Final RI/FS Report	01/23/2020
Prepare FS Report	CH2M, AFCEC, EPA, ADEC	July 2019	March 2020	Draft FS Report to regulators	11/25/2019
				RTCs and red-lined Draft-Final FS Report to regulators	01/23/2020
				Final FS Report	03/23/2020

Note:

ADEC = Alaska Department of Environmental Conservation
AFCEC = Air Force Civil Engineering Center
CH2M = CH2M HILL, Inc.
EPA = United States Environmental Protection Agency
ERPIMS = Environmental Restoration Program Information Management System
N/A = not applicable
RI/FS = Remedial Investigation/Feasibility Study
RTCs = response to comments
VI = vapor intrusion

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Table of Contents

SECTION **PAGE**

Executive Summary ES-1
Acronyms and Abbreviations vii
QAPP Worksheet #1 – Title and Approval Pages 1
Worksheet #3/5– Project Organization and QAPP Distribution 3
Worksheet #4/7/8 – Personnel Qualifications and Sign-Off Sheet 7
Worksheet #6 – Communication Pathways 11
Worksheet #9 – Project Planning Session Summary 13
Worksheet #10 – Conceptual Site Model 15
Worksheet #11 – Project/Data Quality Objectives 109
Worksheet #12 – Measurement Performance Criteria 125
Worksheet #13 – Secondary Data Uses and Limitations 143
Worksheet #14/16 – Project Tasks & Schedule 145
Worksheet #15 – Project Action Limits and Laboratory-Specific Detection/Quantitation Limits 157
Worksheet #17 – Sampling Design and Rationale 209
Worksheet #18 – Sampling Locations and Methods 229
Worksheet #19/30 – Sample Containers, Preservation, and Hold Times 249
Worksheet #20 – Field QC Summary 255
Worksheet #21 – Field SOPs 259
Worksheet #22 – Field Equipment Calibration, Maintenance, Testing, and Inspection 263
Worksheet #23 – Analytical SOPs 267
Worksheet #24 – Analytical Instrument Calibration 273
Worksheet #25 – Analytical Instrument and Equipment Maintenance, Testing, and Inspection 275
Worksheet #26/27 – Sample Handling, Custody, and Disposal 277
Worksheet #28 – Analytical Quality Control and Corrective Action 279
Worksheet #29 – Project Documents and Records 285
Worksheet #31/32/33 – Assessments and Corrective Action 289
Worksheet #34 – Data Verification and Validation Inputs 293
Worksheet #35 – Data Verification Procedures 295
Worksheet #36 – Data Validation Procedures 297
Worksheet #37 – Data Usability Assessment 309
References 315

Tables

ES-1 SS035 RI/FS Management Plan Project Schedule ES-10
10-1 Eielson Soil Background Threshold Values 57
10-2 Eielson Groundwater Background Threshold Values 58
10-3 Summary of Chemicals Detected in Soil 59
10-4 Summary of Chemicals Detected in Sediment 77
10-5 Summary of Chemicals Detected in Surface Water 89
10-6 Summary of Chemicals Detected in Groundwater 95
10-7 Summary of Chemicals Detected in Passive Soil Vapor 104
10-8 SS035 Exposure Pathway Evaluation 107
11-1 Site SS035 RI/FS Management Plan Data Quality Objectives 113
13-1 Secondary Data Criteria and Limitations Table 143
14-1 SS035 RI/FS Management Plan Project Schedule 156
15-1 Soil PSLs for SS035 161
15-2 Sediment PSLs for SS035 171
15-3 Groundwater PSLs for SS035 183
15-4 Surface Water PSLs for SS035 197
15-5 Soil vapor PSLs for SS035 205
15-6 Indoor Air PSLs for SS035 207
18-1 SS035 Remedial Investigation Proposed Soil Sampling Locations and Methods 231
18-2 SS035 Remedial Investigation Proposed Sediment Sampling Locations and Methods 236
18-3 SS035 Remedial Investigation Proposed Groundwater Locations and Methods 238
18-4 SS035 Remedial Investigation Proposed Surface Water Locations and Methods 240
18-5 SS035 Remedial Investigation Proposed Indoor Air and Soil Vapor Sampling Locations and Methods 243
20-1 Field QC Summary 257
22-1 Field Equipment Calibration, Maintenance, Testing, and Inspection 265
23-1 Analytical SOP References for APPL Inc. 269
23-2 Analytical SOP References for Air Technology Laboratories, Inc. 272
23-3 Analytical SOP References for Vista Analytical 272
25-1 Analytical Instrument and Equipment Maintenance, Testing, and Inspection 276
29-1 Project Documents and Records 285
31-1 Planned Project Assessments 289
31-2 Assessment Response and Corrective Action 291
36-1 Validation Process Summary 297
36-2 Laboratory Data Qualifiers 300
36-3 Validation and Usability Assessment Data Qualifiers 304
36-4 Data Qualifying Conventions Based on Quantitation of Results 304
36-5 General Data Qualifying Conventions 305
37-1 Data Usability Assessment Process Summary 310
37-2 Data Usability Assessment Table 312

Figures

10-1 Eielson Air Force Base Location Map 32
10-2 SS035 Location Map 33
10-3A Metals in Surface and Subsurface Soil (2012-2016) 34
10-3B PAHs in Surface and Subsurface Soil (2012-2016) 35
10-3C Pesticides in Surface Soil (2012-2016) 36
10-3D Pesticides Subsurface Soil (2012-2016) 37
10-3E SVOCs in Surface and Subsurface Soil (2012-2016) 38
10-3F TPH in Surface and Subsurface Soil (2012-2016) 39
10-3G VOCs in Surface and Subsurface Soil (2012-2016) 40
10-3H Passive Soil Vapor TPH and TVOC Concentrations (2013) 41
10-4A Metals in Sediment (2012) 42
10-4B Metals in Sediment (2014-2016) 43
10-4C PAH in Sediment (2012-2016) - Northern Portion 44
10-4D PAH in Sediment (2012-2016) - Southern Portion 45
10-4E PCBS and PFAS in Sediment and Soil (2012-2017) 46
10-4F Pesticides in Sediment (2012-2016) 47
10-4G TPH in Sediment (2012-2016) 48
10-4H VOCs in Sediment (2012-2016) 49
10-5A Metals in Surface Water (2012) 50
10-5B Pesticides in Surface Water (2012) 51
10-5C TPH in Surface Water (2012) 52
10-6A Metals in Groundwater (2014-2016) 53
10-6B Pesticides in Groundwater (2014-2016) 54
10-6C TPH in Groundwater (2012-2016) 55
10-6D VOCs in Groundwater (2014-2016) 56
17-1 Soil and Sediment Sampling Locations 219
17-2A Southern Portion Garrison Slough Pond Proposed Soil and Sediment Sampling Locations 220
17-2B Middle Portion Garrison Slough Pond Proposed Soil and Sediment Sampling Locations 221
17-2C Northern Portion Garrison Slough Pond Proposed Soil and Sediment Sampling Locations 222
17-3 Groundwater Sampling Locations 223
17-4 Surface Water Sampling Locations 224
17-5A Building 3228 Potential Vapor Intrusion Sampling Locations 225
17-5B Building 3460 Potential Vapor Intrusion Sampling Locations 226
17-5C Building 3462 Potential Vapor Intrusion Sampling Locations 227

Appendixes

A Resumes
B Risk Assessment Work Plan
C Analytical Quality Assurance/ Quality Control Criteria and Instrument Calibration Tables
D Field Standard Operating Procedures
E Health and Safety Plan
F Analytical Laboratory Quality Assurance Manuals, Certificates, and Standard Operating Procedures
G Data Management Plan
H Regulatory Response to Comments

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Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
%R	percent recovery
µg/m^3	microgram(s) per cubic meter
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFCEE	Air Force Center for Engineering and the Environment
bgs	below ground surface
BHC	benzene hexachloride
BTV	background threshold value
CAS	Chemical Abstracts Service
CCV	continuing calibration verification
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CH2M	CH2M HILL, Inc.
CL	control limit
CO	Contracting Officer
CoC	chain-of-custody
COC	contaminant of concern
COPC	contaminant of potential concern
COR	Contracting Officer Representative
CSM	conceptual site model
CVAA	cold vapor atomic absorption
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethene
DDT	dichlorodiphenyltrichloroethane
DL	detection limit
DoD	United States Department of Defense
DOT	United States Department of Transportation
DQI	data quality indicator
DQO	data quality objective

DRO	diesel-range organics
EB	equipment blank
EDB	ethylene dibromide (1,2-dibromoethane)
EDD	electronic data deliverable
ELAP	Environmental Laboratory Accreditation Program
EPA	United States Environmental Protection Agency
ERA	ecological risk assessment
ERPIMS	Environmental Restoration Program Information Management System
ESD	explanation of significant differences
FD	field duplicate
FFA	Federal Facility Agreement
FM	field manager
FRB	field reagent blank
FS	Feasibility Study
g	gram(s)
GAC	granular activated carbon
GC	gas chromatography
GC-ECD	gas chromatograph-electron capture detector
GC-FID	gas chromatography-flame ionization detector
GC-MS	gas chromatography-mass spectrometry
GIS	geographic information system
GPS	global positioning system
GRO	gasoline-range organics
GSP	Garrison Slough Pond
GW	groundwater
HA	health advisory
HCl	hydrochloric acid
Hg	mercury
HHRA	human health risk assessment
HPLC	high-performance liquid chromatography
HQ	hazard quotient
HVAC	heating, ventilation, and air conditioning
IC	ion chromatography
ICAL	initial calibration

ICP-AES	inductively coupled plasma-atomic emission spectroscopy
ICP-MS	inductively coupled plasma-mass spectrometry
ICS	interference check sample
ICV	initial calibration verification
IDQTF	Intergovernmental Data Quality Task Force
IDW	investigation-derived waste
IS	internal standard
IWMP	Installation-wide Management Program
L	liter(s)
LCL	lower confidence limit
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
MB	method blank
MDL	method detection limit
MeOH	methanol
mg/kg	milligrams per kilogram
mL	milliliter(s)
MPC	measurement performance criteria
MS	matrix spike
MSD	matrix spike duplicate
N	primary sample
N/A	not applicable
NAD	North American Datum
$NaHSO_4$	sodium bisulfate
ND	non-detect or not detected
NOAA	National Oceanic and Atmospheric Administration
OU	operable unit
oz.	ounce(s)
PAH	polycyclic aromatic hydrocarbon
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
PCB	polychlorinated biphenyl

PID	photoionization detector
PFAS	per- and polyfluorinated alkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PID	photoionization detector
PM	Project Manager
POP	period of performance
PP	proposed plan
PSL	project screening level
PVC	polyvinyl chloride
QA	quality assurance
QAM	quality assurance manual
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Systems Manual
R	sample was rejected
RAIS	Risk Assessment Information System
RCRA	1976 Resource Conservation and Recovery Act
RF	response factor
RI	Remedial Investigation
ROD	record of decision
RPD	relative percent difference
RRO	residual-range organics
RSL	regional screening level
RT	retention time
SARA	1986 Superfund Amendments and Reauthorization Act
SDG	sample delivery group
SOP	standard operating procedure
SRM	standard reference material
STC	senior technical consultant
SVOC	semi-volatile organic compound
TB	trip blank
TCE	trichloroethene
TCR	target risk for carcinogens

TEL	threshold effect level
TLC	Teflon-lined cap
TLS	Teflon-lined septa
TO	task order
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TVOC	total volatile organic compound
UCL	upper confidence level
UFP	Uniform Federal Policy
USAF	United States Air Force
UST	underground storage tank
VI	vapor intrusion
VOA	volatile organic analysis
VOC	volatile organic compound
WTP	water treatment plant

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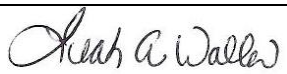
QAPP Worksheet #1 – Title and Approval Pages

SS035 Project Information	
Site Name:	SS035 – Asphalt Mixing Area (Hazard ID 392)
Project Name:	Remedial Investigation/Feasibility Study and Proposed Plan/Record of Decision for SS035
Site Location/Number:	Eielson Air Force Base, Alaska
Contract Number:	FA8903-16-D-0026
Task Order Number:	FA8903-17-F-0068
Preparer Information	
Prepared By:	CH2M HILL, Inc. (CH2M) 949 E. 36th Ave, Suite 500, Anchorage, AK 99508
Preparation Date:	August 2018
Revision Date:	Not Applicable (N/A)
Project Manager (PM) Name and Title:	Leah Waller, PM
PM Signature and Date:	
Lead Organization	
Organization Name:	Air Force Civil Engineer Center (AFCEC)
Quality Manager Name and Title:	A. Kathleen Bradley, P.G., Hydrogeologist/Technical Directorate
PM Name and Title:	Gary Fink, Eielson Restoration Chief
Federal Regulatory Agency	
Agency Name:	United States Environmental Protection Agency (EPA), Region 10
PM Name and Title:	Dustan Bott, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial PM
Signature and Date:	*Approval to be provided via Memorandum*
State Regulatory Agency	
Agency Name:	Alaska Department of Environmental Conservation (ADEC)
PM Name and Title:	John O'Brien, Contaminated Sites PM
Signature and Date:	*Approval to be provided via Memorandum*

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Worksheet #3/5– Project Organization and QAPP Distribution

The following table identifies the key personnel that will receive and review the Quality Assurance Project Plan (QAPP).

QAPP Recipient	Organization	Title	Telephone Number	E-mail Address
Gary Fink	AFCEC	Eielson Restoration Chief	(907) 552-8757	gary.fink@us.af.mil
Tracy Kissler	AFCEC	Contracting Officer Representative (COR)	(210) 478-1819	tracy.kissler@us.af.mil
A. Kathleen Bradley	AFCEC/Environmental Restoration Technical Support Branch	Technical Directorate/Quality Manager	(210) 395-0560	anne.bradley.1@us.af.mil
Dustan Bott	EPA	PM	(206) 553-5502	bott.dustan@epamail.epa.gov
John O'Brien	ADEC	Contaminated Sites PM	(907) 451-2181	john.obrien@alaska.gov
Leah Waller	CH2M	PM	(916) 286-0336	leah.waller@ch2m.com
Corey Schwabenlander	CH2M	Task Manager (TM), Quality Manager	(385) 474-8554	corey.schwabenlander@ch2m.com
Gary Colgan	CH2M	Senior Technical Consultant	(385) 474-8512	gary.colgan@ch2m.com
Berney Kidd	CH2M	Project Chemist	(530) 229-3203	bernice.kidd@ch2m.com
Mike Bedan	CH2M	Vapor Intrusion/ Risk Assessment Subject Matter Expert	(720) 286-5333	mike.bedan@ch2m.com
Larry Amskold	Jacobs	Field Team Leader	(907) 762-1015	Larry.Amskold@jacobs.com
Brandon Jones-Stanley	CH2M	Field Team Leader	(541) 768-3226	brandon.jones-stanley@ch2m.com
Greg Salata	APPL, Inc.	Soil and Groundwater Laboratory Project Manger	(559) 275-2175	gsalata@applinc.com
Jennifer Miller	Vista Analytical	Subcontracted Laboratory to APPL for per- and polyfluorinated alkyl substances (PFAS) Analysis, Project Manager	(916) 673-1520	(submitted through APPL)
Val Mallari	Air Technology Laboratories, Inc.	Air Laboratory Project Manager	(626) 964-4032	vmallari@airtechlabs.com

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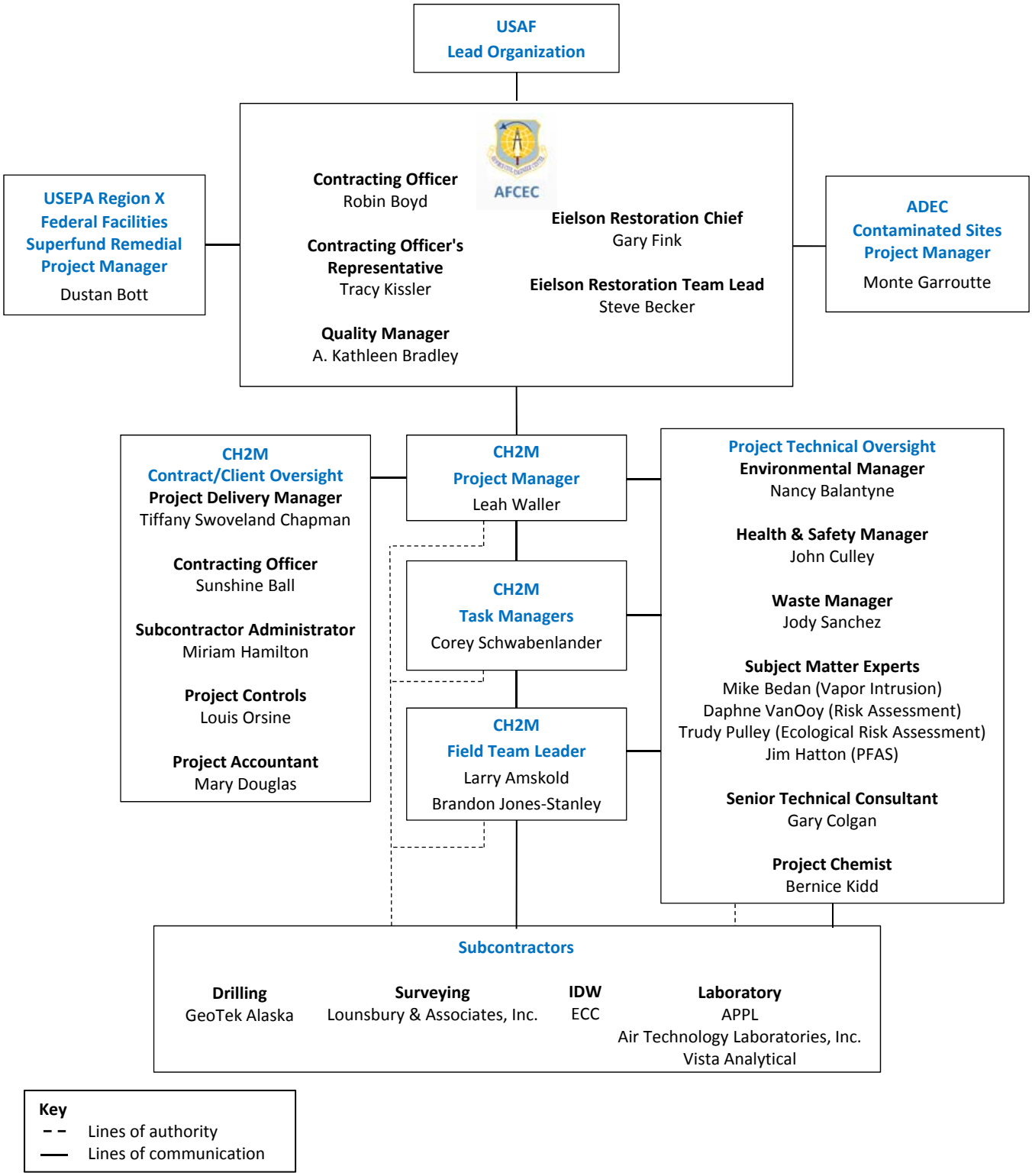
Worksheet #3 & 5 – Project Organization and QAPP Distribution (Continued)

The project organizational chart is presented below.



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Worksheet #4/7/8 – Personnel Qualifications and Sign-Off Sheet

The following key project personnel from each organization will review the applicable sections of this QAPP.

Name	Project Title/Role	Personnel Qualifications or Special Training
Prime Contractor/CH2M		
Leah Waller*	PM	B.A., Biology 21 years of experience
Corey Schwabenlander*	TM, Quality Manager	B.S., Geology and Geophysics Professional Geologist in the State of Utah 15 years of experience
Berney Kidd*	Project Chemist	B.S., Chemistry 18 years of experience
Gary Colgan*	Senior Technical Consultant	M.S. Geosciences (Hydrogeology/Geochemistry) Professional Geologist in States of Utah and Wyoming 32 years of experience
Daphne Van Ooy	Subject Matter Expert (Human Health Risk Assessment)	M.S. Atmospheric Science 15 years of experience
Trudy Pulley	Subject Matter Expert (Ecological Risk Assessment)	M.S. Environmental Health/Toxicology 25 years of experience
Mike Bedan	Subject Matter Expert (Vapor Intrusion [VI] and Risk Assessment)	M.S. Environmental Science (Hazardous Materials Management and Risk Assessment Emphasis) 27 years of experience
Nancy Ballantyne	Environmental Manager	B.A. Geology 23 years of experience
John Culley	Health and Safety Manager	B.S. Environmental Management 20 years of experience
Jody Sanchez	Waste Manager	B.S. Geology 15 years of experience
Larry Amskold*	ADEC Qualified Environmental Professional	M. Sc, Geology, University of New Brunswick 11 years of experience

Name	Project Title/Role	Personnel Qualifications or Special Training
Annika Seay*	ADEC Qualified Environmental Professional	B.S., Geology, Tarleton State University 6 years of experience
Stacey Kehne*	ADEC Qualified Environmental Professional	B.S., Biology, Elon University, North Carolina, 14 years of experience
Jennifer Ulrich (Frame)*	ADEC Qualified Environmental Professional	B.S., Geology, Fort Lewis College-Durango, Colorado 4 years of experience
David Lubell*	ADEC Qualified Environmental Professional	B.A., Geology, North Carolina State University Professional Geologist in State of Colorado and Tennessee 18 years of experience
Katura Willingham*	ADEC Qualified Environmental Professional	B.S. Environmental Planning 11 years of experience
Brandon Jones-Stanley*	ADEC Qualified Environmental Professional	M.Eng, Environmental Engineering, Oregon State University Professional Engineer in the State of Oregon 10 years of experience
Rebecca Reyes*	ADEC Qualified Environmental Professional	B.S., Geological Sciences, University of Alaska Anchorage 3 years of experience
Mike Landon*	ADEC Qualified Sampler	Completion of the Alaska Forum's Environmental Technician Apprenticeship Program. 6 years of experience
Kristen Stevens*	ADEC Qualified Sampler	Certified Environmental Technician, Alaska Department of Labor, November 2014 6 years of experience
Subcontractors		
Greg Salata (APPL, Inc.)	Soil and Groundwater Laboratory/ Project Manager	On-file with Subcontractor's Human Resources
Jennifer Miller (Vista Analytical)	Subcontracted Laboratory to APPL/ Project Manager for PFAS Analysis	On-file with Subcontractor's Human Resources
Val Mallari (Air Technology Laboratories, Inc.)	Air Laboratory Quality Manager	On-file with Subcontractor's Human Resources
Scott Vojta (GeoTek Alaska)	Drilling PM	On-file with Subcontractor's Human Resources

Name	Project Title/Role	Personnel Qualifications or Special Training
Don Maloney (ECC)	Investigation-derived Waste (IDW) Project Manger	On-file with Subcontractor's Human Resources
Dean Cimmiyotti (Lounsbury & Associates, Inc.)	Surveying PM	On-file with Subcontractor's Human Resources

Note:

*Resume is included in Appendix A.

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Worksheet #6 – Communication Pathways

The following table describes the communication pathways and modes of communication that will be used during the project after the QAPP has been approved. The communication pathways presented below define the procedures for soliciting and/or obtaining approval between project personnel, between different contractors, and between samplers and laboratory staff. These procedures should be followed when any approved project activity requires real-time modifications to achieve project goals or a QAPP amendment must be obtained. Procedures for stopping work and responsible entities should also be identified.

Communication Drivers	Responsible Entity	Name	Phone Number	Procedure (Timing, Pathways, etc.)
Project scope changes	AFCEC Contracting Officer (CO) AFCEC COR AFCEC PM CH2M PM ADEC PM EPA PM	Robin Boyd Tracy Kissler Gary Fink Leah Waller John O'Brien Dustan Bott	(210) 395-8743 (210) 478-1819 (907) 552-8757 (916) 286-0336 (907) 451-2181 (206) 553-5502	AFCEC will inform the CH2M PM and appropriate regulatory agencies (ADEC, and EPA) of any project scope changes.
Revisions to QAPP	AFCEC PM ADEC PM EPA PM	Gary Fink John O'Brien Dustan Bott	(907) 552-8757 (907) 451-2181 (206) 553-5502	AFCEC, ADEC, and EPA will approve QAPP revisions before the changes are implemented.
Management of required project tasks	CH2M PM CH2M TM	Leah Waller Corey Schwabenlander	(916) 286-0336 (385) 474-8554	The CH2M PM and TMs will inform appropriate project staff (field and non-field) of tasks to complete and required completion date. The CH2M PM will communicate potential scope issues with AFCEC as well as task progress and resources/ information required to complete tasks.
Delay/change to field work and daily field update	CH2M PM CH2M TM	Leah Waller Corey Schwabenlander	(916) 286-0336 (385) 474-8554	The CH2M project staff will inform the PM and TM of any delays or changes to field work and of daily field progress. The CH2M PM will inform AFCEC of field work progress.
Changes in field conditions	AFCEC CO AFCEC COR AFCEC PM CH2M PM CH2M TM ADEC PM EPA PM	Robin Boyd Tracy Kissler Gary Fink Leah Waller Corey Schwabenlander John O'Brien Dustan Bott	(210) 395-8743 (210) 478-1819 (907) 552-8757 (916) 286-0336 (385) 474-8554 (907) 451-2181 (206) 553-5502	The CH2M PM will inform AFCEC of changes in field conditions and work to adjust approach, if necessary. Changes to scope or budget must be coordinated through the AFCEC contracting officer. Will communicate with the AFCEC PM within 24 hours of change in field conditions. AFCEC will inform EPA and ADEC of any changes in field conditions (e.g., modification of investigation locations greater than 30 feet, discovery of previously unknown contaminant sources, conditions that affect the sample collection procedures explained in this RI/feasibility study [FS] management plan)

Communication Drivers	Responsible Entity	Name	Phone Number	Procedure (Timing, Pathways, etc.)
				within 7 working days. Approval of changes may be verbal or electronic to expedite field work.
Environmental incidents or other unplanned field events.	CH2M PM	Leah Waller	(916) 286-0336	The CH2M PM will notify the AFCEC PM by phone as soon as possible or within 24 hours.
Reporting of laboratory data quality issues	CH2M Project Chemist	Bernice Kidd	(530) 229-3203	CH2M project chemist will communicate any issues related to data quality upon receipt of samples or during analyses and data validation to the CH2M PM and TM. If significant data quality issues exist, the CH2M PM will immediately notify the AFCEC PM. AFCEC PM will notify ADEC and EPA PMs within 7 working days. Approval of changes may be verbal or electronic to expedite field work.
Recommendations to stop work and initiation of corrective actions	AFCEC CO AFCEC COR AFCEC PM ADEC PM EPA PM CH2M PM	Robin Boyd Tracy Kissler Gary Fink John O'Brien Dustan Bott Leah Waller	(210) 395-8743 (210) 478-1819 (907) 552-8757 (907) 451-2181 (206) 553-5502 (916) 286-0336	CH2M and AFCEC have authority to stop work and initiate corrective actions should there be a reason to do so. Whoever stops work or initiates the corrective action will inform all other interested parties immediately. CH2M will notify AFCEC, and they will notify ADEC and EPA PMs, as required, of any stop work order that creates an imminent and substantial endangerment to health and welfare of personnel on site (Eielson) or in the surrounding area or to the environment.
Distribution of analytical data	AFCEC Quality Manager AFCEC PM ADEC PM EPA PM CH2M PM CH2M TM CH2M TM CH2M Project Chemist	A. Kathleen Bradley Gary Fink John O'Brien Dustan Bott Leah Waller Larry AmskoldCorey Schwabenlander Bernice Kidd	(210) 395-0560 (907) 552-8757 (907) 451-2181 (206) 553-5502 (916) 286-0336 (907) 762-1015 (385) 474-8554 (530) 229-3203	CH2M will receive all deliverables from the subcontracted laboratory and distribute data to AFCEC, ADEC, EPA, and any other interested parties (as directed by AFCEC). Validated data will be made available in accordance with the timeframes specified in the Federal Facility Agreement (FFA), unless these periods are extended by mutual agreement among the PMs (Eielson, ADEC, and EPA).
Communication with the public	AFCEC PM	Gary Fink	(907) 552-8757	AFCEC, with support from CH2M, will present information to the public, as needed, during public meetings and through press releases.

Worksheet #9 – Project Planning Session Summary

An RI/FS management plan scoping meeting for SS035 was held on December 13, 2017, with ACFEC, ADEC, EPA, and CH2M. The tables in this worksheet list meeting participants, topics discussed, and consensus decisions of the meeting.

Date of Planning Session: December 13, 2017

Location: EPA Conference Room, Seattle, WA

Purpose: SS035 Management Plan Scoping Meeting

Participants			
Name	**Affiliation**	**Title/Role**	**E-mail/Phone**
Gary Fink	AFCEC	Restoration Chief	gary.fink@us.af.mil (907) 552-8757
Dustan Bott	EPA	PM	bott.dustan@epa.gov (206) 553-5502
John O'Brien	ADEC	PM	john.obrien@alaska.gov (907) 451-2181
Leah Waller	CH2M	PM	leah.waller@ch2m.com (916) 286-0336
Corey Schwabenlander	CH2M	TM	corey.schwabenlander@ch2m.com (385) 474-8554
Brandon Jones-Stanley	CH2M	Lead Author	brandon.jones-stanley@ch2m.com (541) 768-3226
Amanda Rohrbaugh	TechLaw	EPA Consultant	arohrbaugh@techlawinc.com
Stan Pauwels	TechLaw	EPA Consultant	spauwels@techlawinc.com
Tim Sueltenfuss	Galen Driscol	Facilitator	tim@galendriscol.com (210) 323-7647

Comments/Discussion:

- An overview of the site, including a site description, proposed investigation area, and historic investigations, was provided. Proposed data quality objectives (DQOs) and information inputs for the RI were discussed. Information inputs consist of project screening levels (PSLs), validated historical laboratory data representative of current site conditions, background metals soil data, and data collected during the supplemental RI, which is planned for 2018 and 2019. Because of the presence of aquatic habitat in Garrison Slough Pond (GSP), PSLs proposed for sediment and surface water also considered ecological screening levels.
- Laboratory data considered representative of current site conditions consists of data collected from 2012 to the present, using the most recent data for each monitoring well and excluding data for soil/sediment samples that were excavated and historic surface water samples.

- A phased sampling approach for collection of soil, sediment, surface water, and groundwater samples was proposed, and the following changes to the proposed sampling locations were discussed:
  - Adding sample locations to the southwest of GSP where anomalies were identified by the geophysical survey.
  - Adding sediment sampling locations west of the granular activated carbon (GAC) treatment building to define the extent of potential polychlorinated biphenyl (PCB) contamination.
- The following was discussed regarding the two VI sampling events, one proposed for November 2018 and the second in February 2019 (shoulder and heating seasons):
  - The first VI sampling event could be conducted earlier because the weather in Fairbanks in November is equivalent to heating season conditions.
- Building 3228 (water treatment plant [WTP]) should be added to the VI investigation, in addition to Buildings 3460 and 3462, because it has office space and a basement and is located less than 100 feet from known volatile organic compound (VOC) contamination. Although Buildings 3460 and 3462 are located further than 100 feet from known VOC contamination, the utilidor connecting to these buildings cuts through known and potential VOC soil contamination, including an area believed to intersect GSP. The utilidor represents a potential preferential VI pathway.
- It was noted that the regulators would review the risk assessment approach further following the meeting and may provide comments at that time. A follow-up meeting may be scheduled if additional discussion regarding the approach is needed.
- EPA and ADEC requested 50 days for review of the draft RI/FS management plan.

Consensus Decisions:

- Add additional soil sample locations to the southwest of GSP near previously detected geophysical anomalies.
- Add sediment and surface water sample locations beyond the extent of the GAC treatment building/ PCB excavation and downgradient of drainage (concrete outfall, drainage swale).
- Action Items:
  - Confirm sample locations associated with the GAC construction that were not excavated and represent current site conditions (side wall, bottom of excavation).
  - Confirm presence of a utility line to the southwest of GSP.

Worksheet #10 – Conceptual Site Model

The SS035 conceptual site model (CSM) is provided in this worksheet. The CSM is used to identify data gaps and develop DQOs for the project and will be updated as new information becomes available. The recommended CSM template and guidance regarding the development of site-specific CSMs are available in the ADEC *Guidance on Developing Conceptual Site Models* (2017g), the United States Air Force (USAF) *Environmental Restoration Program Optimization (ERP-O) Guidance* (AFCEE, 2009), and ADEC *Procedures for Calculating Cumulative Risk* (2016). A location map for Eielson Air Force Base (AFB) is provided as Figure 10-1 (figures are located at the end of this worksheet). The location of SS035 is shown on Figure 10-2.

10.1 Eielson AFB Overview

This section provides an overview of the basewide site description, basewide operational history, and general CSM for Eielson.

10.1.1 Site Description, History, and Regulatory Background Information

10.1.1.1 Site Description and History

Eielson AFB (or Base) is located within the urban center of the Fairbanks North Star Borough, a county-scale municipality, approximately 23 miles southeast of Fairbanks, 9 miles southeast of the city of North Pole, and approximately 2.9 miles southeast of Moose Creek (Figure 10-1). It is in the Tanana River Valley on a low, relatively flat, floodplain terrace approximately 2 miles from the active river channel. The Base extends for 19,700 acres, most of which is forest, wetlands, lakes, and ponds beyond the approximately 3,650 acres that have been improved or partially improved, and are used for the bulk of Base activities (AECOM, 2013).

The Base is bordered on the north, east, and west by undeveloped military reservation lands. A mixture of commercial, light industrial, and residential areas, as well as recreational areas, have been developed in a narrow corridor along the Richardson Highway between the Base and Fairbanks. Moose Creek abuts the northern boundary, and the Salcha area lies a few miles south of the Base.

10.1.1.2 Operational History

Eielson AFB is an active military installation that has been used for military operations since its establishment in 1944. The mission of Eielson AFB is to train and equip personnel for close air support of ground troops in an arctic environment. Eielson AFB operations include industrial areas, aircraft maintenance and operations, an active runway and associated facilities, administrative offices, and residential and recreational facilities. Eielson AFB provides housing for resident military personnel and their dependents, as well as employment and services for civilians from the surrounding area.

10.1.1.3 Regulatory Background

In 1980, Congress enacted the CERCLA (i.e., Superfund). CERCLA outlines the responsibility for identifying and remediating contaminated sites in the United States and its possessions. The CERCLA legislation identifies the EPA as the primary policy and enforcement agency regarding contaminated sites.

The 1986 Superfund Amendments and Reauthorization Act (SARA) extends the requirements of CERCLA and modifies CERCLA with respect to goals for remediation and the steps that lead to the selection of a remedial process. Under SARA, technologies that provide permanent removal or destruction of a contaminant are preferable to an action that only contains or isolates the contaminant. SARA also

provides for greater interaction with public and state agencies and extends the EPA's role in evaluating health risks associated with contamination.

Under SARA, early determination of Applicable or Relevant and Appropriate Requirements is required, and the consideration of potential remediation alternatives is recommended at the initiation of a RI/FS. SARA is the primary legislation governing remedial action at past hazardous waste disposal sites.

Executive Order 12580, adopted in 1987, gave various federal agencies, including the United States Department of Defense (DoD), the responsibility to act as lead agencies for conducting investigations and implementing remediation efforts when they are the sole or co-contributor to contamination on or off their properties.

Eielson AFB was placed on the National Priorities List on November 21, 1989. This listing designated the facility as a federal Superfund site subject to the remedial response requirements of CERCLA, as amended by SARA. In May 1991, the USAF, ADEC, and EPA entered into the FFA, under CERCLA Section 120 (USAF, 1991a), which established the procedural framework and schedule for developing, implementing, and monitoring CERCLA response actions.

Although PFAS are not listed as CERCLA hazardous substances (Title 40, code of Federal Regulations, Part 302, Table 302.4), PFAS are being investigated in accordance with DoD Instruction 4715.18, "Emerging Contaminants (ECs)" (DoD, 2009), and the *Interim USAF Guidance on Sampling and Response Actions for Perfluorinated Compounds at Active and Base Realignment and Closure (BRAC) Installations* (USAF, 2012), and the *SAF/IE Policy on Perfluorinated Compounds of Concern* (USAF, 2016). In addition, ADEC adopted cleanup levels (18 Alaska Administrative Code [AAC] 75 Table B-1 and Table C) for perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in soil and groundwater on November 6, 2016 (ADEC, 2017a).

10.1.2 Demographics and Land Use

Land surrounding Eielson AFB is primarily used for military training associated with Fort Wainwright, an active United States Army installation located northwest of Eielson AFB. The United States Army owns the land north and east of Eielson AFB and west of the Tanana River. Eielson AFB owns the land west to Piledriver Slough. The land located between Piledriver Slough and the Tanana River is privately held. The towns of North Pole and Moose Creek are located within 10 miles of Eielson AFB and have a combined population of approximately 3,000 residents.

10.1.3 Climate

Eielson AFB is located in the interior of Alaska in an area that has a sub-arctic climate. These climatic conditions are characterized by long cold winters and short warm summers. The extremes in temperature have ranged from -64 degrees Fahrenheit (° F) in the winter to 93° F in the summer, with a mean annual temperature of 26° F. The area receives low annual precipitation. The average annual rainfall at Eielson AFB is 13.1 inches, with approximately 60 percent occurring during the warmer months of June through September. The average annual snowfall is 73.5 inches.

10.1.4 Ecology

The natural ecosystem at Eielson AFB is characterized as lowland spruce/hardwood forest. Dense and open stands of evergreen and deciduous trees include black and white spruce. Shrubs include willow, alder, dwarf birch, low-bush cranberry, and blueberry. Sedges and bog cranberry occur along small bogs and muskegs. Some riparian vegetation is present along the banks of Garrison Slough. Wildlife species prevalent at Eielson AFB include moose, black bear, owl, grouse, ptarmigan, duck, and geese. French Creek and Piledriver Slough support arctic grayling and other fish; fingerling silver salmon are stocked

annually in Moose Lake and 28-Mile Pit. No threatened or endangered plant or animal species reside on Eielson AFB (Von Rueden, 2008).

10.1.5 Topography

Eielson AFB was constructed on the floodplain of the Tanana River. The floodplain is a relatively flat surface with meandering streams and a complex network of shallow swales. Approximately 89 percent of the Base is fault alluvial floodplain with elevations ranging from 520 to 556 feet. The remaining 11 percent of the Base occurs in the uplands along the eastern edge of the valley. Elevations in the main industrial area surrounding the flight line range from 548 to 556 feet. In the uplands at the northeast extent of the Base is Engineer Hill, which reaches 1,000 feet above mean sea level. The highest elevation is 1,125 feet, which occurs on Quarry Hill in the uplands at the southeastern corner of the Base (AECOM, 2013).

10.1.6 Geology

Eielson AFB is located in the Tanana Basin, in the valley of the Tanana River, bordered on the north by the Yukon-Tanana Upland, which is characterized by rolling hills and small mountains, and the Alaska Range to the south. In this area, Quaternary sediments consisting of loess are found on the low hills and lower slopes, some of it reworked and redistributed down slope, and of alluvium found on the valley bottoms.

Consolidated rocks in the area of Eielson AFB are part of the Birch Creek Schist of Precambrian age. This unit is primarily slate to schistose, although it includes quartzite and quartz veins (Cederstrom, 1963). The schist weathers to silt and clayey silt. The weathering product has been described as yellow clay in drill logs. The weathering zone may be relatively thick, 150 feet or greater. Because thick sediment accumulations are present in the Tanana Basin, bedrock is several hundred feet deep in the middle of the valley.

In the Eielson AFB area, the low hills and lower slopes consist primarily of Quaternary loess sediments, with shallow or outcropping bedrock where sediments are thin or not present. Some of these sediments have been reworked and redistributed downslope. The valley floor consists primarily of alluvium. Sedimentary deposits overlie the Birch Creek Schist in much of the area surrounding Eielson AFB. The most recent glaciation occurred during the Late Pleistocene (Wisconsinan glaciation), at which time the ice sheet advanced nearly to the Tanana River. During glacial retreat, outwash and alluvial fans were deposited to the south and west of the river. This glacial environment created extreme changes in surface water flow rates: high flow created by melt water and low flow when no melt water was available. As a result, the Tanana is braided with multiple channels that wander across the valley, leaving abandoned channel belts.

The prevailing wind direction appears to have been from the west, blowing silt-size particles from the alluvial fans and plastering them on the hill slopes of the Tanana Uplands, east of Eielson AFB. These are well sorted, massive silt deposits with little jointing or stratification and are thickest near major rivers draining glaciated areas (PeWe, 1975). Along the hill slopes and underlying the loess are sediments deposited by solifluction occurring in periglacial settings where water-saturated soil is moved downslope with melt water. Weathered bedrock fragments may be included in the reworked material. This solifluction layer is widespread and inactive and has been referred to as the Tanana Formation (PeWe, 1975). The valley-fill deposits of the Tanana Basin are complex and heterogeneous, consisting of alternating sand, gravel, and silt (Cederstrom, 1963). These braided river deposits are composed of variable gradations of fine and coarse material. Generally, individual lenses are less than 20 feet thick. Many structures found in these deposits are small-scale and cannot be correlated over great distances.

Today, perennially frozen ground is not usually continuous over wide areas on the valley floor. The thick masses of permafrost (where present) may thin laterally, either gradually or abruptly, generally where a stream or the course of a former stream is approached. Where thick permafrost has been penetrated by wells in Fairbanks, the mass is ordinarily solid, and apparently unfrozen layers are absent. Near the edge of the frozen mass, however, lateral melting at different rates has produced a sawtooth pattern in cross section.

Eielson AFB is in the area of an abandoned river-channel belt and the subsurface underlying most of the Base consists of braided river deposits. These deposits are complex in structure but similar in lithology. In the Tanana River Valley, these deposits are 300 feet thick or greater. In the developed portion of the Base, fill material, generally described as silty sand and gravelly sand, was used during construction. This material was quarried nearby and is lithologically similar to natural soil although the sedimentary structures would have been obliterated. Only the upper part of the floodplain sediments has been explored, in some areas less than 30 feet. These sediments consist primarily of gravelly sand and sandy gravel (AECOM, 2013).

10.1.7 Hydrogeology and Groundwater Use

The Birch Creek Schist underlies the unconsolidated, sedimentary deposits in the vicinity of Eielson AFB. However, the unconsolidated deposits do not extend far up the hill slopes. Groundwater flows down the hill slopes within the Birch Creek Schist and within the overlying sediments of the valley fill toward the basin. Alluvial fans fine toward their distal ends. These fan deposits are typically much finer than the braided river deposits encountered at the Base, causing the boundary effect. However, the thickness of the alluvial fans is unknown. It is likely that at least a portion of the fans has pushed out over older braided river deposits. If this is the case, the groundwater flow direction in the deep part of the aquifer could be more westerly than the shallow flow direction (AECOM, 2013).

The Tanana Basin Aquifer is composed of a heterogeneous mixture of gravelly sands and sandy gravels. While very permeable, this heterogeneity causes local changes in groundwater flow velocity. Groundwater depths range from the ground surface in wetland areas to 10 feet below ground surface (bgs) in developed areas of Eielson AFB, with seasonal fluctuation ranges up to 2 feet (USAF, 1995c), although larger fluctuations may occur.

Recharge to the Tanana Basin aquifer is from precipitation, snowmelt, and infiltration from stream beds. Historical water-level data indicate that recharge typically increases from April through May, often beginning in late March and continuing through mid-June, indicating recharge from snowmelt and from high water levels in the rivers and streams. Water-level declines begin in July or August. The largest recharge to the aquifer is from the river during periods of high flow. There also is recharge from the Birch Creek Schist from groundwater flowing down the hill slopes to the valley. The wetlands at the foot of the uplands, to the east of Eielson AFB, are likely fed from this source and precipitation perched on permafrost. Therefore, the wetlands also may lose water to the Tanana Basin aquifer.

Water levels in the Tanana Basin aquifer vary seasonally, rising during snowmelt and declining in winter. Analysis of river stage elevations compared with groundwater levels indicates that there is little separation between the two (less than 0.2 foot), although data are limited. Based on these data, the sloughs at or near Eielson AFB are likely to be at the same elevation as the groundwater. On the eastern side of Eielson AFB, wetlands likely recharge groundwater.

In general, groundwater flow is to the north-northwest, turning more westerly to the north, paralleling the sloughs. This parallel flow pattern indicates that the overall groundwater flow is more influenced by aquifer boundaries than the tendency to receive recharge from or discharge to the sloughs. The aquifer is bounded by lower permeability schist and alluvial fans. These features act hydraulically as no-flow boundaries, though a small amount of groundwater is present in both. This hydraulic boundary effect is

the result of the contrast in permeability, the schist and alluvial fans being low, and the braided-river deposits being very high. Therefore, the shape of the valley controls the overall direction of groundwater flow. However, local perturbations in the contours created by changes in river stage may occur.

The unconfined aquifer under Eielson AFB extends from near the ground surface to a depth of approximately 250-300 feet. Generally, across Eielson AFB, groundwater in the unconfined aquifer flows to the north northwest with a horizontal gradient of 0.001 foot per foot across Eielson AFB (USAF, 2003). Groundwater flow is influenced by surface water bodies, including Garrison Slough, and pumping associated with water supply wells.

Groundwater is the principal source of potable and non-potable water at Eielson AFB and in nearby communities. Eight groundwater drinking wells are located on Eielson AFB, and a ninth well provides drinking water strictly for the military working dogs. Of the eight drinking water wells, five are primary and supply the Base with drinking water, a sixth is a standby/backup well to the main drinking water system, and two (one at Hursey Gate and one at the Bear Lake Family Camp) supply single facilities. The wells that supply the primary drinking water distribution system range in depth from 89 to 160 feet and have pumps set between 42 and 106 feet deep (although the depth of one pump is unknown). The wells can produce 1,000 gallons per minute, except for one that is capable of producing 2,500 gallons per minute (Hollowell, 2015). The five primary Base drinking water wells and standby/backup well are connected to the public water system for Eielson AFB, which is a community water system. The Alaska Public Water System ID for this system is 370625. The federal Public Water System ID is AK2370625. Localized contamination of the aquifer has been identified in the industrial area of the Base (USAF, 2007).

Quarterly sampling of the public water system for PFOA and PFOS has been conducted since early 2015 (USAF, 2017b). A temporary GAC treatment system was added to the public water system treatment facility to treat PFAS, and sampling in August 2016 showed the GAC system effluent was below the health advisories (HAs) for PFOS and PFOA (USAF, 2017b). The two temporary GAC vessels are in the process of being made a part of the permanent system and are currently operational. ADEC issued the Interim Permit to Operate on December 13, 2017.

10.1.8 Surface Water

Although much of the immediate area of Eielson AFB has been built up with fill material, the Base is surrounded by large areas of forested wetland and numerous small lakes and ponds. The area is relatively flat and stormwater drainage occurs as sheet flow across much of the Base. Sheet flow primarily collects in low areas or drains into Garrison Slough. Garrison Slough flows south to north through the main area of the Base, east of the flightline, and drains to the wetlands north of the Base, which ultimately drain to the Tanana River.

10.1.9 Background Metals Concentrations

To evaluate background metals in soil across the base, 20 soil samples were collected from fluvial sediments characteristic of riverine deposition, and 20 soil samples were collected from loess characteristic of wind-blown deposition from locations not impacted by anthropological activities and analyzed for target analyte list metals (USAF, 2014b). Sample results were used to calculate background threshold values (BTVs) for metals in fluvial and loess soils in accordance with EPA Guidance (EPA, 2010a). The calculated BTVs for fluvial and loess soils are presented in Table 10-1 (tables are located at the end of this worksheet).

To evaluate background metals in groundwater, 13 background monitoring wells were installed and 2 existing monitoring wells were sampled (USAF, 2014a). A total of 26 groundwater samples were

collected from the 14 monitoring wells in fall 2012 and 12 monitoring wells in summer 2013. These wells were located upgradient or cross-gradient of known contaminated sites. The sample results were used to calculate BTVs for metals in groundwater in accordance with EPA Guidance (EPA, 2010a). Table 10-2 summarizes the BTVs calculated for the background groundwater samples.

10.2 SS035-specific Overview

10.2.1 Site Description and Location

SS035 (ADEC Contaminated Sites Database Hazard ID 392) is part of Operable Unit (OU) 4 and is located within an industrial area in the central portion of Eielson AFB, west of Central Avenue (Figure 10-2). The investigation area includes GSP, the surrounding grassy area extending to the east of Central Avenue and west of Buildings 3460 and 3462, and the area adjacent to the WTP (Buildings 3226, 3227, and 3228). It is bounded to the northeast by ST011. GSP and the surrounding investigation area is approximately 22 acres, with a relatively flat surface gradient. GSP is approximately 7.8 acres. Garrison Slough flows north into the southern portion of GSP and then flows from GSP to the northeast. Additional drainage occurs to GSP from the east and the west. GSP has also historically received small volumes of overflow water from the WTP pond, located northeast of GSP.

A utility conduit (utilidor) runs roughly parallel to and east of Central Avenue and west of Buildings 3460 and 3462. A utility conduit appears to intersect GSP and continue offsite towards the southeast where it intersects the larger utilidor.

SS035 location information is provided in Exhibit 10-1.

Exhibit 10-1 SS035 Location Information

Latitude (NAD 83 UTM Zone 6N)	Longitude (NAD 83 UTM Zone 6N)	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
64.665392	-147.083669	1/24/2018	ArcGIS	Mid-point GSP	Not Applicable	0.01 meter

NAD = North American Datum

SS035 was used historically as a mixing area for asphalt and a base for road oiling activities, and may have been used for mixing pesticides and cleaning pesticide-spraying equipment (USAF, 1982). The former asphalt mixing area now consists of a grass-covered field. Empty asphalt-cement drums were reportedly disposed along the shoreline of GSP (USAF, 1982; 1991a). Over 1,000 drums were deposited in layers, at least three drums high, within GSP and along the shoreline (BEM, 2014). Sediment and a total of 1,120 drums were subsequently removed in 1997, 2003, 2014, and 2016. Additional drums and debris remain within GSP and along the shoreline. A small heat-generating plant was operated on the site in the late 1940s and early 1950s. The plant was originally coal-fired but was later converted to diesel fuel. Diesel-fuel storage was reportedly aboveground.

A remedy was selected for SS035 under CERCLA in the Record of Decision (ROD) for OUs 3, 4, and 5 (USAF, 1995b) and was amended in 2001 (USAF, 2001). Sediment and a total of 1,120 drums were subsequently removed in 1997, 2003, 2014, and 2016. Additional drums and debris remain within GSP and along the shoreline. In 2016, PCBs were detected in soil during expansion of the WTP, and soil was excavated. Institutional controls are in place and prevent fishing onsite (USAF, 2014c).

Based on previous investigations, the subsurface profile at SS035 consists of a surficial fill layer, or disturbed soil underlain by native alluvial soil. The fill or disturbed soil is typically 10 feet thick and varies

from sandy silt to sandy gravel, with silty sand and sandy silt being the most common soil types. The relative density of the disturbed soil or fill is typically loose or very loose. Organic material, treated wood scraps, and other debris were observed in the fill material during historical boring activities. The alluvium beneath the fill consists of loose to dense sand and gravel to the depths explored (USAF, 2014c).

10.2.2 Groundwater

Groundwater beneath the site is encountered at approximately 6 to 11 feet bgs with interpreted flow to the north-northwest along the northern and eastern portions of Source Area SS035 and localized westward flow to Garrison Slough (Figure 10-2)

The hydrogeology at SS035 is affected by its proximity to GSP, and there is likely some groundwater recharge to GSP based on proximity to GSP. Based on a slug test conducted in monitoring well 35M02 in 1988, aquifer hydraulic conductivity was estimated at 58 feet per day. No recent hydraulic conductivity data are available; however, this parameter is not expected to be variable on this timescale. Water levels were measured at Source Area SS035 (then identified as Site 35) in August and October 1988. The groundwater levels fluctuated between 0.1 and 0.2 feet between August and October 1988, and significant changes in the groundwater flow direction and hydraulic gradient occurred. The flow direction changed from northwest in August to northeast in October 1988, a shift of approximately 110 degrees. The hydraulic gradient also changed from approximately 1.6 feet per mile to the northwest to approximately 8.8 feet per mile (USAF, 1989).

10.2.3 Surface Water

GSP receives occasional surface water flow from Garrison Slough (Hazard ID 386), an engineered drainage channel that runs through the developed portion of Eielson AFB, and also discharges water to Garrison Slough. Upstream of GSP, Garrison Slough contains shallow standing water and is dry during periods of low precipitation, but fills with surface drainage water after storm events and flows to GSP. Downgradient of GSP, Garrison Slough has a visibly moving current as GSP surface water is discharged to Garrison Slough (USAF, 2014c).

Overflow water from the WTP pond to GSP is low enough that it has minimal impact on surface water elevation and water flow through GSP.

Other factors potentially affecting the surface water elevation are seasonal runoff peaks, ice blocks recorded in the springtime along Garrison Slough, and beaver dams in the slough that could locally raise the surface water elevation by approximately 2 feet; however, the USAF routinely maintains the slough, so any of these variations in surface water elevation are limited in duration (USAF, 2014c).

Records indicate that GSP functions as a sediment deposition area, because of its characteristic low flow velocities, instead of a sediment transfer area where deposited sediment is removed periodically by downstream flow to areas of the Garrison Slough (HLA, 1992). Over the years, the low-flow velocities resulted in sediment deposition and the partial burial of submerged drums within GSP.

10.2.4 Summary of Previous Investigations and Response Actions

Investigation activities—including geophysical surveys and soil, sediment, surface water, and groundwater sampling—and drum removal activities have been conducted at SS035 since 1988.

10.2.4.1 1988 to 1990 Field Investigations and Geophysical Surveys

Early investigations of SS035 were performed under the Installation Restoration Program and included geophysical and soil-gas surveys, installation of monitoring wells, and slug tests; and collection of soil, sediment, surface water, and groundwater samples (USAF, 1995b). Total petroleum hydrocarbons (TPH),

pesticides, and lead were detected in soil, and TPH was detected in sediment. Toluene and cyanide were detected in groundwater, and trichloroethene and benzene were detected in both groundwater and surface water.

The geophysical surveys conducted in 1988 and 1990 identified three anomalous areas (Anomalies A, B, and C shown on Figure 10-2) along the east and southeast shoreline of GSP where buried drums and other materials exist.

A fourth drum burial area was identified near the Building 3460 and the Central Avenue utilidor connection during the 1990 geophysical survey; however, this area was not included in the Interim Remedial Action. Sample results from one of the drums removed from the fourth burial area reported compounds indicative of waste oils and waste solvent mixtures used in historic road oiling operations (BEM, 2014).

10.2.4.2 1989 Drum Removal Activities

In the spring of 1989, a contractor working on a building project adjacent to the site and to the northeast (Figure 10-2) uncovered several drums buried along the Central Avenue utilidor. An unknown number of drums were removed by the Eielson AFB contractor, and the likelihood that additional drums were buried along the utilidor was noted (USAF, 1992).

10.2.4.3 Remedial Investigation/Feasibility Study

In 1992, an RI was conducted at SS035 as part of the larger OUs 3, 4, 5 and RI (USAF, 1995b). Eight surface soil samples and twelve groundwater samples were collected at SS035 and analyzed for VOCs, pesticides, PCBs, TPH, and lead. The groundwater samples were also analyzed for arsenic. The groundwater samples were collected from four temporary groundwater probes and eight monitoring wells.

Neither VOCs, pesticides, or PCBs were detected in groundwater above the method detection limits (MDLs). Lead was detected in several samples at concentrations up to the federal drinking water action level (15 micrograms per liter). However, these detections did not account for background lead present at Eielson AFB.

In soil, TPH, dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethane (DDD), and dichlorodiphenyldichloroethylene (DDE), and/or lead were detected at several locations. The lead results were less than the BTV for lead at Eielson AFB. DDT was detected at concentrations exceeding the preliminary remediation goals, which were the more conservative of either Alaska drinking water standards or EPA water quality criteria (USAF, 1995c).

The results of the RI were used to develop remedial alternatives for the OU 3,4,5 Feasibility Study (USAF, 1995c). Alternatives included no action, institutional controls, soil capping, and soil and drum removal.

10.2.4.4 1995 Record of Decision

SS035 is part of OU4 and the ROD for OUs 3, 4, and 5 (USAF, 1995a). DDD, DDE, DDT, aldrin, alpha-benzene hexachloride (BHC), chlordane, and heptachlor epoxide were identified as contaminants of concern (COCs) in soil and 1,2-dichloroethane, DDT, benzene, and beta-BHC in groundwater. The selected remedy for SS035 was installation of a soil cover over the surface soil contamination; future removal of drums if they were determined to be a continuing source of contamination; monitoring of surface water, sediments, and aquatic organisms to verify effectiveness of the soil cover; and monitoring of groundwater to verify contaminant concentrations remained below cleanup levels.

10.2.4.5 1996, 1998, and 1999 Sediment and Surface Water Sample Collection

In 1996, surface water and sediment samples were collected from GSP and analyzed for pesticides (BEM, 2014). Pesticides were not detected in surface water at concentrations greater than the laboratory MDLs. However, DDT, DDD, and DDE were detected in sediment at concentrations greater than the reporting limit. Additional sampling conducted in 1998 and 1999 detected DDD, DDE, and DDT above the reporting limit.

10.2.4.6 1997 Drum Removal Activities

In 1997, nineteen 55-gallon drums containing sediment and water were removed from GSP. The exact location of the removed drums was not documented. One of the removed drums contained petroleum related VOCs (toluene, ethylbenzene, and xylenes); chlorinated solvents (tetrachloroethene, 1,1,1-trichloroethane, and 1,1-dichloroethene); and metals (barium, cadmium, and lead) (USAF, 1998).

10.2.4.7 1998 ROD Amendment

In 1998, the OUs 3, 4, and 5 ROD was amended (USAF, 2001), removing the soil cover from the remedy. Continued monitoring of surface water, sediments and aquatic organisms at the site was required to confirm contaminant concentrations remained at levels that are protective of human health and the environment.

10.2.4.8 2002 Sediment and Surface Water Sample Collection

In 2002, both sediment and surface water samples were collected along a transect running along the center of GSP. DDD was detected in one surface water sample and low-level concentrations of DDT, DDE, and DDD were detected in the sediment samples (BEM, 2014).

10.2.4.9 2003 Drum Removal Activities

In 2003, two unlabeled drums of asphalt emulsion were removed from an area along the eastern edge of the pond. Four additional drums discovered at the time were left in place (EA, 2003). Samples from the two removed drums contained petroleum-related VOCs, semi-volatile organic compounds (SVOCs), metals, and DDT (EA, 2003; USAF, 2014c).

10.2.4.10 2014 Conceptual Site Model Update

A field investigation was conducted in 2012 and 2013 to further characterize the source area and facilitate a CSM update to support future remedial actions and in compliance with the USAF accelerated site completion policy (USAF, 2014c). Tasks included geophysical and bathymetric surveys; installation of five additional monitoring wells; collection and analysis of groundwater, surface water, surface soil, and sediment samples; and a passive soil vapor survey.

Surface soil, sediment, surface water and groundwater samples were analyzed for pesticides, VOCs, SVOCs, and metals. Several pesticides, including DDD, DDE, and DDT, plus petroleum hydrocarbons and metals were detected in surface soil, sediment, surface water, and groundwater at concentrations above one or more of their respective project-specific screening levels.

Three anomalies were reinterpreted based on the 2012 geophysical results. Anomaly A, located within and along the southeast shoreline of GSP, consists of buried drums or a mix of debris and drums. Anomaly B was interpreted to be primarily a utility conduit that appears to intersect the pond and continue offsite towards the southeast where it intersects a larger utility conduit that runs roughly parallel to Central Avenue. However, there is a smaller anomaly adjacent to Anomaly B that was interpreted as buried debris. Because of the anomaly's proximity to GSP, the confirmed and interpreted drum locations within GSP and along the shoreline adjacent to this anomaly, this smaller anomaly was

considered as potentially resulting from buried drums or a mix of debris and drums. Anomaly C, located on the eastern shoreline of GSP, was interpreted to contain drums.

10.2.4.11 2014 Drum Removal and Shore Stabilization

Drum removal activities conducted in September 2014 included clearing and stabilizing approximately 5,900 square feet of vegetation along the eastern GSP shoreline; installing a 10-millimeter oil-resistant, polyethylene liner 3 feet below GSP water surface at the shoreline; removing 50 submerged drums; and collecting and analyzing surface water, sediment, and waste characterization samples (BEM, 2014).

Drums were removed using a dive crew to maneuver each submerged drum into an overpack container, sealing the lid of the overpack container underwater, and lifting the overpack drum from the pond bottom using a floatation device. Drums had approximately 3-inch holes on the sides and an asphalt/tar-like substance on the interior. Several drums also contained thick oil and emitted a strong petroleum odor (BEM, 2014).

Sediment and surface water samples were collected to evaluate if the interim removal actions resulted in the dispersion of contaminated sediment to the surrounding areas of GSP, located outside the silt curtain surrounding the removal area (BEM, 2014). Ten surface water samples (SS035-SW01 through SS035-SW10) were collected in September 2014 from a designated point approximately 100 feet downstream of the drum pile on the exterior of the silt curtain. These samples were analyzed for diesel-range organics (DRO), residual-range organics (RRO), VOCs, polycyclic aromatic hydrocarbons (PAHs), metals, pesticides, and PCBs. VOCs were detected at concentrations below their surface water evaluation criteria. PAHs, pesticides, PCBs, and metals were detected at concentrations exceeding at least one of their respective surface water screening criteria, but below the lowest ecological screening criteria.

After drum removal effort was completed, 20 sediment samples were collected outside and downstream of the silt curtain around the removal area. The upper 1 foot of sediment was collected and analyzed for DRO, RRO, VOCs, PAHs, metals, pesticides, and PCBs. VOCs were detected at concentrations below their screening criteria. No PAHs, pesticides, and PCBs were detected above their respective detection limits; however, the laboratory detection limits were above the National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Tables Threshold Effect Level (TEL) and Probable Effect Level. Six PAHs were detected at concentrations exceeding their respective NOAA TEL. Several metals, including arsenic, cadmium, and zinc, were detected at concentrations exceeding the NOAA screening levels.

10.2.4.12 2016 Drum Removal and Test Pit Sampling

During drum and sediment removal activities in 2016, a total of 1,045 drums were removed from Area A and Area C (within GSP). Of these drums, 1,042 were identified as 1976 Resource Conservation and Recovery Act (RCRA) -empty and recycled. Two asphaltic waste drums were identified as nonhazardous waste. One drum with Earl Foam was identified as hazardous waste. In addition to drum removal, a total of 1,040 tons of visually-impacted contaminated soil and sediment were excavated from Areas A and C. Additional drums and debris remain within GSP along the eastern and northern shoreline and Area A.

Soil samples were collected to characterize the Area A excavation limits and the remaining contaminants present in soil and sediment after drum removal in Area C. Confirmation soil samples were collected from the base and sidewalls of the excavation areas to determine what contamination remained following excavation. Petroleum hydrocarbons, pesticides, VOCs, and SVOCs/PAHs were detected in Areas A and C soils at concentrations above screening levels.

A total of 10 test pits were advanced to investigate anomalies and characterize potential contamination along the eastern perimeter of GSP, both inside and outside of the Area C boundary. One soil sample

was collected from each test pit at depths between 6 and 11 feet bgs. Petroleum hydrocarbons, pesticides, VOCs, and SVOCs/PAHs were detected at concentrations above screening levels.

10.2.4.13 Granular Activated Carbon Construction at the Water Treatment Plant

In 2016, before the expansion of the water treatment plant located adjacent to GSP, a soil investigation was conducted. Twenty-two soil borings were advanced to a depth of 7 feet bgs within and around the proposed GAC facility building footprint, and soil samples were collected and analyzed for analyzed for PFAS, PAHs, pesticides, VOCs, and PCBs. VOCs and pesticides were detected at concentrations above the ADEC migration to groundwater cleanup levels. PFAS and PCBs were detected at concentrations above ADEC human health cleanup levels (ADEC, 2017a).

Between June 5 and 19, 2017, 167 cubic yards of contaminated soil was excavated from 0 to 3 feet bgs in areas overlying the previous soil boring locations with concentrations above ADEC cleanup levels (Bristol, 2017). Confirmation samples were collected from the bottom and sidewalls of the excavations, but no survey data was collected for the sample locations. PCBs and select PAHs were detected at concentrations above the ADEC human health cleanup level (ADEC, 2017a), and naphthalene and PFAS were detected at concentrations above the ADEC migration to groundwater cleanup levels. Because of the presence of contamination within the sidewall confirmation samples, an additional 188 cubic yards of potentially contaminated soil was excavated between July 17 and 20, 2017, from areas within or surrounding the edge of the planned building footprint. Confirmation samples were not collected from the additional excavations.

10.2.4.14 ST011

ST011 is located to the east of the northern end of GSP and northeast of the WTP (Figure 10-2) and is a part of OU2. Diesel contamination was identified at ST011 in 1975, likely originating from a 4-inch fuel pipeline that extended from the bakery to several diesel tanks located to the east of Central Avenue. In 1977, three passive skimming trenches and three culverts were installed between Facility 3224 and Garrison Slough, and the 4-inch fuel pipeline was removed. Four monitoring wells were installed at ST011. The OU2 ROD specified that wells be sampled for five years under the sitewide program to confirm the absence of contamination (USAF, 1994). Groundwater sampling results remained below the final remediation goals selected in the ROD, and the site was recommended for closure in 2002 (USAF, 2003).

Groundwater samples collected in 2012 under the Installation-wide Management Program (IWMP) contained benzene and DRO above groundwater cleanup levels (USAF, 2014a). Results from the 2015 IWMP identified DRO and benzene contamination in two wells located upgradient of the skimming system (USAF, 2016d).

In 2016, three vertical aluminum culverts and several pieces of piping remaining on the ground surface and subsurface piping near the culverts were decommissioned, revealing an unregulated underground storage tank (UST) and associated waste materials. Three primary analytical soil samples were collected from the floor following removal of the UST: one from below the center of the UST and two from the locations of highest photoionization detection (PID) readings, which were also located below the UST. The confirmation soil samples were analyzed for gasoline range organics (GRO), DRO, RRO, VOCs, PAHs, and RCRA metals.

Naphthalene and DRO were detected at concentrations above the ADEC migration to groundwater cleanup levels (0.038 milligrams per kilogram [mg/kg] and 250 mg/kg, respectively) in three analytical soil samples collected from the floor of the excavation. DRO results ranged from 6,200 to 14,000 mg/kg, with the highest concentration originating from the sample collected below the center of the UST. Naphthalene results ranged from 0.12 to 0.36 mg/kg, with the highest concentration originating from

the sample collected below the southwest end of the tank. Sample results for the excavation were also above ADEC cleanup levels for arsenic, chromium, and iron but were below the background level established for fluvial soil at Eielson AFB (USAF, 2014b).

10.2.4.15 Explanation of Significant Differences

In 2017, an explanation of significant differences (ESD) (USAF, 2018b) was prepared for SS035 and the OUs 3, 4, and 5 ROD (USAF, 1995a) and amended ROD (USAF, 2001). The ESD reinstated the provision for drum removal at SS035, which was originally included in the OUs 3, 4, and 5 ROD.

10.2.5 Nature and Extent of Contamination

The nature and extent of soil, sediment, surface water and groundwater contamination at SS035 was evaluated by comparing data collected from previous field activities, from 2012 to 2017, to the PSLs for this RI/FS management plan (Tables 15-1 through 15-4).

10.2.5.1 Surface and Subsurface Soil

Soil sampling conducted since 2012 included collection of surface soils, test pit samples and soil confirmation samples following 2016 drum removal and excavation activities at anomaly Areas A and C. The majority of sampling has been conducted adjacent to GSP along the eastern shoreline and near the anomalies detected as part of the geophysical survey. Metals, pesticides, PAHs, SVOCs, TPH, and VOCs are present in surface and subsurface soil, up to 11 feet bgs, at concentrations greater than PSLs (Table 10-3, Figures 10-3A through 10-3G). The highest concentrations of pesticides, VOCs, and PAHs were detected in areas where suspected buried drums are present (shoreline of GSP and anomaly areas), with concentrations generally decreasing with distance from the shoreline of GSP. Metals concentrations greater than PSLs are widespread throughout the surface and subsurface soil.

Confirmation soil samples were collected to characterize the Area A excavation limits and the remaining contaminants in soil after drum removal in Area C. Petroleum hydrocarbons, pesticides, VOCs, SVOCS, and PAHs were detected in the Areas A and C soil confirmation samples at concentrations above the PSLs at depths up to 6.5 feet bgs (Table 10-3, Figures 10-3A through 10-3G).

In addition, a total of 10 test pits were advanced to investigate anomalies and characterize potential contamination along the eastern perimeter of GSP. One soil sample was collected from the base of each test pit at depths ranging from 6 to 11 feet bgs. Petroleum hydrocarbons, VOCs, and PAHs were detected at concentrations above the PSLs in the samples collected from three of the test pits. Pesticides were detected above the PSLs in two of the test pits.

The passive soil vapor survey conducted in 2012 provided additional information about the extent of VOC contamination in shallow soil (4 to 8 inches bgs). The passive soil vapor survey indicated somewhat elevated total volatile organic compounds (TVOCs) (which includes petroleum-related VOCs and chlorinated solvents) and TPH mass south and southeast of the southern tip of GSP (Figure 10-3H). Elevated results were not co-located with any of the surface soil samples collected for analysis, and indicate that VOC and TPH contamination may be present in other portions of this area where surface soil samples were not collected. TVOCs were also detected at lower levels in passive soil vapor samples collected in other areas of the site, likely reflecting the low-level VOC detections reported in surface soil samples, and supporting the finding that low-level VOC and TPH contamination is widespread at the site (Table 10-7 and Figure 10-3H).

PCBs (Aroclor-1254), PFOA and PFOS were detected in confirmation samples collected from the GAC excavation at concentrations above PSLs (ADEC migration to groundwater cleanup levels) (ADEC, 2017a). Additional excavation removed soil associated with side wall samples with PFOS concentrations above PSLs. As confirmation samples were not collected, it is unknown if further contamination extends

laterally. PFOS and PCBs were detected above PSLs in samples from the bottom of the northern excavation (3 feet bgs). No additional excavation was conducted in the bottom of the excavation. PCB, PFOA, and PFOS concentrations detected in the confirmation samples from the bottom of the northern excavation are presented in Table 10-3 and on Figure 10-4E.

10.2.5.2 Sediment

Sediment samples were collected from GSP during investigations conducted from 2012 to 2016. Sediment sampling conducted in 2012 as part of the CSM update included samples from 21 locations at depths from 0 to 1 and 1 to 2 feet below the sediment surface. Additional sediment sampling in 2014 focused on the southern portion of GSP with samples collected from 20 locations at depths from 0 to 0.5 feet below the sediment surface. The latest sediment sampling was conducted as part of the drum removal activities in 2016 along the eastern shoreline. Samples were collected from four locations around the perimeter of GSP from 0 to 0.5 foot below the sediment surface. Overall, sediment sampling results show that TPH, VOCs, PAHs, pesticides, and metals are widespread in the sediment of GSP at concentrations above PSLs (Table 10-4, Figures 10-4A through 10-4H). PCBs were only detected at three locations in the northern portion of the pond in the vicinity of the WTP. GRO was not detected in any sample.

10.2.5.3 Surface Water

DRO, RRO, and pesticides are widespread in historic surface water samples collected in GSP. Several metals (arsenic, iron, magnesium, and manganese) were also detected above PSLs (Table 10-5, Figures 10-5A through 10-5C). Metals may be related to the drums present in and around GSP and their contents, while others are likely naturally occurring (background) or from upstream sources. No GRO, VOCs, PAHs, or PCBs were detected above PSLs in surface water. Results from surface water sampling conducted in 2012 are presented in Table 10-5 and Figures 10-5A through 10-5C.

10.2.5.4 Groundwater

In 2012, groundwater samples were collected from all monitoring wells associated with SS035. Since 2014, sampling has been conducted annually at seven monitoring wells (35M01, 35M02, 35M04, 35M05, 35M06, 35M08, and 35M14) as part of the IWMP. See Table 10-6 and Figures 10-6A through 10-6D for sample results. Petroleum hydrocarbons were detected above PSLs in groundwater in 2012 but were not in more recent samples. VOCs were detected in groundwater above PSLs as recently as 2015, but were not detected above PSLs in 2016. Pesticides were detected above PSLs in groundwater in 2012 and 2014, but not in 2015 and 2016.

A variety of metals were present in groundwater at concentrations above PSLs in 2012. Since that time only lead has been analyzed as part of the IWMP. Lead has not been detected in the seven monitoring wells sampled.

10.2.6 Source and Release Mechanisms

SS035 was historically used for mixing pesticides and asphalt and for cleaning pesticide-spraying equipment (USAF, 1982). Drums and drum remnants remain buried at the site and have historically been identified as the primary ongoing source of contamination at SS035. A number of additional potential sources have been identified subsequent to the RI. The following potential sources of contamination at SS035 have been identified for further investigation in this supplemental RI:

- Leaks or spills of waste oils, solvents, contaminated fuels, and pesticides from buried or submerged drums remaining in GSP and along its shoreline

- Leaks or spills of waste oils, solvents, contaminated fuels, and pesticides from drums removed during historic removal actions (1989, 2003, 2014, and 2016)
- An unknown release of PCBs near the WTP
- Discharges of PCBs, PFAS, and/or hexavalent chromium from upgradient Garrison Slough

Empty asphalt-cement drums were reportedly disposed along the shoreline of GSP (USAF, 1982; 1991b). Sediment and a total of 1,120 drums were subsequently removed in 1997, 2003, 2014, and 2016. Additional drums and debris remain within GSP and along the shoreline. Geophysical anomalies identified during previous investigations (Areas A, B, and C; along the utilidor roughly parallel to Central Avenue and Buildings 3460 and 3462; and to the southwest of GSP) may represent additional drum disposal areas (Figure 10-2).

PCBs and PFAS have been historically detected in Garrison Slough (USAF, 2014c; USAF, 2017b). Blast media from the upstream Corrosion Control Building may have also migrated to Garrison Slough and is considered a possible source of chromium contamination to GSP (CH2M, 2017).

10.2.7 Potential Transport Mechanisms

The following transport mechanisms for potential contaminant migration from the impacted media were identified (USAF, 2012):

- Migration of contaminants in surface soil downward to subsurface soil via dissolved phase transport (e.g., solute leaching) in the vadose zone
- Erosion of surface soil, runoff, and discharge to surface water, sediment, or other areas of surface soil
- Deposition of suspended material in surface water, which becomes part of the sediment, and re-suspension of sediment, by which it becomes mixed with and transported by surface water
- Migration of contaminants from subsurface soil to groundwater via dissolution in infiltrating precipitation or direct partitioning into groundwater
- Volatilization of contaminants from the surface soil or surface water to the air
- Uptake of contaminants from the soil, sediment, or surface water by plants and animals

The first four of these transport mechanisms result in transfer of contaminants between the primary impacted media (surface and subsurface soil, sediment, surface water, and groundwater). It is difficult to distinguish whether these transport mechanisms are important at the site or whether the impacts observed are primary in nature. The last two transport mechanisms involve transfer of contaminants to other media, which become exposure media, as discussed in the following section.

10.2.8 Potential Receptors and Exposure Pathways

Exposure pathways—the means by which people, animals, and plants might come into contact with contaminants of potential concern (COPCs) in environmental media—were evaluated at SS035 in accordance with the *Guidance on Developing Conceptual Site Models* (ADEC, 2017g). The results of that evaluation are presented in the human health risk assessment (HHRA) and ecological risk assessment (ERA) work plans included in Appendix B and are summarized in Table 10-8.

10.2.8.1 Potential Human Receptors and Exposure Pathways

Potential exposure pathways are based on current and potential future land, surface water and groundwater use. The current land use for SS035 is industrial. Groundwater is currently used as a

drinking water source on Eielson AFB, and a drinking water well is located within the investigation boundary (well 3228). There is no current use of surface water at SS035 as a drinking water source. Exposure to surface water and sediment is considered insignificant for current receptors because the duration of any potential exposure would be short. Current and future industrial and construction worker and hypothetical future residential land use scenarios will be considered in the SS035 HHRA.

The following potential human receptors and exposure pathways are considered potentially complete:

Soil

- Current industrial workers could potentially be exposed to surface soil (0 to 2 feet bgs). Potentially complete routes of exposure to surface soil would include incidental ingestion, dermal contact, and inhalation of suspended soil particulates (fugitive dust) and vapors volatilizing from the soil surface to air.
- Future industrial workers could potentially be exposed to mixed-zone soils (0 to 15 feet bgs). Potentially complete routes of exposure to mixed-zone soil would include incidental ingestion, dermal contact, and inhalation of fugitive dust and vapors volatilizing from the soil surface to air.
- Current and future construction workers may be exposed to surface soil (0 to 2 feet bgs) and mixed-zone soils (0 to 15 feet bgs) during construction, excavation or trenching activities through incidental ingestion, dermal contact, and inhalation of fugitive dust and vapors volatilizing from the soil surface to air.
- Hypothetical (long-term) future residents (child and adult) could potentially be exposed to surface soil (0 to 2 feet bgs) and mixed-zone soils (0 to 15 feet bgs). Potentially complete routes of exposure to surface soil would include incidental ingestion, dermal contact, and inhalation of fugitive dust and vapors volatilizing from the soil surface to air. This scenario is considered the most conservative scenario for potential future site uses.

Sediment

- Future industrial workers could potentially be exposed to mixed-zone sediment (0 to 10 feet bgs) through the direct contact exposure pathway.
- Current and future construction workers may be exposed surface soil (0 to 2 feet bgs) and mixed-zone sediment (0 to 10 feet bgs) during construction, excavation, or trenching activities through the direct contact exposure pathway.
- Hypothetical future residents could potentially be exposed to sediment (0 to 10 feet bgs) through the direct contact exposure pathway.
- Future industrial workers, construction workers, and hypothetical residents could also be exposed to sediment through incidental ingestion and inhalation of fugitive dust and vapors volatilizing from the surface to air. These future potentially complete exposure pathways will be evaluated for sediment using the same approach and methodology as for soil.

Groundwater

- Hypothetical future residents could potentially be exposed to use of groundwater as tapwater. A drinking water well is located within the SS035 investigation boundary and is connected to the public water system for Eielson AFB. Potentially complete routes of exposure to groundwater would include ingestion, dermal contact, and inhalation during household activities.
- Current and future industrial workers could potentially be exposed to use of groundwater as tapwater. Potentially complete routes of exposure to groundwater would include ingestion, dermal

contact, and inhalation during commercial/industrial activities. However, these potentially complete exposure pathways from the use of groundwater as tapwater will only be evaluated for the more conservative hypothetical future residents in the SS035 HHRA.

- Exposure of current and future construction workers to groundwater during excavation or trenching activities is considered a potentially complete exposure pathway because the depth to groundwater is less than 15 feet bgs. Potentially complete routes of exposure to groundwater during construction activities would include incidental ingestion, dermal contact, and inhalation of vapors from shallow groundwater.

Surface Water

- Although groundwater is the principal source of potable and non-potable water at Eielson AFB and in nearby communities, the risk assessment will consider the most conservative potential future exposure, hypothetical future residents exposure to surface water as a domestic drinking water source. Potentially complete routes of exposure to surface water would include ingestion, dermal contact, and inhalation during household activities.
- Future construction workers could potentially be exposed to surface water during work activities. Potentially complete routes of exposure would include incidental ingestion, dermal contact, and inhalation of vapors.

Indoor Air

- Current and future industrial workers and hypothetical future residents could potentially be exposed to VOCs through the inhalation of volatile constituents that could migrate from soil or groundwater to the indoor air of current and future buildings (the VI pathway). Exposure to VOCs in indoor air through the VI pathway will be evaluated with indoor air samples (for the current industrial worker scenario) and soil vapor and groundwater data (for the future industrial worker and hypothetical residential scenarios).
- Future site visitors or trespassers could potentially be exposed to soil, sediment, and surface water. Potentially complete routes of exposure would include ingestion and dermal contact. However, these potentially complete receptors and exposure routes will not be evaluated in the SS035 HHRA because the hypothetical future residential scenario will provide a more conservative evaluation of the risk from these exposures.

10.2.8.2 Potential Ecological Receptors and Exposure Pathways

Ecological receptor groups that may use SS035 and may be exposed to site-related contaminants include the following:

- Aquatic Vegetation—Aquatic vegetation may be exposed to contaminants in surface water and sediment via absorption/direct contact.
- Fish—Although no fish survey was conducted at GSP during previous site-related investigations, fish are present in Garrison Slough (USAF, 2014c) and the presence of fish in GSP is therefore suspected. Fish may be exposed to contaminants in surface water and sediment by direct contact, through consumption of other organisms that have taken up contaminants from these media, or through ingestion. However, ingestion of surface water and direct contact with sediment are considered to be minor exposure pathways for fish.
- Benthic invertebrates—Clams, snails, midges, flies, and beetles were among the invertebrates collected from the pond during sampling in 2004 (USAF, 2005). Benthic invertebrates living in GSP

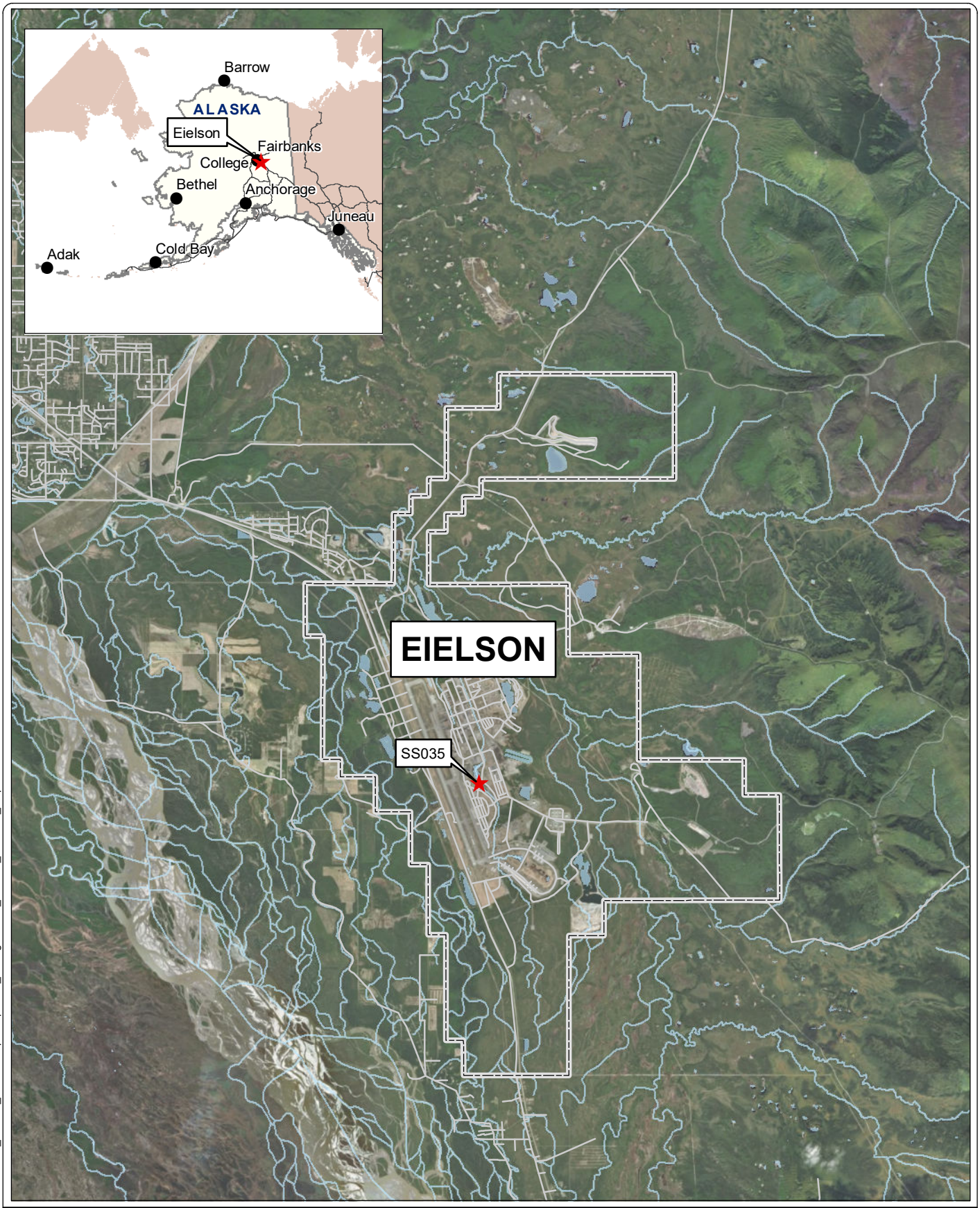
may be exposed to contaminants in surface water and sediment (including pore water) through ingestion, direct contact, and the food chain.

- Amphibians—Amphibians are also suspected to be present in the vicinity of GSP. They may be exposed to contaminants in surface soil via incidental ingestion or the food chain, and may also experience minor exposure through direct contact with soil. Amphibians may also be exposed to contaminants volatilized from the soil via inhalation. The primary exposure media for immature amphibians is surface water and sediment via ingestion, direct contact, or the food chain.
- Terrestrial vegetation—Most of the terrestrial vegetation diversity exists along the shoreline of GSP. Potentially complete exposure pathways include root uptake from soil or surface water. Exposure to groundwater is not considered a complete exposure pathway as groundwater has been reported to be greater than 4 feet bgs. If groundwater is encountered in the 0 to 4 feet bgs depth interval, this pathway will be evaluated in the screening level ecological risk assessment.
- Soil invertebrates—Soil invertebrates are assumed to be present at the site, and may be exposed to contaminants through ingestion of and direct contact with surface soil, and through ingestion of other organisms that have taken up contaminants from the soil.
- Birds and mammals— Birds and mammals are common on the Base and are thought to utilize GSP and surrounding land as habitat. Receptors may include upland and semi-aquatic species. They may be exposed to contaminants in surface soil, sediment, or surface water through ingestion, direct contact, and via the food chain. Direct contact is considered to be a minor pathway because of the protection provided by fur and feathers. Birds and mammals (especially those that burrow) may also be exposed to contaminants volatilized from the soil via inhalation.

10.2.9 Data Gaps

The following data gaps identified at SS035 and presented below will be addressed during this RI:

- Lateral and vertical extent of soil contamination
- Lateral and vertical extent of sediment contamination within GSP
- Nature and extent of groundwater contamination
- Nature of surface water contamination within GSP
- The potential for VI to impact indoor air
- Data to support baseline risk assessment
- Data to support an FS



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EIELSON AIR FORCE BASE LOCATION MAP

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure

10-1

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. GAC = granular activated carbon
   PCB = polychlorinated biphenyl
   UST = underground storage tank

11-9 535.49
11-3B 535.50
11-2B 535.72
11-8 535.89
ST011
GARRISON SLOUGH
UST
GAC Treatment Building/ PCB Excavation
Likely Drill Rig Access to Garrison Slough Pond
Anomaly A
Anomaly B
Anomaly C
35M01 537.50
35M02 537.47
35M04 537.55
35M05 537.54
35M06 537.56
35M08 537.20
35M09 537.72
35M10
35M11
35M12
35M13
35M14 537.92
1211MW07
1989 Drum Removal
2003 Drum Removal
Central Avenue
Chinook Street
Tenakee Street
535
536
537
538
3227
3228
3226
3460
3459
3462
3435
3436
3437
3438
3439
32251
4105
34701

LEGEND
- Monitoring Well
- Drinking Water Well
- Soil Vapor Survey Location
- GPR Interpreted Drum
- Utilidor Alignment
- Storm Sewer Open Drainage
- Groundwater Contour
- Area A and C Drum Removal Extent
- Anomaly Area [USAF (1992)]
- Geophysical Anomaly
- Multiple GPR Interpreted Drums
- Drum Removal Area
- Possible Location of Buried Drums (1990)
- ST011 Site Boundary
- Investigation Area
- GAC Treatment Building/PCB Excavation
- Building

0 75 150 300 Feet

Esri World Imagery Basemap

N W E S

Date: 09 Aug 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-2_SS035_Location_Map.mxd

SS035 LOCATION MAP

Figure **10-2**

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Metals compared to established background threshold values (BTVs) presented in worksheet 10. Change to "Project Screening Levels (PSLs) presented in worksheet 15."
5. A **bold** result indicates a detected concentration above BTVs.

15-BASE

Depth (feet bgs)	Lead	Manganese
0.5	**71**	**2,600**

11-BASE

Depth (feet bgs)	Lead
0.75	**82**

35-SS-07

Depth (feet bgs)	Lead
1-2	**52**

09-ESW(1)

Depth (feet bgs)	Antimony	Cobalt	Manganese
1.5	**3.7 Q**	**17 Q**	**1,700 Q**

05/06-ESW(2)

Depth (feet bgs)	Arsenic	Iron	Lead	Manganese
2.5	**46 Q**	**49,000 Q**	**85**	**2,000 Q**

04-BASE

Depth (feet bgs)	Manganese
0.5	**700**

02/03-ESW(04)

Depth (feet bgs)	Antimony
0.83	**4.1 Q**

35-SS-25

Depth (feet bgs)	Aluminum	Manganese
0-2	**14,000**	**760**

11/12-ESW(03)

Depth (feet bgs)	Lead	Manganese
0.75	**45**	**630**

EDR-01-PC

Depth (feet bgs)	Aluminum	Vanadium
0.5	**24,000**	**78**

EDR-02-PC

Depth (feet bgs)	Aluminum	Vanadium
0.5	**18,000**	**63**

EDR-06-PC

Depth (feet bgs)	Aluminum
0.5	**14,000**

EDR-07-PC

Depth (feet bgs)	Aluminum
0.5	**15,000**

35-SS-20

Depth (feet bgs)	Aluminum	Vanadium
0.5-1.5	**21,000**	**70**

LEGEND

Subsurface Soil/Test Pit Sampling Locations
- Results Below Project Screening Level
- 1x to 10x Project Screening Level

Surface Soil Sampling Locations
- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Multiple GPR Interpreted Drums
- Investigation Area
- Area A and C Drum Removal Extent
- Building

Esri World Imagery Basemap

N
W E
S

0 55 110 220 330 Feet

METALS IN SURFACE AND SUBSURFACE SOIL (2012-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-3A

Date: 27 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\UUSACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-3A_Surface_SubSurface_Metals.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   PAHS = polycyclic aromatic hydrocarbons

35-SS-22
Depth (feet bgs)	Benzo(a)pyrene
1 - 2	**0.05**

35-SS-09
Depth (feet bgs)	Benzo(a)pyrene
0.5 - 1.5	**0.029**

35-SS-10
Depth (feet bgs)	Benzo(a)pyrene
1 - 2	**0.036**

35-SS-07
Depth (feet bgs)	Benzo(a)pyrene
1 - 2	**0.035**

11-ESW(03)
Depth (feet bgs)	Benzo(a)pyrene	Benzo(b)fluoranthene
0.75	**0.2 J**	**0.29 Q**

15-BASE
Depth (feet bgs)	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Indeno(1,2,3-cd)pyrene	Pentachlorophenol
0.5	**0.24 J**	**0.35 J**	**0.51**	**0.27 J**	**2.1 J**

14-BASE
Depth (feet bgs)	Benzo(a)pyrene	Dibenz(a,h)anthracene
0.75	**0.16 J**	**0.19 J**

TP-10
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)pyrene
11	**1.3**	**1.8**	**0.021**

11-BASE
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)pyrene
0.5	**1.9**	**2**	**0.048**

08-ESW(03)
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene
0.75	**1**	**1.4**

10-BASE
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)pyrene
0.75	**5.8**	**8.5**	**0.13 J**

35-SS-21
Depth (feet bgs)	Benzo(a)pyrene
1 - 2	**0.035**

09-BASE
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)anthracene
1	**7.4**	**11**	**0.19 J**

06-BASE
Depth (feet bgs)	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
0.5	**0.32**	**0.35**	**0.35**	**0.03 J**	**0.27 J**

08-BASE
Depth (feet bgs)	Benzo(a)pyrene
2	**0.039 J**

04-BASE
Depth (feet bgs)	Benzo(a)anthracene	Benzo(b)fluoranthene	1-methylnaphthalene
0.5	**0.39**	**0.22**	**0.47**

03-BASE
Depth (feet bgs)	Benzo(a)pyrene
0.5	**0.045**

TP-7
Depth (feet bgs)	Benzo(a)pyrene
6	**0.087 Q**

02-BASE
Depth (feet bgs)	Benzo(a)pyrene
0.5	**0.061**

01-ESW(03)
Depth (feet bgs)	Benzo(a)pyrene
0.75	**0.032 J**

01-BASE
Depth (feet bgs)	Benzo(a)pyrene
0.5	**0.11**

13-WSW(3)
Depth (feet bgs)	Benzo(a)pyrene
3	**0.097 J**

09-ESW(1)
Depth (feet bgs)	Benzo(a)pyrene
1.5	**0.12 J**

07-ESW(04)
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene
2	**2.9**	**3.4**

05-ESW(2)
Depth (feet bgs)	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
2.5	**0.35 J**	**0.53 J**	**0.76 Q**	**0.38 J**	**0.29 J**

EDR-04-PC
Depth (feet bgs)	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
0.5	**0.37**	**0.54**	**0.75**	**0.058**	**0.46**

EDR-05-PC
Depth (feet bgs)	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
0.5	**0.74**	**1.2**	**1.5**	**0.25**	**1.4**

EDR-03-PC
Depth (feet bgs)	Benzo(a)pyrene
0.5	**0.038 J**

EDR-01-PC
Depth (feet bgs)	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
0.5	**0.32**	**0.39**	**0.53**	**0.073**	**0.4**

EDR-09-PC
Depth (feet bgs)	Benzo(a)pyrene
0.5	**0.12 J**

EDR-06-PC
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
0.5	**17**	**17**	**0.34**	**0.66**	**0.58**	**0.11**	**0.52**

EDR-08-PC
Depth (feet bgs)	Benzo(a)pyrene
0.5	**0.11**

EDR-10-PC
Depth (feet bgs)	Benzo(a)pyrene	Dibenz(a,h)anthracene
0.5	**0.44**	**0.029 J**

EDR-07-PC
Depth (feet bgs)	Benzo(a)pyrene	Dibenz(a,h)anthracene
0.5	**0.052**	**0.021 J**

35-SS-05
Depth (feet bgs)	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene
1 - 2	**0.13**	**0.23**	**0.022**

05-BASE
Depth (feet bgs)	Benzo(a)pyrene	1-methylnaphthalene
0.5	**0.05**	**0.63**

04-ESW(02)
Depth (feet bgs)	Benzo(a)pyrene
0.67	**0.037 J**

35-SS-04
Depth (feet bgs)	1-Methylnaphthalene	Benzo(a)pyrene	Dibenz(a,h)anthracene
0 - 2	**0.42**	**0.072**	**0.036 M**

02-ESW(04)
Depth (feet bgs)	Benzo(a)pyrene
0.83	**0.047 Q**

TP-5
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)pyrene
9	**10**	**8**	**0.024 J**

16-ESW(0_5)
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)pyrene	Dibenz(a,h)anthracene
0.5	**11**	**9.7**	**0.11**	**0.057**

14-NSW(5-5)
Depth (feet bgs)	1-Methylnaphthalene	Benzo(a)pyrene	Dibenz(a,h)anthracene
5.5	**1**	**0.067**	**0.029 J**

16-BASE
Depth (feet bgs)	1-Methyl-naphthalene	2-Methyl-naphthalene
6.5	**36**	**55**

17-BASE
Depth (feet bgs)	1-Methylnaphthalene	Benzo(a)pyrene
6	**0.8**	**0.025 J**

18-SSW(3_5)
Depth (feet bgs)	Benzo(a)pyrene
3.5	**0.087**

18-BASE
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)anthracene	Benzo(a)pyrene
6.5	**20 Q**	**26 Q**	**0.17 J**	**0.41 Q**

17-SSW(1_5)
Depth (feet bgs)	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
1.5	**21**	**22**	**0.63 J**	**0.52**	**0.28 J**	**0.3**	**0.31**

LEGEND

Surface Soil Sampling Locations
- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level

Subsurface Soil/Test Pit Sampling Locations
- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 75 150 300 450 Feet

PAHS IN SURFACE AND SUBSURFACE SOIL (2012-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-3B

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FSIFigure10-3B_Surface_SubSurfaceSoil_PAH.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   ND = not detected (method reporting limit)

35-SS-09				
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT	Heptachlor Epoxide
0.5 - 1.5	0.0058 J	0.0036 J	0.046	**0.011 J**

35-SS-10			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	ND (0.0061)	**0.002 J**	**0.016 J**

35-SS-08			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	ND (0.0065)	0.0051 J	0.011 J

35-SS-22				
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT	Heptachlor Epoxide
1 - 2	0.011 J	0.012 J	0.13	**0.0033 J**

35-SS-07			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	0.29	0.077	**3**

EDR-04-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	0.03 Q-	0.027 Q-	0.16 Q-

EDR-05-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	0.023	0.031	0.12

EDR-03-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	0.0065	0.037	0.096

EDR-01-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	0.011 M,Q-	0.032 M,Q-	0.051 M,Q-

35-SS-21			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	0.014 J	0.0071 J	0.13

35-SS-06			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	0.026 J	0.069	0.36

EDR-02-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	0.015 Q-	0.1 Q-	0.37 Q-

EDR-09-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	**0.59 Q-**	0.13 Q-	1.8 Q-

EDR-06-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	0.066	0.087	0.28

EDR-08-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	0.018 Q-	0.016 Q-	0.046 Q-

EDR-10-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	0.18	0.038	0.47 Q

EDR-07-PC			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5	0.047	0.14	0.21

35-SS-05			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	0.012 J	0.037	0.15

35-SS-17			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	0.026	0.16	0.39 J

35-SS-25			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	0.034	0.038	0.094 J

35-SS-04			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 2	**35**	**47**	**810 J**

35-SS-20			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.5 - 1.5	0.1 J	0.19	1.4

35-SS-18			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	0.021 J	**3.4**	0.25

35-SS-15			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 2	**1.2**	**1.3**	**19 J**

35-SS-19			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	0.17	0.63	**2 J**

35-SS-16			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 2	0.009 J	0.052	0.09 J

35-SS-13			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 2	0.32	0.21	**2.9 J**

35-SS-14			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 2	0.036	0.17	0.35 J

35-SS-12				
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT	Heptachlor Epoxide
0 - 2	**1.6**	**3.2**	**29 J**	**0.015 J**

35-SS-03			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 2	0.22	0.39	**3.9 J**

35-SS-02			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 2	0.053	0.26	0.58 J

35-SS-11			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 2	0.0085 J	0.11	0.1 J

35-SS-01			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 2	ND (0.0036)	0.0065 J	0.0046 J

35-SS-24			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	0.0081 J	0.07 J	0.095 J

35-SS-23			
Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
1 - 2	ND (0.004)	ND (0.004)	**0.0045 J**

SP-11

3240 3435 3436 3425 3437 3460 3459 3441 3442

LEGEND
- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 70 140 280 420 Feet

PESTICIDES IN SURFACE SOIL (2012-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-3C

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-3C_SurfaceSoil_Pesticides.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface

15-BASE

Depth (feet bgs)	4,4-DDD
0.5	**3 Q**

11-ESW(03)

Depth (feet bgs)	4,4-DDD	delta-BHC	Heptachlor Epoxide
0.75	**1.7 Q+**	**0.0098 J**	**0.011 J**

TP-10

Depth (feet bgs)	4,4-DDD
11	**7.7**

12-BASE

Depth (feet bgs)	4,4-DDD
0.5	**0.53 Q**

11-BASE

Depth (feet bgs)	4,4-DDD
0.5	**5.8 Q+**

04-BASE

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT	Heptachlor Epoxide
0.5	**130 Q+**	**2.5**	**110 Q**	**0.44**

05/06-ESW(2)

Depth (feet bgs)	4,4-DDD	delta-BHC	Heptachlor Epoxide
2.5	**0.68 Q**	**0.0086 J**	**0.0067 J**

03-BASE

Depth (feet bgs)	4,4-DDD
0.5	**2.7 Q**

07-BASE

Depth (feet bgs)	4,4-DDD
0.5	**2.2**

02-BASE

Depth (feet bgs)	4,4-DDD
0.5	**0.82 Q+**

06-BASE

Depth (feet bgs)	4,4-DDD
0.5	**1.7 Q**

02-ESW(04)

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0.83	**24 Q+**	**2.9**	**52 Q**

05-BASE

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT	beta-BHC	delta-BHC	Dieldrin	Heptachlor	Heptachlor Epoxide
0.5	**110**	**33**	**1,500 Q**	**0.014 J**	**0.012 J**	**0.034 J**	**1.2**	**4.7**

01-ESW(03)

Depth (feet bgs)	4,4-DDD	4,4-DDT
0.75	**4.5 Q+**	**15 Q**

01-BASE

Depth (feet bgs)	4,4-DDD	4,4-DDT
0.5	**1.6 Q+**	**2.7 Q**

16-ESW(0_5)

Depth (feet bgs)	4,4-DDD	4,4-DDT	Heptachlor Epoxide
0.5	**1.8 Q+**	**1.9 Q-**	**0.0057 JQ**

13-WSW(3)

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
3	**0.53**	**1.1**	**19 Q+**

TP-6

Depth (feet bgs)	gamma-BHC
8	**0.017 M**

18-SSW(3_5)

Depth (feet bgs)	4,4-DDD	Heptachlor Epoxide
3.5	**5.4**	**0.0054 JQ**

17-SSW(1_5)

Depth (feet bgs)	4,4-DDD	4,4-DDT	Heptachlor Epoxide
1.5	**8.3 Q+**	**0.0035 J**	**0.0071 JQ**

TP-11
6-EDR-14-BASE-SO
16-EDR-13-BASE-SO
16-EDR-08-ESW(3)-SO
16-EDR-10-BASE-SO
16-EDR-09-BASE-SO
16-EDR-08-BASE-SO
16-EDR-09/10-ESW(1)-SO
16-EDR-07-ESW(1.5)-SO
TP-09
TP-07
TP-02
TP-03
16-EDR-04-ESW(02)
TP-01
TP-05
TP-04
16-EDR-15-NSW(1)-SO
16-EDR-14-NSW(5.5)-SO
16-EDR-16-BASE-SO
16-EDR-17-BASE-SO
16-EDR-18-BASE-SO
16-EDR-19-BASE-SO

3437
3438
3439
3440
3441
3460
3462
3245

LEGEND

Subsurface Soil/Test Pit Sampling Locations

- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Multiple GPR Interpreted Drums
- Investigation Area
- Area A and C Drum Removal Extent
- Building

Esri World Imagery Basemap

N
W E
S

0 55 110 220 330
Feet

PESTICIDES IN SUBSURFACE SOIL (2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-3D

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-3D_SubSurfaceSoil_Pesticides.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   SVOCS = semi-volatile organic compounds

15-BASE

Depth (feet bgs)	3,3-Dichlorobenzidine
0.5	**0.83 J**

07-ESW(04)

Depth (feet bgs)	4-Chloroaniline	Isophorone
0.83	**1.7 J**	**3.6 J**

EDR-10-PC

Depth (feet bgs)	2,4-Dinitrotoluene
0.5	**0.48 J**

02-ESW(04)

Depth (feet bgs)	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Nitrobenzene
0.83	**0.089 J**	**0.047 J**	**0.036 J**

16-BASE

Depth (feet bgs)	4-Chloroaniline	Isophorone
6.5	**1.8**	**7.6**

18-BASE

Depth (feet bgs)	Isophorone
6.5	**5 Q**

LEGEND

Surface Soil Sampling Locations
- Results Below Project Screening Level
- 10x to 100x Project Screening Level

Subsurface Soil/Test Pit Sampling Locations
- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Multiple GPR Interpreted Drums
- Investigation Area
- Area A and C Drum Removal Extent
- Building

Esri World Imagery Basemap

N W E S

0 55 110 220 330 Feet

SVOCS IN SURFACE AND SUBSURFACE SOIL (2012-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-3E

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-3E_Surface_SubSurface_SubSurfaceSoil_SVOCs.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   DRO = dielsel range organics
   RRO = residual oil range organics
   TPH = total petroleum hydrocarbon

11-Base

Depth (feet bgs)	DRO (C10-C25)
0.5	**2,900**

08-ESW(03)

Depth (feet bgs)	DRO (C10-C25)
0.75	**2,000**

10-Base

Depth (feet bgs)	DRO (C10-C25)
0.75	**2,200**

09-Base

Depth (feet bgs)	DRO (C10-C25)	RRO (C25-C36)
1	**6,500**	**17,000**

05-Base

Depth (feet bgs)	DRO (C10-C25)
0.5	**2,300**

04-Base

Depth (feet bgs)	DRO (C10-C25)
0.5	**520**

35-SS-04

Depth (feet bgs)	DRO (C10-C25)
0 - 2	**1,000**

03-Base

Depth (feet bgs)	DRO (C10-C25)
0.5	**5,400**

02-Base

Depth (feet bgs)	DRO (C10-C25)
0.5	**3,200**

01-Base

Depth (feet bgs)	DRO (C10-C25)
0.5	**2,700**

13-WSW(3)

Depth (feet bgs)	DRO (C10-C25)
3	**370**

17-Base

Depth (feet bgs)	DRO (C10-C25)
6	**1,300**

18-SSW(3_5)

Depth (feet bgs)	DRO (C10-C25)
3.5	**640**

17-SSW(1_5)

Depth (feet bgs)	DRO (C10-C25)	RRO (C25-C36)
1.5	**24,000**	**18,000**

15-Base

Depth (feet bgs)	DRO (C10-C25)
0.5	**260**

18-Base

Depth (feet bgs)	DRO (C10-C25)
6.5	**2,900 Q**

16-Base

Depth (feet bgs)	DRO (C10-C25)
6.5	**10,000**

11-ESW(03)

Depth (feet bgs)	DRO (C10-C25)
0.75	**390**

14-Base

Depth (feet bgs)	DRO (C10-C25)
0.75	**270**

TP-10

Depth (feet bgs)	DRO (C10-C25)	RRO (C25-C36)
11	**1,300**	**4,400**

35-SS-07

Depth (feet bgs)	DRO (C10-C25)
1 - 2	**520**

09-ESW(1)

Depth (feet bgs)	DRO (C10-C25)
1.5	**2,700 Q**

07-ESW(1.5)

Depth (feet bgs)	DRO (C10-C25)	RRO (C25-C36)
2	**1,700**	**4,900**

05-ESW(2)

Depth (feet bgs)	DRO (C10-C25)
0.5	**700**

06-Base

Depth (feet bgs)	DRO (C10-C25)
0.5	**310**

EDR-10-PC

Depth (feet bgs)	DRO (C10-C25)
0.5	**270**

TP-1

Depth (feet bgs)	DRO (C10-C25)
11	**780**

TP-5

Depth (feet bgs)	DRO (C10-C25)
11	**4,800**

16-ESW(0_5)

Depth (feet bgs)	DRO (C10-C25)
0.5	**1,100**

14-NSW(5-5)

Depth (feet bgs)	DRO (C10-C25)
5.5	**2,200**

SS-10, SS-09, SS-22, TP-11, SS-08, 16-EDR-13-BASE-SO, 16-EDR-12-BASE-SO, SP-4, SP-1, SP-3, SP-5, SP-11, TP-09, SP-2, SS-21, 16-EDR-08-BASE-SO, SS-06, 16-EDR-07-BASE-SO, SP-9, SP-6, TP-07, SP-8, SP-7, SS-05, TP-02, SS-17, SS-20, TP-03, 16-EDR-02/03-ESW(04), 16-EDR-04-ESW(02), 16-EDR-01-ESW(03), SS-25, SS-18, SS-19, SS-15, SS-16, TP-04, TP-06, SS-14, 16-EDR-15-NSW(1)-SO, SS-03, SS-13, SS-12, SS-11, SS-02, SS-24, SS-01, SS-23

3436, 3437, 3438, 3439, 3440, 3441, 3462

LEGEND

Surface Soil Sampling Locations
- Results Below Project Screening Level
- 1x to 10x Project Screening Level

Subsurface Soil/Test Pit Sampling Locations
- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Multiple GPR Interpreted Drums
- Investigation Area
- Area A and C Drum Removal Extent
- Building

Esri World Imagery Basemap

N W E S

0 55 110 220 330 Feet

TPH IN SURFACE AND SUBSURFACE SOIL (2012-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-3F

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\U\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-3F_Surface_SubSurfaceSoil_TPH.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   VOCs = volatile organic compounds

07-ESW(1.5)

Depth (feet bgs)	1,2,4-Trimethyl-benzene	Benzene	Ethylbenzene	Naphthalene
2	**2**	**0.031**	**0.19**	**1.7**

08-ESW(03)

Depth (feet bgs)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Naphthalene	p-Isopropyltoluene
0.75	**3.7**	**1.5**	**0.83**	**0.72**

10-BASE

Depth (feet bgs)	1,2,4-Trimethylbenzene	Naphthalene	p-Isopropyltoluene
0.75	**0.29**	**3.8**	**0.072**

09-BASE

Depth (feet bgs)	1,2,4-Trimethylbenzene	Naphthalene
1	**0.31**	**8.6**

TP-10

Depth (feet bgs)	1,2,4-Trimethylbenzene	Benzene	Naphthalene	p-Isopropyltoluene
11	**0.59**	**0.036**	**0.58**	**0.087**

11-BASE

Depth (feet bgs)	Naphthalene
0.5	**0.33**

06-BASE

Depth (feet bgs)	Naphthalene
0.5	**0.077 J**

EDR-06-PC

Depth (feet bgs)	Naphthalene
0.5	**2.5**

05-BASE

Depth (feet bgs)	Naphthalene
0.5	**0.2**

35-SS-04

Depth (feet bgs)	Naphthalene
0 - 2	**0.33**

TP-1

Depth (feet bgs)	Naphthalene
11	**0.08**

13-WSW(3)

Depth (feet bgs)	Naphthalene
3	**0.039**

TP-5

Depth (feet bgs)	1,2,4-Trimethylbenzene	Naphthalene	p-Isopropyltoluene
9	**1.4**	**3.9**	**0.41**

35-SS-15

Depth (feet bgs)	Chloroform
0 - 2	**0.014 J**

17-Base

Depth (feet bgs)	1,2,4-Trimethylbenzene	Naphthalene	p-Isopropyltoluene
6	0.73	0.55	0.16

18-SSW(3_5)

Depth (feet bgs)	Naphthalene
3.5	**0.039 JH**

15-NSW(1_0)

Depth (feet bgs)	Naphthalene
1	**0.059**

17-SSW(1_5)

Depth (feet bgs)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	n-Butylbenzene	Naphthalene
1.5	**1.3**	**2.9**	**2.9 Q**	**32 H**

16-ESW(0_5)

Depth (feet bgs)	1,2,4-Trimethylbenzene	Naphthalene
0.5	**0.56**	**2.7**

35-SS-12

Depth (feet bgs)	Chloroform
0 - 2	**0.0079 J**

14-NSW(5-5)

Depth (feet bgs)	Naphthalene
5.5	**0.42**

18-BASE

Depth (feet bgs)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	n-Butylbenzene	Naphthalene	p-Isopropyltoluene
6.5	**4.8 Q**	**2 Q**	**2.5 Q**	**7.1 Q**	**1.3 Q**

16-Base

Depth (feet bgs)	1,2,4-Trimethylbenzene	Naphthalene	p-Isopropyltoluene
6.5	**1.9**	**9.3**	**0.43**

LEGEND

- GAC Building Sample Location

Surface Soil Sampling Locations

- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level

Subsurface Soil/Test Pit Sampling Locations

- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Multiple GPR Interpreted Drums
- Investigation Area
- Area A and C Drum Removal Extent
- Building

Esri World Imagery Basemap

N W E S

0 75 150 300 450 Feet

VOCS IN SURFACE AND SUBSURFACE SOIL (2012-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-3G

Date: 02 Jul 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\U\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-3G_Surface_SubSurfaceSoil_VOCs.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. GAC = granular activated carbon
   ng = nanograms
   PCB = polychlorinated biphenyl
   TPH = total petroleum hydrocarbon
   TVOC = total volatile organic compounds
   UST = underground storage tank

GARRISON SLOUGH

ST011

UST

GAC Treatment Building/ PCB Excavation

3227

3228

3226

Chinook Street

35-42 TVOC: 28 ng
35-39 TVOC: 32 ng
35-40
35-38
35-37 TVOC: 35 ng
35-35 TVOC: 58 ng
35-34
35-33 TVOC: 96 ng
35-32
35-29
35-31
35-28
35-30
35-27
35-26 TVOC: 49 ng
35-25 TVOC: 9 ng
35-17
35-18
35-16
35-19
35-15
35-20
35-14
35-12 TVOC: 9,303 ng TPH: 9,303 ng
35-21
35-13
35-11 TVOC: 56 ng TPH: 19,598 ng
35-52
35-22
35-51
35-50 TVOC: 87 ng
35-23
35-49
35-5
35-6 TVOC: 7 ng
35-24
35-48 TVOC: 96 ng
35-47
35-4
35-10
35-7 TVOC: 145 ng
35-46 TVOC: 1,390 ng
35-43
35-3 TVOC: 50 ng
35-45 TVOC: 67 ng
35-44 TVOC: 85 ng
35-9 TVOC: 68 ng
35-2 TVOC: 112 ng TPH: 11,973 ng
35-1 TVOC: 38 ng

Central Avenue

3435
3436
3437
3438
3439
3460
3459
3462

GARRISON SLOUGH

Tenakee Street

34701

4105

LEGEND

- Soil Vapor Survey with No Detections
- Soil Vapor Survey with Detections
- GPR Interpreted Drum
- Utilidor Alignment
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- ST011 Site Boundary
- Investigation Area
- GAC Treatment Building/PCB Excavation
- Building

0 75 150 300 Feet

Esri World Imagery Basemap

Date: 27 Jun 2018 Drawn by: AESPE_JO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-3H_Passive_Soil_Vapor_TPH_TVOC_Conc.mxd

PASSIVE SOIL VAPOR TPH AND TVOC CONCENTRATIONS (2013)

Figure **10-3H**

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface

35-SD-19

Depth (feet bgs)	Arsenic	Iron	Lead	Manganese
0 - 1	**18**	**13,000**	**34**	**2,000**
1 - 2	**22**	**15,000**	**2.8**	**2,600**

35-SD-10

Depth (feet bgs)	Arsenic	Cadmium	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Vanadium
0 - 1	**23**	**0.12 J**	**3.4 J**	**11 J**	**11,000**	**12**	**610**	**9.3 J**	**12 J**
1 - 2	**53**	**0.66**	**11 J**	**33 J**	**57,000**	**43**	**1,500 J**	**23 J**	**49 J**

35-SD-21

Depth (feet bgs)	Arsenic	Cobalt	Iron	Lead	Manganese
0 - 1	**7.3**	**3.6 J**	**10,000**	**35**	**960**
1 - 2	**5.3**	**4.9 J**	**8,600**	**1,100**	**480**

35-SD-09

Depth (feet bgs)	Aluminum	Antimony	Arsenic	Cadmium	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Vanadium	Zinc
0 - 1	**15,000 J**	**2.6 J**	**170 J**	**0.89 J**	**17 J**	**64 J**	**130,000 J**	**76 J**	**40,000**	**40 J**	**65 J**	**140**
1 - 2	**7,200 J**	**0.88**	**5.3**	**0.24 J**	**10**	**30**	**15,000**	**7.7 J**	**360**	**24**	**37**	**46**

35-SD-20

Depth (feet bgs)	Arsenic	Cadmium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Silver	Vanadium	Zinc
0 - 1	**84**	**0.95**	**12 J**	**42 J**	**160,000**	**74**	**5,900**	**0.15**	**20 J**	**0.56 J**	**56 J**	**260**
1 - 2	**2.8**	**0.12 J**	**3.4 J**	**11 J**	**6,100**	**3**	**130**	ND (0.0069)	**9 J**	**0.031 J**	**12 J**	**18**

35-SD-13

Depth (feet bgs)	Aluminum	Arsenic	Cadmium	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Vanadium	Zinc
0 - 1	**8,600 J**	**150**	**0.93 J**	**12**	**47**	**140,000**	**79 J**	**3,800**	**27**	**61**	**160**
1 - 2	**6,700 J**	**5.3**	**0.18 J**	**9.2**	**24**	**14,000**	**6.8 J**	**280**	**22**	**34**	**43**

35-SD-18

Depth (feet bgs)	Arsenic	Cadmium	Iron	Manganese
0 - 1	**30**	**0.12 J**	**14,000**	**2,500 J**
1 - 2	**30**	**1.1 J**	**17,000**	**2,500 J**

35-SD-17

Depth (feet bgs)	Arsenic	Iron	Manganese
0 - 1	**26**	**13,000**	**3,300**
1 - 2	**28**	**17,000**	**4,000**

35-SD-08

Depth (feet bgs)	Aluminum	Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Vanadium	Zinc
0 - 1	**18,000**	**110**	**0.62**	**48 J**	**22 J**	**75 J**	**81,000**	**43**	**1,500**	**53 J**	**86 J**	**150**
1 - 2	**530**	**45**	**0.15 J**	**2.9 J**	**1 J**	**3.7 J**	**18,000**	**3.3**	**3,200**	**2.9 J**	**6.4 J**	**22**

35-SD-15

Depth (feet bgs)	Aluminum	Arsenic	Cadmium	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Silver	Vanadium
0 - 1	**9,100**	**42**	**0.69**	**9.5**	**34**	**43,000**	**81**	**1,000**	**24**	**0.25 J**	**42**
1 - 2	**11,000**	**12**	**0.47**	**12**	**40**	**24,000**	**19**	**780**	**30**	**0.54**	**46**

35-SD-07

Depth (feet bgs)	Aluminum	Arsenic	Cadmium	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Silver	Vanadium	Zinc
0 - 1	**11,000**	**230**	**0.74**	**12 J**	**47 J**	**100,000**	**140**	**1,500**	**30 J**	**0.24 J**	**63 J**	**130**
1 - 2	**9,900**	**19**	**0.65**	**24 J**	**41 J**	**20,000**	**18**	**430**	**48 J**	**1.1 J**	**44 J**	**110**

35-SD-16

Depth (feet bgs)	Aluminum	Arsenic	Cadmium	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Vanadium
0 - 1	**8,600 J**	**57**	**0.71**	**19**	**40**	**50,000**	**74 J**	**2,400**	**38**	**47**
1 - 2	**3,500 J**	**3.9**	**0.13 J**	**7.5**	**13**	**7,500**	**6.2 J**	**170**	**14**	**21**

35-SD-05

Depth (feet bgs)	Arsenic	Cobalt	Copper	Iron	Lead	Manganese	Vanadium
0 - 1	**140**	**4.4**	**16**	**68,000**	**39**	**1,100**	**27**
1 - 2	**330**	**6.2**	**23**	**160,000**	**64**	**3,300**	**46**

35-SD-12

Depth (feet bgs)	Aluminum	Arsenic	Cobalt	Copper	Iron	Manganese	Nickel	Silver	Vanadium
0 - 1	**15,000**	**21**	**15**	**59**	**37,000**	**650 J**	**38**	**0.72**	**57**
1 - 2	**7,200**	**5.3**	**8.4**	**25**	**16,000**	**350**	**23**	**0.056 J**	**45**

35-SD-14

Depth (feet bgs)	Aluminum	Arsenic	Cobalt	Copper	Iron	Manganese	Nickel
0 - 1	**7,600**	**46**	**8.5**	**29**	**29,000**	**1300**	**21**
1 - 2	**8,600**	**7.9**	**8.9**	**25**	**18,000**	**400**	**24**

35-SD-04

Depth (feet bgs)	Aluminum	Arsenic	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Vanadium
0 - 1	**12,000**	**62**	**12**	**48**	**59,000**	**42**	**930**	**33**	**58**
1 - 2	**9,500**	**7.1**	**9.2**	**29**	**19,000**	**8.1**	**310**	**25**	**38**

35-SD-11

Depth (feet bgs)	Aluminum	Arsenic	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Vanadium
0 - 1	**13,000**	**15**	**16**	**52**	**34,000**	**36**	**660**	**35**	**52**
1 - 2	**6,800**	**3.7**	**7.5**	**19**	**15,000**	**5**	**240**	**20**	**37**

35-SD-03

Depth (feet bgs)	Arsenic	Cobalt	Copper	Iron	Manganese	Nickel
0 - 1	**13**	**7.7**	**29**	**21,000**	**460**	**20**
1 - 2	**3.8**	**7.3**	**20**	**13,000**	**250**	**23**

35-SD-06

Depth (feet bgs)	Aluminum	Antimony	Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Vanadium	Zinc
0 - 1	**32,000**	**2.6**	**250**	**0.95 J**	**74**	**30**	**110**	**180,000**	**61**	**2,700**	**0.14**	**78**	**2.5 J**	**0.52 J**	**130**	**250**
1 - 2	**13,000**	**1**	**17**	**0.34**	**28**	**13**	**42**	**26,000**	**14**	**460**	**0.045**	**33**	**0.81 J**	**0.48**	**50**	**86**

35-SD-02

Depth (feet bgs)	Aluminum	Arsenic	Cobalt	Copper	Iron	Manganese	Nickel	Vanadium
0 - 0.75	**7,400**	**20**	**8.4**	**34**	**26,000**	**460 J**	**25**	**38**
1 - 2	**9,500**	**7**	**9.4**	**33**	**19,000**	**380**	**26**	**42**

35-SD-01

Depth (feet bgs)	Arsenic	Cobalt	Iron	Manganese
0 - 1	**28**	**5.1**	**16,000**	**280**
1 - 2	**11**	**2.6**	**9,500**	**170**

LEGEND
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 100 200 400 600 Feet

METALS IN SEDIMENT (2012)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-4A

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\UUSACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-4A_Sediment_Metals_2012.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface

35-SD-04

Depth (feet bgs)	Arsenic	Iron	Manganese	Selenium
0 - 0.5	**35.6**	**19,500**	**3,340**	**2.6 J**

35-SD-03

Depth (feet bgs)	Arsenic	Cadmium	Copper	Iron	Manganese	Selenium	Silver	Thallium	Zinc
0 - 0.5	**488**	**1.2 J**	**20.2**	**264,000**	**4,390**	**6.8 J**	**1.2 J**	**1.8 J**	**134**

35-SD-02

Depth (feet bgs)	Arsenic	Cadmium	Copper	Iron	Manganese	Mercury	Selenium	Silver	Thallium	Vanadium	Zinc
0 - 0.5	**443**	**1.4 J**	**20.2**	**245,000**	**6,160**	**0.16 J**	**14.6**	**2.1 J**	**2.1 J**	**41.8**	**156**

35-SD-01

Depth (feet bgs)	Arsenic	Cadmium	Copper	Iron	Manganese	Silver	Zinc
0 - 0.5	**369**	**1.2 J**	**23**	**215,000**	**4,240**	**2.9 J**	**151**

EDR-GSP-04

Depth (feet bgs)	Aluminum	Arsenic	Cobalt	Copper	Iron	Manganese	Nickel	Zinc
0 - 0.5	**10,000**	**57**	**11**	**32**	**50,000**	**5,800**	**24**	**320**

35-SD-11

Depth (feet bgs)	Arsenic	Cobalt	Copper	Iron	Manganese	Selenium
0 - 0.5	**212**	**2.9 J**	**21.6**	**95,600**	**1,700**	**3.5 J**

35-SD-08

Depth (feet bgs)	Arsenic	Cadmium	Copper	Iron	Manganese	Selenium	Silver	Thallium	Zinc
0 - 0.5	**377**	**0.79 J**	**22.7**	**210,000**	**3,630**	**6.3 J**	**0.97 J**	**1.6 J**	**127**

35-SD-10

Depth (feet bgs)	Arsenic	Cadmium	Copper	Iron	Manganese	Selenium	Silver	Thallium	Zinc
0 - 0.5	**438**	**1 J**	**28.1**	**239,000**	**4,350**	**6.2 J**	**1.2 J**	**2.1 J**	**123**

35-SD-09

Depth (feet bgs)	Arsenic	Cadmium	Copper	Iron	Manganese	Selenium	Silver	Thallium	Zinc
0 - 0.5	**451**	**1 J**	**23.2**	**245,000**	**4,440**	**6 J**	**1.1 J**	**3 J**	**143**

35-SD-12

Depth (feet bgs)	Arsenic	Cadmium	Cobalt	Copper	Iron	Manganese	Selenium	Silver	Thallium	Vanadium	Zinc
0 - 0.5	**159**	**0.82 J**	**5.7 J**	**32.3**	**126,000**	**4,270**	**6.4 J**	**0.7 J**	**2 J**	**43.1**	**202**

EDR-GSP-02

Depth (feet bgs)	Arsenic	Cobalt	Iron	Manganese	Nickel
0 - 1	**11**	**6.5**	**16,000**	**1,100**	**18**

35-SD-13

Depth (feet bgs)	Arsenic	Cadmium	Copper	Iron	Manganese	Selenium	Silver	Thallium
0 - 0.5	**461**	**0.86 J**	**18.8**	**252,000**	**4,210**	**6.2 J**	**1.1 J**	**1.3 J**

EDR-GSP-01

Depth (feet bgs)	Aluminum	Arsenic	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Thallium
0 - 0.5	**141**	**0.64 J**	**3.1 J**	**21.6**	**112,000**	**8,480**	**8.4 J**	**1.2 J**	**6 J**

35-SD-17

Depth (feet bgs)	Arsenic	Cadmium	Cobalt	Copper	Iron	Manganese	Selenium	Silver	Thallium	Zinc
0 - 0.5	**141**	**0.64 J**	**3.1 J**	**21.6**	**112,000**	**8,480**	**8.4 J**	**1.2 J**	**6 J**	**187**

EDR-GSP-05

Depth (feet bgs)	Arsenic	Iron	Manganese
0 - 1	**22**	**20,000**	**3,100**

35-SD-16

Depth (feet bgs)	Arsenic	Iron	Manganese	Selenium	Silver	Thallium
0 - 0.5	**81**	**62,800**	**7,240**	**6.1 J**	**0.82 J**	**5.8 J**

35-SD-20

Depth (feet bgs)	Arsenic	Iron	Manganese	Selenium	Thallium
0 - 0.5	**77.5**	**37,300**	**4,560**	**5.6 J**	**1.9 J**

35-SD-05

Depth (feet bgs)	Arsenic	Cadmium	Iron	Manganese	Selenium	Silver	Thallium
0 - 0.5	**431**	**1 J**	**258,000**	**5,050**	**6.9 J**	**1.5 J**	**2.5 J**

35-SD-07

Depth (feet bgs)	Arsenic	Iron	Manganese	Selenium	Silver	Thallium
0 - 0.5	**277**	**165,000**	**3,530**	**6 J**	**0.71 J**	**2.3 J**

35-SD-06

Depth (feet bgs)	Arsenic	Iron	Manganese	Selenium	Silver	Thallium
0 - 0.5	**79.4**	**49,500**	**5,620**	**4.7 J**	**0.57 J**	**4.4 J**

35-SD-15

Depth (feet bgs)	Arsenic	Cadmium	Iron	Manganese	Selenium	Silver	Thallium
0 - 0.5	**136**	**0.63 J**	**86,000**	**6,090**	**6.2 J**	**0.76 J**	**4.7 J**

35-SD-14

Depth (feet bgs)	Arsenic	Cadmium	Copper	Iron	Manganese	Selenium	Silver	Thallium	Zinc
0 - 0.5	**511**	**1.2 J**	**23.9**	**302,000**	**4,360**	**7.6 J**	**1.4 J**	**1 J**	**126**

35-SD-18

Depth (feet bgs)	Arsenic	Cadmium	Copper	Iron	Manganese	Selenium	Silver	Zinc
0 - 0.5	**450**	**0.93 J**	**22.5**	**244,000**	**2,770**	**6.1 J**	**1.3 J**	**154**

35-SD-19

Depth (feet bgs)	Arsenic	Cadmium	Iron	Manganese	Selenium	Silver	Thallium
0 - 0.5	**499**	**1.5 J**	**258,000**	**3,250**	**12.2 J**	**2.1 J**	**0.8 J**

Central Avenue

LEGEND
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 75 150 300 450 Feet

METALS IN SEDIMENT (2014-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-4B

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-4B_Sediment_Metals_2014.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   PAH = polycyclic aromatic hydrocarbons

35-SD-20

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthylene	**0.049 M**	0.0052 J
Benzo(a)anthracene	**0.15 M**	0.0023 J
Benzo(a)pyrene	**0.18 M**	0.0025 J
Benzo(b)fluoranthene	**0.36 M**	0.0063 J
Benzo(k)fluoranthene	**0.11 M**	ND (0.0028)
Chrysene	**0.25 M**	0.0047 J
Dibenz(a,h)anthracene	**0.026 M**	ND (0.0028)
Fluoranthene	**0.6**	0.0089 J
Flourene	**0.039 M**	0.0036 J
Indeno(1,2,3-cd)pyrene	**0.13 M**	0.0024 J
Phenanthrene	**0.26 M**	0.0083 J
Pyrene	**0.49**	0.0093J

35-SD-21

	Depth (feet bgs) 0 - 1	1 - 2
Benzo(a)pyrene	**0.022 M**	0.0038 J
Benzo(b)fluoranthene	**0.04 M**	0.012 M
Indeno(1,2,3-cd)pyrene	**0.023 M**	0.006 M

35-SD-10

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	**0.031**	0.0044 J
Anthracene	**0.14**	0.013 M
Benzo(a)anthracene	**0.35**	0.029 M
Benzo(a)pyrene	**0.27**	**0.034**
Benzo(b)fluoranthene	**0.25 M**	**0.053 M**
Benzo(k)fluoranthene	**0.13 M**	0.021 M
Chrysene	**0.34**	0.048 M
Dibenz(a,h)anthracene	**0.042 M**	0.0084 J
Fluoranthene	**0.7**	0.094 M
Flourene	**0.055**	0.0082 J
Indeno(1,2,3-cd)pyrene	**0.2**	**0.037**
Phenanthrene	**0.42**	**0.044 M**
Pyrene	**0.68**	**0.087 M**

35-SD-09

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	**0.19 M**	**0.0072 M**
Acenaphthylene	**0.089 M**	ND (0.0033)
Anthracene	**0.13 J**	0.0023 J
Benzo(a)anthracene	**0.2**	0.0024J
Benzo(a)pyrene	**0.21**	0.0024 J
Benzo(b)fluoranthene	**0.44**	0.0047 J
Benzo(k)fluoranthene	**0.13**	ND (0.0033)
Chrysene	**0.35**	0.006 J
Dibenz(a,h)anthracene	**0.049 J**	ND (0.0033)
Fluoranthene	**0.74**	0.012 M
Flourene	**0.37 M**	0.012 M
Indeno(1,2,3-cd)pyrene	**0.19 J**	0.0025 J
Phenanthrene	**0.86 J**	0.0099 M
Pyrene	**0.63**	0.011 M

35-SD-13

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	**0.055 M**	**0.0077 M**
Acenaphthylene	**0.089 M**	0.002 J
Anthracene	**0.36 M**	ND (0.0034)
Benzo(a)anthracene	**0.48**	ND (0.0034)
Benzo(a)pyrene	**0.84**	ND (0.0034)
Benzo(b)fluoranthene	**0.3**	ND (0.0034)
Benzo(k)fluoranthene	**0.3**	ND (0.0034)
Chrysene	**0.45 M**	ND (0.0034)
Dibenz(a,h)anthracene	**0.066 M**	ND (0.0034)
Fluoranthene	**1**	0.006 J
Flourene	**0.075 M**	0.006 J
Indeno(1,2,3-cd)pyrene	**0.34 M**	ND (0.0034)
Phenanthrene	**0.39 M**	0.0055 J
Pyrene	**0.92**	0.006 J

SS035-SD-16

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.103 J**
Benzo(a)pyrene	**0.141 J**
Benzo(b)fluoranthene	**0.144 J**
Benzo(k)fluoranthene	**0.146 J**
Chrysene	**0.179**
Fluoranthene	**0.194 J**
Indeno(1,2,3-cd)pyrene	**0.109 J**
Phenanthrene	**0.117 J**
Pyrene	**0.201 J**

35-SD-18

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)pyrene	**0.078 J**
Chrysene	**0.11 J**

SS035-SD-17

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.183 J**
Benzo(a)pyrene	**0.239 J**
Benzo(b)fluoranthene	**0.28 J**
Benzo(k)fluoranthene	**0.254 J**
Chrysene	**0.316 J**
Fluoranthene	**0.363 J**
Indeno(1,2,3-cd)pyrene	**0.193 J**
Phenanthrene	**0.223 J**
Pyrene	**0.39 J**

EDR-GSP-04

Analyte	Depth (feet bgs) 0 - 1
2-Methylnaphthalene	**0.052 J**
Acenaphthene	**0.042 J**
Acenaphthylene	**0.043 J**
Anthracene	**0.081**
Benzo(a)anthracene	**0.11**
Benzo(a)pyrene	**0.14**
Benzo(b)fluoranthene	**0.26**
Benzo(k)fluoranthene	**0.11**
Chrysene	**0.18**
Fluoranthene	**0.5**
Fluorene	**0.18**
Indeno(1,2,3-cd)pyrene	**0.11**
Phenanthrene	**0.53**
Pyrene	**0.4**

35-SD-08

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	**0.092 M**	ND (0.0075)
Acenaphthylene	**0.051 M**	ND (0.0075)
Anthracene	**0.15 M**	ND (0.0075)
Benzo(a)anthracene	**0.32**	ND (0.0075)
Benzo(a)pyrene	**0.29**	ND (0.0075)
Benzo(b)fluoranthene	**0.48**	ND (0.0075)
Benzo(k)fluoranthene	**0.18**	ND (0.0075)
Chrysene	**0.43**	ND (0.0075)
Dibenz(a,h)anthracene	**0.055**	ND (0.0075)
Fluoranthene	**0.91**	ND (0.0075)
Flourene	**0.2 M**	ND (0.0075)
Indeno(1,2,3-cd)pyrene	**0.19**	ND (0.0075)
Phenanthrene	**1.1 M**	ND (0.0075)
Pyrene	**0.78**	ND (0.0075)

35-SD-15

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	ND (0.027)	**0.018 M**
Acenaphthylene	**0.45**	**0.052 M**
Anthracene	0.1 M	0.035 M
Benzo(a)anthracene	**0.13**	0.03 M
Benzo(a)pyrene	**0.096**	**0.022 M**
Benzo(b)fluoranthene	**0.2 M**	**0.059 M**
Benzo(k)fluoranthene	**0.058 M**	0.015 M
Chrysene	**0.26**	0.052 M
Dibenz(a,h)anthracene	**0.025 J**	ND (0.0041)
Fluoranthene	**0.81**	**0.26**
Flourene	**0.51 M**	**0.13 M**
Indeno(1,2,3-cd)pyrene	**0.073**	**0.02 M**
Phenanthrene	**1.2 M**	**0.25 M**
Pyrene	**0.74**	**0.22**

35-SD-16

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthylene	**0.049 M**	0.0052 J
Benzo(a)anthracene	**0.15 M**	0.0023 J
Benzo(a)pyrene	**0.18 M**	0.0025 J
Benzo(b)fluoranthene	**0.36 M**	0.0063 J
Benzo(k)fluoranthene	**0.11 M**	ND (0.0028)
Chrysene	**0.25 M**	0.0047 J
Dibenz(a,h)anthracene	**0.026 M**	ND (0.0028)
Fluoranthene	**0.6**	0.0089 J
Flourene	**0.039 M**	0.0036 J
Indeno(1,2,3-cd)pyrene	**0.13 M**	0.0024 J
Phenanthrene	**0.26 M**	0.0083 J
Pyrene	**0.49**	0.0093J

SS035-SD-11

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.0907 J**
Benzo(a)pyrene	**0.12 J**
Benzo(b)fluoranthene	**0.128 J**
Benzo(k)fluoranthene	**0.138 J**
Chrysene	**0.157**
Fluoranthene	**0.206 J**
Indeno(1,2,3-cd)pyrene	**0.101 J**
Phenanthrene	**0.121 J**
Pyrene	**0.201 J**

SS035-SD-01

	Depth (feet bgs) 0 - 1
Benzo(k)fluoranthene	**0.0649 J**
Chrysene	**0.069 J**

SS035-SD-02

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.15 J**
Benzo(a)pyrene	**0.213 J**
Benzo(b)fluoranthene	**0.256 J**
Benzo(g,h,i)perylene	**0.177 J**
Benzo(k)fluoranthene	**0.23 J**
Chrysene	**0.283 J**
Fluoranthene	**0.466 J**
Indeno(1,2,3-cd)pyrene	**0.229 J**
Phenanthrene	**0.291 J**
Pyrene	**0.382 J**

SS035-SD-03

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.134 J**
Benzo(a)pyrene	**0.179 J**
Benzo(b)fluoranthene	**0.182 J**
Benzo(k)fluoranthene	**0.195 J**
Chrysene	**0.299 J**
Fluoranthene	**0.322 J**
Indeno(1,2,3-cd)pyrene	**0.128 J**
Phenanthrene	**0.224 J**
Pyrene	**0.285 J**

35-SD-07

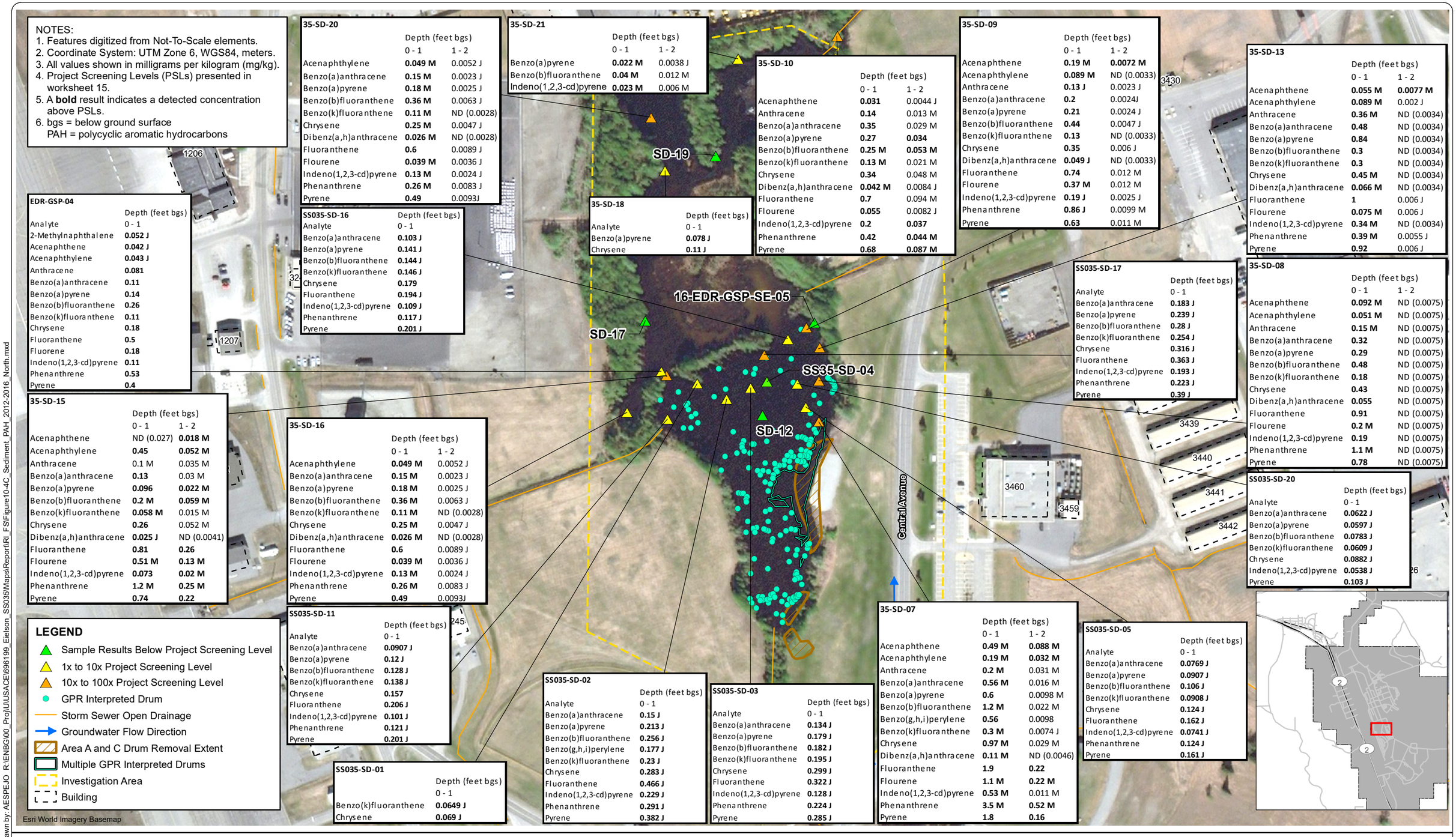
	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	**0.49 M**	**0.088 M**
Acenaphthylene	**0.19 M**	**0.032 M**
Anthracene	**0.2 M**	0.031 M
Benzo(a)anthracene	**0.56 M**	0.016 M
Benzo(a)pyrene	**0.6**	0.0098 M
Benzo(b)fluoranthene	**1.2 M**	0.022 M
Benzo(g,h,i)perylene	**0.56**	0.0098
Benzo(k)fluoranthene	**0.3 M**	0.0074 J
Chrysene	**0.97 M**	0.029 M
Dibenz(a,h)anthracene	**0.11 M**	ND (0.0046)
Fluoranthene	**1.9**	**0.22**
Flourene	**1.1 M**	**0.22 M**
Indeno(1,2,3-cd)pyrene	**0.53 M**	0.011 M
Phenanthrene	**3.5 M**	**0.52 M**
Pyrene	**1.8**	**0.16**

SS035-SD-05

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.0769 J**
Benzo(a)pyrene	**0.0907 J**
Benzo(b)fluoranthene	**0.106 J**
Benzo(k)fluoranthene	**0.0908 J**
Chrysene	**0.124 J**
Fluoranthene	**0.162 J**
Indeno(1,2,3-cd)pyrene	**0.0741 J**
Phenanthrene	**0.124 J**
Pyrene	**0.161 J**

SS035-SD-20

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.0622 J**
Benzo(a)pyrene	**0.0597 J**
Benzo(b)fluoranthene	**0.0783 J**
Benzo(k)fluoranthene	**0.0609 J**
Chrysene	**0.0882 J**
Indeno(1,2,3-cd)pyrene	**0.0538 J**
Pyrene	**0.103 J**



N W E S

0 100 200 400 600 Feet

PAH IN SEDIMENT (2012-2016) - NORTHERN PORTION

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-4C

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\AUSACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-4C_Sediment_PAH_2012-2016_North.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   PAH = polycyclic aromatic hydrocarbons

35-SD-11

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthylene	**0.047 M**	ND (0.0034)
Anthracene	**0.11 M**	ND (0.0034)
Benzo(a)anthracene	**0.18**	ND (0.0034)
Benzo(a)pyrene	**0.13**	ND (0.0034)
Benzo(b)fluoranthene	**0.18 M**	ND (0.0034)
Benzo(k)fluoranthene	**0.056 M**	ND (0.0034)
Chrysene	**0.18**	ND (0.0034)
Dibenz(a,h)anthracene	**0.022**	ND (0.0034)
Fluoranthene	**0.53**	0.0021 J
Fluorene	**0.056 M**	ND (0.0034)
Indeno(1,2,3-cd)pyrene	**0.082 M**	ND (0.0034)
Phenanthrene	**0.21 M**	ND (0.0034)
Pyrene	**0.46**	ND (0.0034)

SS035-SD-08

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.0804 J**
Benzo(a)pyrene	**0.121 J**
Benzo(b)fluoranthene	**0.108 J**
Benzo(k)fluoranthene	**0.128 J**
Chrysene	**0.147 J**
Fluoranthene	**0.21 J**
Indeno(1,2,3-cd)pyrene	**0.093 J**
Phenanthrene	**0.153 J**
Pyrene	**0.196 J**

SS035-SD-07

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.0412 J**
Benzo(a)pyrene	**0.0551 J**
Benzo(b)fluoranthene	**0.0628**
Benzo(k)fluoranthene	**0.0637**
Chrysene	**0.0763**
Indeno(1,2,3-cd)pyrene	**0.0488 J**
Phenanthrene	**0.0628 J**
Pyrene	**0.0937 J**

SS035-SD-14

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.083 J**
Benzo(a)pyrene	**0.106 J**
Benzo(b)fluoranthene	**0.111 J**
Benzo(k)fluoranthene	**0.125 J**
Chrysene	**0.144 J**
Fluoranthene	**0.186 J**
Indeno(1,2,3-cd)pyrene	**0.0862 J**
Phenanthrene	**0.121 J**
Pyrene	**0.176 J**

35-SD-06

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	**0.22 M**	**0.056 M**
Acenaphthylene	**0.13 M**	**0.021 M**
Anthracene	**0.17 M**	0.02 M
Benzo(a)anthracene	**13**	0.016
Benzo(a)pyrene	**0.097**	0.011
Benzo(b)fluoranthene	0.16 M	0.017 M
Benzo(k)fluoranthene	**0.068M**	0.0052 J
Chrysene	**0.18**	0.022 M
Dibenz(a,h)anthracene	**0.028**	ND (0.0039)
Fluoranthene	**0.56**	**0.07**
Flourene	**0.45 M**	**0.092 M**
Indeno(1,2,3-cd)pyrene	**0.086 M**	0.012
Phenanthrene	**1.2**	**0.15 M**
Pyrene	**0.5**	**0.057**

35-SD-14

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthylene	**0.14 M**	**0.0074 M**
Anthracene	**0.11 M**	ND (0.0036)
Benzo(a)anthracene	**0.047 M**	ND (0.0036)
Benzo(a)pyrene	**0.055**	ND (0.0036)
Benzo(b)fluoranthene	**0.12**	ND (0.0036)
Benzo(k)fluoranthene	**0.036**	ND (0.0036)
Chrysene	**0.1 M**	ND (0.0036)
Dibenz(a,h)anthracene	**0.014 J**	ND (0.0036)
Fluoranthene	**0.25**	ND (0.0036)
Fluorene	**0.31 M**	0.011
Indeno(1,2,3-cd)pyrene	**0.051**	ND (0.0036)
Phenanthrene	**0.69 M**	0.0052 J
Pyrene	**0.24**	ND (0.0036)

SS035-SD-09

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.0701 J**
Benzo(a)pyrene	**0.102 J**
Benzo(b)fluoranthene	**0.107 J**
Benzo(k)fluoranthene	**0.114 J**
Chrysene	**0.133 J**
Fluoranthene	**0.205 J**
Indeno(1,2,3-cd)pyrene	**0.0833 J**
Phenanthrene	**0.136 J**
Pyrene	**0.195 J**

SS035-SD-10

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.1 J**
Benzo(a)pyrene	**0.139 J**
Benzo(b)fluoranthene	**0.17 J**
Benzo(k)fluoranthene	**0.147 J**
Chrysene	**0.182 J**
Fluoranthene	**0.263 J**
Indeno(1,2,3-cd)pyrene	**0.117 J**
Phenanthrene	**0.168 J**
Pyrene	**0.255 J**

SS035-SD-12

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.116 J**
Benzo(a)pyrene	**0.172 J**
Benzo(b)fluoranthene	**0.194 J**
Benzo(k)fluoranthene	**0.203 J**
Chrysene	**0.22 J**
Fluoranthene	**0.322 J**
Indeno(1,2,3-cd)pyrene	**0.144 J**
Phenanthrene	**0.209 J**
Pyrene	**0.304 J**

SS035-SD-13

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.0606 J**
Benzo(a)pyrene	**0.0867 J**
Benzo(b)fluoranthene	**0.1 J**
Benzo(k)fluoranthene	**0.0894 J**
Chrysene	**0.108 J**
Fluoranthene	**0.171 J**
Indeno(1,2,3-cd)pyrene	**0.0673 J**
Phenanthrene	**0.109 J**
Pyrene	**0.168 J**

EDR-GSP-02

Analyte	Depth (feet bgs) 0 - 1
Acenaphthylene	**0.0084**
Benzo(b)fluoranthene	**0.031 Q**

EDR-GSP-01

Analyte	Depth (feet bgs) 0 - 1
2-Methylnaphthalene	**0.045**
Benzo(a)anthracene	**0.067**
Benzo(a)pyrene	**0.087**
Benzo(b)fluoranthene	**0.15**
Benzo(k)fluoranthene	**0.055 J**
Chrysene	**0.084**
Fluoranthene	**0.19**
Indeno(1,2,3-cd)pyrene	**0.047**
Naphthalene	**0.047**
Phenanthrene	**0.11**
Pyrene	**0.14**

35-SD-01

	Depth (feet bgs) 0 - 1	1 - 2
Benzo(b)fluoranthene	0.0062 J	**0.029 M**

35-SD-02

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthylene	**0.0079 J**	**0.0059 J**
Anthracene	**0.051 M**	0.023 M
Benzo(a)anthracene	**0.087**	0.017
Benzo(a)pyrene	**0.087**	0.011
Benzo(b)fluoranthene	**0.12**	0.017 M
Benzo(k)fluoranthene	**0.044**	0.0057 J
Chrysene	**0.097**	0.022
Dibenz(a,h)anthracene	**0.011**	ND (0.0035)
Fluoranthene	**0.19**	0.068
Indeno(1,2,3-cd)pyrene	**0.045**	0.0063 J
Phenanthrene	**0.075 M**	0.036 M
Pyrene	**0.24**	**0.11**

35-SD-03

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	**0.07 M**	ND (0.003)
Acenaphthylene	**0.054 M**	ND (0.003)
Anthracene	**0.33 M**	ND (0.003)
Benzo(a)anthracene	**0.27**	0.0024 J
Benzo(a)pyrene	**0.19**	0.0027 J
Benzo(b)fluoranthene	**0.29**	0.0049 J
Benzo(k)fluoranthene	**0.11**	0.0022 J
Chrysene	**0.24**	0.0036 J
Dibenz(a,h)anthracene	**0.032**	ND (0.003)
Fluoranthene	**1**	0.0026 J
Flourene	0.11 M	ND (0.003)
Indeno(1,2,3-cd)pyrene	**0.11**	0.0021 J
Phenanthrene	**0.49 M**	0.0028 J
Pyrene	**1.1**	0.0032 J

35-SD-04

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	**0.026 M**	0.002 J
Acenaphthylene	**0.022 M**	0.0054 J
Anthracene	**0.14 M**	0.0034 J
Benzo(a)anthracene	**0.2**	ND (0.0034)
Benzo(a)pyrene	**0.18**	ND (0.0034)
Benzo(b)fluoranthene	**0.32**	0.0033 J
Benzo(k)fluoranthene	**0.12**	ND (0.0034)
Chrysene	**0.28**	ND (0.0034)
Dibenz(a,h)anthracene	**0.032**	ND (0.0034)
Fluoranthene	**0.73**	0.0094
Flourene	0.07 M	0.0052 J
Indeno(1,2,3-cd)pyrene	**0.12**	ND (0.0034)
Phenanthrene	**0.22 M**	0.016
Pyrene	**0.66**	0.01

SS035-SD-19

Analyte	Depth (feet bgs) 0 - 1
Benzo(a)anthracene	**0.0678 J**
Benzo(a)pyrene	**0.0903 J**
Benzo(b)fluoranthene	**0.0909 J**
Benzo(k)fluoranthene	**0.0913 J**
Chrysene	**0.116 J**
Fluoranthene	**0.214 J**
Indeno(1,2,3-cd)pyrene	**0.0852 J**
Phenanthrene	**0.171 J**
Pyrene	**0.179 J**

35-SD-05

	Depth (feet bgs) 0 - 1	1 - 2
Acenaphthene	**0.022 M**	**0.056 M**
Acenaphthylene	**0.012 J**	**0.026 J**
Anthracene	**0.12**	**0.16 M**
Benzo(a)anthracene	**0.16**	**0.25**
Benzo(a)pyrene	**0.26**	**0.48**
Benzo(b)fluoranthene	0.11	**0.18**
Benzo(k)fluoranthene	**0.1**	**0.19**
Chrysene	**0.2 M**	**0.45**
Dibenz(a,h)anthracene	**0.037**	**0.048**
Fluoranthene	**0.39**	**0.76 M**
Flourene	**0.074 M**	**0.17 M**
Indeno(1,2,3-cd)pyrene	**0.12**	**0.2**
Phenanthrene	**0.28 M**	**0.63 M**
Pyrene	**0.36**	**0.64 M**

LEGEND
- Sample Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\UUSACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-4D_Sediment_PAH_2012-2016_South.mxd

0 100 200 400 600 Feet

PAH IN SEDIMENT (2012-2016) - SOUTHERN PORTION

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure **10-4D**

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   ND (0.012) = not detected (method reporting limit)
   PCBS = polychlorinated biphenyls
   PFAS = per-and polyfluorinated alkyl substances

35-SD-18

Depth (feet bgs)	Aroclor 1016	Aroclor 1254	Aroclor 1260
0-1	ND (0.011)	**0.53 J**	**0.17 J**
1-2	**0.036 J**	ND (0.012)	**0.085 J**

35-SD-17

Depth (feet bgs)	Aroclor 1260
0-1	**0.017 J**
1-2	**0.085 J**

35-SD-19

Depth (feet bgs)	Aroclor 1260
0-1	ND (0.0093)
1-2	**0.024 J**

SEE INSET

NS3/4

Depth (feet bgs)	PFOS
Unknown	**0.0097**

NS2

Depth (feet bgs)	Aroclor 1254
Unknown	**0.155**

NB3/4

Depth (feet bgs)	Aroclor 1260
3	**1.4**

NB2

Depth (feet bgs)	Aroclor 1260
3	**4.29**

NB5

Depth (feet bgs)	Aroclor 1260	PFOS
3	**11.6**	**0.00638**

SS1

Depth (feet bgs)	Aroclor 1254	PFOA
Unknown	**0.241**	**0.0643**

INSET

SD-10, SD-21, SD-20, SD-09, 16-EDR-GSP-SE-05, SS35-SD-17, SS35-SD-03, SS35-SD-16, SD-13, SD-15, 16-EDR-GSP-SE-04, SS35-SD-04, SS35-SD-20, SD-08, SS35-SD-01, SS35-SD-08, SD-16, SS35-SD-02, SD-12, SS35-SD-05, SS35-SD-07, SS35-SD-11, SD-14, SD-07, SS35-SD-06, SS35-SD-10, SD-11, SS35-SD-15, SS35-SD-12, SS35-SD-14, 16-EDR-GSP-SE-02, SD-06, 16-EDR-GSP-SE-03, SS35-SD-18, SS35-SD-09, SD-05, SS35-SD-13, SS35-SD-19, 16-EDR-GSP-01, SD-04, SD-03, SD-02, SD-01

Central Avenue

32251, 3242, 3243, 3240, 3228, 3226, 1207, 1212, 1211, 1208, 1209, 3245, 3460, 3459, 3440, 3441, 3442, 3426, 3462

NB1

LEGEND
- GAC Building Sample Location
- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 100 200 400 600 Feet

PCBS AND PFAS IN SEDIMENT AND SOIL (2012-2017)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure **10-4E**

Date: 05 Jul 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\IU\SACE\696199_Eielson_SS035\Maps\ReportRI_FS\Figure10-4E_Sediment_PCBs_PFAS.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   ND = not detected (method reporting limit)

SS35-SD-02

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**0.445 J**	ND (0.58)	ND (0.58)

EDR-GSP-04

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT	gamma-BHC
0 - 1	**9.5**	**0.65**	**0.03 J**	**0.0054 J,Q**

35-SD-15

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**9.9. J**	**0.83 M**	**0.051 J**
1 - 2	**3.8 J**	**0.27 JM**	ND (0.0096)

35-SD-12

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**0.28 M**	**0.028 J**	**0.01 J**
1 - 2	**0.0053 J**	ND (0.0039)	ND (0.0078)

35-SD-16

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**2.8 M**	**0.68 M**	ND (0.045)
1 - 2	**0.024 J**	**0.0051 J**	ND (0.0067)

35-SD-14

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**1.4 J**	**0.24**	**0.028 J**
1 - 2	**0.009 J**	ND (0.0042)	**0.0033 J**

35-SD-11

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**6.9 M**	**0.54 M**	**0.42 J**
1 - 2	**0.027**	ND (0.004)	**0.012 J**

EDR-GSP-02/03

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT	gamma-BHC	gamma-Chlordane
0 - 1	**1.2 Q**	**0.12 Q**	**0.0057 J,B**	**0.0019 J,Q**	**0.00078 J,Q**

EDR-GSP-01

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**0.52 Q-**	**0.043 Q**	**0.0019 J,B,Q**

35-SD-02

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**29 J**	**0.86 M**	**14**
1 - 2	**13 J**	**0.3 J**	**4.6 J**

35-SD-10

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**0.048**	**0.0056 J**	**0.026 J**
1 - 2	**0.34**	**0.13**	**0.54**

EDR-GSP-05

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT	Heptachlor Epoxide
0 - 1	**0.071**	**0.0055**	**0.00092 J,B**	**0.00087 J,Q**

35-SD-09

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT	alpha-BHC
0 - 1	**15 J**	**1.3 J**	**0.15 J**	ND (0.015)
1 - 2	**0.18**	**0.017 J**	**0.11 J**	**0.0034 J**

35-SD-13

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**7 M**	**0.82**	**0.2 J**
1 - 2	**0.049 J**	ND (0.0004)	ND (0.008)

35-SD-08

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**19 M**	**1.2 M**	**1.6 J**
1 - 2	**0.0056 J**	**0.00096 J**	0.00069 J

35-SD-07

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**22**	**1.6 M**	**5.6 J**
1 - 2	**0.53 M**	**0.062 J**	ND (0.01)

35-SD-06

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**11 M**	**0.79 J**	**2 J**
1 - 2	**0.28**	**0.023 J**	**0.0084 J**

35-SD-05

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**1.8 J**	**0.37 M**	**0.072 J**
1 - 2	**3 J**	**0.43 J**	**0.096 J**

35-SD-03

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**210 J**	**2.8**	**33**
1 - 2	**0.043 J**	ND (0.0074)	**0.0097 J**

35-SD-01

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**0.13 J**	ND (0.0063)	ND (0.031)
1 - 2	**0.47 J**	ND (0.00037)	**0.35 J**

35-SD-04

Depth (feet bgs)	4,4-DDD	4,4-DDE	4,4-DDT
0 - 1	**100 J**	**3.1 M**	**32 J**
1 - 2	**0.089 J**	**0.0081 J**	**0.015 J**

LEGEND
- Sample Results Below Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 100 200 400 600 Feet

PESTICIDES IN SEDIMENT (2012-2016)

Figure **10-4F**

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-4F_Sediment_Pesticides_2012-2016.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   DRO = diesel range organics
   RRO = residual range organics
   TPH = total petroleum hydrocarbon

35-SD-20	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**350**
1 - 2	8.7 J

35-SD-21	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**300**
1 - 2	**410**

35-SD-09	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**6,500 J**
1 - 2	110 J

EDR-GSP-04	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**690**

35-SD-15	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**9,800**
1 - 2	**1,300**

35-SD-16	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**1,900**
1 - 2	**320 J**

SS035-SD-11	
Depth (feet bgs)	DRO (C10-C25)
0 - 0.5	**358**

35-SD-14	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**3,900**
1 - 2	31

SS035-SD-12	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**340**

EDR-GSP-02	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**330 Q**

35-SD-01	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**370**
1 - 2	18 J

35-SD-13	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**1,700**
1 - 2	12 J

35-SD-08	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**2,000**
1 - 2	13 J

35-SD-07		
Depth (feet bgs)	DRO (C10-C25)	RRO (C25-C36)
0 - 1	**6,700**	**16,000**
1 - 2	**900**	1,200

35-SD-11	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**1,100**
1 - 2	ND (26)

35-SD-06	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**2,700**
1 - 2	130

35-SD-05	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**400**
1 - 2	**650**

35-SD-04	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**2,600**
1 - 2	39

35-SD-03	
Depth (feet bgs)	DRO (C10-C25)
0 - 1	**4,200**
1 - 2	57

SD-10, SD-19, SD-18, SD-17, 16-EDR-GSP-SE-05, SD-12, 16-EDR-GSP-SE-03, 16-EDR-GSP-01, SD-02

Central Avenue

3242, 3231, 3227, 3228, 3226, 3430, 3425, 3446, 3460, 3459, 3426, 3462, 1207, 1212, 1211, 1208, 1209

LEGEND
- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 100 200 400 600 Feet

TPH IN SEDIMENT (2012-2016)

Figure **10-4G**

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-4G_Sediment_TPH_2012-2016.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in milligrams per kilogram (mg/kg).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. bgs = below ground surface
   ND (0.012) = not detected (method reporting limit)
   VOCS = volatile organic compounds

35-SD-20

Depth (feet bgs)	Methylene Chloride
0 - 1	**0.256 J**

35-SD-19

Depth (feet bgs)	Methylene Chloride
0 - 1	**0.211 J**

35-SD-18

Depth (feet bgs)	Methylene Chloride
0 - 1	**0.285 J**

35-SD-17

Depth (feet bgs)	Chloroform
0 - 1	ND (0.056)
1 - 2	**0.031 J**

35-SD-15

Depth (feet bgs)	Benzene	Carbon Disulfide	Naphthalene
0 - 1	0.02 J	ND (0.048)	**0.41**
1 - 2	**0.076 J**	**0.023 J**	**0.21**

35-SD-16

Depth (feet bgs)	Naphthalene
0 - 1	**0.064**
1 - 2	0.0092 J

SS035-SD-11

Depth (feet bgs)	Benzene
0 - 1	**0.0475 J**

35-SD-14

Depth (feet bgs)	1,2,4-Trimethylbenzene	Benzene	Naphthalene	p-Isopropyltoluene
0 - 1	**0.57 J**	**0.067 J**	**0.3**	**0.069 J**
1 - 2	ND (0.033)	**0.027 J**	**0.057**	0.012 J

SS035-SD-10

Depth (feet bgs)	Benzene
0 - 1	**0.0342 J**

SS035-SD-12

Depth (feet bgs)	Acetone
0 - 1	**0.895 J**

35-SD-21

Depth (feet bgs)	Carbon Disulfide	Naphthalene
0 - 1	0.015 J	**0.89**
1 - 2	**0.0062 J**	0.0021 J

SS035-SD-02

Depth (feet bgs)	Methylene Chloride
0 - 1	**0.378 J**

35-SD-10

Depth (feet bgs)	Carbon Disulfide
0 - 1	**0.0061 J**
1 - 2	**0.0088 J**

35-SD-09

Depth (feet bgs)	1,2,4-Trimethylbenzene	Carbon Disulfide	Naphthalene	p-Isopropyltoluene
0 - 1	**0.21 J**	**0.045 J**	**0.35 J**	**0.05 J**
1 - 2	**0.36 J**	**0.024 J**	**0.14 J**	**0.049 J**

35-SD-13

Depth (feet bgs)	Naphthalene
0 - 1	**0.13**
1 - 2	0.0071

35-SD-08

Depth (feet bgs)	Naphthalene
0 - 1	**0.075**
1 - 2	ND (0.0075)

35-SD-07

Depth (feet bgs)	Benzene	Naphthalene
0 - 1	**0.0086 J**	**0.28 M**
1 - 2	**0.031 J**	**0.086**

35-SD-06

Depth (feet bgs)	Acetone	Benzene	Naphthalene	p-Isopropyltoluene
0 - 1	ND (0.85)	**0.04 J**	**0.33**	**0.038 J**
1 - 2	**0.27 J**	0.018 J	**0.082**	ND (0.042)

35-SD-11

Depth (feet bgs)	Naphthalene
0 - 1	**0.098**
1 - 2	ND (0.0034)

35-SD-05

Depth (feet bgs)	Naphthalene	p-Isopropyltoluene
0 - 1	**0.063**	ND (0.084)
1 - 2	**0.25**	**0.035 J**

35-SD-04

Depth (feet bgs)	Benzene	Carbon Disulfide	Naphthalene
0 - 1	**0.088 J**	ND (0.083)	**0.074**
1 - 2	**0.07 J**	**0.014 J**	0.024

35-SD-03

Depth (feet bgs)	Carbon Disulfide	Naphthalene
0 - 1	0.11 J	**0.058**
1 - 2	ND (0.016)	ND (0.003)

SS035-SD-13

Depth (feet bgs)	Benzene
0 - 1	**0.0421 J**

EDR-GSP-01

Depth (feet bgs)	Naphthalene
0 - 1	**0.047**

35-SD-02

Depth (feet bgs)	Benzene	Carbon Disulfide
0 - 1	0.017 J	ND (0.038)
1 - 2	**0.031**	**0.0075 J**

35-SD-01

Depth (feet bgs)	Carbon Disulfide
0 - 1	**0.21 J**
1 - 2	**0.0075 J**

SS35-SD-03, SS35-SD-17, 16-EDR-GSP-SE-05, SS35-SD-16, 16-EDR-GSP-SE-04, SS35-SD-04, SS35-SD-20, SS35-SD-01, SS35-SD-08, SS35-SD-05, SD-12, SS35-SD-07, SS35-SD-06, SS35-SD-15, SS35-SD-14, SS35-SD-09, 16-EDR-GSP-SE-02, 16-EDR-GSP-SE-03, SS35-SD-18, SS35-SD-19

Central Avenue

32251, 3228, 3226, 3430, 3425, 3446, 3460, 3459, 3426, 1211, 3245, 1208, 1209

LEGEND
- Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 100 200 400 600 Feet

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\US\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-4H_Sediment_VOCs.mxd

VOCS IN SEDIMENT (2012-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-4H

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in micrograms per liter (µg/L).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a dectected concentration above PSLs.

35-SW-08

	2012
Arsenic	**6.7**
Copper	**0.57 J**
Iron	**1500**
Magnesium	**16000**
Manganese	**1400 J**

35-SW-07

	2012
Arsenic	**4.1**
Iron	**620**
Magnesium	**13000**
Manganese	**1300 J**

35-SW-06

	2012
Arsenic	**4.1**
Iron	**630**
Magnesium	**13000**
Manganese	**1300 J**

35-SW-05

	2012
Arsenic	**4.2**
Iron	**640**
Magnesium	**13000**
Manganese	**1400 J**

35-SW-01

	2012
Arsenic	**4**
Iron	**620**
Magnesium	**13000**
Manganese	**1300 J**

35-SW-04

	2012
Arsenic	**4**
Iron	**690**
Magnesium	**13000**
Manganese	**1300 J**

35-SW-03

	2012
Arsenic	**4.2**
Iron	**660**
Magnesium	**13000**
Manganese	**1300 J**

35-SW-02

	2012
Arsenic	**4.2**
Iron	**650**
Magnesium	**13000**
Manganese	**1300 J**

Central Avenue

LEGEND
- 10x to 100 Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 112.5 225 450 675 Feet

METALS IN SURFACE WATER (2012)

Figure **10-5A**

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-5A_SurfaceWater_Metals.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in micrograms per liter (µg/L).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. ND = not detected (method reporting limit)

35-SW-08

	2012
4,4-DDD	**0.0063 J**
4,4-DDE	ND (0.0028)
4,4-DDT	**0.0031 J**

35-SW-07

	2012
4,4-DDD	**0.019**
4,4-DDE	ND (0.0028)
4,4-DDT	**0.0032 J**

35-SW-06

	2012
4,4-DDD	**0.023**
4,4-DDE	ND (0.0028)
4,4-DDT	**0.0046 J**

35-SW-05

	2012
4,4-DDD	**0.021**
4,4-DDE	ND (0.0028)
4,4-DDT	**0.003 J**

35-SW-01

	2012
4,4-DDD	**0.033**
4,4-DDE	**0.0019 J**
4,4-DDT	**0.0073 J**

35-SW-04

	2012
4,4-DDD	**0.019**
4,4-DDE	ND (0.0029)
4,4-DDT	ND (0.0048)

35-SW-03

	2012
4,4-DDD	**0.019**
4,4-DDE	ND (0.0028)
4,4-DDT	**0.0039 J**

35-SW-02

	2012
4,4-DDD	**0.021**
4,4-DDE	**0.0016 J**
4,4-DDT	**0.003 J**

LEGEND
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 112.5 225 450 675 Feet

PESTICIDES IN SURFACE WATER (2012)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-5B

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\UUSACE\696199_Eielson_SS035\Maps\Report\RI_FSFigure10-5B_SurfaceWater_Pesticides.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in micrograms per liter (µg/L).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. DRO = diesel range organics
   RRO = residual range organics
   TPH = total petroleum hydrocarbon

35-SW-08

	2012
DRO (C10-C25)	**290**
RRO (C25-C36)	**240**

35-SW-07

	2012
DRO (C10-C25)	**250**
RRO (C25-C36)	**130**

35-SW-06

	2012
DRO (C10-C25)	**240**
RRO (C25-C36)	**160**

35-SW-05

	2012
DRO (C10-C25)	**260**
RRO (C25-C36)	**150**

35-SW-01

	2012
DRO (C10-C25)	**240**
RRO (C25-C36)	**170**

35-SW-04

	2012
DRO (C10-C25)	**260**
RRO (C25-C36)	**140**

35-SW-03

	2012
DRO (C10-C25)	**280**
RRO (C25-C36)	**160**

35-SW-02

	2012
DRO (C10-C25)	**250**
RRO (C25-C36)	**140**

LEGEND
- 1x to 10x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 112.5 225 450 675 Feet

TPH IN SURFACE WATER (2012)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-5C

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-5C_SurfaceWater_TPH.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in micrograms per liter (µg/L).
4. Metals compared to established background threshold values (BTVs) presented in worksheet 10. Change to "Project Screening Levels (PSLs) presented in worksheet 15."
5. A **bold** result indicates a detected concentration above BTVs.

35M13

	9/30/2012
Arsenic	**15**
Cobalt	**6**
Iron	**7300**

35M12

	9/30/2012
Arsenic	**8.3**
Cobalt	**8.9**
Iron	**8200**

35M11

	9/30/2012
Arsenic	**5.6**
Iron	**3000**

35M10

	9/29/2012
Arsenic	**8.5**
Iron	**7800**

35M09

	9/30/2012
Arsenic	**13**
Iron	**2600**

LEGEND
- Monitoring Well
- Sample Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 112.5 225 450 675 Feet

METALS IN GROUNDWATER (2014-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-6A

Date: 27 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\UUSACE\696199_Eielson_SS035\Maps\Report\RI_FSFigure10-6A_Groundwater_Metals.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in micrograms per liter (µg/L).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. ND = not detected (method reporting limit)

35M08

Analyte	6/14/2014	6/1/2015	9/17/2015	6/3/2016	9/12/2016
4,4-DDD	ND (0.004)	ND (0.0097)	ND (0.01)	ND (0.01)	ND (0.0097)
4,4-DDE	ND (0.004)	ND (0.0097)	ND (0.01)	ND (0.01)	ND (0.0097)
4,4-DDT	ND (0.004)	ND (0.0049)	ND (0.01)	ND (0.01)	ND (0.0097)
Heptachlor	**0.015 B**	ND (0.0097)	ND (0.01)	ND (0.01)	ND (0.012)

35M02

Analyte	6/14/2014	6/1/2015	9/17/2015	6/3/2016	9/12/2016
4,4-DDD	ND (0.004)	ND (0.01)	ND (0.01)	ND (0.01)	0.0095 U
4,4-DDE	ND (0.004)	ND (0.005)	ND (0.01)	ND (0.01)	0.0095 U
4,4-DDT	ND (0.004)	ND (0.005)	ND (0.0051)	ND (0.01)	0.0095 U
Heptachlor	**0.014 B**	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.0095)

35M10

	9/29/2012	10/5/2012
4,4-DDD	ND (0.0047)	ND (0.0038)
4,4-DDE	ND (0.0028)	ND (0.0038)
4,4-DDT	0.0029 J	ND (0.0038)

35M09

Analyte	9/29/2012	10/5/2012
4,4-DDD	ND (0.0047)	ND (0.0038)
4,4-DDE	ND (0.0028)	ND (0.0038)
4,4-DDT	0.003 J	ND (0.0038)

35M13

	9/30/2012
4,4-DDD	ND (0.0047)
4,4-DDE	ND (0.0028)
4,4-DDT	0.0028 J

35M12

	9/30/2012
4,4-DDD	ND (0.0047)
4,4-DDE	ND (0.0028)
4,4-DDT	0.0031 J
Aldrin	**0.0063 J**

35M11

	9/30/2012
4,4-DDD	ND (0.0047)
4,4-DDE	ND (0.0028)
4,4-DDT	0.0031 J

35M04

Analyte	6/14/2014	6/2/2015	9/17/2015	6/3/2016	9/12/2016
4,4-DDD	ND (0.004)	ND (0.0098)	ND (0.011)	ND (0.01)	ND (0.01)
4,4-DDE	ND (0.004)	ND (0.0049)	ND (0.011)	ND (0.01)	ND (0.01)
4,4-DDT	ND (0.004)	ND (0.0049)	ND (0.011)	ND (0.01)	ND (0.01)
Heptachlor	**0.014 B**	ND (0.011)	ND (0.011)	ND (0.01)	ND (0.01)

35M01

Analyte	6/14/2014	6/2/2015	9/17/2015	6/3/2016	9/12/2016
4,4-DDD	ND (0.004)	ND (0.01)	ND (0.01)	ND (0.011)	ND (0.011)
4,4-DDE	ND (0.004)	ND (0.0051)	ND (0.01)	ND (0.011)	ND (0.011)
4,4-DDT	ND (0.004)	ND (0.0051)	ND (0.01)	ND (0.011)	ND (0.011)
Heptachlor	**0.014 B**	ND (0.01)	ND (0.01)	ND (0.011)	ND (0.011)

35M05

Analyte	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016
4,4-DDD	ND (0.004)	ND (0.0098)	ND (0.011)	ND (0.01)	ND (0.01)
4,4-DDE	ND (0.004)	ND (0.0098)	ND (0.011)	ND (0.01)	ND (0.01)
4,4-DDT	ND (0.004)	ND (0.0098)	ND (0.011)	ND (0.01)	ND (0.01)
Heptachlor	**0.015 B**	ND (0.0098)	ND (0.011)	ND (0.01)	ND (0.01)

35M06

Analyte	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016
4,4-DDD	ND (0.004)	ND (0.0048)	ND (0.01)	ND (0.01)	ND (0.01)
4,4-DDE	ND (0.004)	ND (0.0048)	ND (0.01)	ND (0.0051)	ND (0.01)
4,4-DDT	ND (0.004)	ND (0.0095)	ND (0.0051)	ND (0.01)	ND (0.01)
Heptachlor	**0.016 B**	ND (0.0066)	ND (0.01)	ND (0.01)	ND (0.01)

LEGEND
- Monitoring Well
- Sample Results Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 112.5 225 450 675 Feet

PESTICIDES IN GROUNDWATER (2014-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-6B

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\UUSACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-6B_Groundwater_Pesticides.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in micrograms per liter (µg/L).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. DRO = diesel range organics
   RRO = residual range organics
   TPH = total petroleum hydrocarbon

35M13

Analyte	9/30/2012
DRO (C10-C25)	**190**
RRO (C25-C36)	**160**

35M12

	9/30/2012
DRO (C10-C25)	**270**
RRO (C25-C36)	**210**

35M11

	9/30/2012
DRO (C10-C25)	**310**
RRO (C25-C36)	**250**

35M10

	9/29/2012	10/5/2012
DRO (C10-C25)	**250**	ND (96.6)
RRO (C25-C36)	**210**	70.5 J

35M09

	9/29/2012	10/5/2012
DRO (C10-C25)	**240**	ND (76.8)
RRO (C25-C36)	**160**	55 J

LEGEND
- Monitoring Well
- Sample Results Below Project Screening Level
- 1x to 10x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Base Boundary
- Building

Esri World Imagery Basemap

N S E W

0 112.5 225 450 675 Feet

TPH IN GROUNDWATER (2012-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
10-6C

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\U\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure10-6C_Groundwater_TPH.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. All values shown in micrograms per liter (µg/L).
4. Project Screening Levels (PSLs) presented in worksheet 15.
5. A **bold** result indicates a detected concentration above PSLs.
6. ND = not detected (method reporting limit)
   VOCS = volatile organic compounds

35M08

	6/14/2014	6/1/2015	9/17/2015	6/3/2016	9/12/2016
Vinyl Chloride	ND (0.4)	ND (0.2)	**0.16 J**	ND (0.2)	ND (0.2)

35M04

	6/14/2014	6/2/2015	9/17/2015	6/3/2016	9/12/2016
Vinyl Chloride	ND (0.4)	ND (0.2)	**0.17 J**	ND (0.2)	ND (0.2)

35M01

	6/14/2014	6/2/2015	9/17/2015	6/3/2016	9/12/2016
Vinyl Chloride	ND (0.4)	ND (0.2)	**0.15 J**	ND (0.2)	ND (0.2)

35M05

	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016
Vinyl Chloride	ND (0.4)	ND (0.2)	**0.14 J**	ND (0.2)	ND (0.2)

35M06

	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016
Vinyl Chloride	ND (0.4)	ND (0.2)	**0.17 J**	ND (0.2)	ND (0.2)

35M12

	9/30/2012
Chloroform	**0.89 J**

35M11

	9/30/2012
Chloroform	**0.73 J**

35M02

	6/14/2014	6/2/2015	9/17/2015	6/3/2016	9/12/2016
Vinyl Chloride	ND (0.4)	ND (0.2)	**0.14 J**	ND (0.2)	ND (0.2)

35M09

	9/29/2012
Chloroform	**0.37 J**

35M14

	6/14/2014	6/2/2015	9/17/2015	6/3/2016	9/12/2016
Benzene	**0.58 J**	**0.82 J**	**0.67 J**	0.31 J	0.34 J
Vinyl Chloride	ND (0.4)	ND (0.2)	**0.17 J**	ND (0.2)	ND (0.2)

LEGEND
- Monitoring Well
- Sample Results Below Project Screening Level
- 1x to 10x Project Screening Level
- GPR Interpreted Drum
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Multiple GPR Interpreted Drums
- Investigation Area
- Base Boundary
- Building

Esri World Imagery Basemap

N W E S

0 112.5 225 450 675 Feet

VOCS IN GROUNDWATER (2014-2016)

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure **10-6D**

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Table 10-1 Eielson Soil Background Threshold Values

Parameter	Maximum Detected Concentration for Fluvial Soil (mg/kg)	UPL[a] for Fluvial Soil (mg/kg)	UTL[b] for Fluvial Soil (mg/kg)	Maximum Detected Concentration for Loess (mg/kg)	UPL[a] for Loess (mg/kg)	UTL[b] for Soil (mg/kg)
Aluminum	14000	13000	13000	17000	17000	18000[c]
Antimony	1.2	1.1	1.2	1	1.2[c]	1.3[c]
Arsenic	24	23	24	14	13	13
Barium	160	160	160	220	208	212
Beryllium	0.25	0.25	0.26[c]	0.58	0.5	0.53
Cadmium	0.32	0.29	0.3	0.38	0.3	0.34
Calcium	7600	7300	7600	5700	5200	5300
Chromiuim	30	28	29	51	46	47
Cobalt	14	15[c]	15[c]	16	16.0	17[c]
Copper	80	64	67	45	47[c]	48[c]
Iron	31000	32000[c]	33000[c]	34000	34000	35000[c]
Lead	13	12	12	11	11	11
Magnesium	8000	7900	8100[c]	6200	6000	6100
Manganese	610	540	560	560	520	550
Mercury	0.046	0.040	0.041	0.077	0.077	0.079[c]
Nickel	36	35	36	42	40	42
Potassium	1300	1200	1200	1100	1100	1100
Selenium	0.97	0.93	0.96	1	0.92	0.94
Silver	0.17	0.14	0.15	0.092	0.093[c]	0.096[c]
Sodium	510	480	490	290	310[c]	310[c]
Thallium	0	0.21	0.21	0	0.2	0.24
Vanadium	63	57	58	85	78	80
Zinc	93	87	89	79	74	75

Notes:

a) UPL is the 95% Upper Predictin Limit

b) UTL is the 95% Upper Tolerance Limit with 90% Coverage

c) Indicates parameters where UPL and/or UTL exceed maximum detected concentration, in which case the maximum detected concentration is recommended as the background threshold values.

mg/kg = milligram(s) per kilogram

Table 10-2 Eielson Groundwater Background Threshold Values

Parameter	Maximum Detected Concentration (µg/L)	UPL[a] (µg/L)	UTL[b] (µg/L)
Aluminum	NA	500	500
Antimony	0.68	0.57	0.59
Arsenic	5.4	5.4	5.4
Barium	180	190[c]	190[c]
Beryllium	0.36	0.36	0.36
Cadmium	0.23	0.23	0.23
Calcium	88000	80000	81000
Chromiuim	0.059	0.59	0.59
Cobalt	6.1	5.1	5.3
Copper	2.5	2.5	2.6[c]
Iron	3000	2400	2600
Lead	0.41	0.35	0.37
Magnesium	17000	16000	16000
Manganese	3100	2900	3000
Mercury	NA	0.041	0.041
Nickel	7.6	7.3	7.5
Potassium	3800	4000[c]	4200[c]
Selenium	NA	1.6	1.6
Silver	NA	0.10	0.10
Sodium	5300	4900	4900
Thallium	NA	1.0	1.0
Vanadium	6.9	6.5	5.00
Zinc	7.6	6.5	6.7

Notes:

a) UPL is the 95% Upper Prediction Limit

b) UTL is the 95% Upper Tolerance Limit with 90% Coverage

c) Indicates parameters where UPL and/or UTL exceed maximum detected concentration, in which case the maximum detected concentration is recommended as the background threshold values.

µg/L = microgram(s) per liter

Table 10-3 Summary of Chemicals Detected in Soil

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date / Screening Level	Screening Level Source	01-BASE 16-EDR-01-BASE-SO 0.5 7/31/2016	01-ESW(03) 16-EDR-01-ESW(03)SO 0.75 8/1/2016	02-BASE 16-EDR-02-BASE-SO 0.5 7/31/2016	02-ESW(04) 16-EDR-02-ESW(04)-SO 0.83 8/1/2016	02-ESW(04) 16-EDR-03-ESW(04)-SO 0.83 8/1/2016	03-BASE 16-EDR-03-BASE-SO 0.5 7/31/2016	04-BASE 16-EDR-04-BASE-SO 0.5 7/31/2016	04-ESW(02) 16-EDR-04-ESW(02)-SO 0.67 8/1/2016	05-BASE 16-EDR-05-BASE-SO 0.5 7/31/2016
Hydrocarbons (mg/kg)											
C10-C25 DRO	250	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)	**2700**	**100**	**3200**	**81**	**120**	**5400**	**520**	**220**	**2300**
C25-C36 RRO	10000	ADEC Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)	**380**	**170**	**270**	**120**	**170**	**310**	**610**	**560**	**460**
C6-C10 GRO	300	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)	**1.3 J**	1.3 U	1.5 U	1.5 U	1.5 U	1.4 U	**0.76 J**	1.1 U	**10**
VOCs (mg/kg)											
1,1,1,2-Tetrachloroethane	0.022	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	85	0.0057 U	0.0086 U
1,1,1-Trichloroethane	32	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
1,1,2,2-Tetrachloroethane	0.003	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0036 U	0.0033 U	0.0038 U	0.0036 U	0.0036 U	0.0034 U	0.0066 U	0.0029 U	0.0043 U
1,1,2-Trichloroethane	0.0014	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
1,1-Dichloroethane	0.092	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
1,1-Dichloroethene	1.2	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
1,1-Dichloropropene	0.018	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
1,2,3-Trichlorobenzene	0.15	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
1,2,3-Trichloropropane	0.000031	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
1,2,4-Trichlorobenzene	0.082	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.022 U	0.022 U	0.018 U	0.04 U	0.016 U	0.017 U
1,2,4-Trimethylbenzene	0.16	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.016 J,B**	0.0033 U	0.0038 U	0.0036 U	0.0036 U	0.0034 U	0.0066 U	**0.0035 J,B**	**0.01 J,B**
1,2-Dibromo-3-Chloropropane	0.0053	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
1,2-Dichlorobenzene	2.4	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.015 U	0.015 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
1,2-Dichloroethane	0.0055	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U,H	0.0066 U,H	0.0075 U,H	0.0073 U,H	0.0073 U,H	0.0069 U,H	0.013 U,H	0.0057 U	0.0086 U,H
1,2-Dichloropropane	0.016	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0036 U	0.0033 U	0.0038 U	0.0036 U	0.0036 U	0.0034 U	0.0066 U	0.0029 U	0.0043 U
1,3,5-Trimethylbenzene	1.3	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.011 J**	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
1,3-Dichlorobenzene	2.3	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.0086 U	0.017 U
1,3-Dichloropropane	160	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
1,4-Dichlorobenzene	0.037	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.022 U	0.022 U	0.018 U	0.04 U	0.016 U	0.017 U
2,2-Dichloropropane	0.016	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
2-Butanone (MEK)	15	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.11 U	0.1 U	0.11 U	0.11 U	0.11 U	0.1 U	0.2 U	0.086 U	0.13 U
2-Chlorotoluene	160	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
2-Hexanone	0.11	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.054 U	0.05 U	0.057 U	0.055 U	0.055 U	0.052 U	0.099 U	0.043 U	0.065 U
4-Chlorotoluene	160	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
4-Methyl-2-Pentanone (MIBK)	18	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.054 U	0.05 U	0.057 U	0.055 U	0.055 U	0.052 U	0.099 U	0.043 U	0.065 U
Acetone	38	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.36 U,Q-	0.33 U,Q-	0.38 U,Q-	0.36 U,Q-	0.36 U,Q-	0.34 U,Q-	0.66 U,Q-	0.29 U	0.43 U,Q-
Benzene	0.022	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.0074 J**	0.0033 U	0.0038 U	0.0036 U	**0.0015 J**	0.0034 U	0.0066 U	0.0029 U	0.0043 U
bis(2-Chloroethoxy)methane	19	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
Bromobenzene	0.36	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0036 U	0.0033 U	0.0038 U	0.0036 U	0.0036 U	0.0034 U	0.0066 U	0.0029 U	0.0043 U
Bromochloromethane	15	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.021 U,H	0.02 U,H	0.023 U,H	0.022 U,H	0.022 U,H	0.021 U,H	0.04 U,H	0.017 U	0.026 U,H
Bromodichloromethane	0.0043	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
Bromoform	0.1	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.043 U	0.04 U	0.045 U	0.044 U	0.044 U	0.041 U	0.079 U	0.034 U	0.052 U
Bromomethane	0.024	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
Carbon Disulfide	2.9	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
Carbon Tetrachloride	0.021	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
Chlorobenzene	0.46	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
Chloroethane	72	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
Chloroform	0.0071	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
Chloromethane	0.61	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
cis-1,2-Dichloroethene	0.12	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
cis-1,3-Dichloropropene	0.018	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0036 U	0.0033 U	0.0038 U	0.0036 U	0.0036 U	0.0034 U	0.0066 U	0.0029 U	0.0043 U
Dibromochloromethane	0.0027	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
Dibromomethane	0.025	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U,H	0.01 U,H	0.011 U,H	0.011 U,H	0.011 U,H	0.01 U,H	0.02 U,H	0.0086 U	0.013 U,H
Dichlorodifluoromethane	3.9	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.071 U	0.066 U	0.075 U	0.073 U	0.073 U	0.069 U	0.13 U	0.057 U	0.086 U
Ethylbenzene	0.13	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
Ethylene Dibromide (EDB)	0.00024	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
Hexachlorobutadiene	0.02	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.038 U	0.04 U	0.044 U	0.044 U	0.044 U	0.041 U	0.079 U	0.034 U	0.04 U
Isopropylbenzene	5.4	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.0068 J,B**	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
m- & p-Xylene	1.5	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.071 U	0.066 U	0.075 U	0.073 U	0.073 U	0.069 U	0.13 U	0.057 U	0.086 U
Methyl tert-Butyl Ether (MTBE)	0.4	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
Methylene Chloride	0.33	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
n-Butylbenzene	2	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
n-Propylbenzene	5.2	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
Naphthalene	0.038	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.024 J**	**0.0092 J**	**0.015**	0.022 U	0.022 U	**0.016 J**	**0.017 J**	**0.0069 J**	**0.2**
o-Xylene	1.5	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
p-Isopropyltoluene	0.03	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	**0.023**	0.026 U
sec-Butylbenzene	2.8	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.014 J,B**	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	**0.005 J,B**	0.026 U
Styrene	10	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
tert-Butylbenzene	3.5	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
Tetrachloroethene (PCE)	0.19	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	**0.017 B,Q**	0.011 U,Q	0.01 U	0.02 U	**0.13 B**	0.013 U
Toluene	6.7	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	**0.012 J**
trans-1,2-Dichloroethene	1.3	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.021 U	0.02 U	0.023 U	0.022 U	0.022 U	0.021 U	0.04 U	0.017 U	0.026 U
trans-1,3-Dichloropropene	0.018	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

M- = Result is estimated with a low bias due to an MS/MSD exceedance

mg/kg = milligram(s) per kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date / Screening Level	Screening Level Source	01-BASE 16-EDR-01-BASE-SO 0.5 7/31/2016	01-ESW(03) 16-EDR-01-ESW(03)SO 0.75 8/1/2016	02-BASE 16-EDR-02-BASE-SO 0.5 7/31/2016	02-ESW(04) 16-EDR-02-ESW(04)-SO 0.83 8/1/2016	02-ESW(04) 16-EDR-03-ESW(04)-SO 0.83 8/1/2016	03-BASE 16-EDR-03-BASE-SO 0.5 7/31/2016	04-BASE 16-EDR-04-BASE-SO 0.5 7/31/2016	04-ESW(02) 16-EDR-04-ESW(02)-SO 0.67 8/1/2016	05-BASE 16-EDR-05-BASE-SO 0.5 7/31/2016
Trichloroethene (TCE)	0.011	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0071 U	0.0066 U	0.0075 U	0.0073 U	0.0073 U	0.0069 U	0.013 U	0.0057 U	0.0086 U
Trichlorofluoromethane	41	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.071 U	0.066 U	0.075 U	0.073 U	0.073 U	0.069 U	0.13 U	0.057 U	0.086 U
Vinyl Chloride	0.0008	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.02 U	0.0086 U	0.013 U
SVOCs (mg/kg)											
1-Methylnaphthalene	0.41	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.079**	**0.0063 J**	**0.095**	0.015 U	**0.007 J**	**0.036**	**0.47**	**0.0073 J**	**0.63**
2,4,5-Trichlorophenol	28	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.054 U	0.057 U	0.063 U	0.051 U	0.051 U	0.06 U	0.79 U	0.054 U	0.057 U
2,4,6-Trichlorophenol	0.092	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.054 U	0.057 U	0.063 U	0.051 U	0.051 U	0.06 U	0.79 U	0.054 U	0.057 U
2,4-Dichlorophenol	0.21	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.054 U	0.057 U	0.063 U	0.051 U	0.051 U	0.06 U	0.79 U	0.054 U	0.057 U
2,4-Dimethylphenol	3.2	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.48**	0.057 U	**2.3**	0.051 U	0.051 U	0.06 U	0.79 U	0.054 U	**1.2**
2,4-Dinitrophenol	0.34	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.43 U,Q-	0.45 U,Q-	0.51 U,Q-	0.41 U,Q-	0.41 U,Q-	0.48 U,Q-	6.3 U,Q-	0.43 U,Q-	0.46 U,Q-
2,4-Dinitrotoluene	0.024	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.038 U	0.04 U	0.044 U	0.036 U	**0.089 J**	0.042 U	0.55 U	0.038 U	0.04 U
2,6-Dinitrotoluene	0.005	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.038 U	0.04 U	0.044 U	0.036 U	**0.047 J**	0.042 U	0.55 U	0.038 U	0.04 U
2-Chloronaphthalene	26	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
2-Chlorophenol	0.71	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
2-Methylnaphthalene	1.3	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.091**	**0.014**	**0.086**	**0.01 J**	**0.019 J**	**0.057**	**0.54**	**0.011**	**1**
2-Methylphenol	6.2	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
2-Nitroaniline	63	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.038 U	0.04 U	0.044 U	0.036 U	**0.043 J**	0.042 U	0.55 U	0.038 U	0.04 U
2-Nitrophenol	--		0.038 U	0.04 U	0.044 U	0.036 U	0.036 U	0.042 U	0.55 U	0.038 U	0.04 U
3,3-Dichlorobenzidine	0.056	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.076 U	0.08 U	0.089 U	0.072 U	**0.048 J**	0.084 U	1.1 U	0.076 U	0.08 U
3- & 4-Methylphenol	6.1	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.038 U	0.04 U	0.044 U	0.036 U	0.036 U	0.042 U	0.55 U	0.038 U	0.04 U
3-Nitroaniline	--		0.098 U	0.1 U	0.11 U	0.092 U	**0.056 J**	0.11 U	1.4 U	0.098 U	0.1 U
4,6-Dinitro-2-Methylphenol	0.51	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.26 U,Q-	0.27 U,Q-	0.3 U,Q-	0.25 U,Q-	**0.11 J,Q-**	0.29 U,Q-	3.8 U,Q-	0.26 U,Q-	0.28 U,Q-
4-Bromophenyl Phenyl Ether	--		0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
4-Chloro-3-Methylphenol	630	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.054 U	0.057 U	0.063 U	0.051 U	0.051 U	0.06 U	0.79 U	0.054 U	0.057 U
4-Chloroaniline	0.015	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
4-Chlorophenyl Phenyl Ether	--		0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
4-Nitroaniline	25	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.054 U	0.057 U	0.063 U	0.051 U	**0.043 J**	0.06 U	0.79 U	0.054 U	0.057 U
4-Nitrophenol	--		0.11 U	0.11 U	0.13 U	0.1 U	0.1 U	0.12 U	1.6 U	0.11 U	0.11 U
Acenaphthene	37	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.045**	0.0019 U	**0.039**	0.015 U	0.015 U	**0.027**	0.027 U	0.0018 U	**0.15**
Acenaphthylene	18	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.07**	0.0019 U	**0.18**	0.015 U	**0.011 J**	**0.094**	**0.05 J**	**0.0023 J**	**0.14**
Anthracene	230	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**0.0055**	**0.0074**	**0.025**	0.015 U	**0.019 J**	0.002 U	**0.62**	0.0018 U	**0.022**
Benzo(a)anthracene	0.16	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**0.1**	**0.028**	**0.05**	**0.027**	**0.039**	**0.046**	**0.39**	**0.025**	**0.052**
Benzo(a)pyrene	0.02	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.11**	**0.032 J**	**0.061**	**0.033 J,Q**	**0.047 Q**	**0.045**	0.047 U	**0.037 J**	**0.05**
Benzo(b)fluoranthene	0.16	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**0.15**	**0.032**	**0.073**	**0.026 Q**	**0.046 Q**	**0.058**	**0.22**	**0.043**	**0.07**
Benzo(g,h,i)perylene	230	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.071**	**0.02 J**	**0.046**	**0.019 J**	**0.025 J**	**0.04 J**	**0.085**	**0.032 J**	**0.039 J**
Benzo(k)fluoranthene	2	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.076**	**0.021 J**	**0.041 J**	**0.015 J**	**0.04 J**	**0.033 J**	**0.2**	**0.016 J**	**0.027 J**
Benzoic acid	200	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.43 U	0.45 U	0.51 U	0.41 U	0.41 U	0.48 U	6.3 U	**0.55 J**	0.46 U
Benzyl alcohol	5.7	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.052 J**	0.057 U	0.063 U	**0.056 J**	**0.039 J**	**0.11 J**	0.79 U	**0.039 J**	0.057 U
bis(2-Chloroethyl)ether	0.00042	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.054 U	0.057 U	0.063 U	0.051 U	0.051 U	0.06 U	0.79 U	0.054 U	0.057 U
bis(2-Chloroisopropyl)ether	310	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.038 U	0.04 U	0.044 U	0.036 U	0.036 U	0.042 U	0.55 U	0.038 U	0.04 U
bis(2-Ethylhexyl)phthalate	39	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**0.077 J**	0.14 U	**0.093 J**	**0.06 J**	**0.056 J**	0.14 U	**0.84 J**	0.13 U	**0.088 J**
Butyl Benzyl Phthalate	16	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.13 U	**0.086 J**	0.15 U	0.12 U	**0.059 J**	0.14 U	1.9 U	**0.087 J**	0.14 U
Carbazole	--		0.016 U	0.017 U	0.019 U	0.015 U	**0.01 J**	0.018 U	0.24 U	0.016 U	0.017 U
Chrysene	20	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.098**	**0.018 J**	**0.052**	**0.012 J**	**0.025 J**	**0.038**	**0.12 J**	**0.015 J**	**0.057**
di-n-Butyl Phthalate	16	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.11 J**	0.14 U	0.15 U	0.12 U	0.12 U	0.14 U	1.9 U	0.13 U	0.14 U
di-n-Octyl Phthalate	63	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.054 U	0.057 U	0.063 U	0.051 U	**0.025 J**	0.06 U	0.79 U	0.054 U	0.057 U
Dibenz(a,h)anthracene	0.02	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.011**	0.0034 U	**0.006 J**	0.036 U	**0.013 J**	**0.0045 J**	0.047 U	0.0033 U	**0.0047 J**
Dibenzofuran	0.97	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
Diethyl phthalate	60	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.13 U	0.14 U	0.15 U	0.12 U	0.12 U	0.14 U	1.9 U	0.13 U	0.14 U
Dimethyl phthalate	48	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
Fluoranthene	240	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**0.14**	**0.047**	**0.055**	**0.03**	**0.044**	**0.064**	**0.31 J**	**0.054**	**0.22**
Fluorene	36	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.042**	0.0019 U	0.0022 U	0.015 U	0.015 U	**0.016**	**0.13**	0.0018 U	**0.19**
Hexachlorobenzene	0.0082	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
Hexachlorocyclopentadiene	0.0093	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.098 U,Q-	0.1 U,Q-	0.11 U,Q-	0.092 U,Q-	0.093 U,Q-	0.11 U,Q-	1.4 U,Q-	0.098 U,Q-	0.1 U,Q-
Hexachloroethane	0.018	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
Indeno(1,2,3-cd)pyrene	0.2	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.089**	**0.024 J**	**0.056**	**0.017 J**	**0.032 J**	**0.041 J**	**0.12**	**0.04 J**	**0.05**
Isophorone	2.7	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	0.015 U	0.018 U	0.24 U	0.016 U	0.017 U
N-Nitrosodimethylamine (NDMA)	0.0000033	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.22 U	0.23 U	0.25 U	0.21 U	0.21 U	0.24 U	3.2 U	0.22 U	0.23 U
N-Nitrosodiphenylamine	4.6	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.033 U	0.034 U	0.038 U	0.031 U	**0.024 J**	0.036 U	0.47 U	0.033 U	0.034 U
N-Nitrosodipropylamine	0.00068	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.054 U	0.057 U	0.063 U	0.051 U	0.051 U	0.06 U	0.79 U	0.054 U	0.057 U
Nitrobenzene	0.0079	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	0.019 U	0.015 U	**0.036 J**	0.018 U	0.24 U	0.016 U	0.017 U
Pentachlorophenol	0.0043	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.26 U	0.27 U	0.3 U	0.25 U	0.25 U	0.29 U	3.8 U	0.26 U	0.28 U
Phenanthrene	39	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.047**	**0.015 J**	**0.03**	0.015 U	**0.018 J**	**0.022**	**0.59**	**0.016 J**	**0.14**
Phenol	29	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.016 U	0.017 U	**0.028 J**	**0.013 J**	**0.02 J**	0.018 U	0.24 U	0.016 U	0.017 U
Pyrene	87	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.16**	**0.036**	**0.11**	**0.032**	**0.043**	**0.075**	**0.51**	**0.028**	**0.62**

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date / Screening Level	Screening Level Source	01-BASE 16-EDR-01-BASE-SO 0.5 7/31/2016	01-ESW(03) 16-EDR-01-ESW(03)SO 0.75 8/1/2016	02-BASE 16-EDR-02-BASE-SO 0.5 7/31/2016	02-ESW(04) 16-EDR-02-ESW(04)-SO 0.83 8/1/2016	02-ESW(04) 16-EDR-03-ESW(04)-SO 0.83 8/1/2016	03-BASE 16-EDR-03-BASE-SO 0.5 7/31/2016	04-BASE 16-EDR-04-BASE-SO 0.5 7/31/2016	04-ESW(02) 16-EDR-04-ESW(02)-SO 0.67 8/1/2016	05-BASE 16-EDR-05-BASE-SO 0.5 7/31/2016
Metals (mg/kg)											
Aluminum	13000	Background Threshold Value	**6100**	**6700**	**5700**	**8100**	**7400**	**6000**	**5700**	**4000**	**5700**
Antimony	3.1	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**1.3**	**0.53**	**0.63**	**0.63 Q**	**4.1 Q**	**0.84**	**0.64**	**0.59**	**0.56**
Arsenic	23	Background Threshold Value	**6.8**	**5.8**	**7.4**	**7.9**	**9.6 Q**	**6.5**	**10**	**3.8**	**4.3**
Barium	1500	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**88**	**99**	**110**	**100**	**110**	**85**	**79**	**70**	**300**
Beryllium	16	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**0.11 J**	**0.11 J**	**0.12 J**	**0.14 J**	**0.12 J**	**0.1 J**	**0.093 J**	**0.07 J**	**0.12 J**
Cadmium	7.1	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**0.19 J**	**0.2 J**	**0.23**	**0.21**	**0.21**	**0.23**	**0.25**	**0.16**	**0.23**
Calcium	--		**8500**	**5200**	**4200**	**5000**	**4300 Q**	**5700**	**4400**	**3200**	**8300**
Chromium	10000	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**13**	**13**	**12**	**17**	**16**	**12**	**12**	**8.6**	**13**
Cobalt	15	Background Threshold Value	**5.6**	**6.3**	**5.1**	**7.7**	**7.3**	**5.7**	**5.5**	**3.3**	**4.2**
Copper	310	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**20**	**20**	**16**	**24**	**24**	**17**	**20**	**12**	**15**
Iron	32000	Background Threshold Value	**13000**	**14000**	**12000**	**18000**	**17000**	**13000**	**23000**	**8500**	**12000**
Lead	40	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**12**	**13**	**14**	**12**	**18 Q**	**9.7**	**12**	**10**	**30**
Magnesium	--		**3800**	**3800**	**3200**	**4700**	**4400**	**3600**	**3400**	**2100**	**2900**
Manganese	540	Background Threshold Value	**310**	**380**	**230**	**370**	**340**	**210**	**700**	**140**	**230**
Mercury	1.1	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**0.014 J**	**0.015 J**	**0.015 J**	**0.013 J**	**0.018 J**	**0.015 J**	**0.019 J**	**0.016 J**	**0.016 J**
Nickel	150	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**15**	**17**	**14**	**21**	**19**	**15**	**16**	**9.8**	**15**
Potassium	--		**490**	**760**	**510**	**1000**	**900**	**510**	**470**	**340**	**480**
Selenium	6.9	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.55 J**	**0.69 J**	**0.53 J**	**0.77 J**	**0.7 J**	**0.52 J**	**0.45 J**	**0.35 J**	**0.6 J**
Silver	11	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.069 J**	**0.05 J**	**0.038 J**	**0.08 J**	**0.13 J**	**0.072 J**	**0.032 J**	**0.02 J**	**0.028 J**
Sodium	--		180 U	**180**	170 U	**250**	**210**	**180**	180 U	**120**	150 U
Thallium	0.21	Background Threshold Value	- -	- -	- -			- -	- -	- -	- -
Vanadium	57	Background Threshold Value	**25**	**27**	**23**	**33**	**30**	**25**	**25**	**16**	**24**
Zinc	2300	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**39**	**33**	**30**	**42 Q**	**71 Q**	**52**	**98**	**20**	**42**
Pesticides (mg/kg)											
4,4-DDD	0.19	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**1.6 Q+**	**4.5 Q+**	**0.82 Q+**	**16 Q+**	**24 Q+**	**0.45 Q+**	**130 Q+**	**0.025 Q+**	**110**
4,4-DDE	0.72	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.27**	**0.63**	**0.15**	**2.2**	**2.9**	**0.3**	**2.5**	**0.011**	**33**
4,4-DDT	1.9	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	**2.7 Q**	**15 Q**	**0.63 Q**	**34 Q**	**52 Q**	**2.7 Q**	**110 Q**	**0.21 Q-**	**1500 Q**
Aldrin	0.0099	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0025 U	0.0007 U	0.00079 U	0.00072 U	0.00063 U	0.00074 U	0.0032 U	0.00092 U	**0.0044 J**
alpha-BHC	0.0029	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0062 U	0.0017 U	0.002 U	0.0018 U	0.0016 U	0.0018 U	0.0079 U	0.0023 U	0.011 U
alpha-Chlordane	0.18	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0037 U	0.001 U	**0.0011 J**	0.0011 U	0.00095 U	0.0011 U	0.0047 U	0.0014 U	0.0066 U
alpha-Endosulfan	9.3	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0037 U	0.001 U	0.0012 U	0.0011 U	0.00095 U	0.0011 U	0.0047 U	0.0014 U	0.0066 U
beta-BHC	0.01	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.012 U	0.0035 U	0.0039 U	0.0036 U	0.0032 U	0.0037 U	0.016 U	0.0046 U	**0.014 J**
beta-Endosulfan	9.3	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0012 U	0.00035 U	0.00039 U	0.00036 U	0.00032 U	0.00037 U	0.0016 U	0.00046 U	0.0022 U
delta-BHC	0.0029	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0037 U	0.001 U	0.0012 U	0.0011 U	0.00095 U	0.0011 U	0.0047 U	0.0014 U	**0.012 J**
Dieldrin	0.0047	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0087 U	0.0024 U	0.0028 U	0.0025 U	0.0022 U	0.0026 U	0.011 U	0.0032 U	**0.034 J**
Endosulfan Sulfate	9.3	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0037 U	0.001 U	0.0012 U	0.0011 U	0.00095 U	0.0011 U	0.0047 U	0.0014 U	0.0066 U
Endrin	0.61	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0037 U	0.001 U	**0.0058 J**	0.0011 U	0.00095 U	0.0011 U	0.0047 U	0.0014 U	0.0066 U
Endrin Aldehyde	0.61	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.012 U	0.0035 U	0.0039 U	0.0036 U	0.0032 U	0.0037 U	0.016 U	0.0046 U	**0.21**
Endrin Ketone	0.61	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.012 U	0.0035 U	0.0039 U	0.0036 U	0.0032 U	0.0037 U	0.016 U	0.0046 U	0.022 U
gamma-BHC	0.016	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**0.00067 J**	0.00035 U	0.00039 U	0.00036 U	0.00032 U	**0.0004 J**	0.0016 U	0.00046 U	**0.013 J**
gamma-Chlordane	0.18	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0062 U	**0.008**	0.002 U	**0.013 Q**	0.0016 U,Q	**0.0014 J**	**0.021**	0.0023 U	**0.12**
Heptachlor	0.0076	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0025 U	0.0007 U	0.00079 U,Q-	0.00072 U	0.00063 U	0.00074 U	0.0032 U	0.00092 U	**1.2**
Heptachlor Epoxide	0.0019	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0087 U	0.0024 U	0.0028 U,Q-	0.0025 U	0.0022 U	0.0026 U	**0.44**	0.0032 U	**4.7**
Methoxychlor	13	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.012 U,Q-	0.0035 U,Q-	0.0039 U,Q-	0.0036 U,Q-	0.0032 U,Q-	0.0037 U,Q-	0.016 U,Q-	**0.0052 J,Q-**	0.022 U,Q-
Toxaphene	0.49	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018)	0.31 U	0.087 U	0.099 U	0.091 U	0.079 U	0.092 U	0.39 U	0.11 U,Q-	0.55 U
Polychlorinated Biphenyls (mg/kg)											
Aroclor 1016	0.1	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.075 U	0.07 U	0.079 U	0.072 U	0.063 U	0.074 U	0.095 U	0.055 U,Q-	0.11 U
Aroclor 1221	0.1	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.037 U	0.035 U	0.039 U	0.036 U	0.032 U	0.037 U	0.047 U	0.028 U	0.055 U
Aroclor 1232	0.1	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.037 U	0.035 U	0.039 U	0.036 U	0.032 U	0.037 U	0.047 U	0.028 U	0.055 U
Aroclor 1242	0.1	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.013 U	0.012 U	0.014 U	0.013 U	0.011 U	0.013 U	0.017 U	0.0096 U	0.019 U
Aroclor 1248	0.1	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.037 U	0.035 U	0.039 U	0.036 U	0.032 U	0.037 U	0.047 U	0.028 U	0.055 U
Aroclor 1254	0.1	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.019 U	0.017 U	0.02 U	0.018 U	0.016 U	0.018 U	0.024 U	0.014 U	0.027 U
Aroclor 1260	0.1	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.026 U	0.024 U	0.028 U	0.025 U	0.022 U	0.026 U	0.033 U	0.019 U,Q-	0.038 U
Per- and Polyfluoroalkyl Substances (mg/kg)											
Perfluorooctanoic Acid	0.003	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--
Perfluorooctanesulfonic acid	0.0017	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--
General Chemistry (%)											
Moisture, percent	--		**22.2**	**17.6**	**27.4**	**18.6**	**20.2**	**24.5**	**37.9**	**12.4**	**19.5**
General Chemistry (%)											
Percent Solids	--		**77.8**	**82.4**	**72.6**	**81.4**	**79.8**	**75.5**	**62.1**	**87.6**	**80.5**
General Chemistry (mg/kg)											
Total Organic Carbon	--		- -	- -	- -	- -	- -	- -	- -	- -	- -

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	05-ESW(2)		06-BASE	07-BASE	08-BASE	08-ESW(03)	09-BASE	09-ESW(1)		10-BASE	11-BASE	11-ESW(03)		12-BASE	13-BASE
	Sample ID	16-EDR-05-ESW(2)-SO	16-EDR-06-ESW(2)-SO	16-EDR-06-BASE-SO	16-EDR-07-BASE-SO	16-EDR-08-BASE-SO	16-EDR-08-ESW(03)-SO	16-EDR-09-BASE-SO	16-EDR-09-ESW(1)-SO	16-EDR-10-ESW(1)-SO	16-EDR-10-BASE-SO	16-EDR-11-BASE-SO	16-EDR-11-ESW(03)-SO	16-EDR-12-ESW(03)-SO	16-EDR-12-BASE-SO	16-EDR-13-BASE-SO
	Sample Depth (ft)	2.5	2.5	0.5	0.5	2	0.75	1	1.5	1.5	0.75	0.5	0.75	0.75	0.5	0.5
	Sample Date	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/2/2016	8/2/2016	8/1/2016	8/1/2016
Analyte	**Screening Level**															
Hydrocarbons (mg/kg)																
C10-C25 DRO	250	**600**	**700**	**310**	**75**	**21 J**	**2000**	**6500**	**2700 Q**	**1100 Q**	**2200**	**2900**	**390**	**370**	**78**	**18 J,B**
C25-C36 RRO	10000	**8500 Q**	**3200 Q**	**420**	**210**	**81**	**5800**	**17000**	**9400 Q**	**3700 Q**	**6600**	**8100**	**1500**	**2100**	**290**	**45 J**
C6-C10 GRO	300	3.2 U	4.3 U	2.5 U	2.6 U	2.3 U	**140 Q+**	**19**	**68 Q**	**120 Q**	**14**	**2.3 J**	**11 Q**	**2.5 J,Q**	**1.2 J**	**1.4 J**
VOCs (mg/kg)																
1,1,1,2-Tetrachloroethane	0.022	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
1,1,1-Trichloroethane	32	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
1,1,2,2-Tetrachloroethane	0.003	0.0079 U	0.011 U	0.0062 U	0.0066 U	0.0058 U	0.0052 U	0.0059 U	0.0045 U	0.006 U	0.0034 U	0.0032 U	0.0039 U	0.0035 U	0.002 U	0.0026 U
1,1,2-Trichloroethane	0.0014	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
1,1-Dichloroethane	0.092	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
1,1-Dichloroethene	1.2	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
1,1-Dichloropropene	0.018	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
1,2,3-Trichlorobenzene	0.15	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	0.031 U	0.036 U	0.027 U	0.036 U	0.02 U	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
1,2,3-Trichloropropane	0.000031	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	0.031 U	0.036 U	0.027 U	0.036 U	0.02 U	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
1,2,4-Trichlorobenzene	0.082	0.99 U	0.3 U	0.037 U	0.023 U	0.021 U	0.031 U	0.036 U	0.17 U	0.18 U	0.02 U	0.019 U	0.16 U	0.17 U	0.012 U	0.016 U
1,2,4-Trimethylbenzene	0.16	0.0079 U	0.011 U	0.0062 U	0.0066 U	0.0058 U	**3.7**	**0.31**	**0.024 J,B**	0.006 U	**0.29**	**0.13**	**0.012 J,B**	**0.013 J,B**	0.002 U	**0.045 B,M**
1,2-Dibromo-3-Chloropropane	0.0053	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
1,2-Dichlorobenzene	2.4	0.99 U	0.3 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.17 U	0.18 U	0.0068 U	0.0064 U	0.16 U	0.17 U	0.0039 U	0.0053 U
1,2-Dichloroethane	0.0055	0.016 U	0.021 U	0.012 U,H	0.013 U,H	0.012 U,H	0.01 U	0.012 U,H	0.0091 U	0.012 U	0.0068 U,H	0.0064 U,H	0.0077 U	0.007 U	0.0039 U,H	0.0053 U,H
1,2-Dichloropropane	0.016	0.0079 U	0.011 U	0.0062 U	0.0066 U	0.0058 U	0.0052 U	0.0059 U	0.0045 U	0.006 U	0.0034 U	0.0032 U	0.0039 U	0.0035 U	0.002 U	0.0026 U
1,3,5-Trimethylbenzene	1.3	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	**1.5**	**0.18**	0.014 U	0.018 U	**0.085**	**0.092**	0.012 U	**0.013 J**	0.0059 U	**0.028 M**
1,3-Dichlorobenzene	2.3	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.016 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
1,3-Dichloropropane	160	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
1,4-Dichlorobenzene	0.037	0.99 U	0.3 U	0.037 U	0.023 U	0.021 U	0.031 U	0.036 U	0.17 U	0.18 U	0.02 U	0.019 U	0.16 U	0.17 U	0.012 U	0.016 U
2,2-Dichloropropane	0.016	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	0.031 U	0.036 U	0.027 U	0.036 U	0.02 U	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
2-Butanone (MEK)	15	0.24 U	0.32 U	0.19 U	0.2 U	0.17 U	0.16 U	0.18 U	0.14 U	0.18 U	0.1 U	0.097 U	0.12 U	0.1 U	0.059 U	0.079 U
2-Chlorotoluene	160	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
2-Hexanone	0.11	0.12 U	0.16 U	0.093 U	0.099 U	0.087 U	0.078 U	0.089 U	0.068 U	0.09 U	0.051 U	0.048 U	0.058 U	0.052 U	0.03 U	0.04 U
4-Chlorotoluene	160	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U,Q	**0.052 B,Q**	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
4-Methyl-2-Pentanone (MIBK)	18	0.12 U	0.16 U	0.093 U	0.099 U	0.087 U	0.078 U	0.089 U	0.068 U	0.09 U	0.051 U	0.048 U	0.058 U	0.052 U	0.03 U	0.04 U
Acetone	38	0.79 U	1.1 U	0.62 U,Q-	0.66 U,Q-	0.58 U,Q-	0.52 U	0.59 U,Q-	0.45 U	0.6 U	0.34 U,Q-	0.32 U,Q-	**0.13 J**	0.35 U	0.2 U,Q-	0.26 U,Q-
Benzene	0.022	0.0079 U	0.011 U	0.0062 U	0.0066 U	0.0058 U	0.0052 U	**0.0094 J**	0.0045 U	0.006 U	0.0034 U	0.0032 U	0.0039 U	0.0035 U	0.002 U	0.0026 U
bis(2-Chloroethoxy)methane	19	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
Bromobenzene	0.36	0.0079 U	0.011 U	0.0062 U	0.0066 U	0.0058 U	0.0052 U	0.0059 U	0.0045 U	0.006 U	0.0034 U	0.0032 U	0.0039 U	0.0035 U	0.002 U	0.0026 U
Bromochloromethane	15	0.048 U	0.064 U	0.037 U,H	0.04 U,H	0.035 U,H	0.031 U	0.036 U,H	0.027 U	0.036 U	0.02 U,H	0.019 U,H	0.023 U	0.021 U	0.012 U,H	0.016 U,H
Bromodichloromethane	0.0043	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
Bromoform	0.1	0.095 U	0.13 U	0.074 U	0.079 U	0.069 U	0.062 U	0.071 U	0.054 U	0.072 U	0.041 U	0.039 U	0.046 U	0.042 U	0.024 U	0.032 U
Bromomethane	0.024	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	0.031 U	0.036 U	0.027 U	0.036 U	0.02 U	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
Carbon Disulfide	2.9	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	0.031 U	0.036 U	0.027 U	0.036 U	0.02 U	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
Carbon Tetrachloride	0.021	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
Chlorobenzene	0.46	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	0.031 U	0.036 U	0.027 U	0.036 U	0.02 U	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
Chloroethane	72	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	0.031 U	0.036 U	0.027 U	0.036 U	0.02 U	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
Chloroform	0.0071	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
Chloromethane	0.61	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	0.031 U	0.036 U	0.027 U	0.036 U	0.02 U	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
cis-1,2-Dichloroethene	0.12	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
cis-1,3-Dichloropropene	0.018	0.0079 U	0.011 U	0.0062 U	0.0066 U	0.0058 U	0.0052 U	0.0059 U	0.0045 U	0.006 U	0.0034 U	0.0032 U	0.0039 U	0.0035 U	0.002 U	0.0026 U
Dibromochloromethane	0.0027	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
Dibromomethane	0.025	0.024 U	0.032 U	0.019 U,H	0.02 U,H	0.017 U,H	0.016 U	0.018 U,H	0.014 U	0.018 U	0.01 U,H	0.0097 U,H	0.012 U	0.01 U	0.0059 U,H	0.0079 U,H
Dichlorodifluoromethane	3.9	0.16 U	0.21 U	0.12 U	0.13 U	0.12 U	0.1 U	0.12 U	0.091 U	0.12 U	0.068 U	0.064 U	0.077 U	0.07 U	0.039 U	0.053 U
Ethylbenzene	0.13	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	**0.11**	**0.13**	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
Ethylene Dibromide (EDB)	0.00024	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
Hexachlorobutadiene	0.02	2.3 U	0.71 U	0.074 U	0.054 U	0.048 U	0.062 U	0.071 U	0.39 U	0.43 U	0.041 U	0.039 U	0.38 U	0.39 U	0.024 U	0.032 U
Isopropylbenzene	5.4	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	**0.57**	**0.059 B**	0.027 U	0.036 U	**0.05 B**	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
m- & p-Xylene	1.5	0.16 U	0.21 U	0.12 U	0.13 U	0.12 U	**1.5**	**0.15 J**	0.091 U	0.12 U	**0.06 J**	**0.029 J**	0.077 U	0.07 U	0.039 U	0.053 U,M-
Methyl tert-Butyl Ether (MTBE)	0.4	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
Methylene Chloride	0.33	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
n-Butylbenzene	2	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	**0.88 Q**	0.036 U	0.027 U	0.036 U	**0.098**	**0.025 J**	0.023 U	0.021 U	0.012 U	**0.014 J**
n-Propylbenzene	5.2	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	**0.65**	**0.078 B**	0.014 U	0.018 U	**0.075 B**	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
Naphthalene	0.038	0.99 U	0.3 U	**0.077 J**	**0.0035 J**	**0.0037 J**	**0.83**	**8.6**	0.17 U	0.18 U	**3.8**	**0.33**	0.16 U	0.17 U	**0.0033 J**	**0.016 J**
o-Xylene	1.5	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	**0.047 B**	**0.042 J,B**	0.0091 U	0.012 U	**0.0052 J,B**	**0.017 J,B**	0.0077 U	0.007 U	0.0039 U	**0.012 J,B**
p-Isopropyltoluene	0.03	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	**0.72**	0.036 U	0.027 U	0.036 U	**0.072**	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
sec-Butylbenzene	2.8	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	**0.61**	**0.078 B**	0.027 U	0.036 U	**0.057 B**	**0.019 J,B**	0.023 U	0.021 U	0.012 U	**0.012 J,B**
Styrene	10	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
tert-Butylbenzene	3.5	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	**0.071 H,Q+**	**0.019 J**	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
Tetrachloroethene (PCE)	0.19	**0.029 J,B**	0.032 U	0.019 U	**0.16 B**	**0.06 B**	0.016 U	0.018 U	0.014 U,Q	**0.028 B,Q**	0.01 U	0.0097 U	0.012 U,Q	**0.015 B,Q**	0.0059 U	0.0079 U
Toluene	6.7	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
trans-1,2-Dichloroethene	1.3	0.048 U	0.064 U	0.037 U	0.04 U	0.035 U	0.031 U	0.036 U	0.027 U	0.036 U	0.02 U	0.019 U	0.023 U	0.021 U	0.012 U	0.016 U
trans-1,3-Dichloropropene	0.018	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

M- = Result is estimated with a low bias due to an MS/MSD exceedance

mg/kg = milligram(s) per kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	05-ESW(2)		06-BASE	07-BASE	08-BASE	08-ESW(03)	09-BASE	09-ESW(1)		10-BASE	11-BASE	11-ESW(03)		12-BASE	13-BASE
	Sample ID	16-EDR-05-ESW(2)-SO	16-EDR-06-ESW(2)-SO	16-EDR-06-BASE-SO	16-EDR-07-BASE-SO	16-EDR-08-BASE-SO	16-EDR-08-ESW(03)-SO	16-EDR-09-BASE-SO	16-EDR-09-ESW(1)-SO	16-EDR-10-ESW(1)-SO	16-EDR-10-BASE-SO	16-EDR-11-BASE-SO	16-EDR-11-ESW(03)-SO	16-EDR-12-ESW(03)-SO	16-EDR-12-BASE-SO	16-EDR-13-BASE-SO
	Sample Depth (ft)	2.5	2.5	0.5	0.5	2	0.75	1	1.5	1.5	0.75	0.5	0.75	0.75	0.5	0.5
	Sample Date	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/2/2016	8/2/2016	8/1/2016	8/1/2016
Analyte	**Screening Level**															
Trichloroethene (TCE)	0.011	0.016 U	0.021 U	0.012 U	0.013 U	0.012 U	0.01 U	0.012 U	0.0091 U	0.012 U	0.0068 U	0.0064 U	0.0077 U	0.007 U	0.0039 U	0.0053 U
Trichlorofluoromethane	41	0.16 U	0.21 U	0.12 U	0.13 U	0.12 U	0.1 U	0.12 U	0.091 U	0.12 U	0.068 U	0.064 U	0.077 U	0.07 U	0.039 U	0.053 U
Vinyl Chloride	0.0008	0.024 U	0.032 U	0.019 U	0.02 U	0.017 U	0.016 U	0.018 U	0.014 U	0.018 U	0.01 U	0.0097 U	0.012 U	0.01 U	0.0059 U	0.0079 U
SVOCs (mg/kg)																
1-Methylnaphthalene	0.41	0.99 U	0.3 U	**0.077 J**	**0.0044 J**	**0.0033 J**	**1**	**7.4**	0.17 U	0.18 U	**5.8**	**1.9**	**0.098 J**	0.17 U	**0.0053 J**	**0.004 J**
2,4,5-Trichlorophenol	28	3.3 U	1 U	0.38 U	0.077 U	0.068 U	0.54 U	3.6 U	0.56 U	0.61 U	2.9 U	0.26 U	0.54 U	0.56 U	0.044 U	0.057 U
2,4,6-Trichlorophenol	0.092	3.3 U	1 U	0.38 U	0.077 U	0.068 U	0.54 U	3.6 U	0.56 U	0.61 U	2.9 U	0.26 U	0.54 U	0.56 U	0.044 U	0.057 U
2,4-Dichlorophenol	0.21	3.3 U	1 U	0.38 U	0.077 U	0.068 U	0.54 U	3.6 U	0.56 U	0.61 U	2.9 U	0.26 U	0.54 U	0.56 U	0.044 U	0.057 U
2,4-Dimethylphenol	3.2	3.3 U	1 U	0.38 U	0.077 U	0.068 U	0.54 U	3.6 U	0.56 U	0.61 U	2.9 U	0.26 U	0.54 U	0.56 U	0.044 U	0.057 U
2,4-Dinitrophenol	0.34	26 U,Q-	8.1 U,Q-	3.1 U,Q-	0.62 U,Q-	0.55 U,Q-	4.4 U,Q-	28 U,Q-	4.5 U,Q-	4.9 U,Q-	23 U,Q-	2 U,Q-	4.3 U,Q-	4.5 U,Q-	0.35 U,Q-	- -
2,4-Dinitrotoluene	0.024	2.3 U	0.71 U	0.27 U	0.054 U	0.048 U	0.38 U	2.5 U	0.39 U	0.43 U	2 U	0.18 U	0.38 U	0.39 U	0.031 U	0.04 U
2,6-Dinitrotoluene	0.005	2.3 U	0.71 U	0.27 U	0.054 U	0.048 U	0.38 U	2.5 U	0.39 U	0.43 U	2 U	0.18 U	0.38 U	0.39 U	0.031 U	0.04 U
2-Chloronaphthalene	26	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
2-Chlorophenol	0.71	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
2-Methylnaphthalene	1.3	0.99 U	0.3 U	**0.17**	**0.0077 J**	**0.0031 J**	**1.4**	**11**	0.17 U	0.18 U	**8.5**	**2**	**0.097 J**	**0.049 J**	**0.0064 J**	**0.0082 J,M**
2-Methylphenol	6.2	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
2-Nitroaniline	63	2.3 U	0.71 U	0.27 U	0.054 U	0.048 U	0.38 U	2.5 U	0.39 U	0.43 U	2 U	0.18 U	0.38 U	0.39 U	0.031 U	0.04 U
2-Nitrophenol	--	2.3 U	0.71 U	0.27 U	0.054 U	0.048 U	0.38 U	2.5 U	0.39 U	0.43 U	2 U	0.18 U	0.38 U	0.39 U	0.031 U	0.04 U
3,3-Dichlorobenzidine	0.056	4.6 U	1.4 U	0.54 U	0.11 U	0.096 U	0.76 U	5 U	0.79 U	0.86 U	4.1 U	0.36 U	0.75 U	0.78 U	0.061 U	0.08 U
3- & 4-Methylphenol	6.1	2.3 U	0.71 U	**0.25 J**	0.054 U	0.048 U	0.38 U	2.5 U	0.39 U	0.43 U	2 U	0.18 U	0.38 U	0.39 U	0.031 U	0.04 U
3-Nitroaniline	--	6 U	1.8 U	0.69 U	0.14 U	0.12 U	0.98 U	6.4 U	1 U	1.1 U	5.2 U	0.46 U	0.97 U	1 U	0.079 U	0.1 U
4,6-Dinitro-2-Methylphenol	0.51	16 U,Q-	4.9 U,Q-	1.8 U,Q-	0.37 U,Q-	0.33 U,Q-	2.6 U,Q-	17 U,Q-	2.7 U,Q-	2.9 U,Q-	14 U,Q-	1.2 U,Q-	2.6 U,Q-	2.7 U,Q-	0.21 U,Q-	0.28 U,M-
4-Bromophenyl Phenyl Ether	--	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
4-Chloro-3-Methylphenol	630	3.3 U	1 U	0.38 U	0.077 U	0.068 U	0.54 U	3.6 U	0.56 U	0.61 U	2.9 U	0.26 U	0.54 U	0.56 U	0.044 U	0.057 U
4-Chloroaniline	0.015	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
4-Chlorophenyl Phenyl Ether	--	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
4-Nitroaniline	25	3.3 U	1 U,Q-	0.38 U	0.077 U	0.068 U	0.54 U,Q-	3.6 U	0.56 U,Q-	0.61 U,Q-	2.9 U	0.26 U	0.54 U,Q-	0.56 U,Q-	0.044 U	0.057 U
4-Nitrophenol	--	6.6 U	2 U	0.77 U	0.15 U	0.14 U	1.1 U	7.1 U	1.1 U	1.2 U	5.8 U	0.51 U	1.1 U	1.1 U	0.087 U	0.11 U
Acenaphthene	37	0.99 U	0.3 U	**0.047**	0.0026 U	0.0023 U	0.093 U	0.12 U	0.17 U	0.18 U	**0.15 J**	**0.055**	0.16 U	0.17 U	0.0015 U	0.002 U
Acenaphthylene	18	0.99 U	0.3 U	**0.037 J**	0.0026 U	**0.0016 J**	0.093 U	0.12 U	0.17 U	0.18 U	**0.11 J**	**0.08**	0.16 U	0.17 U	**0.0014 J**	0.002 U
Anthracene	230	0.99 U	0.3 U	**0.1 J**	0.0026 U	**0.01 J**	0.093 U	0.12 U	0.17 U	0.18 U	0.099 U	**0.053**	0.16 U	0.17 U	**0.0016 J**	0.002 U
Benzo(a)anthracene	0.16	0.99 U	**0.35 J**	**0.32**	**0.035**	**0.033**	**0.055 J**	**0.19 J**	0.17 U	0.18 U	**0.11 J**	**0.15**	**0.067 J**	0.17 U	**0.021**	**0.0021 J**
Benzo(a)pyrene	0.02	**0.099 J**	**0.53 J**	**0.35**	**0.0049 J**	**0.039 J**	0.16 U	0.21 U	**0.12 J**	0.43 U	**0.13 J**	**0.048**	**0.2 J**	**0.057**	**0.0039 J**	**0.0022 J**
Benzo(b)fluoranthene	0.16	0.99 U,Q	**0.76 Q**	**0.35**	**0.011**	**0.025 J**	0.093 U	0.12 U	0.17 U	0.18 U	**0.11 J**	**0.058**	**0.29 Q**	0.17 U,Q	**0.0072**	**0.0044 J,M**
Benzo(g,h,i)perylene	230	2.3 U	**0.52 J**	**0.22 J**	**0.004 J**	**0.0064 J**	**0.086 J**	0.21 U	0.39 U	0.43 U	**0.087 J**	**0.034**	0.38 U	0.39 U	**0.0037 J**	**0.0019 J**
Benzo(k)fluoranthene	2	3.3 U	**0.45 J**	**0.22 J**	**0.0036 J**	**0.019 J**	0.16 U	0.21 U	0.56 U	0.61 U	0.17 U	**0.017 J**	**0.27 J**	0.56 U	**0.002 J**	**0.0013 J**
Benzoic acid	200	26 U	8.1 U	3.1 U	0.62 U	0.55 U	4.4 U	28 U	4.5 U	4.9 U	23 U	2 U	4.3 U	4.5 U	0.35 U	0.46 U
Benzyl alcohol	5.7	3.3 U	1 U	0.38 U	0.077 U	0.068 U	0.54 U	3.6 U	0.56 U	0.61 U	2.9 U	0.26 U	0.54 U	0.56 U	0.044 U	0.057 U
bis(2-Chloroethyl)ether	0.00042	3.3 U	1 U	0.38 U	0.077 U	0.068 U	0.54 U	3.6 U	0.56 U	0.61 U	2.9 U	0.26 U	0.54 U	0.56 U	0.044 U	0.057 U
bis(2-Chloroisopropyl)ether	310	2.3 U	0.71 U	0.27 U	0.054 U	0.048 U	0.38 U	2.5 U	0.39 U	0.43 U	2 U	0.18 U	0.38 U	0.39 U	0.031 U	0.04 U
bis(2-Ethylhexyl)phthalate	39	7.9 U	2.4 U	**0.48 J**	**0.089 J**	**0.091 J**	1.3 U	**3.6 J**	1.4 U	1.5 U	7 U	0.61 U	1.3 U	1.3 U	**0.053 J**	**0.071 J**
Butyl Benzyl Phthalate	16	7.9 U	2.4 U	0.92 U	0.19 U	0.16 U	1.3 U	8.5 U	1.4 U	1.5 U	7 U	0.61 U	1.3 U	1.3 U	0.1 U	0.14 U
Carbazole	--	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
Chrysene	20	0.99 U	**0.39 J**	**0.33**	**0.011 J**	**0.015 J**	**0.17 J**	**0.56**	0.17 U	0.18 U	**0.36**	**0.12 J**	**0.13 J**	0.17 U	**0.01 J**	**0.0046 J**
di-n-Butyl Phthalate	16	7.9 U	2.4 U	0.92 U	0.19 U	**0.069 J**	1.3 U	8.5 U	1.4 U	1.5 U	7 U	0.61 U	1.3 U	1.3 U	0.1 U	0.14 U
di-n-Octyl Phthalate	63	3.3 U	1 U	0.38 U	0.077 U	0.068 U	0.54 U	3.6 U	0.56 U	0.61 U	2.9 U	0.26 U	**0.5 J**	0.56 U	0.044 U	0.057 U
Dibenz(a,h)anthracene	0.02	2.3 U	**0.38 J**	**0.03 J**	0.0046 U	0.0041 U	0.16 U	0.21 U	0.39 U	0.43 U	0.17 U	0.015 U	0.38 U	0.39 U	0.0026 U	0.0034 U
Dibenzofuran	0.97	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
Diethyl phthalate	60	7.9 U	2.4 U	0.92 U	0.19 U	0.16 U	1.3 U	8.5 U	1.4 U	1.5 U	7 U	0.61 U	1.3 U	1.3 U	0.1 U	0.14 U
Dimethyl phthalate	48	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
Fluoranthene	240	**0.68 J,Q**	**0.79 Q**	**0.77**	**0.027 J**	**0.031**	0.16 U	0.21 U	0.17 U	0.18 U	0.17 U	**0.21**	**0.14 J**	0.17 U	**0.016 J**	**0.012 J**
Fluorene	36	0.99 U	0.3 U	**0.092 J**	0.0026 U	0.0023 U	**0.12 J**	**0.29 J**	0.17 U	0.18 U	**0.32**	**0.32**	0.16 U	0.17 U	**0.0046**	0.002 U
Hexachlorobenzene	0.0082	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
Hexachlorocyclopentadiene	0.0093	6 U,Q-	1.8 U,Q-	0.69 U,Q-	0.14 U,Q-	0.12 U,Q-	0.98 U,Q-	6.4 U,Q-	1 U,Q-	1.1 U,Q-	5.2 U,Q-	0.46 U,Q-	0.97 U,Q-	1 U,Q-	0.079 U,Q-	0.1 U,Q-,M-
Hexachloroethane	0.018	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
Indeno(1,2,3-cd)pyrene	0.2	0.99 U	**0.29 J**	**0.27 J**	**0.0054 J**	**0.024 J**	0.16 U	0.21 U	0.17 U	0.18 U	0.17 U	**0.032**	**0.094 J**	0.17 U	**0.0031 J**	**0.0022 J**
Isophorone	2.7	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
N-Nitrosodimethylamine (NDMA)	0.0000033	13 U	4 U	1.5 U	0.31 U	0.27 U	2.2 U	14 U	2.3 U	2.4 U	12 U	1 U	2.2 U	2.2 U	0.17 U	0.23 U
N-Nitrosodiphenylamine	4.6	2 U	0.61 U	0.23 U	0.046 U	0.041 U	0.33 U	2.1 U	0.34 U	0.37 U	1.7 U	0.15 U	0.32 U	0.34 U	0.026 U	0.034 U
N-Nitrosodipropylamine	0.00068	3.3 U	1 U	0.38 U	0.077 U	0.068 U	0.54 U	3.6 U	0.56 U	0.61 U	2.9 U	0.26 U	0.54 U	0.56 U	0.044 U	0.057 U
Nitrobenzene	0.0079	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	0.16 U	1.1 U	0.17 U	0.18 U	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
Pentachlorophenol	0.0043	16 U	4.9 U	1.8 U	0.37 U	0.33 U	2.6 U	17 U	2.7 U	2.9 U	14 U	1.2 U	2.6 U	2.7 U	0.21 U	0.28 U
Phenanthrene	39	0.99 U,Q	**0.47 Q**	**0.39**	**0.012 J**	**0.013 J**	**0.16 J**	**0.32 J**	0.17 U	0.18 U	**0.63**	**0.66**	**0.14 J**	0.17 U	**0.013**	**0.0079 J**
Phenol	29	0.99 U	0.3 U	0.12 U	0.023 U	0.021 U	**0.27 J**	1.1 U	**0.21 J**	**0.13 J**	0.87 U	0.077 U	0.16 U	0.17 U	0.013 U	0.017 U
Pyrene	87	**1.2 J,Q**	**0.71 Q**	**0.72**	**0.043**	**0.042**	**0.12 J**	**1.5**	0.17 U	0.18 U	**0.16 J**	**0.36**	**0.27 Q**	**0.19 J,Q**	**0.027**	**0.022 J**

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

M- = Result is estimated with a low bias due to an MS/MSD exceedance

mg/kg = milligram(s) per kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	05-ESW(2)		06-BASE	07-BASE	08-BASE	08-ESW(03)	09-BASE	09-ESW(1)		10-BASE	11-BASE	11-ESW(03)		12-BASE	13-BASE
	Sample ID	16-EDR-05-ESW(2)-SO	16-EDR-06-ESW(2)-SO	16-EDR-06-BASE-SO	16-EDR-07-BASE-SO	16-EDR-08-BASE-SO	16-EDR-08-ESW(03)-SO	16-EDR-09-BASE-SO	16-EDR-09-ESW(1)-SO	16-EDR-10-ESW(1)-SO	16-EDR-10-BASE-SO	16-EDR-11-BASE-SO	16-EDR-11-ESW(03)-SO	16-EDR-12-ESW(03)-SO	16-EDR-12-BASE-SO	16-EDR-13-BASE-SO
	Sample Depth (ft)	2.5	2.5	0.5	0.5	2	0.75	1	1.5	1.5	0.75	0.5	0.75	0.75	0.5	0.5
	Sample Date	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/2/2016	8/2/2016	8/1/2016	8/1/2016
Analyte	**Screening Level**															
Metals (mg/kg)																
Aluminum	13000	**9300**	**10000**	**10000**	**8600**	**10000**	**8100**	**8900**	**6400**	**8800**	**5400**	**5100**	**5500**	**7200**	**3200**	**2200**
Antimony	3.1	**0.74**	**0.88**	**1.2**	**0.65**	**0.64**	**0.53**	**0.53**	**3.7 Q**	**0.7 Q**	**0.34**	**0.41**	**0.41 Q**	**0.77 Q**	**0.18 J**	**0.15 J,Q**
Arsenic	23	**16 Q**	**46 Q**	**19**	**13**	**11**	**6.8**	**9.6**	**6.6**	**9.9**	**4.2**	**5.6**	**15**	**13**	**2.7**	**2.4 Q**
Barium	1500	**150**	**180**	**230**	**100**	**100**	**92**	**94**	**160**	**100**	**47**	**74**	**79**	**110**	**26**	**38 Q**
Beryllium	16	**0.21 J**	**0.22 J**	**0.2 J**	**0.14 J**	**0.14 J**	**0.13 J**	**0.14 J**	**0.1 J**	**0.17 J**	**0.079 J**	**0.089 J**	**0.087 J**	**0.12 J**	**0.054 J**	0.092 U
Cadmium	7.1	**0.26**	**0.43**	**0.36**	**0.23 J**	**0.24 J**	**0.18 J**	**0.2 J**	**0.2 J,Q**	**0.25 Q**	**0.2**	**0.22**	**0.18**	**0.2**	**0.058 J**	**0.027 J**
Calcium	--	**7400**	**12000**	**7400**	**6500**	**6500**	**4400**	**6000**	**3600**	**4700**	**2700**	**2500**	**4100 Q**	**6900 Q**	**1600**	**800 Q**
Chromium	10000	**20**	**22**	**21**	**17**	**21**	**18**	**18**	**14**	**19**	**11**	**12**	**12**	**19**	**6.5**	**4.1 Q**
Cobalt	15	**8.8**	**10**	**8.4**	**8.4**	**11**	**8.4**	**9.2**	**9.4 Q**	**17 Q**	**5.2**	**4.9**	**6.2**	**8.3**	**3.1**	**2.1**
Copper	310	**27**	**34**	**30**	**26**	**31**	**25**	**23**	**26**	**28**	**13**	**19**	**28**	**35**	**12**	**7.6**
Iron	32000	**25000 Q**	**49000 Q**	**21000**	**21000**	**24000**	**18000**	**21000**	**15000**	**20000**	**12000**	**11000**	**24000**	**24000**	**7300**	**4800 Q**
Lead	40	**56**	**85**	**31**	**11**	**7.3**	**23**	**7.8**	**6**	**8**	**24**	**82**	**45**	**39**	**8.9**	**2.2 Q**
Magnesium	--	**5000**	**5800**	**5100**	**5000**	**6300**	**4900**	**5200**	**3900**	**5400**	**3200**	**3100**	**3100**	**4300**	**2100**	**1500 Q**
Manganese	540	**800 Q**	**2000 Q**	**510**	**480**	**470**	**380**	**390**	**1700 Q**	**730 Q**	**190**	**190**	**630**	**620**	**120**	**63 Q**
Mercury	1.1	**0.035**	**0.05**	**0.028 J**	**0.028 J**	**0.028 J**	**0.043**	**0.017 J**	**0.013 J,Q**	**0.021 Q**	**0.012 J**	**0.0091 J**	**0.017 J**	**0.017 J**	0.0079 U	0.0095 U
Nickel	150	**24**	**27**	**22**	**22**	**26**	**25**	**26**	**21 Q**	**35 Q**	**15**	**14**	**15 Q**	**25 Q**	**7.7**	**8.2 Q**
Potassium	--	**730**	**800**	**970**	**780**	**860**	**700**	**780**	**1300 Q**	**770 Q**	**440**	**500**	**490**	**540**	**520**	**280 Q**
Selenium	6.9	**1 J**	**1 J**	**1 J**	**0.9 J**	**1 J**	**0.78 J**	**0.94 J**	**0.61 J**	**0.91 J**	**0.48 J**	**0.56 J**	**0.47 J**	**0.59 J**	**0.29 J**	0.58 U
Silver	11	**0.072 J,Q**	**0.39 Q**	**0.1 J**	**0.067 J**	**0.06 J**	**0.043 J**	**0.045 J**	**0.38 Q**	**0.063 J,Q**	**0.03 J**	**0.068 J**	**0.041 J**	**0.052 J**	0.027 U	0.029 U
Sodium	--	**290**	**350**	**290**	**280**	**360**	**270**	**300**	**160 Q**	**280 Q**	**180**	**150**	**160**	**210**	160 U	170 U
Thallium	0.21			- -	- -	- -	- -	- -			- -	- -			- -	- -
Vanadium	57	**39**	**46**	**38**	**33**	**40**	**38**	**43**	**38**	**39**	**25**	**22**	**22**	**30**	**14**	**8.6 Q**
Zinc	2300	**54 Q**	**120 Q**	**75**	**49**	**52**	**44**	**45**	**35**	**48**	**34**	**36**	**39**	**45**	**25**	**11 Q**
Pesticides (mg/kg)																
4,4-DDD	0.19	**0.68 Q**	**0.61 Q+**	**1.7 Q+**	**2.2**	**0.0028 J**	**0.1 Q**	**0.023 Q+**	**0.064 Q+**	**0.093 Q+**	**0.21 Q+**	**5.8 Q+**	**1.4 Q+**	**1.7 Q+**	**0.53 Q+**	**0.029 Q+**
4,4-DDE	0.72	**0.043 Q**	**0.036 J,Q**	**0.11**	**0.21**	0.00089 U	**0.0071 J,Q**	**0.0041 J**	**0.0022 J,Q**	**0.003 J,Q**	**0.015**	**0.066**	**0.082**	**0.09**	**0.018**	**0.0095**
4,4-DDT	1.9	**0.25 Q**	**0.046 J,Q**	**0.45 Q**	**0.024 B,Q**	**0.0087 J,Q**	**0.064 Q-**	**0.0049 J,Q**	**0.0024 J,B,Q**	**0.003 J,B,Q**	**0.081 Q**	**0.22 Q**	**0.16 Q-**	**0.23 Q-**	**0.03 B,Q**	**0.062 Q**
Aldrin	0.0099	0.003 U	0.0082 U	0.0027 U	0.00086 U	0.00089 U	0.0024 U	0.00087 U	0.0021 U	0.0022 U	0.00075 U	0.0025 U	0.0058 U	0.0051 U	0.00066 U	0.00071 U
alpha-BHC	0.0029	0.0075 U	0.02 U	0.0068 U	0.0022 U	0.0022 U	0.006 U	0.0022 U	0.0052 U	0.0055 U	0.0019 U	0.0063 U	0.015 U	0.013 U	0.0016 U	0.0018 U
alpha-Chlordane	0.18	0.0045 U	0.012 U	**0.023**	0.0013 U,Q-	0.0013 U	0.0036 U	0.0013 U	0.0031 U	0.0033 U	**0.0017 J**	0.0038 U	**0.012 J**	**0.0049 J**	0.00099 U	0.0011 U
alpha-Endosulfan	9.3	0.0045 U	0.012 U	0.0041 U	0.0013 U	0.0013 U	0.0036 U	0.0013 U	0.0031 U	0.0033 U	0.0011 U	0.0038 U	**0.004 J**	0.0077 U	0.00099 U	0.0011 U
beta-BHC	0.01	0.015 U	0.041 U	0.014 U	0.0043 U	0.0045 U	0.012 U	0.0044 U	0.01 U	0.011 U	0.0038 U	0.013 U	0.029 U	0.026 U	0.0033 U	0.0036 U
beta-Endosulfan	9.3	0.0015 U	0.0041 U	0.0014 U	0.00043 U	0.00045 U	0.0012 U	0.00044 U	0.001 U	0.0011 U	0.00038 U	0.0013 U	**0.003 J**	**0.0018 J**	0.00033 U	0.00036 U
delta-BHC	0.0029	**0.0048 J,Q**	**0.0086 J**	0.0041 U	0.0013 U	0.0013 U	**0.0015 J,B**	0.0013 U	0.0031 U	0.0033 U	0.0011 U	0.0038 U	**0.0068 J**	**0.0098 J**	0.00099 U	0.0011 U
Dieldrin	0.0047	0.01 U	0.029 U	0.0095 U	0.003 U	0.0031 U	0.0084 U	0.0031 U	0.0073 U	0.0078 U	0.0026 U	0.0089 U	0.02 U	0.018 U	0.0023 U	0.0025 U,M-
Endosulfan Sulfate	9.3	0.0045 U	0.012 U	0.0041 U	0.0013 U	0.0013 U	0.0036 U	0.0013 U	0.0031 U	0.0033 U	0.0011 U	0.0038 U	0.0088 U	0.0077 U	0.00099 U	0.0011 U
Endrin	0.61	0.0045 U	0.012 U	0.0041 U	0.0013 U	0.0013 U	0.0036 U	0.0013 U	0.0031 U	0.0033 U	0.0011 U	0.0038 U	**0.0061 J**	0.0077 U	0.00099 U	0.0011 U
Endrin Aldehyde	0.61	0.015 U	0.041 U	0.014 U	0.0043 U	0.0045 U	0.012 U	0.0044 U	0.01 U	0.011 U	0.0038 U	0.013 U	0.029 U	0.026 U	0.0033 U	0.0036 U
Endrin Ketone	0.61	0.015 U	0.041 U	0.014 U	0.0043 U	0.0045 U	0.012 U	0.0044 U	0.01 U	0.011 U	0.0038 U	0.013 U	0.029 U	0.026 U	0.0033 U	0.0036 U
gamma-BHC	0.016	0.0015 U	**0.0067 J**	0.0014 U	0.00043 U	0.00045 U	**0.001 J**	0.00044 U	0.001 U	0.0011 U	**0.00029 J**	0.0013 U	0.0029 U	**0.0011 J**	0.00033 U	0.00036 U
gamma-Chlordane	0.18	0.0075 U	0.02 U	**0.017**	**0.0028 J**	0.0022 U	0.006 U	0.0022 U	0.0052 U	0.0055 U	**0.0012 J**	**0.01 J**	**0.0087 J**	0.013 U	**0.00083 J**	0.0018 U
Heptachlor	0.0076	0.003 U	0.0082 U	0.0027 U	0.00086 U	0.00089 U	0.0024 U	0.00087 U	0.0021 U	0.0022 U	0.00075 U	0.0025 U	0.0058 U	0.0051 U	0.00066 U	0.00071 U
Heptachlor Epoxide	0.0019	**0.0067 J**	0.029 U	0.0095 U	0.003 U,Q-	0.0031 U	0.0084 U	0.0031 U	0.0073 U	0.0078 U	0.0026 U	0.0089 U	0.02 U	**0.011 J**	0.0023 U	0.0025 U
Methoxychlor	13	**0.013 J,Q-**	0.041 U,Q-	0.014 U,Q-	0.0043 U,Q-	0.0045 U	**R**	0.0044 U,Q-	**R**	**R**	0.0038 U,Q-	0.013 U,Q-	0.029 U	0.026 U	0.0033 U,Q-	0.0036 U,Q-
Toxaphene	0.49	0.37 U,Q-	1 U,Q-	0.34 U	0.11 U	0.11 U	0.3 U,Q-	0.11 U	0.26 U,Q-	0.28 U,Q-	0.094 U	0.32 U	0.73 U,Q-	0.64 U,Q-	0.082 U	0.089 U
Polychlorinated Biphenyls (mg/kg)																
Aroclor 1016	0.1	0.09 U,Q-	0.12 U,Q-	0.081 U	0.086 U	0.089 U	0.072 U,Q-	0.087 U	0.063 U,Q-	0.066 U,Q-	0.075 U	0.076 U	0.07 U,Q-	0.061 U,Q-	0.066 U	0.071 U
Aroclor 1221	0.1	0.045 U	0.061 U,Q-	0.041 U	0.043 U	0.045 U	0.036 U	0.044 U	0.031 U	0.033 U	0.038 U	0.038 U	0.035 U	0.031 U	0.033 U	0.036 U
Aroclor 1232	0.1	0.045 U	0.061 U,Q-	0.041 U	0.043 U	0.045 U	0.036 U	0.044 U	0.031 U	0.033 U	0.038 U	0.038 U	0.035 U	0.031 U	0.033 U	0.036 U
Aroclor 1242	0.1	0.016 U	0.022 U,Q-	0.014 U	0.015 U	0.016 U	0.013 U	0.015 U	0.011 U	0.012 U	0.013 U	0.013 U	0.012 U	0.011 U	0.012 U	0.012 U
Aroclor 1248	0.1	0.045 U	0.061 U,Q-	0.041 U	0.043 U	0.045 U	0.036 U	0.044 U	0.031 U	0.033 U	0.038 U	0.038 U	0.035 U	0.031 U	0.033 U	0.036 U
Aroclor 1254	0.1	0.022 U	0.031 U,Q-	0.02 U	0.022 U	0.022 U	0.018 U	0.022 U	0.016 U	0.017 U	0.019 U	0.019 U	0.018 U	0.015 U	0.016 U	0.018 U
Aroclor 1260	0.1	0.031 U,Q-	0.043 U,Q-	0.028 U	0.03 U	0.031 U	0.025 U,Q-	0.031 U	0.022 U,Q-	0.023 U,Q-	0.026 U	0.027 U	**0.0079 J,Q-**	**0.0075 J,Q-**	0.023 U	0.025 U
Per- and Polyfluoroalkyl Substances (mg/kg)																
Perfluorooctanoic Acid	0.003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluorooctanesulfonic acid	0.0017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry (%)																
Moisture, percent	--	**38**	**53.3**	**37.2**	**39.3**	**38**	**19.5**	**38.5**	**18.2**	**23.9**	**23.2**	**23.7**	**19.3**	**13.2**	**9.3**	**20**
General Chemistry (%)																
Percent Solids	--	**62**	**46.7**	**62.8**	**60.7**	**62**	**80.5**	**61.5**	**81.8**	**76.1**	**76.8**	**76.3**	**80.7**	**86.8**	**90.7**	**80**
General Chemistry (mg/kg)																
Total Organic Carbon	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	13-WSW(3)	14-BASE	15-BASE	15-NSW(1.0)	16-BASE	17-BASE	18-BASE		35-SS-01	35-SS-02	35-SS-03		35-SS-04	35-SS-05	35-SS-06	35-SS-07	35-SS-08	35-SS-09	35-SS-10
	Sample ID	16-EDR-13-WSW(3)-SO	16-EDR-14-BASE-SO	16-EDR-15-BASE-SO	16-EDR-15-NSW(1_0)-SO	16-EDR-16-BASE-SO	16-EDR-17-BASE-SO	16-EDR-18-BASE-SO	16-EDR-19-BASE-SO	35-SS-01-2	35-SS-02-2	35-SS-03-2	35-SS-27-2	35-SS-04-2	35-SS-05-2	35-SS-06-2	35-SS-07-1	35-SS-08-2	35-SS-09-1_5	35-SS-10-2
	Sample Depth (ft)	3	0.75	0.5	1	6.5	6	6.5	6.5	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	1 - 2	1 - 2	1 - 2	1 - 2	0.5 - 1.5	1 - 2
	Sample Date	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012
Analyte	**Screening Level**																			
Hydrocarbons (mg/kg)																				
C10-C25 DRO	250	**370**	**270**	**260**	**60**	**10000**	**1300**	**290 Q**	**2900 Q**	**19 J**	**14 J**	**13 J**	**16 J**	**1000**	**17 J**	**28**	**520**	7 U	**70**	**4.6 J**
C25-C36 RRO	10000	**1500**	**2500**	**1700**	**55**	**170**	**380**	**150 Q**	**920 Q**	**42 J**	**27 J**	25 U	**17 J**	**1100**	**140**	**220**	**3300**	**73**	**280**	**88**
C6-C10 GRO	300	**1 J**	**0.99 J**	3.7 U	**0.5 J**	**19 Q+**	**3.9**	**2.6 J,Q**	**78 Q**	1.4 U	2.1 U	2.1 U	8.6 U	5.5 U	1.9 U	2.7 U	**22**	5.1 U	**9.3**	7.3 U
VOCs (mg/kg)																				
1,1,1,2-Tetrachloroethane	0.022	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,1,1-Trichloroethane	32	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,1,2,2-Tetrachloroethane	0.003	0.0032 U	0.0038 U	0.0093 U	0.0037 U	0.0046 U	0.0044 U	0.0045 U	0.0056 U	0.0085 U	0.0073 U	0.0072 U	0.0053 U	0.0065 U	0.0072 U	0.0088 U	0.0069 U	0.0081 U	0.0067 U	0.0061 U
1,1,2-Trichloroethane	0.0014	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.0085 U	0.0073 U	0.0072 U	0.0053 U	0.0065 U	0.0072 U	0.0088 U	0.0069 U	0.0081 U	0.0067 U	0.0061 U
1,1-Dichloroethane	0.092	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,1-Dichloroethene	1.2	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.014 U	0.012 U	0.012 U	0.009 U	0.011 U	0.012 U	0.015 U	0.012 U	0.014 U	0.011 U	0.01 U
1,1-Dichloropropene	0.018	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.014 U	0.012 U	0.012 U	0.009 U	0.011 U	0.012 U	0.015 U	0.012 U	0.014 U	0.011 U	0.01 U
1,2,3-Trichlorobenzene	0.15	0.019 U	0.023 U	0.056 U	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,2,3-Trichloropropane	0.000031	0.019 U	0.023 U	0.056 U	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,2,4-Trichlorobenzene	0.082	0.019 U	0.023 U	0.056 U	0.016 U	0.028 U	0.018 U	0.019 U	0.034 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,2,4-Trimethylbenzene	0.16	**0.021 J,B**	0.0038 U	**0.017 J,B**	**0.022 J,B**	**1.9**	**0.73**	**0.38 Q**	**4.8 Q**	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,2-Dibromo-3-Chloropropane	0.0053	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.14 U	0.12 U	0.12 U	0.09 U	0.11 U	0.12 U	0.15 U	0.12 U	0.14 U	0.11 U	0.1 U
1,2-Dichlorobenzene	2.4	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,2-Dichloroethane	0.0055	0.0063 U	0.0077 U,H	0.019 U,H	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,2-Dichloropropane	0.016	0.0032 U	0.0038 U	0.0093 U	0.0037 U	0.0046 U	0.0044 U	0.0045 U	0.0056 U	0.0096 U	0.0083 U	0.0082 U	0.006 U	0.0074 U	0.0082 U	0.01 U	0.0078 U	0.0092 U	0.0076 U	0.0069 U
1,3,5-Trimethylbenzene	1.3	**0.011 J**	0.012 U	**0.014 J**	**0.014 J**	**0.82**	**0.2**	**0.13 Q**	**2 Q**	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,3-Dichlorobenzene	2.3	0.0095 U	0.16 U	0.27 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,3-Dichloropropane	160	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
1,4-Dichlorobenzene	0.037	0.019 U	0.023 U	0.056 U	0.016 U	0.028 U	0.018 U	0.019 U	0.034 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
2,2-Dichloropropane	0.016	0.019 U	0.023 U	0.056 U	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
2-Butanone (MEK)	15	0.095 U	0.12 U	0.28 U	0.11 U	0.14 U	0.13 U	0.14 U	0.17 U	0.29 U	0.25 U	0.25 U	0.18 U	0.22 U	0.25 U	0.3 U	0.23 U	0.28 U	0.23 U	0.21 U
2-Chlorotoluene	160	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
2-Hexanone	0.11	0.048 U	0.058 U	0.14 U	0.055 U	0.069 U	0.066 U	0.068 U	0.084 U	0.14 U	0.12 U	0.12 U	0.09 U	0.11 U	0.12 U	0.15 U	0.12 U	0.14 U	0.11 U	0.1 U
4-Chlorotoluene	160	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
4-Methyl-2-Pentanone (MIBK)	18	0.048 U	0.058 U	0.14 U	0.055 U	0.069 U	0.066 U	0.068 U	0.084 U	0.14 U	0.12 U	0.12 U	0.09 U	0.11 U	0.12 U	0.15 U	0.12 U	0.14 U	0.11 U	0.1 U
Acetone	38	0.32 U	0.38 U,Q-	0.93 U,Q-	0.37 U	0.46 U	0.44 U	0.45 U	0.56 U	0.29 U	0.25 U	0.25 U	0.18 UJ	0.22 UJ	0.25 UJ	0.3 UJ	0.23 UJ	0.28 UJ	0.23 UJ	0.21 UJ
Benzene	0.022	0.0032 U	0.0038 U	**0.015 J**	**0.0035 J**	0.0046 U	**0.019**	0.0045 U	**0.0034 J**	0.0096 U	0.0083 U	0.0082 U	0.006 U	0.0074 U	0.0082 U	0.01 U	0.0078 U	0.0092 U	0.0076 U	0.0069 U
bis(2-Chloroethoxy)methane	19	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromobenzene	0.36	0.0032 U	0.0038 U	0.0093 U	0.0037 U	0.0046 U	0.0044 U	0.0045 U	0.0056 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Bromochloromethane	15	0.019 U	0.023 U,H	0.056 U,H	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Bromodichloromethane	0.0043	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Bromoform	0.1	0.038 U	0.046 U	0.11 U	0.044 U	0.055 U	0.053 U	0.054 U	0.067 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Bromomethane	0.024	0.019 U	0.023 U	0.056 U	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.096 U	0.083 U	0.082 U	0.06 U	0.074 U	0.082 U	0.1 U	0.078 U	0.092 U	0.076 U	0.069 U
Carbon Disulfide	2.9	0.019 U	0.023 U	0.056 U	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 UJ	0.03 UJ	0.023 U	0.028 U	0.023 U	0.021 U
Carbon Tetrachloride	0.021	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.014 U	0.012 U	0.012 U	0.009 U	0.011 U	0.012 U	0.015 U	0.012 U	0.014 U	0.011 U	0.01 U
Chlorobenzene	0.46	0.019 U	0.023 U	0.056 U	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Chloroethane	72	0.019 U	0.023 U	0.056 U	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.29 U	0.25 U	0.25 U	0.18 U	0.22 U	0.25 U	0.3 U	0.23 U	0.28 U	0.23 U	0.21 U
Chloroform	0.0071	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Chloromethane	0.61	0.019 U	0.023 U	0.056 U	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.29 U	0.25 U	0.25 U	0.18 U	0.22 U	0.25 U	0.3 U	0.23 U	0.28 U	0.23 U	0.21 U
cis-1,2-Dichloroethene	0.12	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
cis-1,3-Dichloropropene	0.018	0.0032 U	0.0038 U	0.0093 U	0.0037 U	0.0046 U	0.0044 U	0.0045 U	0.0056 U	0.0096 U	0.0083 U	0.0082 U	0.006 U	0.0074 U	0.0082 U	0.01 U	0.0078 U	0.0092 U	0.0076 U	0.0069 U
Dibromochloromethane	0.0027	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Dibromomethane	0.025	0.0095 U	0.012 U,H	0.028 U,H	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Dichlorodifluoromethane	3.9	0.063 U	0.077 U	0.19 U	0.073 U	0.092 U	0.088 U	0.091 U	0.11 U	0.029 U	0.025 U	0.025 U	0.018 UJ	0.022 UJ	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Ethylbenzene	0.13	0.0095 U	0.012 U	**0.019 J**	**0.0097 J**	**0.014 J**	0.013 U	0.014 U	0.017 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Ethylene Dibromide (EDB)	0.00024	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Hexachlorobutadiene	0.02	0.038 U	0.046 U	0.11 U	0.038 U	0.055 U	0.043 U	0.044 U	0.067 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Isopropylbenzene	5.4	0.019 U	0.023 U	0.056 U	0.022 U	**0.064 B**	0.026 U	**0.015 J,B,Q**	**0.18 Q**	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
m- & p-Xylene	1.5	0.063 U	0.077 U	0.19 U	0.073 U	**0.091 J**	**0.082 J**	0.091 U,Q	**0.3 Q**	0.013 J	**0.015 J**	0.016 U	0.012 U	0.015 U	**0.017 J**	**0.025 J**	**0.016 J**	**0.012 J**	0.015 U	0.014 U
Methyl tert-Butyl Ether (MTBE)	0.4	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Methylene Chloride	0.33	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.022 U	0.027 U	0.025 U	0.024 UJ	0.024 UJ	0.012 U	0.026 U	0.04 UJ	0.037 U	0.023 U	0.016 UJ
n-Butylbenzene	2	**0.014 J,Q**	0.023 U	0.056 U	**0.014 J,Q**	**0.6 Q**	**0.25 Q**	**0.11 Q**	**2.5 Q**	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
n-Propylbenzene	5.2	0.0095 U	**0.012 J,B**	0.028 U	0.011 U	**0.14 B**	**0.076 B**	**0.041 B,Q**	**0.41 Q**	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Naphthalene	0.038	**0.039**	0.018 U	0.056 U	**0.059**	**9.3**	**0.55**	**0.47 Q**	**7.1 Q**	0.003 U	0.0026 U	0.0026 U	0.0026 U	**0.33**	**0.011**	**0.013 J**	0.0026 U	0.0027 U	**0.0079**	**0.011 J**
o-Xylene	1.5	0.0063 U	0.0077 U	0.019 U	**0.011 J,B**	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
p-Isopropyltoluene	0.03	0.019 U	0.023 U	0.056 U	**0.012 J**	**0.43**	**0.16**	**0.066 Q**	**1.3 Q**	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	**0.011 J**	**0.013 J**	0.023 U	0.028 U	0.023 U	0.021 U
sec-Butylbenzene	2.8	0.019 U	**0.012 J,B**	0.056 U	0.022 U	0.028 U	**0.1 B**	**0.052 B,Q**	**0.9 Q**	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Styrene	10	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	**0.0079 J**	0.028 U	0.023 U	0.021 U
tert-Butylbenzene	3.5	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U,Q	**0.048 H,Q**	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
Tetrachloroethene (PCE)	0.19	0.0095 U	0.012 U	0.028 U	0.011 U	**0.017 J,B**	0.013 U	**0.13 B,Q**	0.017 U,Q	0.014 U	0.012 U	0.012 U	0.009 U	0.011 U	0.012 U	0.015 U	0.012 U	0.014 U	0.011 U	0.01 U
Toluene	6.7	0.0095 U	0.012 U	**0.081**	**0.015 J**	0.014 U	0.013 U	0.014 U	0.017 U	0.029 U	0.025 U	0.025 U	0.0082 UJ	0.022 U	0.025 U	0.03 U	**0.015 J**	0.028 U	0.023 U	0.021 U
trans-1,2-Dichloroethene	1.3	0.019 U	0.023 U	0.056 U	0.022 U	0.028 U	0.026 U	0.027 U	0.034 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	0.023 U	0.028 U	0.023 U	0.021 U
trans-1,3-Dichloropropene	0.018	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.0096 U	0.0083 U	0.0082 U	0.006 U	0.0074 U	0.0082 U	0.01 U	0.0078 U	0.0092 U	0.0076 U	0.0069 U

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

M- = Result is estimated with a low bias due to an MS/MSD exceedance

mg/kg = milligram(s) per kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

Analyte	Location	13-WSW(3)	14-BASE	15-BASE	15-NSW(1.0)	16-BASE	17-BASE	18-BASE		35-SS-01	35-SS-02	35-SS-03		35-SS-04	35-SS-05	35-SS-06	35-SS-07	35-SS-08	35-SS-09	35-SS-10
	Sample ID	16-EDR-13-WSW(3)-SO	16-EDR-14-BASE-SO	16-EDR-15-BASE-SO	16-EDR-15-NSW(1_0)-SO	16-EDR-16-BASE-SO	16-EDR-17-BASE-SO	16-EDR-18-BASE-SO	16-EDR-19-BASE-SO	35-SS-01-2	35-SS-02-2	35-SS-03-2	35-SS-27-2	35-SS-04-2	35-SS-05-2	35-SS-06-2	35-SS-07-1	35-SS-08-2	35-SS-09-1_5	35-SS-10-2
	Sample Depth (ft)	3	0.75	0.5	1	6.5	6	6.5	6.5	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	1 - 2	1 - 2	1 - 2	1 - 2	0.5 - 1.5	1 - 2
	Sample Date	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012
	Screening Level																			
Trichloroethene (TCE)	0.011	0.0063 U	0.0077 U	0.019 U	0.0073 U	0.0092 U	0.0088 U	0.0091 U	0.011 U	0.0096 U	0.0083 U	0.0082 U	0.006 U	0.0074 U	0.0082 U	0.01 U	0.0078 U	0.0092 U	0.0076 U	0.0069 U
Trichlorofluoromethane	41	0.063 U	0.077 U	0.19 U	0.073 U	0.092 U	0.088 U	0.091 U	0.11 U	0.029 U	0.025 U	0.025 U	0.018 U	0.022 U	0.025 U	0.03 U	**0.03 J**	0.028 U	0.023 U	0.021 U
Vinyl Chloride	0.0008	0.0095 U	0.012 U	0.028 U	0.011 U	0.014 U	0.013 U	0.014 U	0.017 U	0.0048 U	0.0041 U	0.0041 U	0.003 U	0.0037 U	0.0041 U	0.005 U	0.0039 U	0.0046 U	0.0038 U	0.0034 U
SVOCs (mg/kg)																				
1-Methylnaphthalene	0.41	0.049 U	0.011 U	0.09 U	**0.026 J**	**36**	**0.8**	**1.3 Q**	**20 Q**	0.003 U	0.0026 U	0.0026 U	0.0026 U	**0.42**	**0.0048 J**	**0.0016 J**	**0.0024 J**	0.0027 U	**0.0068 M**	0.0026 U
2,4,5-Trichlorophenol	28	0.49 U	0.53 U	0.9 U	0.054 U	0.64 U	0.061 U	0.062 U	0.59 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	0.092	0.49 U	0.53 U	0.9 U	0.054 U	0.64 U	0.061 U	0.062 U	0.59 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	0.21	0.49 U	0.53 U	0.9 U	0.054 U	0.64 U	0.061 U	0.062 U	0.59 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	3.2	0.49 U	0.53 U	0.9 U	0.054 U	0.64 U	0.061 U	0.062 U	0.59 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	0.34	4 U,Q-	4.3 U,Q-	7.2 U,Q-	0.43 U,Q-	5.1 U,Q-	0.49 U,Q-	0.5 U,Q-	4.7 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	0.024	0.35 U	0.37 U	0.63 U	0.038 U	0.45 U	0.043 U	0.044 U	0.41 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	0.005	0.35 U	0.37 U	0.63 U	0.038 U	0.45 U	0.043 U	0.044 U	0.41 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene	26	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorophenol	0.71	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	1.3	0.084 U	0.018 U	**0.086 J**	**0.083**	**55**	**0.97**	**1.2 Q**	**26 Q**	0.003 U	**0.0028 J**	0.0026 U	0.0026 U	**1.3**	**0.0071**	**0.0032 J**	**0.0031 J**	0.0027 U	**0.018 M**	0.0026 U
2-Methylphenol	6.2	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitroaniline	63	0.35 U	0.37 U	0.63 U	0.038 U	0.45 U	0.043 U	0.044 U	0.41 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitrophenol	--	0.35 U	0.37 U	0.63 U	0.038 U	0.45 U	0.043 U	0.044 U	0.41 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	0.056	0.69 U	0.75 U	**0.83 J**	0.076 U	0.9 U	0.086 U	0.087 U	0.82 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3- & 4-Methylphenol	6.1	0.35 U	0.37 U	0.63 U	0.038 U	0.45 U	0.043 U	0.044 U	0.41 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3-Nitroaniline	--	0.89 U	0.96 U	1.6 U	0.097 U	1.2 U	0.11 U	0.11 U	1.1 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	0.51	2.4 U,Q-	2.6 U,Q-	4.3 U,Q-	0.26 U,Q-	3.1 U,Q-	0.29 U,Q-	0.3 U,Q-	2.8 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	--	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	630	0.49 U	0.53 U	0.9 U	0.054 U	0.64 U	0.061 U	0.062 U	0.59 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloroaniline	0.015	0.15 U	0.16 U	0.27 U	0.016 U	**1.8**	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	--	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitroaniline	25	0.49 U,Q-	0.53 U,Q-	0.9 U,Q-	0.054 U	0.64 U,Q-	0.061 U,Q-	0.062 U,Q-	0.59 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitrophenol	--	0.99 U	1.1 U	1.8 U	0.11 U	**8.5 J**	0.12 U	0.12 U	1.2 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	37	0.084 U	0.018 U	0.15 U	0.0018 U	**1.9**	**0.08**	**0.064 Q**	**0.67 Q**	0.003 U	0.0026 U	0.0026 U	0.0026 U	**0.026**	**0.012 M**	0.0027 U	**0.0018 J**	0.0027 U	**0.0027 J**	**0.002 J**
Acenaphthylene	18	0.084 U	0.018 U	0.15 U	**0.0039 J**	**0.76**	**0.05**	**0.029 Q**	**0.48 Q**	0.003 U	0.0026 U	0.0026 U	0.0026 U	**0.021 M**	**0.0052 J**	0.0027 U	**0.0021 J**	0.0027 U	**0.0019 J**	0.0026 U
Anthracene	230	0.084 U	0.018 U	0.15 U	0.0018 U	**0.15**	**0.0087**	**0.0047 J**	**0.07 J**	0.003 U	**0.0019 J**	0.0026 U	0.0026 U	**0.021 M**	**0.033**	**0.003 J**	**0.004 J**	0.0027 U	**0.0034 J**	**0.0061**
Benzo(a)anthracene	0.16	**0.094 J**	**0.077 J**	**0.24 J**	**0.0067 J**	**0.088 J**	**0.0066**	**0.013 J**	**0.17 J**	0.003 U	**0.0029 J**	0.0026 U	0.0026 U	**0.056**	**0.11**	**0.014 M**	**0.02 M**	**0.0036 J**	**0.021 M**	**0.027**
Benzo(a)pyrene	0.02	**0.097 J**	**0.16 J**	**0.35 J**	**0.002 J**	**0.02 J**	**0.025 J**	**0.0094 Q**	**0.41 Q**	0.003 U	**0.0027 J**	0.0026 U	0.0026 U	**0.072**	**0.13**	**0.02 M**	**0.035**	**0.0044 J**	**0.029**	**0.036**
Benzo(b)fluoranthene	0.16	0.084 U	**0.16 J**	**0.51**	**0.0043 J**	**0.018 J**	**0.0079**	**0.005 J**	**0.1 J**	0.003 U	**0.004 J**	0.0026 U	0.0026 U	**0.09 M**	**0.23**	**0.036 M**	**0.074**	**0.0072**	**0.055**	**0.054**
Benzo(g,h,i)perylene	230	**0.2 J**	**0.17 J**	**0.16 J**	**0.0025 J**	0.039 U	**0.0068**	**0.0066 Q**	**0.15 J,Q**	0.003 U	**0.0037 J**	0.0026 U	0.0026 U	**0.11**	**0.074**	**0.017**	**0.041**	**0.0037 J**	**0.022**	**0.029**
Benzo(k)fluoranthene	2	0.15 U	**0.021 J**	**0.34 J**	**0.0025 J**	**0.019 J**	**0.0031 J**	**0.003 J**	**0.086 J**	0.003 U	**0.0017 J**	0.0026 U	0.0026 U	**0.022 M**	**0.082**	**0.012 M**	**0.026**	**0.0028 J**	**0.019**	**0.021**
Benzoic acid	200	4 U	4.3 U	7.2 U	0.43 U	5.1 U	0.49 U	0.5 U	4.7 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzyl alcohol	5.7	0.49 U	0.53 U	0.9 U	0.054 U	**0.5 J**	0.061 U	0.062 U	0.59 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroethyl)ether	0.00042	0.49 U	0.53 U	0.9 U	0.054 U	0.64 U	0.061 U	0.062 U	0.59 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroisopropyl)ether	310	0.35 U	0.37 U	0.63 U	0.038 U	0.45 U	0.043 U	0.044 U	0.41 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Ethylhexyl)phthalate	39	1.2 U	1.3 U	2.2 U	0.13 U	1.5 U	0.15 U	0.15 U	1.4 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Butyl Benzyl Phthalate	16	1.2 U	1.3 U	2.2 U	0.13 U	1.5 U	0.15 U	0.15 U	1.4 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbazole	--	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	20	**0.084 J**	0.032 U	**0.29 J**	**0.0058 J**	**0.034 J**	**0.014 J**	**0.012 J**	**0.26 J,Q**	0.003 U	**0.0044 J**	**0.0015 J**	0.0026 U	**0.097**	**0.16**	**0.023 M**	**0.042 M**	**0.006**	**0.039 M**	**0.042**
di-n-Butyl Phthalate	16	1.2 U	1.3 U	2.2 U	0.13 U	1.5 U	0.15 U	0.15 U	1.4 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
di-n-Octyl Phthalate	63	0.49 U	**0.41 J**	0.9 U	0.054 U	0.64 U	0.061 U	0.062 U	0.59 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	0.02	0.15 U	**0.19 J**	0.27 U	0.0032 U	0.039 U	**0.003 J**	**0.0036 J**	0.18 U	0.003 U	**0.0017 J**	0.0026 U	**0.0016 J**	**0.036 M**	**0.022**	**0.0043 J**	**0.01**	0.0027 U	**0.0046 J**	**0.0067**
Dibenzofuran	0.97	0.15 U	0.16 U	0.27 U	0.016 U	**0.64 J**	0.018 U	0.019 U	**0.46 J**	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Diethyl phthalate	60	1.2 U	1.3 U	2.2 U	0.13 U	1.5 U	0.15 U	0.15 U	1.4 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dimethyl phthalate	48	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	240	0.15 U	**0.028 J**	**0.63**	**0.0064 J**	**0.13 J**	**0.015 J**	**0.0053 J**	0.18 U	0.003 U	**0.007**	**0.0031 J**	**0.0022 J**	**0.061**	**0.36**	**0.038**	**0.059**	**0.0096**	**0.064 M**	**0.068**
Fluorene	36	0.084 U	0.018 U	0.15 U	0.0018 U	**2.7**	**0.15**	**0.13 Q**	**2 Q**	**0.0019 J**	**0.0017 J**	0.0026 U	0.0026 U	**0.03 M**	**0.02**	**0.0021 J**	**0.0029 J**	0.0027 U	**0.0029 J**	**0.0021 J**
Hexachlorobenzene	0.0082	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	0.0093	0.89 U,Q-	0.96 U,Q-	1.6 U,Q-	0.097 U	1.2 U,Q-	0.11 U,Q-	0.11 U,Q-	1.1 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachloroethane	0.018	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	0.2	**0.062 J**	**0.075 J**	**0.27 J**	**0.0032 J**	0.039 U	**0.0064**	0.0037 U	**0.09 J**	0.003 U	**0.0032 J**	0.0026 U	0.0026 U	**0.07**	**0.098**	**0.021**	**0.041**	**0.0037 J**	**0.025**	**0.031**
Isophorone	2.7	0.15 U	0.16 U	0.27 U	0.016 U	**7.6**	**0.28**	0.019 U,Q	**5 Q**	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodimethylamine (NDMA)	0.0000033	2 U	2.1 U	3.6 U	0.22 U	2.6 U	0.24 U	0.25 U	2.4 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodiphenylamine	4.6	0.3 U	0.32 U	0.54 U	0.032 U	0.39 U	0.037 U	0.037 U	0.35 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodipropylamine	0.00068	0.49 U	0.53 U	0.9 U	0.054 U	0.64 U	0.061 U	0.062 U	0.59 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Nitrobenzene	0.0079	0.15 U	0.16 U	0.27 U	0.016 U	0.19 U	0.018 U	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pentachlorophenol	0.0043	2.4 U	2.6 U	**2.1 J**	0.26 U	3.1 U	0.29 U	0.3 U	2.8 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	39	0.15 U	**0.017 J**	**0.35 J**	**0.011**	**2.7**	**0.084**	**0.036 Q**	**0.52 Q**	**0.0027 J**	**0.005 J**	**0.0022 J**	0.0026 U	**0.12 M**	**0.26**	**0.02**	**0.035 M**	**0.0063**	**0.042 M**	**0.034**
Phenol	29	0.15 U	0.16 U	0.27 U	0.016 U	**0.25 J**	**0.028 J**	0.019 U	0.18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	87	0.15 U	**0.07 J**	**0.61**	**0.0061**	**0.13 J**	**0.027**	**0.012 Q**	**0.24 J,Q**	**0.002 J**	**0.0061**	**0.0026 J**	**0.0018 J**	**0.16**	**0.27**	**0.034**	**0.052**	**0.008**	**0.052 M**	**0.059**

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	13-WSW(3)	14-BASE	15-BASE	15-NSW(1.0)	16-BASE	17-BASE	18-BASE		35-SS-01	35-SS-02	35-SS-03		35-SS-04	35-SS-05	35-SS-06	35-SS-07	35-SS-08	35-SS-09	35-SS-10
	Sample ID	16-EDR-13-WSW(3)-SO	16-EDR-14-BASE-SO	16-EDR-15-BASE-SO	16-EDR-15-NSW(1_0)-SO	16-EDR-16-BASE-SO	16-EDR-17-BASE-SO	16-EDR-18-BASE-SO	16-EDR-19-BASE-SO	35-SS-01-2	35-SS-02-2	35-SS-03-2	35-SS-27-2	35-SS-04-2	35-SS-05-2	35-SS-06-2	35-SS-07-1	35-SS-08-2	35-SS-09-1_5	35-SS-10-2
	Sample Depth (ft)	3	0.75	0.5	1	6.5	6	6.5	6.5	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	1 - 2	1 - 2	1 - 2	1 - 2	0.5 - 1.5	1 - 2
	Sample Date	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	8/2/2016	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012
Analyte	**Screening Level**																			
Metals (mg/kg)																				
Aluminum	13000	**5900**	**6800**	**12000**	**8600**	**7800**	**8600**	**8800**	**8300**	**11000**	**7100**	**5800**	**5700**	**7300**	**12000**	**9200**	**4800**	**9300**	**7300**	**6700**
Antimony	3.1	**0.4**	**0.46**	**0.96**	**0.57**	**0.53**	**0.58**	**0.67**	**0.56**	**0.93**	**0.53**	**0.9**	**0.37**	**0.5**	**0.41 J**	**0.36 J**	**0.2 J**	**0.37 J**	**0.49 J**	**0.3 J**
Arsenic	23	**5.6**	**8.6**	**23**	**8.7**	**7**	**10**	**7.8**	**6.7**	**14**	**7.2**	**4.8**	**5.1**	**5.7**	**9.9**	**12**	**4**	**12**	**8.4**	**7.7**
Barium	1500	**67**	**110**	**480**	**90**	**78**	**99**	**97**	**87**	**120**	**100**	**75**	**77**	**200**	**380**	**120**	**87**	**120**	**160**	**130**
Beryllium	16	**0.081 J**	**0.26**	**0.37**	**0.14 J**	**0.12 J**	**0.15 J**	**0.13 J**	**0.13 J**	0.18 U	0.14 U	0.12 U	0.11 U	0.17 U	**0.34**	**0.19 J**	0.1 U	**0.21 J**	**0.19**	**0.19 J**
Cadmium	7.1	**0.12 J**	**0.19 J**	**0.56**	**0.18**	**0.2 J**	**0.21**	**0.19 J**	**0.13 J**	**0.22 J**	**0.17 J**	**0.13 J**	**0.11 J**	**0.23**	**0.37**	0.28 U	0.22 U	0.29 U	0.25 U	0.25 U
Calcium	--	**3100**	**4000**	**45000**	**4900**	**4800**	**4900**	**5200**	**4900**	**6300 J**	**3400 J**	**2700 J**	**2500 J**	**5100 J**	**11000 J**	**6900 J**	**2100 J**	**6500 J**	**6800 J**	**3800 J**
Chromium	10000	**13**	**15**	**23**	**19**	**17**	**19**	**19**	**18**	**24**	**16**	**13**	**13**	**15**	**24 J**	**22 J**	**12 J**	**21 J**	**17 J**	**16 J**
Cobalt	15	**5.7**	**6.6**	**8.6**	**8.9**	**8.8**	**8.3**	**9.4**	**8.2**	**11**	**7.8**	**5.6**	**5.8**	**6.1**	**9.5**	**10**	**5.2**	**10**	**7.7**	**7.8**
Copper	310	**18**	**21**	**38**	**27**	**23**	**25**	**26**	**23**	**38**	**22**	**15**	**16**	**19**	**32 J**	**30 J**	**14 J**	**30 J**	**25 J**	**25 J**
Iron	32000	**13000**	**19000**	**26000**	**20000**	**18000**	**19000**	**19000**	**18000**	**24000**	**15000**	**12000**	**12000**	**12000**	**18000 J**	**20000 J**	**10000 J**	**20000 J**	**15000 J**	**15000 J**
Lead	40	**6.6**	**31**	**71**	**7.3**	**6**	**6.9**	**7.2**	**6.3**	**9.1**	**6.7**	**4.9**	**4.9**	**14**	**19**	**17**	**52**	**10**	**26**	**16**
Magnesium	--	**3700**	**4200**	**4300**	**5200**	**5100**	**4900**	**5400**	**5200**	**6100 J**	**4300 J**	**3400 J**	**3500 J**	**3400 J**	**5300 J**	**5700 J**	**3000 J**	**5700 J**	**4100 J**	**4000 J**
Manganese	540	**240**	**450**	**2600**	**350**	**320**	**260**	**290**	**260**	**390**	**290**	**290**	**280**	**240**	**370**	**410**	**220**	**410**	**320**	**370 J**
Mercury	1.1	**0.073**	**0.017 J**	**0.035**	**0.019 J**	**0.013 J**	**0.016 J**	**0.016 J**	**0.017 J**	**0.036**	0.015 U	0.015 U	0.014 U	0.017 U	**0.032**	**0.2**	0.015 U	**0.029**	0.019 U	**0.025**
Nickel	150	**16**	**18**	**21**	**23**	**22**	**23**	**24**	**23**	**29**	**21**	**16**	**16**	**21**	**26**	**27**	**15**	**26**	**22**	**21**
Potassium	--	**540**	**850**	**970**	**700**	**650**	**670**	**670**	**630**	**1000**	**890**	**750**	**760**	**750**	**990**	**900**	**630**	**810**	**880**	**700**
Selenium	6.9	**0.59 J**	**0.94 J**	**0.85 J**	**0.81 J**	**0.78 J**	**0.94**	**0.84 J**	**0.84 J**	**0.69 J**	**0.49 J**	**0.34 J**	**0.36 J**	**0.43 J**	**0.65 J**	**0.52 J**	**0.24 J**	**0.58 J**	**0.42 J**	**0.46 J**
Silver	11	**0.025 J**	**0.059 J**	**0.07 J**	**0.053 J**	**0.034 J**	**0.046 J**	**0.046 J**	**0.042 J**	**0.093 J**	**0.074 J**	**0.04 J**	**0.032 J**	**0.042 J**	**0.082 J**	**0.082 J**	**0.044 J**	**0.075 J**	**0.059 J**	**0.056 J**
Sodium	--	**170**	**190**	270 U	**270**	**240**	**250**	**280**	**260**	**420**	**270**	**210**	**210**	**210**	**340**	**370**	**140**	**400**	**240**	**230**
Thallium	0.21	- -	- -	- -	- -	- -	- -	- -	- -	0.31 U	0.27 U	0.25 U	0.26 U	0.26 U	0.29 U	0.26 U	0.25 U	0.28 U	0.25 U	0.27 U
Vanadium	57	**27**	**29**	**43**	**38**	**37**	**38**	**39**	**38**	**46**	**34**	**27**	**28**	**33**	**46**	**43**	**24**	**41**	**35**	**32**
Zinc	2300	**30**	**51**	**84**	**47**	**42**	**47**	**49**	**43**	**61**	**51**	**53**	**50**	**37**	**59 J**	**68 J**	**61 J**	**58 J**	**71 J**	**61 J**
Pesticides (mg/kg)																				
4,4-DDD	0.19	**0.53**	**0.46 Q+**	**3 Q+**	**0.074 Q+**	**0.011 J,Q+**	**0.019 Q+**	**0.0099 J,Q**	**0.046 Q**	0.0036 U	**0.053**	**0.22**	**0.19**	**35**	**0.012 J**	**0.026 J**	**0.29**	0.0065 U	**0.0058 J**	0.0061 U
4,4-DDE	0.72	**1.1**	**0.047**	**0.11**	**0.021**	**0.00047 J**	**0.0014 J**	**0.00061 J**	**0.0031 J**	**0.0065 J**	**0.26**	**0.39**	**0.27**	**47**	**0.037**	**0.069**	**0.077**	**0.0051 J**	**0.0036 J**	**0.002 J**
4,4-DDT	1.9	**19 Q+**	**0.22 Q-**	**0.051 Q-**	**0.11 Q-**	**0.0031 J,B,Q-**	**0.0065 J,B,Q-**	**0.0035 J,B,Q-**	**0.0035 J,B,Q-**	**0.0046 J**	**0.58 J**	**3.9 J**	**2.2 J**	**810 J**	**0.15**	**0.36**	**3**	**0.011 J**	**0.046**	**0.016 J**
Aldrin	0.0099	0.0018 U	0.0011 U	0.0017 U	0.00019 U	0.0013 U	0.0014 U	0.0013 U	0.0026 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	0.0033 U	0.0034 U	0.0031 U	0.0032 U	0.0031 U	0.003 U
alpha-BHC	0.0029	0.0045 U	0.0028 U	0.0043 U	0.00047 U	0.0032 U	0.0034 U	0.0033 U	0.0065 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	0.0033 U	0.0034 U	0.0031 U	0.0032 U	0.0031 U	0.003 U
alpha-Chlordane	0.18	0.0027 U	**0.0019 J**	**0.0074 J,Q**	0.00028 U	0.0019 U	0.002 U	0.002 U	**0.0016 J**	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	**0.0042 J**	**0.01 J**	0.0031 U	**0.0089 J**	**0.063 M**	**0.0073 J**
alpha-Endosulfan	9.3	0.0027 U	0.0017 U	0.0026 U	0.00028 U	0.0019 U	0.002 U	0.002 U	0.0039 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	**9**	0.0033 U	0.0034 U	0.0031 U	0.0032 U	0.0031 U	0.003 U
beta-BHC	0.01	0.0089 U	0.0055 U	0.0087 U	0.00094 U	0.0064 U	0.0068 U	0.0066 U	0.013 U	0.0061 U	0.0052 U	0.005 U	0.0052 U	0.026 U	0.0055 U	0.0056 U	0.0051 U	0.0054 U	0.0052 U	0.0051 U
beta-Endosulfan	9.3	0.00089 U	0.00055 U	**0.00068 J,Q**	0.000094 U	0.00064 U	0.00068 U	0.00066 U	0.0013 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	0.0033 U	0.0034 U	0.0031 U	0.0032 U	0.0031 U	0.003 U
delta-BHC	0.0029	0.0027 U	0.0017 U	0.0026 U	0.00028 U	**0.0013 J,B**	0.002 U	**0.0012 J,B**	**0.0017 J,B**	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	0.0033 UJ	0.0034 UJ	0.0031 UJ	0.0032 U	**0.0016 J**	0.003 U
Dieldrin	0.0047	0.0062 U	0.0039 U	0.0061 U	0.00066 U	0.0045 U	0.0047 U	0.0046 U	0.0091 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	0.0033 U	0.0034 U	0.0031 U	0.0032 U	0.0031 U	0.003 U
Endosulfan Sulfate	9.3	0.0027 U	0.0017 U	0.0026 U	0.00028 U	0.0019 U	0.002 U	0.002 U	0.0039 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	0.0033 U	0.0034 U	0.0031 U	0.0032 U	0.0031 U	0.003 U
Endrin	0.61	0.0027 U	0.0017 U	0.0026 U	0.00028 U	0.0019 U	0.002 U	0.002 U	0.0039 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	0.0033 UJ	0.0034 UJ	0.0031 UJ	0.0032 U	0.0031 UJ	0.003 U
Endrin Aldehyde	0.61	0.0089 U	0.0055 U	0.0087 U	0.00094 U	0.0064 U	0.0068 U	0.0066 U	0.013 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	0.0033 U	0.0034 U	0.0031 U	0.0032 U	0.0031 U	0.003 U
Endrin Ketone	0.61	0.0089 U	0.0055 U	0.0087 U	0.00094 U	0.0064 U	0.0068 U	0.0066 U	0.013 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	0.0033 U	0.0034 U	0.0031 U	0.0032 U	0.0031 U	0.003 U
gamma-BHC	0.016	0.00089 U	0.00055 U	0.00087 U	0.000094 U	0.00064 U	0.00068 U	0.00066 U	**0.0019 J**	0.0061 U	0.0052 U	0.005 U	0.0052 U	0.026 U	0.0055 U	0.0056 U	0.0051 U	0.0054 U	0.0052 U	0.0051 U
gamma-Chlordane	0.18	**0.014 Q**	**0.0013 J,Q**	**0.0059 J,Q**	0.00047 U	0.0032 U	0.0034 U	0.0033 U	0.0065 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	**0.0065 J**	**0.0066 J**	0.0031 U	**0.0039 J**	**0.052**	**0.0049 J**
Heptachlor	0.0076	0.0018 U	0.0011 U	0.0017 U	**0.00006 J,Q**	0.0013 U	0.0014 U	**0.00061 J**	**0.001 J**	0.0061 U	0.0052 U	0.005 U	0.0052 U	0.026 U	0.0055 U	0.0056 U	0.0051 U	0.0054 U	0.0052 U	0.0051 U
Heptachlor Epoxide	0.0019	0.0062 U	0.0039 U	0.0061 U	0.00066 U	0.0045 U	0.0047 U	0.0046 U	0.0091 U	0.0036 U	0.0031 U	0.003 U	0.0031 U	0.015 U	**0.00094 J**	**0.0017 J**	0.0031 U	**0.0014 J**	**0.011 J**	0.003 U
Methoxychlor	13	**R**	**R**	**R**	**R**	0.0064 U	0.0068 U,Q-	0.0066 U,Q-	0.013 U,Q-	0.0036 UJ	0.0031 UJ	0.003 UJ	0.0062 UJ	0.015 UJ	0.0033 UJ	0.0034 UJ	0.0031 UJ	0.0032 U	0.0031 UJ	0.003 U
Toxaphene	0.49	0.22 U,Q-	0.14 U,Q-	0.22 U,Q-	0.023 U,Q-	0.16 U,Q-	0.17 U,Q-	0.16 U,Q-	0.33 U,Q-	0.61 U	0.52 U	0.5 U	0.52 U	2.6 U	0.55 U	0.56 U	0.51 U	0.54 U	0.52 U	0.51 U
Polychlorinated Biphenyls (mg/kg)																				
Aroclor 1016	0.1	0.054 U,Q-	0.067 U,Q-	0.1 U,Q-	0.056 U	0.077 U,Q-	0.081 U,Q-	0.079 U,Q-	0.078 U,Q-	0.0061 U	0.0052 U	0.005 U	0.0052 U	0.0051 U	0.0055 U	0.0056 U	0.0051 U	0.0054 U	0.0052 U	0.0051 U
Aroclor 1221	0.1	0.027 U	0.033 U	0.052 U	0.028 U	0.039 U	0.041 U	0.039 U	0.039 U	0.012 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U
Aroclor 1232	0.1	0.027 U	0.033 U	0.052 U	0.028 U	0.039 U	0.041 U	0.039 U	0.039 U	0.012 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U
Aroclor 1242	0.1	0.0094 U	0.012 U	0.018 U	0.0099 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0061 U	0.0052 U	0.005 U	0.0052 U	0.0051 U	0.0055 UJ	0.0056 UJ	0.0051 U	0.0054 U	0.0052 U	0.0051 U
Aroclor 1248	0.1	0.027 U	0.033 U	0.052 U	0.028 U	0.039 U	0.041 U	0.039 U	0.039 U	0.0061 U	0.0052 U	0.005 U	0.0052 U	0.0051 U	0.0055 UJ	0.0056 UJ	0.0051 U	0.0054 U	0.0052 U	0.0051 U
Aroclor 1254	0.1	0.013 U	0.017 U	0.026 U	0.014 U	0.019 U	0.02 U	0.02 U	0.02 U	0.0061 U	0.0052 U	0.005 U	0.0052 U	0.0051 U	0.0055 UJ	0.0056 UJ	0.0051 U	0.0054 U	0.0052 U	0.0051 U
Aroclor 1260	0.1	0.019 U,Q-	0.023 U,Q-	0.036 U,Q-	0.02 U,Q-	0.027 U,Q-	0.028 U,Q-	0.028 U,Q-	0.027 U,Q-	0.0061 U	0.0052 U	0.005 U	0.0052 U	0.0051 U	0.0055 UJ	0.0056 UJ	0.0051 U	0.0054 U	0.0052 U	**0.0048 J**
Per- and Polyfluoroalkyl Substances (mg/kg)																				
Perfluorooctanoic Acid	0.003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluorooctanesulfonic acid	0.0017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry (%)																				
Moisture, percent	--	**9.4**	**19**	**45.7**	**15.1**	**31.1**	**27.1**	**29.8**	**29**	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
General Chemistry (%)																				
Percent Solids	--	**90.6**	**81**	**54.3**	**84.9**	**68.9**	**72.9**	**70.2**	**71**	**18**	- -	**3.1**	**3.9**	**4.1**	**15**	**13**	**2.9**	**12**	**4.8**	**5.3**
General Chemistry (mg/kg)																				
Total Organic Carbon	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	35-SS-11	35-SS-12		35-SS-13		35-SS-14	35-SS-15	35-SS-16	35-SS-17		35-SS-18	35-SS-19		35-SS-20	35-SS-21	35-SS-22	35-SS-23		35-SS-24		35-SS-25		EDR-01-PC
	Sample ID	35-SS-11-2	35-SS-12-2	35-SS-26-2	35-SS-13-2	35-SS-28-24	35-SS-14-2	35-SS-15-2	35-SS-16-2	35-SS-17-24	35-SS-17-24	35-SS-18-2	35-SS-19-24	35-SS-19-24	35-SS-20-1_5	35-SS-21-2	35-SS-22-1	35-SS-23-24	35-SS-23-24	35-SS-24-24	35-SS-24-24	35-SS-25-24	35-SS-25-24	16-EDR-01-PC-SP(6)"
	Sample Depth (ft)	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0-2	0-2	1 - 2	0-2	0-2	0.5 - 1.5	1 - 2	1 - 2	0-2	0-2	0-2	0-2	0-2	0-2	0.5
	Sample Date	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	8/16/2013	9/17/2012	9/18/2012	8/16/2013	9/17/2012	9/17/2012	9/17/2012	9/18/2012	8/16/2013	9/18/2012	8/16/2013	9/18/2012	8/16/2013	9/11/2016
Analyte	**Screening Level**																						
Hydrocarbons (mg/kg)																							
C10-C25 DRO	250	**12 J**	**69**	**84**	**51**	**32**	**15 J**	**90**	**20 J**	**11 J**	- -	**14 J**	**29**	- -	**82**	**150**	**87**	**17 J**	- -	**13 J**	- -	**7.1 J**	- -	**37**
C25-C36 RRO	10000	**20 J**	**53**	**64**	**430**	**340**	**30 J**	**350**	**60 J**	**51 J**	- -	**43 J**	**270**	- -	**570**	**2600**	**320**	**130**	- -	**110**	- -	**25 J**	- -	**110**
C6-C10 GRO	300	9.5 U	1.4 U	6.4 U	1.3 U	1.1 U	4.8 U	18 U	1.6 U	14 U	- -	3.1 U	2.7 U	- -	2.8 U	1.3 U	6 U	1.2 U	- -	1.2 U	- -	4.1 U	- -	3.7 U
VOCs (mg/kg)																							
1,1,1,2-Tetrachloroethane	0.022	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
1,1,1-Trichloroethane	32	**0.014 J**	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
1,1,2,2-Tetrachloroethane	0.003	0.0076 U	0.0061 U	0.0074 U	0.0066 U	0.0066 U	0.0067 U	0.0065 U	0.0085 U	0.0063 U	- -	0.0065 U	0.0057 U	- -	0.007 U	0.0052 U	0.0066 U	0.0058 U	- -	0.0069 U	- -	0.0063 U	- -	0.0093 U
1,1,2-Trichloroethane	0.0014	0.0076 U	0.0061 U	0.0074 U	0.0066 U	0.0066 U	0.0067 U	0.0065 U	0.0085 U	0.0063 U	- -	0.0065 U	0.0057 U	- -	0.007 U	0.0052 U	0.0066 U	0.0058 U	- -	0.0069 U	- -	0.0063 U	- -	0.019 U
1,1-Dichloroethane	0.092	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
1,1-Dichloroethene	1.2	0.013 U	0.01 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.015 U	0.011 U	- -	0.011 U	0.0097 U	- -	0.012 U	0.0088 U	0.011 U	0.01 U	- -	0.012 U	- -	0.011 U	- -	0.019 U
1,1-Dichloropropene	0.018	0.013 U	0.01 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.015 U	0.011 U	- -	0.011 U	0.0097 U	- -	0.012 U	0.0088 U	0.011 U	0.01 U	- -	0.012 U	- -	0.011 U	- -	0.028 U
1,2,3-Trichlorobenzene	0.15	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
1,2,3-Trichloropropane	0.000031	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
1,2,4-Trichlorobenzene	0.082	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
1,2,4-Trimethylbenzene	0.16	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	**0.0054 J,B**
1,2-Dibromo-3-Chloropropane	0.0053	0.13 U	0.1 U	0.13 U	0.11 U	0.11 U	0.11 U	0.11 U	0.15 U	0.11 U	- -	0.11 U	0.097 U	- -	0.12 U	0.088 U	0.11 U	0.1 U	- -	0.12 U	- -	0.11 U	- -	0.028 U
1,2-Dichlorobenzene	2.4	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
1,2-Dichloroethane	0.0055	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
1,2-Dichloropropane	0.016	0.0086 U	0.0069 U	0.0084 U	0.0075 U	0.0075 U	0.0076 U	0.0074 U	0.0097 U	0.0072 U	- -	0.0073 U	0.0065 U	- -	0.0079 U	0.0059 U	0.0075 U	0.0066 U	- -	0.0079 U	- -	0.0072 U	- -	0.0093 U
1,3,5-Trimethylbenzene	1.3	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
1,3-Dichlorobenzene	2.3	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
1,3-Dichloropropane	160	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
1,4-Dichlorobenzene	0.037	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
2,2-Dichloropropane	0.016	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
2-Butanone (MEK)	15	0.26 U	0.21 U	0.25 U	0.22 U	0.23 U	0.23 U	0.22 U	0.29 U	0.22 U	- -	0.22 U	0.19 U	- -	0.24 U	0.18 U	0.22 U	0.2 U	- -	0.24 U	- -	0.21 U	- -	0.28 U
2-Chlorotoluene	160	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
2-Hexanone	0.11	0.13 U	0.1 U	0.13 U	0.11 U	0.11 U	0.11 U	0.11 U	0.15 U	0.11 U	- -	0.11 U	0.097 U	- -	0.12 U	0.088 U	0.11 U	0.1 U	- -	0.12 U	- -	0.11 U	- -	0.14 U
4-Chlorotoluene	160	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
4-Methyl-2-Pentanone (MIBK)	18	0.13 U	0.1 U	0.13 U	0.11 U	0.11 U	0.11 U	0.11 U	0.15 U	0.11 U	- -	0.11 U	0.097 U	- -	0.12 U	0.088 U	0.11 U	0.1 U	- -	0.12 U	- -	0.11 U	- -	0.14 U
Acetone	38	0.26 UJ	0.21 UJ	0.25 UJ	0.22 UJ	0.23 UJ	0.23 UJ	0.22 UJ	0.29 UJ	0.22 UJ	- -	0.22 UJ	0.19 UJ	- -	0.24 UJ	0.18 UJ	0.22 UJ	0.2 UJ	- -	0.24 UJ	- -	0.21 UJ	- -	0.93 U
Benzene	0.022	0.0086 U	0.0069 U	0.0084 U	0.0075 U	0.0075 U	0.0076 U	**0.0052 J**	0.0097 U	0.0072 U	- -	0.0073 U	0.0065 U	- -	0.0079 U	0.0059 U	0.0075 U	0.0066 U	- -	0.0079 U	- -	0.0072 U	- -	**0.0052 J,B**
bis(2-Chloroethoxy)methane	19	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
Bromobenzene	0.36	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.0093 U
Bromochloromethane	15	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
Bromodichloromethane	0.0043	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
Bromoform	0.1	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.11 U
Bromomethane	0.024	0.086 U	0.069 U	0.084 U	0.075 U	0.075 U	0.076 U	0.074 U	0.097 U	0.072 U	- -	0.073 U	0.065 U	- -	0.079 U	0.059 U	0.075 U	0.066 U	- -	0.079 U	- -	0.072 U	- -	0.056 U
Carbon Disulfide	2.9	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 UJ	- -	0.022 UJ	0.019 UJ	- -	0.024 UJ	0.018 U	0.022 U	0.02 UJ	- -	0.024 UJ	- -	0.021 UJ	- -	0.056 U
Carbon Tetrachloride	0.021	0.013 U	0.01 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.015 U	0.011 U	- -	0.011 U	0.0097 U	- -	0.012 U	0.0088 U	0.011 U	0.01 U	- -	0.012 U	- -	0.011 U	- -	0.019 U
Chlorobenzene	0.46	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
Chloroethane	72	0.26 U	0.21 U	0.25 U	0.22 U	0.23 U	0.23 U	0.22 U	0.29 U	0.22 U	- -	0.22 U	0.19 U	- -	0.24 U	0.18 U	0.22 U	0.2 U	- -	0.24 U	- -	0.21 U	- -	0.056 U
Chloroform	0.0071	0.026 U	**0.0079 J**	0.025 U	0.022 U	0.023 U	0.023 U	**0.014 J**	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
Chloromethane	0.61	0.26 U	0.21 U	0.25 U	0.22 U	0.23 U	0.23 U	0.22 U	0.29 U	0.22 U	- -	0.22 U	0.19 U	- -	0.24 U	0.18 U	0.22 U	0.2 U	- -	0.24 U	- -	0.21 U	- -	0.056 U
cis-1,2-Dichloroethene	0.12	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
cis-1,3-Dichloropropene	0.018	0.0086 U	0.0069 U	0.0084 U	0.0075 U	0.0075 U	0.0076 U	0.0074 U	0.0097 U	0.0072 U	- -	0.0073 U	0.0065 U	- -	0.0079 U	0.0059 U	0.0075 U	0.0066 U	- -	0.0079 U	- -	0.0072 U	- -	0.0093 U
Dibromochloromethane	0.0027	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
Dibromomethane	0.025	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
Dichlorodifluoromethane	3.9	0.026 UJ	0.021 UJ	0.025 UJ	0.022 UJ	0.023 U	0.023 UJ	0.022 UJ	0.029 UJ	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.19 U
Ethylbenzene	0.13	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
Ethylene Dibromide (EDB)	0.00024	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
Hexachlorobutadiene	0.02	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.043 U
Isopropylbenzene	5.4	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
m- & p-Xylene	1.5	**0.014 J**	**0.026 J**	**0.019 J**	0.015 U	0.015 U	0.015 U	**0.016 J**	0.019 U	0.014 U	- -	**0.018 J**	0.013 U	- -	**0.018 J**	**0.016 J**	**0.012 J**	**0.011 J**	- -	0.016 U	- -	0.014 U	- -	0.19 U
Methyl tert-Butyl Ether (MTBE)	0.4	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
Methylene Chloride	0.33	0.05 UJ	0.03 U	0.038 UJ	0.016 U	0.017 U	0.033 UJ	0.034 UJ	0.029 U	0.0084 UJ	- -	0.023 U	0.019 U	- -	0.024 U	0.015 U	0.033 U	0.016 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
n-Butylbenzene	2	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
n-Propylbenzene	5.2	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
Naphthalene	0.038	0.0026 U	0.0025 U	**0.0027 J**	**0.0066**	**0.0025 J**	0.0027 U	0.0025 U	0.0032 U	0.022 U	- -	**0.01 J**	0.019 U	- -	**0.013**	**0.0035 J**	**0.0037 J**	0.02 U	- -	0.024 U	- -	0.021 U	- -	**0.013**
o-Xylene	1.5	0.026 U	**0.011 J**	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.019 U
p-Isopropyltoluene	0.03	0.026 U	**0.0098 J**	0.025 U	**0.0079 J**	**0.0075 J**	0.023 U	**0.0095 J**	0.029 U	**0.0082 J**	- -	0.022 U	**0.0071 J**	- -	**0.017 J**	**0.0078 J**	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
sec-Butylbenzene	2.8	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
Styrene	10	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
tert-Butylbenzene	3.5	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.028 U
Tetrachloroethene (PCE)	0.19	0.013 U	0.01 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.015 U	0.011 U	- -	0.011 U	0.0097 U	- -	0.012 U	0.0088 U	0.011 U	0.01 U	- -	0.012 U	- -	0.011 U	- -	0.028 U
Toluene	6.7	0.026 U	0.021 U	0.0097 UJ	0.022 U	0.023 U	**0.0094 J**	**0.02 J**	0.029 U	**0.013 J**	- -	0.022 U	0.019 U	- -	0.024 U	**0.006 J**	0.022 U	0.02 U	- -	0.024 U	- -	**0.0096 J**	- -	**0.018 J**
trans-1,2-Dichloroethene	1.3	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.056 U
trans-1,3-Dichloropropene	0.018	0.0086 U	0.0069 U	0.0084 U	0.0075 U	0.0075 U	0.0076 U	0.0074 U	0.0097 U	0.0072 U	- -	0.0073 U	0.0065 U	- -	0.0079 U	0.0059 U	0.0075 U	0.0066 U	- -	0.0079 U	- -	0.0072 U	- -	0.028 U

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

M- = Result is estimated with a low bias due to an MS/MSD exceedance

mg/kg = milligram(s) per kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

Analyte	Location	35-SS-11	35-SS-12		35-SS-13		35-SS-14	35-SS-15	35-SS-16	35-SS-17		35-SS-18	35-SS-19		35-SS-20	35-SS-21	35-SS-22	35-SS-23		35-SS-24		35-SS-25		EDR-01-PC
	Sample ID	35-SS-11-2	35-SS-12-2	35-SS-26-2	35-SS-13-2	35-SS-28-24	35-SS-14-2	35-SS-15-2	35-SS-16-2	35-SS-17-24	35-SS-17-24	35-SS-18-2	35-SS-19-24	35-SS-19-24	35-SS-20-1_5	35-SS-21-2	35-SS-22-1	35-SS-23-24	35-SS-23-24	35-SS-24-24	35-SS-24-24	35-SS-25-24	35-SS-25-24	16-EDR-01-PC-SP(6)"
	Sample Depth (ft)	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0-2	0-2	1 - 2	0-2	0-2	0.5 - 1.5	1 - 2	1 - 2	0-2	0-2	0-2	0-2	0-2	0-2	0.5
	Sample Date	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	8/16/2013	9/17/2012	9/18/2012	8/16/2013	9/17/2012	9/17/2012	9/17/2012	9/18/2012	8/16/2013	9/18/2012	8/16/2013	9/18/2012	8/16/2013	9/11/2016
	Screening Level																						
Trichloroethene (TCE)	0.011	0.0086 U	0.0069 U	0.0084 U	0.0075 U	0.0075 U	0.0076 U	0.0074 U	0.0097 U	0.0072 U	- -	0.0073 U	0.0065 U	- -	0.0079 U	0.0059 U	0.0075 U	0.0066 U	- -	0.0079 U	- -	0.0072 U	- -	0.019 U
Trichlorofluoromethane	41	0.026 U	0.021 U	0.025 U	0.022 U	0.023 U	0.023 U	0.022 U	0.029 U	0.022 U	- -	0.022 U	0.019 U	- -	0.024 U	0.018 U	0.022 U	0.02 U	- -	0.024 U	- -	0.021 U	- -	0.19 U
Vinyl Chloride	0.0008	0.0043 U	0.0034 U	0.0042 U	0.0037 U	0.0038 U	0.0038 U	0.0037 U	0.0048 U	0.0036 U	- -	0.0037 U	0.0032 U	- -	0.004 U	0.0029 U	0.0037 U	0.0033 U	- -	0.0039 U	- -	0.0036 U	- -	0.028 U
SVOCs (mg/kg)																								
1-Methylnaphthalene	0.41	0.0026 U	**0.0034 J**	**0.0029 J**	**0.0039 J**	**0.003 J**	0.0027 U	**0.002 J**	**0.0029 J**	**0.0019 J**	- -	**0.0036 J**	**0.0025 J**	- -	**0.011**	**0.003 J**	**0.0035 J**	0.0033 U	- -	0.0029 U	- -	0.0026 U	- -	**0.0091 J**
2,4,5-Trichlorophenol	28	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
2,4,6-Trichlorophenol	0.092	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
2,4-Dichlorophenol	0.21	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
2,4-Dimethylphenol	3.2	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
2,4-Dinitrophenol	0.34	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.49 U,Q-
2,4-Dinitrotoluene	0.024	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.043 U
2,6-Dinitrotoluene	0.005	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.043 U
2-Chloronaphthalene	26	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
2-Chlorophenol	0.71	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
2-Methylnaphthalene	1.3	0.0026 U	**0.0045 J**	**0.0041 J**	**0.0071 M**	**0.0041 J**	0.0027 U	**0.0042 J**	**0.0031 J**	0.0028 U	- -	**0.0051 J**	**0.0041 J**	- -	**0.019**	**0.0042 J**	**0.006 M**	0.0033 U	- -	0.0029 U	- -	0.0026 U	- -	**0.0089**
2-Methylphenol	6.2	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
2-Nitroaniline	63	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.043 U
2-Nitrophenol	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.043 U
3,3-Dichlorobenzidine	0.056	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.086 U
3- & 4-Methylphenol	6.1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	**0.035 J**
3-Nitroaniline	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.11 U
4,6-Dinitro-2-Methylphenol	0.51	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.3 U,Q-
4-Bromophenyl Phenyl Ether	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
4-Chloro-3-Methylphenol	630	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
4-Chloroaniline	0.015	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
4-Chlorophenyl Phenyl Ether	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
4-Nitroaniline	25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
4-Nitrophenol	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.12 U,Q-
Acenaphthene	37	0.0026 U	0.0025 U	0.0026 U	0.0027 U	0.0027 U	0.0027 U	0.0025 U	0.0032 U	0.0028 U	- -	0.0027 U	0.0027 U	- -	0.0029 U	**0.0037 J**	**0.0029 J**	0.0033 U	- -	0.0029 U	- -	0.0026 U	- -	**0.035**
Acenaphthylene	18	0.0026 U	0.0025 U	**0.0035 J**	0.0027 U	0.0027 U	0.0027 U	0.0025 U	0.0032 U	**0.002 J**	- -	**0.0024 J**	0.0027 U	- -	**0.0036 J**	**0.0026 J**	**0.0024 J**	0.0033 U	- -	0.0029 U	- -	0.0026 U	- -	**0.018**
Anthracene	230	0.0026 U	**0.0035 J**	**0.0056**	**0.0018 J**	0.0027 U	0.0027 U	**0.0015 J**	**0.0029 J**	0.0028 U	- -	**0.0018 J**	0.0027 U	- -	**0.0036 J**	**0.015**	**0.0063 M**	0.0033 U	- -	0.0029 U	- -	0.0026 U	- -	**0.11**
Benzo(a)anthracene	0.16	0.0026 U	**0.0062**	**0.0099**	**0.0075 M**	**0.0027 J**	0.0027 U	**0.0035 J**	**0.0054 J**	**0.0026 J**	- -	**0.0042 J**	**0.0071**	- -	**0.0063**	**0.023 M**	**0.035**	0.0033 U	- -	**0.0026 J**	- -	**0.0019 J**	- -	**0.32**
Benzo(a)pyrene	0.02	0.0026 U	**0.0066**	**0.0095**	**0.015 M**	**0.0096**	0.0027 U	**0.009**	**0.0057 J**	**0.0036 J**	- -	**0.0055**	**0.02**	- -	**0.0064**	**0.035**	**0.05**	0.0033 U	- -	**0.0034 J**	- -	**0.0021 J**	- -	**0.39**
Benzo(b)fluoranthene	0.16	0.0026 U	**0.011 M**	**0.014 M**	**0.017 M**	**0.0061 M**	**0.0019 J**	**0.0064 M**	**0.0095 M**	**0.0063 M**	- -	**0.0096**	**0.031 M**	- -	**0.021 M**	**0.04 M**	**0.08**	0.0033 U	- -	**0.0062**	- -	**0.0038 J**	- -	**0.53**
Benzo(g,h,i)perylene	230	0.0026 U	**0.0076**	**0.0092**	**0.05 M**	**0.049 M**	**0.0016 J**	**0.019**	**0.0049 J**	**0.0032 J**	- -	**0.0031 J**	**0.029**	- -	**0.0074**	**0.03**	**0.055**	0.0033 U	- -	**0.0028 J**	- -	0.0026 U	- -	**0.32**
Benzo(k)fluoranthene	2	0.0026 U	**0.0044 J**	**0.0054 M**	**0.006 M**	**0.0024 J**	0.0027 U	**0.0022 J**	**0.0029 J**	**0.0021 J**	- -	**0.0038 J**	**0.0094 M**	- -	**0.0048 J**	**0.014 M**	**0.03**	0.0033 U	- -	**0.002 J**	- -	**0.0015 J**	- -	**0.26**
Benzoic acid	200	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	**0.3 J**
Benzyl alcohol	5.7	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
bis(2-Chloroethyl)ether	0.00042	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
bis(2-Chloroisopropyl)ether	310	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.043 U
bis(2-Ethylhexyl)phthalate	39	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	**0.13 J**
Butyl Benzyl Phthalate	16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.15 U
Carbazole	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	**0.078 J,Q+**
Chrysene	20	0.0026 U	**0.012**	**0.015**	**0.013 M**	**0.0055 M**	**0.0024 J**	**0.0068 M**	**0.0088**	**0.0054 J**	- -	**0.0078**	**0.014**	- -	**0.018 M**	**0.034 M**	**0.054**	0.0033 U	- -	**0.0051 J**	- -	**0.0031 J**	- -	**0.49**
di-n-Butyl Phthalate	16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.15 U
di-n-Octyl Phthalate	63	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
Dibenz(a,h)anthracene	0.02	0.0026 U	**0.0023 J**	**0.0032 J**	**0.013 M**	**0.011 M**	0.0027 U	**0.0056 M**	**0.003 J**	0.0028 U	- -	0.0027 U	**0.0027 J**	- -	0.0029 U	**0.007 M**	**0.0075**	0.0033 U	- -	0.0029 U	- -	0.0026 U	- -	**0.073**
Dibenzofuran	0.97	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	**0.022 J**
Diethyl phthalate	60	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.15 U
Dimethyl phthalate	48	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
Fluoranthene	240	**0.0033 J**	**0.019**	**0.028**	**0.019 M**	**0.0074**	**0.0036 J**	**0.0091**	**0.016**	**0.0067**	- -	**0.012**	**0.016**	- -	**0.033**	**0.064**	**0.093**	0.0033 U	- -	**0.0093**	- -	**0.0055**	- -	**0.92**
Fluorene	36	0.0026 U	0.0025 U	0.0026 U	0.0027 U	0.0027 U	0.0027 U	0.0025 U	**0.0021 J**	0.0028 U	- -	0.0027 U	0.0027 U	- -	**0.0029 J**	**0.005 J**	**0.0038 J**	0.0033 U	- -	0.0029 U	- -	0.0026 U	- -	**0.039**
Hexachlorobenzene	0.0082	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
Hexachlorocyclopentadiene	0.0093	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.11 U,Q-
Hexachloroethane	0.018	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
Indeno(1,2,3-cd)pyrene	0.2	0.0026 U	**0.0083**	**0.012**	**0.025 M**	**0.018 M**	**0.0019 J**	**0.0094 M**	**0.0063 J**	**0.0035 J**	- -	**0.0038 J**	**0.026**	- -	**0.0083**	**0.021 M**	**0.046**	0.0033 U	- -	**0.0032 J**	- -	**0.0023 J**	- -	**0.4**
Isophorone	2.7	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
N-Nitrosodimethylamine (NDMA)	0.0000033	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.25 U
N-Nitrosodiphenylamine	4.6	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.037 U
N-Nitrosodipropylamine	0.00068	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.062 U
Nitrobenzene	0.0079	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
Pentachlorophenol	0.0043	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.3 U
Phenanthrene	39	**0.0024 J**	**0.012 M**	**0.018**	**0.01 M**	**0.0056 M**	**0.0027 J**	**0.0069 M**	**0.011**	**0.005 J**	- -	**0.0085**	**0.0082**	- -	**0.039**	**0.055**	**0.055 M**	**0.002 J**	- -	**0.0063**	- -	**0.0043 J**	- -	**0.49**
Phenol	29	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.019 U
Pyrene	87	0.0026 U	**0.016**	**0.025**	**0.016 M**	**0.0056**	**0.0021 J**	**0.012**	**0.013**	**0.0059**	- -	**0.0099**	**0.015**	- -	**0.029**	**0.062**	**0.078**	0.0033 U	- -	**0.0071**	- -	**0.0045 J**	- -	**0.88**

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	35-SS-11	35-SS-12		35-SS-13		35-SS-14	35-SS-15	35-SS-16	35-SS-17		35-SS-18	35-SS-19		35-SS-20	35-SS-21	35-SS-22	35-SS-23		35-SS-24		35-SS-25		EDR-01-PC
	Sample ID	35-SS-11-2	35-SS-12-2	35-SS-26-2	35-SS-13-2	35-SS-28-24	35-SS-14-2	35-SS-15-2	35-SS-16-2	35-SS-17-24	35-SS-17-24	35-SS-18-2	35-SS-19-24	35-SS-19-24	35-SS-20-1_5	35-SS-21-2	35-SS-22-1	35-SS-23-24	35-SS-23-24	35-SS-24-24	35-SS-24-24	35-SS-25-24	35-SS-25-24	16-EDR-01-PC-SP(6)"
	Sample Depth (ft)	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0-2	0-2	1 - 2	0-2	0-2	0.5 - 1.5	1 - 2	1 - 2	0-2	0-2	0-2	0-2	0-2	0-2	0.5
	Sample Date	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	8/16/2013	9/17/2012	9/18/2012	8/16/2013	9/17/2012	9/17/2012	9/17/2012	9/18/2012	8/16/2013	9/18/2012	8/16/2013	9/18/2012	8/16/2013	9/11/2016
Analyte	**Screening Level**																							
Metals (mg/kg)																								
Aluminum	13000	**9000**	**6500**	**7300**	**6900**	**7000**	**7400**	**5100**	**8400**	- -	**6200**	**6800**	- -	**8500**	**21000**	**6600**	**7100**	- -	**6500**	- -	**8500 J**	- -	**14000**	**24000**
Antimony	3.1	**0.68**	**0.5**	**0.57**	**0.47**	**0.45**	**0.45**	**0.45**	**0.62**	- -	**0.42 J**	**0.35 J**	- -	**0.85 J**	**0.53 J**	**0.26 J**	**0.84 J**	- -	**0.58 J**	- -	**0.32 J**	- -	**0.55 J**	**1.6**
Arsenic	23	**11**	**5.9**	**6.7**	**6.7**	**6.2**	**6.8**	**5.8**	**9.9**	- -	**4.4**	**8.1**	- -	**6.2**	**7.6**	**8**	**8.1**	- -	**4.5**	- -	**9.6**	- -	**17**	**10**
Barium	1500	**100**	**95**	**95**	**98**	**93**	**90**	**76**	**100**	- -	**140**	**190**	- -	**290**	**970**	**94**	**210**	- -	**83**	- -	**140**	- -	**200**	**1400**
Beryllium	16	0.16 U	0.11 U	0.12 U	0.14 U	0.16 U	0.13 U	0.092 U	0.15 U	- -	**0.13 J**	**0.19 J**	- -	**0.23**	**0.75**	**0.14 J**	**0.21**	- -	**0.13 J**	- -	**0.25**	- -	**0.38**	**0.88**
Cadmium	7.1	**0.16 J**	**0.18 J**	**0.23**	**0.17 J**	**0.17 J**	**0.13 J**	**0.16 J**	**0.16 J**	- -	**0.18 J**	0.26 U	- -	**0.27**	**0.41**	0.19 U	0.3 U	- -	**0.12 J**	- -	**0.18 J**	- -	**0.31**	**0.28**
Calcium	--	**6800 J**	**3400 J**	**3400 J**	**4000 J**	**3800 J**	**3600 J**	**2600 J**	**6600 J**	- -	**3800**	**5200 J**	- -	**7500**	**24000 J**	**4600 J**	**9400 J**	- -	**3200**	- -	**6300 J**	- -	**13000**	**30000**
Chromium	10000	**20**	**15**	**16**	**16**	**15**	**16**	**13**	**19**	- -	**12 J**	**15 J**	- -	**16 J**	**26 J**	**15 J**	**17 J**	- -	**12 J**	- -	**18 J**	- -	**30 J**	**30**
Cobalt	15	**9.3**	**6.5**	**7.1**	**7.2**	**7.1**	**7.4**	**6.1**	**9.2**	- -	**5.4**	**7.6**	- -	**5.5**	**8.4**	**7.6**	**6.9**	- -	**5.2**	- -	**8.6**	- -	**15**	**8.8**
Copper	310	**29**	**19**	**22**	**21**	**19**	**20**	**19**	**28**	- -	**16**	**24 J**	- -	**26**	**40 J**	**21 J**	**29 J**	- -	**13**	- -	**25**	- -	**43**	**94**
Iron	32000	**20000**	**14000**	**15000**	**14000**	**15000**	**15000**	**12000**	**19000**	- -	**13000**	**15000 J**	- -	**17000**	**17000 J**	**14000 J**	**14000 J**	- -	**13000**	- -	**21000**	- -	**36000**	**21000**
Lead	40	**6.7**	**9.1**	**10**	**7.4**	**7.2**	**5.6**	**6.9**	**7.8**	- -	**10**	**7.6**	- -	**30**	**29**	**16**	**35**	- -	**8.2**	- -	**9.2**	- -	**12**	**11**
Magnesium	--	**5400 J**	**3900 J**	**4300 J**	**4000 J**	**4000 J**	**4200 J**	**3300 J**	**4900 J**	- -	**3600**	**3800 J**	- -	**3300**	**5100 J**	**3900 J**	**4000 J**	- -	**4000**	- -	**4900 J**	- -	**8200**	**5500**
Manganese	540	**350**	**250**	**280**	**280**	**290**	**310**	**200**	**330**	- -	**190**	**400**	- -	**230**	**400**	**290**	**280**	- -	**250**	- -	**350 J**	- -	**760**	**420**
Mercury	1.1	**0.027**	**0.029**	0.023 U	0.019 U	0.016 U	0.015 U	0.023 U	0.023 U	- -	**0.0097 J**	0.018 U	- -	**0.019**	0.022 U	0.021 U	0.024 U	- -	**0.01 J**	- -	**0.022**	- -	**0.046**	**0.015 J**
Nickel	150	**24**	**23**	**19**	**20**	**20**	**20**	**17**	**24**	- -	**17**	**22**	- -	**17**	**25**	**21**	**20**	- -	**15**	- -	**23**	- -	**36**	**28**
Potassium	--	**850**	**780**	**830**	**660**	**720**	**890**	**640**	**700**	- -	**780**	**650**	- -	**860**	**1300**	**560**	**960**	- -	**780**	- -	**820**	- -	**1400**	**1700**
Selenium	6.9	**0.55 J**	**0.39 J**	**0.41 J**	**0.52 J**	**0.39 J**	**0.39 J**	**0.37 J**	**0.52 J**	- -	**0.36 J**	**0.47 J**	- -	**0.47 J**	**0.75**	**0.34 J**	**0.44 J**	- -	**0.25 J**	- -	**0.64 J**	- -	**1.1**	**0.98 J**
Silver	11	**0.067 J**	**0.05 J**	**0.05 J**	**0.049 J**	**0.048 J**	**0.046 J**	**0.039 J**	**0.065 J**	- -	**0.043 J**	**0.058 J**	- -	**0.071 J**	**0.085 J**	**0.059 J**	**0.064 J**	- -	**0.035 J**	- -	**0.071 J**	- -	**0.11 J**	**0.13 J,B**
Sodium	--	**450**	**240**	**290**	**280**	**280**	**290**	**170**	**340**	- -	**160 J**	**200**	- -	**190 J**	**350**	**250**	**270**	- -	**180 J**	- -	**290 J**	- -	**560 J**	**330**
Thallium	0.21	0.26 U	0.27 U	0.26 U	0.27 U	0.26 U	0.27 U	0.25 U	0.32 U	- -	0.24 U	0.27 U	- -	0.23 U	0.26 U	0.26 U	0.26 U	- -	0.24 U	- -	0.27 U	- -	0.39 U	- -
Vanadium	57	**45**	**30**	**33**	**33**	**32**	**34**	**27**	**38**	- -	**26**	**31**	- -	**30**	**70**	**31**	**34**	- -	**23**	- -	**35**	- -	**52**	**78**
Zinc	2300	**52**	**51**	**48**	**42**	**43**	**56**	**41**	**48**	- -	**32**	**66 J**	- -	**43**	**76 J**	**52 J**	**85 J**	- -	**31**	- -	**52**	- -	**80**	**34**
Pesticides (mg/kg)																								
4,4-DDD	0.19	**0.0085 J**	**0.81 J**	**1.6**	**0.32**	**0.2**	**0.036**	**1.2**	**0.009 J**	**0.026**	- -	**0.021 J**	**0.17**	- -	**0.1 J**	**0.014 J**	**0.011 J**	0.004 U	- -	**0.0081 J**	- -	**0.034**	- -	**0.011 M,Q-**
4,4-DDE	0.72	**0.11**	**1.6 J**	**3.2**	**0.21**	**0.14**	**0.17**	**1.3**	**0.052**	**0.16**	- -	**3.4**	**0.63**	- -	**0.19**	**0.0071 J**	**0.012 J**	0.004 U	- -	**0.07 J**	- -	**0.038**	- -	**0.032 M,Q-**
4,4-DDT	1.9	**0.1 J**	**15 J**	**29 J**	**2.9 J**	**2 J**	**0.35 J**	**19 J**	**0.09 J**	**0.39 J**	- -	**0.25**	**2 J**	- -	**1.4**	**0.13**	**0.13**	**0.0045 J**	- -	**0.095 J**	- -	**0.094 J**	- -	**0.051 M,Q-**
Aldrin	0.0099	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	**0.0059 J**	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.00023 U,M-,Q-
alpha-BHC	0.0029	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	0.0032 U	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.00058 U,M-,Q-
alpha-Chlordane	0.18	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	**0.029 J**	- -	0.016 U	0.0068 U	**0.026 J**	0.004 U	- -	0.0036 U	- -	**0.0026 J**	- -	0.00035 U,M-,Q-
alpha-Endosulfan	9.3	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	0.0032 U	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.00035 U,M-,Q-
beta-BHC	0.01	0.0052 U	0.005 U	0.0052 U	0.01 U	0.011 U	0.0053 U	0.0049 U	0.0062 U	0.0058 U	- -	0.026 U	0.01 U	- -	0.027 U	0.011 U	0.0053 U	0.0067 U	- -	0.0061 U	- -	0.005 U	- -	0.0012 U,Q-
beta-Endosulfan	9.3	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	0.0032 U	0.004 U	- -	0.0036 U	- -	0.003 U	- -	**0.000059 J,Q,M-**
delta-BHC	0.0029	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	0.0032 UJ	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.00035 U,M-,Q-
Dieldrin	0.0047	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	0.0032 U	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.00081 U,M-,Q-
Endosulfan Sulfate	9.3	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	0.0032 U	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.00035 U,M-,Q-
Endrin	0.61	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	0.0032 UJ	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.00035 U
Endrin Aldehyde	0.61	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	0.0032 U	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.0012 U,Q-
Endrin Ketone	0.61	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	0.0032 U	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.0012 U,M-,Q-
gamma-BHC	0.016	0.0052 U	0.005 U	0.0052 U	0.01 U	0.011 U	0.0053 U	0.0049 U	0.0062 U	0.0058 U	- -	0.026 U	0.01 U	- -	0.027 U	0.011 U	0.0053 U	0.0067 U	- -	0.0061 U	- -	0.005 U	- -	0.00012 U,M-,Q-
gamma-Chlordane	0.18	0.0031 U	0.003 U	0.0031 U	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	**0.045**	- -	0.016 U	0.0068 U	**0.016 J**	0.004 U	- -	0.0036 U	- -	**0.004 J**	- -	0.00058 U,M-,Q-
Heptachlor	0.0076	0.0052 U	0.005 U	0.0052 U	0.01 U	0.011 U	0.0053 U	0.0049 U	0.0062 U	0.0058 U	- -	0.026 U	0.01 U	- -	0.027 U	0.011 U	0.0053 U	0.0067 U	- -	0.0061 U	- -	0.005 U	- -	0.00023 U,M-,Q-
Heptachlor Epoxide	0.0019	0.0031 U	0.003 U	**0.015 J**	0.0063 U	0.0064 U	0.0032 U	0.0029 U	0.0037 U	0.0035 U	- -	0.016 U	0.0062 U	- -	0.016 U	0.0068 U	**0.0033 J**	0.004 U	- -	0.0036 U	- -	0.003 U	- -	0.00081 U,M-,Q-
Methoxychlor	13	0.0031 UJ	0.003 UJ	0.16 UJ	0.0063 UJ	0.0064 UJ	0.0032 UJ	0.059 UJ	0.0075 UJ	0.0035 UJ	- -	0.016 UJ	0.0062 UJ	- -	0.016 UJ	0.0068 U	0.0032 UJ	0.004 UJ	- -	0.0036 UJ	- -	0.003 UJ	- -	0.0012 U,Q-
Toxaphene	0.49	0.52 U	0.5 U	0.52 U	1 U	1.1 U	0.53 U	0.49 U	0.62 U	0.58 U	- -	2.6 U	1 U	- -	2.7 U	1.1 U	0.53 U	0.67 U	- -	0.61 U	- -	0.5 U	- -	0.029 U,Q-
Polychlorinated Biphenyls (mg/kg)																								
Aroclor 1016	0.1	0.0052 U	0.005 U	0.0052 U	0.0052 U	0.0054 U	0.0053 U	0.0049 U	0.0062 U	0.0058 U	- -	0.0052 U	0.0052 U	- -	0.0054 U	0.0057 U	0.0053 U	0.0067 U	- -	0.0061 U	- -	0.005 U	- -	0.023 U,Q-
Aroclor 1221	0.1	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.0098 U	0.012 U	0.012 U	- -	0.01 U	0.01 U	- -	0.011 U	0.011 U	0.011 U	0.013 U	- -	0.012 U	- -	0.0099 U	- -	0.012 U,Q-
Aroclor 1232	0.1	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.0098 U	0.012 U	0.012 U	- -	0.01 U	0.01 U	- -	0.011 U	0.011 U	0.011 U	0.013 U	- -	0.012 U	- -	0.0099 U	- -	0.012 U,Q-
Aroclor 1242	0.1	0.0052 U	0.005 U	0.0052 U	0.0052 U	0.0054 U	0.0053 U	0.0049 U	0.0062 U	0.0058 U	- -	0.0052 UJ	0.0052 U	- -	0.0054 UJ	0.0057 U	0.0053 U	0.0067 U	- -	0.0061 U	- -	0.005 U	- -	0.004 U,Q-
Aroclor 1248	0.1	0.0052 U	0.005 U	0.0052 U	0.0052 U	0.0054 U	0.0053 U	0.0049 U	0.0062 U	0.0058 U	- -	0.0052 UJ	0.0052 U	- -	0.0054 UJ	0.0057 U	0.0053 U	0.0067 U	- -	0.0061 U	- -	0.005 U	- -	0.012 U,Q-
Aroclor 1254	0.1	0.0052 U	0.005 U	0.0052 U	0.0052 U	0.0054 U	0.0053 U	0.0049 U	0.0062 U	0.0058 U	- -	0.0052 UJ	0.0052 U	- -	0.0054 UJ	0.0057 U	0.0053 U	0.0067 U	- -	0.0061 U	- -	0.005 U	- -	0.0058 U,Q-
Aroclor 1260	0.1	0.0052 U	0.005 U	0.0052 U	0.0052 U	0.0054 U	0.0053 U	0.0049 U	0.0062 U	0.0058 U	- -	0.0052 UJ	0.0052 U	- -	0.0054 UJ	0.0057 U	0.0053 U	0.0067 U	- -	0.0061 U	- -	0.005 U	- -	0.0081 U,Q-
Per- and Polyfluoroalkyl Substances (mg/kg)																								
Perfluorooctanoic Acid	0.003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluorooctanesulfonic acid	0.0017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry (%)																								
Moisture, percent	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	**22.6**
General Chemistry (%)																								
Percent Solids	--	**6**	**5**	**5.8**	**9.1**	**8.1**	**8.8**	**2.7**	**22**	**14**	**1.8**	- -	**8.2**	**3.1**	**13**	**15**	**5.6**	**26**	**1.7**	**20**	**13**	**3.1**	**36**	**77.4**
General Chemistry (mg/kg)																								
Total Organic Carbon	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	EDR-02-PC	EDR-03-PC	EDR-04-PC	EDR-05-PC	EDR-06-PC	EDR-07-PC	EDR-08-PC	EDR-09-PC	EDR-10-PC	EDR-TP-01	EDR-TP-02	EDR-TP-03	EDR-TP-04	EDR-TP-05	EDR-TP-06	EDR-TP-07	
	Sample ID	16-EDR-02-PC-SP(6)"	16-EDR-03-PC-SP(6)"	16-EDR-04-PC-SP(6)"	16-EDR-05-PC-SP(6)"	16-EDR-06-PC-SP(6)"	16-EDR-07-PC-SP(6)"	16-EDR-08-PC-SP(6)"	16-EDR-09-PC-SP(6)"	16-EDR-10-PC-SP(6)"	16-EDR-TP-01-SO	16-EDR-TP-02-SO	16-EDR-TP-03-SO	16-EDR-TP-04-SO	16-EDR-TP-05-SO	16-EDR-TP-06-SO	16-EDR-TP-07-SO	16-EDR-TP-08-SO
	Sample Depth (ft)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	11	10	9	10	11	8	6	6
	Sample Date	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016
Analyte	**Screening Level**																	
Hydrocarbons (mg/kg)																		
C10-C25 DRO	250	**46**	**23**	**60**	**83**	**160**	**36**	**58**	**76**	**270**	**780**	**19 J**	18 U	**7.2 J**	**4800**	**14 J**	19 U	**10 J**
C25-C36 RRO	10000	**180**	**100**	**390**	**500**	**550**	**160**	**240**	**640**	**3300**	**81**	**71**	**30 J**	**38 J**	**50 J**	**26 J**	**26 J**	**41 J**
C6-C10 GRO	300	4 U	2.9 U	2.4 U	3.9 U	**0.63 J**	1.9 U	2.8 U	1.9 U	**2.1 J**	1.6 U	1.6 U	1.8 U	1.8 U	**12 Q+**	1.9 U	1.9 U	1.8 U
VOCs (mg/kg)																		
1,1,1,2-Tetrachloroethane	0.022	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
1,1,1-Trichloroethane	32	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
1,1,2,2-Tetrachloroethane	0.003	0.0099 U	0.0072 U	0.006 U	0.0098 U	0.0056 U	0.0047 U	0.0069 U	0.0048 U	- -	0.0039 U	0.0041 U	0.0045 U	0.0045 U	0.0041 U	0.0047 U	0.0047 U	0.0044 U
1,1,2-Trichloroethane	0.0014	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
1,1-Dichloroethane	0.092	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
1,1-Dichloroethene	1.2	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
1,1-Dichloropropene	0.018	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
1,2,3-Trichlorobenzene	0.15	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
1,2,3-Trichloropropane	0.000031	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
1,2,4-Trichlorobenzene	0.082	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
1,2,4-Trimethylbenzene	0.16	0.0099 U	0.0072 U	**0.0042 J,B**	0.0098 U	0.0056 U	0.0047 U	0.0069 U	0.0048 U	**0.014 J,B**	**0.0057 J**	0.0041 U	0.0045 U	0.0045 U	**1.4**	**0.012 J**	0.0047 U	0.0044 U
1,2-Dibromo-3-Chloropropane	0.0053	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
1,2-Dichlorobenzene	2.4	0.018 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
1,2-Dichloroethane	0.0055	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
1,2-Dichloropropane	0.016	0.0099 U	0.0072 U	0.006 U	0.0098 U	0.0056 U	0.0047 U	0.0069 U	0.0048 U	- -	0.0039 U	0.0041 U	0.0045 U	0.0045 U	0.0041 U	0.0047 U	0.0047 U	0.0044 U
1,3,5-Trimethylbenzene	1.3	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	**0.61**	0.014 U	0.014 U	0.013 U
1,3-Dichlorobenzene	2.3	0.018 U	0.018 U	0.018 U	0.029 U	0.017 U	0.014 U	0.016 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
1,3-Dichloropropane	160	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
1,4-Dichlorobenzene	0.037	0.018 U	0.018 U	0.036 U	0.059 U	0.033 U	0.017 U	0.016 U	0.029 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
2,2-Dichloropropane	0.016	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
2-Butanone (MEK)	15	0.3 U	0.22 U	0.18 U	0.29 U	**0.99**	0.14 U	0.21 U	0.15 U	- -	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.14 U	0.14 U	0.13 U
2-Chlorotoluene	160	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
2-Hexanone	0.11	0.15 U	0.11 U	0.09 U	0.15 U	0.083 U	0.071 U	0.1 U	0.073 U	- -	0.058 U	0.061 U	0.068 U	0.068 U	0.062 U	0.07 U	0.071 U	0.067 U
4-Chlorotoluene	160	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
4-Methyl-2-Pentanone (MIBK)	18	0.15 U	0.11 U	0.09 U	0.15 U	0.083 U	0.071 U	0.1 U	0.073 U	- -	0.058 U	0.061 U	0.068 U	0.068 U	0.062 U	0.07 U	0.071 U	0.067 U
Acetone	38	0.99 U	0.72 U	0.6 U	**0.39 J**	**1.4**	0.47 U	**2.8**	**0.31 J**	- -	0.39 U	0.41 U	0.45 U	0.45 U	0.41 U	0.47 U	0.47 U	0.44 U
Benzene	0.022	**0.0046 J,B**	0.0072 U	0.006 U	0.0098 U	0.0056 U	0.0047 U	0.0069 U	**0.0034 J,B**	- -	**0.022**	0.0041 U	0.0045 U	0.0045 U	0.0041 U	0.0047 U	0.0047 U	0.0044 U
bis(2-Chloroethoxy)methane	19	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
Bromobenzene	0.36	0.0099 U	0.0072 U	0.006 U	0.0098 U	0.0056 U	0.0047 U	0.0069 U	0.0048 U	- -	0.0039 U	0.0041 U	0.0045 U	0.0045 U	0.0041 U	0.0047 U	0.0047 U	0.0044 U
Bromochloromethane	15	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
Bromodichloromethane	0.0043	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
Bromoform	0.1	0.12 U	0.087 U	0.072 U	0.12 U	0.067 U	0.057 U	0.083 U	0.058 U	- -	0.047 U	0.049 U	0.054 U	0.054 U	0.049 U	0.056 U	0.057 U	0.053 U
Bromomethane	0.024	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
Carbon Disulfide	2.9	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
Carbon Tetrachloride	0.021	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
Chlorobenzene	0.46	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
Chloroethane	72	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
Chloroform	0.0071	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
Chloromethane	0.61	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
cis-1,2-Dichloroethene	0.12	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	**0.083**	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
cis-1,3-Dichloropropene	0.018	0.0099 U	0.0072 U	0.006 U	0.0098 U	0.0056 U	0.0047 U	0.0069 U	0.0048 U	- -	0.0039 U	0.0041 U	0.0045 U	0.0045 U	0.0041 U	0.0047 U	0.0047 U	0.0044 U
Dibromochloromethane	0.0027	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
Dibromomethane	0.025	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
Dichlorodifluoromethane	3.9	0.2 U	0.14 U	0.12 U	0.2 U	0.11 U	0.094 U	0.14 U	0.097 U	- -	0.078 U	0.082 U	0.09 U	0.09 U	0.082 U	0.094 U	0.095 U	0.089 U
Ethylbenzene	0.13	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	**0.057**	0.014 U	0.014 U	0.013 U
Ethylene Dibromide (EDB)	0.00024	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
Hexachlorobutadiene	0.02	0.043 U	0.041 U	0.072 U	0.12 U	0.067 U	0.039 U	0.037 U	0.058 U	- -	0.038 U	0.038 U	0.042 U	0.036 U	0.038 U	0.034 U	0.039 U	0.04 U
Isopropylbenzene	5.4	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	**0.11**	0.028 U	0.028 U	0.027 U
m- & p-Xylene	1.5	0.2 U	0.14 U	0.12 U	0.2 U	0.11 U	0.094 U	0.14 U	0.097 U	- -	0.078 U	0.082 U	0.09 U	0.09 U	**0.052 J**	0.094 U	0.095 U	0.089 U
Methyl tert-Butyl Ether (MTBE)	0.4	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
Methylene Chloride	0.33	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	**0.015 J,B**	0.012 U	**0.013 J,B**	0.014 U	0.012 U	0.014 U	**0.0071 J,B**	0.013 U
n-Butylbenzene	2	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	**0.84**	0.028 U	0.028 U	0.027 U
n-Propylbenzene	5.2	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	**0.24**	0.014 U	0.014 U	0.013 U
Naphthalene	0.038	**0.012**	**0.0015 J**	**0.0083 J**	**0.016 J**	**2.5**	**0.0049 J**	**0.0048 J**	0.0083 U	**0.022 J**	**0.08**	0.0019 U	**0.0016 J**	0.0018 U	**3.9**	**0.036**	**0.0034 J,Q**	**0.01 Q**
o-Xylene	1.5	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	**0.0062 J**	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
p-Isopropyltoluene	0.03	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	**0.0072 J**	0.023 U	0.025 U	0.027 U	0.027 U	**0.41**	0.028 U	0.028 U	0.027 U
sec-Butylbenzene	2.8	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	**0.25**	**0.0099 J,B**	**0.01 J,B**	0.027 U
Styrene	10	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
tert-Butylbenzene	3.5	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
Tetrachloroethene (PCE)	0.19	0.03 U	**0.049**	0.018 U	**0.043**	**0.026**	**0.036**	0.021 U	**0.006 J**	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
Toluene	6.7	0.03 U	**0.01 J**	0.018 U	**0.016 J**	**0.0077 J**	**0.0098 J**	**0.045 J**	**0.015 J**	**0.017 J**	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
trans-1,2-Dichloroethene	1.3	0.059 U	0.043 U	0.036 U	0.059 U	0.033 U	0.028 U	0.042 U	0.029 U	- -	0.023 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.028 U	0.027 U
trans-1,3-Dichloropropene	0.018	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

M- = Result is estimated with a low bias due to an MS/MSD exceedance

mg/kg = milligram(s) per kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	EDR-02-PC	EDR-03-PC	EDR-04-PC	EDR-05-PC	EDR-06-PC	EDR-07-PC	EDR-08-PC	EDR-09-PC	EDR-10-PC	EDR-TP-01	EDR-TP-02	EDR-TP-03	EDR-TP-04	EDR-TP-05	EDR-TP-06	EDR-TP-07	
	Sample ID	16-EDR-02-PC-SP(6)"	16-EDR-03-PC-SP(6)"	16-EDR-04-PC-SP(6)"	16-EDR-05-PC-SP(6)"	16-EDR-06-PC-SP(6)"	16-EDR-07-PC-SP(6)"	16-EDR-08-PC-SP(6)"	16-EDR-09-PC-SP(6)"	16-EDR-10-PC-SP(6)"	16-EDR-TP-01-SO	16-EDR-TP-02-SO	16-EDR-TP-03-SO	16-EDR-TP-04-SO	16-EDR-TP-05-SO	16-EDR-TP-06-SO	16-EDR-TP-07-SO	16-EDR-TP-08-SO
	Sample Depth (ft)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	11	10	9	10	11	8	6	6
	Sample Date	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016
Analyte	**Screening Level**																	
Trichloroethene (TCE)	0.011	0.02 U	0.014 U	0.012 U	0.02 U	0.011 U	0.0094 U	0.014 U	0.0097 U	- -	0.0078 U	0.0082 U	0.009 U	0.009 U	0.0082 U	0.0094 U	0.0095 U	0.0089 U
Trichlorofluoromethane	41	0.2 U	0.14 U	0.12 U	0.2 U	0.11 U	0.094 U	0.14 U	0.097 U	- -	0.078 U	0.082 U	0.09 U	0.09 U	0.082 U	0.094 U	0.095 U	0.089 U
Vinyl Chloride	0.0008	0.03 U	0.022 U	0.018 U	0.029 U	0.017 U	0.014 U	0.021 U	0.015 U	- -	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U
SVOCs (mg/kg)																		
1-Methylnaphthalene	0.41	**0.0021 J**	0.0012 U	**0.0071 J**	**0.012 J**	**17**	**0.002 J**	**0.0059**	**0.0051 J**	**0.015 J**	**0.35**	**0.0092**	**0.0025 J**	**0.0013 J**	**10**	**0.099 M**	**0.0017 J,Q**	**0.0076 Q**
2,4,5-Trichlorophenol	28	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	0.056 U	0.057 U
2,4,6-Trichlorophenol	0.092	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	0.056 U	0.057 U
2,4-Dichlorophenol	0.21	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	0.056 U	0.057 U
2,4-Dimethylphenol	3.2	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	0.056 U	0.057 U
2,4-Dinitrophenol	0.34	0.49 U,Q-	0.47 U,Q-	2.4 U,Q-	2.2 U,Q-	3.7 U,Q-	0.45 U,Q-,M-	0.42 U,Q-	2 U,Q-	- -	0.44 U,Q-	0.44 U,Q-	0.48 U,Q-	0.42 U,Q-	0.43 U,Q-	0.39 U,M-,Q-	0.45 U,Q-	0.46 U,Q-
2,4-Dinitrotoluene	0.024	0.043 U	0.041 U	0.21 U	0.2 U	0.32 U	0.039 U	0.037 U	0.17 U	**0.48 J**	0.038 U	0.038 U	0.042 U	0.036 U	0.038 U	0.034 U	0.039 U	0.04 U
2,6-Dinitrotoluene	0.005	0.043 U	0.041 U	0.21 U	0.2 U	0.32 U	0.039 U	0.037 U	0.17 U	- -	0.038 U	0.038 U	0.042 U	0.036 U	0.038 U	0.034 U	0.039 U	0.04 U
2-Chloronaphthalene	26	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
2-Chlorophenol	0.71	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
2-Methylnaphthalene	1.3	**0.0051 J**	**0.0014 J**	**0.011 J**	**0.015 J**	**17**	**0.0047 J**	**0.0067 J**	**0.0073 J**	- -	**0.42**	**0.012**	**0.0053 J**	**0.0017 J**	**8**	**0.082 M**	**0.0025 J,Q**	**0.008 Q**
2-Methylphenol	6.2	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
2-Nitroaniline	63	0.043 U	0.041 U	0.21 U	0.2 U	0.32 U	0.039 U	0.037 U	0.17 U	- -	0.038 U	0.038 U	0.042 U	0.036 U	0.038 U	0.034 U	0.039 U	0.04 U
2-Nitrophenol	--	0.043 U	0.041 U	0.21 U	0.2 U	0.32 U	0.039 U	0.037 U	0.17 U	- -	0.038 U	0.038 U	0.042 U	0.036 U	0.038 U	0.034 U	0.039 U	0.04 U
3,3-Dichlorobenzidine	0.056	0.086 U	0.082 U	0.41 U	0.39 U	0.64 U	0.079 U	0.074 U	0.34 U	- -	0.077 U	0.076 U	0.084 U	0.073 U	0.076 U	0.069 U	0.079 U	0.08 U
3- & 4-Methylphenol	6.1	0.043 U	0.041 U	0.21 U	0.2 U	**0.15 J**	**0.032 J**	**0.07 J**	0.17 U	- -	0.038 U	0.038 U	0.042 U	0.036 U	0.038 U	0.034 U	0.039 U	0.04 U
3-Nitroaniline	--	0.11 U	0.11 U	0.53 U	0.5 U	0.83 U	0.1 U	0.095 U	0.44 U	- -	0.098 U	0.098 U	0.11 U	0.094 U	0.098 U	0.088 U	0.1 U	0.1 U
4,6-Dinitro-2-Methylphenol	0.51	0.29 U,Q-	0.28 U,Q-	1.4 U,Q-	1.3 U,Q-	2.2 U,Q-	0.27 U,Q-	0.25 U,Q-	1.2 U,Q-	- -	0.26 U,Q-	0.26 U,Q-	0.29 U,Q-	0.25 U,Q-	0.26 U,Q-	0.24 U,Q-	0.27 U,Q-	0.27 U,Q-
4-Bromophenyl Phenyl Ether	--	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
4-Chloro-3-Methylphenol	630	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	0.056 U	0.057 U
4-Chloroaniline	0.015	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U,M-	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
4-Chlorophenyl Phenyl Ether	--	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
4-Nitroaniline	25	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U,M-	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	0.056 U	0.057 U
4-Nitrophenol	--	0.12 U,Q-	0.12 U,Q-	0.59 U,Q-	0.56 U,Q-	0.92 U,Q-	0.11 U,Q-	0.11 U,Q-	0.49 U,Q-	- -	0.11 U	0.11 U	0.12 U	0.1 U	0.11 U	0.098 U	0.11 U	0.11 U
Acenaphthene	37	**0.0015 J**	**0.0016 J**	**0.035 J**	**0.052 J**	**0.58**	**0.002 J**	**0.0086**	0.0083 U	**0.016 J**	0.0019 U	**0.0017 J**	0.002 U	0.0018 U	**0.34**	**0.0045 J,M**	0.017 U	**0.019 Q**
Acenaphthylene	18	**0.0021 J**	**0.0019 J**	**0.027 J**	**0.07**	**0.69**	**0.0028 J**	**0.0056**	**0.006 J**	**0.017 J**	0.0019 U	**0.0022 J**	0.002 U	0.0018 U	**0.23**	**0.0054 M**	**0.0014 J**	**0.0046 J**
Anthracene	230	**0.0031 J**	**0.0052 J**	**0.1 J**	**0.27**	**0.18**	**0.01**	**0.017 J**	**0.013 J**	**0.075 J**	0.0019 U	0.0019 U	0.002 U	0.0018 U	0.0018 U	0.0017 U	0.0019 U,Q	**0.077 Q**
Benzo(a)anthracene	0.16	**0.018 J**	**0.021 J**	**0.37**	**0.74**	**0.34**	**0.036**	**0.071**	**0.036**	- -	**0.0019 J**	**0.00073 J**	**0.0011 J**	0.001 U	**0.033**	**0.0071 J**	**0.0014 J,Q**	**0.096 Q**
Benzo(a)pyrene	0.02	**0.013**	**0.038 J**	**0.54**	**1.2**	**0.66**	**0.052**	**0.11**	**0.12 J**	**0.44**	**0.0017 J**	0.0033 U	0.0036 U	0.0031 U	**0.024 J**	**0.003 J,M**	**0.0011 J,Q**	**0.087 Q**
Benzo(b)fluoranthene	0.16	**0.037**	**0.057**	**0.75**	**1.5**	**0.58**	**0.064**	**0.14**	**0.12**	- -	**0.0028 J**	**0.0015 J**	0.002 U	0.0018 U	**0.042**	**0.014 J**	**0.0035 J,Q**	**0.12 Q**
Benzo(g,h,i)perylene	230	**0.013**	**0.031 J**	**0.44**	**1.2**	**0.54**	**0.035 J**	**0.068**	**0.09 J**	- -	0.0033 U	0.0033 U	0.0036 U	0.0031 U	**0.0079**	**0.0076 M**	0.0034 U,Q	**0.042 Q**
Benzo(k)fluoranthene	2	**0.034 J**	**0.031 J**	**0.3 J**	**0.7**	**0.23 J**	**0.039 J**	**0.069**	**0.13 J**	- -	**0.0016 J**	**0.001 J**	0.0036 U	0.0031 U	**0.015 J**	**0.0028 J**	**0.0015 J,Q**	**0.038 J**
Benzoic acid	200	**0.29 J**	0.47 U	2.4 U	2.2 U	3.7 U	0.45 U	**0.27 J**	2 U	- -	0.44 U	0.44 U	**0.22 J**	0.42 U	0.43 U	0.39 U	**0.17 J**	**0.18 J**
Benzyl alcohol	5.7	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	**0.088 J**	0.057 U
bis(2-Chloroethyl)ether	0.00042	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	0.056 U	0.057 U
bis(2-Chloroisopropyl)ether	310	0.043 U	0.041 U	0.21 U	0.2 U	0.32 U	0.039 U	0.037 U	0.17 U	- -	0.038 U	0.038 U	0.042 U	0.036 U	0.038 U	0.034 U	0.039 U	0.04 U
bis(2-Ethylhexyl)phthalate	39	**0.063 J**	**0.069 J**	**0.31 J**	**0.35 J**	1.1 U	**0.06 J**	**0.06 J**	0.59 U	- -	0.13 U	0.13 U	0.14 U	0.13 U	0.13 U	0.12 U	0.14 U	0.14 U
Butyl Benzyl Phthalate	16	0.15 U	0.14 U	0.71 U	0.67 U	1.1 U	0.13 U	0.13 U	0.59 U	- -	0.13 U	0.13 U	0.14 U	0.13 U	0.13 U	0.12 U	0.14 U	0.14 U
Carbazole	--	0.018 U	0.018 U	**0.066 J,Q+**	**0.19 J,Q+**	0.14 U	**0.0062 J,Q+**	**0.024 J,Q+**	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	**0.036 J**
Chrysene	20	**0.025**	**0.025 J**	**0.53**	**1.2**	**0.5**	**0.053**	**0.11**	**0.043**	**0.23**	**0.0022 J**	**0.0014 J**	**0.0016 J**	0.0031 U	**0.035**	**0.0077 J**	**0.0027 J,Q**	**0.098 Q**
di-n-Butyl Phthalate	16	0.15 U	0.14 U	0.71 U	0.67 U	1.1 U	0.13 U	0.13 U	0.59 U	- -	0.13 U	0.13 U	0.14 U	0.13 U	0.13 U	0.12 U	0.14 U	0.14 U
di-n-Octyl Phthalate	63	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	0.056 U	0.057 U
Dibenz(a,h)anthracene	0.02	**0.0025 J**	**0.0027 J**	**0.058**	**0.25**	**0.11**	**0.021 J**	**0.012**	**0.0067 J**	**0.029 J**	0.0033 U	0.0033 U	0.0036 U	0.0031 U	**0.003 J**	0.0029 U	0.039 U	**0.0082 Q**
Dibenzofuran	0.97	**0.01 J**	0.018 U	0.089 U	**0.031 J**	**0.54 J**	0.017 U	**0.01 J**	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	**0.01 J**
Diethyl phthalate	60	0.15 U	0.14 U	0.71 U	0.67 U	1.1 U	0.13 U	0.13 U	0.59 U	- -	0.13 U	0.13 U	0.14 U	0.13 U	0.13 U	0.12 U	0.14 U	0.14 U
Dimethyl phthalate	48	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
Fluoranthene	240	**0.067**	**0.06**	**1**	**2.3**	**0.7**	**0.1**	**0.28**	**0.11**	**0.56**	**0.0059**	**0.0076**	**0.008**	0.0031 U	**0.1**	**0.024 M**	**0.0075 J,Q**	**0.24 Q**
Fluorene	36	**0.0022 J**	**0.0029 J**	**0.028 J**	**0.066**	**2.2**	**0.0031 J**	**0.012**	0.0083 U	**0.02 J**	**0.065**	**0.0033 J**	**0.0018 J**	0.0018 U	**1.4**	**0.017**	**0.0011 J,Q**	**0.026 Q**
Hexachlorobenzene	0.0082	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
Hexachlorocyclopentadiene	0.0093	0.11 U,Q-	0.11 U,Q-	0.53 U,Q-	0.5 U,Q-	0.83 U,Q-	0.1 U,Q-	0.095 U,Q-	0.44 U,Q-	- -	0.098 U,Q-	0.098 U,Q-	0.11 U,Q-	0.094 U,Q-	0.098 U,Q-	0.088 U,Q-	0.1 U,Q-	0.1 U,Q-
Hexachloroethane	0.018	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
Indeno(1,2,3-cd)pyrene	0.2	**0.017**	**0.037 J**	**0.46**	**1.4**	**0.52**	**0.04 J**	**0.096**	**0.087 J**	**0.19**	**0.0015 J**	0.0033 U	**0.0013 J**	0.0031 U	**0.019 J**	**0.0075 M**	**0.0017 J,Q**	**0.053 Q**
Isophorone	2.7	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
N-Nitrosodimethylamine (NDMA)	0.0000033	0.24 U	0.24 U	1.2 U	1.1 U	1.8 U	0.22 U	0.21 U	0.98 U	- -	0.22 U	0.22 U	0.24 U	0.21 U	0.22 U	0.2 U	0.23 U	0.23 U
N-Nitrosodiphenylamine	4.6	0.037 U	0.035 U	0.18 U	0.17 U	0.28 U	0.034 U	0.032 U	0.15 U	- -	0.033 U	0.033 U	0.036 U	0.031 U	0.033 U	0.029 U	0.034 U	0.034 U
N-Nitrosodipropylamine	0.00068	0.061 U	0.059 U	0.3 U	0.28 U	0.46 U	0.056 U	0.053 U	0.25 U	- -	0.055 U	0.055 U	0.06 U	0.052 U	0.054 U	0.049 U	0.056 U	0.057 U
Nitrobenzene	0.0079	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
Pentachlorophenol	0.0043	0.29 U	0.28 U	1.4 U	1.3 U	2.2 U	0.27 U	0.25 U	1.2 U	- -	0.26 U	0.26 U	0.29 U	0.25 U	0.26 U	0.24 U	0.27 U	0.27 U
Phenanthrene	39	**0.042**	**0.035**	**0.46**	**1**	**0.8**	**0.042**	**0.16**	**0.069 J**	**0.28**	**0.024**	**0.0039 J**	**0.0023 J**	0.0031 U	**1.2**	**0.015 M**	**0.0036 J,Q**	**0.18 Q**
Phenol	29	0.018 U	0.018 U	0.089 U	0.084 U	0.14 U	0.017 U	0.016 U	0.074 U	- -	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U
Pyrene	87	**0.046**	**0.051**	**0.96**	**2.1**	**0.88**	**0.088**	**0.24**	**0.094**	**0.5**	**0.0068**	**0.0022 J**	0.0036 U	0.0031 U	**0.084**	**0.0053 M**	**0.0024 J,Q**	**0.22 Q**

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

	Location	EDR-02-PC	EDR-03-PC	EDR-04-PC	EDR-05-PC	EDR-06-PC	EDR-07-PC	EDR-08-PC	EDR-09-PC	EDR-10-PC	EDR-TP-01	EDR-TP-02	EDR-TP-03	EDR-TP-04	EDR-TP-05	EDR-TP-06	EDR-TP-07	
	Sample ID	16-EDR-02-PC-SP(6)"	16-EDR-03-PC-SP(6)"	16-EDR-04-PC-SP(6)"	16-EDR-05-PC-SP(6)"	16-EDR-06-PC-SP(6)"	16-EDR-07-PC-SP(6)"	16-EDR-08-PC-SP(6)"	16-EDR-09-PC-SP(6)"	16-EDR-10-PC-SP(6)"	16-EDR-TP-01-SO	16-EDR-TP-02-SO	16-EDR-TP-03-SO	16-EDR-TP-04-SO	16-EDR-TP-05-SO	16-EDR-TP-06-SO	16-EDR-TP-07-SO	16-EDR-TP-08-SO
	Sample Depth (ft)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	11	10	9	10	11	8	6	6
	Sample Date	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016	8/14/2016
Analyte	**Screening Level**																	
Metals (mg/kg)																		
Aluminum	13000	**18000**	**9600**	**7900**	**8600**	**14000**	**15000**	**12000**	**9600**	- -	**11000**	**11000**	**11000**	**10000**	**11000**	**10000**	**12000**	**11000**
Antimony	3.1	**1.5**	**1**	**0.58**	**0.83**	**0.97**	**0.92**	**0.82**	**0.75**	- -	**1.1**	**0.89**	**0.82**	**0.8**	**0.79**	**0.69**	**0.83**	**0.77**
Arsenic	23	**10**	**12**	**6.7**	**9.4**	**9**	**7.1**	**10**	**12**	- -	**10**	**9.7**	**8.3**	**9.4**	**9.7**	**10**	**11**	**11**
Barium	1500	**900**	**150**	**260**	**170**	**580**	**630**	**280**	**110**	- -	**98**	**110**	**100**	**100**	**130**	**110**	**120**	**120**
Beryllium	16	**0.62 B**	**0.23 B**	**0.21 B**	**0.21 J,B**	**0.41 B**	**0.43 B**	**0.33 B**	**0.22 B**	- -	**0.19 J**	**0.19 J**	**0.19 J**	**0.17 J**	**0.2 J**	**0.19 J**	**0.22 J**	**0.18 J**
Cadmium	7.1	**0.21 J**	**0.23**	**0.34**	**0.42**	**0.33**	**0.23**	**0.34**	**0.21**	- -	**0.22 J**	**0.4**	**0.18 J**	**0.22**	**0.19 J**	**0.27**	**0.19 J**	**0.17 J**
Calcium	--	**27000**	**5100**	**5800**	**5000**	**15000**	**15000**	**6800**	**6600**	- -	**6100**	**5900**	**5600**	**5800**	**7000**	**5600**	**11000**	**9300**
Chromium	10000	**28**	**20**	**16**	**21**	**22**	**21**	**22**	**20**	- -	**21**	**21**	**22**	**20**	**21**	**19**	**22**	**21**
Cobalt	15	**8.8**	**9.6**	**6.5**	**8.2**	**8.4**	**7.3**	**9.2**	**9.7**	- -	**13**	**9.4**	**9.3**	**8.9**	**9.8**	**8.6**	**10**	**9.8**
Copper	310	**42**	**31**	**21**	**29**	**36**	**32**	**34**	**33**	- -	**30**	**30**	**30**	**29**	**31**	**26**	**33**	**31**
Iron	32000	**21000**	**22000**	**15000**	**19000**	**19000**	**17000**	**21000**	**22000**	- -	**24000**	**22000**	**25000**	**23000**	**23000**	**22000**	**26000**	**25000**
Lead	40	**21**	**11**	**38**	**35**	**35**	**12**	**14**	**23**	- -	**7.8**	**8.3**	**7.8**	**8.2**	**7.8**	**16**	**8.9**	**10**
Magnesium	--	**5300**	**5400**	**3800**	**4600**	**5100**	**4900**	**5500**	**5700**	- -	**6200**	**6000**	**6500**	**6200**	**6600**	**5900**	**7100**	**6600**
Manganese	540	**410**	**390**	**260**	**310**	**360**	**270**	**310**	**370**	- -	**450**	**420**	**410**	**410**	**360**	**300**	**440**	**420**
Mercury	1.1	**0.016 J**	**0.21**	**0.029**	**0.067**	**0.026**	**0.02 J**	**0.018 J**	**0.027**	- -	**0.015 J**	**0.032**	**0.03**	**0.014 J**	**0.014 J**	**0.023 J,M**	**0.016 J**	**0.017 J**
Nickel	150	**27**	**26**	**18**	**23**	**25**	**21**	**25**	**26**	- -	**29**	**24**	**24**	**23**	**25**	**23**	**26**	**26**
Potassium	--	**1400**	**1300**	**1200**	**1100**	**1200**	**1000**	**1300**	**1000**	- -	**840**	**930**	**810**	**860**	**860**	**860**	**770**	**760**
Selenium	6.9	**0.93 J**	**0.6 J**	**0.42 J**	**0.56 J**	**0.66 J**	**0.65 J**	**0.65 J**	**0.61 J**	- -	**0.77 J**	**0.79 J**	**0.81 J**	**0.7 J**	**0.87 J**	**0.72 J**	**0.83 J**	**0.79 J**
Silver	11	**0.13 J,B**	**0.099 J,B**	**0.06 J,B**	**0.075 J,B**	**0.083 J,B**	**0.072 J,B**	**0.097 J,B**	**0.091 J,B**	- -	**0.072 J,B**	**0.073 J,B**	**0.069 J,B**	**0.064 J,B**	**0.072 J,B**	**0.062 J,B**	**0.078 J,B**	**0.076 J,B**
Sodium	--	**260**	**250**	**160**	**220**	**240**	**230**	**230**	**270**	- -	**310**	**320**	**310**	**290**	**320**	**280**	**360**	**340**
Thallium	0.21	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Vanadium	57	**63**	**40**	**31**	**36**	**50**	**48**	**46**	**39**	- -	**37**	**37**	**37**	**37**	**40**	**37**	**40**	**39**
Zinc	2300	**38**	**51**	**52**	**59**	**44**	**36**	**52**	**54**	- -	**55**	**57**	**54**	**53**	**51**	**130**	**56**	**54**
Pesticides (mg/kg)																		
4,4-DDD	0.19	**0.015 Q-**	**0.0065**	**0.03 Q-**	**0.023**	**0.066**	**0.047**	**0.018 Q-**	**0.59 Q-**	**0.18**	**0.13**	0.00025 U	**0.0012 J**	**0.00065 J,Q**	**0.02**	**0.0012 J,Q**	**0.002 J,Q**	**0.003 Q**
4,4-DDE	0.72	**0.1 Q-**	**0.037**	**0.027 Q-**	**0.031**	**0.087**	**0.14**	**0.016 Q-**	**0.13 Q-**	**0.038**	**0.038**	**0.0037**	**0.013**	**0.0003 J**	**0.15**	**0.0036**	**0.0099**	**0.014**
4,4-DDT	1.9	**0.37 Q-**	**0.096**	**0.16 Q-**	**0.12**	**0.28**	**0.21**	**0.046 Q-**	**1.8 Q-**	**0.47 Q**	**0.35**	**0.014**	**0.029**	**0.003 B**	**0.37**	**0.013**	**0.038 Q**	**0.066 Q**
Aldrin	0.0099	0.00025 U,Q-	0.00023 U	0.00069 U,Q-	0.00065 U	0.0007 U	0.00065 U	0.00069 U,Q-	0.00068 U,Q-	- -	0.0013 U	0.00025 U	0.00024 U	0.00023 U	0.0011 U	0.0002 U	0.00025 U	0.00025 U
alpha-BHC	0.0029	0.00063 U,Q-	0.00058 U	0.0017 U,Q-	0.0016 U	0.0018 U	0.0016 U	0.0017 U,Q-	0.0017 U,Q-	0.005 U	0.0031 U	0.00062 U	0.0006 U	0.00057 U	0.0027 U	0.0005 U	0.00063 U	0.00063 U
alpha-Chlordane	0.18	0.00038 U,Q-	0.00035 U	0.001 U,Q-	0.00098 U	0.0011 U	0.00097 U	0.001 U,Q-	0.001 U,Q-	- -	0.0019 U	0.00037 U	0.00036 U	0.00034 U	0.0016 U	0.0003 U	0.00038 U	0.00038 U
alpha-Endosulfan	9.3	0.00038 U,Q-	0.00035 U	0.001 U,Q-	0.00098 U	0.0011 U	0.00097 U	0.001 U,Q-	0.001 U,Q-	- -	0.0019 U	0.00037 U	0.00036 U	0.00034 U	0.0016 U	0.0003 U	0.00038 U	0.00038 U
beta-BHC	0.01	0.0013 U,Q-	0.0012 U	0.0035 U,Q-	0.0033 U	0.0035 U	0.0032 U	0.0035 U,Q-	0.0034 U,Q-	- -	0.0063 U	0.0012 U	0.0012 U	0.0011 U	0.0054 U	0.00099 U	0.0013 U	0.0013 U
beta-Endosulfan	9.3	0.00013 U,Q-	0.00012 U	0.00035 U,Q-	0.00033 U	0.00035 U	0.00032 U	0.00035 U,Q-	0.00034 U,Q-	- -	0.00063 U	0.00012 U	0.00012 U	0.00011 U	0.00054 U	0.000099 U	0.00013 U	0.00013 U
delta-BHC	0.0029	0.00038 U,Q-	0.00035 U	0.001 U,Q-	0.00098 U	0.0011 U	0.00097 U	0.001 U,Q-	0.001 U,Q-	- -	0.0019 U	0.00037 U	0.00036 U	0.00034 U	0.0016 U	0.0003 U	0.00038 U	0.00038 U
Dieldrin	0.0047	0.00089 U,Q-	0.00081 U	0.0024 U,Q-	0.0023 U	0.0025 U	0.0023 U	0.0024 U,Q-	0.0024 U,Q-	0.007 U	0.0044 U	0.00087 U	0.00084 U	0.00079 U	0.0038 U	0.0007 U	0.00089 U	0.00088 U
Endosulfan Sulfate	9.3	0.00038 U,Q-	0.00035 U	0.001 U,Q-	0.00098 U	0.0011 U	0.00097 U	0.001 U,Q-	0.001 U,Q-	- -	0.0019 U	0.00037 U	0.00036 U	0.00034 U	0.0016 U	0.0003 U	0.00038 U	0.00038 U
Endrin	0.61	0.00038 U,Q-	0.00035 U	0.001 U,Q-	0.00098 U	0.0011 U	0.00097 U	0.001 U,Q-	0.001 U,Q-	- -	0.0019 U	0.00037 U	0.00036 U	**0.00027 J,B,Q**	0.0016 U	0.0003 U	0.00038 U	0.00038 U
Endrin Aldehyde	0.61	0.0013 U,Q-	0.0012 U	0.0035 U,Q-	0.0033 U	0.0035 U	0.0032 U	0.0035 U,Q-	0.0034 U,Q-	- -	0.0063 U	0.0012 U	0.0012 U	0.0011 U	0.0054 U	0.00099 U	0.0013 U	0.0013 U
Endrin Ketone	0.61	0.0013 U,Q-	0.0012 U	0.0035 U,Q-	0.0033 U	0.0035 U	0.0032 U	0.0035 U,Q-	0.0034 U,Q-	- -	0.0063 U	0.0012 U	0.0012 U	0.0011 U	0.0054 U	0.00099 U	0.0013 U	0.0013 U
gamma-BHC	0.016	0.00013 U,Q-	0.00012 U	0.00035 U,Q-	0.00033 U	0.00035 U	0.00032 U	0.00035 U,Q-	0.00034 U,Q-	- -	0.00063 U	0.00012 U	**0.000051 J,B,Q**	**0.000061 J,B,Q**	0.00054 U	**0.017 M**	0.00013 U	0.00013 U
gamma-Chlordane	0.18	**0.00032 J,Q**	**0.00023 J,Q**	0.0017 U,Q-	0.0016 U	**0.00075 J,Q**	**0.0012 J,Q**	0.0017 U,Q-	**0.0014 J,Q**	0.005 U	0.0031 U	0.00062 U	0.0006 U	0.00057 U	0.0027 U	0.0005 U	0.00063 U	0.00063 U
Heptachlor	0.0076	0.00025 U,Q-	0.00023 U	0.00069 U,Q-	**0.00026 J**	0.0007 U	0.00065 U	**0.00033 J,Q-**	**0.00084 J,Q-**	- -	**0.00047 J**	0.00025 U	0.00024 U	0.00023 U	**0.00043 J**	0.0002 U	0.00025 U	0.00025 U
Heptachlor Epoxide	0.0019	0.00089 U,Q-	0.00081 U	0.0024 U,Q-	0.0023 U	0.0025 U	0.0023 U	0.0024 U,Q-	0.0024 U,Q-	0.007 U	0.0044 U	0.00087 U	0.00084 U	0.00079 U	0.0038 U	0.0007 U	0.00089 U	0.00088 U
Methoxychlor	13	0.0013 U,Q-	0.0012 U	0.0035 U,Q-	0.0033 U	0.0035 U	0.0032 U	0.0035 U,Q-	0.0034 U,Q-	**0.0041 J**	0.0063 U	0.0012 U	0.0012 U	0.0011 U	0.0054 U	**0.0016 J,Q**	0.0013 U	0.0013 U
Toxaphene	0.49	0.032 U,Q-	0.029 U	0.087 U,Q-	0.082 U	0.088 U	0.081 U	0.086 U,Q-	0.085 U,Q-	- -	0.16 U	0.031 U	0.03 U	0.028 U	0.14 U	0.025 U	0.032 U	0.032 U
Polychlorinated Biphenyls (mg/kg)																		
Aroclor 1016	0.1	0.025 U	0.023 U	0.023 U	0.022 U	0.023 U	0.022 U	0.023 U	0.023 U	- -	0.025 U	0.025 U	0.024 U	0.023 U	0.022 U	0.02 U	0.025 U	0.025 U
Aroclor 1221	0.1	0.013 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	- -	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.0099 U	0.013 U	0.013 U
Aroclor 1232	0.1	0.013 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	- -	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.0099 U	0.013 U	0.013 U
Aroclor 1242	0.1	0.0044 U	0.0041 U	0.004 U	0.0038 U	0.0041 U	0.0038 U	0.004 U	0.004 U	0.0035 U	0.0044 U	0.0043 U	0.0042 U	0.004 U	0.0038 U	0.0035 U	0.0044 U	0.0044 U
Aroclor 1248	0.1	0.013 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	- -	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.0099 U	0.013 U	0.013 U
Aroclor 1254	0.1	0.0063 U	0.0058 U	0.0058 U	0.0054 U	0.0058 U	0.0054 U	0.0058 U	0.0057 U	0.005 U	0.0063 U	0.0062 U	0.006 U	0.0057 U	0.0054 U	0.005 U	0.0063 U	0.0063 U
Aroclor 1260	0.1	0.0089 U	0.0081 U	0.0081 U	0.0076 U	0.0082 U	0.0075 U	0.0081 U	0.008 U	0.007 U	0.0088 U	0.0087 U	0.0084 U	0.0079 U	0.0076 U	0.007 U	0.0089 U	0.0088 U
Per- and Polyfluoroalkyl Substances (mg/kg)																		
Perfluorooctanoic Acid	0.003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluorooctanesulfonic acid	0.0017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry (%)																		
Moisture, percent	--	**22.4**	**16.6**	**17**	**15.4**	**15**	**11.2**	**13.8**	**14.7**	**8.8**	**22.5**	**24.4**	**18.6**	**15**	**22.9**	**14.8**	**24**	**23.5**
General Chemistry (%)																		
Percent Solids	--	**77.6**	**83.4**	**83**	**84.6**	**85**	**88.8**	**86.2**	**85.3**	- -	**77.5**	**75.6**	**81.4**	**85**	**77.1**	**85.2**	**76**	**76.5**
General Chemistry (mg/kg)																		
Total Organic Carbon	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Notes:
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J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

Analyte	Location	EDR-TP-09	EDR-TP-10	EDR-TP-11		NB1		NB3		NB5	NS2	NS3	NS4	SS1
	Sample ID	16-EDR-TP-09-SO	16-EDR-TP-10-SO	16-EDR-TP-11-SO	16-EDR-TP-12-SO	NB1	NB2	NB3	NB4	NB5	NS2	NS3	NS4	SS1
	Sample Depth (ft)	8	11	10	10	3	3	3	3	3	Unknown	Unknown	Unknown	Unknown
	Sample Date	8/14/2016	8/15/2016	8/15/2016	8/15/2016	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017
	Screening Level													
Hydrocarbons (mg/kg)														
C10-C25 DRO	250	**84**	**1300**	18 U	18 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
C25-C36 RRO	10000	**420**	**4400**	**37 J,Q**	**91 Q**	- -	- -	- -	- -	- -	- -	- -	- -	- -
C6-C10 GRO	300	1.6 U	**13**	2.2 U	1.6 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
VOCs (mg/kg)														
1,1,1,2-Tetrachloroethane	0.022	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	32	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	0.003	0.0041 U	0.0051 U	0.0054 U	0.0041 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	0.0014	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	0.092	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethene	1.2	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	0.018	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	0.15	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	0.000031	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	0.082	0.017 U	0.019 U	0.016 U	0.018 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	0.16	**0.052**	**0.59**	**0.0033 J**	0.0041 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane	0.0053	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	2.4	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	0.0055	0.0081 U	0.01 U	0.011 U	0.0081 U	0.00403 U	0.0066 U	**0.00320 J**	0.0065 U	0.0106 U	- -	- -	- -	- -
1,2-Dichloropropane	0.016	0.0041 U	0.0051 U	0.0054 U	0.0041 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	1.3	0.012 U	**0.36**	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichlorobenzene	2.3	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	160	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	0.037	0.017 U	0.019 U	0.016 U	0.018 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	0.016	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Butanone (MEK)	15	0.12 U	0.15 U	0.16 U	0.12 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	160	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Hexanone	0.11	0.061 U	0.077 U	0.082 U	0.061 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	160	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone (MIBK)	18	0.061 U	0.077 U	0.082 U	0.061 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Acetone	38	0.41 U	0.51 U	0.54 U	0.41 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzene	0.022	0.0041 U	**0.036**	0.0054 U	0.0041 U	0.00505 U	**0.0119 J**	0.00615 U	**0.00587 J**	**0.00847 J**	**0.0157**	0.0082 U	0.0087 U	- -
bis(2-Chloroethoxy)methane	19	0.017 U	0.019 U	0.016 U	0.018 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromobenzene	0.36	0.0041 U	0.0051 U	0.0054 U	0.0041 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromochloromethane	15	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromodichloromethane	0.0043	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromoform	0.1	0.049 U	0.062 U	0.065 U	0.049 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromomethane	0.024	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbon Disulfide	2.9	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	0.021	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chlorobenzene	0.46	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloroethane	72	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloroform	0.0071	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloromethane	0.61	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	0.12	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	0.018	0.0041 U	0.0051 U	0.0054 U	0.0041 U		- -	- -	- -	- -	- -	- -	- -	- -
Dibromochloromethane	0.0027	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibromomethane	0.025	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dichlorodifluoromethane	3.9	0.081 U	0.1 U	0.11 U	0.081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Ethylbenzene	0.13	0.012 U	**0.018 J**	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Ethylene Dibromide (EDB)	0.00024	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobutadiene	0.02	0.04 U	0.045 U	0.037 U	0.042 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Isopropylbenzene	5.4	0.024 U	**0.047**	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
m- & p-Xylene	1.5	0.081 U	**0.52**	0.11 U	0.081 U	0.0201 U	**0.0224 J**	0.0246 U	0.0326 U	0.053 U	- -	- -	- -	- -
Methyl tert-Butyl Ether (MTBE)	0.4	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Methylene Chloride	0.33	**0.0096 J,B**	0.015 U	0.016 U	0.012 U	0.0403 U	**0.263**	**0.184**	**0.21**	**0.210 J**	- -	- -	- -	- -
n-Butylbenzene	2	0.024 U	**0.1**	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
n-Propylbenzene	5.2	**0.013 J,B**	**0.08 B**	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Naphthalene	0.038	0.0019 U	**0.58**	**0.0027 J**	0.002 U	0.0106 U	0.011 U	0.0106 U	0.0105 U	**0.00839 J**	- -	- -	- -	0.0113 U
o-Xylene	1.5	0.0081 U	**0.018 J**	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
p-Isopropyltoluene	0.03	0.024 U	**0.087**	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	2.8	0.024 U	**0.066 B**	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Styrene	10	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	3.5	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Tetrachloroethene (PCE)	0.19	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Toluene	6.7	0.012 U	0.015 U	0.016 U	0.012 U	0.0101 U	**0.0221 J**	0.0246 U	0.0326 U	0.053 U	- -	- -	- -	- -
trans-1,2-Dichloroethene	1.3	0.024 U	0.031 U	0.033 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
trans-1,3-Dichloropropene	0.018	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

M- = Result is estimated with a low bias due to an MS/MSD exceedance

mg/kg = milligram(s) per kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

Analyte	Location	EDR-TP-09	EDR-TP-10	EDR-TP-11		NB1		NB3		NB5	NS2	NS3	NS4	SS1
	Sample ID	16-EDR-TP-09-SO	16-EDR-TP-10-SO	16-EDR-TP-11-SO	16-EDR-TP-12-SO	NB1	NB2	NB3	NB4	NB5	NS2	NS3	NS4	SS1
	Sample Depth (ft)	8	11	10	10	3	3	3	3	3	Unknown	Unknown	Unknown	Unknown
	Sample Date	8/14/2016	8/15/2016	8/15/2016	8/15/2016	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017
	Screening Level													
Trichloroethene (TCE)	0.011	0.0081 U	0.01 U	0.011 U	0.0081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Trichlorofluoromethane	41	0.081 U	0.1 U	0.11 U	0.081 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Vinyl Chloride	0.0008	0.012 U	0.015 U	0.016 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
SVOCs (mg/kg)														
1-Methylnaphthalene	0.41	**0.0038 J**	**1.3**	**0.0026 J**	**0.0038 J**	--	--	--	--	--	--	--	--	0.0142 U
2,4,5-Trichlorophenol	28	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	0.092	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.21	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	3.2	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	0.34	0.46 U,Q-	0.51 U,Q-	0.42 U,Q-	0.48 U,Q-	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	0.024	0.04 U	0.045 U	0.037 U	0.042 U	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	0.005	0.04 U	0.045 U	0.037 U	0.042 U	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	26	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
2-Chlorophenol	0.71	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	1.3	**0.0053 J**	**1.8**	**0.0031 J**	**0.0043 J**	0.0133 U	0.0138 U	0.0133 U	0.0131 U	**0.117 J**	--	--	--	--
2-Methylphenol	6.2	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
2-Nitroaniline	63	0.04 U	0.045 U	0.037 U	0.042 U	--	--	--	--	--	--	--	--	--
2-Nitrophenol	--	0.04 U	0.045 U	0.037 U	0.042 U	--	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	0.056	0.08 U	0.09 U	0.074 U	0.083 U	--	--	--	--	--	--	--	--	--
3- & 4-Methylphenol	6.1	0.04 U	0.045 U	0.037 U	0.042 U	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	0.1 U	0.12 U	0.095 U	0.11 U	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-Methylphenol	0.51	0.27 U,Q-	0.31 U,Q-	0.25 U,Q-	0.29 U,Q-	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	--	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	630	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.015	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenyl Ether	--	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
4-Nitroaniline	25	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
4-Nitrophenol	--	0.11 U	0.13 U	0.11 U	0.12 U	--	--	--	--	--	--	--	--	--
Acenaphthene	37	**0.0013 J**	**0.039**	0.0018 U	0.002 U	--	--	--	--	--	--	--	--	0.0142 U
Acenaphthylene	18	**0.0027 J**	**0.035**	0.0018 U	**0.0014 J**	--	--	--	--	--	--	--	--	0.0142 U
Anthracene	230	0.0019 U	**0.017**	0.0018 U	0.002 U	--	--	--	--	--	0.0134 U	0.0142 U	0.0147 U	0.0142 U
Benzo(a)anthracene	0.16	**0.013 J**	**0.02**	0.0011 U	0.0012 U	0.0133 U	**0.017 J**	0.0133 U	0.0131 U	**0.0246 J**	0.0134 U	**0.0184 J**	**0.0206 J**	0.0142 U
Benzo(a)pyrene	0.02	**0.016**	**0.021**	0.0032 U	0.0036 U	0.0133 U	**0.256 J**	0.0133 U	0.0131 U	**0.0295**	0.0134 U	**0.0289**	**0.0338**	**0.00912 J**
Benzo(b)fluoranthene	0.16	**0.018**	**0.02**	0.0018 U	0.002 U	0.0133 U	**0.0303**	0.0133 U	0.0131 U	**0.0366**	0.0134 U	**0.0329**	**0.0407**	**0.0154 J**
Benzo(g,h,i)perylene	230	**0.015**	**0.0094**	0.0032 U	0.0036 U	0.0133 U	**0.0184 J**	0.0133 U	0.0131 U	**0.0218 J**	0.0134 U	**0.0207 J**	**0.0235 J**	**0.0097 J**
Benzo(k)fluoranthene	2	**0.0056 J**	**0.0073**	0.0032 U	0.0036 U	0.0133 U	**0.0115 J**	0.0133 U	0.0131 U	**0.0159 J**	0.0134 U	**0132 J**	**0.0142 J**	0.0142 U
Benzoic acid	200	**0.18 J**	0.51 U	**0.18 J**	**0.22 J**	--	--	--	--	--	--	--	--	--
Benzyl alcohol	5.7	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	0.00042	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
bis(2-Chloroisopropyl)ether	310	0.04 U	0.045 U	0.037 U	0.042 U	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	39	0.14 U	0.15 U	0.13 U	0.14 U	--	--	--	--	--	--	--	--	--
Butyl Benzyl Phthalate	16	0.14 U	0.15 U	0.13 U	0.14 U	--	--	--	--	--	--	--	--	--
Carbazole	--	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
Chrysene	20	**0.016 J**	**0.038**	0.0032 U	0.0036 U	0.0133 U	**0.0219 J**	0.0133 U	0.0131 U	**0.0286**	0.0134 U	**0.0247 J**	**0.0285 J**	0.0142 U
di-n-Butyl Phthalate	16	0.14 U	0.15 U	0.13 U	0.14 U	--	--	--	--	--	--	--	--	--
di-n-Octyl Phthalate	63	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	0.02	**0.0042 J**	**0.0025 J**	0.0032 U	0.0036 U	--	--	--	--	--	0.0134 U	0.0142 U	0.0147 U	--
Dibenzofuran	0.97	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
Diethyl phthalate	60	0.14 U	0.15 U	0.13 U	0.14 U	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	48	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
Fluoranthene	240	**0.022**	**0.064**	0.0032 U	**0.0026 J**	0.0133 U	**0.034**	**0.0102 J**	0.0131 U	**0.0451**	0.0134 U	**0.0304**	**0.0312**	**0.0145 J**
Fluorene	36	0.0019 U	**0.23**	**0.0017 J,Q**	**0.0073 Q**	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.0082	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	0.0093	0.1 U,Q-	0.12 U,Q-	0.095 U,Q-	0.11 U,Q-	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.018	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	0.2	**0.016**	**0.0097**	**0.0035 J**	**0.0015 J**	0.0133 U	0.0165 J	0.0133 U	0.0131 U	0.0194 J	0.0134 U	**0.0178 J**	**0.0207 J**	0.0142 U
Isophorone	2.7	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
N-Nitrosodimethylamine (NDMA)	0.0000033	0.23 U	0.26 U	0.21 U	0.24 U	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	4.6	0.034 U	0.039 U	0.032 U	0.036 U	--	--	--	--	--	--	--	--	--
N-Nitrosodipropylamine	0.00068	0.057 U	0.064 U	0.053 U	0.059 U	--	--	--	--	--	--	--	--	--
Nitrobenzene	0.0079	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.0043	0.27 U	0.31 U	0.25 U	0.29 U	--	--	--	--	--	--	--	--	--
Phenanthrene	39	**0.0089**	**0.15**	**0.0018 J**	**0.0054 J**	0.0133 U	**0.0137 J**	0.0133 U	0.0131 U	**0.0246 J**	0.0134 U	**0.0155 J**	**0.0103 J**	0.0142 U
Phenol	29	0.017 U	0.019 U	0.016 U	0.018 U	--	--	--	--	--	--	--	--	--
Pyrene	87	**0.024**	**0.15**	0.0032 U	**0.0023 J**	0.0133 U	**0.0297**	**0.00839 J**	0.0131 U	**0.0388**	0.0134 U	**0.0292**	**0.0305**	**0.0123 J**

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-3 Summary of Chemicals Detected in Soil

Analyte	Location	EDR-TP-09	EDR-TP-10	EDR-TP-11		NB1		NB3		NB5	NS2	NS3	NS4	SS1
	Sample ID	16-EDR-TP-09-SO	16-EDR-TP-10-SO	16-EDR-TP-11-SO	16-EDR-TP-12-SO	NB1	NB2	NB3	NB4	NB5	NS2	NS3	NS4	SS1
	Sample Depth (ft)	8	11	10	10	3	3	3	3	3	Unknown	Unknown	Unknown	Unknown
	Sample Date	8/14/2016	8/15/2016	8/15/2016	8/15/2016	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017	6/13/2017
Metals (mg/kg)	Screening Level													
Aluminum	13000	**9500**	**10000**	**9500**	**9100**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Antimony	3.1	**0.82**	**0.64**	**0.71**	**0.64**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Arsenic	23	**9.6**	**8.6**	**8.1**	**6.9**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Barium	1500	**110**	**110**	**100**	**100**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Beryllium	16	**0.2 J**	**0.18 J**	**0.19 J**	**0.18 J**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	7.1	**0.2 J**	**0.21 J**	**0.16 J**	**0.14 J**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Calcium	--	**5800**	**6200**	**5700**	**5300**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	10000	**20**	**19**	**19**	**18**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Cobalt	15	**9**	**9**	**8.3**	**8.1**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Copper	310	**30**	**27**	**27**	**25**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Iron	32000	**21000**	**23000**	**21000**	**20000**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Lead	40	**30**	**17**	**7.8**	**6.6**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Magnesium	--	**5600**	**5500**	**5500**	**5400**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Manganese	540	**370**	**420**	**420**	**520**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Mercury	1.1	**0.015 J**	**0.012 J**	**0.021 J**	**0.011 J**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Nickel	150	**24**	**23**	**22**	**21**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Potassium	--	**800**	**810**	**750**	**760**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Selenium	6.9	**0.75 J**	**0.69 J**	**0.66 J**	**0.62 J**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Silver	11	**0.077 J,B**	**0.069 J,B**	**0.064 J,B**	**0.055 J,B**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Sodium	--	**290**	**280**	**290**	**270**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Thallium	0.21	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Vanadium	57	**38**	**35**	**38**	**34**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Zinc	2300	**53**	**53**	**50**	**45**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pesticides (mg/kg)														
4,4-DDD	0.19	**0.064**	**7.7**	**0.00064 J,Q-**	**0.001 J,Q-**	**0.00214**	**0.024**	**0.532**	**0.282**	**0.0848**	0.00108 U	**0.00841**	**0.0138**	**0.0351 J**
4,4-DDE	0.72	**0.0075**	0.026 U	**0.00011 J,Q**	**0.00027 J,Q**	**1.28 J**	**0.00351**	**0.159**	**0.0238 J**	**14.4 J**	**0.0022**	**0.00453**	**0.0067**	**0.0197**
4,4-DDT	1.9	**0.13**	**0.077 J**	**0.00046 J,B,Q**	**0.0022 J,B,Q-**	**0.0245**	**0.0515**	**1.67**	**0.314**	**0.156**	**0.004**	**0.0235 J**	**0.0246 J**	0.114 U
Aldrin	0.0099	0.00059 U	0.026 U	0.00023 U,Q-	0.00024 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
alpha-BHC	0.0029	0.0015 U	0.065 U	0.00058 U,Q-	0.00061 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
alpha-Chlordane	0.18	0.00089 U	0.039 U	0.00035 U,Q-	0.00037 U,Q-	0.000795 U	0.000815 U	**0.000796 J**	**0.000641 J**	**0.00256**	0.00081 U	**0.00126 J**	**0.00127 J**	**0.00237 J**
alpha-Endosulfan	9.3	0.00089 U	0.039 U	0.00035 U,Q-	0.00037 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
beta-BHC	0.01	0.003 U	0.13 U	0.0012 U,Q-	0.0012 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
beta-Endosulfan	9.3	0.0003 U	0.013 U	0.00012 U,Q-	0.00012 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
delta-BHC	0.0029	0.00089 U	0.039 U	0.00035 U,Q-	0.00037 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dieldrin	0.0047	0.0021 U	0.091 U	0.00081 U,Q-	0.00085 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
Endosulfan Sulfate	9.3	0.00089 U	0.039 U	0.00035 U,Q-	0.00037 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
Endrin	0.61	0.00089 U	0.039 U	**0.00022 J,B,Q-**	**0.00043 J,B,Q-**	- -	- -	- -	- -	- -	- -	- -	- -	- -
Endrin Aldehyde	0.61	0.003 U	0.13 U	0.0012 U,Q-	0.0012 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
Endrin Ketone	0.61	0.003 U	0.13 U	0.0012 U,Q-	0.0012 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
gamma-BHC	0.016	**0.00011 J,B,Q**	0.013 U	**0.000039 J,B,Q**	0.00012 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
gamma-Chlordane	0.18	0.0015 U	0.065 U	0.00058 U,Q-	0.00061 U,Q-	0.000795 U	**0.000533 J**	**0.000919 J**	**0.000737 J**	**0.00231**	0.00081 U	**0.00123 J**	**0.0012 J**	**0.0034 U**
Heptachlor	0.0076	0.00059 U	0.026 U	0.00023 U,Q-	0.00024 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
Heptachlor Epoxide	0.0019	0.0021 U	0.091 U	0.00081 U,Q-	0.00085 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
Methoxychlor	13	0.003 U	0.13 U	0.0012 U,Q-	0.0012 U,Q-	- -	- -	- -	- -	- -	- -	- -	- -	- -
Toxaphene	0.49	0.074 U	3.2 U	0.029 U,Q-	0.031 U,Q-									
Polychlorinated Biphenyls (mg/kg)														
Aroclor 1016	0.1	0.02 U	0.026 U	0.023 U	0.024 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Aroclor 1221	0.1	0.0099 U	0.013 U	0.012 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Aroclor 1232	0.1	0.0099 U	0.013 U	0.012 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Aroclor 1242	0.1	0.0035 U	0.0045 U	0.0041 U	0.0043 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Aroclor 1248	0.1	**0.018**	0.013 U	0.012 U	0.012 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Aroclor 1254	0.1	0.005 U	0.0065 U	0.0058 U	0.0061 U	**0.0304**	**4.29**	**1.4**	**1.03**	**11.6**	**0.155**	0.0281 U	**0.0574 J**	**0.241**
Aroclor 1260	0.1	**0.0022 J**	0.0091 U	0.0081 U	0.0085 U	- -	- -	- -	- -	- -	- -	- -	- -	- -
Per- and Polyfluoroalkyl Substances (mg/kg)														
Perfluorooctanoic Acid	0.003	--	--	--	--	0.0010 U	0.0011 U	**0.000630 J**	0.0011 U	**0.00116 J**	**0.0011 U**	**0.000802 J**	**0.00118 J**	**0.0643**
Perfluorooctanesulfonic acid	0.0017	--	--	--	--	**0.000606 J**	**0.000824 J**	**0.000853 J**	0.000591 J	**0.00638**	**0.000541 J**	**0.00604**	**0.0097**	0.0012 U
General Chemistry (%)														
Moisture, percent	--	**19.9**	**28**	**23.4**	**21.3**	**6.4**	**9.1**	**7**	**6.4**	**9.3**	**7.5**	**11.8**	**15.4**	**12**
General Chemistry (%)														
Percent Solids	--	**80.1**	**72**	**76.6**	**78.7**	**93.6**	**90.9**	**93**	**93.6**	**90.7**	**92.5**	**88.2**	**84.6**	**88**
General Chemistry (mg/kg)														
Total Organic Carbon	--	- -	- -	- -	- -									

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
M = Result is estimated based on MS/MSD exceedance
M- = Result is estimated with a low bias due to an MS/MSD exceedance
mg/kg = milligram(s) per kilogram
NA = Not analyzed
Q = Result is estimated due to a QC exceedance
Q- = Result is estimated with a low bias due to a QC exceedance
Q+ = Result is estimated with a high bias due to a QC exceedance
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.
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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

Analyte	Location	Sample ID	Sample Depth (ft)	Sample Date	Screening Level	Screening Level Source	35-SD-01		35-SD-02		35-SD-03		35-SD-04		35-SD-05		35-SD-06		35-SD-07		35-SD-08	
							35-SD-01-1	35-SD-01-2	35-SD-02_0_75	35-SD-02-2	35-SD-03-1	35-SD-03-2	35-SD-04-1	35-SD-04-2	35-SD-05-1	35-SD-05-2	35-SD-06-1	35-SD-06-2	35-SD-07-1	35-SD-07-2	35-SD-08-1	35-SD-08-2
							0 - 1	1 - 2	0 - 0.75	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2
							9/13/2012	9/13/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/15/2012	9/15/2012	9/14/2012	9/14/2012	9/14/2012	9/14/2012
Hydrocarbons (mg/kg)																						
C10-C25 DRO	250	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)					**370**	**18 J**	**160**	**200**	**4200**	**57**	**2600**	**39**	**400**	**650**	**2700**	**130**	**6700**	**900**	**2000**	**13 J**
C25-C36 RRO	10000	ADEC Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)					**2000**	**130**	**230**	**170**	**900**	**120**	**2000**	**170**	**1100**	**4400**	**2300**	**340**	**16000**	**1200**	**1600**	80 U
C6-C10 GRO	300	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)					3.3 U	2.4 U	4.3 U	4.5 U	2.2 UJ	6.3 U	5.3 UJ	1.8 U	4.1 UJ	5.7 U	4.4 UJ	3 U	3.1 UJ	2.3 U	7 U	3.3 UJ
VOCs (MG/KG)																						
1,1,1,2-Tetrachloroethane	0.022	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,1,1-Trichloroethane	0.0302	Lowest of Sediment RAIS Screening Benchmark					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,1,2,2-Tetrachloroethane	0.003	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.0088 U	0.0046 U	0.011 UJ	0.013 U	**R**	0.0047 U	0.024 UJ	0.0077 UJ	0.024 UJ	0.019 UJ	0.025 UJ	0.012 UJ	0.019 UJ	0.0099 UJ	0.019 UJ	0.017 UJ
1,1,2-Trichloroethane	0.0014	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.0088 U	0.0046 U	0.011 UJ	0.013 U	**R**	0.0047 U	0.024 UJ	0.0077 UJ	0.024 UJ	0.019 UJ	0.025 UJ	0.012 UJ	0.019 UJ	0.0099 UJ	0.019 UJ	0.017 UJ
1,1-Dichloroethane	0.000575	Lowest of Sediment RAIS Screening Benchmark					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,1-Dichloroethene	0.0194	Lowest of Sediment RAIS Screening Benchmark					0.015 U	0.0078 U	0.019 UJ	0.022 U	**R**	0.0079 U	0.041 UJ	0.013 UJ	0.042 UJ	0.033 UJ	0.042 UJ	0.021 UJ	0.032 UJ	0.017 UJ	0.032 UJ	0.03 UJ
1,1-Dichloropropene	0.018	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.015 U	0.0078 U	0.019 UJ	0.022 U	**R**	0.0079 U	0.041 UJ	0.013 UJ	0.042 UJ	0.033 UJ	0.042 UJ	0.021 UJ	0.032 UJ	0.017 UJ	0.032 UJ	0.03 UJ
1,2,3-Trichlorobenzene	0.15	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,2,3-Trichloropropane	0.000031	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,2,4-Trichlorobenzene	0.082	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,2,4-Trimethylbenzene	0.16	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	**0.12 J**	**0.04 J**	0.042 UJ	0.065 UJ	**0.022 J**	0.064 UJ	0.059 UJ
1,2-Dibromo-3-Chloropropane	0.0053	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)					0.15 U	0.078 U	0.19 UJ	0.22 U	**R**	0.079 U	0.41 UJ	0.13 UJ	0.42 UJ	0.33 UJ	0.42 UJ	0.21 UJ	0.32 UJ	0.17 UJ	0.32 UJ	0.3 UJ
1,2-Dichlorobenzene	0.0165	Lowest of Sediment RAIS Screening Benchmark					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,2-Dichloroethane	0.0055	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,2-Dichloropropane	0.016	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.01 U	0.0052 U	0.013 UJ	0.015 U	**R**	0.0053 U	0.028 UJ	0.0088 UJ	0.028 UJ	0.022 UJ	0.028 UJ	0.014 UJ	0.022 UJ	0.011 UJ	0.021 UJ	0.02 UJ
1,3,5-Trimethylbenzene	1.3	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	**0.022 J**	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,3-Dichlorobenzene	0.62	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,3-Dichloropropane	160	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
1,4-Dichlorobenzene	0.037	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
2,2-Dichloropropane	0.016	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
2-Butanone (MEK)	0.0424	Lowest of Sediment RAIS Screening Benchmark					0.3 U	0.16 U	0.38 UJ	0.44 U	**R**	0.16 U	0.83 UJ	0.26 UJ	0.84 UJ	0.66 UJ	0.85 UJ	0.42 UJ	0.65 UJ	0.34 UJ	0.64 UJ	0.59 UJ
2-Chlorotoluene	160	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
2-Hexanone	0.0582	Lowest of Sediment RAIS Screening Benchmark					0.15 U	0.078 U	0.19 UJ	0.22 U	**R**	0.079 U	0.41 UJ	0.13 UJ	0.42 UJ	0.33 UJ	0.42 UJ	0.21 UJ	0.32 UJ	0.17 UJ	0.32 UJ	0.3 UJ
4-Chlorotoluene	160	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
4-Methyl-2-Pentanone (MIBK)	0.0251	Lowest of Sediment RAIS Screening Benchmark					0.15 U	0.078 U	0.19 UJ	0.22 U	**R**	0.079 U	0.41 UJ	0.13 UJ	0.42 UJ	0.33 UJ	0.42 UJ	0.21 UJ	0.32 UJ	0.17 UJ	0.32 UJ	0.3 UJ
Acetone	0.0099	Lowest of Sediment RAIS Screening Benchmark					0.3 U	0.16 U	0.38 UJ	0.44 U	**R**	0.16 U	0.83 UJ	0.26 UJ	0.84 UJ	0.66 UJ	0.85 UJ	**0.27 J**	0.65 UJ	0.34 UJ	0.64 UJ	0.59 UJ
Benzene	0.022	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.01 U	**0.018**	**0.017 J**	**0.031**	**0.0053 J**	**0.0035 J**	**0.088 J**	**0.07 J**	0.028 UJ	0.022 UJ	**0.04 J**	**0.018 J**	**0.0086 J**	**0.031 J**	**0.019 J**	0.02 UJ
bis(2-Chloroethoxy)methane	19	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromobenzene	0.36	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Bromochloromethane	15	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Bromodichloromethane	0.0043	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Bromoform	0.1	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Bromomethane	0.00137	Lowest of Sediment RAIS Screening Benchmark					0.1 U	0.052 U	0.13 UJ	0.15 U	**R**	0.053 U	0.28 UJ	0.088 UJ	0.28 UJ	0.22 UJ	0.28 UJ	0.14 UJ	0.22 UJ	0.11 UJ	0.21 UJ	0.2 UJ
Carbon Disulfide	0.000851	Lowest of Sediment RAIS Screening Benchmark					**0.021 J**	**0.0075 J**	0.038 UJ	**0.036 J**	**0.011 J**	0.016 U	0.083 UJ	**0.014 J**	0.084 UJ	0.066 UJ	0.085 UJ	0.019 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Carbon Tetrachloride	0.021	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.015 U	0.0078 U	0.019 UJ	0.022 U	**R**	0.0079 U	0.041 UJ	0.013 UJ	0.042 UJ	0.033 UJ	0.042 UJ	0.021 UJ	0.032 UJ	0.017 UJ	0.032 UJ	0.03 UJ
Chlorobenzene	0.00842	Lowest of Sediment RAIS Screening Benchmark					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Chloroethane	72	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.3 U	0.16 U	0.38 UJ	0.44 U	**R**	0.16 U	0.83 UJ	0.26 UJ	0.84 UJ	0.66 UJ	0.85 UJ	0.42 UJ	0.65 UJ	0.34 UJ	0.64 UJ	0.59 UJ
Chloroform	0.0071	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Chloromethane	0.61	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.3 U	0.16 U	0.38 UJ	0.44 U	**R**	0.16 U	0.83 UJ	0.26 UJ	0.84 UJ	0.66 UJ	0.85 UJ	0.42 UJ	0.65 UJ	0.34 UJ	0.64 UJ	0.59 UJ
cis-1,2-Dichloroethene	0.12	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
cis-1,3-Dichloropropene	0.018	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.01 U	0.0052 U	0.013 UJ	0.015 U	**R**	0.0053 U	0.028 UJ	0.0088 UJ	0.028 UJ	0.022 UJ	0.028 UJ	0.014 UJ	0.022 UJ	0.011 UJ	0.021 UJ	0.02 UJ
Dibromochloromethane	0.0027	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Dibromomethane	0.025	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Dichlorodifluoromethane	3.9	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Ethylbenzene	0.13	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Ethylene Dibromide (EDB)	0.00024	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Hexachlorobutadiene	0.02	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Isopropylbenzene	0.086	Lowest of Sediment RAIS Screening Benchmark					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	**0.018 J**	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
m- & p-Xylene	1.5	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					**0.013 J**	0.01 U	**0.021 J**	**0.026 J**	**R**	**0.0094 J**	0.055 UJ	**0.011 J**	0.056 UJ	**0.068 J**	**0.031 J**	**0.026 J**	0.043 UJ	**0.02 J**	0.042 UJ	0.039 UJ
Methyl tert-Butyl Ether (MTBE)	0.4	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Methylene Chloride	0.159	Lowest of Sediment RAIS Screening Benchmark					0.049 U	0.024 U	0.048 UJ	0.052 U	0.024 UJ	0.022 UJ	0.077 UJ	0.032 UJ	0.087 UJ	0.086 UJ	0.059 UJ	0.018 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
n-Butylbenzene	2	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	**0.019 J**	0.065 UJ	**0.016 J**	0.064 UJ	0.059 UJ
n-Propylbenzene	5.2	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Naphthalene	0.0346	Lowest of Sediment RAIS Screening Benchmark					0.0053 U	**0.0047 J**	**0.02**	**0.013**	**0.058**	0.003 U	**0.074**	**0.024**	**0.063**	**0.25**	**0.33**	**0.082**	**0.28 M**	**0.086**	**0.075**	0.0075 U
o-Xylene	1.5	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	**0.014 J**	0.064 UJ	0.059 UJ
p-Isopropyltoluene	0.03	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	**0.035 J**	**0.038 J**	0.042 UJ	0.065 UJ	**0.02 J**	0.064 UJ	0.059 UJ
sec-Butylbenzene	2.8	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Styrene	0.254	Lowest of Sediment RAIS Screening Benchmark					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
tert-Butylbenzene	3.5	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Tetrachloroethene (PCE)	0.19	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)					0.015 U	0.0078 U	0.019 UJ	0.022 U	**R**	0.0079 U	0.041 UJ	0.013 UJ	0.042 UJ	0.033 UJ	0.042 UJ	0.021 UJ	0.032 UJ	0.017 UJ	0.032 UJ	0.03 UJ
Toluene	1.22	Lowest of Sediment RAIS Screening Benchmark					0.03 U	0.016 U	**0.014 J**	0.044 U	**R**	**0.0064 J**	0.083 UJ	**0.0098 J**	0.084 UJ	0.066 UJ	**0.046 J**	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
trans-1,2-Dichloroethene	0.654	Lowest of Sediment RAIS Screening Benchmark					0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

Analyte	Location	Sample ID	Sample Depth (ft)	Sample Date	Screening Level	Screening Level Source
trans-1,3-Dichloropropene	35-SD-01	35-SD-01-1	0 - 1	9/13/2012	0.018	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)
		35-SD-01-2	1 - 2	9/13/2012		
	35-SD-02	35-SD-02_0_75	0 - 0.75	9/12/2012		
		35-SD-02-2	1 - 2	9/12/2012		
	35-SD-03	35-SD-03-1	0 - 1	9/12/2012		
		35-SD-03-2	1 - 2	9/12/2012		
	35-SD-04	35-SD-04-1	0 - 1	9/12/2012		
		35-SD-04-2	1 - 2	9/12/2012		
	35-SD-05	35-SD-05-1	0 - 1	9/12/2012		
		35-SD-05-2	1 - 2	9/12/2012		
	35-SD-06	35-SD-06-1	0 - 1	9/15/2012		
		35-SD-06-2	1 - 2	9/15/2012		
	35-SD-07	35-SD-07-1	0 - 1	9/14/2012		
		35-SD-07-2	1 - 2	9/14/2012		
	35-SD-08	35-SD-08-1	0 - 1	9/14/2012		
		35-SD-08-2	1 - 2	9/14/2012		
trans-1,3-Dichloropropene					0.01 U	0.0052 U	0.013 UJ	0.015 U	**R**	0.0053 U	0.028 UJ	0.0088 UJ	0.028 UJ	0.022 UJ	0.028 UJ	0.014 UJ	0.022 UJ	0.011 UJ	0.021 UJ	0.02 UJ
Trichloroethene (TCE)					0.011	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.01 U	0.0052 U	0.013 UJ	0.015 U	**R**	0.0053 U	0.028 UJ	0.0088 UJ	0.028 UJ	0.022 UJ	0.028 UJ	0.014 UJ	0.022 UJ	0.011 UJ	0.021 UJ	0.02 UJ
Trichlorofluoromethane					41	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.03 U	0.016 U	0.038 UJ	0.044 U	**R**	0.016 U	0.083 UJ	0.026 UJ	0.084 UJ	0.066 UJ	0.085 UJ	0.042 UJ	0.065 UJ	0.034 UJ	0.064 UJ	0.059 UJ
Vinyl Chloride					0.0008	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.005 U	0.0026 U	0.0063 UJ	0.0074 U	**R**	0.0026 U	0.014 UJ	0.0044 UJ	0.014 UJ	0.011 UJ	0.014 UJ	0.007 UJ	0.011 UJ	0.0056 UJ	0.011 UJ	0.0098 UJ
Xylenes, Total					0.433	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
SVOCs (MG/KG)																						
1-Methylnaphthalene					0.41	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0053 U	0.0032 U	**0.034 M**	**0.016 M**	0.0046 U	**0.0048 J**	**0.19**	**0.012 M**	**0.094 M**	**0.3 M**	**1.2**	**0.53**	**2.8**	**0.21**	**0.32 M**	0.0075 U
2,4,5-Trichlorophenol					28	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol					0.092	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol					0.0817	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol					0.029	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol					0.00621	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene					0.0144	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene					0.005	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene					0.41723	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorophenol					0.0312	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene					0.0202	Lowest of Sediment RAIS Screening Benchmark	0.0053 U	0.0032 U	**0.057 M**	**0.029 M**	**0.17 M**	**0.006 J**	**0.21**	**0.019 M**	**0.12 M**	**0.49 M**	**1.7**	**0.48**	**3.1 M**	**0.23 M**	**0.38 M**	0.0075 U
2-Methylphenol					0.0554	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitroaniline					63	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitrophenol					--		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine					0.056	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3- & 4-Methylphenol					6.1	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3-Nitroaniline					--		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol					0.104	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether					1.23	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol					0.38818	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloroaniline					0.015	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether					--		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitroaniline					25	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitrophenol					0.0133	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene					0.0067	Lowest of Sediment RAIS Screening Benchmark	0.0053 U	**0.005 J**	**0.004 J**	0.0035 U	**0.07 M**	0.003 U	**0.026 M**	**0.002 J**	**0.022 M**	**0.056 M**	**0.22 M**	**0.056 M**	**0.49 M**	**0.088 M**	**0.092 M**	0.0075 U
Acenaphthylene					0.00587	Lowest of Sediment RAIS Screening Benchmark	0.0053 U	**0.0044 J**	**0.0079 J**	**0.0059 J**	**0.054 M**	0.003 U	**0.022 M**	**0.0054 J**	**0.012 J**	**0.026 J**	**0.13 M**	**0.021 M**	**0.19 M**	**0.032 M**	**0.051 M**	0.0075 U
Anthracene					0.0469	Lowest of Sediment RAIS Screening Benchmark	0.0053 U	**0.0035 J**	**0.051 M**	**0.023 M**	**0.33 M**	0.003 U	**0.14 M**	**0.0034 J**	**0.031 M**	**0.046 M**	**0.17 M**	**0.02 M**	**0.2 M**	**0.031 M**	**0.15 M**	0.0075 U
Benzo(a)anthracene					0.0317	Lowest of Sediment RAIS Screening Benchmark	**0.0032 J**	**0.012 M**	**0.087**	**0.017**	**0.27**	**0.0024 J**	**0.2**	0.0034 U	**0.12**	**0.16 M**	**0.13**	**0.016**	**0.56 M**	**0.016 M**	**0.32**	0.0075 U
Benzo(a)pyrene					0.02	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	**0.0036 J**	**0.013 M**	**0.074**	**0.011**	**0.19**	**0.0027 J**	**0.18**	0.0034 U	**0.16**	**0.25**	**0.097**	**0.011**	**0.6**	**0.0098 M**	**0.29**	0.0075 U
Benzo(b)fluoranthene					0.0272	Lowest of Sediment RAIS Screening Benchmark	**0.0062 J**	**0.029 M**	**0.12**	**0.017 M**	**0.29**	**0.0049 J**	**0.32**	**0.0033 J**	**0.26**	**0.48**	**0.16 M**	**0.017 M**	**1.2 M**	**0.022 M**	**0.48**	0.0075 U
Benzo(g,h,i)perylene					0.17	Lowest of Sediment RAIS Screening Benchmark	0.0053 U	**0.0098**	**0.038**	**0.0069 J**	**0.094**	**0.0018 J**	**0.11**	0.0034 U	**0.11**	**0.18**	**0.11**	**0.008**	**0.56**	**0.0098**	**0.16**	0.0075 U
Benzo(k)fluoranthene					0.0272	Lowest of Sediment RAIS Screening Benchmark	0.0053 U	**0.0087 M**	**0.044**	**0.0057 J**	**0.11**	**0.0022 J**	**0.12**	0.0034 U	**0.1**	**0.19**	**0.068 M**	**0.0052 J**	**0.3 M**	**0.0074 J**	**0.18**	0.0075 U
Benzoic acid					0.65	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzyl alcohol					0.00104	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroethyl)ether					0.00042	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroisopropyl)ether					310	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Ethylhexyl)phthalate					0.18	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Butyl Benzyl Phthalate					1.97	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbazole					--		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chrysene					0.0571	Lowest of Sediment RAIS Screening Benchmark	**0.0052 J**	**0.025 M**	**0.097**	**0.022**	**0.24**	**0.0036 J**	**0.28**	0.0034 U	**0.2 M**	**0.45**	**0.18**	**0.022 M**	**0.97 M**	**0.029 M**	**0.43**	0.0075 U
di-n-Butyl Phthalate					1.114	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
di-n-Octyl Phthalate					4.06	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene					0.00622	Lowest of Sediment RAIS Screening Benchmark	0.0053 U	**0.0038 J**	**0.011**	0.0035 U	**0.032**	0.003 U	**0.032**	0.0034 U	**0.037**	**0.048**	**0.028**	0.0039 U	**0.11 M**	0.0046 U	**0.055**	0.0075 U
Dibenzofuran					0.415	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Diethyl phthalate					0.295	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dimethyl phthalate					48	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene					0.111	Lowest of Sediment RAIS Screening Benchmark	**0.0074 J**	**0.055 M**	**0.19**	**0.068**	**1**	**0.0026 J**	**0.73**	**0.0094**	**0.39**	**0.76 M**	**0.56**	**0.07**	**1.9**	**0.22**	**0.91**	0.0075 U
Fluorene					0.0212	Lowest of Sediment RAIS Screening Benchmark	0.0053 U	**0.0053 J**	**0.014 M**	**0.0068 J**	**0.11 M**	0.003 U	**0.07 M**	**0.0052 J**	**0.074 M**	**0.17 M**	**0.45 M**	**0.092 M**	**1.1 M**	**0.22 M**	**0.2 M**	0.0075 U
Hexachlorobenzene					0.0082	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene					--		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachloroethane					0.018	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene					0.017	Lowest of Sediment RAIS Screening Benchmark	0.0053 U	**0.01**	**0.045**	**0.0063 J**	**0.11**	**0.0021 J**	**0.12**	0.0034 U	**0.12**	**0.2**	**0.086 M**	**0.012**	**0.53 M**	**0.011 M**	**0.19**	0.0075 U
Isophorone					0.432	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodimethylamine (NDMA)					0.0000033	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodiphenylamine					2.68	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodipropylamine					0.00068	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Nitrobenzene					0.0079	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pentachlorophenol					0.0043	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene					0.0419	Lowest of Sediment RAIS Screening Benchmark	**0.0051 J**	**0.027 M**	**0.075 M**	**0.036 M**	**0.49 M**	**0.0028 J**	**0.22 M**	**0.016**	**0.28 M**	**0.63 M**	**1.2**	**0.15 M**	**3.5 M**	**0.52 M**	**1.1 M**	0.0075 U
Phenol					0.0491	Lowest of Sediment RAIS Screening Benchmark	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyrene					0.053	Lowest of Sediment RAIS Screening Benchmark	**0.0072 J**	**0.043 M**	**0.24**	**0.11**	**1.1**	**0.0032 J**	**0.66**	**0.01**	**0.36**	**0.64 M**	**0.5**	**0.057**	**1.8**	**0.16**	**0.78**	0.0075 U

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

Analyte	Location	Screening Level Source	35-SD-01		35-SD-02		35-SD-03		35-SD-04		35-SD-05		35-SD-06		35-SD-07		35-SD-08	
	Sample ID		35-SD-01-1	35-SD-01-2	35-SD-02_75	35-SD-02-2	35-SD-03-1	35-SD-03-2	35-SD-04-1	35-SD-04-2	35-SD-05-1	35-SD-05-2	35-SD-06-1	35-SD-06-2	35-SD-07-1	35-SD-07-2	35-SD-08-1	35-SD-08-2
	Sample Depth (ft)		0 - 1	1 - 2	0 - 0.75	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2
	Sample Date		9/13/2012	9/13/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/15/2012	9/15/2012	9/14/2012	9/14/2012	9/14/2012	9/14/2012
Metals (mg/kg)																		
Aluminum	7700	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**3300 J**	**2200 J**	**7400**	**9500**	**7200**	**6100**	**12000**	**9500**	**3500**	**4900**	**32000**	**13000**	**11000**	**9900**	**18000**	**530**
Antimony	2	Lowest of Sediment RAIS Screening Benchmark	**0.18 J**	**0.27**	**0.94**	**0.72**	**0.77**	**0.47**	**1.8**	**0.71**	**0.52 J**	**0.94 J**	**2.6**	**1**	**1.5**	**0.92**	**1.5**	**0.14 J**
Arsenic	0.2	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	**28**	**11**	**20**	**7**	**13**	**3.8**	**62**	**7.1**	**140**	**330**	**250**	**17**	**230**	**19**	**110**	**45**
Barium	1500	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**66**	**50**	**120**	**130**	**120**	**74**	**220**	**150**	**160**	**240**	**1100**	**180**	**390**	**260**	**580**	**220**
Beryllium	16	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**0.071 J**	**0.056 J**	**0.18 J**	**0.18 J**	**0.15 J**	**0.12 J**	**0.35 J**	**0.21 J**	**0.15 J**	**0.28 J**	**0.65 J**	0.21 U	**0.43 J**	**0.26 J**	**0.49**	**0.095 J**
Cadmium	0.6	SQuiRT Tables TEL	**0.13 J**	**0.098 J**	**0.33**	**0.26**	**0.27 J**	**0.18 J**	**0.51 J**	**0.21 J**	**0.24 J**	**0.39 J**	**0.95 J**	**0.34**	**0.74**	**0.65**	**0.62**	**0.15 J**
Calcium	--		**1900**	**1800**	**5500 J**	**6300 J**	**5700 J**	**3500 J**	**9400 J**	**5600 J**	**6000 J**	**23000 J**	**25000**	**7100**	**16000**	**6000**	**19000**	**310000**
Chromium	37.3	Lowest of Sediment RAIS Screening Benchmark	**4**	**4.2**	**17**	**21**	**16**	**13**	**29**	**19**	**10**	**15**	**74**	**28**	**29 J**	**26 J**	**48 J**	**2.9 J**
Cobalt	2.3	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**5.1**	**2.6**	**8.4**	**9.4**	**7.7**	**7.3**	**12**	**9.2**	**4.4**	**6.2**	**30**	**13**	**12 J**	**24 J**	**22 J**	**1 J**
Copper	18.7	Lowest of Sediment RAIS Screening Benchmark	**13**	**7.2**	**34**	**33**	**29**	**20**	**48**	**29**	**16**	**23**	**110**	**42**	**47 J**	**41 J**	**75 J**	**3.7 J**
Iron	5500	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**16000**	**9500**	**26000**	**19000**	**21000**	**13000**	**59000**	**19000**	**68000**	**160000**	**180000**	**26000**	**100000**	**20000**	**81000**	**18000**
Lead	30.2	Lowest of Sediment RAIS Screening Benchmark	**4.7 J**	**5.7 J**	**18**	**9.6**	**15**	**5.5**	**42**	**8.1**	**39**	**64**	**61**	**14**	**140**	**18**	**43**	**3.3**
Magnesium	--		**1800 J**	**1100 J**	**4300 J**	**5900 J**	**4100 J**	**4100 J**	**6700 J**	**5300 J**	**1900 J**	**2700 J**	**17000**	**6900**	**5600 J**	**5800 J**	**11000 J**	**14000 J**
Manganese	180	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**280**	**170**	**460 J**	**380**	**460**	**250**	**930**	**310**	**1100**	**3300**	**2700**	**460**	**1500**	**430**	**1500**	**3200**
Mercury	0.13	Lowest of Sediment RAIS Screening Benchmark	**0.044**	**0.03**	**0.047**	0.024 U	**0.03**	**0.027**	**0.07**	0.024 U	**0.026 J**	**0.075 J**	**0.14**	**0.045**	**0.054 J**	**0.086**	**0.072**	0.025 U
Nickel	15.9	Lowest of Sediment RAIS Screening Benchmark	**7.6**	**5.7**	**25**	**26**	**20**	**23**	**33**	**25**	**11**	**14**	**78**	**33**	**30 J**	**48 J**	**53 J**	**2.9 J**
Potassium	--		**560**	**170**	**780**	**940**	**840**	**630**	**1400**	**820**	**470**	**600 J**	**3600**	**1300**	**1200 J**	**1100 J**	**2100 J**	**110 J**
Selenium	2	Lowest of Sediment RAIS Screening Benchmark	0.84 U	0.45 U	**0.39 J**	**0.44 J**	**0.41 J**	**0.25 J**	1.4 U	**0.45 J**	1.3 U	2.8 U	**2.5 J**	**0.81 J**	**0.77 J**	**0.62 J**	**1.2 J**	1 U
Silver	0.5	Lowest of Sediment RAIS Screening Benchmark	0.042 U	**0.03 J**	**0.1 J**	**0.094 J**	**0.13 J**	**0.18 J**	**0.2 J**	**0.069 J**	**0.077 J**	**0.1 J**	**0.52 J**	**0.48**	**0.24 J**	**1.1 J**	**0.39 J**	0.051 U
Sodium	--		45 U	34 U	**260**	**350**	**240**	**210**	**440**	**270**	130 U	**200 J**	**1200**	**500**	**300 J**	**280**	**590**	38 U
Thallium	0.078	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	0.55 U	0.29 U	0.43 U	0.32 U	0.5 U	0.32 U	0.93 U	0.33 U	0.87 U	1.8 U	1.4 U	0.38 U	0.81 U	0.41 U	0.59 U	0.66 U
Vanadium	39	EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (June 2017)	**21**	**9**	**38**	**42**	**31**	**31**	**58**	**38**	**27**	**46**	**130**	**50**	**63 J**	**44 J**	**86 J**	**6.4 J**
Zinc	121	Lowest of Sediment RAIS Screening Benchmark	**110**	**45**	**76**	**63**	**64**	**43**	**120**	**50**	**57**	**110**	**250**	**86**	**130**	**110**	**150**	**22**
Pesticides (mg/kg)																		
4,4-DDD	0.0033	Lowest of Sediment RAIS Screening Benchmark	**0.13 J**	**0.47 J**	**29 J**	**13 J**	**210 J**	**0.043 J**	**100 J**	**0.089 J**	**1.8 J**	**3 J**	**11 M**	**0.28**	**22**	**0.53 M**	**19 M**	**0.0056 J**
4,4-DDE	0.00142	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	**0.86 M**	**0.3 J**	**2.8**	0.0074 U	**3.1 M**	**0.0081 J**	**0.37 M**	**0.43 J**	**0.79 J**	**0.023 J**	**1.6 M**	**0.062 J**	**1.2 M**	**0.00096 J**
4,4-DDT	0.00119	Lowest of Sediment RAIS Screening Benchmark	0.031 U	**0.35 J**	**14**	**4.6 J**	**33**	**0.0097 J**	**32 J**	**0.015 J**	**0.072 J**	**0.096 J**	**2 J**	**0.0084 J**	**5.6 J**	0.01 UJ	**1.6 J**	**0.00069 J**
Aldrin	0.002	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
alpha-BHC	0.0029	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
alpha-Chlordane	0.0017	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
alpha-Endosulfan	0.0029	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
beta-BHC	0.005	Lowest of Sediment RAIS Screening Benchmark	0.01 U	0.00062 U	0.016 U	0.013 U	0.018 U	0.012 U	0.038 U	0.0071 U	0.037 U	0.19 U	0.054 U	0.0078 U	0.038 U	0.017 U	0.028 U	0.0016 UJ
beta-Endosulfan	0.00194	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
Chlordane	0.0017	Lowest of Sediment RAIS Screening Benchmark	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	0.0029	ADEC 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)	0.0063 UJ	0.00037 UJ	0.0099 UJ	0.008 UJ	0.011 UJ	0.0074 UJ	0.023 UJ	0.0043 UJ	0.022 UJ	0.11 UJ	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
Dieldrin	0.0019	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
Endosulfan Sulfate	0.0054	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
Endrin	0.00222	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	0.0099 UJ	0.008 UJ	0.011 UJ	0.0074 UJ	0.023 UJ	0.0043 UJ	0.022 UJ	0.11 UJ	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
Endrin Aldehyde	0.00267	SQuiRT Tables TEL	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
Endrin Ketone	0.00267	SQuiRT Tables TEL	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
gamma-BHC	0.00094	SQuiRT Tables TEL	0.01 U	0.00062 U	0.016 U	0.013 U	0.018 U	0.012 U	0.038 U	0.0071 U	0.037 U	0.19 U	0.054 U	0.0078 U	0.038 U	0.017 U	0.028 U	0.0016 UJ
gamma-Chlordane	0.0017	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
Heptachlor	0.0006	Lowest of Sediment RAIS Screening Benchmark	0.01 U	0.00062 U	0.016 UJ	0.013 UJ	0.018 UJ	0.012 UJ	0.038 UJ	0.0071 UJ	0.037 UJ	0.19 UJ	0.054 U	0.0078 U	0.038 U	0.017 U	0.028 U	0.0016 UJ
Heptachlor Epoxide	0.0006	Lowest of Sediment RAIS Screening Benchmark	0.0063 U	0.00037 U	0.0099 U	0.008 U	0.011 U	0.0074 U	0.023 U	0.0043 U	0.022 U	0.11 U	0.032 U	0.0047 U	0.023 U	0.01 U	0.017 U	0.00094 UJ
Methoxychlor	0.0136	Lowest of Sediment RAIS Screening Benchmark	0.031 U	0.019 U	0.0099 UJ	0.008 UJ	0.011 UJ	0.0074 UJ	0.023 UJ	0.0043 UJ	0.022 UJ	0.11 UJ	0.081 UJ	0.0094 UJ	0.023 U	0.01 U	0.017 U	0.00094 UJ
Toxaphene	0.000077	Lowest of Sediment RAIS Screening Benchmark	5.2 U	3.1 U	1.6 U	1.3 U	1.8 U	1.2 U	3.8 U	0.71 U	3.7 U	19 U	5.4 U	0.78 U	3.8 U	1.7 U	2.8 U	0.16 UJ
Polychlorinated Biphenyls (MG/KG)																		
Aroclor 1016	0.007	Lowest of Sediment RAIS Screening Benchmark	0.01 U	0.0062 U	0.0082 U	0.0067 UJ	0.0092 U	0.0062 U	0.019 U	0.0071 U	0.018 U	0.038 U	0.027 U	0.0078 U	0.019 UJ	0.0087 U	0.014 UJ	0.016 U
Aroclor 1221	0.067	Lowest of Sediment RAIS Screening Benchmark	0.021 U	0.012 U	0.016 U	0.013 UJ	0.018 U	0.012 U	0.038 U	0.014 U	0.037 U	0.075 U	0.054 U	0.016 U	0.038 UJ	0.017 UJ	0.028 UJ	0.031 U
Aroclor 1232	0.1	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.021 U	0.012 U	0.016 U	0.013 UJ	0.018 U	0.012 U	0.038 U	0.014 U	0.037 U	0.075 U	0.054 U	0.016 U	0.038 UJ	0.017 U	0.028 UJ	0.031 U
Aroclor 1242	0.1	1/10th ADEC Table B1 Human Health Soil Cleanup Level (November 2017)	0.01 U	0.0062 U	0.0082 U	0.0067 UJ	0.0092 U	0.0062 U	0.019 U	0.0071 U	0.018 U	0.038 U	0.027 U	0.0078 U	0.019 UJ	0.0087 U	0.014 UJ	0.016 U
Aroclor 1248	0.03	Lowest of Sediment RAIS Screening Benchmark	0.01 U	0.0062 U	0.0082 U	0.0067 UJ	0.0092 U	0.0062 U	0.019 U	0.0071 U	0.018 U	0.038 U	0.027 U	0.0078 U	0.019 UJ	0.0087 U	0.014 UJ	0.016 U
Aroclor 1254	0.06	Lowest of Sediment RAIS Screening Benchmark	0.01 U	0.0062 U	0.0082 U	0.0067 UJ	0.0092 U	0.0062 U	0.019 U	0.0071 U	0.018 U	0.038 U	0.027 U	0.0078 U	0.019 UJ	0.0087 U	0.014 UJ	0.016 U
Aroclor 1260	0.005	Lowest of Sediment RAIS Screening Benchmark	0.01 U	0.0062 U	0.0082 U	0.0067 UJ	0.0092 U	0.0062 U	0.019 U	0.0071 U	0.018 U	0.038 U	0.027 U	0.0078 U	0.019 UJ	0.0087 U	0.014 UJ	0.016 U
General Chemistry (%)																		
Moisture, percent	--		**54**	**23**	**40**	**30**	**49**	**23**	**76**	**31**	**73**	**87**	**83**	**37**	**76**	**47**	**66**	**69**
General Chemistry (%)																		
Percent Solids	--		**46**	**77**	**60**	**70**	**51**	**77**	**24**	**69**	**27**	**13**	**17**	**63**	**24**	**53**	**34**	**31**

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

	Location	35-SD-09				35-SD-10		35-SD-11		35-SD-12		35-SD-13		35-SD-14		35-SD-15		35-SD-16			35-SD-17		35-SD-18			35-SD-19		
	Sample ID	35-SD-09-1	35-SD-22	35-SD-09-2	35-SD-23	35-SD-10-1	35-SD-10-2	35-SD-11-1	35-SD-11-2	35-SD-12-1	35-SD-12-2	35-SD-13-1	35-SD-13-2	35-SD-14-1	35-SD-14-2	35-SD-15-1	35-SD-15-2	35-SD-16-1	35-SD-16-2	35-SD-24	35-SD-17-1	35-SD-17-2	35-SD-18-1	35-SD-25	35-SD-18-2	35-SD-19-1	35-SD-19-2	35-SD-26
	Sample Depth (ft)	0 - 1	0 - 1	1 - 2	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	1 - 2	0 - 1	1 - 2	0 - 1	0 - 1	1 - 2	0 - 1	1 - 2	1 - 2
	Sample Date	9/13/2012	9/13/2012	9/13/2012	9/13/2012	9/14/2012	9/14/2012	9/15/2012	9/15/2012	9/15/2012	9/15/2012	9/13/2012	9/13/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/13/2012	9/13/2012	9/13/2012	9/15/2012	9/15/2012	9/13/2012	9/13/2012	9/13/2012	9/14/2012	9/14/2012	9/14/2012
Analyte	**Screening Level**																											
Hydrocarbons (mg/kg)																												
C10-C25 DRO	250	**3200 J**	**6500 J**	**110 J**	**21 J**	**98**	**170**	**1100**	26 U	**200**	14 U	**1700**	**12 J**	**3900**	**31**	**9800**	**1300**	**1900**	**47 J**	**320 J**	26 U	33 U	**20 J**	**8.4 J**	**6.5 J**	**45**	**44**	**40**
C25-C36 RRO	10000	**2200 J**	**2600**	**190 J**	**67 J**	**600 J**	**330**	**960**	**38 J**	**410**	**51 J**	**4000**	**56 J**	**2500**	**97**	**4000**	**1500**	**3500**	**56**	**80**	**76 J**	**120**	**58 J**	**68 J**	**56 J**	**78 J**	**120**	**130**
C6-C10 GRO	300	7.9 UJ	6.6 U	4.4 U	5.9 U	0.75 U	1.2 U	1.8 UJ	1 U	1.3 U	3.5 U	9 UJ	1.5 U	5.5 U	1.5 U	2.4 UJ	3.1 U	2.4 UJ	1.3 UJ	2.2 U	2.3 UJ	1.2 U	1.7 U	2.1 U	3 U	1.2 UJ	2.1 UJ	1.5 UJ
VOCs (MG/KG)																												
1,1,1,2-Tetrachloroethane	0.022	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,1,1-Trichloroethane	0.0302	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,1,2,2-Tetrachloroethane	0.003	0.038 UJ	0.027 UJ	0.0095 UJ	0.011 UJ	0.004 U	0.006 UJ	0.01 UJ	0.0071 UJ	0.0091 UJ	0.0083 UJ	0.05 UJ	0.0082 U	0.017 UJ	0.0096 UJ	0.014 UJ	0.012 UJ	0.016 UJ	0.0056 U	0.0069 U	0.016 UJ	0.014 UJ	0.015 UJ	0.016 UJ	0.019 UJ	0.0072 UJ	0.011 UJ	0.01 UJ
1,1,2-Trichloroethane	0.0014	0.038 UJ	0.027 UJ	0.0095 UJ	0.011 UJ	0.004 U	0.006 UJ	0.01 UJ	0.0071 UJ	0.0091 UJ	0.0083 UJ	0.05 UJ	0.0082 U	0.017 UJ	0.0096 UJ	0.014 UJ	0.012 UJ	0.016 UJ	0.0056 U	0.0069 U	0.016 UJ	0.014 UJ	0.015 UJ	0.016 UJ	0.019 UJ	0.0072 UJ	0.011 UJ	0.01 UJ
1,1-Dichloroethane	0.000575	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,1-Dichloroethene	0.0194	0.065 UJ	0.045 UJ	0.016 UJ	0.019 UJ	0.0068 U	0.01 UJ	0.017 UJ	0.012 UJ	0.016 UJ	0.014 UJ	0.084 UJ	0.014 U	0.029 UJ	0.016 UJ	0.024 UJ	0.02 UJ	0.027 UJ	0.0095 U	0.012 U	0.028 UJ	0.023 UJ	0.026 UJ	0.027 UJ	0.032 UJ	0.012 UJ	0.018 UJ	0.018 UJ
1,1-Dichloropropene	0.018	0.065 UJ	0.045 UJ	0.016 UJ	0.019 UJ	0.0068 U	0.01 UJ	0.017 UJ	0.012 UJ	0.016 UJ	0.014 UJ	0.084 UJ	0.014 U	0.029 UJ	0.016 UJ	0.024 UJ	0.02 UJ	0.027 UJ	0.0095 U	0.012 U	0.028 UJ	0.023 UJ	0.026 UJ	0.027 UJ	0.032 UJ	0.012 UJ	0.018 UJ	0.018 UJ
1,2,3-Trichlorobenzene	0.15	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,2,3-Trichloropropane	0.000031	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,2,4-Trichlorobenzene	0.082	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,2,4-Trimethylbenzene	0.16	**0.21 J**	**0.12 J**	**0.36 J**	**0.34 J**	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	**0.57 J**	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,2-Dibromo-3-Chloropropane	0.0053	0.65 UJ	0.45 UJ	0.16 UJ	0.19 UJ	0.068 U	0.1 UJ	0.17 UJ	0.12 UJ	0.16 UJ	0.14 UJ	0.84 UJ	0.14 U	0.29 UJ	0.16 UJ	0.24 UJ	0.2 UJ	0.27 UJ	0.095 U	0.12 U	0.28 UJ	0.23 UJ	0.26 UJ	0.27 UJ	0.32 UJ	0.12 UJ	0.18 UJ	0.18 UJ
1,2-Dichlorobenzene	0.0165	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,2-Dichloroethane	0.0055	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,2-Dichloropropane	0.016	0.043 UJ	0.03 UJ	0.011 UJ	0.013 UJ	0.0045 U	0.0069 UJ	0.011 UJ	0.008 UJ	0.01 UJ	0.0094 UJ	0.056 UJ	0.0093 U	0.019 UJ	0.011 UJ	0.016 UJ	0.014 UJ	0.018 UJ	0.0063 U	0.0078 U	0.019 UJ	0.015 UJ	0.017 UJ	0.018 UJ	0.021 UJ	0.0082 UJ	0.012 UJ	0.012 UJ
1,3,5-Trimethylbenzene	1.3	**0.05 J**	**0.034 J**	**0.061 J**	**0.06 J**	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	**0.19 J**	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,3-Dichlorobenzene	0.62	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,3-Dichloropropane	160	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
1,4-Dichlorobenzene	0.037	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
2,2-Dichloropropane	0.016	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
2-Butanone (MEK)	0.0424	1.3 UJ	0.91 UJ	0.32 UJ	0.38 UJ	0.14 U	0.21 UJ	0.34 UJ	0.24 UJ	0.31 UJ	0.28 UJ	1.7 UJ	0.28 U	0.57 UJ	0.33 UJ	0.48 UJ	0.41 UJ	0.53 UJ	0.19 U	0.23 U	0.56 UJ	0.46 UJ	0.52 UJ	0.55 UJ	0.64 UJ	0.25 UJ	0.36 UJ	0.35 UJ
2-Chlorotoluene	160	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
2-Hexanone	0.0582	0.65 UJ	0.45 UJ	0.16 UJ	0.19 UJ	0.068 U	0.1 UJ	0.17 UJ	0.12 UJ	0.16 UJ	0.14 UJ	0.84 UJ	0.14 U	0.29 UJ	0.16 UJ	0.24 UJ	0.2 UJ	0.27 UJ	0.095 U	0.12 U	0.28 UJ	0.23 UJ	0.26 UJ	0.27 UJ	0.32 UJ	0.12 UJ	0.18 UJ	0.18 UJ
4-Chlorotoluene	160	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
4-Methyl-2-Pentanone (MIBK)	0.0251	0.65 UJ	0.45 UJ	0.16 UJ	0.19 UJ	0.068 U	0.1 UJ	0.17 UJ	0.12 UJ	0.16 UJ	0.14 UJ	0.84 UJ	0.14 U	0.29 UJ	0.16 UJ	0.24 UJ	0.2 UJ	0.27 UJ	0.095 U	0.12 U	0.28 UJ	0.23 UJ	0.26 UJ	0.27 UJ	0.32 UJ	0.12 UJ	0.18 UJ	0.18 UJ
Acetone	0.0099	1.3 UJ	0.91 UJ	0.32 UJ	0.38 UJ	0.14 U	0.21 UJ	0.34 UJ	0.24 UJ	0.31 UJ	0.28 UJ	1.7 UJ	0.28 U	0.57 UJ	0.33 UJ	0.48 UJ	0.41 UJ	0.53 UJ	0.19 U	0.23 U	0.56 UJ	0.46 UJ	0.52 UJ	0.55 UJ	0.64 UJ	0.25 UJ	0.36 UJ	0.35 UJ
Benzene	0.022	0.043 UJ	0.03 UJ	**0.0066 J**	**0.0057 J**	0.0045 U	0.0069 UJ	0.011 UJ	0.008 UJ	**0.0053 J**	0.0094 UJ	0.056 UJ	**0.018**	**0.067 J**	**0.027 J**	**0.02 J**	**0.076 J**	**0.013 J**	0.0063 U	**0.0037 J**	0.019 UJ	0.015 UJ	0.017 UJ	0.018 UJ	0.021 UJ	0.0082 UJ	0.012 UJ	0.012 UJ
bis(2-Chloroethoxy)methane	19	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromobenzene	0.36	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Bromochloromethane	15	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Bromodichloromethane	0.0043	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Bromoform	0.1	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Bromomethane	0.00137	0.43 UJ	0.3 UJ	0.11 UJ	0.13 UJ	0.045 U	0.069 UJ	0.11 UJ	0.08 UJ	0.1 UJ	0.094 UJ	0.56 UJ	0.093 U	0.19 UJ	0.11 UJ	0.16 UJ	0.14 UJ	0.18 UJ	0.063 U	0.078 U	0.19 UJ	0.15 UJ	0.17 UJ	0.18 UJ	0.21 UJ	0.082 UJ	0.12 UJ	0.12 UJ
Carbon Disulfide	0.000851	0.13 U	**0.045 J**	**0.02 J**	**0.024 J**	**0.0061 J**	**0.0088 J**	0.034 UJ	0.024 UJ	0.031 UJ	0.012 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	**0.023 J**	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.027 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Carbon Tetrachloride	0.021	0.065 UJ	0.045 UJ	0.016 UJ	0.019 UJ	0.0068 U	0.01 UJ	0.017 UJ	0.012 UJ	0.016 UJ	0.014 UJ	0.084 UJ	0.014 U	0.029 UJ	0.016 UJ	0.024 UJ	0.02 UJ	0.027 UJ	0.0095 U	0.012 U	0.028 UJ	0.023 UJ	0.026 UJ	0.027 UJ	0.032 UJ	0.012 UJ	0.018 UJ	0.018 UJ
Chlorobenzene	0.00842	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Chloroethane	72	1.3 UJ	0.91 UJ	0.32 UJ	0.38 UJ	0.14 U	0.21 UJ	0.34 UJ	0.24 UJ	0.31 UJ	0.28 UJ	1.7 UJ	0.28 U	0.57 UJ	0.33 UJ	0.48 UJ	0.41 UJ	0.53 UJ	0.19 U	0.23 U	0.56 UJ	0.46 UJ	0.52 UJ	0.55 UJ	0.64 UJ	0.25 UJ	0.36 UJ	0.35 UJ
Chloroform	0.0071	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	**0.031 J**	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Chloromethane	0.61	1.3 UJ	0.91 UJ	0.32 UJ	0.38 UJ	0.14 U	0.21 UJ	0.34 UJ	0.24 UJ	0.31 UJ	0.28 UJ	1.7 UJ	0.28 U	0.57 UJ	0.33 UJ	0.48 UJ	0.41 UJ	0.53 UJ	0.19 U	0.23 U	0.56 UJ	0.46 UJ	0.52 UJ	0.55 UJ	0.64 UJ	0.25 UJ	0.36 UJ	0.35 UJ
cis-1,2-Dichloroethene	0.12	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
cis-1,3-Dichloropropene	0.018	0.043 UJ	0.03 UJ	0.011 UJ	0.013 UJ	0.0045 U	0.0069 UJ	0.011 UJ	0.008 UJ	0.01 UJ	0.0094 UJ	0.056 UJ	0.0093 U	0.019 UJ	0.011 UJ	0.016 UJ	0.014 UJ	0.018 UJ	0.0063 U	0.0078 U	0.019 UJ	0.015 UJ	0.017 UJ	0.018 UJ	0.021 UJ	0.0082 UJ	0.012 UJ	0.012 UJ
Dibromochloromethane	0.0027	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Dibromomethane	0.025	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Dichlorodifluoromethane	3.9	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Ethylbenzene	0.13	0.13 UJ	0.091 UJ	**0.023 J**	**0.02 J**	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	**0.021 J**	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Ethylene Dibromide (EDB)	0.00024	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Hexachlorobutadiene	0.02	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Isopropylbenzene	0.086	0.13 UJ	0.091 UJ	**0.016 J**	**0.013 J**	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	**0.037 J**	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
m- & p-Xylene	1.5	**0.058 J**	**0.049 J**	**0.05 J**	**0.042 J**	0.009 U	0.014 UJ	0.023 UJ	**0.011 J**	0.021 UJ	**0.014 J**	**0.064 J**	0.019 U	**0.046 J**	0.022 UJ	0.032 UJ	**0.023 J**	0.036 UJ	**0.011 J**	**0.015 J**	0.037 UJ	0.031 UJ	**0.019 J**	0.036 UJ	**0.023 J**	0.016 UJ	0.024 UJ	0.023 UJ
Methyl tert-Butyl Ether (MTBE)	0.4	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Methylene Chloride	0.159	0.2 UJ	0.14 UJ	0.047 UJ	0.076 UJ	0.0066 U	0.0076 UJ	0.026 UJ	0.02 UJ	0.031 UJ	0.013 UJ	0.25 UJ	0.039 U	0.066 UJ	0.023 UJ	0.039 UJ	0.05 UJ	0.074 UJ	0.029 U	0.046 U	0.056 UJ	0.067 UJ	0.072 UJ	0.072 UJ	0.1 UJ	0.025 UJ	0.036 UJ	0.035 UJ
n-Butylbenzene	2	0.13 UJ	0.091 UJ	**0.15 J**	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	**0.18 J**	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
n-Propylbenzene	5.2	0.13 UJ	0.091 UJ	**0.048 J**	**0.044 J**	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	**0.039 J**	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Naphthalene	0.0346	**0.17 J**	**0.35 J**	**0.14 J**	**0.13 J**	**0.0031 J**	**0.014**	**0.098**	0.0034 U	**0.013**	0.0032 U	**0.13**	**0.0071**	**0.3**	**0.057**	**0.41**	**0.21**	**0.064**	**0.0041 J**	**0.0092 J**	0.0056 U	0.0052 U	0.0059 U	0.0052 U	0.0055 U	0.0046 U	0.0045 U	0.0044 U
o-Xylene	1.5	0.13 UJ	0.091 UJ	**0.014 J**	0.038 U	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
p-Isopropyltoluene	0.03	**0.05 J**	**0.031 J**	**0.049 J**	**0.049 J**	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	**0.069 J**	**0.012 J**	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
sec-Butylbenzene	2.8	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ

Table 10-4 Summary of Chemicals Detected in Sediment

Analyte	Location	35-SD-09				35-SD-10		35-SD-11		35-SD-12		35-SD-13		35-SD-14		35-SD-15		35-SD-16			35-SD-17		35-SD-18			35-SD-19		
	Sample ID	35-SD-09-1	35-SD-22	35-SD-09-2	35-SD-23	35-SD-10-1	35-SD-10-2	35-SD-11-1	35-SD-11-2	35-SD-12-1	35-SD-12-2	35-SD-13-1	35-SD-13-2	35-SD-14-1	35-SD-14-2	35-SD-15-1	35-SD-15-2	35-SD-16-1	35-SD-16-2	35-SD-24	35-SD-17-1	35-SD-17-2	35-SD-18-1	35-SD-25	35-SD-18-2	35-SD-19-1	35-SD-19-2	35-SD-26
	Sample Depth (ft)	0 - 1	0 - 1	1 - 2	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	1 - 2	0 - 1	1 - 2	0 - 1	0 - 1	1 - 2	0 - 1	1 - 2	1 - 2
	Sample Date	9/13/2012	9/13/2012	9/13/2012	9/13/2012	9/14/2012	9/14/2012	9/15/2012	9/15/2012	9/15/2012	9/15/2012	9/13/2012	9/13/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/13/2012	9/13/2012	9/13/2012	9/15/2012	9/15/2012	9/13/2012	9/13/2012	9/13/2012	9/14/2012	9/14/2012	9/14/2012
Analyte	Screening Level																											
trans-1,3-Dichloropropene	0.018	0.043 UJ	0.03 UJ	0.011 UJ	0.013 UJ	0.0045 U	0.0069 UJ	0.011 UJ	0.008 UJ	0.01 UJ	0.0094 UJ	0.056 UJ	0.0093 U	0.019 UJ	0.011 UJ	0.016 UJ	0.014 UJ	0.018 UJ	0.0063 U	0.0078 U	0.019 UJ	0.015 UJ	0.017 UJ	0.018 UJ	0.021 UJ	0.0082 UJ	0.012 UJ	0.012 UJ
Trichloroethene (TCE)	0.011	0.043 UJ	0.03 UJ	0.011 UJ	0.013 UJ	0.0045 U	0.0069 UJ	0.011 UJ	0.008 UJ	0.01 UJ	0.0094 UJ	0.056 UJ	0.0093 U	0.019 UJ	0.011 UJ	0.016 UJ	**0.0073 J**	0.018 UJ	0.0063 U	0.0078 U	0.019 UJ	0.015 UJ	0.017 UJ	0.018 UJ	0.021 UJ	0.0082 UJ	0.012 UJ	0.012 UJ
Trichlorofluoromethane	41	0.13 UJ	0.091 UJ	0.032 UJ	0.038 UJ	0.014 U	0.021 UJ	0.034 UJ	0.024 UJ	0.031 UJ	0.028 UJ	0.17 UJ	0.028 U	0.057 UJ	0.033 UJ	0.048 UJ	0.041 UJ	0.053 UJ	0.019 U	0.023 U	0.056 UJ	0.046 UJ	0.052 UJ	0.055 UJ	0.064 UJ	0.025 UJ	0.036 UJ	0.035 UJ
Vinyl Chloride	0.0008	0.022 UJ	0.015 UJ	0.0054 UJ	0.0063 UJ	0.0023 U	0.0034 UJ	0.0057 UJ	0.004 UJ	0.0052 UJ	0.0047 UJ	0.028 UJ	0.0047 U	0.0096 UJ	0.0055 UJ	0.0079 UJ	0.0068 UJ	0.0089 UJ	0.0032 U	0.0039 U	0.0093 UJ	0.0077 UJ	0.0087 UJ	0.0091 UJ	0.011 UJ	0.0041 UJ	0.006 UJ	0.0059 UJ
Xylenes, Total	0.433	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (MG/KG)																												
1-Methylnaphthalene	0.41	**0.3 J**	**0.82 J**	**0.035**	**0.025**	**0.0027 J**	**0.0077 J**	**0.058 M**	0.0034 U	**0.013 M**	0.0032 U	**0.093 M**	**0.013**	**2.3**	**0.18**	**0.53 M**	**0.17 M**	**0.055 M**	**0.0027 J**	**0.0068 J**	0.0056 U	0.0052 U	0.0059 U	0.0052 U	0.0055 U	**0.0046 J**	0.0045 U	**0.0041 J**
2,4,5-Trichlorophenol	28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	0.092	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.0817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	0.029	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	0.00621	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	0.0144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	0.41723	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	0.0312	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	0.0202	**0.32 J**	**1.2 J**	**0.048**	**0.036**	**0.0034 J**	**0.017 M**	**0.12 M**	0.0034 U	**0.014 M**	0.0032 U	**0.14 M**	**0.013**	**2.4**	**0.14**	**0.58 M**	**0.36 M**	**0.074 M**	**0.004 J**	**0.01 J**	0.0056 U	0.0052 U	0.0059 U	0.0052 U	0.0055 U	0.0046 U	0.0045 U	0.0044 U
2-Methylphenol	0.0554	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	0.056	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3- & 4-Methylphenol	6.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-Methylphenol	0.104	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	1.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	0.38818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenyl Ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	0.0133	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.0067	**0.18 M**	**0.19 M**	**0.0072 M**	**0.0067 J**	**0.031**	**0.0044 J**	0.0046 U	0.0034 U	**0.0062 J**	0.0032 U	0.012 U	**0.0024 J**	**0.14 M**	**0.0074 M**	0.027 U	**0.018 M**	0.0077 U	0.0028 U	0.0026 U	0.0056 U	0.0052 U	0.0059 U	0.0052 U	0.0055 U	0.0046 U	0.0045 U	0.0044 U
Acenaphthylene	0.00587	**0.072 M**	**0.089 M**	0.0033 U	0.0036 U	**0.0024 J**	**0.0039 J**	**0.047 M**	0.0034 U	0.0041 U	0.0032 U	**0.055 M**	**0.0077 M**	**0.11 M**	0.0036 U	**0.45 M**	**0.052 M**	**0.049 M**	0.0028 U	**0.0052 J**	0.0056 U	0.0052 U	0.0059 U	0.0052 U	0.0055 U	0.0046 U	0.0045 U	0.0044 U
Anthracene	0.0469	**0.05 J**	**0.13 J**	**0.0023 J**	0.0036 U	**0.14**	**0.013 M**	**0.11 M**	0.0034 U	**0.0058 J**	0.0032 U	**0.089 M**	**0.002 J**	**0.033 M**	0.0036 U	**0.1 M**	**0.035 M**	**0.032 M**	0.0028 U	0.0026 U	0.0056 U	0.0052 U	0.0059 U	0.0052 U	0.0055 U	0.0046 U	0.0045 U	0.0044 U
Benzo(a)anthracene	0.0317	**0.16**	**0.2**	**0.0024 J**	**0.0023 J**	**0.35**	**0.029 M**	**0.18**	0.0034 U	**0.0081 M**	0.0032 U	**0.36 M**	0.0034 U	**0.047 M**	0.0036 U	**0.13**	**0.03 M**	**0.15 M**	0.0028 U	**0.0023 J**	0.0056 U	0.0052 U	0.0059 U	0.0052 U	0.0055 U	0.0046 U	**0.0045 J**	**0.0038 J**
Benzo(a)pyrene	0.02	**0.21**	**0.16**	**0.0024 J**	0.0036 U	**0.27**	**0.034**	**0.13**	0.0034 U	**0.0076 J**	0.0032 U	**0.48**	0.0034 U	**0.055**	0.0036 U	**0.096**	**0.022 M**	**0.18 M**	0.0028 U	**0.0025 J**	0.0056 U	0.0052 U	**0.005 J**	0.0052 U	0.0055 U	0.0046 U	**0.0055 J**	**0.0054 J**
Benzo(b)fluoranthene	0.0272	**0.44**	**0.27**	**0.0047 J**	0.0036 U	**0.25 M**	**0.053 M**	**0.18 M**	0.0034 U	**0.0085 M**	0.0032 U	**0.84**	0.0034 U	**0.12**	0.0036 U	**0.2 M**	**0.059 M**	**0.36 M**	**0.0019 J**	**0.0063 J**	**0.0036 J**	**0.0032 J**	**0.0097 J**	0.0052 U	**0.0035 J**	**0.003 J**	**0.0092 M**	**0.011 M**
Benzo(g,h,i)perylene	0.17	**0.17 J**	**0.081 J**	**0.0022 J**	0.0036 U	**0.15**	**0.031**	**0.085**	0.0034 U	**0.0042 J**	0.0032 U	**0.3**	0.0034 U	**0.046**	0.0036 U	**0.074**	**0.025**	**0.12**	0.0028 U	**0.0023 J**	0.0056 U	0.0052 U	**0.0039 J**	0.0052 U	0.0055 U	0.0046 U	**0.0048 J**	**0.0052 J**
Benzo(k)fluoranthene	0.0272	**0.13**	**0.097**	0.0033 U	0.0036 U	**0.13 M**	**0.021 M**	**0.056 M**	0.0034 U	0.0041 U	0.0032 U	**0.3**	0.0034 U	**0.036**	0.0036 U	**0.058 M**	**0.015 M**	**0.11 M**	0.0028 U	0.0026 U	0.0056 U	0.0052 U	**0.0035 J**	0.0052 U	0.0055 U	0.0046 U	**0.0041 J**	**0.0039 J**
Benzoic acid	0.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	0.00104	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	0.00042	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroisopropyl)ether	310	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl Benzyl Phthalate	1.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.0571	**0.35**	**0.27**	**0.006 J**	**0.0045 J**	**0.34**	**0.048 M**	**0.18**	0.0034 U	**0.011 M**	0.0032 U	**0.45 M**	0.0034 U	**0.1 M**	0.0036 U	**0.26**	**0.052 M**	**0.25 M**	0.0028 U	**0.0047 J**	**0.0046 J**	0.0052 U	**0.0075 J**	0.0052 U	0.0055 U	**0.0037 J**	**0.0096**	**0.0087 J**
di-n-Butyl Phthalate	1.114	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
di-n-Octyl Phthalate	4.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	0.00622	**0.049 J**	**0.023 J**	0.0033 U	0.0036 U	**0.042 M**	**0.0084 J**	**0.022**	0.0034 U	0.0041 U	0.0032 U	**0.066 M**	0.0034 U	**0.014 J**	0.0036 U	**0.025 J**	0.0041 U	**0.026 M**	0.0028 U	0.0026 U	0.0056 U	0.0052 U	0.0059 U	0.0052 U	0.0055 U	0.0046 U	**0.0034 J**	0.0044 U
Dibenzofuran	0.415	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	0.295	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	0.111	**0.58**	**0.74**	**0.012 M**	**0.0086 M**	**0.7**	**0.094 M**	**0.53**	**0.0021 J**	**0.026 M**	**0.0021 J**	**1**	**0.006 J**	**0.25**	0.0036 U	**0.81**	**0.26**	**0.6**	**0.0039 J**	**0.0089 J**	**0.0081 J**	**0.0069 J**	**0.012**	0.0052 U	**0.0054 J**	**0.0068 J**	**0.018**	**0.013**
Fluorene	0.0212	**0.25 M**	**0.37 M**	**0.012 M**	**0.01 M**	**0.055**	**0.0082 J**	**0.056 M**	0.0034 U	**0.013 M**	0.0032 U	**0.075 M**	**0.006 J**	**0.31 M**	**0.011**	**0.51 M**	**0.13 M**	**0.039 M**	**0.0017 J**	**0.0036 J**	0.0056 U	0.0052 U	0.0059 U	0.0052 U	0.0055 U	0.0046 U	**0.0028 J**	0.0044 U
Hexachlorobenzene	0.0082	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	0.017	**0.19 J**	**0.097 J**	**0.0025 J**	0.0036 U	**0.2**	**0.037**	**0.082 M**	0.0034 U	**0.0051 J**	0.0032 U	**0.34 M**	0.0034 U	**0.051**	0.0036 U	**0.073**	**0.02 M**	**0.13 M**	0.0028 U	**0.0024 J**	0.0056 U	0.0052 U	**0.0037 J**	0.0052 U	0.0055 U	0.0046 U	**0.0066 J**	**0.0058 J**
Isophorone	0.432	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodimethylamine (NDMA)	0.0000033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	2.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodipropylamine	0.00068	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	0.0079	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.0043	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	0.0419	**0.51 J**	**0.86 J**	**0.0099 M**	**0.0068 J**	**0.42**	**0.044 M**	**0.21 M**	**0.0022 J**	**0.021 M**	**0.002 J**	**0.39 M**	**0.0055 J**	**0.69 M**	**0.0052 J**	**1.2 M**	**0.25 M**	**0.26 M**	**0.0052 J**	**0.013 J**	**0.0083 J**	**0.0056 J**	**0.0088 J**	0.0052 U	**0.0039 J**	**0.004 J**	**0.0097 M**	**0.0087 J**
Phenol	0.0491	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	0.053	**0.51**	**0.63**	**0.011 M**	**0.0088 M**	**0.68**	**0.087 M**	**0.46**	**0.0024 J**	**0.026 M**	**0.0025 J**	**0.92**	**0.006 J**	**0.24**	0.0036 U	**0.74**	**0.22**	**0.49**	**0.0043 J**	**0.0093 J**	**0.0067 J**	**0.0059 J**	**0.01 J**	**0.0031 J**	**0.0053 J**	**0.0055 J**	**0.014**	**0.011**

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

	Location	35-SD-09				35-SD-10		35-SD-11		35-SD-12		35-SD-13		35-SD-14		35-SD-15		35-SD-16			35-SD-17		35-SD-18			35-SD-19		
	Sample ID	35-SD-09-1	35-SD-22	35-SD-09-2	35-SD-23	35-SD-10-1	35-SD-10-2	35-SD-11-1	35-SD-11-2	35-SD-12-1	35-SD-12-2	35-SD-13-1	35-SD-13-2	35-SD-14-1	35-SD-14-2	35-SD-15-1	35-SD-15-2	35-SD-16-1	35-SD-16-2	35-SD-24	35-SD-17-1	35-SD-17-2	35-SD-18-1	35-SD-25	35-SD-18-2	35-SD-19-1	35-SD-19-2	35-SD-26
	Sample Depth (ft)	0 - 1	0 - 1	1 - 2	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	1 - 2	0 - 1	1 - 2	0 - 1	0 - 1	1 - 2	0 - 1	1 - 2	1 - 2
	Sample Date	9/13/2012	9/13/2012	9/13/2012	9/13/2012	9/14/2012	9/14/2012	9/15/2012	9/15/2012	9/15/2012	9/15/2012	9/13/2012	9/13/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/13/2012	9/13/2012	9/13/2012	9/15/2012	9/15/2012	9/13/2012	9/13/2012	9/13/2012	9/14/2012	9/14/2012	9/14/2012
Analyte	**Screening Level**																											
Metals (mg/kg)																												
Aluminum	7700	**3300 J**	**15000 J**	**7200 J**	**6900 J**	**1800**	**7700**	**13000**	**6800**	**15000**	**7200**	**8600 J**	**6700 J**	**7600**	**8600**	**9100**	**11000**	**8600 J**	**3500 J**	**4800 J**	**820**	**3700**	**220 J**	**190 J**	**270 J**	**390**	**440**	**450**
Antimony	2	**1.1 J**	**2.6 J**	**0.88**	**0.56**	**0.38**	**0.63**	**1.5**	**0.44**	**1.4**	**0.58**	**1.8**	**0.54**	**0.93**	**0.38**	**0.86**	**0.67**	**1.5**	**0.22**	**0.31**	0.24 U	**0.44**	**0.16 J**	**0.14 J**	**0.27 J**	**0.16 J**	**0.13 J**	**0.13 J**
Arsenic	0.2	**170 J**	**50 J**	**5.3**	**4.7**	**23**	**53**	**15**	**3.7**	**21**	**5.3**	**150**	**5.3**	**46**	**7.9**	**42**	**12**	**57**	**3.9**	**4.7**	**26**	**28**	**30**	**25**	**30**	**18**	**21**	**22**
Barium	1500	**600 J**	**340 J**	**120**	**110**	**230**	**470**	**230**	**76**	**260**	**110**	**430**	**120**	**170**	**94**	**190**	**210**	**270**	**54**	**65**	**190**	**300**	**190**	**160**	**200**	**220**	**210**	**190**
Beryllium	16	**0.22 J**	**0.36 J**	**0.16 J**	**0.14 J**	**0.075 J**	**0.29**	**0.27 J**	0.14 U	**0.34**	0.17 U	**0.42 J**	**0.13 J**	**0.23 J**	**0.18 J**	**0.24 J**	**0.25 J**	**0.31 J**	**0.081 J**	**0.1 J**	0.13 U	**0.38**	0.087 U	**0.049 J**	**0.057 J**	**0.068 J**	**0.063 J**	**0.073 J**
Cadmium	0.6	**0.39 J**	**0.89 J**	**0.24 J**	**0.18 J**	**0.12 J**	**0.66**	**0.52**	**0.14 J**	**0.53**	**0.28**	**0.93 J**	**0.18 J**	**0.38 J**	0.25 U	**0.69**	**0.47**	**0.71**	**0.13 J**	**0.2 J**	**0.1 J**	**0.16 J**	**0.12 J**	**0.058 J**	**1.1 J**	**0.059 J**	**0.079 J**	**0.079 J**
Calcium	--	**89000 J**	**13000 J**	**4800**	**4200**	**2300**	**15000 J**	**6600**	**3300**	**8200**	**3700**	**150000**	**8700**	**7600 J**	**4800**	**9800**	**6200**	**48000**	**2100**	**2600**	**350000**	**310000**	**370000 J**	**370000**	**320000**	**330000**	**340000**	**330000**
Chromium	37.3	**13 J**	**36 J**	**18**	**17**	**10 J**	**22 J**	**29**	**16**	**32 J**	**18 J**	**27**	**17**	**17**	**20**	**22**	**24**	**22**	**9.7**	**12**	**3.1 J**	**17 J**	**1.6**	**2.6**	**2.5**	**1.4 J**	**1.6 J**	**1.6**
Cobalt	2.3	**8.6 J**	**17 J**	**10**	**8.9**	**3.4 J**	**11 J**	**16**	**7.5**	**15**	**8.4**	**12**	**9.2**	**8.5**	**8.9**	**9.5**	**12**	**19**	**7.5**	**8.4**	**0.92**	**2**	**0.51**	**0.72**	**0.55**	**0.49 J**	**0.57 J**	**0.56**
Copper	18.7	**18 J**	**64 J**	**30**	**24**	**11 J**	**33 J**	**52**	**19**	**59**	**25**	**47**	**24**	**29**	**25**	**34**	**40**	**40**	**13**	**16**	**4.3**	**6.3**	**2.3**	**4.3**	**5.4**	**3.3 J**	**4.1 J**	**3.2**
Iron	5500	**130000 J**	**63000 J**	**15000**	**15000**	**11000**	**57000**	**34000**	**15000**	**37000**	**16000**	**140000**	**14000**	**29000**	**18000**	**43000**	**24000**	**50000**	**7500**	**9900**	**13000**	**17000**	**14000**	**12000**	**17000**	**13000**	**15000**	**14000**
Lead	30.2	**29 J**	**76 J**	**7.7 J**	**6.8 J**	**12**	**43**	**36**	**4.9**	**21**	**6**	**79 J**	**6.8 J**	**30**	**7.3**	**81**	**19**	**74 J**	**6.2 J**	**9.3 J**	**2**	**3.1**	**3.1 J**	**2.2 J**	**21 J**	**34**	**2.8**	**2.3**
Magnesium	--	**8300 J**	**8600 J**	**4700 J**	**4400 J**	**1300 J**	**5500 J**	**6900**	**4300**	**8500**	**5000**	**13000 J**	**4500 J**	**4300 J**	**5000**	**4500**	**6000**	**4800 J**	**2300 J**	**3000 J**	**5900**	**5000**	**3700 J**	**5600 J**	**7200 J**	**4800 J**	**4600 J**	**4200**
Manganese	180	**40000**	**1400 J**	**360**	**280**	**610**	**1500 J**	**660**	**240**	**650 J**	**350**	**3800**	**280**	**1300**	**400**	**1000**	**780**	**2400**	**170**	**210**	**3300**	**4000**	**2500 J**	**2000**	**2500 J**	**2000**	**2600**	**2500**
Mercury	0.13	**0.099 J**	**0.058 J**	0.014 U	0.015 U	0.025 U	**0.052**	**0.064**	0.017 U	**0.08**	**0.027**	**0.088**	0.013 U	**0.058**	0.019 U	**0.068**	0.013 U	**0.055**	0.0088 U	0.0072 U	0.015 U	0.017 U	0.015 U	**0.028 J**	0.017 UJ	0.011 U	0.014 U	0.012 U
Nickel	15.9	**11 J**	**40 J**	**24**	**22**	**9.3 J**	**23 J**	**35**	**20**	**38**	**23**	**27**	**22**	**21**	**24**	**24**	**30**	**38**	**14**	**17**	**2.6**	**4.1**	**1.6**	**2.3**	**2**	**1.7 J**	**1.6 J**	**1.7**
Potassium	--	**520 J**	**1800 J**	**720**	**710**	**270 J**	**720 J**	**1500**	**700**	**1500 J**	**750 J**	**1100**	**660**	**850**	**780**	**1100**	**1200**	**1000**	**450**	**520**	**340 J**	**3500 J**	**56 J**	**66 J**	**55 J**	**59 J**	**55 J**	**52 J**
Selenium	2	2.1 U	**1.1 J**	**0.44 J**	**0.42 J**	0.4 U	**0.47 J**	**0.95 J**	**0.51 J**	**1.2**	**0.56 J**	**1 J**	**0.4 J**	0.86 U	**0.47 J**	**0.59 J**	**0.62 J**	**0.82 J**	0.44 U	**0.27 J**	0.86 U	**0.56 J**	0.87 U	0.82 U	0.84 U	0.51 U	0.66 U	0.51 U
Silver	0.5	**0.08 J**	**0.49 J**	**0.074 J**	**0.056 J**	**0.027 J**	**0.1 J**	**0.36 J**	**0.041 J**	**0.72**	**0.056 J**	**0.27 J**	**0.055 J**	**0.24 J**	**0.057 J**	**0.25 J**	**0.54**	**0.23 J**	**0.071 J**	**0.14 J**	0.043 U	0.038 U	0.043 U	0.041 U	**0.15 J**	0.026 U	0.033 U	0.025 U
Sodium	--	120 UJ	**530 J**	**260**	**270**	22 U	**300**	**470**	**300**	**550**	**300**	**350 J**	**240**	**260**	**290**	**320**	**390**	**330**	120 U	180 U	87 U	160 U	36 U	50 U	170 U	50 U	31 U	41 U
Thallium	0.078	1.4 U	0.63 U	0.35 U	0.35 U	0.26 U	0.38 U	0.49 U	0.34 U	0.39 U	0.3 U	1.3 U	0.33 U	0.56 U	0.38 U	0.52 U	0.44 U	0.75 U	0.28 U	0.27 U	0.56 U	0.5 U	0.57 U	0.53 U	0.55 U	0.33 U	0.43 U	0.33 U
Vanadium	39	**32 J**	**65 J**	**36**	**37**	**12 J**	**49 J**	**52**	**37**	**57**	**45**	**61**	**34**	**34**	**38**	**42**	**46**	**47**	**21**	**27**	**5.5**	**11**	**3**	**3.5**	**3.4**	**2.3 J**	**2.6 J**	**2.8**
Zinc	121	**120 J**	**140**	**46**	**43**	**31**	**94**	**99**	**38**	**100**	**43**	**160**	**43**	**79**	**54**	**91**	**87**	**110**	**28**	**38**	**27**	**37**	**21 J**	**16 J**	**57 J**	**14**	**20**	**18**
Pesticides (mg/kg)																												
4,4-DDD	0.0033	**1.8 J**	**15 J**	**0.18**	**0.12 J**	**0.048**	**0.34**	**6.9 M**	**0.027**	**0.28 M**	**0.0053 J**	**7 M**	**0.049 J**	**1.4 J**	**0.009 J**	**9.9 J**	**3.8 J**	**2.8 M**	**0.012 J**	**0.024 J**	**0.013 J**	**0.013 J**	**0.02 J**	**0.03 J**	**0.016 J**	**0.022 J**	**0.056 J**	**0.042 J**
4,4-DDE	0.00142	**0.26 J**	**1.3 J**	**0.017 J**	**0.01 J**	**0.0056 J**	**0.13**	**0.54 M**	0.004 U	**0.028 J**	0.0039 U	**0.82**	0.0004 U	**0.24**	0.0042 U	**0.83 M**	**0.27 JM**	**0.68 M**	**0.0024 J**	**0.0051 J**	**0.0046 J**	0.0062 U	**0.012 J**	**0.017 J**	**0.0054 J**	**0.012 J**	**0.021 J**	**0.018 J**
4,4-DDT	0.00119	**0.048 J**	**0.15 J**	**0.011 J**	0.0083 U	**0.026 J**	**0.54**	**0.42 J**	**0.012 J**	**0.01 J**	0.0078 UJ	**0.2 J**	0.008 UJ	**0.028 J**	**0.0033 J**	**0.051 J**	0.0096 U	0.045 UJ	0.0063 UJ	0.0067 U	0.013 UJ	**0.019 J**	**0.026 J**	**0.045 J**	**0.013 J**	0.011 U	0.012 U	0.011 UJ
Aldrin	0.002	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
alpha-BHC	0.0029	0.03 U	0.015 U	**0.0034 J**	0.00042 UJ	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
alpha-Chlordane	0.0017	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
alpha-Endosulfan	0.0029	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
beta-BHC	0.005	0.051 U	0.025 U	0.00066 U	0.00069 U	0.01 U	0.017 U	0.018 U	0.0067 U	0.0084 U	0.0065 U	0.024 U	0.00067 U	0.053 U	0.0069 U	0.056 U	0.016 U	0.03 U	0.00052 U	0.00055 U	0.011 U	0.01 U	0.0011 U	0.0011 U	0.0012 U	0.019 U	0.019 U	0.018 U
beta-Endosulfan	0.00194	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
Chlordane	0.0017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	0.0029	0.03 U	0.015 UJ	0.00039 U	0.00042 UJ	0.0062 UJ	0.01 UJ	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 UJ	0.0042 UJ	0.034 UJ	0.0096 UJ	0.018 U	0.00031 U	0.00033 UJ	0.0066 U	0.0062 U	0.00068 U	0.00066 UJ	0.0007 UJ	0.011 U	0.012 U	0.011 U
Dieldrin	0.0019	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
Endosulfan Sulfate	0.0054	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
Endrin	0.00222	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 UJ	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 UJ	0.0042 UJ	0.034 UJ	0.0096 UJ	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
Endrin Aldehyde	0.00267	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
Endrin Ketone	0.00267	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
gamma-BHC	0.00094	**0.08 J**	0.025 U	0.00066 U	0.00069 U	0.01 U	0.017 U	0.018 U	0.0067 U	0.0084 U	0.0065 U	0.024 U	0.00067 U	0.053 U	0.0069 U	0.056 U	0.016 U	0.03 U	0.00052 U	0.00055 U	0.011 U	0.01 U	0.0011 U	0.0011 U	0.0012 U	0.019 U	0.019 U	0.018 U
gamma-Chlordane	0.0017	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
Heptachlor	0.0006	0.051 U	0.025 U	0.00066 U	0.00069 U	0.01 U	0.017 U	0.018 U	0.0067 U	0.0084 U	0.0065 U	0.024 U	0.00067 U	0.053 UJ	0.0069 UJ	0.056 U	0.016 U	0.03 U	0.00052 U	0.00055 U	0.011 U	0.01 U	0.0011 U	0.0011 U	0.0012 U	0.019 U	0.019 U	0.018 U
Heptachlor Epoxide	0.0006	0.03 U	0.015 U	0.00039 U	0.00042 U	0.0062 U	0.01 U	0.011 U	0.004 U	0.0051 U	0.0039 U	0.015 U	0.0004 U	0.032 U	0.0042 U	0.034 U	0.0096 U	0.018 U	0.00031 U	0.00033 U	0.0066 U	0.0062 U	0.00068 U	0.00066 U	0.0007 U	0.011 U	0.012 U	0.011 U
Methoxychlor	0.0136	0.076 UJ	0.015 U	0.0079 UJ	0.0083 U	0.0062 U	0.01 UJ	0.027 UJ	0.0081 UJ	0.01 UJ	0.0078 UJ	0.073 UJ	0.008 UJ	0.032 UJ	0.0042 UJ	0.034 UJ	0.0096 UJ	0.045 UJ	0.0063 UJ	0.0067 U	0.013 UJ	0.012 UJ	0.014 UJ	0.013 U	0.014 U	0.011 UJ	0.012 UJ	0.011 U
Toxaphene	0.000077	5.1 U	2.5 U	0.066 U	1.4 U	1 U	1.7 U	1.8 U	0.67 U	0.84 U	0.65 U	2.4 U	0.067 U	5.3 U	0.69 U	5.6 U	1.6 U	3 U	0.052 U	1.1 U	1.1 U	1 U	0.11 U	2.2 U	2.3 U	1.9 U	1.9 U	1.8 U
Polychlorinated Biphenyls (MG/KG)																												
Aroclor 1016	0.007	0.025 U	0.012 UJ	0.0066 U	0.0069 U	0.0051 U	0.0087 U	0.0091 U	0.0067 U	0.0084 U	0.0065 U	0.024 U	0.0067 U	0.011 U	0.0069 U	0.011 U	0.008 U	0.015 U	0.0052 U	0.0055 U	0.011 U	0.01 U	0.011 U	0.011 UJ	**0.036 J**	0.0093 U	0.0097 U	0.0089 U
Aroclor 1221	0.067	0.051 U	0.025 UJ	0.013 U	0.014 U	0.01 U	0.017 U	0.018 U	0.013 U	0.017 U	0.013 U	0.049 U	0.013 U	0.021 U	0.014 U	0.022 U	0.016 U	0.03 U	0.01 U	0.011 U	0.022 U	0.021 U	0.023 U	0.022 U	0.023 U	0.019 U	0.019 U	0.018 U
Aroclor 1232	0.1	0.051 U	0.025 UJ	0.013 U	0.014 U	0.01 UJ	0.017 UJ	0.018 U	0.013 U	0.017 U	0.013 U	0.049 U	0.013 U	0.021 U	0.014 U	0.022 U	0.016 U	0.03 U	0.01 U	0.011 U	0.022 U	0.021 U	0.023 U	0.022 U	0.023 U	0.019 U	0.019 U	0.018 U
Aroclor 1242	0.1	0.025 U	0.012 UJ	0.0066 U	0.0069 U	0.0051 U	0.0087 U	0.0091 U	0.0067 U	0.0084 U	0.0065 U	0.024 U	0.0067 U	0.011 U	0.0069 U	0.011 U	0.008 U	0.015 U	0.0052 U	0.0055 U	0.011 U	0.01 U	0.011 UJ	0.011 U	0.012 U	0.0093 U	0.0097 U	0.0089 U
Aroclor 1248	0.03	0.025 U	0.012 UJ	0.0066 U	0.0069 U	0.0051 U	0.0087 U	0.0091 U	0.0067 U	0.0084 U	0.0065 U	0.024 U	0.0067 U	0.011 U	0.0069 U	0.011 U	0.008 U	0.015 U	0.0052 U	0.0055 U	0.011 U	0.01 U	0.011 UJ	0.011 U	0.012 U	0.0093 U	0.0097 U	0.0089 U
Aroclor 1254	0.06	0.025 U	0.012 UJ	0.0066 U	0.0069 U	0.0051 U	0.0087 U	0.0091 U	0.0067 U	0.0084 U	0.0065 U	0.024 U	0.0067 U	0.011 U	0.0069 U	0.011 U	0.008 U	0.015 U	0.0052 U	0.0055 U	0.011 U	0.01 U	0.011 UJ	**0.53 J**	0.012 UJ	0.0093 U	0.0097 U	0.0089 U
Aroclor 1260	0.005	0.025 U	0.012 UJ	0.0066 U	0.0069 U	0.0051 U	0.0087 U	0.0091 U	0.0067 U	0.0084 U	0.0065 U	0.024 U	0.0067 U	0.011 U	0.0069 U	0.011 U	0.008 U	0.015 U	0.0052 U	0.0055 U	**0.017 J**	**0.085 J**	**0.17 J**	**0.13 J**	**0.068 J**	0.0093 U	0.0097 UJ	**0.024 J**
General Chemistry (%)																												
Moisture, percent	--	**81**	**60**	**27**	**31**	**8.9**	**47**	**47**	**27**	**42**	**27**	**80**	**27**	**56**	**32**	**57**	**41**	**68**	**11**	**11**	**56**	**52**	**58**	**55**	**58**	**49**	**49**	**47**
General Chemistry (%)																												
Percent Solids	--	**19**	**40**	**73**	**69**	**91**	**53**	**53**	**73**	**58**	**73**	**20**	**73**	**44**	**68**	**43**	**59**	**32**	**89**	**89**	**44**	**48**	**42**	**45**	**42**	**51**	**51**	**53**

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

Analyte	Location	35-SD-20		35-SD-21		SS035-SD-01	SS035-SD-02		SS035-SD-03	SS035-SD-04	SS035-SD-05	SS035-SD-06	SS035-SD-07	SS035-SD-08	SS035-SD-09	SS035-SD-10	SS035-SD-11	SS035-SD-12	SS035-SD-13	SS035-SD-14	SS035-SD-15	SS035-SD-16	SS035-SD-17	SS035-SD-18
	Sample ID	35-SD-20-1	35-SD-20-2	35-SD-21-1	35-SD-21-2	SS035-SD-01	SS035-SD-02	SS035-SD-30	SS035-SD-03	SS035-SD-04	SS035-SD-05	SS035-SD-06	SS035-SD-07	SS035-SD-08	SS035-SD-09	SS035-SD-10	SS035-SD-11	SS035-SD-12	SS035-SD-13	SS035-SD-14	SS035-SD-15	SS035-SD-16	SS035-SD-17	SS035-SD-18
	Sample Depth (ft)	0 - 1	1 - 2	0 - 1	1 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
	Sample Date	9/14/2012	9/14/2012	9/14/2012	9/14/2012	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014
Hydrocarbons (mg/kg)	Screening Level																							
C10-C25 DRO	250	**350**	**8.7 J**	**300**	**410**	**66.2**	**83**	**170**	**128**	14 U	**34.5 J**	**12.7 J**	**85.9**	**87.9**	**95.9**	**172**	**358**	**340**	**108**	**79.9 J**	**156**	**93.4**	**164**	**150**
C25-C36 RRO	10000	**1300**	**19 J**	**1100**	**1500**	**479**	**540**	**1160**	**851**	**19.7 J**	**279**	**27.6 J**	**551**	**620**	**720**	**1160**	**1350**	**2420**	**721**	**583**	**915**	**617**	**993**	**1060**
C6-C10 GRO	300	5.3 UJ	1 U	1.5 UJ	0.75 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
VOCs (MG/KG)																								
1,1,1,2-Tetrachloroethane	0.022	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,1,1-Trichloroethane	0.0302	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,1,2,2-Tetrachloroethane	0.003	0.034 UJ	0.0033 U	0.0071 UJ	0.0032 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,1,2-Trichloroethane	0.0014	0.034 UJ	0.0033 U	0.0071 UJ	0.0032 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,1-Dichloroethane	0.000575	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,1-Dichloroethene	0.0194	0.059 UJ	0.0056 U	0.012 UJ	0.0054 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,1-Dichloropropene	0.018	0.059 UJ	0.0056 U	0.012 UJ	0.0054 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,2,3-Trichlorobenzene	0.15	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,2,3-Trichloropropane	0.000031	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,2,4-Trichlorobenzene	0.082	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,2,4-Trimethylbenzene	0.16	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,2-Dibromo-3-Chloropropane	0.0053	0.59 UJ	0.056 U	0.12 UJ	0.054 U	0.15 U	0.17 U	0.28 U	0.22 U	0.05 U	0.21 U	0.11 U	0.17 U	0.2 U	0.25 U	0.15 U	0.12 U	0.17 U	0.19 U	0.22 U	0.12 U	0.11 U	0.15 U	0.24 U
1,2-Dichlorobenzene	0.0165	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,2-Dichloroethane	0.0055	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,2-Dichloropropane	0.016	0.039 UJ	0.0037 U	0.008 UJ	0.0036 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,3,5-Trimethylbenzene	1.3	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,3-Dichlorobenzene	0.62	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,3-Dichloropropane	160	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
1,4-Dichlorobenzene	0.037	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
2,2-Dichloropropane	0.016	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
2-Butanone (MEK)	0.0424	1.2 UJ	0.11 U	0.24 UJ	0.11 U	0.31 U	0.34 U	0.57 U	0.44 U	0.1 U	0.43 U	0.22 U	0.35 U	0.4 U	0.5 U	0.31 U	0.24 U	0.34 U	0.37 U	0.44 U	0.23 U	0.21 U	0.29 U	0.49 U
2-Chlorotoluene	160	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
2-Hexanone	0.0582	0.59 UJ	0.056 U	0.12 UJ	0.054 U	0.31 U	0.34 U	0.57 U	0.44 U	0.1 U	0.43 U	0.22 U	0.35 U	0.4 U	0.5 U	0.31 U	0.24 U	0.34 U	0.37 U	0.44 U	0.23 U	0.21 U	0.29 U	0.49 U
4-Chlorotoluene	160	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
4-Methyl-2-Pentanone (MIBK)	0.0251	0.59 UJ	0.056 U	0.12 UJ	0.054 U	0.31 U	0.34 U	0.57 U	0.44 U	0.1 U	0.43 U	0.22 U	0.35 U	0.4 U	0.5 U	0.31 U	0.24 U	0.34 U	0.37 U	0.44 U	0.23 U	0.21 U	0.29 U	0.49 U
Acetone	0.0099	1.2 UJ	0.11 UJ	0.24 UJ	0.11 UJ	1.5 U	1.7 U	2.8 U	2.2 U	0.5 U	2.1 U	1.1 U	1.7 U	2 U	2.5 U	1.5 U	1.2 U	**0.895 J**	1.9 U	2.2 U	1.2 U	1.1 U	1.5 U	2.4 U
Benzene	0.022	0.039 UJ	0.0037 U	0.008 UJ	0.0036 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	**0.0342 J**	**0.0475 J**	0.084 U	**0.0421 J**	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
bis(2-Chloroethoxy)methane	19	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromobenzene	0.36	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Bromochloromethane	15	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Bromodichloromethane	0.0043	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Bromoform	0.1	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Bromomethane	0.00137	0.39 UJ	0.037 U	0.08 UJ	0.036 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Carbon Disulfide	0.000851	0.12 UJ	**0.0048 J**	**0.015 J**	**0.0062 J**	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	0.021	0.059 UJ	0.0056 U	0.012 UJ	0.0054 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Chlorobenzene	0.00842	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Chloroethane	72	1.2 UJ	0.11 U	0.24 UJ	0.11 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Chloroform	0.0071	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Chloromethane	0.61	1.2 UJ	0.11 U	0.24 UJ	0.11 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
cis-1,2-Dichloroethene	0.12	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
cis-1,3-Dichloropropene	0.018	0.039 UJ	0.0037 U	0.008 UJ	0.0036 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Dibromochloromethane	0.0027	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Dibromomethane	0.025	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Dichlorodifluoromethane	3.9	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Ethylbenzene	0.13	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Ethylene Dibromide (EDB)	0.00024	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Hexachlorobutadiene	0.02	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Isopropylbenzene	0.086	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
m- & p-Xylene	1.5	0.078 UJ	0.0075 U	**0.009 J**	0.0073 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Methyl tert-Butyl Ether (MTBE)	0.4	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Methylene Chloride	0.159	0.12 UJ	0.011 U	0.014 UJ	0.011 U	0.38 U	0.43 U	**0.378 J**	0.55 U	0.13 U	0.53 U	0.28 U	0.44 U	0.5 U	0.63 U	0.39 U	0.3 U	0.42 U	0.47 U	0.55 U	0.29 U	0.27 U	0.37 U	**0.285 J**
n-Butylbenzene	2	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.12 U	0.14 U	0.23 U	0.18 U	0.04 U	0.17 U	0.089 U	0.14 U	0.16 U	0.2 U	0.12 U	0.095 U	0.13 U	0.15 U	0.18 U	0.094 U	0.086 U	0.12 U	0.2 U
n-Propylbenzene	5.2	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.092 U	0.1 U	0.17 U	0.13 U	0.03 U	0.13 U	0.067 U	0.1 U	0.12 U	0.15 U	0.092 U	0.071 U	0.1 U	0.11 U	0.13 U	0.07 U	0.064 U	0.088 U	0.15 U
Naphthalene	0.0346	**0.089**	**0.0021 J**	**0.019**	**0.013**	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.043 U	0.06 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
o-Xylene	1.5	0.12 UJ	0.011 U	0.024 UJ	0.011 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
p-Isopropyltoluene	0.03	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
sec-Butylbenzene	2.8	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Styrene	0.254	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
tert-Butylbenzene	3.5	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Tetrachloroethene (PCE)	0.19	0.059 UJ	0.0056 U	0.012 UJ	0.0054 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Toluene	1.22	0.12 UJ	0.011 U	**0.016 J**	0.0047 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	**0.0518 J**	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
trans-1,2-Dichloroethene	0.654	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

Analyte	Location	35-SD-20		35-SD-21		SS035-SD-01	SS035-SD-02		SS035-SD-03	SS035-SD-04	SS035-SD-05	SS035-SD-06	SS035-SD-07	SS035-SD-08	SS035-SD-09	SS035-SD-10	SS035-SD-11	SS035-SD-12	SS035-SD-13	SS035-SD-14	SS035-SD-15	SS035-SD-16	SS035-SD-17	SS035-SD-18
	Sample ID	35-SD-20-1	35-SD-20-2	35-SD-21-1	35-SD-21-2	SS035-SD-01	SS035-SD-02	SS035-SD-30	SS035-SD-03	SS035-SD-04	SS035-SD-05	SS035-SD-06	SS035-SD-07	SS035-SD-08	SS035-SD-09	SS035-SD-10	SS035-SD-11	SS035-SD-12	SS035-SD-13	SS035-SD-14	SS035-SD-15	SS035-SD-16	SS035-SD-17	SS035-SD-18
	Sample Depth (ft)	0 - 1	1 - 2	0 - 1	1 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
	Sample Date	9/14/2012	9/14/2012	9/14/2012	9/14/2012	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014
Analyte	Screening Level																							
trans-1,3-Dichloropropene	0.018	0.039 UJ	0.0037 U	0.008 UJ	0.0036 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Trichloroethene (TCE)	0.011	0.039 UJ	0.0037 U	0.008 UJ	0.0036 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Trichlorofluoromethane	41	0.12 UJ	0.011 U	0.024 UJ	0.011 U	0.076 U	0.086 U	0.14 U	0.11 U	0.025 U	0.11 U	0.056 U	0.087 U	0.1 U	0.13 U	0.077 U	0.059 U	0.084 U	0.093 U	0.11 U	0.059 U	0.054 U	0.074 U	0.12 U
Vinyl Chloride	0.0008	0.02 UJ	0.0019 U	0.004 UJ	0.0018 U	0.14 U	0.15 U	0.25 U	0.2 U	0.045 U	0.19 U	0.1 U	0.16 U	0.18 U	0.23 U	0.14 U	0.11 U	0.15 U	0.17 U	0.2 U	0.11 U	0.097 U	0.13 U	0.22 U
Xylenes, Total	0.433	--	--	--	--	0.15 U	0.17 U	0.28 U	0.22 U	0.05 U	0.21 U	0.11 U	0.17 U	0.2 U	0.25 U	0.15 U	0.12 U	0.17 U	0.19 U	0.22 U	0.12 U	0.11 U	0.15 U	0.24 U
SVOCs (MG/KG)																								
1-Methylnaphthalene	0.41	**0.037 M**	0.0027 U	**0.0093 M**	**0.0057 M**	0.22 U	0.25 U	0.3 U	0.31 U	0.028 U	0.15 U	0.043 U	0.06 U	0.15 U	0.15 U	0.25 U	0.14 U	0.27 U	0.15 U	0.17 U	0.19 U	0.17 U	0.32 U	0.43 U
2,4,5-Trichlorophenol	28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	0.092	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.0817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	0.029	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	0.00621	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	0.0144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	0.41723	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	0.0312	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	0.0202	**0.085 M**	0.0027 U	**0.034 M**	**0.017 M**	0.22 U	0.25 U	0.3 U	0.31 U	0.028 U	0.15 U	0.043 U	0.06 U	0.15 U	0.15 U	0.25 U	0.14 U	0.27 U	0.15 U	0.17 U	0.19 U	0.17 U	0.32 U	0.43 U
2-Methylphenol	0.0554	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	0.056	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3- & 4-Methylphenol	6.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-Methylphenol	0.104	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	1.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	0.38818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	0.015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl Phenyl Ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	0.0133	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.0067	**0.015 J**	0.0027 U	0.0029 U	0.0028 U	0.22 U	0.25 U	0.3 U	0.31 U	0.028 U	0.15 U	0.043 U	0.06 U	0.15 U	0.15 U	0.25 U	0.14 U	0.27 U	0.15 U	0.17 U	0.19 U	0.17 U	0.32 U	0.43 U
Acenaphthylene	0.00587	**0.033 M**	0.0027 U	**0.0057 M**	**0.002 J**	0.22 U	0.25 U	0.3 U	0.31 U	0.028 U	0.15 U	0.043 U	0.06 U	0.15 U	0.15 U	0.25 U	0.14 U	0.27 U	0.15 U	0.17 U	0.19 U	0.17 U	0.32 U	0.43 U
Anthracene	0.0469	**0.053 M**	0.0027 U	**0.0049 J**	0.0028 U	0.22 U	0.25 U	0.3 U	0.31 U	0.028 U	0.15 U	0.043 U	0.06 U	0.15 U	0.15 U	0.25 U	0.14 U	0.27 U	0.15 U	0.17 U	0.19 U	0.17 U	0.32 U	0.43 U
Benzo(a)anthracene	0.0317	**0.18**	**0.0018 J**	**0.019 M**	**0.0042 J**	0.11 U	**0.0915 J**	**0.15 J**	**0.134 J**	0.014 U	**0.0769 J**	0.022 U	**0.0412 J**	**0.0804 J**	**0.0701 J**	**0.1 J**	**0.0907 J**	**0.116 J**	**0.0606 J**	**0.083 J**	**0.101 J**	**0.103 J**	**0.183 J**	0.22 U
Benzo(a)pyrene	0.02	**0.21**	0.0027 U	**0.022 M**	**0.0038 J**	0.11 U	**0.115 J**	**0.213 J**	**0.179 J**	0.014 U	**0.0907 J**	0.022 U	**0.0551 J**	**0.121 J**	**0.102 J**	**0.139 J**	**0.12 J**	**0.172 J**	**0.0867 J**	**0.106 J**	**0.108 J**	**0.141 J**	**0.239 J**	**0.078 J**
Benzo(b)fluoranthene	0.0272	**0.32 M**	**0.0025 J**	**0.04 M**	**0.012 M**	0.11 U	**0.134 J**	**0.256 J**	**0.182 J**	0.014 U	**0.106 J**	0.022 U	**0.0628**	**0.108 J**	**0.107 J**	**0.17 J**	**0.128 J**	**0.194 J**	**0.1 J**	**0.111 J**	**0.121 J**	**0.144 J**	**0.28 J**	0.22 U
Benzo(g,h,i)perylene	0.17	**0.19**	0.0027 U	**0.021 M**	**0.0076**	0.11 U	**0.0886 J**	**0.177 J**	**0.106 J**	0.014 U	**0.0627 J**	0.022 U	**0.0402 J**	**0.078 J**	**0.0749 J**	**0.0999 J**	**0.0935 J**	**0.129 J**	**0.0588 J**	**0.0707 J**	**0.0675 J**	**0.0859 J**	**0.151 J**	0.22 U
Benzo(k)fluoranthene	0.0272	**0.13 M**	0.0027 U	**0.011 M**	**0.0031 J**	**0.0649 J**	**0.118 J**	**0.23 J**	**0.195 J**	0.014 U	**0.0908 J**	0.022 U	**0.0637**	**0.128 J**	**0.114 J**	**0.147 J**	**0.138 J**	**0.203 J**	**0.0894 J**	**0.125 J**	**0.123 J**	**0.146 J**	**0.254 J**	0.22 U
Benzoic acid	0.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	0.00104	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	0.00042	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroisopropyl)ether	310	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl Benzyl Phthalate	1.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.0571	**0.27**	**0.0017 J**	**0.035 M**	**0.013 M**	**0.069 J**	**0.152 J**	**0.283 J**	**0.299 J**	0.014 U	**0.124 J**	0.022 U	**0.0763**	**0.147 J**	**0.133 J**	**0.182 J**	**0.157**	**0.22 J**	**0.108 J**	**0.144 J**	**0.146 J**	**0.179**	**0.316 J**	**0.11 J**
di-n-Butyl Phthalate	1.114	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
di-n-Octyl Phthalate	4.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	0.00622	**0.041 M**	**0.0016 J**	**0.006 M**	0.0028 U	0.11 U	0.13 U	0.15 U	0.16 U	0.014 U	0.073 U	0.022 U	0.03 U	0.077 U	0.076 U	0.12 U	0.071 U	0.14 U	0.073 U	0.086 U	0.095 U	0.086 U	0.16 U	0.22 U
Dibenzofuran	0.415	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	0.295	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	0.111	**0.5**	**0.0062**	**0.057 M**	**0.016 M**	0.22 U	**0.217 J**	**0.466 J**	**0.322 J**	0.028 U	**0.162 J**	0.043 U	**0.105 J**	**0.21 J**	**0.205 J**	**0.263 J**	**0.206 J**	**0.322 J**	**0.171 J**	**0.186 J**	**0.203 J**	**0.194 J**	**0.363 J**	0.43 U
Fluorene	0.0212	**0.068 M**	0.0027 U	**0.012 M**	**0.0041 J**	0.22 U	0.25 U	0.3 U	0.31 U	0.028 U	0.15 U	0.043 U	0.06 U	0.15 U	0.15 U	0.25 U	0.14 U	0.27 U	0.15 U	0.17 U	0.19 U	0.17 U	0.32 U	0.43 U
Hexachlorobenzene	0.0082	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	0.018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	0.017	**0.26**	**0.0018 J**	**0.023 M**	**0.006 M**	0.11 U	**0.105 J**	**0.229 J**	**0.128 J**	0.014 U	**0.0741 J**	0.022 U	**0.0488 J**	**0.093 J**	**0.0833 J**	**0.117 J**	**0.101 J**	**0.144 J**	**0.0673 J**	**0.0862 J**	**0.0749 J**	**0.109 J**	**0.193 J**	0.22 U
Isophorone	0.432	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodimethylamine (NDMA)	0.0000033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	2.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodipropylamine	0.00068	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	0.0079	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.0043	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	0.0419	**0.28 M**	**0.0039 J**	**0.036 M**	**0.013 M**	0.22 U	**0.142 J**	**0.291 J**	**0.224 J**	0.028 U	**0.124 J**	0.043 U	**0.0628 J**	**0.153 J**	**0.136 J**	**0.168 J**	**0.121 J**	**0.209 J**	**0.109 J**	**0.121 J**	**0.137 J**	**0.117 J**	**0.223 J**	0.43 U
Phenol	0.0491	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	0.053	**0.46**	**0.006**	**0.053 M**	**0.019 M**	0.22 U	**0.201 J**	**0.382 J**	**0.285 J**	0.028 U	**0.161 J**	0.043 U	**0.0937 J**	**0.196 J**	**0.195 J**	**0.255 J**	**0.201 J**	**0.304 J**	**0.168 J**	**0.176 J**	**0.208 J**	**0.201 J**	**0.39 J**	0.43 U

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

	Location	35-SD-20		35-SD-21		SS035-SD-01	SS035-SD-02		SS035-SD-03	SS035-SD-04	SS035-SD-05	SS035-SD-06	SS035-SD-07	SS035-SD-08	SS035-SD-09	SS035-SD-10	SS035-SD-11	SS035-SD-12	SS035-SD-13	SS035-SD-14	SS035-SD-15	SS035-SD-16	SS035-SD-17	SS035-SD-18
	Sample ID	35-SD-20-1	35-SD-20-2	35-SD-21-1	35-SD-21-2	SS035-SD-01	SS035-SD-02	SS035-SD-30	SS035-SD-03	SS035-SD-04	SS035-SD-05	SS035-SD-06	SS035-SD-07	SS035-SD-08	SS035-SD-09	SS035-SD-10	SS035-SD-11	SS035-SD-12	SS035-SD-13	SS035-SD-14	SS035-SD-15	SS035-SD-16	SS035-SD-17	SS035-SD-18
	Sample Depth (ft)	0 - 1	1 - 2	0 - 1	1 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
	Sample Date	9/14/2012	9/14/2012	9/14/2012	9/14/2012	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014	9/23/2014
Analyte	**Screening Level**																							
Metals (mg/kg)																								
Aluminum	7700	**7700**	**2200**	**2900**	**4100**	**4510**	**2650**	**3840**	**2700**	**399**	**2010**	**658**	**1600**	**2040**	**2720**	**3610**	**5450**	**7460**	**2340**	**2330**	**2720**	**1750**	**3720**	**1850**
Antimony	2	**0.93**	**0.23**	**0.34**	**0.34**	1 U	1.2 U	1.3 U	1.4 U	**0.4 J**	1.2 U	**0.49 J**	1.1 U	1.2 U	1.4 U	1.1 U	0.71 U	1.2 U	1.3 U	1.6 U	0.9 U	**0.41 J**	1.3 U	1.6 U
Arsenic	0.2	**84**	**2.8**	**7.3**	**5.3**	**369**	**368**	**443**	**488**	**35.6**	**431**	**79.4**	**277**	**377**	**451**	**438**	**212**	**159**	**461**	**511**	**136**	**81**	**141**	**450**
Barium	1500	**210**	**47**	**75**	**130**	**830**	**302**	**372**	**491**	**349**	**816**	**458**	**309**	**393**	**565**	**665**	**313**	**245**	**547**	**813**	**333**	**189**	**239**	**830**
Beryllium	16	**0.43 J**	**0.068 J**	**0.083 J**	**0.12 J**	0.51 U	0.59 U	0.66 U	0.68 U	0.25 U	0.59 U	0.38 U	0.55 U	0.61 U	0.69 U	0.56 U	0.35 U	0.59 U	0.66 U	0.81 U	0.45 U	0.41 U	0.64 U	0.78 U
Cadmium	0.6	**0.95**	**0.12 J**	**0.19 J**	**0.23**	**1.2 J**	**0.94 J**	**1.4 J**	**1.2 J**	**0.2 J**	**1 J**	**0.38 J**	**0.6 J**	**0.79 J**	**1 J**	**1 J**	**0.46 J**	**0.82 J**	**0.86 J**	**1.2 J**	**0.63 J**	**0.49 J**	**0.64 J**	**0.93 J**
Calcium	--	**44000**	**1300**	**7400**	**4700**	**16900**	**44200**	**51900**	**25700**	**298000**	**52800**	**225000**	**60200**	**49400**	**30900**	**19100**	**8030**	**21100**	**20300**	**21700**	**179000**	**205000**	**127000**	**12700**
Chromium	37.3	**27 J**	**6.4 J**	**8.2 J**	**12 J**	**11.2**	**9.6**	**11.3**	**8.7**	**2.3 J**	**7.1**	**3.6 J**	**6.2**	**7.3**	**9.3**	**10.5**	**12.3**	**18.9**	**8.6**	**7.6 J**	**8.6**	**7.4**	**11.2**	**6.4 J**
Cobalt	2.3	**12 J**	**3.4 J**	**3.6 J**	**4.9 J**	**1 J**	0.59 U	**0.26 J**	0.68 U	0.25 U	0.59 U	0.38 U	0.55 U	0.61 U	0.69 U	0.56 U	**2.9 J**	**5.7 J**	0.66 U	0.81 U	**1.2 J**	**1.4 J**	**3.1 J**	0.78 U
Copper	18.7	**42 J**	**11 J**	**11 J**	**14 J**	**22.7**	**19.6**	**20.2**	**20.2**	**4.7 J**	**18**	**7 J**	**15.2**	**22.7**	**23.2**	**28.1**	**21.6**	**32.3**	**18.8**	**23.9**	**16.2**	**15**	**21.6**	**22.5**
Iron	5500	**160000**	**6100**	**10000**	**8600**	**215000**	**215000**	**245000**	**264000**	**19500**	**258000**	**49500**	**165000**	**210000**	**245000**	**239000**	**95600**	**126000**	**252000**	**302000**	**86000**	**62800**	**112000**	**244000**
Lead	30.2	**74**	**3.3**	**35**	**1100**	**14.1**	**8 J**	**10.4 J**	**5.6 J**	**1.3 J**	**4.6 J**	**2.9 J**	**4.3 J**	**4.8 J**	**7 J**	**7.6 J**	**9.2**	**14.4**	**5.4 J**	**4.9 J**	**14.9**	**5.1 J**	**8.7 J**	**5.2 J**
Magnesium	--	**6600 J**	**1400 J**	**1800 J**	**2400 J**	**2830**	**8120**	**8950**	**2590 J**	**10500**	**4220**	**16100**	**4910**	**4300**	**4660**	**3560**	**3230**	**4890**	**3710**	**3140 J**	**8560**	**4240**	**4090**	**1690 J**
Manganese	180	**5900**	**130**	**960**	**480**	**4240**	**4920**	**6160**	**4390**	**3340**	**5050**	**5620**	**3530**	**3630**	**4440**	**4350**	**1700**	**4270**	**4210**	**4360**	**6090**	**7240**	**8480**	**2770**
Mercury	0.13	**0.15**	0.0069 U	0.018 U	0.011 U	**0.036 J**	0.1 U	**0.16 J**	0.13 U	0.042 U	0.11 U	0.065 U	0.093 U	0.11 U	0.13 U	0.098 U	**0.028 J**	0.1 U	0.11 U	0.13 U	0.076 U	0.065 U	0.11 U	0.13 U
Nickel	15.9	**20 J**	**9 J**	**9.1 J**	**14 J**	**8.5**	**4.8 J**	**6.5 J**	**5.5 J**	**1.2 J**	**3.8 J**	**1.6 J**	**2.9 J**	**3.9 J**	**5.1 J**	**6.8**	**10.1**	**15.7**	**4.8 J**	**3.9 J**	**8**	**4.8**	**9.1**	**3.3 J**
Potassium	--	**960 J**	**320 J**	**310 J**	**530 J**	**644 J**	**375 J**	**514 J**	**420 J**	**75.5 J**	**341 J**	**83.8 J**	**275 J**	**343 J**	**437 J**	**559 J**	**845 J**	**1130 J**	**396 J**	**383 J**	**387 J**	**295 J**	**555 J**	**381 J**
Selenium	2	1.8 U	0.32 U	0.46 U	**0.22 J**	3.6 U	**6.1 J**	**14.6**	**6.8 J**	**2.6 J**	**6.9 J**	**4.7 J**	**6 J**	**6.3 J**	**6 J**	**6.2 J**	**3.5 J**	**6.4 J**	**6.2 J**	**7.6 J**	**6.2 J**	**6.1 J**	**8.4 J**	**6.1 J**
Silver	0.5	**0.56 J**	**0.031 J**	**0.029 J**	**0.047 J**	**2.9 J**	**1.4 J**	**2.1 J**	**1.2 J**	0.37 U	**1.5 J**	**0.57 J**	**0.71 J**	**0.97 J**	**1.1 J**	**1.2 J**	**0.28 J**	**0.7 J**	**1.1 J**	**1.4 J**	**0.76 J**	**0.82 J**	**1.2 J**	**1.3 J**
Sodium	--	**220 J**	64 U	63 U	100 U	**342 J**	**312 J**	**408 J**	**319 J**	**275 J**	**332 J**	**351 J**	**281 J**	**353 J**	**364 J**	**366 J**	**417 J**	**547 J**	**367 J**	**488 J**	**282 J**	**223 J**	**364 J**	**397 J**
Thallium	0.078	1.2 U	0.21 U	0.3 U	0.2 U	1 U	**3 J**	**2.1 J**	**1.8 J**	**2 J**	**2.5 J**	**4.4 J**	**2.3 J**	**1.6 J**	**3 J**	**2.1 J**	0.71 U	**2 J**	**1.3 J**	**1 J**	**4.7 J**	**5.8 J**	**6 J**	1.6 U
Vanadium	39	**56 J**	**12 J**	**16 J**	**21 J**	**32.4**	**35.8**	**41.8**	**37.1**	**5.5**	**31.2**	**11.4**	**25.1**	**30**	**35.7**	**35.6**	**26.4**	**43.1**	**35.2**	**33.4**	**22.6**	**17.9**	**31.5**	**27.9**
Zinc	121	**260**	**18**	**30**	**41**	**151**	**102**	**156**	**134**	**20.9**	**113**	**33.5**	**96.6**	**127**	**143**	**123**	**90.7**	**202**	**118**	**126**	**89.9**	**115**	**187**	**154**
Pesticides (mg/kg)																								
4,4-DDD	0.0033	**0.79**	**0.023 JM**	**0.13 M**	**0.13 J**	0.45 U	0.51 U	**0.445 J**	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
4,4-DDE	0.00142	**0.12 J**	0.0031 U	**0.047 M**	**0.016 J**	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
4,4-DDT	0.00119	0.032 U	0.0031 U	**0.01 J**	0.0034 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Aldrin	0.002	0.032 U	0.0031 U	0.0067 U	0.0034 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
alpha-BHC	0.0029	0.032 U	0.0031 U	0.0067 U	0.0034 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
alpha-Chlordane	0.0017	0.032 U	0.0031 U	0.0067 U	0.0034 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Endosulfan	0.0029	0.032 U	0.0031 U	0.0067 U	0.0034 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
beta-BHC	0.005	0.053 U	0.0052 U	0.011 U	0.0057 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
beta-Endosulfan	0.00194	0.032 U	0.0031 U	0.0067 U	0.0034 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Chlordane	0.0017	--	--	--	--	4.5 U	5.1 U	5.8 U	6.3 U	2.2 U	6 U	0.88 U	12 U	15 U	15 U	12 U	15 U	14 U	15 U	17 U	9.5 U	8.6 U	13 U	17 U
delta-BHC	0.0029	0.032 U	0.0031 UJ	0.0067 U	0.0034 UJ	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Dieldrin	0.0019	0.032 U	0.0031 U	0.0067 U	0.0034 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Endosulfan Sulfate	0.0054	0.032 U	0.0031 U	0.0067 U	0.0034 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Endrin	0.00222	0.032 U	0.0031 U	0.0067 U	0.0034 UJ	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Endrin Aldehyde	0.00267	0.032 U	0.0031 U	0.0067 U	0.0034 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Endrin Ketone	0.00267	0.032 U	0.0031 U	0.0067 U	0.0034 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	0.00094	0.053 U	0.0052 U	0.011 U	0.0057 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
gamma-Chlordane	0.0017	0.032 U	0.0031 U	0.0067 U	0.0034 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	0.0006	0.053 U	0.0052 U	0.011 U	0.0057 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Heptachlor Epoxide	0.0006	0.032 U	0.0031 U	0.0067 U	0.0034 U	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Methoxychlor	0.0136	0.032 UJ	0.0031 U	0.0067 UJ	0.0034 UJ	0.45 U	0.51 U	0.58 U	0.63 U	0.22 U	0.6 U	0.088 U	1.2 U	1.5 U	1.5 U	1.2 U	1.5 U	1.4 U	1.5 U	1.7 U	0.95 U	0.86 U	1.3 U	1.7 U
Toxaphene	0.000077	5.3 U	0.52 U	1.1 U	0.57 U	4.5 U	5.1 U	5.8 U	6.3 U	2.2 U	6 U	0.88 U	12 U	15 U	15 U	12 U	15 U	14 U	15 U	17 U	9.5 U	8.6 U	13 U	17 U
Polychlorinated Biphenyls (MG/KG)																								
Aroclor 1016	0.007	0.026 U	0.0052 U	0.0056 U	0.0057 U	0.28 U	0.32 U	3.6 U	0.39 U	0.14 U	0.37 U	0.22 U	0.3 U	0.38 U	0.39 U	0.3 U	0.18 U	0.34 U	0.37 U	0.43 U	0.24 U	0.22 U	0.32 U	2.1 U
Aroclor 1221	0.067	0.053 UJ	0.01 UJ	0.011 UJ	0.011 U	0.28 U	0.32 U	3.6 U	0.39 U	0.14 U	0.37 U	0.22 U	0.3 U	0.38 U	0.39 U	0.3 U	0.18 U	0.34 U	0.37 U	0.43 U	0.24 U	0.22 U	0.32 U	2.1 U
Aroclor 1232	0.1	0.053 U	0.01 U	0.011 U	0.011 UJ	0.28 U	0.32 U	3.6 U	0.39 U	0.14 U	0.37 U	0.22 U	0.3 U	0.38 U	0.39 U	0.3 U	0.18 U	0.34 U	0.37 U	0.43 U	0.24 U	0.22 U	0.32 U	2.1 U
Aroclor 1242	0.1	0.026 U	0.0052 U	0.0056 U	0.0057 U	0.28 U	0.32 U	3.6 U	0.39 U	0.14 U	0.37 U	0.22 U	0.3 U	0.38 U	0.39 U	0.3 U	0.18 U	0.34 U	0.37 U	0.43 U	0.24 U	0.22 U	0.32 U	2.1 U
Aroclor 1248	0.03	0.026 U	0.0052 U	0.0056 U	0.0057 U	0.28 U	0.32 U	3.6 U	0.39 U	0.14 U	0.37 U	0.22 U	0.3 U	0.38 U	0.39 U	0.3 U	0.18 U	0.34 U	0.37 U	0.43 U	0.24 U	0.22 U	0.32 U	2.1 U
Aroclor 1254	0.06	0.026 U	0.0052 U	0.0056 U	0.0057 U	0.28 U	0.32 U	3.6 U	0.39 U	0.14 U	0.37 U	0.22 U	0.3 U	0.38 U	0.39 U	0.3 U	0.18 U	0.34 U	0.37 U	0.43 U	0.24 U	0.22 U	0.32 U	2.1 U
Aroclor 1260	0.005	0.026 U	0.0052 U	0.0056 U	0.0057 U	0.28 U	0.32 U	3.6 U	0.39 U	0.14 U	0.37 U	0.22 U	0.3 U	0.38 U	0.39 U	0.3 U	0.18 U	0.34 U	0.37 U	0.43 U	0.24 U	0.22 U	0.32 U	2.1 U
General Chemistry (%)																								
Moisture, percent	--	**82**	**7.3**	**18**	**14**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry (%)																								
Percent Solids	--	**18**	**93**	**82**	**86**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

	Location	SS035-SD-19	SS035-SD-20		EDR-GSP-01	EDR-GSP-02		EDR-GSP-04	EDR-GSP-05
	Sample ID	SS035-SD-19	SS035-SD-20	SS035-SD-31	16-EDR-GSP-SE-01	16-EDR-GSP-SE-02	16-EDR-GSP-SE-03	16-EDR-GSP-SE-04	16-EDR-GSP-SE-05
	Sample Depth (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
	Sample Date	9/23/2014	9/23/2014	9/23/2014	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016
Analyte	**Screening Level**								
Hydrocarbons (mg/kg)									
C10-C25 DRO	250	**112**	**34.3**	**59.4**	**62**	**330 Q**	**170 Q**	**690**	**83**
C25-C36 RRO	10000	**696**	**148**	**400**	**140**	**170 Q**	**330 Q**	**3100 Q+**	**980**
C6-C10 GRO	300	- -	- -	- -	5.2 U	1.9 U	1.7 U	7.8 U	3.8 U
VOCs (MG/KG)									
1,1,1,2-Tetrachloroethane	0.022	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
1,1,1-Trichloroethane	0.0302	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
1,1,2,2-Tetrachloroethane	0.003	0.098 U	0.036 U	0.1 U	0.013 U	0.0047 U	0.0043 U	0.019 U	0.0094 U
1,1,2-Trichloroethane	0.0014	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
1,1-Dichloroethane	0.000575	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
1,1-Dichloroethene	0.0194	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
1,1-Dichloropropene	0.018	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
1,2,3-Trichlorobenzene	0.15	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
1,2,3-Trichloropropane	0.000031	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
1,2,4-Trichlorobenzene	0.082	0.098 U	0.036 U	0.1 U	0.035 U	0.019 U	0.019 U	0.12 U	0.025 U
1,2,4-Trimethylbenzene	0.16	0.098 U	0.036 U	0.1 U	0.013 U	0.0047 U	0.0043 U	0.019 U	0.0094 U
1,2-Dibromo-3-Chloropropane	0.0053	0.2 U	0.072 U	0.2 U	0.039 U,Q-	0.014 U,Q-	0.013 U,Q-	0.058 U,Q-	0.028 U,Q-
1,2-Dichlorobenzene	0.0165	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
1,2-Dichloroethane	0.0055	0.098 U	0.036 U	0.1 U	0.026 U	**0.0044 J**	0.0086 U	0.039 U	0.019 U
1,2-Dichloropropane	0.016	0.098 U	0.036 U	0.1 U	0.013 U	0.0047 U	0.0043 U	0.019 U	0.0094 U
1,3,5-Trimethylbenzene	1.3	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
1,3-Dichlorobenzene	0.62	0.098 U	0.036 U	0.1 U	0.035 U	0.014 U	0.013 U	0.058 U	0.025 U
1,3-Dichloropropane	160	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
1,4-Dichlorobenzene	0.037	0.098 U	0.036 U	0.1 U	0.035 U	0.019 U	0.019 U	0.12 U	0.025 U
2,2-Dichloropropane	0.016	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
2-Butanone (MEK)	0.0424	0.39 U	0.14 U	0.4 U	0.39 U,Q-	0.14 U,Q-	0.13 U,Q-	0.58 U,Q-	0.28 U,Q-
2-Chlorotoluene	160	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
2-Hexanone	0.0582	0.39 U	0.14 U	0.4 U	0.2 U,Q-	0.07 U,Q-	0.065 U,Q-	0.29 U,Q-	0.14 U,Q-
4-Chlorotoluene	160	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
4-Methyl-2-Pentanone (MIBK)	0.0251	0.39 U	0.14 U	0.4 U	0.2 U	0.07 U	0.065 U	0.29 U	0.14 U
Acetone	0.0099	2 U	0.72 U	2 U	1.3 U	0.47 U	0.43 U	1.9 U	0.94 U
Benzene	0.022	0.098 U	0.036 U	0.1 U	0.013 U	0.0047 U	0.0043 U	0.019 U	0.0094 U
bis(2-Chloroethoxy)methane	19	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
Bromobenzene	0.36	0.098 U	0.036 U	0.1 U	0.013 U	0.0047 U	0.0043 U	0.019 U	0.0094 U
Bromochloromethane	15	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
Bromodichloromethane	0.0043	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
Bromoform	0.1	0.098 U	0.036 U	0.1 U	0.16 U,Q-	0.056 U,Q-	0.052 U,Q-	0.23 U,Q-	0.11 U,Q-
Bromomethane	0.00137	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
Carbon Disulfide	0.000851	- -	- -	- -	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
Carbon Tetrachloride	0.021	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
Chlorobenzene	0.00842	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
Chloroethane	72	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
Chloroform	0.0071	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
Chloromethane	0.61	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
cis-1,2-Dichloroethene	0.12	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
cis-1,3-Dichloropropene	0.018	0.098 U	0.036 U	0.1 U	0.013 U	0.0047 U	0.0043 U	0.019 U	0.0094 U
Dibromochloromethane	0.0027	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
Dibromomethane	0.025	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
Dichlorodifluoromethane	3.9	0.098 U	0.036 U	0.1 U	0.26 U	0.093 U	0.086 U	0.39 U	0.19 U
Ethylbenzene	0.13	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
Ethylene Dibromide (EDB)	0.00024	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
Hexachlorobutadiene	0.02	0.098 U	0.036 U	0.1 U	0.081 U	0.044 U	0.043 U	0.23 U	0.059 U
Isopropylbenzene	0.086	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
m- & p-Xylene	1.5	- -	- -	- -	0.26 U	0.093 U	0.086 U	0.39 U	0.19 U
Methyl tert-Butyl Ether (MTBE)	0.4	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
Methylene Chloride	0.159	**0.211 J**	**0.105 J**	**0.256 J**	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
n-Butylbenzene	2	0.16 U	0.058 U	0.16 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
n-Propylbenzene	5.2	0.12 U	0.043 U	0.12 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
Naphthalene	0.0346	0.098 U	0.036 U	0.1 U	**0.047**	0.0021 U	**0.0037 J**	**0.021 J**	0.0029 U
o-Xylene	1.5	- -	- -	- -	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
p-Isopropyltoluene	0.03	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
sec-Butylbenzene	2.8	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U
Styrene	0.254	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
tert-Butylbenzene	3.5	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
Tetrachloroethene (PCE)	0.19	0.098 U	0.036 U	0.1 U	0.039 U	**0.021 Q**	**0.012 J,Q**	0.058 U	**0.025 J**
Toluene	1.22	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
trans-1,2-Dichloroethene	0.654	0.098 U	0.036 U	0.1 U	0.079 U	0.028 U	0.026 U	0.12 U	0.056 U

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

	Location	SS035-SD-19	SS035-SD-20		EDR-GSP-01	EDR-GSP-02		EDR-GSP-04	EDR-GSP-05
	Sample ID	SS035-SD-19	SS035-SD-20	SS035-SD-31	16-EDR-GSP-SE-01	16-EDR-GSP-SE-02	16-EDR-GSP-SE-03	16-EDR-GSP-SE-04	16-EDR-GSP-SE-05
	Sample Depth (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
	Sample Date	9/23/2014	9/23/2014	9/23/2014	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016
Analyte	**Screening Level**								
trans-1,3-Dichloropropene	0.018	0.098 U	0.036 U	0.1 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
Trichloroethene (TCE)	0.011	0.098 U	0.036 U	0.1 U	0.026 U	0.0093 U	0.0086 U	0.039 U	0.019 U
Trichlorofluoromethane	41	0.098 U	0.036 U	0.1 U	0.26 U	0.093 U	0.086 U	0.39 U	0.19 U
Vinyl Chloride	0.0008	0.18 U	0.065 U	0.18 U	0.039 U	0.014 U	0.013 U	0.058 U	0.028 U
Xylenes, Total	0.433	0.2 U	0.072 U	0.2 U	- -	- -	- -	- -	- -
SVOCs (MG/KG)									
1-Methylnaphthalene	0.41	0.15 U	0.061 U	0.21 U	**0.017 J**	**0.0044 J**	**0.0061 J**	**0.04 J**	**0.002 J**
2,4,5-Trichlorophenol	28	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
2,4,6-Trichlorophenol	0.092	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
2,4-Dichlorophenol	0.0817	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
2,4-Dimethylphenol	0.029	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
2,4-Dinitrophenol	0.00621	- -	- -	- -	0.92 U,Q-	0.5 U,Q-	0.5 U,Q-	5.7 U,Q-	0.67 U,Q-
2,4-Dinitrotoluene	0.0144	- -	- -	- -	0.081 U	0.044 U	0.043 U	0.5 U	0.059 U
2,6-Dinitrotoluene	0.005	- -	- -	- -	0.081 U	0.044 U	0.043 U	0.5 U	0.059 U
2-Chloronaphthalene	0.41723	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
2-Chlorophenol	0.0312	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
2-Methylnaphthalene	0.0202	0.15 U	0.061 U	0.21 U	**0.045**	**0.0091**	**0.011**	**0.052 J**	**0.0032 J**
2-Methylphenol	0.0554	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
2-Nitroaniline	63	- -	- -	- -	0.081 U	0.044 U	0.043 U	0.5 U	0.059 U
2-Nitrophenol	--	- -	- -	- -	0.081 U	0.044 U	0.043 U	0.5 U	0.059 U
3,3-Dichlorobenzidine	0.056	- -	- -	- -	0.16 U	0.087 U	0.087 U	1 U	0.12 U
3- & 4-Methylphenol	6.1	- -	- -	- -	**0.051 J**	0.044 U	0.043 U	0.5 U	0.059 U
3-Nitroaniline	--	- -	- -	- -	0.21 U	0.11 U	0.11 U	1.3 U	0.15 U
4,6-Dinitro-2-Methylphenol	0.104	- -	- -	- -	0.55 U,Q-	0.3 U,Q-	0.3 U,Q-	3.4 U,Q-	0.4 U,Q-
4-Bromophenyl Phenyl Ether	1.23	- -	- -	- -	**0.04 J**	0.019 U	0.019 U	0.21 U	0.025 U
4-Chloro-3-Methylphenol	0.38818	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
4-Chloroaniline	0.015	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
4-Chlorophenyl Phenyl Ether	--	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
4-Nitroaniline	25	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
4-Nitrophenol	0.0133	- -	- -	- -	0.23 U	0.12 U	0.12 U	1.4 U	0.17 U
Acenaphthene	0.0067	0.15 U	0.061 U	0.21 U	**0.0051 J**	0.0021 U	0.0021 U	**0.042 J**	**0.0022 J**
Acenaphthylene	0.00587	0.15 U	0.061 U	0.21 U	**0.0053 J**	0.0021 U	**0.0084**	**0.043 J**	**0.0021 J**
Anthracene	0.0469	0.15 U	0.061 U	0.21 U	**0.013**	0.0021 U	0.0021 U	**0.081**	**0.0022 J**
Benzo(a)anthracene	0.0317	**0.0678 J**	**0.0216 J**	**0.0622 J**	**0.067**	**0.014 J**	**0.014 J**	**0.11**	**0.017 J**
Benzo(a)pyrene	0.02	**0.0903 J**	**0.025 J**	**0.0597 J**	**0.087**	**0.017**	**0.014**	**0.14**	**0.014**
Benzo(b)fluoranthene	0.0272	**0.0909 J**	**0.029 J**	**0.0783 J**	**0.15**	**0.027**	**0.031 Q**	**0.26**	**0.022**
Benzo(g,h,i)perylene	0.17	**0.0667 J**	**0.0206 J**	**0.0503 J**	**0.033**	**0.0065 Q**	**0.0058 J,Q**	**0.071 J**	**0.0063 J**
Benzo(k)fluoranthene	0.0272	**0.0913 J**	**0.028 J**	**0.0609 J**	**0.055 J**	**0.0085**	**0.0076**	**0.11**	**0.0091**
Benzoic acid	0.65	- -	- -	- -	**0.45 J**	0.5 U	0.5 U	5.7 U	0.67 U
Benzyl alcohol	0.00104	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
bis(2-Chloroethyl)ether	0.00042	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
bis(2-Chloroisopropyl)ether	310	- -	- -	- -	0.081 U	0.044 U	0.043 U	0.5 U	0.059 U
bis(2-Ethylhexyl)phthalate	0.18	- -	- -	- -	0.28 U	0.15 U	0.15 U	1.7 U	0.2 U
Butyl Benzyl Phthalate	1.97	- -	- -	- -	0.28 U	0.15 U	0.15 U	1.7 U	0.2 U
Carbazole	--	- -	- -	- -	**0.022 J**	0.019 U	0.019 U	0.21 U	0.025 U
Chrysene	0.0571	**0.116 J**	**0.0354 J**	**0.0882 J**	**0.084**	**0.022**	**0.017 J**	**0.18**	**0.021 J**
di-n-Butyl Phthalate	1.114	- -	- -	- -	0.28 U	0.15 U	0.15 U	1.7 U	0.2 U
di-n-Octyl Phthalate	4.06	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
Dibenz(a,h)anthracene	0.00622	0.075 U	0.031 U	0.1 U	0.0069 U	0.0037 U	0.0037 U	0.043 U	0.0051 U
Dibenzofuran	0.415	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
Diethyl phthalate	0.295	- -	- -	- -	0.28 U	0.15 U	0.15 U	1.7 U	0.2 U
Dimethyl phthalate	48	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
Fluoranthene	0.111	**0.214 J**	**0.0505 J**	**0.103 J**	**0.19**	**0.047**	**0.038**	**0.5**	**0.039**
Fluorene	0.0212	0.15 U	0.061 U	0.21 U	**0.015**	0.0021 U	0.0021 U	**0.18**	**0.0079 J**
Hexachlorobenzene	0.0082	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
Hexachlorocyclopentadiene	--	- -	- -	- -	0.21 U,Q-	0.11 U,Q-	0.11 U,Q-	1.3 U,Q-	0.15 U,Q-
Hexachloroethane	0.018	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
Indeno(1,2,3-cd)pyrene	0.017	**0.0852 J**	**0.0251 J**	**0.0538 J**	**0.047**	**0.0093**	**0.0089**	**0.11**	**0.0093**
Isophorone	0.432	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
N-Nitrosodimethylamine (NDMA)	0.0000033	- -	- -	- -	0.46 U	0.25 U	0.25 U	2.9 U	0.34 U
N-Nitrosodiphenylamine	2.68	- -	- -	- -	0.069 U	0.037 U	0.037 U	0.43 U	0.051 U
N-Nitrosodipropylamine	0.00068	- -	- -	- -	0.12 U	0.062 U	0.062 U	0.72 U	0.084 U
Nitrobenzene	0.0079	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
Pentachlorophenol	0.0043	- -	- -	- -	0.55 U	0.3 U	0.3 U	3.4 U	0.4 U
Phenanthrene	0.0419	**0.171 J**	**0.036 J**	0.21 U	**0.11**	**0.035 Q**	**0.022**	**0.53**	**0.02 J**
Phenol	0.0491	- -	- -	- -	0.035 U	0.019 U	0.019 U	0.21 U	0.025 U
Pyrene	0.053	**0.179 J**	**0.0411 J**	**0.103 J**	**0.14**	**0.042**	**0.034**	**0.4**	**0.033**

Notes:

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mg/kg = Milligrams per Kilogram

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Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-4 Summary of Chemicals Detected in Sediment

	Location	SS035-SD-19	SS035-SD-20		EDR-GSP-01	EDR-GSP-02		EDR-GSP-04	EDR-GSP-05
	Sample ID	SS035-SD-19	SS035-SD-20	SS035-SD-31	16-EDR-GSP-SE-01	16-EDR-GSP-SE-02	16-EDR-GSP-SE-03	16-EDR-GSP-SE-04	16-EDR-GSP-SE-05
	Sample Depth (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
	Sample Date	9/23/2014	9/23/2014	9/23/2014	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016
Analyte	**Screening Level**								
Metals (mg/kg)									
Aluminum	7700	**2280**	**601**	**918**	**13000**	**6100**	**6300**	**10000**	**1500**
Antimony	2	1.5 U	**0.56 J**	**1.3 J**	**1.1**	**0.55**	**0.48**	**1.1**	**0.37 J**
Arsenic	0.2	**499**	**50.2**	**77.5**	**11**	**9.4**	**11**	**57**	**22**
Barium	1500	**757**	**194**	**346**	**190**	**93**	**94**	**210**	**120**
Beryllium	16	0.73 U	0.24 U	0.46 U	**0.29 J**	**0.11 J**	**0.11 J**	**0.24 J**	**0.093 J**
Cadmium	0.6	**1.5 J**	**0.29 J**	**0.65 J**	**0.54**	**0.2 J**	**0.19 J**	**0.55 J**	**0.26 J**
Calcium	--	**17000**	**498000**	**772000**	**8000**	**5800**	**6000**	**16000**	**230000**
Chromium	37.3	**6.3 J**	**1.5 J**	**2.7 J**	**26**	**12**	**13**	**21**	**4.8**
Cobalt	2.3	0.73 U	0.24 U	0.46 U	**12**	**6.4**	**6.5**	**11**	**1.6**
Copper	18.7	**15.3 J**	**4.3 J**	**7.7 J**	**37**	**18**	**17**	**32**	**6.3**
Iron	5500	**258000**	**24000**	**37300**	**25000**	**15000**	**16000**	**50000**	**20000**
Lead	30.2	**6.1 J**	**0.6 J**	**2 J**	**40**	**13**	**9.7**	**27**	**13**
Magnesium	--	**2740 J**	**7540**	**15900**	**7000**	**3400**	**3800**	**5000**	**2700**
Manganese	180	**3250**	**2480**	**4560**	**680**	**910**	**1100**	**5800**	**3100**
Mercury	0.13	0.11 U	0.051 U	0.079 U	**0.052**	**0.024 J**	**0.0092 J**	**0.045 J**	0.015 U
Nickel	15.9	**3.6 J**	**1.8 J**	**3.2 J**	**32**	**16**	**18**	**24**	**4.1**
Potassium	--	**397 J**	**89.6 J**	**148 J**	**1100**	**500**	**530**	**830**	**130 J**
Selenium	2	**12.2 J**	**3.1 J**	**5.6 J**	**1 J**	**0.51 J**	**0.53 J**	**1.1 J**	0.95 U
Silver	0.5	**2.1 J**	0.36 U	**0.23 J**	**0.1 J**	**0.045 J**	**0.037 J**	**0.1 J**	**0.027 J**
Sodium	--	**419 J**	**154 J**	**308 J**	**400**	**180**	200 U	460 U	290 U
Thallium	0.078	**0.8 J**	**0.58 J**	**1.9 J**	- -	- -	- -	- -	- -
Vanadium	39	**31.8**	**5.3**	**9.1**	**50**	**26**	**28**	**42**	**9**
Zinc	121	**115**	**22.6**	**63.9**	**78**	**42**	**49**	**320**	**50**
Pesticides (mg/kg)									
4,4-DDD	0.0033	1.5 U	0.61 U	0.42 U	**0.52 Q-**	**0.2 Q**	**1.2 Q**	**9.5**	**0.071**
4,4-DDE	0.00142	1.5 U	0.61 U	0.42 U	**0.043 Q**	**0.031 Q**	**0.12 Q**	**0.65**	**0.0055**
4,4-DDT	0.00119	1.5 U	0.61 U	0.42 U	**0.0019 J,B,Q**	**0.0038 J,B,Q-**	**0.0057 J,B**	**0.03 J**	**0.00092 J,B**
Aldrin	0.002	1.5 U	0.61 U	0.42 U	0.00049 U,Q-	0.00068 U,Q-	0.0013 U	0.0054 U	0.00035 U
alpha-BHC	0.0029	1.5 U	0.61 U	0.42 U	0.0012 U,Q-	0.0017 U,Q-	0.0031 U	0.014 U	0.00089 U
alpha-Chlordane	0.0017	- -	- -	- -	0.00074 U,Q-	0.001 U,Q-	0.0019 U	0.0081 U	**0.0004 J,Q**
alpha-Endosulfan	0.0029	1.5 U	0.61 U	0.42 U	0.00074 U,Q-	0.001 U,Q-	0.0019 U	0.0081 U	0.00053 U
beta-BHC	0.005	1.5 U	0.61 U	0.42 U	0.0025 U,Q-	0.0034 U,Q-	0.0063 U	0.027 U	0.0018 U
beta-Endosulfan	0.00194	1.5 U	0.61 U	0.42 U	0.00025 U,Q-	0.00034 U,Q-	0.00063 U	0.0027 U	0.00018 U
Chlordane	0.0017	15 U	6.1 U	4.2 U	- -	- -	- -	- -	- -
delta-BHC	0.0029	1.5 U	0.61 U	0.42 U	0.00074 U,Q-	**0.0011 J,Q-**	0.0019 U	0.0081 U	0.00053 U
Dieldrin	0.0019	1.5 U	0.61 U	0.42 U	0.0017 U,Q-	0.0024 U,Q-	0.0044 U	0.019 U	0.0012 U
Endosulfan Sulfate	0.0054	1.5 U	0.61 U	0.42 U	0.00074 U,Q-	0.001 U,Q-	0.0019 U	0.0081 U	0.00053 U
Endrin	0.00222	1.5 U	0.61 U	0.42 U	0.00074 U,Q-	0.001 U,Q-	0.0019 U	0.0081 U	**0.00028 J,B**
Endrin Aldehyde	0.00267	1.5 U	0.61 U	0.42 U	0.0025 U,Q-	0.0034 U,Q-	0.0063 U	0.027 U	0.0018 U
Endrin Ketone	0.00267	- -	- -	- -	0.0025 U,Q-	0.0034 U,Q-	0.0063 U	0.027 U	0.0018 U
gamma-BHC	0.00094	1.5 U	0.61 U	0.42 U	0.00025 U,Q-	0.00034 U,Q-	0.00063 U	0.0027 U	0.00018 U
gamma-Chlordane	0.0017	- -	- -	- -	0.0012 U,Q-	**0.00081 J,Q**	**0.0019 J,Q**	**0.0054 J,Q**	**0.00073 J,Q**
Heptachlor	0.0006	1.5 U	0.61 U	0.42 U	0.00049 U,Q-	0.00068 U,Q-	**0.00078 J,Q**	0.0054 U	0.00035 U
Heptachlor Epoxide	0.0006	1.5 U	0.61 U	0.42 U	0.0017 U,Q-	0.0024 U,Q-	0.0044 U	0.019 U	**0.00087 J,Q**
Methoxychlor	0.0136	1.5 U	0.61 U	0.42 U	0.0025 U,Q-	0.0034 U,Q-	0.0063 U	0.027 U	0.0018 U
Toxaphene	0.000077	15 U	6.1 U	4.2 U	0.062 U,Q-	0.085 U,Q-	0.16 U	0.68 U	0.044 U
Polychlorinated Biphenyls (MG/KG)									
Aroclor 1016	0.007	1.9 U	0.76 U	2.6 U	0.049 U,Q-	0.023 U,Q-	0.025 U	0.054 U	0.035 U
Aroclor 1221	0.067	1.9 U	0.76 U	2.6 U	0.025 U,Q-	0.011 U,Q-	0.013 U	0.027 U	0.018 U
Aroclor 1232	0.1	1.9 U	0.76 U	2.6 U	0.025 U,Q-	0.011 U,Q-	0.013 U	0.027 U	0.018 U
Aroclor 1242	0.1	1.9 U	0.76 U	2.6 U	0.0086 U,Q-	0.004 U,Q-	0.0044 U	0.0095 U	0.0062 U
Aroclor 1248	0.03	1.9 U	0.76 U	2.6 U	0.025 U,Q-	0.011 U,Q-	0.013 U	0.027 U	0.018 U
Aroclor 1254	0.06	1.9 U	0.76 U	2.6 U	0.012 U,Q-	0.0057 U,Q-	0.0063 U	0.014 U	0.0089 U
Aroclor 1260	0.005	1.9 U	0.76 U	2.6 U	0.017 U,Q-	0.0079 U,Q-	0.0088 U	0.019 U	0.012 U
General Chemistry (%)									
Moisture, percent	--	- -	- -	- -	**61**	**27.6**	**28.3**	**68**	**48.1**
General Chemistry (%)									
Percent Solids	--	- -	- -	- -	**39**	**72.4**	**71.7**	**32**	**51.9**

Notes:

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

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

M = Result is estimated based on MS/MSD exceedance

mg/kg = Milligrams per Kilogram

NA = Not analyzed

Q = Result is estimated due to a QC exceedance

Q- = Result is estimated with a low bias due to a QC exceedance

Q+ = Result is estimated with a high bias due to a QC exceedance

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.

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 screening criteria

Table 10-5 Summary of Chemicals Detected in Surface Water

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date — Screening Level	Screening Level Source	35-SW-01	35-SW-02	35-SW-03	35-SW-03	35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
			35-SW-01	35-SW-02	35-SW-03	35-SW-A	35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
			0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
			9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012
Hydrocarbons (µg/L)											
C10-C25 DRO	150	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**240**	**250**	**240**	**280**	**260**	**260**	**240**	**250**	**290**
C25-C36 RRO	110	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**170**	**140**	**140**	**160**	**140**	**150**	**160**	**130**	**240**
C6-C10 GRO	220	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	15 U	21 U	44 U	18 U	19 U	21 U	24 U	19 U	18 U
VOCs (µg/L)											
1,1,1,2-Tetrachloroethane	0.57	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,1,1-Trichloroethane	11	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,1,2,2-Tetrachloroethane	0.076	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,1,2-Trichloroethane	0.041	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,1-Dichloroethane	2.8	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,1-Dichloroethene	25	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,1-Dichloropropene	0.47	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,2,3-Trichlorobenzene	0.7	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,2,3-Trichloropropane	0.00075	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,2,4-Trichlorobenzene	0.076	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,2,4-Trimethylbenzene	5.6	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,2-Dibromo-3-Chloropropane	0.00033	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
1,2-Dichlorobenzene	0.7	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,2-Dichloroethane	0.17	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,2-Dichloropropane	0.14	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,3,5-Trimethylbenzene	1.8	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,3-Dichlorobenzene	10	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,3-Dichloropropane	12	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
1,4-Dichlorobenzene	0.48	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
2,2-Dichloropropane	0.14	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
2-Butanone (MEK)	560	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U
2-Chlorotoluene	24	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
2-Hexanone	3.8	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
4-Chlorotoluene	25	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Methyl-2-Pentanone (MIBK)	170	Lowest of the RAIS Surface Water Screening Criteria	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Acetone	1400	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	4.5 UJ	4.5 UJ	4.5 UJ	4.5 UJ	4.5 UJ	4.5 UJ	4.5 UJ	4.5 UJ	4.5 UJ
Benzene	0.46	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
bis(2-Chloroethoxy)methane	5.9	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	--	--	--	--	--	--	--	--	--
Bromobenzene	6.2	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Bromochloromethane	8.3	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Bromodichloromethane	0.13	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Bromoform	3.3	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Bromomethane	0.75	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	2.3 UJ	2.3 UJ	2.3 UJ	2.3 UJ	2.3 UJ	2.3 UJ	2.3 UJ	2.3 UJ	2.3 UJ
Carbon Disulfide	0.92	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	**0.18 J**	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Carbon Tetrachloride	0.46	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Chlorobenzene	1.3	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Chloroethane	2100	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Chloroform	0.22	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Chloromethane	19	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
cis-1,2-Dichloroethene	1.85	FRG Human Health (Fish Consumption)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
cis-1,3-Dichloropropene	0.055	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U

Notes:

µg/L = microgram(s) per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-5 Summary of Chemicals Detected in Surface Water

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date — Screening Level	Screening Level Source	35-SW-01	35-SW-02	35-SW-03		35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
			35-SW-01	35-SW-02	35-SW-03	35-SW-A	35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
			0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
			9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012
Dibromochloromethane	0.87	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Dibromomethane	0.83	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Dichlorodifluoromethane	20	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Ethyl tert-Butyl Ether (ETBE)	--		- -	- -	- -	- -	- -	- -	- -	- -	- -
Ethylbenzene	1.5	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Ethylene Dibromide (EDB)	0.0075	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Hexachlorobutadiene	0.01	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ
Isopropyl ether (DIPE)	--		- -	- -	- -	- -	- -	- -	- -	- -	- -
Isopropylbenzene	2.6	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
m- & p-Xylene	13	Lowest of the RAIS Surface Water Screening Criteria	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Methyl tert-Butyl Ether (MTBE)	14	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Methylene Chloride	11	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.16 U	0.45 U	0.45 U	0.45 U
n-Butylbenzene	71	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
n-Propylbenzene	66	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Naphthalene	0.17	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
o-Xylene	13	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
p-Isopropyltoluene	85	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
sec-Butylbenzene	82	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Styrene	32	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
tert-Amyl Methyl Ether (TAME)	--		- -	- -	- -	- -	- -	- -	- -	- -	- -
tert-Butanol (TBA)	--		- -	- -	- -	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	48	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Tetrachloroethene (PCE)	4.1	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ	0.45 UJ
Toluene	2	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
trans-1,2-Dichloroethene	3.2	FRG Human Health (Fish Consumption)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
trans-1,3-Dichloropropene	0.055	Lowest of the RAIS Surface Water Screening Criteria	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Trichloroethene (TCE)	0.28	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Trichlorofluoromethane	520	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Vinyl Chloride	0.019	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Xylenes, Total	13	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
SVOCs (µg/L)											
1-Methylnaphthalene	1.1	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**0.033 J**	**0.033 J**	0.075 U	0.075 U	**0.038 J**	0.075 U	0.075 U	0.075 U	0.075 U
2,4,5-Trichlorophenol	64	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	1.2	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	4.6	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	21.2	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	3.9	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	0.24	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	0.049	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene	0.396	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorophenol	9.1	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	3.6	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**0.041 J**	**0.045 J**	**0.044 J**	**0.038 J**	**0.041 J**	**0.039 J**	0.075 U	**0.04 J**	0.075 U
2-Methylphenol	93	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitroaniline	19	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitrophenol	1920	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	0.13	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -

Notes:

µg/L = microgram(s) per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-5 Summary of Chemicals Detected in Surface Water

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date / Screening Level	Screening Level Source	35-SW-01	35-SW-02	35-SW-03		35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
	Sample ID		35-SW-01	35-SW-02	35-SW-03	35-SW-A	35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
	Sample Depth (ft)		0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date		9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012
3- & 4-Methylphenol	9.3	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
3-Nitroaniline	--		- -	- -	- -	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	0.15	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	1.5	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	0.3	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloroaniline	0.37	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	--		- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitroaniline	3.8	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitrophenol	60	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	5.8	Lowest of the RAIS Surface Water Screening Criteria	0.075 U	0.075 U	0.075 U	0.075 U	**0.033 J**	0.075 U	0.075 U	0.075 U	0.075 U
Acenaphthylene	26	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Anthracene	0.012	Lowest of the RAIS Surface Water Screening Criteria	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Benzo(a)anthracene	0.0013	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Benzo(a)pyrene	0.00013	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Benzo(b)fluoranthene	0.0013	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Benzo(g,h,i)perylene	0.026	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Benzo(k)fluoranthene	0.013	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Benzoic acid	42	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzyl alcohol	8.6	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroethyl)ether	0.014	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroisopropyl)ether	71	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Ethylhexyl)phthalate	0.3	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
Butyl Benzyl Phthalate	0.1	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbazole	--		- -	- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	0.13	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
di-n-Butyl Phthalate	7	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
di-n-Octyl Phthalate	0.22	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	0.00013	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Dibenzofuran	0.79	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
Diethyl phthalate	110	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dimethyl phthalate	330	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	0.04	Lowest of the RAIS Surface Water Screening Criteria	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Fluorene	3	Lowest of the RAIS Surface Water Screening Criteria	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Hexachlorobenzene	0.000079	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	--		- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachloroethane	0.1	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	- -	- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	0.0013	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Isophorone	78	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodimethylamine	0.00011	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodiphenylamine	6	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodipropylamine	0.011	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
Nitrobenzene	0.14	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pentachlorophenol	0.04	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	0.4	Lowest of the RAIS Surface Water Screening Criteria	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
Phenol	4	Lowest of the RAIS Surface Water Screening Criteria	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	0.025	Lowest of the RAIS Surface Water Screening Criteria	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U

Notes:

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

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Shading indicates the result exceeded screening criteria

Table 10-5 Summary of Chemicals Detected in Surface Water

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date / Screening Level	Screening Level Source	35-SW-01	35-SW-02	35-SW-03		35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
	Sample ID		35-SW-01	35-SW-02	35-SW-03	35-SW-A	35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
	Sample Depth (ft)		0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date		9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012
Metals (µg/L)											
Aluminum	75	Lowest of the RAIS Surface Water Screening Criteria	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Aluminum, dissolved	75	Lowest of the RAIS Surface Water Screening Criteria	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Antimony	0.78	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Antimony, dissolved	0.78	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.11 J**	0.2 U	0.2 U	0.2 U
Arsenic	0.052	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**4**	**4.2**	**4.1**	**4.2**	**4**	**4.2**	**4.1**	**4.1**	**6.7**
Arsenic, dissolved	0.052	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**3.4**	**3.3**	**3.2**	**3.2**	**3.3**	**3.3**	**3.2**	**3.5**	**3.9**
Barium	380	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**190**	**190**	**190**	**190**	**190**	**190**	**190**	**190**	**200**
Barium, dissolved	380	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**190**	**190**	**190**	**190**	**190**	**190**	**190**	**190**	**170**
Beryllium	0.53	Lowest of the RAIS Surface Water Screening Criteria	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Beryllium, dissolved	0.53	Lowest of the RAIS Surface Water Screening Criteria	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	0.25	Lowest of the RAIS Surface Water Screening Criteria	0.05 U	0.05 U	0.05 U	0.05 U	**0.034 J**	0.05 U	0.05 U	0.05 U	0.05 U
Cadmium, dissolved	0.25	Lowest of the RAIS Surface Water Screening Criteria	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Calcium	116000	Lowest of the RAIS Surface Water Screening Criteria	**52000**	**52000**	**52000**	**53000**	**53000 J**	**52000**	**52000**	**51000**	**56000**
Calcium, dissolved	116000	Lowest of the RAIS Surface Water Screening Criteria	**52000 J**	**52000 J**	**52000 J**	**52000 J**	**52000 J**	**52000 J**	**51000 J**	**50000 J**	**51000 J**
Chromium	11	National Recommended Water Quality Aquatic Life Freshwater Chronic	**0.41**	**0.37 J**	**0.36 J**	**0.37 J**	**0.48**	**0.4**	**0.36 J**	**0.37 J**	**0.65**
Chromium, dissolved	11	National Recommended Water Quality Aquatic Life Freshwater Chronic	**0.35 J**	**0.38 J**	**0.37 J**	**0.37 J**	**0.4**	**0.36 J**	**0.36 J**	**0.36 J**	**0.38 J**
Cobalt	0.6	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	**0.15 J**	**0.16 J**	**0.15 J**	**0.13 J**	**0.15 J**	**0.15 J**	**0.15 J**	**0.13 J**	**0.14 J**
Cobalt, dissolved	0.6	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	**0.13 J**	**0.12 J**	**0.12 J**	**0.11 J**	**0.11 J**	**0.12 J**	**0.11 J**	**0.11 J**	**0.064 J**
Copper	0.205	Lowest of the RAIS Surface Water Screening Criteria	0.2 U	0.2 U	0.2 U	0.2 U	**0.18 J**	0.2 U	0.2 U	0.2 U	**0.57 J**
Copper, dissolved	0.205	Lowest of the RAIS Surface Water Screening Criteria	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Iron	16	Lowest of the RAIS Surface Water Screening Criteria	**620**	**650**	**640**	**660**	**690**	**640**	**630**	**620**	**1500**
Iron, dissolved	16	Lowest of the RAIS Surface Water Screening Criteria	**140 J**	**130 J**	100 U	100 U	**110 J**	**130 J**	**86 J**	**210**	**130 J**
Lead	0.35	Lowest of the RAIS Surface Water Screening Criteria	0.05 U	0.05 U	0.05 U	0.05 U	**0.086 J**	0.05 U	0.05 U	0.05 U	**0.11 J**
Lead, dissolved	0.35	Lowest of the RAIS Surface Water Screening Criteria	0.05 U	0.05 U	0.05 U	**0.075 J**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Magnesium	647	Lowest of the RAIS Surface Water Screening Criteria	**13000**	**13000**	**13000**	**13000**	**13000**	**13000**	**13000**	**13000**	**16000**
Magnesium, dissolved	647	Lowest of the RAIS Surface Water Screening Criteria	**13000**	**13000**	**13000**	**13000**	**13000**	**13000**	**13000**	**13000**	**16000**
Manganese	43	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	**1300 J**	**1300 J**	**1300 J**	**1300 J**	**1300 J**	**1400 J**	**1300 J**	**1300 J**	**1400 J**
Manganese, dissolved	43	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	**1400 J**	**1400 J**	**1300 J**	**1300 J**	**1300 J**	**1400 J**	**1300 J**	**1300 J**	**640 J**
Mercury	0.0013	Lowest of the RAIS Surface Water Screening Criteria	0.052 U	0.051 U	0.048 U	0.053 U	0.048 U	0.042 U	0.05 U	0.054 U	0.053 U
Mercury, dissolved	0.0013	Lowest of the RAIS Surface Water Screening Criteria	0.048 U	0.054 U	0.052 U	0.044 U	0.1 U	0.045 U	0.048 U	0.047 U	0.047 U
Nickel	5	Lowest of the RAIS Surface Water Screening Criteria	0.5 U	**1.3 J**	0.5 U	**1.3 J**	0.5 U	**0.41 J**	0.5 U	0.5 U	**0.5 J**
Nickel, dissolved	5	Lowest of the RAIS Surface Water Screening Criteria	**0.43 J**	**0.43 J**	**0.4 J**	**0.4 J**	**0.43 J**	0.5 U	0.5 U	0.5 U	**0.48 J**
Potassium	53000	Lowest of the RAIS Surface Water Screening Criteria	**4200 J**	**4200 J**	**4200 J**	**4200 J**	**4200 J**	**4300 J**	**4300 J**	**4100 J**	**5100 J**
Potassium, dissolved	53000	Lowest of the RAIS Surface Water Screening Criteria	**4300 J**	**4200 J**	**4300 J**	**4400 J**	**4200 J**	**4300 J**	**4400 J**	**4200 J**	**5100 J**
Selenium	5	National Recommended Water Quality Aquatic Life Freshwater Chronic	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Selenium, dissolved	5	National Recommended Water Quality Aquatic Life Freshwater Chronic	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Silver	0.012	Lowest of the RAIS Surface Water Screening Criteria	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Silver, dissolved	0.012	Lowest of the RAIS Surface Water Screening Criteria	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Sodium	680000	Lowest of the RAIS Surface Water Screening Criteria	**5400**	**5500**	**5500**	**5600**	**5600**	**5500**	**5500**	**5300**	**5700**
Sodium, dissolved	680000	Lowest of the RAIS Surface Water Screening Criteria	**5500**	**5400**	**5500**	**5400**	**5400**	**5400**	**5300**	**5300**	**5600**
Thallium	0.02	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Thallium, dissolved	0.02	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vanadium	8.6	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**1.5 J**	**1.6 J**	**1.5 J**	**1.7 J**	**1.5 J**	**1.6 J**	**1.5 J**	**1.5 J**	**1.8 J**
Vanadium, dissolved	8.6	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**1.7 J**	**1.6 J**	**1.8 J**	**1.8 J**	**1.8 J**	**1.7 J**	**1.8 J**	**1.7 J**	**1.9 J**
Zinc	21	Lowest of the RAIS Surface Water Screening Criteria	**2.1**	**1.7**	**1.5**	**1.4**	**1.9**	**2.1**	**1.6**	**2**	**5.2**

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Table 10-5 Summary of Chemicals Detected in Surface Water

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date — Screening Level	Screening Level Source	35-SW-01	35-SW-02	35-SW-03	35-SW-03	35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
			35-SW-01	35-SW-02	35-SW-03	35-SW-A	35-SW-04	35-SW-05	35-SW-06	35-SW-07	35-SW-08
			0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
			9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012	9/11/2012
Zinc, dissolved	21	Lowest of the RAIS Surface Water Screening Criteria	**1.2 J**	**1.2 J**	**2**	**1.8**	**1.4**	**1.3 J**	**1.4**	**1.3 J**	**1.1 J**
Pesticides (µg/L)											
4,4-DDD	0.00012	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	**0.033**	**0.021**	**0.019**	**0.019 J**	**0.019**	**0.021**	**0.023**	**0.019**	**0.0063 J**
4,4-DDE	0.00000000451	Lowest of the RAIS Surface Water Screening Criteria	**0.0019 J**	**0.0016 J**	0.0028 U	0.0028 U	0.0029 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U
4,4-DDT	0.000011	Lowest of the RAIS Surface Water Screening Criteria	**0.0073 J**	**0.003 J**	**0.0039 J**	0.0047 U	0.0048 UJ	**0.003 J**	**0.0046 J**	**0.0032 J**	**0.0031 J**
Aldrin	0.00000077	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
alpha-BHC	0.00039	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0029 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U
alpha-Chlordane	0.0022	Lowest of the RAIS Surface Water Screening Criteria	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
alpha-Endosulfan	0.051	Lowest of the RAIS Surface Water Screening Criteria	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
beta-BHC	0.014	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0029 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U
beta-Endosulfan	0.051	Lowest of the RAIS Surface Water Screening Criteria	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Chlordane	0.00032	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	- -	- -	- -	- -	- -	- -	- -	- -	- -
delta-BHC	0.0072	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Dieldrin	0.0000012	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Endosulfan Sulfate	0.056	Lowest of the RAIS Surface Water Screening Criteria	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Endrin	0.002	Lowest of the RAIS Surface Water Screening Criteria	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Endrin Aldehyde	0.15	Lowest of the RAIS Surface Water Screening Criteria	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0029 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U
Endrin Ketone	0.23	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
gamma-BHC	0.01	Lowest of the RAIS Surface Water Screening Criteria	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
gamma-Chlordane	0.0022	Lowest of the RAIS Surface Water Screening Criteria	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0029 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U
Heptachlor	0.0000059	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Heptachlor Epoxide	0.000032	National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Methoxychlor	0.019	Lowest of the RAIS Surface Water Screening Criteria	0.0047 UJ	0.0047 UJ	0.0047 UJ	0.0047 UJ	0.0048 UJ	0.0047 UJ	0.0047 UJ	0.0047 UJ	0.0047 UJ
Toxaphene	0.00014	Lowest of the RAIS Surface Water Screening Criteria	0.47 U	0.47 U	0.47 U	0.47 U	0.48 U	0.47 U	0.47 U	0.47 U	0.47 U
Polychlorinated Biphenyls (µg/L)											
Aroclor 1016	0.000074	Lowest of the RAIS Surface Water Screening Criteria	0.094 U	0.094 U	0.094 U	0.094 U	0.096 U	0.094 U	0.094 U	0.094 U	0.094 U
Aroclor 1221	0.000074	Lowest of the RAIS Surface Water Screening Criteria	0.12 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U
Aroclor 1232	0.000074	Lowest of the RAIS Surface Water Screening Criteria	0.094 U	0.094 U	0.094 U	0.094 U	0.096 U	0.094 U	0.094 U	0.094 U	0.094 U
Aroclor 1242	0.000074	Lowest of the RAIS Surface Water Screening Criteria	0.094 U	0.094 U	0.094 U	0.094 U	0.096 U	0.094 U	0.094 U	0.094 U	0.094 U
Aroclor 1248	0.000074	Lowest of the RAIS Surface Water Screening Criteria	0.075 U	0.075 U	0.075 U	0.075 U	0.077 U	0.075 U	0.075 U	0.075 U	0.075 U
Aroclor 1254	0.000074	Lowest of the RAIS Surface Water Screening Criteria	0.12 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U
Aroclor 1260	0.000074	Lowest of the RAIS Surface Water Screening Criteria	0.094 U	0.094 U	0.094 U	0.094 U	0.096 U	0.094 U	0.094 U	0.094 U	0.094 U

Notes:

µg/L = microgram(s) per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

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Table 10-6 Summary of Chemicals Detected in Groundwater

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date / Screening Level	Screening Level Source	35M01						35M02						35M04			
			35M01-IWMP-S14	35M01-IWMP-S14-V	35M01-2015S	35M01-2015F	35M01-2016S	35M01-2016F	35M02-IWMP-S14	35M02-IWMP-S14-V	35M02-2015S	35M02-2015F	35M02-2016S	35M02-2016F	35M04-IWMP-S14	35M04-IWMP-S14-V	35M04-2015S	35M04-2015S9
			0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
			6/14/2014	6/14/2014	6/2/2015	9/17/2015	6/3/2016	9/12/2016	6/14/2014	6/14/2014	6/1/2015	9/17/2015	6/3/2016	9/12/2016	6/14/2014	6/14/2014	6/2/2015	6/2/2015
Hydrocarbons (µg/L)																		
C10-C25 DRO	150	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**64.4 J**	- -	- -	- -	- -	- -	**43.8 J**	- -	- -	- -	- -	- -	**52 J**	- -	- -	- -
C25-C36 RRO	110	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	110 U	- -	- -	- -	- -	- -	100 U	- -	- -	- -	- -	- -	100 U	- -	- -	- -
C6-C10 GRO	220	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	25 U	- -	- -	- -	- -	- -	25 U	- -	- -	- -	- -	- -	25 U	- -	- -
VOCs (µg/L)																		
1,1,1,2-Tetrachloroethane	0.57	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U
1,1,1-Trichloroethane	800	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	0.076	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,1,2-Trichloroethane	0.041	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,1-Dichloroethane	2.8	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,1-Dichloroethene	28	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,1-Dichloropropene	0.47	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,2,3-Trichlorobenzene	0.7	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U
1,2,3-Trichloropropane	0.00075	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	0.4	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U
1,2,4-Trimethylbenzene	5.6	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,2-Dibromo-3-Chloropropane	0.00033	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	1 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	1 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	1 U	0.5 U	0.5 U
1,2-Dichlorobenzene	30	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U
1,2-Dichloroethane	0.17	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,2-Dichloropropane	0.14	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	6	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,3-Dichlorobenzene	30	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,3-Dichloropropane	37	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
1,4-Dichlorobenzene	0.48	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
2,2-Dichloropropane	0.14	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
2-Butanone (MEK)	560	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U	4 U
2-Chlorotoluene	24	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
2-Hexanone	3.8	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U	4 U
4-Chlorotoluene	25	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U
4-Methyl-2-Pentanone (MIBK)	630	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U	4 U
Acetone	1400	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	10 U	5 U	5 U	5 U	5 U	- -	10 U	**3.9 J**	5 U	5 U	5 U	- -	10 U	5 U	5 U
Benzene	0.46	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Bromobenzene	6.2	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Bromochloromethane	8.3	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Bromodichloromethane	0.13	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Bromoform	3.3	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.5 U	0.3 U	0.3 U
Bromomethane	0.75	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U
Carbon Disulfide	81	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U	0.5 U
Carbon Tetrachloride	0.46	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Chlorobenzene	7.8	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Chloroethane	2100	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U
Chloroform	0.22	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Chloromethane	19	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U
cis-1,2-Dichloroethene	3.6	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	**0.17 J**	0.2 U	0.2 U	0.2 U	- -	0.4 U	**0.17 J**	**0.18 J**	**0.14 J**	**0.32 J**	- -	0.4 U	**0.2 J**	**0.21 J**
cis-1,3-Dichloropropene	0.47	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Dibromochloromethane	0.87	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Dibromomethane	0.83	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Dichlorodifluoromethane	20	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U
Ethylbenzene	1.5	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Ethylene Dibromide (EDB)	0.0075	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	- -	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	- -	0.005 U	0.02 U	0.02 U
Hexachlorobutadiene	0.14	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U
Isopropylbenzene	45	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
m- & p-Xylene	19	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U	- -	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U	- -	0.8 U	0.4 U	0.4 U
Methyl tert-Butyl Ether (MTBE)	14	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Methylene Chloride	11	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	4 U	1 U	1 U	1 U	1 U	- -	4 U	1 U	1 U	1 U	1 U	- -	4 U	1 U	1 U
n-Butylbenzene	100	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
n-Propylbenzene	66	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Naphthalene	0.17	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	- -	1 U	1 U	1 U	1 U	0.1 U	- -	1 U	1 U	1 U	1 U	0.094 U	- -	1 U	1 U
o-Xylene	19	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
p-Isopropyltoluene	--		- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
sec-Butylbenzene	200	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
Styrene	120	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U	0.5 U
tert-Butylbenzene	69	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U
Tetrachloroethene (PCE)	4.1	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U
Toluene	110	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	36	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.47	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U
Trichloroethene (TCE)	0.28	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U

Notes:

µg/L = Micrograms per Liter

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

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

mg/L = Milligrams per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-6 Summary of Chemicals Detected in Groundwater

Analyte	Location / Sample ID / Sample Depth (ft) / Sample Date / Screening Level	Screening Level Source	35M01						35M02						35M04			
			35M01-IWMP-S14	35M01-IWMP-S14-V	35M01-2015S	35M01-2015F	35M01-2016S	35M01-2016F	35M02-IWMP-S14	35M02-IWMP-S14-V	35M02-2015S	35M02-2015F	35M02-2016S	35M02-2016F	35M04-IWMP-S14	35M04-IWMP-S14-V	35M04-2015S	35M04-2015S9
			0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
			6/14/2014	6/14/2014	6/2/2015	9/17/2015	6/3/2016	9/12/2016	6/14/2014	6/14/2014	6/1/2015	9/17/2015	6/3/2016	9/12/2016	6/14/2014	6/14/2014	6/2/2015	6/2/2015
Trichlorofluoromethane	520	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	--	0.4 U	0.3 U	0.3 U
Vinyl Chloride	0.019	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	0.4 U	0.2 U	**0.15 J**	0.2 U	0.2 U	--	0.4 U	0.2 U	**0.14 J**	0.2 U	0.2 U	--	0.4 U	0.2 U	0.2 U
Xylenes, Total	19	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	1.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	1.2 U	0.2 U	0.2 U	0.2 U	**0.19 J**	--	1.2 U	0.2 U	0.2 U
SVOCs (µg/L)																		
1-Methylnaphthalene	1.1	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	0.094 U	--	--	--
2-Methylnaphthalene	3.6	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	0.094 U	--	--	--
Acenaphthene	53	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	0.094 U	--	--	--
Acenaphthylene	26	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	0.094 U	--	--	--
Anthracene	4.3	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	0.094 U	--	--	--
Benzo(a)anthracene	0.012	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.095 U	--	--	--	--	--	0.095 U	--	--	--	--	--	0.09 U	--	--	--
Benzo(a)pyrene	0.0034	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.095 U	--	--	--	--	--	0.095 U	--	--	--	--	--	0.09 U	--	--	--
Benzo(b)fluoranthene	0.034	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.095 U	--	--	--	--	--	0.095 U	--	--	--	--	--	0.09 U	--	--	--
Benzo(g,h,i)perylene	0.026	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.095 U	--	--	--	--	--	0.095 U	--	--	--	--	--	0.09 U	--	--	--
Benzo(k)fluoranthene	0.08	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.095 U	--	--	--	--	--	0.095 U	--	--	--	--	--	0.09 U	--	--	--
Chrysene	0.2	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.095 U	--	--	--	--	--	0.095 U	--	--	--	--	--	0.09 U	--	--	--
Dibenz(a,h)anthracene	0.0034	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.095 U	--	--	--	--	--	0.095 U	--	--	--	--	--	0.09 U	--	--	--
Fluoranthene	26	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	0.094 U	--	--	--
Fluorene	29	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	0.094 U	--	--	--
Indeno(1,2,3-cd)pyrene	0.0019	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.095 U	--	--	--	--	--	0.095 U	--	--	--	--	--	0.09 U	--	--	--
Phenanthrene	17	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	0.094 U	--	--	--
Pyrene	12	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	0.094 U	--	--	--
Metals (µg/L)																		
Aluminum	2000	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum, dissolved	2000	EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) June 2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	0.78	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony, dissolved	0.78	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5.4	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic, dissolved	5.4	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	380	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium, dissolved	380	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	2.5	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium, dissolved	2.5	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	0.92	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium, dissolved	0.92	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium, dissolved	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	2200	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, dissolved	2200	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	5.1	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt, dissolved	5.1	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	80	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper, dissolved	80	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	2400	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron, dissolved	2400	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	1.5	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	2 U	--	0.1 U	**0.0506 J**	0.1 U	0.1 U	2 U	--	0.1 U	0.1 U	0.1 U	**0.0502 J**	**0.17 J**	--	**0.0575 J**	0.1 U
Lead, dissolved	1.5	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium, dissolved	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	2900	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese, dissolved	2900	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.052	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury, dissolved	0.052	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	39	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel, dissolved	39	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium, dissolved	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	10	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium, dissolved	10	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	9.4	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver, dissolved	9.4	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium, dissolved	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	1	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium, dissolved	1	Background Threshold Value	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	8.6	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium, dissolved	8.6	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	600	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc, dissolved	600	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

µg/L = Micrograms per Liter

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

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

mg/L = Milligrams per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-6 Summary of Chemicals Detected in Groundwater

	Location		35M01						35M02						35M04			
	Sample ID		35M01-IWMP-S14	35M01-IWMP-S14-V	35M01-2015S	35M01-2015F	35M01-2016S	35M01-2016F	35M02-IWMP-S14	35M02-IWMP-S14-V	35M02-2015S	35M02-2015F	35M02-2016S	35M02-2016F	35M04-IWMP-S14	35M04-IWMP-S14-V	35M04-2015S	35M04-2015S9
	Sample Depth (ft)		0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date		6/14/2014	6/14/2014	6/2/2015	9/17/2015	6/3/2016	9/12/2016	6/14/2014	6/14/2014	6/1/2015	9/17/2015	6/3/2016	9/12/2016	6/14/2014	6/14/2014	6/2/2015	6/2/2015
Analyte	Screening Level	Screening Level Source																
Pesticides (µg/L)																		
4,4-DDD	0.032	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.011 U
4,4-DDE	0.046	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.0051 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.005 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0049 U	0.0052 U
4,4-DDT	0.23	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.0051 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.005 U	0.0051 U	0.01 U	0.0095 U	0.004 U	- -	0.0049 U	0.011 U
Aldrin	0.00092	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.0052 U
alpha-BHC	0.0072	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.0051 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.0052 U
alpha-Chlordane	0.02	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.011 U
alpha-Endosulfan	10	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.011 U
beta-BHC	0.025	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.005 U	- -	0.01 U	0.0071 U	0.0076 U	0.0076 U	0.005 U	- -	0.01 U	0.0071 U	0.0072 U	0.0095 U	0.005 U	- -	0.0098 U	0.011 U
beta-Endosulfan	10	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.011 U
delta-BHC	0.0072	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0066 U	0.004 U	- -	0.0098 U	0.011 U
Dieldrin	0.0018	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0048 U	0.004 U	- -	0.0098 U	0.011 U
Endosulfan Sulfate	10	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.011 U
Endrin	0.23	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.011 U
Endrin Aldehyde	0.23	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.005 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.005 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.005 U	- -	0.0098 U	0.0052 U
Endrin Ketone	0.23	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.011 U
gamma-BHC	0.042	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.0051 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0049 U	0.0052 U
gamma-Chlordane	0.02	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.01 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.011 U
Heptachlor	0.0014	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	**0.014 B**	- -	0.01 U	0.01 U	0.011 U	0.011 U	**0.014 B**	- -	0.01 U	0.01 U	0.01 U	0.0095 U	**0.014 B**	- -	0.0098 U	0.011 U
Heptachlor Epoxide	0.0014	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.01 U	0.01 U	0.011 U	0.011 U	0.004 U	- -	0.01 U	0.0051 U	0.01 U	0.0095 U	0.004 U	- -	0.0098 U	0.011 U
Methoxychlor	3.7	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.004 U	- -	0.1 U	0.1 U	0.11 U	0.11 U	0.004 U	- -	0.1 U	0.1 U	0.1 U	0.095 U	0.004 U	- -	0.098 U	0.1 U
Toxaphene	0.071	1/10th ADEC Table C Human Health Groundwater Cleanup Level (November 2017)	0.082 U	- -	0.51 U	0.51 U	0.54 U	0.55 U	0.082 U	- -	0.5 U	0.51 U	0.52 U	0.48 U	0.08 U	- -	0.49 U	0.52 U
General Chemistry (mg/L)																		
Total Organic Carbon	--		**3.7**	- -	- -	- -	- -	- -	**3.4**	- -	- -	- -	- -	- -	**4.6**	- -	- -	- -

Notes:
µg/L = Micrograms per Liter
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
mg/L = Milligrams per Liter
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.

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

Table 10-6 Summary of Chemicals Detected in Groundwater

	Location	35M04			35M05								35M06						35M08		
	Sample ID	35M04-2015F	35M04-2016S	35M04-2016F	35M05-IWMP-S14	35M05-IWMP-S14-1	35M05-IWMP-S14-1-V	35M05-IWMP-S14-V	35M05-2015S	35M05-2015F	35M05-2016S	35M05-2016F	35M06-IWMP-S14	35M06-IWMP-S14-V	35M06-2015S	35M06-2015F	35M06-2016S	35M06-2016F	35M08-IWMP-S14	35M08-IWMP-S14-V	35M08-2015S
	Sample Depth (ft)	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date	9/17/2015	6/3/2016	9/12/2016	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016	6/13/2014	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016	6/14/2014	6/14/2014	6/1/2015
Analyte	Screening Level																				
Hydrocarbons (µg/L)																					
C10-C25 DRO	150	- -	- -	- -	**79.2 J**	**46.9 J**	- -	- -	- -	- -	- -	- -	**46.5 J**	- -	- -	- -	- -	- -	**34.1 J**	- -	- -
C25-C36 RRO	110	- -	- -	- -	110 U	100 U	- -	- -	- -	- -	- -	- -	97 U	- -	- -	- -	- -	- -	100 U	- -	- -
C6-C10 GRO	220	- -	- -	- -	- -	- -	25 U	25 U	- -	- -	- -	- -	- -	25 U	- -	- -	- -	- -	- -	25 U	- -
VOCs (µg/L)																					
1,1,1,2-Tetrachloroethane	0.57	0.2 U	0.2 U	0.2 U	- -	- -	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U
1,1,1-Trichloroethane	800	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,1,2,2-Tetrachloroethane	0.076	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,1,2-Trichloroethane	0.041	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,1-Dichloroethane	2.8	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,1-Dichloroethene	28	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,1-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,2,3-Trichlorobenzene	0.7	0.3 U	0.3 U	0.3 U	- -	- -	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U
1,2,3-Trichloropropane	0.00075	0.5 U	0.5 U	0.5 U	- -	- -	0.4 U	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U
1,2,4-Trichlorobenzene	0.4	0.3 U	0.3 U	0.3 U	- -	- -	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U
1,2,4-Trimethylbenzene	5.6	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,2-Dibromo-3-Chloropropane	0.00033	0.5 U	0.5 U	0.5 U	- -	- -	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	1 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	1 U	0.5 U
1,2-Dichlorobenzene	30	0.2 U	0.2 U	0.2 U	- -	- -	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U
1,2-Dichloroethane	0.17	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,2-Dichloropropane	0.14	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,3,5-Trimethylbenzene	6	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,3-Dichlorobenzene	30	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,3-Dichloropropane	37	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
1,4-Dichlorobenzene	0.48	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
2,2-Dichloropropane	0.14	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
2-Butanone (MEK)	560	4 U	4 U	4 U	- -	- -	4 U	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U
2-Chlorotoluene	24	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
2-Hexanone	3.8	4 U	4 U	4 U	- -	- -	4 U	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U
4-Chlorotoluene	25	0.2 U	0.2 U	0.2 U	- -	- -	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U
4-Methyl-2-Pentanone (MIBK)	630	4 U	4 U	4 U	- -	- -	4 U	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U	4 U	4 U	4 U	- -	4 U	4 U
Acetone	1400	5 U	5 U	5 U	- -	- -	10 U	10 U	5 U	5 U	5 U	5 U	- -	10 U	5 U	5 U	5 U	5 U	- -	10 U	5 U
Benzene	0.46	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	**0.17 J**	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Bromobenzene	6.2	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Bromochloromethane	8.3	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Bromodichloromethane	0.13	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Bromoform	3.3	0.3 U	0.3 U	0.3 U	- -	- -	0.5 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.5 U	0.3 U
Bromomethane	0.75	0.3 U	0.3 U	0.3 U	- -	- -	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U
Carbon Disulfide	81	0.5 U	0.5 U	0.5 U	- -	- -	0.4 U	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U
Carbon Tetrachloride	0.46	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Chlorobenzene	7.8	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Chloroethane	2100	0.3 U	0.3 U	0.3 U	- -	- -	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U
Chloroform	0.22	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Chloromethane	19	0.3 U	0.3 U	0.3 U	- -	- -	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U
cis-1,2-Dichloroethene	3.6	**0.25 J**	**0.16 J**	**0.22 J**	- -	- -	0.4 U	0.4 U	**0.15 J**	**0.17 J**	**0.1 J**	**0.11 J**	- -	0.4 U	**0.22 J**	**0.25 J**	0.2 U	0.2 U	- -	0.4 U	**0.2 J**
cis-1,3-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Dibromochloromethane	0.87	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Dibromomethane	0.83	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Dichlorodifluoromethane	20	0.3 U	0.3 U	0.3 U	- -	- -	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U
Ethylbenzene	1.5	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Ethylene Dibromide (EDB)	0.0075	0.02 U	0.02 U	0.02 U	- -	- -	0.005 U	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	- -	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	- -	0.005 U	0.02 U
Hexachlorobutadiene	0.14	0.3 U	0.3 U	0.3 U	- -	- -	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U
Isopropylbenzene	45	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
m- & p-Xylene	19	0.4 U	0.4 U	0.4 U	- -	- -	0.8 U	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U	- -	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U	- -	0.8 U	0.4 U
Methyl tert-Butyl Ether (MTBE)	14	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Methylene Chloride	11	1 U	1 U	1 U	- -	- -	4 U	4 U	1 U	1 U	1 U	1 U	- -	4 U	1 U	1 U	1 U	1 U	- -	4 U	1 U
n-Butylbenzene	100	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
n-Propylbenzene	66	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Naphthalene	0.17	1 U	1 U	1 U	0.1 U	0.1 U	- -	- -	1 U	1 U	1 U	1 U	0.1 U	- -	1 U	1 U	1 U	1 U	0.1 U	- -	1 U
o-Xylene	19	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
p-Isopropyltoluene	--	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
sec-Butylbenzene	200	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
Styrene	120	0.5 U	0.5 U	0.5 U	- -	- -	0.4 U	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	- -	0.4 U	0.5 U
tert-Butylbenzene	69	0.2 U	0.2 U	0.2 U	- -	- -	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U
Tetrachloroethene (PCE)	4.1	0.2 U	0.2 U	0.2 U	- -	- -	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U
Toluene	110	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
trans-1,2-Dichloroethene	36	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U
trans-1,3-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	- -	- -	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.5 U	0.2 U
Trichloroethene (TCE)	0.28	0.2 U	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	0.4 U	0.2 U

Notes:

µg/L = Micrograms per Liter

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

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

mg/L = Milligrams per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-6 Summary of Chemicals Detected in Groundwater

	Location	35M04			35M05								35M06						35M08		
	Sample ID	35M04-2015F	35M04-2016S	35M04-2016F	35M05-IWMP-S14	35M05-IWMP-S14-1	35M05-IWMP-S14-1-V	35M05-IWMP-S14-V	35M05-2015S	35M05-2015F	35M05-2016S	35M05-2016F	35M06-IWMP-S14	35M06-IWMP-S14-V	35M06-2015S	35M06-2015F	35M06-2016S	35M06-2016F	35M08-IWMP-S14	35M08-IWMP-S14-V	35M08-2015S
	Sample Depth (ft)	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date	9/17/2015	6/3/2016	9/12/2016	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016	6/13/2014	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016	6/14/2014	6/14/2014	6/1/2015
Analyte	**Screening Level**																				
Trichlorofluoromethane	520	0.3 U	0.3 U	0.3 U	- -	- -	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	- -	0.4 U	0.3 U
Vinyl Chloride	0.019	**0.17 J**	0.2 U	0.2 U	- -	- -	0.4 U	0.4 U	0.2 U	**0.14 J**	0.2 U	0.2 U	- -	0.4 U	0.2 U	**0.17 J**	0.2 U	0.2 U	- -	0.4 U	0.2 U
Xylenes, Total	19	0.2 U	0.2 U	**0.11 J**	- -	- -	1.2 U	1.2 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	1.2 U	0.2 U	0.2 U	0.2 U	0.2 U	- -	1.2 U	0.2 U
SVOCs (µg/L)																					
1-Methylnaphthalene	1.1	- -	- -	- -	0.1 U	0.1 U	- -	- -	- -	- -	- -	- -	0.1 U	- -	- -	- -	- -	- -	0.1 U	- -	- -
2-Methylnaphthalene	3.6	- -	- -	- -	0.1 U	0.1 U	- -	- -	- -	- -	- -	- -	0.1 U	- -	- -	- -	- -	- -	0.1 U	- -	- -
Acenaphthene	53	- -	- -	- -	0.1 U	0.1 U	- -	- -	- -	- -	- -	- -	0.1 U	- -	- -	- -	- -	- -	0.1 U	- -	- -
Acenaphthylene	26	- -	- -	- -	0.1 U	0.1 U	- -	- -	- -	- -	- -	- -	0.1 U	- -	- -	- -	- -	- -	0.1 U	- -	- -
Anthracene	4.3	- -	- -	- -	0.1 U	0.1 U	- -	- -	- -	- -	- -	- -	0.1 U	- -	- -	- -	- -	- -	0.1 U	- -	- -
Benzo(a)anthracene	0.012	- -	- -	- -	0.095 U	0.095 U	- -	- -	- -	- -	- -	- -	0.095 U	- -	- -	- -	- -	- -	0.095 U	- -	- -
Benzo(a)pyrene	0.0034	- -	- -	- -	0.095 U	0.095 U	- -	- -	- -	- -	- -	- -	0.095 U	- -	- -	- -	- -	- -	0.095 U	- -	- -
Benzo(b)fluoranthene	0.034	- -	- -	- -	0.095 U	0.095 U	- -	- -	- -	- -	- -	- -	0.095 U	- -	- -	- -	- -	- -	0.095 U	- -	- -
Benzo(g,h,i)perylene	0.026	- -	- -	- -	0.095 U	0.095 U	- -	- -	- -	- -	- -	- -	0.095 U	- -	- -	- -	- -	- -	0.095 U	- -	- -
Benzo(k)fluoranthene	0.08	- -	- -	- -	0.095 U	0.095 U	- -	- -	- -	- -	- -	- -	0.095 U	- -	- -	- -	- -	- -	0.095 U	- -	- -
Chrysene	0.2	- -	- -	- -	0.095 U	0.095 U	- -	- -	- -	- -	- -	- -	0.095 U	- -	- -	- -	- -	- -	0.095 U	- -	- -
Dibenz(a,h)anthracene	0.0034	- -	- -	- -	0.095 U	0.095 U	- -	- -	- -	- -	- -	- -	0.095 U	- -	- -	- -	- -	- -	0.095 U	- -	- -
Fluoranthene	26	- -	- -	- -	0.1 U	0.1 U	- -	- -	- -	- -	- -	- -	0.1 U	- -	- -	- -	- -	- -	0.1 U	- -	- -
Fluorene	29	- -	- -	- -	0.1 U	0.1 U	- -	- -	- -	- -	- -	- -	0.1 U	- -	- -	- -	- -	- -	0.1 U	- -	- -
Indeno(1,2,3-cd)pyrene	0.0019	- -	- -	- -	0.095 U	0.095 U	- -	- -	- -	- -	- -	- -	0.095 U	- -	- -	- -	- -	- -	0.095 U	- -	- -
Phenanthrene	17	- -	- -	- -	0.1 U	0.1 U	- -	- -	- -	- -	- -	- -	0.1 U	- -	- -	- -	- -	- -	0.1 U	- -	- -
Pyrene	12	- -	- -	- -	0.1 U	0.1 U	- -	- -	- -	- -	- -	- -	0.1 U	- -	- -	- -	- -	- -	0.1 U	- -	- -
Metals (µg/L)																					
Aluminum	2000	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Aluminum, dissolved	2000	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Antimony	0.78	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Antimony, dissolved	0.78	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Arsenic	5.4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Arsenic, dissolved	5.4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Barium	380	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Barium, dissolved	380	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Beryllium	2.5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Beryllium, dissolved	2.5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	0.92	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium, dissolved	0.92	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Calcium	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Calcium, dissolved	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	2200	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium, dissolved	2200	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Cobalt	5.1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Cobalt, dissolved	5.1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Copper	80	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Copper, dissolved	80	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Iron	2400	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Iron, dissolved	2400	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Lead	1.5	**0.0868 J**	0.1 U	0.1 U	**0.079 J**	**0.052 J**	- -	- -	**0.0672 J**	0.1 U	0.1 U	**0.147 J**	**0.12 J**	- -	**0.0672 J**	**0.0842 J**	0.1 U	0.1 U	2 U	- -	0.1 U
Lead, dissolved	1.5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Magnesium	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Magnesium, dissolved	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Manganese	2900	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Manganese, dissolved	2900	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Mercury	0.052	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Mercury, dissolved	0.052	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Nickel	39	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Nickel, dissolved	39	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Potassium	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Potassium, dissolved	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Selenium	10	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Selenium, dissolved	10	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Silver	9.4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Silver, dissolved	9.4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Sodium	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Sodium, dissolved	--	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Thallium	1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Thallium, dissolved	1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Vanadium	8.6	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Vanadium, dissolved	8.6	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Zinc	600	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Zinc, dissolved	600	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Notes:
µg/L = Micrograms per Liter
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
mg/L = Milligrams per Liter
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.

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

Table 10-6 Summary of Chemicals Detected in Groundwater

	Location	35M04			35M05								35M06						35M08		
	Sample ID	35M04-2015F	35M04-2016S	35M04-2016F	35M05-IWMP-S14	35M05-IWMP-S14-1	35M05-IWMP-S14-1-V	35M05-IWMP-S14-V	35M05-2015S	35M05-2015F	35M05-2016S	35M05-2016F	35M06-IWMP-S14	35M06-IWMP-S14-V	35M06-2015S	35M06-2015F	35M06-2016S	35M06-2016F	35M08-IWMP-S14	35M08-IWMP-S14-V	35M08-2015S
	Sample Depth (ft)	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date	9/17/2015	6/3/2016	9/12/2016	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016	6/13/2014	6/13/2014	6/2/2015	9/17/2015	6/3/2016	9/13/2016	6/14/2014	6/14/2014	6/1/2015
Analyte	**Screening Level**																				
Pesticides (µg/L)																					
4,4-DDD	0.032	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0048 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
4,4-DDE	0.046	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0048 U	0.01 U	0.0051 U	0.01 U	0.004 U	- -	0.0097 U
4,4-DDT	0.23	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.0051 U	0.01 U	0.01 U	0.004 U	- -	0.0049 U
Aldrin	0.00092	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0049 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0048 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
alpha-BHC	0.0072	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
alpha-Chlordane	0.02	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
alpha-Endosulfan	10	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
beta-BHC	0.025	0.011 U	0.0071 U	0.0072 U	0.005 U	0.005 U	- -	- -	0.0098 U	0.011 U	0.0071 U	0.01 U	0.005 U	- -	0.0095 U	0.01 U	0.0071 U	0.01 U	0.005 U	- -	0.0068 U
beta-Endosulfan	10	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
delta-BHC	0.0072	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.0071 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
Dieldrin	0.0018	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
Endosulfan Sulfate	10	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
Endrin	0.23	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
Endrin Aldehyde	0.23	0.011 U	0.01 U	0.01 U	0.005 U	0.005 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.005 U	- -	0.0048 U	0.01 U	0.01 U	0.01 U	0.005 U	- -	0.0097 U
Endrin Ketone	0.23	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
gamma-BHC	0.042	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
gamma-Chlordane	0.02	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0049 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.01 U	0.01 U	0.004 U	- -	0.0097 U
Heptachlor	0.0014	0.011 U	0.01 U	0.01 U	**0.014 B**	**0.015 B**	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	**0.016 B**	- -	0.0066 U	0.01 U	0.01 U	0.01 U	**0.015 B**	- -	0.0097 U
Heptachlor Epoxide	0.0014	0.011 U	0.01 U	0.01 U	0.004 U	0.004 U	- -	- -	0.0098 U	0.011 U	0.01 U	0.01 U	0.004 U	- -	0.0095 U	0.01 U	0.0051 U	0.01 U	0.004 U	- -	0.0097 U
Methoxychlor	3.7	0.11 U	0.1 U	0.1 U	0.004 U	0.004 U	- -	- -	0.098 U	0.11 U	0.1 U	0.1 U	0.004 U	- -	0.095 U	0.1 U	0.1 U	0.1 U	0.004 U	- -	0.097 U
Toxaphene	0.071	0.55 U	0.51 U	0.52 U	0.082 U	0.082 U	- -	- -	0.49 U	0.53 U	0.51 U	0.52 U	0.082 U	- -	0.48 U	0.51 U	0.51 U	0.51 U	0.082 U	- -	0.49 U
General Chemistry (mg/L)																					
Total Organic Carbon	--	- -	- -	- -	**4.9**	**4.9**	- -	- -	- -	- -	- -	- -	**5.6**	- -	- -	- -	- -	- -	**3.7**	- -	- -

Notes:

µg/L = Micrograms per Liter

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

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

mg/L = Milligrams per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-6 Summary of Chemicals Detected in Groundwater

Analyte	Location	35M08					35M09			35M10			35M11	35M12	35M13	35M14						
	Sample ID	35M08-2015F	35M08-2015F9	35M08-2016S	35M08-2016F	35M08-2016F-9	35M09-092912	35M09-IWMP-R1	35M09-IWMP-R1A	35M10	35M10-IWMP-R1	35M10-IWMP-R1A	35M11	35M12	35M13-093012	35M14-IWMP-S14	35M14-IWMP-S14-V	35M14-2015S	35M14-2015F	35M14-2016S	35M14-2016S-9	35M14-2016F
	Sample Depth (ft)	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date	9/17/2015	9/17/2015	6/3/2016	9/12/2016	9/12/2016	9/29/2012	10/5/2012	10/5/2012	9/29/2012	10/5/2012	10/5/2012	9/30/2012	9/30/2012	9/30/2012	6/14/2014	6/14/2014	6/2/2015	9/17/2015	6/3/2016	6/3/2016	9/12/2016
Hydrocarbons (µg/L)	Screening Level																					
C10-C25 DRO	150	- -	- -	- -	- -	- -	**240**	76.8 U	- -	**250**	93.6 U	- -	**310**	**270**	**190**	**55.9 J**	- -	- -	- -	- -	- -	- -
C25-C36 RRO	110	- -	- -	- -	- -	- -	**160**	**55 J**	- -	**210**	**70.5 J**	- -	**250**	**210**	**160**	100 U	- -	- -	- -	- -	- -	- -
C6-C10 GRO	220	- -	- -	- -	- -	- -	44 UJ	- -	25 U	17 UJ	- -	25 U	44 UJ	19 UJ	44 UJ	- -	25 U	- -	- -	- -	- -	- -
VOCs (µg/L)																						
1,1,1,2-Tetrachloroethane	0.57	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.5 U	0.45 U	- -	0.5 U	0.45 U	0.45 U	0.45 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	800	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	0.076	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	0.041	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	2.8	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	28	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichlorobenzene	0.7	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2,3-Trichloropropane	0.00075	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	0.4	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2,4-Trimethylbenzene	5.6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dibromo-3-Chloropropane	0.00033	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5 U	- -	1 U	1.5 U	- -	1 U	1.5 U	1.5 U	1.5 U	- -	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	30	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.5 U	0.45 U	- -	0.5 U	0.45 U	0.45 U	0.45 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	0.17	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.14	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	30	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichloropropane	37	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	0.48	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,2-Dichloropropane	0.14	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Butanone (MEK)	560	4 U	4 U	4 U	4 U	4 U	4.5 UJ	- -	4 U	4.5 UJ	- -	4 U	4.5 UJ	4.5 UJ	4.5 UJ	- -	4 U	4 U	4 U	4 U	4 U	4 U
2-Chlorotoluene	24	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Hexanone	3.8	4 U	4 U	4 U	4 U	4 U	2.3 U	- -	4 U	2.3 U	- -	4 U	2.3 U	2.3 U	2.3 U	- -	4 U	4 U	4 U	4 U	4 U	4 U
4-Chlorotoluene	25	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.5 U	0.45 U	- -	0.5 U	0.45 U	0.45 U	0.45 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-Methyl-2-Pentanone (MIBK)	630	4 U	4 U	4 U	4 U	4 U	2.3 U	- -	4 U	2.3 U	- -	4 U	2.3 U	2.3 U	2.3 U	- -	4 U	4 U	4 U	4 U	4 U	4 U
Acetone	1400	5 U	5 U	5 U	5 U	5 U	4.5 UJ	- -	10 U	4.5 UJ	- -	10 U	4.5 UJ	4.5 UJ	4.5 UJ	- -	10 U	5 U	5 U	5 U	5 U	5 U
Benzene	0.46	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.17 J**	- -	**0.22 J**	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	**0.58 J**	**0.82 J**	**0.67 J**	**0.3 J**	**0.31 J**	**0.34 J**
Bromobenzene	6.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromochloromethane	8.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 U	- -	0.4 U	0.7 U	- -	0.4 U	0.7 U	0.7 U	0.7 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromodichloromethane	0.13	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoform	3.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U	- -	0.5 U	0.45 U	- -	0.5 U	0.45 U	0.45 U	0.45 U	- -	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Bromomethane	0.75	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	2.3 U	- -	0.4 U	2.3 U	- -	0.4 U	2.3 U	2.3 U	2.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbon Disulfide	81	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	0.46	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	7.8	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.19 U	- -	0.4 U	0.18 U	0.17 U	0.19 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	2100	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	2.3 U	- -	0.4 U	2.3 U	- -	0.4 U	2.3 U	2.3 U	2.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chloroform	0.22	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.37 J**	- -	0.4 U	0.45 U	- -	0.4 U	**0.73 J**	**0.89 J**	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane	19	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	2.3 U	- -	0.4 U	2.3 U	- -	0.4 U	2.3 U	2.3 U	2.3 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
cis-1,2-Dichloroethene	3.6	**0.18 J**	**0.17 J**	**0.19 J**	**0.28 J**	**0.31 J**	0.45 U	- -	**0.3 J**	0.45 U	- -	**0.4 J**	0.45 U	0.45 U	0.45 U	- -	**0.44 J**	**0.58 J**	**0.55 J**	**0.32 J**	**0.3 J**	**0.31 J**
cis-1,3-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromochloromethane	0.87	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.9 U	- -	0.4 U	0.9 U	- -	0.4 U	0.9 U	0.9 U	0.9 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromomethane	0.83	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	20	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.3 U	**0.24 J**	0.3 U	0.3 U	0.3 U
Ethylbenzene	1.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylene Dibromide (EDB)	0.0075	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.9 U	- -	0.01 U	0.9 U	- -	0.01 U	0.9 U	0.9 U	0.9 U	- -	0.005 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hexachlorobutadiene	0.14	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Isopropylbenzene	45	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
m- & p-Xylene	19	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.9 U	- -	0.8 U	0.9 U	- -	0.8 U	0.9 U	0.9 U	0.9 U	- -	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U	**0.27 J**
Methyl tert-Butyl Ether (MTBE)	14	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride	11	1 U	1 U	1 U	1 U	1 U	0.45 U	- -	4 U	0.45 U	- -	4 U	0.45 U	0.45 U	0.45 U	- -	4 U	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	100	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
n-Propylbenzene	66	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Naphthalene	0.17	1 U	1 U	1 U	1 U	1 U	0.071 U	0.1 U	- -	0.071 U	0.099 U	- -	0.071 U	0.071 U	0.071 U	0.1 U	- -	1 U	1 U	1 U	1 U	1 U
o-Xylene	19	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
p-Isopropyltoluene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.16 J**	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
sec-Butylbenzene	200	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Styrene	120	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
tert-Butylbenzene	69	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.5 U	0.45 U	- -	0.5 U	0.45 U	0.45 U	0.45 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene (PCE)	4.1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 UJ	- -	0.5 U	0.45 UJ	- -	0.5 U	0.45 UJ	0.45 UJ	0.45 UJ	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	110	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	**0.19 J**	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	36	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.5 U	0.45 U	- -	0.5 U	0.45 U	0.45 U	0.45 U	- -	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene (TCE)	0.28	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.45 U	- -	0.4 U	0.45 U	- -	0.4 U	0.45 U	0.45 U	0.45 U	- -	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Notes:

µg/L = Micrograms per Liter

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

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

mg/L = Milligrams per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-6 Summary of Chemicals Detected in Groundwater

	Location	35M08					35M09			35M10			35M11	35M12	35M13	35M14						
	Sample ID	35M08-2015F	35M08-2015F9	35M08-2016S	35M08-2016F	35M08-2016F-9	35M09-092912	35M09-IWMP-R1	35M09-IWMP-R1A	35M10	35M10-IWMP-R1	35M10-IWMP-R1A	35M11	35M12	35M13-093012	35M14-IWMP-S14	35M14-IWMP-S14-V	35M14-2015S	35M14-2015F	35M14-2016S	35M14-2016S-9	35M14-2016F
	Sample Depth (ft)	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date	9/17/2015	9/17/2015	6/3/2016	9/12/2016	9/12/2016	9/29/2012	10/5/2012	10/5/2012	9/29/2012	10/5/2012	10/5/2012	9/30/2012	9/30/2012	9/30/2012	6/14/2014	6/14/2014	6/2/2015	9/17/2015	6/3/2016	6/3/2016	9/12/2016
Analyte	**Screening Level**																					
Trichlorofluoromethane	520	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U	--	0.4 U	0.45 U	--	0.4 U	0.45 U	0.45 U	0.45 U	--	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Vinyl Chloride	0.019	**0.16 J**	**0.13 J**	0.2 U	0.2 U	0.2 U	0.45 U	--	0.4 U	0.45 U	--	0.4 U	0.45 U	0.45 U	0.45 U	--	0.4 U	0.2 U	**0.17 J**	0.2 U	0.2 U	0.2 U
Xylenes, Total	19	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--	--	--	--	--	1.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.27 J**
SVOCs (µg/L)																						
1-Methylnaphthalene	1.1	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.1 U	--	--	--	--	--	--
2-Methylnaphthalene	3.6	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.1 U	--	--	--	--	--	--
Acenaphthene	53	--	--	--	--	--	0.071 U	0.1 U	--	0.071 U	0.099 U	--	0.071 U	0.071 U	0.071 U	0.1 U	--	--	--	--	--	--
Acenaphthylene	26	--	--	--	--	--	0.071 U	0.1 U	--	0.071 U	0.099 U	--	0.071 U	0.071 U	0.071 U	0.1 U	--	--	--	--	--	--
Anthracene	4.3	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.1 U	--	--	--	--	--	--
Benzo(a)anthracene	0.012	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.095 U	--	--	--	--	--	--
Benzo(a)pyrene	0.0034	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.095 U	--	--	--	--	--	--
Benzo(b)fluoranthene	0.034	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.095 U	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.026	--	--	--	--	--	0.071 U	0.1 U	--	0.071 U	0.099 U	--	0.071 U	0.071 U	0.071 U	0.095 U	--	--	--	--	--	--
Benzo(k)fluoranthene	0.08	--	--	--	--	--	0.071 U	0.1 U	--	0.071 U	0.099 U	--	0.071 U	0.071 U	0.071 U	0.095 U	--	--	--	--	--	--
Chrysene	0.2	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.095 U	--	--	--	--	--	--
Dibenz(a,h)anthracene	0.0034	--	--	--	--	--	0.071 U	0.1 U	--	0.071 U	0.099 U	--	0.071 U	0.071 U	0.071 U	0.095 U	--	--	--	--	--	--
Fluoranthene	26	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.1 U	--	--	--	--	--	--
Fluorene	29	--	--	--	--	--	0.071 U	0.1 U	--	0.071 U	0.099 U	--	0.071 U	0.071 U	0.071 U	0.1 U	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	0.0019	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.095 U	--	--	--	--	--	--
Phenanthrene	17	--	--	--	--	--	0.071 U	0.1 U	--	0.071 U	0.099 U	--	0.071 U	0.071 U	0.071 U	0.1 U	--	--	--	--	--	--
Pyrene	12	--	--	--	--	--	0.071 UJ	0.1 U	--	0.071 UJ	0.099 U	--	0.071 UJ	0.071 UJ	0.071 UJ	0.1 U	--	--	--	--	--	--
Metals (µg/L)																						
Aluminum	2000	--	--	--	--	--	500 U	--	--	500 U	--	--	500 U	500 U	500 U	--	--	--	--	--	--	--
Aluminum, dissolved	2000	--	--	--	--	--	500 U	--	--	500 U	--	--	500 U	500 U	500 U	--	--	--	--	--	--	--
Antimony	0.78	--	--	--	--	--	0.25 U	--	--	0.28 U	--	--	0.26 U	0.17 U	0.4 U	--	--	--	--	--	--	--
Antimony, dissolved	0.78	--	--	--	--	--	0.2 U	--	--	0.18 U	--	--	0.2 U	0.4 U	0.4 U	--	--	--	--	--	--	--
Arsenic	5.4	--	--	--	--	--	**13**	--	--	**8.5**	--	--	**5.6**	**8.3**	**15**	--	--	--	--	--	--	--
Arsenic, dissolved	5.4	--	--	--	--	--	**13**	--	--	**8.3**	--	--	**5.5**	**8.5**	**15**	--	--	--	--	--	--	--
Barium	380	--	--	--	--	--	**150**	--	--	**270**	--	--	**270**	**360**	**280**	--	--	--	--	--	--	--
Barium, dissolved	380	--	--	--	--	--	**160**	--	--	**260**	--	--	**270**	**380**	**290**	--	--	--	--	--	--	--
Beryllium	2.5	--	--	--	--	--	0.4 U	--	--	0.4 U	--	--	0.4 U	0.4 U	0.4 U	--	--	--	--	--	--	--
Beryllium, dissolved	2.5	--	--	--	--	--	0.4 U	--	--	0.4 U	--	--	0.4 U	0.4 U	0.4 U	--	--	--	--	--	--	--
Cadmium	0.92	--	--	--	--	--	0.1 U	--	--	0.1 U	--	--	0.1 U	**0.11 J**	0.1 U	--	--	--	--	--	--	--
Cadmium, dissolved	0.92	--	--	--	--	--	0.1 U	--	--	0.1 U	--	--	0.1 U	**0.086 J**	0.1 U	--	--	--	--	--	--	--
Calcium	--	--	--	--	--	--	**58000**	--	--	**73000**	--	--	**90000**	**100000**	**78000**	--	--	--	--	--	--	--
Calcium, dissolved	--	--	--	--	--	--	**58000**	--	--	**73000**	--	--	**87000**	**110000**	**79000**	--	--	--	--	--	--	--
Chromium	2200	--	--	--	--	--	0.6 U	--	--	**0.88**	--	--	0.6 U	0.6 U	0.6 U	--	--	--	--	--	--	--
Chromium, dissolved	2200	--	--	--	--	--	0.6 U	--	--	**0.72 J**	--	--	0.6 U	0.6 U	0.6 U	--	--	--	--	--	--	--
Cobalt	5.1	--	--	--	--	--	**2.7**	--	--	**4.9**	--	--	**4.1**	**8.9**	**6**	--	--	--	--	--	--	--
Cobalt, dissolved	5.1	--	--	--	--	--	**2.8**	--	--	**4.5**	--	--	**3.8**	**9.7**	**6.1**	--	--	--	--	--	--	--
Copper	80	--	--	--	--	--	**0.46 J**	--	--	0.4 U	--	--	**0.23 J**	0.4 U	0.4 U	--	--	--	--	--	--	--
Copper, dissolved	80	--	--	--	--	--	**0.22 J**	--	--	0.4 U	--	--	0.4 U	0.4 U	0.4 U	--	--	--	--	--	--	--
Iron	2400	--	--	--	--	--	**2600**	--	--	**7800**	--	--	**3000**	**8200**	**7300**	--	--	--	--	--	--	--
Iron, dissolved	2400	--	--	--	--	--	**2700**	--	--	**8000**	--	--	**2900**	**8600**	**7300**	--	--	--	--	--	--	--
Lead	1.5	0.1 U	**0.0509 J**	0.1 U	0.1 U	0.1 U	0.1 U	0.054 U	--	**0.14 J**	0.11 U	--	0.1 U	0.1 U	0.1 U	2 U	--	**0.104 J**	**0.0692 J**	**0.0815 J**	**0.451 J**	0.1 U
Lead, dissolved	1.5	--	--	--	--	--	0.1 U	--	--	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	**13000**	--	--	**17000**	--	--	**20000**	**22000**	**17000**	--	--	--	--	--	--	--
Magnesium, dissolved	--	--	--	--	--	--	**13000**	--	--	**17000**	--	--	**20000**	**23000**	**17000**	--	--	--	--	--	--	--
Manganese	2900	--	--	--	--	--	**1900**	--	--	**1800**	--	--	**1900**	**2700**	**1600**	--	--	--	--	--	--	--
Manganese, dissolved	2900	--	--	--	--	--	**2000**	--	--	**1700**	--	--	**1900**	**2900**	**1600**	--	--	--	--	--	--	--
Mercury	0.052	--	--	--	--	--	0.062 U	--	--	0.066 U	--	--	0.058 U	0.055 U	0.061 U	--	--	--	--	--	--	--
Mercury, dissolved	0.052	--	--	--	--	--	0.06 U	--	--	0.061 U	--	--	0.063 U	0.055 U	0.055 U	--	--	--	--	--	--	--
Nickel	39	--	--	--	--	--	**3.3 J**	--	--	**2.5 J**	--	--	**4.2 J**	**6.8**	**4 J**	--	--	--	--	--	--	--
Nickel, dissolved	39	--	--	--	--	--	**3.2 J**	--	--	**2.1 J**	--	--	**4.3 J**	**7.2**	**4.1 J**	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	14000 U	--	--	14000 U	--	--	14000 U	**6100 J**	14000 U	--	--	--	--	--	--	--
Potassium, dissolved	--	--	--	--	--	--	14000 U	--	--	14000 U	--	--	14000 U	**6200 J**	14000 U	--	--	--	--	--	--	--
Selenium	10	--	--	--	--	--	1.6 U	--	--	1.6 U	--	--	1.6 U	1.6 U	1.6 U	--	--	--	--	--	--	--
Selenium, dissolved	10	--	--	--	--	--	1.6 U	--	--	1.6 U	--	--	1.6 U	1.6 U	1.6 U	--	--	--	--	--	--	--
Silver	9.4	--	--	--	--	--	0.1 U	--	--	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--	--	--	--	--
Silver, dissolved	9.4	--	--	--	--	--	0.1 U	--	--	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	**5800**	--	--	**9000**	--	--	**7700**	**8700**	**8700**	--	--	--	--	--	--	--
Sodium, dissolved	--	--	--	--	--	--	**5900**	--	--	**9000**	--	--	**7500**	**9200**	**8900**	--	--	--	--	--	--	--
Thallium	1	--	--	--	--	--	1 U	--	--	1 U	--	--	1 U	1 U	1 U	--	--	--	--	--	--	--
Thallium, dissolved	1	--	--	--	--	--	1 U	--	--	1 U	--	--	1 U	1 U	1 U	--	--	--	--	--	--	--
Vanadium	8.6	--	--	--	--	--	**2 J**	--	--	**2.2 J**	--	--	2 U	2 U	2 U	--	--	--	--	--	--	--
Vanadium, dissolved	8.6	--	--	--	--	--	**2.1 J**	--	--	**2.3 J**	--	--	2 U	2 U	2 U	--	--	--	--	--	--	--
Zinc	600	--	--	--	--	--	**4.7**	--	--	**7.4**	--	--	**6.2**	**7**	**10**	--	--	--	--	--	--	--
Zinc, dissolved	600	--	--	--	--	--	**5**	--	--	**7**	--	--	**5.9**	**7.8**	**7.1**	--	--	--	--	--	--	--

Notes:

µg/L = Micrograms per Liter

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

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

mg/L = Milligrams per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-6 Summary of Chemicals Detected in Groundwater

Analyte	Location	35M08					35M09			35M10			35M11	35M12	35M13	35M14						
	Sample ID	35M08-2015F	35M08-2015F9	35M08-2016S	35M08-2016F	35M08-2016F-9	35M09-092912	35M09-IWMP-R1	35M09-IWMP-R1A	35M10	35M10-IWMP-R1	35M10-IWMP-R1A	35M11	35M12	35M13-093012	35M14-IWMP-S14	35M14-IWMP-S14-V	35M14-2015S	35M14-2015F	35M14-2016S	35M14-2016S-9	35M14-2016F
	Sample Depth (ft)	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
	Sample Date	9/17/2015	9/17/2015	6/3/2016	9/12/2016	9/12/2016	9/29/2012	10/5/2012	10/5/2012	9/29/2012	10/5/2012	10/5/2012	9/30/2012	9/30/2012	9/30/2012	6/14/2014	6/14/2014	6/2/2015	9/17/2015	6/3/2016	6/3/2016	9/12/2016
Pesticides (µg/L)	Screening Level																					
4,4-DDD	0.032	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
4,4-DDE	0.046	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0028 UJ	0.0038 U	- -	0.0028 UJ	0.0038 U	- -	0.0028 U	0.0028 U	0.0028 U	- -	- -	0.0048 U	0.0096 U	0.0059 U	0.0052 U	0.011 U
4,4-DDT	0.23	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	**0.003 J**	0.0038 U	- -	**0.0029 J**	0.0038 U	- -	**0.0031 J**	**0.0031 J**	**0.0028 J**	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
Aldrin	0.00092	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	**0.0063 J**	0.0047 U	- -	- -	0.0048 U	0.0096 U	0.012 U	0.011 U	0.011 U
alpha-BHC	0.0072	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0028 UJ	0.0038 U	- -	0.0028 UJ	0.0038 U	- -	0.0028 U	0.0028 U	0.0028 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
alpha-Chlordane	0.02	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
alpha-Endosulfan	10	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
beta-BHC	0.025	0.007 U	0.0099 U	0.0071 U	0.0097 U	0.0081 U	0.0028 UJ	0.0048 U	- -	0.0028 UJ	0.0048 U	- -	0.0028 U	0.0028 U	0.0028 U	- -	- -	0.0096 U	0.0067 U	0.0083 U	0.0074 U	0.011 U
beta-Endosulfan	10	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
delta-BHC	0.0072	0.01 U	0.0099 U	0.0071 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.0074 U	0.0077 U
Dieldrin	0.0018	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
Endosulfan Sulfate	10	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
Endrin	0.23	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
Endrin Aldehyde	0.23	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0028 UJ	0.0048 U	- -	0.0028 UJ	0.0048 U	- -	0.0028 U	0.0028 U	0.0028 U	- -	- -	0.0096 U	0.0096 U	0.0059 U	0.0052 U	0.011 U
Endrin Ketone	0.23	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
gamma-BHC	0.042	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
gamma-Chlordane	0.02	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0028 UJ	0.0038 U	- -	0.0028 UJ	0.0038 U	- -	0.0028 U	0.0028 U	0.0028 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
Heptachlor	0.0014	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0096 U	0.012 U	0.011 U	0.011 U
Heptachlor Epoxide	0.0014	0.01 U	0.0099 U	0.01 U	0.0097 U	0.012 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.0096 U	0.0048 U	0.012 U	0.0052 U	0.011 U
Methoxychlor	3.7	0.1 U	0.099 U	0.1 U	0.097 U	0.12 U	0.0047 UJ	0.0038 U	- -	0.0047 UJ	0.0038 U	- -	0.0047 U	0.0047 U	0.0047 U	- -	- -	0.096 U	0.096 U	0.12 U	0.1 U	0.11 U
Toxaphene	0.071	0.5 U	0.5 U	0.51 U	0.49 U	0.58 U	0.47 UJ	0.076 U	- -	0.47 UJ	0.077 U	- -	0.47 U	0.47 U	0.47 U	- -	- -	0.48 U	0.48 U	0.59 U	0.52 U	0.55 U
General Chemistry (mg/L)																						
Total Organic Carbon	--	- -	- -	- -	- -	- -	- -	- -	**3.6**	- -	- -	**6.2**	- -	- -	- -	**6.2**	- -	- -	- -	- -	- -	- -

Notes:

µg/L = Micrograms per Liter

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

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

mg/L = Milligrams per Liter

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.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

Table 10-7 Summary of Chemicals Detected in Passive Soil Vapor

Sample ID:	35.1	35.1 DUP	35-2	35-3	35-4	35-5	35-6	35-7	35-9	35-10	35-10 DUP	35-11	35-12	35-13	35-14	35-15	35-16	35-17	35-18	35-19
Laboratory Sample Receipt Date:	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
Analyte																				
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dioxane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	**55**	<25	<25	<25	<25	**71**	**36**	**43**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	**27**	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<10	<10	<10	<10	<10	<10	**7 J**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<25	**31**	<25	<25	<25	<25	<25	**34**	**33**	<25	**26**	**29**	<25	<25	<25	<25	**29**	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	<10	<10	<10	<10	<10	<10	<10	**40**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	**38**	<25	**57**	**50**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TPH C_{10}-C_{15}	<5,000	<5,000	**11,973**	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	**19,598**	**9,303**	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_5-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Notes:

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

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

ng = nanogram

Table 10-7 Summary of Chemicals Detected in Passive Soil Vapor

Sample ID:	35-20	35-20 DUP	35-21	35-22	35-23	35-24	35-25	35-26	35-27	35-28	35-29	35-30	35-30 DUP	35-31	35-32	35-33	35-34	35-35	35-37	35-38	35-39
Laboratory Sample Receipt Date:	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
Analyte																					
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dioxane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	**32**	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	**31**	<25	<25	<25
cis-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<10	<10	<10	<10	<10	<10	**9 J**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<25	<25	<25	<25	<25	<25	<25	**49**	<25	<25	<25	<25	<25	<25	<25	**45**	<25	**28**	**35**	<25	**32**
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**18**	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_5-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Notes:

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

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

ng = nanogram

Table 10-7 Summary of Chemicals Detected in Passive Soil Vapor

Sample ID:	35-40	35-40 DUP	35-42	35-43	35-44	35-45	35-46	35-47	35-48	35-49	35-50	35-50 DUP	35-51	35-52
Laboratory Sample Receipt Date:	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013	7/3/2013
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
Analyte														
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dioxane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	**1,313**	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	**57**	**39**	**51**	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	**27**	<25	<25	<25	<25	<25
Tetrachloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<25	**41**	**28**	<25	**28**	**27**	**25**	<25	**69**	<25	**87**	**41**	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_5-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Notes:
B = The analyte was detected in the associated method and/or calibration blank.
J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample
ng = nanogram

Table 10-8 SS035 Exposure Pathway Evaluation

Pathway	Result[a]	Explanation
Soil contact (incidental ingestion, dermal contact, and inhalation of suspended soil particulates [fugitive dust])	Pathway potentially complete	COPCs were detected in soil between 0 and 15 feet bgs at concentrations above PSLs.
		This pathway is considered potentially complete for current and future commercial/ industrial and construction worker exposure scenarios and a future residential exposure scenario.
Inhalation – outdoor air	Pathway potentially complete	VOCs were detected in soil between 0 and 15 feet bgs at concentrations above PSLs.
		This pathway is considered potentially complete for current and future commercial/ industrial and construction worker exposure scenarios and a future residential exposure scenario.
Inhalation – indoor air (VI)	Pathway potentially complete	VOCs have been detected in soil at concentrations above the most stringent cleanup criteria within 100 feet of an existing building (3228) and near a utility corridor that connects to two other buildings (3460 and 3462)
		This pathway is considered potentially complete for current and future commercial/ industrial and future residential exposure scenarios.
Groundwater ingestion, inhalation, and dermal contact	Pathway potentially complete	COPCs were detected in groundwater at concentrations above PSLs. Drinking water is considered a beneficial use of groundwater, and a drinking water well is located within the investigation area (Well 3228). Depth to groundwater is less than 15 feet bgs and groundwater flows to surface water (Garrison Slough and GSP) is potentially complete.
		Groundwater is a current and future drinking water source. Shallow groundwater could be encountered during excavation/trenching activities.
		Exposure to shallow groundwater is considered a potentially complete pathway for current and future construction worker exposure scenarios. Exposure to tapwater use of groundwater is considered a potentially complete pathway for the current and future commercial/industrial exposure scenario and the hypothetical future residential exposure scenario. However, these potentially complete exposure pathways from the use of groundwater as tapwater will only be evaluated for the more conservative hypothetical future residents.
Surface water ingestion, inhalation, and dermal contact	Pathway potentially complete	The nearest surface water body is GSP, located on the site. COPCs were detected in surface water at concentrations above PSLs. There is no current use of surface water as a drinking water source and groundwater is the principal source of potable and non-potable water. However, a hypothetical future resident exposure to surface water as a domestic drinking water source will be evaluated as a conservative potential future exposure Exposure to surface water is considered insignificant for current commercial/industrial exposure scenarios because the duration of any potential exposure would be short. Exposure to surface water is considered a potentially complete pathway for future construction workers.
Sediment (incidental ingestion, dermal contact, and inhalation of suspended soil particulates [fugitive dust])	Pathway potentially complete	COPCs were detected in sediment at concentrations above PSLs.
		Exposure to sediment is considered a potentially complete pathway for current and future commercial/industrial and construction worker exposure scenarios and a future residential exposure scenario.

Table 10-8 SS035 Exposure Pathway Evaluation

Pathway	Result[a]	Explanation
Wild foods ingestion	Pathway potentially complete	The site is not currently used for hunting, fishing, or harvesting of wild or farmed foods. As a result of contamination in Garrison Slough (which is not a part of SS035), fish movement has been restricted by screens from the railroad bridge near Bear Lake to near Building 2258 since 1998. This pathway is considered insignificant for a future residential exposure scenario.
Exposure to ecological receptors	Pathway potentially complete	The site has suitable habitat to support populations of ecological receptors under current and future land use scenarios. Therefore, exposure of ecological receptors to contaminated soil, sediment, and surface water is potentially complete.

Notes:

[a] Results:

"Pathway potentially complete" means contamination has the potential to contact receptors.

bgs = below ground surface
COPCs = chemicals of potential concern
GSP = Garrison Slough Pond
PSL = project screening level
VI = vapor intrusion
VOC = volatile organic compound

Worksheet #11 – Project/Data Quality Objectives

This worksheet is used to develop and document project DQOs using a systematic planning process that follows the EPA seven-step DQO process and documents the environmental decisions that need to be made and the level of data quality needed. DQOs are pre-established goals that help monitor and assess project progress. They provide benchmarks against which the quality of fieldwork and the quality of the resultant analytical data are evaluated, and they specify the type, quality, quantity, and uses of the data needed to adequately support RI decisions. They may be filled using either existing data or data to be gathered during sampling activities presented in this RI/FS management plan.

The DQO process is outlined in the *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA, 2006). As defined in that document, the seven steps are as follows: (1) State the Problem, (2) Identify the Goals of the Study, (3) Identify Information Inputs, (4) Define the Boundaries of the Study, (5) Develop the Analytic Approach, (6) Specify Performance or Acceptance Criteria, and (7) Develop the Detailed Plan for Data Collection.

The following DQOs have been identified for this site:

- DQO 1: Characterize Nature and Sources of Contamination
- DQO 2: Characterize the Nature and Extent of Soil Contamination
- DQO 3: Characterize the Extent of Sediment Contamination within GSP
- DQO 4: Characterize the Nature and Extent of Groundwater Contamination
- DQO 5: Characterize the Nature of Surface Water Contamination within GSP
- DQO 6: Characterize the Potential for Volatile Contaminants in Soil and Groundwater to Impact Indoor Air
- DQO 7: Perform a Baseline Risk Assessment
- DQO 8: Collect Data to Support an FS

Details of each of these DQOs are provided in Table 11-1. These DQOs will be used to guide data collection to further delineate the nature and extent of contamination and update the CSM. The specific quality assurance (QA)/quality control (QC) requirements developed for the site are consistent with those presented in the United States DoD *Quality Systems Manual, Version 5* (QSM v 5.1) (2017). Worksheet #17 presents the sampling rationale and general sampling design that were developed from these DQOs.

11.1 State the Problem

The overarching project objective is to complete a supplemental RI and FS for SS035 and to provide the project team with information necessary to determine whether remedial action is necessary to protect human health and the environment. Contamination has been identified in soil, sediment, surface water, and groundwater at the site (Section 10.2.5), and the extent of contamination is not fully defined to characterize potential risks and/or support a remedial decision. The RI will be conducted to (1) delineate the nature and extent of contaminants in soil, sediment, and groundwater; (2) characterize the current nature of contaminants in surface water within GSP; (3) assess whether VOCs in soil, sediment, or groundwater are or potentially can impact indoor air through the VI pathway; and (4) evaluate whether soil, sediment, surface water, groundwater, and/or indoor air pose an unacceptable risk to human health or the environment.

The objective of the FS is to develop and evaluate remedial action alternatives to support selection of an appropriate remedy if it is determined that contaminants pose an unacceptable risk to human health or the environment.

Further development of the problem statement is provided in Worksheets #14 and #17 of this RI/FS management plan.

11.2 Identify the Goals of the Study

The data collected from this investigation will be used to achieve the following goals:

- DQOs 1 & 2 – Delineate the lateral and vertical extent of COPCs in soil by collecting soil samples and using analytical data to confirm or deny the presence of contamination. Refine the understanding of the nature and source of contamination if additional historical information becomes available or newly collected analytical data indicate a previously unknown source area.
- DQO 3 – Delineate the lateral and vertical extent of COPCs in sediment by collecting sediment samples and using analytical data to confirm or deny the presence of contamination.
- DQO 4 – Delineate the nature and extent of COPCs in groundwater and determine whether groundwater has been impacted by COC soil contamination by installing new permanent and temporary monitoring wells and collecting groundwater samples from new and existing monitoring wells.
- DQO 5 – Characterize the nature of COPCs in surface water by collecting surface water samples and using analytical data to confirm or deny the presence of contamination.
- DQO 6 – Assess whether the VI pathway is complete and if further action is necessary by collecting soil vapor, indoor air, and outdoor air samples and monitor differential pressure in the selected buildings.
- DQO 7 – Using new and available historical site data, perform a baseline risk assessment to assess whether concentrations in soil, groundwater, sediment, surface water, indoor air, and soil vapor present unacceptable risk to human health and/or the environment.
- DQO 8 – Collect additional data, as determined appropriate, to support the evaluation of remedial alternatives in a FS. Specifically, data should be collected to better understand remediation time frames.

11.3 Identify Information Inputs

A summary of the information inputs for this RI/FS and how they will be used is presented below.

- Review of the site history, current conditions, previous investigations, and the overall CSM will refine the understanding of contaminant transport at the site and guide new sample location placement and depths.
- PSLs and BTVs for soil and groundwater will determine whether new and historical soil, sediment, surface water, air, and groundwater data indicates the presence of absence of contamination at the site.
- Validated historical and newly collected laboratory analytical chemical data and previous sample locations and depths will establish the current nature and extent of contamination, guide the placement and depths of proposed borings and samples, identify data gaps, be used for risk calculations, and support the forthcoming feasibility study.
- Newly collected validated laboratory total organic carbon (TOC) and hardness data will be used to support the ERA. TOC and hardness data will be used to develop site-specific sediment or water quality criteria that are dependent on TOC or hardness, respectively.

- Field observations and measurements will aid in selecting the appropriate sample intervals, identifying the potential presence of contamination, and determining whether step-out borings may be needed to define extent.
- Groundwater elevation data collected at existing monitoring wells on site and nearby to determine the local groundwater flow direction and the optimal placement for new monitoring wells.
- Risk assessment requirements will be used to determine whether soil, sediment, soil vapor, indoor air, surface water, and groundwater contamination presents unacceptable risk.
- Soil geotechnical properties (fraction of organic carbon, bulk density, particle size, and moisture content), as needed, will be used for input to risk calculations and to assess potential remedial alternatives. Geotechnical data will not be validated.

11.4 Define the Boundaries of the Study

SS035 is bordered by ST011 to the northeast, an athletic field area to the southwest, and Buildings 3460 and 3462 to the east. The Garrison Slough, on the northern and southern ends of GSP, is a separate site – SS062. Additional details regarding these spatial boundaries, as well as temporal and chemical boundaries for each DQO, are discussed in detail in Table 11-1.

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Table 11-1 Site SS035 RI/FS Management Plan Data Quality Objectives

Problem Statement	Decisions to Be Made	Input to the Decisions	Study Area Boundaries (Temporal, Spatial, or Chemical)	Decision Rule	Acceptable Limits on Decision Error	Optimize the Design
DQO 1 – Characterize Nature and Sources of Contamination						
There are gaps in our understanding of the nature and source(s) of contamination. Previous investigations have identified potential sources of contamination within and surrounding GSP. The source areas and investigation area need to be defined to adequately develop a CSM, evaluate the nature and extent of contamination, and assess potential risks to complete the remedial investigation.	To evaluate the nature and sources of soil, sediment, surface water, and groundwater contamination and define the investigation area, the following decisions need to be made: 1. What are the potential sources associated with SS035? 2. Are the geophysical anomalies outside of GSP identified in previous investigations (USAF, 2014c) sources of contamination? 3. How will the presence or absence of soil and groundwater contamination be determined? 4. How is the investigation area defined? 5. Have all available and accessible historical resources been reviewed? 6. Does historical data and contaminant distribution suggest the location of a source "hot spot(s)" or widespread distribution? 7. Does newly collected data indicate the presence of contaminant hot-spots and/or a potential source area?	1. Review background, history, and CSM for the site and surrounding areas 2. Site reconnaissance records 3. Site improvements or development history since releases or sampling 4. Historical aerial photographs, if available 5. Previous sample locations and depths 6. Available laboratory analytical data of acceptable quality from historical samples 7. BTVs calculated as part of the metals background study 8. PSLs as described in Worksheet #15 9. Field observations and measurements from historical and current investigation activities 10. Geophysical data 11. Soil vapor data 12. Validated laboratory analytical data of acceptable quality from new soil, sediment, surface water, and groundwater samples collected from new soil borings and surface soil samples 13. GIS data	**Temporal Boundaries**: Historical reports for GSP and immediate surrounding areas (ST011, WTP GAC Construction, Garrison Slough) were reviewed. Historical data since 2012 were used to identify source areas and define the investigation area. **Spatial Boundaries**: The investigation area and identified source areas are shown on Figure 10-2. SS035 consists of GSP and the immediate surrounding upland area, including the WTP (Building 3228), the associated GAC construction project located at the WTP, the area east of GSP to Buildings 3460 and 3462, and the fields west of GSP where geophysical anomalies were identified in previous investigations. Drums and sediment were removed during removal actions in 2014 and 2016. SS035 is bordered by ST011 to the northeast, SS062 (Garrison Slough) to the north and south, an athletic field area to the southwest, and Buildings 3460 and 3462 to the east. <u>Soil and Sediment</u> VOCs, SVOCs, PAHs, petroleum hydrocarbons, pesticides, PCBs, and metals were detected in soil and sediment above the PSLs within and along the shoreline of GSP. Drums and drum remnants remain within GSP and along the eastern shoreline. PCBs, VOCS, PAHs, pesticides, and PFAS were detected in shallow soil above the PSLs to the west-southwest of the WTP during the GAC construction project. Contaminated soil was removed during a removal action in 2017. Confirmation samples were not collected. <u>Surface Water</u> In surface water within GSP, petroleum hydrocarbons, pesticides, and metals were detected above PSLs. <u>Groundwater</u> Petroleum hydrocarbons and metals were detected above PSLs in groundwater at the site in 2012, but were not detected in more recent samples. VOCs were detected in groundwater above PSLs as recently as 2015, but were not detected above PSLs in 2016. Pesticides were detected above PSLs in groundwater in 2012 and 2014, but were not detected in 2015 and 2016. <u>Soil Vapor</u> VOCs were identified in soil vapor along the eastern and southern shores of GSP during soil vapor surveys in 2013. **Chemical Boundaries**: Use target analyte list, analytical methods, and PSLs as described in Worksheet #15 to evaluate presence or absence of soil contamination.	If newly acquired historical reports reveal a previously undiscovered source of contamination, then that information will be considered for incorporation into the site CSM and RI/FS approach as a contaminant source area. If newly collected data identify concentrations of analytes above the PSLs, indicative of a potential release area, then that information will be considered for incorporation into the site CSM and RI/FS approach as a contaminant source area or to extend the investigation boundary.	Analytical chemical data used in identifying potential source areas will meet quality expectations for PARCCS as defined by this RI/FS management plan and in accordance with the DoD QSM v 5.1 (2017).	If additional historical reports become available that have not previously been reviewed, then they will be reviewed to further refine the investigation area and CSM.

Table 11-1 Site SS035 RI/FS Management Plan Data Quality Objectives

Problem Statement	Decisions to Be Made	Input to the Decisions	Study Area Boundaries (Temporal, Spatial, or Chemical)	Decision Rule	Acceptable Limits on Decision Error	Optimize the Design
DQO 2 – Delineate the Extent of Soil Contamination						
Previous investigations have identified VOCs, SVOCs, PAHs, petroleum hydrocarbons, pesticides, PCBS, and metals in soil at SS035 above PSLs. The vertical and lateral extent of these COPCs in soil is not fully delineated to adequately evaluate potential risks and/or support a remedial decision.	To evaluate the extent of soil contamination at the site, the following decisions will need to be made: 1. What are the data gaps at the site? 2. How will the presence or absence of soil contamination be determined? 3. What are the estimated quantity, locations, and depths of samples required to evaluate the extent of contamination in soil? 4. What are the estimated quantity, locations, and depths of samples required to assess potential risks from contamination in soil? 5. Do historical data and new analytical data meet quality standards and are useable to confirm that extent has been delineated, as defined by questions 1 and 2?	1. Review site background, history, and CSM 2. Site reconnaissance records 3. Site improvements or development history since releases or sampling 4. Previous sample locations and depths 5. Available laboratory analytical data of acceptable quality from historical soil samples collected at the site 6. BTVs calculated as part of the metals background study 7. Project PSLs as described in Worksheet #15 8. Field observations and measurements from historical and current investigation activities 9. GIS data 10. Utility locations 11. Geophysical data 12. Soil vapor data 13. Risk assessment requirements 14. Validated laboratory analytical data of acceptable quality from soil samples collected from new soil borings and surface soil samples	**Temporal Boundaries**: Historical data from soil samples collected in 2012, 2014, and 2016 will be used, excluding data for soil excavated near GSP in 2014 and 2016 and near the WTP in 2017. Soil analytical data from the 2017 interim removal action for construction of the GAC facility at the WTP will be used, with the exception of soil excavated as part of the removal. Although a majority of the soil with concentrations above PSLs were excavated, no confirmation samples were collected. Significant changes to physical conditions or uses of the area, such as imported fill used in the construction of the new GAC unit at the WTP, will be taken into account. Constituent degradation potential, contaminant migration potential, and changes to analytical methodology over time will be considered when selecting sample locations and analytical methods. More recent data will be used if newer and older data are inconsistent. Sampling events will be scheduled and completed according to contract requirements, project schedules, and weather or other seasonal considerations. Delineation may occur during one sampling event; however, if sampling results indicate the nature and extent of contamination was not defined, additional sampling may be required. It is anticipated that soil samples will be collected during two events. Phase 1 locations were selected to fill data gaps based on historic data above PSLs. Source areas, historical site activities, and site access were used to select sample locations and sample depths. During Phase 5 of the investigation, step-out samples will be collected to fill remaining data gaps. Phase 5 step-out locations will be selected after review of Phase 1 validated results and consultation with stakeholders. **Spatial Boundaries**: Validated samples collected during previous investigations with analytes detected above the PSLs were used to establish the current known extent of contamination (see Figures 10-3A through 10-3H). The lateral and vertical extent of COPCs is not defined to below PSLs by historical data. Therefore, soil samples are needed to delineate the extent. Additionally, the presence/absence of petroleum hydrocarbons, VOCs, SVOCs, petroleum hydrocarbons, PAHs, pesticides, PCBs, dioxins, metals, and/or PFAS in surface soil and subsurface soil has not been fully evaluated in all potential source areas. If those compounds are identified in new surface or subsurface soil samples above PSLs, the extent will also need to be defined. VOCs, SVOCs, PAHs, petroleum hydrocarbons, pesticides, and metals were detected in soil near GSP. To evaluate the extent of contamination in the area around GSP, borings will be placed approximately 20 and 45 feet beyond the known lateral extent of contamination. Two soil samples will be collected from each boring, at various depths from approximately 2.5 to 10 feet bgs (beyond the known vertical extent of contamination). A surface soil sample will be collected from 0 to 2 feet bgs. If fill or grade is evident in surface soils, the surface soil sample interval of 0 to 2 feet bgs will start at the beginning of native soil. A third sample will be collected from select borings at intervals suspected to have the highest concentrations based on historic results, PID readings, and field observations.	**Definition of Lateral and/or Vertical Extent in Soil**: If contaminant concentrations from new soil sample validated data are below PSLs, then lateral and vertical extent has been delineated. If contaminant concentrations are above PSLs, then additional sampling to determine extent will be completed using step-in/step-out and sampling depth decision logic detailed in Worksheet #17 (Phase 5). Step-out samples will be collected approximately 20 to 45 feet from borings with known contamination.	Analytical chemical data will meet quality expectations for PARCCS as defined by this RI/FS management plan and in accordance with the DoD QSM 5.1 v 5.1 (2017).	If contaminant concentrations are below applicable PSLs, then the soil evaluation will be completed with available information. If contaminant concentrations are above PSLs, then additional investigation to further define lateral and/or vertical extent will occur. Only analytical suites with analytes detected above the PSLs in initial borings will be analyzed for in step-out borings.

Table 11-1 Site SS035 RI/FS Management Plan Data Quality Objectives

Problem Statement	Decisions to Be Made	Input to the Decisions	Study Area Boundaries (Temporal, Spatial, or Chemical)	Decision Rule	Acceptable Limits on Decision Error	Optimize the Design
			PCBs, VOCS, PAHs, pesticides and PFAS were detected in shallow soil above the PSLs to the west-southwest of the WTP during the GAC construction project. To evaluate the lateral and vertical extent of contamination in this area, six surface soil samples and two borings will be placed along the boundary of the excavation (known extent of contamination) and approximately one surface soil sample 60 feet beyond the excavation. The surface soil samples will be collected from 0 to 2 feet bgs. Two soil samples will be collected from each boring along the boundary of the excavation, from 3 to 5 and 7 to 9 feet bgs (at and beyond the known vertical extent of contamination). The surface sample beyond the excavation boundary, will be collected from 0 to 2 feet bgs. **Chemical Boundaries**: Use target analyte list, analytical methods, and PSLs as described in Worksheet #15 to evaluate presence or absence of soil contamination and the extent.			
DQO 3 – Delineate the Extent of Sediment Contamination within GSP						
Previous investigations have identified VOCs, PAHs, petroleum hydrocarbons, pesticides, PCBs, and metals in sediment at GSP above PSLs. The extent of those COPCs in sediment is not fully delineated to adequately evaluate potential risks and/or support a remedial decision.	To delineate the extent of sediment contamination at GSP, the following decisions will need to be made: 1. What are the data gaps at the site? 2. How will the presence or absence of sediment contamination be determined? 3. What are the estimated quantity, locations, and depths of samples required to evaluate the extent of contamination in sediment? 4. Do historical data and new analytical data meet quality standards and are useable to confirm that extent has been delineated, as defined by questions 1 and 2?	1. Review site background, history, and CSM 2. Site reconnaissance records 3. Site improvements or development history since releases or sampling 4. Previous sample locations and depths 5. Available laboratory analytical data of acceptable quality from historical sediment samples collected at the site 6. Project PSLs as described in Worksheet #15 7. Field observations and measurements from historical and current investigation activities 8. GIS data 9. Utility locations, if applicable 10. Geophysical data 11. Risk assessment requirements 12. Validated laboratory analytical data of acceptable quality from sediment samples collected from new sediment borings	**Temporal Boundaries:** Historical data from sediment and soil samples collected since 2012 will be used, excluding data for samples excavated in 2014 and 2016. Soil data will be used to define the lateral extent of contamination adjacent to the shoreline of GSP. Significant changes to physical conditions or uses of the area, such as removal of impacted sediment during the 2014 and 2016 removal actions, will be considered. Constituent degradation potential, contaminant migration potential, and changes to analytical methodology over time will be considered when selecting sample locations and analytical methods. More recent data will be used if newer and older data are inconsistent. Sampling will be scheduled and completed according to contract requirements, project schedules, and weather or other seasonal considerations. It is anticipated that sediment samples will be collected along the shoreline and within GSP during one event, during Phase 5 of the investigation. Locations were selected to fill data gaps based on historic data above PSLs. Source areas, historical site activities, and site access were used to select sample locations and sample depths. **Spatial Boundaries:** Validated samples collected during previous investigations with analytes detected above the PSLs were used to establish the current known extent of contamination (see Figures 10-4A through 10-4H). The extent of COPCs in sediment within GSP is not defined to below PSLs by historical data. Therefore, sediment samples are needed to delineate the extent. Additionally, the presence/absence of petroleum hydrocarbons, VOCs, SVOCs, PAHs, pesticides, PCBs, dioxins, metals, and/or PFAS in sediment has not been fully evaluated. If those compounds are identified in sediment above PSLs, the extent will also need to be defined. A total of 23 sediment borings will be drilled to a depth of 10 feet below the top of the sediment. Sample intervals may be adjusted in the field based on PID readings and field observations. To evaluate the vertical extent of sediment contamination, two samples will be collected from multiple borings within GSP, from approximately 2 to 4 and 8 to 10 feet bgs (beyond the known vertical extent of contamination).	**Determination of Sediment Impact:** If contaminant concentrations from new sediment and soil sample validated data are below PSLs, then extent has been delineated. If contaminant concentrations are above PSLs, then additional sampling may be necessary. If contaminant concentrations at depth are above PSLs, then additional sampling to determine vertical extent may be necessary.	Analytical chemical data will meet quality expectations for PARCCS as defined by this RI/FS management plan and in accordance with the DoD QSM v 5.1 (2017).	If sediment concentrations are below applicable PSLs, then the sediment evaluation will be completed with available information. If concentrations in sediment at depth are above PSLs and cleanup criteria, then then additional samples and/or locations may be collected as part of future investigations.

Table 11-1 Site SS035 RI/FS Management Plan Data Quality Objectives

Problem Statement	Decisions to Be Made	Input to the Decisions	Study Area Boundaries (Temporal, Spatial, or Chemical)	Decision Rule	Acceptable Limits on Decision Error	Optimize the Design
			To evaluate the lateral and vertical extent of contamination along the shoreline of GSP, two samples will be collected from borings placed on the eastern shoreline of GSP, from approximately 2 to 4 and 4 to 10 feet bgs. To evaluate the presence/absence of contamination, three samples will be collected from borings placed on the western shoreline of GSP, from approximately 0 to 2, 2 to 4, and 8 to 10 feet bgs. **Chemical Boundaries**: Use target analyte list, analytical methods, and PSLs as described in Worksheet #15 to evaluate presence or absence of sediment contamination and the extent. Chromium speciation will be completed in approximately 10% of sediment samples.			
DQO 4 - Characterize Nature and Extent of Groundwater Contamination						
Previous investigations have identified petroleum hydrocarbons, VOCs, pesticides, and metals in groundwater above PSLs at or near SS035.	To characterize groundwater contamination at the site and evaluate whether COPCs in soil have impacted groundwater, the following decisions will need to be made: 1. How will the presence or absence of groundwater contamination be determined? 2. What existing groundwater data exists and are data of sufficient quantity to support decision making? 3. What new or existing monitoring well locations are required to be sampled to evaluate the extent of contamination in groundwater? 4. What is the depth to groundwater and groundwater flow direction and do they change over time/seasonally? 5. What is the extent of soil contamination above migration-to-groundwater cleanup levels? 6. Do historical data and new site analytical data meet quality standards and are they useable to confirm presence or that extent has been delineated? 7. If contaminants are detected, are associated daughter products present at concentrations that may be indicative of contaminant degradation?	1. Site CSM, including understanding of the hydrostratigraphy 2. Historical and new analytical data (verify that sample collection and analytical quality conforms to current practices) 3. Sample locations and depths 4. Monitoring well construction information 5. Groundwater PSLs as described in Worksheet #15 6. Groundwater use information 7. Hydraulic gradient and flow direction, including temporal variations 8. Potential points of compliance 9. Transport properties of contaminants of interest 10. Geochemistry of the aquifer systems 11. BTVs calculated as part of the metals background study	**Temporal Boundaries**: Seasonality of groundwater table fluctuations will be considered and measured during synoptic depth-to-groundwater measurement events. Historical groundwater data will be used as appropriate. More recently collected data will be preferentially used over older data. Sampling of groundwater will occur in two events. The first event will occur after a minimum of 48 hours following well development of the new permanent and temporary monitoring wells. The second event will occur approximately 1 month after the first sampling event. **Spatial Boundaries**: PSLs determine the spatial boundaries of contaminants in groundwater. Samples from proposed monitoring wells, and existing monitoring wells, associated with this RI/FS management plan will be collected to determine if COPCs are present in groundwater above PSLs and, if so, delineate the extent of the COPCs in groundwater. A groundwater investigation is also being conducted as part of ST011, located northeast of GSP. <u>Potential VOC Migration-to-Groundwater</u>: To evaluate potential migration-to-groundwater impacts from SS035 soil contamination, data from monitoring wells within and downgradient of the defined extent of soil contamination will be considered. Proposed monitoring wells will be placed downgradient of the extent of soil contamination. **Chemical Boundaries:** Use target analyte list, analytical methods, and PSLs as described in Worksheet #15 to evaluate presence or absence and extent of groundwater contamination.	**Determination of Groundwater Impact:** If monitoring wells are installed and concentrations of target analytes are below PSLs in groundwater samples, then the boundaries of COPCs are defined for the intended direction. Otherwise, additional wells/samples or evaluation of additional groundwater data may be required to define the extent of groundwater contamination. <u>Potential VOC Migration-to-Groundwater</u>: If monitoring wells are installed, groundwater samples are collected downgradient of the source area(s), concentrations of target analytes are below PSLs, and detection limits are appropriate, then groundwater impacts have been assessed and extent defined. Otherwise, additional wells/samples or evaluation of additional groundwater samples may be required to define the extent of groundwater impacts.	Analytical chemical data will meet quality expectations for PARCCS as defined by this RI/FS management plan and in accordance with the DoD QSM v 5.1 (2017).	If contaminant concentrations are below PSLs, then complete evaluation with available information. If contaminant concentrations are above applicable PSLs and cleanup levels, additional sampling at appropriate locations to determine extent of groundwater contamination is recommended.

Table 11-1 Site SS035 RI/FS Management Plan Data Quality Objectives

Problem Statement	Decisions to Be Made	Input to the Decisions	Study Area Boundaries (Temporal, Spatial, or Chemical)	Decision Rule	Acceptable Limits on Decision Error	Optimize the Design
DQO 5 – Characterize the Nature of Surface water Contamination within GSP						
Previous investigations have identified COPCs (petroleum hydrocarbons, pesticides, and metals) in surface water above PSLs. Additional data is needed to characterize surface water and determine current site conditions following interim removal actions in 2014 and 2016.	To characterize surface water contamination based on current site conditions, the following decisions will need to be made: 1. How will the presence or absence of surface water contamination be determined? 2. What existing surface water data exists and are data of sufficient quantity to support decision making? 3. What new surface water locations are required to be sampled to characterize the nature of contamination in surface water? 4. Do historical data and new site analytical data meet quality standards and are they useable to confirm presence or that extent has been delineated?	1. Site CSM, including understanding of the hydrology and potential contaminant sources 2. Historical and new analytical data (verify that sample collection and analytical quality conforms to current practices) 3. Sample locations 4. Surface water PSLs as described in Worksheet #15 5. Surface water use information 6. Potential points of compliance 7. Transport properties of contaminants of interest 8. Geochemistry of the surface water system	**Temporal Boundaries:** Historical data from 2012 collected before interim removal actions in 2014 and 2016 are not considered representative of current site conditions. Only more recent data collected following the interim removal actions are considered representative of current site conditions and will be used. **Spatial Boundaries**: The presence/absence of COPCs in surface water at GSP above PSLs is not currently defined. Samples from locations associated with this RI/FS management plan will be collected during two events to determine the presence or absence of contamination in surface water at GSP. Samples will not be collected within Garrison Slough, which is SS062. The second event will occur approximately 1 month after the first sampling event. **Chemical Boundaries:** Use target analyte list, analytical methods, and PSLs as described in Worksheet #15 to evaluate presence or absence of surface water contamination.	**Determination of surface water Impact:** The presence or absence of contamination in surface water will be determined by comparing analytical data to PSLs.	Analytical chemical data will meet quality expectations for PARCCS as defined by this RI/FS management plan and in accordance with the DoD QSM v 5.1 (2017).	New data collected during this investigation will be included in the forthcoming RI report, and facilitate the development of a CSM and risk assessment. If the review of available historical data and new data indicate there are potential data gaps, then additional samples and/or locations may be collected as part of future investigations
DQO 6 – Assess the Potential for Volatile Contaminants in Soil and Groundwater to Impact Indoor Air						
VOCs detected in soil and groundwater have the potential to migrate to indoor air of existing (current land use) and future buildings. The objective of the vapor intrusion investigation is to assess whether the VI pathway is currently complete, potentially complete for future buildings, and if further action is necessary.	To identify whether the VI pathway is complete, the following decisions need to be made: 1. Are VOCs present in soil above the most conservative ADEC Table B1 cleanup levels or in groundwater above vapor intrusion screening levels (VI screening levels)? 2. What types of VOCs (e.g., petroleum hydrocarbons, chlorinated compounds) are present in soil and groundwater? 3. What is the proximity of existing buildings to VOC contamination in soil and groundwater? 4. Are there potential preferential vapor migration pathways (e.g., underground utility corridors)? Are there interior background source(s) present in current buildings?	1. Review site background, history, and CSM 2. Site reconnaissance records 3. Site improvements or development history since releases or sampling 4. Current and planned future uses at the site 5. Subsurface soil, soil vapor, and groundwater sampling results from previous sample locations and depths 6. Available laboratory analytical data of acceptable quality from historical soil and groundwater samples collected at the site 7. Project PSLs and/or cleanup levels as described in Worksheet #15; additionally, subslab soil vapor notification levels and indoor air action levels (Tables 15-5 and 15-6, respectively) 8. GIS data 9. Utility locations	**Temporal Boundaries**: Historical data from soil, groundwater, and soil vapor samples collected when historical site investigations began will be used to identify areas/existing buildings with the potential for VI. More recent data will be used in place of historical data if newer and older data are inconsistent. To address temporal variability (changes in temperature; atmospheric pressure; and heating, ventilation, and air conditioning operation) VI investigations will consist of two rounds (one during the winter and one in the fall or spring) of indoor/outdoor air and subslab vapor sampling. **Spatial Boundaries**: Existing buildings less than 30 feet from petroleum-related VOC soil contamination or less than 100 feet from non-petroleum soil/groundwater VOC contamination will be included in the VI investigation of this RI/FS management plan. In addition, general areas within 30 feet of petroleum VOC soil contamination or within 100 feet from non-petroleum VOC soil contamination will be evaluated for the potential future scenario. Buildings and areas beyond the 30- and 100-foot buffers will be considered if there is reason to believe those buffers are not protective (e.g., if preferential pathways are identified/suspected). **Chemical Boundaries**: VOCs detected in (1) soil above ADEC most stringent cleanup levels and (2) groundwater above vapor intrusion screening levels are the indoor/outdoor air and subslab soil vapor target analytes.	**Assessment of the VI pathway:** Laboratory indoor air, outdoor air, and subslab vapor data coupled with indoor-to-subslab differential pressure data will be evaluated to assess the VI pathway. Lines of evidence indicating the likely occurrence of VI: • Indoor air VOC concentrations greater than PSLs (if not attributed to a background source) • Subslab soil vapor VOC concentrations greater than VI screening levels • Negative differential pressure (indoor vs subslab pressure) • Mismatched or similar concentration ratios between indoor air/subslab soil vapor/ outdoor air VOC ratios are similar or mismatched • Building located within proximity of subsurface VOC contamination	Analytical chemical data used to evaluate VI potential will meet quality expectations for PARCCS as defined by this RI/FS management plan and in accordance with the DoD QSM v 5.1 (2017).	New data collected during this VI investigation will be included in the forthcoming RI report and facilitate the development of a VI CSM and risk assessment. If the review of available historical data and the lines of evidence collected during the VI investigation indicate there are potential data gaps, then additional samples and/or locations may be collected as part of future investigations.

Table 11-1 Site SS035 RI/FS Management Plan Data Quality Objectives

Problem Statement	Decisions to Be Made	Input to the Decisions	Study Area Boundaries (Temporal, Spatial, or Chemical)	Decision Rule	Acceptable Limits on Decision Error	Optimize the Design
		10. Geophysical data 11. Field observations and measurements from historical and current investigation activities 12. Building survey (visual observation and interviews) 13. Depth to water table measurements at existing wells and calculated hydraulic gradient 14. Risk assessment inputs and results 15. Validated laboratory analytical data of acceptable quality from soil samples collected from new soil borings 16. Validated laboratory analytical data of acceptable quality from groundwater samples collected from new and existing monitoring wells 17. Differential pressure data collected during sampling events 18. Proximity of contaminated groundwater and/or soil to existing buildings 19. Existence and proximity of potential preferential pathways to existing buildings 20. Information regarding products containing VOCs within existing buildings, more specifically, which specific VOCs are present in products stored within the buildings 21. Data obtained during VI follow-up investigations using a HAPSITE portable chromatograph-mass spectrometer and pressure cycling		• Nearby soil/groundwater VOC contamination is present at concentrations that may cause VI • Nearby underground utility corridors present (preferential VI pathways) • Outdoor air similar or greater than indoor air concentrations, indicating background VOCs • Potential indoor VOC sources identified during building survey • Building construction/conditions that could increase or decrease likelihood of VI (i.e., potential vapor entry points identified during building survey) • Discrepancy between the results from the two sampling events Buildings beyond the 30- and 100-foot buffers will be considered if there is reason to believe those buffers are not protective (e.g., if preferential pathways are identified/suspected). Significance of the VI pathway is based on 1) if the VI pathway is complete, 2) indoor air concentrations greater than the PSL, 3) results of the risk assessment.		
DQO 7– Perform a Baseline Risk Assessment						
Contamination may pose an unacceptable risk to human health and the environment.	To assess whether contaminants in soil, sediment, surface water, groundwater, and/or indoor air pose unacceptable risk and to support the evaluation of remedial alternatives in the FS, the following decisions will need to be made: 1. What are the media of concern?	1. CSM: • Hydrogeologic data • Validated analytical data of acceptable quality • Background inorganic soil and groundwater data • Sample location and depths	**Temporal Boundaries:** Use samples collected after release is suspected to have occurred. Data from soil and/or sediment that has subsequently been removed or clean soil that has been imported to the site will not be considered. Consider constituent degradation potential. Use newer data if newer and older data are inconsistent. Current and future exposure scenarios will be considered. Use established background threshold values for metals in soil and groundwater. **Spatial Boundaries:** Site data are spatially defined by the historical and proposed data collected within the boundaries of the SS035 investigation area (Figure 10-2). Spatial relationships among the apparent extent of	<u>HHRA</u> If contaminants in soil, sediment, surface water, groundwater, soil vapor, and/or indoor air contribute to an excess lifetime cancer risk above 1 x 10^{-6}, a hazard quotient above 1, or are above ADEC 18 AAC 75 Table B1 and B2 migration to groundwater cleanup levels (ADEC, 2017a), then they are	Sampling design will provide sufficient representative data for risk assessment. Analytical chemical, pH, TOC, and hardness data will meet quality expectations for PARCCS as defined by this RI/FS management plan and in accordance with the DoD QSM v 5.1 (2017).	If the review of available historical data and the current distribution of samples and analyses determine there are potential data gaps to perform risk calculations, then additional samples and/or locations will be collected.

Table 11-1 Site SS035 RI/FS Management Plan Data Quality Objectives

Problem Statement	Decisions to Be Made	Input to the Decisions	Study Area Boundaries (Temporal, Spatial, or Chemical)	Decision Rule	Acceptable Limits on Decision Error	Optimize the Design
	2. Are there data of sufficient quality and quantity to support risk assessment? 3. What are the contaminants of potential concern? 4. What are the exposure pathways to be evaluated? 5. What are the soil depth intervals of concern? 6. What are the exposure areas to be evaluated? 7. How will exposure point concentrations be calculated? 8. What exposure parameters and assumptions will be used? 9. What toxicity values will be used? 10. How will risk be characterized/ calculated? 11. What defines unacceptable risk? 12. What are the uncertainties?	• Parcel/site boundaries and exposure areas • Current and potential future land and groundwater use information • Likely/potential exposure scenarios and pathways 2. Reasonable maximum exposure parameters 3. Calculated exposure point concentrations 4. Risk-based concentrations, exposure parameters, and toxicity values 5. Results of human health risk assessment 6. Results of risk from petroleum hydrocarbons under ADEC Method Three. 7. Results of ecological scoping evaluation 8. Uncertainty Analysis 9. Results of the vapor intrusion investigation (DQO 6)	contamination, the locations of available data points, and the potential exposure pathway will be evaluated. <u>HHRA</u> For the HHRA, one exposure areas will be evaluated for soil. Soil data will be compiled by depth interval based on the following potential exposure scenarios: 1. Current industrial worker scenario = 0 to 2 feet bgs [i.e., surface soil] 2. Future industrial worker scenario = 0 to 15 feet bgs (i.e., mixed-zone [surface + subsurface soil]) 3. Surface construction worker scenarios = 0 to 2 feet bgs (surface soil). 4. Construction/excavation worker scenario = 0 to 15 feet bgs (mixed-zone soil). 5. Hypothetical (long term) future residential scenario = 0 to 15 feet bgs (mixed-zone soil). Soil samples deeper than 15 feet bgs will be excluded from the risk assessment data set. Summary statistics will be prepared for the surface soil data set and mixed-zone soil data set for each exposure area. For sediment, one exposure area will be evaluated – sediment within GSP. For groundwater, one exposure area will be evaluated. Groundwater data from monitoring wells located onsite and in the surrounding area will be aggregated for this exposure area. For the VI pathway, indoor air data will be used to evaluate the current exposure scenario and soil vapor and groundwater data will be used to evaluate the potential future scenario. Indoor air and soil vapor samples will be evaluated on a location-specific basis, rather than aggregating data. <u>ERA</u> For the ERA, the following exposure scenarios are considered potentially complete: Soil (0 to 2 feet bgs) may provide a complete exposure pathway for terrestrial receptors, including terrestrial plants, soil invertebrates, birds, and mammals. Soil (0 to 6 feet bgs) may provide a complete exposure pathway for burrowing birds and mammals if they are present on-site. Sediment (0 to 0.5 feet bgs) may provide a complete exposure pathway to rooted aquatic plants and benthic organisms. Surface water may provide a complete exposure pathway for aquatic organisms, birds, and mammals. **Chemical Boundaries:** Use target analyte list appropriate for suspected source and release history. Use DLs appropriate to previously evaluated site PSLs. COPCs, for quantitative assessment, identified based on at least one sample with concentrations greater than PSLs. Supporting parameters (TOC and hardness) will be collected to develop site-specfic toxicity values for sediment and water, respectively. pH analysis to support aluminum and iron risk calculations.	considered primary contributors to risk. COCs will be identified based on evaluating the primary risk contributors in conjunction with the EPA risk management range of 1×10^{-6} to 1×10^{-4}, the ADEC standard of 1×10^{-5}, the target organ evaluation, risk from naturally occurring chemicals, and the uncertainties analysis. If COCs are identified in soil, sediment, surface water, groundwater, soil vapor, and/or indoor air, then evaluation of remedial options will be recommended. In addition, if groundwater concentrations are above ADEC 18 AAC 75 Table C cleanup criteria, then evaluation of remedial options will be recommended. <u>ERA</u> If the predicted results of the ERA indicate there is no unacceptable risk to ecological receptors via a specific exposure pathway and/or media and the weight of evidence indicates that the data are sufficient to make final recommendations; then that exposure pathway and/or media will be recommended for no further ecological investigation or remediation. If the predicted risks indicate a potential for ecological risk and the weight of evidence indicates that the data are sufficient to make final recommendations, then the chemicals retained after the weight of evidence evaluation will be identified as COECs will be recommended for risk management consideration. If the predicted results of the ERA indicate potential for ecological risk but data gaps are present, then further evaluation and/or data collection may be proposed before determining remedial actions.		

Table 11-1 Site SS035 RI/FS Management Plan Data Quality Objectives

Problem Statement	Decisions to Be Made	Input to the Decisions	Study Area Boundaries (Temporal, Spatial, or Chemical)	Decision Rule	Acceptable Limits on Decision Error	Optimize the Design
DQO 8 – Collect Data to Support an FS						
Additional data may need to be collected to support an FS and understand remediation time frames.	To identify what data are needed to support the FS, the following decisions need to be made: 1. What are the likely COCs and contaminated media that will be considered in the FS? 2. What are the likely remedial or response actions for those COCs/media? 3. What data are needed to adequately evaluate remedial or response actions identified in Decision 2? 4. What supporting data has been collected at the site during previous investigations? 5. Do historical data and new site analytical data meet quality standards and are useable? 6. After review of available historical data, are there any data gaps that need to be addressed in this RI/FS?	1. Review site background, history, and updated CSM 2. Previous sample locations and depths 3. Slug tests/short-term groundwater pump test results (estimate aquifer properties) 4. Available laboratory analytical data of acceptable quality from historical soil, sediment, surface water, and groundwater samples collected at the site 5. PSLs as described in Worksheet #15 6. Validated laboratory analytical data of acceptable quality from soil samples collected from new soil borings and surface soil sample locations 7. Validated laboratory analytical data of acceptable quality from sediment samples collected from new sediment sample locations 8. Validated laboratory analytical data of acceptable quality from groundwater samples collected from new and existing monitoring wells 9. Validated laboratory analytical data of acceptable quality from new surface water samples 10. Geotechncial laboaratory data	**Temporal Boundaries**: Historical data from samples collected since 2012 will be used. More recent data will be used if newer and older data are inconsistent. Soil/sediment data that has been excavated/removed from the site will not be used. **Spatial Boundaries**: Data used to support the FS are defined by data collected within the SS035 investigation area (Figure 10-2) or nearby sites. Data used will be representative of site lithology/hydrogeology. **Chemical/Analytical Boundaries**: Use target analyte list, analytical methods, and PSLs as described in Worksheet #15 to evaluate remedial or response actions. Collect additional parameters such as hydraulic conductivity and geotechnical data to assess contaminant transport and natural attenuation rates. Slug tests results will be used to estimate aquifer properties to support a FS.	If data such as hydraulic conductivity were not collected previously at the site, then remediation timeframes used in the FS will be uncertain.	Analytical chemical data used to perform an FS will meet quality expectations for PARCCS as defined by this RI/FS management plan and in accordance with the DoD QSM v 5.1 (2017). Geotechnical data will not be validated.	If the necessary data to support an FS was not collected during previous site investigations, then sampling will be proposed to obtain the necessary data.

Notes:

AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
bgs = below ground surface
BTV = background threshold value
COC = contaminant of concern
CSM = conceptual site model
DL = detection limit
DoD = Department of Defense
DQO = data quality objective
EPA = United States Environmental Protection Agency
ERA = Ecological Risk Assessment
GAC = granular activated carbon
GIS = geographic information system
GSP = Garrison Slough Pond
HHRA = Human Health Risk Assessment
PAH = polycyclic aromatic hydrocarbons
PARCCS = precision, accuracy, representativeness, completeness, comparability, and sensitivity
PCBs = Polychlorinated biphenyls
PFAS = per- and polyfluorinated alkyl substances
PID = photoionization detector
QSM = Quality Systems Manual
PSL = project screening level
RI/FS = Remedial Investigation/Feasibility Study
SVOC = semivolatile organic compound
EPAUSAF = United States Air Force
VI = vapor intrusion
VOC = volatile organic compound
WTP = water treatment plant

11.5 Develop the Analytic Approach

The following general decision rules will guide the RI/FS:

- If validated laboratory data of acceptable quality indicate chemical concentrations from new soil, sediment, surface water and groundwater samples are below PSLs, then the extent of contamination has been delineated and the absence of contamination has been confirmed.
- If validated data of acceptable quality indicate chemical concentrations are above PSLs, then the presence of contamination has been confirmed, and these compounds will be considered COPCs. Chemicals will be eliminated as COPCs if they are identified as inorganics within the range of ambient concentrations or essential nutrients (calcium, magnesium, potassium, and sodium), established in previous background data analysis for Eielson (USAF, 2014a; 2014b).
- For the HHRA, if contaminants in soil, sediment, surface water, groundwater, soil vapor, or indoor air contribute to an excess lifetime cancer risk above 1×10^{-6}, a hazard quotient above 1, or are above ADEC 18 AAC 75 Table B1 and B2 migration to groundwater cleanup levels (ADEC, 2017a) (unless there is another line of evidence, such as groundwater or lithology data, that indicates groundwater is not and will not be impacted), then they will be considered COCs for consideration in the FS.
- If the predicted results of the ERA indicate a potential for ecological risk and the weight of evidence indicates that the data are sufficient to make final recommendations then the chemicals retained after the weight of evidence evaluation will be identified as contaminants of ecological concern (COECs) and will be recommended for risk management consideration.
- If COCs or COECs are identified in soil, sediment, air, surface water and groundwater, then evaluation of remedial options in an FS will be recommended.

11.6 Specify Performance or Acceptance Criteria

Soil, sediment, air, surface water, and groundwater data will be used to evaluate and characterize the nature and extent of contamination in those media, assess potential risks, and make decisions about the need for and extent of remedial action. Definitive data of acceptable quality will be generated using rigorous analytical methods (such as approved EPA SW-846 reference methods, including Methods 8260C for VOCs). Collected data will be verified and validated as described in Worksheets #34, 35, 36. The use of these data is not restricted unless there is a quality problem associated with the data. Analytical data will meet quality expectations for PARCCS as defined by this RI/FS management plan and in accordance with the DoD QSM v 5.1 (2017).

Worksheet #15 provides the analytical laboratory's achievable limits of detection (LODs) and limits of quantitation (LOQs) in comparison with PSLs. In cases where the PSL is less than the LOD, the determination of COCs at SS035 will be coordinated with EPA and ADEC.

Worksheet #28 provides laboratory QCs that will be used to ensure sufficient quality of the data. If these QC measures are not within acceptable parameters, professional judgment will be used to assess the usability of the data. This information will be presented in the data quality assessment.

11.7 Develop the Detailed Plan for Data Collection

The scope and sequence of activities to be conducted under this RI/FS management plan are detailed in Worksheets #14, #15, #17, and #18, and are summarized as follows:

- Pre-field effort activities:
  - RI/FS management plan approval
  - Procuring subcontractors, equipment, and materials
  - Acquiring applicable training and certification
  - Coordinating site access
  - Locating utilities and acquiring Eielson AFB dig permits
- Phase 1: Soil, Surface Water, and Groundwater Sampling
  - Mobilization
  - Decontamination of sampling equipment
  - Surface soil sampling
  - Installation and sampling of soil borings
  - Installation and development of permanent and temporary monitoring wells
  - Evaluate groundwater flow direction of local aquifer by taking synoptic depth to groundwater measurements
  - Groundwater sampling in new and existing monitoring wells
  - Estimate aquifer hydraulic properties (pump testing of monitoring wells)
  - Surface water sampling
  - Management of IDW
  - Surveying
  - Demobilization
- Phase 2: Second Surface Water and Groundwater Sampling Event
  - Mobilization
  - Decontamination of sampling equipment
  - Surface water sampling from locations previously sampled during the first sampling event
  - Groundwater sampling of new and existing monitoring wells sampled during the first sampling event
  - Management of IDW
  - Demobilization
- Phase 3: First VI Sampling Event
  - Mobilization
  - Performing building VI surveys and subslab utility locates
  - Subslab soil vapor, indoor air, and outdoor air sampling
  - Differential pressure monitoring
  - Demobilization
- Phase 4: VI HAPSITE Investigation
  - Mobilization
    - HAPSITE sampling and pressure cycling
    - Demobilization

- Phase 5: Sediment Sampling, and Step-out Sampling, and Second VI Sampling
  - Step-out Sampling
    - Mobilization
    - Decontamination of sampling equipment
    - Sediment sampling within GSP and on the shoreline.
    - Step-out sampling of soil and groundwater in upland areas, as needed to fill data gaps based on Phase 1 results.
    - Management of IDW
    - Surveying
    - Demobilization
  - Second VI Sampling Event
    - Mobilization
    - Subslab soil vapor, indoor air, and outdoor air sampling
    - Differential pressure monitoring
    - Demobilization
- Temporary Monitoring Well Decommissioning
  - Mobilization
  - Decommission temporary wells
  - Management of IDW
  - Demobilization
- Post-Investigation Activities
  - Laboratory Analysis
  - Data management, review, and evaluation
  - Consolidation and submittal to the Environmental Restoration Program Information Management System (ERPIMS) of field and analytical data
- Reporting:
  - RI and FS reports

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Worksheet #12 – Measurement Performance Criteria

Tables summarizing the measurement performance criteria (MPC) for each matrix and analytical parameter of this project are presented in this worksheet. In general, the MPCs follow those defined in the DoD QSM v 5.1 (2017). Method-specific criteria will be followed for parameters not included in the DoD QSM.

12.1 Data Quality Indicators

The quality of the data to be collected for this project will be verified through appropriate MPCs established for both sampling procedures and analytical methods. The criteria should relate to data quality indicators (DQIs) consisting of precision, accuracy, representativeness, comparability, completeness, and sensitivity, commonly referred to as PARCCS parameters. The quality of the sampling procedures and laboratory results will be evaluated for compliance with project DQOs (as defined in Worksheet #11) through a review of overall PARCCS, in accordance with procedures described in Worksheet #37.

The DQIs are defined in the following sections.

12.1.1 Precision

Precision refers to the reproducibility of measurements. Precision is usually expressed as standard deviation, variance, percent difference, or range, in either absolute or relative terms. Precision data are used to evaluate consistency and reproducibility of field sampling and/or analytical procedures. Precision will be evaluated by comparing the following:

- Laboratory control sample (LCS) and LCS duplicates (LCSD) (if prepared and analyzed) to determine the precision of the laboratory procedures
- Matrix spike (MS) and MS duplicate (MSD) samples to determine the effect of the sample matrix on the precision of the results generated using the selected analytical method
- Primary and field duplicate (FD) sample results
- Serial dilution results
- Precision is evaluated by calculating relative percent difference (RPD) using the following equation:

$$RPD = \frac{2|(D_1 - D_2)|}{D_1 + D_2} x\,100$$

Where: D_1 = first sample value
D_2 = second sample value (replicate)
RPD = relative percent difference

12.1.2 Accuracy

Accuracy is the degree of agreement between an observed value (such as sample results) and an accepted reference value. A measurement is considered accurate when the reported value agrees with the true value or known concentration of the spike or standard within acceptable limits.

Accuracy is evaluated by reviewing:

- Calibrations – initial and continuing; acceptance, and frequency
- Surrogates – recovery and frequency

- LCS and LCSD recoveries
- MS, MSD, and post-digestion spike recoveries
- Relative response factors (RFs) and relative standard deviation (appropriate calibration procedures improve accuracy of measurement results)
- Method blanks (MBs) (detections in the MB may indicate potential high bias in associated samples)
- Gas chromatography (GC) second-column confirmation (if required)
- Tune criteria (gas chromatography/mass spectroscopy [GC-MS]) – acceptability and frequency (to ensure accuracy of mass and ion-abundance measurements)
- Internal standards (GC-MS) – acceptability and

For measurements where matrix spikes are used:

$$\%\ Recovery = \frac{(S - U)}{C_{sa}}\ x\ 100$$

Where: S = measured concentration in spiked aliquot
U = measured concentration in unspiked aliquot
C_{sa} = actual concentration of spike added

For situations where a standard reference material (SRM) is used instead of, or in addition to, matrix spikes:

$$\%R = 100\ x \left[\frac{C_m}{C_{sm}}\right]$$

Where: C_m = measured concentration of SRM
C_{sm} = actual concentration of SRM

12.1.3 Representativeness

Representativeness is a qualitative term that refers to the degree that data accurately and precisely depict the characteristics of a population, whether referring to the distribution of a contaminant within a sample, a sample within a matrix, or a contaminant at a site. Representativeness is determined by appropriate program design, with consideration of elements such as proper well locations, drilling and installation procedures, operations process locations, and sampling locations.

Objectives for representativeness, which are defined for each sampling and analysis task, are a function of the investigative objectives. Assessment of representativeness will be achieved through use of the standard field, sampling, and analytical procedures. Decisions regarding sample/well/boring locations, sampling procedures, and sample quantities, as well as the statistical sampling design, will be documented in Worksheets #10, #17, and #18.

Representativeness will be evaluated by reviewing the following:

- Sample quantities and locations
- Sampling procedures and equipment
- Sample chain-of-custody (CoC) forms and field logbooks
- Holding times and preservation

12.1.4 Comparability

Comparability addresses the degree to which different methods or data agree or can be represented as similar. The objective for this QA/QC program is to produce data with the greatest possible degree of comparability. The number of matrices that are sampled and the range of field conditions encountered are considered in determining comparability. Comparability is achieved by the following:

- Using standard methods for sampling and analysis
- Reporting data in standard units
- Normalizing results to standard conditions
- Operating instruments within their calibrated range according to established procedures based on approved methodology
- Using standard and comprehensive reporting formats

12.1.5 Completeness

Analytical completeness is a measure of the amount of valid data obtained compared with the amount that was expected to be obtained under correct, normal conditions. Completeness is calculated for the aggregation of data for each analyte measured for any particular sampling event or other defined set of samples (such as by site) as set out in the DQOs. Completeness is calculated and reported for each method, matrix, and analyte combination using the formula below:

$$\%\ Completeness = 100\ x\ (\frac{V}{n})$$

Where: V = number of measurements judged valid
n = total number of measurements

The number of valid results divided by the number of possible individual analyte results, expressed as a percentage, determines the completeness of the dataset. For completeness requirements, valid results are all results not qualified with an R-flag after a usability assessment has been performed (flagging conventions are outlined in Section 36.3.8). Completeness should not be determined only based on laboratory data qualifiers. The goal for completeness is 95 percent for aqueous and air samples and 90 percent for soil and sediment samples.

12.1.6 Sensitivity

Sensitivity is the ability of a method or instrument to detect the target analytes at the level of interest. The capability of analytical laboratory methods and instrumentation to provide data with the sensitivity to meet the site-specific DQOs will be evaluated during the planning phase. The laboratory reference limits will be evaluated against the project action limits in order to determine whether the analytical methods and/or laboratory meet the project DQOs.

12.2 Laboratory Reference Limits

Sensitivity requirements include the establishment of various limits in accordance with the DoD QSM v 5.1 (2017).

12.2.1 Detection Limit

The DL is the smallest analyte concentration that can be identified, measured, and reported with confidence that the analyte concentration is not a false positive value. The MDL as defined by Title 40,

Code of Federal Regulations, Part 136, Appendix B, is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The MDL is one way to establish a DL. The MDL will be considered the DL for the purposes of this project and reporting in accordance with the DoD QSM v 5.1 (2017). The laboratory will establish DLs for each method, matrix, and analyte and will provide the DLs to the project chemist at the beginning of the project (i.e., before project samples are analyzed) and upon request.

Laboratories participating in this work will demonstrate the MDLs for each instrument, including confirmatory columns, method of analysis, analyte, and matrix, using the following steps:

1. Estimate the DL using one of the following:
   - The concentration value that corresponds to an instrument signal/noise ratio in the range of 2.5 to 5
   - The concentration equivalent of three times the standard deviation of replicate measurement of the analyte in reagent water
   - The region of the standard curve where there is a significant change in sensitivity (i.e., a break in the slope of the standard curve)
2. Prepare (extract or digest) and analyze seven MS samples (using ASTM International Type II water for aqueous methods; Ottawa sand for soil organic methods; and glass beads of 1 millimeter in diameter or smaller, or Teflon chips, for soil metals) containing the analyte of interest at a concentration 3 to 5 times the estimated MDL. If more than seven replicates are analyzed, all results must be used to calculate the MDLs unless exclusion of a result is technically justified and documented. MDLs must be established for each extraction/cleanup method combination employed for samples.
3. Determine the variance (S2) for each analyte as follows:

$$S2 = \frac{1}{n-1}\left[\sum_{i=1}^{n}\left(x_i - \bar{x}\right)^2\right]$$

where:

x_i = the i^{th} measurement of the variable x
$\bar{x}$ = the average value of x
S2 = variance

$$\overline{X} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

4. Determine the standard deviation(s) for each analyte as follows:

$$s = (S2)1/2$$

5. Determine the DL for each analyte as follows:

$$MDL = 3.14(s)$$

(Note: 3.14 is the one-sided t-statistic at the 99 percent confidence level that is appropriate for determining the DL using seven samples.)

6. Repeat the process using a smaller spiking level if the spike level used in Step 2 is more than 10 times the calculated DL.

   If multiple instruments are used, the DL used for reporting purposes will represent the least sensitive instrument response for each compound or element spiked.

12.2.2 Limit of Detection

The LOD is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99 percent). At the LOD, the false negative rate is 1 percent. The DL will be used to determine the LOD for each analyte and matrix and for all preparatory and cleanup methods routinely used on samples in accordance with the DoD QSM v 5.1 (2017). After each DL determination, the laboratory must immediately establish the LOD by spiking a quality system matrix at approximately two to three times the DL (for a single-analyte standard) or one to four times the DL (for a multi-analyte standard). This spike concentration establishes the LOD; it is specific to each combination of analyte, matrix, method (including sample preparation), and instrument configuration. The LOD must be verified quarterly.

The following requirements apply to the initial DL and LOD determinations and to the quarterly LOD verifications:

- The apparent signal-to-noise ratio at the LOD must be at least 3, and the results must meet all method requirements for analyte identification (e.g., ion abundance, second-column confirmation, or pattern recognition). For data systems that do not provide a noise measurement, the signal produced by the verification sample must produce a result that is at least three standard deviations greater than the mean MB concentrations.
- If a laboratory uses multiple instruments for a given method, the LOD must be verified for each.
- If the LOD verification fails, the laboratory must repeat the DL determination and LOD verification at a higher concentration or perform and pass two consecutive LOD verifications at a higher concentration and set the LOD at the higher concentration.
- The laboratory will maintain documentation for all DL determinations and LOD verifications.

LOD verification samples will be prepared and analyzed in the same manner as field samples. Verification of the LOD will be conducted in accordance with the DoD QSM v 5.1 (2017).

12.2.3 Limit of Quantitation

The LOQ is the lowest concentration that produces a quantitative result within specified limits of precision and bias. The LOQ will be set at or above the concentration of the lowest initial calibration (ICAL) standard. The laboratory will compare the results of the LOD demonstrations with the LOQs for each method and analyte. The LOD may not be more than one-half the corresponding LOQ. The laboratory will also verify LOQs by including a standard equal to or below the LOQ as the lowest point on the calibration curve.

At a minimum, the LOQ must be verified quarterly. LOQ verification samples will be prepared and analyzed in the same manner as field samples. Precision and accuracy of the LOQ verification are established in accordance with the DoD QSM v 5.1 (2017). The laboratory procedure for establishing the LOQ must empirically demonstrate precision and bias at the LOQ. In the absence of client requirements, the LOQ must meet LCS control limits (CL). The LOQ and associated precision and bias must meet project-specific requirements and must be reported. If the method is modified, precision and bias at the new LOQ must be demonstrated and reported.

If a result is greater than the DL and less than the LOQ, the result will be reported as a detected concentration and flagged “J” (Section 36.3.8 details flagging conventions). If no detected concentration is determined down to the DL, the result will be reported to the LOD concentration (with the added variables of sample dilution, final volume, and sample mass included), reported as a non-detect (ND) result, and U-flagged. A detected result greater than or equal to the LOQ will be reported without a qualifying flag unless stated otherwise in the QA/QC criteria and instrument calibration tables for each matrix and method in Appendix C. No results below the DL will be reported.

Sample dilution because of target and or non-target compound concentrations or matrix interference could prevent achievement of DLs. Samples must be analyzed initially while undiluted, when reasonable. If dilution is necessary, both the original and the diluted results must be reported. Any samples that are not analyzed undiluted must be supported by matrix interference documentation, such as sample viscosity, color, odor, or results from other analyses of the same sample, to show that undiluted analysis is not possible. Appropriate cleanup procedures must be followed to minimize matrix effects on DLs, LODs, and LOQs. The analytical laboratory must notify the project chemist for review and approval of diluted samples and/or non-cleanup samples.

Laboratory DLs, LODs, and LOQs for laboratories that are expected to perform analyses for this RI/FS management plan are included in Worksheet #15 (APPL, Inc. and Air Technology Laboratories, Inc.). The laboratory DLs, LODs, and LOQs will be evaluated against project-specific action limits and screening criteria to determine whether the sensitivity of the analysis is sufficient for project decision-making.

QAPP Worksheet #12 - Measurement Performance Criteria Table (GRO)

Matrix: Soil/Water

Analytical Group or Method: GRO by AK101

Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils, RPD <30 percent for waters
Bias/Contamination	Blanks (MB, trip blank [TB], equipment blank [EB])	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS/LCSD and MS/MSD recoveries	Percent recovery and precision limits in Table C1 of Appendix C
Precision	LCS/LCSD and MS/MSD RPDs	Percent recovery and precision limits in Table C1 of Appendix C
Accuracy	Surrogate Recoveries for MB/LCS/LCSD	Percent recovery limits in Table C1 of Appendix C
Accuracy	Surrogate Recoveries for Field Samples including MS/MSD	Percent recovery limits in Table C1 of Appendix C
Accuracy/Bias	Initial calibration verification (ICV) and continuing calibration verification (CCV)	≤25 percent difference
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (see Worksheet #19/30 for details)
Representativeness/Usability	Cooler Temperature and Temperature Blank	Temperature ≤6 degrees Celsius (°C)
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (DRO/RRO)

Matrix: Soil/Water
Analytical Group or Method: DRO/ RRO by AK102/AK103
Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils RPD <30 percent for waters
Bias/ Contamination	Blanks (MB, EB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS/LCSD and MS/MSD recoveries	Percent recovery and precision limits in Table C1 of Appendix C
Precision	LCS/LCSD and MS/MSD RPDs	Percent recovery and precision limits in Table C1 of Appendix C
Accuracy	Surrogate Recoveries for MB/LCS/LCSD	Percent recovery limits in Table C1 of Appendix C
Accuracy	Surrogate Recoveries for Field Samples including MS/MSD	Percent recovery limits in Table C1 of Appendix C
Accuracy/Bias	ICV and CCV	≤25 percent difference
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times see Worksheet #19/30 for details)
Representativeness/Usability	Cooler Temperature and Temperature Blank	Temperature ≤6°C
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (VOCs in Air)

Matrix: Air

Analytical Group or Method: VOCs by Task Order (TO)-15 or TO-15SIM

Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <30 percent for air
Bias/Contamination	Blanks (MB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS recoveries	Percent recovery and precision limits in Tables C21 and C32 of Appendix C
Precision	LCS/LCSD RPDs	Percent recovery and precision limits in Tables C21 and C32 of Appendix C
Accuracy	Surrogate Recoveries	Percent recovery and precision limits in Tables C21 and C32 through H13 of Appendix C
Accuracy/Bias	ICV and CCV	≤ 30 percent difference
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be analyzed within holding times (Worksheet #19/30)
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for air

QAPP Worksheet #12 - Measurement Performance Criteria Table (VOCs)

Matrix: Soil/Water
Analytical Group or Method: VOCs by SW8260C
Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils, RPD <30 percent for waters
Bias/Contamination	Blanks (MB, Trip Blank, EB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample. For common laboratory contaminants, no analytes detected >LOQ and >1/10 the amount measured in any sample.
Accuracy	LCS and MS/MSD recoveries	Percent recovery and precision limits in Tables C2 and C3 of Appendix C
Precision	MS/MSD RPDs (and LCS/LCSD, if performed)	RPD ≤ 20 percent
Accuracy	Surrogate Recoveries	Percent recovery limits in Tables C2 and C3 of Appendix C
Accuracy/Bias	ICV and CCV	≤ 20 percent difference
Sensitivity	Internal Standards	Retention time (RT) ±30 seconds from RT of the internal standard (IS) of the calibration midpoint and extracted ion current profile area within -50 percent to +100 percent of area from IS calibration midpoint standard
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (Worksheet #19/30)
Representativeness/Usability	Cooler Temperature and Temperature Blank	Temperature ≤6°C
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (Pesticides, PCBs, and EDB)

Matrix: Soil/Water

Analytical Group or Method: Pesticides by SW8081B, PCBs by SW8082A, and Ethylene Dibromide by SW8011

Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils, RPD <30 percent for waters
Bias/Contamination	Blanks (MB, EB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS and MS/MSD recoveries	Percent recovery and precision limits in Tables C2 and C8 through C11 of Appendix C
Precision	MS/MSD RPDs (and LCS/LCSD, if performed)	Percent recovery and precision limits in Tables C2 and C8 through C11 of Appendix C
Precision	Second column confirmation	RPD ≤ 40 percent
Accuracy	Surrogate Recoveries	Percent recovery and precision limits in Tables C2 and C8 through C11 of Appendix C
Accuracy/Bias	ICV and CCV	≤ 20 percent difference
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (Worksheet #19/30)
Representativeness/Usability	Cooler Temperature and Temperature Blank	Temperature ≤6°C
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (SVOCs/1,4-Dioxane/PAH)

Matrix: Soil/Water
Analytical Group or Method: SVOCs+1,4-Dioxane by SW8270D, PAHs by SW8270D-SIM
Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils, RPD <30 percent for waters
Bias/Contamination	Blanks (MB, EB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample. For common laboratory contaminants, no analytes detected >LOQ and >1/10 the amount measured in any sample.
Accuracy	LCS and MS/MSD recoveries	Percent recovery and precision limits in Tables C4 through C7 of Appendix C
Precision	MS/MSD RPDs (and LCS/LCSD, if performed)	Percent recovery and precision limits in Tables C4 through C7 of Appendix C
Accuracy	Surrogate Recoveries	Percent recovery limits in Tables C4 through C7 of Appendix C
Accuracy/Bias	ICV and CCV	≤ 20 percent difference
Accuracy	Tune criteria consistent with SW8270D	Mass spectrometer tuning check, decafluorotriphenylphosphine
Sensitivity	Internal Standards	RT ±30 seconds from RT of the IS of the calibration midpoint and extracted ion current profile area within -50 percent to +100 percent of area from IS calibration midpoint standard
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (Worksheet #19/30)
Representativeness/Usability	Cooler Temperature and Temperature Blank	Temperature ≤6°C
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (Metals)

Matrix: Soil/Water
Analytical Group or Method: **Total and Dissolved** Metals (excluding mercury) by SW6010C and SW6020A
Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils RPD <30 percent for waters
Bias/Contamination	Blanks (MB, EB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS and MS/MSD recoveries	Percent recovery and precision limits in Tables C12 through C15 of Appendix C
Precision	MS/MSD RPDs (and LCS/LCSD, if performed)	Percent recovery and precision limits in Tables C12 through C15 of Appendix C
Accuracy/Bias	Post-digestion spike	Within ±25 percent of expected value
Accuracy/Bias	ICV and CCV	≤ 10 percent difference
Accuracy/Bias	Interfering element check standards	Interference check sample (ICS)-A: All non-spiked analytes <LOD ICS-AB: Within ±20 percent of expected value
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (Worksheet #19/30)
Representativeness/Usability	Cooler temperature and temperature blank	NA
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (Mercury)

Matrix: Soil/Water
Analytical Group or Method: Mercury by SW7470A and SW7471B
Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils RPD <30 percent for waters
Bias/Contamination	Blanks (MB, EB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS and MS/MSD recoveries	Percent recovery and precision limits in Tables C16 and C17 of Appendix C
Precision	MS/MSD RPDs (and LCS/LCSD, if performed)	RPD ≤ 20 percent
Accuracy/Bias	Post-digestion spike	Within ±25 percent of expected value
Accuracy/Bias	ICV and CCV	≤ 10 percent difference
Accuracy/Bias	Low-level CCV	≤ 20 percent difference
Accuracy/Bias	Calibration blank	≤ LOD
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (Worksheet #19/30)
Representativeness/Usability	Cooler Temperature and Temperature Blank	Temperature ≤6°C
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (Hexavalent Chromium)

Matrix: Soil/Sediment/Water
Analytical Group or Method: Hexavalent Chomium by SW7199
Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils and sediments RPD <30 percent for waters
Bias/Contamination	Blanks (MB, EB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS and MS/MSD recoveries	Percent recovery and precision limits in Table C18 of Appendix C
Precision	MS/MSD RPDs (and LCS/LCSD, if performed)	RPD ≤ 20 percent
Accuracy/Bias	ICV and CCV	≤ 10 percent difference
Accuracy/Bias	Calibration blank	≤ LOD
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (Worksheet #19/30)
Representativeness/Usability	Cooler Temperature and Temperature Blank	Temperature ≤6°C
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (Perfluorinated Compounds)

Matrix: Soil/Water
Analytical Group or Method: Perfluorinated Compounds by EPA 537 MOD
Concentration Level: N/A

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils RPD <30 percent for waters
Bias/Contamination	Blanks (MB, EB, field reagent blank [FRB])	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS and MS/MSD recoveries	Percent recovery and precision limits in Table C20 Appendix C
Precision	MS/MSD RPDs (and LCS/LCSD, if performed)	RPD ≤ 30 percent
Precision/Accuracy/Bias	Instrument setup, ion transitions, initial calibrations, extracted and injected internal standard analytes.	Must meet the criteria defined in DOD QSM v5.1 Table B-15
Accuracy/Bias	ICV	≤ 30 percent difference
Accuracy/Bias	CCV	≤ 30 percent difference
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (Worksheet #19/30)
Representativeness/Usability	Cooler temperature and temperature blank	Temperature ≤6°C
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (Dioxins and Furans)

Matrix: Soil/Water
Analytical Group or Method: Dioxins and Furans by SW8290A
Concentration Level: N/A

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils RPD <30 percent for waters
Bias/Contamination	Blanks (MB, EB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS and MS/MSD recoveries	Percent recovery and precision limits in Table C19 of Appendix C
Precision	MS/MSD RPDs (and LCS/LCSD, if performed)	RPD ≤ 20 percent
Accuracy/Bias	ICV	≤ 20 percent difference for unlabeled standards; ≤ 30 percent difference for labeled standards
Accuracy/Bias	CCV	≤ 20 percent difference for unlabeled standards; ≤ 30 percent difference for labeled standards
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (Worksheet #19/30)
Representativeness/Usability	Cooler temperature and temperature blank	Temperature ≤6°C
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	95 percent for waters 90 percent for soils

QAPP Worksheet #12 - Measurement Performance Criteria Table (Total Organic Carbon)

Matrix: Soil/Sediment

Analytical Group or Method: Total Organic Carbon by Walkley Black

Concentration Level: Low-High

DQI	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision	FD	RPD <50 percent for soils and sediments
Bias/Contamination	Blanks (MB)	No analytes detected >1/2 LOQ and >1/10 the amount found in any sample.
Accuracy	LCS and MS/MSD recoveries	Percent recovery with 80-120%
Precision	MS/MSD RPDs (and LCS/LCSD, if performed)	RPD ≤ 20 percent for LCS and ≤ 20 percent for MS/MSD
Accuracy/Bias	ICV and CCV	≤ 20 percent difference
Accuracy/Bias	Calibration blank	≤ LOD
Representativeness/Usability	Collection time/date, extraction time/date, analysis time/date	Samples must be extracted and analyzed within holding times (Worksheet #19/30)
Representativeness/Usability	Cooler Temperature and Temperature Blank	Temperature ≤6°C
Sensitivity	Evaluate laboratory LODs and LOQs against project DQOs	LOD for ND results less than the project action limit
Completeness	Completeness of samples collected; completeness of analytical requirements per the QAPP	90 percent for soils

Worksheet #13 – Secondary Data Uses and Limitations

The term secondary data includes data collected from previous investigations as well as regional, local, and Eielson AFB reference materials that may be used to increase the understanding of current site conditions. Secondary data may not have been generated with the same quality criteria established for the current project and may have been collected or generated to answer different questions than those posed in the current investigation. Therefore, the usability of any secondary data must be evaluated to ensure data quality meets the DQOs established for the site-specific needs.

Table 13-1 identifies secondary data and information that will be used for the project and their originating sources. The table also specifies how the secondary data will be used and the limitations on their use. Secondary data that do not meet validation and usability standards discussed in Worksheets #34 through #37 of this RI/FS management plan will not be used for updating the CSM or determining nature and extent. Secondary data will be evaluated in terms of precision, bias, representativeness, comparability, and completeness to ensure they are of the type and quality necessary to support their intended uses.

Table 13-1 Secondary Data Criteria and Limitations Table

Secondary Data	Data Source	Data Uses Relative to Current Project	Factors Affecting the Reliability of Data and Limitations on Data Use
Chemical laboratory data	A through F	Data will be used for applicable DQO purposes, including nature and extent determinations and risk evaluations.	Changes in site conditions since data were collected (e.g., volatilization); changes in analytical methods; analyte detection limits appropriate to meet project goals.
Screening field data (including field meter readings or field kit analysis)	A through F	Data will be used as screening data to assist with CSM development and to guide placement of samples to fill potential data gaps.	Review of data and professional judgment will be required to determine applicability and usability of data.
Boring log information	A through F	Data will be used to generate geologic cross sections and to support the development of the hydrogeologic CSM.	Review of data and professional judgment will be required to determine applicability and usability of data.
Well construction and water level elevation information	A through F	Data will be used to support the development of the hydrogeologic CSM and hydrographs, and for future groundwater sample planning.	Review of data and professional judgment will be required to determine applicability and usability of data.
GIS mapping layers and coordinates	A through F and DoD reference database	Data will be used to determine well, boring, sample, and site feature locations to support CSMs, nature and extent, and risk evaluations.	Review of data and professional judgment will be required to determine applicability and usability of data.
Photographs, aerial photography, interviews with site personnel, as-built drawings of current and former buildings, or other source data	Sources A through F, published literature, personnel interviews	Data will be used to support CSMs and perform VI building surveys	Review of data and professional judgment will be required to determine applicability and usability of data. As-built drawings may not be available for all current/former buildings. Personnel knowledge may be limited.

Table 13-1 Secondary Data Criteria and Limitations Table

Secondary Data	Data Source	Data Uses Relative to Current Project	Factors Affecting the Reliability of Data and Limitations on Data Use
Background data	C, E	Historical and new inorganic data will be compared to the background data reports for Eielson, if needed, to determine whether detected analytes are related to site activities or are naturally occurring.	None.
Federal Facility Agreement	F	Information will be used to support work planning, fieldwork, reporting, and notification processes. Information regarding elements of work required to be performed in responding to hazardous substance/waste releases.	None.

Notes:

CSM = conceptual site model
DoD = United States Department of Defense
DQO = data quality objective
GIS = geographic information system
VI = vapor intrusion

Data Sources:

A = *Site SS035 Drum and Sediment Removal and Disposal Report. Eielson Air Force Base, Alaska*. Final. September (USAF, 2017a)

B = *Installation-wide Monitoring Program 2015 Groundwater Monitoring Report, Eielson Air Force Base, Alaska*. February (USAF, 2017c) and *Installation-wide Monitoring Program 2016 Groundwater Monitoring Report, Eielson Air Force Base, Alaska*. (USAF, 2018a)

C = *Report on the Background Study of Metals in Soil*, *Eielson Air Force Base, Alaska.* Final. Revision 1.0. January. (USAF, 2014b)

D = *Field Investigation and Conceptual Site Model Update Report Source Area SS035.* Final. February. (USAF, 2014c)

E = *Report on the Background Study of Metals in Groundwater*, *Eielson Air Force Base, Alaska.* Final. March. (USAF, 2014a)

F = *Federal Facility Agreement Under CERCLA Section 120,* Administrative Docket Number 1089-07-14-120. (USAF, 1991a)

Worksheet #14/16 – Project Tasks & Schedule

This worksheet provides a summary of the project tasks and schedule. The RI will be completed as five sampling events and one temporary monitoring well decommissioning event.

Refer to Worksheet #21 of this RI/FS management plan for the full list of field standard operating procedures (SOPs), and Appendix D for the full text of the field SOPs.

14.1 Objectives

The objectives of this RI/FS management plan are as follows:

- Delineate the nature and extent of contaminants in soil, sediment, and groundwater
- Characterize the current nature of contaminants in surface water within GSP
- Assess whether VOCs in soil or groundwater are or potentially can impact indoor air through the VI pathway
- Evaluate whether soil, sediment, surface water, groundwater, and/or indoor air pose unacceptable risks to human health or the environment
- Conduct an FS and evaluate potential remedial alternatives to support selection of an appropriate remedy if it is determined that contaminants pose an unacceptable risk to human health or the environment

14.2 Project Tasks

The following are tasks to be completed during the investigation at SS035.

- Pre-investigation Activities
  - RI/FS management plan approval
  - Procuring subcontractors, equipment, and materials
  - Acquiring applicable training and certification
  - Coordinating site access
  - Locating utilities and acquiring Eielson AFB dig permits
- Phase 1: Soil, Surface Water, and Groundwater Sampling
  - Mobilization
  - Decontamination of sampling equipment
  - Surface soil sampling
  - Installation and sampling of soil borings
  - Surface water sampling
  - Installation and development of permanent and temporary monitoring wells
  - Evaluate groundwater flow direction of local aquifer by taking synoptic depth to groundwater measurements
  - Groundwater sampling of new and existing monitoring wells
  - Estimate aquifer hydraulic properties (pump testing of monitoring wells)
  - Surveying
  - Management of IDW
  - Demobilization

- Phase 2: Second Surface Water and Groundwater Sampling Event
  - Mobilization
  - Decontamination of sampling equipment
  - Surface water sampling from locations previously sampled during the first sampling event
  - Groundwater sampling of new and existing monitoring wells sampled during the first sampling event
  - Management of IDW
  - Demobilization
- Phase 3: First VI Sampling Event
  - Mobilization
  - Decontamination of sampling equipment
  - Performing building VI surveys and subslab utility locates
  - Subslab soil vapor, indoor air, and outdoor air sampling
  - Differential pressure monitoring
  - Demobilization
- Phase 4: VI HAPSITE Investigation
  - Mobilization
  - HAPSITE sampling and pressure cycling
  - Demobilization
- Phase 5: Sediment Sampling, Step-out Sampling, and Second VI Sampling Event
  - Sediment and Step-out Sampling
    - Mobilization
    - Decontamination of sampling equipment
    - Sampling of sediment within GSP and on the shoreline to address data gaps in sediment
    - Step-out sampling of soil and groundwater in upland areas
    - Evaluate groundwater flow direction of local aquifer by taking synoptic depth to groundwater measurements
    - Surveying
    - Management of IDW
    - Demobilization
  - VI Sampling
    - Subslab soil vapor, indoor air, and outdoor air sampling
    - Differential pressure monitoring
    - Demobilization
- Temporary Well Decommissioning
- Post-Investigation Activities
  - Laboratory Analysis
  - Data management, review, and evaluation
  - Consolidation and submittal to the ERPIMS of field and analytical data
- Reporting:
  - RI and FS reports
- Community Relations

A summary of the sampling process and rationale for the project tasks is presented in the following sections; a detailed description is presented in Worksheet #17. Refer to Worksheet #21 of for the list of field SOPs, and to Appendix D for the full text of the field SOPs. Site work will be performed in accordance with the Health and Safety Plan included as Appendix E.

14.2.1 Pre-Investigation Activities

Work will be coordinated with AFCEC and appropriate Eielson AFB installation points of contact. Access to portions of the areas under investigation are within secured (fenced and locked) areas. Eielson AFB dig permits will be obtained for intrusive field activities (673 WG Form 3). To help locate buried utility lines at the site, utilities will be cleared by a private utility locator. Utility locates will be performed in accordance with SOP-03. If underground utilities or any other subsurface obstructions/features are located within a 5-foot radius around each designated boring/well location, the location will be moved. Drilling or other invasive activities will be conducted after utility clearance has been completed.

Boring locations may be moved in accordance with SOP-03, utility clearance of intrusive operations, and Sections 6.1.7 and 6.1.8 of Appendix E, Health and Safety Plan. The new boring location will be dependent on-site conditions, and consistent with achieving DQOs specified in this RI/FS Management Plan. As noted in WS #6, EPA and ADEC will be notified if modification of locations is greater than 30 feet or of conditions that affect the sample collection procedures. Sampling will be completed after consensus with the change.

14.2.2 Phase 1: Soil, Surface water, and Groundwater Sampling

Mobilization

Before starting sampling activities, equipment will be mobilized to the site, and the site will be visually inspected for signs of environmental contamination such as surface staining or distressed vegetation.

Decontamination of Sampling Equipment

Initial decontamination of equipment will be performed following arrival onsite, before starting work. Subsequent decontamination will be completed on all equipment that contacts environmental media before mobilization to the next location. All equipment will be decontaminated in accordance with SOP-13.

A temporary decontamination pad may be constructed in a location at the site approved by Eielson for decontamination of equipment. The decontamination pad will be constructed of a plastic base containment pallet with plywood side walls to contain overspray during decontamination operations. The containment pallet will act as a sump to collect decontamination water. Sediment and water will be disposed of as described in the IDW management section of this worksheet.

To minimize decontamination procedures, single-use equipment will be used whenever possible; however, if dedicated equipment is not feasible, then all downhole equipment will be decontaminated before and after use. Field technicians conducting decontamination operations will wear appropriate protective clothing. Steam cleaning is the preferable method for decontamination; however, if steam cleaning is not available, then procedures for decontamination will be as follows:

- Pressure wash and scrub equipment with phosphate-free, laboratory-grade detergent (i.e., Alconox or equivalent).
- Triple-rinse with water and air dry.

Borehole Drilling, Soil Sampling, and Analysis

Soil borings will be drilled to collect surface and subsurface soil samples to assess the nature and extent of contaminated soil. Proposed sample locations, sample depths, laboratory analyses, and sampling rationale at each location are presented in Worksheet #17. Boreholes will be drilled using a direct-push drilling rig in accordance with SOP-05 or hand auger in accordance with SOP-7 and abandoned in accordance with SOP-20. Discrete soil samples will be collected in accordance with SOP-07. Sample intervals may be revised while drilling/sampling based on field observations and PID measurement, as appropriate/possible, to target intervals with the highest concentrations.

Swing-tie measurements or a global positioning satellite system (GPS) will be used to establish the initial soil locations. Sample handling procedures will follow SOP-16 and SOP-17. Fieldwork will be documented in accordance with SOP-01.

Surface Water Sampling and Analysis

Surface water samples will be collected to assess the nature of contaminants within GSP. Proposed sample locations, sample depths, laboratory analyses, and sampling rationale at each location are presented in Worksheet #17. Surface water samples will be collected in accordance with SOP-27. Sample locations may be revised based on access to the surface water location.

Installation and Development of Permanent and Temporary Monitoring Wells

New permanent and temporary monitoring wells will be installed to (1) delineate the downgradient extent of COCs in groundwater and (2) determine if COCs in soil associated with SS035 have migrated to groundwater (Figure 17-3). Monitoring wells will be installed as specified in SOP-08. Monitoring well casing and well screens will be constructed of Schedule 40 PVC, nominal 2-inch-diameter casing and screen. The standard screen slot size anticipated for newly installed wells is 20-slot (0.020-inch), unless field conditions indicate a smaller slot size (e.g., 10-slot) is warranted and approval of the CH2M PM has been obtained. Monitoring wells must use commercially manufactured, machine-slotted well screens. Well screens will be 10 feet in length at all wells. The placement of the top of each screen will be based on the hydrogeology at a particular location. If first groundwater detected is unconfined, to accommodate for the anticipated fluctuations in the groundwater table, the top of the well screen may be placed approximately 2.5 feet above the water table so that the well screen is not entirely submerged during monitoring events. If the first aquifer encountered is confined, then the top of the well screen will be placed directly beneath the confining unit and constructed in a manner that a bentonite seal is in place across the confining unit. A No. 10-20 sand pack paired with 20-slot screen is anticipated. However, if the finer grained materials are encountered, either 20-40 sand with a 10-slot screen or 16-30 sand with a 20-slot screen may be used with approval of the CH2M PM. The filter pack will extend above the well screen by no less than 2 feet. A bentonite seal will be installed at least 2 feet thick on the top of the filter pack. The annular space above the bentonite seal will be filled with a bentonite slurry or coarse bentonite chips. If chips are used, they will be hydrated in 5-foot lifts. Permanent monitoring wells will be completed with aboveground monuments with protective bollards or flush mount surface completions. Temporary monitoring wells will be finished with a traffic-rated flush mount surface completion.

Newly installed monitoring wells will be developed no sooner than 24 hours after well installation, as detailed in SOP-09. A surge and purge method will be used to develop the entire vertical screen interval. A pump will be the preferred method of purging for well development, unless aquifer conditions are not conducive to purging with a pump and alternative purge methods are necessary. Development will continue until water quality parameters stabilize within the specified criteria (SOP-09) with three consecutive readings or a minimum of 10 well casings have been removed from the well.

Groundwater Flow Direction Assessment

Synoptic groundwater elevation measurements will be obtained from new and existing wells (see Figure 17-3 for locations) and a groundwater flow direction will be determined to help refine the CSM. Groundwater elevation measurements will be collected in accordance with SOP-10.

Groundwater Sampling and Analysis

After a minimum of 48 hours following monitoring well development, a groundwater sample will be collected from each of the existing, permanent, and temporary monitoring wells using low-flow sampling methods in accordance with SOP-12. Monitoring wells will be purged and low-flow sampled in accordance with SOP-12. Field measurements will be collected during groundwater sampling and will include pH, conductivity, temperature, turbidity, dissolved oxygen, oxidation-reduction potential, and depth to groundwater in accordance with SOP-10 and SOP-11. Sample handling procedures will follow SOP-16 and SOP-17. Fieldwork will be documented in accordance with SOP-01. Proposed sample locations, laboratory analyses, and sampling rationale at each location are presented in Worksheet #17.

Estimating Aquifer Hydraulic Properties (pump testing of monitoring wells)

Once the new wells have been developed, single well rising head tests, commonly referred to as slug tests, will be performed at eight new or existing wells. Tests will be conducted one at a time to estimate aquifer properties. Wells will be selected based on location to account for spatial variability.

As a starting point, a pressure transducer and digital data logger (In-Situ Mini-Troll or equivalent) will be placed in the well and synchronized to record the height of the water column above the pressure sensor. A backup manual depth to water measurement will also be collected using a handheld water level indicator. A slug (of known volume) will be inserted into the well and allowed to equilibrate until the water level has stabilized to static conditions. The slug will then be rapidly removed, making sure not to disturb the transducer cable. At the moment of slug removal, assigned time zero, the depth to water and the time will be measured and recorded by the pressure transducer until the water level returns to its initial depth. If practical depending on the well response, transducer readings will be supplemented with periodic manual water level measurements. Multiple tests will be conducted at each well to ensure sufficient data are collected for analysis and interpretation to estimate hydraulic conductivity.

Surveying

Following the installation of soil borings and monitoring wells, an Alaska-licensed surveyor will survey horizontal and ground surface elevations in accordance with SOP-15. The accuracy of the horizontal plane survey will be ±0.1 foot and vertical plane survey measurements will be accurate to ±0.1 foot. For monitoring wells, the surveyor will survey horizontal, top of casing, and ground surface elevations. The accuracy of the horizontal plane survey will be ±0.1 foot, and vertical plane survey measurements will be accurate to ±0.01 foot.

Management of IDW

IDW will include waste material generated during drilling and soil sampling activities, monitoring well installation, monitoring well development, groundwater sampling, and aquifer testing. Generated wastes will consist of soil cuttings, well development water, well purge water, decontamination water, municipal waste, and personal protective equipment.

Soil cuttings generated during sampling will be containerized in clean, open-top, steel, matrix-appropriate, United States Department of Transportation (DOT)-approved, 55-gallon drums. Drums will be filled onsite and transported, in accordance with SOP-19, to the waste storage area specified by the Eielson AFB hazardous waste personnel.

One composite waste characterization sample will be collected per 10 drums for nonvolatiles when they are full and staged at the waste storage area. Analysis will include SVOCs, RCRA metals, DRO, GRO, RRO, PCBs, herbicides, and pesticides. For VOC analyses, one grab sample will be collected per 10 drums, collected from the drum that contains the boring with the highest PID reading. If analytical results exceed 10 times the toxicity characteristic leaching procedure criteria, then a toxicity characteristic leaching procedure extraction with analyses for those analyte exceedances will be conducted.

Wastewater generated as part of decontamination, well development, well pumping tests, and well sampling activities will be contained in a frac tank (for pumping tests), poly containers or clean, open-top, steel, matrix-appropriate, DOT-approved, 55-gallon drums and delivered to the waste storage area specified by Eielson hazardous waste personnel. Water transported to the waste storage area in poly tanks will be transferred to clean, open-top, steel, matrix-appropriate, DOT-approved, 55-gallon drums at the waste storage area. Aqueous waste characterization samples will be collected from each drum when it is full and staged at the waste storage area. One composite aqueous sample will be collected per 10 drums for nonvolatile analyses and one grab samples per 10 drums for volatile analyses. Analysis will include VOCs, SVOCs, RCRA metals, DRO, GRO, RRO, PCBs, herbicides, pesticides, and corrosivity.

A waste subcontractor will be contracted to work with a disposal facility to profile, manifest, transport, and dispose of the soil and water drums following all appropriate local, state, and federal regulations.

Demobilization

Following completion of sampling activities, equipment will be decontaminated and demobilized, and the site will be cleaned and returned to its previous condition in accordance with SOP-02, to the extent possible.

14.2.3 Phase 2: Second Surface Water and Groundwater Sampling Event

Mobilization

Before starting sampling activities, equipment will be mobilized to the site, and the site will be visually inspected for signs of environmental contamination such as surface staining or distressed vegetation.

Surface Water Sampling and Analysis

A second surface water sampling event will occur approximately 1 month after the first event to account for potential seasonal variations in surface water levels/chemistry. Surface water samples will be collected from the 11 previously sampled locations and analyzed by the same methods.

Groundwater Sampling and Analysis

A second groundwater sampling event will occur approximately 1 month after the first event to account for potential seasonal variations in groundwater levels/chemistry. During this event, depth to groundwater will be measured in 10 existing and 13 new monitoring wells (Figure 17-3). Newly installed monitoring wells and existing wells samples sampled during Phase 1 will be sampled and analyzed by the same methods.

Management of IDW

Reference text in Management of IDW in Phase 1 (Section 14.2.2).

Demobilization

Following completion of sampling activities, equipment will be decontaminated and demobilized, and the site will be cleaned and returned to its previous condition in accordance with SOP-02, to the extent possible.

14.2.4 Phase 3: First VI Sampling Event

VI investigations will be performed at three existing buildings at SS035 where the VI pathway is potentially complete. Building 3228 is likely located less than 100 feet from known VOC contamination in soil. VOCs, including naphthalene, were detected in excavated soil during the 2016 investigation associated with expanding the water treatment plant. Additional confirmation samples were not collected, so, as a conservative approach, Building 3228 is included in the VI investigation. Buildings 3460 and 3462 are located further than 100 feet from known VOC contamination, but the utilidor connecting to these buildings cuts through areas of known and potential VOC soil contamination, including an area where it is believed to intersect GSP. As such, the utilidor represents a potential preferential VI pathway from VOC sources to Buildings 3460 and 3462.

Performing a VI Building Survey

The VI investigation at Buildings 3228, 3460, and 3462 will include two sampling events, one in the winter and one in the fall or spring (depending on timing of approval of this RI/FS management plan). Building surveys will be performed before the first sampling event. A building survey will be completed at each building in accordance with SOP-21 and ADEC's Building Inventory Air Sampling Questionnaire (ADEC, 2017h; Appendix I). Building survey information will be obtained by visual inspection and by holding discussions with the owners, tenants, or building managers.

Indoor Air, Subslab Soil Vapor, and Outdoor Air Sampling

Each VI sampling event will include collection of indoor air, subslab soil vapor, and outdoor air samples in accordance with SOP-22 and SOP-23 and submittal for laboratory analysis following EPA Methods TO-15 and TO-15 SIM procedures. Indoor/outdoor air and subslab soil vapor samples will be collected using Summa canisters. For indoor and outdoor samples, 6-liter Summa canisters will be fitted with 24-hour flow controllers; subslab soil vapor will be collected using 1-liter canisters and 30-minute flow controllers. The target analyte list for air samples (Tables 15-5 and 15-6) is limited to the volatile compounds detected (1) in soil above the most conservative ADEC 18 AAC 75 cleanup levels and (2) in groundwater above vapor intrusion screening levels.

The lowest occupied space in each building will be sampled; of the three buildings, only Building 3228 has a basement. The number of indoor air samples planned for each building is in accordance with ADEC's *Vapor Intrusion Guidance for Contaminated Sites* (ADEC, 2017h)—one indoor air sample per approximately 1,000 square feet of floor space. Six indoor air samples are planned for the basement of Building 3228, 17 locations are planned for Building 3460, and 10 are planned for Building 3462. The planned sampling locations are tentative and may be revised during the building surveys, though the number of locations per building will remain as planned.

Subslab soil vapor samples will be collected at each indoor air sample location. Subslab utility clearance and soil vapor probe installation will be conducted as described in SOP-24. Subslab utilities, including electric lines, gas lines, and communication lines, will be identified by a private utility locator, before any intrusive activities are initiated for soil vapor probe installation. Subslab soil vapor samples will be collected in accordance with SOP-23. Following the first sampling event, the soil vapor will be capped and left in place for use during the second sampling event.

Two outdoor air samples will be collected—one will be located upwind of Buildings 3460 and 3462, the other will be placed upwind of Building 3228..

The locations of subslab soil vapor, indoor air, and outdoor air sampling locations will be recorded using swing-tie measurements.

Differential Pressure Monitoring

Concurrent with sampling, additional subslab soil vapor probes will be installed in each building to measure the differential pressure between the primary building compartment and the subslab. Differential pressure will be measured in three locations at Building 3460, two locations at Building 3462, and one location in Building 3228 over at least a 24-hour period and for up to 7 days, depending on logistic coordination with each building, in accordance with SOP-25.

Differential pressure will be measured using an Omniguard 4 differential pressure transducer/data logger. The differential pressure transducer will be connected to the soil vapor probe and the pressure differential between the indoor and subslab will be recorded by the electronic data logger at 5-minute intervals during the 24-hour sampling period (at least).

Demobilization

Following completion of sampling activities, equipment will be decontaminated and demobilized, and the buildings will be cleaned and returned to their previous condition (except for the soil vapor probes being left in place) in accordance with SOP-02, to the extent possible.

14.2.5 Phase 4: VI HAPSITE Investigation

Following the first and before the second VI sampling event, HAPSITE real-time GC-MS investigations will be performed to assess if the detections are from an interior background source(s) at locations where compounds are detected above their respective screening levels in indoor air samples. If no compounds are detected at levels greater than a PSL, then a HAPSITE investigation will not be completed. Regardless of the results of the first sampling event, a second sampling event will be performed (see Phase 5, below).

If necessary and where possible, pressure cycling using a blower door will be used in conjunction with the HAPSITE in building compartments that are less than 20,000 cubic feet in volume to help assess if indoor air detections are being caused by interior sources or VI. HAPSITE and pressure cycling investigations will be performed in accordance with SOP-25.

The use of a HAPSITE portable GC-MS allows for the identification of interior sources in real time, such as those that may not have ingredients listed, those with an incomplete ingredients list, or those related to the activities occurring within a building. If no interior sources are identified, building compartments will be pressure cycled using a blower door, if possible. The intent of the pressure cycling method is to measure indoor air concentrations (using a HAPSITE) under known and uniform negative or positive pressure conditions. Two target negative and one positive differential pressure steps will be established (-5 Pascal, -10 Pascal, and +5 Pascal). The negative pressure steps simulate worst case VI conditions. Up to 2.5 air exchanges will be achieved during each step. Throughout each pressure step, the HAPSITE will be used to analyze indoor air samples at multiple locations in the building compartment do measure real time indoor air concentrations and help identify potential vapor entry points.

14.2.6 Phase 5: Sediment Sampling, Step-out Sampling, and Second VI Sampling Event

Mobilization

Before starting sampling activities, equipment will be mobilized to the site, and the site will be visually inspected for signs of environmental contamination such as surface staining or distressed vegetation.

Sediment Sampling and Analysis

A total of 23 sediment borings will be drilled to 10 feet below the sediment surface to assess the lateral and vertical extent of contaminated sediment and collect data for risk assessment. A handheld GPS will be used to establish the sediment sampling locations (SOP-14). To advance borings to 10 feet below the sediment surface, it is anticipated that sediment sampling will be performed during the winter when GSP is frozen to allow access to the middle of the pond with a tracked direct-push drill rig (SOP-5). It is assumed that a direct-push rig will be needed to collect sediment samples to depth. However, depending on sediment recovery in the direct-push core barrel, alternate sediment sample methods may be used (SOP-26), as necessary. A handheld GPS will be used to establish the sediment sampling locations (SOP-14). Sample intervals may be revised while drilling/sampling based on field observations and PID measurement, as appropriate/ possible, to target intervals with the highest concentrations. Sediment locations may be revised because of accessibility based on site conditions at the time of sampling. Sample handling procedures will follow SOP-16 and SOP-17.

Step-out Soil Sampling

If, following Phase 1, the extent of soil contamination has not been defined, additional soil samples will be collected to delineate extent. Step-out locations will be between 20 and 45 feet beyond a boring/surface soil location with confirmed contamination. However, if the results from sample locations in Phase 1 are indicative of a potential release area, step-out locations will be proposed at shorter distances.

Data tables summarizing Phase 1 results and figures showing the locations of proposed step-out locations will be provided to the regulators before advancing the step-outs. Sample intervals and analyses will mirror those in Phase 1. Only analytical suites with analytes detected above PSLs in Phase 1 borings will be analyzed for in step-out samples.

Step-out Monitoring Wells

If COPCs are detected in groundwater at existing and new monitoring wells at concentrations above respective PSLs, additional temporary or permanent monitoring wells will be installed to define the extent, as necessary. Temporary monitoring well construction and sampling details will mirror those from Phase 1. Only analytical suites with analytes detected above PSLs in Phase 1 groundwater samples will be analyzed for in step-out monitoring well groundwater samples. Groundwater from existing nearby wells may also be sampled to aid in delineating groundwater contamination extent. Data tables summarizing Phase 1 results and figures showing the locations of proposed step-out monitoring well locations and existing well sample locations will be provided to the regulators before drilling or sampling the wells.

Second VI Sampling Event

A second VI sampling event will occur to account for seasonal variability. The same subslab soil vapor, indoor air, and outdoor air will be sampled during the second VI sampling event, unless information gathered during the VI follow-up investigation suggest sample locations should be moved. Differential pressure will also be monitored at the same locations as the first VI sampling event.

Surveying

Reference text in Surveying in Phase 1 for step-out soil borings and monitoring wells.

Management of IDW

Reference text in Management of IDW in Phase 1 (Section 14.2.2).

Demobilization

Following completion of sampling activities, equipment will be decontaminated, subslab soil vapor probes will be abandoned, and the buildings will be cleaned and returned to its previous condition in accordance with SOP-02.

14.2.7 Temporary Well Decommissioning

Mobilization and Decontamination

Before starting decommissioning activities, equipment will be mobilized to the site and downhole equipment will be decontaminated before starting work in accordance with SOP-13.

Decommission Temporary Wells

Temporary monitoring wells will be decommissioned in accordance with SOP-20.

Management of IDW

IDW will include removed well casing and screen materials. The well materials will be unscrewed/broken down into manageable lengths, decontaminated in accordance with SOP-13, and disposed of as municipal solid waste.

Demobilization

Following completion of sampling activities, equipment will be decontaminated and demobilized, and the site will be cleaned and returned to its previous condition in accordance with SOP-02, to the extent possible.

14.2.8 Post-Investigation Activities

Activities to occur after the field activities include the following:

- Lab analysis
- Data management, data review, and evaluation
- Consolidation and submittal to ERPIMS of field and analytical data
- RI and FS reporting
- Community relations

A description of each of these post-investigation activities presented in the following paragraphs.

14.2.8.1 Laboratory Analysis

Subcontract laboratories performing work at Eielson hold current DoD Environmental Laboratory Accreditation Program (ELAP) accreditation and ADEC Laboratory Certification Program approval for the required fields of testing. Laboratory certifications are included in Appendix F.

Laboratory analyses will be performed according to the DoD QSM v 5.1 (2017) and analytical SOPs included in Appendix F.

The laboratory analyses to be performed are included in Worksheet #15. Appendix C provides the QA/QC criteria and instrument calibration tables for each sample matrix and analytical method combination to be used.

14.2.8.2 Data Management, Review, and Evaluation

Data Management

Field activities will be recorded in a project log book, as applicable, and on the applicable standard logs in accordance with SOP-01. Field and analytical data will be consolidated and maintained within the ERPIMS.

Data Review

A three-step data review process (consisting of verification, validation, and usability assessment) will be employed in examining the collected data. This process should ensure that only scientifically sound data of known and documented quality are used in making environmental decisions. Worksheets #34 through #37 of this RI/FS management plan describe the process and criteria in detail.

Analytical chemical data obtained during the project will be validated by a qualified CH2M chemist in accordance with specifications provided in Worksheet #36 of this RI/FS management plan. Full documentation of the data validation process and the results will be provided in appendixes to the investigation reports.

An electronic deliverable report of validated data will be provided to AFCEC in the ERPIMS format.

Data Evaluation

Field data will be compiled from field logs and presented in tables listing the sampling details, field observations, and field parameter measurements. Field data will be used to further refine the understanding of conditions at the sites and to create and update the CSM, as appropriate.

Validated analytical data will be processed to produce a "working" dataset with which to run statistical summaries, evaluate the nature and extent of contamination by comparing results to PSLs, and assess risk to human health and the environment. Data to be used for risk assessment evaluations will be processed using the following rules:

- Resolving multiple results for a single chemical reported by different analytical methods (e.g., naphthalene reported by both Methods SW8260 and SW8270SIM) to produce a single value for each analyte per sample.
- Resolving FD results to produce a single value for each sampling location.
- In accordance with the *Guidelines for Treatment of Non-Detect Values, Data Reduction for Multiple-Detections and Comparison of Quantitation Limits to Cleanup Values* (ADEC, 2017d), the event that more than one contaminant result is reported because of multiple analyses by a single method, the highest detected value will be used (on a compound specific basis). If more than one result is reported from alternate analytical methods for a single contaminant (that is detected), the highest detected value or the result from the confirmatory method will be used.

Appendix G describes the data processing procedures in detail. A complete set of the processed results, as well as full documentation of the original results and how the processed results were derived, will be included as appendixes in the RI report.

14.2.8.3 Reporting

Following completion of the field investigations, an RI report will be prepared to document the results, interpretations, and conclusions of the investigations. The RI report will also include an HHRA and ERA. The HHRA and ERA work plans are included in Appendix B.

Following completion of the RI report, an FS report will be prepared to identify and screen technologies, assemble technologies into alternatives, identify and evaluate applicable or relevant and appropriate requirements, and evaluate remedial alternatives.

14.2.8.4 Community Relations

Community relations for SS035 will be conducted in accordance with the *Eielson Air Force Base, Alaska 2014 Community Involvement Plan* (USAF, 2014d). Pertinent documents will be available in the administrative record and information repository. Following completion of the RI and FS, a Proposed

Plan (PP) will be prepared, and a public notice will be published in the Fairbanks *Daily News Miner.* The PP will present the preferred alternative, provide a brief summary of the RI/FS and PP, announce the dates for the 30-day public comment period and public meeting, and solicit public comments.

14.3 Schedule

Key dates for the project are provided in Table 14-1.

Table 14-1 SS035 RI/FS Management Plan Project Schedule

Activity	Responsible Party	Planned Start Date	Planned Completion Date	Deliverable(s)	Deliverable Due Dates
Prepare RI/FS management plan	CH2M, AFCEC, EPA, ADEC	July 2017	August 2018	Draft RI/FS management plan to regulators	04/17/2018
				RTCs and red-lined Draft Final RI/FS management plan to regulators	06/25/2018
				Final RI/FS management plan	07/27/2018
Field Work					
Soil/Groundwater/ Surface Water Sampling/Aquifer Test	CH2M	August 2018	November 2018	ERPIMS Submittal	11/24/2018
Second Groundwater/ Surface Water Sampling Event	CH2M	September 2018	December 2018	ERPIMS Submittal	12/24/2018
First VI Sampling Event	CH2M	October 2018	February 2019	ERPIMS Submittal	02/15/2019
VI Follow-Up	CH2M	January 2019	January 2019	N/A	N/A
Sediment/Step-out Sampling Event	CH2M	February 2019	May 2019	ERPIMS Submittal	05/22/2019
Second VI Event	CH2M	January 2019	May 2019	ERPIMS Submittal	05/23/2019
Temporary Well Decommissioning	CH2M	June 2019	June 2019	N/A	N/A
Prepare RI Report	CH2M, AFCEC, EPA, ADEC	March 2019	January 2020	Draft RI/FS Report to regulators	09/26/2019
				RTCs and red-lined Draft-Final RI/FS Report to regulators	11/24/2019
				Final RI/FS Report	01/23/2020
Prepare FS Report	CH2M, AFCEC, EPA, ADEC	July 2019	March 2020	Draft FS Report to regulators	11/25/2019
				RTCs and red-lined Draft-Final FS Report to regulators	01/23/2020
				Final FS Report	03/23/2020

Note:

ADEC = Alaska Department of Environmental Conservation
AFCEC = Air Force Civil Engineering Center
CH2M = CH2M HILL, Inc.
EPA = United States Environmental Protection Agency
ERPIMS = Environmental Restoration Program Information Management System
N/A = not applicable
RI/FS = Remedial Investigation/Feasibility Study
RTCs = response to comments
VI = vapor intrusion

Worksheet #15 – Project Action Limits and Laboratory-Specific Detection/Quantitation Limits

One of the objectives of this RI/FS management plan is to provide guidance for selecting the appropriate analytical methods and laboratories that will provide data that satisfy overall project DQOs (as defined in Worksheet #11). The following sections discuss several important considerations for the collection of analytical data that are valid, defensible, and will meet site-specific DQOs.

To ensure that the analytical method sensitivity meets the project requirements, laboratory reference limits for target analytes were compared to multiple screening levels (such as ADEC screening levels, 18 AAC 75 cleanup levels, EPA regional screening levels (RSLs), ecological screening levels) and the most conservative levels for each media were selected as PSLs. Tables 15-1 through 15-6 (located at the end of this worksheet) provide the analytical methods, target analyte lists, screening levels, and laboratory reference limits for the project laboratories. APPL, Inc. will analyze soil, sediment, surface water, groundwater samples. Air Technology Laboratories, Inc. will analyze soil vapor and air samples.

15.1 Target Analytes

The target analytes for soil, sediment, groundwater, and surface water at SS035 (Table 15-1 through 15-4) are as follows:

- GRO by AK101
- DRO by AK102
- RRO by AK103
- VOCs by SW8260C and SW8260C-low
- SVOCs by SW8270D
- PAHs by SW8270D-SIM
- Pesticides by SW8081A
- PCBs by SW8082A
- Dioxins/Furans by SW8290A (soil and sediment only)
- Metals by SW6020A/6010C/SW7470A/SW7471B
- Hexavalent Chromium by SW7199 (up to 5 sediment samples, approximately 10 percent of primary sediment samples)
- 1,4-dioxane by SW8270D (groundwater and surface water only)
- Ethylene dibromide (EDB) by SW8011 (groundwater and surface water only)
- Perfluorinated Compounds by EPA Method 537 Mod
- Geotechnical Parameters (select soil samples only)
  - Fraction of Organic Carbon
  - Bulk Density
  - Particle Size
  - Moisture Content
- TOC (select sediment samples only)
- Hardness (composite sample from 5 surface water locations)
- pH (select soil and sediment samples only)

The target analytes for indoor air, outdoor air, and soil vapor, listed in Table 15-5 and 15-6, will be analyzed by EPA Method TO-15 and TO-15 SIM. The target analyte lists include the volatile chemicals that have been detected at SS035 above the most stringent ADEC 18 AAC 75 cleanup levels.

The complete analyte lists presented in Tables 15-1 through 15-6 for the analytical groups and methods listed above are based on those included in the DoD QSM v 5.1 (2017) and those with cleanup levels listed in 18 AAC 75.

15.2 Project Cleanup Levels and Screening Criteria

The cleanup/screening levels included in the Tables 15-1 through 15-6 are derived from ADEC's 18 AAC 75 Tables B1, B2, and C (ADEC, 2017a); ADEC *Vapor Intrusion Guidance for Contaminated Sites (*2017h)*;* EPA RSLS (2017a); and various ecological screening standards and benchmarks.

15.2.1 Project Screening Levels

PSLs will be used to make decisions about the presence/absence, nature, and extent of contamination. PSLs are intended for screening purposes only; exceedance of a PSL is not an indication of unacceptable risk. PSLs have been established for soil, sediment, groundwater, surface water, soil vapor and indoor air as described in Sections 15.2.1.1 through 15.2.1.6.

15.2.1.1 Soil PSLs

Soil PSLs, presented in Table 15-1, consider cumulative exposure of human receptors to contaminants in soil. Soil PSLs are the most stringent of **(1)** the EPA RSLS for residential soil (target cancer risk [TCR] of 1×10^{-6} and hazard quotient [HQ] of 0.1).; **(2)** ADEC Table B2 soil cleanup level (under 40-inch zone); **(3)** ADEC Table B2 migration to groundwater cleanup level; **(4)** one-tenth of the ADEC Table B1 human health cleanup level (under 40-inch zone); or **(5)** ADEC Table B1 migration to groundwater cleanup level.

15.2.1.2 Sediment PSLs

Sediment PSLs, presented in Table 15-2, consider cumulative exposure of human and ecological receptors to contaminants in sediment. Sediment PSLs are the most stringent of **(1)** the EPA residential soil RSLS (TCR of 1×10^{-6} and HQ of 0.1); **(2)** ADEC Table B2 soil cleanup level (under 40-inch zone); **(3)** ADEC Table B2 migration to groundwater cleanup level; **(4)** one-tenth of the ADEC Table B1 human health cleanup level (under 40-inch zone); **(5)** ADEC Table B1 migration-to-groundwater cleanup level **(6)** the NOAA Screening Quick Reference Tables freshwater sediment TEL, (Buchman, 2008); or **(7)** lowest of the sediment values from the Risk Assessment Information System (RAIS) Ecological Benchmark Tool (RAIS database, 2017).

15.2.1.3 Groundwater PSLs

As presented in Table 15-3, groundwater PSLs are the most stringent of **(1)** EPA tapwater RSLs (TCR of 1×10^{-6} and HQ of 0.1); or **(2)** one-tenth of the ADEC Table C groundwater cleanup levels.

15.2.1.4 Surface Water PSLs

Surface water PSLs, presented in Table 15-4, consider exposure of human and ecological receptors to contaminants in surface water screening levels are the most stringent of **(1)** EPA tapwater RSLs (TCR of 1×10^{-6} and HQ of 0.1; **(2)** one-tenth of the ADEC Table C groundwater cleanup levels; **(3)** OUs 3, 4, and 5 Final Remediation Goals for Aquatic Life (Freshwater Chronic) (USAF, 1995a); **(4)** OUs 3, 4, and 5 Final Remediation Goals for Human Health (Fish Consumption) (USAF, 1995a); **(5)** Alaska Water Quality Standard Aquatic Life Freshwater Acute (ADEC, 2008); **(6)** Alaska Water Quality Standard Aquatic Life Freshwater Chronic (ADEC, 2008); **(7)** Alaska Water Quality Standard Human Health for Consumption of Aquatic Organisms Only (ADEC, 2008); **(8)** National Recommended Water Quality Aquatic Life Freshwater Acute (EPA, 2017b); **(9)** National Recommended Water Quality Aquatic Life Freshwater Chronic (EPA, 2017b); **(10)** National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only (EPA, 2017b); or **(11)** Lowest RAIS Surface Water Criteria (RAIS Database, 2017).

15.2.1.5 Soil Vapor PSLs

Subslab soil vapor PSLs, presented in Table 15-5, are based on one-tenth the value of ADEC Target Levels for Residential and Commercial Soil Gas (ADEC, 2017h).

15.2.1.6 Indoor Air PSLs

As presented in Table 15-6, indoor air PSLs are the most conservative of **(1)** one-tenth the value of ADEC Indoor Air Target Levels for Commercial Air (ADEC, 2017h), or **(2)** EPA RSLs for composite worker air (TCR of 1 x 10^{-6} and HQ of 0.1).

15.2.1.7 Background Concentrations

In addition to PSLs, some common naturally occurring analytes (i.e., metals) will also be compared to established background concentrations to determine whether detected analytes are related to site activities or are naturally occurring. Metals concentrations will be compared to PSLs and Eielson background concentrations (USAF, 2014a; 2014b).

15.3 Reference Limit Evaluation

The DLs, LODs, and LOQs for each chemical included in the above-listed analytical suites were compared with the potentially applicable PSLs and cleanup levels for each medium and evaluation group.
The results of these comparisons are summarized in Tables 15-1 through 15-6. In accordance with QSM v5.1, NDs are reported at the LOD, not ND at the LOQ, so LODs are compared to PSLs. Any bias for a detect between the DL and LOQ will be on a case by case basis, depending on LOD verifications, lab QC, etc. The handling of sensitivity and uncertainties associated with LODs and LOQs during risk assessment is detailed in Appendix B.

The tables show that, for the majority of analytes, the LODs for each listed target analyte are less than PSLs and sufficient for quantitative use. For analytes where the LODs are greater than the PSLs (highlighted in the tables), use of analytical results for the purposes of this RI/FS is not expected to be an issue because of all or some of the following: (1) the analyte is not currently a site COPC and is not anticipated to be based on previous site investigations and site history, (2) the current PSL is based on a conservative screening level but the LOD is sufficient for other screening level criteria, or (3) the best available technology is being used to reach lowest LOD possible and the current PSL is not achievable by a current DoD-approved method.

Sample dilution, because of target and/or non-target analyte concentrations or matrix interference, may prevent the achievement of LODs. Initially, all samples must be analyzed undiluted (when reasonable). If a dilution is necessary, both the original and diluted result must be delivered. The laboratory may analyze samples diluted as deemed necessary, but no sample may be reported diluted with all analytes ND without supporting documentation of matrix interference (such as sample viscosity, color, odor, or results from other analyses of the same sample) to show that an undiluted sample is not possible. Appropriate cleanup procedures will be followed to minimize the matrix effects on the LODs. Approved cleanup procedures are documented in Worksheet #19. The CH2M project chemist must be contacted to use a cleanup procedure that is not listed in Worksheet #19 or if cleanup procedures performed are not successful in eliminating matrix effects.

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Table 15-1 Soil PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
AK101	Gasoline Range Organics	C6-C10	NA	1400	300	--	--	--	300	B	0.80	1.00	No	No
AK102/103	Diesel Range Organics	C10-C25	NA	10250	250	--	--	--	250	B	1.00	5.00	No	No
AK102/103	Residual Range Organics	C25-C36	NA	10000	11000	--	--	--	10000	A	5.00	10.0	No	No
SW6010C	Aluminum	7429-90-5	7700	--	--	--	--	13000	13000	F	4.00	50.0	No	No
SW6010C	Antimony	7440-36-0	3.1	--	--	4.1	4.6	1.1	3.1	C	0.60	2.00	No	No
SW6010C	Arsenic	7440-38-2	0.68	--	--	0.88	0.2	23	23	F	0.80	2.50	No	No
SW6010C	Barium	7440-39-3	1500	--	--	2000	2100	160	1500	C	0.40	2.00	No	No
SW6010C	Beryllium	7440-41-7	16	--	--	20	260	0.25	16	C	0.20	0.50	No	No
SW6010C	Cadmium	7440-43-9	7.1	--	--	9.2	9.1	0.29	7.1	C	0.20	0.50	No	No
SW6010C	Calcium	7440-70-2	--	--	--	--	--	7300	--	--	20.0	100	No	No
SW6010C	Chromium	7440-47-3	NA	--	--	10000	100000	28	10000	D	0.40	3.50	No	No
SW6010C	Cobalt	7440-48-4	2.3	--	--	--	--	15	15	F	0.30	1.00	No	No
SW6010C	Copper	7440-50-8	310	--	--	410	370	64	310	C	0.40	5.00	No	No
SW6010C	Iron	7439-89-6	5500	--	--	--	--	32000	5500	C	4.00	80.0	No	No
SW6010C	Lead	7439-92-1	400	--	--	40	NA	12	40	D	0.80	0.90	No	No
SW6010C	Magnesium	7439-95-4	--	--	--	--	--	7900	--	--	4.00	30.0	No	No
SW6010C	Manganese	7439-96-5	180	--	--	--	--	540	540	F	0.40	4.50	No	No
SW6010C	Molybdenum	7439-98-7	39	--	--	--	--	--	39	C	0.40	0.50	No	No
SW6010C	Nickel	7440-02-0	150	--	--	200	340	35	150	C	0.40	4.00	No	No
SW6010C	Potassium	9/7/7440	--	--	--	--	--	1200	--	--	50.0	300	No	No
SW6010C	Selenium	7782-49-2	39	--	--	51	6.9	0.93	6.9	E	1.00	3.00	No	No
SW6010C	Silver	7440-22-4	39	--	--	51	11	0.14	11	E	0.20	1.50	No	No
SW6010C	Sodium	7440-23-5	--	--	--	--	--	480	--	--	50.0	500	No	No
SW6010C	Thallium	7440-28-0	0.078	--	--	0.1	0.19	0.21	0.21	F	1.20	3.00	Yes	Yes
SW6010C	Vanadium	7440-62-2	39	--	--	51	1100	57	57	F	0.40	2.00	No	No
SW6010C	Zinc	7440-66-6	2300	--	--	3000	4900	87	2300	C	4.00	8.00	No	No
SW6020A	Aluminum	7429-90-5	7700	--	--	--	--	13000	13000	F	4.00	5.00	No	No
SW6020A	Antimony	7440-36-0	3.1	--	--	4.1	4.6	1.1	3.1	C	0.20	0.20	No	No
SW6020A	Arsenic	7440-38-2	0.68	--	--	0.88	0.2	23	23	F	0.30	0.50	No	No
SW6020A	Barium	7440-39-3	1500	--	--	2000	2100	160	1500	C	0.20	0.25	No	No
SW6020A	Beryllium	7440-41-7	16	--	--	20	260	0.25	16	C	0.30	1.00	No	No
SW6020A	Cadmium	7440-43-9	7.1	--	--	9.2	9.1	0.29	7.1	C	0.08	0.10	No	No
SW6020A	Calcium	7440-70-2	--	--	--	--	--	7300	--	--	15.0	20.0	No	No
SW6020A	Chromium	7440-47-3	NA	--	--	10000	100000	28	10000	D	0.20	0.50	No	No

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-1 Soil PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
SW6020A	Cobalt	7440-48-4	2.3	--	--	--	--	15	15	F	0.08	0.10	No	No
SW6020A	Copper	7440-50-8	310	--	--	410	370	64	310	C	0.20	2.50	No	No
SW6020A	Iron	7439-89-6	5500	--	--	--	--	32000	5500	C	8.00	10.0	No	No
SW6020A	Lead	7439-92-1	400	--	--	40	NA	12	40	D	0.05	0.10	No	No
SW6020A	Magnesium	7439-95-4	--	--	--	--	--	7900	--	--	5.00	10.0	No	No
SW6020A	Manganese	7439-96-5	180	--	--	--	--	540	540	F	0.10	0.10	No	No
SW6020A	Molybdenum	7439-98-7	39	--	--	--	--	--	39	C	0.05	0.20	No	No
SW6020A	Nickel	7440-02-0	150	--	--	200	340	35	150	C	0.20	0.35	No	No
SW6020A	Potassium	9/7/7440	--	--	--	--	--	1200	--	--	8.00	10.0	No	No
SW6020A	Selenium	7782-49-2	39	--	--	51	6.9	0.93	6.9	E	0.10	0.50	No	No
SW6020A	Silver	7440-22-4	39	--	--	51	11	0	11	E	0.05	0.10	No	No
SW6020A	Sodium	7440-23-5	--	--	--	--	--	480	--	--	8.00	10.0	No	No
SW6020A	Thallium	7440-28-0	0.078	--	--	0.1	0.19	0.21	0.21	F	0.05	0.10	No	No
SW6020A	Vanadium	7440-62-2	39	--	--	51	1100	57	57	F	0.10	0.50	No	No
SW6020A	Zinc	7440-66-6	2300	--	--	3000	4900	87	2300	C	1.50	2.50	No	No
SW7471B	Mercury	7439-97-6	1.1	--	--	0.31	0.36	0.04	1.1	C	0.04	0.10	No	No
Walkley Black	Total organic carbon	TOC	--	--	--	--	--	--	--	--	150	200.00	--	--
SW8082A	PCB-1016	12674-11-2	0.41	--	--	0.1	NA	--	0.1	D	0.020	0.05	No	No
SW8082A	PCB-1221	11104-28-2	0.2	--	--	0.1	NA	--	0.1	D	0.020	0.05	No	No
SW8082A	PCB-1232	11141-16-5	0.17	--	--	0.1	NA	--	0.1	D	0.010	0.05	No	No
SW8082A	PCB-1242	53469-21-9	0.23	--	--	0.1	NA	--	0.1	D	0.010	0.05	No	No
SW8082A	PCB-1248	12672-29-6	0.23	--	--	0.1	NA	--	0.1	D	0.010	0.05	No	No
SW8082A	PCB-1254	11097-69-1	0.12	--	--	0.1	NA	--	0.1	D	0.010	0.05	No	No
SW8082A	PCB-1260	11096-82-5	0.24	--	--	0.1	NA	--	0.1	D	0.010	0.05	No	No
SW8081B	4,4'-DDD	72-54-8	0.19	--	--	2.9	0.49	--	0.19	C	0.004	0.05	No	No
SW8081B	4,4'-DDE	72-55-9	2	--	--	2.5	0.72	--	0.72	D	0.004	0.05	No	No
SW8081B	4,4'-DDT	50-29-3	1.9	--	--	2.4	5.1	--	1.9	C	0.0016	0.05	No	No
SW8081B	Aldrin	309-00-2	0.039	--	--	0.049	0.0099	--	0.0099	E	0.002	0.05	No	Yes
SW8081B	alpha-BHC	319-84-6	0.086	--	--	0.11	0.0029	--	0.0029	E	0.002	0.05	No	Yes
SW8081B	alpha-Chlordane	5103-71-9	1.7	--	--	2.2	0.18	--	0.18	E	0.002	0.05	No	No
SW8081B	beta-BHC	319-85-7	0.3	--	--	0.39	0.0100	--	0.01	E	0.002	0.05	No	Yes
SW8081B	delta-BHC	319-86-8	0.086	--	--	0.11	0.0029	--	0.0029	E	0.002	0.05	No	Yes
SW8081B	Dieldrin	60-57-1	0.034	--	--	0.044	0.0047	--	0.0047	E	0.002	0.05	No	Yes
SW8081B	Endosulfan I	959-98-8	47	--	--	61	9.3	--	9.3	E	0.0016	0.05	No	No

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-1 Soil PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
SW8081B	Endosulfan II	33213-65-9	47	--	--	61	9.3	--	9.3	E	0.0016	0.05	No	No
SW8081B	Endosulfan sulfate	1031-07-8	47	--	--	61	9.3	--	9.3	E	0.002	0.05	No	No
SW8081B	Endrin	72-20-8	1.9	--	--	2.5	0.61	--	0.61	E	0.002	0.05	No	No
SW8081B	Endrin aldehyde	7421-93-4	1.9	--	--	2.5	0.61	--	0.61	E	0.004	0.05	No	No
SW8081B	Endrin ketone	53494-70-5	1.9	--	--	2.5	0.61	--	0.61	E	0.004	0.05	No	No
SW8081B	gamma-BHC (Lindane)	58-89-9	0.57	--	--	0.74	0.016	--	0.016	E	0.002	0.05	No	Yes
SW8081B	gamma-Chlordane	5103-74-2	1.7	--	--	2.2	0.18	--	0.18	E	0.002	0.05	No	No
SW8081B	Heptachlor	76-44-8	0.13	--	--	0.16	0.0076	--	0.0076	E	0.002	0.05	No	Yes
SW8081B	Heptachlor epoxide	1024-57-3	0.07	--	--	0.086	0.0019	--	0.0019	E	0.002	0.05	Yes	Yes
SW8081B	Methoxychlor	72-43-5	32	--	--	41	13	--	13	E	0.002	0.05	No	No
SW8081B	Toxaphene	8001-35-2	0.49	--	--	0.64	0.72	--	0.49	C	0.05	1.00	No	Yes
SW8081B	Chlordane (technical)	57-74-9	1.7	--	--	2.2	0.18	--	0.18	E	0.05	1.00	No	Yes
SW8260C-Low	1,1,1,2-Tetrachloroethane	630-20-6	2	--	--	2.1	0.022	--	0.022	E	0.002	0.005	No	No
SW8260C-Low	1,1,1-Trichloroethane	71-55-6	810	--	--	36	32	--	32	E	0.002	0.005	No	No
SW8260C-Low	1,1,2,2-Tetrachloroethane	79-34-5	0.6	--	--	0.61	0.003	--	0.003	E	0.002	0.005	No	Yes
SW8260C-Low	1,1,2-Trichloroethane	79-00-5	0.15	--	--	0.16	0.0014	--	0.0014	E	0.002	0.005	Yes	Yes
SW8260C-Low	1,1-Dichloroethane	75-34-3	3.6	--	--	4.6	0.092	--	0.092	E	0.002	0.005	No	No
SW8260C-Low	1,1-Dichloroethene	75-35-4	23	--	--	33	1.2	--	1.2	E	0.002	0.005	No	No
SW8260C-Low	1,1-Dichloropropene	563-58-6	1.8	--	--	2.1	0.018	--	0.018	E	0.002	0.005	No	No
SW8260C-Low	1,2,3-Trichlorobenzene	87-61-6	6.3	--	--	8.1	0.15	--	0.15	E	0.002	0.005	No	No
SW8260C-Low	1,2,3-Trichloropropane	96-18-4	0.0051	--	--	0.0066	0.000031	--	0.000031	E	0.005	0.02	Yes	Yes
SW8260C-Low	1,2,4-Trichlorobenzene	120-82-1	5.8	--	--	4.5	0.082	--	0.082	E	0.002	0.005	No	No
SW8260C-Low	1,2,4-Trimethylbenzene	95-63-6	30	--	--	4.3	0.16	--	0.16	E	0.002	0.005	No	No
SW8260C-Low	1,2-Dibromo-3-chloropropane	96-12-8	0.0053	--	--	--	--	--	0.0053	C	0.005	0.01	No	Yes
SW8260C-Low	Ethylene dibromide	106-93-4	0.036	--	--	0.042	0.00024	--	0.00024	E	0.002	0.005	Yes	Yes
SW8260C-Low	1,2-Dichlorobenzene	95-50-1	180	--	--	7.8	2.4	--	2.4	E	0.002	0.005	No	No
SW8260C-Low	1,2-Dichloroethane	107-06-2	0.46	--	--	0.55	0.0055	--	0.0055	E	0.002	0.005	No	No
SW8260C-Low	1,2-Dichloropropane	78-87-5	0.28	--	--	1.1	0.016	--	0.016	E	0.002	0.005	No	No
SW8260C-Low	1,3-Dichlorobenzene	541-73-1	NA	--	--	6.2	2.3	--	2.3	E	0.002	0.005	No	No
SW8260C-Low	1,3-Dichloropropane	142-28-9	160	--	--	--	--	--	160	C	0.002	0.005	No	No
SW8260C-Low	1,3,5-Trimethylbenzene	108-67-8	27	--	--	3.7	1.3	--	1.3	E	0.002	0.005	No	No
SW8260C-Low	1,4-Dichlorobenzene	106-46-7	2.6	--	--	2.1	0.037	--	0.037	E	0.002	0.005	No	No
SW8260C-Low	2,2-Dichloropropane	594-20-7	0.28	--	--	1.1	0.016	--	0.016	E	0.002	0.005	No	No
SW8260C-Low	2-Butanone	78-93-3	2700	--	--	2300	15	--	15	E	0.003	0.01	No	No

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

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DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-1 Soil PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
SW8260C-Low	2-Chlorotoluene	95-49-8	160	--	--	--	--	--	160	C	0.002	0.005	No	No
SW8260C-Low	2-Hexanone	591-78-6	20	--	--	27	0.11	--	0.11	E	0.002	0.01	No	No
SW8260C-Low	4-Chlorotoluene	106-43-4	160	--	--	--	--	--	160	C	0.002	0.005	No	No
SW8260C-Low	4-Methyl-2-pentanone	108-10-1	3300	--	--	220	18	--	18	E	0.002	0.01	No	No
SW8260C-Low	Acetone	67-64-1	6100	--	--	8100	38	--	38	E	0.002	0.01	No	No
SW8260C-Low	Benzene	71-43-2	1.2	--	--	1.1	0.022	--	0.022	E	0.002	0.005	No	No
SW8260C-Low	Bromobenzene	108-86-1	29	--	--	16	0.36	--	0.36	E	0.002	0.005	No	No
SW8260C-Low	Bromochloromethane	74-97-5	15	--	--	--	--	--	15	C	0.002	0.01	No	No
SW8260C-Low	Bromodichloromethane	75-27-4	0.29	--	--	0.36	0.0043	--	0.0043	E	0.002	0.005	No	Yes
SW8260C-Low	Bromoform	75-25-2	19	--	--	24	0.1	--	0.1	E	0.002	0.005	No	No
SW8260C-Low	Bromomethane	74-83-9	0.68	--	--	1	0.024	--	0.024	E	0.002	0.005	No	No
SW8260C-Low	Carbon disulfide	75-15-0	77	--	--	50	2.9	--	2.9	E	0.002	0.005	No	No
SW8260C-Low	Carbon tetrachloride	56-23-5	0.65	--	--	0.91	0.021	--	0.021	E	0.002	0.005	No	No
SW8260C-Low	Chlorobenzene	108-90-7	28	--	--	18	0.46	--	0.46	E	0.002	0.005	No	No
SW8260C-Low	Chloroethane	75-00-3	1400	--	--	140	72	--	72	E	0.002	0.005	No	No
SW8260C-Low	Chloroform	67-66-3	0.32	--	--	0.4	0.0071	--	0.0071	E	0.002	0.005	No	No
SW8260C-Low	Chloromethane	74-87-3	11	--	--	17	0.61	--	0.61	E	0.005	0.01	No	No
SW8260C-Low	cis-1,2-Dichloroethene	156-59-2	16	--	--	20	0.12	--	0.12	E	0.002	0.005	No	No
SW8260C-Low	cis-1,3-Dichloropropene	10061-01-5	1.8	--	--	2.1	0.018	--	0.018	E	0.002	0.005	No	No
SW8260C-Low	Dibromochloromethane	124-48-1	8.3	--	--	11	0.0027	--	0.0027	E	0.002	0.005	No	Yes
SW8260C-Low	Dibromomethane	74-95-3	2.4	--	--	3.1	0.025	--	0.025	E	0.002	0.005	No	No
SW8260C-Low	Dichlorodifluoromethane	75-71-8	8.7	--	--	15	3.9	--	3.9	E	0.002	0.01	No	No
SW8260C-Low	Ethylbenzene	100-41-4	5.8	--	--	4.9	0.13	--	0.13	E	0.002	0.005	No	No
SW8260C-Low	Hexachlorobutadiene	87-68-3	1.2	--	--	0.33	0.02	--	0.02	E	0.002	0.01	No	No
SW8260C-Low	Isopropylbenzene	98-82-8	190	--	--	5.4	5.6	--	5.4	D	0.002	0.005	No	No
SW8260C-Low	Methyl tert-butyl ether	1634-04-4	47	--	--	67	0.4	--	0.4	E	0.002	0.005	No	No
SW8260C-Low	Methylene chloride	75-09-2	35	--	--	46	0.33	--	0.33	E	0.01	0.02	No	No
SW8260C-Low	m-Xylene & p-Xylene	136777-61-2	55	--	--	5.7	1.5	--	1.5	E	0.002	0.01	No	No
SW8260C-Low	Naphthalene	91-20-3	3.8	--	--	2.9	0.038	--	0.038	E	0.002	0.005	No	No
SW8260C-Low	n-Butylbenzene	104-51-8	390	--	--	2	23	--	2	D	0.002	0.005	No	No
SW8260C-Low	n-Propylbenzene	103-65-1	380	--	--	5.2	9.1	--	5.2	D	0.002	0.005	No	No
SW8260C-Low	o-Xylene	95-47-6	65	--	--	5.7	1.5	--	1.5	E	0.002	0.005	No	No
SW8260C-Low	p-Isopropyltoluene	99-87-6	NA	--	--	0.03	0.03	--	0.03	E	0.002	0.005	No	No

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

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DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-1 Soil PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
SW8260C-Low	sec-Butylbenzene	135-98-8	780	--	--	2.8	42	--	2.8	D	0.002	0.005	No	No
SW8260C-Low	Styrene	100-42-5	600	--	--	18	10	--	10	E	0.002	0.005	No	No
SW8260C-Low	tert-Butylbenzene	98-06-6	780	--	--	3.5	11	--	3.5	D	0.002	0.005	No	No
SW8260C-Low	Tetrachloroethene	127-18-4	8.1	--	--	6.8	0.19	--	0.19	E	0.002	0.005	No	No
SW8260C-Low	Toluene	108-88-3	490	--	--	20	6.7	--	6.7	E	0.002	0.005	No	No
SW8260C-Low	trans-1,2-Dichloroethene	156-60-5	160	--	--	96	1.3	--	1.3	E	0.002	0.005	No	No
SW8260C-Low	trans-1,3-Dichloropropene	10061-02-6	1.8	--	--	2.1	0.018	--	0.018	E	0.002	0.005	No	No
SW8260C-Low	Trichloroethene	79-01-6	0.41	--	--	0.49	0.011	--	0.011	E	0.002	0.005	No	No
SW8260C-Low	Trichlorofluoromethane	75-69-4	2300	--	--	98	41	--	41	E	0.002	0.005	No	No
SW8260C-Low	Vinyl chloride	75-01-4	0.06	--	--	0.065	0.0008	--	0.0008	E	0.002	0.005	Yes	Yes
SW8260C-Low	Xylenes, total	1330-20-7	58	--	--	5.7	1.5	--	1.5	E	0.002	0.01	No	No
SW8260C-Methanol	1,1,1,2-Tetrachloroethane	630-20-6	2	--	--	2.1	0.022	--	0.022	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1,1-Trichloroethane	71-55-6	810	--	--	36	32	--	32	E	2.00	5.0	No	No
SW8260C-Methanol	1,1,2,2-Tetrachloroethane	79-34-5	0.6	--	--	0.61	0.003	--	0.003	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1,2-Trichloroethane	79-00-5	0.15	--	--	0.16	0.0014	--	0.0014	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1-Dichloroethane	75-34-3	3.6	--	--	4.6	0.092	--	0.092	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1-Dichloroethene	75-35-4	23	--	--	33	1.2	--	1.2	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1-Dichloropropene	563-58-6	1.8	--	--	2.1	0.018	--	0.018	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2,3-Trichlorobenzene	87-61-6	6.3	--	--	8.1	0.15	--	0.15	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2,3-Trichloropropane	96-18-4	0.0051	--	--	0.0066	0.000031	--	0.000031	E	5.00	20	Yes	Yes
SW8260C-Methanol	1,2,4-Trichlorobenzene	120-82-1	5.8	--	--	4.5	0.082	--	0.082	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2,4-Trimethylbenzene	95-63-6	30	--	--	4.3	0.16	--	0.16	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2-Dibromo-3-chloropropane	96-12-8	0.0053	--	--	--	--	--	0.0053	C	5.00	10	Yes	Yes
SW8260C-Methanol	Ehtylene dibromide	106-93-4	0.036	--	--	0.042	0.00024	--	0.00024	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2-Dichlorobenzene	95-50-1	180	--	--	7.8	2.4	--	2.4	E	2.00	5.0	No	Yes
SW8260C-Methanol	1,2-Dichloroethane	107-06-2	0.46	--	--	0.55	0.0055	--	0.0055	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2-Dichloropropane	78-87-5	0.28	--	--	1.1	0.016	--	0.016	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,3-Dichlorobenzene	541-73-1	NA	--	--	6.2	2.3	--	2.3	E	2.00	5.0	No	Yes
SW8260C-Methanol	1,3-Dichloropropane	142-28-9	160	--	--	--	--	--	160	C	2.00	5.0	No	No
SW8260C-Methanol	1,3,5-Trimethylbenzene	108-67-8	27	--	--	3.7	1.3	--	1.3	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,4-Dichlorobenzene	106-46-7	2.6	--	--	2.1	0.037	--	0.037	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	2,2-Dichloropropane	594-20-7	0.28	--	--	1.1	0.016	--	0.016	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	2-Butanone	78-93-3	2700	--	--	2300	15	--	15	E	3.00	10	No	No
SW8260C-Methanol	2-Chlorotoluene	95-49-8	160	--	--	--	--	--	160	C	2.00	5.0	No	No

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = Background Threshold Value

Surrogates:

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2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-1 Soil PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
SW8260C-Methanol	2-Hexanone	591-78-6	20	--	--	27	0.11	--	0.11	E	2.00	10	Yes	Yes
SW8260C-Methanol	4-Chlorotoluene	106-43-4	160	--	--	--	--	--	160	C	2.00	5.0	No	No
SW8260C-Methanol	4-Methyl-2-pentanone	108-10-1	3300	--	--	220	18	--	18	E	2.00	10	No	No
SW8260C-Methanol	Acetone	67-64-1	6100	--	--	8100	38	--	38	E	5.00	10	No	No
SW8260C-Methanol	Benzene	71-43-2	1.2	--	--	1.1	0.022	--	0.022	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Bromobenzene	108-86-1	29	--	--	16	0.36	--	0.36	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Bromochloromethane	74-97-5	15	--	--	--	--	--	15	C	2.00	10	No	No
SW8260C-Methanol	Bromodichloromethane	75-27-4	0.29	--	--	0.36	0.0043	--	0.0043	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Bromoform	75-25-2	19	--	--	24	0.1	--	0.1	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Bromomethane	74-83-9	0.68	--	--	1	0.024	--	0.024	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Carbon disulfide	75-15-0	77	--	--	50	2.9	--	2.9	E	2.00	5.0	No	Yes
SW8260C-Methanol	Carbon tetrachloride	56-23-5	0.65	--	--	0.91	0.021	--	0.021	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Chlorobenzene	108-90-7	28	--	--	18	0.46	--	0.46	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Chloroethane	75-00-3	1400	--	--	140	72	--	72	E	2.00	5.0	No	No
SW8260C-Methanol	Chloroform	67-66-3	0.32	--	--	0.4	0.0071	--	0.0071	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Chloromethane	74-87-3	11	--	--	17	0.61	--	0.61	E	5.00	10	Yes	Yes
SW8260C-Methanol	cis-1,2-Dichloroethene	156-59-2	16	--	--	20	0.12	--	0.12	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	cis-1,3-Dichloropropene	10061-01-5	1.8	--	--	2.1	0.018	--	0.018	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Dibromochloromethane	124-48-1	8.3	--	--	11	0.0027	--	0.0027	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Dibromomethane	74-95-3	2.4	--	--	3.1	0.025	--	0.025	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Dichlorodifluoromethane	75-71-8	8.7	--	--	15	3.9	--	3.9	E	2.00	10	No	Yes
SW8260C-Methanol	Ethylbenzene	100-41-4	5.8	--	--	4.9	0.13	--	0.13	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Hexachlorobutadiene	87-68-3	1.2	--	--	0.33	0.02	--	0.02	E	2.00	10	Yes	Yes
SW8260C-Methanol	Isopropylbenzene	98-82-8	190	--	--	5.4	5.6	--	5.4	D	2.00	5.0	No	No
SW8260C-Methanol	Methyl tert-butyl ether	1634-04-4	47	--	--	67	0.4	--	0.4	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Methylene chloride	75-09-2	35	--	--	46	0.33	--	0.33	E	10	20	Yes	Yes
SW8260C-Methanol	m-Xylene & p-Xylene	136777-61-2	55	--	--	5.7	1.5	--	1.5	E	5.00	10	Yes	Yes
SW8260C-Methanol	Naphthalene	91-20-3	3.8	--	--	2.9	0.038	--	0.038	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	n-Butylbenzene	104-51-8	390	--	--	2	23	--	2	D	2.00	5.0	No	Yes
SW8260C-Methanol	n-Propylbenzene	103-65-1	380	--	--	5.2	9.1	--	5.2	D	2.00	5.0	No	No
SW8260C-Methanol	o-Xylene	95-47-6	65	--	--	5.7	1.5	--	1.5	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	p-Isopropyltoluene	99-87-6	NA	--	--	0.03	0.03	--	0.03	D	2.00	5.0	Yes	Yes
SW8260C-Methanol	sec-Butylbenzene	135-98-8	780	--	--	2.8	42	--	2.8	D	2.00	5.0	No	Yes
SW8260C-Methanol	Styrene	100-42-5	600	--	--	18	10	--	10	E	2.00	5.0	No	No

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

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Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
SW8260C-Methanol	tert-Butylbenzene	98-06-6	780	--	--	3.5	11	--	3.5	D	2.00	5.0	No	Yes
SW8260C-Methanol	Tetrachloroethene	127-18-4	8.1	--	--	6.8	0.19	--	0.19	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Toluene	108-88-3	490	--	--	20	6.7	--	6.7	E	2.00	5.0	No	No
SW8260C-Methanol	trans-1,2-Dichloroethene	156-60-5	160	--	--	96	1.3	--	1.3	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	trans-1,3-Dichloropropene	10061-02-6	1.8	--	--	2.1	0.018	--	0.018	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Trichloroethene	79-01-6	0.41	--	--	0.49	0.011	--	0.011	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Trichlorofluoromethane	75-69-4	2300	--	--	98	41	--	41	E	2.00	5.0	No	No
SW8260C-Methanol	Vinyl chloride	75-01-4	0.06	--	--	0.065	0.0008	--	0.0008	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Xylenes, total	1330-20-7	58	--	--	5.7	1.5	--	1.5	E	2.00	10	Yes	Yes
SW8270D	1,2,4-Trichlorobenzene	120-82-1	5.8	--	--	0.45	0.082	--	0.082	E	0.167	0.330	Yes	Yes
SW8270D	1,2-Dichlorobenzene	95-50-1	180	--	--	7.8	2.4	--	2.4	E	0.167	0.330	No	No
SW8270D	1,3-Dichlorobenzene	541-73-1	NA	--	--	6.2	2.3	--	2.3	E	0.167	0.330	No	No
SW8270D	1,4-Dichlorobenzene	106-46-7	2.6	--	--	2.1	0.037	--	0.037	E	0.167	0.330	Yes	Yes
SW8270D	1,4-Dioxane	123-91-1	5.3	--	--	7.3	0.012	--	0.012	E	0.167	0.330	Yes	Yes
SW8270D	2,4,5-Trichlorophenol	95-95-4	630	--	--	82	28	--	28	E	0.167	0.330	No	No
SW8270D	2,4,6-Trichlorophenol	88-06-2	6.3	--	--	0.82	0.092	--	0.092	E	0.167	0.330	Yes	Yes
SW8270D	2,4-Dichlorophenol	120-83-2	19	--	--	2.5	0.21	--	0.21	E	0.167	0.330	No	Yes
SW8270D	2,4-Dimethylphenol	105-67-9	130	--	--	16	3.2	--	3.2	E	0.167	0.330	No	No
SW8270D	2,4-Dinitrophenol	51-28-5	13	--	--	1.6	0.34	--	0.34	E	0.167	0.330	No	No
SW8270D	2,4-Dinitrotoluene	121-14-2	1.7	--	--	0.23	0.024	--	0.024	E	0.167	0.660	Yes	Yes
SW8270D	2,6-Dinitrotoluene	606-20-2	0.36	--	--	0.047	0.005	--	0.005	E	0.167	0.660	Yes	Yes
SW8270D	2-Chloronaphthalene	91-58-7	480	--	--	62	26	--	26	E	0.167	0.330	No	No
SW8270D	2-Chlorophenol	95-57-8	39	--	--	5.1	0.71	--	0.71	E	0.167	0.330	No	No
SW8270D	2-Methylnaphthalene	91-57-6	24	--	--	3.1	1.3	--	1.3	E	0.167	0.330	No	No
SW8270D	2-Methylphenol	95-48-7	320	--	--	41	6.2	--	6.2	E	0.167	0.330	No	No
SW8270D	2-Nitroaniline	88-74-4	63	--	--	--	--	--	63	C	0.167	0.660	No	No
SW8270D	2-Nitrophenol	88-75-5	--	--	--	--	--	--	--	--	0.167	0.330	--	--
SW8270D	3,3'-Dichlorobenzidine	91-94-1	1.2	--	--	0.16	0.056	--	0.056	E	0.167	0.660	Yes	Yes
SW8270D	3 & 4 Methylphenol	15831-10-4	320	--	--	41	6.1	--	6.1	E	0.167	0.330	No	No
SW8270D	3-Nitroaniline	99-09-2	--	--	--	--	--	--	--	--	0.167	0.660	--	--
SW8270D	4,6-Dinitro-2-methylphenol	534-52-1	0.51	--	--	--	--	--	0.51	C	0.167	0.660	No	Yes
SW8270D	4-Bromophenyl phenyl ether	101-55-3	--	--	--	--	--	--	--	--	0.167	0.330	--	--
SW8270D	4-Chloro-3-methylphenol	59-50-7	630	--	--	--	--	--	630	C	0.167	0.330	No	No
SW8270D	4-Chloroaniline	106-47-8	2.7	--	--	0.35	0.015	--	0.015	E	0.167	0.330	Yes	Yes

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

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B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

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-- = not applicable; screening level does not exist
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Table 15-1 Soil PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
SW8270D	4-Chlorophenyl phenyl ether	7005-72-3	--	--	--	--	--	--	--	--	0.167	0.330	--	--
SW8270D	4-Nitroaniline	100-01-6	25	--	--	--	--	--	25	C	0.167	0.330	No	No
SW8270D	4-Nitrophenol	100-02-7	--	--	--	--	--	--	--	--	0.167	0.660	--	--
SW8270D	Acenaphthene	83-32-9	360	--	--	460	37	--	37	E	0.167	0.330	No	No
SW8270D	Acenaphthylene	208-96-8	NA	--	--	230	18	--	18	E	0.167	0.330	No	No
SW8270D	Anthracene	120-12-7	230	--	--	2300	390	--	230	C	0.167	0.330	No	No
SW8270D	Azobenzene	103-33-3	5.6	--	--	--	--	--	5.6	C	0.167	0.330	No	No
SW8270D	Benzo(a)anthracene	56-55-3	0.16	--	--	0.2	0.28	--	0.16	C	0.167	0.330	Yes	Yes
SW8270D	Benzo(a)pyrene	50-32-8	0.11	--	--	0.02	0.27	--	0.02	D	0.167	0.330	Yes	Yes
SW8270D	Benzo(b)fluoranthene	205-99-2	0.16	--	--	0.2	2.7	--	0.16	C	0.167	0.330	Yes	Yes
SW8270D	Benzo(g,h,i)perylene	191-24-2	NA	--	--	230	15000	--	230	D	0.167	0.330	No	No
SW8270D	Benzo(k)fluoranthene	207-08-9	230	--	--	2	27	--	2	D	0.167	0.330	No	No
SW8270D	Benzoic acid	65-85-0	25000	--	--	10000	200	--	200	E	0.167	0.330	No	No
SW8270D	Benzyl alcohol	100-51-6	630	--	--	820	5.7	--	5.7	E	0.167	0.330	No	No
SW8270D	bis(2-Chloroethoxy)methane	111-91-1	19	--	--	--	--	--	19	C	0.167	0.330	No	No
SW8270D	Bis(2-chloroethyl)ether	111-44-4	0.23	--	--	0.28	0.00042	--	0.00042	E	0.167	0.330	Yes	Yes
SW8270D	bis(2-Chloroisopropyl)ether	108-60-1	310	--	--	--	--	--	310	C	0.167	0.330	No	No
SW8270D	bis(2-Ethylhexyl) phthalate	117-81-7	39	--	--	50	88	--	39	C	0.167	0.660	No	No
SW8270D	Butyl benzyl phthalate	85-68-7	290	--	--	370	16	--	16	E	0.167	0.330	No	No
SW8270D	Carbazole	86-74-8	--	--	--	--	--	--	--	--	0.167	0.330	--	--
SW8270D	Chrysene	218-01-9	110	--	--	20	82	--	20	D	0.167	0.330	No	No
SW8270D	Dibenz(a,h)anthracene	53-70-3	0.11	--	--	0.02	0.87	--	0.02	D	0.167	0.330	Yes	Yes
SW8270D	Dibenzofuran	132-64-9	7.3	--	--	9.5	0.97	--	0.97	E	0.167	0.660	No	No
SW8270D	Diethyl phthalate	84-66-2	5100	--	--	6600	60	--	60	E	0.167	0.330	No	No
SW8270D	Dimethyl phthalate	131-11-3	NA	--	--	6600	48	--	48	E	0.167	0.330	No	No
SW8270D	Di-n-butyl phthalate	84-74-2	630	--	--	820	16	--	16	E	0.167	0.330	No	No
SW8270D	Di-n-octyl phthalate	117-84-0	63	--	--	82	370	--	63	C	0.167	0.330	No	No
SW8270D	Fluoranthene	206-44-0	240	--	--	310	590	--	240	C	0.167	0.330	No	No
SW8270D	Fluorene	86-73-7	240	--	--	310	36	--	36	E	0.167	0.330	No	No
SW8270D	Hexachlorobenzene	118-74-1	0.21	--	--	0.2	0.0082	--	0.0082	E	0.167	0.660	Yes	Yes
SW8270D	Hexachlorobutadiene	87-68-3	1.2	--	--	0.33	0.02	--	0.02	E	0.167	0.330	Yes	Yes
SW8270D	Hexachloroethane	67-72-1	1.8	--	--	1.7	0.018	--	0.018	E	0.167	0.330	Yes	Yes
SW8270D	Indeno[1,2,3-cd]pyrene	193-39-5	1.1	--	--	0.2	8.8	--	0.2	D	0.167	0.330	No	Yes
SW8270D	Isophorone	78-59-1	570	--	--	740	2.7	--	2.7	E	0.167	0.330	No	No

Notes:

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PSL Sources:

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E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

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Surrogates:

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2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

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TCR = target risk for carcinogens

Table 15-1 Soil PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
SW8270D	Naphthalene	91-20-3	3.8	--	--	2.9	0.038	--	0.038	E	0.167	0.330	Yes	Yes
SW8270D	Nitrobenzene	98-95-3	5.1	--	--	4.3	0.0079	--	0.0079	E	0.167	0.330	Yes	Yes
SW8270D	N-Nitrosodimethylamine	62-75-9	0.002	--	--	0.0026	0.0000033	--	0.0000033	E	0.167	0.330	Yes	Yes
SW8270D	N-Nitrosodi-n-propylamine	621-64-7	0.078	--	--	0.1	0.00068	--	0.00068	E	0.167	0.330	Yes	Yes
SW8270D	N-Nitrosodiphenylamine	86-30-6	110	--	--	140	4.6	--	4.6	E	0.167	0.330	No	No
SW8270D	Pentachlorophenol	87-86-5	1	--	--	1.3	0.0043	--	0.0043	E	0.167	0.660	Yes	Yes
SW8270D	Phenanthrene	85-01-8	NA	--	--	230	39	--	39	E	0.167	0.660	No	No
SW8270D	Phenol	108-95-2	1900	--	--	2500	29	--	29	E	0.167	0.330	No	No
SW8270D	Pyrene	129-00-0	180	--	--	230	87	--	87	E	0.167	0.330	No	No
SW8270D-SIM	1-Methylnaphthalene	90-12-0	18	--	--	6.8	0.41	--	0.41	E	0.00167	0.005	No	No
SW8270D-SIM	2-Methylnaphthalene	91-57-6	24	--	--	31	1.3	--	1.3	E	0.00167	0.005	No	No
SW8270D-SIM	Acenaphthene	83-32-9	360	--	--	460	37	--	37	E	0.00167	0.005	No	No
SW8270D-SIM	Acenaphthylene	208-96-8	NA	--	--	230	18	--	18	E	0.00167	0.005	No	No
SW8270D-SIM	Anthracene	120-12-7	1800	--	--	2300	390	--	390	E	0.00167	0.005	No	No
SW8270D-SIM	Benzo(a)anthracene	56-55-3	1.1	--	--	0.2	0.28	--	0.2	D	0.00167	0.005	No	No
SW8270D-SIM	Benzo(a)pyrene	50-32-8	0.11	--	--	0.02	0.27	--	0.02	D	0.00167	0.005	No	No
SW8270D-SIM	Benzo(b)fluoranthene	205-99-2	1.1	--	--	0.2	2.7	--	0.2	D	0.00167	0.005	No	No
SW8270D-SIM	Benzo(g,h,i)perylene	191-24-2	NA	--	--	230	15000	--	230	D	0.00167	0.005	No	No
SW8270D-SIM	Benzo(k)fluoranthene	207-08-9	11	--	--	2	27	--	2	D	0.00167	0.005	No	No
SW8270D-SIM	Chrysene	218-01-9	110	--	--	20	82	--	20	D	0.00167	0.005	No	No
SW8270D-SIM	Dibenz(a,h)anthracene	53-70-3	0.11	--	--	0.02	0.87	--	0.02	D	0.00167	0.005	No	No
SW8270D-SIM	Fluoranthene	206-44-0	240	--	--	310	590	--	240	C	0.00167	0.005	No	No
SW8270D-SIM	Fluorene	86-73-7	240	--	--	310	36	--	36	E	0.00167	0.005	No	No
SW8270D-SIM	Indeno(1,2,3-cd)pyrene	193-39-5	1.1	--	--	0.2	8.8	--	0.2	D	0.00167	0.005	No	No
SW8270D-SIM	Naphthalene	91-20-3	3.8	--	--	2.9	0.038	--	0.038	E	0.00167	0.005	No	No
SW8270D-SIM	Phenanthrene	85-01-8	NA	--	--	230	39	--	39	E	0.00167	0.005	No	No
SW8270D-SIM	Pyrene	129-00-0	180	--	--	230	87	--	87	E	0.00167	0.005	No	No
SW8290A	2,3,7,8-TCDD	1746-01-6	0.0000048	--	--	0.000006	0.0000039	--	0.0000039	E	--	0.000005	--	Yes
SW8290A	1,2,3,7,8-PECDD	40321-76-4	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	1,2,3,4,7,8-HXCDD	39227-28-6	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	1,2,3,6,7,8-HXCDD	57653-85-7	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	1,2,3,7,8,9-HXCDD	19408-74-3	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	1,2,3,4,6,7,8-HPCDD	35822-46-9	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	OCDD	3268-87-9	--	--	--	--	--	--	--		--	0.000025	--	

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-1 Soil PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL (mg/kg)	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	Background Threshold Value	Soil PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Soil PSL?	LOQ Exceeds Soil PSL?
SW8290A	2,3,7,8-TCDF	51207-31-9	--	--	--	--	--	--	--		--	0.000005	--	
SW8290A	1,2,3,7,8-PECDF	57117-41-6	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	2,3,4,7,8-PECDF	57117-31-4	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	1,2,3,4,7,8-HXCDF	70648-26-9	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	1,2,3,6,7,8-HXCDF	57117-44-9	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	2,3,4,6,7,8-HXCDF	60851-34-5	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	1,2,3,7,8,9-HXCDF	72918-21-9	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	1,2,3,4,6,7,8-HPCDF	67562-39-4	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	1,2,3,4,7,8,9-HPCDF	55673-89-7	--	--	--	--	--	--	--		--	0.0000125	--	
SW8290A	OCDF	39001-02-0	--	--	--	--	--	--	--		--	0.000025	--	
Method 537 Mod	Perfluorobutanesulfonic acid (PFBS)	375-73-5	130	--	--	--	--	--	--	--	0.000001	0.000002	No	No
Method 537 Mod	Perfluorodecanoic acid (PFDA)	335-76-2	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorododecanoic acid (PFDoA)	307-55-1	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluoroheptanoic acid (PFHpA)	375-85-9	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorohexanoic acid (PFHxA)	307-24-4	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorononanoic acid (PFNA)	375-95-1	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorotetradecanoic acid (PFTA)	376-06-7	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorotridecanoic acid (PFTrDA)	72629-94-8	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluoroundecanoic acid (PFUnA)	2058-94-8	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorooctane Sulfonate (PFOS)	1763-23-1	1.26	--	--	0.16	0.0030	--	0.003	E	0.000001	0.000002	No	No
Method 537 Mod	Perfluorooctanic Acid (PFOA)	335-67-1	1.26	--	--	0.16	0.0017	--	0.0017	E	0.000001	0.000002	No	No

Notes:

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PSL Sources:

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B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

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GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
AK101	Gasoline Range Organics	C6-C10	--	1400	300	--	--	--	--	300	B	0.80	1.00	No	No
AK102/103	Diesel Range Organics	C10-C25	--	10250	250	--	--	--	--	250	B	1.00	5.00	No	No
AK102/103	Residual Range Organics	C25-C36	--	10000	11000	--	--	--	--	10000	A	5.00	10.0	No	No
SW6010C	Aluminum	7429-90-5	7700	--	--	--	--	--	--	7700	C	4.00	50.0	No	No
SW6010C	Antimony	7440-36-0	3.1	--	--	4.1	4.6	--	2	2	G	0.60	2.00	No	No
SW6010C	Arsenic	7440-38-2	0.68	--	--	0.88	0.2	5.9	5.9	0.2	E	0.80	2.50	Yes	Yes
SW6010C	Barium	7440-39-3	1500	--	--	2000	2100	--	2100	1500	C	0.40	2.00	No	No
SW6010C	Beryllium	7440-41-7	16	--	--	20	260	--	--	16	C	0.20	0.50	No	No
SW6010C	Cadmium	7440-43-9	7.1	--	--	9.2	9.1	0.6	0.99	0.6	F	0.20	0.50	No	No
SW6010C	Calcium	7440-70-2	--	--	--	--	--	--	--	--	--	20.0	100	--	--
SW6010C	Chromium	7440-47-3	--	--	--	10000	100000	37.3	37.3	37.3	G	0.40	3.50	No	No
SW6010C	Cobalt	7440-48-4	2.3	--	--	--	--	--	50	2.3	C	0.30	1.00	No	No
SW6010C	Copper	7440-50-8	310	--	--	410	370	35.7	18.7	18.7	G	0.40	5.00	No	No
SW6010C	Iron	7439-89-6	5500	--	--	--	--	--	20000	5500	C	4.00	80.0	No	No
SW6010C	Lead	7439-92-1	400	--	--	40	NA	35	30.2	30.2	G	0.80	0.90	No	No
SW6010C	Magnesium	7439-95-4	--	--	--	--	--	--	--	--	--	4.00	30.0	--	--
SW6010C	Manganese	7439-96-5	180	--	--	--	--	--	460	180	C	0.40	4.50	No	No
SW6010C	Molybdenum	7439-98-7	39	--	--	--	--	--	--	39	C	0.40	0.50	No	No
SW6010C	Nickel	7440-02-0	150	--	--	200	340	--	15.9	15.9	G	0.40	4.00	No	No
SW6010C	Potassium	9/7/7440	--	--	--	--	--	--	--	--	--	50.0	300	--	--
SW6010C	Selenium	7782-49-2	39	--	--	51	6.9	--	2	2	G	1.00	3.00	No	Yes
SW6010C	Silver	7440-22-4	39	--	--	51	11	--	0.5	0.5	G	0.20	1.50	No	Yes
SW6010C	Sodium	7440-23-5	--	--	--	--	--	--	--	--	--	50.0	500	--	--
SW6010C	Thallium	7440-28-0	0.078	--	--	0.1	0.19	--	--	0.078	C	1.20	3.00	Yes	Yes
SW6010C	Vanadium	7440-62-2	39	--	--	51	1100	--	--	39	C	0.40	2.00	No	No
SW6010C	Zinc	7440-66-6	2300	--	--	3000	4900	123	121	121	G	4.00	8.00	No	No
SW6020A	Aluminum	7429-90-5	7700	--	--	--	--	--	--	7700	C	4.00	5.00	No	No
SW6020A	Antimony	7440-36-0	3.1	--	--	4.1	4.6	--	2	2	G	0.20	0.20	No	No
SW6020A	Arsenic	7440-38-2	0.68	--	--	0.88	0.2	5.9	5.9	0.2	E	0.30	0.50	Yes	Yes
SW6020A	Barium	7440-39-3	1500	--	--	2000	2100	--	2100	1500	C	0.20	0.25	No	No
SW6020A	Beryllium	7440-41-7	16	--	--	20	260	--	--	16	C	0.30	1.00	No	No
SW6020A	Cadmium	7440-43-9	7.1	--	--	9.2	9.1	0.6	0.99	0.6	F	0.08	0.10	No	No

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = SQuiRT Tables TEL (NOAA Office of Response and Restoration, https://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html Accessed December 2017.)

G = Lowest of Sediment RAIS Screening Benchmark (https://rais.ornl.gov/tools/eco_search.php Accessed December 2017.)

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DAF = dilution attenuation factor
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
SW6020A	Calcium	7440-70-2	--	--	--	--	--	--	--	--	--	15.0	20.0	--	--
SW6020A	Chromium	7440-47-3	--	--	--	10000	100000	37.3	37.3	37.3	G	0.20	0.50	No	No
SW6020A	Cobalt	7440-48-4	2.3	--	--	--	--	--	50	2.3	C	0.08	0.10	No	No
SW6020A	Copper	7440-50-8	310	--	--	410	370	35.7	18.7	18.7	G	0.20	2.50	No	No
SW6020A	Iron	7439-89-6	5500	--	--	--	--	--	20000	5500	C	8.00	10.0	No	No
SW6020A	Lead	7439-92-1	400	--	--	40	NA	35	30.2	30.2	G	0.05	0.10	No	No
SW6020A	Magnesium	7439-95-4	--	--	--	--	--	--	--	--	--	5.00	10.0	--	--
SW6020A	Manganese	7439-96-5	180	--	--	--	--	--	460	180	C	0.10	0.10	No	No
SW6020A	Molybdenum	7439-98-7	39	--	--	--	--	--	--	39	C	0.05	0.20	No	No
SW6020A	Nickel	7440-02-0	150	--	--	200	340	--	15.9	15.9	G	0.20	0.35	No	No
SW6020A	Potassium	9/7/7440	--	--	--	--	--	--	--	--	--	8.00	10.0	--	--
SW6020A	Selenium	7782-49-2	39	--	--	51	6.9	--	2	2	G	0.10	0.50	No	No
SW6020A	Silver	7440-22-4	39	--	--	51	11	--	0.5	0.5	G	0.05	0.10	No	No
SW6020A	Sodium	7440-23-5	--	--	--	--	--	--	--	--	--	8.00	10.0	--	--
SW6020A	Thallium	7440-28-0	0.078	--	--	0.1	0.19	--	--	0.078	C	0.05	0.10	No	Yes
SW6020A	Vanadium	7440-62-2	39	--	--	51	1100	--	--	39	C	0.10	0.50	No	No
SW6020A	Zinc	7440-66-6	2300	--	--	3000	4900	123	121	121	G	1.50	2.50	No	No
SW7199	Hexavalent Chromium	18540-29-9	0.3	--	--	0.39	0.089	--	--	0.089	E	0.40	0.60	Yes	Yes
SW7471B	Mercury	7439-97-6	1.1	--	--	0.31	0.36	0.17	0.13	0.13	G	0.04	0.10	No	No
Walkley Black	Total organic carbon	TOC	--	--	--	--	--	--	--	--	--	150	200	--	--
SW8082A	PCB-1016	12674-11-2	0.41	--	--	0.1	NA		0.007	0.007	G	0.020	0.05	Yes	Yes
SW8082A	PCB-1221	11104-28-2	0.2	--	--	0.1	NA		0.067	0.067	G	0.020	0.05	No	No
SW8082A	PCB-1232	11141-16-5	0.17	--	--	0.1	NA		--	0.1	D	0.010	0.05	No	No
SW8082A	PCB-1242	53469-21-9	0.23	--	--	0.1	NA		--	0.1	D	0.010	0.05	No	No
SW8082A	PCB-1248	12672-29-6	0.23	--	--	0.1	NA		0.03	0.03	G	0.010	0.05	No	Yes
SW8082A	PCB-1254	11097-69-1	0.12	--	--	0.1	NA	0.06	0.06	0.06	G	0.010	0.05	No	No
SW8082A	PCB-1260	11096-82-5	0.24	--	--	0.1	NA		0.005	0.005	G	0.010	0.05	Yes	Yes
SW8081B	4,4'-DDD	72-54-8	0.19	--	--	2.9	0.49	0.00354	0.0033	0.0033	G	0.004	0.05	Yes	Yes
SW8081B	4,4'-DDE	72-55-9	2	--	--	2.5	0.72	0.00142	0.00142	0.00142	G	0.004	0.05	Yes	Yes
SW8081B	4,4'-DDT	50-29-3	1.9	--	--	2.4	5.1	0.00119	0.00119	0.00119	G	0.0016	0.05	Yes	Yes
SW8081B	Aldrin	309-00-2	0.039	--	--	0.049	0.0099		0.002	0.002	G	0.002	0.05	No	Yes
SW8081B	alpha-BHC	319-84-6	0.086	--	--	0.11	0.0029		0.006	0.0029	E	0.002	0.05	No	Yes

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = SQuiRT Tables TEL (NOAA Office of Response and Restoration, https://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html Accessed December 2017.)

G = Lowest of Sediment RAIS Screening Benchmark (https://rais.ornl.gov/tools/eco_search.php Accessed December 2017.)

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DAF = dilution attenuation factor
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
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MCL = maximum contaminant level
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
SW8081B	alpha-Chlordane	5103-71-9	1.7	--	--	2.2	0.18	0.0045	0.0017	0.0017	G	0.002	0.05	Yes	Yes
SW8081B	beta-BHC	319-85-7	0.3	--	--	0.39	0.0100		0.005	0.005	G	0.002	0.05	No	Yes
SW8081B	delta-BHC	319-86-8	0.086	--	--	0.11	0.0029		6.4	0.0029	E	0.002	0.05	No	Yes
SW8081B	Dieldrin	60-57-1	0.034	--	--	0.044	0.0047	0.00285	0.0019	0.0019	G	0.002	0.05	Yes	Yes
SW8081B	Endosulfan I	959-98-8	47	--	--	61	9.3		0.0029	0.0029	G	0.0016	0.05	No	Yes
SW8081B	Endosulfan II	33213-65-9	47	--	--	61	9.3		0.00194	0.00194	G	0.0016	0.05	No	Yes
SW8081B	Endosulfan sulfate	1031-07-8	47	--	--	61	9.3		0.0054	0.0054	G	0.002	0.05	No	Yes
SW8081B	Endrin	72-20-8	1.9	--	--	2.5	0.61	0.00267	0.00222	0.00222	G	0.002	0.05	No	Yes
SW8081B	Endrin aldehyde	7421-93-4	1.9	--	--	2.5	0.61	0.00267	0.48	0.00267	F	0.004	0.05	Yes	Yes
SW8081B	Endrin ketone	53494-70-5	1.9	--	--	2.5	0.61	0.00267	0.48	0.00267	F	0.004	0.05	Yes	Yes
SW8081B	gamma-BHC (Lindane)	58-89-9	0.57	--	--	0.74	0.016	0.00094	0.00094	0.00094	F	0.002	0.05	Yes	Yes
SW8081B	gamma-Chlordane	5103-74-2	1.7	--	--	2.2	0.18	0.0045	0.0017	0.0017	G	0.002	0.05	Yes	Yes
SW8081B	Heptachlor	76-44-8	0.13	--	--	0.16	0.0076		0.0006	0.0006	G	0.002	0.05	Yes	Yes
SW8081B	Heptachlor epoxide	1024-57-3	0.07	--	--	0.086	0.0019	0.0006	0.0006	0.0006	G	0.002	0.05	Yes	Yes
SW8081B	Methoxychlor	72-43-5	32	--	--	41	13		0.0136	0.0136	G	0.002	0.05	No	Yes
SW8081B	Toxaphene	8001-35-2	0.49	--	--	0.64	0.72	0.0001	0.000077	0.000077	G	0.05	1.00	Yes	Yes
SW8081B	Chlordane (technical)	57-74-9	1.7	--	--	2.2	0.18	0.0045	0.0017	0.0017	G	0.05	1.00	Yes	Yes
SW8260C-Low	1,1,1,2-Tetrachloroethane	630-20-6	2	--	--	2.1	0.022	--	--	0.022	E	0.002	0.005	No	No
SW8260C-Low	1,1,1-Trichloroethane	71-55-6	810	--	--	36	32	--	0.0302	0.0302	G	0.002	0.005	No	No
SW8260C-Low	1,1,2,2-Tetrachloroethane	79-34-5	0.6	--	--	0.61	0.003	--	0.85	0.003	E	0.002	0.005	No	Yes
SW8260C-Low	1,1,2-Trichloroethane	79-00-5	0.15	--	--	0.16	0.0014	--	0.518	0.0014	E	0.002	0.005	Yes	Yes
SW8260C-Low	1,1-Dichloroethane	75-34-3	3.6	--	--	4.6	0.092	--	0.000575	0.000575	G	0.002	0.005	Yes	Yes
SW8260C-Low	1,1-Dichloroethene	75-35-4	23	--	--	33	1.2	--	0.0194	0.0194	G	0.002	0.005	No	No
SW8260C-Low	1,1-Dichloropropene	563-58-6	1.8	--	--	2.1	0.018	--	--	0.018	E	0.002	0.005	No	No
SW8260C-Low	1,2,3-Trichlorobenzene	87-61-6	6.3	--	--	8.1	0.15	--	0.858	0.15	E	0.002	0.005	No	No
SW8260C-Low	1,2,3-Trichloropropane	96-18-4	0.0051	--	--	0.0066	0.000031	--	--	0.000031	E	0.005	0.02	Yes	Yes
SW8260C-Low	1,2,4-Trichlorobenzene	120-82-1	5.8	--	--	4.5	0.082	--	2.1	0.082	E	0.002	0.005	No	No
SW8260C-Low	1,2,4-Trimethylbenzene	95-63-6	30	--	--	4.3	0.16	--	--	0.16	E	0.002	0.005	No	No
SW8260C-Low	1,2-Dibromo-3-chloropropane	96-12-8	0.0053	--	--	--	--	--	--	0.0053	C	0.005	0.01	No	Yes
SW8260C-Low	Ethylene dibromide	106-93-4	0.036	--	--	0.042	0.00024	--	--	0.00024	E	0.002	0.005	Yes	Yes
SW8260C-Low	1,2-Dichlorobenzene	95-50-1	180	--	--	7.8	2.4	--	0.0165	0.0165	G	0.002	0.005	No	No
SW8260C-Low	1,2-Dichloroethane	107-06-2	0.46	--	--	0.55	0.0055	--	0.26	0.0055	E	0.002	0.005	No	No

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C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

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-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
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Table 15-2 Sediment PSLs for SS035

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SW8260C-Low	1,2-Dichloropropane	78-87-5	0.28	--	--	1.1	0.016	--	0.333	0.016	E	0.002	0.005	No	No
SW8260C-Low	1,3-Dichlorobenzene	541-73-1	--	--	--	6.2	2.3	--	1.315	1.315	G	0.002	0.005	No	No
SW8260C-Low	1,3-Dichloropropane	142-28-9	160	--	--	--	--	--	--	160	C	0.002	0.005	No	No
SW8260C-Low	1,3,5-Trimethylbenzene	108-67-8	27	--	--	3.7	1.3	--	--	1.3	E	0.002	0.005	No	No
SW8260C-Low	1,4-Dichlorobenzene	106-46-7	2.6	--	--	2.1	0.037	--	0.318	0.037	E	0.002	0.005	No	No
SW8260C-Low	2,2-Dichloropropane	594-20-7	0.28	--	--	1.1	0.016	--	0.333	0.016	E	0.002	0.005	No	No
SW8260C-Low	2-Butanone	78-93-3	2700	--	--	2300	15	--	0.0424	0.0424	G	0.003	0.01	No	No
SW8260C-Low	2-Chlorotoluene	95-49-8	160	--	--	--	--	--	--	160	C	0.002	0.005	No	No
SW8260C-Low	2-Hexanone	591-78-6	20	--	--	27	0.11	--	0.0582	0.0582	G	0.002	0.01	No	No
SW8260C-Low	4-Chlorotoluene	106-43-4	160	--	--	--	--	--	--	160	C	0.002	0.005	No	No
SW8260C-Low	4-Methyl-2-pentanone	108-10-1	3300	--	--	220	18	--	0.0251	0.0251	G	0.002	0.01	No	No
SW8260C-Low	Acetone	67-64-1	6100	--	--	8100	38	--	0.0099	0.0099	G	0.002	0.01	No	Yes
SW8260C-Low	Benzene	71-43-2	1.2	--	--	1.1	0.022	--	0.14157	0.022	E	0.002	0.005	No	No
SW8260C-Low	Bromobenzene	108-86-1	29	--	--	16	0.36	--	--	0.36	E	0.002	0.005	No	No
SW8260C-Low	Bromochloromethane	74-97-5	15	--	--	--	--	--	--	15	C	0.002	0.01	No	No
SW8260C-Low	Bromodichloromethane	75-27-4	0.29	--	--	0.36	0.0043	--	--	0.0043	E	0.002	0.005	No	Yes
SW8260C-Low	Bromoform	75-25-2	19	--	--	24	0.1	--	0.492	0.1	E	0.002	0.005	No	No
SW8260C-Low	Bromomethane	74-83-9	0.68	--	--	1	0.024	--	0.00137	0.00137	G	0.002	0.005	Yes	Yes
SW8260C-Low	Carbon disulfide	75-15-0	77	--	--	50	2.9	--	0.000851	0.000851	G	0.002	0.005	Yes	Yes
SW8260C-Low	Carbon tetrachloride	56-23-5	0.65	--	--	0.91	0.021	--	0.0642	0.021	E	0.002	0.005	No	No
SW8260C-Low	Chlorobenzene	108-90-7	28	--	--	18	0.46	--	0.00842	0.00842	G	0.002	0.005	No	No
SW8260C-Low	Chloroethane	75-00-3	1400	--	--	140	72	--	--	72	E	0.002	0.005	No	No
SW8260C-Low	Chloroform	67-66-3	0.32	--	--	0.4	0.0071	--	0.121	0.0071	E	0.002	0.005	No	No
SW8260C-Low	Chloromethane	74-87-3	11	--	--	17	0.61	--	--	0.61	E	0.005	0.01	No	No
SW8260C-Low	cis-1,2-Dichloroethene	156-59-2	16	--	--	20	0.12	--	--	0.12	E	0.002	0.005	No	No
SW8260C-Low	cis-1,3-Dichloropropene	10061-01-5	1.8	--	--	2.1	0.018	--	--	0.018	E	0.002	0.005	No	No
SW8260C-Low	Dibromochloromethane	124-48-1	8.3	--	--	11	0.0027	--	--	0.0027	E	0.002	0.005	No	Yes
SW8260C-Low	Dibromomethane	74-95-3	2.4	--	--	3.1	0.025	--	--	0.025	E	0.002	0.005	No	No
SW8260C-Low	Dichlorodifluoromethane	75-71-8	8.7	--	--	15	3.9	--	--	3.9	E	0.002	0.01	No	No
SW8260C-Low	Ethylbenzene	100-41-4	5.8	--	--	4.9	0.13	--	0.175	0.13	E	0.002	0.005	No	No
SW8260C-Low	Hexachlorobutadiene	87-68-3	1.2	--	--	0.33	0.02	--	0.0265	0.02	E	0.002	0.01	No	No
SW8260C-Low	Isopropylbenzene	98-82-8	190	--	--	5.4	5.6	--	0.086	0.086	G	0.002	0.005	No	No

Notes:

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PSL Sources:

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C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

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endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

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MCL = maximum contaminant level
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
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TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
SW8260C-Low	Methyl tert-butyl ether	1634-04-4	47	--	--	67	0.4	--	--	0.4	E	0.002	0.005	No	No
SW8260C-Low	Methylene chloride	75-09-2	35	--	--	46	0.33	--	0.159	0.159	G	0.01	0.02	No	No
SW8260C-Low	m-Xylene & p-Xylene	136777-61-2	55	--	--	5.7	1.5	--	--	1.5	E	0.002	0.01	No	No
SW8260C-Low	Naphthalene	91-20-3	3.8	--	--	2.9	0.038	--	0.0346	0.0346	G	0.002	0.005	No	No
SW8260C-Low	n-Butylbenzene	104-51-8	390	--	--	2	23	--	--	2	D	0.002	0.005	No	No
SW8260C-Low	n-Propylbenzene	103-65-1	380	--	--	5.2	9.1	--	--	5.2	D	0.002	0.005	No	No
SW8260C-Low	o-Xylene	95-47-6	65	--	--	5.7	1.5	--	--	1.5	E	0.002	0.005	No	No
SW8260C-Low	p-Isopropyltoluene	99-87-6	--	--	--	0.03	0.03	--	--	0.03	E	0.002	0.005	No	No
SW8260C-Low	sec-Butylbenzene	135-98-8	780	--	--	2.8	42	--	--	2.8	D	0.002	0.005	No	No
SW8260C-Low	Styrene	100-42-5	600	--	--	18	10	--	0.254	0.254	G	0.002	0.005	No	No
SW8260C-Low	tert-Butylbenzene	98-06-6	780	--	--	3.5	11	--	--	3.5	D	0.002	0.005	No	No
SW8260C-Low	Tetrachloroethene	127-18-4	8.1	--	--	6.8	0.19	--	0.468	0.19	E	0.002	0.005	No	No
SW8260C-Low	Toluene	108-88-3	490	--	--	20	6.7	--	1.22	1.22	G	0.002	0.005	No	No
SW8260C-Low	trans-1,2-Dichloroethene	156-60-5	160	--	--	96	1.3	--	0.654	0.654	G	0.002	0.005	No	No
SW8260C-Low	trans-1,3-Dichloropropene	10061-02-6	1.8	--	--	2.1	0.018	--	--	0.018	E	0.002	0.005	No	No
SW8260C-Low	Trichloroethene	79-01-6	0.41	--	--	0.49	0.011	--	0.0969	0.011	E	0.002	0.005	No	No
SW8260C-Low	Trichlorofluoromethane	75-69-4	2300	--	--	98	41	--	--	41	E	0.002	0.005	No	No
SW8260C-Low	Vinyl chloride	75-01-4	0.06	--	--	0.065	0.0008	--	0.202	0.0008	E	0.002	0.005	Yes	Yes
SW8260C-Low	Xylenes, total	1330-20-7	58	--	--	5.7	1.5	--	0.433	0.433	G	0.002	0.01	No	No
SW8260C-Methanol	1,1,1,2-Tetrachloroethane	630-20-6	2	--	--	2.1	0.022	--	--	0.022	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1,1-Trichloroethane	71-55-6	810	--	--	36	32	--	0.0302	0.0302	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1,2,2-Tetrachloroethane	79-34-5	0.6	--	--	0.61	0.003	--	0.85	0.003	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1,2-Trichloroethane	79-00-5	0.15	--	--	0.16	0.0014	--	0.518	0.0014	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1-Dichloroethane	75-34-3	3.6	--	--	4.6	0.092	--	0.000575	0.000575	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1-Dichloroethene	75-35-4	23	--	--	33	1.2	--	0.0194	0.0194	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,1-Dichloropropene	563-58-6	1.8	--	--	2.1	0.018	--	--	0.018	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2,3-Trichlorobenzene	87-61-6	6.3	--	--	8.1	0.15	--	0.858	0.15	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2,3-Trichloropropane	96-18-4	0.0051	--	--	0.0066	0.000031	--	--	0.000031	E	5.00	20	Yes	Yes
SW8260C-Methanol	1,2,4-Trichlorobenzene	120-82-1	5.8	--	--	4.5	0.082	--	2.1	0.082	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2,4-Trimethylbenzene	95-63-6	30	--	--	4.3	0.16	--	--	0.16	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2-Dibromo-3-chloropropane	96-12-8	0.0053	--	--	--	--	--	--	0.0053	C	5.00	10	Yes	Yes
SW8260C-Methanol	Ethylene dibromide	106-93-4	0.036	--	--	0.042	0.00024	--	--	0.00024	E	2.00	5.0	Yes	Yes

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = SQuiRT Tables TEL (NOAA Office of Response and Restoration, https://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html Accessed December 2017.)

G = Lowest of Sediment RAIS Screening Benchmark (https://rais.ornl.gov/tools/eco_search.php Accessed December 2017.)

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DAF = dilution attenuation factor
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
SW8260C-Methanol	1,2-Dichlorobenzene	95-50-1	180	--	--	7.8	2.4	--	0.0165	0.0165	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2-Dichloroethane	107-06-2	0.46	--	--	0.55	0.0055	--	0.26	0.0055	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,2-Dichloropropane	78-87-5	0.28	--	--	1.1	0.016	--	0.333	0.016	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,3-Dichlorobenzene	541-73-1	--	--	--	6.2	2.3	--	1.315	1.315	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,3-Dichloropropane	142-28-9	160	--	--	--	--	--	--	160	C	2.00	5.0	No	No
SW8260C-Methanol	1,3,5-Trimethylbenzene	108-67-8	27	--	--	3.7	1.3	--	--	1.3	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	1,4-Dichlorobenzene	106-46-7	2.6	--	--	2.1	0.037	--	0.318	0.037	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	2,2-Dichloropropane	594-20-7	0.28	--	--	1.1	0.016	--	0.333	0.016	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	2-Butanone	78-93-3	2700	--	--	2300	15	--	0.0424	0.0424	G	3.00	10	Yes	Yes
SW8260C-Methanol	2-Chlorotoluene	95-49-8	160	--	--	--	--	--	--	160	C	2.00	5.0	No	No
SW8260C-Methanol	2-Hexanone	591-78-6	20	--	--	27	0.11	--	0.0582	0.0582	G	2.00	10	Yes	Yes
SW8260C-Methanol	4-Chlorotoluene	106-43-4	160	--	--	--	--	--	--	160	C	2.00	5.0	No	No
SW8260C-Methanol	4-Methyl-2-pentanone	108-10-1	3300	--	--	220	18	--	0.0251	0.0251	G	2.00	10	Yes	Yes
SW8260C-Methanol	Acetone	67-64-1	6100	--	--	8100	38	--	0.0099	0.0099	G	5.00	10	Yes	Yes
SW8260C-Methanol	Benzene	71-43-2	1.2	--	--	1.1	0.022	--	0.14157	0.022	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Bromobenzene	108-86-1	29	--	--	16	0.36	--	--	0.36	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Bromochloromethane	74-97-5	15	--	--	--	--	--	--	15	C	2.00	10	No	No
SW8260C-Methanol	Bromodichloromethane	75-27-4	0.29	--	--	0.36	0.0043	--	--	0.0043	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Bromoform	75-25-2	19	--	--	24	0.1	--	0.492	0.1	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Bromomethane	74-83-9	0.68	--	--	1	0.024	--	0.00137	0.00137	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	Carbon disulfide	75-15-0	77	--	--	50	2.9	--	0.000851	0.000851	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	Carbon tetrachloride	56-23-5	0.65	--	--	0.91	0.021	--	0.0642	0.021	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Chlorobenzene	108-90-7	28	--	--	18	0.46	--	0.00842	0.00842	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	Chloroethane	75-00-3	1400	--	--	140	72	--	--	72	E	2.00	5.0	No	No
SW8260C-Methanol	Chloroform	67-66-3	0.32	--	--	0.4	0.0071	--	0.121	0.0071	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Chloromethane	74-87-3	11	--	--	17	0.61	--	--	0.61	E	5.00	10	Yes	Yes
SW8260C-Methanol	cis-1,2-Dichloroethene	156-59-2	16	--	--	20	0.12	--	--	0.12	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	cis-1,3-Dichloropropene	10061-01-5	1.8	--	--	2.1	0.018	--	--	0.018	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Dibromochloromethane	124-48-1	8.3	--	--	11	0.0027	--	--	0.0027	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Dibromomethane	74-95-3	2.4	--	--	3.1	0.025	--	--	0.025	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Dichlorodifluoromethane	75-71-8	8.7	--	--	15	3.9	--	--	3.9	E	2.00	10	No	Yes
SW8260C-Methanol	Ethylbenzene	100-41-4	5.8	--	--	4.9	0.13	--	0.175	0.13	E	2.00	5.0	Yes	Yes

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = SQuiRT Tables TEL (NOAA Office of Response and Restoration, https://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html Accessed December 2017.)

G = Lowest of Sediment RAIS Screening Benchmark (https://rais.ornl.gov/tools/eco_search.php Accessed December 2017.)

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DAF = dilution attenuation factor
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
SW8260C-Methanol	Hexachlorobutadiene	87-68-3	1.2	--	--	0.33	0.02	--	0.0265	0.02	E	2.00	10	Yes	Yes
SW8260C-Methanol	Isopropylbenzene	98-82-8	190	--	--	5.4	5.6	--	0.086	0.086	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	Methyl tert-butyl ether	1634-04-4	47	--	--	67	0.4	--	--	0.4	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Methylene chloride	75-09-2	35	--	--	46	0.33	--	0.159	0.159	G	10	20	Yes	Yes
SW8260C-Methanol	m-Xylene & p-Xylene	136777-61-2	55	--	--	5.7	1.5	--	--	1.5	E	5.00	10	Yes	Yes
SW8260C-Methanol	Naphthalene	91-20-3	3.8	--	--	2.9	0.038	--	0.0346	0.0346	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	n-Butylbenzene	104-51-8	390	--	--	2	23	--	--	2	D	2.00	5.0	No	Yes
SW8260C-Methanol	n-Propylbenzene	103-65-1	380	--	--	5.2	9.1	--	--	5.2	D	2.00	5.0	No	No
SW8260C-Methanol	o-Xylene	95-47-6	65	--	--	5.7	1.5	--	--	1.5	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	p-Isopropyltoluene	99-87-6	--	--	--	0.03	0.03	--	--	0.03	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	sec-Butylbenzene	135-98-8	780	--	--	2.8	42	--	--	2.8	D	2.00	5.0	No	Yes
SW8260C-Methanol	Styrene	100-42-5	600	--	--	18	10	--	0.254	0.254	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	tert-Butylbenzene	98-06-6	780	--	--	3.5	11	--	--	3.5	D	2.00	5.0	No	Yes
SW8260C-Methanol	Tetrachloroethene	127-18-4	8.1	--	--	6.8	0.19	--	0.468	0.19	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Toluene	108-88-3	490	--	--	20	6.7	--	1.22	1.22	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	trans-1,2-Dichloroethene	156-60-5	160	--	--	96	1.3	--	0.654	0.654	G	2.00	5.0	Yes	Yes
SW8260C-Methanol	trans-1,3-Dichloropropene	10061-02-6	1.8	--	--	2.1	0.018	--	--	0.018	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Trichloroethene	79-01-6	0.41	--	--	0.49	0.011	--	0.0969	0.011	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Trichlorofluoromethane	75-69-4	2300	--	--	98	41	--	--	41	E	2.00	5.0	No	No
SW8260C-Methanol	Vinyl chloride	75-01-4	0.06	--	--	0.065	0.0008	--	0.202	0.0008	E	2.00	5.0	Yes	Yes
SW8260C-Methanol	Xylenes, total	1330-20-7	58	--	--	5.7	1.5	--	0.433	0.433	G	2.00	10	Yes	Yes
SW8270D	1,2,4-Trichlorobenzene	120-82-1	5.8	--	--	0.45	0.082	--	2.1	0.082	E	0.167	0.330	Yes	Yes
SW8270D	1,2-Dichlorobenzene	95-50-1	180	--	--	7.8	2.4	--	0.0165	0.0165	G	0.167	0.330	Yes	Yes
SW8270D	1,3-Dichlorobenzene	541-73-1	--	--	--	6.2	2.3	--	1.315	0.62	D	0.167	0.330	No	No
SW8270D	1,4-Dichlorobenzene	106-46-7	2.6	--	--	2.1	0.037	--	0.318	0.037	E	0.167	0.330	Yes	Yes
SW8270D	1,4-Dioxane	123-91-1	5.3	--	--	7.3	0.012	--	0.119	0.012	E	0.167	0.330	Yes	Yes
SW8270D	2,4,5-Trichlorophenol	95-95-4	630	--	--	82	28	--	--	28	E	0.167	0.330	No	No
SW8270D	2,4,6-Trichlorophenol	88-06-2	6.3	--	--	0.82	0.092	--	0.208	0.092	E	0.167	0.330	Yes	Yes
SW8270D	2,4-Dichlorophenol	120-83-2	19	--	--	2.5	0.21	--	0.0817	0.0817	G	0.167	0.330	Yes	Yes
SW8270D	2,4-Dimethylphenol	105-67-9	130	--	--	16	3.2	--	0.029	0.029	G	0.167	0.330	Yes	Yes
SW8270D	2,4-Dinitrophenol	51-28-5	13	--	--	1.6	0.34	--	0.00621	0.00621	G	0.167	0.330	Yes	Yes
SW8270D	2,4-Dinitrotoluene	121-14-2	1.7	--	--	0.23	0.024	--	0.0144	0.0144	G	0.167	0.660	Yes	Yes

Notes:

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PSL Sources:

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B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = SQuiRT Tables TEL (NOAA Office of Response and Restoration, https://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html Accessed December 2017.)

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Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

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EPA = United States Environmental Protection Agency
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mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
SW8270D	2,6-Dinitrotoluene	606-20-2	0.36	--	--	0.047	0.005	--	0.0398	0.005	E	0.167	0.660	Yes	Yes
SW8270D	2-Chloronaphthalene	91-58-7	480	--	--	62	26	--	0.41723	0.41723	G	0.167	0.330	No	No
SW8270D	2-Chlorophenol	95-57-8	39	--	--	5.1	0.71	--	0.0312	0.0312	G	0.167	0.330	Yes	Yes
SW8270D	2-Methylnaphthalene	91-57-6	24	--	--	3.1	1.3	0.0202	0.0202	0.0202	G	0.167	0.330	Yes	Yes
SW8270D	2-Methylphenol	95-48-7	320	--	--	41	6.2	--	0.0554	0.0554	G	0.167	0.330	Yes	Yes
SW8270D	2-Nitroaniline	88-74-4	63	--	--	--	--	--	--	63	C	0.167	0.660	No	No
SW8270D	2-Nitrophenol	88-75-5	--	--	--	--	--	--	--	--	--	0.167	0.330	--	--
SW8270D	3,3'-Dichlorobenzidine	91-94-1	1.2	--	--	0.16	0.056	--	0.127	0.056	E	0.167	0.660	Yes	Yes
SW8270D	3 & 4 Methylphenol	15831-10-4	320	--	--	41	6.1	--	--	6.1	E	0.167	0.330	No	No
SW8270D	3-Nitroaniline	99-09-2	--	--	--	--	--	--	--	--	--	0.167	0.660	--	--
SW8270D	4,6-Dinitro-2-methylphenol	534-52-1	0.51	--	--	--	--	--	0.104	0.104	G	0.167	0.660	Yes	Yes
SW8270D	4-Bromophenyl phenyl ether	101-55-3	--	--	--	--	--	--	1.23	1.23	G	0.167	0.330	--	--
SW8270D	4-Chloro-3-methylphenol	59-50-7	630	--	--	--	--	--	0.38818	0.38818	G	0.167	0.330	No	No
SW8270D	4-Chloroaniline	106-47-8	2.7	--	--	0.35	0.015	--	0.14608	0.015	E	0.167	0.330	Yes	Yes
SW8270D	4-Chlorophenyl phenyl ether	7005-72-3	--	--	--	--	--	--	--	--	--	0.167	0.330	--	--
SW8270D	4-Nitroaniline	100-01-6	25	--	--	--	--	--	--	25	C	0.167	0.330	No	No
SW8270D	4-Nitrophenol	100-02-7	--	--	--	--	--	--	0.0133	0.0133	G	0.167	0.660	--	--
SW8270D	Acenaphthene	83-32-9	360	--	--	460	37	0.00671	0.0067	0.0067	G	0.167	0.330	Yes	Yes
SW8270D	Acenaphthylene	208-96-8	--	--	--	230	18	0.00587	0.00587	0.00587	G	0.167	0.330	Yes	Yes
SW8270D	Anthracene	120-12-7	230	--	--	2300	390	0.0469	0.0469	0.0469	G	0.167	0.330	Yes	Yes
SW8270D	Azobenzene	103-33-3	5.6	--	--	--	--	--	--	5.6	C	0.167	0.330	No	No
SW8270D	Benzo(a)anthracene	56-55-3	0.16	--	--	0.2	0.28	0.0317	0.0317	0.0317	G	0.167	0.330	Yes	Yes
SW8270D	Benzo(a)pyrene	50-32-8	0.11	--	--	0.02	0.27	0.0319	0.0319	0.02	D	0.167	0.330	Yes	Yes
SW8270D	Benzo(b)fluoranthene	205-99-2	0.16	--	--	0.2	2.7	--	0.0272	0.0272	G	0.167	0.330	Yes	Yes
SW8270D	Benzo(g,h,i)perylene	191-24-2	--	--	--	230	15000	--	0.17	0.17	G	0.167	0.330	No	Yes
SW8270D	Benzo(k)fluoranthene	207-08-9	230	--	--	2	27	--	0.0272	0.0272	G	0.167	0.330	Yes	Yes
SW8270D	Benzoic acid	65-85-0	25000	--	--	10000	200	--	0.65	0.65	G	0.167	0.330	No	No
SW8270D	Benzyl alcohol	100-51-6	630	--	--	820	5.7	--	0.00104	0.00104	G	0.167	0.330	Yes	Yes
SW8270D	bis(2-Chloroethoxy)methane	111-91-1	19	--	--	--	--	--	--	19	C	0.167	0.330	No	No
SW8270D	Bis(2-chloroethyl)ether	111-44-4	0.23	--	--	0.28	0.00042	--	3.52	0.00042	E	0.167	0.330	Yes	Yes
SW8270D	bis(2-Chloroisopropyl)ether	108-60-1	310	--	--	--	--	--	--	310	C	0.167	0.330	No	No
SW8270D	bis(2-Ethylhexyl) phthalate	117-81-7	39	--	--	50	88	--	0.18	0.18	G	0.167	0.660	No	Yes

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = SQuiRT Tables TEL (NOAA Office of Response and Restoration, https://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html Accessed December 2017.)

G = Lowest of Sediment RAIS Screening Benchmark (https://rais.ornl.gov/tools/eco_search.php Accessed December 2017.)

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DAF = dilution attenuation factor
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
SW8270D	Butyl benzyl phthalate	85-68-7	290	--	--	370	16	--	1.97	1.97	G	0.167	0.330	No	No
SW8270D	Carbazole	86-74-8	--	--	--	--	--	--	--	--	--	0.167	0.330	--	--
SW8270D	Chrysene	218-01-9	110	--	--	20	82	0.0571	0.0571	0.0571	G	0.167	0.330	Yes	Yes
SW8270D	Dibenz(a,h)anthracene	53-70-3	0.11	--	--	0.02	0.87	0.00622	0.00622	0.00622	G	0.167	0.330	Yes	Yes
SW8270D	Dibenzofuran	132-64-9	7.3	--	--	9.5	0.97	--	0.415	0.415	G	0.167	0.660	No	Yes
SW8270D	Diethyl phthalate	84-66-2	5100	--	--	6600	60	--	0.295	0.295	G	0.167	0.330	No	Yes
SW8270D	Dimethyl phthalate	131-11-3	--	--	--	6600	48	--	--	48	E	0.167	0.330	No	No
SW8270D	Di-n-butyl phthalate	84-74-2	630	--	--	820	16	--	1.114	1.114	G	0.167	0.330	No	No
SW8270D	Di-n-octyl phthalate	117-84-0	63	--	--	82	370	--	4.06	4.06	G	0.167	0.330	No	No
SW8270D	Fluoranthene	206-44-0	240	--	--	310	590	0.111	0.111	0.111	G	0.167	0.330	Yes	Yes
SW8270D	Fluorene	86-73-7	240	--	--	310	36	0.0212	0.0212	0.0212	G	0.167	0.330	Yes	Yes
SW8270D	Hexachlorobenzene	118-74-1	0.21	--	--	0.2	0.0082	--	0.02	0.0082	E	0.167	0.660	Yes	Yes
SW8270D	Hexachlorobutadiene	87-68-3	1.2	--	--	0.33	0.02	--	0.0265	0.02	E	0.167	0.330	Yes	Yes
SW8270D	Hexachloroethane	67-72-1	1.8	--	--	1.7	0.018	--	0.584	0.018	E	0.167	0.330	Yes	Yes
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	1.1	--	--	0.2	8.8	--	0.017	0.017	G	0.167	0.330	Yes	Yes
SW8270D	Isophorone	78-59-1	570	--	--	740	2.7	--	0.432	0.432	G	0.167	0.330	No	No
SW8270D	Naphthalene	91-20-3	3.8	--	--	2.9	0.038	0.0346	0.0346	0.0346	G	0.167	0.330	Yes	Yes
SW8270D	Nitrobenzene	98-95-3	5.1	--	--	4.3	0.0079	--	0.145	0.0079	E	0.167	0.330	Yes	Yes
SW8270D	N-Nitrosodimethylamine	62-75-9	0.002	--	--	0.0026	0.0000033	--	--	0.0000033	E	0.167	0.330	Yes	Yes
SW8270D	N-Nitrosodi-n-propylamine	621-64-7	0.078	--	--	0.1	0.00068	--	--	0.00068	E	0.167	0.330	Yes	Yes
SW8270D	N-Nitrosodiphenylamine	86-30-6	110	--	--	140	4.6	--	2.68	2.68	G	0.167	0.330	No	No
SW8270D	Pentachlorophenol	87-86-5	1	--	--	1.3	0.0043	--	0.504	0.0043	E	0.167	0.660	Yes	Yes
SW8270D	Phenanthrene	85-01-8	--	--	--	230	39	0.0419	0.0419	0.0419	G	0.167	0.660	Yes	Yes
SW8270D	Phenol	108-95-2	1900	--	--	2500	29	--	0.0491	0.0491	G	0.167	0.330	Yes	Yes
SW8270D	Pyrene	129-00-0	180	--	--	230	87	0.053	0.053	0.053	G	0.167	0.330	Yes	Yes
SW8270D-SIM	1-Methylnaphthalene	90-12-0	18	--	--	6.8	0.41	--	--	0.41	E	0.00167	0.005	No	No
SW8270D-SIM	2-Methylnaphthalene	91-57-6	24	--	--	31	1.3	0.0202	0.0202	0.0202	G	0.00167	0.005	No	No
SW8270D-SIM	Acenaphthene	83-32-9	360	--	--	460	37	0.00671	0.0067	0.0067	G	0.00167	0.005	No	No
SW8270D-SIM	Acenaphthylene	208-96-8	--	--	--	230	18	0.00587	0.00587	0.00587	G	0.00167	0.005	No	No
SW8270D-SIM	Anthracene	120-12-7	1800	--	--	2300	390	0.0469	0.0469	0.0469	G	0.00167	0.005	No	No
SW8270D-SIM	Benzo(a)anthracene	56-55-3	1.1	--	--	0.2	0.28	0.0317	0.0317	0.0317	G	0.00167	0.005	No	No
SW8270D-SIM	Benzo(a)pyrene	50-32-8	0.11	--	--	0.02	0.27	0.0319	0.0319	0.02	D	0.00167	0.005	No	No

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

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G = Lowest of Sediment RAIS Screening Benchmark (https://rais.ornl.gov/tools/eco_search.php Accessed December 2017.)

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DAF = dilution attenuation factor
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
SW8270D-SIM	Benzo(b)fluoranthene	205-99-2	1.1	--	--	0.2	2.7	--	0.0272	0.0272	G	0.00167	0.005	No	No
SW8270D-SIM	Benzo(g,h,i)perylene	191-24-2	--	--	--	230	15000	--	0.17	0.17	G	0.00167	0.005	No	No
SW8270D-SIM	Benzo(k)fluoranthene	207-08-9	11	--	--	2	27	--	0.0272	0.0272	G	0.00167	0.005	No	No
SW8270D-SIM	Chrysene	218-01-9	110	--	--	20	82	0.0571	0.0571	0.0571	G	0.00167	0.005	No	No
SW8270D-SIM	Dibenz(a,h)anthracene	53-70-3	0.11	--	--	0.02	0.87	0.00622	0.00622	0.00622	G	0.00167	0.005	No	No
SW8270D-SIM	Fluoranthene	206-44-0	240	--	--	310	590	0.111	0.111	0.111	G	0.00167	0.005	No	No
SW8270D-SIM	Fluorene	86-73-7	240	--	--	310	36	0.0212	0.0212	0.0212	G	0.00167	0.005	No	No
SW8270D-SIM	Indeno(1,2,3-cd)pyrene	193-39-5	1.1	--	--	0.2	8.8		0.017	0.017	G	0.00167	0.005	No	No
SW8270D-SIM	Naphthalene	91-20-3	3.8	--	--	2.9	0.038	0.0346	0.0346	0.0346	G	0.00167	0.005	No	No
SW8270D-SIM	Phenanthrene	85-01-8	--	--	--	230	39	0.0419	0.0419	0.0419	G	0.00167	0.005	No	No
SW8270D-SIM	Pyrene	129-00-0	180	--	--	230	87	0.053	0.053	0.053	G	0.00167	0.005	No	No
SW8290A	2,3,7,8-TCDD	1746-01-6	0.0000048	--	--	0.000006	0.0000039	--	--	0.0000039	E	--	0.000005	--	Yes
SW8290A	1,2,3,7,8-PECDD	40321-76-4	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	1,2,3,4,7,8-HXCDD	39227-28-6	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	1,2,3,6,7,8-HXCDD	57653-85-7	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	1,2,3,7,8,9-HXCDD	19408-74-3	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	1,2,3,4,6,7,8-HPCDD	35822-46-9	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	OCDD	3268-87-9	--	--	--	--	--	--	--	--	--	--	0.000025	--	--
SW8290A	2,3,7,8-TCDF	51207-31-9	--	--	--	--	--	--	--	--	--	--	0.000005	--	--
SW8290A	1,2,3,7,8-PECDF	57117-41-6	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	2,3,4,7,8-PECDF	57117-31-4	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	1,2,3,4,7,8-HXCDF	70648-26-9	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	1,2,3,6,7,8-HXCDF	57117-44-9	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	2,3,4,6,7,8-HXCDF	60851-34-5	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	1,2,3,7,8,9-HXCDF	72918-21-9	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	1,2,3,4,6,7,8-HPCDF	67562-39-4	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	1,2,3,4,7,8,9-HPCDF	55673-89-7	--	--	--	--	--	--	--	--	--	--	0.0000125	--	--
SW8290A	OCDF	39001-02-0	--	--	--	--	--	--	--	--	--	--	0.000025	--	--
Method 537 Mod	Perfluorobutanesulfonic acid (PFBS)	375-73-5	130	--	--	--	--	--	--	1300	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorodecanoic acid (PFDA)	335-76-2	--	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorododecanoic acid (PFDoA)	307-55-1	--	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluoroheptanoic acid (PFHpA)	375-85-9	--	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--

Notes:

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PSL Sources:

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B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

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The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

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endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

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LOD = limit of detection
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mg/kg = milligram(s) per kilogram
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TCR = target risk for carcinogens

Table 15-2 Sediment PSLs for SS035

Method	Analyte	CAS	EPA Residential Soil RSL	ADEC Table B2 Method Two Ingestion Soil Cleanup Level (mg/kg)	ADEC Table B2 Method Two Migration to Groundwater Cleanup Level (mg/kg)	1/10th ADEC Table B1 Human Health Soil Cleanup Level (mg/kg)	ADEC Table B1 Migration to Groundwater Cleanup Level (mg/kg)	SQuiRT Tables TEL	Lowest of Sediment RAIS Screening Benchmark	Sediment PSL (mg/kg)	PSL Source	LOD (mg/kg)	LOQ (mg/kg)	LOD Exceeds Sediment PSL?	LOQ Exceeds Sediment PSL?
Method 537 Mod	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	--	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorohexanoic acid (PFHxA)	307-24-4	--	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorononanoic acid (PFNA)	375-95-1	--	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorotetradecanoic acid (PFTA)	376-06-7	--	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorotridecanoic acid (PFTrDA)	72629-94-8	--	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluoroundecanoic acid (PFUnA)	2058-94-8	--	--	--	--	--	--	--	--	--	0.000001	0.000002	--	--
Method 537 Mod	Perfluorooctane Sulfonate (PFOS)	1763-23-1	1.26	--	--	0.16	0.003	--	--	0.003	E	0.000001	0.000002	No	No
Method 537 Mod	Perfluorooctanic Acid (PFOA)	335-67-1	1.26	--	--	0.16	0.0017	--	--	0.0017	E	0.000001	0.000002	No	No

Notes:

Gray Shading = indicates LOD and LOQ values are greater than the PSL

PSL Sources:

A = ADEC 18 AAC 75 Table B2 Method Two Soil Ingestion Cleanup Level-Under 40-inch Zone (April 2017)

B = ADEC 18 AAC 75 Table B2 Method Two Migration to Groundwater Cleanup Level-Under 40-inch Zone (April 2017)

C = EPA Residential Soil RSL (HQ 0.1 and TCR 1E-6) (May 2018) or calculated residential risk-based screening level using the EPA Regional Screening Level calculator, Tier 3 value reference dose for PFOS/PFOA

D = 1/10th ADEC 18 AAC 75 Table B1 Human Health Soil Cleanup Level (November 2017)

E = ADEC 18 AAC 75 2017 Table B1 Migration to Groundwater Cleanup Level (November 2017)

F = SQuiRT Tables TEL (NOAA Office of Response and Restoration, https://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html Accessed December 2017.)

G = Lowest of Sediment RAIS Screening Benchmark (https://rais.ornl.gov/tools/eco_search.php Accessed December 2017.)

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

The screening level for 4-isopropyltoluene was calculated using the State of Connecticut Department of Public Health RID of 0.03 mg/kg

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma-chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

Acronyms:

ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DAF = dilution attenuation factor
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane
DRO = diesel-range organics
GRO = gasoline-range organics
EPA = United States Environmental Protection Agency
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/kg = milligram(s) per kilogram
-- = not applicable; screening level does not exist
PCB =polychlorinated biphenyls
PSL = project screening level
RRO = residual-range organics
RSL = regional screening levels
TCR = target risk for carcinogens

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Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
AK101	Gasoline Range Organics	C6-C10 GRO	--	220	--	220	B	18	20	No	No
AK102/103	Diesel Range Organics	C10-C25 DRO	--	150	--	150	B	75	100	No	No
AK102/103	Residual Range Organics	C25-C36 RRO	--	110	--	110	B	200	500	Yes	Yes
SW6010C	Aluminum	7429-90-5	2000	--	500	2000	A	80.0	300	No	No
SW6010C	Antimony	7440-36-0	0.78	0.78	0.59	0.78	B	5.00	20.0	Yes	Yes
SW6010C	Arsenic	7440-38-2	0.052	0.052	5.4	5.4	C	10.0	25.0	Yes	Yes
SW6010C	Barium	7440-39-3	380	380	190	380	B	4.00	10.0	No	No
SW6010C	Beryllium	7440-41-7	2.5	2.5	0.36	2.5	B	1.00	2.00	No	No
SW6010C	Cadmium	7440-43-9	0.92	0.92	0.23	0.92	B	3.00	5.00	Yes	Yes
SW6010C	Calcium	7440-70-2	--	--	80000	--	--	75.0	1000	No	No
SW6010C	Chromium	7440-47-3	--	2200	0.59	2200	B	4.00	15.0	No	No
SW6010C	Cobalt	7440-48-4	0.60	--	5.1	5.1	C	3.00	15.0	No	Yes
SW6010C	Copper	7440-50-8	80	80	2.5	80	B	4.00	15.0	No	No
SW6010C	Iron	7439-89-6	1400	--	2400	2400	C	25.0	100	No	No
SW6010C	Lead	7439-92-1	1.5	1.5	0.35	1.5	B	4.00	15.0	Yes	Yes
SW6010C	Magnesium	7439-95-4	--	--	16000	--	--	30.0	500	No	No
SW6010C	Manganese	7439-96-5	43	--	2900	2900	C	4.00	10.0	No	No
SW6010C	Molybdenum	7439-98-7	10	--	--	10	A	5.00	30.0	No	Yes
SW6010C	Nickel	7440-02-0	39	39	7.3	7.3	B	3.00	40.0	No	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW6010C	Potassium	7440-09-7	--	--	3800	--	--	500	3000	No	No
SW6010C	Selenium	7782-49-2	10	10	1.6	10	B	10.0	22.0	No	Yes
SW6010C	Silver	7440-22-4	9.4	9.4	0.1	9.4	B	0.90	15.0	No	Yes
SW6010C	Sodium	7440-23-5	--	--	4900	--	--	500	5000	No	No
SW6010C	Thallium	7440-28-0	0.02	0.02	1	1	B	10.0	40.0	Yes	Yes
SW6010C	Vanadium	7440-62-2	8.6	8.6	5	8.6	B	4.00	15.0	No	Yes
SW6010C	Zinc	7440-66-6	600	600	6.5	600	B	20.0	150	No	No
SW6020A	Aluminum	7429-90-5	2000	--	500	2000	A	10.0	20.0	No	No
SW6020A	Antimony	7440-36-0	0.78	0.78	0.59	0.78	B	0.50	6.0	No	Yes
SW6020A	Arsenic	7440-38-2	0.052	0.052	5.4	5.4	C	1.00	5.0	No	No
SW6020A	Barium	7440-39-3	380	380	190	380	B	0.80	3.0	No	No
SW6020A	Beryllium	7440-41-7	2.5	2.5	0.36	2.5	B	0.20	1.0	No	No
SW6020A	Cadmium	7440-43-9	0.92	0.92	0.23	0.92	B	0.10	1.0	No	Yes
SW6020A	Calcium	7440-70-2	--	--	80000	--	--	150	200	No	No
SW6020A	Chromium	7440-47-3	--	2200	0.59	2200	B	1.50	10.0	No	No
SW6020A	Cobalt	7440-48-4	0.60	--	5.1	5.1	C	0.40	1.0	No	No
SW6020A	Copper	7440-50-8	80	80	2.5	80	B	1.50	2.0	No	No
SW6020A	Iron	7439-89-6	1400	--	2400	1400	A	30.00	40.0	No	No
SW6020A	Lead	7439-92-1	1.5	1.5	0.35	1.5	B	0.40	3.0	No	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW6020A	Magnesium	7439-95-4	--	--	16000	--	--	20.00	40.0	No	No
SW6020A	Manganese	7439-96-5	43	--	2900	2900	C	0.80	3.5	No	No
SW6020A	Molybdenum	7439-98-7	10	--	--	10	A	0.30	2.0	No	No
SW6020A	Nickel	7440-02-0	39	39	7.3	39	B	0.80	3.0	No	No
SW6020A	Potassium	7440-09-7	--	--	3800	--	--	40.00	50.0	No	No
SW6020A	Selenium	7782-49-2	10	10	1.6	10	B	2.00	5.0	No	No
SW6020A	Silver	7440-22-4	9.4	9.4	0.1	9.4	B	0.10	5.0	No	No
SW6020A	Sodium	7440-23-5	--	--	4900	--	--	50.00	100	No	No
SW6020A	Thallium	7440-28-0	0.02	0.02	1	1	C	0.20	1.0	No	No
SW6020A	Vanadium	7440-62-2	8.6	8.6	5	8.6	B	1.00	6.0	No	No
SW6020A	Zinc	7440-66-6	600	600	6.5	600	B	15.00	20.0	No	No
SW7470A	Mercury	7439-97-6	0.063	0.052	0.041	0.052	B	0.15	0.2	Yes	Yes
SW8011	Ethylene dibromide	106-93-4	0.0075	0.0075	--	0.0075	B	0.003	0.01	No	Yes
SW8082A	PCB-1016	12674-11-2	0.14	0.05	--	0.05	B	0.250	0.50	Yes	Yes
SW8082A	PCB-1221	11104-28-2	0.0047	0.05	--	0.0047	A	0.250	0.50	Yes	Yes
SW8082A	PCB-1232	11141-16-5	0.0047	0.05	--	0.0047	A	0.250	0.50	Yes	Yes
SW8082A	PCB-1242	53469-21-9	0.0078	0.05	--	0.0078	A	0.250	0.50	Yes	Yes
SW8082A	PCB-1248	12672-29-6	0.0078	0.05	--	0.0078	A	0.250	0.50	Yes	Yes
SW8082A	PCB-1254	11097-69-1	0.0078	0.05	--	0.0078	A	0.250	0.50	Yes	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8082A	PCB-1260	11096-82-5	0.0078	0.05	--	0.0078	A	0.250	0.50	Yes	Yes
SW8081B	4,4'-DDD	72-54-8	0.0063	0.032	--	0.0063	A	0.0100	0.050	Yes	Yes
SW8081B	4,4'-DDE	72-55-9	0.046	0.046	--	0.046	B	0.0100	0.050	No	Yes
SW8081B	4,4'-DDT	50-29-3	0.23	0.23	--	0.23	B	0.0100	0.050	No	No
SW8081B	Aldrin	309-00-2	0.00092	0.00092	--	0.00092	B	0.0100	0.050	Yes	Yes
SW8081B	alpha-BHC	319-84-6	0.0072	0.0072	--	0.0072	B	0.0100	0.050	Yes	Yes
SW8081B	alpha-Chlordane	5103-71-9	0.02	0.02	--	0.02	B	0.0100	0.050	No	Yes
SW8081B	beta-BHC	319-85-7	0.025	0.025	--	0.025	B	0.0100	0.050	No	Yes
SW8081B	delta-BHC	319-86-8	0.0072	0.0072	--	0.0072	B	0.0100	0.050	Yes	Yes
SW8081B	Dieldrin	60-57-1	0.0018	0.0018	--	0.0018	B	0.0100	0.050	Yes	Yes
SW8081B	Endosulfan I	959-98-8	10	10	--	10	B	0.0100	0.050	No	No
SW8081B	Endosulfan II	33213-65-9	10	10	--	10	B	0.0100	0.050	No	No
SW8081B	Endosulfan sulfate	1031-07-8	10	10	--	10	B	0.0100	0.050	No	No
SW8081B	Endrin	72-20-8	0.23	0.23	--	0.23	B	0.0100	0.050	No	No
SW8081B	Endrin aldehyde	7421-93-4	0.23	0.23	--	0.23	B	0.0100	0.050	No	No
SW8081B	Endrin ketone	53494-70-5	0.23	0.23	--	0.23	B	0.0100	0.050	No	No
SW8081B	gamma-BHC (Lindane)	58-89-9	0.042	0.042	--	0.042	B	0.0100	0.050	No	Yes
SW8081B	gamma-Chlordane	5103-74-2	0.02	0.02	--	0.02	B	0.0100	0.050	No	Yes
SW8081B	Heptachlor	76-44-8	0.0014	0.0014	--	0.0014	B	0.0100	0.050	Yes	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8081B	Heptachlor epoxide	1024-57-3	0.0014	0.0014	--	0.0014	B	0.0100	0.050	Yes	Yes
SW8081B	Methoxychlor	72-43-5	3.7	3.7	--	3.7	B	0.0100	0.050	No	No
SW8081B	Toxaphene	8001-35-2	0.071	0.071	--	0.071	B	0.40	1.00	Yes	Yes
SW8081B	Chlordane (technical)	57-74-9	0.02	0.02	--	0.02	B	0.040	1.00	Yes	Yes
SW8260C	1,1,1,2-Tetrachloroethane	630-20-6	0.57	0.57	--	0.57	B	0.30	1.0	No	Yes
SW8260C	1,1,1-Trichloroethane	71-55-6	800	800	--	800	B	0.30	1.0	No	No
SW8260C	1,1,2,2-Tetrachloroethane	79-34-5	0.076	0.076	--	0.076	B	0.30	1.0	Yes	Yes
SW8260C	1,1,2-Trichloroethane	79-00-5	0.041	0.041	--	0.041	B	0.50	1.00	Yes	Yes
SW8260C	1,1-Dichloroethane	75-34-3	2.8	2.8	--	2.8	B	0.30	1.00	No	No
SW8260C	1,1-Dichloroethene	75-35-4	28	28	--	28	B	0.50	1.00	No	No
SW8260C	1,1-Dichloropropene	563-58-6	0.47	0.47	--	0.47	B	0.50	1.00	Yes	Yes
SW8260C	1,2,3-Trichlorobenzene	87-61-6	0.7	0.7	--	0.7	B	0.50	1.00	No	Yes
SW8260C	1,2,3-Trichloropropane	96-18-4	0.00075	0.00075	--	0.00075	B	1.00	2.00	Yes	Yes
SW8260C	1,2,4-Trichlorobenzene	120-82-1	0.4	0.4	--	0.4	B	0.50	1.00	Yes	Yes
SW8260C	1,2,4-Trimethylbenzene	95-63-6	5.6	15	--	5.6	A	0.30	1.00	No	No
SW8260C	1,2-Dibromo-3-chloropropane	96-12-8	0.00033	--	--	0.00033	A	1.00	2.00	Yes	Yes
SW8260C	Ethylene dibromide	106-93-4	0.0075	0.0075	--	0.0075	B	0.50	1.00	Yes	Yes
SW8260C	1,2-Dichlorobenzene	95-50-1	30	30	--	30	B	0.30	1.00	No	No
SW8260C	1,2-Dichloroethane	107-06-2	0.17	0.17	--	0.17	B	0.30	1.00	Yes	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
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DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8260C	1,2-Dichloropropane	78-87-5	0.14	0.44	--	0.14	A	0.30	1.00	Yes	Yes
SW8260C	1,3-Dichlorobenzene	541-73-1	--	30	--	30	B	0.30	1.00	No	No
SW8260C	1,3-Dichloropropane	142-28-9	37	--	--	37	A	0.30	1.00	No	No
SW8260C	1,3,5-Trimethylbenzene	108-67-8	6	120	--	6	A	0.30	1.00	No	No
SW8260C	1,4-Dichlorobenzene	106-46-7	0.48	0.48	--	0.48	B	0.30	1.00	No	Yes
SW8260C	2,2-Dichloropropane	594-20-7	0.14	0.44	--	0.14	A	0.50	1.00	Yes	Yes
SW8260C	2-Butanone (MEK)	78-93-3	560	560	--	560	B	2.00	10.0	No	No
SW8260C	2-Chlorotoluene	95-49-8	24	--	--	24	A	0.30	1.00	No	No
SW8260C	2-Hexanone	591-78-6	3.8	3.8	--	3.8	B	2.00	10.0	No	Yes
SW8260C	4-Chlorotoluene	106-43-4	25	--	--	25	A	0.30	1.00	No	No
SW8260C	4-Methyl-2-pentanone (MIBK)	108-10-1	630	630	--	630	B	5.00	10.0	No	No
SW8260C	Acetone	67-64-1	1400	1400	--	1400	B	2.00	10.0	No	No
SW8260C	Benzene	71-43-2	0.46	0.46	--	0.46	B	0.30	1.00	No	Yes
SW8260C	Bromobenzene	108-86-1	6.2	6.2	--	6.2	B	0.30	1.00	No	No
SW8260C	Bromochloromethane	74-97-5	8.3	--	--	8.3	A	0.30	1.00	No	No
SW8260C	Bromodichloromethane	75-27-4	0.13	0.13	--	0.13	B	0.30	1.00	Yes	Yes
SW8260C	Bromoform	75-25-2	3.3	3.3	--	3.3	B	0.30	1.00	No	No
SW8260C	Bromomethane	74-83-9	0.75	0.75	--	0.75	B	0.50	2.00	No	Yes
SW8260C	Carbon disulfide	75-15-0	81	81	--	81	B	0.50	1.00	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8260C	Carbon tetrachloride	56-23-5	0.46	0.46	--	0.46	B	0.30	1.00	No	Yes
SW8260C	Chlorobenzene	108-90-7	7.8	7.8	--	7.8	B	0.50	1.00	No	No
SW8260C	Chloroethane	75-00-3	2100	2100	--	2100	B	0.50	1.00	No	No
SW8260C	Chloroform	67-66-3	0.22	0.22	--	0.22	B	0.30	1.00	Yes	Yes
SW8260C	Chloromethane	74-87-3	19	19	--	19	B	0.50	1.00	No	No
SW8260C	cis-1,2-Dichloroethene	156-59-2	3.6	3.6	--	3.6	B	0.30	1.00	No	No
SW8260C	cis-1,3-Dichloropropene	10061-01-5	0.47	0.47	--	0.47	B	0.30	1.00	No	Yes
SW8260C	Dibromochloromethane	124-48-1	0.87	0.87	--	0.87	B	0.30	1.00	No	Yes
SW8260C	Dibromomethane	74-95-3	0.83	0.83	--	0.83	B	0.50	1.00	No	Yes
SW8260C	Dichlorodifluoromethane	75-71-8	20	20	--	20	B	0.30	1.00	No	No
SW8260C	Ethylbenzene	100-41-4	1.5	1.5	--	1.5	B	0.50	1.00	No	No
SW8260C	Hexachlorobutadiene	87-68-3	0.14	1.4	--	0.14	A	0.30	1.00	Yes	Yes
SW8260C	Isopropylbenzene	98-82-8	45	45	--	45	B	0.30	1.00	No	No
SW8260C	Methyl tert-butyl ether (MTBE)	1634-04-4	14	14	--	14	B	0.52	1.00	No	No
SW8260C	Methylene chloride	75-09-2	11	11	--	11	B	1.00	5.00	No	No
SW8260C	m-Xylene & p-Xylene	136777-61-2	19	19	--	19	B	0.60	2.00	No	No
SW8260C	Naphthalene	91-20-3	0.17	0.17	--	0.17	B	0.50	1.00	Yes	Yes
SW8260C	n-Butylbenzene	104-51-8	100	100	--	100	B	0.30	1.00	No	No
SW8260C	n-Propylbenzene	103-65-1	66	66	--	66	B	0.50	1.00	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8260C	o-Xylene	95-47-6	19	19	--	19	B	0.30	1.00	No	No
SW8260C	p-Isopropyltoluene	99-87-6	--	--	--	--	--	0.30	1.00	--	--
SW8260C	sec-Butylbenzene	135-98-8	200	200	--	200	B	0.30	1.00	No	No
SW8260C	Styrene	100-42-5	120	120	--	120	B	0.50	1.00	No	No
SW8260C	tert-Butylbenzene	98-06-6	69	69	--	69	B	0.30	1.00	No	No
SW8260C	Tetrachloroethene	127-18-4	4.1	4.1	--	4.1	B	0.30	1.00	No	No
SW8260C	Toluene	108-88-3	110	110	--	110	B	0.30	1.00	No	No
SW8260C	trans-1,2-Dichloroethene	156-60-5	36	36	--	36	B	0.30	1.00	No	No
SW8260C	trans-1,3-Dichloropropene	10061-02-6	0.47	0.47	--	0.47	B	0.30	1.00	No	Yes
SW8260C	Trichloroethene	79-01-6	0.28	0.28	--	0.28	B	0.30	1.00	Yes	Yes
SW8260C	Trichlorofluoromethane	75-69-4	520	520	--	520	B	0.30	1.00	No	No
SW8260C	Vinyl chloride	75-01-4	0.019	0.019	--	0.019	B	0.30	1.00	Yes	Yes
SW8260C	Xylenes, total	1330-20-7	19	19	--	19	B	0.30	2.00	No	No
SW8270D	1,2,4-Trichlorobenzene	120-82-1	0.4	0.4	--	0.4	B	5.00	10	Yes	Yes
SW8270D	1,2-Dichlorobenzene	95-50-1	30	30	--	30	B	5.00	10	No	No
SW8270D	1,3-Dichlorobenzene	541-73-1	--	30	--	30	B	5.00	10	No	No
SW8270D	1,4-Dichlorobenzene	106-46-7	0.48	0.48	--	0.48	B	5.00	10	Yes	Yes
SW8270D	1,4-Dioxane	123-91-1	0.46	0.46	--	0.46	B	0.50	1.0	Yes	Yes
SW8270D	2,4,5-Trichlorophenol	95-95-4	120	120	--	120	B	5.00	10	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8270D	2,4,6-Trichlorophenol	88-06-2	1.2	1.2	--	1.2	B	5.00	10	Yes	Yes
SW8270D	2,4-Dichlorophenol	120-83-2	4.6	4.6	--	4.6	B	5.00	10	Yes	Yes
SW8270D	2,4-Dimethylphenol	105-67-9	36	36	--	36	B	5.00	10	No	No
SW8270D	2,4-Dinitrophenol	51-28-5	3.9	3.9	--	3.9	B	5.00	20	Yes	Yes
SW8270D	2,4-Dinitrotoluene	121-14-2	0.24	0.24	--	0.24	B	5.00	20	Yes	Yes
SW8270D	2,6-Dinitrotoluene	606-20-2	0.049	0.049	--	0.049	B	5.00	20	Yes	Yes
SW8270D	2-Chloronaphthalene	91-58-7	75	75	--	75	B	5.00	10	No	No
SW8270D	2-Chlorophenol	95-57-8	9.1	9.1	--	9.1	B	5.00	10	No	Yes
SW8270D	2-Methylnaphthalene	91-57-6	3.6	3.6	--	3.6	B	5.00	10	Yes	Yes
SW8270D	2-Methylphenol	95-48-7	93	93	--	93	B	5.00	10	No	No
SW8270D	2-Nitroaniline	88-74-4	19	--	--	19	A	5.00	20	No	Yes
SW8270D	2-Nitrophenol	88-75-5	--	--	--	--	--	5.00	10	--	--
SW8270D	3,3'-Dichlorobenzidine	91-94-1	0.13	0.13	--	0.13	B	5.00	10	Yes	Yes
SW8270D	3 & 4 Methylphenol	15831-10-4	93	9.3	--	9.3	B	5.00	10	No	Yes
SW8270D	3-Nitroaniline	99-09-2	--	--	--	--	--	5.00	10	--	--
SW8270D	4,6-Dinitro-2-methylphenol	534-52-1	0.15	--	--	0.15	A	5.00	20	Yes	Yes
SW8270D	4-Bromophenyl phenyl ether	101-55-3	--	--	--	--	--	5.00	10	--	--
SW8270D	4-Chloro-3-methylphenol	59-50-7	140	--	--	140	A	5.00	10	No	No
SW8270D	4-Chloroaniline	106-47-8	0.37	0.37	--	0.37	B	5.00	10	Yes	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
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HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8270D	4-Chlorophenyl phenyl ether	7005-72-3	--	--	--	--	--	5.00	10	--	--
SW8270D	4-Nitroaniline	100-01-6	3.8	--	--	3.8	A	5.00	10	Yes	Yes
SW8270D	4-Nitrophenol	100-02-7	--	--	--	--	--	5.00	20	--	--
SW8270D	Acenaphthene	83-32-9	53	53	--	53	B	5.00	10	No	No
SW8270D	Acenaphthylene	208-96-8	--	26	--	26	B	5.00	10	No	No
SW8270D	Anthracene	120-12-7	180	4.3	--	4.3	B	5.00	10	Yes	Yes
SW8270D	Azobenzene	103-33-3	0.12	--	--	0.12	A	5.00	10	Yes	Yes
SW8270D	Benzo(a)anthracene	56-55-3	0.03	0.012	--	0.012	B	5.00	10	Yes	Yes
SW8270D	Benzo(a)pyrene	50-32-8	0.025	0.0034	--	0.0034	B	5.00	10	Yes	Yes
SW8270D	Benzo(b)fluoranthene	205-99-2	0.25	0.034	--	0.034	B	5.00	10	Yes	Yes
SW8270D	Benzo(g,h,i)perylene	191-24-2	--	0.026	--	0.026	B	5.00	10	Yes	Yes
SW8270D	Benzo(k)fluoranthene	207-08-9	2.5	0.08	--	0.08	B	5.00	10	Yes	Yes
SW8270D	Benzoic acid	65-85-0	7500	7500	--	7500	B	5.00	10	No	No
SW8270D	Benzyl alcohol	100-51-6	200	200	--	200	B	5.00	10	No	No
SW8270D	bis(2-Chloroethoxy)methane	111-91-1	5.9	--	--	5.9	A	5.00	10	No	Yes
SW8270D	Bis(2-chloroethyl)ether	111-44-4	0.014	0.014	--	0.014	B	5.00	10	Yes	Yes
SW8270D	bis(2-Choroisopropyl)ether	108-60-1	71	--	--	71	A	5.00	10	No	No
SW8270D	bis(2-Ethylhexyl) phthalate	117-81-7	5.6	5.6	--	5.6	B	5.00	20	No	Yes
SW8270D	Butyl benzyl phthalate	85-68-7	16	16	--	16	B	5.00	10	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

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Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8270D	Carbazole	86-74-8	--	--	--	--	--	5.00	10	--	--
SW8270D	Chrysene	218-01-9	25	0.2	--	0.2	B	5.00	10	Yes	Yes
SW8270D	Dibenz(a,h)anthracene	53-70-3	0.025	0.0034	--	0.0034	B	5.00	10	Yes	Yes
SW8270D	Dibenzofuran	132-64-9	0.79	0.79	--	0.79	B	5.00	20	Yes	Yes
SW8270D	Diethyl phthalate	84-66-2	1500	1500	--	1500	B	5.00	10	No	No
SW8270D	Dimethyl phthalate	131-11-3	--	1600	--	1600	B	5.00	10	No	No
SW8270D	Di-n-butyl phthalate	84-74-2	90	9	--	9	B	5.00	10	No	Yes
SW8270D	Di-n-octyl phthalate	117-84-0	20	0.22	--	0.22	B	5.00	10	Yes	Yes
SW8270D	Fluoranthene	206-44-0	80	26	--	26	B	5.00	10	No	No
SW8270D	Fluorene	86-73-7	29	29	--	29	B	5.00	10	No	No
SW8270D	Hexachlorobenzene	118-74-1	0.0098	0.0098	--	0.0098	B	5.00	20	Yes	Yes
SW8270D	Hexachlorobutadiene	87-68-3	0.14	0.14	--	0.14	B	5.00	10	Yes	Yes
SW8270D	Hexachloroethane	67-72-1	0.33	0.33	--	0.33	B	5.00	10	Yes	Yes
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	0.25	0.019	--	0.019	B	5.00	10	Yes	Yes
SW8270D	Isophorone	78-59-1	78	78	--	78	B	5.00	10	No	No
SW8270D	Naphthalene	91-20-3	0.17	0.17	--	0.17	B	5.00	10	Yes	Yes
SW8270D	Nitrobenzene	98-95-3	0.14	0.14	--	0.14	B	5.00	10	Yes	Yes
SW8270D	N-Nitrosodimethylamine	62-75-9	0.00011	0.00011	--	0.00011	B	5.00	10	Yes	Yes
SW8270D	N-Nitrosodi-n-propylamine	621-64-7	0.011	0.011	--	0.011	B	5.00	10	Yes	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

µg/L = microgram(s) per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
BHC = benzene hexachloride
CAS = Chemical Abstracts Service
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
EPA = United States Environmental Protection Agency
GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8270D	N-Nitrosodiphenylamine	86-30-6	12	12	--	12	B	5.00	10	No	No
SW8270D	Pentachlorophenol	87-86-5	0.041	0.041	--	0.041	B	5.00	20	Yes	Yes
SW8270D	Phenanthrene	85-01-8	--	17	--	17	B	5.00	20	No	Yes
SW8270D	Phenol	108-95-2	580	580	--	580	B	5.00	10	No	No
SW8270D	Pyrene	129-00-0	12	12	--	12	B	5.00	10	No	No
SW8270D-SIM	1-Methylnaphthalene	90-12-0	1.1	1.1	--	1.1	B	0.10	0.20	No	No
SW8270D-SIM	2-Methylnaphthalene	91-57-6	3.6	3.6	--	3.6	B	0.10	0.20	No	No
SW8270D-SIM	Acenaphthene	83-32-9	53	53	--	53	B	0.10	0.20	No	No
SW8270D-SIM	Acenaphthylene	208-96-8	--	26	--	26	B	0.10	0.20	No	No
SW8270D-SIM	Anthracene	120-12-7	180	4.3	--	4.3	B	0.10	0.20	No	No
SW8270D-SIM	Benzo(a)anthracene	56-55-3	0.03	0.012	--	0.012	B	0.10	0.20	Yes	Yes
SW8270D-SIM	Benzo(a)pyrene	50-32-8	0.025	0.0034	--	0.0034	B	0.10	0.20	Yes	Yes
SW8270D-SIM	Benzo(b)fluoranthene	205-99-2	0.25	0.034	--	0.034	B	0.10	0.20	Yes	Yes
SW8270D-SIM	Benzo(g,h,i)perylene	191-24-2	--	0.026	--	0.026	B	0.10	0.20	Yes	Yes
SW8270D-SIM	Benzo(k)fluoranthene	207-08-9	2.5	0.08	--	0.08	B	0.10	0.20	Yes	Yes
SW8270D-SIM	Chrysene	218-01-9	25	0.2	--	0.2	B	0.10	0.20	No	No
SW8270D-SIM	Dibenz(a,h)anthracene	53-70-3	0.025	0.0034	--	0.0034	B	0.10	0.20	Yes	Yes
SW8270D-SIM	Fluoranthene	206-44-0	80	26	--	26	B	0.10	0.20	No	No
SW8270D-SIM	Fluorene	86-73-7	29	29	--	29	B	0.10	0.20	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

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AAC = Alaska Administrative Code
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BHC = benzene hexachloride
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GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
LOQ = limit of quantitation
MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

Table 15-3 Groundwater PSLs for SS035

Method	Analyte	CAS	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Background Threshold Value	Groundwater PSL (µg/L)	Groundwater PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds GW PSL?	LOQ Exceeds GW PSL?
SW8270D-SIM	Indeno(1,2,3-cd)pyrene	193-39-5	0.25	0.0019	--	0.0019	B	0.10	0.20	Yes	Yes
SW8270D-SIM	Naphthalene	91-20-3	0.17	0.17	--	0.17	B	0.10	0.20	No	Yes
SW8270D-SIM	Phenanthrene	85-01-8	--	17	--	17	B	0.10	0.20	No	No
SW8270D-SIM	Pyrene	129-00-0	12	12	--	12	B	0.10	0.20	No	No
Method 537 Mod	Perfluorobutanesulfonic acid (PFBS)	375-73-5	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorodecanoic acid (PFDA)	335-76-2	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorododecanoic acid (PFDoA)	307-55-1	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluoroheptanoic acid (PFHpA)	375-85-9	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorohexanoic acid (PFHxA)	307-24-4	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorononanoic acid (PFNA)	375-95-1	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorotetradecanoic acid (PFTA)	376-06-7	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorotridecanoic acid (PFTrDA)	72629-94-8	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluoroundecanoic acid (PFUnA)	2058-94-8	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.07	0.04	--	0.04	B	0.004	0.008	No	No
Method 537 Mod	Perfluorooctanic Acid (PFOA)	335-67-1	0.07	0.04	--	0.04	B	0.004	0.008	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = Background Threshold Value

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

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GRO = gasoline-range organics
HQ = hazard quotient
LOD = limit of detection
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MDL = method detection limit
NA = not applicable/criteria not established
PCB = polychlorinated biphenyl
PSL = project screening level
RI/FS - remedial investigation/feasibility study
RSL = regional screening level
RRO = residual-range organics
TCR = target risk for carcinogens

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Table 15-4 Surface Water PSLs for SS035

Method	Analyte	CAS	FRG Aquatic Life (Freshwater Chronic)	FRG Human Health (Fish Consumption)	Alaska Water Quality Standard Aquatic Life Freshwater Chronic	Alaska Water Quality Standard Human Health for Consumption of Aquatic Organisms Only	National Recomended Water Quality Aquatic Life Freshwater Chronic	National Recomended Water Quality Human Health for Consumption of Aquatic Organisms Only	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Lowest RAIS Surface Water Criteria	Surface Water PSL (µg/L)	Surface Water PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds SW PSL?	LOQ Exceeds SW PSL?
AK101	Gasoline Range Organics	C6-C10 GRO	--	--	--	--	--	--	--	220	--	220	B	18	20	No	No
AK102/103	Diesel Range Organics	C10-C25 DRO	--	--	--	--	--	--	--	150	--	150	B	75	100	No	No
AK102/103	Residual Range Organics	C25-C36 RRO	--	--	--	--	--	--	--	110	--	110	B	200	500	Yes	Yes
SW6010C	Aluminum	7429-90-5	--	--	87	--	87	--	2000	--	75	75	K	80.0	300	Yes	Yes
SW6010C	Antimony	7440-36-0	--	--	--	4300	--	640	0.78	0.78	30	0.78	B	5.00	20.0	Yes	Yes
SW6010C	Arsenic	7440-38-2	--	--	150	--	150	0.14	0.052	0.052	5	0.052	B	10.0	25.0	Yes	Yes
SW6010C	Barium	7440-39-3	--	--	--	--	--	--	380	380	3.9	380	B	4.00	10.0	No	No
SW6010C	Beryllium	7440-41-7	--	--	--	--	--	--	2.5	2.5	0.53	0.53	K	1.00	2.00	Yes	Yes
SW6010C	Cadmium	7440-43-9	--	--	4.2	--	4.2	--	0.92	0.92	0.25	0.25	K	3.00	5.00	Yes	Yes
SW6010C	Calcium	7440-70-2	--	--	--	--	--	--	--	--	116000	116000	K	75.0	1000	No	No
SW6010C	Chromium	7440-47-3	--	--	11	--	11	--	--	2200	8.44	11	I	4.00	15.0	No	Yes
SW6010C	Cobalt	7440-48-4	--	--	--	--	--	--	0.6	--	3	0.6	A	3.00	15.0	Yes	Yes
SW6010C	Copper	7440-50-8	--	--	--	--	--	--	80	80	0.205	0.205	K	4.00	15.0	Yes	Yes
SW6010C	Iron	7439-89-6	--	--	1000	--	1000	--	1400	--	16	16	K	25.0	100	Yes	Yes
SW6010C	Lead	7439-92-1	3.2	--	6.9	--	6.9	--	1.5	1.5	0.35	0.35	K	4.00	15.0	Yes	Yes
SW6010C	Magnesium	7439-95-4	--	--	--	--	--	--	--	--	647	647	K	30.0	500	No	No
SW6010C	Manganese	7439-96-5	--	--	--	100	--	100	43	--	80	43	A	4.00	10.0	No	No
SW6010C	Molybdenum	7439-98-7	--	--	--	--	--	--	10	--	73	10	A	5.00	30.0	No	Yes
SW6010C	Nickel	7440-02-0	--	--	52	4600	52	4600	39	39	5	5	K	3.00	40.0	No	Yes
SW6010C	Potassium	7440-09-7	--	--	--	--	--	--	--	--	53000	53000	K	500	3000	No	No
SW6010C	Selenium	7782-49-2	--	--	5	11000	5	4200	10	10	1	5	I	10.0	22.0	Yes	Yes
SW6010C	Silver	7440-22-4	0.12	--	--	--	--	--	9.4	9.4	0.012	0.012	K	0.90	15.0	Yes	Yes
SW6010C	Sodium	7440-23-5	--	--	--	--	--	--	--	--	680000	680000	K	500	5000	No	No
SW6010C	Thallium	7440-28-0	--	--	--	6.3	--	0.47	0.02	0.02	0.8	0.02	B	10.0	40.0	Yes	Yes
SW6010C	Vanadium	7440-62-2	--	--	--	--	--	--	8.6	8.6	12	8.6	B	4.00	15.0	No	Yes
SW6010C	Zinc	7440-66-6	--	--	120	69000	120	26000	600	600	21	21	K	20.0	150	No	Yes
SW6020A	Aluminum	7429-90-5	--	--	87	--	87	--	2000	--	75	75	K	10.00	20.0	No	No
SW6020A	Antimony	7440-36-0	--	--	--	4300	--	640	0.78	0.78	30	0.78	B	0.50	6.0	No	Yes
SW6020A	Arsenic	7440-38-2	--	--	150	--	150	0.14	0.052	0.052	5	0.052	B	1.00	5.0	Yes	Yes
SW6020A	Barium	7440-39-3	--	--	--	--	--	--	380	380	3.9	380	B	0.80	3.0	No	No
SW6020A	Beryllium	7440-41-7	--	--	--	--	--	--	2.5	2.5	0.53	0.53	K	0.20	1.0	No	Yes
SW6020A	Cadmium	7440-43-9	--	--	4.2	--	4.2	--	0.92	0.92	0.25	0.25	K	0.10	1.0	No	Yes
SW6020A	Calcium	7440-70-2	--	--	--	--	--	--	--	--	116000	116000	K	150	200	No	No
SW6020A	Chromium	7440-47-3	--	--	11	--	11	--	--	2200	8.44	11	I	1.50	10.0	No	No
SW6020A	Cobalt	7440-48-4	--	--	--	--	--	--	0.6	--	3	0.6	A	0.40	1.0	No	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = FRG Aquatic Life (Freshwater Chronic)

D = FRG Human Health (Fish Consumption)

E = Alaska Water Quality Standard Aquatic Life Freshwater Acute

F = Alaska Water Quality Standard Aquatic Life Freshwater Chronic

G = Alaska Water Quality Standard Human Health for Consumption of Aquatic Organisms Only

H = National Recommended Water Quality Aquatic Life Freshwater Acute (https://www.epa.gov/wqc/national-recommended-water-quality-criteria)

I = National Recommended Water Quality Aquatic Life Freshwater Chronic (https://www.epa.gov/wqc/national-recommended-water-quality-criteria)

J = National Recommended Water Quality Human Health for Consumption of Aquatic Organisms Only (https://www.epa.gov/wqc/national-recommended-water-quality-criteria)

K = Lowest of the RAIS Surface Water Screening Criteria (https://rais.ornl.gov/tools/eco_search.php Accessed December 2017.)

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

-- = not applicable/criteria not established

µg/L = microgram(s) per liter

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ADEC = Alaska Department of Environmental Conservation

BHC = benzene hexachloride

CAS = Chemical Abstracts Service

DDD = dichlorodiphenyldichloroethane

DDE = dichlorodiphenyldichloroethylene

DDT = dichlorodiphenyltrichloroethane

EPA = United States Environmental Protection Agency

GRO = gasoline-range organics

HQ = hazard quotient

LOD = limit of detection

LOQ = limit of quantitation

MDL = method detection limit

PCB = polychlorinated biphenyl

PSL = project screening level

RI/FS - remedial investigation/feasibility study

RSL = regional screening level

RRO = residual-range organics

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Table 15-4 Surface Water PSLs for SS035

Method	Analyte	CAS	FRG Aquatic Life (Freshwater Chronic)	FRG Human Health (Fish Consumption)	Alaska Water Quality Standard Aquatic Life Freshwater Chronic	Alaska Water Quality Standard Human Health for Consumption of Aquatic Organisms Only	National Recomended Water Quality Aquatic Life Freshwater Chronic	National Recomended Water Quality Human Health for Consumption of Aquatic Organisms Only	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Lowest RAIS Surface Water Criteria	Surface Water PSL (µg/L)	Surface Water PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds SW PSL?	LOQ Exceeds SW PSL?
SW6020A	Copper	7440-50-8	--	--	--	--	--	--	80	80	0.205	0.205	K	1.50	2.0	Yes	Yes
SW6020A	Iron	7439-89-6	--	--	1000	--	1000	--	1400	--	16	16	K	30.00	40.0	Yes	Yes
SW6020A	Lead	7439-92-1	3.2	--	6.9	--	6.9	--	1.5	1.5	0.35	0.35	K	0.40	3.0	Yes	Yes
SW6020A	Magnesium	7439-95-4	--	--	--	--	--	--	--	--	647	647	K	20.00	40.0	No	No
SW6020A	Manganese	7439-96-5	--	--	--	100	--	100	43	--	80	43	A	0.80	3.5	No	No
SW6020A	Molybdenum	7439-98-7	--	--	--	--	--	--	10	--	73	10	A	0.30	2.0	No	No
SW6020A	Nickel	7440-02-0	--	--	52	4600	52	4600	39	39	5	5	K	0.80	3.0	No	No
SW6020A	Potassium	7440-09-7	--	--	--	--	--	--	--	--	53000	53000	K	40.00	50.0	No	No
SW6020A	Selenium	7782-49-2	--	--	5	11000	5	4200	10	10	1	5	I	2.00	5.0	No	No
SW6020A	Silver	7440-22-4	0.12	--	--	--	--	--	9.4	9.4	0.012	0.012	K	0.10	5.0	Yes	Yes
SW6020A	Sodium	7440-23-5	--	--	--	--	--	--	--	--	680000	680000	K	50.00	100	No	No
SW6020A	Thallium	7440-28-0	--	--	--	6.3	--	0.47	0.02	0.02	0.8	0.02	B	0.20	1.0	Yes	Yes
SW6020A	Vanadium	7440-62-2	--	--	--	--	--	--	8.6	8.6	12	8.6	B	1.00	6.0	No	No
SW6020A	Zinc	7440-66-6	--	--	120	69000	120	26000	600	600	21	21	K	15.00	20.0	No	No
SW7470A	Mercury	7439-97-6	--	--	0.91	0.051	0.77	--	0.063	0.052	0.0013	0.0013	K	0.15	0.2	Yes	Yes
SW8011	Ethylene dibromide	106-93-4	--	--	--	--	--	--	0.0075	0.0075	--	0.0075	B	0.003	0.01	No	Yes
SW8082A	PCB-1016	12674-11-2	--	--	--	--	--	--	0.14	0.05	0.000074	0.000074	K	0.250	0.50	Yes	Yes
SW8082A	PCB-1221	11104-28-2	--	--	--	--	--	--	0.0047	0.05	0.000074	0.000074	K	0.250	0.50	Yes	Yes
SW8082A	PCB-1232	11141-16-5	--	--	--	--	--	--	0.0047	0.05	0.000074	0.000074	K	0.250	0.50	Yes	Yes
SW8082A	PCB-1242	53469-21-9	--	--	--	--	--	--	0.0078	0.05	0.000074	0.000074	K	0.250	0.50	Yes	Yes
SW8082A	PCB-1248	12672-29-6	--	--	--	--	--	--	0.0078	0.05	0.000074	0.000074	K	0.250	0.50	Yes	Yes
SW8082A	PCB-1254	11097-69-1	--	--	--	--	--	--	0.0078	0.05	0.000074	0.000074	K	0.250	0.50	Yes	Yes
SW8082A	PCB-1260	11096-82-5	--	--	--	--	--	--	0.0078	0.05	0.000074	0.000074	K	0.250	0.50	Yes	Yes
SW8081B	4,4'-DDD	72-54-8	--	--	--	--	--	0.00012	0.0063	0.032	0.0064	0.00012	J	0.0100	0.050	Yes	Yes
SW8081B	4,4'-DDE	72-55-9	--	--	--	--	--	0.000018	0.046	0.046	4.51E-09	4.51E-09	K	0.0100	0.050	Yes	Yes
SW8081B	4,4'-DDT	50-29-3	1.1	0.000024	0.001	--	--	0.00003	0.23	0.23	0.000011	0.000011	K	0.0100	0.050	Yes	Yes
SW8081B	Aldrin	309-00-2	--	--	--	--	--	0.00000077	0.00092	0.00092	--	0.00000077	J	0.0100	0.050	Yes	Yes
SW8081B	alpha-BHC	319-84-6	--	--	--	--	--	0.00039	0.0072	0.0072	2.2	0.00039	J	0.0100	0.050	Yes	Yes
SW8081B	alpha-Chlordane	5103-71-9	--	--	--	--	--	--	0.02	0.02	0.0022	0.0022	K	0.0100	0.050	Yes	Yes
SW8081B	beta-BHC	319-85-7	--	--	--	--	--	0.014	0.025	0.025	0.495	0.014	J	0.0100	0.050	No	Yes
SW8081B	delta-BHC	319-86-8	--	--	--	--	--	--	0.0072	0.0072	2.2	0.0072	B	0.0100	0.050	Yes	Yes
SW8081B	Dieldrin	60-57-1	--	--	0.056	--	0.056	0.0000012	0.0018	0.0018	0.0019	0.0000012	J	0.0100	0.050	Yes	Yes
SW8081B	Endosulfan I	959-98-8	--	--	0.056	240	0.056	30	10	10	0.051	0.051	K	0.0100	0.050	No	No
SW8081B	Endosulfan II	33213-65-9	--	--	0.056	240	0.056	40	10	10	0.051	0.051	K	0.0100	0.050	No	No
SW8081B	Endosulfan sulfate	1031-07-8	--	--	--	240	--	40	10	10	0.056	0.056	K	0.0100	0.050	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = FRG Aquatic Life (Freshwater Chronic)

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Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

-- = not applicable/criteria not established

µg/L = microgram(s) per liter

AAC = Alaska Administrative Code

ADEC = Alaska Department of Environmental Conservation

BHC = benzene hexachloride

CAS = Chemical Abstracts Service

DDD = dichlorodiphenyldichloroethane

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RI/FS - remedial investigation/feasibility study

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TCR = target risk for carcinogens

Table 15-4 Surface Water PSLs for SS035

Method	Analyte	CAS	FRG Aquatic Life (Freshwater Chronic)	FRG Human Health (Fish Consumption)	Alaska Water Quality Standard Aquatic Life Freshwater Chronic	Alaska Water Quality Standard Human Health for Consumption of Aquatic Organisms Only	National Recomended Water Quality Aquatic Life Freshwater Chronic	National Recomended Water Quality Human Health for Consumption of Aquatic Organisms Only	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Lowest RAIS Surface Water Criteria	Surface Water PSL (µg/L)	Surface Water PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds SW PSL?	LOQ Exceeds SW PSL?
SW8081B	Endrin	72-20-8	--	--	0.036	0.81	0.036	0.03	0.23	0.23	0.002	0.002	K	0.0100	0.050	Yes	Yes
SW8081B	Endrin aldehyde	7421-93-4	--	--	--	0.81	--	1	0.23	0.23	0.15	0.15	K	0.0100	0.050	No	No
SW8081B	Endrin ketone	53494-70-5	--	--	--	--	--	--	0.23	0.23	--	0.23	B	0.0100	0.050	No	No
SW8081B	gamma-BHC (Lindane)	58-89-9	--	--	--	--	--	4.4	0.042	0.042	0.01	0.01	K	0.0100	0.050	No	Yes
SW8081B	gamma-Chlordane	5103-74-2	--	--	--	--	--	--	0.02	0.02	0.0022	0.0022	K	0.0100	0.050	Yes	Yes
SW8081B	Heptachlor	76-44-8	--	--	0.0038	--	0.0038	0.0000059	0.0014	0.0014	0.0019	0.0000059	J	0.0100	0.050	Yes	Yes
SW8081B	Heptachlor epoxide	1024-57-3	--	--	0.0038	--	0.0038	0.000032	0.0014	0.0014	0.0019	0.000032	J	0.0100	0.050	Yes	Yes
SW8081B	Methoxychlor	72-43-5	--	--	0.03	--	0.03	0.02	3.7	3.7	0.019	0.019	K	0.0100	0.050	No	Yes
SW8081B	Toxaphene	8001-35-2	--	--	0.0002	--	--	0.00071	0.071	0.071	0.00014	0.00014	K	0.40	1.00	Yes	Yes
SW8081B	Chlordane (technical)	57-74-9	0.0043	0.00048	0.0043	--	0.0043	0.00032	0.02	0.02	0.0022	0.00032	J	0.040	1.00	Yes	Yes
SW8260C	1,1,1,2-Tetrachloroethane	630-20-6	--	--	--	--	--	--	0.57	0.57	--	0.57	B	0.30	1.0	No	Yes
SW8260C	1,1,1-Trichloroethane	71-55-6	--	--	--	--	--	200000	800	800	11	11	K	0.30	1.0	No	No
SW8260C	1,1,2,2-Tetrachloroethane	79-34-5	--	--	--	--	--	3	0.076	0.076	111	0.076	B	0.30	1.0	Yes	Yes
SW8260C	1,1,2-Trichloroethane	79-00-5	--	--	--	--	--	8.9	0.041	0.041	21	0.041	B	0.50	1.00	Yes	Yes
SW8260C	1,1-Dichloroethane	75-34-3	--	--	--	--	--	--	2.8	2.8	47	2.8	B	0.30	1.00	No	No
SW8260C	1,1-Dichloroethene	75-35-4	--	--	--	--	--	20000	28	28	25	25	K	0.50	1.00	No	No
SW8260C	1,1-Dichloropropene	563-58-6	--	--	--	1700	--	--	0.47	0.47	--	0.47	B	0.50	1.00	Yes	Yes
SW8260C	1,2,3-Trichlorobenzene	87-61-6	--	--	--	--	--	--	0.7	0.7	8	0.7	B	0.50	1.00	No	Yes
SW8260C	1,2,3-Trichloropropane	96-18-4	--	--	--	--	--	--	0.00075	0.00075	--	0.00075	B	1.00	2.00	Yes	Yes
SW8260C	1,2,4-Trichlorobenzene	120-82-1	--	--	--	940	--	0.076	0.4	0.4	--	0.076	J	0.50	1.00	Yes	Yes
SW8260C	1,2,4-Trimethylbenzene	95-63-6	--	--	--	--	--	--	5.6	15	33	5.6	A	0.30	1.00	No	No
SW8260C	1,2-Dibromo-3-chloropropane	96-12-8	--	--	--	--	--	--	0.00033	--	--	0.00033	A	1.00	2.00	Yes	Yes
SW8260C	Ethylene dibromide	106-93-4	--	--	--	--	--	--	0.0075	0.0075	--	0.0075	B	0.50	1.00	Yes	Yes
SW8260C	1,2-Dichlorobenzene	95-50-1	--	--	--	17000	--	3000	30	30	0.7	0.7	K	0.30	1.00	No	Yes
SW8260C	1,2-Dichloroethane	107-06-2	--	--	--	--	--	650	0.17	0.17	100	0.17	B	0.30	1.00	Yes	Yes
SW8260C	1,2-Dichloropropane	78-87-5	--	--	--	--	--	31	0.14	0.44	360	0.14	A	0.30	1.00	Yes	Yes
SW8260C	1,3-Dichlorobenzene	541-73-1	763	2600	--	2600	--	10	--	30	38	10	J	0.30	1.00	No	No
SW8260C	1,3-Dichloropropane	142-28-9	--	--	--	--	--	12	37	--	--	12	J	0.30	1.00	No	No
SW8260C	1,3,5-Trimethylbenzene	108-67-8	--	--	--	--	--	--	6	120	1.8	1.8	K	0.30	1.00	No	No
SW8260C	1,4-Dichlorobenzene	106-46-7	--	--	--	2600	--	900	0.48	0.48	9.4	0.48	B	0.30	1.00	No	Yes
SW8260C	2,2-Dichloropropane	594-20-7	--	--	--	--	--	--	0.14	0.44	360	0.14	A	0.50	1.00	Yes	Yes
SW8260C	2-Butanone (MEK)	78-93-3	--	--	--	--	--	--	560	560	2200	560	B	2.00	10.0	No	No
SW8260C	2-Chlorotoluene	95-49-8	--	--	--	--	--	--	24	--	--	24	A	0.30	1.00	No	No
SW8260C	2-Hexanone	591-78-6	--	--	--	--	--	--	3.8	3.8	99	3.8	B	2.00	10.0	No	Yes
SW8260C	4-Chlorotoluene	106-43-4	--	--	--	--	--	--	25	--	--	25	A	0.30	1.00	No	No

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Table 15-4 Surface Water PSLs for SS035

Method	Analyte	CAS	FRG Aquatic Life (Freshwater Chronic)	FRG Human Health (Fish Consumption)	Alaska Water Quality Standard Aquatic Life Freshwater Chronic	Alaska Water Quality Standard Human Health for Consumption of Aquatic Organisms Only	National Recomended Water Quality Aquatic Life Freshwater Chronic	National Recomended Water Quality Human Health for Consumption of Aquatic Organisms Only	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Lowest RAIS Surface Water Criteria	Surface Water PSL (µg/L)	Surface Water PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds SW PSL?	LOQ Exceeds SW PSL?
SW8260C	4-Methyl-2-pentanone (MIBK)	108-10-1	--	--	--	--	--	--	630	630	170	170	K	5.00	10.0	No	No
SW8260C	Acetone	67-64-1	--	--	--	--	--	--	1400	1400	1500	1400	B	2.00	10.0	No	No
SW8260C	Benzene	71-43-2	5300	40	--	--	--	16	0.46	0.46	21	0.46	B	0.30	1.00	No	Yes
SW8260C	Bromobenzene	108-86-1	--	--	--	--	--	--	6.2	6.2	--	6.2	B	0.30	1.00	No	No
SW8260C	Bromochloromethane	74-97-5	--	--	--	--	--	--	8.3	--	--	8.3	A	0.30	1.00	No	No
SW8260C	Bromodichloromethane	75-27-4	--	--	--	--	--	27	0.13	0.13	4320	0.13	B	0.30	1.00	Yes	Yes
SW8260C	Bromoform	75-25-2	--	--	--	--	--	120	3.3	3.3	149	3.3	B	0.30	1.00	No	No
SW8260C	Bromomethane	74-83-9	--	--	--	4000	--	10000	0.75	0.75	16	0.75	B	0.50	2.00	No	Yes
SW8260C	Carbon disulfide	75-15-0	--	--	--	--	--	--	81	81	0.92	0.92	K	0.50	1.00	No	Yes
SW8260C	Carbon tetrachloride	56-23-5	--	--	--	--	--	5	0.46	0.46	9.8	0.46	B	0.30	1.00	No	Yes
SW8260C	Chlorobenzene	108-90-7	--	--	--	21000	--	800	7.8	7.8	1.3	1.3	K	0.50	1.00	No	No
SW8260C	Chloroethane	75-00-3	--	--	--	--	--	--	2100	2100	--	2100	B	0.50	1.00	No	No
SW8260C	Chloroform	67-66-3	--	--	--	--	--	2000	0.22	0.22	1.8	0.22	B	0.30	1.00	Yes	Yes
SW8260C	Chloromethane	74-87-3	--	--	--	--	--	--	19	19	5500	19	B	0.50	1.00	No	No
SW8260C	cis-1,2-Dichloroethene	156-59-2	11600	1.85	--	--	--	--	3.6	3.6	--	1.85	D	0.30	1.00	No	No
SW8260C	cis-1,3-Dichloropropene	10061-01-5	--	--	--	--	--	--	0.47	0.47	0.055	0.055	K	0.30	1.00	Yes	Yes
SW8260C	Dibromochloromethane	124-48-1	--	--	--	--	--	21	0.87	0.87	257	0.87	B	0.30	1.00	No	Yes
SW8260C	Dibromomethane	74-95-3	--	--	--	--	--	--	0.83	0.83	--	0.83	B	0.50	1.00	No	Yes
SW8260C	Dichlorodifluoromethane	75-71-8	--	--	--	--	--	--	20	20	--	20	B	0.30	1.00	No	No
SW8260C	Ethylbenzene	100-41-4	32000	3280	--	29000	--	130	1.5	1.5	7.3	1.5	B	0.50	1.00	No	No
SW8260C	Hexachlorobutadiene	87-68-3	--	--	--	--	--	0.01	0.14	1.4	0.053	0.01	J	0.30	1.00	Yes	Yes
SW8260C	Isopropylbenzene	98-82-8	--	--	--	--	--	--	45	45	2.6	2.6	K	0.30	1.00	No	No
SW8260C	Methyl tert-butyl ether (MTBE)	1634-04-4	--	--	--	--	--	--	14	14	10000	14	B	0.52	1.00	No	No
SW8260C	Methylene chloride	75-09-2	--	--	--	--	--	1000	11	11	98.1	11	B	1.00	5.00	No	No
SW8260C	m-Xylene & p-Xylene	136777-61-2	--	--	--	--	--	--	19	19	13	13	K	0.60	2.00	No	No
SW8260C	Naphthalene	91-20-3	--	--	--	--	--	--	0.17	0.17	--	0.17	B	0.50	1.00	Yes	Yes
SW8260C	n-Butylbenzene	104-51-8	--	--	--	--	--	--	100	100	71	71	K	0.30	1.00	No	No
SW8260C	n-Propylbenzene	103-65-1	--	--	--	--	--	--	66	66	128	66	B	0.50	1.00	No	No
SW8260C	o-Xylene	95-47-6	--	--	--	--	--	--	19	19	13	13	K	0.30	1.00	No	No
SW8260C	p-Isopropyltoluene	99-87-6	--	--	--	--	--	--	--	--	85	85	K	0.30	1.00	No	No
SW8260C	sec-Butylbenzene	135-98-8	--	--	--	--	--	--	200	200	82	82	K	0.30	1.00	No	No
SW8260C	Styrene	100-42-5	--	--	--	--	--	--	120	120	32	32	K	0.50	1.00	No	No
SW8260C	tert-Butylbenzene	98-06-6	--	--	--	--	--	--	69	69	48	48	K	0.30	1.00	No	No
SW8260C	Tetrachloroethene	127-18-4	840	8.85	--	--	--	29	4.1	4.1	45	4.1	B	0.30	1.00	No	No
SW8260C	Toluene	108-88-3	17500	424000	--	200000	--	520	110	110	2	2	K	0.30	1.00	No	No

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SW8260C	trans-1,2-Dichloroethene	156-60-5	11600	3.2	--	140000	--	4000	36	36	970	3.2	D	0.30	1.00	No	No
SW8260C	trans-1,3-Dichloropropene	10061-02-6	--	--	--	--	--	--	0.47	0.47	0.055	0.055	K	0.30	1.00	Yes	Yes
SW8260C	Trichloroethene	79-01-6	21900	81	--	--	--	7	0.28	0.28	21	0.28	B	0.30	1.00	Yes	Yes
SW8260C	Trichlorofluoromethane	75-69-4	--	--	--	--	--	--	520	520	1740	520	B	0.30	1.00	No	No
SW8260C	Vinyl chloride	75-01-4	--	525	--	--	--	1.6	0.019	0.019	930	0.019	B	0.30	1.00	Yes	Yes
SW8260C	Xylenes, total	1330-20-7	--	--	--	--	--	--	19	19	13	13	K	0.30	2.00	No	No
SW8270D	1,2,4-Trichlorobenzene	120-82-1	--	--	--	940	--	0.076	0.4	0.4	--	0.076	J	5.00	10	Yes	Yes
SW8270D	1,2-Dichlorobenzene	95-50-1	--	--	--	17000	--	3000	30	30	0.7	0.7	K	5.00	10	Yes	Yes
SW8270D	1,3-Dichlorobenzene	541-73-1	--	--	--	2600	--	10	--	30	38	10	J	5.00	10	No	No
SW8270D	1,4-Dichlorobenzene	106-46-7	763	2600	--	2600	--	900	0.48	0.48	9.4	0.48	B	5.00	10	Yes	Yes
SW8270D	1,4-Dioxane	123-91-1	--	--	--	--	--	--	0.46	0.46	22000	0.46	B	0.50	1.0	Yes	Yes
SW8270D	2,4,5-Trichlorophenol	95-95-4	--	--	--	9800	--	600	120	120	64	64	K	5.00	10	No	No
SW8270D	2,4,6-Trichlorophenol	88-06-2	--	--	--	--	--	2.8	1.2	1.2	3.2	1.2	B	5.00	10	Yes	Yes
SW8270D	2,4-Dichlorophenol	120-83-2	--	--	--	790	--	60	4.6	4.6	11	4.6	B	5.00	10	Yes	Yes
SW8270D	2,4-Dimethylphenol	105-67-9	--	--	--	2300	--	3000	36	36	21.2	21.2	K	5.00	10	No	No
SW8270D	2,4-Dinitrophenol	51-28-5	--	--	--	14000	--	300	3.9	3.9	6.2	3.9	B	5.00	20	Yes	Yes
SW8270D	2,4-Dinitrotoluene	121-14-2	--	--	--	--	--	1.7	0.24	0.24	44	0.24	B	5.00	20	Yes	Yes
SW8270D	2,6-Dinitrotoluene	606-20-2	--	--	--	--	--	--	0.049	0.049	81	0.049	B	5.00	20	Yes	Yes
SW8270D	2-Chloronaphthalene	91-58-7	--	--	--	4300	--	1000	75	75	0.396	0.396	K	5.00	10	Yes	Yes
SW8270D	2-Chlorophenol	95-57-8	--	--	--	400	--	800	9.1	9.1	24	9.1	B	5.00	10	No	Yes
SW8270D	2-Methylnaphthalene	91-57-6	--	--	--	--	--	--	3.6	3.6	4.7	3.6	B	5.00	10	Yes	Yes
SW8270D	2-Methylphenol	95-48-7	--	--	--	--	--	--	93	93	--	93	B	5.00	10	No	No
SW8270D	2-Nitroaniline	88-74-4	--	--	--	--	--	--	19	--	--	19	A	5.00	20	No	Yes
SW8270D	2-Nitrophenol	88-75-5	--	--	--	--	--	--	--	--	1920	1920	K	5.00	10	No	No
SW8270D	3,3'-Dichlorobenzidine	91-94-1	--	--	--	--	--	0.15	0.13	0.13	4.5	0.13	B	5.00	10	Yes	Yes
SW8270D	3 & 4 Methylphenol	15831-10-4	--	--	--	--	--	2000	93	9.3	25	9.3	B	5.00	10	No	Yes
SW8270D	3-Nitroaniline	99-09-2	--	--	--	--	--	--	--	--	--	--	--	5.00	10	--	--
SW8270D	4,6-Dinitro-2-methylphenol	534-52-1	--	--	--	765	--	30	0.15	--	--	0.15	A	5.00	20	Yes	Yes
SW8270D	4-Bromophenyl phenyl ether	101-55-3	--	--	--	--	--	--	--	--	1.5	1.5	K	5.00	10	Yes	Yes
SW8270D	4-Chloro-3-methylphenol	59-50-7	--	--	--	--	--	--	140	--	0.3	0.3	K	5.00	10	Yes	Yes
SW8270D	4-Chloroaniline	106-47-8	--	--	--	--	--	--	0.37	0.37	232	0.37	B	5.00	10	Yes	Yes
SW8270D	4-Chlorophenyl phenyl ether	7005-72-3	--	--	--	--	--	--	--	--	--	--	--	5.00	10	--	--
SW8270D	4-Nitroaniline	100-01-6	--	--	--	--	--	--	3.8	--	--	3.8	A	5.00	10	Yes	Yes
SW8270D	4-Nitrophenol	100-02-7	--	--	--	--	--	--	--	--	60	60	K	5.00	20	--	--
SW8270D	Acenaphthene	83-32-9	--	--	--	2700	--	90	53	53	5.8	5.8	K	5.00	10	No	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = FRG Aquatic Life (Freshwater Chronic)

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K = Lowest of the RAIS Surface Water Screening Criteria (https://rais.ornl.gov/tools/eco_search.php Accessed December 2017.)

Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

-- = not applicable/criteria not established

µg/L = microgram(s) per liter

AAC = Alaska Administrative Code

ADEC = Alaska Department of Environmental Conservation

BHC = benzene hexachloride

CAS = Chemical Abstracts Service

DDD = dichlorodiphenyldichloroethane

DDE = dichlorodiphenyldichloroethylene

DDT = dichlorodiphenyltrichloroethane

EPA = United States Environmental Protection Agency

GRO = gasoline-range organics

HQ = hazard quotient

LOD = limit of detection

LOQ = limit of quantitation

MDL = method detection limit

PCB = polychlorinated biphenyl

PSL = project screening level

RI/FS - remedial investigation/feasibility study

RSL = regional screening level

RRO = residual-range organics

TCR = target risk for carcinogens

Table 15-4 Surface Water PSLs for SS035

Method	Analyte	CAS	FRG Aquatic Life (Freshwater Chronic)	FRG Human Health (Fish Consumption)	Alaska Water Quality Standard Aquatic Life Freshwater Chronic	Alaska Water Quality Standard Human Health for Consumption of Aquatic Organisms Only	National Recomended Water Quality Aquatic Life Freshwater Chronic	National Recomended Water Quality Human Health for Consumption of Aquatic Organisms Only	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Lowest RAIS Surface Water Criteria	Surface Water PSL (µg/L)	Surface Water PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds SW PSL?	LOQ Exceeds SW PSL?
SW8270D	Acenaphthylene	208-96-8	--	--	--	--	--	--	--	26	4840	26	B	5.00	10	No	No
SW8270D	Anthracene	120-12-7	--	--	--	110000	--	400	180	4.3	0.012	0.012	K	5.00	10	Yes	Yes
SW8270D	Azobenzene	103-33-3	--	--	--	--	--	0.2	0.12	--	2.7	0.12	A	5.00	10	Yes	Yes
SW8270D	Benzo(a)anthracene	56-55-3	--	--	--	--	--	0.0013	0.03	0.012	0.018	0.0013	J	5.00	10	Yes	Yes
SW8270D	Benzo(a)pyrene	50-32-8	--	--	--	--	--	0.00013	0.025	0.0034	0.018	0.00013	J	5.00	10	Yes	Yes
SW8270D	Benzo(b)fluoranthene	205-99-2	--	--	--	--	--	0.0013	0.25	0.034	9.07	0.0013	J	5.00	10	Yes	Yes
SW8270D	Benzo(g,h,i)perylene	191-24-2	--	--	--	--	--	--	--	0.026	7.64	0.026	B	5.00	10	Yes	Yes
SW8270D	Benzo(k)fluoranthene	207-08-9	--	--	--	--	--	0.013	2.5	0.08	--	0.013	J	5.00	10	Yes	Yes
SW8270D	Benzoic acid	65-85-0	--	--	--	--	--	--	7500	7500	42	42	K	5.00	10	No	No
SW8270D	Benzyl alcohol	100-51-6	--	--	--	--	--	--	200	200	8.6	8.6	K	5.00	10	No	Yes
SW8270D	bis(2-Chloroethoxy)methane	111-91-1	--	--	--	--	--	--	5.9	--	--	5.9	A	5.00	10	No	Yes
SW8270D	Bis(2-chloroethyl)ether	111-44-4	--	--	--	170000	--	2.2	0.014	0.014	1900	0.014	B	5.00	10	Yes	Yes
SW8270D	bis(2-Chloroisopropyl)ether	108-60-1	--	--	--	--	--	4000	71	--	--	71	A	5.00	10	No	No
SW8270D	bis(2-Ethylhexyl) phthalate	117-81-7	--	--	--	--	--	0.37	5.6	5.6	0.3	0.3	K	5.00	20	Yes	Yes
SW8270D	Butyl benzyl phthalate	85-68-7	--	--	--	5200	--	0.1	16	16	19	0.1	J	5.00	10	Yes	Yes
SW8270D	Carbazole	86-74-8	--	--	--	--	--	--	--	--	--	--	--	5.00	10	--	--
SW8270D	Chrysene	218-01-9	--	--	--	--	--	0.13	25	0.2	7	0.13	J	5.00	10	Yes	Yes
SW8270D	Dibenz(a,h)anthracene	53-70-3	--	--	--	--	--	0.00013	0.025	0.0034	5	0.00013	J	5.00	10	Yes	Yes
SW8270D	Dibenzofuran	132-64-9	--	--	--	--	--	--	0.79	0.79	3.7	0.79	B	5.00	20	Yes	Yes
SW8270D	Diethyl phthalate	84-66-2	--	--	--	120000	--	600	1500	1500	110	110	K	5.00	10	No	No
SW8270D	Dimethyl phthalate	131-11-3	--	--	--	2900000	--	2000	--	1600	330	330	K	5.00	10	No	No
SW8270D	Di-n-butyl phthalate	84-74-2	--	--	--	12000	--	30	90	9	7	7	K	5.00	10	No	Yes
SW8270D	Di-n-octyl phthalate	117-84-0	--	--	--	--	--	--	20	0.22	22	0.22	B	5.00	10	Yes	Yes
SW8270D	Fluoranthene	206-44-0	--	--	--	370	--	20	80	26	0.04	0.04	K	5.00	10	Yes	Yes
SW8270D	Fluorene	86-73-7	--	--	--	14000	--	70	29	29	3	3	K	5.00	10	Yes	Yes
SW8270D	Hexachlorobenzene	118-74-1	--	--	--	--	--	0.000079	0.0098	0.0098	0.0003	0.000079	J	5.00	20	Yes	Yes
SW8270D	Hexachlorobutadiene	87-68-3	--	--	--	--	--	0.01	0.14	0.14	0.053	0.01	J	5.00	10	Yes	Yes
SW8270D	Hexachloroethane	67-72-1	--	--	--	--	--	0.1	0.33	0.33	8	0.1	J	5.00	10	Yes	Yes
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	--	--	--	--	--	0.0013	0.25	0.019	4.31	0.0013	J	5.00	10	Yes	Yes
SW8270D	Isophorone	78-59-1	--	--	--	--	--	1800	78	78	920	78	B	5.00	10	No	No
SW8270D	Naphthalene	91-20-3	--	--	--	--	--	--	0.17	0.17	1.1	0.17	B	5.00	10	Yes	Yes
SW8270D	Nitrobenzene	98-95-3	--	--	--	1900	--	600	0.14	0.14	220	0.14	B	5.00	10	Yes	Yes
SW8270D	N-Nitrosodimethylamine	62-75-9	--	--	--	--	--	3	0.00011	0.00011	117	0.00011	B	5.00	10	Yes	Yes
SW8270D	N-Nitrosodi-n-propylamine	621-64-7	--	--	--	--	--	0.51	0.011	0.011	20	0.011	B	5.00	10	Yes	Yes
SW8270D	N-Nitrosodiphenylamine	86-30-6	--	--	--	--	--	6	12	12	58.5	6	J	5.00	10	No	Yes

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

C = FRG Aquatic Life (Freshwater Chronic)

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Acronyms:

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DDE = dichlorodiphenyldichloroethylene

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EPA = United States Environmental Protection Agency

GRO = gasoline-range organics

HQ = hazard quotient

LOD = limit of detection

LOQ = limit of quantitation

MDL = method detection limit

PCB = polychlorinated biphenyl

PSL = project screening level

RI/FS - remedial investigation/feasibility study

RSL = regional screening level

RRO = residual-range organics

TCR = target risk for carcinogens

Table 15-4 Surface Water PSLs for SS035

Method	Analyte	CAS	FRG Aquatic Life (Freshwater Chronic)	FRG Human Health (Fish Consumption)	Alaska Water Quality Standard Aquatic Life Freshwater Chronic	Alaska Water Quality Standard Human Health for Consumption of Aquatic Organisms Only	National Recomended Water Quality Aquatic Life Freshwater Chronic	National Recomended Water Quality Human Health for Consumption of Aquatic Organisms Only	EPA Tapwater RSL	1/10th ADEC Human Health Groundwater Cleanup Level	Lowest RAIS Surface Water Criteria	Surface Water PSL (µg/L)	Surface Water PSL Source	LOD (µg/L)	LOQ (µg/L)	LOD Exceeds SW PSL?	LOQ Exceeds SW PSL?
SW8270D	Pentachlorophenol	87-86-5	--	--	--	--	15	0.04	0.041	0.041	0.5	0.04	J	5.00	20	Yes	Yes
SW8270D	Phenanthrene	85-01-8	--	--	--	--	--	--	--	17	0.4	0.4	K	5.00	20	Yes	Yes
SW8270D	Phenol	108-95-2	--	--	--	4600000	--	300000	580	580	4	4	K	5.00	10	Yes	Yes
SW8270D	Pyrene	129-00-0	--	--	--	11000	--	30	12	12	0.025	0.025	K	5.00	10	Yes	Yes
SW8270D-SIM	1-Methylnaphthalene	90-12-0	--	--	--	--	--	--	1.1	1.1	2.1	1.1	B	0.10	0.20	No	No
SW8270D-SIM	2-Methylnaphthalene	91-57-6	--	--	--	--	--	--	3.6	3.6	4.7	3.6	B	0.10	0.20	No	No
SW8270D-SIM	Acenaphthene	83-32-9	--	--	--	--	--	90	53	53	5.8	5.8	K	0.10	0.20	No	No
SW8270D-SIM	Acenaphthylene	208-96-8	--	--	--	--	--	--	--	26	4840	26	B	0.10	0.20	No	No
SW8270D-SIM	Anthracene	120-12-7	--	--	--	--	--	--	180	4.3	0.012	0.012	K	0.10	0.20	Yes	Yes
SW8270D-SIM	Benzo(a)anthracene	56-55-3	--	--	--	--	--	0.0013	0.03	0.012	0.018	0.0013	J	0.10	0.20	Yes	Yes
SW8270D-SIM	Benzo(a)pyrene	50-32-8	--	--	--	--	--	0.00013	0.025	0.0034	0.018	0.00013	J	0.10	0.20	Yes	Yes
SW8270D-SIM	Benzo(b)fluoranthene	205-99-2	--	--	--	--	--	0.0013	0.25	0.034	9.07	0.0013	J	0.10	0.20	Yes	Yes
SW8270D-SIM	Benzo(g,h,i)perylene	191-24-2	--	--	--	--	--	--	--	0.026	7.64	0.026	B	0.10	0.20	Yes	Yes
SW8270D-SIM	Benzo(k)fluoranthene	207-08-9	--	--	--	--	--	0.013	2.5	0.08	--	0.013	J	0.10	0.20	Yes	Yes
SW8270D-SIM	Chrysene	218-01-9	--	--	--	--	--	0.13	25	0.2	7	0.13	J	0.10	0.20	No	Yes
SW8270D-SIM	Dibenz(a,h)anthracene	53-70-3	--	--	--	--	--	0.00013	0.025	0.0034	5	0.00013	J	0.10	0.20	Yes	Yes
SW8270D-SIM	Fluoranthene	206-44-0	--	--	--	--	--	20	80	26	0.04	0.04	K	0.10	0.20	Yes	Yes
SW8270D-SIM	Fluorene	86-73-7	--	--	--	--	--	70	29	29	3	3	K	0.10	0.20	No	No
SW8270D-SIM	Indeno(1,2,3-cd)pyrene	193-39-5	--	--	--	--	--	0.0013	0.25	0.0019	4.31	0.0013	J	0.10	0.20	Yes	Yes
SW8270D-SIM	Naphthalene	91-20-3	--	--	--	--	--	--	0.17	0.17	1.1	0.17	B	0.10	0.20	No	Yes
SW8270D-SIM	Phenanthrene	85-01-8	--	--	--	--	--	--	--	17	0.4	0.4	K	0.10	0.20	No	No
SW8270D-SIM	Pyrene	129-00-0	--	--	--	--	--	30	12	12	0.025	0.025	K	0.10	0.20	Yes	Yes
Method 537 Mod	Perfluorobutanesulfonic acid (PFBS)	375-73-5	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorodecanoic acid (PFDA)	335-76-2	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorododecanoic acid (PFDoA)	307-55-1	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluoroheptanoic acid (PFHpA)	375-85-9	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	(PFHxS)	355-46-4	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorohexanoic acid (PFHxA)	307-24-4	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorononanoic acid (PFNA)	375-95-1	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorotetradecanoic acid (PFTA)	376-06-7	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorotridecanoic acid (PFTrDA)	72629-94-8	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluoroundecanoic acid (PFUnA)	2058-94-8	--	--	--	--	--	--	--	--	--	--	--	0.004	0.008	--	--
Method 537 Mod	Perfluorooctane Sulfonate (PFOS)	1763-23-1	--	--	--	--	--	--	0.07	0.04	--	0.04	B	0.004	0.008	No	No
Method 537 Mod	Perfluorooctanic Acid (PFOA)	335-67-1	--	--	--	--	--	--	0.07	0.04	--	0.04	B	0.004	0.008	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the groundwater PSL

PSL Sources:

A = EPA Tapwater RSL (HQ 0.1 and TCR 1E-6) May 2018

B = 1/10th ADEC 18 AAC 75 Table C Human Health Groundwater Cleanup Level (November 2017)

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Surrogates:

chromium screening level is the value for chromium III

cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1-dichloropropene screening levels are the value for 1,3-dichloropropene

2,2-Dichloropropane screening level is the value for 1,2-Dichloropropane

delta-BHC screening level is the value for alpha-BHC

alpha-chlordane, gamma chlordane and technical chlordane screening levels are the value for chlordane

endosulfan I, endosulfan II and endosulfan sulfate screening levels are the value for endosulfan

endrin aldehyde and endrin ketone screening levels are the value for endrin

Acronyms:

-- = not applicable/criteria not established

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DDD = dichlorodiphenyldichloroethane

DDE = dichlorodiphenyldichloroethylene

DDT = dichlorodiphenyltrichloroethane

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GRO = gasoline-range organics

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LOQ = limit of quantitation

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PSL = project screening level

RI/FS - remedial investigation/feasibility study

RSL = regional screening level

RRO = residual-range organics

TCR = target risk for carcinogens

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Table 15-5 Soil Vapor PSLs for SS035

Method	Analyte[a]	CAS	Residential Soil Vapor PSL (µg/m^3)[b]	Commercial Soil Vapor PSL (µg/m^3)[b]	LOD (µg/m^3)	LOQ (µg/m^3)	Residential PSL		Commercial PSL	
							LOD Exceeds Target Level?	LOQ Exceeds Target Level?	LOD Exceeds Target Level?	LOQ Exceeds Target Level?
TO-15	1,1,1-Trichloroethane	71-55-6	5200	22000	0.95	5.5	No	No	No	No
TO-15	1,1,2,2-Tetrachloroethane	79-34-5	0.48	2.1	1.7	6.9	Yes	Yes	No	Yes
TO-15	1,1,2-Trichloroethane	79-00-5	0.21	0.88	2.7	5.5	Yes	Yes	Yes	Yes
TO-15	1,1-Dichloroethane	75-34-3	18	77	1.0	4.0	No	No	No	No
TO-15	1,1-Dichloroethene	75-35-4	210	880	0.99	4.0	No	No	No	No
TO-15	1,2,4-Trichlorobenzene	120-82-1	2.1	8.8	1.9	7.4	No	Yes	No	No
TO-15	1,2,4-Trimethylbenzene	95-63-6	7.3	31	1.2	4.9	No	No	No	No
TO-15	Ethylene dibromide	106-93-4	0.047	0.2	1.9	7.7	Yes	Yes	Yes	Yes
TO-15	1,2-Dichlorobenzene	95-50-1	210	880	1.5	6.0	No	No	No	No
TO-15	1,2-Dichloroethane	107-06-2	1.1	4.7	1.0	4.0	No	Yes	No	No
TO-15	1,2-Dichloropropane	78-87-5	2.8	12	1.2	4.6	No	Yes	No	No
TO-15	1,3-Dichlorobenzene	541-73-1	210	880	1.5	6.0	No	No	No	No
TO-15	1,3,5-Trimethylbenzene	108-67-8	--	--	1.2	4.9	--	--	--	--
TO-15	1,4-Dichlorobenzene	106-46-7	2.6	11	1.5	6.0	No	Yes	No	No
TO-15	2-Butanone (MEK)	78-93-3	5200	22000	0.52	2.9	No	No	No	No
TO-15	2-Hexanone	591-78-6	31	130	1.0	4.1	No	No	No	No
TO-15	4-Methyl-2-pentanone (MIBK)	108-10-1	3100	13000	2.0	4.1	No	No	No	No
TO-15	Acetone	67-64-1	32000	140000	2.4	4.8	No	No	No	No
TO-15	Benzene	71-43-2	3.6	16	1.6	3.2	No	No	No	No
TO-15	Bromodichloromethane	75-27-4	0.76	3.3	1.7	6.7	Yes	Yes	No	Yes
TO-15	Bromoform	75-25-2	26	110	2.6	10	No	No	No	No
TO-15	Bromomethane	74-83-9	5.2	22	3.9	7.8	No	Yes	No	No
TO-15	Carbon disulfide	75-15-0	730	3100	0.78	3.1	No	No	No	No

Notes:

[a] = The analyte list for air analysis is comprised of compounds detected in (1) soil above the most conservative ADEC CULs and (2) groundwater above vapor intrusion screening levels.

[b] = Soil Vapor PSLs are 1/10th the value of ADEC Soil Gas Target Levels (ADEC Novemeber 2017)

Gray shading = indicates LOD/LOQ values are greater than the PSL

Acronyms:

µg/m^3 = micrgram(s) per cubic meter
ADEC = Alaska Department of Environmental Conservation
CAS = Chemical Abstracts Service
LOD = limit of detection
LOQ = limit of quantitation
NA = not applicable/criteria not established
PSL = project screening level
RI/FS = remedial investigation/feasibility study

Table 15-5 Soil Vapor PSLs for SS035

Method	Analyte[a]	CAS	Residential Soil Vapor PSL (µg/m^3)[b]	Commercial Soil Vapor PSL (µg/m^3)[b]	LOD (µg/m^3)	LOQ (µg/m^3)	Residential PSL		Commercial PSL	
							LOD Exceeds Target Level?	LOQ Exceeds Target Level?	LOD Exceeds Target Level?	LOQ Exceeds Target Level?
TO-15	Carbon tetrachloride	56-23-5	4.7	20	1.6	6.3	No	Yes	No	No
TO-15	Chlorobenzene	108-90-7	52	220	1.2	4.6	No	No	No	No
TO-15	Chloroethane	75-00-3	10000	44000	1.3	2.6	No	No	No	No
TO-15	Chloroform	67-66-3	1.2	5.3	0.85	4.9	No	Yes	No	No
TO-15	Chloromethane	74-87-3	94	390	2.1	4.1	No	No	No	No
TO-15	cis-1,2-Dichloroethene	156-59-2	--	--	2.0	4.0	--	--	--	--
TO-15	cis-1,3-Dichloropropene	10061-01-5	7	31	0.79	4.5	No	No	No	No
TO-15	Dibromochloromethane	124-48-1	--	--	4.3	8.5	--	--	--	--
TO-15	Dichlorodifluoromethane	75-71-8	100	440	0.87	4.9	No	No	No	No
TO-15	Ethylbenzene	100-41-4	2.2	49	0.76	4.3	No	Yes	No	No
TO-15	Hexachlorobutadiene	87-68-3	1.3	5.6	2.7	11	Yes	Yes	No	Yes
TO-15	Methyl tert-butyl ether (MTBE)	1634-04-4	110	470	1.8	3.6	No	No	No	No
TO-15	Methylene chloride	75-09-2	630	2600	1.7	3.5	No	No	No	No
TO-15	m-Xylene & p-Xylene	136777-61-2	100	440	1.1	4.3	No	No	No	No
TO-15	Naphthalene	91-20-3	0.83	3.6	10	26	Yes	Yes	Yes	Yes
TO-15	o-Xylene	95-47-6	100	440	0.76	4.3	No	No	No	No
TO-15	Styrene	100-42-5	1000	4400	1.1	4.3	No	No	No	No
TO-15	Tetrachloroethene	127-18-4	42	180	1.2	6.8	No	No	No	No
TO-15	Toluene	108-88-3	5200	22000	0.66	3.8	No	No	No	No
TO-15	trans-1,2-Dichloroethene	156-60-5	--	--	0.99	4.0	--	--	--	--
TO-15	trans-1,3-Dichloropropene	10061-02-6	7	31	0.79	9.1	No	Yes	No	No
TO-15	Trichloroethene	79-01-6	2	84	1.3	5.4	No	Yes	No	No
TO-15	Vinyl chloride	75-01-4	1.7	28	1.3	2.6	No	Yes	No	No

Notes:

[a] = The analyte list for air analysis is comprised of compounds detected in (1) soil above the most conservative ADEC CULs and (2) groundwater above vapor intrusion screening levels.

[b] = Soil Vapor PSLs are 1/10th the value of ADEC Soil Gas Target Levels (ADEC Novemeber 2017)

Gray shading = indicates LOD/LOQ values are greater than the PSL

Acronyms:

µg/m^3 = micrgram(s) per cubic meter
ADEC = Alaska Department of Environmental Conservation
CAS = Chemical Abstracts Service
LOD = limit of detection
LOQ = limit of quantitation
NA = not applicable/criteria not established
PSL = project screening level
RI/FS = remedial investigation/feasibility study

Table 15-6 Indoor Air PSLs for SS035

Method	Analyte	CAS	1/10th ADEC Target Levels for Indoor Air – Commercial (µg/m^3)	EPA Composite Woker RSL	Indoor Air PSL	Indoor Air PSL Source	LOD (µg/m^3)	LOQ (µg/m^3)	LOD Exceeds Indoor Air PSL?	LOQ Exceeds Indoor Air PSL?
TO-15-SIM	1,1,1-Trichloroethane	71-55-6	380	2200	380	A	0.016	0.055	No	No
TO-15-SIM	1,1,2,2-Tetrachloroethane	79-34-5	0.21	0.21	0.21	B	0.021	0.069	No	No
TO-15-SIM	1,1,2-Trichloroethane	79-00-5	0.088	0.77	0.088	A	0.0055	0.055	No	No
TO-15-SIM	1,1-Dichloroethane	75-34-3	7.7	7.7	7.7	B	0.010	0.040	No	No
TO-15-SIM	1,1-Dichloroethene	75-35-4	7.9	88	7.9	A	0.0099	0.020	No	No
TO-15-SIM	1,2,4-Trichlorobenzene	120-82-1	0.88	0.88	0.88	B	0.037	0.15	No	No
TO-15	1,2,4-Trimethylbenzene	95-63-6	3.1	26	3.1	A	1.2	4.9	No	Yes
TO-15-SIM	Ethylene dibromide	106-93-4	0.02	0.02	0.02	B	0.019	0.077	No	Yes
TO-15-SIM	1,2-Dichlorobenzene	95-50-1	88	88	88	B	0.0060	0.060	No	No
TO-15-SIM	1,2-Dichloroethane	107-06-2	0.47	0.47	0.47	B	0.012	0.040	No	No
TO-15-SIM	1,2-Dichloropropane	78-87-5	1.2	1.8	1.2	A	0.0046	0.046	No	No
TO-15-SIM	1,3-Dichlorobenzene	541-73-1	88	--	88	A	0.0060	0.060	No	No
TO-15	1,3,5-Trimethylbenzene	108-67-8	--	26	26	B	1.2	4.9	No	No
TO-15-SIM	1,4-Dichlorobenzene	106-46-7	1.1	1.1	1.1	B	0.0060	0.060	No	No
TO-15	2-Butanone (MEK)	78-93-3	2200	2200	2200	B	0.52	2.9	No	No
TO-15	2-Hexanone	591-78-6	13	13	13	B	1.0	4.1	No	No
TO-15	4-Methyl-2-pentanone (MIBK)	108-10-1	1300	--	1300	A	2.0	4.1	No	No
TO-15	Acetone	67-64-1	31000	14000	14000	B	2.4	4.8	No	No
TO-15-SIM	Benzene	71-43-2	1.6	1.6	1.6	B	0.032	0.16	No	No
TO-15-SIM	Bromodichloromethane	75-27-4	0.33	0.33	0.33	B	0.017	0.067	No	No
TO-15	Bromoform	75-25-2	11	11	11	B	2.6	10	No	No
TO-15	Bromomethane	74-83-9	2.2	2.2	2.2	B	3.9	7.8	Yes	Yes
TO-15	Carbon disulfide	75-15-0	310	310	310	B	0.78	3.1	No	No
TO-15-SIM	Carbon tetrachloride	56-23-5	2	2	2	B	0.031	0.063	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the PSL

PSL Sources:

A = 1/10th ADEC Target Levels for Indoor Air – Commercial (ADEC Novemeber 2017)

B = EPA RSLs [May 2018] for Composite Worker Air [TCR=1E-06, HQ = 0.1]

Acronyms:

µg/m^3 = micrgram(s) per cubic meter

ADEC = Alaska Department of Environmental Conservation

CAS = Chemical Abstracts Service

EPA = United States Environmental Protection Agency

HQ = hazard quotient

LOD = limit of detection

LOQ = limit of quantitation

-- = not applicable/criteria not established

PSL = project screening level

RI/FS - remedial investigation/feasibility study

TCR = target risk for carcinogens

Table 15-6 Indoor Air PSLs for SS035

Method	Analyte	CAS	1/10th ADEC Target Levels for Indoor Air – Commercial (µg/m^3)	EPA Composite Woker RSL	Indoor Air PSL	Indoor Air PSL Source	LOD (µg/m^3)	LOQ (µg/m^3)	LOD Exceeds Indoor Air PSL?	LOQ Exceeds Indoor Air PSL?
TO-15-SIM	Chlorobenzene	108-90-7	22	22	22	B	0.0046	0.046	No	No
TO-15-SIM	Chloroethane	75-00-3	4000	4400	4000	B	0.013	0.026	No	No
TO-15-SIM	Chloroform	67-66-3	0.53	0.53	0.53	B	0.015	0.049	No	No
TO-15-SIM	Chloromethane	74-87-3	39	39	39	B	0.010	0.041	No	No
TO-15-SIM	cis-1,2-Dichloroethene	156-59-2	--	--	--	--	0.012	0.040	--	--
TO-15	cis-1,3-Dichloropropene	10061-01-5	3.1	--	3.1	A	0.79	4.5	No	Yes
TO-15	Dibromochloromethane	124-48-1	--	--	--	--	4.3	8.5	--	--
TO-15-SIM	Dichlorodifluoromethane	75-71-8	44	44	44	B	0.0049	0.049	No	No
TO-15-SIM	Ethylbenzene	100-41-4	4.9	4.9	4.9	B	0.013	0.043	No	No
TO-15	Hexachlorobutadiene	87-68-3	0.56	0.56	0.56	B	2.7	11	Yes	Yes
TO-15-SIM	Methyl tert-butyl ether (MTBE)	1634-04-4	47	47	47	B	0.018	0.036	No	No
TO-15-SIM	Methylene chloride	75-09-2	100	260	100	A	0.017	0.17	No	No
TO-15-SIM	m-Xylene & p-Xylene	136777-61-2	44	44	44	B	0.022	0.043	No	No
TO-15-SIM	Naphthalene	91-20-3	0.36	0.36	0.36	B	0.052	0.26	No	No
TO-15-SIM	o-Xylene	95-47-6	44	44	44	B	0.013	0.043	No	No
TO-15-SIM	Styrene	100-42-5	440	440	440	B	0.011	0.21	No	No
TO-15-SIM	Tetrachloroethene	127-18-4	4.1	47	4.1	A	0.034	0.068	No	No
TO-15-SIM	Toluene	108-88-3	750	2200	750	A	0.011	0.075	No	No
TO-15-SIM	trans-1,2-Dichloroethene	156-60-5	79	--	79	A	0.020	0.040	No	No
TO-15-SIM	trans-1,3-Dichloropropene	10061-02-6	3.1	--	3.1	A	0.045	0.23	No	No
TO-15-SIM	Trichloroethene	79-01-6	0.22	0.88	0.22	A	0.0054	0.054	No	No
TO-15-SIM	Vinyl chloride	75-01-4	2.8	2.8	2.8	B	0.0077	0.013	No	No

Notes:

Gray shading = indicates LOD/LOQ values are greater than the PSL

PSL Sources:

A = 1/10th ADEC Target Levels for Indoor Air – Commercial (ADEC Novemeber 2017)

B = EPA RSLs [May 2018] for Composite Worker Air [TCR=1E-06, HQ = 0.1]

Acronyms:

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LOD = limit of detection

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PSL = project screening level

RI/FS - remedial investigation/feasibility study

TCR = target risk for carcinogens

Worksheet #17 – Sampling Design and Rationale

This worksheet presents the investigation approach and sampling design developed for SS035. The rationale and sampling design discussed here are applied to Worksheet #18 to select sampling locations and analyses. A project schedule and a description of each investigation activity, including general pre- and post-investigation activities, are presented in Worksheets #14/16.

The objectives of the RI are as follows:

- **Delineate the extent of soil contamination.** This will include collecting samples from surface (0 to 2 feet bgs) and subsurface soil (2.5 to 10 feet bgs) to fill data daps identified during review of historical site data. Source areas, historical site activities, and site access also guide proposed sample locations and sample depths.
- **Delineate the extent of sediment contamination within GSP.** This will include drilling borings to collect sediment samples (0 to 10 feet bgs) within GSP. Sediment sampling will be conducted during the third phase of the investigation. Sediment locations were selected to fill data gaps based on historic data above PSLs.
- **Delineate the nature and extent of groundwater contamination.** This will include drilling, installing, and sampling monitoring wells to fill data gaps. Groundwater samples will also be collected from downgradient existing monitoring wells. Step-out monitoring wells may be required if groundwater contamination is observed and the extent is not defined by initial monitoring wells. Synoptic depth-to-groundwater measurements and aquifer testing will help refine the CSM.
- **Characterize the nature of surface water contamination within GSP.** This will include collection of two rounds of surface water from GSP at up to 11 locations around the pond. The pond receives input from multiple locations, including Garrison Slough, and discharges to Garrison Slough.
- **Evaluate the potential for VI to impact indoor air.** Based on a review of existing site data and features, the VI pathway is potentially complete at Buildings 3228, 3460, and 3462. VI investigations performed at those three buildings will include building surveys; two rounds of indoor air, outdoor air, and subslab soil vapor sampling; and indoor to subslab differential pressure monitoring. Based on the results of the first sampling round, a follow-up investigation will be performed before the second round to determine if any indoor air detections are because of VI or indoor background sources.
- **Collect a sufficient data to support a risk assessment.** Soil, sediment, groundwater, surface water, indoor air, and subslab soil vapor data will be used to support an HHRA and ERA.
- **Collect additional data to support a feasibility study.** This will include performing short-term pump tests to evaluate aquifer properties and analyzing soil samples for various geotechnical parameters (i.e., fraction of organic carbon, bulk density, particle size, and moisture content). These data will support the evaluation of remedial and response action alternatives in the FS report.

17.1 SS035 RI/FS Sampling Plan

The general logic and objectives presented above, as well as previous investigation results, have been used to develop the scope of work presented below. Figures 17-1 through 17-2C show the locations of proposed new soil and sediment locations at the site, Figure 17-3 shows the locations of the proposed new permanent and temporary well locations at the site, Figure 17-4 shows the locations of proposed surface water sampling locations, and Figures 17-5A through 17-5C show the locations of proposed

indoor air and subslab soil vapor sampling locations in Buildings 3228, 3460, and 3462. Figures are located at the end of this worksheet.

Table 18-1, located in Worksheet #18, presents the samples to be collected, analytes, and rationale. Sampling activities will be completed in accordance with the ADEC *Final Field Sampling Guidance* (2017b).

Sample locations will be sited using GPS or the swing-tie method, as described in SOP-14. If it is not possible to collect a sample at a proposed location for any reason, a new location will be selected as close to the proposed location as possible. If a sample location must be moved more than 25 feet, approval from the USAF will be obtained before drilling commences. The USAF will provide any significant changes to the regulatory agencies for review.

Before intrusive sampling activities, like drilling, utility locates and clearance will be performed in accordance with SOP-03 to identify potential underground hazards. If underground utilities or any other subsurface obstructions/features are located within a 5-foot radius around each designated boring/well location, the location will be moved. Drilling or other invasive activities will be conducted after utility clearance has been completed.

The sampling event will be conducted in five phases, as described below.

17.2 Phase 1 Soil, Surface Water, and Groundwater Sampling

17.2.1 Surface Soil Samples: SS035-SS01 to SS035-SS026

Twenty-six shallow primary soil samples (SS035-SS01 through SS035-SS26) will be collected to 2 feet bgs using a direct-push drill rig (SOP-05) or hand auger (SOP-07). Five discrete shallow borings (SS035-SS22 to SS035-SS26) will be completed. Twenty-one shallow soil samples will be collected from the same borings as subsurface soil borings (SS035-SS01 through SS035-SS21); see Section 17.2.2. Proposed surface soil sample locations are shown as white squares on Figure 17-1 and Figures 17-2A, -2B and -2C. Sample locations were selected to collect data adjacent to historical sample locations with concentrations detected above PSLs and to determine the absence or presence of COCs in areas that have not been previously sampled. Samples will be analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAHs, PCBs, dioxins, pesticides, metals, and PFAS. Three samples will also be analyzed for pH to support the ERA.

17.2.2 Subsurface Soil Borings: SS035-SB01 through SS035-SB29

Twenty-nine soil borings (SS035-SB01 through SS035-SB29) will be drilled to approximately 10 feet bgs (or the water table) using a direct-push drill rig (SOP-05) or hand auger to refusal (SOP-07), if drill rig access is limited (such as SS035-SB2). Soil will be collected continuously in 5-foot cores from each boring from the surface to the total depth of the boring. Proposed subsurface soil sample locations are shown as black circles on Figure 17-1 and Figures 17-2A, -2B and -2C. Sample locations were selected to collect data adjacent to historical sample locations with concentrations detected above PSLs and to determine the absence or presence of COCs in areas that have not been previously sampled.

A total of 64 primary subsurface soil samples will be collected from 29 soil borings, 2 from each boring at various depths from 2 to a maximum depth of 10 feet bgs or the water table, and an additional interval at 6 select borings to further define vertical extent. The exact soil sample intervals will be selected based on field observations (e.g., depth to water table, observed contamination, PID readings). Samples will be analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAHs, pesticides, PCBs, metals, dioxins, and PFAS. Specific

laboratory methods, bottle requirements, field preservation requirements, and sample volumes are provided in Worksheet #19. QA/QC samples will be collected as specified in Worksheet #20.

Soil cores will be examined for evidence of hydrocarbons (e.g., staining or odor) and will be screened for organic vapors using a PID in accordance with SOP-04. Lithologic descriptions, observations of staining or odor, and the results of field screening with the PID will be recorded on borehole log forms in accordance with the procedures in SOP-06. Discrete soil samples will be collected using the methods described in SOP-07. Soil samples will be handled and shipped in accordance with SOPs-16 and 17. Fieldwork will be documented in accordance with SOP-01.

17.2.3 Groundwater Monitoring Well Installation: SS035-MW01 through SS035-MW04 and SS035-TW01 through SS035-TW09

17.2.3.1 Monitoring Well Installation

New permanent and temporary monitoring wells will be installed to (1) delineate the downgradient extent of COCs in groundwater and (2) determine if COCs in soil associated with SS035 have migrated to groundwater (Figure 17-3). Four of the new wells (SS035-MW01 through SS035-MW04) are permanent and will remain onsite following the RI, and nine of the wells (SS035-TW01 through SS035-TW09) will be decommissioned following the RI.

Two soil samples will be collected during installation of each monitoring well at anticipated depths of 2 to 4 feet bgs and 8 to 10 feet bgs and an additional interval at four select borings to further define vertical extent (total of 30 primary soil samples). Soil samples will be analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAHs, PCBs, pesticides, metals, PFAS, and geotechnical parameters. In addition, select soil samples will be collected and analyzed for geotechnical parameters (fraction of organic carbon, bulk density, particle size, and moisture content).

Monitoring wells will be installed as specified in SOP-08. Monitoring well casing and well screens will be constructed of Schedule 40 PVC, nominal 2-inch-diameter casing and screen. The standard screen slot size anticipated for newly installed wells is 20-slot (0.020-inch), unless field conditions indicate a smaller slot size (e.g., 10-slot) is warranted and approval of the CH2M PM has been obtained. Monitoring wells must use commercially manufactured, machine-slotted well screens. Well screens will be 10 feet in length at all wells. The placement of the top of each screen will be based on the hydrogeology at a particular location. If first groundwater detected is unconfined, the top of the well screen will be placed approximatley 2.5 feet above the water table to accomodate the anticipated fluctuations in the groundwater table such that the well screen is not entirely submerged during monitoring events. A No. 10-20 sand pack paired with a 20-slot screen is anticipated. However, if the finer-grained materials are encountered, either 20-40 sand with a 10-slot screen or 16-30 sand with a 20-slot screen may be used with approval of the CH2M PM. The filter pack will extend above the well screen by no less than 2 feet. A bentonite seal will be installed at least 2 feet thick on the top of the filter pack. The annular space above the bentonite seal will be filled with a bentonite slurry or coarse bentonite chips. If chips are used, they will be hydrated in 5-foot lifts. Permanent monitoring wells will be completed with aboveground monuments with protective bollards or flush mount surface completions. Temporary monitoring wells will be finished with a traffic-rated flush mount surface completion.

17.2.3.2 Monitoring Well Development

Newly installed monitoring wells will be developed no sooner than 24 hours after well installation, as detailed in SOP-09. A surge and purge method will be used to develop the entire vertical screen interval. A pump will be the preferred method of purging for well development, unless aquifer conditions are not conducive to purging with a pump and alternative purge methods are necessary. Development will

continue until water quality parameters stabilize within the specified criteria (SOP-09) with three consecutive readings or a minimum of 10 well casings have been removed from the well.

17.2.3.3 First Groundwater Sampling Event

After a minimum of 48 hours following monitoring well development and aquifer testing, groundwater samples will be collected from the four new permanent wells (SS035-MW01 to -MW04), nine new temporary monitoring wells (SS035-TMW01 through -TMW09), and ten existing monitoring wells (35M01, 35M02, 35M04, 35M05, 35M06, 35M08, 35M10, 35M12, 35M14, and 1211MW07) (Figure 17-3).

Groundwater samples will be collected using low-flow sampling methods in accordance with SOP-12. Field measurements will be collected during groundwater sampling and will include pH, conductivity, temperature, turbidity, dissolved oxygen, oxidation-reduction potential, and depth to groundwater in accordance with SOP-10 and SOP-11. Samples will be collected after the water level and water quality parameters have stabilized.

Groundwater samples will be analyzed for DRO, GRO, RRO, VOCs, EDB, 1,4-dioxane, SVOCs, PAHs, pesticides, PCBs, total metals, and PFAS. Specific laboratory methods, bottle requirements, field preservation requirements, and sample volumes are provided in Worksheet #19. QA/QC samples will be collected as specified in Worksheet #20. Sample handling will follow procedures listed in SOP-16 and SOP-17.

17.2.3.4 Estimating Aquifer Hydraulic Properties

Once the new wells have been developed, single well rising head tests, commonly referred to as slug tests, will be performed at eight new or existing wells one at a time to estimate aquifer properties (following groundwater sampling). Wells will be selected based on location to account for spatial variability.

As a starting point, a pressure transducer and digital data logger (In-Situ Mini-Troll or equivalent) will be placed in the well and synchronized to record the height of the water column above the pressure sensor. A backup manual depth to water measurement will also be collected using a handheld water level indicator. A slug (of known volume) will be inserted into the well and allowed to equilibrate until the water level has stabilized to static conditions. The slug will then be rapidly removed, making sure not to disturb the transducer cable. At the moment of slug removal, assigned time zero, the depth to water and the time will be measured and recorded by the pressure transducer until the water level returns to its initial depth. If practical depending on the well response, transducer readings will be supplemented with periodic manual water level measurements. Multiple tests will be conducted at each well to ensure sufficient data are collected for analysis and interpretation to estimate hydraulic conductivity. Details on slug testing procedures are provided in SOP-29.

In addition to estimating hydraulic conductivity through slug testing, soil geotechnical results (particle size distribution) collected as part of the investigation will be used to provide an independent estimate of formation characteristics such as porosity and hydraulic conductivity. Methods such as those described by Vukovic and Soro (1992) and Odong (2007) will be used.

Alternatively, short-term pump tests may be completed at eight wells to estimate aquifer properties and would consist of the following. As a starting point, wells will be pumped at the maximum rate of the pump that was used for development. Water level data during pumping and recovery phases of the test will be collected with a data-recording pressure transducer. As backup, water level measurements will also be collected at least every 5 minutes using a handheld water level indicator. As pumping is initiated, drawdown in the well will be measured at least every 10 seconds for the first 30 minutes followed by at least twice per minute for a minimum of 3 hours. After 3 hours, pumping will cease and water levels will

be measured in at least 30-second intervals until the water level has recovered to 90 percent of baseline measurement.

17.2.3.5 Depth-to-Groundwater Measurements

Once the new wells are installed, synoptic groundwater elevation measurements will be collected from all new temporary and permanent monitoring wells and 10 existing wells (Figure 17-3) to refine the local groundwater flow direction at the site. Groundwater elevation measurements will be collected in accordance with SOP-10. Depth to groundwater is anticipated to be approximately 10 feet bgs.

17.2.3.6 First Surface Water Sampling Event

Surface water samples will be collected from 11 locations (SS035-SW01 through SS035-SW11) within GSP, and one composite sample will be collected (Figure 17-4). Surface water will be sampled as specified in SOP-27. One surface water sample and required QC samples (Worksheet #20) will be collected from each location by either direct grab method for unpreserved samples or sample transfer device method for preserved samples. Sample handling procedures will follow SOP-16 and SOP-17. Field work will be documented in accordance with SOP-01. Discrete surface water samples will be analyzed for DRO, GRO, RRO, VOCs, EDB, 1,4-dioxane, SVOCs, PAHs, pesticides, PCBs, dissolved metals, and PFAS. The composite surface water sample will be analyzed for hardness to support the ERA.

17.3 Phase 2: Second Surface Water and Groundwater Sampling Event

A second surface water and groundwater sampling event will occur approximately 1 month after the first event. The same 11 surface water locations and 23 groundwater monitoring wells sampled in the first event will be sampled in the second event: the 4 new permanent wells (SS035-MW01 to –MW04), the 9 new temporary monitoring wells (SS035-TMW01 through -TMW09), and 10 existing monitoring wells (35M01, 35M02, 35M04, 35M05, 35M06, 35M08, 35M10, 35M12, 35M14, and 1211MW07). Depth-to-groundwater will be measured at the 23 wells before beginning sampling. Water samples will be analyzed for GRO, DRO, RRO, VOCs, EDB, 1,4-dioxane, SVOCs, PAHs, pesticides, PCBs, dissolved metals, and PFAS. A composite sample will also be collected from the surface water locations and analyzed for hardness.

17.4 Phase 3: First VI Sampling Event

VI investigations will be performed at three existing buildings at SS035 where the VI pathway is potentially complete. Building 3228 is located less than 100 feet from known VOC contamination in soil. Buildings 3460 and 3462 are located more than 100 feet from known VOC contamination, but the utilidor connecting to these buildings cuts through areas of known and potential VOC soil contamination, including an area where it is believed to intersect GSP. As such, the utilidor represents a potential preferential VI pathway from VOC sources to Buildings 3460 and 3462.

The objective of the VI investigations is to assess whether the VI pathway is complete and significant at the buildings of interest. The primary components of the VI investigation include:

1. Indoor air sampling
2. Subslab soil vapor sampling
3. Outdoor air sampling
4. Indoor air to subslab differential pressure monitoring

The VI investigation at Buildings 3228, 3460, and 3462 will include two sampling events, one in the winter and one in the fall or spring (depending on timing of approval of this RI/FS management plan). The following text outlines the VI investigation sampling procedures. The VI investigation will be conducted in accordance with ADEC *Vapor Intrusion Guidance for Contaminated Sites* (ADEC, 2017h) and SOP-21 through SOP-24.

17.4.1.1 Building Surveys

Building surveys at Buildings 3228, 3460, and 3462 will be performed before the first sampling event. A building survey will be completed at each building in accordance with SOP-21 and ADEC's Building Inventory Air Sampling Questionnaire (ADEC, 2017h; Appendix I). The pre-sampling building survey will be performed at buildings of interest to gather building characteristic information, identify potential vapor entry points, and identify potential indoor sources of VOCs, such as chemicals and cleaning products. Building survey information will be obtained by visual inspection and by holding discussions with the owners, tenants, or building managers. If interior source(s) of VOCs are found and removal is possible (not too large and permitted to be removed by building occupants), these items will be removed (preferably 48 hours) before indoor air and subslab soil vapor sampling. The condition of the foundations will be documented. The planned locations for indoor air and sub-slab soil vapor samples will be reviewed during the building surveys and revised as necessary. Any information that can be obtained by the property owner regarding the heating, ventilation, and air conditioning (HVAC) and air-handling system, and typical operating conditions will also be documented. Results of the building surveys will facilitate indoor/outdoor air sampling, subslab soil vapor sampling, and the evaluation of whether the VI pathway is complete and significant.

17.4.1.2 Indoor Air, Subslab Soil Vapor, and Outdoor Air Sampling

Each VI sampling event will include collection of indoor air, subslab soil vapor, and outdoor air samples in accordance with SOP-22 and SOP-23 and submittal for laboratory analysis following EPA Methods TO-15 and TO-15 SIM procedures. Indoor/outdoor air and subslab soil vapor samples will be collected using individually certified clean Summa canisters. For indoor and outdoor samples, canister vacuums will be checked after 20 hours to confirm that each canister vacuum has not reached zero. Canisters with a final vacuum of zero will not be analyzed.

The target analyte list for air samples (Tables 15-5 and 15-6) is limited to the volatile compounds detected (1) in soil above the most conservative ADEC 18 AAC 75 cleanup levels and (2) in groundwater above vapor intrusion screening levels. Note in Tables 15-5 and 15-6 that trichloroethene (TCE) is a target analyte for subslab soil vapor and indoor air. In accordance with EPA and ADEC guidance regarding TCE exposure (EPA, 2012; ADEC, 2017i), regulatory agencies will be notified immediately if TCE is detected in subslab soil vapor or indoor air above ADEC target levels for the commercial exposure scenario (ADEC, 2017h).

Indoor air samples will be collected in individually cerified 6-liter Summa canisters fitted with individually certified 24-hour flow controllers (SOP-22). The lowest occupied space in each building will be sampled; of the three buildings, only Building 3228 has a basement. The number of indoor air samples planned for each building is in accordance with ADEC's *Vapor Intrusion Guidance for Contaminated Sites* (2017h): one indoor air sample per approximately 1,000 square feet of floor space. Six indoor air samples are planned for the basement of Building 3228 (Figure 17-5A), 17 locations are planned for Building 3460 (Figure 17-5B), and 10 are planned for Building 3462 (Figure 17-5C). The sampling locations shown on the figures are tentative and may be revised during the building surveys, though the number of locations per building will remain as planned. Canisters for indoor air samples will be placed approximately 3 to 6 feet above ground surface (i.e., the approximate breathing zone), turned on, and left undisturbed for 24 hours. Indoor air samples will be collected under normal building operating conditions (HVAC operable). The canisters will be placed 3 to 4 feet above the floor if workers in the area are primarily seated and at 5 to

6 feet above the floor if workers in that area are primarily standing. Indoor and outdoor canisters will also be placed with a "Please Do Not Disturb" sign that provides information on the purpose of the sampling canister and a point of contact (SOP-22).

Subslab soil vapor samples will be collected at each indoor air sample location. Approval to install soil vapor probes will be procured from building managers before beginning probe installation. Subslab utilities—including electric lines, gas lines, and communication lines—will be identified by a private utility locator, before any intrusive activities are initiated for soil vapor probe installation (SOP-22). Cox-Colvin & Associates, Inc. Vapor Pins will be used for the probes. Subslab soil vapor samples will be collected using 1-liter canisters and 30-minute flow controllers in accordance with SOP-23. Soil vapor probe installation notes and sampling notes will be recorded in field forms and a field notebook. Following the first sampling event, the soil vapor probes will be capped and left in place for use during the second sampling event.

Two outdoor air samples will be collected—one will be located upwind of Buildings 3460 and 3462, the other will be placed upwind of Building 3228. Outdoor air samples will be collected using 6-liter Summa canisters fitted with 24-hour flow controllers (SOP-22) and will be collected concurrent with the indoor air samples. To the extent possible, outdoor air canisters will be positioned in an upwind location to identify the presence of potential outdoor VOC source(s).

Following the sampling period, the initial and final canister vacuums will be recorded for each sample. As described in SOP-25, the final pressure should be between -10 to -2 inches mercury (Hg). If it is 0 inch Hg, the sample will not be submitted and a new canister/flow controller will be redeployed. If it is between -2 and 0 inch Hg, the sample will be submited to the laboratory for analysis but the lab will ensure there is some residual negative pressure before analyzing the sample. Canisters will be shipped overnight to a DoD-certified laboratory (Air Technologies, Inc.) for analysis per EPA Method TO-15 and TO-15 SIM. The locations of subslab soil vapor, indoor air, and outdoor air sampling locations will be recorded using swing-tie measurements.

17.4.1.3 Differential Pressure Monitoring

Concurrent with sampling, additional subslab soil vapor probes will be installed in each building to measure the differential pressure between the primary building compartment and the subslab. Differential pressure will be measured in three locations at Building 3460, two locations at Building 3462, and one location in Building 3228 over at least the 24-hour period that samples are being collected. If possible, based on logistic coordination in each of the buildings, differential pressure will be monitored for up to 7 days around the sampling event.

Differential pressure will be measured using an Omniguard 4 differential pressure transducer/data logger. The differential pressure transducer will be connected to the soil vapor probe and the pressure differential between the indoor and subslab will be recorded by the electronic data logger at 5-minute intervals during the 24-hour sampling period.

17.5 Phase 4: VI HAPSITE Investigation

Following the first and before the second VI sampling event, HAPSITE real-time GC-MS investigations will be performed to assess if the detections are from an interior background source(s) at locations where compounds are detected above their respective screening levels in indoor air samples. If no compounds are detected at levels greater than a PSL, then a HAPSITE investigation will not be completed. Regardless of the results of the first sampling event, a second sampling event will be performed (see Phase 5, below).

If necessary and where possible, pressure cycling using a blower door will be used in conjunction with the HAPSITE in building compartments that are less than 20,000 cubic feet in volume to help assess if indoor air detections are being caused by interior sources or VI. HAPSITE and pressure cycling investigations will be performed in accordance with SOP-25.

The use of a HAPSITE portable GC-MS allows for the identification of interior sources in real time, such as those that may not have ingredients listed, those with an incomplete ingredients list, or those related to the activities occurring within a building. If no interior sources are identified, building compartments will be pressure cycled using a blower door, if possible. The intent of the pressure cycling method is to measure indoor air concentrations (using a HAPSITE) under known and uniform negative or positive pressure conditions. Two target negative and one positive differential pressure steps will be established (-5 Pascal, -10 Pascal, and +5 Pascal). The negative pressure steps simulate worst case VI conditions. Up to 2.5 air exchanges will be achieved during each step. Throughout each pressure step, the HAPSITE will be used to analyze indoor air samples at multiple locations in the building compartment to measure real time indoor air concentrations and identify vapor entry points.

17.6 Phase 5: Sediment Sampling, Step-out Sampling, and Second VI Sampling Event

17.6.1.1 Sediment Sampling

A total of 23 sediment borings (SS035-SD01 through SS035-SD23) will be drilled to 10 feet below the sediment surface to assess the lateral and vertical extent of contaminated sediment (Figures 17-1 through 17-2C). To advance borings to 10 feet below the sediment surface, it is anticipated that sediment sampling will be performed during the winter when GSP is frozen to allow access to the middle of the pond with a tracked direct-push drill rig (SOP-05). It is assumed that a direct-push rig will be needed to collect sediment samples to depth. However, depending on sediment recovery in the direct-push core barrel, alternate sediment sample methods may be used (SOP-26), as necessary. A handheld GPS will be used to establish the sediment sampling locations (SOP-14).

Two discrete sediment samples will be collected from each boring at various depths from 0 to 10 feet and additional intervals at select borings to further define vertical extent below the sediment surface (total of 52 primary sediment samples). Sediment samples will be analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAHs, pesticides, PCBs, dioxins, metals, and PFAS. Four surface sediment samples (0 to 0.5 feet bgs) will also be analyzed for TOC, and three sediment samples for pH to support the ERA. Hexavalent chromium will also be analyzed for in approximately 10 percent of the sediment samples.

Sample handling procedures will follow SOP-16 and SOP-17.

17.6.1.2 Step-out Soil Borings

If, following Phase 1, the extent of soil contamination has not been defined, additional soil borings may be installed and soil samples collected to delineate extent. Step-out borings will be sited between 20 and 45 feet beyond a boring with confirmed contamination. However, if the results from sample locations in Phase 1 are indicative of a potential release area, step-out borings will be proposed at shorter distances.

Data tables summarizing Phase 1 results and figures showing the locations of proposed step-out boring locations and a Field Change Form will be provided to the regulators before advancing the step-outs. Sample intervals and analyses will mirror those in Phase 1. Only analytical suites with analytes detected above PSLs in Phase 1 borings will be analyzed for in step-out boring samples.

17.6.1.3 Step-out Monitoring Wells

If COPCs are detected in groundwater at existing and new monitoring wells above respective PSLs, additional temporary or permanent monitoring wells will be installed to define the extent, as necessary. Monitoring well construction and sampling details will mirror those from Phase 1. Only analytical suites with analytes detected above PSLs in Phase 1 groundwater samples will be analyzed for in step-out monitoring well groundwater samples. Groundwater from existing nearby wells may also be sampled to aid in delineating groundwater contamination extent.

Data tables summarizing Phase 1 results and figures showing the locations of proposed step-out monitoring well locations and existing well sample locations and a Field Change Form will be provided to the regulators before drilling or sampling the wells.

17.6.1.4 Second VI Sampling Event

A second VI sampling event will occur to account for seasonal variability. The same subslab soil vapor, indoor air, and outdoor air will be sampled during the second VI sampling event, unless information gathered during the VI follow-up investigation suggest sample locations should be moved. Differential pressure will also be monitored at the same locations as the first VI sampling event. Soil vapor probes will be abandoned following the completion of second VI sampling event in accordance with SOP-24.

17.7 Change Management

Planning and field decisions may be affected by certain boundary conditions, access issues, analytical turnaround times, availability of field sampling equipment, and field conditions (weather and inaccessible areas). AFCEC will inform EPA and ADEC of any changes in field conditions (e.g., modification of investigation locations greater than 45 feet, discovery of previously unknown contaminant sources) that affect the sample collection procedures explained in this RI/FS management plan. EPA and ADEC will also be notified, as required, of any stop work order that creates an imminent and substantial endangerment to health and welfare of personnel on site or in the surrounding area or to the environment.

Other decisions will be addressed by the project team including the project manager, TM, and field team lead using professional judgment and logic, in consultation with the Eielson AFB restoration team lead. Using this approach, the project team will work quickly to modify field approaches to account for site-specific observations while ensuring that DQOs are still met.

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NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.
3. UST = underground storage tank

11-9
11-3B
11-2B
GARRISON SLOUGH
ST011
11-8
32251
UST
3227
3228
3226
GAC Treatment Building/PCB Excavation
Chinook Street
3435
3436
3437
3438
3439
35M13
Anomaly C
35M08
1989 Drum Removal
35M12
3460
3459
35M11
1211MW07
2003 Drum Removal
Central Avenue
35M02
35M04
Anomaly B
Likely Drill Rig Access to Garrison Slough Pond
35M10
35M01
Anomaly A
35M05
3462
35M09
GARRISON SLOUGH
35M06
35M14
Tenakee Street
34701
4105
Esri World Imagery Basemap

LEGEND

- Proposed Soil Boring Location
- Proposed Surface Soil Sample
- Proposed Sediment Sampling Location
- Soil Samples Collected from Permanent Monitoring Well
- Soil Samples Collected from Temporary Monitoring Well
- Monitoring Well
- Utilidor Alignment
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Anomaly Area [USAF (1992)]
- Geophysical Anomaly
- Multiple GPR Interpreted Drums
- Drum Removal Area
- ST011 Site Boundary
- Investigation Area
- GAC Treatment Building/PCB Excavation
- Building

0 75 150 300 Feet

N W E S

Date: 13 Aug 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\U\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure17-1_Soil_and_Sediment_Sampling_Locations.mxd

SOIL AND SEDIMENT SAMPLING LOCATIONS

Figure
17-1

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.

SS035-SS17/SB17
SS035-SD09
SS035-SD03
SS035-SS06/SB06
SS035-SS05/SB05
SS035-TMW07
35M02
SS035-SD02
35M04
SS035-SD01
SS035-SB29
SS035-SS15/SB15
SS035-SB28
Anomaly B
SS035-SS04/SB04
35M10
SS035-SS16/SB16
SS035-TMW06
SS035-SB27
35M01
SS035-SS03/SB03
SS035-SS02/SB02
SS035-TMW01
SS035-SS14/SB14
Anomaly A
SS035-SB22
35M05
35M09
SS035-SS01/SB01
35M06
35M14
Central Avenue

LEGEND

- Proposed Soil Boring Location
- Proposed Surface Soil Sample
- Proposed Sediment Sampling Location
- Soil Samples Collected from Temporary Monitoring Well
- Existing Monitoring Well

Soil Boring/Test Pit Sampling Location

- Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level

Surface Soil Sampling Location

- Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level

Sediment Sampling Location

- 100x Project Screening Level
- Utilidor Alignment
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- Anomaly Area [USAF (1992)]
- Geophysical Anomaly
- Investigation Area
- Building

Esri World Imagery Basemap

N W E S

0 35 70 140 210 Feet

SOUTHERN PORTION GARRISON SLOUGH POND
PROPOSED SOIL AND SEDIMENT SAMPLING LOCATIONS

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
17-2A

Date: 13 Aug 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\U\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure17-2A_Southern GSP Proposed Soil and Sediment Sampling Locations.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.

LEGEND

- Proposed Soil Boring Location
- Proposed Surface Soil Sample
- Proposed Sediment Sampling Location
- Soil Samples Collected from Permanent Monitoring Well
- Soil Samples Collected from Temporary Monitoring Well
- Existing Monitoring Well

Soil Boring/Test Pit Sampling Location
- Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level

Surface Soil Sampling Location
- Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level

Sediment Sampling Location
- 100x Project Screening Level
- Utilidor Alignment
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Drum Removal Area
- Area A and C Drum Removal Extent
- Anomaly Area [USAF (1992)]
- Geophysical Anomaly
- Investigation Area
- Building

Esri World Imagery Basemap

SS035-SD17
SS035-MW01
SS035-SS13/SB13
SS035-SD08
SS035-SS12/SB12
SS035-TMW05
35M13
SS035-SB26
SS035-SD11
SS035-SD16
SS035-SD07
Anomaly C
SS035-SS11/SB11
SS035-MW03
SS035-SD15
1989 Drum Removal Area
35M08
SS035-SD10
SS035-SS10/SB10
SS035-SB25
SS035-SS19/SB19
SS035-SB24
SS035-TMW04
SS035-SD14
35M12
SS035-SD06
SS035-SS09/SB09
SS035-MW08
Central Avenue
SS035-SS08/SB08
SS035-SS18/SB18
SS035-SD05
2003 Drum Removal Area
SS035-SD13
SS035-TMW03
SS035-SD04
SS035-TMW09
SS035-TMW02
SS035-MW02
SS035-SB23
SS035-SS07/SB07
SS035-SD12
SS035-SS06/SB06
SS035-SS17/SB17

N
W E
S

0 35 70 140 210 Feet

Date: 13 Aug 2018 Drawn by: AESPE.JO R:\ENBG\00_Proj\U\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure17-2B_Middle GSP Proposed Soil and Sediment Sampling Locations.mxd

MIDDLE PORTION GARRISON SLOUGH POND
PROPOSED SOIL AND SEDIMENT SAMPLING LOCATIONS

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
17-2B

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.

LEGEND

- Proposed Soil Boring Location
- Proposed Surface Soil Sample
- Proposed Sediment Sampling Location
- Soil Samples Collected from Permanent Monitoring Well
- Existing Monitoring Well

Soil Boring/Test Pit Sampling Location

- Below Project Screening Level
- 1x to 10x Project Screening Level
- 10x to 100x Project Screening Level
- 100x Project Screening Level

Sediment Sampling Location

- 10x to 100x Project Screening Level
- 100x Project Screening Level
- Utilidor Alignment
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Investigation Area
- GAC Treatment Building/PCB Excavation
- Building

Esri World Imagery Basemap

SS035-SD23
11-2B
11-8
SS035-SD20
SS035-MW04
3227
Central Avenue
SS035-SD19
SS035-SS26
SS035-SD22
SS035-SS25
SS035-SS21/SB21
3228
NB3/4
NS2
NB1
SS035-SS24
NB2
SS035-SD18
NS3/4
NB5
SS035-SD21
3226
GAC Treatment Building/
PCB Excavation
SS1
SS035-SS20/SB20
SS035-SS23
SS035-SS22

N
W
E
S

0 35 70 140 210
Feet

Date: 13 Aug 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\U\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure17-2C_Northern GSP Proposed Soil and Sediment Sampling Locations.mxd

NORTHERN PORTION GARRISON SLOUGH POND PROPOSED SOIL AND SEDIMENT SAMPLING LOCATIONS

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
17-2C

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.

LEGEND

- Proposed Permanent Monitoring Well
- Proposed Temporary Monitoring Well
- Existing Monitoring Well to be Sampled During RI
- Existing Monitoring Well
- Production Well
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- 1989 Drum Removal Area
- Investigation Area
- GAC Treatment Building/PCB Excavation
- Building

Esri World Imagery Basemap

N W E S

0 112.5 225 450 675 Feet

GROUNDWATER SAMPLING LOCATIONS

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
17-3

Date: 13 Aug 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\U\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure17-3_Groundwater_Sampling_Locations.mxd

NOTES:
1. Features digitized from Not-To-Scale elements.
2. Coordinate System: UTM Zone 6, WGS84, meters.

SS035-SW11
SS035-SW09
SS035-SW10
SS035-SW08
GAC Treatment Building/PCB Excavation
SS035-SW07
SW-08
SS035-SW06
SW-07
SW-04
1989 Drum Removal Area
SS035-SW04
SW-03
SS035-SW03
SW-06
SS035-SW05
SW-05
SW-02
SS035-SW02
SS035-SW01
SW-01

1190 3225 32251 3242 1206 3231 3229 3227 3228 3226 3243 3240 1207 1207 1212 1211 3245 9999 9999 3420 6209 3430 6214 3425 3435 3436 3437 3438 3439 3440 3441 3442 3446 3460 3459 3462

LEGEND
- Proposed Surface Water Sample
- 10x to 100x Project Screening Level
- 100x Project Screening Level
- Storm Sewer Open Drainage
- Groundwater Flow Direction
- Area A and C Drum Removal Extent
- 1989 Drum Removal Area
- Investigation Area
- GAC Treatment Building/PCB Excavation
- Building

Esri World Imagery Basemap

N W E S

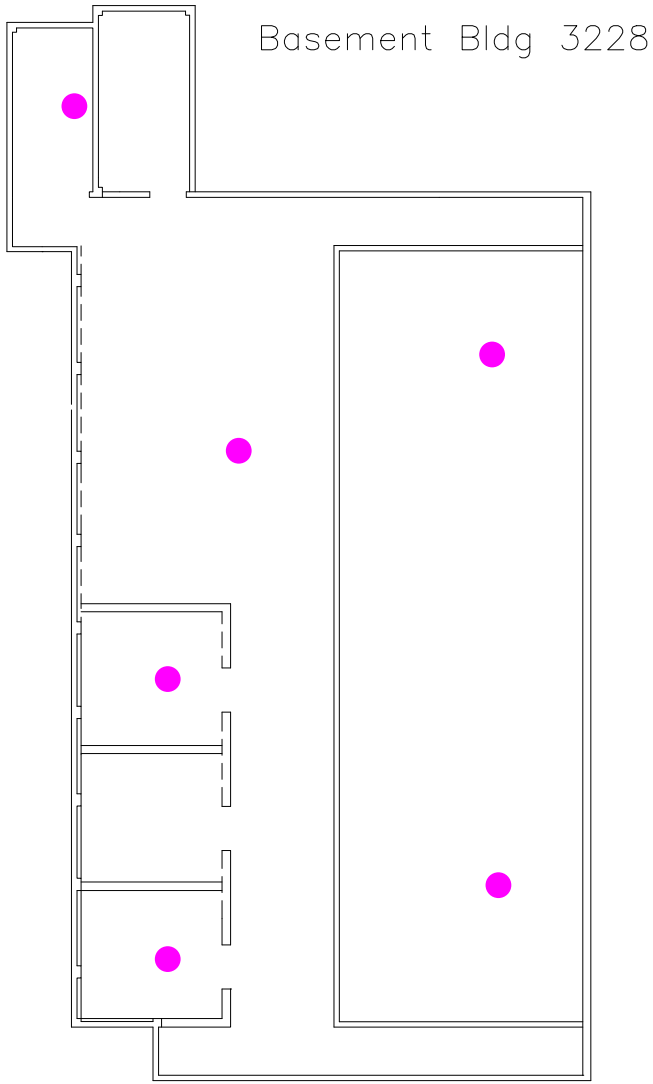
0 112.5 225 450 675 Feet

SURFACE WATER SAMPLING LOCATIONS

SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

Figure
17-4

Date: 21 Jun 2018 Drawn by: AESPEJO R:\ENBG\00_Proj\USACE\696199_Eielson_SS035\Maps\Report\RI_FS\Figure17-4_SurfaceWater_Sampling_Locations.mxd



Area = 6,970 ft^2

Potential Vapor Intrusion Sampling Locations

Figure 17-5A
Building 3228 Potential Vapor Intrusion Sampling Locations
SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

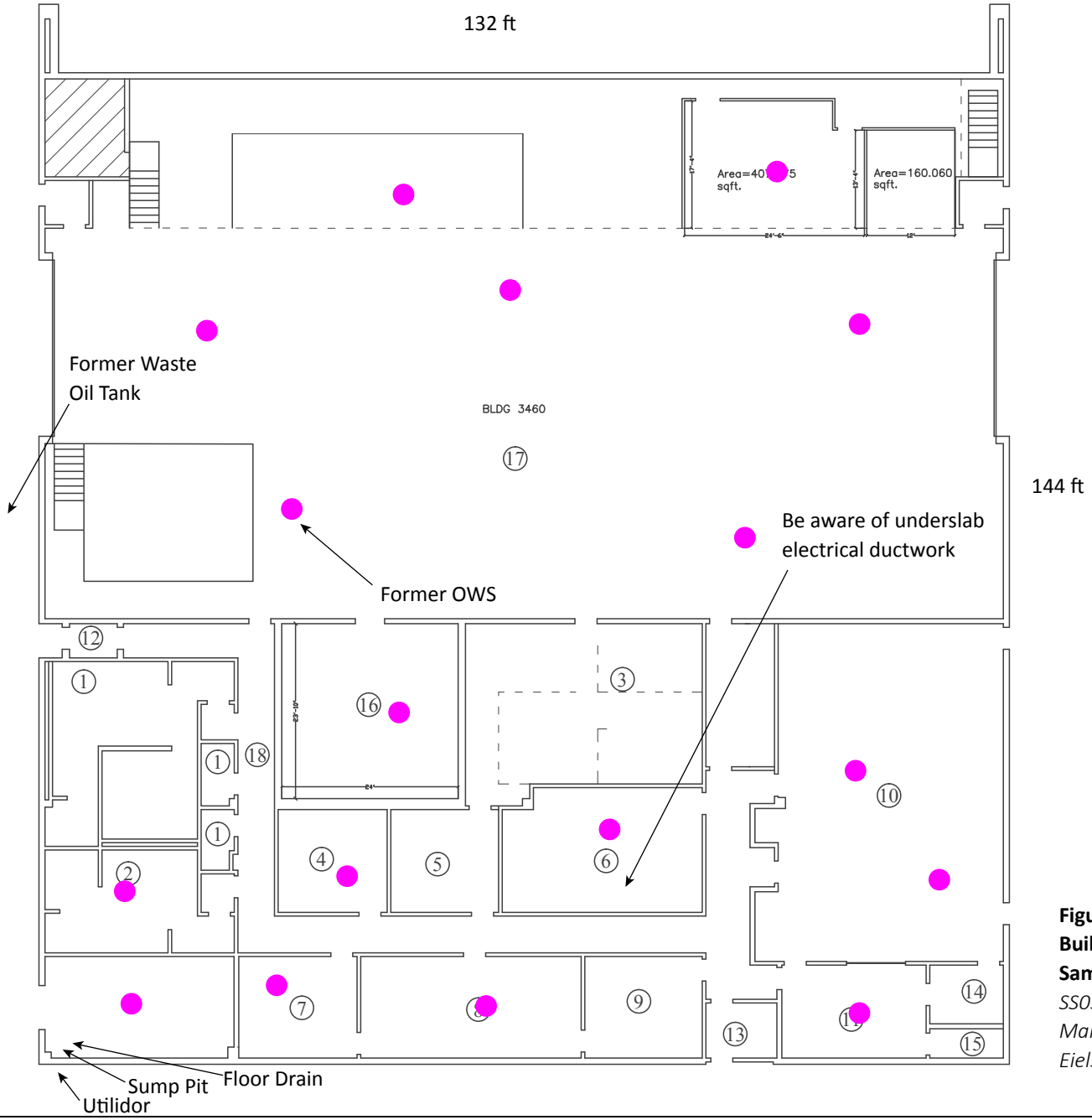


Figure 17-5B
Building 3460 Potential Vapor Intrusion Sampling Locations
SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

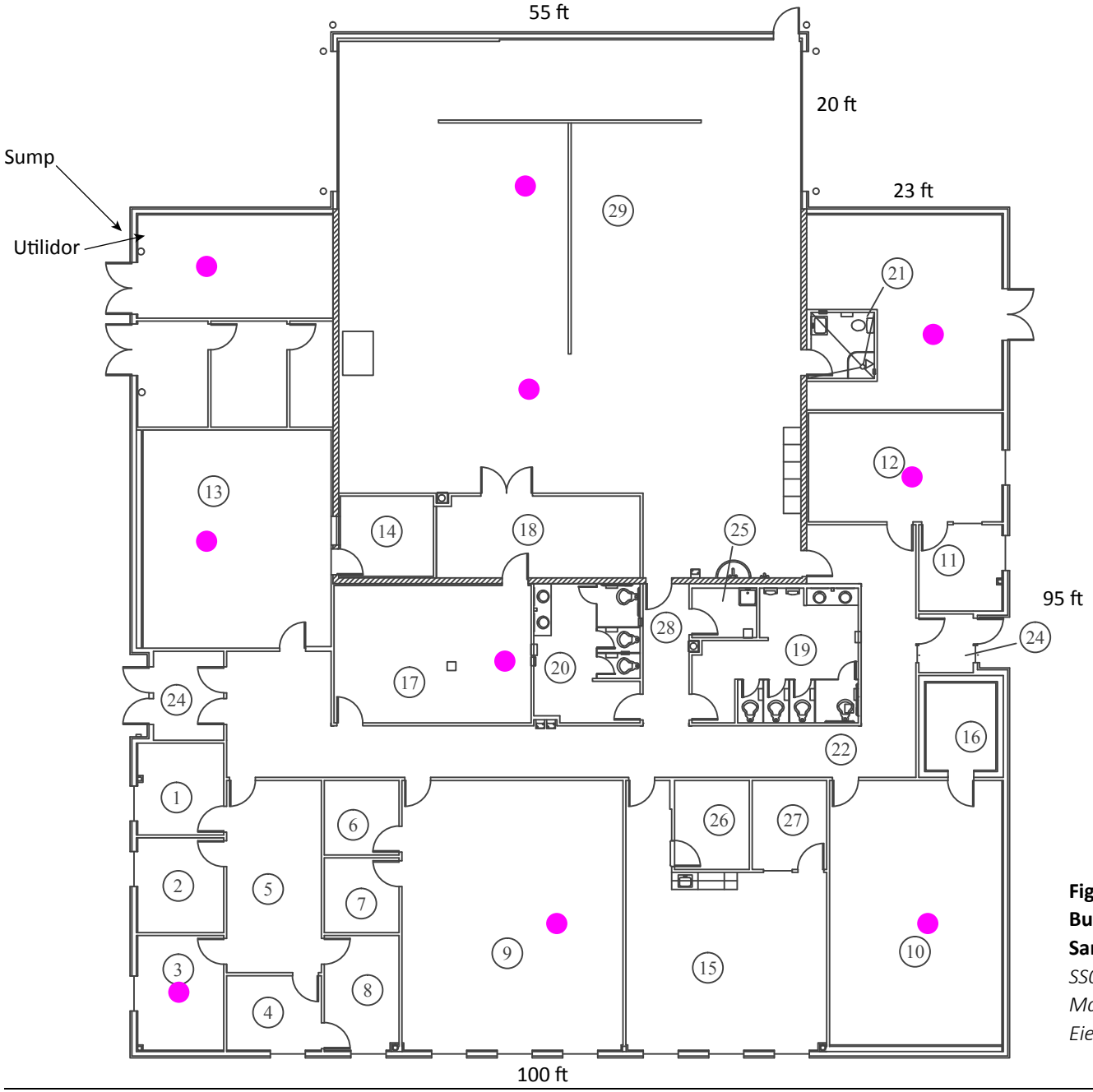


Figure 17-5C
Building 3462 Potential Vapor Intrusion Sampling Locations
SS035 Remedial Investigation/Feasibility Study Management Plan
Eielson Air Force Base, Alaska

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Worksheet #18 – Sampling Locations and Methods

Environmental samples will be collected using methods selected to ensure that DQOs are met. The CSM and problem definition Worksheet #10 and the DQOs established in Worksheet #11 were used to help determine the sampling approach and sampling locations. The general rationale for the proposed sampling locations is discussed in Worksheet #17. Figures 17-1, 17-2A-C, 17-3, 17-4, and 17-5A-C present the proposed soil, sediment, groundwater, surface water, indoor air and subslab soil vapor sampling locations for this RI.

Tables 18-1 thru 18-5 presents the proposed sample depths and analytical methods for planned soil and groundwater samples.

In addition to analyzing soil for low-level VOCs, soil VOCs will also be collected in methanol as required by ADEC. Upon receipt at the laboratory, all low-level and methanol-preserved VOCs will be analyzed. Field SOPs that outline the procedures to be followed for environmental sample collection are included in Appendix D, and specified in Worksheet #21. QA/QC samples will be collected as specified in Worksheet #20.

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Table 18-1 SS035 Remedial Investigation Proposed Soil Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO	DRO	RRO	VOCs (full suite)	VOCs (low level, full suite)	SVOCs	PAHs	Pesticides	PCBs	Dioxins	Metals[c]	PFAS	pH	Geotechnical Testing[d]	Rationale
					AK101	AK102	AK103	SW8260C	SW8260C - Low	SW8270D	SW8270D-SIM	SW8081A	SW8082A	SW8290A	SW6020A/ SW7471B	EPA 537 MOD		Various	
SS035-SS01	18Q3SS035-SS0101-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Southern edge of Anomaly A area. Delineate lateral extent in surface soil.
	18Q3SS035-SS0102-SO-0	Soil	FD	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-SS02	18Q3SS035-SS0201-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	Within Anomaly A area, confirm previous pesticide detections. Delineate lateral extent in surface soil.
SS035-SS03	18Q3SS035-SS0301-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	South of Anomaly B. Delineate lateral extent.
SS035-SS04	18Q3SS035-SS0401-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	East of Anomaly B. Delineate lateral extent.
SS035-SS05	18Q3SS035-SS0501-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	Eastern shoreline. Delineate lateral extent
SS035-SS06	18Q3SS035-SS0601-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Confirm detections at drum removal stockpile. Delineate lateral extent.
SS035-SS07	18Q3SS035-SS0701-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Eastern shoreline upgradient of drum removal area. Delineate lateral extent.
SS035-SS08	18Q3SS035-SS0801-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Eastern shoreline at stabilized shoreline. Collect from top of the bank.Delineate lateral extent
SS035-SS09	18Q3SS035-SS0901-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Confirm detects at drum removal stockpile area. Delineate lateral extent.
SS035-SS10	18Q3SS035-SS1001-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Eastern shoreline at southern end of Anomaly C. Collect from the top of the bank. Delineate lateral extent.
SS035-SS11	18Q3SS035-SS1101-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Along eastern edge of investigation area. Delineate lateral extent.
	18Q3SS035-SS1101-SO-1	Soil	FD	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-SS12	18Q3SS035-SS1201-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	East side of GSP, north of Anomaly C. Delineate lateral extent.
	18Q3SS035-SS1202-SO-0MS	Soil	MS	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-SS1202-SO-0SD	Soil	MSD	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-SS13	18Q3SS035-SS1301-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	East side of GSP northeast corner of site. Delineate lateral extent.
SS035-SS14	18Q3SS035-SS1401-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	North of ballfield near detected anomaly. Delineate Lateral extent.
SS035-SS15	18Q3SS035-SS1501-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	West side of GSP near previously identified subsurface anomalies. Delineate lateral extent.
SS035-SS16	18Q3SS035-SS1601-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	West side of GSP near previously identified subsurface anomalies. Delineate lateral extent.
SS035-SS17	18Q3SS035-SS1701-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Western shoreline of GSP. Delineate lateral extent.
SS035-SS18	18Q3SS035-SS1801-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Western shoreline of GSP. Delineate lateral extent.
SS035-SS19	18Q3SS035-SS1901-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Western shoreline of GSP. Delineate lateral extent.
SS035-SS20	18Q3SS035-SS201-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Southern side of GAC treatment building. Delineate lateral extent of PCBs.
SS035-SS21	18Q3SS035-SS2101-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	North side of GAC treatment building. Delineate lateral extent of PCBs.
SS035-SS22	18Q3SS035-SS2201-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Southern side of GAC treatment building. Delineate lateral extent of PCBs.
	18Q3SS035-SS2201-SO-1	Soil	FD	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-SS23	18Q3SS035-SS2301-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Southern side of GAC treatment building. Delineate lateral extent of PCBs.
	18Q3SS035-SS2302-SO-0MS	Soil	MS	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-SS2302-SO-0SD	Soil	MSD	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-SS24	18Q3SS035-SS2401-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	West side of GAC treatment building. Delineate lateral extent of PCBs.
SS035-SS25	18Q3SS035-SS2501-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	West side of GAC treatment building. Delineate lateral extent of PCBs.
SS035-SS26	18Q3SS035-SS2601-SO-0	Soil	N	0 to 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	North of GAC treatment building. Delineate lateral extent of PCBs.
SS035-SB01	18Q3SS035-SB0101-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Southern edge of Anomaly A area. Delineate lateral and vertical extent.
	18Q3SS035-SB0101-SO-1	Soil	FD	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-SB0102-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for soil, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-1 for list of metals

[d] Geotechnical Testing will include: fraction of organic carbon (D2974), bulk density (ASTM-D7263), particle size (ASTM-D6913 and D7928), and percent moisture (ASTM D2216)

Acronyms

bgs = below ground surface
DPT = direct push technology
DRO = diesel-range organics
GRO = gasoline-range organics
EB = equipment blank
FD = field duplicate
FRB = field reagent blank
HA = hand auger
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
VOC = volatile organic compound

Table 18-1 SS035 Remedial Investigation Proposed Soil Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO	DRO	RRO	VOCs (full suite)	VOCs (low level, full suite)	SVOCs	PAHs	Pesticides	PCBs	Dioxins	Metals[c]	PFAS	pH	Geotechnical Testing[d]	Rationale
					AK101	AK102	AK103	SW8260C	SW8260C - Low	SW8270D	SW8270D-SIM	SW8081A	SW8082A	SW8290A	SW6020A/ SW7471B	EPA 537 MOD		Various	
SS035-SB02	18Q3SS035-SB0201-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Within Anomaly A area. Delineate lateral and vertical extent.
	18Q3SS035-SB0202-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
	18Q3SS035-SB0202-SO-0MS	Soil	MS	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-SB0202-SO-0SD	Soil	MSD	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-SB03	18Q3SS035-SB0301-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	South of Anomaly B. Delineate lateral and vertical extent of VOCs and TPH.
	18Q3SS035-SB0302-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB04	18Q3SS035-SB0401-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	East of Anomaly B, no previous samples collected. Delineate lateral and vertical extent.
	18Q3SS035-SB0402-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-SB05	18Q3SS035-SB0501-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Eastern shoreline located betweeen drum removal excavations. Delineate lateral and vertical extent.
	18Q3SS035-SB0501-SO-1	Soil	FD	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-SB0502-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth to delineate vertical extent.
	18Q3SS035-SB0503-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB06	18Q3SS035-SB0601-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Drum removal stockpile. Delineate lateral and vertical extent.
	18Q3SS035-SB0602-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB07	18Q3SS035-SB0701-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Eastern shoreline, top of the bank. Delineate lateral and vertical extent.
	18Q3SS035-SB0702-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB08	18Q3SS035-SB0801-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Eastern stabilized shoreline, top of bank. Delineate lateral extent.
	18Q3SS035-SB0802-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB09	18Q3SS035-SB0901-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	At drum removal stockpile. Delineate lateral and vertical extent.
	18Q3SS035-SB0902-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB10	18Q3SS035-SB1001-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Eastern shoreline at southern end of Anomaly C, top of bank. Delineate lateral extent.
	18Q3SS035-SB1002-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB11	18Q3SS035-SB1101-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Eastern edge of investigation area. Delineate lateral and vertical extent.
	18Q3SS035-SB1101-SO-1	Soil	FD	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-SB1102-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB12	18Q3SS035-SB1201-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	East side of GSP, north of Anomaly C. Delineate lateral and vertical extent.
	18Q3SS035-SB1202-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
	18Q3SS035-SB1202-SO-0MS	Soil	MS	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-SB1202-SO-0SD	Soil	MSD	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-SB13	18Q3SS035-SB1301-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	East side of GSP northeast corner of site. Delineate lateral and vertical extent. No previous samples collected.
	18Q3SS035-SB1302-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB14	18Q3SS035-SB1401-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	West side of GSP near previously identified subsurface anomalies by Ballfield. Not placed within the anomalies to prevent potentially puncturing buried drums that may be present within the anomaly. Define lateral and vertical extent.
	18Q3SS035-SB1402-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.

Notes:

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SS035-SB15	18Q3SS035-SB1501-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	West side of GSP near previously identified subsurface anomalies. Not placed within the anomalies to prevent potentially puncturing buried drums that may be present within the anomaly. Define lateral and vertical extent.
	18Q3SS035-SB1502-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB16	18Q3SS035-SB1601-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	West side of GSP near previously identified subsurface anomalies. Not placed within the anomalies to prevent potentially puncturing buried drums that may be present within the anomaly. Define lateral and vertical extent.
	18Q3SS035-SB1601-SO-1	Soil	FD	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-SB1602-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB17	18Q3SS035-SB1701-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Western shoreline of GSP, delineate lateral and vertical extent. No previous sampling conducted.
	18Q3SS035-SB1702-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Collect from interval above the water table. Do not collect from below water table
SS035-SB18	18Q3SS035-SB1801-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Western shoreline of GSP, delineate lateral and vertical extent. No previous sampling conducted.
	18Q3SS035-SB1802-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB19	18Q3SS035-SB1901-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Western shoreline of GSP, delineate lateral and vertical extent. No previous sampling conducted.
	18Q3SS035-SB1902-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Collect from interval above the water table. Do not collect from below water table
SS035-SB20	18Q3SS035-SB2001-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	South side of GAC treatment building. Delineate lateral and vertical extent of PCBs.
	18Q3SS035-SB2002-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB21	18Q3SS035-SB2101-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	North side of GAC treatment building. Delineate lateral and vertical extent of PCBs.
	18Q3SS035-SB2102-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth to delineate vertical extent.
	18Q3SS035-SB2103-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB22	18Q3SS035-SB2201-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Southern portion of GSP adjacent to potential buried drums along utilidor. Delineate lateral and vertical extent.
	18Q3SS035-SB2201-SO-1	Soil	FD	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-SB2202-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Collect from interval above the water table. Do not collect from below water table
SS035-SB23	18Q2SS035-SB2301-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Middle portion of GSP adjacent to potential buried drums along utilidor. Delineate lateral and vertical extent.
	18Q2SS035-SB2302-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB24	18Q3SS035-SB2401-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Middle portion of GSP adjacent to potential buried drums along utilidor. Delineate lateral and vertical extent.
	18Q3SS035-SB2402-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB25	18Q3SS035-SB2501-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Middle portion of GSP adjacent to potential buried drums along utilidor. Delineate lateral and vertical extent.
	18Q3SS035-SB2502-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth to delineate vertical extent.
	18Q3SS035-SB2503-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB26	18Q3SS035-SB2601-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Middle portion GSP adjacent to potential buried drums along utilidor. Delineate lateral and vertical extent.
	18Q3SS035-SB2602-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth to delineate vertical extent.
	18Q3SS035-SB2603-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB27	18Q3SS035-SB2701-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Adjacent to Area A drum removal extent. Delineate lateral and vertical extent.
	18Q3SS035-SB2702-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth to delineate vertical extent.
	18Q3SS035-SB2703-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-SB28	18Q3SS035-SB2801-SO-0	Soil	N	6 to 8	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Withn Area A drum removal extent. Delineate vertical extent.
	18Q3SS035-SB2802-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Depth below previous excavation (6.5 feet bgs). Delineate vertical extent.

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for soil, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-1 for list of metals

[d] Geotechnical Testing will include: fraction of organic carbon (D2974), bulk density (ASTM-D7263), particle size (ASTM-D6913 and D7928), and percent moisture (ASTM D2216)

Acronyms

bgs = below ground surface
DPT = direct push technology
DRO = diesel-range organics
GRO = gasoline-range organics
EB = equipment blank
FD = field duplicate
FRB = field reagent blank
HA = hand auger
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
VOC = volatile organic compound

Table 18-1 SS035 Remedial Investigation Proposed Soil Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO	DRO	RRO	VOCs (full suite)	VOCs (low level, full suite)	SVOCs	PAHs	Pesticides	PCBs	Dioxins	Metals[c]	PFAS	pH	Geotechnical Testing[d]	Rationale
					AK101	AK102	AK103	SW8260C	SW8260C - Low	SW8270D	SW8270D-SIM	SW8081A	SW8082A	SW8290A	SW6020A/ SW7471B	EPA 537 MOD		Various	
SS035-SB29	18Q3SS035-SB2901-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent of pesticides at highest concentration detected in soil.
	18Q3SS035-SB2902-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth to delineate vertical extent.
	18Q3SS035-SB2903-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-TMW01	18Q3SS035-TMW0101-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Highest TPH soil gas mass detected, upgradient west of Central Avenue. Delineate lateral and vertical extent.
	18Q3SS035-TMW0101-SO-1	Soil	FD	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-TMW0102-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth to delineate vertical extent.
	18Q3SS035-TMW0103-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-TMW02	18Q3SS035-TMW0201-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Upgradient, west of Central Avenue. Delineate lateral and vertical extent.
	18Q3SS035-TMW0202-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
	18Q3SS035-TMW0202-SO-0MS	Soil	MS	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-TMW0202-SO-0SD	Soil	MSD	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-TMW03	18Q3SS035-TMW0301-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Southern portion of drum removal area along eastern shoreline. Collect from the top of the bank. Delineate lateral and vertical extent.
	18Q3SS035-TMW0302-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-TMW04	18Q3SS035-TMW0401-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Northern portion of drum removal area along eastern shoreline. Collect from the top of the bank. Delineate lateral and vertical extent.
	18Q3SS035-TMW0402-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Collect from interval directly above groundwater interface
SS035-TMW05	18Q3SS035-TMW0501-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Downgradient of 1989 drum removal area. Delineate lateral and vertical extent.
	18Q3SS035-TMW0501-SO-1	Soil	FD	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-TMW0502-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-TMW06	18Q3SS035-TMW0601-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Highest soil gas VOC mass detected. Delineate lateral and vertical extent.
	18Q3SS035-TMW0602-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth to delineate vertical extent.
	18Q3SS035-TMW0602-SO-1	Soil	FD	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-TMW0603-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-TMW07	18Q3SS035-TMW0701-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Western edge of GSP. Delineate lateral and vertical extent.
	18Q3SS035-TMW0702-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-TMW08	18Q3SS035-TMW0801-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Western edge of GSP. Delineate lateral and vertical extent.
	18Q3SS035-TMW0802-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-TMW09	18Q3SS035-TMW0901-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Downgradient along western investigation area boundary. Delineate lateral and vertical extent.
	18Q3SS035-TMW0902-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth to delineate vertical extent.
	18Q3SS035-TMW0903-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-MW01	18Q3SS035-MW0101-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Upgradient of WTP. Delineate lateral and vertical extent.
	18Q3SS035-MW0101-SO-1	Soil	FD	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-MW0102-SO-0	Soil	N	4 to 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Third sample depth
	18Q3SS035-MW0103-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for soil, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-1 for list of metals

[d] Geotechnical Testing will include: fraction of organic carbon (D2974), bulk density (ASTM-D7263), particle size (ASTM-D6913 and D7928), and percent moisture (ASTM D2216)

Acronyms

bgs = below ground surface
DPT = direct push technology
DRO = diesel-range organics
GRO = gasoline-range organics
EB = equipment blank
FD = field duplicate
FRB = field reagent blank
HA = hand auger
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
VOC = volatile organic compound

Table 18-1 SS035 Remedial Investigation Proposed Soil Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO	DRO	RRO	VOCs (full suite)	VOCs (low level, full suite)	SVOCs	PAHs	Pesticides	PCBs	Dioxins	Metals[c]	PFAS	pH	Geotechnical Testing[d]	Rationale
					AK101	AK102	AK103	SW8260C	SW8260C - Low	SW8270D	SW8270D-SIM	SW8081A	SW8082A	SW8290A	SW6020A/ SW7471B	EPA 537 MOD		Various	
SS035-MW02	18Q3SS035-MW0201-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	West of GSP. Delineate lateral and vertical extent.
	18Q3SS035-MW0202-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
	18Q3SS035-MW0202-SO-0MS	Soil	MS	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	18Q3SS035-MW0202-SO-0SD	Soil	MSD	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
SS035-MW03	18Q3SS035-MW0301-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	West of GSP, north of drainage area. Delineate lateral and vertical extent.
	18Q3SS035-MW0302-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
SS035-MW04	18Q3SS035-MW0401-SO-0	Soil	N	2 to 4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	West of GSP in northwest corner of the site. Delinrate lateral and vertical extent.
	18Q3SS035-MW0402-SO-0	Soil	N	8 to 10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	Delineate vertical extent. Collect from interval above the water table. Do not collect from below water table.
Field QA/QC	18Q3SS035-SOTB01 through -SOTB15	Water	TB	N/A	15	0	0	15	15	0	0	0	0	0	0	0	0	0	TBs for soil sampling, estimated 15 days of shipments
	18Q3SS035-SOEB01 through -SOEB06	Water	EB	N/A	6	6	6	6	6	6	6	6	6	6	6	6	0	0	EBs for soil sampling, estimated at 20% of samples
	18Q3SS035-SOFB01 through -SOFB06	Water	FRB	N/A	0	0	0	0	0	0	0	0		0	0	6	0	0	FRBs for soil sampling, estimated at 20% of samples
Total Analyses					**165**	**150**	**150**	**165**	**165**	**150**	**150**	**150**	**150**	**150**	**150**	**156**	**3**	**26**	
Soil Analyses					120	120	120	120	120	120	120	120	120	120	120	120	3	26	
Soil FDs					12	12	12	12	12	12	12	12	12	12	12	12	0	0	
Soil QA (MS/MSD)					12	12	12	12	12	12	12	12	12	12	12	12	0	0	
Water QA (TB, EB, FRB)					21	6	6	21	21	6	6	6	6	6	6	12	0	0	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for soil, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-1 for list of metals

[d] Geotechnical Testing will include: fraction of organic carbon (D2974), bulk density (ASTM-D7263), particle size (ASTM-D6913 and D7928), and percent moisture (ASTM D2216)

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FD = field duplicate
FRB = field reagent blank
HA = hand auger
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
VOC = volatile organic compound

Table 18-2 SS035 Remedial Investigation Proposed Sediment Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO	DRO	RRO	VOCs (full suite)	VOCs (low level, full suite)	SVOCs	PAHs	Pesticides	PCBs	Dioxins	Metals[c]	Hexavalent Chromium	PFAS	pH	TOC	Rationale
					AK101	AK102	AK103	SW8260C	SW8260C - Low	SW8270D	SW8270D-SIM	SW8081A	SW8082A	SW8290A	SW6020A/SW7471B	SW7199	EPA 537 MOD			
SS035-SD01	19Q1SS035-SD0101-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Inlet to Garrison Slough. Delineate vertical and lateral extent.
	19Q1SS035-SD0101-SO-0MS	Sediment	MS	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Delineate vertical extent.
	19Q1SS035-SD0101-SO-0SD	Sediment	MSD	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	19Q1SS035-SD0101-SO-1	Sediment	FD	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD0103-SO-0	Sediment	N	5 to 7.5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Third sample depth to delineate vertical extent.
	19Q1SS035-SD0104-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD02	19Q1SS035-SD0201-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Drum removal area. Delineate vertical extent.
	19Q1SS035-SD0202-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD03	19Q1SS035-SD0300-SO-0	Sediment	N	0 to 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	Collect TOC to support ecological risk assessment.
	19Q1SS035-SD0300-SO-1	Sediment	FD	0 to 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
	19Q1SS035-SD0301-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	North of drum removal area. Delineate lateral extent.
	19Q1SS035-SD0302-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD04	19Q1SS035-SD0401-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Drum removal area. Delineate vertical extent.
	19Q1SS035-SD0402-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD05	19Q1SS035-SD0501-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Drum removal area. Delineate vertical extent
	19Q1SS035-SD0503-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD0503-SO-1	Sediment	FD	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD06	19Q1SS035-SD0601-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Drum removal area. Delineate vertical extent
	19Q1SS035-SD0602-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD07	19Q1SS035-SD0701-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	North of drum removal area near Anomaly C. Delineate vertical and lateral extent.
	19Q1SS035-SD0702-SO-0	Sediment	N	5 to 7.5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Third sample depth to delineate vertical extent.
	19Q1SS035-SD0703-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD08	19Q1SS035-SD0801-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Northeast of drum removal area. Delineate vertical extent.
	19Q1SS035-SD0802-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD09	19Q1SS035-SD0901-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Southern portion of GSP. Delineate vertical extent.
	19Q1SS035-SD0902-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD10	19Q1SS035-SD1001-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Middle portion of GSP. Delineate vertical extent.
	19Q1SS035-SD1002-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD11	19Q1SS035-SD1101-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Middle portion of GSP. Delineate vertical extent.
	19Q1SS035-SD1101-SO-1	Sediment	FD	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD1102-SO-0	Sediment	N	5 to 7.5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Third sample depth to delineate vertical extent.
	19Q1SS035-SD1103-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD12	19Q1SS035-SD1200-SO-0	Sediment	N	0 to 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0		1	Collect TOC to support ecological risk assessment.
	19Q1SS035-SD1201-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Western shoreline of middle portion of GSP. Delineate vertical extent
	19Q1SS035-SD1202-SO-0	Sediment	N	5 to 7.5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Third sample depth to delineate vertical extent.
	19Q1SS035-SD1203-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD1203-SO-0MS	Sediment	MS	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD1203-SO-0SD	Sediment	MSD	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD13	19Q1SS035-SD1301-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Western shoreline of middle portion of GSP. Delineate vertical and lateral extent
	19Q1SS035-SD1302-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SD01 for Sediment boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for Sediment, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-2 for list of metals

Acronyms

bgs = below ground surface
DRO = diesel-range organics
GRO = gasoline-range organics
EB = equipment blank
FD = field duplicate
FRB = field reagent blank
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
TOC = total organic carbon
VOC = volatile organic compounds

Table 18-2 SS035 Remedial Investigation Proposed Sediment Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO	DRO	RRO	VOCs (full suite)	VOCs (low level, full suite)	SVOCs	PAHs	Pesticides	PCBs	Dioxins	Metals[c]	Hexavalent Chromium	PFAS	pH	TOC	Rationale
					AK101	AK102	AK103	SW8260C	SW8260C - Low	SW8270D	SW8270D-SIM	SW8081A	SW8082A	SW8290A	SW6020A/SW7471B	SW7199	EPA 537 MOD			
SS035-SD14	19Q1SS035-SD1401-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Western shoreline of middle portion of GSP. Delineate vertical extent
	19Q1SS035-SD1402-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD15	19Q1SS035-SD1502-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Western shoreline of middle portion of GSP. Delineate vertical and lateral extent
	19Q1SS035-SD1502-SO-1	Sediment	FD	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
	19Q1SS035-SD1503-SO-0	Sediment	N	5 to 7.5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Third sample depth to delineate vertical extent.
	19Q1SS035-SD1504-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD16	19Q1SS035-SD1601-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Western shoreline of middle portion of GSP near inlet. Delineate vertical extent.
	19Q1SS035-SD1602-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD17	19Q1SS035-SD1701-SO-0	Sediment	N	0 to 0.5	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	Eastern shoreline of middle portion of GSP near drainage south of WTP. Delineate vertical and lateral extent and support ecological risk assessment.
	19Q1SS035-SD1702-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD1703-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD18	19Q1SS035-SD1801-SO-0	Sediment	N	0 to 0.5	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	Western shoreline of northern portion of GSP near inlet. Delineate vertical and lateral extent, and support ecological risk assessment.
	19Q1SS035-SD1802-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD1803-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD19	19Q1SS035-SD1901-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	West of WTP. Delineate vertical extent of PCBs.
	19Q1SS035-SD1902-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD20	19Q1SS035-SD2001-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	Northern portion of GSP. Delineate vertical extent.
	19Q1SS035-SD2002-SO-0	Sediment	N	5 to 7.5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD2003-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Third sample depth to delineate vertical extent.
SS035-SD21	19Q1SS035-SD2101-SO-0	Sediment	N	0 to 0.5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Near WTP. Delineate vertical and lateral extent of PCBs and support ecological risk assessment.
	19Q1SS035-SD2102-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD2102-SO-1	Sediment	FD	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	19Q1SS035-SD2103-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD22	18Q2SS035-SD2201-SO-0	Sediment	N	0 to 0.5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Near WTP. Delineate vertical and lateral extent of PCBs and support ecological risk assessment..
	18Q2SS035-SD2202-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	18Q2SS035-SD2203-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	18Q2SS035-SD2203-SO-0MS	Sediment	MS	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
	18Q2SS035-SD2203-SO-0SD	Sediment	MSD	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
SS035-SD23	19Q1SS035-SD2301-SO-0	Sediment	N	2.5 to 5	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	Outlet of GSP. Delineate vertical extent.
	19Q1SS035-SD2302-SO-0	Sediment	N	7.5 to 10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	
Field QA/QC	19Q1SS035-SDTB01 through -SDTB07	Water	TB	N/A	7			7	7	0	0	0	0	0	0	0	0	0	0	TBs for sediment sampling, estimated 7 days of shipments.
	19Q1SS035-SDEB01 through -SDEB03	Water	EB	N/A	3	3	3	3	3	3	3	3	3	3	3	1	3	0	0	EBs for sediment sampling, estimated at 20% of samples.
	18Q2SS035-SDFB01 through -SDFB02	Water	FRB	N/A	0	0	0	0	0	0	0	0	0		0	0	3	0	0	FRBs for sediment sampling, estimated at 20% of samples
Total Analyses					**77**	**70**	**70**	**77**	**77**	**70**	**70**	**70**	**70**	**70**	**70**	**9**	**73**	**3**	**5**	
Sediment Analyses					55	55	55	55	55	55	55	55	55	55	55	5	55	3	4	
Sediment FDs					6	6	6	6	6	6	6	6	6	6	6	1	6	0	1	
Sediment QA (MS/MSD)					6	6	6	6	6	6	6	6	6	6	6	2	6	0	0	
Water QA (TB, EB, FRB)					10	3	3	10	10	3	3	3	3	3	3	1	6	0	0	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SD01 for Sediment boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for Sediment, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-2 for list of metals

Acronyms

bgs = below ground surface
DRO = diesel-range organics
GRO = gasoline-range organics
EB = equipment blank
FD = field duplicate
FRB = field reagent blank
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
TOC = total organic carbon
VOC = volatile organic compounds

Table 18-3 SS035 Remedial Investigation Proposed Groundwater Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO	DRO	RRO	VOCs (full suite)	SVOCs	PAHs	EDB	1,4-Dioxane	Pesticides	PCBs	Metals[c]	PFAS	Rationale
					AK101	AK102	AK103	SW8260C	SW8270D	SW8270D-SIM	SW8011	SW8270D	SW8081A	SW8082A	SW6020A/ SW7470A	EPA 537 MOD	
35M01	18Q3SS035-35M0101-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Existing monitoirng well adjacent to drum removal excavation. Characterize current conditions.
	18Q3SS035-35M0101-GW-1	GW	FD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-35M0102-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-35M0102-GW-1	GW	FD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
35M02	18Q3SS035-35M0201-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Existing monitoirng well along eastern shoreline of GSP. Characterize current conditions.
	18Q3SS035-35M0202-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-35M0202-GW-0MS	GW	MS	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-35M0202-GW-0SD	GW	MSD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
35M04	18Q3SS035-35M0401-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Existing monitoirng well along eastern shoreline of GSP. Characterize current conditions.
	18Q3SS035-35M0402-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
35M05	18Q3SS035-35M0501-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Existing monitoirng well south of GSP. Characterize current conditions.
	18Q3SS035-35M0502-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
35M06	18Q3SS035-35M0601-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Existing monitoirng well south of GSP. Characterize current conditions.
	18Q3SS035-35M0602-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
35M08	18Q3SS035-35M0801-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-35M0802-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
35M10	18Q3SS035-35M1001-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Existing montioring well located northwest (downgradient) from Building 3462. Characterize current conditions.
	18Q3SS035-35M1002-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
35M12	18Q3SS035-35M1201-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Existing montioring well adjacent to Building 3460. Characterize current conditions.
	18Q3SS035-35M1202-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
35M14	18Q3SS035-35M1401-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Existing monitoing well upgradient of SS035. Characterize current conditions.
	18Q3SS035-35M1402-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-35M1402-GW-1	GW	FD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
1211MW07	18Q3SS035-1211MW0701-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Existing montiroing well on westside of GSP downgradient of GSP. Characterize current conditions.
	18Q3SS035-1211MW0702-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-TMW01	18Q3SS035-TMW0101-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Located where highest TPH soil gas mass detected. Delineate lateral extent
	18Q3SS035-TMW0101-GW-1	GW	FD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-TMW0102-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-TMW02	18Q3SS035-TMW0201-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Located upgradient, west of Central Ave. Delineate lateral extent.
	18Q3SS035-TMW0202-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-TMW0202-GW-0MS	GW	MS	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-TMW0202-GW-0SD	GW	MSD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-TMW03	18Q3SS035-TMW0301-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Located in southern portion of drum removal area along eastern shoreline. Delineate lateral extent.
	18Q3SS035-TMW0302-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-TMW04	18Q3SS035-TMW0401-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Upgradient of stabilization cap and buried drums. Delineate lateral extent.
	18Q3SS035-TMW0402-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for Soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for Soil, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-3 for list of metals

Acronyms

bgs = below ground surface
DRO = diesel-range organics
GRO = gasoline-range organics
EB = equipment blank
EDB = ethylene dibromide
FD = field duplicate
FRB = field reagent blank
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
VOC = volatile organic compounds

Table 18-3 SS035 Remedial Investigation Proposed Groundwater Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO	DRO	RRO	VOCs (full suite)	SVOCs	PAHs	EDB	1,4-Dioxane	Pesticides	PCBs	Metals[c]	PFAS	Rationale
					AK101	AK102	AK103	SW8260C	SW8270D	SW8270D-SIM	SW8011	SW8270D	SW8081A	SW8082A	SW6020A/ SW7470A	EPA 537 MOD	
SS035-TMW05	18Q3SS035-TMW0501-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Located downgradient of 1989 drum removal area. Delineate lateral extent.
	18Q3SS035-TMW0502-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-TMW0502-GW-1	GW	FD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-TMW06	18Q3SS035-TMW0601-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Located where highest soil gas VOC mass detected. Delineate lateral extent.
	18Q3SS035-TMW0602-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-TMW07	18Q3SS035-TMW0701-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Located along western edge of GSP. Delineate lateral extent.
	18Q3SS035-TMW0702-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-TMW08	18Q3SS035-TMW0801-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Located along western edge of GSP. Delineate lateral extent.
	18Q3SS035-TMW0802-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-TMW09	18Q3SS035-TMW0901-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Located downgradient along western investigation area boundary. Delineate lateral extent.
	18Q3SS035-TMW0902-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-MW01	18Q3SS035-MW0101-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	Upgradient of WTP. Delineate lateral extent.
	18Q3SS035-MW0101-1-GW-1	GW	FD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-MW0101-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-MW02	18Q3SS035-MW0201-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	West of GSP. Delineate lateral extent
	18Q3SS035-MW0201-GW-0MS	GW	MS	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-MW0201-GW-0SD	GW	MSD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-MW0202-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-MW03	18Q3SS035-MW0301-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	West of GSP, north of drainage area. Delineate lateral extent
	18Q3SS035-MW0302-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
SS035-MW04	18Q3SS035-MW0401-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	West of GSP in northwest corner of the site. Delineate lateral extent.
	18Q3SS035-MW0401-GW-0MS	GW	MS	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-MW0401-GW-0SD	GW	MSD	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
	18Q3SS035-MW0402-GW-0	GW	N	~ 10 to 20	1	1	1	1	1	1	1	1	1	1	1	1	
Field QA/QC	18Q3SS035-GWTB01 through -GWTB08	Water	TB	N/A	8	0	0	8	0	0	8	0	0	0	0	0	TBs for GW sampling, estimated 4 days of shipments per event
	18Q3SS035-GWEB01 through -GWEB03	Water	EB	N/A	2	2	2	2	2	2	2	2	2	2	2	2	EBs for GW sampling, estimated 1 per event
	18Q3SS035-GWFB01 through -GWFB003	Water	FRB	N/A	0	0	0	0	0	0	0	0	0	0	0	3	FRBs for GW sampling, estimated at 20% of samples
Total Analyses					**70**	**62**	**62**	**70**	**62**	**62**	**70**	**62**	**62**	**62**	**62**	**65**	
GW Analyses					47	47	47	47	47	47	47	47	47	47	47	47	
GW FDs (2 Events)					5	5	5	5	5	5	5	5	5	5	5	5	
GW QA (MS/MSD)					8	8	8	8	8	8	8	8	8	8	8	8	
Water QA (TB, EB, FRB)					10	2	2	10	2	2	10	2	2	2	2	5	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where

- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for Soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for Soil, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-3 for list of metals

Acronyms

bgs = below ground surface
DRO = diesel-range organics
GRO = gasoline-range organics
EB = equipment blank
EDB = ethylene dibromide
FD = field duplicate
FRB = field reagent blank
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
VOC = volatile organic compounds

Table 18-4 SS035 Remedial Investigation Proposed Surface Water Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO	DRO	RRO	VOCs (full suite)	SVOCs	PAHs	EDB	1,4-Dioxane	Pesticides	PCBs	Dissolved Metals[c]	PFAS	Hardness	Rationale
					AK101	AK102	AK103	SW8260C	SW8270D	SW8270D-SIM	SW8011	SW8270D	SW8081A	SW8082A	SW6020A/ SW7470A	EPA 537 MOD		
SS035-SW01	18Q3SS035-SW0101-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	Inlet from Garrison Slough. Characterize current conditions.
	18Q3SS035-SW0101-SW-1	SW	FD	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
	18Q3SS035-SW0102-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
	18Q3SS035-SW0102-SW-1	SW	FD	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SW02	18Q3SS035-SW0201-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	Eastern side of GSP betweeen drum removal areas. Characterize current conditions.
	18Q3SS035-SW0201-SW-0MS	SW	MS	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
	18Q3SS035-SW0201-SW-0SD	SW	MSD	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
	18Q3SS035-SW0202-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SW03	18Q3SS035-SW0301-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	Eastern side of GSP at drum removal area. Characterize current conditions.
	18Q3SS035-SW0302-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SW04	18Q3SS035-SW0401-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	Eastern side of GSP north of drum removal area. Delineate lateral extent
	18Q3SS035-SW0402-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SW05	18Q3SS035-SW0501-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	Western side of GSP, near previous sampling location. Characterize current conditions.
	18Q3SS035-SW0502-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SW06	18Q3SS035-SW0601-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	Western side of GSP at storm water drainage inlet. Characterize current conditions.
	18Q3SS035-SW0602-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
	18Q3SS035-SW0602-SW-1MS	SW	MS	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
	18Q3SS035-SW0602-SW-1MSD	SW	MSD	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SW07	18Q3SS035-SW0701-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	Eastern side of GSP at storm water drainage south of WTP. Characterize current conditions.
	18Q3SS035-SW0702-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SW08	18Q3SS035-SW0801-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	West of WTP at base of slope. Characterize current conditions.
	18Q3SS035-SW0802-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SW09	18Q3SS035-SW0901-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	West of WTP adjacent to drainage outlet. Characterize current conditions.
	18Q3SS035-SW0901-SW-1	SW	FD	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
	18Q3SS035-SW0902-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where

- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for SWil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for Soil, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-4 for list of metals

Acronyms

bgs = below ground surface
DRO = diesel-range organics
GRO = gasoline-range organics
EDB = ethylene dibromide
EB = equipment blank
FD = field duplicate
FRB = field reagent blank
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
VOC = volatile organic compounds

Table 18-4 SS035 Remedial Investigation Proposed Surface Water Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	GRO AK101	DRO AK102	RRO AK103	VOCs (full suite) SW8260C	SVOCs SW8270D	PAHs SW8270D-SIM	EDB SW8011	1,4-Dioxane SW8270D	Pesticides SW8081A	PCBs SW8082A	Dissolved Metals[c] SW6020A/ SW7470A	PFAS EPA 537 MOD	Hardness	Rationale
SS035-SW10	18Q3SS035-SW1001-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	Western side of GSP at north storm water drainage inlet. Characterize current conditions.
	18Q3SS035-SW1002-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SW11	18Q3SS035-SW1101-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	Outlet of GSP to Garrison Slough. Characterize current conditions.
	18Q3SS035-SW1102-SW-0	SW	N	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
	18Q3SS035-SW1102-SW-1	SW	FD	0	1	1	1	1	1	1	1	1	1	1	1	1	0	
SS035-SWCOMP	18Q3SS035-SWCOMP01-SW-0	SW	N	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Composite sample from 5 surface water locations, 1 per event to support ecological risk assessment.
	18Q3SS035-SWCOMP01-SW-1	SW	FD	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
	18Q3SS035-SWCOMP02-SW-0	SW	N	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Composite sample from 5 surface water locations, 1 per event to support ecological risk assessment.
	18Q3SS035-SWCOMP02-SW-1	SW	FD	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Field QA/QC	18Q3SS035-SWTB01 through -SWTB04	Water	TB	NA	4	0	0	4	0	0	4	0	0	0	0	0	0	TBs for SW sampling, estimated 4 days of shipments
	18Q3SS035-SWEB01 through -SWEB02	Water	EB	NA	2	2	2	2	2	2	2	2	2	2	2	2	0	EBs for SW sampling, estimate 1 per event
	18Q3SS035-SWFB01 through -SWFB02	Water	FRB	N/A	0	0	0	0	0	0	0	0	0		0	2	0	FRBs for SW sampling, estimated at 20% of samples
Total Analyses					**36**	**32**	**32**	**36**	**32**	**32**	**36**	**32**	**32**	**32**	**32**	**34**	**4**	
SW Analyses					22	22	22	22	22	22	22	22	22	22	22	22	2	
SW FDs					4	4	4	4	4	4	4	4	4	4	4	4	2	
SW QA (MS/MSD)					4	4	4	4	4	4	4	4	4	4	4	4	0	
Water QA (TB, EB, FRB)					6	2	2	6	2	2	6	2	2	2	2	4	0	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where

- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for SWil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SO for Soil, GW for groundwater, etc.
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs and 5 percent for MS/MSD, EBs, and TBs, based on site-specific sample quantities.

[c] See Table 15-4 for list of metals

Acronyms

bgs = below ground surface
DRO = diesel-range organics
GRO = gasoline-range organics
EDB = ethylene dibromide
EB = equipment blank
FD = field duplicate
FRB = field reagent blank
ID = identification
MS = matrix spike
MSD = matrix spike duplicate
N = normal sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per-and polyfluoroalkyl substances
QA = quality assurance
QC = quality control
RRO = residual-range organics
SVOC = semi-volatile organics
TB = trip blank
VOC = volatile organic compounds

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Table 18-5 SS035 Remedial Investigation Proposed Indoor Air and Soil Vapor Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	VOCs (full suite)	VOCs (full suite)	Rationale
					TO-15	TO-15 SIM	
Bldg. 3228	18Q3SS035-B332801-IA-0	IA	N	N/A		1	Collect samples to evaluate vapor intrusion risk
	18Q3SS035-B332801-IA-1	IA	FD	N/A		1	
	19Q1SS035-B332801-IA-0	IA	N	N/A		1	
	19Q1SS035-B332801-IA-1	IA	FD	N/A		1	
Bldg. 3228	18Q3SS035-B332802-IA-0	IA	N	N/A		1	
	19Q1SS035-B332802-IA-0	IA	N	N/A		1	
Bldg. 3228	18Q3SS035-B332803-IA-0	IA	N	N/A		1	
	19Q1SS035-B332803-IA-0	IA	N	N/A		1	
Bldg. 3228	18Q3SS035-B332804-IA-0	IA	N	N/A		1	
	19Q1SS035-B332804-IA-0	IA	N	N/A		1	
Bldg. 3228	18Q3SS035-B332805-IA-0	IA	N	N/A		1	
	19Q1SS035-B332805-IA-0	IA	N	N/A		1	
Bldg. 3228	18Q3SS035-B332806-IA-0	IA	N	N/A		1	
	19Q1SS035-B332806-IA-0	IA	N	N/A		1	
Bldg. 3228	18Q3SS035-B332801-SV-0	SV	N	N/A	1		Collocated with indoor air samples
	18Q3SS035-B332801-SV-1	SV	FD	N/A	1		
	19Q1SS035-B332801-SV-0	SV	N	N/A	1		
	19Q1SS035-B332801-SV-1	SV	FD	N/A	1		
Bldg. 3228	18Q3SS035-B332802-SV-0	SV	N	N/A	1		
	19Q1SS035-B332802-SV-0	SV	N	N/A	1		
Bldg. 3228	18Q3SS035-B332803-SV-0	SV	N	N/A	1		
	19Q1SS035-B332803-SV-0	SV	N	N/A	1		
Bldg. 3228	18Q3SS035-B332804-SV-0	SV	N	N/A	1		
	19Q1SS035-B332804-SV-0	SV	N	N/A	1		
Bldg. 3228	18Q3SS035-B332805-SV-0	SV	N	N/A	1		
	19Q1SS035-B332805-SV-0	SV	N	N/A	1		
Bldg. 3228	18Q3SS035-B332806-SV-0	SV	N	N/A	1		
	19Q1SS035-B332806-SV-0	SV	N	N/A	1		
Bldg. 3228	18Q3SS035-B332801-OA-0	OA	N	N/A		1	Assess potential impacts from outdoor sources.
	19Q1SS035-B332801-OA-0	OA	N	N/A		1	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where

- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SV for soil vapor, IA for indoor air, and OA for outdoor air
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs based on site-specific sample quantities.

Acronyms

bgs = below ground surface
FD = field duplicate
IA = indoor air
ID = identification
N = normal sample
N/A = not applicable
OA = outdoor air
QA = quality assurance
QC = quality control
SV = soil vapor
VOC = volatile organic compounds

Table 18-5 SS035 Remedial Investigation Proposed Indoor Air and Soil Vapor Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	VOCs (full suite)	VOCs (full suite)	Rationale
					TO-15	TO-15 SIM	
Bldg. 3462	18Q3SS035-B346201-IA-0	IA	N	N/A		1	Collect samples to evaluate vapor intrusion risk
	18Q3SS035-B346201-IA-1	IA	FD	N/A		1	
	19Q1SS035-B346201-IA-0	IA	N	N/A		1	
	19Q1SS035-B346201-IA-1	IA	FD	N/A		1	
Bldg. 3462	18Q3SS035-B346202-IA-0	IA	N	N/A		1	
	19Q1SS035-B346202-IA-0	IA	N	N/A		1	
Bldg. 3462	18Q3SS035-B346203-IA-0	IA	N	N/A		1	
	19Q1SS035-B346203-IA-0	IA	N	N/A		1	
Bldg. 3462	18Q3SS035-B346204-IA-0	IA	N	N/A		1	
	19Q1SS035-B346204-IA-0	IA	N	N/A		1	
Bldg. 3462	18Q3SS035-B346205-IA-0	IA	N	N/A		1	
	19Q1SS035-B346205-IA-0	IA	N	N/A		1	
Bldg. 3462	18Q3SS035-B346206-IA-0	IA	N	N/A		1	
	19Q1SS035-B346206-IA-0	IA	N	N/A		1	
Bldg. 3462	18Q3SS035-B346207-IA-0	IA	N	N/A		1	
	19Q1SS035-B346207-IA-0	IA	N	N/A		1	
Bldg. 3462	18Q3SS035-B346208-IA-0	IA	N	N/A		1	
	19Q1SS035-B346208-IA-0	IA	N	N/A		1	
Bldg. 3462	18Q3SS035-B346209-IA-0	IA	N	N/A		1	
	19Q1SS035-B346209-IA-0	IA	N	N/A		1	
Bldg. 3462	18Q3SS035-B346210-IA-0	IA	N	N/A		1	
	19Q1SS035-B346210-IA-0	IA	N	N/A		1	
Bldg. 3462	18Q3SS035-B346201-SV-0	SV	N	N/A	1		Collocated with indoor air samples
	18Q3SS035-B346201-SV-1	SV	FD	N/A	1		
	19Q1SS035-B346201-SV-0	SV	N	N/A	1		
	19Q1SS035-B346201-SV-1	SV	FD	N/A	1		
Bldg. 3462	18Q3SS035-B346202-SV-0	SV	N	N/A	1		
	19Q1SS035-B346202-SV-0	SV	N	N/A	1		
Bldg. 3462	18Q3SS035-B346203-SV-0	SV	N	N/A	1		
	19Q1SS035-B346203-SV-0	SV	N	N/A	1		

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SV for soil vapor, IA for indoor air, and OA for outdoor air
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs based on site-specific sample quantities.

Acronyms

bgs = below ground surface
FD = field duplicate
IA = indoor air
ID = identification
N = normal sample
N/A = not applicable
OA = outdoor air
QA = quality assurance
QC = quality control
SV = soil vapor
VOC = volatile organic compounds

Table 18-5 SS035 Remedial Investigation Proposed Indoor Air and Soil Vapor Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	VOCs (full suite) TO-15	VOCs (full suite) TO-15 SIM	Rationale
Bldg. 3462	18Q3SS035-B346204-SV-0	SV	N	N/A	1		Collocated with indoor air samples
	19Q1SS035-B346204-SV-0	SV	N	N/A	1		
Bldg. 3462	18Q3SS035-B346205-SV-0	SV	N	N/A	1		
	19Q1SS035-B346205-SV-0	SV	N	N/A	1		
Bldg. 3462	18Q3SS035-B346206-SV-0	SV	N	N/A	1		
	19Q1SS035-B346206-SV-0	SV	N	N/A	1		
Bldg. 3462	18Q3SS035-B346207-SV-0	SV	N	N/A	1		
	19Q1SS035-B346207-SV-0	SV	N	N/A	1		
Bldg. 3462	18Q3SS035-B346208-SV-0	SV	N	N/A	1		
	19Q1SS035-B346208-SV-0	SV	N	N/A	1		
Bldg. 3462	18Q3SS035-B346209-SV-0	SV	N	N/A	1		
	19Q1SS035-B346209-SV-0	SV	N	N/A	1		
Bldg. 3462	18Q3SS035-B346210-SV-0	SV	N	N/A	1		
	19Q1SS035-B346210-SV-0	SV	N	N/A	1		
Bldg. 3462	18Q3SS035-B346201-OA-0	OA	N	N/A		1	Assess potential impacts from outdoor sources.
	19Q1SS035-B346201-OA-0	OA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346001-IA-0	IA	N	N/A		1	Collect samples to evaluate vapor intrusion risk
	18Q3SS035-B346001-IA-1	IA	FD	N/A		1	
	19Q1SS035-B346001-IA-0	IA	N	N/A		1	
	19Q1SS035-B346001-IA-1	IA	FD	N/A		1	
Bldg. 3460	18Q3SS035-B346002-IA-0	IA	N	N/A		1	
	19Q1SS035-B346002-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346003-IA-0	IA	N	N/A		1	
	19Q1SS035-B346003-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346004-IA-0	IA	N	N/A		1	
	19Q1SS035-B346004-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346005-IA-0	IA	N	N/A		1	
	19Q1SS035-B346005-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346006-IA-0	IA	N	N/A		1	
	19Q1SS035-B346006-IA-0	IA	N	N/A		1	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SV for soil vapor, IA for indoor air, and OA for outdoor air
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs based on site-specific sample quantities.

Acronyms

bgs = below ground surface
FD = field duplicate
IA = indoor air
ID = identification
N = normal sample
N/A = not applicable
OA = outdoor air
QA = quality assurance
QC = quality control
SV = soil vapor
VOC = volatile organic compounds

Table 18-5 SS035 Remedial Investigation Proposed Indoor Air and Soil Vapor Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	VOCs (full suite)	VOCs (full suite)	Rationale
					TO-15	TO-15 SIM	
Bldg. 3460	18Q3SS035-B346007-IA-0	IA	N	N/A		1	Collect samples to evaluate vapor intrusion risk
	19Q1SS035-B346007-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346008-IA-0	IA	N	N/A		1	
	19Q1SS035-B346008-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346009-IA-0	IA	N	N/A		1	
	19Q1SS035-B346009-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346010-IA-0	IA	N	N/A		1	
	18Q3SS035-B346010-IA-1	IA	FD	N/A		1	
	19Q1SS035-B346010-IA-0	IA	N	N/A		1	
	19Q1SS035-B346010-IA-1	IA	FD	N/A		1	
Bldg. 3460	18Q3SS035-B346011-IA-0	IA	N	N/A		1	
	19Q1SS035-B346011-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346012-IA-0	IA	N	N/A		1	
	19Q1SS035-B346012-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346013-IA-0	IA	N	N/A		1	
	19Q1SS035-B346013-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346014-IA-0	IA	N	N/A		1	
	19Q1SS035-B346014-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346015-IA-0	IA	N	N/A		1	
	19Q1SS035-B346015-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346016-IA-0	IA	N	N/A		1	
	19Q1SS035-B346016-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346017-IA-0	IA	N	N/A		1	
	19Q1SS035-B346017-IA-0	IA	N	N/A		1	
Bldg. 3460	18Q3SS035-B346001-SV-0	SV	N	N/A	1		Collocated with indoor air samples
	18Q3SS035-B346001-SV-1	SV	FD	N/A	1		
	19Q1SS035-B346001-SV-0	SV	N	N/A	1		
	19Q1SS035-B346001-SV-1	SV	FD	N/A	1		
Bldg. 3460	18Q3SS035-B346002-SV-0	SV	N	N/A	1		
	19Q1SS035-B346002-SV-0	SV	N	N/A	1		

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SV for soil vapor, IA for indoor air, and OA for outdoor air
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs based on site-specific sample quantities.

Acronyms

bgs = below ground surface
FD = field duplicate
IA = indoor air
ID = identification
N = normal sample
N/A = not applicable
OA = outdoor air
QA = quality assurance
QC = quality control
SV = soil vapor
VOC = volatile organic compounds

Table 18-5 SS035 Remedial Investigation Proposed Indoor Air and Soil Vapor Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	VOCs (full suite) TO-15	VOCs (full suite) TO-15 SIM	Rationale
Bldg. 3460	18Q3SS035-B346003-SV-0	SV	N	N/A	1		Collocated with indoor air samples
	19Q1SS035-B346003-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346004-SV-0	SV	N	N/A	1		
	19Q1SS035-B346004-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346005-SV-0	SV	N	N/A	1		
	19Q1SS035-B346005-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346006-SV-0	SV	N	N/A	1		
	19Q1SS035-B346006-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346007-SV-0	SV	N	N/A	1		
	19Q1SS035-B346007-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346008-SV-0	SV	N	N/A	1		
	19Q1SS035-B346008-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346009-SV-0	SV	N	N/A	1		
	19Q1SS035-B346009-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346010-SV-0	SV	N	N/A	1		
	18Q3SS035-B346010-SV-1	SV	FD	N/A	1		
	19Q1SS035-B346010-SV-0	SV	N	N/A	1		
	19Q1SS035-B346010-SV-1	SV	FD	N/A	1		
Bldg. 3460	18Q3SS035-B346011-SV-0	SV	N	N/A	1		
	19Q1SS035-B346011-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346012-SV-0	SV	N	N/A	1		
	19Q1SS035-B346012-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346013-SV-0	SV	N	N/A	1		
	19Q1SS035-B346013-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346014-SV-0	SV	N	N/A	1		
	19Q1SS035-B346014-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346015-SV-0	SV	N	N/A	1		
	19Q1SS035-B346015-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346016-SV-0	SV	N	N/A	1		
	19Q1SS035-B346016-SV-0	SV	N	N/A	1		
Bldg. 3460	18Q3SS035-B346017-SV-0	SV	N	N/A	1		
	19Q1SS035-B346017-SV-0	SV	N	N/A	1		

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where
- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SV for soil vapor, IA for indoor air, and OA for outdoor air
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs based on site-specific sample quantities.

Acronyms

bgs = below ground surface
FD = field duplicate
IA = indoor air
ID = identification
N = normal sample
N/A = not applicable
OA = outdoor air
QA = quality assurance
QC = quality control
SV = soil vapor
VOC = volatile organic compounds

Table 18-5 SS035 Remedial Investigation Proposed Indoor Air and Soil Vapor Sampling Locations and Methods

Sampling Location	Field Sample ID[a]	Media	Sample Type[b]	Sample Depth (feet bgs)	VOCs (full suite) TO-15	VOCs (full suite) TO-15 SIM	Rationale
				Total Analyses	**74**	**78**	
				Soil Vapor Analyses	66	70	
				Soil Vapor FDs	8	8	

Notes:

[a] Each sample will be identified as follows: YYFREQSITE-LOC(or QC)##-MEDIA-0/1, where

- YY = year
- FREQ = Frequency if sampling (Q1 for first quarter, etc.)
- SITE = Site ID
- LOC(or QC)## = The sample number based on its location or whether it is a QC blank (MW01 for monitoring wells, SB01 for soil boring, TB for trip blank, EB for equipment blank, etc.)
- MEDIA = SV for soil vapor, IA for indoor air, and OA for outdoor air
- -0/-1 = 0 for primary samples and 1 for field duplicates

[b] QA/QC samples will be added at a rate of 10 percent for FDs based on site-specific sample quantities.

Acronyms

bgs = below ground surface
FD = field duplicate
IA = indoor air
ID = identification
N = normal sample
N/A = not applicable
OA = outdoor air
QA = quality assurance
QC = quality control
SV = soil vapor
VOC = volatile organic compounds

Worksheet #19/30 – Sample Containers, Preservation, and Hold Times

Laboratory: APPL Labs
908 N Temperance Avenue
Certification 4064.01 (Exp. 6/30/2019)
Clovis, California 93611
(559) 275-2175
PM: Greg Salata

Certification: ADEC Laboratory Approval UST-081 (Exp. 6/30/2019)
DoD ELAP

Backup Lab: TestAmerica network laboratories
Shipment: Ship direct via Alaska Airlines GoldStreak
TAT: 15 business days

Matrix	Analyte/ Analyte Group	Method/SOP	Container(s) (number, size, & type per sample)	Minimum Sample Volume	Preservation	Preparation Holding Time	Analytical Holding Time
Soil/ Sediment	GRO	Preparation Method/SOP: AK101/ ANAAK101 Analysis Method/SOP: AK101/ ANAAK101	4-ounce (oz.) jar with Teflon-lined lid.	25 g	0°C to ≤6°C, 25 mls methanol (MeOH) + surrogate	28 days	
	DRO/RRO	Preparation Method/SOP: AK102, AK103/ SON004 Analysis Method/SOP: AK102, AK103 / ANAAK102-103	8-oz (250 mL) amber glass wide-mouth jar with Teflon lined screw cap	25 g	0°C to ≤6°C	14 days	40 days
	VOC	Preparation Method/SOP: SW5035A/ ANA8260 Analysis Method/SOP: SW8260C / ANA8260	(1) 4-oz. pre-tared amber glass jar w/ Teflon-lined septa (TLS)	25 g soil	0°C to ≤6°C, 25 mls MeOH	14 days	
	VOC (low level)	Preparation Method/SOP: SW5035A/ ANA8260 Analysis Method/SOP: SW8260C / ANA8260	(2) 40 milliliters (mL) volatile organic analysis (VOA) vial	5 g soil	0°C to ≤6°C, 1 g sodium bisulfate ($NaHSO_4$)/5 mL water	14 days	
	SVOC	Preparation Method/SOP: SW3550C/ SON009 Analysis Method/SOP: SW8270D/ ANA8270SIM	(1) 4-oz. amber glass jar w/TLC	30 g	0°C to ≤6°C	14 days	40 days
	PAH	Preparation Method/SOP: SW3550C/ SON009	(1) 4-oz. amber glass jar w/TLC	30 g	0°C to ≤6°C	14 days	40 days

Matrix	Analyte/ Analyte Group	Method/SOP	Container(s) (number, size, & type per sample)	Minimum Sample Volume	Preservation	Preparation Holding Time	Analytical Holding Time
		Analysis Method/SOP: SW8270D/ ANA8270SIM					
	Pesticides	Preparation Method/SOP: SW3550C/ SON002 Analysis Method/SOP: SW8081B / ANA8081	(1) 4-oz. amber glass jar w/TLC	30 g	0°C to ≤6°C	14 days	40 days
	PCBs	Preparation Method/SOP: SW3550C/ SON002 Analysis Method/SOP: SW8082A / ANA8082	(1) 4-oz. amber glass jar w/TLC	30 g	0°C to ≤6°C	14 days	40 days
	Herbicides	Preparation Method/SOP: SW8151A / MSE005 Analysis Method/SOP: SW8151A / ANA8151	8 oz. (250 mL) amber glass wide-mouth jar with Teflon lined screw cap	5g	0°C to ≤6°C	14 days	40 days
	Dioxins/Furans	Preparation Method/SOP: SW8290A / HPL8290 Analysis Method/SOP: SW8290A / HPL8290	4 oz. amber glass jar	10 g	0°C to ≤6°C	30 days	45 days
	pH	Preparation Method/SOP: EPA 9045D/ ANA9045 Analysis Method/SOP: EPA 9045D/ ANA9045	4 oz. (125 mL) amber glass wide-mouth jar with Teflon lined screw cap	20g	0°C to ≤6°C	ASAP	
	Total Metals	Preparation Method/SOP: SW3050B/ PRE3050B Analysis Method/SOP: SW6010C / ANA6010	(1) 4-oz. glass jar w/TLC	1 g	None	180 days	
	Total Metals	Preparation Method/SOP: SW3050B or SW3051A/ PRE3050B or PRE3051A Analysis Method/SOP: SW6020A / ANA6020	(1) 4-oz. glass jar w/TLC	1 g	None	180 days	

Matrix	Analyte/ Analyte Group	Method/SOP	Container(s) (number, size, & type per sample)	Minimum Sample Volume	Preservation	Preparation Holding Time	Analytical Holding Time
	Hexavalent Chromium	Preparation Method/SOP: SW3060A/ ANA3060A Analysis Method/SOP: SW7199 / ANA218.6-7199	4 oz. (125 mL) amber glass wide-mouth jar with Teflon lined screw cap	2.5g	0°C to ≤6°C	30 days from sample collection and 168 hours after alkaline digestion.	
	TOC	Preparation and Analysis Method SOP: Total Organic Carbon in Soil Walkley-Black, modified; Revision 3, 10/03/2017	(1) 4-oz. glass jar	0.5g	0°C to ≤6°C	28 days	
	PFAS	Preparation and Analysis SOP: EPA 537 MOD/ SOP 49	6 oz HDPE	30g	0°C to ≤6°C	60	30
	Mercury	Preparation Method/SOP: SW7471B/ PRE7471B Analysis Method/SOP: SW7471B / ANA7471	(1) 4-oz. glass jar w/TLC	1 g	0°C to ≤6°C	28 days	
Water	GRO	Preparation Method/SOP: AK101/ ANAAK101 Analysis Method/SOP: AK101/ ANAAK101	3 x 40mL VOA vials with septa	120 mL	0°C to ≤6°C, hydrochloric acid (HCl) to pH<2	14 days	
	DRO/RRO	Preparation Method/SOP: AK102, AK103/ SEP033 Analysis Method/SOP: AK102, AK103 / ANAAK102-103	1-liter (L) amber glass with Teflon-lined lid	1 L	0°C to ≤6°C, HCl to pH<2	14 days	40 days
	VOC	Preparation Method/SOP: SW5030C / ANA8260 Analysis Method/SOP: SW8260C / ANA8260	(3) 40 mL VOA vials w/TLS	120 mL	0°C to ≤6°C, HCl to pH<2	14 days	
	1,4-Dioxane	Preparation Method/SOP: SW3510C / SEP004 Analysis Method/SOP: SW8270D/ ANA8270 rev 11, 12/22/16	Two 1-L amber glass with Teflon-lined lid	1 Liter	0°C to ≤6°C, HCl to pH<2	14 days	

Matrix	Analyte/ Analyte Group	Method/SOP	Container(s) (number, size, & type per sample)	Minimum Sample Volume	Preservation	Preparation Holding Time	Analytical Holding Time
	SVOC	Preparation Method/SOP: SW3510C / SEP004 Analysis Method/SOP: SW8270D/ ANA8270SIM	(2) 1-L amber glass jars w/TLC	1 L	0°C to ≤6°C	7 days	40 days
	PAH	Preparation Method/SOP: SW3510C / SEP004 Analysis Method/SOP: SW8270D/ ANA8270SIM	(2) 1-L amber glass jars w/TLC	1 L	0°C to ≤6°C	7 days	40 days
	Pesticides	Preparation Method/SOP: SW3510C / SEP025 Analysis Method/SOP: SW8081B / ANA8081	(1) 1-L amber glass jars w/TLC	1 L	0°C to ≤6°C	7 days	40 days
	PCBs	Preparation Method/SOP: SW3510C / SEP025 Analysis Method/SOP: SW8082A / ANA8082	(1) 1-L amber glass jars w/TLC	1 L	0°C to ≤6°C	7 days	40 days
	Herbicides	Preparation Method/SOP: SW8151A / SEP002 Analysis Method/SOP: SW8151A / ANA8151	Two 1-L amber glass with Teflon-lined lid	1 L	0°C to ≤6°C	7 days	40 days
	pH	Preparation Method/SOP: EPA 9040C/ ANA9040C Analysis Method/SOP: EPA 9040C/ ANA9040C	125 mL plastic	50mL	0°C to ≤6°C	ASAP	
	Total Metals	Preparation Method/SOP: SW3010A / PRE3010 Analysis Method/SOP: SW6010C / ANA6010	500 mL plastic	50 mL	nitric acid to pH<2	180 days	
	Disssolved Metals	Preparation Method/SOP: SW3015A / PRE3015A	500 mL plastic	50 mL	nitric acid to pH<2 after field filtration	180 days	

Matrix	Analyte/ Analyte Group	Method/SOP	Container(s) (number, size, & type per sample)	Minimum Sample Volume	Preservation	Preparation Holding Time	Analytical Holding Time
		Analysis Method/SOP: SW6020A / ANA6020					
	Hexavalent Chromium	Preparation Method/SOP: SW7199 / ANA218.6-7199 Analysis Method/SOP: SW7199 / ANA218.6-7199	125 mL plastic	25mL	0°C to ≤6°C	24 hours	
	PFAS	Preparation and Analysis SOP: EPA 537 MOD/ SOP 49	(1) 125 mL HDPE	125	0°C to ≤6°C Trizma preservative added if presence of chlorine is suspected	14	28
	EDB	1,2-dibromomethane (EDB), dibromo-3-chloropropane (DBCP) and 1,2,3-trichloropropane (TCP) by microextractions and gas chromatography by EPA method 8011	(3) 40 mL VOA vials w/TLS	120 mL	Sodium thiosulfate; 0°C to ≤6°C	14 days	
	Mercury	Preparation Method/SOP: SW7470A/ PRE7470A Analysis Method/SOP: SW7470A / ANA7470A	500 mL plastic	50 mL	0°C to ≤6°C, nitric acid to pH<2	28 days	

Notes:

Sample containers may vary but must meet analytical method requirements.

Worksheet #19/30 – Sample Containers, Preservation, and Hold Times (continued)

Laboratory: Air Technology Laboratories, Inc.
18501 E. Gale Ave. #130
City of Industry, CA 91748
626-964-4032

PM: Val Mallari

Certification: DoD ELAP: ADE-1461 (Expires 6/20/2018)

Shipment: Ship direct via FedEx

TAT: 15 business days

Matrix	Analyte/ Analyte Group	Method/SOP	Container(s) (number, size, & type per sample)	Minimum Sample Volume	Preservation	Preparation Holding Time	Analytical Holding Time
Air	VOC	TO-15/ATLI-SOP-001	One 1-L Summa canister (batch certified)	1 L	None	28 days	
	VOC-Low	TO-15-SIM/ ATLI-SOP-002	One 6-L Summa canister (individually certified)	6 L	None	28 days	

Worksheet #20 – Field QC Summary

This worksheet summarizes the field QC samples that may be collected for the project. Field QC samples will be collected at the frequencies specified in the *Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling Technical Memorandum* (ADEC, 2017f), the DoD QSM v 5.1 (2017), and *Field Sampling Guidance* (ADEC, 2017b). Worksheet #12 includes the MPC for field QC sampling results that may be used to evaluate project DQIs such as accuracy/bias and precision.

The following field QC samples will be collected and submitted:

- A minimum of one FD must be collected for every 10 field samples for each matrix sampled and for each target analyte. FDs must be collected from locations of known or suspected contamination. For a sampling event occurring over multiple days, all FDs must not be collected in 1 day. If there are at least 10 primary samples collected in 1 day, the goal should be to collect a minimum of one FD per day.
- MS and MSD samples will be collected at a frequency of one for every 20 or fewer samples (5 percent) for each method and matrix.
- Trip blanks will be submitted with every cooler for every shipment containing volatile samples; there must be a TB for each volatile method and matrix.
- FRBs will be submitted at a frequency of one for every 20 or fewer PFAS analytical samples.
- Temperature blanks will be submitted with every cooler containing analytical samples.
- EBs will be collected at a frequency of one per 20 or fewer samples per sampling crew, for each method and matrix. If dedicated sampling equipment is used, EBs are not required.

Table 18-1 presents a summary of the proposed samples and QC samples, which may change based on field observations/screening results. The actual number of FDs and MS/MSD soil samples will be based on the total quantity of primary samples collected.

20.1 Field Duplicate Samples

An FD is a generic term for two field samples collected at the same time in the same location. FD samples are submitted as blind samples to the laboratory and are taken through all steps of the analytical preparation and analysis process in an identical manner. These samples are used to assess precision of the entire data collection activity, including sampling, analysis, and site heterogeneity.

There are two categories of FD samples defined by the collection method: co-located FDs and subsample FDs. Co-located FDs, which are proposed for this project, are two or more independent samples collected from side-by-side locations at the same point in time and space so as to be considered identical. Co-locates are samples collected from adjacent locations or liners (e.g., laterally or vertically, in separate containers), or water samples collected from the same well at the same time that have not been homogenized. Subsample FDs samples are obtained from one sample collection at one sample location. Soil duplicate samples may be homogenized and subsampled in the field (or at the laboratory) to form an original and duplicate sample, or may be an additional volume of sample collected in a separate sample container to form a co-located sample.

The interpretation of co-located duplicate data may be more complex than subsample duplicate data because of the number of variables associated with the results of this type of duplicate sample. Duplicate soil samples for VOC analysis will always be co-located (i.e., not homogenized or otherwise processed or subsampled). Duplicates will be analyzed for the same analytical parameters as their

associated parent sample. Collection of both co-located and subsampled versions of the same sample may be performed to aid in approximating sampling and analysis error. Evaluation of FD results is performed by calculation of the RPD between the parent sample and its FD for every analyte of interest and matrix. The acceptance criteria are included in Worksheets #12 and #36.

20.2 Matrix Spike and Matrix Spike Duplicate Samples

The MS is used to access the performance of the method as applied to a particular matrix. MS and MSD samples are aliquots of samples spiked with known amounts of all target analytes. The spiking occurs in the laboratory before sample preparation and analysis. The spiking level should be greater than the lowest concentration standard used for calibration and less than or equal to the midpoint of the linear range calibration.

Sampling locations selected for assigning an MS/MSD should be an area anticipated to be free from contamination or with low concentrations of targeted analytes. During the acquisition of soil MS/MSD samples, field personnel should avoid areas where staining is observed or areas that are known to have high levels of target analytes. Similar precautions should be taken for aqueous samples. Wells containing free product or having a history of high concentrations of target analytes should be avoided for MS/MSD samples.

Only site-specific samples will be used for spiking. The MS/MSD is designated on the CoC form. The MS/MSD is used to document the bias of a method because of sample matrix. These sample results are not used to control the analytical process. The acceptance criteria for the MS and MSD are included in Appendix C. If performance criteria are not being met by the MS and MSD samples, then the analytical procedures and methods must be re-evaluated for appropriateness and correctness. For example, clean-up procedures may be needed to remove matrix interferences.

20.3 Trip Blanks

TBs are used to assess the potential introduction of contaminants to sample containers during the field collection event, including transportation and storage procedures. Once prepared, TBs should not be opened until they reach the laboratory for analysis. All TBs are transported to the sampling site, handled like an environmental sample, and returned to the laboratory for analysis. Detections of VOCs in the TB and their possible impacts to the investigation are evaluated on a site-specific basis, typically during the data quality review and assessment.

Water TBs consist of ASTM Type II, organic-free water prepared by the laboratory. TBs for soil samples consist of matrix-specific methanol-preserved jars or jars with water and sodium bisulfate prepared by the laboratory.

20.4 Field Reagent Blanks

An aliquot of reagent water that is placed in a sample container in the laboratory and treated as a sample in all respects, including shipment to the sampling site, exposure to sampling site conditions, storage, preservation, and all analytical procedures. The purpose of the FRB is to determine if method analytes or other interferences are present in the field environment.

20.5 Temperature Blanks

A temperature blank is a container of water that is packed and shipped to the laboratory with the field samples requiring preservation by cooling to 6°C. Upon arrival of a cooler at the laboratory, the laboratory measures the temperature of the blank. This temperature reading is used to represent the conditions of the field samples during shipment to the laboratory. This information is used by both the laboratory and by

the data reviewer. If the temperature blank exceeds the criteria of less than 6°C, then the laboratory must notify the Project Chemist immediately for guidance.

20.6 Equipment Rinsate Blanks

An equipment rinsate blank (i.e., "decontamination rinsate" or "equipment rinsate") sample consists of a sample of analyte-free source water poured over or through decontaminated field sampling equipment that is considered ready to collect or process an additional sample. Equipment rinsate blanks are to be collected from non-dedicated sampling equipment to assess the adequacy of the decontamination process.

To collect an equipment rinsate blank sample, pump or pour the source water over and/or through the decontaminated sampling equipment. Collect this runoff water into the sample containers directly or with the use of a funnel, if necessary. The source water may be poured by use of an electric or hand submersible pump by tipping the jug of water upside down or by use of a stopcock and gravity. Results of equipment rinsate blank samples are used to evaluate whether equipment decontamination was effective.

The equipment rinsate blanks samples will be analyzed for the same parameters as field samples that were collected using that piece of equipment. If analytes pertinent to the project are detected in the equipment rinsate blanks, then the frequency of equipment rinsate blank samples may be increased after decontamination procedures have been modified to further evaluate effectiveness of the decontamination procedure. Detections in the EB and their possible impacts to the investigation are evaluated on a site-specific basis.

Table 20-1 Field QC Summary

Matrix	Analytical Groups	Field Primary Samples	FDs	MSs	MSDs	EBs	Trip Blanks	FRB	Total # Analyses
Soil	DRO, RRO, SVOCs, PAHs, Pesticides, PCBs, Dioxins, Metals	120	12	6	6	6	0	0	150
	VOCs, low-level VOCs and GRO	120	12	6	6	6	15	0	165
	PFAS	120	12	6	6	6	0	6	156
	pH	3	0	0	0	0	0	0	3
	Geotechnical Testing	26	0	0	0	0	0	0	26
Sediment	DRO, RRO, SVOCs, PAHs, Pesticides, PCBs, Dioxins, Metals	55	6	3	3	3	0	0	70
	VOCs, low-level VOCs and GRO	55	6	3	3	3	7	0	77
	PFAS	55	6	3	3	3	0	3	73
	pH	3	0	0	0	0	0	0	3
	Total Organic Carbon	4	1	0	0	0	0	0	5
	Hexavalent Chromium	5	1	1	1	1	0	0	8
Surface Water	DRO, RRO, SVOCs, PAHs, PCBs, Pesticides, Total Metals, Dissolved Metals, 1,4-Dioxane	22	4	2	2	2	0	0	32
	VOCs, EDB and GRO	22	4	2	2	2	4	0	36
	Hardness	2	2	0	0	0	0	0	4
	PFAS	22	4	2	2	2	0	2	34

Table 20-1 Field QC Summary

Matrix	Analytical Groups	Field Primary Samples	FDs	MSs	MSDs	EBs	Trip Blanks	FRB	Total # Analyses
Groundwater	DRO, RRO, SVOCs, PAHs, PCBs, Pesticides, Metals, 1,4-Dioxane	46	6	4	4	2	0	0	62
	VOCs, EDB and GRO	46	6	4	4	2	8	0	70
	PFAS	46	6	4	4	2	0	3	65
Air	VOCs	136	16	0	0	0	0	0	152

Notes:

EBs meet requirement of Field Reagent Blanks.

DRO = diesel-range organics
EB = equipment blank
EDB = ethylene dibromide (1,2-dibromoethane)
FD = field duplicate
FRB = field reagent blank
GRO = gasoline-range organics
MS = matrix spike
MSD = matrix spike duplicate
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PFAS = per- and polyfluorinated compounds
QC = quality control
RRO = residual-range organics
SVOC = semivolatile organic compound
VOC = volatile organic compound

Worksheet #21 – Field SOPs

Field SOPs that outline the procedures for how the primary field activities will be performed are included in Appendix D and are listed in the following table.

SOP #	SOP Title	Originating Organization	Brief Description	Date Last Reviewed and Updated
SOP-01	Note Taking and Field Log Books	CH2M	• Digital photographs • Field Datasheets and Forms • Electronic Data Documents	10/19/17
SOP-02	Site Reconnaissance, Preparation, and Restoration	CH2M	• Preplanning Activities • Site Reconnaissance • Housekeeping • Traffic and Public Safety Management • Restoration of Work Areas to Pre-fieldwork Conditions	10/19/17
SOP-03	Utility Locates and Clearance for Intrusive Operations	CH2M	• Preparation and Initial Notification • Initial Utility Locate and Survey • Utility Verification • Field Markings • Surface and Overhead Utilities • Site Operations	10/19/17
SOP-04	Organic Vapor Monitoring and Air Monitoring	CH2M	• Equipment Calibration • Organic Vapor Monitoring with a PID • Air Monitoring for Potential Contamination Exposure	10/19/17
SOP-05	Drilling Methods	CH2M	• Hollow-Stem Auger Drilling • Direct-Push System Drilling • Sonic Drilling • Air Rotary/ARCH Drilling • Drilling and Sampling Procedures	10/19/17
SOP-06	Boring Log Completion, Soil Classification, and Logging	CH2M	• Procedure for Lithological Logs • Standard Penetration Test Procedures	10/19/17
SOP-07	Surface and Subsurface Soil Sampling	CH2M	• Sample Tools and Equipment • Decontamination • Surface Soil Sampling • Subsurface Soil Sampling • Excavation and Stockpile Sampling • Composite Soil Sampling • Soil Sampling for VOCs • QA/QC Procedures and Samples • IDW	10/19/17
SOP-08	Monitoring Well Installation	CH2M	• Well casings and Well Screens • Filter Pack • Annular (Bentonite) Seal • Surface Completion and Well Protection • Monitoring Wells in Frozen Ground	10/19/17

SOP #	SOP Title	Originating Organization	Brief Description	Date Last Reviewed and Updated
SOP-09	Monitoring Well Development	CH2M	• Equipment • Conventional Monitoring Well Development • Direct Push Groundwater Sampler and Well Point Development • Development Water Management	10/19/17
SOP-10	Liquid Level and Total Depth Measurement	CH2M	• Equipment • Depth to Water/Depth to Light Non-Aqueous Phase Liquid Measurement • Total Depth Measurement	10/19/17
SOP-11	Field Water Quality Measurements and Calibration	CH2M	• Instruments and Supplies • Calibration • Water Quality Instrument Field Measurement and Usage • Storage • Service and Maintenance	10/19/17
SOP-12	Groundwater Sampling Procedures	CH2M	• Equipment and Materials • Pre-sampling Tasks • Pump Setup • Groundwater Sampling Techniques	10/19/17
SOP-13	Equipment Decontamination Procedures	CH2M	• Decontamination Area • Decontamination Equipment • Decontamination Procedures • IDW	10/19/17
SOP-14	Global Positioning Satellite System (GPS) Surveying	CH2M	• GPS Management • GPS Procedures	10/19/17
SOP-15	Geographic Land Surveying	CH2M	• General Surveying • Surveying Monitoring Wells and Other Environmental Monitoring Points	10/19/17
SOP-16	Packing and Shipping of Environmental Samples	CH2M	• Determine Whether Samples are Classified as Hazardous Waste • Packing and Shipping Samples	10/19/17
SOP-17	Sample Handling and Custody	CH2M	• Sample Custody • Transfer of Custody and Shipment • Laboratory Sample Custody Procedures • CoC Records • Sample Labels • Sample Identification • Sample Handling and Storage • Records	10/19/17
SOP-18	Field Procedure Change Management	CH2M	• Identify, Analyze, Evaluate and Approve SOP Changes • Plan and Implement the SOP Change • Review and Close the SOP Change	10/19/17
SOP-19	Contaminated Soil Transport	CH2M	• Materials and Equipment • Soil Transporting Procedures • Document Control	10/19/17

SOP #	SOP Title	Originating Organization	Brief Description	Date Last Reviewed and Updated
SOP-20	Monitoring Well Decommissioning and Borehole Abandonment	CH2M	• Well Decommissioning Materials • Grouting Requirements • Decommissioning-Well Casing Removal • Leaving Well Casing in Place • Re-drilling the Well	10/19/17
SOP-21	Conducting Building Surveys for Vapor Intrusion Investigations	CH2M	• Building use and occupancy • Condition of the building envelope • Presence of a basement or crawl space • Presence of atypical preferential pathways for soil vapor intrusion • Dimensions of the building and interior compartments • Condition of the slab and basement walls and presence of potential VI pathways • Type, zoning, and typical operational settings of the heating, ventilation, and air conditioning system • Evidence of groundwater infiltration into the structure • Presence of potential indoor sources of VOCs	10/19/17
SOP-22	Indoor, Outdoor, and Crawlspace Air Sampling Using Canisters	CH2M	• Sampling equipment and materials • Procedures and guidelines • Quality control and quality assurance	7/25/17
SOP-23	Subslab Soil Vapor Sampling from Vapor Pins	CH2M	• Materials and equipment • Purging vapor pins • Performing leak checks • Sample collection	12/2/16
SOP-24	Installation and Abandonment of Vapor Pins as Subslab Soil Vapor Probes	CH2M	• Materials and equipment • Vapor pin installation procedures • Vapor pin abandonment procedures	12/2/16
SOP-25	Pressure Cycling and the HAPSITE GC-MS	CH2M	• Sampling equipment and materials • Procedures and guidelines • Quality control and quality assurance	7/15/16
SOP-26	Sediment Sampling	CH2M	• Equipment and Materials • Pre-sampling Tasks • Sediment Sampling Techniques • Decontamination	10/19/17
SOP-27	Surface Water Sampling	CH2M	• Equipment and Materials • Pre-sampling Tasks • Surface Water Sampling Techniques	10/19/17
SOP-28	Field Sampling Protocol for PFOS/PFOA (PFAS Compounds)	CH2M	• Pre-sampling Tasks • Procedures and guidelines • Quality control and quality assurance	3/30/2018
SOP-29	Aquifer Slug Testing	CH2M	• Procedures and guidelines • Equipment and Materials • Decontamination	8/8/2018

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Worksheet #22 – Field Equipment Calibration, Maintenance, Testing, and Inspection

Generalized field equipment calibration, maintenance, testing, and inspection protocol for activities conducted at Eielson AFB are discussed below. The manufacturer's instructions are included with the SOPs in Appendix D.

22.1 Field Instrument Calibration

All field personnel will be aware of and follow appropriate manufacturer maintenance and calibration requirements for measuring and test equipment under their control. Compliance with maintenance, calibration/standardization, and record keeping procedures ensures the quality of the data collected. Field instruments requiring calibration or calibration verification may include, but are not limited to, those listed in Table 22-1 (located at the end of this worksheet).

Calibration and preventive maintenance procedures apply to government-furnished equipment, leased, and rented equipment. Calibration standards will be traceable to reference standards commonly used by industry, such as the National Institute for Standards and Technology, where appropriate. These calibration and maintenance procedures do not apply to rulers, tape measures, levels, or other such devices when normal commercial standards provide acceptable accuracy.

22.2 Field Instrument Storage, Maintenance, Testing, and Inspection

Equipment will be stored in accordance with its operation manual. While in storage, each piece of measuring and test equipment will contain a unique number or marking that is readily legible and traceable to calibration and maintenance records.

Upon receipt and before the acceptance of government-furnished, leased, or rented equipment, a designated field crew member will perform an initial instrument inspection consisting of a maintenance document review and a functional or operational check to ensure that the equipment is in proper working order. Field personnel will review maintenance records to verify that periodic maintenance activities are current and equipment-specific QC procedures are included with the instrument. In addition, field personnel will complete an inspection of measuring equipment to verify that it is working consistently and appears to be in satisfactory condition for its intended use, as specified in its operation manual or vendor supplied QC procedures.

All equipment deficiencies will be noted, addressed, and resolved during initial instrument inspection and before equipment acceptance. Equipment replacement or an equivalent substitution will be required in cases where equipment deficiencies are not resolved during the initial inspection.

An item discovered to be out of calibration or in need of maintenance will not be used until the required service is completed. If equipment does not to conform to its operation criteria as specified in its operation manual, then the nonconformance will be documented in the project field logbook and the equipment returned to its source. Data generated from field instruments with calibrations outside manufacturer or project-specified calibration criteria will not be used.

Upon returning measuring and test equipment to the government property custodian or vendor, personnel will provide written documentation of any and all maintenance or calibration problems encountered in using the item.

22.3 Field Equipment Maintenance and Calibration Documentation

Record keeping for government-furnished, leased, or rented equipment must comply with procedures for documenting periodic maintenance and associated calibration.

Personnel will maintain records of all field maintenance and calibration performed. Specific calibration standards and calibration methods will be recorded. Such records will be entered directly into the field logbook.

An item discovered to be out of calibration or in need of maintenance will not be used until the required service is completed. If equipment does not to conform to its operation criteria as specified in its operation manual, then the non-conformance will be documented in the project field logbook and the equipment returned to its source. Data generated from field instruments with calibrations outside manufacturer's or project-specified calibration criteria will not be used.

Upon returning measuring and test equipment to the government property custodian or vendor, personnel will provide written documentation of any and all maintenance or calibration problems encountered in using the item.

Table 22-1 Field Equipment Calibration, Maintenance, Testing, and Inspection

Field Equipment	Activity	SOP Reference	Title or Position of Responsible Person	Frequency	Acceptance Criteria	Corrective Action
PID	Calibrate using isobutylene gas	SOP-06	Field Lead	Daily before use	SOP-06 Check operations manual for acceptable range of calibrated probe for the specific lamp model	Recalibrate as necessary. If acceptable calibration cannot be obtained, return equipment to vendor for repair. Replace if necessary.
	Bump test after calibration	SOP-06	Field Lead	Daily before use	±5 percent	
MultiRAE	Calibrate using the supplied calibration gases	SOP-06	Field Lead	Daily before use	SOP-06 Check operations manual for acceptable range of calibrated probe for the specific lamp model	Recalibrate as necessary. If acceptable calibration cannot be obtained, return equipment to vendor for repair. Replace if necessary.
YSI 556 Multimeter (or equivalent)	Calibrate pH (3-point), conductivity, dissolved oxygen, oxidation-reduction potential	SOP-11	Field Lead	Daily before use	SOP-11 Manufacturer's instructions	If unstable or erroneous readings are observed, clean probes and recalibrate as required. Repair or replace instrument if necessary.
	Verify and record check standard reading after calibration	SOP-11	Field Lead	Daily before use	SOP-11 ± 20 percent, or manufacturer's specifications, whichever is more stringent	
Hach Portable Turbidimeter (or equivalent)	Calibration will be performed by vendor	None	Vendor	Before use	Manufacturer's instructions	If variation or erroneous readings are observed, check calibration. Repair or replace instrument if necessary.
	Calibration check	SOP-11	Field Lead	Daily before use	±5 percent of previously established value for each standard	
GPS unit	Calibrate per manufacturer's instructions	SOP-15	Field Lead	Daily before use	± 1 meter	If variation or erroneous readings are observed, check calibration. Repair or replace instrument if necessary.
Low-flow water pump	Calibrate per manufacturer's instructions	SOP-09 SOP-12	Field Lead	Daily before use	Per manufacture's specifications	If pump fails, follow manufacturer's troubleshooting instructions. Otherwise, do not use this pump.

Table 22-1 Field Equipment Calibration, Maintenance, Testing, and Inspection

Field Equipment	Activity	SOP Reference	Title or Position of Responsible Person	Frequency	Acceptance Criteria	Corrective Action
Oil/Water Interface Probe	No calibration needed; verify that the battery is working for the alarm	SOP-10	Field Lead	Daily before use	± 0.01 foot	If meter fails to calibrate, follow manufacturer's troubleshooting instructions. Replace batteries if necessary. Otherwise, do not use this meter.
Omniguard 4	Calibrate per manufacturer's instructions	SOP-25	Field Lead	Daily before use	Manufacturer's instructions	If variation or erroneous readings are observed, check calibration. Repair or replace instrument if necessary.
HAPSITE GC-MS	Calibrate per manufacturer's instructions	SOP-25	Field Lead	Daily before use	Manufacturer's instructions	If variation or erroneous readings are observed, check calibration. Repair or replace instrument if necessary.

Notes:

GC-MS = gas chromatography-mass spectrometry
GPS = global positioning system
PID = photoionization detector
SOP = standard operating procedure

Worksheet #23 – Analytical SOPs

Tables 23-1 and 23-2 provide analytical laboratory SOP references, which were provided by APPL, Inc. and Air Technology Laboratories, Inc.

Laboratory SOPs, presented in Appendix F, have not been specifically modified for this RI/FS management plan. All analytical procedures that will be used in support of the project are documented in this RI/FS management plan. Laboratory SOPs for additional methods or laboratories that are used, if needed, will be included as addenda to this RI/FS management plan.

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Table 23-1 Analytical SOP References for APPL Inc.

SOP #	Title, Date, and URL (if available)	Definitive or Screening Data	Matrix/ Analytical Group	SOP Option or Equipment Type	Modified for Project Work? (Y/N)
SON001	Sonication EPA 3550 Combined), Revision 3, 06/2017	Definitive	Soil: TPH-extractables	Preparation	N
SEP033	Modified THC water extraction for Oklahoma and Alaska (EPA method 3510C/3520), Revision 2, 01/2017	Definitive	Water: TPH-extractables	Preparation	N
ANAAK102/103	Determination of diesel range organics (DRO) and residual range organics (RRO) in water, sludges and soils by GC-FID, Revision 4, 1/26/2018	Definitive	Soil/Water: TPH-extractables	GC-FID	N
ANAAK101	Determination of Gasoline Range Organics (GRO) by Method AK101 or AK101-MS, Revision 5, 07/18/2017	Definitive	Soil/Water: TPH-purgeables	GC-MS	N
SEP004	625/8270 Separatory Funnel Extraction of Water (EPA Method 3510C); Revision 3, 9/22/16	Definitive	Water: SVOCs and PAHs	Preparation	N
SON009	8270, BNA, SIM and PAH Sonication Extraction of Soil, Sludge and Solids (EPA Method 3550C); Revision 10, 8/23/16	Definitive	Soil: SVOCs and PAHs	Preparation	N
ANA8260	Analysis of Water/Soil/Sludge by EPA Method 8260, Revision 20, 11/13/2017	Definitive	Soil/Water: VOCs	GC-MS	N
ANA8270SIM	PAH by SIM by EPA Method 8270; Revision 7, 4/27/2017	Definitive	Soil/Water: PAHs	GC-MS	N
PRE3050B	Acid Digestion of Sediments, Sludges, and Soils by EPA Method 3050B Rev, 3, 05/2014	Definitive	Soil: Metals	Preparation	N
PRE3010A	Acid Digestion of Aqueous Samples and Extracts for Total and Dissolved Metals for Analysis by ICP Spectroscopy or ICP Mass Spectroscopy by EPA Method 3010A, Rev. 0, 10/2014	Definitive	Water: Metals	Preparation	N
ANA6010	Inductively Coupled Plasma-Atomic Emission Spectroscopy by EPA Method 6010, Rev. 10, 11/30/2017	Definitive	Soil and Water: Metals	Inductively Coupled Argon Plasma Emission Spectrometer (ICP-AES)	N
PRE3015A	Microwave Assisted Acid Digestion of Aqueous Samples and Extracts by EPA Method 3015A; Rev. 4, 9/21/16	Definitive	Water: Metals	Preparation	N
PRE3051A	Microwave Assisted Acid Digestion of Soil Samples and Extracts by EPA Method 3051A; Revision 4; 9/21/16	Definitive	Soil: Metals	Preparation	N
ANA6020	Inductively Coupled Plasma-Mass Spectrometry by EPA Method 6020; Revision 8; 8/10/2017	Definitive	Soil and Water: Metals	ICP-MS	N

Table 23-1 Analytical SOP References for APPL Inc.

SOP #	Title, Date, and URL (if available)	Definitive or Screening Data	Matrix/ Analytical Group	SOP Option or Equipment Type	Modified for Project Work? (Y/N)
PRE7471B	Digestion of Mercury in Solid or Semisolid Waste EPA Method 7471b, Rev, 0, 10/2014	Definitive	Soil: Mercury	Preparation	N
PRE7470A	Digestion of Aqueous Samples by EPA Method 7470a, Rev. 1, 02/2014	Definitive	Water: Mercury	Preparation	N
ANA7471	Determination of Mercury in Solid or Semisolid Waste EPA Method 7471, Rev 4, 1/5/2017	Definitive	Soil: Mercury	CVAA	N
ANA7470A	Determination of Mercury in Water by Cold Vapor Atomic Absorption Spectrometry by EPA Method 7470a; Rev 8, 1/25/2017	Definitive	Water: Mercury	CVAA	N
ANA3060A	Alkaline digestion for Hexavalent chromium, Method 3060A, Revision 1, 10/2017	Definitive	Soil: Hexavalent Chromium	Preparation	N
ANA218.6/7199	Hexavalent Chromium Analysis EPA Method 7199/218.6/218.7, Revision 7, 11/30/2017	Definitive	Soil/Water: Hexavalent Chromium	IC	N
SEP025	Low Level OCL/OP Separatory Funnel Extraction of water by EPA method 3510C, Revision 5, 07/2015	Definitive	Water: Chlorinated Pesticides and PCBs	Preparation	N
SON002	OCL, PCB, OP and Carbamate sonication extraction of soil, sludge, solids and wipes (EPA method 3550C), Revision 5, 10/2015	Definitive	Soil: Chlorinated Pesticides and PCBs	Preparation	N
ANA8011	1,2-Dibromoethane (EDB), Dibromo-3-chloropropane (DBCP) and 1,2,3-trichloropropane (TCP) by Microextraction and Gas Chromatography by EPA Method 8011, Revision 4, 4//4/2017	Definitive	Water: Ethylene dibromide	GS/MS	N
ANA8081	Organochlorine Pesticides by gas chromatography by EPA Method 8081, Revision 11, 7/17/201710/2015	Definitive	Soil/Water: Chlorinated Pesticides	GC-ECD	N
ANA8082	PCBs and Congeners by EPA Method 8082, Revision 5, 1/26/2017	Definitive	Soil/Water: PCBs	GC-ECD	N
MSE005	Extraction of Herbicides in Soil by Method 8151A, Revision 3, 7/2015	Definitive	Soil: Herbicides	Preparation	N
ANA8151	Chlorinated Acid Herbicides by EPA Method 8151A, Revision 8, 9/1/2017	Definitive	Soil/Water: Herbicides	GC-ECD	N
ANA8270	Semivolatile Organic Compounds by EPA Method 8270, Revision 13, 6/26/2017	Definitive	Water: SVOCs	GC-MS	N

Table 23-1 Analytical SOP References for APPL Inc.

SOP #	Title, Date, and URL (if available)	Definitive or Screening Data	Matrix/ Analytical Group	SOP Option or Equipment Type	Modified for Project Work? (Y/N)
HPL8290	Instrumental Analysis of Polychlorinated Dibenzodioxins (PCDD) and Polychlorinated Dibenzofurans (PCDF) BY HRGC-HRMS (EPA Method 8290); Revision 12, 01/23/17	Definitive	Solid Dioxins	HRGC-MS	N
ANAWALKLEY	Total Organic Carbon in Soil Walkley-Black, modified; Revision 3, 10/03/2017	Definitive	Soil: TOC	NA	N
ANA9040C	pH, EPA SW846 Method 9040C, Revision 2, 01/25/2017	Definitive	Water: pH	pH meter	N
ANA9045	pH in soil and waste, EPA SW846 Method 9045C&D; Revision 5, 09/11/2017	Definitive	Soil: pH	pH meter	N
11-PRE1311	Toxicity Characteristic Leaching Procedure by EPA method 1311; Revision 5, 5/25/2017	Definitive	TCLP – SVOCs, Pesticides, Herbicides, Metals, Mercury	Preparation	N

Notes:

CVAA = cold vapor atomic absorption
DRO = diesel-range organics
EPA = United States Environmental Protection Agency
GC-ECD = gas chromatograph-electron capture detector
GC-FID = gas chromatography-flame ionization detector
GC-MS = gas chromatography-mass spectrometry
GRO = gasoline-range organics
HRGC-MS = high resolution gas chromatography-mass spectrometry
IC = ion chromatography
ICP-AES = inductively coupled plasma-atomic emission spectroscopy
ICP-MS = inductively coupled plasma-mass spectrometry
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
RRO = residual-range organics
SOP = standard operating procedure
SVOC = semi-volatile organic compound
TPH = total petroleum hydrocarbon
UPLC/MS/MS = ultra-performance liquid chromatography/tandem mass spectrometry
VOC = volatile organic compound

Table 23-2 Analytical SOP References for Air Technology Laboratories, Inc.

SOP #	Title, Date, and URL (if available)	Definitive or Screening Data	Matrix/ Analytical Group	SOP Option or Equipment Type	Modified for Project Work? (Y/N)
ATLI-SOP-001	VOCs by TO-15, Rev 17.1, Effective date 7/17/2017	Definitive	Air; VOC	GC-MS	N
ATLI-SOP-002	VOCs by TO-15SIM, Rev 17.1, Effective date 7/17/2017	Definitive	Air; VOC	GC-MS	N

Notes:

GC-MS = gas chromatography-mass spectrometry
SOP = standard operating procedure
VOC = volatile organic compound

Table 23-3 Analytical SOP References for Vista Analytical

SOP #	Title, Date, and URL (if available)	Definitive or Screening Data	Matrix/ Analytical Group	SOP Option or Equipment Type	Modified for Project Work? (Y/N)
SOP 49	Preparation and Analysis for the Determination of Per and Poly-Fluorinated Compounds, Rev 13, Effective 3/22/2018	Definitive	Water and Soil; PFAS	UPLC/MS/MS	N

Notes:

GC-MS = gas chromatography-mass spectrometry
SOP = standard operating procedure
VOC = volatile organic compound

Worksheet #24 – Analytical Instrument Calibration

To ensure that the analytical methods and the selected instrumentation meet the project requirements, each analytical instrument will be calibrated following the procedures and frequency specified by the approved laboratory QSM, analytical method, and in accordance with Section 5.5 of the DoD QSM v 5.1 (2017). Specific analytical method SOP references are provided in Worksheet #23.

While only instrument calibration is requested as part of this worksheet, full method QA/QC tables are provided in Appendix C for use by project chemists and the laboratory. This additional information provides documentation on analytical QC samples, corrective actions, flagging criteria for laboratory services, and expectations for analytical services. The information meets the requirements of Worksheets #24 and #28.

24.1 Instrument Calibration Requirements

The calibrations and QA/QC will meet the acceptance criteria specified in the tables provided in Appendix C. For calibrations, the following standards must be met:

- All results reported will be within the calibration range. Results outside the calibration range are unsuitable for quantitative work and show only an estimate of the true concentration.
- Results will be within the working range determined by the daily ICAL.
- Samples will be diluted, if necessary, to bring analyte responses within the calibration range. Data that exceed the calibration range must be reported by the laboratory with the dilution results.
- Records of standard preparation and instrument calibration will be maintained. Records will unambiguously trace the preparation of standards and their use in the calibration and quantitation of sample results.
- Calibration standards will be traceable to standard materials.

Instrument calibration will be achieved by beginning with the simplest approach (the linear model through the origin), and will then progress through other options (nonlinear) until the acceptance criteria are met. When an analyte has more than one acceptable calibration model, results will be reported from the simplest calibration model.

The ICAL must be verified by a second-source standard. Multipoint calibrations will contain the minimum number of calibration points specified in the applicable tables, with all points used for the calibration being contiguous. If more than the minimum number of standards is analyzed for the ICAL, all of the standards analyzed will be included in the ICAL. The only exception is that a standard at either end of the calibration curve can be dropped from the calibration if the requirement for the minimum number of standards is met and the low point of the calibration curve is at or below the LOQ for each analyte.

Analyte concentrations are determined with either calibration curves or RFs. Nonlinear calibration should be considered only when a linear approach cannot be applied. It is not acceptable to use an alternative calibration procedure when a compound fails to perform in the usual manner. Nonlinear calibration may be necessary to achieve low detection limits or to address specific instrument techniques. However, it is not the intent of EPA methods to allow nonlinear calibration to be used to compensate for detector saturation at higher concentrations or to avoid proper instrument maintenance. When this type of nonlinear calibration occurs, it is indicative of instrument issues or operator error. When multipoint calibration is specified, the concentrations of the calibration standards will bracket those expected in the samples.

When using RFs to determine analyte concentrations for GC and GC-MS methods, the average RF from the ICAL will be used. The continuing calibration will not be used to update the RFs from the ICAL.

24.2 Continuing Calibration Verification

The CCV cannot be used as the LCS. A CCV is to be performed daily before sample analysis (unless an ICAL and second-source-standard verification are performed immediately before sample analysis) and as required by the applicable method. In addition, the DoD QSM v 5.1 (2017) requires that the concentration used for the CCV sample will be between the low calibration standard and the midpoint of the calibration range. Finally, the lowest standard used must be the lowest concentration for which quantitative data are to be reported.

Worksheet #25 – Analytical Instrument and Equipment Maintenance, Testing, and Inspection

APPL Inc. and Air Technology Laboratories, Inc. operate under a quality system that conforms to ISO 17025:2005. The analytical instrument calibration, maintenance, testing, and inspection activities to be included in this worksheet are documented in the laboratory's SOPs referenced in Worksheet #23 and provided in Appendix F.

If a specific analytical testing procedure for the project has requirements that are different from those contained in the subcontracted laboratory's SOPs, Table 25-1 will be completed for those items.

Table 25-1 Analytical Instrument and Equipment Maintenance, Testing, and Inspection

Instrument/ Equipment	Maintenance Activity	Testing Activity	Inspection Activity	Frequency	Acceptance Criteria	Corrective Action	Title/Position responsible for corrective action	Reference

Worksheet #26/27 – Sample Handling, Custody, and Disposal

Sampling Organization: CH2M

Laboratory: APPL, Inc., Vista Analytical, and Air Technology Laboratories, Inc.

Method of sample delivery (shipper/carrier): FedEx or Alaska Airlines

Number of days from reporting until sample disposal: 30 days

Activity	Organization and Title or Position of Person Responsible for the Activity	SOP Reference
Sample labeling	Field Samplers CH2M	SOP-17
CoC	Field Samplers, Project Chemist CH2M	SOP-17
Packaging	Field Samplers, CH2M Sample custodian, Subcontract laboratory	SOP-16
Shipping coordination	Field Samplers, Project Chemist CH2M	SOP-16
Sample receipt, inspection, and log-in	Project Chemist CH2M Sample custodian, Subcontract laboratory	SOP-17
Sample custody and storage	Project Chemist, CH2M Sample custodian and analyst, Subcontract laboratory	SOP-17
Sample disposal	Sample custodian and analyst, Subcontract laboratory	SOP-17

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Worksheet #28 – Analytical Quality Control and Corrective Action

The purpose of the laboratory QC sample activities is to produce data of known quality that satisfy the project-specific DQOs. This worksheet provides additional discussions relevant to the analytical QC requirements that laboratories producing definitive data will be required to follow. Appendix C provides the full method QA/QC summary tables for each analytical method. These tables provide documentation for corrective actions, flagging criteria, and expectations for analytical services. These tables meet the requirements of Worksheets #24 and #28.

28.1 Analytical Quality Control Samples

28.1.1 Method Blank

An MB is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The MB is included in each analytical batch and is carried through the complete sample preparation and analytical procedure and is used to assess possible contamination resulting from the analytical process.

The MB will be considered contaminated if the following occur:

- The concentration of any target analyte (COC) in the blank exceeds 0.5 the LOQ and is greater than 0.1 the amount measured in any associated sample, or 0.1 the regulatory limit, whichever is greater.
- The concentration of any common laboratory contaminant in the blank exceeds the LOQ.
- If an MB is contaminated as described above, then the laboratory will reprocess affected samples in a subsequent preparation batch, except when sample results are below the LOD. If insufficient sample volume remains for reprocessing, the results will be reported with appropriate data qualifiers as outlined in Appendix C.

28.1.2 Laboratory Control Sample

An LCS is a sample of known composition that is spiked with all target analytes. The LCS is used with each analytical batch to determine whether the method is in control. Each analyte in the LCS will be spiked at a level less than or equal to the midpoint of the calibration curve, which is defined as the median point of the curve instead of the middle of the range. The LCS will be carried through the complete sample preparation and analysis procedure. The LCS cannot be used as the CCV.

At least one LCS will be included in every analytical batch. If more than one LCS is analyzed in an analytical batch, results from all LCSs will be reported. A failure of an analyte in any of the LCSs will require appropriate corrective action, including qualification of the failed analyte in all of the samples, as required.

28.1.2.1 Laboratory Control Sample Control Limits

The LCS limits specified in Appendix C will be used unless the laboratory determines that the limit cannot be met (in which case laboratory historical CLs will be used). The LCS limits are based on those in the DoD QSM v 5.1 (2017). The performance of the LCS is evaluated against the QC acceptance limits. Whenever an analyte in the LCS is outside the acceptance limit, corrective action will be performed. If an analyte in the LCS exceeds the upper or lower CL and no corrective action is performed or the corrective action is ineffective, an appropriate flag, as described in Appendix C, will be applied to all affected results.

28.1.2.2 Marginal Exceedance

Sporadic marginal exceedances are allowed for those analytes outside the three standard deviation CLs but still within four standard deviations. Sporadic marginal exceedances are not allowed for target analytes (COCs as identified by a project) without project-specific approval.

Marginal exceedances must be sporadic (random). If the same analyte exceeds the LCS CLs repeatedly (e.g., two out of three consecutive LCSs), that is an indication that the problem is systematic, not random. The source of error should be located, and appropriate corrective actions should be taken.

28.1.3 Matrix Spike/Matrix Spike Duplicate

An MS or MSD is an aliquot of a sample collected in the field and spiked with known concentrations of all target analytes. The spiking occurs before sample preparation and analysis. Each analyte in the MS and MSD will be spiked at a level less than or equal to the midpoint of the calibration curve for that analyte. The MS/MSD is used to document potential matrix effects associated with a site and will not be used to control the analytical process. The MS/MSD results and flags will not be associated with or related to samples that are collected from the same site where the MS/MSD set was collected, with the exception of an FD. Additional volume will be collected for samples selected for MS/MSDs, and the laboratory will use those samples to prepare the appropriate MS/MSDs.

The performance of the MS and MSD is evaluated against the QC acceptance limits outlined in Appendix C. If either the MS or the MSD is outside the QC acceptance limits, the data will be evaluated to determine whether there is a matrix effect or analytical error. The analytes in the parent sample and associated samples collected at the same site (if applicable) will be qualified according to the data flagging criteria provided in Appendix C.

If the sample concentration exceeds the spike concentration by a factor of four or more, the data will be reported unflagged. The laboratory should communicate potential matrix difficulties to the project chemist so an evaluation can be made with respect to the project-specific DQOs.

28.1.4 Surrogates

Surrogates are compounds similar to the target analytes in chemical composition and behavior, but not normally found in environmental samples. Surrogates are used to evaluate accuracy, method performance, and extraction efficiency. Surrogates will be added to environmental samples, controls, and blanks in accordance with the method requirements.

If a surrogate recovery is outside the acceptance limit, corrective action must be performed. After the system problems have been resolved and system control has been reestablished, the sample should be re-prepared and reanalyzed. If corrective actions are not performed or are ineffective, an appropriate flag (as described in Appendix C) will be applied to the sample results.

28.1.5 Internal Standards

ISs are known amounts of standards that are added to a portion of a sample or sample extract and carried through the entire determination procedure. ISs are used as a reference for calibration and for controlling the precision and bias of the analytical method. ISs will be added to environmental samples, controls, and blanks, in accordance with the method requirements.

If the IS results are outside the acceptance limits, corrective actions will be performed. After the system problems have been resolved and system control has been reestablished, all samples analyzed while the system was malfunctioning will be reanalyzed. If corrective actions are not performed or are ineffective, an appropriate flag (as described in Appendix C) will be applied to the sample results.

28.1.6 Retention Time Windows

RT windows are used in GC, IC, and high-performance liquid chromatography (HPLC) analysis for qualitative identification of analytes. RT windows are calculated from replicate analyses of a standard on multiple days. The procedure and calculation method are given in SW-846, Method 8000C. The center of the RT window is established for each analyte and surrogate using the RT of the midpoint standard of the ICAL. For non-mass spectrometry methods, these are updated daily using the absolute RT in the ICV.

If the RT is outside the acceptance limits, corrective action will be performed. This applies to all CCV subsequent to the ICV and to LCSs. If corrective actions are not performed or are ineffective, an appropriate flag (as described in Appendix C) will be applied to the sample results.

28.1.7 Interference Check Samples

Interference check samples (ICSs) are used in ICP-AES and ICP–MS analyses only. The ICSs consist of the following:

- Solution A contains the interfering analytes
- Solution B contains both the analytes of interest and the interfering analytes

The ICSs are used to verify background and inter-element correction factors. The ICSs are run at the beginning of each run sequence for ICP-AES and ICP-MS methods.

If the ICS results are outside the acceptance limits, corrective action will be performed. After the system problems have been resolved and system control has been reestablished, the ICS will be reanalyzed. If ICS results are acceptable, all affected samples will be reanalyzed. If corrective actions are not performed or are ineffective, an appropriate flag (as described in Appendix C) will be applied to the sample results.

28.2 QC Checks

28.2.1 Analytical Batch Requirements

Laboratory QC samples will be included in an analytical batch with the field samples. An analytical batch is a group of samples (not exceeding 20 environmental samples plus associated laboratory QC samples) that are similar in composition (matrix), extracted or digested at the same time and with the same lot of reagents, and analyzed together as a group.

The analytical batch also extends to cover samples that do not need separate extraction or digestion (e.g., VOC analysis by purge and trap). The identity of each analytical batch will be unambiguously reported with the analyses so that a reviewer can identify the laboratory QC samples and the associated environmental samples. The type of laboratory QC samples and the frequency of use of these samples are discussed in the following sections.

28.2.2 Holding Time Compliance

All sample preparation and analysis will be completed within the method-required holding times. Some methods have more than one holding time requirement (e.g., Method SW8270D). For methods not requiring sample preparation, the holding time is calculated from the time of sample collection to the time of completion of all analytical runs. For methods requiring sample preparation before analysis:

- Preparation holding time is calculated from the time of sample collection to the time of completion of preparation.

- Analytical holding time is calculated from the time of completion of preparation to the time of completion of all analytical runs.

Holding times are determined based on days, hours, and minutes. If the time of sample collection is not provided, the laboratory must assume the most conservative time of day. If the analyses are performed despite holding times being exceeded, the results will be flagged according to the procedures described in Appendix C and identified in the data package case narrative.

28.2.3 Confirmation

Results at or above the LOQ for samples analyzed by GC or HPLC require quantitative confirmation. The confirmation will be completed within the method-required holding times. If the analyses are performed despite holding times being exceeded, the results will be flagged according to the procedures described in Appendix C:

- For GC methods, a second column will be used for confirmation
- For HPLC methods, a second column or a different detector will be used

Unless otherwise specified or overlapping peaks are causing erroneously high results, data from the primary column or detector will be reported as the primary result. The column used for both the primary and confirmation results will be indicated on the sample reports. The associated calibration and laboratory QC results will be submitted for both columns so that sample results can be appropriately evaluated.

28.2.4 Control Charts

Control charts or data analysis software will be maintained and used to detect trends and prevent out-of-control conditions. CLs will be monitored on an ongoing basis (at least quarterly) for shifts in mean recovery, changes in standard deviation, and development of trends. Laboratories may choose representative compounds for control charts for the purpose of trend analysis.

The QA Officer or designee will review control charts at a specified frequency for out-of-control conditions and initiate appropriate corrective actions. Data analysis software may also be used for the statistical evaluation of data for trends and biases.

28.2.5 Standard Materials

Standard materials (including second source materials) used in calibration and to prepare samples will be traceable to a National Institute of Standards and Technology, EPA, American Association of Laboratory Accreditation, or another equivalent approved source, if available. If a National Institute of Standards and Technology, EPA, or American Association of Laboratory Accreditation standard material is not available, the standard material proposed for use will be included in an addendum to this RI/FS management plan and approved before use.

The standard materials will be current, and the following expiration policy will be followed:

- Expiration dates for ampulated solutions will not exceed the manufacturer’s expiration date or 1 year from the date of receipt, whichever comes first.
- Expiration dates for laboratory-prepared stock and diluted standards will be no later than the expiration date of the stock solution or material or the date calculated from the holding time allowed by the applicable analytical method, whichever comes first.
- Expiration dates for pure chemicals will be established by the laboratory and be based on chemical stability, possibility of contamination, and environmental and storage conditions.

Expired standard materials will be either revalidated before use or discarded. Revalidation may be performed through assignment of a true value and error window statistically derived from replicate analyses of the material as compared to an unexpired standard. The laboratory will label standard and QC materials with expiration dates.

A second source standard is used to independently confirm the ICAL. A second source standard is a standard purchased from a vendor different from that supplying the material used in the ICAL. The second source material can be used for the continuing calibration standards and/or for the LCS. Two different lot numbers from the same vendor do not normally constitute a second source. However, when a project requires analyses for which there is not a separate vendor source available, the use of different lot numbers from the same vendor will be acceptable to verify calibration.

28.2.6 Supplies and Consumables

The laboratory will inspect supplies and consumables before their use in analysis. The materials description in the methods of analysis will be used as a guideline for establishing the acceptance criteria for these materials. Purity of reagents will be monitored and documented. An inventory and storage system for these materials will ensure that the materials are used before manufacturers' expiration dates and are stored under safe and chemically compatible conditions.

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Worksheet #29 – Project Documents and Records

The documents and records deliverables developed and maintained during every aspect of the project are identified in Table 29-1. These include, but are not limited to, (1) field sample collection and measurement records, (2) analytical records, (3) health and safety documentation, (4) project communication records, and (5) data assessment records.

Table 29-1 Project Documents and Records

Project Document/Record	Generation	Verification	Storage Location/Archival
Health and safety certifications, training documentation	Project Staff	Health and Safety Manager	Project files*
Field logbook(s)	Project Staff	FM and Quality Manager	Project files*
Data collection sheets (e.g., groundwater sampling forms)	Project Staff	FM and Quality Manager	Project files*
Sample documentation (e.g., sample labels, CoCs, sample summary table)	Project Staff	FM and Quality Manager	Project files*
Figures	Project Staff	PM	Project files*
Survey data	Project Staff	PM	Project files*
Field instrument calibration logs	Project Staff	FM and Quality Manager	Project files*
Cooler receipt forms	Project Staff	FM and Quality Manager	Project files*
Photographs	Project Staff	FM and Quality Manager	Project files*
Airway Bills	Project Staff	FM and Quality Manager	Project files*
Contractor Daily QC Reports	Project Staff	PM	Project files*
Waste manifests or other documentation of waste disposal	Project Staff	PM	Project files*
Deviations	Project Staff	FM and Quality Manager	Project files*
Corrective Action Reports	Project Staff	PM	Project files*
Correspondence	Project Staff	PM	Project files*
Performance Evaluation/ Performance Testing Sample Reports	Laboratory Quality Manager Laboratory Project Manager	Project Chemist	Project files*
Field audit documentation	Project Staff	Site Manager or QA Auditor	Project files*

Table 29-1 Project Documents and Records

Project Document/Record	Generation	Verification	Storage Location/Archival
Analytical sample records (CoC forms, cooler receipt information)	Project Staff	Project Chemist	Project files*
Analytical laboratory data packages	Laboratory	Project Chemist	Project files* Laboratories maintenance records in accordance with the QAM and State of Alaska requirements.
Electronic data deliverables	Laboratory	Project Chemist	Project files* Laboratories maintenance records in accordance with the QAM and State of Alaska requirements.
ERPToolX files	Laboratory	Project Chemist	The ERPIMS database is maintained by AFCEC. Data will be stored and managed using a commercially available relational database management system.
ADEC Laboratory Data Review Checklist (2017c)	Project Chemist / Data Validator	PM or Project Chemist	Project files*
QA/QC summary report	Project Chemist / Data Validator	PM or Project Chemist	Project files*
Data usability assessment	Project Chemist / Data Validator	Project Team	Project files*

Notes:

* The project team will maintain the project files in electronic and/or hard copy formats for the duration of the contract POP. Electronic project files will be maintained on a CH2M Project SharePoint site until transfer of custody. Hard copy formats will be maintained at the CH2M office in Anchorage, Alaska, unless project needs require limited storage at an alternative CH2M office. Project data and reports will be managed by USAF via ERPIMS and the Administrative Record.

ADEC = Alaska Department of Environmental Conservation
AFCEC = Air Force Civil Engineer Center
CH2M = CH2M HILL, Inc.
CoC = chain-of-custody
ERPIMS = Environmental Restoration Program Information Management System
FM = field manager
PM = project manager
POP = period of performance
QA = quality assurance
QAM = quality assurance manual
QC = quality control
USAF = United States Air Force

29.1 Analytical Records

29.1.1 Hardcopy Analytical Data Deliverables

The hardcopy data reports will conform to the formats identified in Section 8.8 of the AFCEE QAPP Version 4.0.02 (2006). Note that substituted summary forms may be used for the applicable AFCEE form, as needed, as long as the information is equivalent to or exceeds the required content of the AFCEE form and pre-approval has been obtained from the project chemist. A PDF version of all hardcopy data will also be provided as part of the laboratory data deliverable. Supporting raw data information may be

required. Raw data submittals, if required, will be included in the PDF submittal and defined in the laboratory statement of work for the project.

29.1.2 Electronic Data Reports from the Laboratory

The electronic data deliverable (EDD) will be as defined in the project-specific laboratory statement of work.

29.2 ERPIMS Electronic Data Reports

Electronic deliverable reports will be provided in the ERPIMS format. ERPIMS is a data management system designed to accommodate all types of data collected at the Installation Restoration Program sites. Specific codes and data forms have been developed to allow consistent and efficient input of information to the system. CH2M will provide the database information via ASCII files in specified ERPIMS format on CDs. The information transferred will include all required technical data, such as site information, well characteristics, and hydrogeologic, geologic, physical, and chemical analysis results. Electronic data reporting formats and requirements are given in *ERPIMS, 2012 Data Loading Handbook,* Version 6.0 (AFCEE, 2012).

29.3 Data Assessment Records

Data assessment records include, but are not limited to, data validation reports.

29.4 ADEC-required Laboratory Checklists

CH2M will provide the current version of the ADEC Division of Spill Prevention and Response Contaminated Sites Program laboratory checklist (2017c) with the data quality evaluation reports. One checklist will be provided for each analytical data deliverable as an appendix to the data quality evaluation reports. Each section of the checklist must be completed and all sample receipt and data quality issues must be discussed even if associated data did not require qualification.

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Worksheet #31/32/33 – Assessments and Corrective Action

These worksheets document responsibilities for conducting project assessments, responding to assessment findings, and implementing corrective action. Appropriately scheduled assessments (field sampling technical systems audits at the beginning of sampling) allow management to implement corrective action in a timely manner, thereby correcting nonconformances and minimizing the impact on DQOs.

Table 31-1 Planned Project Assessments

Assessment Type	Responsible Party/ Organization	Number/Frequency	Estimated Dates	Assessment Deliverable	Deliverable Due Date
Planning documents	Project Staff, TM, STC, and Quality Manager	To be prepared before initiation of activities at the site	Planning documents, including this RI/FS management plan, will be finalized before project mobilization. Dates are provided in the project schedule (see Worksheet #14/16).	QC checklist for each document Electronic and hard copy documents, quantity depending on version	7 to 14 business days after response to comments
RI Report	Project Staff, TM, STC, and Quality Manager	To be prepared upon completion of activities at the site(s)	Report will be completed following the completion of field activities and the receipt and validation of laboratory data deliverables. Dates are provided in the project schedule (see Worksheet #14/16).	QC checklist for each document Electronic and hard copy reports, quantity depending on version	7 to 14 business days after response to comments
Internal and external project reporting reviews	Project Staff	After receiving comments	7 to 14 business days	Internal and external corrective action reports, updated case narratives, and corrected data submissions	7 to 14 business days
Laboratory technical evaluation	PM and Project Chemist	Once, before laboratory subcontract award	During RI/FS management plan development	Laboratory subcontract award based on evaluation of the technical proposal	Before project mobilization
Subcontractor technical evaluation	PM	Once, before subcontract award	During RI/FS management plan development	Subcontract award based on evaluation of the technical proposal	Before project mobilization
Readiness review	PM	Once before project mobilization	Before fieldwork	Operational readiness review form	Before project mobilization
Daily QC audit	PM, TM, or Quality Manager	Daily during field activities	During fieldwork	Document variances in logbook notes, daily QC report, or correspondence	Within 24 hours of audit
Review of written or electronic field documentation (e.g., logbook notes, sampling data sheets)	PM, TM, or Quality Manager/STC	Weekly, during field activities	During fieldwork	Document variances in logbook notes, daily QC report, or correspondence	Within 5 days of audit
Review of field instrument calibration logs	PM, TM, or Quality Manager	Daily during field activities	During fieldwork	Document variances in logbook notes, daily QC report, or correspondence	Within 24 hours of audit

Table 31-1 Planned Project Assessments

Assessment Type	Responsible Party/ Organization	Number/Frequency	Estimated Dates	Assessment Deliverable	Deliverable Due Date
Review of CoC forms	TM, Quality Manager, or Project Chemist	Daily as CoC forms are generated	During sampling events	Corrected CoC form Laboratory notification of changes	Within 24 hours of review
Review of laboratory cooler receipt information	Project Chemist	One for each SDG (CoC form) received	Within 24 hours of sample receipt	Written documentation or correspondence to appropriate parties regarding variances or potential data quality issues found during the review Correspondence with laboratory if corrections are required (e.g., sample identification number changes).	Within 24 hours of review
Field Performance audit	FM and TM, or Quality Manager	Once during each field event	During fieldwork	Document variances in logbook notes, daily QC report, or correspondence	Within 7 days of audit
Laboratory system audit	Quality Manager or Project Chemist	Once, before subcontract award	Before project mobilization	Audit findings	Before project mobilization
Laboratory performance assessment	Quality Manager or Project Chemist	Once during the course of the project	Following data validation and usability assessment	Written documentation or correspondence, or internal subcontractor evaluation	Within 5 days of audit
Data quality and usability assessment	Project Chemist	After all laboratory data deliverables have been received and validated	30 days after data has been validated	Recipients listed in the Distribution Memo	After data has been generated and validated

Notes:

CoC = chain of custody
FM = field manager
PM = project manager
QC = quality control
RI/FS = remedial investigation/feasibility study
SDG = sample delivery group
STC = senior technical consultant
TM = task manager

Table 31-2 Assessment Response and Corrective Action

Assessment Type	Responsibility for Responding to Assessment Findings	Assessment Response Documentation	Timeframe for Response	Responsibility for Implementing Corrective Action	Responsible for Monitoring Corrective Action Implementation
Review of planning documents (e.g., RI/FS management plan)	Lead Author or Project Team	Responses to comments	See project schedule	Quality Manager or PM	Quality Manager or PM
Technical project reports (e.g., after-action reports, remedial action reports, annual reports)	Lead Author or Project Team	Responses to comments	See project schedule	Quality Manager or PM	Quality Manager or PM
Laboratory technical evaluation	Project Chemist	Verbal debriefing after audit or written documentation of evaluation	Within 5 business days from receipt of technical proposal	Project Chemist requests additional information from bidder if needed, otherwise no corrective action required	PM
Subcontractor technical evaluation	PM or designee	Verbal debriefing after audit or written documentation of evaluation	Within 5 business days from receipt of technical proposal	PM or designee requests additional information from bidder if needed, otherwise no corrective action required	PM
Readiness review	PM	Verbal debriefing or written corrective action response	Before planned activities	As directed by the PM	PM
Daily QC audit	PM, TM, or Quality Manager	Daily QC report, internal memo, or correspondence	As appropriate based on findings	Quality Manager or designee	PM
Review of written or electronic field documentation (e.g., logbook notes, sampling data sheets)	TM, Quality Manager	Daily QC report, internal memo, or correspondence	As appropriate based on findings	Field Team	PM
Review of field instrument calibration logs	FM or Quality Manager	Daily QC report, internal memo, or correspondence	Within 24 hours of review	Field Team	PM
Review of CoC forms	Project Chemist	Daily QC report, internal memo, or correspondence	Within 24 hours of review	Project Chemist	PM
Review of laboratory cooler receipt information	Project Chemist	Internal correspondence or correspondence with subcontract laboratory	Within 24 hours of review	Project Chemist	PM

Table 31-2 Assessment Response and Corrective Action

Assessment Type	Responsibility for Responding to Assessment Findings	Assessment Response Documentation	Timeframe for Response	Responsibility for Implementing Corrective Action	Responsible for Monitoring Corrective Action Implementation
Field performance audit	Field Team	Verbal debriefing after audit and/or written corrective action plan	As appropriate based on findings	Field Team or Site Manager	Field Team or Site Manager
Laboratory system audit	Project Chemist	Verbal debriefing after audit and/or written documentation	Before the start of field activities	Project Chemist	Quality Manager
Laboratory performance assessment	Project Chemist	Verbal debriefing after audit and/or written report	As appropriate based on findings	Project Chemist	PM
Data quality and usability assessment	Project Chemist	Data validation report ADEC Laboratory Data Review Checklist(s) (2017c) Corrective action (if required)	For inclusion in preliminary draft and draft reports, or as determined by corrective action	Project Chemist	PM

Notes:

ADEC = Alaska Department of Environmental Conservation
CoC = chain of custody
FM = field manager
PM = project manager
QC = quality control
RI/FS = remedial investigation/feasibility study
TM = task manager

Worksheet #34 – Data Verification and Validation Inputs

To ensure that scientifically sound data of known and documented quality are used in making environmental decisions, data verification and validation will be performed. Worksheet #34 lists the inputs that will be used during data verification and validation. Inputs include planning documents, field records, and laboratory records. Data verification is a check that all specified activities involved in collecting and analyzing samples have been completed and documented and that the necessary records (objective evidence) are available to proceed to data validation. Data validation is the evaluation of conformance to stated requirements.

Item	Description	Verification (Completeness)	Validation (Conformance to Specifications)
Planning Documents/Records			
	Approved QAPP	X	
	Contract	X	
	Field SOPs	X	
	Laboratory certifications, SOPs, and reporting limits	X	X
	Statement(s) of work	X	
Field Records			
	Field logbook(s)	X	X
	Field instrument calibration logs	X	X
	CoC and cooler receipt form	X	X
	Sampling diagrams/surveys	X	X
	Boring logs and well construction diagrams	X	X
	Daily quantity reports	X	X
	Waste tracking log/manifests and/or disposal records	X	X
	Correspondence	X	X
	Change orders/deviations	X	X
	Field audit reports	X	X
	Field corrective action reports	X	X
Analytical Data Package			
	Case narrative	X	X
	Original and internal CoC forms	X	X
	Cooler receipt form(s) for each cooler of samples	X	X
	Sample date/time of receipt, date/time of prep, date/time of analysis	X	X
	Initial and continuing calibration	X	X

Item	Description	Verification (Completeness)	Validation (Conformance to Specifications)
	Field sample and field QC sample results	X	X
	Laboratory QC sample results	X	X
	DL, LOD, and LOQ reported	X	X
	DL, LOD, and LOQ establishment and verification	X	X
	Raw data	X	X
	Benchsheets/worksheets	X	X
	Instrument analytical run logs	X	X
	Instrument maintenance and operations logs	X	X
	Definition of laboratory qualifiers	X	X
	Hard copy and electronic versions of the laboratory report	X	X
	Communication records	X	X
	Documentation of data quality issues and their resolution, including corrective actions	X	X

Worksheet #35 – Data Verification Procedures

Data verification is a completeness check to confirm that all required activities were conducted, all specified records are present, and the contents of the records are complete. This worksheet documents procedures that will be used to verify project data. It applies to both field and laboratory records.

Records Reviewed	Requirement Documents	Process Description	Responsible Person, Organization
Field documentation including field logbook(s), CoC forms	RI/FS management plan Field SOPs	Verify accuracy and completeness for each day of field activities. Verify that all planned samples, including field QC samples, were collected and documented in accordance with the field SOPs and QAPP requirements. Verify that deviations from planned activities were documented. Verify that field monitoring and field measurements were recorded.	Field Lead Project Chemist
Laboratory analytical records	RI/FS management plan Analytical SOPs	Verify that the analytical SOPs were followed.	Laboratory QA Manager Project Chemist
Sample receipt documentation (cooler receipt forms, laboratory log-in information)	RI/FS management plan Field SOPs	Verify accuracy and completeness. Verify that discrepancies were documented and resolution of any potential data quality issues.	Laboratory QA Manager Field Lead Project Chemist
Sample summary table(s)	RI/FS management plan	Verify accuracy and completeness of the sample summary by comparing against the planned samples and the CoCs and cooler receipt forms for samples actually submitted to the laboratory.	Field Lead Project Chemist
Field measurements, including field screening results	RI/FS management plan Field SOPs	Verify that field measurements meet the QA/QC requirements established in the Project QAPP. Verify accuracy and completeness.	Field Lead
Laboratory analytical report(s) and electronic deliverable(s)	RI/FS management plan	Verify accuracy and completeness. Verify that report and EDDs meet contract requirements. Verify that the EDDs are consistent with the hard copy data package.	Laboratory QA Manager Project Chemist
Analytical results, including DL/LOD/LOQ, and laboratory data qualifiers	RI/FS management plan	Verify that reporting limits meet DQOs specified in the project QAPP. Verify that method and required QC samples were analyzed. Verify that soil sample results are dry-weight corrected.	Laboratory QA Manager Project Chemist
Field QC sample results	RI/FS management plan field SOPs	Verify that all QAPP-required QC samples were collected and analyzed.	Laboratory QA Manager Field Lead Project Chemist

Records Reviewed	Requirement Documents	Process Description	Responsible Person, Organization
Audit reports, corrective action reports	RI/FS management plan	Verify accuracy and completeness. Verify that corrective actions were documented and implemented.	PM TM Laboratory QA Manager Project Chemist

Worksheet #36 – Data Validation Procedures

The objective of data validation is to assess the performance associated with the analysis to determine the quality of the data. This will be accomplished by evaluating whether the collected data comply with the predefined requirements of the project (including method, procedural, and contractual requirements) and by comparing the collected data with criteria established based on the project DQOs. The validation process is summarized in Table 36-1.

Table 36-1 Validation Process Summary

Level	Matrix	Analytical Group	Concentration Level	Validation Criteria	Data Validator
Minimum Level III	Soil, Sediment	All methods except for IDW analyses, which will not be validated	All	Defined in Worksheet #36	Project Chemist or designee
Minimum Level III	Groundwater, Surface Water	All methods except for IDW analyses, which will not be validated	All	Defined in Worksheet #36	Project Chemist or designee
Minimum Level III	Air	All methods	All	Defined in Worksheet #36	Project Chemist or designee

Note:

IDW = investigation-derived waste

All types of data, including screening data and definitive data, are relevant to the usability assessment. The following sections focus on the data review requirements for definitive data only.

36.1 Data Review Requirements for Definitive Data

Scientifically sound data of known and documented quality that meet DQOs are essential for use in the decision-making process. Data review is the process whereby a variety of personnel who have different responsibilities within the data management process examine and evaluate data to varying levels of detail and specificity. This process includes verification, validation, and usability assessment. The records that document data review activities to effectively assess the data for quality and usability must be complete and robust. The data can then move forward with associated qualifiers that indicate the overall usability of the data.

Data verification is the first step in data review. Data verification confirms that the specified requirements have been performed. Data verification and validation inputs are included in Worksheet #34, and data verification procedures are included in Worksheet #35.

Data validation extends data verification and is used to confirm that the requirements for a specific intended use are fulfilled. Data validation is the systematic process of evaluating whether the data comply with the pre-defined requirements of the project (including method, procedural, and contractual requirements) and comparing the data with criteria based on the DQOs documented in this RI/FS management plan. The purpose of data validation is to assess the performance associated with the analysis to determine the quality of the data. Data validation includes a determination, to the extent possible, of the reasons for any failure to meet performance requirements, and an evaluation of the effect of such failures on the usability of the data.

A data usability assessment is an evaluation based on the findings of data validation and verification in the context of the overall project decisions or objectives. The assessment determines whether the project execution and resulting data meet the DQOs. Both the sampling and analytical activities must be

considered, with the ultimate goal of assessing whether the final, qualified results support the decisions to be made with the data.

36.2 Laboratory Reporting Requirements

36.2.1 Analytical Data Package Requirements

A group of samples submitted to the laboratory at the same time and included on the same CoC will be considered an SDG. The results for an SDG will be reported as one analytical data package. The analytical data package must contain adequate information and be presented in a clear and concise manner. Laboratories must provide Level IV data packages that meet the minimum requirements included in the *Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling Technical Memorandum* (ADEC, 2017f) and the DoD QSM v 5.1 (2017) which include, but are not limited to, the following:

- Cover sheet, which identifies the project
- Table of contents
- Case narrative, which summarizes samples, provides analyses, and discusses any issues that may affect data usability
- Definition of laboratory qualifiers
- Analytical results
- Laboratory DLs, LODs, and LOQs
- Instrument performance check summary
- Calibration summaries (ICAL linearity and relative RFs, continuing calibration, second source verification, IS areas, and RT check summaries)
- Sample management records
- Internal laboratory QA/QC information (MBs, surrogate recoveries, MS/MSD, LCS/LCSD, duplicate runs, serial dilutions [metals], or SRMs [if any])
- Raw data (e.g., chromatograms, mass spectrum results)

The laboratory's analytical data package should be organized so that the analytical results are reported on a per-analytical-batch basis, unless otherwise specified.

Using the information contained in the data package, a reviewer should be able to determine the PARCCS of the data. Additional information may be required, depending on the level of detail related to the data review performed.

During laboratory procurement and project planning, a schedule will be established so that data packages are provided promptly to the CH2M project chemist for data review, validation, assessment, and use. This schedule will include identification of the anticipated number of these data packages to be generated for the project.

The case narrative of the analytical data package will include, but is not limited to, the following:

- Table summarizing samples received, and correlating field sample numbers, laboratory sample numbers, and laboratory tests completed

- Discussion of sample appearance and integrity issues that may affect data usability (e.g., temperature, preservation, pH, sample containers, air bubbles, and multi-phases)
- Samples received but not analyzed and the explanations for non-analysis
- Discussion of holding-time deviations for sample preparation and analyses
- Analysis of all exceedances or discrepancies of calibrations, continuing calibrations or QC sample results, raw data/chromatograms, and corrective actions taken
- Identification of samples and analytes for which manual integration was necessary
- Discussion of all qualified data and definition of qualifying flags
- Discussion and recommendations of potential data usability of qualified data

36.2.2 Laboratory Data Reporting Requirements

The following sections describe laboratory reporting requirements for reporting limits, manual integrations, and MBs.

36.2.2.1 Result Reporting Requirements

The following result reporting requirements will be met for laboratory data:

- DLs and sample results should be reported to one decimal place more than the corresponding LOQ, unless the appropriate number of significant figures for the measurement dictates otherwise.
- Results for soil samples should be reported on a dry-weight basis. DLs, LODs, and LOQs will be adjusted for moisture.
- Samples should be analyzed undiluted, if possible. ND results should be reported to the LOD.

36.2.2.2 Manual Integration Requirements

Manual integrations, which are an integral part of the chromatographic analysis process, will be done only as corrective action measures. Examples of instances where manual integration would be warranted include, but are not limited to, co-eluting compounds resulting in poor-peak resolution, a misidentified peak, an incorrect RT, or a problematic baseline.

When manual integrations are used, the following procedures will be implemented for documenting the event and for consistency in performing the manual integration:

- A laboratory SOP will be followed for manual integrations. This SOP will specify (1) when automated integrations by the instrument are likely to be unreliable, (2) what constitutes an unacceptable automated integration, (3) how the problems should be resolved by the analyst, and (4) the procedures for the analyst to follow in documenting any required manual integrations.
- Raw data records will include a complete audit trail for those manipulations, including (1) results of both the automated and manual integrations, (2) notation of the cause and justification for performing the manual integrations, (3) date, and (4) signature or initials of person performing the manual operations.
- The chromatogram of the peak before and after manual integration will be provided in laboratory report.
- All manual integrations must be reviewed and approved by the section supervisor and/or the QA officer.
- All manual integrations must be identified in the case narrative.

36.2.3 Laboratory Data Deliverables

At minimum, the following data deliverables will be requested from the subcontract laboratories:

- Level IV data package in PDF for each SDG containing the elements specified in this worksheet (including raw data) and consistent with the requirements specified in *Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling Technical Memorandum* (ADEC, 2017f) and the DoD QSM v 5.1 (2017)
- CH2M LabSpec EDD validated using the most current version of CherpTool

36.2.4 Laboratory Data Review Requirements

All analytical data that the laboratory generates will be verified before submittal to CH2M. This internal data review process, which is multi-tiered, will include all aspects of data generation, reduction, and QC assessment. All definitive data will be reviewed first by the analyst, and then by the supervisor of the respective analytical section using the same criteria. Elements for review or verification at each level must include, but are not limited to, the following:

- Sample receipt procedures and conditions
- Sample preparation
- Appropriate analytical SOPs and methodologies
- Accuracy and completeness of analytical results
- Correct interpretation of all raw data, including all manual integrations
- Appropriate application of QC samples and compliance with established CLs
- Verification of data transfers
- Documentation completeness
- Accuracy and completeness of data deliverables (hard copy and electronic)

36.2.5 Laboratory Data Evaluation

The calibration, QC, corrective actions, and flagging requirements for definitive data are shown in Appendix C. The laboratory will apply data qualifiers as part of its internal validation activities. The allowable data qualifiers for definitive data are Q, J, B, U, and N, and are defined in Table 36-2. Flagging criteria apply when acceptance criteria are not met and when corrective actions are not successful or not performed. The supervisor of the respective analytical sections will review the data qualifiers.

Table 36-2 Laboratory Data Qualifiers

Qualifier	Description
Q	One or more QC criteria have failed.
J	The analyte was positively identified, but the associated concentration is estimated above the DL and below the LOQ.
B	The analyte was found in an associated blank above one-half the LOQ, as well as in the sample.
U	The analyte was analyzed for, but not detected.
N	The analyte is a tentatively identified compound (for mass spectrometry methods only).

Notes:

DL = detection limit, LOQ = limit of quantitation, QC = quality control

The laboratory's QA section will perform a 100 percent review of 10 percent of the completed data packages, and the laboratory project representative will complete a final review on all of the completed data packages.

The CH2M project chemist or designee will subsequently evaluate the flags that the laboratory applied as part of its data validation and usability assessment activities. The flags may be accepted, modified, or rejected per the validation guidelines outlined in this RI/FS management plan.

36.2.5.1 Method Blank Evaluation Guidance

For MBs, the source of contamination will be investigated. If 0.5 the LOQ is exceeded, the laboratory will evaluate whether the samples need to be reprocessed using the following criteria: (1) the MB contamination exceeds a concentration greater than 0.1 of the measured concentration of any sample in the associated preparation batch, or (2) there is evidence that the blank contamination otherwise affects the sample results. Except when sample analysis results in an ND, all samples associated with MB contamination and meeting these criteria will be reprocessed in a subsequent preparation batch. If insufficient sample volume remains for reprocessing, the results will be reported with a B-flag, along with any other appropriate data qualifier. If an analyte is detected only in the MB, and not in any batch samples, no flagging is necessary. MB contamination must be addressed in the case narrative.

36.3 Data Validation Requirements

CH2M has overall responsibility for data quality. The person performing the data review should possess the disciplinary expertise, experience, and theoretical knowledge to perform the task; the individuals should also have a complete understanding of the intended use of the data and the relationship of the QC results to the usability of the data.

36.3.1 Data Verification Guidelines

Data verification is the first step in data review. Data verification confirms that the specified requirements have been performed. Data verification and validation inputs are included in Worksheet #34, and data verification procedures are included in Worksheet #35.

36.3.2 Data Validation Guidelines

The data validation process builds on data verification. The laboratory case narrative and data validation results should be reviewed, with data qualifiers removed or added if needed. All project data will be validated (except for IDW analyses, which will not be validated) on an analytical-batch basis by assessing QC samples and associated field sample results. Data validation guidelines have been developed with guidance from DoD QSM v 5.1 (2017); *QAPP* Version 4.0.02 (AFCEE, 2006); EPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (2008); EPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (2010b); and specific method guidance, such as the ADEC *Underground Storage Tank Procedures Manual* (2017e) and EPA SW-846 Third Edition (through Final Update IV, 2007).

Data validation is typically performed by person(s) independent of the activity being validated. The CH2M project chemist or designee will be performing the Level III data validation (at a minimum) with elements of Level IV data validation, if major QC issues such as problems with calidibrations or consistent QC failures are identified during Level III validation. The appropriate degree of independence is an issue that can be determined on a program-specific basis.

The following information will be reviewed as part of a Level III data validation:

- CoC documentation
- Holding time compliance
- QC sample frequencies
- Blanks
- LCS recoveries (and precision, if LCSD performed)
- Surrogate spike recoveries
- MS/MSD recoveries and precision
- Initial and continuing calibration summary information
- ISs
- Tuning criteria
- FD precision
- Case narrative review, laboratory flagging review, and other method-specific criteria

In general, EDDs will be evaluated for consistency with project and contract requirements. EDDs will be consistent with the hard copy data package.

During data verification and validation, a partially automated process using a data management system (not commercially available) may be used to make all of the comparisons against the limits for elements of QC that are available in the laboratory EDDs on a project-specific basis. The partially automated process will include data flagging for issues related to MBs, EBs, TBs, LCS (and LCSD, if performed), MS/MSD samples, FDs, surrogate recoveries, holding time, and reconciliation of dilutions and re-extractions. All of the elements of QC, their limits, and the logic for applying flags will be incorporated in the computer application. Data flags, as well as the reason for each flag, will be entered into an electronic database and will be made available to the data users. The data validator/chemist will apply a final flag to the data after evaluating all flags entered into the database and selecting the most conservative flags per the ranking hierarchy outlined in Table 36-3.

36.3.3 Raw Data Review

As part of the data validation and usability assessment, the Level IV data review performed by the CH2M project chemist can involve an in-depth review of the raw data to verify accuracy, followed by analysis and interpretation of the data in the context of the project objectives and end use. This type of in-depth review may be required based on the findings of the data validation in order to further evaluate the usability of the data.

Instrument data will be included in the Level IV analytical laboratory data packages provided by the subcontract laboratories. Raw data review may include, but is not limited to, the following:

- Method-specific instrument calibration and QC parameters
- Raw data and chromatograms
- System performance
- Proper integration (if applicable)
- Manual integration (where applicable)
- Spectral matches and/or RTs to verify analyte identification (where applicable)
- Random check of calculations
- Interference problems or system performance problems
- The laboratory's resolution of any identified problems, as necessary

36.3.4 Data Analysis and Interpretation

The assessment phase of the data validation process may include, but is not limited to, the following:

- Laboratory and field blank contamination and parallel contamination in samples
- Duplicate sample analyses
- Matrix spike data
- LCS data
- Effect of multiple data issues on the final analytical results
- Deficiencies identified during data verification and assessment of their effect on the sample results
- Assessment of data usability and assignment of final data qualifiers, as necessary
- Discussion of completeness, representativeness, and comparability

A data validation report will be prepared summarizing the findings and discussing their effect on overall data usability. The report will follow the guidelines in the ADEC Division of Spill Prevention and Response Contaminated Sites Program Technical Memorandum, Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling (March 2017). The report will present, in text or tabular form, all QC parameters evaluated, the acceptance criteria used to evaluate each QC parameter, a list of all QC exceedances as well as the extent of the exceedance, the samples associated with each exceedance, and the qualifiers applied. This report will be incorporated into the final usability assessment. In addition to the overall validation report, the project chemist or data validator will complete the Laboratory Data Review Checklist for each laboratory data package (ADEC, 2017c).

36.3.5 Blank Evaluation Guidelines

The CH2M project chemist or designee will evaluate MBs, as well as other field blanks, based on the concentration of the analyte in the samples in relation to the concentration in the blank. The CH2M project chemist or designee must discuss any blank contamination that may affect data usability in conjunction with project-specific goals. When a dataset contains low-level detects in field samples and has associated field or laboratory blanks that have detects at similar concentrations, this suggests that the low-level detects in these field samples may be artifacts from either field or laboratory practices. A sample detect that is less than or equal to 5 times the blank contamination will be flagged “B” at the detected concentration to document the associated blank contamination (less than or equal to 10 times for common laboratory contaminants including, but not limited to, acetone, 2-butanone, methylene chloride, and phthalate esters).

36.3.6 Duplicate Evaluation Guidance

QC measures for precision include FDs, laboratory duplicates, and MSDs. The laboratory will evaluate and qualify these measures according to procedures outlined in Appendix C, with the exception of the FDs.

Specifically, FDs will be sent to the laboratory as blind samples and will be given unique sample identification numbers. These sample results can be used to assess field sampling precision, laboratory precision, and, potentially, the representativeness of the matrix sampled. Flagging of results associated with FDs should be assigned so that the level of uncertainty required, as provided by the project-specific objectives, is considered.

Poor overall precision may result from one or more of the following:

- Field instrument variation
- Analytical measurement variation
- Poor sampling technique
- Sample transport problems

- Spatial variation (heterogeneous sample matrices)

To identify the cause of imprecision, the project team should evaluate the field sampling design rationale and sampling techniques, as well as review both field and analytical duplicate sample results. If poor precision is indicated in both the field and analytical duplicates, then the laboratory may be the source of error. If poor precision is limited to the FD results, then the sampling technique, field instrument variation, sample transport, and/or spatial variability may be the source of error. If data validation reports indicate that analytical imprecision exists for a particular dataset or SDG, then the reports must discuss the effect of that imprecision on usability.

36.3.7 Matrix Interference Evaluation Guidance

In the case of matrix interference, J-flags or UJ-flags should be applied to the associated parent sample and FD, as applicable.

36.3.8 Flagging Conventions

The allowable final data qualifiers for definitive data and the hierarchy of data qualifiers listed in order of the most severe through the least severe are R, B, J, UJ, U and NJ. Table 36-3 describes these validation and usability assessment data qualifiers.

Table 36-3 Validation and Usability Assessment Data Qualifiers

Qualifier	Description
R	The data are rejected because of deficiencies in meeting QC criteria and may not be used for decision-making.
B	The analyte was detected in the sample at a concentration less than or equal to five 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 quality control criteria. Or the analyte was positively identified, but the associated concentration is estimated greater than or equal to the DL and below the LOQ.
UJ	The analyte was not detected. However, the result is estimated because of discrepancies in meeting certain analyte-specific QC criteria.
U	The analyte was analyzed for, but not detected.
NJ	The analyte is a tentatively identified compound.

Notes:

Data validation will indicate when performance criteria are not met. The final rejection of data (qualified “R”) and their use must be decided by the project team and not based solely on the assessment performed by the data validator.

DL = detection limit, LOQ = limit of quantitation, QC = quality control

Data qualifying conventions based on result quantitation are summarized in Table 36-4.

Table 36-4 Data Qualifying Conventions Based on Quantitation of Results

Criteria	Flag
< DL	U, UJ at the LOD
≥ DL < LOQ	J
≥ LOQ	As needed
≥ High standard/linear range	J

Notes:

DL = detection limit, LOD = limit of detection, LOQ = limit of quantitation

For example:

- DL = 2, LOD = 4, LOQ = 15, sample is undiluted
- Sample #1: Analytical result: not detected; reported result: < 4 U
- Sample #2: Analytical result: 2; reported result: 2 J
- Sample #3: Analytical result: 10; reported result: 10 J
- Sample #4: Analytical result: 15; reported result: 15

Table 36-5 presents general guidelines for applying the data validation and usability assessment qualifiers. The tables in Appendix C should be consulted for specific details.

Table 36-5 General Data Qualifying Conventions

QC Requirement	Criteria	Flag	Flag Applied to
Holding time	Time exceeded for extraction or analysis	J for positive results; R for NDs	All analytes in sample
	Time exceeded for extraction or analysis by a factor of >2	J for positive results; R for NDs	
Sample integrity (volatiles)	Bubbles > 0.25 inch in VOA vial used for analysis	J for positive results; UJ for NDs	Sample
	Evidence of leaking methanol	J for R or positive results; R or UJ for NDs based on professional judgment	
Sample preservation	Sample not preserved; however, if sample preservation was not done in the field but was performed at the laboratory upon sample receipt, no flagging is required	J for positive results; UJ for NDs	Sample
	Sample receipt temperature >6°C	J for positive results; UJ for NDs	
	Sample receipt temperature >8°C	J for positive results; R for NDs	
Instrument tuning	Ion abundance method-specific criteria not met	R for all results	All associated samples in analytical batch
Initial calibration	All analytes must be within method-specified criteria	J for positive results; R for NDs	All associated samples in analytical batch
Second source check or continuing calibration	All analytes must be within method-specified criteria	High bias: J for positive results Low bias: J for positive results; UJ for NDs	All associated samples in analytical batch
	Criteria exceeded by more than 2 times	J for positive results; R for NDs	
Low level calibration check	All analytes must be within 50 percent of expected value	High bias: J for positive results Low bias: J for positive results; UJ for NDs	All associated samples in analytical batch
	Criteria exceeded by more than 2 times	J for positive results; R for NDs	
ICS	All analytes must be within 20 percent of expected value	High bias: J for positive results Low bias: J for positive results; UJ for NDs	All associated samples in analytical batch
	Criteria exceeded by more than 2 times	J for positive results; R for NDs	

Table 36-5 General Data Qualifying Conventions

QC Requirement	Criteria	Flag	Flag Applied to
LCS (a LCSD must be included for Methods AK101 and AK102/103)	%R > UCL %R < LCL %R <10 percent for organics %R <40 percent for inorganicsLCS/LCSD RPD > CL	J for positive results J for positive results; UJ for NDs J for positive results; R for NDs J for positive results; R for NDsJ for positive results	The specific analyte(s) in all samples in associated analytical batch
Internal Standards	Area > UCL Area < LCL Area < 20 percent	J for positive results; UJ for NDs J for positive results J for positive results; R for NDs	Associated analytes in sample
Surrogate spikes	%R > UCL %R < LCL and >10 percent %R <10 percent	J for positive results J for positive results; UJ for NDs J for positive results; R for NDs	Associated analytes in sample
	Dilution >10 times	No flagging required for failed surrogates	
Blanks (MB, EB, or TB)	Analyte(s) detected	B for positive sample results ≤ 5 times highest blank concentration (10 times for common lab contaminants)	All samples in preparation, field, or analytical batch, whichever applies
FDs	RPD > CL and FDs > LOQs One FD > LOQ, one ND or <LOQ	J for positive results J for positive results; UJ for NDs	The specific analyte(s) in FD pair Note: No flagging is required for RPDs based on both concentrations less than the LOQs or where one result is ND and one is less than the LOQ
MS/MSD	MS or MSD %R > UCL MS or MSD %R < LCL MS or MSD <20 percent for organics MS or MSD <30 percent for inorganics MS/MSD RPD > CL Sample concentration > 4 times spike concentration; excessive dilution[a]	J for positive results J for positive results; UJ for NDs J for positive results; R for NDs J for positive results; R for NDs J for positive results No flag required	The specific analyte(s) in parent sample and FD only.
Post-digestion spike	All analytes must be within 25 percent of expected value	High bias: J for positive results Low bias: J for positive results; UJ for NDs	The specific analyte(s) in parent sample
Serial dilutions	All analytes must be within 10 percent of expected value	If post spike not analyzed; J for positive results	The specific analyte(s) in parent sample
Confirmation	RPD between primary and confirmation results > 40 percent	J for positive results	The specific analyte(s) in the sample
RT window	Analyte within established window	R for all results	The specific analyte(s) in the sample

Table 36-5 General Data Qualifying Conventions

Notes:

[a] Based on analyte-specific review

Information in this table reflects flagging criteria from guidance documents, as well as criteria applied based on professional judgment.

°C = degrees Celsius
%R = percent recovery
CL = control limit
FD = field duplicate
ICS = interference check sample
LCL = lower confidence limit
LCS = laboratory control sample
LCSD = laboratory control sample duplicate
LOQ = limit of quantitation
MS = matrix spike
MSD = matrix spike duplicate
ND = non-detect
QC = quality control
RPD = relative percent difference
RT = retention time
UCL = upper confidence level
VOA = volatile organic analysis

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Worksheet #37 – Data Usability Assessment

The data usability assessment is an evaluation based on the results of data verification and validation in the context of the overall project decisions or objectives. The assessment determines whether the project execution and resulting data meet the project DQOs. The sampling and analytical activities must be considered, with the ultimate goal of assessing whether the final, qualified results support the decisions to be made with the data.

The following sections summarize (1) the processes used to determine whether the collected data are of the right type, quality, and quantity to support project decision making; (2) how data quality issues will be addressed; and (3) how limitations of the use of the data will be handled.

The Data Usability Assessment table (Table 37-2) includes specific examples of items that will be evaluated during the usability assessment, as applicable.

37.1 Summary of Usability Assessment Processes

A usability assessment is performed to determine how well the data collected for a particular project support the project objectives. Decisions can then be made by the QA Manager, PM, or project chemist.

Data gaps may be present if (1) a sample is not collected, (2) a sample is not analyzed for the requested parameters, or (3) the data are determined to be unusable. The need for further investigation will be determined on a case-by-case basis. This determination will depend on whether data can be extrapolated from adjacent sample locations and whether the data are needed based on the results from adjacent sample locations.

The project chemist and the analytical laboratory subcontractor will ensure that the collected data meet the DLs, LODs, LOQs, and laboratory QC limits specified in this RI/FS management plan, as referenced. During the data validation assessment, nonconformances will be documented, and the project chemist will apply validation qualifiers in accordance with the validation procedures in Worksheet #36. The project chemist will then evaluate potential effects on data usability and work with the project team to determine whether the data are usable within the context of project objectives.

With the exception of rejected data, all data are usable as qualified by the project chemist. Estimated and/or biased results are usable. Outliers, if present, can be addressed on a case-by-case basis. There is no generic formula for determining whether a result is an outlier. Potential outliers will be referred to a statistician and/or senior consultant, who will determine which formulas are appropriate for classifying data points in a statistically appropriate and defensible manner. Data will not be eliminated from consideration based on statistical outlier testing. Additional detail on data evaluation procedures is provided in Appendix C. Outliers as determined by ProUCL will be addressed separately on a site-specific basis in consultation with ADEC. Final determination regarding the handling of outliers and site management decisions will be per ADEC approval.

Table 37-1 Data Usability Assessment Process Summary

Steps	Process Description
Step 1	**Review the project's objectives and sampling design** The project team and project chemist will review the site-specific DQOs and MPC to verify that they are still applicable. The site-specific sampling design will be reviewed and evaluated for consistency with project objectives. Identify any deviations in procedures and evaluate in the context of project DQOs.
Step 2	**Review the data verification and data validation outputs** The project chemist will verify and validate the project data in accordance with Worksheets #34, #35, and #36. Definitions of PARCCS criteria and associated equations are included in Worksheet #12. Following the data verification and validation, project staff and the project chemist will perform a data usability assessment following the procedures in Worksheet #37. The QA/QC summary report, or data validation and usability report, will be reviewed to identify results that did not meet project DQOs and those for which the usability of the data is affected. Summarize the data using figures and tables. Identify results that are unexpected or otherwise appear to be anomalous. Identify trends in the results. Review deviations from planned activities and determine the effects on the project data. Identify those data that are not acceptable for use. Determine the cause, evaluate the effects on the project, and take appropriate corrective action (e.g., resample or limit the use of data).
Step 3	**Verify the assumptions of the selected statistical method** Statistical procedures, if applicable, will be identified in Worksheet #17. The underlying assumptions for any statistical methods identified in this RI/FS management plan (e.g., distribution of data, comparability of results, and precision of sampling and analysis) will be verified and the acceptability of the amount of error will be evaluated. Overall measurement error may be associated with sampling design and field measurements, as well as laboratory analytical procedures. If serious deviations from the assumptions for the planned statistical methods are identified, another statistical method may need to be selected.
Step 4	**Implement the statistical method** Implement any statistical method identified in this RI/FS management plan, if applicable. For projects that do not require statistical methods to be used, the uncertainty in measurements must be evaluated for consistency with the project DQOs.
Step 5	**Document data usability and draw conclusions** Data usability will be documented in the report and the data validation and usability assessment. It will be determined whether the data can be used as intended, based on the results of deviations, corrective actions, and the impacts of QC failures. The sampling design will be evaluated, and the results of statistical methods will be documented in the report (if applicable). Valid data will be used to update the CSM and any data gaps will be identified.

Notes:

CSM = conceptual site model
DQO = data quality objective
MPC = measurement performance criteria
PARCCS = precision, accuracy, representativeness, completeness, comparability, and sensitivity
QA = quality assurance
QC = quality control
RI/FS = remedial investigation/feasibility study

37.2 Personnel Responsible for Performing the Usability Assessment

The data management team will be responsible for performing the analytical data usability assessment.

The project chemist will also perform a usability assessment of the validated data. The PM and field lead, with support from the project chemist, will use the results of the usability assessments to determine whether the data generated during the investigation can be used to answer the principal study questions.

Additional personnel such as geologists, statisticians, risk assessors, and others will also perform usability assessment as it relates to specific project DQOs.

37.3 Usability Assessment Documentation

The project chemist will generate a data quality assessment report to be included with the project report describing the results of the data verification, validation, and usability assessment. The project chemist will work with the PM, field lead, and other project staff to discuss conclusions drawn and determine any potential limitations on the usability of the project data because of the assessment. The data quality assessment will document all data nonconformance and usability determinations, even in cases where it is determined that the usability of the data is not affected.

The usability of the data collected during field activities will be assessed in several ways:

- Any deviations from proposed field activities and sampling and handling procedures will be reviewed and their effect on data usability evaluated
- Field screening and analytical results for field samples and field and laboratory QC samples will be compared against the DQOs in Worksheet #11 and evaluated using the measurement performance criteria in Worksheet #12
- Analytical results, including ND values, will be compared against the PSLs in Worksheet #15
- Data verification and validation will be completed following the procedures in Worksheets #34-36
- Based on the results of data verification and validation, the usability of the data will be evaluated in the context of project-specific DQOs following the procedures in Worksheet #37.

Measurement error will be evaluated by reviewing sampling design, sampling locations, and sample collection methods. The project chemist will evaluate laboratory and field QC sample results to assess the overall measurement error associated with the project.

37.3.1 Bias Contamination

The analytical results for blanks (including MBs, TBs, and equipment rinsate blanks) will be checked against the MPC in Worksheet #12 to evaluate possible bias because of contamination.

37.3.2 Overall Bias

Overall biases in the QC results will be evaluated and discussed in the usability report.

37.3.3 Uncertainty Based on Laboratory Limits of Quantitation

LOQs, LODs, and DLs for sample results will be evaluated against this RI/FS management plan. The LODs for ND results will be evaluated against the laboratory limits and cleanup levels and/or screening criteria

in Worksheet #15. If the LOD exceeds the cleanup level or screening criteria, the DL may be evaluated. Worksheet #15 represents the achievable limits for analytes in a laboratory matrix. However, analysis of field samples may result in sample dilutions that cause elevation of laboratory reporting limits above cleanup levels or screening criteria.

The magnitude of the laboratory LODs will be evaluated for usability of the results within the context of the project objectives. For instance, if an analyte is present at a concentration below the LOD and below the screening criteria, then project decisions are not affected for that analyte. However, it is also possible that an analyte is present below the LOD and above the screening criteria; as such, the assumption that the analyte is not present would potentially result in an underestimation of the potential contamination impact. As a result, the result for this analyte requires further evaluation (i.e., comparison of the DL for that analyte against screening criteria or evaluation of alternate analytical methods).

Table 37-2 Data Usability Assessment Table

Item	Assessment Activity	Responsibility
Laboratory data deliverables and RI/FS management plan	Ensure that all necessary information was provided, including (but not limited to) QC sample results and data validation results.	Project Chemist
Sampling locations, deviation	Determine whether alterations to sampling locations continue to satisfy the DQOs.	Field Team, PM
CoC, deviation	Establish that any problems with documentation or custody procedures do not prevent the data from being used for the intended purpose.	Project Chemist
Holding times, deviation	Determine the acceptability of data where holding times were exceeded.	Project Chemist
SOPs and methods, deviations	Evaluate the impact of deviations from analytical and field SOPs and specified methods on data quality.	Field Team, Project Chemist
QC samples	Evaluate the implications of unacceptable QC sample results on the data usability for the associated samples. For example, consider the effects of observed blank contamination.	Project Chemist
Matrix	Evaluate matrix effects (interference or bias).	Project Chemist
Meteorological data and site conditions	Evaluate the possible effects of meteorological (e.g., wind, rain, temperature) and site conditions on sample results. Review field reports to identify whether any unusual conditions were present and how the sampling plan was executed.	Field Team, PM
Comparability	Ensure that results from different data collection events achieve an acceptable level of agreement.	Project Chemist
Completeness	Evaluate the impact of missing information. Ensure that enough information was obtained for the data to be usable (completeness as defined in the DQOs documented in this RI/FS management plan).	PM, Field Team, Project Chemist
Critical samples	Establish that critical samples and critical target analytes, as defined in the RI/FS management plan, were collected and analyzed. Determine whether the results meet criteria specified in the RI/FS management plan.	PM, Field Team, Project Chemist
Data restrictions	Describe the exact process for handling data that do not meet project DQOs (i.e., when measurement performance criteria are not met). Depending on how those data will be used, specify the restrictions on use of those data for environmental decision-making.	PM, Field Team, Project Chemist

Table 37-2 Data Usability Assessment Table

Item	Assessment Activity	Responsibility
Usability decision	Determine whether the data can be used to make a specific decision considering the implications of all deviations and corrective actions.	PM, Field Team, Project Chemist
Usability report	Discuss and compare overall PARCCS for each matrix, analytical group, and concentration level. Describe limitations on the use of project data if criteria for DQIs are not met.	Project Chemist

Notes:

Information in this table reflects general data usability considerations. This RI/FS management plan may need to include additional information, as applicable, to reflect the needs of the project data to meet quality.

CoC = chain-of-custody
DQI = data quality indicator
DQO = data quality objective
PM = Project Manager
QC = quality control
RI/FS = remedial investigation/feasibility study
SOP = standard operating procedure

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