
Final

**Per- and Polyfluoroalkyl
Substances (PFAS) Remedial
Investigation Addendum Report
for
Fire Protection Training Area
(Site FT001)
Former Galena Forward Operating
Location, Alaska**

Prepared for

Air Force Civil Engineer Center

Contract No. FA8903-16-D-0046
Task Order FA8903-21-F-1073

September 2025

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List of Acronyms and Abbreviations

µg/kg	micrograms per kilogram
°F	degrees Fahrenheit
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ADOT&PF	Alaska Department of Transportation & Public Facilities
AFFF	aqueous film forming foam
AMEC	AMEC Foster Environment & Infrastructure, Wheeler Inc.
amsl	above mean sea level
ANL	Argonne National Laboratory
ASL	Aerostar SES LLC
atm-m ³ /mol	atmospheres relative to cubic meters per mol
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMC	critical micelle concentration
COI	contaminant of interest
CSM	conceptual site model
CUL	cleanup level
DoD	Department of Defense
DoE	Department of Energy
DQA	data quality assessment
DQO	data quality objective
EETA	Eurofins Environmental Test America
FD	field duplicate
FPTA	Fire Protection Training Area
FOL	Forward Operating Location
GPS	global positioning system
HLC	Henry's Law Constant
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
ITRC	Interstate Technology and Regulatory Council
Koc	water/organic carbon partition coefficient
L/kg	liters per kilogram
LOQ	limit of quantification
MCL	maximum contaminant level
MDL	method detection limit
mg/L	milligrams per liter
mm Hg	millimeters of mercury
NA	not applicable or not available
NAD83	North American Datum (horizontal) of 1983
NAVD88	North American Vertical Datum of 1988

List of Acronyms and Abbreviations (Continued)

ng/L	nanograms per liter
PA	preliminary assessment
PFAA	perfluoroalkyl acid
PFAS	per- and polyfluoroalkyl substances
PFSA	perfluoroalkyl sulfonic acid
PFCA	perfluoroalkyl carboxylic acid
pKa	acid dissociation constant
PSZ	permanently saturated zone
QC	quality control
QSM	Quality Systems Manual
Radian	Radian International
RI	remedial investigation
RSL	regional screening level
SI	site inspection
SL	screening level
SLERA	screening level ecological risk assessment
SOP	standard operating procedure
TOP	total oxidizable precursors
UFP-QAPP	Uniform Federal Policy-Quality Assurance Project Plan
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
VSZ	variably saturated zone

PFAS Acronyms and Abbreviations

11CLPF3OUDS	11-chloroeicosafufluor-3-oxaundecane-1-sulfonic acid
3:3 FTCA	3-perfluoropropyl propanoic acid
5:3 FTCA	2H,2H,3H,3H-perfluorooctanoic acid
7:3 FTCA	3-perfluoroheptyl propanoic acid
FTS or FTSA	fluorotelomer sulfonic acid
4:2 FTS	4:2 fluorotelomer sulfonic acid
6:2 FTS	6:2 fluorotelomer sulfonic acid
8:2 FTS	8:2 fluorotelomer sulfonic acid
9CLPF3ONS	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid
10:2 FTS	10:2 fluorotelomer sulfonic acid
ADONA	4,8-dioxa-3H-perfluorononanoic acid
FOSA	perfluorooctane sulfonamide
FTS	fluorotelomer sulfonic acid
HFPO-DA	hexafluoropropylene oxide dimer acid or Gen-X
NEtFOSA	N-ethyl perfluorooctanesulfonamide
NEtFOSAA	N-ethyl perfluorooctanesulfonamidoacetic acid
NEtFOSE	N-ethyl perfluorooctane- sulfonamidoethanol
NFDHA	nonafluoro-3,6-dioxaheptanoic acid
NMeFOSA	N-methylperfluorooctane sulfamide
NMeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
NMeFOSE	N-methyl perfluorooctane- sulfonamidoethanol
PFBA	perfluorobutanoic acid
PFBS	perfluorobutane sulfonic acid
PFDA	perfluorodecanonic acid
PFDS	perfluorodecane sulfonic acid
PFDoA	perfluorododecanoic acid
PFDoS	perfluorododecane sulfonic acid
PFEES	perfluoro(2-ethoxyethane)sulfonic acid
PFHpA	perfluoroheptanoic acid
PFHpS	perfluoroheptane sulfonic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexane sulfonic acid
PFMPA	perfluoro-3-methoxypropanoic acid
PFMBA	perfluoro-4-methoxybutanoic acid
PFNA	perfluorononanoic acid
PFNS	perfluorononane sulfonic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonic acid
PFPeA	perfluoropentanoic acid
PFPeS	perfluoropentane sulfonic acid
PFPrA	perfluoropropionic acid
PFTeA	perfluorotetradecanoic acid

PFAS Acronyms and Abbreviations (Continued)

PFTrDA	perfluorotridecanoic acid
PFUnA	perfluoroundecanoic acid
TFSI	bis(trifluoromethylsulfonyl)amine

1.0 INTRODUCTION

1.1 Purpose and Objectives

This document provides the activities and results of supplemental Remedial Investigation (RI) activities conducted in 2023 and 2024 at the former Fire Protection Training Area (FPTA) (Site FT001) aqueous film forming foam (AFFF) Release Area at the Former Galena Forward Operating Location (FOL), Alaska (**Figure 1.1**).

The overall objectives of the RI, including the supplemental sampling, are to delineate the nature and extent of contamination in environmental media relative to screening levels (SLs) and to evaluate the potential threats to human health and the environment. The first RI report (Parsons, June 2024) summarized investigations of groundwater and soil samples collected in 2022 that were analyzed for per- and polyfluoroalkyl substances (PFAS) by a procedure compliant with the requirements in the Department of Defense (DoD) Department of Energy (DoE) Consolidated Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (May 2019), Table B-15 which included only 25 PFAS target analytes. Based on analysis of the 2022 RI sampling results, supplemental sampling was proposed to further delineate the nature and extent of PFAS in environmental media and to address data gaps in the RI (Parsons, June 2024). In addition, supplemental sampling was proposed to evaluate the nature of PFAS contamination using U.S. Environmental Protection Agency (USEPA) Method 1633 which includes forty (40) PFAS target analytes. This RI Addendum report presents the results of further investigations and supplemental sampling conducted in 2023 and 2024 to address the data gaps identified in the RI report. Supplemental sampling results include 40 PFAS target analytes measured by USEPA Method 1633. A summary of the types of PFAS analyzed and discussed in this report is presented in **Table 1.1**.

This RI Addendum includes the results to support a baseline human health risk assessment (HHRA) and a screening level ecological risk assessment (SLERA). The HHRA and SLERA will be submitted under separate cover.

1.2 Screening Levels

Historical data and results from the RI and supplemental RI sampling are compared to SLs. RI SLs are conservative, predominantly risk-based values used to characterize and determine the nature and extent of contamination in soil, groundwater, sediment, and surface water. The SLs are intended for screening purposes only; exceedance of an SL is not an indication of unacceptable risk at that location. The DoD has adopted a policy within the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process to compare results against risk-based SLs for soil and groundwater. The U.S. Air Force (USAF) program under which this RI is being performed follows the DoD memorandum regarding use of USEPA Regional Screening Levels (RSLs) as SLs (Office of Assistant Secretary of Defense, August 2023).

At the time that evaluation of the data in this RI Addendum began, the USEPA RSLs applied to ten PFAS compounds. However, two of the compounds, perfluoropropionic acid (PFPrA) and bis(trifluoromethylsulfonyl)amine (TFSI) have no current USEPA-approved analytical methods and therefore are not included in this RI. TFSI has been used in the manufacturing and disposal of batteries and is not likely to have been released at the Galena FOL. Therefore, this RI considers the following eight PFAS and their associated SLs: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorobutane sulfonic acid (PFBS), perfluorohexane sulfonic acid (PFHxS), perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA or Gen-X), perfluorobutanoic acid (PFBA), and perfluorohexanoic acid (PFHxA). SLs

are presented in Worksheet #15 of *Addendum 5 to Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP) Revision 1* (Parsons, August 2024) and are summarized in **Table 1.2**.

Since data evaluation for this RI Addendum began, the DoD guidance of PFAS investigations has been updated. On 17 January 2025, the DoD policy was updated to apply SLs from the USEPAs November 2024 RSLs (Office of Assistant Secretary of Defense, January 2025). One additional PFAS compound, perfluorodecanoic acid (PFDA) was added to the list of PFAS included in DoD investigations, with a SL of 0.06 µg/kg in residential soil and a SL of 0.52 ng/L in tapwater. The SLs in residential soil for two compounds, PFOS and PFOA, were lowered significantly from 13 µg/kg to 0.63 µg/kg for PFOS and 19 µg/kg to 0.070 µg/kg for PFOA. While this report does not evaluate PFAS data to these new SLs, the new SLs are considered with respect to conclusions and recommendations for future work (**Sections 8** and **9**).

On April 26, 2024, the USEPA published a final National Primary Drinking Water Regulation (NPDWR) establishing national drinking water maximum contaminant levels (MCLs) for certain PFAS under the Safe Drinking Water Act. Current guidance from the USAF is to apply the lower of the RSL or the MCL to define the nature and extent of PFAS compounds in groundwater, as a conservative approach. The MCLs are summarized in **Table 1.2** and the lower value of the RSL or the MCL is noted in bold font. In addition to the MCLs for individual compounds, there is a hazard index (HI) MCL for PFHxS, PFNA, PFBS, and HFPO-DA equal to 1. The MCL HI is the sum of the hazard quotient (HQ) for these four compounds, where the HQ for each compound compares the measured concentration to the RSL, which is considered to be an acceptable concentration for non-cancer health risks (USEPA, 1989). The MCL HI is calculated by:

$$MCL\ HI = \left(\frac{HFPO-DA_{ppt}}{[10\ ppt]} \right) + \left(\frac{PFBS_{ppt}}{[2000\ ppt]} \right) + \left(\frac{PFNA_{ppt}}{[10\ ppt]} \right) + \left(\frac{PFHxS_{ppt}}{[10\ ppt]} \right) \quad \text{Equation 1.1}$$

Historical soil and groundwater analytical results compared to SLs are presented in **Appendix A**.

2.0 SITE DESCRIPTION AND BACKGROUND

The following is an abbreviated description of the site and site history; further detail pertaining to the environmental setting, ecology, and previous investigations is provided in the RI Report (Parsons, June 2024). Further detail including information on non-PFAS contamination can be found in the *Remedial Investigation Results: Fire Protection Training Area (Site FT001)* (CH2M HILL, June 2013) and the *Supplemental Remedial Investigation Report, Fire Protection Training Area (Site FT001)* (Parsons, February 2015).

2.1 Site Location

The term “site” as used in this report pertaining to future remediation refers to the area defined in ADEC regulations (18 Alaska Administrative Code [AAC] 75.990(115)) (ADEC, February 2023) as “an area that is contaminated, including areas contaminated by migration of hazardous substances from a source area, regardless of property ownership.”

Site FT001 is located north of the runway overrun at the eastern end of the Former Galena FOL (**Figure 1.1**). The site is located on property owned by the Alaska Department of Transportation and Public Facilities (ADOT&PF) and its boundary encompasses the former FPTA circle, which was an unlined, topographically low-lying region of bare soil/gravel approximately 0.15 acres in size. **Figure 2.1** shows the location of major site features. The primary feature at Site FT001 was the former FPTA circle. A bioventing system to treat petroleum contaminants in soil and a soil cover were constructed at the FPTA in 2018 (Parsons, April 2019). The bioventing system operated from October 2018 to April 2023 and is currently inactive. Current site activities consist of periodic mowing and maintenance of the remediation system and soil cover. The site is bounded by roads to the east and north beyond which are a ball field and park (east) and a commercial/industrial shop building (north).

2.2 Site Features and History

Site FT001 was used for fire training activities from the late 1950s until 1991. As part of these activities, an aircraft mock-up was covered with fuel, ignited, and extinguished with firefighting chemicals including AFFF. Fuel sprayers surrounding the aircraft mockup were fed by an underground fuel pipeline that extended from the FPTA circle to an aboveground fill-stand located approximately 300 feet to the south (**Figure 2.1**). The pipeline delivered flammable liquids from the aboveground fuel loading zone during training exercises. The FPTA was also enclosed by a one-foot-high sand and gravel berm.

When the surface soil was not frozen, the FPTA circle was pre-wetted with water before fuel was distributed directly to the ground surface and ignited. In the 1950s and 1960s, some combustible shop wastes (such as aviation gasoline, thinners, paints, and oils) were used (Engineering-Science, September 1985). Since the 1960s, fuels used consisted of both clean and contaminated jet-propulsion fuel (grade 4). Fire extinguishing agents used at Site FT001 included protein foam, chlorobromomethane, dry chemicals, halon, and AFFF (Engineering Science, September 1985). Some unburned fuel and firefighting chemicals infiltrated downward into the soil (Radian International [Radian], March 1996).

The aircraft mock-up used in the exercises was reportedly removed during the summer of 1992. The fuel sprayers were also removed, and the one-foot-high berm was no longer evident. Surface soil in the area was stained black, presumably from the remaining unburned and residual materials.

Historical aerial photographs from 1963 to 1978 also suggest that drums were stored on the ground around the FPTA circle (Radian, March 1996). A former drum storage area was located approximately 100 feet north of the FPTA (**Figure 2.1**).

The local topography at the Former Galena FOL is relatively flat, as shown on **Figure 2.2**. The major topographic features at the FOL are the dike that surrounds the site, and Million Gallon Hill located along the western edge of the former cantonment triangle area. While water pools temporarily within low areas before infiltrating, there are no significant surface water bodies within the former Galena FOL. Surface and stormwater drainage features are also shown on **Figure 2.2**. The groundwater flow direction near the Yukon River, including Site FT001, is predominantly either toward the north or south (depending on the season), with minor occurrences of flow in other directions. Permafrost at the site appears to be more prevalent to the northeastern and eastern edges.

2.3 Site Land Use

Land use immediately surrounding Site FT001 includes the airport to the west and south, an industrial shop and concrete plant to the north, and community recreational area to the east (**Figure 1.1**). The recreational area includes a softball field and playground. Community gardens are located to the south and southeast of the softball field.

3.0 SAMPLING AND ANALYTICAL METHODS

The locations and rationale for supplemental sampling conducted in the summers of 2023 and 2024 are described in the following documents:

- *Final Technical Memorandum, 2023 Per- and Polyfluoroalkyl Substances (PFAS) Preliminary Remedial Investigation Supplemental Sampling Work Plan - Aqueous Film Forming Foam Release Areas (Site CG109) and Fire Protection Training Area (Site FT001) (Parsons, August 2023a).*
- *Final Technical Memorandum, 2024 Per- and Polyfluoroalkyl Substances (PFAS) Preliminary Remedial Investigation Supplemental Sampling Work Plan - Aqueous Film Forming Foam Release Areas (Site CG109) and Fire Protection Training Area (Site FT001) (Parsons, July 2024).*

The approaches, methods, and procedures for the RI at the Former Galena FOL are described in the following:

- *Addendum 2 to the Uniform Federal Policy Quality Assurance Program Plan (UFP-QAPP) Revision 1, Former Galena Forward Operating Location, Alaska (Parsons, June 2022)*
- *Addendum 4 to the Uniform Federal Policy Quality Assurance Program Plan (UFP-QAPP) Revision 1, Former Galena Forward Operating Location, Alaska (Parsons, August 2023b)*
- *Addendum 5 to the Uniform Federal Policy Quality Assurance Program Plan (UFP-QAPP) Revision 1, Former Galena Forward Operating Location, Alaska (Parsons, August 2024).*

Supplemental soil, sediment, and groundwater samples collected in 2023 and 2024, including samples from public and private wells, were submitted to Eurofins Environment Testing America (EETA) of Denver, Colorado for PFAS analysis by USEPA Method 1633. Target analytes included the 40 PFAS compounds listed in Worksheet #15 of the UFP-QAPP addenda 4 and 5 (Parsons, August 2023b and Parsons, August 2024). In addition, the Quality Control (QC) measures and acceptance criteria from the final version of USEPA Method 1633 and the requirements of Table B-24 of the DoD/DOE QSM Version 6.0 (DoD/DoE, December 2023) have been incorporated by the laboratory.

Field activities were performed in accordance with the most current standard operating procedures (SOPs) included in the UFP-QAPP addenda, including PFAS-specific procedures.

4.0 SUPPLEMENTAL REMEDIAL INVESTIGATION ACTIVITIES

4.1 Supplemental Surface Soil Sampling

The objective of surface soil sampling was to determine whether overspray and wind transport of AFFF during fire training exercises impacted surface soil around the periphery of the FPTA. At Site FT001, six step-out surface soil samples (AFFF1_HA013 through AFFF1_HA018) were collected in summer 2023 and three additional step-out surface soil samples (AFFF1_HA019 through AFFF1_HA021) were collected in summer 2024. The purpose of step-out surface soil samples is to delineate the extent of PFAS constituents of interest to the south, southwest, and southeast of the former FPTA. Surface soil sampling results are discussed in **Section 5.3.1**.

4.2 Supplemental Soil Boring Sampling

The objective of subsurface soil sampling was to delineate and understand migration of PFAS from the surface to groundwater. All supplemental soil borings at Site FT001 were advanced in 2023. Boring logs are presented in **Appendix B**.

Soil was collected continuously from the ground surface to approximately 35 feet below ground surface (bgs) into the upper permanently saturated zone (PSZ). Soil samples for analytical testing from the source area delineation borings were collected from the following intervals:

- Surface soil (0 to 2 feet bgs)
- Vadose zone
- Upper variably saturated zone (VSZ)
- 13-15 feet bgs (base of applicable cleanup levels for human health)
- Middle of VSZ
- Deep VSZ
- Upper PSZ

Two step-out soil borings were drilled at Site FT001. One boring (AFFF1_GP029) was north and the other boring (AFFF1_GP030) was east of the basin surrounding the former FPTA circle. In both cases the borings were outside of the dike that borders the former FPTA. In addition, one boring (AFFF1_GP031) was drilled next to 2022 soil boring AFFF1_GP004 to provide samples for analysis by EPA Method 1633. This allows for comparison to results obtained with the DoD QSM 5.3 Table 15-3 method and provide data in the source area for the additional analytes included in EPA Method 1633. Soil boring sampling results are discussed in **Section 5.3.2**.

4.3 Supplemental Groundwater Investigation

The objective of the groundwater investigation was to delineate the extent of PFAS in groundwater.

4.3.1 Monitoring Well Installation and Development

Five additional new monitoring wells were installed in FT001 during the 2023 season. Well installation details and rationale are shown on **Table 4.1**.

Groundwater monitoring wells installed in 2023 include three wells that were planned for installation in 2022 and two additional wells based on results of the 2022 RI sampling. The wells

that had been planned for installation in 2022 include FT001-MW018, FT001-MW019, and FT001-MW020. These deep wells were not installed in 2022 because a drill rig capable of installing deep wells was not available. Two supplemental investigation monitoring wells, FT001-MW022 and FT001-MW023, were installed in order to more fully characterize the horizontal and/or vertical extent of PFAS in groundwater. A third planned supplemental investigation monitoring well FT001-MW021 was not installed due to the presence of permafrost.

Well construction diagrams are presented in **Appendix C**, well development records are presented in **Appendix D**, and groundwater sampling records are presented in **Appendix E**.

4.3.2 Groundwater Sampling

2023 Supplemental Sampling

A comprehensive round of groundwater sampling for PFAS including existing wells and new wells was completed in 2023. **Table 4.1** presents wells installed in 2023. The 2023 groundwater monitoring program was very similar to the August/September 2022 RI groundwater sampling program with the following modifications:

- Sampled wells FT001-MW018, FT001-MW019, FT001-MW020, FT001-MW022, and FT001-MW023 that were installed in 2023.
- Sampled well 01-MW-07 to better characterize the plume between 01-MW-08R and FT001-MW016.
- Background well BKGD-MW006 was sampled in June 2022 but was obstructed by ice in August 2022. This well was retained as part of the sampling program for 2023; however, it was not sampled due to the ice obstruction.

2024 Supplemental Sampling

Groundwater sampling of select existing wells for PFAS was completed in summer 2024.

The objectives of the 2024 groundwater sampling event at Site FT001 included evaluating the impact on groundwater of turning off the bioventing systems in April 2023 and confirming two prior sample results. Another objective of the 2024 groundwater sampling event was to better delineate PFAS detected in wells at and around Site ST010 which is near AFFF Area 8, the site of a 2003 civilian aircraft crash.

- Source area well FT001-MW013 and upgradient well 01-MW-03 were sampled to determine if there has been any change in PFAS composition resulting from shutting off the bioventing system in April 2023.
- Wells FT001-MW018 and FT001-MW019, which were installed and first sampled in 2023, were resampled. These two wells were resampled in 2024 to determine if the 2023 samples were mislabeled because the results from FT001-MW019 were higher than expected given it is east (side-gradient) of the plume core.

An area of PFAS in groundwater is present around wells ST010-MW010, ST010-MW011, and SE-MW-01. This area appears to be separated from the main Site FT001 plume. The following wells were sampled to better delineate the extent of PFAS around wells ST010-MW010 and ST010-MW011:

- SE-MW-01 (screened interval: 5.6-25.6 feet; sampled in 2016 and 2017)

- SE-MW-03 (screened interval: 5 - 24.6 feet; sampled August 2022 and August 2023)
- SE-MW-04 (screened interval: 5-24.7 feet)
- SE-MW-05 (screened interval: 5-34.49 feet)
- SE-MW-08 (screened interval: 12.85-32.85 feet)
- ST010-MW009 (screened interval: 50-60 feet)
- ST010-MW010 (screened interval: 18-38 feet; sampled May and August 2022 and August 2023)
- ST010-MW011 (screened interval: 49-59 feet; sampled May and August 2022 and August 2023)
- ST010-MW012 (screened interval: 73-83 feet; sampled May and August 2022 and August 2023)
- ST010-MW014 (screened interval: 12-32 feet)
- ST010-MW015 (screened interval: 12-32 feet)

Groundwater sampling results are discussed in **Section 5.3.3**.

4.4 Deviations from the Supplemental Sampling Work Plans

The following were deviations from the 2023 and 2024 supplemental sampling work plans:

- The proposed deep monitoring well FT001-MW021 was not installed in 2023 due to the presence of permafrost from 35 to 90 feet bgs.
- Monitoring well FT001-MW018 was screened from 30 to 50 feet bgs rather than 42 to 52 feet bgs as proposed. Permafrost was encountered at 40 to 50 feet bgs which required a longer screened interval.
- Monitoring well FT001-MW019 was screened from 33 to 43 feet bgs rather than 48 to 58 feet bgs as proposed. Permafrost was encountered at 40 to 60 feet bgs which limited the total well depth.
- Background well BKGD-MW006 was not sampled due to an ice obstruction.

4.5 Surveying

Following completion of the Supplemental RI field work in 2023, all soil borings and monitoring wells installed during the 2023 field season were surveyed by F.R. Bell & Associates, a licensed Professional Land Surveyor in the State of Alaska. All survey data were reported in North American Datum 1983 (NAD83) Universal Transverse Mercator Zone 4 North. Elevations were surveyed relative to North America Vertical Datum of 1998 (NAVD88). Survey data is included in **Appendix F**.

In 2024, Supplemental RI surface soil sample locations were surveyed with a precision global positioning system (GPS). These coordinates are also available in **Appendix F**.

4.6 Data Quality Review

Data collected during the PFAS RI field investigation were reviewed and validated in accordance with the UFP-QAPP Addendum (Parsons, August 2023b and August 2024). Data validation findings for the 2023 Supplemental RI field work are discussed in the *Data Quality Assessment 2023 Remedial Investigation (RI) for Groundwater and Public Water Well Sampling Event* (Parsons, February 2024) and the *Data Quality Assessment 2023 Remedial Investigation (RI) Soil and Sediment Sampling Event* (Parsons, March 2024). Data validation findings for the 2024 Supplemental RI field work are discussed in the *Data Quality Assessment 2024 Remedial Investigation (RI) Groundwater Sampling Event* (Parsons, December 2024) and the *Data Quality Assessment 2024 Remedial Investigation (RI) Soil Sampling* (Parsons, January 2025). The results of the data quality review indicated that all data, as qualified, are usable for their intended purpose.

The analytical data for the Supplemental RI at Site FT001 were evaluated for usability in the context of data quality objectives (DQOs) for RI sites (Parsons, August 2023b and August 2024). The first step in the evaluation process was a determination of whether data from the RI were appropriate for use in evaluating the nature and extent of contamination. Although target analyte and sample coverage are important, the key consideration in determining the usability of the data set was whether the method detection limits (MDLs) for the RI sample results were adequate to detect the target analytes at concentrations consistent with the SLs, that is, whether the MDL was low enough to conclude that the analyte was not present at levels that might pose potential risk (assuming the conservative exposure scenarios of the SLs) if an analyte was not detected in the samples used to delineate extent.

To accomplish the usability evaluations, PFAS data from the 2013 RI for non-PFAS contaminants, the 2016/2017 Site Inspection (SI, Aerostar SES LLC [Aerostar], April 2018), the 2022 PFAS RI, and the 2023/2024 Supplemental PFAS RI were consolidated into summary tables for nondetects (**Tables 4.2** and **4.3**) that list the following for each analyte: number of samples analyzed, minimum and maximum MDLs for nondetects, the SL, and the number of nondetect results with MDLs that exceed the SLs (nondetect MDL exceedances). The summary tables were reviewed to identify analytes that were not detected and consistently had nondetect MDL exceedances, specifically in samples collected at locations and depths used to determine the extent of contamination.

In groundwater, four PFAS analytes had nondetect MDLs greater than SLs: PFOA, PFNA, PFOS, and HFPO-DA (**Table 4.2**). Production of HFPO-DA (Gen-X) began in 2009, after use of the FPTA ceased so it is not expected to be present at the site. The single PFOA nondetect result exceeding its SL was from historical (2016 SI) data. PFNA had nondetect MDL results greater than the SL in 13 out of 85 samples, where two of these exceedances were from the 2024 data. In addition, PFOS had nondetect MDL results greater than the SL in only 4 out of 94 samples, where two of these exceedances were samples collected in 2023 and one was in 2024. In soil, only PFNA had nondetect MDLs greater than the SL in 7 out of 95 samples collected (**Table 4.3**). The PFNA nondetect MDL SL exceedances for soil were all from historical (2016 SI) data. The minimal number of analytes and results with non-detect MDL exceedances at Site FT001 do not adversely affect the usability of the data and do not merit further evaluation.

B-qualified Results. The data usability evaluation for Site FT001 RI data considered the usability of B-qualified results. The B qualifier indicates the analyte was detected in the sample at a concentration less than or equal to 5 times (10 times for common laboratory contaminants) an associated field or laboratory blank concentration. This suggests that the low-level detects in

these field samples may be artifacts of contamination during field or laboratory practices. There were no B-qualified results for PFAS data at Site FT001 as a result of method blank, field blank, or equipment blank contamination.

J-qualified Results. The data usability evaluation of PFAS results at Site FT001 also considered the usability of J-qualified results. The J qualifier is applied to results in which the analyte was positively identified, and the quantitation is an estimation because of discrepancies in meeting analyte-specific quality control criteria, or the analyte was positively identified but the associated concentration is above the MDL and below the limit of quantitation (LOQ). The evaluation was conducted using only “best results” data for PFAS from 2023 and 2024 for soil and groundwater samples collected at and around Site FT001 during the RI. The J-qualified results are summarized as follows:

- One hundred eleven (111) soil results were J-qualified. Of these J-qualified results, 19 results had estimated concentrations because of a QC exceedance or deficiency as discussed in the respective data quality assessment (DQA) reports (Parsons, March 2024 and Parsons, *January 2025*). The remaining 92 J-qualified results had estimated concentrations between their respective LOQs and MDLs.
- One hundred forty-nine (149) groundwater results were J-qualified. Of those J-qualified results, 56 results had estimated concentrations because of a QC exceedance or deficiency as discussed in the respective DQA reports (Parsons, February 2024 and Parsons, December 2024). The remaining 93 J-qualified results had estimated concentrations between their respective LOQs and MDLs.

Based on the validation processes outlined in the UFP-QAPP, all J-flagged data are of sufficient quality necessary for accomplishing project objectives. Therefore, the J-flagged data are usable for nature and extent and risk evaluation purposes.

In 2023, boring AFFF1_GP031 was drilled next to 2022 boring AFFF1_GP004 in the source area to allow for comparison of results obtained with the DoD QSM 5.3 Table 15-3 method (2022 data) to results obtained with EPA Method 1633 (2023). The analyte list for EPA Method 1633 includes 40 PFAS as compared to only 25 PFAS for the DoD QSM 5.3 Table 15-3 method. The results for the 25 PFAS reported by both methods are presented in **Table H.5 in Appendix H**. Note that in a few cases the paired sample depth intervals are not the same. Overall, results for the soil samples for the 25 PFAS reported by both methods are similar considering the inherent heterogeneity of soil samples. There were more PFAS reported as not detected by QSM 5.3 Table 15-3 method but many of the reporting limits were higher.

5.0 NATURE AND EXTENT OF CONTAMINATION

This section describes the sources of PFAS at the site, presents the RI data screening process to identify contaminants of interest (COIs), and discusses the lateral and vertical extents of the COIs in media attributed to the Site FT001 PFAS source area. Laboratory analytical reports are presented in **Appendix G**.

5.1 Sources

Based on the data collected during the RI and previous investigations and on historical information, the sources of PFAS contamination at Site FT001 were due to use of AFFF during fire-fighting training activities. Historical aerial photographs from 1963 to 1978 also suggest that drums were stored on the ground around the FPTA circle (Radian, March 1996). A former drum storage area was located approximately 100 feet north of the FPTA (**Figure 2.1**).

For the purposes of the nature and extent evaluation, source areas are defined as the area(s) within Site FT001 where concentrations of COIs in soil from 0 to 15 feet bgs exceed human health-based SLs (USEPA RSL with hazard quotient [HQ]=0.1).

Another potential source outside the Site FT001 source area that may be impacting groundwater west of Site FT001 is the Civilian Airplane Crash Site that was investigated as AFFF Area 8 during the SI (Aerostar, April 2018). When the aircraft crashed in 2003, foam fire suppressant was reportedly used to extinguish the fire (AMEC Foster Wheeler Environment & Infrastructure, Inc [AMEC], February 2016).

5.2 Contaminants of Interest

PFAS contaminants of interest (COIs) were identified for soil and groundwater by comparing maximum detected concentrations of each target analyte to SLs and eliminating individual contaminants that were not detected above their SLs. COI screening results are presented in **Table 5.1** for soil (0 to 15 feet bgs) and groundwater. This screening considered historical data, 2022 RI data, and 2023/2024 supplemental RI data.

At the time this RI Addendum was prepared, the RSLs presented on the *PFAS 101 Regional SLs Used in DoD Cleanups* website (<https://www.acq.osd.mil/eie/eer/ecc/pfas/pfas101/index.html>) apply to ten compounds. However, two of the compounds, PFPrA and TFSI have no current EPA-approved analytical methods and therefore are not included in this RI. TFSI has been used in the manufacturing and disposal of batteries and is not likely to have been released at the Galena FOL. Therefore, this RI considers the following eight PFAS and their associated SLs: PFOA, PFOS, PFBS, PFHxS, PFNA, HFPO-DA, PFBA, and PFHxA.

Soil SLs for PFOA, PFOS, PFBS, PFHxS, PFNA, HFPO-DA, PFBA, and PFHxA are USEPA RSLs based on human health exposure and are only applicable to soil between 0 and 15 feet bgs. Based on the results for the soil samples collected at Site FT001, the following PFAS constituents exceeded their respective SL in at least one sample and are considered COIs in soil (0 to 15 feet bgs):

- PFOA
- PFNA
- PFHxS
- PFOS

PFBA, PFHxA, PFBS, and HFPO-DA did not exceed their soil SLs in any samples and therefore are not considered COIs. PFNA is considered a COI; however, it was detected above its SL in less than 4 percent of soil samples and is present at much lower frequency and over a much smaller area than other COIs.

The following PFAS constituents are considered COIs in groundwater:

- PFBA
- PFHxA
- PFOA
- PFNA
- PFBS
- PFHxS
- PFOS

HFPO-DA did not exceed its groundwater SL in any sample although in some cases the reporting limits were above the SL. Production of HFPO-DA began in 2009, after use of the FPTA ceased so it is not expected to be present at the site and is not considered a COI.

5.3 Nature and Extent of PFAS in Soil

Soil sample results for PFAS with SLs from samples collected between 2022 and 2024 are presented in **Table 5.2** (0 to 2 feet bgs), **Table 5.3** (2 to 15 feet bgs), and **Table 5.4** (greater than 15 feet bgs). Detected concentrations are indicated by bold font, and exceedances of relevant SLs are indicated with shading, including nondetect MDLs that exceed relevant SLs. Soil sample results for all PFAS analytes are presented in **Appendix H** and are compared to ADEC Method Two CULs for migration to groundwater in **Appendix I**.

To more accurately account for cumulative effects of multiple PFAS in samples, the PFAS RI and Supplemental RI results were used to estimate the cumulative PFAS Hazard Index (HI) at each sample location using the RSLs (adjusted to HQ=1). The HI approach is used by the EPA to determine the risk associated with non-cancer causing constituents when multiple substances are present. Generally, an HI greater than 1.0 is considered to pose an unacceptable risk (USEPA, December 1989). The PFAS HI is the sum of the HQs calculated for each of the eight PFAS (PFOA, PFOS, PFBS, PFHxS, PFNA, HFPO-DA, PFBA, and PFHxA) as the ratio of the measured concentration to the RSL (USEPA, November 2023 adjusted to HQ=1). The PFAS HI was calculated for samples from each 0 to 2 and 2 to 15 feet bgs soil interval and for groundwater to estimate the PFAS delineation. A discussion of SL exceedances and the HIs relative to the nature and extent of PFAS contamination is provided in the following sections.

5.3.1 Nature and Extent of PFAS in Surface Soil Relative to Human Health SLs

As shown in **Table 5.2**, surface soil samples (0 to 2 feet bgs) results from samples collected between 2022 and 2024 are screened to November 2023 RSLs (USEPA, 2023). Details of the results are described in the paragraphs below. In summary, PFAS concentrations exceed human health SLs in surface soil in the airfield within the dike (stretching about 400 feet west and 600 feet south of the dike). Concentrations are highest near the former FPTA circle. PFAS is

delineated to SLs in all directions except the southwest. PFAS concentrations do not exceed SLs outside of the airfield dike.

Summary statistics for surface soil samples collected in historical investigations and between 2022 and 2024 are presented in **Table 5.5**. Soil COIs PFOA, PFHxS, and PFOS were detected in surface soil at high frequencies, ranging between 93 and 100 percent of the samples. In addition, detected concentrations of soil COIs were greater than SLs in numerous surface soil samples: PFOA (14 of 42 samples), PFHxS (14 of 42 samples), and PFOS (34 of 42 samples). PFNA was detected in 79 percent of samples but was only detected above its SL in a single surface soil sample (AFFF1_HA011) at an isolated location south of the former FPTA. As for the other PFAS analytes with SLs, PFBA, PFHxA, and PFBS were detected in between 50 and 86 percent of samples, while HPDO-DA was only detected in a single sample (8 percent). None of these other PFAS analytes exceeded their SLs and are not considered to be COIs. Of the many remaining PFAS analytes without SLs, perfluoropentanoic acid (PFPeA), perfluoroheptanoic acid (PFHpA), perfluoropentane sulfonic acid (PFPeS), perfluoroheptane sulfonic acid (PFHpS), and perfluorooctane sulfonamide (FOSA) were detected the most frequently in more than 50 percent of samples.

PFAS have been widely detected above SLs in surface soil samples within and surrounding the FPTA circle. **Figure 5.1a** shows results of select COIs in surface soil samples collected during the RI and Supplemental RI sampling events. PFOS concentrations in surface soil are generally greatest (often exceeding 1,000 micrograms per kilogram [$\mu\text{g}/\text{kg}$]) in the basin around the former FPTA, generally at elevations less than about 146 feet above mean sea level (amsl).

North of the basin, PFOS is elevated at AFFF1-GP005 (1,400 $\mu\text{g}/\text{kg}$) which appears to be isolated as concentrations in surface soil decrease quickly to the northeast at AFFF1_HA001 (30 $\mu\text{g}/\text{kg}$) and southeast at AFFF1_GP001 (230 $\mu\text{g}/\text{kg}$). Overall, the extent of PFOS is defined in the north at AFFF1_GP029, located north of the dike road, where the concentration is below the SL.

To the immediate east of the FPTA, PFOS concentrations are elevated at AFFF1_GP002 (1,700 $\mu\text{g}/\text{kg}$) and AFFF1_GP006 (1,800 $\mu\text{g}/\text{kg}$). Concentrations of PFOS drop significantly in samples AFFF1_HA002 (250 $\mu\text{g}/\text{kg}$) and AFFF1_HA003 (130 $\mu\text{g}/\text{kg}$) collected from the west face of the dike. On the east side of the dike, PFOS was below the SL in samples AFFF1_HA008 and AFFF1-HA013 through HA015 which define the extent of PFOS contamination to the east; PFOS concentrations at AFFF1_HA007 (17 $\mu\text{g}/\text{kg}$) and AFFF1_GP030 (18 $\mu\text{g}/\text{kg}$) are only slightly higher than the SL. PFOS in surface soil is effectively contained within the dike.

To the south of the former FPTA, PFOS in surface soil was elevated in four samples, including AFFF1_GP003 (3,000 $\mu\text{g}/\text{kg}$), AFFF1_GP007 (1,000 $\mu\text{g}/\text{kg}$), AFFF1_HA004 (1,100 $\mu\text{g}/\text{kg}$), AFFF1_HA011 (1,000 $\mu\text{g}/\text{kg}$). PFOS concentrations quickly decrease to the south in nearby samples AFFF1_HA009 (490 $\mu\text{g}/\text{kg}$), AFFF1_HA010 (210 $\mu\text{g}/\text{kg}$), and AFFF1_HA017 (330 $\mu\text{g}/\text{kg}$). PFOS in surface soil is delineated to the south below the SL in AFFF1_HA020 and HA021; and the PFOS concentration at AFFF1_HA016 (15 $\mu\text{g}/\text{kg}$) is only slightly higher than the SL.

To the immediate west of the basin, PFOS is elevated in AFFF1_GP004 (3,100 $\mu\text{g}/\text{kg}$) and adjacent sample AFFF1_GP0031 (2,700 $\mu\text{g}/\text{kg}$). PFOS concentrations significantly decrease to the west in AFFF1_GP008 (180 $\mu\text{g}/\text{kg}$) and AFFF1_HA005 (80 $\mu\text{g}/\text{kg}$). To the northwest, PFOS is slightly elevated at AFFF1_HA006 (120 $\mu\text{g}/\text{kg}$). To the southwest, PFOS is slightly elevated at AFFF1_HA012 (290 $\mu\text{g}/\text{kg}$) but is delineated to the west of this location by sample AFFF1_HA018. However, PFOS exceeds its SL at AFFF1_HA019 (100 $\mu\text{g}/\text{kg}$) and is not delineated beyond this location.

The majority of PFHxS SL exceedances were in surface soil samples collected from soil borings within the basin around the former FPTA including AFFF1_GP005 (450 µg/kg) to the north, AFFF1_GP002 (470 µg/kg) to the east, and AFFF1_GP003 (170 µg/kg) to the south. PFHxS also slightly exceeded the SL in step-out sample AFFF1-HA017 (150 µg/kg) further to the south. Overall, the extent of PFHxS in surface soil is delineated in all directions below the SL.

The distribution of PFOA is not uniform. Most of the PFOA SL exceedances were in surface soil collected within the basin around the former FPTA at AFFF1_GP005 (88 µg/kg) to the north, AFFF1_GP002 (63 µg/kg) to the east, AFFF1_HA009 (32 µg/kg) to the southeast, and AFFF1_GP031 (34 µg/kg) to the west. PFOA also exceeded the SL in step-out sample AFFF1_HA017 (170 µg/kg) further to the south. Overall, the extent of PFOA in surface soil is delineated in all directions below the SL.

These PFAS results indicate impacts from overspray and wind transport is primarily limited to inside the dike to the north, east, and northeast (the predominant summertime wind direction). Elevated PFOS concentrations observed to the south at locations AFFF1_HA009 through AFFF1_HA011 and AFFF1_HA017 may be from wind drift or possibly AFFF handling in this area. These locations are at elevations higher than the ground elevation at the crest of the basin to the east of the FPTA and PFAS transport to these locations through surface water is unlikely.

Sample AFFF1_HA006 was collected from a low area to the northwest of the FPTA basin where pooled water had been observed in April 2022. The elevated PFOS concentrations at this location (120 µg/kg) suggests transport of PFAS by surface water cresting a low topographic divide between this location and the former FPTA.

As discussed in **Sections 4.1 and 4.2**, Supplemental RI soil samples collected in 2023 and 2024 were used to define the extent of PFAS contamination to the north, south, southwest, and southeast of the former FPTA. As shown on **Figure 5.1b**, the extent of PFAS in surface soil greater than HI=10, which is considered to be 10 times greater than an acceptable risk, is limited to the basin around the former FPTA and locally at AFFF1_GP005. The nature and extent of PFAS below HI=1 in surface soil is well defined in all areas except west of AFFF1_HA019. At this sample location, the cumulative HI is 1.63.

5.3.2 Nature and Extent of PFAS in Soil (2 to 15 feet bgs) Relative to Human Health SLs

As shown in **Table 5.3**, subsurface soil samples (2 to 15 feet bgs) collected in 2022 and 2023 are screened to November 2023 RSLs (USEPA, 2023). No subsurface soil samples were collected in 2024. Details of the results are described in the paragraphs below. In summary, PFAS concentrations exceed human health SLs in subsurface soil (2 to 15 feet bgs) over a smaller area than PFAS does in surface soil. PFAS concentrations in subsurface soil exceed SLs over an area that includes the former FPTA circle and north to the dike, which is the area where water ponds in the spring until soil thaws. PFAS is delineated to SLs in all directions. PFAS concentrations do not exceed SLs outside of the airfield dike.

Summary statistics for subsurface soil samples (2 to 15 feet bgs) collected in historical investigations and between 2022 and 2024 are presented in **Table 5.6**. Soil COIs including PFOA, PFHxS, and PFOS were detected in soil at high frequencies, ranging between 85 and 94 percent of the samples. In addition, detected concentrations of soil COIs were greater than SLs in numerous subsurface soil samples: PFOA (33 of 53 samples), PFHxS (29 of 53 samples), and PFOS (31 of 53 samples). PFNA was detected in 26 percent of samples and was only detected above its SL in two subsurface soil samples. As for the other PFAS analytes with SLs, PFBA,

PFHxA, and PFBS were detected in between 62 and 89 percent of samples, while HPDO-DA was not detected in any samples. None of these other PFAS analytes exceeded their SLs and are not considered to be COIs. Of the many remaining PFAS analytes without SLs, PFPeA, PFHpA, PFPeS, and 6:2 fluorotelomer sulfonic acid (6:2 FTS) were detected the most frequently in more than 50 percent of samples.

Figure 5.2a shows results of select COIs in soil samples collected during the RI and Supplemental RI sampling events. The VSZ at Site FT001 ranges from an elevation of approximately of 116 feet amsl to an elevation of 138 feet amsl (Parsons, February 2018). Samples collected from between 2 and 15 feet bgs are from either the vadose zone, upper VSZ or middle of the VSZ.

The following discussion focuses on distribution of PFAS in soil between 2 and 15 feet bgs. Within this depth range, concentrations of PFAS generally decreased with depth.

PFOA, PFHxS, and/or PFOS exceeded SLs in borings AFFF1_GP001 through AFFF1_GP004 and AFFF1_GP031 immediately surrounding the soil cover and in boring AFFF1_GP005 located at the base of the dike north of the FPTA. Ground surface elevations for these borings range from 143.77 to 145.85 feet amsl.

PFOS and PFHxS are delineated in subsurface soil to the north by AFFF1_GP029, to the east by AFFF1_GP030, to the southeast by AFFF1_GP006, to the south by AFFF1_GP007, and to the west by AFFF1_GP008.

PFOA is similarly delineated except for some exceedances of the SLs at AFFF1_GP008 to the west of the former FPTA but the concentrations are less than two times the SL. In this boring, located at an elevation of 146.33 feet amsl, there were no SL exceedances in the vadose zone sample (5 to 7 feet bgs), only in the VSZ, suggesting the PFOA exceedances may be the result of transport through groundwater.

PFAS is effectively delineated in subsurface soil (2 to 15 feet bgs). Detections of PFAS at concentrations above the SL are in locations within a topographic low where snowmelt water ponds in the spring until the ground thaws.

In borings located within the basin around the former FPTA where the ground surface elevation is below 146 feet amsl, PFAS exceeded SLs throughout the vadose zone and into the VSZ. Within the basin PFAS is transported through the vadose zone and VSZ as the spring snowmelt or summer rain that accumulates in the basin infiltrates.

In borings located outside the basin around the former FPTA, PFAS concentrations greater than human health SLs are limited to surface soil, possibly from overspray and/or wind drift, and in some locations the VSZ, likely from groundwater transport. The data suggest that PFAS in the vadose zone is horizontally limited to locations where the ground elevation is less than approximately 146 feet bgs.

The Supplemental RI soil borings advanced in 2023 were used to define the extent of PFAS contamination to the north, west, and east of the FPTA circle. The extent of PFAS in the vadose and VSZ between 2 and 15 feet bgs has been delineated to human health SLs in all directions. As shown on **Figure 5.2b**, the nature and extent of PFAS below HI=1 in soil from 2 to 15 feet bgs is well defined in all directions outside of the former FPTA.

5.3.3 Nature and Extent of PFAS in Soil greater than 15 feet bgs

As shown in **Table 5.4**, soil samples from depths greater than 15 feet bgs were collected in 2022 and 2023. No subsurface soil samples were collected in 2024. Details of the results are described

in the paragraphs below. In summary, PFAS in subsurface soil (greater than 15 feet bgs) is not compared to health SLs because it is considered too deep for human exposure. PFAS concentrations in subsurface soil (greater than 15 feet bgs) are consistent with detections of PFAS in groundwater.

Summary statistics for soil samples collected in historical investigations, and between 2022 and 2024 are presented in **Table 5.7**. Soil greater than 15 feet bgs is not currently screened by the Air Force against RSLs because 15 feet bgs is considered the limit of possible human exposure to soil, and therefore COIs are not identified in soil greater than 15 feet bgs. Many PFAS analytes were detected in soil samples greater than 15 feet bgs. As discussed in **Sections 5.3.1** and **5.3.2**, PFOA, PFHxS, and PFOS are COIs in soil from 0 to 15 feet bgs, and these analytes continue to be frequently detected in deeper soil. PFHxA, PFOA, PFHxS, and PFOS were detected at the highest frequencies, between 75 and 93 percent of the samples. PFNA frequency of detections decrease with depth (10 percent of samples).

Figure 5.3 shows results of PFOA, PFHxS, and PFOS in soil samples greater than 15 feet bgs collected during the RI and Supplemental RI sampling events. PFAS concentrations generally decrease with depth in these samples.

The highest concentrations of PFOS in soil greater than 15 feet bgs were found in adjacent borings AFFF1-GP004 and AFFF1_GP031 which are located immediately west of the former FPTA and close to well FT001-MW013. PFOS concentrations in AFFF1_GP031 ranged from 1,200 µg/kg at 18 to 20 feet bgs to 430 µg/kg at 32 to 34 feet bgs. PFOS concentrations in AFFF1-GP004 ranged from 1,000 µg/kg at 18 to 20 feet bgs to 230 µg/kg at 30 to 32 feet bgs. In soil deeper than 15 feet bgs, the PFOS concentrations at AFFF1_GP004 and AFFF1_GP031 were at least an order of magnitude greater than PFOS concentrations in other borings. PFOS concentrations decreased with depth in these borings.

Comparing PFAS concentrations from plume axis borings AFFF1_GP003, AFFF1_GP007, AFFF1_GP009, and AFFF1_GP010 confirms that PFAS concentrations in the VSZ and PSZ decrease markedly with distance from the source area. PFAS in soil are largely but not completely absent at AFFF1_GP009, located about 300 feet downgradient of the edge of the former FPTA. Concentrations of PFAS are either low or nondetect in soil samples collected from greater than 15 feet bgs in multiple borings including AFFF1_GP029, AFFF1_GP030, AFFF1_GP002, AFFF1_GP006, AFFF1_GP008, and AFFF1_GP010.

Observations of PFOA and PFOS in deeper soil downgradient of the source area (i.e., the basin around the former FPTA) are consistent with observations of these chemicals in groundwater (**Section 5.4**). This suggests that PFAS dissolved in groundwater migrated from the source area and sorbed to deeper soil in the VSZ and PSZ downgradient of the source area. Of the PFAS detected in soil greater than 15 feet bgs, PFBA, PFHxA, PFOA, PFNA, PFBS, PFHxS, and PFOS exceed groundwater SLs.

5.4 Nature and Extent of PFAS in Groundwater

Groundwater samples were collected as part of the PFAS RI in May through June 2022 during low groundwater and August through September 2022 during high groundwater. Supplemental RI groundwater samples were collected in August through September 2023 and July 2024 during high groundwater. As shown in **Table 5.8**, PFAS groundwater sample results from the RI sampling events are screened to November 2023 RSLs (USEPA, 2023) and the USEPA MCLs. Details of the results are described in the paragraphs below. In summary, the distribution of PFAS in groundwater is more complex and widespread than in soil. Individual PFAS are compared to a SL,

which is the lower of the MCL or the RSL for tapwater at HQ = 0.1. The plumes for PFBA, PFHxA, PFNA, and PFBS are generally delineated to the SL, and all PFAS except PFBA extend from the former FPTA circle to Yukon River. The plumes for PFOA, PFHxS and PFOS are less well defined (not completely delineated to SLs) and there are detections to the southwest toward Site ST010. PFOA and PFHxS are also detected to the west of the former FPTA. PFAS concentrations are highest near Site FT001 FPTA, and much lower to the west. PFAS detections in groundwater in the areas west and southwest of the former FPTA may be associated with use of a foam fire suppressant (likely AFFF) to suppress a fire from a civilian plane crash on the runway in 2003 (identified as AFFF Area 8 in the Preliminary Assessment (AMEC, February 2016)).

Summary statistics for groundwater samples collected in historical investigations, and between 2022 and 2024 are presented in **Table 5.9**. Most of the groundwater COIs including PFBA, PFHxA, PFOA, PFBS, PFHxS, and PFOS were detected in groundwater at high frequencies, ranging between 85 and 100 percent of the samples. PFNA is also a groundwater COI but was detected on only 39 percent of samples. In addition, detected concentrations of groundwater COIs were greater than SLs in numerous groundwater samples: PFBA (10 of 75 samples), PFHxA (38 of 85 samples), PFOA (83 of 94 samples), PFNA (17 of 85 samples), PFBS (30 of 85 samples), PFHxS (78 of 85 samples), and PFOS (77 of 94 samples). While HFPO-DA has available SLs, it was not detected in any groundwater samples and is not considered to be a COI. Of the many remaining PFAS analytes without SLs, PFPeA, PFHpA, PFPeS, PFHpS, and 6:2 FTS, were detected the most frequently in more than 50 percent of samples. This is consistent with PFAS detections in soil.

The maximum detected concentrations of COIs in groundwater include:

- PFBA – 19,000 ng/L
- PFHxA – 120,000 ng/L
- PFOA – 100,000 ng/L
- PFNA – 302 ng/L
- PFBS – 54,000 ng/L
- PFHxS – 290,000 ng/L
- PFOS – 239,000 ng/L

Summary of Lateral Distribution

Groundwater PFAS COIs have been widely detected above SLs in groundwater samples over a large area surrounding the FPTA. The maximum detected concentration of each groundwater COI is compared to the lower value of the MCL and RSL on **Figures 5.4a through 5.4g**. There may be some bias in these figures as the maximum concentration may not be representative of the current concentrations. Further, it is noted that data from earlier than 2023 may not be representative of PFAS results obtained with Method 1633. Of those PFAS constituents with SLs, one or more PFAS constituents exceeded its SL in the majority of wells sampled in association with Site FT001 during the RI and Supplemental RI. Only FT001-MW018 did not have any PFAS with SL exceedances.

Several of the PFAS (PFBA, PFHxA, PFNA, PFBS) exceed their SLs in just a few wells in the immediate vicinity or directly downgradient of the FPTA. Other PFAS (PFOA, PFHxS, and PFOS) are more widespread, particularly to the west including wells near Site ST010. The distribution of PFOS in groundwater (**Figure 5.4g**) is particularly interesting as there are three wells (FT001-MW016, FT001-MW018, and FT001-MW22) west of the FPTA where concentrations are below the SL, suggesting that the PFAS detected further to the west is from a source other than the

FPTA. This second source area is consistent with the findings of the Preliminary Assessment (PA), which identified an area of interest, AFFF Area 8, where foam fire suppressant was used to respond to a fire associated with a civilian airplane crash (AMEC, February 2016). AFFF Area 8 had been recommended as a non-qualifying site and the time of the SI, based on comparisons of soil and groundwater samples collected in the area to the SLs that were applicable at the time of the SI (Aerostar, April 2018). Two of these three wells (FT001-MW016 and FT001-MW22) are screened across the shallow water table while FT001-MW018, located near the river is screened deeper (30 to 50 feet bgs) because plumes are known to dive near the river. Also, at FT001-MW016, refusal was encountered at 23 feet bgs because of suspected permafrost and permafrost was encountered at 40 to 50 feet bgs at FT001-MW018. The presence of permafrost may be impacting PFAS migration.

As first discussed in **Section 1.2**, an MCL HI in groundwater was calculated as the sum of HQs for maximum concentrations of PFHxS, PFNA, PFBS, and HFPO-DA compared to the MCLs. As shown on **Figure 5.4h**, the MCL HI is greater than 1 in all monitoring wells except FT001-MW017, FT001-MW018, and ST010-MW013, indicating there are wide-spread exceedances of MCL HIs across the site. The highest MCL HI is in source area well FT001-MW013. PFAS is delineated to the HI MCL to the east by monitoring well FT001-MW017 and to the southwest by FT001-MW018. PFHxS is driving the wide extent of the MCL HI exceedances and generally comprises the majority of the MCL HI. Note that although the ST010-MW013 MCL HI is less than 1, it is included within the area of MCL HI equal to one contour due to its close proximity to wells with MCL HI greater than 10. Additionally, ST010-MW013 has only been sampled once as it has historically been frozen, and therefore may not be representative of groundwater concentrations.

The eastern extent of the PFAS plume in shallow groundwater appears to be in the vicinity of FT001-MW017. PFAS was detected at much higher concentrations in shallow well FT001-MW016 as compared to FT001-MW017 even though these wells are located approximately equidistant from the FPTA. This suggests a westward component of PFAS migration in groundwater. The PFAS plume associated with Site FT001 extends south toward the Yukon River. Overall, the horizontal limits of PFAS in groundwater have not been defined to the north.

PFAS was detected above RSLs and MCLs in wells located over 1,600 feet west and over 3,000 feet southwest of the site. However, it is possible that PFAS detected in the BKGD well cluster and wells at and around near Site ST010 are associated with other potential sources, possibly including the Civilian Aircraft Crash site (AFFF Area 8). PFOS (a strong indicator of AFFF) is below the SL in wells FT001-MW016, FT001-MW018, and FT001-MW022 suggests that PFAS associated with the FPTA release does not extend as far west as Site ST010 as a result of groundwater transport alone. However, the PFAS profile observed in groundwater at Site ST010, which includes telefluoromers and well as PFAAs, is consistent with the PFAS detected at the FPTA.

Rose diagrams of groundwater gradient in the eastern limits of the airfield (CH2M Hill, July 2013) indicate westward components to the otherwise primarily south and north gradients. There are no corresponding eastern components to the groundwater gradients. These gradients coupled with the seasonal change in groundwater flow direction likely result in groundwater transport of some PFAS released from Site FT001 further west than has historically been recognized.

Wells FT001-MW018 and FT001-MW019 which were installed and first sampled in 2023. The results from FT001-MW019 were higher than expected given it is east of the plume core. The wells were resampled in 2024 to confirm the results. The 2024 results were consistent with the 2023 results suggesting these samples from these two wells were not mislabeled in 2023.

Vertical Distribution

Figure 5.5 presents the vertical distribution of PFOA, PFHxS, and PFOS along the plume axis. The vertical distribution of PFAS in the source area has not been fully defined. Upgradient of the former FPTA, PFHxS, PFOS, and PFOA were detected above SLs in 01-MW-03 (screened 13-23 feet bgs), FT001-MW014 (screened 40-50 feet bgs) and FT001-MW015 (screened 60-70 feet bgs). The highest concentrations of PFOS in this cluster were in the deepest well.

Within and downgradient of the former FPTA, PFAS concentrations are generally decreasing with depth. In the well cluster located approximately 280 feet downgradient of the former FPTA (01-MW-08R, FT001-MW009, FT001-MW023) PFAS was detected in each of the wells. While PFAS concentrations were generally greater in shallow well 01-MW-08R (screened 4 to 44 feet bgs) than collocated well FT001-MW009 (screened 50 to 60 feet bgs) they were of similar magnitude while PFAS concentrations were about two to three orders of magnitude lower in FT001-MW023 (screened 80 and 90 feet bgs).

In the furthest downgradient cluster, PFAS concentrations were greatest in the mid-depth well FT001-MW011 (screened 48 to 58 feet bgs). Plumes at the Former Galena FOL are known to “dive” vertically as they approach the river. The diving plumes are likely due to the annual spring influx of water from the Yukon to groundwater that comes in on top of the groundwater plumes that are at their annual low point. While concentrations of PFOA, PFHxS, and PFOS exceeded SLs in deep well FT001-MW012 (screened 70 to 78 feet bgs), concentrations were significantly lower, and within one order of magnitude of the RSLs and MCLs, in adjacent deeper well FT001-MW020 (screened 90 to 100) feet bgs).

In the well cluster located at Site ST010 (wells ST010-MW010, -MW011, and -MW012), approximately 2,800 feet southwest of the former FPTA, PFAS was detected in each well to a maximum depth of 83 feet bgs. PFHxS, PFOA, and PFOS exceeded SLs throughout the sampled vertical interval. The greatest concentrations of most PFAS were in the mid depth well ST010-MW011 (screened 49-59 feet bgs); however, PFOS was greatest in the shallow well ST010-MW010.

Permafrost has historically been encountered in borings in the eastern end of the airfield and near Site ST010. Permafrost prevented the installation of well FT001-MW021 (a proposed deep upgradient well) and limited the installation depth of wells FT001-MW018 and FT001-MW019. Background wells BKGD-MW006 (screened 40 to 50 feet bgs) was found to be frozen during the August 2022 and August 2023 sampling events. Where present, permafrost is expected to limit the vertical migration of PFAS and may enhance horizontal migration of the PFAS plume. Discontinuous zones of permafrost may also complicate both vertical and horizontal migration of PFAS.

5.4.1 Background PFAS

Selected wells with low concentrations of PFAS from locations that are likely to be away from the identified AFFF release areas at the Galena FOL were evaluated in an attempt to establish are considered as “background,” that is PFAS that may be present in the environment from mechanisms other than migration from AFFF source areas. PFAS are man-made chemicals, and ambient conditions may include low levels of PFAS from atmospheric deposition. Sampling results from upgradient wells are evaluated to try to establish background. However, it is acknowledged that detections in these wells may be from AFFF-sources, including migration in groundwater when seasonal flow direction is to the north and west, and possibly by windblown dust from surface soil from AFFF source areas (known to contain high concentrations of PFAS

including precursors), and subsequent oxidation of precursors (to shorter chain PFAS) and infiltration to groundwater.

The wells include: BKGD-MW001, BKGD-MW005, SS107-MW003, 05-MW-03, and FT001-MW017. The concentrations of PFAS from each of these wells are shown in radar plots in **Figure 5.6** along with the spatial distribution. The radar plots include only 23 of the 40 analytes included in Method 1633; the analytes not included in the plots were below detection limits for all groundwater samples collected at the Galena FOL. For context, the most recent PFOS concentrations are also shown in **Figure 5.6**, so that, when available, the concentrations are representative of the full suite of compounds included in Method 1633.

The results indicate that the groundwater in all of the wells contain some short-chain (carbon-6 or less) PFCAs and PFASs (usually PFBA, PFPeA, PFHxA, PFBS, and PFHxS). Wells BKGD-MW001 and SS107-MW003 contain low concentrations of PFOS (9.4 ng/L and 0.37 ng/L, respectively). Well BKGD-MW001 contains low concentrations of 6:2 FTS (3.1 ng/L), while wells 05-MW-03 and FT001-MW017 contain low concentrations of FOSA (0.56 ng/L and 0.22 ng/L, respectively). All of these PFAS are typical of AFFF or the environmental degradation products of AFFF precursors (Houtz et al, 2013; Interstate Technology and Regulatory Council [ITRC], 2023; Yan et al, 2024). The molar concentrations in background wells range from 0.08 nanomolar (nM) in well 05-MW-03 and 1.1 nM in BKGD-MW05. The molar concentration of PFAS in well FT001-MW013, located in former FPTA source area is 1300 nM.

Overall, these analyses indicate that:

- PFAS compounds are present at low levels in groundwater across the Galena FOL, whether from atmospheric deposition, wind transport from AFFF source areas, or migration of groundwater during the seasonal groundwater flow reversal.
- The PFAS compounds that are present in background wells are compounds that are typical of AFFF sources.

6.0 FATE AND TRANSPORT EVALUATION

The fate and transport of PFAS contaminants was evaluated in the RI Report (Parsons, June 2024). This section includes select updates to the fate and transport evaluation with Supplemental RI data identifying new COIs.

6.1 Conceptual Model for Fate and Transport

The conceptual site model (CSM), which defines the framework for fate and transport evaluation, describes conditions at Site FT001, including the contaminant sources, surface and subsurface hydrogeologic conditions, contaminant migration pathways, and the contaminant release mechanisms. A summary of the salient elements of the CSM that apply to fate and transport is summarized in **Figure 6.1**. Primary elements of the CSM include:

Contaminant sources: Fire training exercises using AFFF and associated AFFF handling are sources of contamination at Site FT001. The RI data suggest the Civilian Airplane Crash Site (AFFF Area 8) may also be a source of PFAS in groundwater near Site ST010, to the southwest of Site FT001.

Hydrogeology: Groundwater at the site exists in an unconfined alluvial aquifer consisting of interbedded sequences of sand and gravelly sand, with minor silt fractions that extends to depths greater than 200 feet bgs. Groundwater levels at the site fluctuate seasonally in response to changes in stage of the Yukon River creating a VSZ from approximately of 116 feet amsl to an elevation of 138 feet amsl (Parsons, February 2018). The groundwater flow direction is to the south from late summer through April (during average or low stage of the Yukon River), and changes to the north during May and June (when the Yukon River stage is high).

Contaminant Release Mechanisms and Migration Pathways identified at Site FT001 include:

- Transport of COIs sorbed to surface soil through transport of soil via stormwater runoff; however, because Site FT001 is in a topographic low area, the transport by this method is only for relatively short distance.
- Dissolution of COIs from surface soil and transport by percolation of water through the unsaturated soil to the water table (i.e., vertical leaching of chemicals from soil into groundwater).
- Dissolution of COIs from VSZ soil to groundwater during periods of high groundwater, and
- Lateral and vertical transport of dissolved contaminants in groundwater to downgradient receptors (groundwater wells, surface water bodies).

The CSM for fate and transport is presented in greater detail in the RI Report (Parsons, June 2024).

6.2 Contaminant Properties, Persistence, and Fate

The properties, persistence, and fate of the PFAS COIs are discussed in very general terms below. The following subsections provide more detail on the properties, persistence, and fate of the COIs.

In general, the PFAS COIs:

- Have relatively high solubility in water so readily leach from soil and migrate in groundwater;

- Have relatively low volatility so will not evaporate into air at appreciable levels;
- Behave like surfactants and form films at the interface of air and water. Adsorption of the COIs at the air-water interface can increase retardation of aqueous-phase transport (i.e., slow down migration in groundwater).
- Perfluoroalkyl acids (PFAAs) are highly resistant to natural degradation processes and conventional treatment methods; therefore, they are unlikely to degrade or otherwise transform (or degrade only very slowly) under normal environmental conditions.
- The PFAS COIs can be formed from natural transformation/degradation of larger, more complex PFAS (known as precursors) that were present in the AFFF and are present in soil (and to a lesser extent in groundwater) at Site FT001. Transformation of these precursors likely provide a continuing source of the PFAS COIs.

6.2.1 Physical and Chemical Properties of Site-Related Contaminants

Updated PFAS COIs are summarized in **Table 6.1** and are discussed in this section. Each of the PFAS COIs are PFAAs and can further be categorized as either perfluoroalkyl carboxylic acids (PFCAs) or perfluoroalkyl sulfonic acids (PFSAs). **Tables 1.1 and 5.1** categorize the COIs for soil and groundwater and present the number of carbon atoms for each PFAA. This information is relevant as there are some differences in the chemical and physical properties between PFAS with shorter and longer chains lengths and the functional group (carboxylate or sulfonate) associated with the PFAAs with the same chain length (e.g., PFOA and PFOS). These differences can affect the fate and transport of the individual COI.

The fate and transport of chemicals in environmental media is governed by the physical and chemical properties of the chemicals and the surface and subsurface media through which the chemicals are migrating. In general, chemicals and structures with similar physical and chemical characteristics will show similar patterns of transformation, transport, or attenuation in the environment. Chemical partitioning information (solubility, vapor pressure, organic carbon partitioning coefficients, acid dissociation constants, and Henry's Law Constant [HLC] data) provide information that can be used to evaluate contaminant mobility in the environment. Degradation rates and concentrations of chemical precursors and intermediate decay products provide information about a contaminants persistence in the environment. Partitioning coefficients are used to assess the relative affinities of chemicals for solution in air and water or association with solid phases.

PFAA molecules are characterized by the fluorinated alkyl chain (generally hydrophobic) and the carboxyl or sulfonate functional group at one end (hydrophilic and negatively charged at ambient pH). This dual nature of PFAA molecules makes their interaction with environmental media somewhat complex involving multiple processes (Li et al, 2018). The synergistic effects of multiple migrating chemicals and the complexity of soil/water interactions, including pH, organic carbon content, grain size, and clay mineral variability, are typically unknown. The properties are used to assess the anticipated behavior of each chemical under environmental conditions and are used as input parameters to mathematical models for predicting contaminant mass transport in the environmental media. Physical and chemical properties of the PFAS COIs for the Site FT001 are presented in **Table 6.2**.

6.2.2 Chemical Factors Affecting Transport

Chemical properties of the updated COIs are presented in this section. The PFAA COIs are all relatively strong acids; they have low acid dissociation constants (pK_a values < 3.8 and usually $<$

2; **Table 6.2**) meaning that the PFAA functional groups are dissociated into anions in typical environment pH levels. These negatively charged anions will associate strongly with positively charged surfaces (e.g., dissolved cations that are associated with negatively charged clay surfaces). The hydrophobic fluorinated alkyl chain paired with the anionic functional group can also impact the how molecules interact with air/water interfaces and with other similar molecules (tendency to form micelles). These impacts are discussed later in this section.

The aqueous solubilities of the PFAS COIs are relatively high, ranging from 240 to 260,000 milligrams per liter (mg/L) (**Table 6.2**). The high solubilities indicate their tendency to dissolve and be transported by groundwater flow. Aqueous solubility may further be enhanced by the presence of other dissolved chemicals, particularly organic carbon and humic acids. Vapor pressures for the majority of PFAS COIs range from 6.5×10^{-4} to 3.3×10^{-1} millimeters of mercury (mm Hg) (**Table 6.2**). The generally low vapor pressures for PFAAs indicates that they will not be present in significant amounts in soil gas. The vapor pressure for PFBA is 15 mm Hg which is relatively higher than the vapor pressure of the other COIs; however, PFBA is not a COI in soil and there are currently no occupied buildings at FT001. The HLC indicates a chemical's tendency to partition between water and air. Substances with HLC values less than 10^{-7} atmospheres relative to cubic meters per mol ($\text{atm}\cdot\text{m}^3/\text{mol}$) will generally tend to stay dissolved in water and do not partition significantly into air, while chemicals with an HLC greater than 10^{-3} $\text{atm}\cdot\text{m}^3/\text{mol}$ will partition rapidly from water into air (Lyman et al., 1990). Available HLC values range from 1.2×10^{-4} to 2.4×10^{-10} $\text{atm}\cdot\text{m}^3/\text{mol}$ (**Table 6.2**) indicating they are unlikely to be present in vapor phase in significant concentrations. Note that the PFAS HLC values are one to five orders of magnitude lower than HLC values for VOCs like benzene and trichloroethene.

The water/organic carbon partition coefficient (K_{oc}) is a measure of the tendency of an organic chemical to partition between water and organic carbon in the soil. The higher the K_{oc} value, the greater is the tendency of the chemical to partition into organic matter in soil. The PFAS COIs have K_{oc} values ranging from 20.4 to 370 liter per kilogram (L/kg) (**Table 6.2**) which is similar to benzene and trichloroethene (other contaminants previously identified at Site FT001). Sorption and retardation generally increase as perfluoroalkyl tail length (and number of carbon atoms) increases. Therefore, short-chain PFASs and PFCAs (e.g., PFBS and PFHxA with four and six carbon atoms, respectively) are retarded less than their long-chain counterparts PFOS and PFOA (eight carbon atoms each). Additionally, PFASs (e.g., PFOS) tend to sorb more strongly than PFCAs (e.g., PFOA) of equal chain length (ITRC, March 2018). Li et al. (2018) showed that K_{oc} alone does not completely describe sorption of PFAS compounds, but a combination of K_{oc} , pH, and soil clay content provides a better correlation with sorption characteristics.

Because PFAS often contain hydrophobic (fluorinated alkyl chains) and hydrophilic (anionic carboxyl or sulfonate functional groups) portions, they exhibit surfactant properties which affect transport in complex ways. Many PFAS preferentially form films at the air-water interface, with the hydrophobic carbon-fluorine (C-F) tail oriented towards the air and the hydrophilic head group dissolved in the water (Krafft and Riess, 2015). The preference of some PFAS for the air-water interface may also influence transport in the vadose zone and VSZ, where unsaturated conditions provide significant air-water interfacial area. Adsorption of PFOS and PFOA at the air-water interface can increase the retardation factor for aqueous-phase transport (Brusseau, 2018).

At higher concentrations, PFAAs can form micelles or hemimicelles where the hydrophilic portions interact with the water phase and the hydrophobic portions interact with each other (ITRC, 2018). For PFOS and PFOA the critical micelle concentration (CMC) of 500 mg/L is much greater than concentrations observed in groundwater (Brusseau, 2018). However, hemimicelles may form at concentrations as low as 0.001 times the CMC.

6.2.3 Degradation of PFAAs

The strength of the molecular bonds between the carbon and fluorine atoms in PFAS, including PFAAs and the Site FT001 COIs, makes them highly resistant to natural degradation processes and conventional treatment methods. Therefore, PFAAs, including the COIs, likely do not degrade or otherwise transform (or degrade only very slowly) under ambient environmental conditions (ITRC, 2018). A more detailed discussion of PFAA degradation is provided in the RI Report (Parsons, June 2024).

6.2.4 Precursor Transformation and Total Oxidizable Precursor Analysis

A discussion of PFAA precursor transformation and the total oxidizable precursor (TOP) assay results are presented in the RI Report (Parsons, June 2024). Certain PFAS precursors including 6:2 FTS can transform over time to shorter chain PFAAs (notably PFBA, PFPeA, PFHxS, PFBS, and PFHxS). Precursors are present in high concentrations in Site FT001 soil and their transformation contributes to an ongoing source of shorter chain PFAAs to groundwater at Site FT001 and may account for the wide presence of these compounds in background wells.

6.3 Contaminant Migration

An extensive discussion of the migration of PFAS contamination is provided in the RI Report (Parsons, June 2024). This section addresses updated to the site-specific contaminant migration pathway identified in the CSM with consideration to observed contaminant migration patterns.

6.3.1 Groundwater Transport

An extensive discussion of the transport of PFAS in groundwater is provided in the RI Report (Parsons, June 2024). Plots of select COIs in groundwater (PFHxS, PFOA, and PFOS, the COIs with the highest prevalence and greatest exceedances of SLs) over time at two plume wells are presented in **Figures 6.2 and 6.3**, with updated PFAS concentrations from 2023 groundwater samples. **Figure 6.2** presents select PFAS concentrations at well 01-MW-01, which is located at the southwest corner of the soil cover. **Figure 6.3** presents the concentrations at well FT001-MW009, which is located approximately 210 feet downgradient to the south of the south edge of the soil cover. Generally, the concentrations of PFHxS, PFOA, and PFOS are decreasing over time. This is expected because fire training activities at FT001 ceased in 1991, as indicated in the RI Report.

The bioventing system at Site FT001 operated from October 2018 through April 2023, and has since been shut down. Samples from wells 01-MW-03 and FT001-MW013, located near the source area and the bioventing system, were collected in 2024 to determine if there were changes in PFAS composition after over a full year without bioventing operation. Concentrations of PFAS in groundwater do not appear to have changed significantly as a result of stopping bioventing operation (**Table 6.8** and **Appendix H**).

7.0 UPDATED CONCEPTUAL SITE MODEL

There are no changes to the CSM per the Supplemental RI results. The updated CSM is presented in the RI Report (Parsons, June 2024).

7.1 Potential Exposure Pathways and Receptors

There are no changes to the potential exposure pathways and receptors included in the CSM is presented in the RI Report (Parsons, June 2024).

7.2 Comparison of Environmental PFAS to Potential Sources

This section discusses the types of PFAS detected at Site FT001 and nearby background wells in order to determine if there were other, non-AFFF, sources of PFAS. In summary, the analysis did not indicate the presence of non-AFFF PFAS in the vicinity of Site FT001.

The groundwater concentrations of PFAS from selected wells are shown in radar plots in **Figure 7.1** along with the spatial distribution. For context, the maximum PFOS concentrations are also shown in **Figure 7.1**. Similar to **Figure 5.5**, the radar plots only include 23 of the 40 analytes included in Method 1633, as the other PFAS were not detected in any groundwater wells at the Galena FOL. The radar plots from the selected wells are plotted on the same logarithmic scale in order to observe similarities and differences in patterns and magnitudes of PFAS in groundwater. The radar plots are shown in different colors, which represent order of magnitude differences in the PFAS molar concentrations, according to the following scheme: green lines represent PFAS molarity less than 1.0 nM, blue represents 1-10 nM, magenta represents 10-100 nM, purple represents 100-1,000 nM, and red represents greater than 1,000 nM.

As discussed in **Section 5.4**, there appears to be a second PFAS source area separate from the Site FT001 FPTA, as there are low PFAS concentration wells in between the FPTA and the vicinity of Site ST010, along the southern boundary of the airstrip (**Figure 7.1**). This area is near a 2003 civilian airplane crash site (AFFF Area 8) that was identified in the PA (AMEC, February 2016). Foam fire suppressant (likely AFFF) was used to respond to a fire associated with the civilian airplane crash. During the SI, soil and groundwater samples were collected in the area. Only one soil sample had PFOS slightly above the ADEC Method 2 Migration to Groundwater CUL. The ADEC Migration to Groundwater CULs were the SLs at the time of the SI and therefore, AFFF Area 8 was recommended for a non-qualifying site determination at the time (Aerostar, April 2018).

All wells contain short-chain (Carbon-6 or less) PFCAs and PFSAAs, while most source-area and downgradient wells contain relatively high concentrations of PFOA and PFOS (wells 01-MW-03, FT001-MW013, 01-MW-01, FT001-MW011, ST010-MW011, and ST010-MW010). This pattern is typical of AFFF environmental releases, and in particular of the legacy 3M AFFF brand name Light Water, which was manufactured by electrochemical fluorination from the late 1960s through 2002. The 3M brand AFFF formulation changed in 1993 through 2001 and contained more fluorotelomers than earlier formulations, but there is also evidence that there were 3M brand AFFF formulas produced historically that may have included precursors that could be associated with FOSA (Houtz et al, 2013; ITRC 2023). Wells containing FOSA include ST010-MW011, 01-MW-03, 01-MW-01, and FT001-MW011.

Of the wells included for radar maps, the fluorotelomer 6:2 FTS was present in wells FT001-MW013, 01-MW-01, FT001-MW011, and ST010-MW011. Fluorotelomer 4:2 FTS was only present in wells FT001-MW013 and FT001-MW011, while 8:2 FTS was only present in 01-MW-01. These fluorotelomers are not likely to have been associated with earlier formulations of the

3M brand AFFF but have been associated with other AFFF brands including Ansul, Chemguard, and National Foam (Houtz et al, 2013; Barzen-Hanson et al, 2017; ITRC, 2023). Ansul and National Foam telefluoromer-based AFFF products were approved for U.S. military use starting in 1976 (Houtz et al, 2013). The presence of these fluorotelomers may be indicative of AFFF use other than the 3M brand. However, overall, there is no indication of non-AFFF sources of PFAS anywhere at the site.

8.0 SUMMARY AND CONCLUSIONS

The following is a comprehensive summary of findings and conclusions from the RI including conclusions presented in the RI Report (Parsons, June 2024), updated as appropriate based on the data collected in 2023 and 2024. It is noted that conclusions on the nature and extent of contamination are based on the SLs indicated in **Section 1.2**, and it is acknowledged that consideration of changes to DoD policy include additional PFAS and lower RSLs may create additional data gaps with regard to PFAS delineation.

8.1 Summary and Conclusions of Nature and Extent

Conclusions of the soil investigation at Site FT001 are as follows:

- Although use of AFFF containing PFAS reportedly stopped in 1991, there is a residual PFAS source area in both the vadose zone and VSZ beneath the basin that surrounds for former FPTA.
- PFAS COIs in soil include PFOA, PFNA, PFHxS, and PFOS.
- In surface soil samples, PFOS exceeds its SL over the greatest lateral extent.
- The extent of COI SL exceedances in surface soil has been effectively delineated except for a small area west of AFFF1_HA019 which is southwest of the former FTPA.
- The extent of COI SL exceedances in vadose zone below 2 feet bgs is generally limited to the area within the basin with ground elevation less than 146 feet amsl (area where snow melt pools prior to the ground thawing in the spring).
- The extent of COI SL exceedances in VSZ and PSZ is larger than the vadose zone as the result of groundwater transport.
- The extent of PFAS in the vadose and VSZ between 2 and 15 feet bgs has been effectively delineated to human health SLs in all directions. While PFOA exceeded its SL (HQ=0.1) to the west at FT001_GP008, no other PFAS exceeded SLs at the location and the cumulative HI (0.28) is acceptable.
- PFAS precursors are present in Site FT001 soils (and to a lesser extent, in groundwater). The highest concentrations of precursors are in surface soils. Oxidation of precursors to shorter chain PFCAs and PFSA is likely on on-going source of these COIs to groundwater.

Conclusions of the groundwater investigation at Site FT001 are as follows:

- Transducer measurements have demonstrated that the groundwater flow direction is predominately in the south-southwest or north-northwest directions (depending on the stage of the Yukon River).
- PFAS COIs in groundwater include PFBA, PFHxA, PFOA, PFNA, PFBS, PFHxS, and PFOS.
- The PFAS COI plumes, except PFBA, extend south toward the Yukon River.

- PFBA, PFHxA, PFNA, PFBS exceed their SLs in just a few wells in the immediate vicinity or directly downgradient of the FPTA and are all delineated to the north, east, and west.
- SL exceedances of PFOA, PFHxS, and PFOS are more widespread and include wells near Site ST010 located far to the west of the source area.
- PFOS does not exceed its SL in several wells between the Site FT001 source area and Site ST010 suggesting a separate PFAS source area is impacting groundwater near Site ST010.
- High concentrations of several PFAS in shallow wells FT001-MW016 and FT001-MW022 suggest a westward component of PFAS migration. This is consistent with historical measurements of groundwater gradients in wells at the eastern end of the runway.
- Evaluation of background wells documents low levels of PFAS compounds in groundwater across the Galena FOL that are typical of AFFF sources.
- The vertical distribution of PFAS in groundwater has not been thoroughly delineated to SLs. Upgradient of the source area permafrost was detected at 35 feet bgs. Within and approximately 280 feet downgradient of the former FPTA, PFAS concentrations are generally decreasing with depth. However, further downgradient, near the Yukon River, the plume is deeper with the greatest PFAS concentrations in the mid-depth well FT001-MW011 (screened 48 to 58 feet bgs), while the concentrations are lower in the two deeper wells in that area.
- The relative proportions of PFAS (i.e., primarily short chain PFAAs and very low proportion of PFOA and PFOS) in upgradient wells is most likely the result of oxidation of precursors in soil and transport to groundwater by the annual snowmelt ponding and infiltration in the local topographic low near the former FPTA.
- Permafrost has historically been encountered in borings in the eastern end of the airfield and permafrost limited the installation depth of the four new wells installed in 2022 or 2023 (FT001-MW016 through FT001-MW019). Where present, permafrost is expected to limit the vertical migration of PFAS and discontinuous zones of permafrost may complicate lateral and vertical migration of PFAS.
- In wells located between 100 to 280 feet downgradient of the FPTA, there was some evidence of seasonal variability as PFAS concentrations were nearly all greater during low groundwater in May than high groundwater in late summer.

Conclusions for the 2022 biota sampling at Site FT001 are as follows:

- PFAS was detected in each invertebrate and vertebrate sample. A greater number of PFAS constituents and higher concentrations were detected in the vertebrates compared to the invertebrates possibly because of bioaccumulation.

8.2 Summary and Conclusions of Contaminant Fate and Transport

Because of their physical and chemical properties, the PFAS COIs readily leach from source area soil and migrate in groundwater. PFAS has migrated south in groundwater and appears to become deeper as it nears the Yukon River. PFAS are also found in the upgradient well cluster but appear to be primarily shorter chain PFCAs and PFSAs.

PFAA precursors are present in both soil and groundwater at Site FT001. These precursors are most prevalent in surface soil, decrease with depth, and are much less present in groundwater. These precursors may be transformed into PFAA end products through natural biotic and abiotic processes; however, the process appears to be very slow.

Conclusions regarding PFAS transport at Site FT001 are as follows:

- Potential surface soil transport through runoff is mostly contained within the basin around the FPTA. Runoff from areas outside the catchment of the basin could potentially transport PFAS impacted surface soil. Runoff from areas south and west of the basin flows into drainage features on the airport which are being investigated as part of Site CG109.
- The residual PFAS soil source area in the vadose zone and VSZ beneath the basin surrounding former FPTA provides a continuing source for leaching of COIs to groundwater. Because use of AFFF containing PFAS stopped in 1991, the leaching rates of COIs has decreased over time. However, the data show that soil in the source area is not depleted of PFAS and leaching of COIs to groundwater continues. Precursors to PFAAs are present in soil and their oxidation to shorter chain PFAAs is likely an on-going source of these COIs to groundwater.
- PFAS concentrations in VSZ and PSZ soil along the plume axis decrease markedly with distance from the source area. However, PFAS in aquifer materials downgradient of the source area may still represent a long-term secondary source area.
- The soil cover installed over the former FPTA in 2018 appears to have reduced the rate of leaching of non-PFAS COIs (e.g., DRO) by reducing infiltration through the most heavily impacted soil in and around the FPTA circle. It is likely that the soil cover has also reduced leaching of PFAS contaminants within the source area; however, this cannot be determined based on the limited groundwater data.
- Bioventing could enhance the rate PFAS precursors are transformed to PFAAs. Bioventing operations ceased in the spring of 2023.
- The Site FT001 plume is wide with PFOA and PFHxS detected above SLs in monitoring wells to the west of the source area. The annual reversal in groundwater gradients, westward components of groundwater gradients, and preferential flow pathways may be contributing factors to the westward spread.
- Because use of AFFF containing PFAS reportedly stopped in 1991, it is probable that the groundwater plume is stable or shrinking. There are currently too few data points available to confirm trends in groundwater concentrations over time.
- Migration of PFAS COIs in groundwater will continue as PFAS COIs remain in the source area. COIs sorbed to aquifer materials in the plume downgradient of the source area may provide an ongoing source.
- Although the PFAS groundwater plume at Site FT001 extends south to the bank of the Yukon River, potential impacts to the river remain a data gap. Based on the findings for the Hydrogeologic Report (CH2M Hill, July 2013) there is hydraulic connection to the Yukon River and groundwater discharges to the river seasonally when groundwater flow is to the south (typically August to May). However, the

mass flux of PFAS that may discharge to the river is expected to be insignificant relative to the high flow of the Yukon River (i.e., groundwater discharge would be highly diluted).

- Although there appears to be a separate PFAS source area impacting groundwater near Site ST010, the radar plots show a pattern typical of an AFFF source. The radar plots do not indicate the presence of non-AFFF PFAS sources.

9.0 RECOMMENDATIONS

Based on the findings of the Supplemental RI, PFAS is generally delineated for Site FT001 with the following exceptions:

- Surface soil samples to the northeast of sample AFFF1-HA007 and west of AFFF1-HA019 may be useful to ensure delineation of PFOS. However, concentrations of PFOS at AFFF1-HA007 only slightly exceed the SL and no other PFAS COIs were detected at concentrations exceeding their SL. PFAS is effectively delineated in this area.
- Additional (deeper) wells may be needed to delineate PFAS in deeper groundwater in wells downgradient of the source area; however, permafrost may be encountered before the target well depths are achieved.
- PFOA, PFHxS, and PFOS in groundwater are not well defined to the west of the FT001 source area and/or north of the runway near Site ST010 and west of Site ST010. A groundwater grab sample investigation is recommended to better define the extent of PFAS in these areas. Data from a groundwater grab sample investigation could be used to inform placement of additional groundwater monitoring wells if needed.
- The apparent PFAS release west of the FPTA in the vicinity of Site ST010 should be further investigated as a separate source area.
- Evaluate the impacts of additional PFAS (e.g., PFDA) and lower RSLs on the nature and extent of PFAS contamination.

The USAF recognizes that PFAS SLs and guidance are evolving. Any future addenda to the RI will compare both historical and recent data to the most current SLs that have been adopted by the Office of the Assistant Secretary of Defense at the time data compilation begins.

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Tables

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Table 1.1
PFAS Molecule Summary

Number of Carbon Atoms	Per Fluoroalkyl Acids (PFAAs)		Fluorotelomers		Fluorosulfonamides (fully or partially fluorinated carbons with sulfonamide group)	Fluorosulfonamidoacetic Acids (fully or partially fluorinated with sulfonamide acetic acid group)	Perfluoroalkane sulfonamidoethanols	Per- and polyfluoroalkyl ether carboxylic acids	Perfluoroalkyl ether sulfonic acids
	Perfluorocarboxylates (fully fluorinated carbons with carboxyl group)	Perfluorosulfonates (fully fluorinated carbons with sulfonic acid group)	Fluorotelomer Sulfonates (partially fluorinated carbons with sulfonic acid group)	Fluorotelomer Carboxylic Acids					
4	Perfluorobutanoic Acid (PFBA)	Perfluorobutane Sulfonic Acid (PFBS)						Perfluoro-3-methoxypropanoic acid (PFMPA)	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)
5	Perfluoropentanoic Acid (PFPeA)	Perfluoropentane Sulfonic Acid (PFPeS)						Perfluoro-4-methoxybutanoic acid (PFMBA)	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
6	Perfluorohexanoic Acid (PFHxA)	Perfluorohexane Sulfonic Acid (PFHxS)	4:2 Fluorotelomer Sulfonic Acid (4:2 FTS)	3-Perfluoropropyl propanoic acid (3:3FTCA)				Hexafluoropropylene oxide dimer acid (HFPO-DA/GenX)	
7	Perfluorheptanoic Acid (PFHpA)	Perfluoroheptane Sulfonic Acid (PFHpS)		2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)				4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	
8	Perfluorooctanoic Acid (PFOA)	Perfluorooctane Sulfonic Acid (PFOS)	6:2 Fluorotelomer Sulfonic Acid (6:2 FTS)		Perfluorooctane Sulfonamide (FOSA)				9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)
9	Perfluorononanoic Acid (PFNA)	Perfluorononane Sulfonic Acid (PFNS)			n-Methyl Perfluorooctane Sulfonamide (NMeFOSA)				
10	Perfluorodecanoic Acid (PFDA)	Perfluorodecane Sulfonic Acid (PFDS)	8:2 Fluorotelomer Sulfonic Acid (8:2 FTS)	3-Perfluoroheptyl propanoic acid (7:3FTCA)	N-Ethyl Perfluorooctanesulfonamide (NEtFOSA)		N-methyl perfluorooctane-sulfonamidoethanol (NMeFOSE)		11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
11	Perfluoroundecanoic Acid (PFUnA)					n-Methyl Perfluorooctane Sulfonamidoacetic Acid (NMeFOSAA)			
12	Perfluorododecanoic Acid (PFDoA)	Perfluorododecane Sulfonic Acid (PFDoS)				n-Ethyl Perfluorooctane Sulfonamidoacetic Acid (NEtFOSAA)	N-ethyl perfluorooctane-sulfonamidoethanol (NEtFOSE)		
13	Perfluorotridecanoic Acid (PFTrA)								
14	Perfluorotetradecanoic Acid (PFTeA)								

Note:

Green shaded chemicals have been detected in at least 10 percent of Site FT001 groundwater and soil samples.

Brown shaded chemicals have been detected in at least 10 percent of Site FT001 soil samples.

Blue shaded chemicals have been detected in at least 10 percent of Site FT001 groundwater samples.

Table 1.2 Screening Levels

Media	PFAS Analyte	RSL – Residential (HQ=0.1) ^{a/}	EPA MCLs
Tap Water & Groundwater	PFBA	1,800 ng/L	NA
	PFHxA	990 ng/L	NA
	PFOA	6.0 ng/L	4.0 ng/L
	PFNA	5.9 ng/L	10.0 ng/L
	PFBS	600 ng/L	NA
	PFHxS	39 ng/L	10.0 ng/L
	PFOS	4.0 ng/L	4.0 ng/L
	HFPO-DA (GenX)	1.5 ng/L	10.0 ng/L
Soil	PFBA	7,800 µg/kg	NA
	PFHxA	3,200 µg/kg	NA
	PFOA	19 µg/kg	NA
	PFNA	19 µg/kg	NA
	PFDA	NA	NA
	PFBS	1,900 µg/kg	NA
	PFHxS	130 µg/kg	NA
	PFOS	13 µg/kg	NA
	HFPO-DA (GenX)	23 µg/kg	NA
Surface Water – Ecological	PFBA	NA	NA
	PFHxA	NA	NA
	PFOA	NA	NA
	PFNA	NA	NA
	PFDA	NA	NA
	PFBS	NA	NA
	PFHxS	NA	NA
	PFOS	NA	NA

^{a/} USEPA Regional Screening Level for hazard quotient of 0.1 using toxicity parameters, per the Office of Assistant Secretary of Defense, PFAS 101.

Bold = lower of RSL and MCL

ng/L = nanograms per liter

µg/kg = micrograms per kilogram

NA = not applicable or not available

PFBA = perfluorobutanoic acid

PFHxA = perfluorohexanoic acid

PFOA = perfluorooctanoic acid

PFNA = perfluorononanoic acid

PFDA = perfluorodecanoic acid

PFBS = perfluorobutane sulfonic acid

PFHxS = perfluorohexane sulfonic acid

PFOS = perfluorooctane sulfonic acid

HFPO-DA = Hexafluoropropylene Oxide Dimer Acid (or Gen-X)

**Table 4.1
Monitoring Well Installation Details**

Well Location/ Identification	Well Diameter (inches)	Screen Length (feet)	Screened Interval (feet bgs)	Top of Casing Elevation (feet NAVD88)	Ground Surface Elevation (feet NAVD88)	Top Screened Interval (feet NAVD88)	Bottom Screened Interval (feet NAVD88)	Easting (meters UTM84)	Northing (meters UTM84)	Rationale
FT001-MW018	2.0	20	30-50	145.86	146.41	116	96	599378.46	7180565.48	Downgradient well to define western edge of plume. Screened across interval with greatest PFAS concentrations in well cluster FT001-MW010, FT001-MW011, and FT001-MW012.
FT001-MW019	2.0	10	33-43	147.54	148.13	115	105	599797.70	7180669.46	Downgradient well to define eastern edge of plume. Screened across interval with greatest PFAS concentrations in well cluster FT001-MW010, FT001-MW011, and FT001-MW012.
FT001-MW020	2.0	10	90-100	154.88	155.37	65	55	599689.48	7180662.44	Downgradient well to define vertical extent of PFAS at location of well cluster FT001-MW010, FT001-MW011, and FT001-MW012.
FT001-MW021	N/A	N/A	N/A	N/A	149.59	N/A	N/A	N/A	N/A	Monitoring well not installed due to the presence of permafrost from 35 to 90 feet bgs.
FT001-MW022	2.0	20	12-32	149.26	149.59	138	118	599450.83	7180764.88	Shallow groundwater monitoring well west of FT001-MW016 to delineate the lateral extent of PFAS to the west
FT001-MW023	2.0	10	80-90	150.90	151.34	71	61	599648.26	7180768.50	Deep monitoring well near existing cluster 01-MW-08R/FT001-MW009 to delineate the vertical extent of PFAS in the plume downgradient of the FPTA

Notes:

The Alaska Department of Transportation (ADOT)-approved flush mount well design requires a gravel pack to a depth of 8 feet, plus a 2-foot bentonite seal and a 2-foot sand pack above the well screen. Therefore, 12 feet bgs is the shallowest depth to which a monitoring well screen can be installed.

feet bgs = feet below ground surface

feet NAVD88 = elevation in feet relative to the North American Vertical Datum of 1988

FPTA = Fire Protection Training Area

meter UTM84 = horizontal coordinates in meters relative to Universal Transverse Mercator coordinate system of 1984

PFAS = per- and polyfluoroalkyl substances

Table 4.2

**Summary of Nondetects Greater than the Screening Level in Groundwater
Site FT001 (AFFF Area 1)**

Analyte	Analyte Abbreviation	Units	Number of Samples ^{a/}	Number of Rejected Samples	Minimum Nondetect Value	Maximum Nondetect Value	Screening Level ^{b/}		Number of Nondetects > Lowest Screening
							RSL	MCL	
<i>Perfluorocarboxylates</i>									
Perfluorobutanoic Acid	PFBA	ng/L	75	0	1.2	1.2	1800	-	0
Perfluorohexanoic Acid	PFHxA	ng/L	85	0	NA	NA	990	-	0
Perfluorooctanoic Acid	PFOA	ng/L	94	0	0.47	6.4	6	4	1
Perfluorononanoic Acid	PFNA	ng/L	85	0	0.16	490	5.9	10	13
<i>Perfluorosulfonates</i>									
Perfluorobutane Sulfonic Acid	PFBS	ng/L	85	0	NA	NA	600	-	0
Perfluorohexane Sulfonic Acid	PFHxS	ng/L	85	0	NA	NA	39	10	0
Perfluorooctane Sulfonic Acid	PFOS	ng/L	94	0	0.15	15	4	4	4
<i>Perfluoroalkyl ether carboxylic acids</i>									
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	ng/L	38	0	0.39	660	1.5	10	13

Notes:

^{a/} Data sets evaluated include historical, 2022 remedial investigation data, and 2023-2024 supplemental remedial investigation data.

^{b/} Groundwater Screening Level is the lower value of 1.) November 2023 USEPA Regional Screening Level calculated for hazard quotient of 0.1, and 2.) Maximum Contaminant Level (MCL).

NA = not applicable, analyte was detected in all

ng/L = nanograms per liter

USEPA = United States Environmental Protection Agency

Nondetect result exceeds screening level.

Table 4.3

**Summary of Nondetects Greater than the Screening Level in Soils (0 to 15 feet bgs)
Site FT001 (AFFF Area 1)**

Analyte	Analyte Abbreviation	Units	Number of Samples ^{a/}	Number of Rejected Samples	Minimum Nondetect Value	Maximum Nondetect Value	Screening Level ^{b/}	Number of Nondetects > Screening Level
<i>Perfluorocarboxylates</i>								
Perfluorobutanoic Acid	PFBA	µg/kg	71	0	0.039	8.9	7800	0
Perfluorohexanoic Acid	PFHxA	µg/kg	95	0	0.017	11	3200	0
Perfluorooctanoic Acid	PFOA	µg/kg	95	0	0.044	2.9	19	0
Perfluorononanoic Acid	PFNA	µg/kg	95	0	0.013	59	19	7
<i>Perfluorosulfonates</i>								
Perfluorobutane Sulfonic Acid	PFBS	µg/kg	95	0	0.0073	59	1900	0
Perfluorohexane Sulfonic Acid	PFHxS	µg/kg	95	0	0.021	0.04	130	0
Perfluorooctane Sulfonic Acid	PFOS	µg/kg	95	0	0.045	0.085	13	0
<i>Perfluoroalkyl ether carboxylic acids</i>								
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	µg/kg	21	0	0.027	0.14	23	0

Notes:

^{a/} Data sets evaluated include historical, 2022 remedial investigation data, and 2023-2024 supplemental remedial investigation data.

^{b/} Soil (0-15 feet bgs): November 2023 USEPA Regional Screening Level calculated for hazard quotient of 0.1.

µg/kg = micrograms per kilogram

bgs = below ground surface

USEPA = United States Environmental Protection Agency

Nondetect result exceeds screening level.

**Table 5.1
Contaminant of Interest Screening
Site FT001 (AFFF Area 1)**

Analyte	Analyte Abbreviation	Units	Number of Detects	Number of Samples ^{a/}	Frequency of Detection	Minimum Detected Value	Maximum Detected Value	Screening Level ^{b/}	Number of Detects > Screening Level	Retain as COI?	Rationale
Soil (0-15 feet bgs)											
<i>Perfluorocarboxylates</i>											
Perfluorobutanoic Acid	PFBA	µg/kg	49	71	69%	0.064	26	7800	0	No	No screening level exceedances
Perfluorohexanoic Acid	PFHxA	µg/kg	83	95	87%	0.034	660	3200	0	No	No screening level exceedances
Perfluorooctanoic Acid	PFOA	µg/kg	86	95	91%	0.075	2200	19	47	Yes	Frequent screening level exceedances
Perfluorononanoic Acid	PFNA	µg/kg	47	95	49%	0.021	28	19	3	Yes	Screening level exceedances
<i>Perfluorosulfonates</i>											
Perfluorobutane Sulfonic Acid	PFBS	µg/kg	54	95	57%	0.032	220	1900	0	No	No screening level exceedances
Perfluorohexane Sulfonic Acid	PFHxS	µg/kg	89	95	94%	0.081	6900	130	43	Yes	Frequent screening level exceedances
Perfluorooctane Sulfonic Acid	PFOS	µg/kg	87	95	92%	0.16	62700	13	65	Yes	Frequent screening level exceedances
<i>Perfluoroalkyl ether carboxylic acids</i>											
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	µg/kg	1	21	5%	0.069	0.069	23	0	No	No screening level exceedances
Groundwater											
<i>Perfluorocarboxylates</i>											
Perfluorobutanoic Acid	PFBA	ng/L	74	75	99%	2.5	19000	1800	10	Yes	Frequent screening level exceedances
Perfluorohexanoic Acid	PFHxA	ng/L	85	85	100%	0.69	120000	990	38	Yes	Frequent screening level exceedances
Perfluorooctanoic Acid	PFOA	ng/L	90	94	96%	0.959	100000	4	83	Yes	Frequent screening level exceedances
Perfluorononanoic Acid	PFNA	ng/L	33	85	39%	0.36	302	5.9	17	Yes	Frequent screening level exceedances
<i>Perfluorosulfonates</i>											
Perfluorobutane Sulfonic Acid	PFBS	ng/L	85	85	100%	0.73	54000	600	30	Yes	Frequent screening level exceedances
Perfluorohexane Sulfonic Acid	PFHxS	ng/L	85	85	100%	1.1	290000	10	78	Yes	Frequent screening level exceedances
Perfluorooctane Sulfonic Acid	PFOS	ng/L	80	94	85%	0.67	239000	4	77	Yes	Frequent screening level exceedances
<i>Perfluoroalkyl ether carboxylic acids</i>											
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	ng/L	0	38	0%	-	-	1.5	0	No	No screening level exceedances

Notes:

^{a/} Data sets evaluated for selection of COIs include historical, 2022 remedial investigation data, and 2023-2024 supplemental remedial investigation data.

^{b/} Screening Levels:

- Soil (0-15 feet bgs): November 2023 USEPA Regional Screening Level calculated for hazard quotient of 0.1.
- Groundwater: Lower value of 1) November 2023 USEPA Regional Screening Level calculated for hazard quotient of 0.1, and 2) Maximum Contaminant Level (MCL).

µg/kg = micrograms per kilogram

bgs = below ground surface

COI = contaminant of interest

ng/L = nanograms per liter

USEPA = United States Environmental Protection Agency

Table 5.2
PFAS Remedial Investigation Soil Results (0 to 2 feet bgs)
Site FT001 (AFFF Area 1)

Analyte Abbreviation:				PFCAs				PFASs			PFECA
				PFBA	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA/GenX
Screening Level (µg/kg) ^{a/} :				7,800	3,200	19	19	1,900	130	13	23
Sample Location	Sample Date ^{b/}	Sample Type	Units								
AFFF1_GP001	9/24/2022	N	µg/kg	0.15 J	1	3.9	0.39	0.073 J	5.2 J	230	-
AFFF1_GP002	9/27/2022	N	µg/kg	1.1	13	63	10	2	470	1700 J	-
AFFF1_GP003	9/28/2022	N	µg/kg	2.3	21	15	7 J	8.6	170	3000 J	-
AFFF1_GP004	9/27/2022	N	µg/kg	5.5 U	5.5 J	16 J	11 J	4.6 U	88	3100 J	-
AFFF1_GP005	9/24/2022	N	µg/kg	1.4	10	88	2.4	0.87	450	1400	-
AFFF1_GP006	9/27/2022	N	µg/kg	0.34	3.1	12	0.69 J	0.34	58	1800	-
AFFF1_GP007	9/28/2022	N	µg/kg	0.39	0.98	3.3	2.9 J	0.22 J	33	1000	-
AFFF1_GP008	9/28/2022	FD	µg/kg	0.47	0.81	12	2.5	0.11 J	28	170	-
AFFF1_GP008	9/28/2022	N	µg/kg	0.5	0.8	10	2.5	0.1 J	25	180	-
AFFF1_GP029	9/27/2023	N	µg/kg	0.039 U	0.022 U	0.044 U	0.013 U	0.015 U	0.021 U	0.3	0.098 U
AFFF1_GP030	9/27/2023	N	µg/kg	0.11 J	0.16 J	0.11 J	0.11 J	0.018 U	1.6	18	0.12 U
AFFF1_GP031	9/27/2023	N	µg/kg	1.4	8.6	34	8.8	2	110	2700	0.12 U
AFFF1_HA001	5/10/2022	N	µg/kg	0.72	0.69	2.3	0.23 J	0.081 J	5.2	30	-
AFFF1_HA002	5/10/2022	FD	µg/kg	0.78	0.72	1.3	1.6	0.091 J	3.6	230	-
AFFF1_HA002	5/10/2022	N	µg/kg	0.8	0.68	1.5	1.9	0.092 J	3.9	250	-
AFFF1_HA003	5/10/2022	N	µg/kg	1.2	1.2	3.1	1.2	0.21 J	9.1	130	-
AFFF1_HA004	5/10/2022	N	µg/kg	1.2	2.8	5.7	2.4	0.66	33	1100	-
AFFF1_HA005	5/10/2022	N	µg/kg	0.79	1.2	5.9	1.5	0.11 J	19	80	-
AFFF1_HA006	5/10/2022	N	µg/kg	0.25 J	0.76	2	1.1	0.21 J	14	120	-
AFFF1_HA007	9/3/2022	N	µg/kg	0.16 J	0.11 J	0.46	0.18 J	0.081 J	1.9	17	-
AFFF1_HA008	9/3/2022	N	µg/kg	0.17 J	0.1 J	0.1 J	0.046 J	0.051 U	0.69	5.9	-
AFFF1_HA009	9/3/2022	N	µg/kg	2.5 U	1.9 J	32	4.1 J	2.1 U	110	490	-
AFFF1_HA010	9/3/2022	N	µg/kg	2.6 U	1.7 U	2.9 U	1.2 U	2.1 U	5.7 J	210	-
AFFF1_HA011	9/3/2022	N	µg/kg	2.8 U	2.9 J	13 J	28	2.3 U	55	1000	-
AFFF1_HA012	9/3/2022	N	µg/kg	2.7 U	1.8 U	3.7 J	1.5 J	2.3 U	13	290	-
AFFF1_HA013	9/30/2023	N	µg/kg	0.049 U	0.073 J	0.57	0.096 J	0.032 J	1.9	3.3	0.12 U
AFFF1_HA014	9/30/2023	N	µg/kg	0.064 J	0.089 J	0.44	0.021 J	0.015 U	1.4	3.1	0.099 U
AFFF1_HA015	9/30/2023	N	µg/kg	0.039 U	0.09 J	0.45	0.027 J	0.015 U	1.9	6	0.099 U
AFFF1_HA016	9/30/2023	N	µg/kg	0.039 U	0.046 J	0.17 J	0.17 J	0.015 U	0.43	15	0.099 U

Table 5.2
PFAS Remedial Investigation Soil Results (0 to 2 feet bgs)
Site FT001 (AFFF Area 1)

				PFCAs				PFSAs			PFECA
Analyte Abbreviation:				PFBA	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA/GenX
Screening Level (µg/kg) ^{a/} :				7,800	3,200	19	19	1,900	130	13	23
Sample Location	Sample Date ^{b/}	Sample Type	Units								
AFFF1_HA017	9/30/2023	N	µg/kg	0.13 J	5	170	1.6	0.095 J	150	330	0.09 U
AFFF1_HA018	9/30/2023	N	µg/kg	0.16 J	0.54	1.1	0.051 J	0.078 J	14	9	0.13 U
AFFF1_HA019	7/25/2024	N	µg/kg	0.24 J	0.45	5.1 J	0.33	0.15 J	20	100	0.035 U
AFFF1_HA020	7/25/2024	N	µg/kg	0.18 J	0.018 U	0.091 J	0.061 U	0.0073 U	0.022 U	0.97	0.027 U
AFFF1_HA021	7/25/2024	N	µg/kg	0.21 J	0.017 U	0.15 J	0.21	0.12 J	0.022 U	0.77	0.069 J

Notes:

^{a/} USEPA Regional Screening Level calculated for hazard quotient of 0.1 using toxicity parameters (USEPA, November 2023)

^{b/} Dataset includes RI data from 2022, 2023, and 2024.

µg/kg = microgram per kilogram

bgs = below ground surface

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

N = normal sample

PFBA = perfluorobutanoic acid

PFCA = perfluorocarboxylic acid

PFECA = perfluoroalkyl ether carboxylic acids

PFHxA = perfluorohexanoic acid

PFOA = perfluorooctanoic acid

PFNA = perfluorononanoic acid

PFBS = perfluorobutane sulfonic acid

PFHxS = perfluorohexane sulfonic acid

PFOS = perfluorooctane sulfonic acid

PFSA = perfluorosulfonic acid

HFPO-DA/GenX = hexafluoropropylene oxide dimer acid

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Bold indicates the analyte was detected

Gray shading indicates the result exceeds the screening criteria.

Table 5.3
PFAS Remedial Investigation Soil Results (2 to 15 feet bgs)
Site FT001 (AFFF Area 1)

Analyte Abbreviation: Screening Level (µg/kg) ^{a/} :						PFCAs				PFASs			PFECA
						PFBA	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA/GenX
Sample Location	Sample Date ^{b/}	Sample Type	Beginning Depth (feet bgs)	End Depth (feet bgs)	Units	7,800	3,200	19	19	1,900	130	13	23
AFFF1_GP001	24-Sep-22	N	3	5	µg/kg	3.8	60	710	1.6 J	9.8	2000	2600 J	-
AFFF1_GP001	24-Sep-22	N	6	8	µg/kg	26 J	660	1600	0.15 J	220	1700	230	-
AFFF1_GP001	24-Sep-22	N	13	15	µg/kg	3.5	95	140	0.031 U	20	180	3.5	-
AFFF1_GP002	27-Sep-22	FD	6	8	µg/kg	0.19 J	19	12	0.025 U	4.3	190	0.22 J	-
AFFF1_GP002	27-Sep-22	N	3	5	µg/kg	0.8	16	390	0.84	6.7	810	59	-
AFFF1_GP002	27-Sep-22	N	6	8	µg/kg	0.18 J	20	14	0.026 U	4.2	210	0.28 J	-
AFFF1_GP002	27-Sep-22	N	13	15	µg/kg	0.15 J	2.6	2.8	0.027 U	0.61	15	0.7	-
AFFF1_GP003	28-Sep-22	N	3	5	µg/kg	1.4	26	1200	0.084 J	5.6	1100	21	-
AFFF1_GP003	28-Sep-22	N	6	9	µg/kg	2.5	26	2200	0.74	10	1700	400	-
AFFF1_GP003	28-Sep-22	N	13	15	µg/kg	2.1	120	1.2	0.028 U	27	17	0.054 U	-
AFFF1_GP004	27-Sep-22	FD	3	5	µg/kg	5 U	20 J	65	21 J	4.4 J	480	4700 J	-
AFFF1_GP004	27-Sep-22	N	3	5	µg/kg	5.3 U	19 J	69	21 J	5.1 J	400	5200 J	-
AFFF1_GP004	27-Sep-22	N	6	8	µg/kg	5.6 U	5.6 J	16 J	2.7 U	5.1 J	90	910	-
AFFF1_GP004	27-Sep-22	N	13	15	µg/kg	5.7 U	18 J	33 J	2.7 U	4.7 U	130	4000 J	-
AFFF1_GP005	24-Sep-22	FD	5	8	µg/kg	0.32 J	6.3	85	0.38 J	3.7	380	350	-
AFFF1_GP005	24-Sep-22	N	5	8	µg/kg	0.37	7.2	100	0.27 J	3.9	370	260	-
AFFF1_GP005	24-Sep-22	N	10	12	µg/kg	0.34 J	5.1	24	2.1 J	1.5	96	2300	-
AFFF1_GP005	24-Sep-22	N	13	15	µg/kg	0.37 J	4.9	19	0.61	0.7	93	160	-
AFFF1_GP006	27-Sep-22	N	5	7	µg/kg	0.17 J	7.2	5.4	0.028 U	2.1	99	0.54	-
AFFF1_GP006	27-Sep-22	N	10	12	µg/kg	0.054 U	8.3	0.088 J	0.026 U	1.2	1.2	0.05 U	-
AFFF1_GP006	27-Sep-22	N	13	15	µg/kg	0.081 J	9.5	0.18 J	0.029 U	2	0.87	0.057 U	-
AFFF1_GP007	28-Sep-22	N	5	7	µg/kg	0.12 J	2.8	0.06 U	0.025 U	1.5	0.033 U	0.19 J	-
AFFF1_GP007	28-Sep-22	N	10	12	µg/kg	0.38 J	11	0.069 U	0.029 U	4.4	0.081 J	0.17 J	-
AFFF1_GP007	28-Sep-22	N	13	15	µg/kg	0.59	11	0.096 J	0.028 U	3.5	0.49	0.055 U	-
AFFF1_GP008	28-Sep-22	N	5	7	µg/kg	0.35 J	3	0.069 U	0.029 U	0.57	12	0.28 J	-
AFFF1_GP008	28-Sep-22	N	10	12	µg/kg	0.86 J	10	34	0.032 U	2.3	120	0.55	-
AFFF1_GP008	28-Sep-22	N	13	15	µg/kg	0.3 J	3.5	23	0.21 J	0.76	59	0.049 U	-
AFFF1_GP009	28-Sep-22	N	13	15	µg/kg	0.23 J	3.7	0.056 U	0.023 U	3.2	0.031 U	0.045 U	-
AFFF1_GP010	25-Sep-22	N	13	16	µg/kg	0.063 U	0.043 U	0.073 U	0.03 U	0.052 U	0.04 U	0.059 U	-
AFFF1_GP029	27-Sep-23	FD	6	8	µg/kg	0.049 U	0.028 U	0.055 U	0.016 U	0.018 U	0.15 J	2.4	0.12 U
AFFF1_GP029	27-Sep-23	N	3	5	µg/kg	0.049 U	0.028 U	0.055 U	0.016 U	0.018 U	0.082 J	0.17 J	0.12 U
AFFF1_GP029	27-Sep-23	N	6	8	µg/kg	0.049 U	0.028 U	0.055 U	0.016 U	0.018 U	0.17 J	2.7	0.12 U
AFFF1_GP029	27-Sep-23	N	13	15	µg/kg	0.056 U	0.034 J	0.3 J	0.018 U	0.021 U	2.1	0.085 U	0.14 U

Table 5.3
PFAS Remedial Investigation Soil Results (2 to 15 feet bgs)
Site FT001 (AFFF Area 1)

Analyte Abbreviation: Screening Level (µg/kg) ^{a/} :						PFCAs				PFSAs			PFECA
						PFBA	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA/GenX
Sample Location	Sample Date ^{b/}	Sample Type	Beginning Depth (feet bgs)	End Depth (feet bgs)	Units	7,800	3,200	19	19	1,900	130	13	23
AFFF1_GP030	27-Sep-23	N	5	7	µg/kg	0.045 U	0.025 U	0.55	0.014 U	0.017 U	1	0.65	0.11 U
AFFF1_GP030	27-Sep-23	N	10	12	µg/kg	0.052 U	0.029 U	0.075 J	0.017 U	0.02 U	0.79	0.95	0.13 U
AFFF1_GP030	27-Sep-23	N	13	15	µg/kg	0.047 U	0.027 U	0.1 J	0.015 U	0.018 U	0.69	0.16 J	0.12 U
AFFF1_GP031	27-Sep-23	FD	8	10	µg/kg	0.98 J	11	48	4.6	3.1	190	2300	0.12 U
AFFF1_GP031	27-Sep-23	N	3	5	µg/kg	0.9 J	12	59	21	4.6	300	4100	0.12 U
AFFF1_GP031	27-Sep-23	N	8	10	µg/kg	0.97 J	12	53	5.3	3.1	150	1800	0.12 U
AFFF1_GP031	27-Sep-23	N	13	15	µg/kg	0.74 J	9.4	23	2.1	1.5	81	5000	0.12 U

Notes:

^{a/} USEPA Regional Screening Level calculated for hazard quotient of 0.1 using toxicity parameters (USEPA, November 2023)

^{b/} Dataset includes RI data from 2022, 2023, and 2024.

µg/kg = microgram per kilogram

bgs = below ground surface

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

N = normal sample

PFBA = perfluorobutanoic acid

PFCA = perfluorocarboxylic acid

PFECA = perfluoroalkyl ether carboxylic acids

PFHxA = perfluorohexanoic acid

PFOA = perfluorooctanoic acid

PFNA = perfluorononanoic acid

PFBS = perfluorobutane sulfonic acid

PFHxS = perfluorohexane sulfonic acid

PFOS = perfluorooctane sulfonic acid

PFSA = perfluorosulfonic acid

HFPO-DA/GenX = hexafluoropropylene oxide dimer acid

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Bold indicates the analyte was detected

Gray shading indicates the result exceeds the screening criteria.

Table 5.4
PFAS Remedial Investigation Soil Results (greater than 15 feet bgs)
Site FT001 (AFFF Area 1)

Analyte Abbreviation:						PFCAs				PFSA			PFECA
Sample Location	Sample Date ^{a/}	Sample Type	Beginning Depth (feet bgs)	End Depth (feet bgs)	Units	PFBA	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA/GenX
AFFF1_GP001	24-Sep-22	18	20	N	µg/kg	1.3	22	21	0.029 U	5.5	70	0.73	-
AFFF1_GP001	24-Sep-22	25	27	N	µg/kg	0.47	8	7.2	0.024 U	1.8	26	4.4	-
AFFF1_GP001	24-Sep-22	30	32	N	µg/kg	0.25 J	3.9	2.3	0.027 U	0.78	8.4	1.6	-
AFFF1_GP002	27-Sep-22	18	20	N	µg/kg	0.06 J	0.43	0.24 J	0.026 U	0.11 J	0.74	0.14 J	-
AFFF1_GP002	27-Sep-22	25	27	N	µg/kg	0.057 U	0.038 U	0.084 J	0.027 U	0.047 U	0.21 J	0.43	-
AFFF1_GP002	27-Sep-22	30	32	N	µg/kg	0.055 U	0.12 J	0.063 U	0.026 U	0.045 U	0.17 J	0.12 J	-
AFFF1_GP003	28-Sep-22	18	20	N	µg/kg	3.3	33	70	0.026 U	11	79	0.051 U	-
AFFF1_GP003	28-Sep-22	25	28	N	µg/kg	1.8	19	6.7	0.028 U	4.9	16	3.4	-
AFFF1_GP003	28-Sep-22	30	32	N	µg/kg	0.059 U	0.35	1.1	0.028 U	0.086 J	1.5	1.5	-
AFFF1_GP004	27-Sep-22	18	20	N	µg/kg	5.4 U	14 J	21 J	2.6 U	4.4 U	70	1000	-
AFFF1_GP004	27-Sep-22	25	27	N	µg/kg	5.3 U	3.5 U	8.9 J	2.5 U	4.3 U	28	450	-
AFFF1_GP004	27-Sep-22	30	32	N	µg/kg	5.1 U	3.4 U	5.9 U	2.4 U	4.2 U	6.9 J	230	-
AFFF1_GP005	24-Sep-22	20	23	N	µg/kg	0.67	6.7	46	0.025 U	1.7	80	0.69	-
AFFF1_GP005	24-Sep-22	28	30	N	µg/kg	0.49	2.9	3.1	0.026 U	1.6	8.3	2.5	-
AFFF1_GP005	24-Sep-22	33	35	N	µg/kg	0.054 U	0.13 J	0.7	0.026 U	0.057 J	1.7	2.2	-
AFFF1_GP006	27-Sep-22	20	22	N	µg/kg	0.18 J	1.8	0.95 J	0.028 U	0.58	3.4	0.056 U	-
AFFF1_GP006	27-Sep-22	20	22	FD	µg/kg	0.23 J	2.2	1.3 J	0.029 U	0.66	4.6	0.057 U	-
AFFF1_GP006	27-Sep-22	28	30	N	µg/kg	0.056 U	0.15 J	0.097 J	0.027 U	0.05 J	0.33	0.35 J	-
AFFF1_GP006	27-Sep-22	33	35	N	µg/kg	0.051 UJ	0.16 J	0.075 J	0.024 U	0.042 U	0.23	0.13 J	-
AFFF1_GP007	28-Sep-22	20	22	N	µg/kg	1.4	28	8.4 J	0.027 U	8.8	25	0.054 U	-
AFFF1_GP007	28-Sep-22	28	30	N	µg/kg	3.5	52	25	0.14 U	14	52	13	-
AFFF1_GP007	28-Sep-22	33	35	N	µg/kg	1.2	10	6.5	0.028 U	2	19	5.8	-
AFFF1_GP008	28-Sep-22	18	20	N	µg/kg	0.27 J	1.8	8.8	0.63	0.33	20	0.053 U	-
AFFF1_GP008	28-Sep-22	25	27	N	µg/kg	0.059 U	0.26	0.82	0.028 U	0.049 U	2.1	5.1	-
AFFF1_GP008	28-Sep-22	33	35	N	µg/kg	0.081 J	0.47	0.92	0.027 U	0.07 J	2.9	2	-
AFFF1_GP009	28-Sep-22	15	17	N	µg/kg	0.41	0.19 J	0.066 U	0.027 U	0.47	0.036 U	0.053 U	-
AFFF1_GP009	28-Sep-22	25	27	N	µg/kg	0.52	5.9	0.39	0.027 U	4.6	3.4	0.052 U	-
AFFF1_GP009	28-Sep-22	32	34	N	µg/kg	0.58 J	5.1	7.1	0.13 U	1.2	27	20	-
AFFF1_GP009	28-Sep-22	38	40	N	µg/kg	0.057 U	0.27	0.53	0.027 U	0.055 J	1.9	12	-
AFFF1_GP010	25-Sep-22	18	23	N	µg/kg	0.058 U	0.21 J	0.08 J	0.028 U	0.057 J	0.29	0.055 U	-
AFFF1_GP010	25-Sep-22	18	23	FD	µg/kg	0.059 U	0.23 J	0.068 U	0.028 U	0.059 J	0.33	0.055 U	-
AFFF1_GP010	25-Sep-22	25	27	N	µg/kg	0.06 U	0.3	0.54	0.029 U	0.068 J	4.5	0.056 U	-
AFFF1_GP010	25-Sep-22	35	37	N	µg/kg	0.052 U	0.17 J	0.78	0.025 U	0.057 J	1.1	3.8	-
AFFF1_GP029	27-Sep-23	18	20	N	µg/kg	0.05 U	0.07 J	0.057 U	0.016 U	0.019 U	0.098 J	0.076 U	0.13 U
AFFF1_GP029	27-Sep-23	26	28	N	µg/kg	0.045 U	0.026 U	0.051 U	0.015 U	0.017 U	0.058 J	0.068 U	0.11 U
AFFF1_GP029	27-Sep-23	30	32	N	µg/kg	0.044 U	0.025 U	0.05 U	0.014 U	0.017 U	0.042 J	0.08 J	0.11 U

Table 5.4
PFAS Remedial Investigation Soil Results (greater than 15 feet bgs)
Site FT001 (AFFF Area 1)

Analyte Abbreviation:						PFCAs				PFSAs			PFECA
Sample Location	Sample Date ^{a/}	Sample Type	Beginning Depth (feet bgs)	End Depth (feet bgs)	Units	PFBA	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA/GenX
AFFF1_GP030	27-Sep-23	20	22	N	µg/kg	0.05 U	0.028 U	0.072 J	0.016 U	0.019 U	0.41	0.69 J	0.13 U
AFFF1_GP030	27-Sep-23	20	22	FD	µg/kg	0.046 U	0.026 U	0.053 U	0.015 U	0.018 U	0.16 J	0.38 J	0.12 U
AFFF1_GP030	27-Sep-23	28	30	N	µg/kg	0.048 U	0.027 U	0.054 U	0.015 U	0.018 U	0.026 U	0.22 J	0.12 U
AFFF1_GP030	27-Sep-23	33	35	N	µg/kg	0.046 U	0.026 U	0.052 U	0.015 U	0.017 U	0.025 U	0.11 J	0.12 U
AFFF1_GP031	27-Sep-23	18	20	N	µg/kg	0.67 J	6.3	12	0.94	0.73	38	1200	0.11 U
AFFF1_GP031	27-Sep-23	26	28	N	µg/kg	0.7 J	8	12	0.56	1.3	46	560	0.12 U
AFFF1_GP031	27-Sep-23	32	34	N	µg/kg	0.63 J	5.7	6.5	0.35	0.93	33	430	0.11 U

Notes:

^{a/} Dataset includes RI data from 2022, 2023, and 2024.

µg/kg = microgram per kilogram

bgs = below ground surface

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

N = normal sample

PFBA = perfluorobutanoic acid

PFCA = perfluorocarboxylic acid

PFECA = perfluoroalkyl ether carboxylic acids

PFHxA = perfluorohexanoic acid

PFOA = perfluorooctanoic acid

PFNA = perfluorononanoic acid

PFBS = perfluorobutane sulfonic acid

PFHxS = perfluorohexane sulfonic acid

PFOS = perfluorooctane sulfonic acid

PFSA = perfluorosulfonic acid

HFPO-DA/GenX = hexafluoropropylene oxide dimer acid

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Bold indicates the analyte was detected

Table 5.5
Summary of Compounds in Soil (0 to 2 feet bgs)
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Units	Number of Detects	Number of Samples ^{a/}	Number of Rejected Samples	Frequency of Detection	Minimum Nondetect Value	Maximum Nondetect Value	Minimum Detected Value	Maximum Detected Value	Screening Level ^{b/}	Number of Detects > Screening Level	Number of Nondetects > Screening Level
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	µg/kg	24	34	0	71%	0.039	8.9	0.064	13	7800	0	0
Perfluoropentanoic Acid	PFPeA	µg/kg	22	34	0	65%	0.011	5.3	0.043	11	-	0	0
Perfluorohexanoic Acid	PFHxA	µg/kg	36	42	0	86%	0.017	11	0.046	92	3200	0	0
Perfluorheptanoic Acid	PFHpA	µg/kg	30	42	0	71%	0.023	48	0.058	44.3	-	0	0
Perfluorooctanoic Acid	PFOA	µg/kg	40	42	0	95%	0.044	2.9	0.091	783	19	14	0
Perfluorononanoic Acid	PFNA	µg/kg	33	42	0	79%	0.013	59	0.021	28	19	1	2
Perfluorodecanoic Acid	PFDA	µg/kg	19	42	0	45%	0.047	59	0.082	13	-	0	0
Perfluoroundecanoic Acid	PFUnA	µg/kg	11	42	0	26%	0.029	59	0.075	10	-	0	0
Perfluorododecanoic Acid	PFDoA	µg/kg	9	42	0	21%	0.018	59	0.045	2.2	-	0	0
Perfluorotridecanoic Acid	PFTTrA	µg/kg	4	42	0	10%	0.023	59	0.034	0.34	-	0	0
Perfluorotetradecanoic Acid	PFTeA	µg/kg	1	42	0	2%	0.016	59	0.075	0.075	-	0	0
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	µg/kg	21	42	0	50%	0.0073	59	0.032	9.26	1900	0	0
Perfluoropentane Sulfonic Acid	PFPeS	µg/kg	17	32	0	53%	0.014	4.5	0.06	14	-	0	0
Perfluorohexane Sulfonic Acid	PFHxS	µg/kg	39	42	0	93%	0.021	0.022	0.43	2350	130	14	0
Perfluoroheptane Sulfonic Acid	PFHpS	µg/kg	25	32	0	78%	0.029	2.9	0.062	36	-	0	0
Perfluorooctane Sulfonic Acid	PFOS	µg/kg	42	42	0	100%	- ^{c/}	- ^{c/}	0.3	62700	13	34	0
Perfluorononane Sulfonic Acid	PFNS	µg/kg	15	32	0	47%	0.028	3.5	0.066	53	-	0	0
Perfluorodecane Sulfonic Acid	PFDS	µg/kg	13	34	0	38%	0.021	94	0.19	51	-	0	0
Perfluorododecane Sulfonic Acid	PFDoS	µg/kg	3	12	0	25%	0.014	0.024	0.21	29	-	0	0
<i>Fluorotelomer Sulfonic Acids</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	µg/kg	0	32	0	0%	0.045	6.2	- ^{d/}	- ^{d/}	-	0	0
6:2 Fluorotelomer Sulfonic Acid	6:2 FTS	µg/kg	7	32	0	22%	0.03	3.3	0.32	4.4	-	0	0
8:2 Fluorotelomer Sulfonic Acid	8:2 FTS	µg/kg	12	32	0	38%	0.038	2.2	0.08	17	-	0	0
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA	µg/kg	0	12	0	0%	0.038	0.24	- ^{d/}	- ^{d/}	-	0	0
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	µg/kg	2	12	0	17%	0.11	0.51	0.15	2.2	-	0	0
3-Perfluoroheptyl propanoic acid	7:3 FTCA	µg/kg	2	12	0	17%	0.17	0.43	0.26	5	-	0	0

Table 5.5

**Summary of Compounds in Soil (0 to 2 feet bgs)
Site FT001 (AFFF Area 1)**

Analyte	Analyte Abbreviation	Units	Number of Detects	Number of Samples ^{a/}	Number of Rejected Samples	Frequency of Detection	Minimum Nondetect Value	Maximum Nondetect Value	Minimum Detected Value	Maximum Detected Value	Screening Level ^{b/}	Number of Detects > Screening Level	Number of Nondetects > Screening Level
<i>Perfluoroalkane sulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	µg/kg	30	34	0	88%	0.013	2	0.031	2200	-	0	0
n-Methyl-Heptadecafluorooctane Sulfonamide (NMeFOSA)	NMeFOSA	µg/kg	8	32	0	25%	0.025	5.9	0.12	6.4	-	0	0
N-ethyl perfluorooctanesulfonamide	NEtFOSA	µg/kg	1	12	0	8%	0.03	0.081	0.25	0.25	-	0	0
<i>Perfluoroalkane sulfonamido acetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NMeFOSAA	µg/kg	6	40	0	15%	0.026	120	0.14	14	-	0	0
n-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	NEtFOSAA	µg/kg	6	40	0	15%	0.025	120	0.19	0.51	-	0	0
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	µg/kg	0	12	0	0%	0.071	0.14	^{c/}	^{c/}	-	0	0
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	µg/kg	0	12	0	0%	0.11	0.15	^{c/}	^{c/}	-	0	0
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	µg/kg	1	12	0	8%	0.0064	0.13	0.057	0.057	-	0	0
Perfluoro-4-methoxybutanoic acid	PFMBA	µg/kg	0	12	0	0%	0.013	0.026	^{c/}	^{c/}	-	0	0
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	µg/kg	0	12	0	0%	0.037	0.066	^{c/}	^{c/}	-	0	0
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	µg/kg	1	12	0	8%	0.027	0.13	0.069	0.069	23	0	0
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	µg/kg	0	12	0	0%	0.0097	0.11	^{c/}	^{c/}	-	0	0
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	µg/kg	0	12	0	0%	0.02	0.055	^{c/}	^{c/}	-	0	0
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	µg/kg	0	12	0	0%	0.021	0.17	^{c/}	^{c/}	-	0	0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	µg/kg	0	12	0	0%	0.02	0.071	^{c/}	^{c/}	-	0	0

Notes:

^{a/} Data sets evaluated include historical, 2022 remedial investigation data, and 2023-2024 supplemental remedial investigation data.

^{b/} USEPA Regional Screening Level (USEPA, November 2023) calculated for hazard quotient of 0.1.

^{c/} No nondetect value.

^{d/} No detected value.

- = no screening level identified or no result

µg/kg = micrograms per kilogram

bgs = below ground surface

USEPA = United States Environmental Protection Agency

Detected result exceeds screening level.

Table 5.6
Summary of Compounds in Soil (2 to 15 feet bgs)
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Units	Number of Detects	Number of Samples ^{a/}	Number of Rejected Samples	Frequency of Detection	Minimum Nondetect Value	Maximum Nondetect Value	Minimum Detected Value	Maximum Detected Value	Screening Level ^{b/}	Number of Detects > Screening Level	Number of Nondetects > Screening Level
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	µg/kg	25	37	0	68%	0.045	8.9	0.081	26	7800	0	0
Perfluoropentanoic Acid	PFPeA	µg/kg	28	37	0	76%	0.025	5.3	0.23	72	-	0	0
Perfluorohexanoic Acid	PFHxA	µg/kg	47	53	0	89%	0.025	0.043	0.034	660	3200	0	0
Perfluorheptanoic Acid	PFHpA	µg/kg	39	53	0	74%	0.026	56	0.057	390	-	0	0
Perfluorooctanoic Acid	PFOA	µg/kg	46	53	0	87%	0.055	0.073	0.075	2200	19	33	0
Perfluorononanoic Acid	PFNA	µg/kg	14	53	0	26%	0.014	56	0.084	21	19	2	5
Perfluorodecanoic Acid	PFDA	µg/kg	5	53	0	9%	0.051	56	0.063	0.69	-	0	0
Perfluoroundecanoic Acid	PFUnA	µg/kg	0	53	0	0%	0.034	56	- ^{c/}	- ^{c/}	-	0	0
Perfluorododecanoic Acid	PFDoA	µg/kg	0	53	0	0%	0.032	56	- ^{c/}	- ^{c/}	-	0	0
Perfluorotridecanoic Acid	PFTrA	µg/kg	0	53	0	0%	0.022	56	- ^{c/}	- ^{c/}	-	0	0
Perfluorotetradecanoic Acid	PFTeA	µg/kg	0	53	0	0%	0.02	56	- ^{c/}	- ^{c/}	-	0	0
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	µg/kg	33	53	0	62%	0.017	56	0.57	220	1900	0	0
Perfluoropentane Sulfonic Acid	PFPeS	µg/kg	28	35	0	80%	0.016	0.051	0.083	930	-	0	0
Perfluorohexane Sulfonic Acid	PFHxS	µg/kg	50	53	0	94%	0.031	0.04	0.081	6900	130	29	0
Perfluoroheptane Sulfonic Acid	PFHpS	µg/kg	16	35	0	46%	0.034	0.071	0.095	150	-	0	0
Perfluorooctane Sulfonic Acid	PFOS	µg/kg	45	53	0	85%	0.045	0.085	0.16	37000	13	31	0
Perfluorononane Sulfonic Acid	PFNS	µg/kg	2	35	0	6%	0.031	3.6	1.5	2.6	-	0	0
Perfluorodecane Sulfonic Acid	PFDS	µg/kg	1	37	0	3%	0.024	9.4	1.4	1.4	-	0	0
Perfluorododecane Sulfonic Acid	PFDoS	µg/kg	0	9	0	0%	0.02	0.026	- ^{c/}	- ^{c/}	-	0	0
<i>Fluorotelomer Sulfonic Acids</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	µg/kg	5	35	0	14%	0.054	6.3	0.1	9.2	-	0	0
6:2 Fluorotelomer Sulfonic Acid	6:2 FTS	µg/kg	20	35	0	57%	0.028	0.74	0.035	110	-	0	0
8:2 Fluorotelomer Sulfonic Acid	8:2 FTS	µg/kg	11	35	0	31%	0.037	0.18	0.2	72	-	0	0
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA	µg/kg	0	9	0	0%	0.21	0.27	- ^{c/}	- ^{c/}	-	0	0
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	µg/kg	2	9	0	22%	0.44	0.56	0.52	1.2	-	0	0
3-Perfluoroheptyl propanoic acid	7:3 FTCA	µg/kg	0	9	0	0%	0.37	0.47	- ^{c/}	- ^{c/}	-	0	0

Table 5.6
Summary of Compounds in Soil (2 to 15 feet bgs)
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Units	Number of Detects	Number of Samples ^{a/}	Number of Rejected Samples	Frequency of Detection	Minimum Nondetect Value	Maximum Nondetect Value	Minimum Detected Value	Maximum Detected Value	Screening Level ^{b/}	Number of Detects > Screening Level	Number of Nondetects > Screening Level
<i>Perfluoroalkane sulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	µg/kg	18	37	0	49%	0.014	4.1	0.042	190	-	0	0
n-Methyl-Heptadecafluorooctane Sulfonamide (NMeFOSA)	NMeFOSA	µg/kg	1	35	0	3%	0.029	6.1	0.11	0.11	-	0	0
N-ethyl perfluorooctanesulfonamide	NEtFOSA	µg/kg	0	9	0	0%	0.037	0.047	- ^{c/}	- ^{c/}	-	0	0
<i>Perfluoroalkane sulfonamido acetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NMeFOSAA	µg/kg	1	51	0	2%	0.024	110	0.53	0.53	-	0	0
n-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	NEtFOSAA	µg/kg	1	51	0	2%	0.029	110	0.38	0.38	-	0	0
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	µg/kg	0	9	0	0%	0.12	0.15	- ^{c/}	- ^{c/}	-	0	0
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	µg/kg	0	9	0	0%	0.13	0.17	- ^{c/}	- ^{c/}	-	0	0
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	µg/kg	0	9	0	0%	0.11	0.14	- ^{c/}	- ^{c/}	-	0	0
Perfluoro-4-methoxybutanoic acid	PFMBA	µg/kg	0	9	0	0%	0.023	0.029	- ^{c/}	- ^{c/}	-	0	0
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	µg/kg	0	9	0	0%	0.058	0.073	- ^{c/}	- ^{c/}	-	0	0
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	µg/kg	0	9	0	0%	0.11	0.14	- ^{c/}	- ^{c/}	23	0	0
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	µg/kg	0	9	0	0%	0.097	0.12	- ^{c/}	- ^{c/}	-	0	0
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	µg/kg	0	9	0	0%	0.048	0.061	- ^{c/}	- ^{c/}	-	0	0
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	µg/kg	0	9	0	0%	0.14	0.18	- ^{c/}	- ^{c/}	-	0	0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	µg/kg	0	9	0	0%	0.061	0.078	- ^{c/}	- ^{c/}	-	0	0

Notes:

^{a/} Data sets evaluated include historical, 2022 remedial investigation data, and 2023-2024 supplemental remedial investigation data.

^{b/} USEPA Regional Screening Level (USEPA, November 2023) calculated for hazard quotient of 0.1.

^{c/} No detected value.

- = no screening level identified

µg/kg = micrograms per kilogram

bgs = below ground surface

USEPA = United States Environmental Protection Agency

Detected result exceeds screening level.

Table 5.7
Summary of Compounds in Soil (Greater than 15 feet bgs)
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Units	Number of Detects	Number of Samples ^{al}	Number of Rejected Samples	Frequency of Detection	Minimum Nondetect Value	Maximum Nondetect Value	Minimum Detected Value	Maximum Detected Value
<i>Perfluorocarboxylates</i>										
Perfluorobutanoic Acid	PFBA	µg/kg	20	40	0	50%	0.044	5.4	0.06	3.5
Perfluoropentanoic Acid	PFPeA	µg/kg	28	40	0	70%	0.025	4.7	0.055	9.8
Perfluorohexanoic Acid	PFHxA	µg/kg	32	40	0	80%	0.025	3.5	0.07	52
Perfluorheptanoic Acid	PFHpA	µg/kg	24	40	0	60%	0.026	4.4	0.051	7.9
Perfluorooctanoic Acid	PFOA	µg/kg	32	40	0	80%	0.05	5.9	0.072	70
Perfluorononanoic Acid	PFNA	µg/kg	4	40	0	10%	0.014	2.6	0.35	0.94
Perfluorodecanoic Acid	PFDA	µg/kg	1	40	0	3%	0.052	5.6	0.11	0.11
Perfluoroundecanoic Acid	PFUnA	µg/kg	0	40	0	0%	0.032	4.9	_b/	_b/
Perfluorododecanoic Acid	PFDoA	µg/kg	0	40	0	0%	0.033	3.5	_b/	_b/
Perfluorotridecanoic Acid	PFTTrA	µg/kg	0	40	0	0%	0.023	2.5	_b/	_b/
Perfluorotetradecanoic Acid	PFTTeA	µg/kg	0	40	0	0%	0.02	4.3	_b/	_b/
<i>Perfluorosulfonates</i>										
Perfluorobutane Sulfonic Acid	PFBS	µg/kg	27	40	0	68%	0.017	4.4	0.05	14
Perfluoropentane Sulfonic Acid	PFPeS	µg/kg	28	40	0	70%	0.015	4.3	0.042	25
Perfluorohexane Sulfonic Acid	PFHxS	µg/kg	37	40	0	93%	0.025	0.036	0.042	80
Perfluoroheptane Sulfonic Acid	PFHpS	µg/kg	21	40	0	53%	0.033	5.6	0.12	26
Perfluorooctane Sulfonic Acid	PFOS	µg/kg	30	40	0	75%	0.051	0.076	0.08	1200
Perfluorononane Sulfonic Acid	PFNS	µg/kg	0	40	0	0%	0.032	3.4	_b/	_b/
Perfluorodecane Sulfonic Acid	PFDS	µg/kg	0	40	0	0%	0.023	6.1	_b/	_b/
Perfluorododecane Sulfonic Acid	PFDoS	µg/kg	0	9	0	0%	0.02	0.023	_b/	_b/
<i>Fluorotelomer Sulfonic Acids</i>										
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	µg/kg	7	40	0	18%	0.055	6	0.069	0.51
6:2 Fluorotelomer Sulfonic Acid	6:2 FTS	µg/kg	27	40	0	68%	0.031	0.65	0.052	54
8:2 Fluorotelomer Sulfonic Acid	8:2 FTS	µg/kg	5	40	0	13%	0.038	4	0.066	11
<i>Fluorotelomer Carboxylic Acids</i>										
3-Perfluoropropyl propanoic acid	3:3 FTCA	µg/kg	0	9	0	0%	0.2	0.24	_b/	_b/
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	µg/kg	0	9	0	0%	0.42	0.49	_b/	_b/
3-Perfluoroheptyl propanoic acid	7:3 FTCA	µg/kg	0	9	0	0%	0.35	0.41	_b/	_b/

Table 5.7
Summary of Compounds in Soil (Greater than 15 feet bgs)
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Units	Number of Detects	Number of Samples ^{a/}	Number of Rejected Samples	Frequency of Detection	Minimum Nondetect Value	Maximum Nondetect Value	Minimum Detected Value	Maximum Detected Value
<i>Perfluoroalkane sulfonamides</i>										
Perfluorooctane sulfonamide	PFOSA/FOSA	µg/kg	9	40	0	23%	0.014	3.9	0.045	1.6
n-Methyl-Heptadecafluorooctane Sulfonamide (NMeFOSA)	NMeFOSA	µg/kg	0	40	0	0%	0.028	5.7	_b/	_b/
N-ethyl perfluorooctanesulfonamide	NEtFOSA	µg/kg	0	9	0	0%	0.036	0.042	_b/	_b/
<i>Perfluoroalkane sulfonamido acetic acids</i>										
n-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NMeFOSAA	µg/kg	0	40	0	0%	0.025	2.7	_b/	_b/
n-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	NEtFOSAA	µg/kg	0	40	0	0%	0.028	5.6	_b/	_b/
<i>Perfluoroalkane sulfonamidoethanols</i>										
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	µg/kg	0	9	0	0%	0.11	0.13	_b/	_b/
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	µg/kg	0	9	0	0%	0.13	0.15	_b/	_b/
<i>Perfluoroalkyl ether carboxylic acids</i>										
Perfluoro-3-methoxypropanoic acid	PFMPA	µg/kg	0	9	0	0%	0.1	0.12	_b/	_b/
Perfluoro-4-methoxybutanoic acid	PFMBA	µg/kg	0	9	0	0%	0.022	0.026	_b/	_b/
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	µg/kg	0	9	0	0%	0.055	0.065	_b/	_b/
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	µg/kg	0	9	0	0%	0.11	0.13	_b/	_b/
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	µg/kg	0	9	0	0%	0.093	0.11	_b/	_b/
<i>Perfluoroalkyl ether sulfonic acids</i>										
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	µg/kg	0	9	0	0%	0.046	0.054	_b/	_b/
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	µg/kg	0	9	0	0%	0.14	0.16	_b/	_b/
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	µg/kg	0	9	0	0%	0.059	0.069	_b/	_b/

Notes:

^{a/} Data sets evaluated include historical, 2022 remedial investigation data, and 2023-2024 supplemental remedial investigation data.

^{b/} No detected value.

µg/kg = micrograms per kilogram

bgs = below ground surface

Table 5.8
PFAS Remedial Investigation Groundwater Results
Site FT001 (AFFF Area 1)

Analyte Abbreviation:						PFCAs				PFASs			PFECA	MCL
						PFBA	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA/GenX	HI ^{c/}
RSL (ng/L) ^{b/} :						1,800	990	6	5.9	600	39	4	1.5	NA
MCL (ng/L) ^{b/} :						NA	NA	4	10	NA	10	4	10	1
Sample Location	Sample Date ^{a/}	Sample Type	Top Screened Interval (feet bgs)	Bottom Screened Interval (feet bgs)	Units	NA	NA	4	10	NA	10	4	10	1
01-MW-01	11-May-22	N	7.19	46.8	ng/L	640	4200	3700	200	510	18000	74000 J	-	1820
01-MW-01	02-Sep-22	N	7.19	46.8	ng/L	160	1700	1300	26	200	5300	27000	-	533
01-MW-01	20-Aug-23	N	7.19	46.8	ng/L	410	2600	4600	61	410	17000	59000	0.45 U	1706
01-MW-03	11-May-22	N	13	23	ng/L	920	16000 J	1.5 J	0.5 U	4600	57	4.1	-	8.0
01-MW-03	23-Aug-22	N	13	23	ng/L	1200	17000	31	0.51 U	4400	290	7.1	-	31
01-MW-03	23-Aug-22	FD	13	23	ng/L	1100	16000	32	0.53 U	4100	340	8.3	-	36
01-MW-03	09-Aug-23	N	13	23	ng/L	1400	28000	33	1.8 U	6000	340	11 J	4.6 U	37
01-MW-03	20-Jul-24	N	12.5	22.5	ng/L	1300	18000	68 J	33 U	4400	170	15 U	44 U	19
01-MW-07	10-Aug-23	N	6.7	46	ng/L	990	13000	9300	2 J	2900	16000	510	1.9 U	1602
01-MW-08R	10-May-22	N	3.86	43.86	ng/L	3100	25000	26000 J	56	6500	46000 J	26000 J	-	4609
01-MW-08R	29-Aug-22	N	4	44	ng/L	2200	15000	15000	48	4200	51000 J	32000	-	5107
01-MW-08R	15-Aug-23	N	4	44	ng/L	2500	22000	17000	54	6300	63000	34000	9.5 U	6309
01-MW-08R	15-Aug-23	FD	4	44	ng/L	2500	23000	16000	49	6400	65000	31000	9.3 U	6508
BKGD-MW005	16-Jun-22	N	12	32	ng/L	19	140	64	0.51 U	40	190	4.1 B	-	19
BKGD-MW005	25-Aug-22	N	12	32	ng/L	14	120	57	0.51 U	27	220	0.53 U	-	22
BKGD-MW005	12-Aug-23	N	12	32	ng/L	12	83	52	0.18 U	21	190	0.31 U	0.46 U	19
BKGD-MW006	16-Jun-22	N	40	50	ng/L	5.6	27	30	0.53 U	13	150	1.6 B	-	15
CPL006-MW001	28-Aug-22	N	19	39	ng/L	1.2 UJ	65	9.2 J	2.8 U	45	78	2.9 U	-	7.8
CPL006-MW001	13-Aug-23	N	19	39	ng/L	14	65	9.2	0.24 U	34	86	0.43 U	0.63 U	8.6
FT001-MW009	10-May-22	N	50	60	ng/L	2100	17000	15000	50	2500	38000 J	29000 J	-	3806
FT001-MW009	29-Aug-22	N	50	60	ng/L	350	3000	2700	16	540	7800	16000	-	782
FT001-MW009	09-Aug-23	N	50	60	ng/L	320	2600	2800	24	470	11000	22000	1.9 U	1103
FT001-MW010	10-May-22	N	13	38	ng/L	730	7300	2700	0.74 J	1800	9400	370	-	941
FT001-MW010	24-Aug-22	N	13	38	ng/L	1000	9800	4700	3.4	2400	15000	1200	-	1502
FT001-MW010	09-Aug-23	N	13	38	ng/L	930	8600	4300	4.5 J	2400	17000	1100 J	1.9 U	1702
FT001-MW011	10-May-22	N	48	58	ng/L	1500	14000	9700	13	3100	20000	12000	-	2003
FT001-MW011	24-Aug-22	N	48	58	ng/L	1700	12000	11000	52 U	3600	27000	12000	-	2702
FT001-MW011	09-Aug-23	N	48	58	ng/L	1400	14000	12000	22	3100	31000	14000	4.7 U	3104
FT001-MW012	07-May-22	N	70	80	ng/L	32	270	250	1.1 J	65	840	440	-	84
FT001-MW012	24-Aug-22	N	70	80	ng/L	450	4500	3000	6	800	8800	6000	-	881
FT001-MW012	09-Aug-23	N	70	80	ng/L	210	1700	1200	4.5	390	4300	3000	0.94 U	431
FT001-MW013	23-Aug-22	N	12	32	ng/L	17000 J	83000 J	67000 J	51 UJ	39000 J	210000 J	27000 J	-	21020
FT001-MW013	23-Aug-22	FD	12	32	ng/L	19000 J	120000 J	100000 J	51 UJ	54000 J	290000 J	32000 J	-	29027
FT001-MW013	06-Aug-23	N	12	32	ng/L	5300	39000	27000	71	16000	82000	6.1 U	8.9 U	8215
FT001-MW013	06-Aug-23	FD	12	32	ng/L	5400	42000	27000	67	15000	85000	6.2 U	9.1 U	8514
FT001-MW013	20-Jul-24	N	12	32	ng/L	13000	99000	65000	490 U	34000	130000	23000	660 U	13017

Table 5.8
PFAS Remedial Investigation Groundwater Results
Site FT001 (AFFF Area 1)

Analyte Abbreviation:						PFCAs				PFASs			PFECA	MCL
						PFBA	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA/GenX	HI ^{c/}
RSL (ng/L) ^{b/} :						1,800	990	6	5.9	600	39	4	1.5	NA
MCL (ng/L) ^{b/} :						NA	NA	4	10	NA	10	4	10	1
Sample Location	Sample Date ^{a/}	Sample Type	Top Screened Interval (feet bgs)	Bottom Screened Interval (feet bgs)	Units									
FT001-MW014	16-Jun-22	N	40	50	ng/L	78	730	51	0.53 U	280	230	11	-	23
FT001-MW014	22-Aug-22	N	40	50	ng/L	76 J	860	48 J	0.52 U	260	220 J	11	-	22
FT001-MW014	09-Aug-23	N	40	50	ng/L	65	580	42	0.17 U	180	170	11	0.44 U	17
FT001-MW015	14-May-22	N	60	70	ng/L	76 J	780	30	0.75 J	210	150	240	-	15
FT001-MW015	23-Aug-22	N	60	70	ng/L	73 J	710	30	0.52 U	190	150	160	-	15
FT001-MW015	09-Aug-23	N	60	70	ng/L	73	810	35	0.53 J	190	150	160	0.43 U	15
FT001-MW016	29-Sep-22	N	12.97	22.97	ng/L	710	11000	27000	0.5 U	2900	32000	0.67 J	-	3201
FT001-MW016	09-Aug-23	N	12.97	22.97	ng/L	840	11000	36000	1.8 U	2700	41000	3.2 U	4.7 U	4101
FT001-MW017	26-Sep-22	N	9.9	24.9	ng/L	4.7	10	1.5 J	0.53 U	4.7	2.3	5.8	-	0.23
FT001-MW017	09-Aug-23	N	9.9	24.9	ng/L	5.6 J	11	0.6 U	0.17 U	6.7	3.5	0.3 U	0.43 U	0.35
FT001-MW018	04-Sep-23	N	30	50	ng/L	2.5 J	0.69 J	0.77 U	0.22 U	0.73 J	1.1 J	2.2	0.56 U	0.11
FT001-MW018	24-Jul-24	N	30	50	ng/L	2.8 J	1.3 J	0.47 U	0.32 U	1.1 J	2.4	0.15 UJ	0.43 U	0.24
FT001-MW019	04-Sep-23	N	32	43	ng/L	10	71	34	0.18 U	21	95	6.7	0.46 U	10
FT001-MW019	24-Jul-24	N	32	43	ng/L	12	85	55	0.28 U	26	160 J	1.8 U	0.39 U	16
FT001-MW020	12-Sep-23	N	90	100	ng/L	4.9 J	35	23	0.16 U	7.2	63	28	0.42 U	6.3
FT001-MW022	04-Sep-23	N	12	32	ng/L	110	530	89	0.18 U	220	1000	0.31 U	0.46 U	100
FT001-MW023	12-Sep-23	N	80	90	ng/L	5.6 J	25	33	0.36 J	6.5	98	260	0.45 U	10
SE-MW-01	24-Jul-24	N	6	26	ng/L	300	46	16	1 J	21	170	25	0.39 U	17
SE-MW-03	25-Aug-22	N	5	24.6	ng/L	4.1	0.99 J	1.6 J	0.5 U	1.1 J	11	22	-	1.1
SE-MW-03	11-Aug-23	N	5	24.6	ng/L	9.5	2.4	1.8	0.18 U	1.7	12	11	0.45 U	1.2
SE-MW-03	23-Jul-24	N	5	24.6	ng/L	11	2 J	1.9	0.29 U	1.8	8.8	15	0.39 U	0.9
SE-MW-04	23-Jul-24	N	5	25	ng/L	9.9	25	14	0.43 J	7.5	140	29 J	0.43 U	14
SE-MW-04	23-Jul-24	FD	5	25	ng/L	9.8	24	13	0.29 U	6.6	120	28 J	0.39 U	12
SE-MW-05	23-Jul-24	N	5	35	ng/L	18	57	24	0.3 U	31	170	17	0.4 U	17
ST010-MW009	23-Jul-24	N	50	60	ng/L	13	49	22	0.76 U	24	150	12	1 U	15
ST010-MW009	23-Jul-24	FD	50	60	ng/L	13	49	21	0.78 U	24	150	12	1.1 U	15
ST010-MW010	11-May-22	N	18	38	ng/L	7.5	2.5	3.7	2.7	1.1 J	10	120	-	1.3
ST010-MW010	17-Aug-22	N	18	38	ng/L	9.1	21	6.2	1.7 J	15	37	47	-	3.9
ST010-MW010	10-Aug-23	N	18	38	ng/L	12	21	15	2.4	11	55	43	0.61 U	5.7
ST010-MW010	23-Jul-24	N	18	38	ng/L	7.9	26	9.6	1.5 J	16	45	37	1.1 U	4.7
ST010-MW011	11-May-22	N	49	59	ng/L	33	89	45	0.54 U	54	270	5.4	-	27
ST010-MW011	11-May-22	FD	49	59	ng/L	35	90	45	0.53 U	52	260	5.7	-	26
ST010-MW011	17-Aug-22	N	49	59	ng/L	8 J	75	37	0.55 U	40	230	4.3	-	23
ST010-MW011	17-Aug-22	FD	49	59	ng/L	20 J	74	33	0.53 U	41	220	4.9	-	22
ST010-MW011	10-Aug-23	N	49	59	ng/L	51 J	77	34	0.19 U	39	230	5.4 J	0.48 U	23
ST010-MW011	10-Aug-23	FD	49	59	ng/L	23 J	77	36	0.18 U	38	230	4.8 J	0.47 U	23
ST010-MW011	23-Jul-24	N	49	59	ng/L	15	65	41	0.77 U	35	210	4.3	1.1 U	21

**Table 5.8
PFAS Remedial Investigation Groundwater Results
Site FT001 (AFFF Area 1)**

Analyte Abbreviation:						PFCAs				PFSA			PFECA	MCL
						PFBA	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA/GenX	HI ^{c/}
RSL (ng/L) ^{b/} :						1,800	990	6	5.9	600	39	4	1.5	NA
MCL (ng/L) ^{b/} :						NA	NA	4	10	NA	10	4	10	1
Sample Location	Sample Date ^{a/}	Sample Type	Top Screened Interval (feet bgs)	Bottom Screened Interval (feet bgs)	Units									
ST010-MW012	12-May-22	N	73	83	ng/L	12	32	11	0.5 U	17	74	13	-	7.4
ST010-MW012	17-Aug-22	N	73	83	ng/L	7.9	30	13	0.57 U	14	81	12	-	8.1
ST010-MW012	09-Aug-23	N	73	83	ng/L	10 J	27	8.5	0.53 J	16	65	24	1.1 U	6.6
ST010-MW012	23-Jul-24	N	73	83	ng/L	7.7 J	25	13 J	3.8 U	12 J	55	23	5.2 U	5.5
ST010-MW014	21-Jul-24	N	12	32	ng/L	20	19	16	1.9 U	7.3 J	100	8.5 J	2.6 U	10
ST010-MW015	21-Jul-24	N	12	32	ng/L	370	32	14 J	3.9 U	13 J	100	1.9 U	5.3 U	10

Notes:

^{a/} Data sets evaluated include the 2022 remedial investigation data and 2023-2024 supplemental remedial investigation data.

^{b/} Groundwater Screening Levels are the 1.) November 2023 USEPA Regional Screening Level (RSL) calculated for hazard quotient of 0.1, and 2.) Maximum Contaminant Level (MCL).

^{c/} Maximum Contaminant Level Hazard Index (HI) calculated using the equation below:

$$HI = \left(\frac{HFPO - DA_{ppt}}{[10 ppt]} \right) + \left(\frac{PFBS_{ppt}}{[2000 ppt]} \right) + \left(\frac{PFNA_{ppt}}{[10 ppt]} \right) + \left(\frac{PFHxS_{ppt}}{[10 ppt]} \right)$$

bgs = below ground surface

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

N = normal sample

ng/L = nanograms per liter

PFBA = perfluorobutanoic acid

PFCA = perfluorocarboxylic acid

PFECA = perfluoroalkyl ether carboxylic acids

PFHxA = perfluorohexanoic acid

PFOA = perfluorooctanoic acid

PFNA = perfluorononanoic acid

PFBS = perfluorobutane sulfonic acid

PFHxS = perfluorohexane sulfonic acid

PFOS = perfluorooctane sulfonic acid

PFSA = perfluorosulfonic acid

HFPO-DA/GenX = hexafluoropropylene oxide dimer acid

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Bold indicates the analyte was detected

Gray shading indicates the result exceeds the screening criteria.

Blue font indicates result is greater than the MCL but less than the RSL.

Table 5.9
Summary of Compounds in Groundwater
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Units	Number of Detects	Number of Samples ^{a/}	Number of Rejected Samples	Frequency of Detection	Minimum Nondetect Value	Maximum Nondetect Value	Minimum Detected Value	Maximum Detected Value	Screening Level ^{b/}		Number of Detects > Lowest Screening Level	Number of Nondetects > Lowest Screening Level
											MCL	RSL		
<i>Perfluorocarboxylates</i>														
Perfluorobutanoic Acid	PFBA	ng/L	74	75	0	99%	1.2	1.2	2.5	19000	-	1800	10	0
Perfluoropentanoic Acid	PFPeA	ng/L	73	75	0	97%	0.21	0.5	0.69	35000	-	-	0	0
Perfluorohexanoic Acid	PFHxA	ng/L	85	85	0	100%	_c/	_c/	0.69	120000	-	990	38	0
Perfluorheptanoic Acid	PFHpA	ng/L	81	85	0	95%	0.16	13	0.78	16000	-	-	0	0
Perfluorooctanoic Acid	PFOA	ng/L	90	94	0	96%	0.47	6.4	0.959	100000	4	6	83	1
Perfluorononanoic Acid	PFNA	ng/L	33	85	0	39%	0.16	490	0.36	302	10	5.9	17	13
Perfluorodecanoic Acid	PFDA	ng/L	2	85	0	2%	0.079	270	0.61	2.9	-	-	0	0
Perfluoroundecanoic Acid	PFUnA	ng/L	0	85	0	0%	0.19	330	_d/	_d/	-	-	0	0
Perfluorododecanoic Acid	PFDoA	ng/L	0	85	0	0%	0.12	270	_d/	_d/	-	-	0	6
Perfluorotridecanoic Acid	PFTrA	ng/L	0	85	0	0%	0.15	360	_d/	_d/	-	-	0	0
Perfluorotetradecanoic Acid	PFTeA	ng/L	0	85	0	0%	0.19	490	_d/	_d/	-	-	0	5
<i>Perfluorosulfonates</i>														
Perfluorobutane Sulfonic Acid	PFBS	ng/L	85	85	0	100%	_c/	_c/	0.73	54000	-	600	30	0
Perfluoropentane Sulfonic Acid	PFPeS	ng/L	70	70	0	100%	_c/	_c/	0.36	41000	-	-	0	0
Perfluorohexane Sulfonic Acid	PFHxS	ng/L	85	85	0	100%	_c/	_c/	1.1	290000	10	39	78	0
Perfluoroheptane Sulfonic Acid	PFHpS	ng/L	35	70	0	50%	0.31	35	0.7	2600	-	-	0	0
Perfluorooctane Sulfonic Acid	PFOS	ng/L	80	94	0	85%	0.15	15	0.67	239000	4	4	77	4
Perfluorononane Sulfonic Acid	PFNS	ng/L	1	70	0	1%	0.14	330	21	21	-	-	0	0
Perfluorodecane Sulfonic Acid	PFDS	ng/L	0	75	0	0%	0.21	360	_d/	_d/	-	-	0	0
Perfluorododecane Sulfonic Acid	PFDoS	ng/L	0	38	0	0%	0.2	570	_d/	_d/	-	-	0	0
<i>Fluorotelomer Sulfonic Acids</i>														
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	ng/L	19	70	0	27%	0.32	130	0.43	5500	-	-	0	0
6:2 Fluorotelomer Sulfonic Acid	6:2 FTS	ng/L	49	70	0	70%	0.34	160	0.47	19000	-	-	0	0
8:2 Fluorotelomer Sulfonic Acid	8:2 FTS	ng/L	13	70	0	19%	0.55	2000	0.99	150	-	-	0	0
<i>Fluorotelomer Carboxylic Acids</i>														
3-Perfluoropropyl propanoic acid	3:3 FTCA	ng/L	3	38	0	8%	0.45	780	12	100	-	-	0	0
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	ng/L	4	38	0	11%	0.53	920	15	110	-	-	0	0
3-Perfluoroheptyl propanoic acid	7:3 FTCA	ng/L	0	38	0	0%	1.1	1800	_d/	_d/	-	-	0	0
<i>Perfluoroalkane sulfonamides</i>														
Perfluorooctane sulfonamide	PFOSA/FOSA	ng/L	35	75	0	47%	0.1	500	0.11	76	-	-	0	0
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	ng/L	0	70	0	0%	0.28	800	_d/	_d/	-	-	0	0
N-ethyl perfluorooctanesulfonamide	NEtFOSA	ng/L	0	38	0	0%	0.18	920	_d/	_d/	-	-	0	0

Table 5.9
Summary of Compounds in Groundwater
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Units	Number of Detects	Number of Samples ^{a/}	Number of Rejected Samples	Frequency of Detection	Minimum Nondetect Value	Maximum Nondetect Value	Minimum Detected Value	Maximum Detected Value	Screening Level ^{b/}		Number of Detects > Lowest Screening Level	Number of Nondetects > Lowest Screening Level
											MCL	RSL		
<i>Perfluoroalkane sulfonamido acetic acids</i>														
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	ng/L	0	80	0	0%	0.38	1000	_d/	_d/	-	-	0	0
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	ng/L	1	80	0	1%	0.3	680	334	334	-	-	0	0
<i>Perfluoroalkane sulfonamidoethanols</i>														
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	ng/L	0	38	0	0%	0.96	2100	_d/	_d/	-	-	0	0
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	ng/L	0	38	0	0%	1	1900	_d/	_d/	-	-	0	0
<i>Perfluoroalkyl ether carboxylic acids</i>														
Perfluoro-3-methoxypropanoic acid	PFMPA	ng/L	6	38	0	16%	0.11	190	0.23	10	-	-	0	0
Perfluoro-4-methoxybutanoic acid	PFMBA	ng/L	5	38	0	13%	0.15	250	0.99	12	-	-	0	0
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	ng/L	0	38	0	0%	0.34	660	_d/	_d/	-	-	0	0
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	ng/L	0	38	0	0%	0.39	660	_d/	_d/	10	1.5	0	13
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	ng/L	0	38	0	0%	0.18	310	_d/	_d/	-	-	0	0
<i>Perfluoroalkyl ether sulfonic acids</i>														
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	ng/L	1	38	0	3%	0.12	210	8.6	8.6	-	-	0	0
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	ng/L	0	38	0	0%	0.2	350	_d/	_d/	-	-	0	0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	ng/L	0	38	0	0%	0.21	360	_d/	_d/	-	-	0	0

Notes:

^{a/} Data sets evaluated include historical, 2022 remedial investigation data, and 2023-2024 supplemental remedial investigation data.

^{b/} Groundwater Screening Level is the lower value of 1.) November 2023 USEPA Regional Screening Level (RSL) calculated for hazard quotient of 0.1, and 2.) Maximum Contaminant Level (MCL).

^{c/} No nondetect value.

^{d/} No detected value.

- = no screening level identified or no result

ng/L = nanograms per liter

Detected result exceeds screening level.

Table 6.1
Contaminants of Interest by Media and Classification

Media	Perfluoroalkyl Carboxylic Acids (PFCA)	Perfluoroalkyl Sulfonic Acids (PFSA)
Surface and Subsurface Soil	PFOA (C8) PFNA (C9)	PFHxS (C6) PFOS (C8)
Groundwater	PFBA (C4) PFHxA (C6) PFOA (C8) PFNA (C9)	PFBS (C4) PFHxS (C6) PFOS (C8)

C# = number of carbon atoms

Table 6.2
Physical and Chemical Properties of Contaminants of Interest

Site Related Chemical	CAS Number	Molecular Weight	pK _a	Reference	K _{oc} (L/kg)	Reference	Vapor Pressure (mm Hg)	Reference	HLC (atm-m ³ /mol)	Reference	Solubility (mg/L)	Reference	Diffusion Coefficient in Air (cm ² /sec)	Diffusion Coefficient in Water (cm ² /sec)	Reference (Air & Water)
Perfluorobutanoic Acid (PFBA)	375-22-4	214	0.08 - <1.6	ITRC, 2023	7.6E+01	USEPA, 2024	1.5E+01	USEPA, 2024	1.2E-04	USEPA, 2024	4.6E+03	USEPA, 2024	3.0E-02	8.2E-06	USEPA, 2024
Perfluorobutanesulfonic acid (PFBS)	375-73-5	300.1	-3.9 - <0.3	ITRC, 2023	6.2E+01	USEPA, 2024	5.0E-02	USEPA, 2024	3.0E-10	USEPA, 2024	2.6E+05	USEPA, 2024	2.7E-02	7.1E-06	USEPA, 2024
Perfluorohexanoic Acid (PFHxA)	307-24-4	314.1	-0.16 - <1.6	ITRC, 2023	2.0E+01	USEPA, 2024	3.3E-01	USEPA, 2024	2.4E-10	USEPA, 2024	2.5E+05	USEPA, 2024	2.6E-02	6.8E-06	USEPA, 2024
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	400.11	-3.5 - <0.3	ITRC, 2023	1.1E+02	USEPA, 2024	4.6E-03	PubChem ^{a/}	2.0E-10	CompTox ^{b/}	2.4E+02	USEPA, 2024	2.3E-02	6.0E-06	USEPA, 2024
Perfluorooctanoic acid (PFOA)	335-67-1	414.07	-0.5 - 3.8	ITRC, 2023	1.1E+02	USEPA, 2024	3.0E-02	USEPA, 2024	3.6E-06	USEPA, 2024	9.5E+03	USEPA, 2024	2.3E-02	5.8E-06	USEPA, 2024
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	500.13	-3.4 - <1	ITRC, 2023	3.7E+02	USEPA, 2024	6.5E-04	USEPA, 2024	4.3E-07	USEPA, 2024	6.8E+02	USEPA, 2024	2.1E-02	5.3E-06	USEPA, 2024
Perfluorononanoic acid (PFNA)	375-95-1	464.08	-0.3 - <1.6	ITRC, 2023	2.5E+02	USEPA, 2024	9.5E-03	USEPA, 2024	1.2E-09	CompTox ^{b/}	1.2E+03	USEPA, 2024	2.1E-02	5.4E-06	USEPA, 2024

Notes:

K_{oc} = Organic carbon partition coefficient

K_{ow} = Octanol-water partition coefficient

L/kg - Liter per kilogram

HLC = Henry's Law Constant

atm-m³/mol = atmospheres relative to cubic meters per mol

mg/L - milligrams per Liter

mm Hg = millimeters mercury

cm²/sec = centimeters squared per second

^{a/} PubChem online data. National Center for Biotechnology Information, National Institutes of Health. <https://pubchem.ncbi.nlm.nih.gov/>

^{b/} U.S. Environmental Protection Agency online CompTox Chemicals Dashboard. <https://comptox.epa.gov/dashboard/>

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Figures

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Legend

- PFAS Site Location
- Location of Sanitary Sewer Outfall (Estimated)
- Sanitary Sewer
- Surface Water Body Area

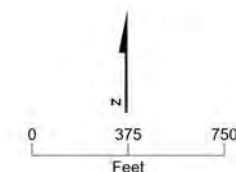
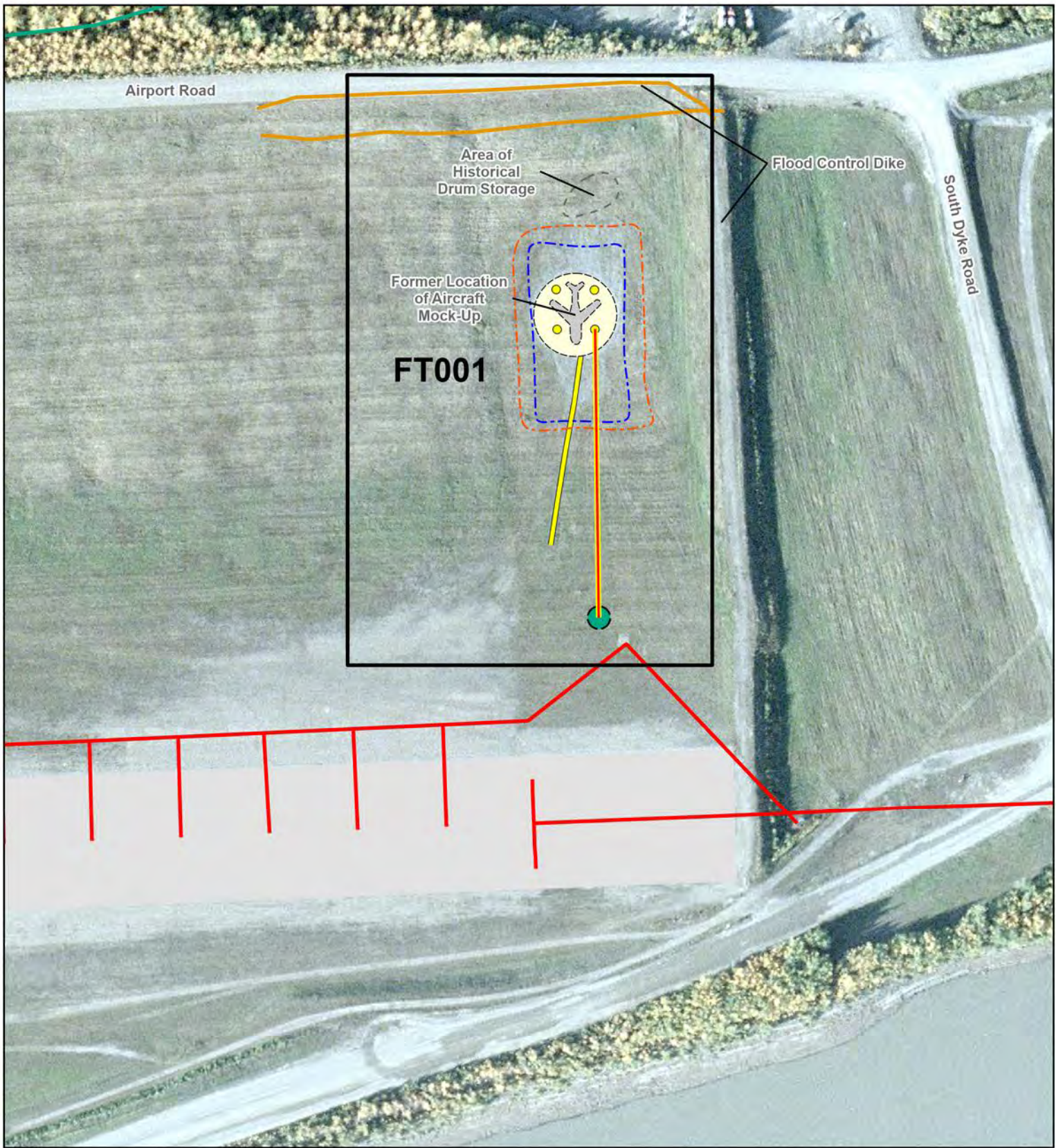


FIGURE 1.1

Site Locations

Site FT001 PFAS Remedial Investigation
Edward G. Pitka Sr. Airport, Galena, Alaska





- Legend**
- FT001
 - Approximate Location of Former Feature
 - ▭ Airfield Surface or Road
 - Fire Training Circle
 - Former Fuel Sprayer
 - Formerly Assumed Location of Underground Fuel Transfer Pipe
 - Underground Electrical Line
- Utility Locates - 2010**
- Communications Line
 - Fuel/Gas Line
 - Top of Soil Cover (Top of Bank)
 - Toe of Soil Cover (Edge of Cap Grading)
 - Assumed Location of Former Aboveground Fillstand

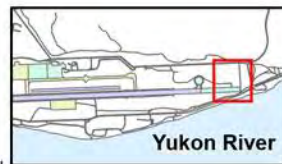
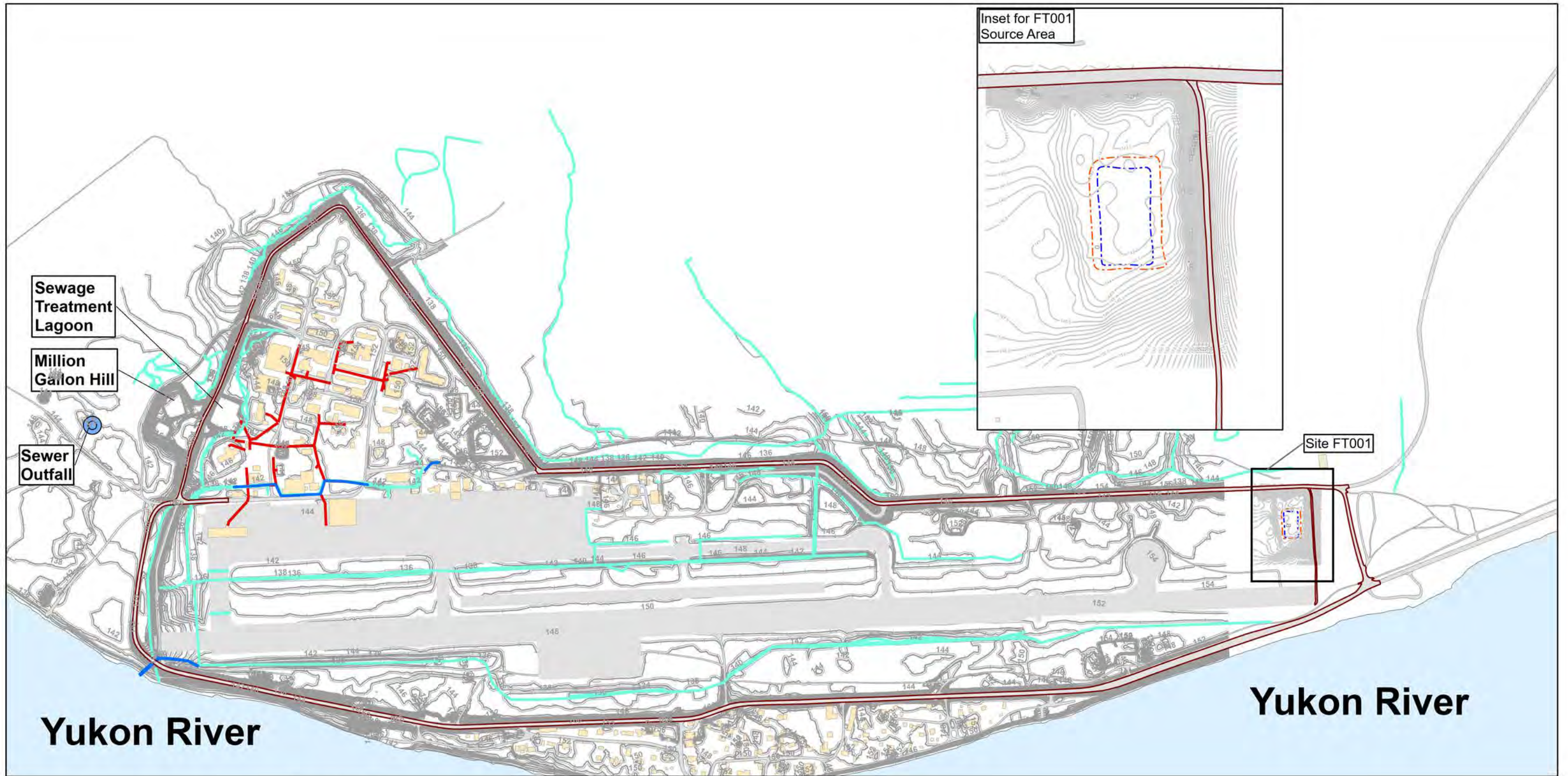


FIGURE 2.1

**Site Features –
Fire Protection Training Area
(FPTA) (Site FT001)**

Site FT001 PFAS Remedial Investigation
Former Galena Forward Operating Location, Alaska





- Legend**
- Storm Sewer
 - Sanitary Sewer
 - Open Drainage
 - Building Building
 - Airfield Surface, Road, or Driveway Area
 - Surface Water
 - Dike
- Contour Interval = 2 Feet**
- Index Contour
 - Intermediate Contour Depression
 - Intermediate Contour
 - Top of Soil Cover (Top of Bank)
 - Toe of Soil Cover (Edge of Cap Grading)

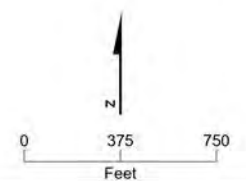
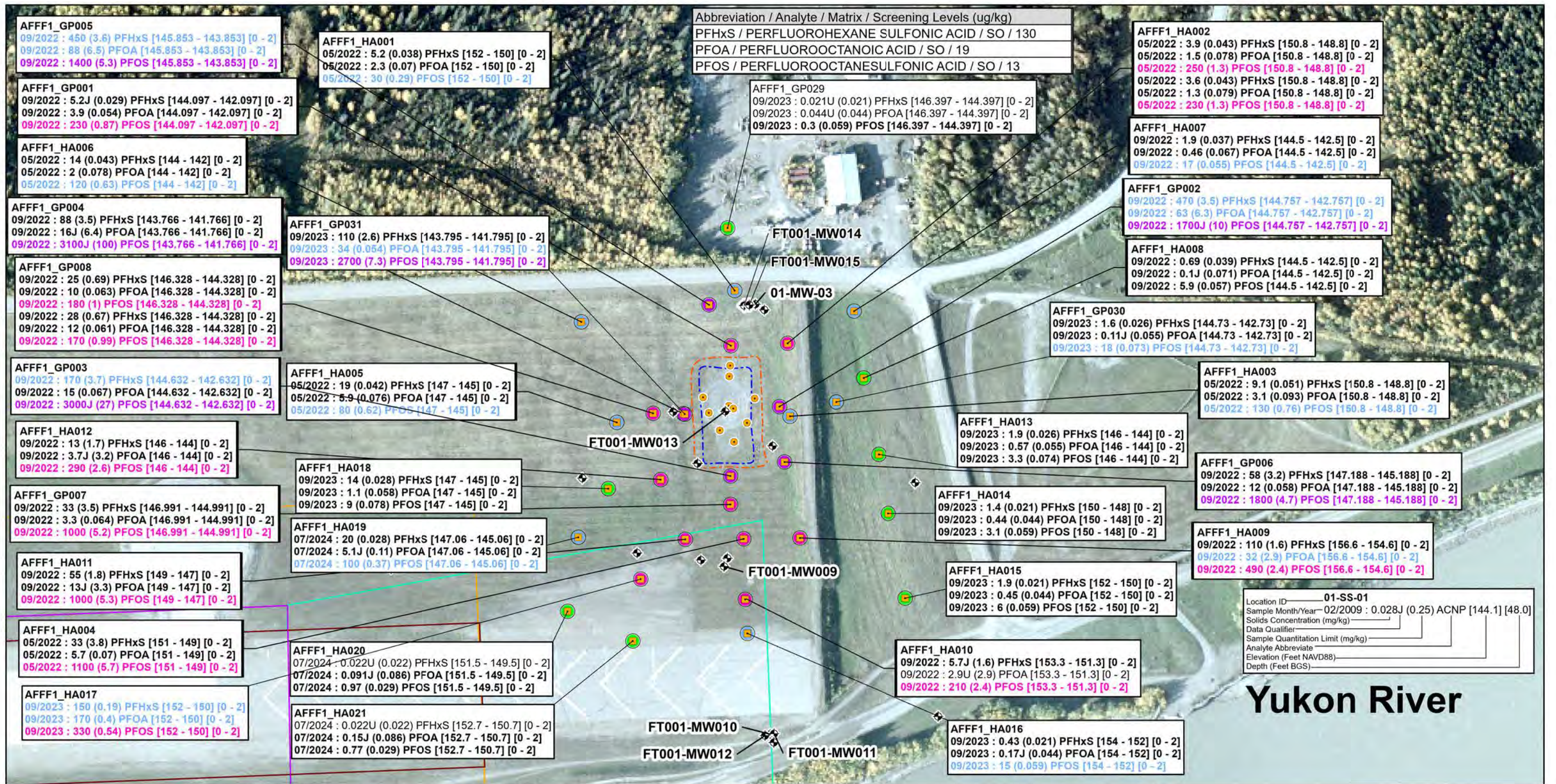


FIGURE 2.2
Topography and Surface Drainage Features

Site FT001 PFAS Remedial Investigation
 Edward G. Pitka Sr. Airport, Galena, Alaska





PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

- Legend**
- ◆ Existing Monitoring Well Locations
 - Historical PFAS Soil Boring
 - Surface Soil Sample Collected from Soil Boring Location
 - Top of Soil Cover (Top of Bank)
 - Toe of Soil Cover (Edge of Cap Grading)
 - ADOT Runway Control Areas
 - Runway Protection Zone (RPZ)
 - Object Free Area (OFA)
 - Object Free Zone (OFZ)
 - Runway Safety Area (RSA)
 - PFOS > 1000xSL
 - 100xSL < PFOS < 1000xSL
 - 10xSL < PFOS < 100xSL
 - 1xSL < PFOS < 10xSL
 - PFOS < 1xSL

- Note:**
1. J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 2. U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.
 3. **Purple Label** = Sample Exceeds Screening Level (Greater than 100X analyte SL)
 4. **Scarlet Label** = Sample Exceeds Screening Level (Greater than 10X analyte SL)
 5. **Blue Label** = Sample Exceeds Screening Level (1 to 10X analyte SL)
 6. Project screening levels are from Investigating Per and Polyfluoroalkyl Substances within the Department of Defense Cleanup Program; Memorandum from Office of Assistant Secretary of Defense dated 06 July 2022.
 7. Results are only posted for PFAS for which a screening level identified by the Assistant Secretary of Defense is available.
 8. **BOLD** Indicates the analyte was detected

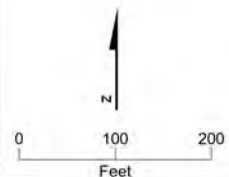


FIGURE 5.1a
Site FT001
Surface Soil Sample Results
Date Range: 2022 - 2024

Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska



USEPA Regional Screening Levels (HQ=1)			
Abbreviation	Analyte	Matrix	Screening Levels (ug/kg)
HFPODA	HEXAFLUOROPROPYLENE OXIDE DIMER ACID	SO	230
PFBA	PERFLUOROBUTANOIC ACID	SO	78000
PFBS	PERFLUOROBUTANE SULFONIC ACID	SO	19000
PFHxA	PERFLUOROHEXANOIC ACID	SO	32000
PFHxS	PERFLUOROHEXANE SULFONIC ACID	SO	1300
PFNA	PERFLUORONONANOIC ACID	SO	190
PFOA	PERFLUOROOCCTANOIC ACID	SO	190
PFOS	PERFLUOROOCCTANESULFONIC ACID	SO	130

The Hazard Quotient (HQ) for individual compounds is the ratio of the concentration (C) to the Regional Screening Level (RSL):
 $HQ = C / RSL$ for HFPODA, PFBA, PFBS, PFHxA, PFHxS, PFNA, PFOA, PFOS

The Hazard Index (HI) is the sum of the HQs:
 $HI = \sum HQ = HQ_{HFPODA} + HQ_{PFBA} + HQ_{PFBS} + HQ_{PFHxA} + HQ_{PFHxS} + HQ_{PFNA} + HQ_{PFOA} + HQ_{PFOS}$

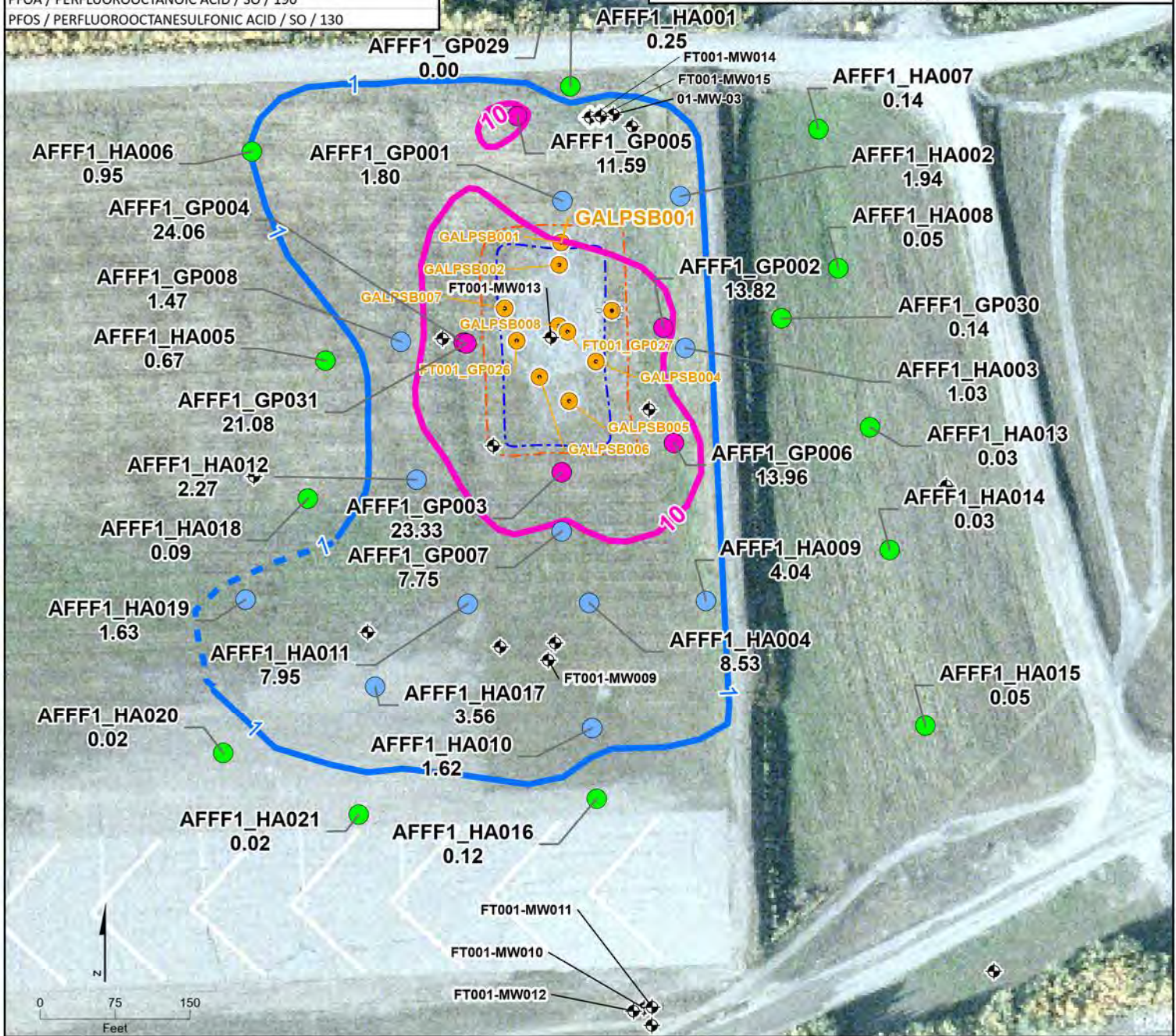


FIGURE 5.1b

**Site FT001 Soil (0-2 ft)
 PFAS Hazard Index Contours
 to Estimate PFAS Delineation**

Date Range: 2022 - 2024

Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska

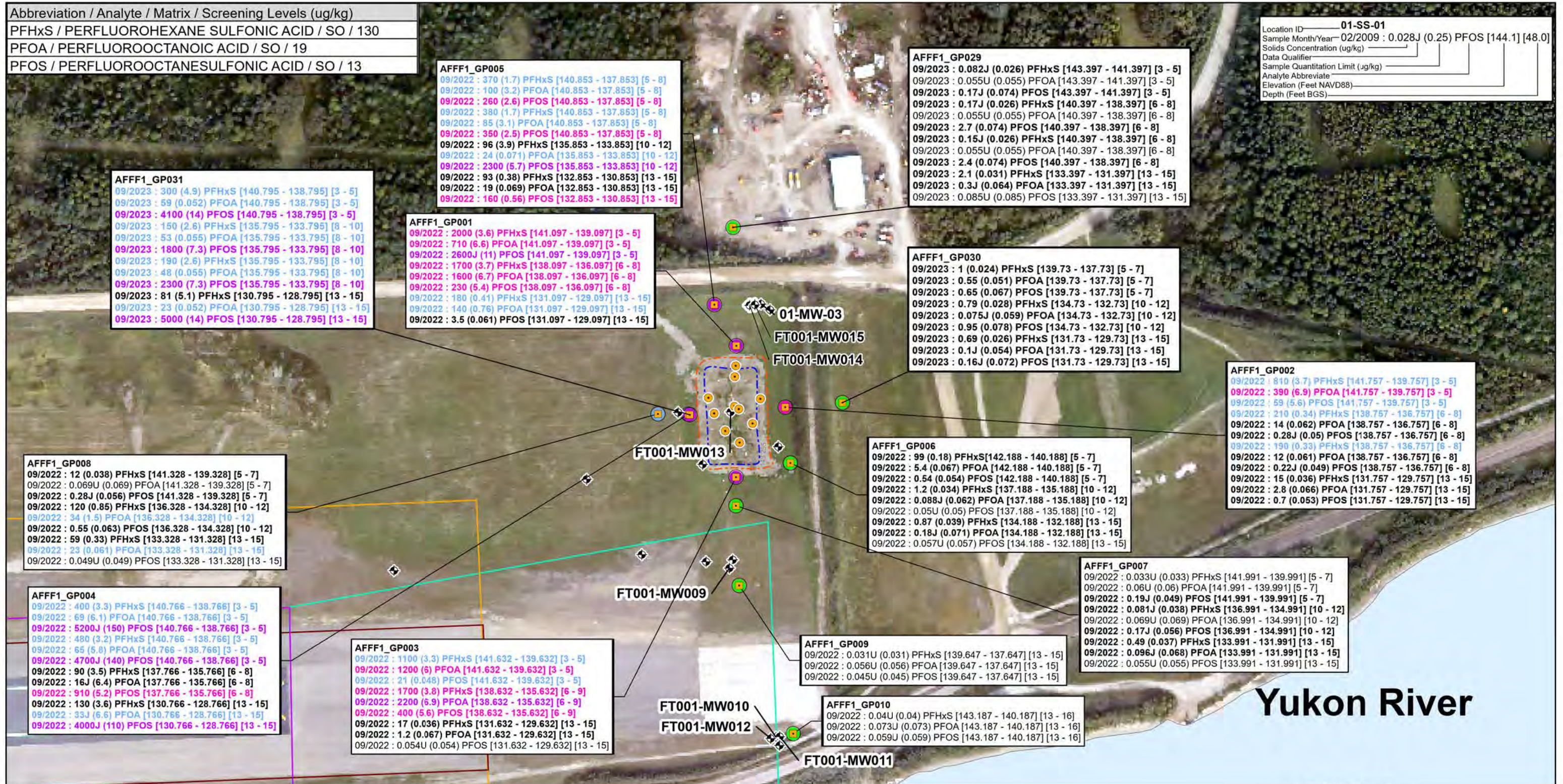


PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

- Legend**
- ◆ Existing Monitoring Well Locations
 - Historical PFAS Soil Boring
 - - Top of Soil Cover (Top of Bank)
 - - Toe of Soil Cover (Edge of Cap Grading)
 - HI > 1000
 - 100 < HI < 1000
 - 10 < HI < 100
 - 1 < HI < 10
 - HI < 1.0
 - - Hazard Index Contour (dashed where inferred)

Abbreviation / Analyte / Matrix / Screening Levels (ug/kg)
PFHxS / PERFLUOROHEXANE SULFONIC ACID / SO / 130
PFOA / PERFLUOROOCCTANOIC ACID / SO / 19
PFOS / PERFLUOROOCCTANESULFONIC ACID / SO / 13

Location ID	01-SS-01
Sample Month/Year	02/2009 : 0.028J (0.25) PFOS [144.1] [48.0]
Solids Concentration (ug/kg)	
Data Qualifier	
Sample Quantitation Limit (ug/kg)	
Analyte Abbreviate	
Elevation (Feet NAVD88)	
Depth (Feet BGS)	



AFFF1_GP008

09/2022 : 12 (0.038) PFHxS [141.328 - 139.328] [5 - 7]
 09/2022 : 0.069U (0.069) PFOA [141.328 - 139.328] [5 - 7]
 09/2022 : 0.28J (0.056) PFOS [141.328 - 139.328] [5 - 7]
 09/2022 : 120 (0.85) PFHxS [136.328 - 134.328] [10 - 12]
 09/2022 : 34 (1.5) PFOA [136.328 - 134.328] [10 - 12]
 09/2022 : 0.55 (0.063) PFOS [136.328 - 134.328] [10 - 12]
 09/2022 : 59 (0.33) PFHxS [133.328 - 131.328] [13 - 15]
 09/2022 : 23 (0.061) PFOA [133.328 - 131.328] [13 - 15]
 09/2022 : 0.049U (0.049) PFOS [133.328 - 131.328] [13 - 15]

AFFF1_GP004

09/2022 : 400 (3.3) PFHxS [140.766 - 138.766] [3 - 5]
 09/2022 : 69 (6.1) PFOA [140.766 - 138.766] [3 - 5]
 09/2022 : 5200J (150) PFOS [140.766 - 138.766] [3 - 5]
 09/2022 : 480 (3.2) PFHxS [140.766 - 138.766] [3 - 5]
 09/2022 : 65 (5.8) PFOA [140.766 - 138.766] [3 - 5]
 09/2022 : 4700J (140) PFOS [140.766 - 138.766] [3 - 5]
 09/2022 : 90 (3.5) PFHxS [137.766 - 135.766] [6 - 8]
 09/2022 : 16J (6.4) PFOA [137.766 - 135.766] [6 - 8]
 09/2022 : 910 (5.2) PFOS [137.766 - 135.766] [6 - 8]
 09/2022 : 130 (3.6) PFHxS [130.766 - 128.766] [13 - 15]
 09/2022 : 33J (6.6) PFOA [130.766 - 128.766] [13 - 15]
 09/2022 : 4000J (110) PFOS [130.766 - 128.766] [13 - 15]

AFFF1_GP003

09/2022 : 1100 (3.3) PFHxS [141.632 - 139.632] [3 - 5]
 09/2022 : 1200 (6) PFOA [141.632 - 139.632] [3 - 5]
 09/2022 : 21 (0.048) PFOS [141.632 - 139.632] [3 - 5]
 09/2022 : 1700 (3.8) PFHxS [138.632 - 136.632] [6 - 9]
 09/2022 : 2200 (6.9) PFOA [138.632 - 136.632] [6 - 9]
 09/2022 : 400 (5.6) PFOS [138.632 - 136.632] [6 - 9]
 09/2022 : 17 (0.036) PFHxS [131.632 - 129.632] [13 - 15]
 09/2022 : 1.2 (0.067) PFOA [131.632 - 129.632] [13 - 15]
 09/2022 : 0.054U (0.054) PFOS [131.632 - 129.632] [13 - 15]

AFFF1_GP009

09/2022 : 0.031U (0.031) PFHxS [139.647 - 137.647] [13 - 15]
 09/2022 : 0.056U (0.056) PFOA [139.647 - 137.647] [13 - 15]
 09/2022 : 0.045U (0.045) PFOS [139.647 - 137.647] [13 - 15]

AFFF1_GP010

09/2022 : 0.04U (0.04) PFHxS [143.187 - 140.187] [13 - 16]
 09/2022 : 0.073J (0.073) PFOA [143.187 - 140.187] [13 - 16]
 09/2022 : 0.059U (0.059) PFOS [143.187 - 140.187] [13 - 16]

PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

- Legend**
- Existing Monitoring Well Locations
 - Historical PFAS Soil Boring
 - Soil Boring Sampled
 - Top of Soil Cover (Top of Bank)
 - Toe of Soil Cover (Edge of Cap Grading)
 - ADOT Runway Control Areas
 - Runway Protection Zone (RPZ)
 - Object Free Area (OFA)
 - Object Free Zone (OFZ)
 - Runway Safety Area (RSA)
 - COI > 1000xSL
 - 100xSL < COI < 1000xSL
 - 10xSL < COI < 100xSL
 - 1xSL < COI < 10xSL
 - COI < 1xSL

Note:

- The groundwater flow direction shown is the predominant direction that persists from late August through breakup of the Yukon River (approximately May 15). Groundwater flow directions during the remainder of the year are variable depending on the timing of fluctuations in Yukon River stage.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- Purple Label** = Sample Exceeds Screening Level (Greater than 100X analyte SL)
- Scarlet Label** = Sample Exceeds Screening Level (Greater than 10X analyte SL)
- Blue Label** = Sample Exceeds Screening Level (1 to 10X analyte SL)
- Results are only posted for PFAS for which a screening level identified by the Assistant Secretary of Defense is available.
- BOLD** Indicates the analyte was detected
- COI = Contaminant of Interest

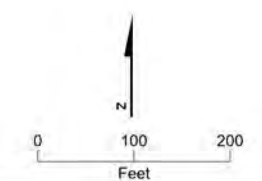
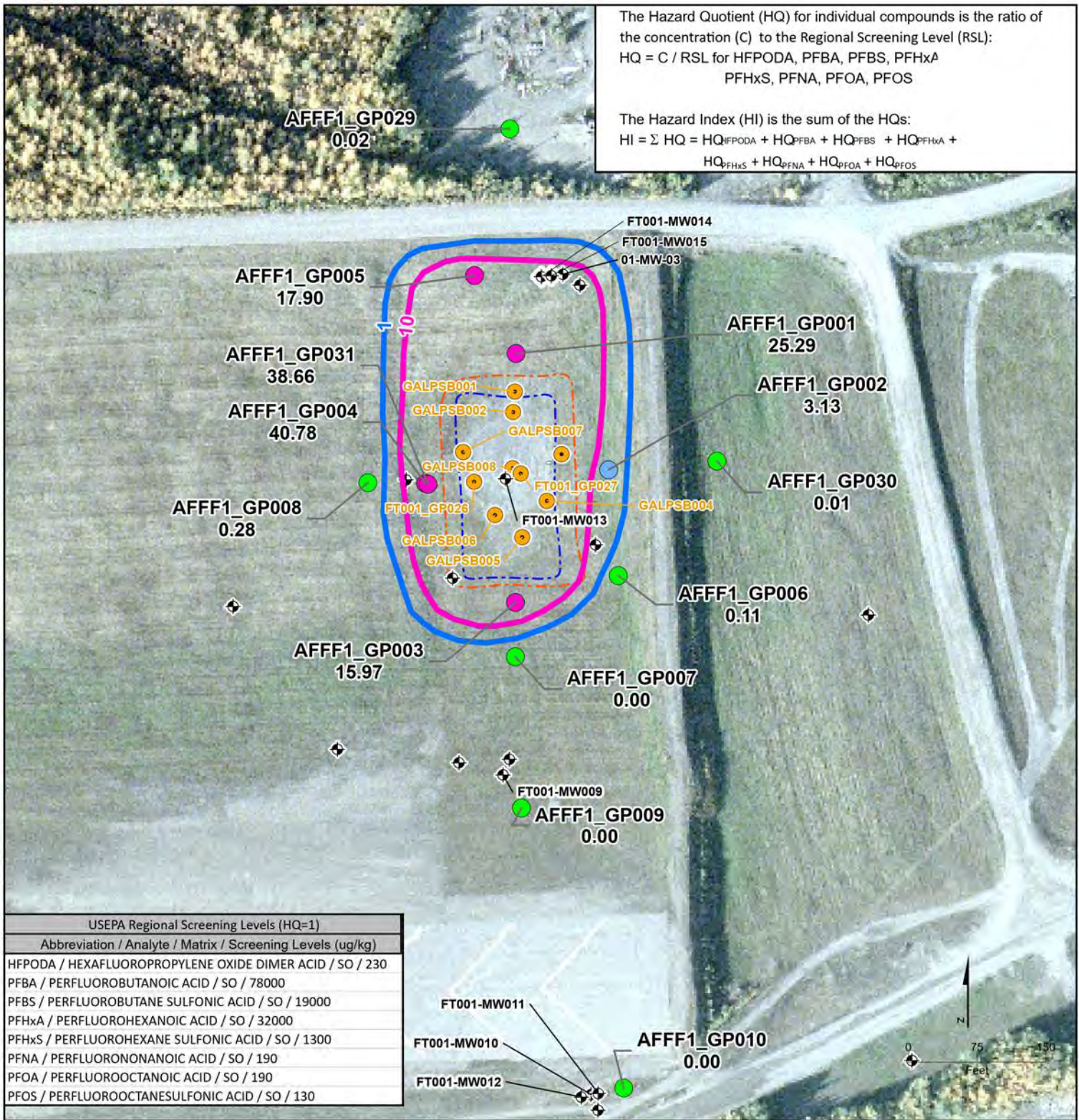


FIGURE 5.2a
Site FT001
Soil Boring Sample Results
for Soil 2 to 15 feet bgs
 COI: PFHxS, PFOA, and PFOS
 Media: Soil (2-15 ft)
 SLs: USEPA Regional SLs (hazard quotient = 0.1)
 Data Range: 2022 - 2024



The Hazard Quotient (HQ) for individual compounds is the ratio of the concentration (C) to the Regional Screening Level (RSL):
 $HQ = C / RSL$ for HFPODA, PFBA, PFBS, PFHxA
 PFHxS, PFNA, PFOA, PFOS

The Hazard Index (HI) is the sum of the HQs:
 $HI = \sum HQ = HQ_{HFPODA} + HQ_{PFBA} + HQ_{PFBS} + HQ_{PFHxA} + HQ_{PFHxS} + HQ_{PFNA} + HQ_{PFOA} + HQ_{PFOS}$



USEPA Regional Screening Levels (HQ=1)	
Abbreviation / Analyte / Matrix / Screening Levels (ug/kg)	
HFPODA / HEXAFLUOROPROPYLENE OXIDE DIMER ACID / SO / 230	
PFBA / PERFLUOROBUTANOIC ACID / SO / 78000	
PFBS / PERFLUOROBUTANE SULFONIC ACID / SO / 19000	
PFHxA / PERFLUOROHEXANOIC ACID / SO / 32000	
PFHxS / PERFLUOROHEXANE SULFONIC ACID / SO / 1300	
PFNA / PERFLUORONONANOIC ACID / SO / 190	
PFOA / PERFLUOROOCANOIC ACID / SO / 190	
PFOS / PERFLUOROOCANESULFONIC ACID / SO / 130	

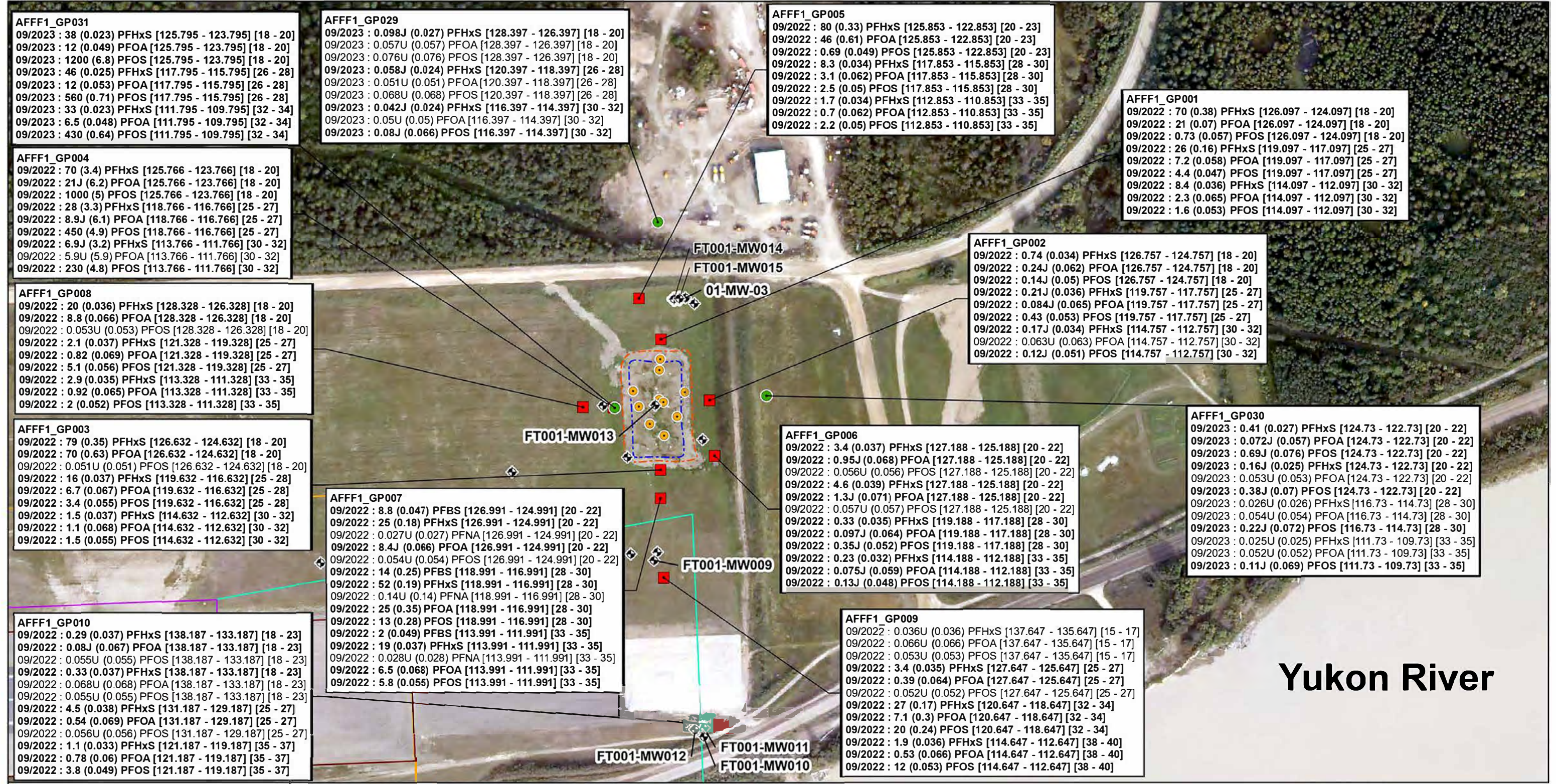
PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

- Legend
- ◆ Existing Monitoring Well Locations
 - Historical PFAS Soil Boring
 - Top of Soil Cover (Top of Bank)
 - Toe of Soil Cover (Edge of Cap Grading)
 - HI > 1000
 - 100 < HI < 1000
 - 10 < HI < 100
 - 1 < HI < 10
 - HI < 1.0
 - Hazard Index Contour (dashed where inferred)

FIGURE 5.2b
Site FT001 Soil (2-15 ft)
PFAS Hazard Index Contours
to Estimate PFAS Delineation

Date Range: 2022 - 2024

Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska
PARSONS



Yukon River

FIGURE 5.3

Site FT001 Soil Boring Sample Results for Soil Deeper than 15 feet

Analytes: PFHxS, PFOA, and PFOS
Media: Soil > 15 ft bgs
SLs: None
Data Range: 2022 - 2024

Site FT001 PFAS Remedial Investigation
Former Galena Forward Operating Location, Alaska
PARSONS

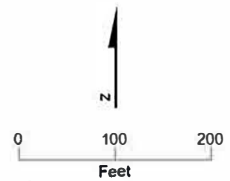


- Legend**
- Existing Monitoring Well Locations
 - Historical PFAS Soil Boring
 - Top of Soil Cover (Top of Bank)
 - Toe of Soil Cover (Edge of Cap Grading)
- ADOT Runway Control Areas**
- Runway Protection Zone (RPZ)
 - Object Free Area (OFA)
 - Object Free Zone (OFZ)
 - Runway Safety Area (RSA)
 - Soil Boring Sampled in 2022
 - Soil Boring Sampled in 2023

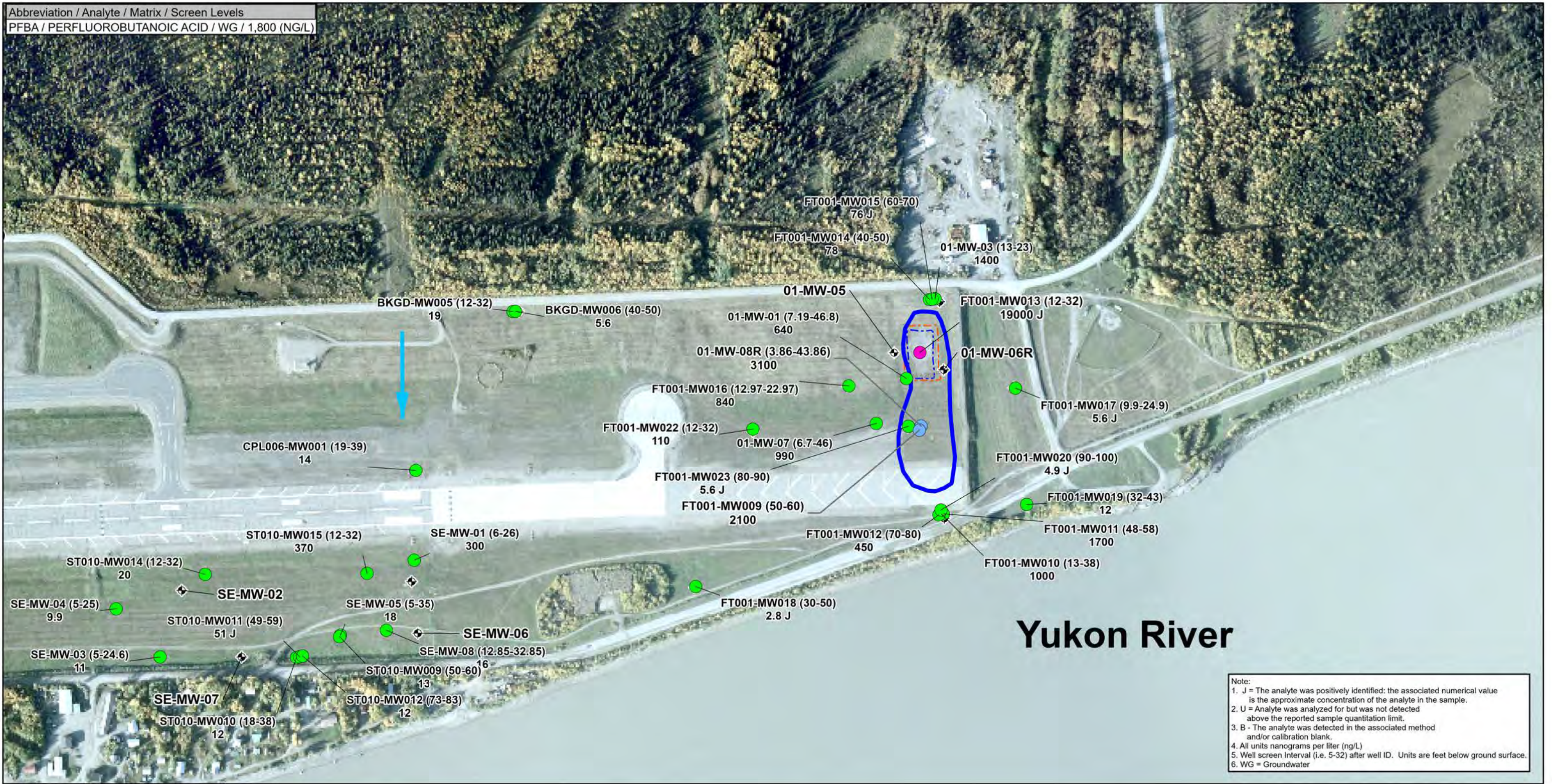
Note:

1. The groundwater flow direction shown is the predominant direction that persists from late August through breakup of the Yukon River (approximately May 15). Groundwater flow directions during the remainder of the year are variable depending on the timing of fluctuations in Yukon River stage.
2. J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
3. BOLD Indicates the analyte was detected

Location ID	01-SS-01
Sample Month/Year	02/2009 : 0.028J (0.25) PFOS [144.1] [48.0]
Solids Concentration (ug/kg)	
Data Qualifier	
Sample Quantitation Limit (ug/kg)	
Analyte Abbreviate	
Elevation (Feet NAVD88)	
Depth (Feet BGS)	



Abbreviation / Analyte / Matrix / Screen Levels
 PFBA / PERFLUOROBUTANOIC ACID / WG / 1,800 (NG/L)



Note:
 1. J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 2. U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.
 3. B - The analyte was detected in the associated method and/or calibration blank.
 4. All units nanograms per liter (ng/L)
 5. Well screen Interval (i.e. 5-32) after well ID. Units are feet below ground surface.
 6. WG = Groundwater

PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

Legend

- ◆ Monitoring Well not Sampled for PFAS
- - - Top of Soil Cover (Top of Bank)
- - - Toe of Soil Cover (Edge of Cap Grading)
- Groundwater Flow Direction
- PFBA > 1000xSL
- 100xSL < PFBA < 1000xSL
- 10xSL < PFBA < 100xSL_Pink
- 1xSL < PFBA < 10xSL_Blue
- PFBA < 1xSL_Green
- Extent of PFBA Exceeding Extent SL (dashed where inferred)

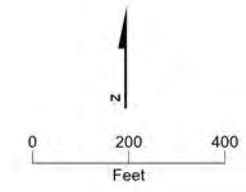
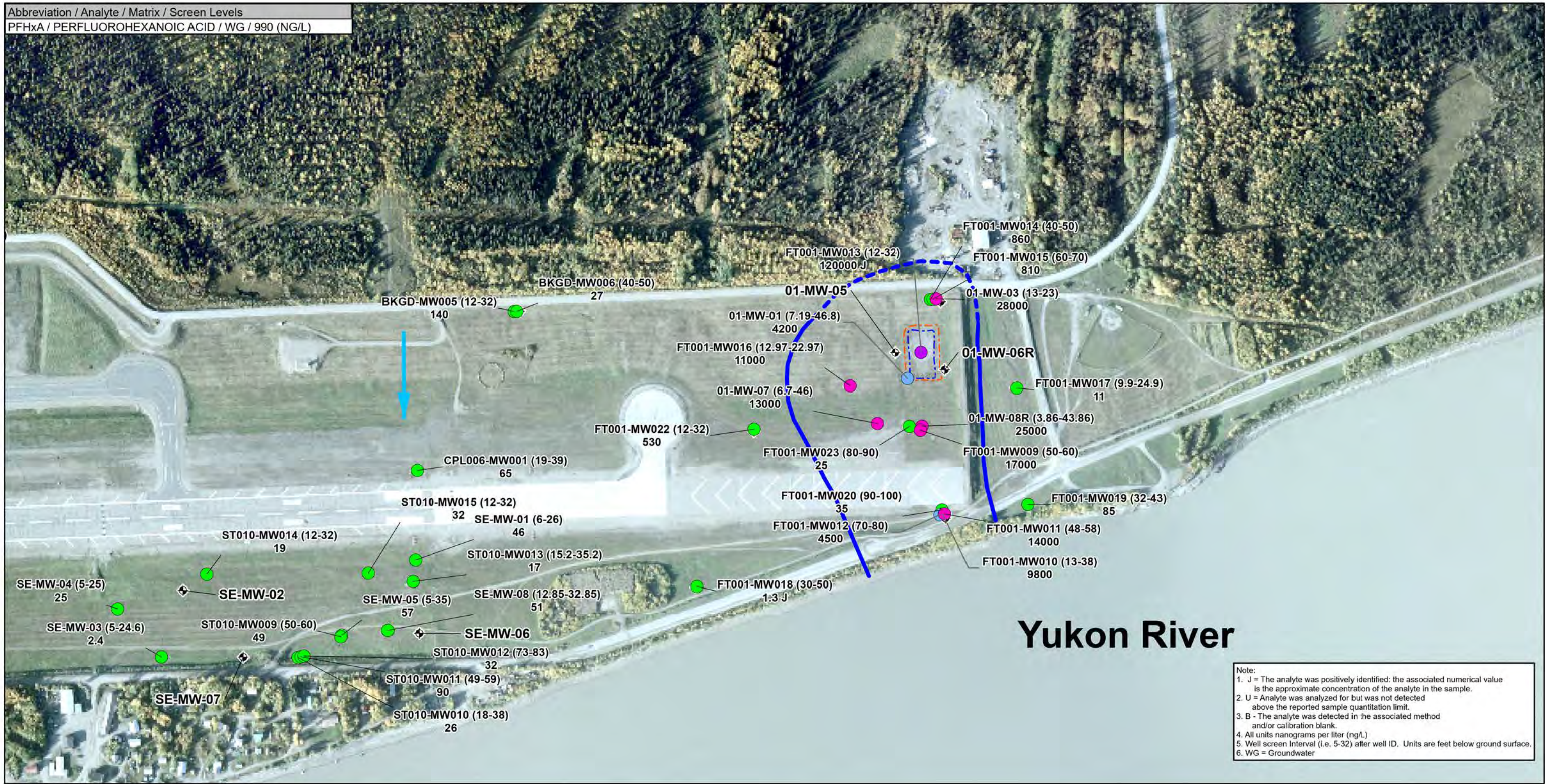


FIGURE 5.4a
Site FT001 Groundwater PFBA Maximum Concentrations Relative to Extent SL

SL: Lower of MCL or RSL for tap water at HQ=0.1
 Date Range: 2022 - 2024

Abbreviation / Analyte / Matrix / Screen Levels
 PFHxA / PERFLUOROHEXANOIC ACID / WG / 990 (NG/L)



Note:
 1. J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 2. U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.
 3. B - The analyte was detected in the associated method and/or calibration blank.
 4. All units nanograms per liter (ng/L)
 5. Well screen Interval (i.e. 5-32) after well ID. Units are feet below ground surface.
 6. WG = Groundwater

PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

Legend

- Monitoring Well not Sampled for PFAS
- PFHxA > 1000xSL
- PFHxA < 1xSL
- Top of Soil Cover (Top of Bank)
- 100xSL < PFHxA < 1000xSL
- Extent of PFHxA exceeding Extent SL (dashed where inferred)
- Toe of Soil Cover (Edge of Cap Grading)
- 10xSL < PFHxA < 100xSL
- 1xSL < PFHxA < 10xSL
- Groundwater Flow Direction

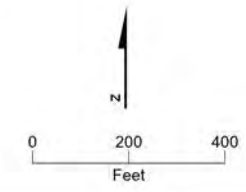


FIGURE 5.4b
Site FT001 Groundwater PFHxA Maximum Concentrations Relative to Extent SL
 SL: Lower of MCL or RSL for tap water at HQ=0.1
 Date Range: 2022 - 2024

Abbreviation / Analyte / Matrix / Screening Levels (ng/L)
 PFOA / PERFLUOROCTANOIC ACID / WG / 4 (NG/L)

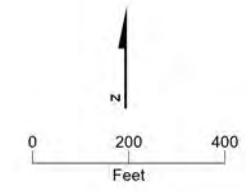


PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

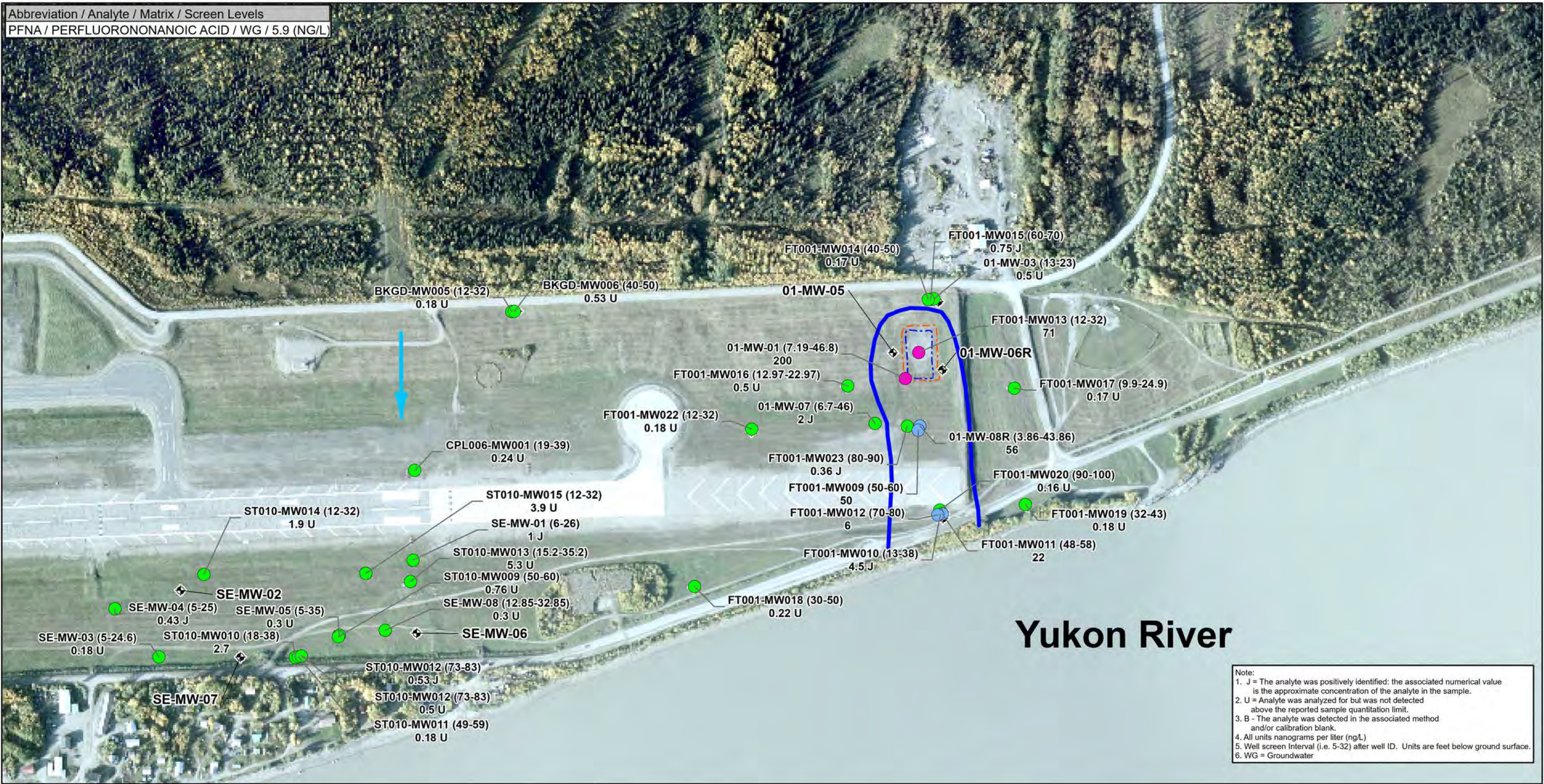
Legend

- ◆ Monitoring Well not Sampled for PFAS
- - - Top of Soil Cover (Top of Bank)
- - - Toe of Soil Cover (Edge of Cap Grading)
- Groundwater Flow Direction
- PFOA > 1000xSL
- 100xSL < PFOA < 1000xSL
- 10xSL < PFOA < 100xSL
- 1xSL < PFOA < 10xSL
- PFOA < 1xSL
- Extent of PFOA Exceeding Extent SL (dashed where inferred)

FIGURE 5.4c
Site FT001 Groundwater PFOA Maximum Concentrations Relative to Extent SL
 SL: Lower of MCL or RSL for tap water at HQ=0.1
 Date Range: 2017, 2022 - 2024



Abbreviation / Analyte / Matrix / Screen Levels
 PFNA / PERFLUORONONOIC ACID / WG / 5.9 (NG/L)



Note:
 1. J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 2. U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.
 3. B - The analyte was detected in the associated method and/or calibration blank.
 4. All units nanograms per liter (ng/L)
 5. Well screen Interval (i.e. 5-32) after well ID. Units are feet below ground surface.
 6. WG = Groundwater

PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

Legend

- ◆ Monitoring Well not Sampled for PFAS
- - - Top of Soil Cover (Top of Bank)
- - - Toe of Soil Cover (Edge of Cap Grading)
- Groundwater Flow Direction
- PFNA > 1000xSL
- 100xSL < PFNA < 1000xSL
- 10xSL < PFNA < 100xSL
- 1xSL < PFNA < 10xSL
- Extent of PFNA exceeding Extent SL (dashed where inferred)

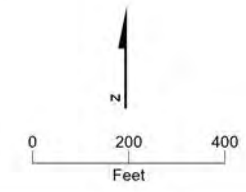
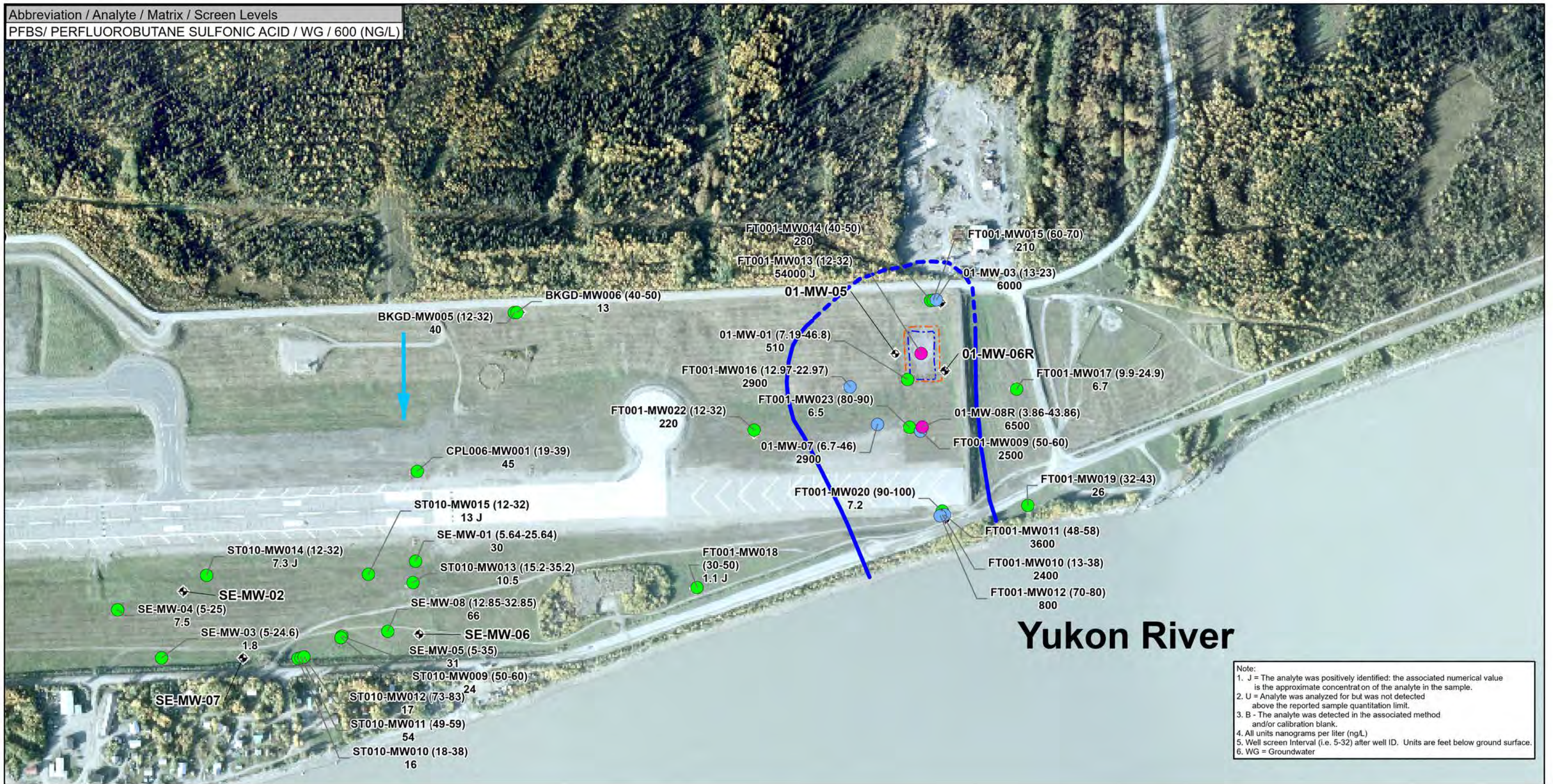


FIGURE 5.4d
Site FT001 Groundwater PFNA Maximum Concentrations Relative to Extent SL
 SL: Lower of MCL or RSL for tap water at HQ=0.1
 Date Range: 2017, 2022 - 2024

Abbreviation / Analyte / Matrix / Screen Levels
 PFBS/ PERFLUOROBUTANE SULFONIC ACID / WG / 600 (NG/L)



PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

Legend

- ◆ Monitoring Well not Sampled for PFAS
- - - Top of Soil Cover (Top of Bank)
- - - Toe of Soil Cover (Edge of Cap Grading)
- Groundwater Flow Direction
- PFBS > 1000xSL
- 100xSL < PFBS < 1000xSL
- 10xSL < PFBS < 100xSL
- 1xSL < PFBS < 10xSL
- Extent of PFBS Exceeding Extent SL (dashed where inferred)

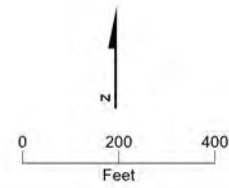


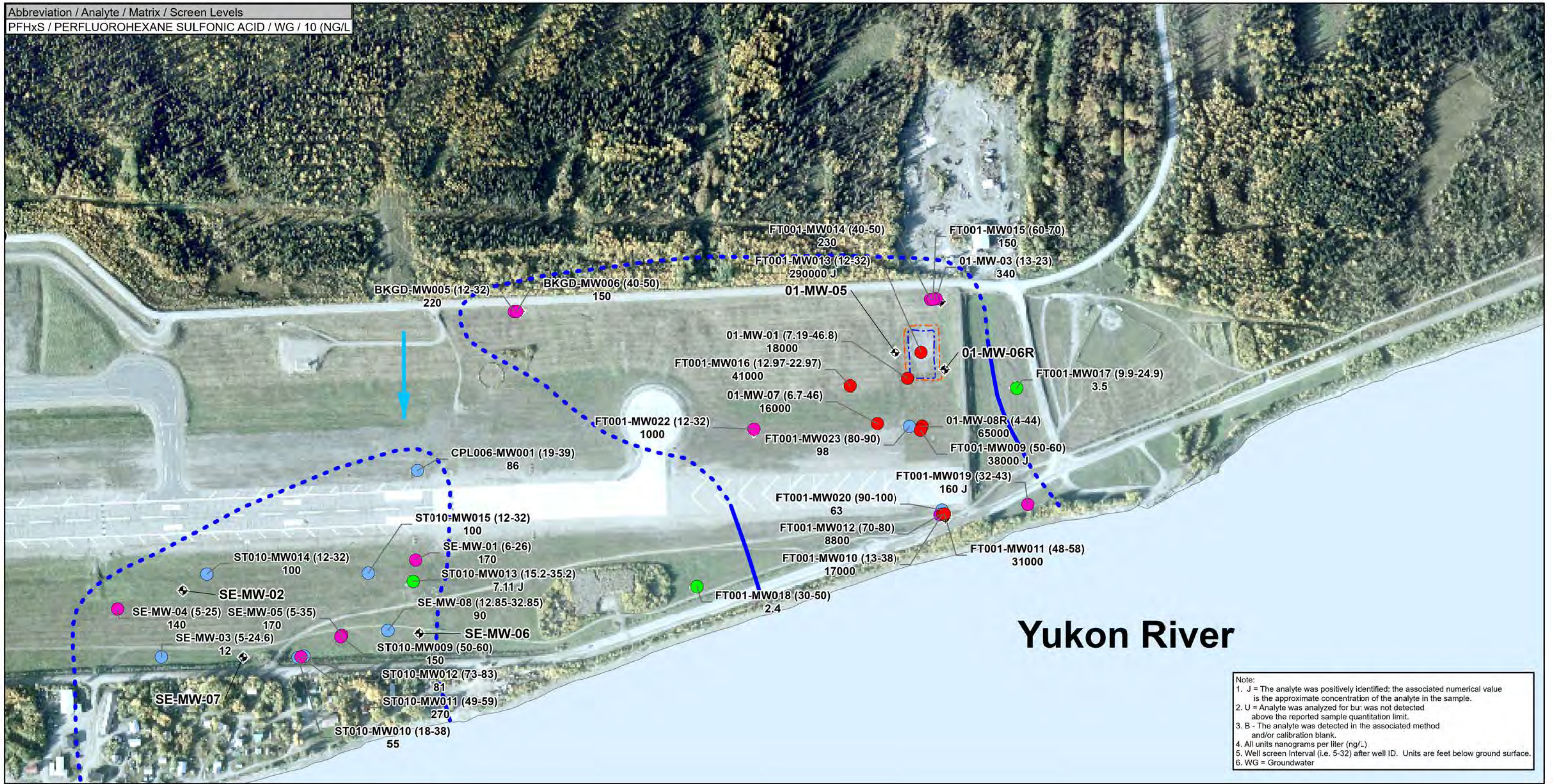
FIGURE 5.4e

Site FT001 Groundwater PFBS Maximum Concentrations Relative to Extent SL

SL: Lower of MCL or RSL for tap water at HQ=0.1
 Date Range: 2017, 2022 - 2024

Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska





Note:
 1. J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 2. U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.
 3. B - The analyte was detected in the associated method and/or calibration blank.
 4. All units nanograms per liter (ng/L)
 5. Well screen Interval (i.e. 5-32) after well ID. Units are feet below ground surface.
 6. WG = Groundwater

PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

Legend

- ◆ Monitoring Well not Sampled for PFAS
- Top of Soil Cover (Top of Bank)
- - - Toe of Soil Cover (Edge of Cap Grading)
- Groundwater Flow Direction
- PFHxS > 1000xSL
- 100xSL < PFHxS < 1000xSL
- 10xSL < PFHxS < 100xSL
- 1xSL < PFHxS < 10xSL
- PFHxS < 1xSL
- Extent of PFHxS exceeding Extent SL (dashed where inferred)

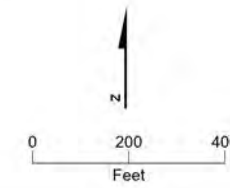


FIGURE 5.4f

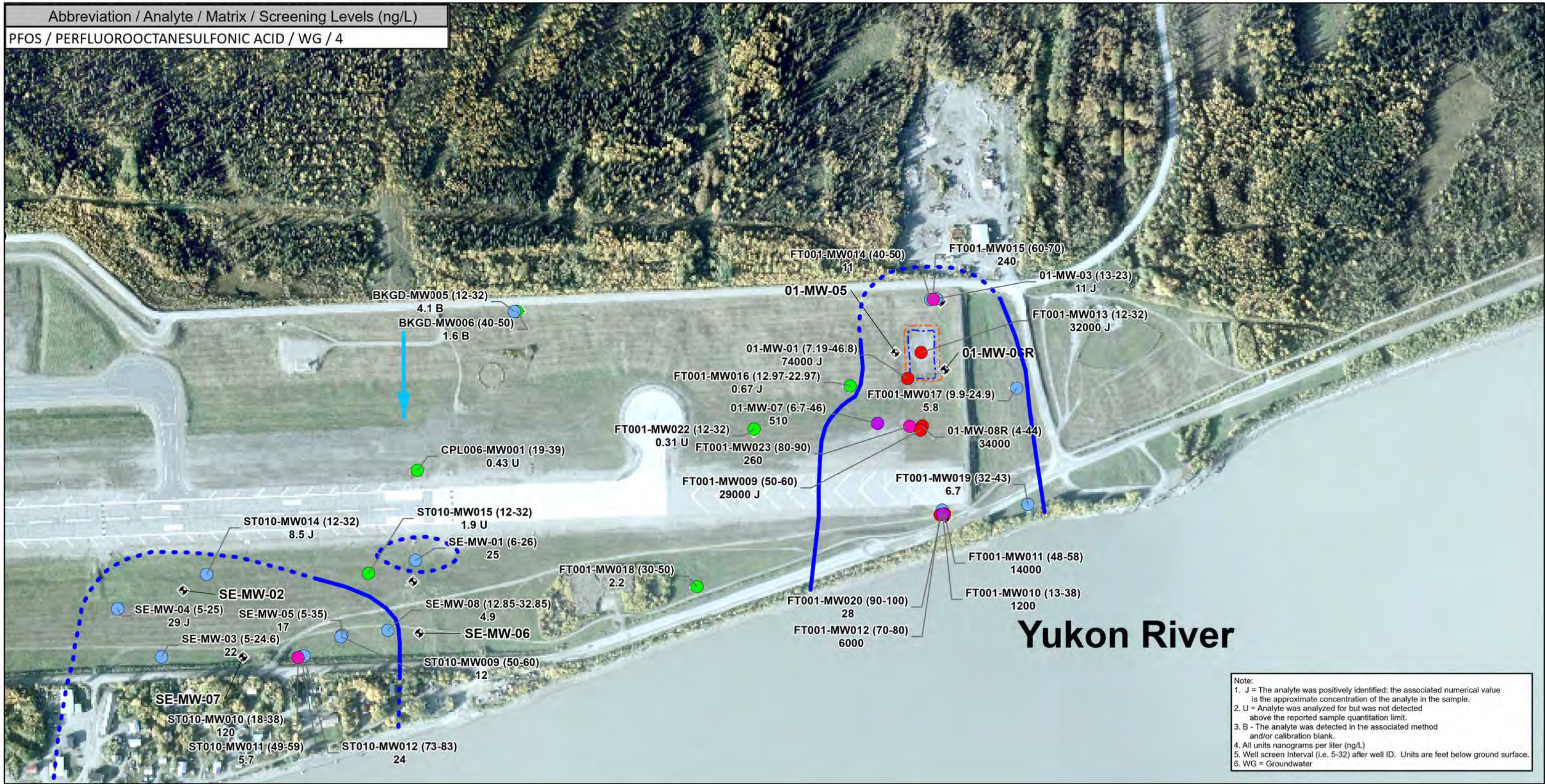
Site FT001 Groundwater PFHxS Maximum Concentrations Relative to Extent SL

SL: Lower of MCL or RSL for tap water at HQ=0.1
 Date Range: 2017, 2022 - 2024

Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska



Abbreviation / Analyte / Matrix / Screening Levels (ng/L)
PFOS / PERFLUOROOCTANESULFONIC ACID / WG / 4



Note:
 1. J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 2. U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.
 3. B - The analyte was detected in the associated method and/or calibration blank.
 4. All units nanograms per liter (ng/L)
 5. Well screen Interval (i.e. 5-32) after well ID. Units are feet below ground surface.
 6. WG = Groundwater

PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

Legend

- ⊕ Monitoring Well not Sampled for PFAS
- Top of Soil Cover (Top of Bank)
- - - Toe of Soil Cover (Edge of Cap Grading)
- Groundwater Flow Direction
- PFOS > 1000xSL
- 100xSL < PFOS < 1000xSL
- 10xSL < PFOS < 100xSL
- 1xSL < PFOS < 10xSL
- Extent of PFOS exceeding Extent SL (dashed where inferred)

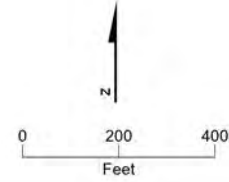


FIGURE 5.4g
Site FT001 Groundwater PFOS Maximum Concentrations Relative to Extent SL

SL: Lower of MCL or RSL for tap water at HQ=0.1
 Date Range: 2017, 2022 - 2024

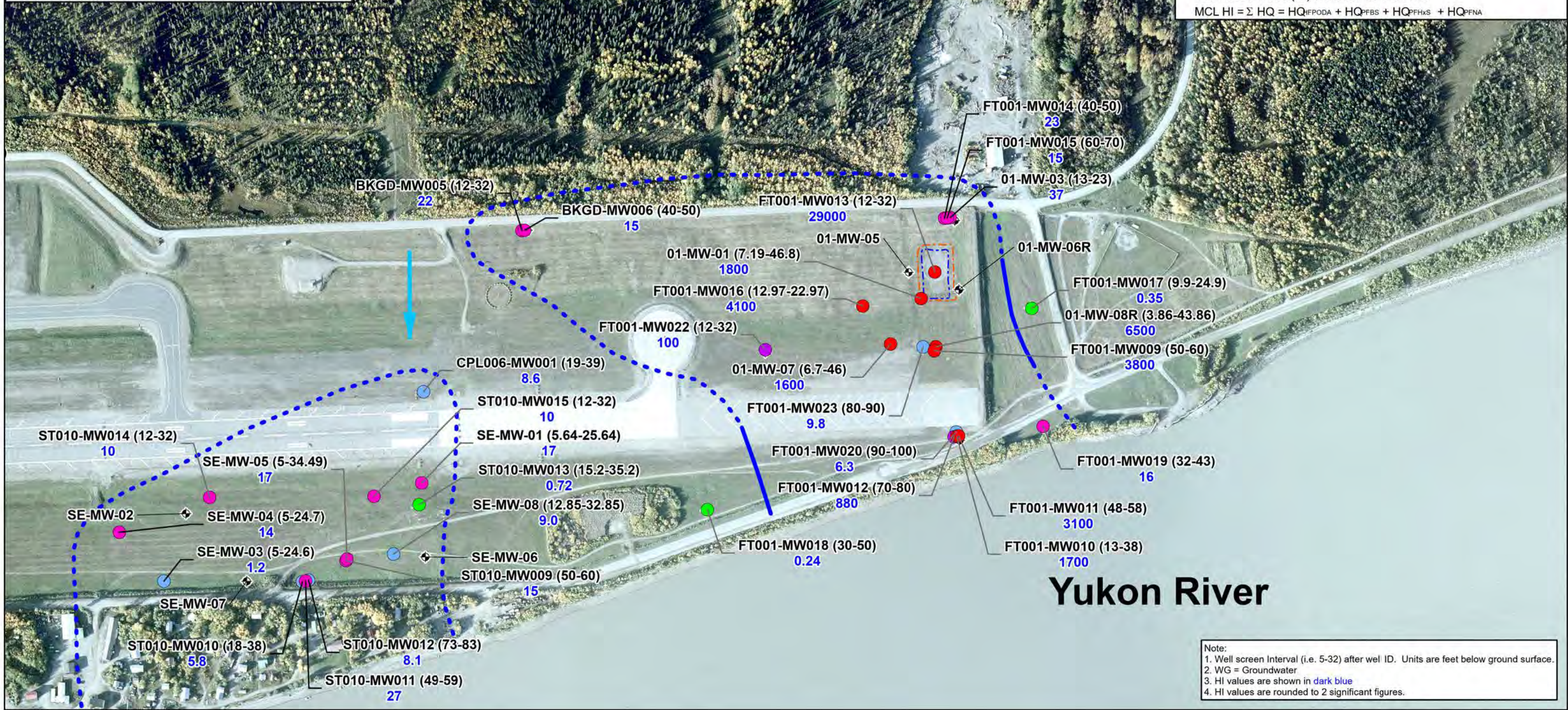
Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska



Abbreviation / Analyte / Matrix / Screening Levels (ng/L)
HFPODA / HEXAFLUOROPROPYLENE OXIDE DIMER ACID / WG / 10
PFBS / PERFLUOROBUTANE SULFONIC ACID / WG / 2000
PFHxS / PERFLUOROHXANE SULFONIC ACID / WG / 10
PFNA / PERFLUORONONANOIC ACID / WG / 10

The Hazard Quotient (HQ) for individual compounds is the ratio of the concentration (C) to the Maximum Contaminant Level (MCL):
 $HQ = C / MCL$ for HFPODA, PFBS, PFHxS, PFNA

The Hazard Index (HI) is the sum of the HQs:
 $MCL\ HI = \sum HQ = HQ_{HFPODA} + HQ_{PFBS} + HQ_{PFHxS} + HQ_{PFNA}$

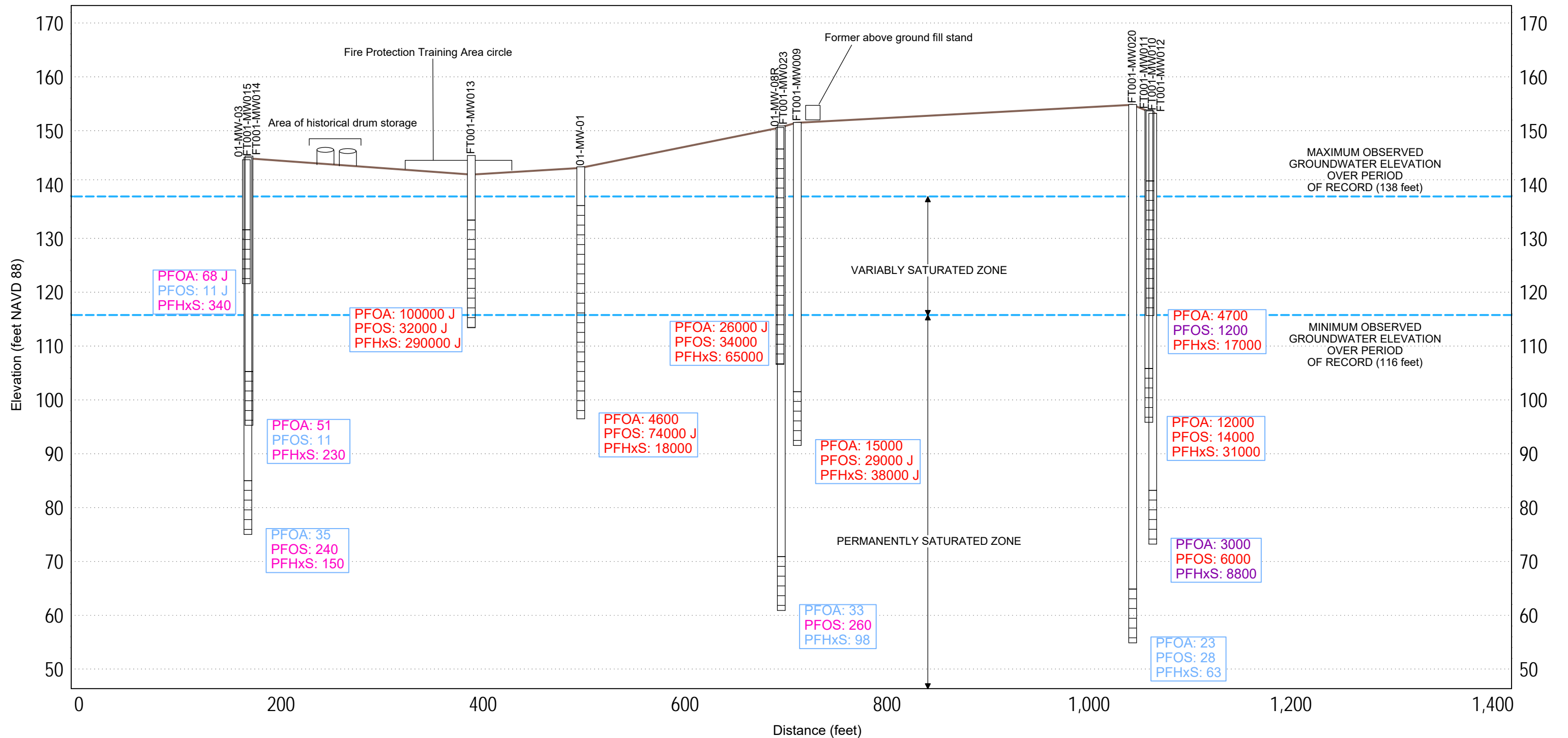


PFAS concentrations in this report were compared to November 2023 USEPA Regional Screening Levels (RSLs) which were the Department of Defense (DoD) accepted screening levels at the time data compilation began. USEPA has and is expected to continue to update RSLs and develop standards for PFAS as new toxicological data comes available. Delineation of PFAS relative to DoD-accepted RSLs and standards screening levels will be updated in future reports as additional DoD guidance is received.

Legend

- ◆ Monitoring Well not Sampled for PFAS
- Top of Soil Cover (Top of Bank)
- - - Toe of Soil Cover (Edge of Cap Grading)
- Groundwater Flow Direction
- MCL HI > 1000
- 100 < MCL HI < 1000
- 1 < MCL HI < 10
- MCL HI < 1.0
- MCL Hazard Index Contour (dashed where inferred)

FIGURE 5.4h
Site FT001 Groundwater PFAS Maximum MCL Hazard Index Contours to Estimate PFAS Delineation
Date Range: 2017, 2022 - 2024
 Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska
PARSONS



LEGEND

GROUND SURFACE ELEVATION (feet NAVD 88)

FT001_GP001 SAMPLE LOCATION

18.2 ANALYTE CONCENTRATION IN GROUNDWATER (ng/L)

GROUNDWATER ELEVATION

SCREEN INTERVAL

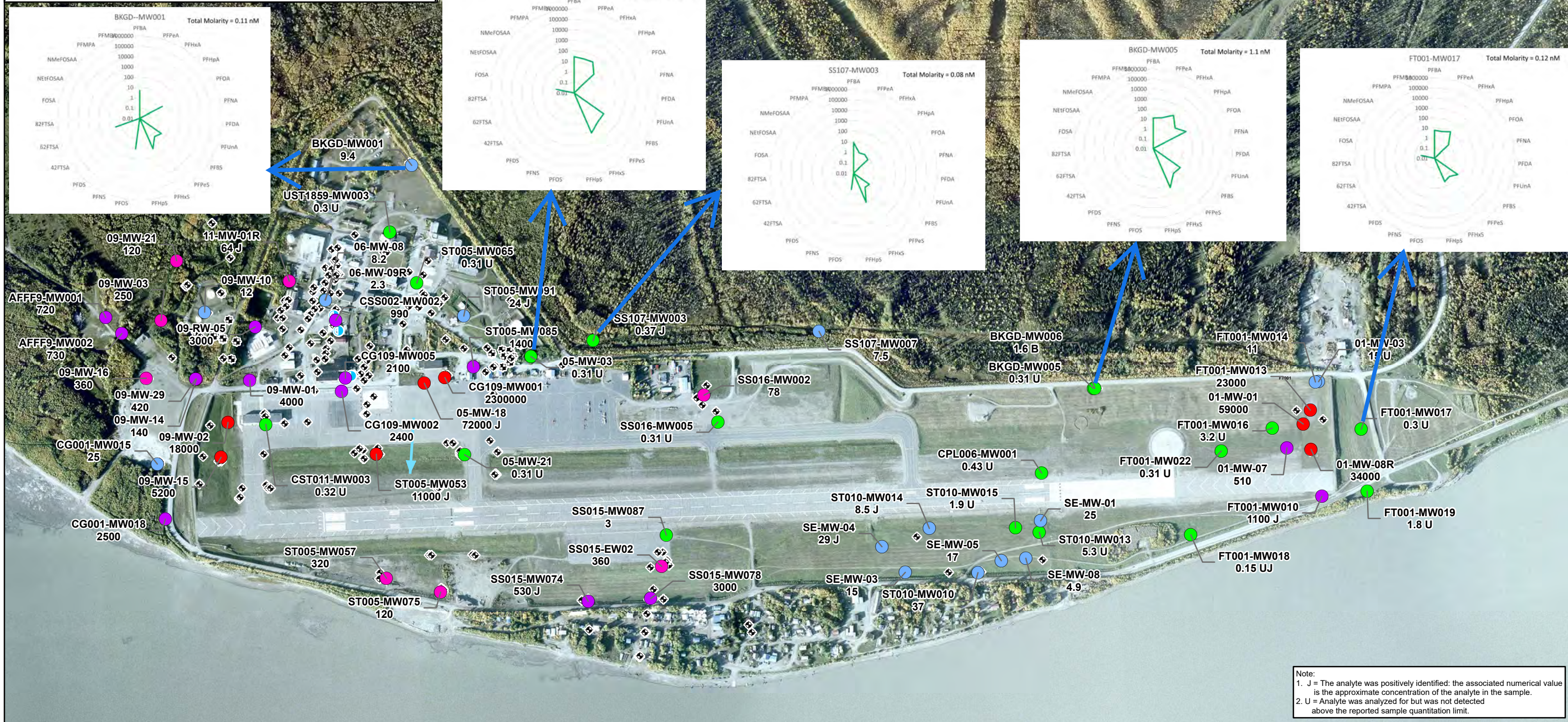
NOTES:

Red Label = Sample Exceeds Screening Level (Greater than 1000x analyte SL).
 Purple Label = Sample Exceeds Screening Level (Greater than 100X analyte SL).
 Scarlet Label = Sample Exceeds Screening Level (Greater than 10X analyte SL).
 Blue Label = Sample Exceeds Screening Level (1 to 10X analyte SL).
 Green Label = Sample Does Not Exceed Screening Level.
 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; the associated numerical value is the approximate concentration of the analyte in the sample.
 U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.
 SL = screening level (USEPA Maximum Contaminant Level).
 NAVD 88 = North American Vertical Datum of 1988.
 PFOA = Perfluorooctanoic acid (SL = 4 ng/L)
 PFHxS = Perfluorohexane sulfonic acid (SL = 10 ng/L)
 PFOS = Perfluorooctane sulfonic acid (SL = 4 ng/L)
 Seasonal groundwater elevations based on transducer information from Well 01-MW-08R. Monitoring data from September 2013 (CH2Mhill, December 2013).

FIGURE 5.5
Vertical Distribution of PFAS COIs Along Plume Axis

SL: Lower of MCL or RSL for tap water at HQ=0.1
Date Range: 2017, 2022 - 2024

Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska



Note:
 1. J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 2. U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

Legend

- Airfield Surface or Road
- ▶ Approximate Groundwater Flow Direction
- Storm Sewer Open Drainage Line
- ⊕ Monitoring Well
- ⊕ Recovery Well
- ⊕ Monitoring Well
- Water Supply Well
- PFOS > 1000xSL
- 100xSL < PFOS < 1000xSL
- 10xSL < PFOS < 100xSL
- 1xSL < PFOS < 10xSL
- PFOS < 1xSL

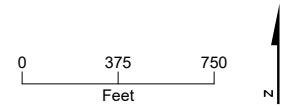
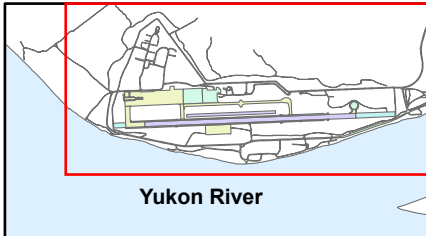
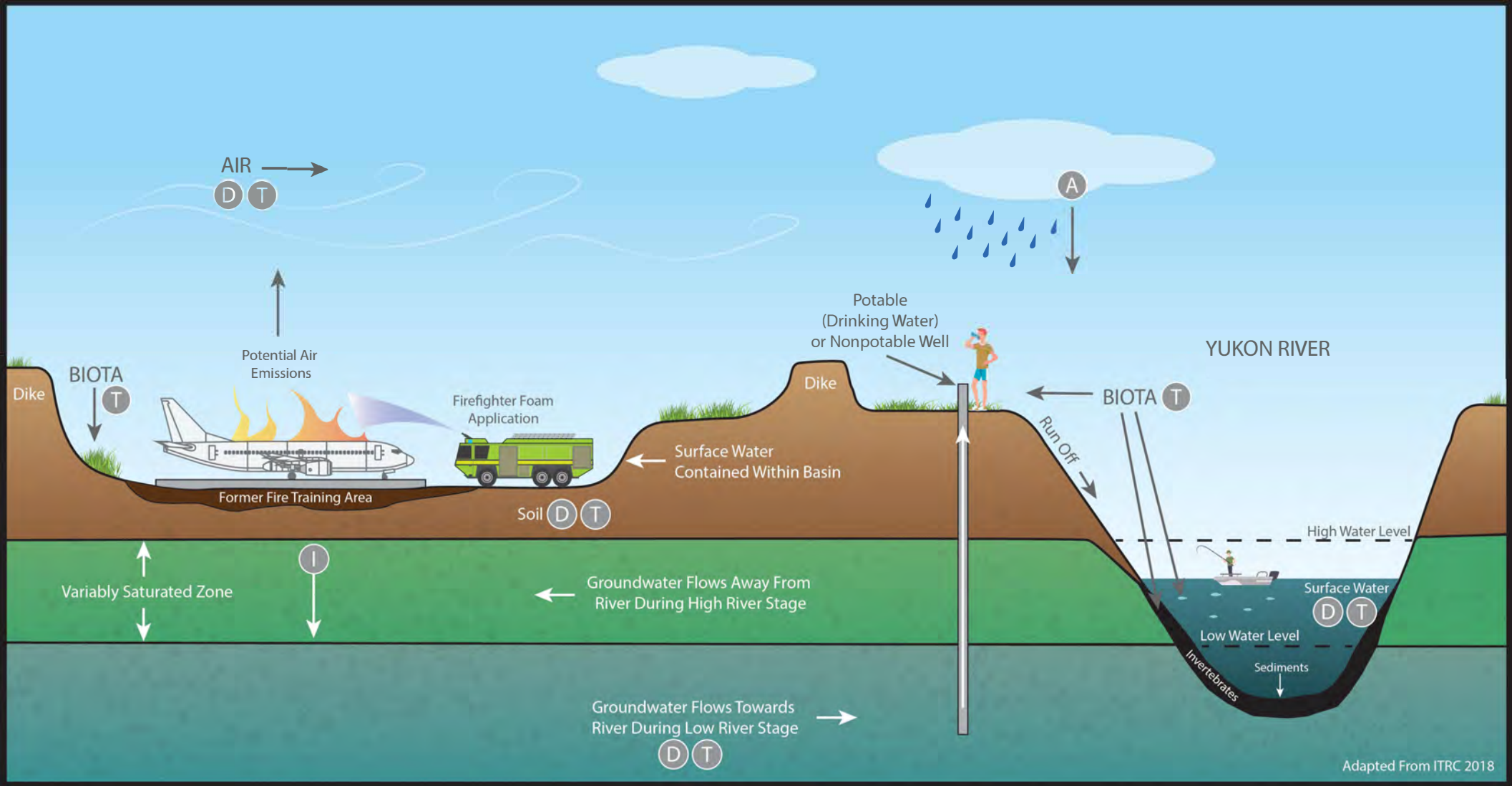


FIGURE 5.6
Radar Plots of Background PFAS in Groundwater
 PFOS Most Recent Concentrations Relative to Extent SL
 SL: RSL for tap water at HQ=0.1 (4 ng/L)
 Date Range: 2022 - 2024
 Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska



Adapted From ITRC 2018

Key

- (A) Atmospheric Deposition
- (D) Diffusion/Dispersion/Advection
- (I) Infiltration
- (T) Transformation of Precursors (Abiotic/Biotic)

FIGURE 6.1
Conceptual Site Model for Fate and Transport, Site FT001

Site FT001 PFAS Remedial Investigation
 Former Galena Forward Operating Location, Alaska



Figure 6.2
PFAS Concentrations Over Time
Well 01-MW-01

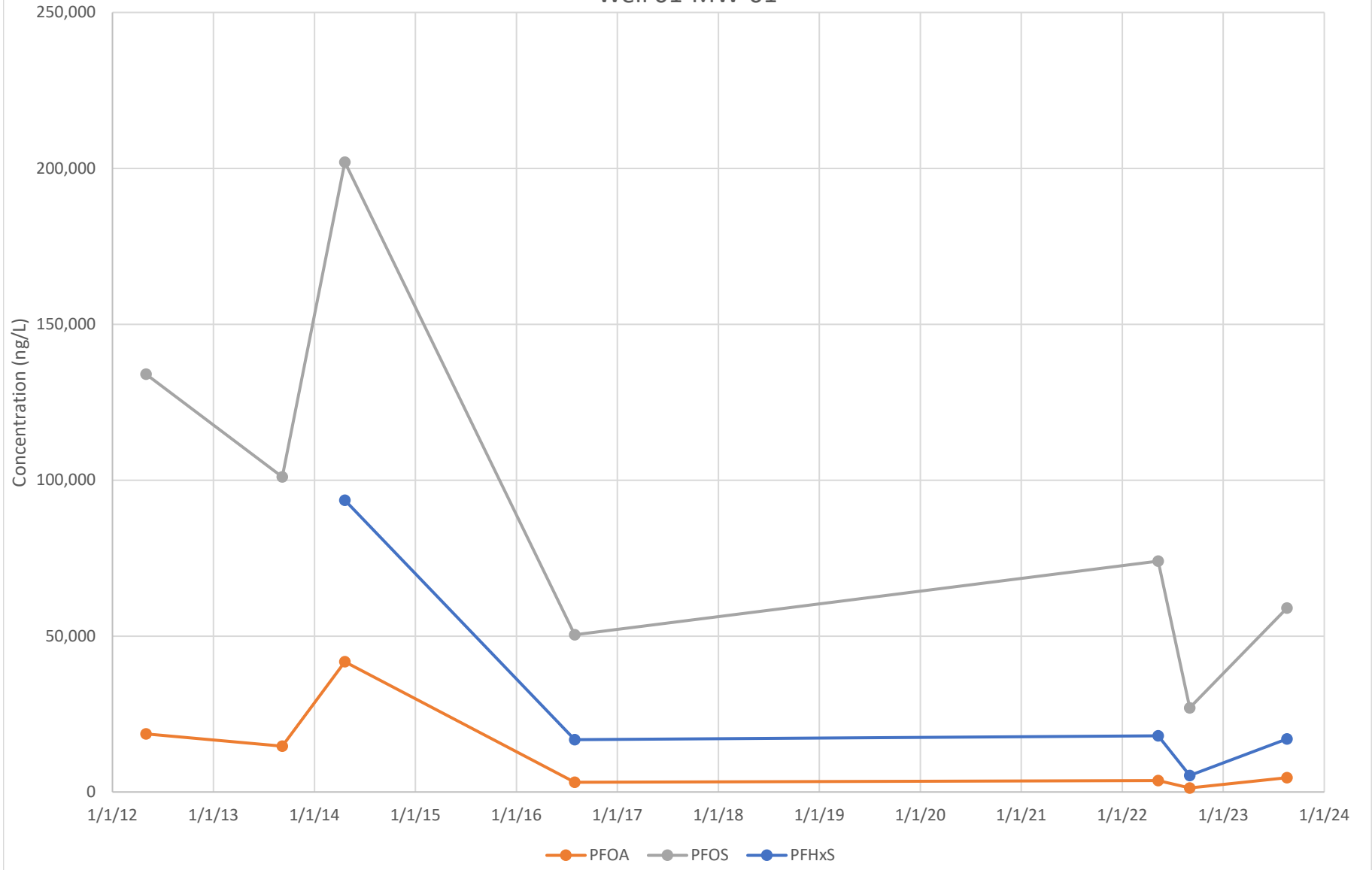
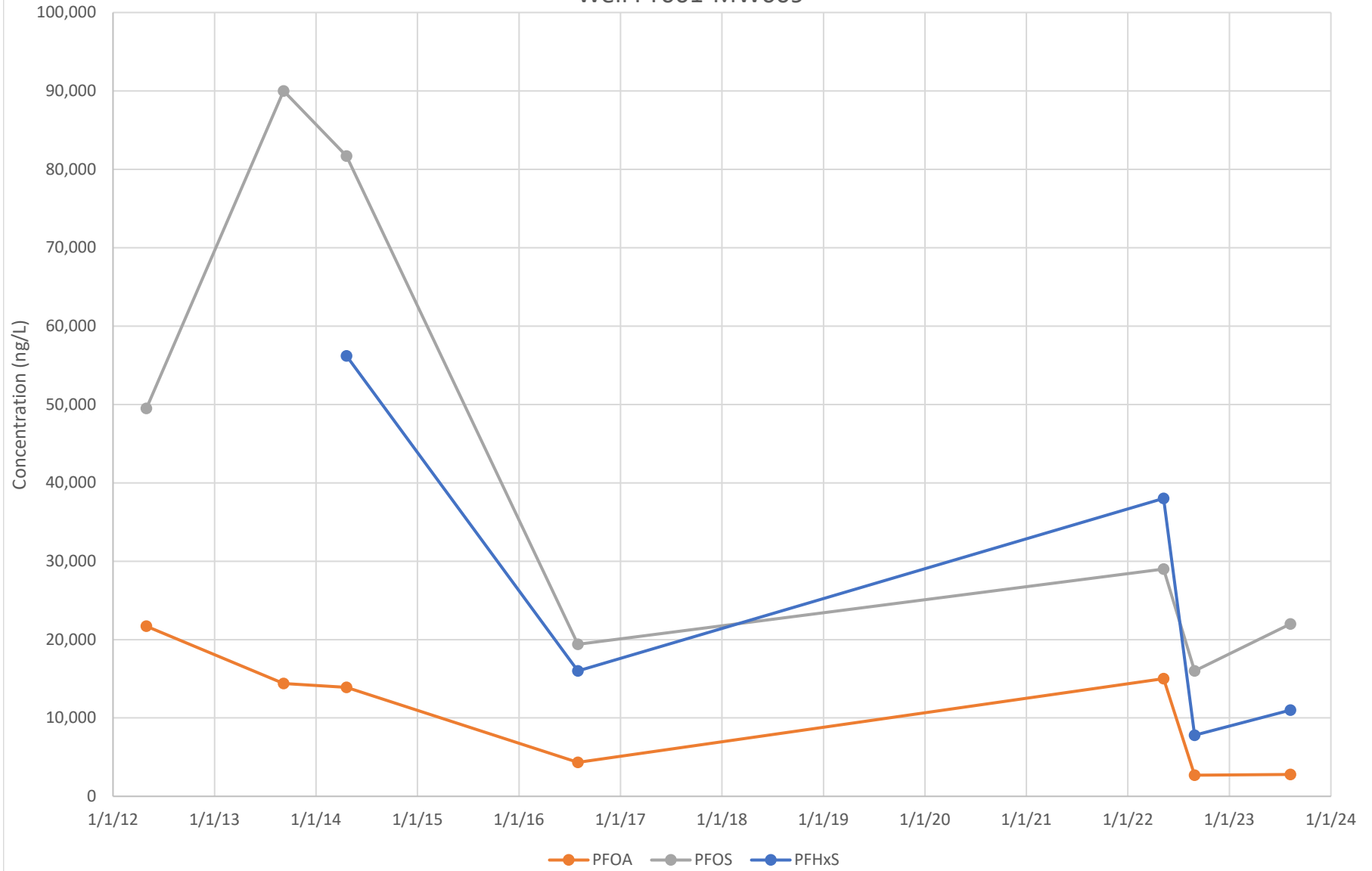
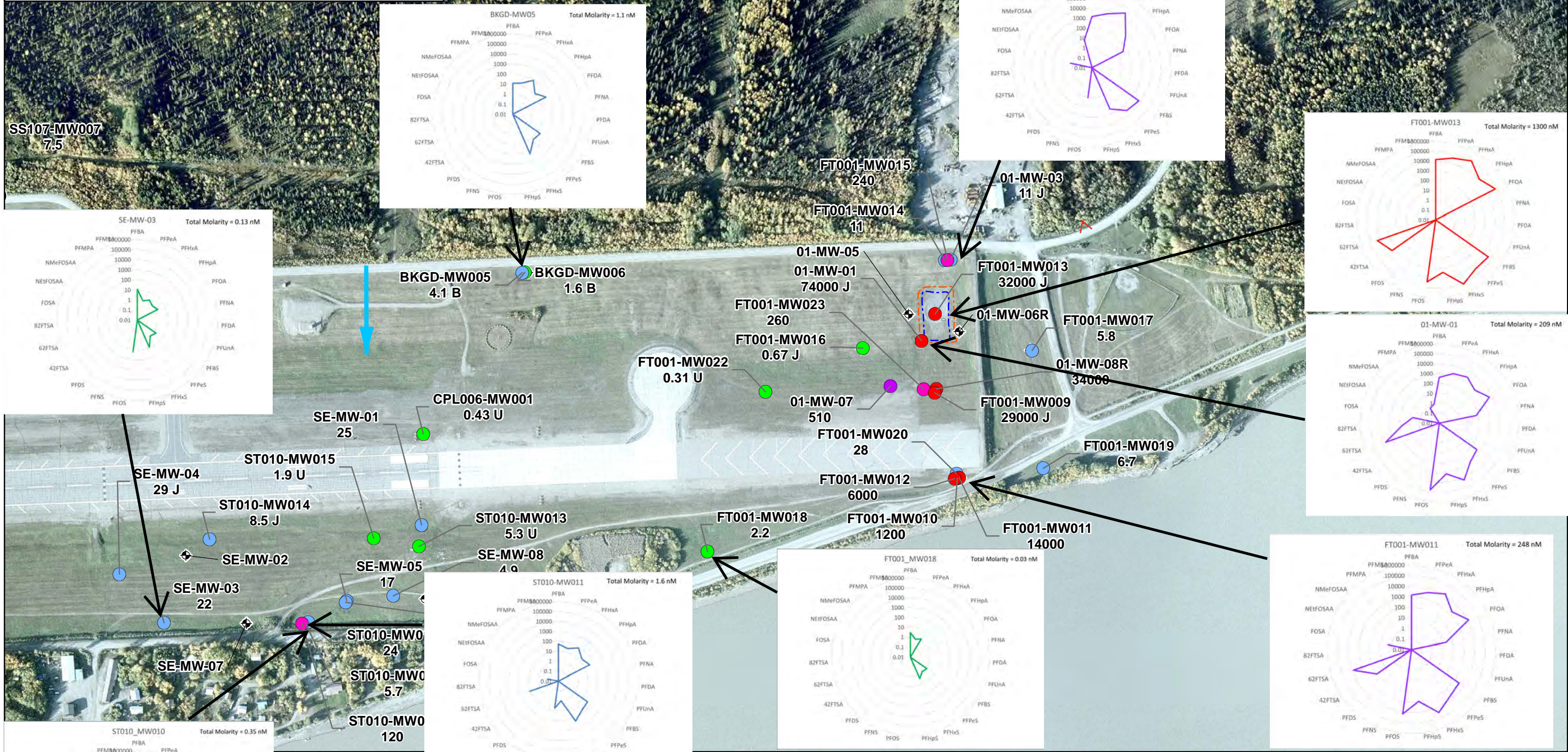


Figure 6.3
PFAS Concentrations Over Time
Well FT001-MW009



Abbreviation / Analyte / Matrix / Screening Levels (ng/L)
 PFOS / PERFLUOROOCETANESULFONIC ACID / GW / 4



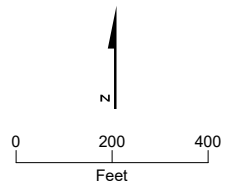
Legend

- ⊕ Monitoring Well not Sampled for PFAS
- - - Top of Soil Cover (Top of Bank)
- - - Toe of Soil Cover (Edge of Cap Grading)
- ➡ Groundwater Flow Direction
- > 1000 x RSL
- < 1000 x RSL
- < 100 x RSL
- < 10 x RSL
- < RSL

FIGURE 7.1
Site FT001 Groundwater PFAS Radar Plots with PFOS Maximum Concentrations

SL: RSL for tap water at HQ=0.1 (4 ng/L)
 Date Range: 2017, 2022 - 2024

Site FT001 PFAS Remedial Investigation Addendum
 Former Galena Forward Operating Location, Alaska



Appendix A
Historical Data

**Table A-1
Historical Groundwater Results
Site FT001 (AFFF Area 1)**

Analyte	Acronym	Location		01-MW-01	01-MW-01	01-MW-01	01-MW-01	01-MW-01	01-MW-01	01-MW-01	01-MW-01	01-MW-03	01-MW-03
		Sample ID		FT001MW01 GW.0412	FT001MW091 GW.0412	FT001MW01G W.0913.TAD	FT001MW901 GW.0913.TAD	FT001MW01G W.0414.TAD	FT001MW901 GW.0414.TAD	GALP01001	GALP01908	FT001MW03G	GALP01002
		Depth (feet)		7.19-46.8	7.19-46.8	7.19-46.8	7.19-46.8	7.19-46.8	7.19-46.8	7.19-46.8	7.19-46.8	13-23	13-23
		Sample Date		5/2/2012	5/2/2012	9/7/2013	9/7/2013	4/21/2014	4/21/2014	7/31/2016	7/31/2016	9/5/2013	7/31/2016
		Sample Type		N	FD	N	FD	N	FD	N	FD	N	N
Screening Level ^{a/}		RSL	MCL										
<i>Perfluorocarboxylates</i>													
PERFLUOROBUTANOIC ACID	PFBA	1800	NA	-	-	-	-	2880 J	4880 J	-	-	-	-
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	-	-	-	-	15000 J	13000	-	-	-	-
PERFLUOROHXANOIC ACID	PFHxA	990	NA	-	-	-	-	33600 J	29400	3230	2970	-	1460
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	-	-	-	-	7110 J	5480	661	624	-	30.5
PERFLUOROOCTANOIC ACID	PFOA	6	4	18400	18800	15500 J	13900 J	49900 J	33600 J	3240	3010	4.9 J	5.4 J
PERFLUORONONANOIC ACID	PFNA	5.9	10	-	-	-	-	218 J	302 J	58.9 J	120 U	-	7.3 U
PERFLUORODECANOIC ACID	PFDA	NA	NA	-	-	-	-	7.63 U	7.42 U	120 U	250 U	-	15 U
PERFLUOROUNDÉCANOIC ACID	PFUnA	NA	NA	-	-	-	-	6.73 U	6.53 U	120 U	250 UJ	-	15 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	-	-	-	-	14.5 U	14.1 U	120 U	250 U	-	15 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	NA	-	-	-	-	17.3 UJ	16.8 UJ	120 U	250 U	-	15 UJ
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	-	-	-	-	14.3 UJ	13.9 UJ	120 U	250 U	-	15 UJ
<i>Perfluorosulfonates</i>													
PERFLUOROBUTANE SULFONIC ACID	PFBS	600	NA	-	-	-	-	2960 J	3610	526	456 J	-	351
PERFLUOROHXANE SULFONIC ACID	PFHxS	39	10	-	-	-	-	82200 J	105000	16000	17500 J	-	65.8
PERFLUOROOCTANESULFONIC ACID	PFOS	4	4	128000	140000	116000 J	86100 J	239000 J	165000 J	50900 JB	50000 JB	12.2 J	15.9 J
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	-	-	-	-	8.93 U	8.68 U	-	-	-	-
<i>Fluorosulfonamides</i>													
PERFLUOROOCTANE SULFONAMIDE	FOSA	NA	NA	-	-	-	-	5.41 U	5.58 U	-	-	-	-
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	NA	-	-	-	-	-	-	310 U	620 U	-	36 U
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	NA	-	-	-	-	-	-	310 U	620 U	-	36 U

**Table A-1
Historical Groundwater Results
Site FT001 (AFFF Area 1)**

Analyte	Acronym	Location		01-MW-08R	FT001-MW009	FT001-MW009	FT001-MW009	FT001-MW009	FT001-MW010	FT001-MW010	FT001-MW010	FT001-MW011	FT001-MW011
		Sample ID		FT001MW08R GW.0412	FT001MW009 GW.0412	FT001MW009 GW.0913.TAD	FT001MW009 GW.0414.TAD	GALP01003	FT001MW010 GW.0913.TAD	FT001MW010 GW.0414.TAD	GALP01004	FT001MW011 GW.0913.TAD	FT001MW011 GW.0414.TAD
		Depth (feet)		3.86-43.86	50-60	50-60	50-60	50-60	13-38	13-38	13-38	48-58	48-58
		Sample Date		5/1/2012	5/1/2012	9/7/2013	4/21/2014	8/1/2016	9/7/2013	4/21/2014	8/1/2016	9/8/2013	4/23/2014
		Sample Type		N	N	N	N	N	N	N	N	N	N
		Screening Level ^{a/}											
		RSL	MCL										
<i>Perfluorocarboxylates</i>													
PERFLUOROBUTANOIC ACID	PFBA	1800	NA	-	-	-	2010	-	-	439	-	-	2780 J
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	-	-	-	6470	-	-	1740	-	-	7930 J
PERFLUOROHXANOIC ACID	PFHxA	990	NA	-	-	-	14000	5830	-	5240	7870	-	24300 J
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	-	-	-	3400	749	-	447 J	782	-	3240 J
PERFLUOROOCTANOIC ACID	PFOA	6	4	21700	21700	14400 J	13900	4340	1720	2020 J	3150	12300 J	13900 J
PERFLUORONONANOIC ACID	PFNA	5.9	10	-	-	-	96.8 J	130 U	-	17.3 U	130 U	-	26.6 J
PERFLUORODECANOIC ACID	PFDA	NA	NA	-	-	-	7.38 U	260 U	-	7.76 U	260 U	-	7.59 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	NA	-	-	-	6.5 U	260 U	-	6.84 U	260 U	-	6.68 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	-	-	-	14.1 U	260 U	-	14.8 U	260 U	-	14.5 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	NA	-	-	-	16.7 UJ	260 U	-	17.6 UJ	260 U	-	17.2 UJ
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	-	-	-	13.9 UJ	260 U	-	14.6 UJ	260 U	-	14.3 UJ
<i>Perfluorosulfonates</i>													
PERFLUOROBUTANE SULFONIC ACID	PFBS	600	NA	-	-	-	4780	1290	-	2200	3030	-	6890 J
PERFLUOROHEXANE SULFONIC ACID	PFHxS	39	10	-	-	-	56200	16000	-	6620	15700	-	36400 J
PERFLUOROOCTANESULFONIC ACID	PFOS	4	4	25200	49500	90000 J	81700	19400 J	148	299 J	489 JB	11000 J	27000 J
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	-	-	-	8.64 U	-	-	9.08 U	-	-	8.88 U
<i>Fluorosulfonamides</i>													
PERFLUOROOCTANE SULFONAMIDE	FOSA	NA	NA	-	-	-	5.62 U	-	-	5.72 U	-	-	5.58 U
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	NA	-	-	-	-	640 U	-	-	640 U	-	-
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	NA	-	-	-	-	640 U	-	-	640 U	-	-

**Table A-1
Historical Groundwater Results
Site FT001 (AFFF Area 1)**

Analyte	Acronym	Location		FT001-MW011	FT001-MW011	FT001-MW012	FT001-MW012	FT001-MW012	SE-MW-01	SE-MW-01	SE-MW-01	ST010-MW013	ST010-MW013
		Sample ID		GALP01005	GALP11909	FT001MW012 GW.0913.TAD	FT001MW012 GW.0414.TAD	GALP01006	GALP08058	GALP08214	GALP08215	GALP08059	GALP08216
		Depth (feet)		48-58	48-58	70-80	70-80	70-80	5.64-25.64	5.64-25.64	5.64-25.64	15.2-35.2	15.2-35.3
		Sample Date		8/1/2016	8/1/2016	9/8/2013	4/24/2014	8/1/2016	8/1/2016	9/30/2017	9/30/2017	7/31/2016	9/30/2017
		Sample Type		N	FD	N	N	N	N	N	FD	N	N
		Screening Level ^{a/}											
		RSL	MCL										
<i>Perfluorocarboxylates</i>													
PERFLUOROBUTANOIC ACID	PFBA	1800	NA	-	-	-	849 J	-	-	-	-	-	-
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	-	-	-	1670 J	-	-	-	-	-	-
PERFLUOROHEXANOIC ACID	PFHxA	990	NA	13700	13700	-	5700 J	2630	36.2	42.3	41.9	26.4	17
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	1770	2900	-	899 J	352 J	12.4 J	8.27 J	10.4	13 U	3.09 J
PERFLUOROOCCTANOIC ACID	PFOA	6	4	9260	8020	2860 J	6740 J	2150	10.4 J	6.27 J	6.38 J	6.4 U	0.959 J
PERFLUORONONANOIC ACID	PFNA	5.9	10	130 U	120 U	-	17.2 U	130 U	8.9 U	5.3 U	5.39 U	6.4 U	5.3 U
PERFLUORODECANOIC ACID	PFDA	NA	NA	260 U	250 U	-	7.72 U	270 U	18 U	5.3 U	5.39 U	13 U	5.3 U
PERFLUOROUNDÉCANOIC ACID	PFUnA	NA	NA	260 U	250 U	-	6.81 U	270 U	18 U	5.3 U	5.39 U	13 U	5.3 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	260 U	250 U	-	14.7 U	270 U	18 U	5.3 U	5.39 U	13 U	5.3 U
PERFLUOROTRIDÉCANOIC ACID	PFTTrDA	NA	NA	260 U	250 U	-	17.5 UJ	270 U	18 UJ	5.3 U	5.39 U	13 UJ	5.3 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	260 U	250 U	-	14.5 UJ	270 U	18 UJ	5.3 U	5.39 U	13 UJ	5.3 U
<i>Perfluorosulfonates</i>													
PERFLUOROBUTANE SULFONIC ACID	PFBS	600	NA	4760	7070	-	1880 J	755	27.1 J	30	27.3	15.4 J	10.5
PERFLUOROHEXANE SULFONIC ACID	PFHxS	39	10	35100	30300	-	21400 J	7570	143	80.6	81.2	22.6	7.11 J
PERFLUOROOCCTANESULFONIC ACID	PFOS	4	4	7090 J	6230 B	3880 J	19700 J	3070 JB	64	7.45 J	7.03 J	6.4 U	5.3 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	-	-	-	9.04 U	-	-	-	-	-	-
<i>Fluorosulfonamides</i>													
PERFLUOROOCCTANE SULFONAMIDE	FOSA	NA	NA	-	-	-	5.33 U	-	-	-	-	-	-
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	NA	640 U	620 U	-	-	670 U	44 U	5.3 U	5.39 U	32 U	5.3 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	NA	640 U	334 J	-	-	670 U	44 U	5.3 U	5.39 U	32 U	5.3 U

Notes:

^{a/} The selected screening level is the lower of the November 2023 U.S. Environmental Protection Agency (EPA) Residential Screening Level (RSL) (Hazard Quotient = 0.1) and the Maximum Contaminant Level (MCL). The lower value of the RSL and MCL is bolded.

All units nanogram per liter (ng/L)

- = not analyzed

FD = field duplicate

N = normal sample

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

SL = Screening Level

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Bold indicates the analyte was detected

Blue font indicates result is greater than the MCL but less than the RSL (only applies to PFOA and PFHxS).

Gray shading indicates the result exceeds the screening criteria.

Table A-2
Historical Soil Results Compared to Screening Levels
Site FT001 (AFFF Area 1)

Analyte Name	Acronym	Unit	Location	FT001_GP026		FT001_GP027			GALPSB001		
			Sample ID	FT001GP026_SS	FT001GP026_SO	FT001GP027_SS	FT001GP027_SO	FT001GP927_SO	GALP01007	GALP01008	GALP01009
			Sample Depth	0 - 2	3 - 5	0 - 2	3 - 5	3 - 5	0 - 2	3 - 5	5 - 7
			Sample Date	8/5/2013	8/5/2013	8/5/2013	8/5/2013	8/5/2013	7/29/2016	7/29/2016	7/29/2016
			Sample Type	N	N	N	N	FD	N	N	N
			Screening Level ^{a/}								
<i>Perfluorocarboxylates</i>											
PERFLUOROBUTANOIC ACID	PFBA	ug/kg	7800	8.9 U	8.9 U	13 J	12 J	14 J	-	-	-
PERFLUOROPENTANOIC ACID	PFPeA	ug/kg	NA	5.3 U	5.3 U	9.3 J	5.8 J	9.8 J	-	-	-
PERFLUOROHXANOIC ACID	PFHxA	ug/kg	3200	25 J	33 J	92	70	70	22.5	29.2 J	72.1
PERFLUOROHEPTANOIC ACID	PFHpA	ug/kg	NA	12 J	11 U	14 J	16 J	20 J	8.44 J	56 U	37.5 J
PERFLUOROOCTANOIC ACID	PFOA	ug/kg	19	120	28 J	150	810	840	91.6	554	1390
PERFLUORONONANOIC ACID	PFNA	ug/kg	19	16 U	16 U	16 U	16 U	16 U	10.2 J	56 U	56 U
PERFLUORODECANOIC ACID	PFDA	ug/kg	NA	13 J	9.7 U	9.7 U	9.7 U	9.7 U	7.66 J	56 U	56 U
PERFLUOROUNDECANOIC ACID	PFUnA	ug/kg	NA	7.2 U	7.2 U	7.2 U	7.2 U	7.2 U	12 U	56 U	56 U
PERFLUORODODECANOIC ACID	PFDoDA	ug/kg	NA	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	12 U	56 U	56 U
PERFLUOROTRIDECANOIC ACID	PFTrDA	ug/kg	NA	14 U	14 U	14 U	14 U	14 U	12 UJ	56 U	56 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	ug/kg	NA	13 U	13 U	13 U	13 U	13 U	12 U	56 U	56 U
<i>Perfluorosulfonates</i>											
PERFLUOROBUTANE SULFONIC ACID	PFBS	ug/kg	1900	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	12 U	56 U	56 U
PERFLUOROHEXANE SULFONIC ACID	PFHxS	ug/kg	130	450	220	500	6100	6900	517	3560	4760
PERFLUOROOCTANESULFONIC ACID	PFOS	ug/kg	13	17000	15000	29000	560	550	25600	1380	162
PERFLUORODECANE SULFONIC ACID	PFDS	ug/kg	NA	94 U	9.4 U	9.4 U	9.4 U	9.4 U	-	-	-
<i>Fluorosulfonamides</i>											
PERFLUOROOCTANE SULFONAMIDE	FOSA	ug/kg	NA	1100	190	2200	36 J	41 J	-	-	-
<i>Fluorosulfonamidoacetic acids</i>											
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	ug/kg	NA	-	-	-	-	-	25 U	110 U	110 U
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	ug/kg	NA	-	-	-	-	-	25 U	110 U	110 U

Table A-2
Historical Soil Results Compared to Screening Levels
Site FT001 (AFFF Area 1)

Analyte Name	Acronym	Unit	Location	GALPSB002			GALPSB003			GALPSB004				
			Sample ID	GALP01010	GALP01011	GALP01012	GALP01013	GALP01014	GALP01015	GALP01016	GALP04903	GALP01017	GALP01018	
			Sample Depth	0 - 2	3 - 5	5 - 7	0 - 2	3 - 5	5 - 7	0 - 2	0 - 2	3 - 5	5 - 7	
			Sample Date	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016
			Sample Type	N	N	N	N	N	N	N	N	FD	N	N
			Screening Level ^{a/}											
<i>Perfluorocarboxylates</i>														
PERFLUOROBUTANOIC ACID	PFBA	ug/kg	7800	-	-	-	-	-	-	-	-	-	-	
PERFLUOROPENTANOIC ACID	PFPeA	ug/kg	NA	-	-	-	-	-	-	-	-	-	-	
PERFLUOROHXANOIC ACID	PFHxA	ug/kg	3200	86.8	27.6	30	11 U	12.8 J	42	29.6 J	23.7	57.7	113	
PERFLUOROHEPTANOIC ACID	PFHpA	ug/kg	NA	44.3 J	18.7	22.2	11 U	7.04 J	20.6	27 U	11 J	49.4	21 U	
PERFLUOROOCTANOIC ACID	PFOA	ug/kg	19	324	221	396	18.1	1550	1680	82.8	77.8	242	188	
PERFLUORONONANOIC ACID	PFNA	ug/kg	19	59 U	12 U	11 U	16.1	7.09 J	9.9 U	18 J	16.5	22 U	21 U	
PERFLUORODECANOIC ACID	PFDA	ug/kg	NA	59 U	12 U	11 U	5.87 J	12 U	9.9 U	27 U	12 U	22 U	21 U	
PERFLUOROUNDECANOIC ACID	PFUnA	ug/kg	NA	59 U	12 U	11 U	11 U	12 U	9.9 U	27 U	12 U	22 U	21 U	
PERFLUORODODECANOIC ACID	PFDoDA	ug/kg	NA	59 U	12 U	11 U	11 U	12 U	9.9 U	27 U	12 U	22 U	21 U	
PERFLUOROTRIDECANOIC ACID	PFTrDA	ug/kg	NA	59 U	12 UJ	11 UJ	11 U	12 U	9.9 U	27 U	12 U	22 U	21 U	
PERFLUOROTETRADECANOIC ACID	PFTeDA	ug/kg	NA	59 U	12 U	11 U	11 U	12 U	9.9 U	27 U	12 U	22 U	21 U	
<i>Perfluorosulfonates</i>														
PERFLUOROBUTANE SULFONIC ACID	PFBS	ug/kg	1900	59 U	12 U	11 U	11 U	12 U	12.7	27 U	12 U	22 U	16.5 J	
PERFLUOROHEXANE SULFONIC ACID	PFHxS	ug/kg	130	2350 J	1620	2040	139	2330	3480	382	334	1510	1030	
PERFLUOROOCTANESULFONIC ACID	PFOS	ug/kg	13	34000	1590	1600	9610	1870	3980	16100	19200	4380	4210	
PERFLUORODECANE SULFONIC ACID	PFDS	ug/kg	NA	-	-	-	-	-	-	-	-	-	-	
<i>Fluorosulfonamides</i>														
PERFLUOROOCTANE SULFONAMIDE	FOSA	ug/kg	NA	-	-	-	-	-	-	-	-	-	-	
<i>Fluorosulfonamidoacetic acids</i>														
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	ug/kg	NA	120 U	23 U	23 U	22 U	23 U	20 U	53 U	24 U	44 U	42 U	
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	ug/kg	NA	120 U	23 U	23 U	22 U	23 U	20 U	53 U	24 U	44 U	42 U	

Table A-2
Historical Soil Results Compared to Screening Levels
Site FT001 (AFFF Area 1)

Analyte Name	Acronym	Unit	Location	GALPSB005			GALPSB006			GALPSB007				
			Sample ID	GALP01019	GALP01020	GALP01021	GALP01022	GALP01023	GALP01024	GALP01025	GALP01026	GALP07904	GALP01027	
			Sample Depth	0 - 2	3 - 5	5 - 7	0 - 2	3 - 5	5 - 7	0 - 2	3 - 5	3 - 5	5 - 7	
			Sample Date	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016
			Sample Type	N	N	N	N	N	N	N	N	N	FD	N
			Screening Level ^{a/}											
<i>Perfluorocarboxylates</i>														
PERFLUOROBUTANOIC ACID	PFBA	ug/kg	7800	-	-	-	-	-	-	-	-	-	-	
PERFLUOROPENTANOIC ACID	PFPeA	ug/kg	NA	-	-	-	-	-	-	-	-	-	-	
PERFLUOROHXANOIC ACID	PFHxA	ug/kg	3200	7.31 J	11.8 J	45.6	66.5	29.2 J	58.5	20.1	19 U	11.5 J	10 J	
PERFLUOROHEPTANOIC ACID	PFHpA	ug/kg	NA	6.03 J	9.7 J	42.8	48 U	51 U	13.1	7.51 J	19 U	7.96 J	5.13 J	
PERFLUOROOCTANOIC ACID	PFOA	ug/kg	19	54.4	682	774	783	470	363	37.1	54.7	49.8	34.6	
PERFLUORONONANOIC ACID	PFNA	ug/kg	19	12.7 J	12 U	11 U	48 U	51 U	11 U	9 U	19 U	10 U	9.9 U	
PERFLUORODECANOIC ACID	PFDA	ug/kg	NA	12 U	12 U	11 U	48 U	51 U	11 U	6.68 J	19 U	10 U	9.9 U	
PERFLUOROUNDECANOIC ACID	PFUnA	ug/kg	NA	12 U	12 U	11 U	48 U	51 U	11 U	9 U	19 U	10 U	9.9 U	
PERFLUORODODECANOIC ACID	PFDoDA	ug/kg	NA	12 U	12 U	11 U	48 U	51 U	11 U	9 U	19 U	10 U	9.9 U	
PERFLUOROTRIDECANOIC ACID	PFTrDA	ug/kg	NA	12 U	12 U	11 U	48 U	51 U	11 U	9 U	19 U	10 U	9.9 U	
PERFLUOROTETRADECANOIC ACID	PFTeDA	ug/kg	NA	12 U	12 U	11 U	48 U	51 U	11 U	9 U	19 U	10 U	9.9 U	
<i>Perfluorosulfonates</i>														
PERFLUOROBUTANE SULFONIC ACID	PFBS	ug/kg	1900	12 U	12 U	21.7	48 U	51 U	6.56 J	9 U	19 U	10 U	9.9 U	
PERFLUOROHXANE SULFONIC ACID	PFHxS	ug/kg	130	227	1650	1240	1220 J	809	662	131	207	228	162	
PERFLUOROOCTANESULFONIC ACID	PFOS	ug/kg	13	34300	7.16 J	836	27500	12200	2230	19800	37000	34700	16400	
PERFLUORODECANE SULFONIC ACID	PFDS	ug/kg	NA	-	-	-	-	-	-	-	-	-	-	
<i>Fluorosulfonamides</i>														
PERFLUOROOCTANE SULFONAMIDE	FOSA	ug/kg	NA	-	-	-	-	-	-	-	-	-	-	
<i>Fluorosulfonamidoacetic acids</i>														
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	ug/kg	NA	24 UJ	24 U	22 U	96 U	100 U	21 U	18 U	39 U	21 U	20 U	
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	ug/kg	NA	24 UJ	24 U	22 U	96 U	100 U	21 U	18 U	39 U	21 U	20 U	

Table A-2
Historical Soil Results Compared to Screening Levels
Site FT001 (AFFF Area 1)

Analyte Name	Acronym	Unit	Location	GALPSB008		
			Sample ID	GALP01028	GALP01029	GALP01030
			Sample Depth	0 - 2	3 - 5	5 - 7
			Sample Date	7/29/2016	7/29/2016	7/29/2016
			Sample Type	N	N	N
			Screening Level ^{a/}			
<i>Perfluorocarboxylates</i>						
PERFLUOROBUTANOIC ACID	PFBA	ug/kg	7800	-	-	-
PERFLUOROPENTANOIC ACID	PFPeA	ug/kg	NA	-	-	-
PERFLUOROHXANOIC ACID	PFHxA	ug/kg	3200	36.6	60.5	49.5
PERFLUOROHEPTANOIC ACID	PFHpA	ug/kg	NA	7.2 J	10.2 J	17.9
PERFLUOROOCTANOIC ACID	PFOA	ug/kg	19	82.1	548	517
PERFLUORONONANOIC ACID	PFNA	ug/kg	19	12 U	9.9 U	10 U
PERFLUORODECANOIC ACID	PFDA	ug/kg	NA	12 U	9.9 U	10 U
PERFLUOROUNDECANOIC ACID	PFUnA	ug/kg	NA	12 U	9.9 U	10 U
PERFLUORODODECANOIC ACID	PFDoDA	ug/kg	NA	12 U	9.9 U	10 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	ug/kg	NA	12 U	9.9 U	10 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	ug/kg	NA	12 U	9.9 U	10 U
<i>Perfluorosulfonates</i>						
PERFLUOROBUTANE SULFONIC ACID	PFBS	ug/kg	1900	9.26 J	9.26 J	13.9
PERFLUOROHXANE SULFONIC ACID	PFHxS	ug/kg	130	467	2450	1710
PERFLUOROOCTANESULFONIC ACID	PFOS	ug/kg	13	62700	4490	1410
PERFLUORODECANE SULFONIC ACID	PFDS	ug/kg	NA	-	-	-
<i>Fluorosulfonamides</i>						
PERFLUOROOCTANE SULFONAMIDE	FOSA	ug/kg	NA	-	-	-
<i>Fluorosulfonamidoacetic acids</i>						
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	ug/kg	NA	23 U	20 U	20 U
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	ug/kg	NA	23 U	20 U	20 U

Notes:

^{a/} November 2023 U.S. Environmental Protection Agency (EPA)

- = not analyzed

µg/kg = microgram per kilogram

CUL = cleanup level

N = normal sample

FD = field duplicate

J = Analyte was

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Bold indicates the analyte was detected

Gray shading indicates the result exceeds the screening criteria.

Appendix B
Boring Logs

SOIL BORING LOG

PROJECT NAME: Galena PFAS RI		HOLE DEPTH (ft): 35.00	DRILLING CONTRACTOR: Geotek Alaska, Anchorage, Alaska	
SURFACE ELEVATION: 146.40 feet	NORTHING (UTM ZONE 4N): 7180978.25	EASTING (UTM ZONE 4N): 599664.35	DATE STARTED: 9/27/2023	DATE COMPLETED: 9/27/2023
WATER LEVEL: --- feet bgs	DRILLING METHOD: Dual Tube		DRILLING EQUIPMENT: Geoprobe 6620 DT	
LOCATION: FT001			LOGGED BY: Matt H.	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE #	RECOVERY (IN)	SOIL DESCRIPTION <small>USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.</small>	OVM (ppm):		COMMENTS <small>(e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)</small>
						PID CORE	HEAD SPACE	
1		90		54-60	SAND (SM) Silty sand; Dark yellowish brown 10YR 4/3; Loose-very loose; Dry; Non-plastic; non-cohesive; 70% fgs, 10% mgs, 15% silt, 5% clay, few cgs			
2					SAND (SW) Well graded sand with gravel; Dark yellowish brown 10YR 4/3; Very loose; non-plastic; non-cohesive; 40% mgs, 15% cgs, 20% fgs, 20% fgg (subrounded-rounded), 5% silt			
3								
4					SILT (ML) with sand; Very dark gray 10YR 3/1 with mottled red/yellowish brown staining; Dry; Medium; 65% silt, 20% fgs, 15% clay, Non plastic-low plasticity; Non cohesive			
5								
6		88		53-60	SANDY SILT (ML) ; Very dark gray GLEY1 3/N; Soft; Moist; Low plasticity; non cohesive; 60% silt, 30% fgs, 10% clay			
7					SILT (ML) with sand, Very dark gray GLEY1 2.5/N; Soft-Medium; Moist; Nonplastic-very low plasticity; non cohesive; 65% silt, 15% fgs, 20% clay; trace organics, Organic odor (decomposition) ; oxidization staining			
8								
9								
10								
11		95		51-60	SILT (ML) with sand; Dark Olive gray 5Y 3/2; Moist (10-13) Wet (13-15); Soft - very soft; Low plasticity; cohesive; 60% silt; 20% fgs, 20% clay; No odor			
12								
13								
14								
15								
16		100		60-60	SILT (ML) with sand; Dark Olive gray 5Y 3/2; Moist (10-13) Wet (13-15); Soft - very soft; Low plasticity; cohesive; 60% silt; 20% fgs, 20% clay; No odor			
17								
18								
19								
20								
21		100		60-60	SILTY SAND (SM) ; Very dark grayish brown 10YR 3/2; Loose; Wet; Non-plastic; Non-cohesive; 70% fgs, 10% mgs, 15% silt, 5% clay			
22								
23								
24								
25								
26		95		57-60	SAND (SP-SM) Poorly graded sand with silt; Very dark gray 5Y 3/1; Loose; Wet; Nonplastic; noncohesive; 80% mgs, 10% fgs, 10% silt, few clay; no odor; very well sorted			
27								
28								
29								
30								
31		90		54-60	SAND (SM) Poorly graded sand with silt; Very dark greenish gray 3/5GY; Loose; Wet; Non-plastic; Non-cohesive; 70% fgs, 10% mgs, 20% silt			
32								
33								
34								
35					35.0 Boring Terminated at 35 feet bgs			



SOIL BORING LOG

PROJECT NAME: Galena PFAS RI		HOLE DEPTH (ft): 35.00	DRILLING CONTRACTOR: Geotek Alaska, Anchorage, Alaska	
SURFACE ELEVATION: 144.73 feet	NORTHING (UTM ZONE 4N): 7180867.88	EASTING (UTM ZONE 4N): 599733.22	DATE STARTED: 9/27/2023	DATE COMPLETED: 9/27/2023
WATER LEVEL: --- feet bgs	DRILLING METHOD: Dual Tube		DRILLING EQUIPMENT: Geoprobe 6620 DT	
LOCATION: FT001			LOGGED BY: Matt H.	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE #	RECOVERY (IN)	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL): color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	OVM (ppm):		COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
						PID CORE	HEAD SPACE	
1		90		54-60	Top 0.2" organic rich top soil (ML); Sandy silt; Olive gray 5Y 4/2; Soft-Medium; Moist; Nonplastic; Non cohesive; 60% silt, 30% fgs, 10% clay			
5				60-60	5.0 SILTY SAND (ML); Olive gray 5Y 4/2; Medium-soft; Moist (5-7' bgs) Wet (7-10' bgs); Low plasticity; noncohesive; 80% silt; 15% fgs, 5% clay			
10				60-60	10.0 SILTY SAND (ML); Olive gray 5Y 4/2; Medium-soft; Moist; Low plasticity; noncohesive; 80% silt; 15% fgs, 5% clay			
14				60-60	14.0 SILTY SAND (ML); Olive gray 5Y 4/2; Soft; Loose; Wet; Nonplastic, Noncohesive; 80% fgs, 15% silt, 5% clay			
15				60-60	15.0 SAND (SP) Poorly graded sand; Dark olive gray 5Y 3/2; Loose-Medium, Wet, Nonplastic, Noncohesive; 80% fgs, 15% silt, 5% clay			
20				53-60	20.0 SILTY SAND (SM); Dark olive gray 5Y 3/2; Soft/Loose; Wet; Non plastic; Noncohesive; Interbedded with few ML (~0.2' thick); 85% fgs, 10% silt, 5% clay			
25				54-60	25.0 SILTY SAND (SM); Dark olive gray 5Y 3/2; Soft/Loose; Wet; Non plastic; Noncohesive; Interbedded with few ML (~0.2' thick); 85% fgs, 10% silt, 5% clay			
30				48-60	30.0 SAND (SP) Poorly graded sand; Very dark Greenish Gray GLEY1 3/5GY; Non-plastic; Non-cohesive; Wet; 85% mgs, 10% mgs, 5% silt			
35				35.0	Boring Terminated at 35 feet bgs			

SOIL BORING LOG

PROJECT NAME: Galena PFAS RI		HOLE DEPTH (ft): 35.00	DRILLING CONTRACTOR: Geotek Alaska, Anchorage, Alaska	
SURFACE ELEVATION: 143.79 feet	NORTHING (UTM ZONE 4N): 7180860.21	EASTING (UTM ZONE 4N): 599637.16	DATE STARTED: 9/27/2023	DATE COMPLETED: 9/27/2023
WATER LEVEL: --- feet bgs		DRILLING METHOD: Dual Tube	DRILLING EQUIPMENT: Geoprobe 6620 DT	
LOCATION: FT001			LOGGED BY: Matt H.	

DEPTH (ft bgs)	INTERVAL (feet)	RECOVERY (%)	SAMPLE #	RECOVERY (IN)	SOIL DESCRIPTION USCS GROUP NAME (USCS GROUP SYMBOL); color, moisture, mineralogy, density, structure, cementation, staining/odor, reaction with HCL. COARSE FRACTION: grain size, angularity, hardness, shape. FINE FRACTION: plasticity, dry strength, toughness, dilatancy. Additional comments.	OVM (ppm):		COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
						PID CORE	HEAD SPACE	
1		90		54-60	1.0 SAND (SW-SM) Well graded sand with silt and gravel; Dark olive gray 5Y 3/2; Loose to very loose; Moist; Nonplastic; Non cohesive; 60% mgs, 20% fgg (rounded-subrounded); 15% silt, 5% clay			
2					SILT (ML) with sand; Very dark grayish brown 10YR 3/2; Medium; Moist; Non plastic; Non cohesive; 80% silt, 10% fgs, 5% mgs, 5% clay			
3								
4								
5		70		42-60	5.0 SILT (ML) with sand; Very dark grayish brown 2.5YR 3/2; Soft-Medium; Moist; Non plastic to low plasticity; Non cohesive; 80% silt, 10% fgs, 10% clay; Few fgs (SP) interbeds			
6								
7								
8								
9								
10					10.0			
11		90		54-60	11.0 SAND (SP-SM) with silt, Poorly graded sand; Very dark grayish brown 2.5Y 3/2; Loose; Wet; Non plastic; Non cohesive; 80% fgs, 10% mgs, 10% silt			
12					12.0 SANDY SILT (ML) ; Very dark grayish brown 2.5Y 3/2; Wet Soft; Non plastic; Non cohesive; 60% silt, 30% fgs, 10% clay			
13					15.0 SAND (SP-SM) with silt, Poorly graded sand; Very dark grayish brown 2.5Y 3/2; Loose; Wet; Non plastic; Non cohesive; 70% fgs, 10% mgs, 15% silt, 5% clay			
14								
15		100		60-60	20.0 SAND (SP-SM) with silt, Poorly graded sand; Very dark grayish brown 2.5Y 3/2; Loose; Wet; Non plastic; Non cohesive; 90% fgs, 10% silt			
16								
17								
18								
19								
20		100		60-60	25.0 SAND (SP-SM) with silt, Poorly graded sand; Black 2.5Y 2.5/1; Loose; Wet; Non plastic; Non cohesive; 90% fgs, 10% silt, Few clay, trace fgg			
21								
22								
23								
24								
25		75		60-60	30.0 SAND (SP) Poorly graded sand; Dark yellowish brown 10YR 4/4; Loose; Wet; Non plastic; Non cohesive; 70% fgs, 15% mgs, 5% cgs, trace fgs (well rounded)			
26								
27								
28								
29								
30								
31		60		45-60	SAND (SP) with Gravel; Poorly graded sand with gravel; Very dark gray 5Y 3/1; Very loose; Wet; Non plastic; Non cohesive; 50% mgs, 10% fgs, 5% silt, 35% fgg (well rounded to rounded)			100% recovery, but possible heave in top 2' of interval based on field observations and discussion with drillers.
32								
33								
34								
35					35.0 Boring Terminated at 35 feet bgs			



Appendix C
Well Construction Diagrams

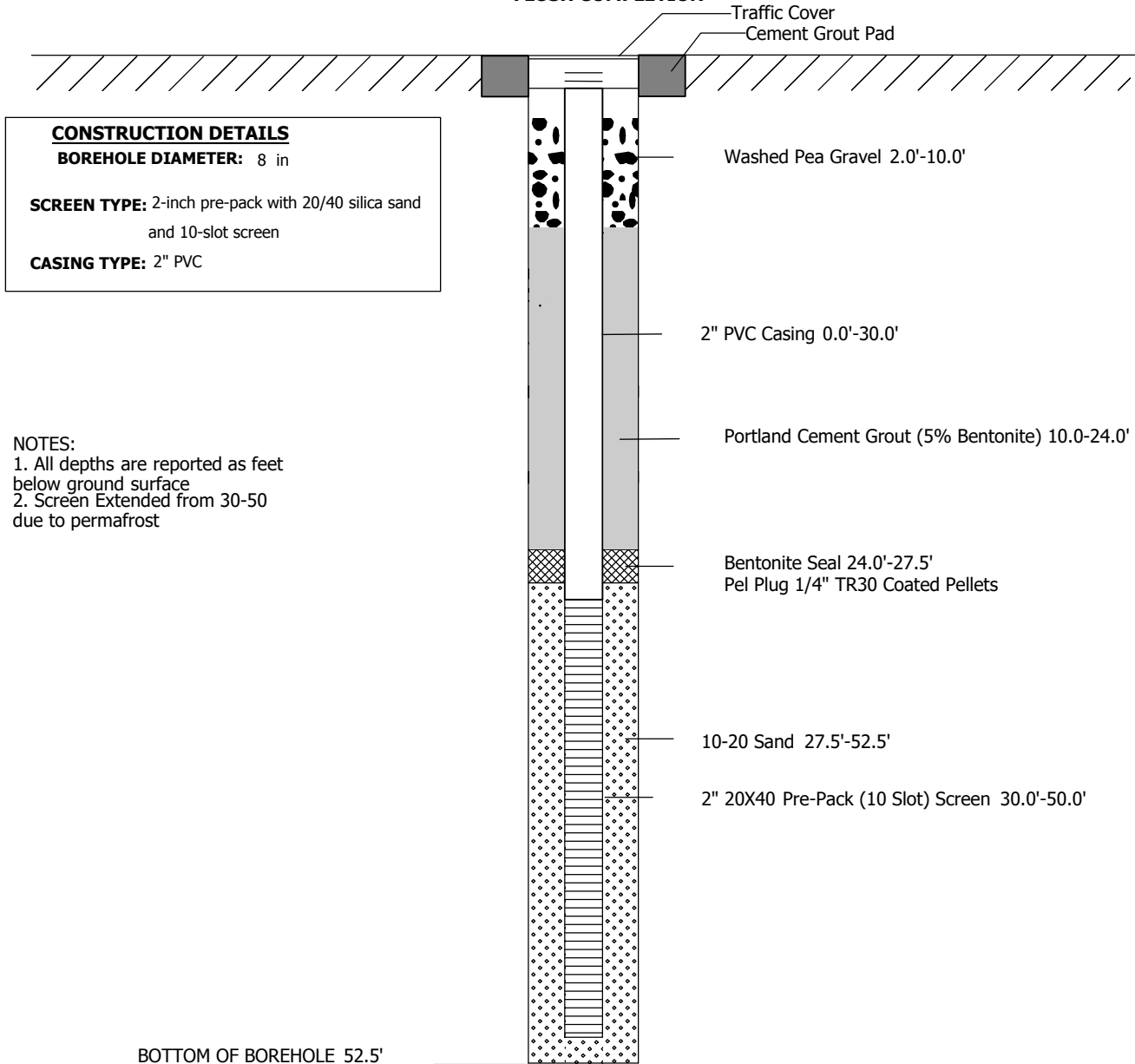
MONITORING WELL COMPLETION DIAGRAM

PROJECT NO: 110288	PROJECT: Galena PFAS RI	WELL NO: FT001-MW018
---------------------------	--------------------------------	-----------------------------

LOCATION: Site FT001

DRILLING CONTRACTOR: Geotek Alaska Inc	DRILLING START: 8/14/2023
DRILLING METHOD: Sonic	DRILLING END: 8/14/2023
LOGGER: G. Manning	COMPLETION DATE: 8/14/2023
GROUND SURFACE ELEVATION (NAVD 88): 146.41 (FEET)	GENERAL REMARKS: 7180565.48 Northing 599378.46 Easting
TOP OF PVC ELEVATION (NAVD 88): 145.86 (FEET)	

FLUSH COMPLETION



CONSTRUCTION DETAILS

BOREHOLE DIAMETER: 8 in

SCREEN TYPE: 2-inch pre-pack with 20/40 silica sand and 10-slot screen

CASING TYPE: 2" PVC

NOTES:

1. All depths are reported as feet below ground surface
2. Screen Extended from 30-50 due to permafrost

DIAGRAM IS NOT TO SCALE

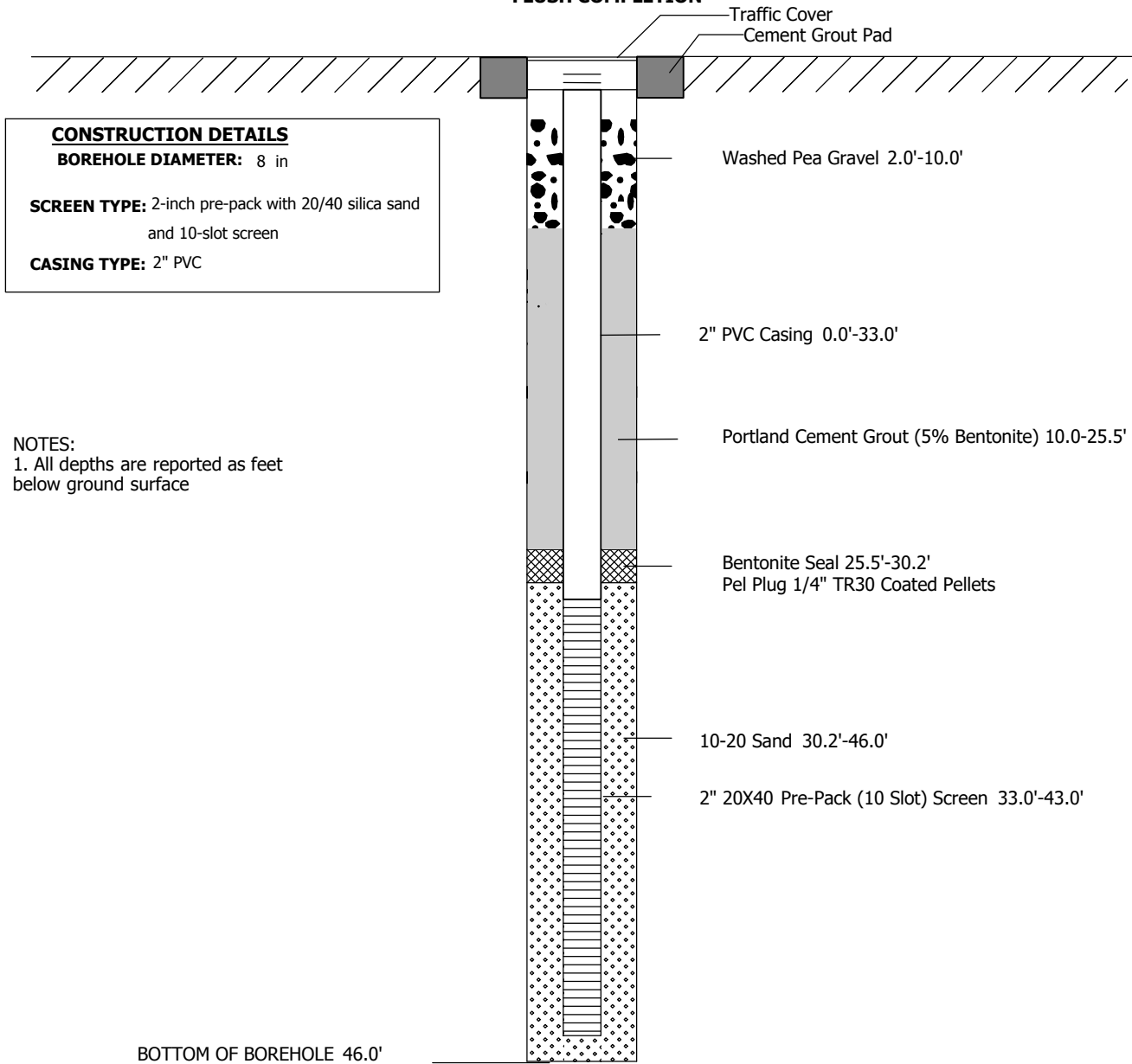
MONITORING WELL COMPLETION DIAGRAM

PROJECT NO: 110288	PROJECT: Galena PFAS RI	WELL NO: FT001-MW019
---------------------------	--------------------------------	-----------------------------

LOCATION: Site FT001

DRILLING CONTRACTOR: Geotek Alaska Inc	DRILLING START: 8/18/2023
DRILLING METHOD: Sonic	DRILLING END: 8/18/2023
LOGGER: G. Manning	COMPLETION DATE: 8/18/2023
GROUND SURFACE ELEVATION (NAVD 88): 148.13 (FEET)	GENERAL REMARKS: 7180669.46 Northing 599797.70 Easting
TOP OF PVC ELEVATION (NAVD 88): 147.54 (FEET)	

FLUSH COMPLETION



CONSTRUCTION DETAILS

BOREHOLE DIAMETER: 8 in

SCREEN TYPE: 2-inch pre-pack with 20/40 silica sand and 10-slot screen

CASING TYPE: 2" PVC

NOTES:
1. All depths are reported as feet below ground surface

DIAGRAM IS NOT TO SCALE

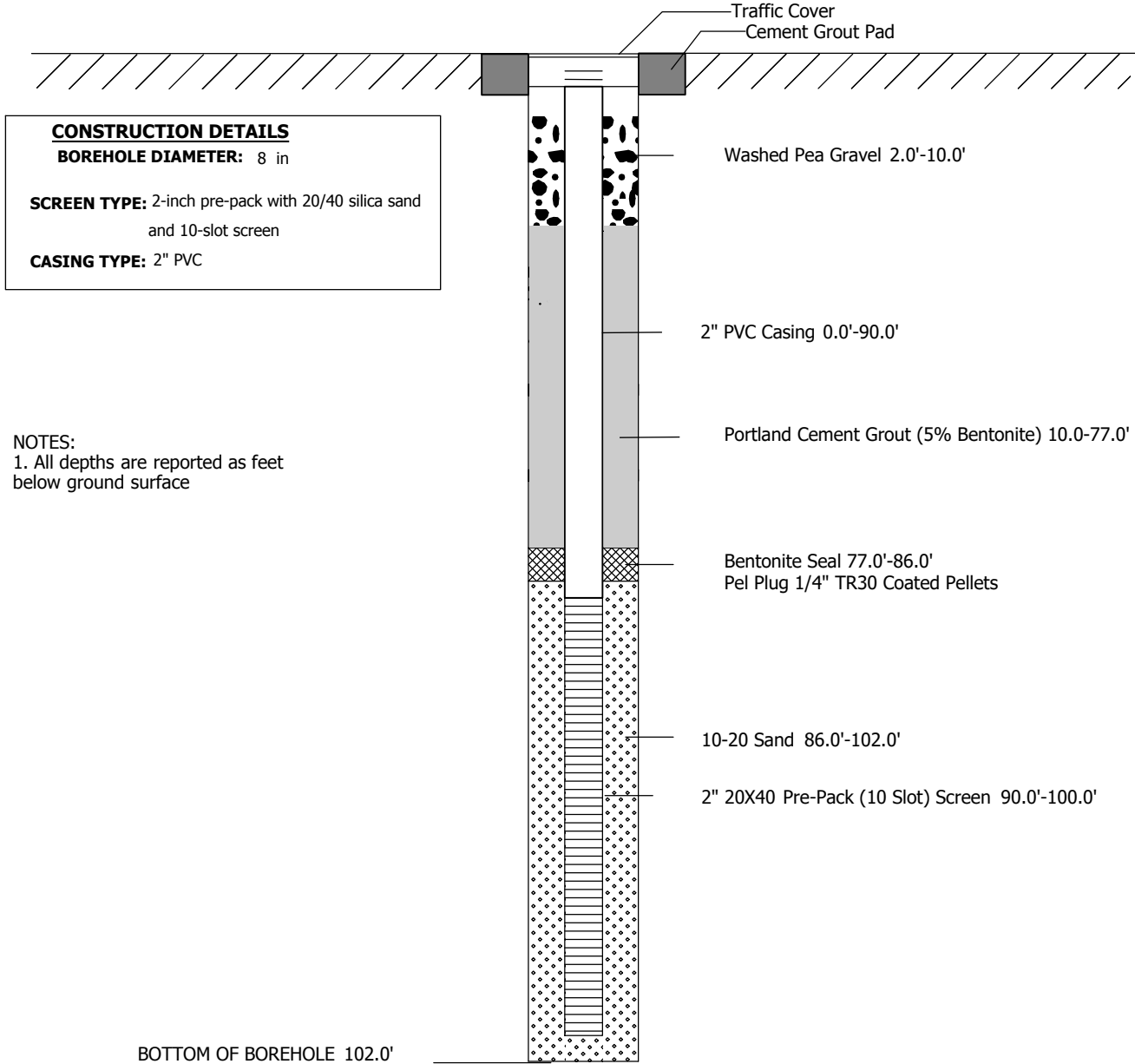
MONITORING WELL COMPLETION DIAGRAM

PROJECT NO: 110288	PROJECT: Galena PFAS RI	WELL NO: FT001-MW020
---------------------------	--------------------------------	-----------------------------

LOCATION: Site FT001

DRILLING CONTRACTOR: Geotek Alaska Inc	DRILLING START: 8/15/2023
DRILLING METHOD: Sonic	DRILLING END: 8/16/2023
LOGGER: G. Manning	COMPLETION DATE: 8/17/2023
GROUND SURFACE ELEVATION (NAVD 88): 155.37 (FEET)	GENERAL REMARKS: 7180662.44 Northing 599689.48 Easting
TOP OF PVC ELEVATION (NAVD 88): 154.88 (FEET)	

FLUSH COMPLETION



CONSTRUCTION DETAILS

BOREHOLE DIAMETER: 8 in

SCREEN TYPE: 2-inch pre-pack with 20/40 silica sand and 10-slot screen

CASING TYPE: 2" PVC

NOTES:

1. All depths are reported as feet below ground surface

BOTTOM OF BOREHOLE 102.0'

DIAGRAM IS NOT TO SCALE

MONITORING WELL COMPLETION DIAGRAM

PROJECT NO: 110288

PROJECT: Galena PFAS RI

WELL NO: FT001-MW021

LOCATION: Site FT001

DRILLING CONTRACTOR: Geotek Alaska Inc

DRILLING START:

DRILLING METHOD: Sonic

DRILLING END:

LOGGER: G. Manning

COMPLETION DATE:

GROUND SURFACE ELEVATION (NAVD 88):

GENERAL REMARKS: No well installed. Permafrost
34 ft to 90 ft bgs

TOP OF PVC ELEVATION (NAVD 88):

FLUSH COMPLETION



CONSTRUCTION DETAILS

BOREHOLE DIAMETER: 8 in

SCREEN TYPE: 2-inch pre-pack with 20/40 silica sand
and 10-slot screen

CASING TYPE: 2" PVC

DIAGRAM IS NOT TO SCALE

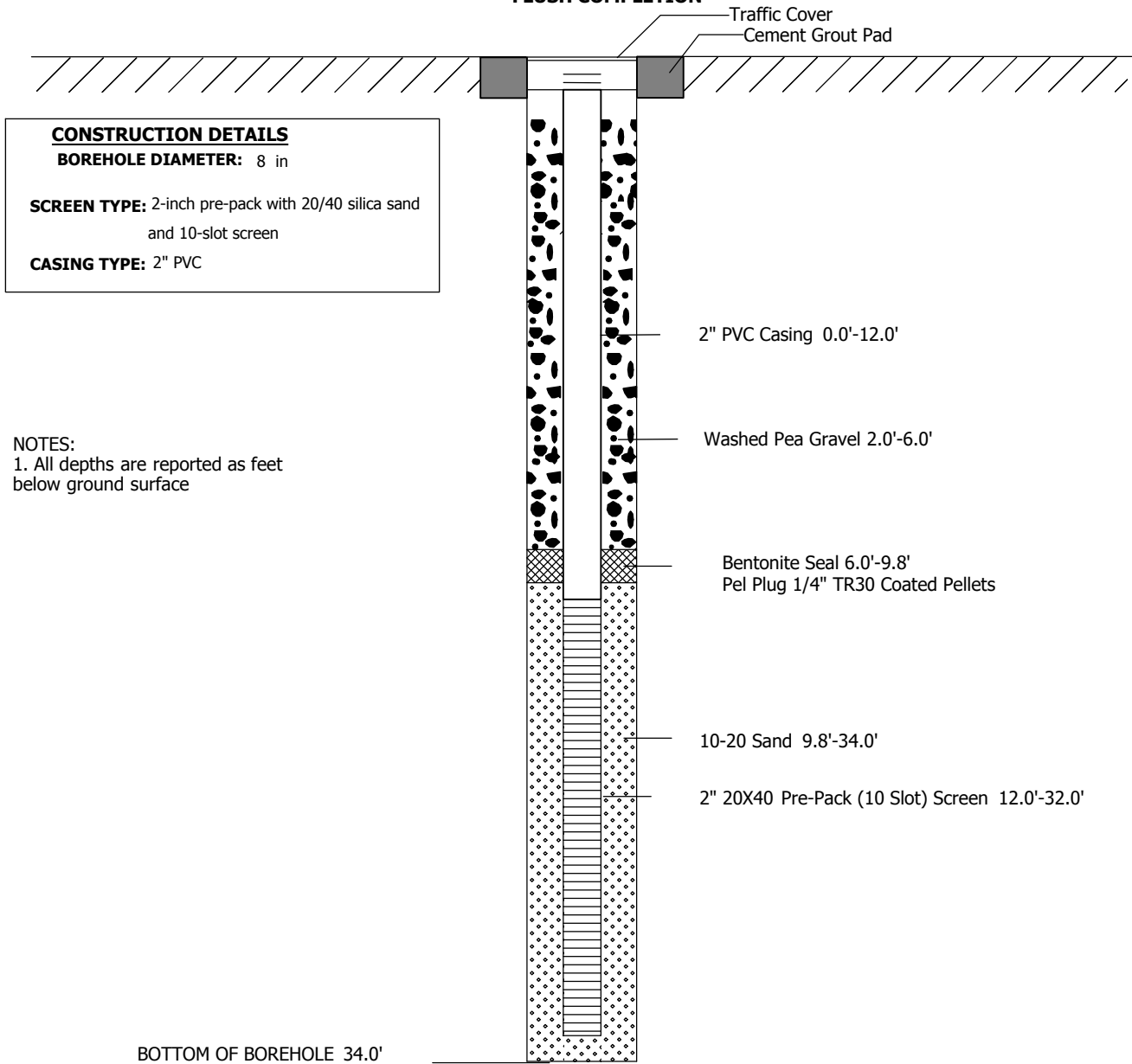
MONITORING WELL COMPLETION DIAGRAM

PROJECT NO: 110288	PROJECT: Galena PFAS RI	WELL NO: FT001-MW022
---------------------------	--------------------------------	-----------------------------

LOCATION: Site FT001

DRILLING CONTRACTOR: Geotek Alaska Inc	DRILLING START: 8/29/2023
DRILLING METHOD: Sonic	DRILLING END: 8/29/2023
LOGGER: G. Manning	COMPLETION DATE: 8/29/2023
GROUND SURFACE ELEVATION (NAVD 88): 149.59 (FEET)	GENERAL REMARKS: 7180764.88 Northing 599450.83 Easting
TOP OF PVC ELEVATION (NAVD 88): 149.26 (FEET)	

FLUSH COMPLETION



NOTES:
1. All depths are reported as feet below ground surface

DIAGRAM IS NOT TO SCALE

MONITORING WELL COMPLETION DIAGRAM

PROJECT NO: 110288	PROJECT: Galena PFAS RI	WELL NO: FT001-MW023
---------------------------	--------------------------------	-----------------------------

LOCATION: Site FT001

DRILLING CONTRACTOR: Geotek Alaska Inc	DRILLING START: 8/28/2023
DRILLING METHOD: Sonic	DRILLING END: 8/28/2023
LOGGER: G. Manning	COMPLETION DATE: 8/29/2023
GROUND SURFACE ELEVATION (NAVD 88): 151.34 (FEET)	GENERAL REMARKS: 7180768.50 Northing 599648.26 Easting
TOP OF PVC ELEVATION (NAVD 88): 150.90 (FEET)	

FLUSH COMPLETION

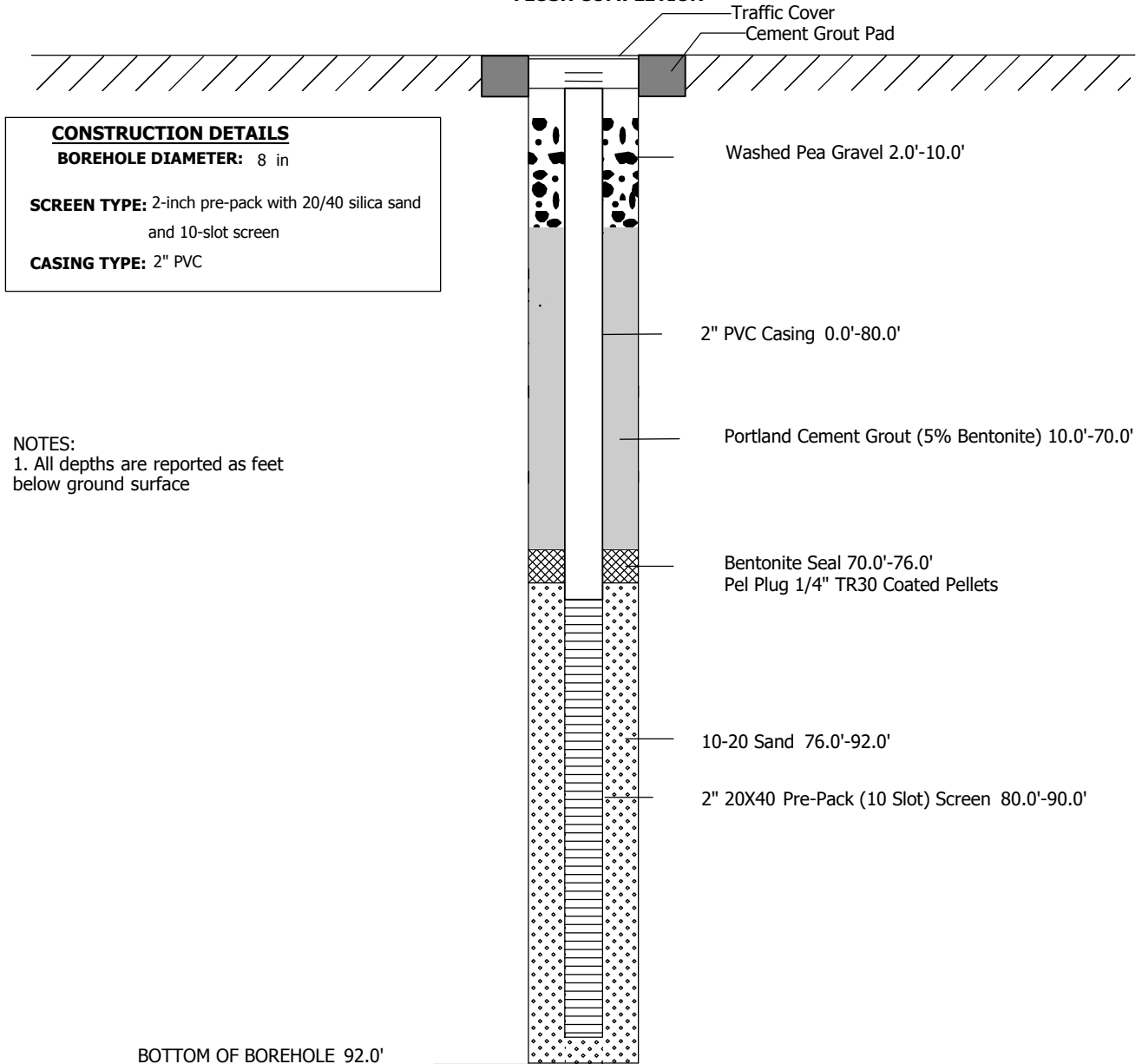


DIAGRAM IS NOT TO SCALE

Appendix D
Well Development Records

SOP-09 Attachment 1
WELL DEVELOPMENT DATASHEET

Well ID: FT001-MW018 SHEET 1 OF 1

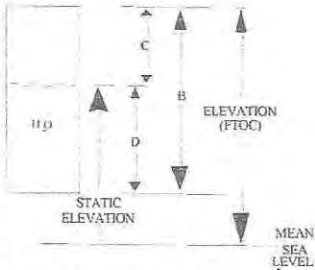
Project: Galena FOL Date: 08/21/22
 Location: Galena, AK Start Time: 1415
 Project #: _____ End Time: 1802
 Development Contractor/Geologist: Pursons/EDA
 Field Notebook #: _____ Date Well Installed: 8/14/23

Well Information and Purge Volume Calculation

Casing ID (inch):	Unit Casing Volume (A) (gal/ft):
0.75	0.02
1	0.04
1.5	0.09
2	0.16
3	0.37
4	0.65
5	1.02
6	1.47
7	2.00
8	2.61
10	4.08
12	5.88

Total Well Depth (B) (ft btoc): 50.55
 Depth to Water (C) (ft btoc): -12.76
 Length of Static Water Column in Well (feet):
 (B - C = D) = 37.79

Unit Casing Volume (A) (gal/ft): x
 Well Casing Volume (E) (gal):
 (D x A = E) = 6.15
 x 10
 Total Purge Volume (F) (gal):
 (E x 10 well volumes = F) = _____



Well Screened Interval (ft btoc): 30-50 Approx. Sediment Depth in Well (ft): 0.0

Development Methods

Method: Surging Pumping Bailing Other Describe: _____
 Surge time per interval (min): _____ Number of development intervals: 4
 Pump: Perist. Bladder Subm. Other Describe: _____
 Purge time per interval (min): _____ Purge Flow Rate (gpm): 1.70 Total purge volume (gals): _____
 Total purge time (min): _____ Pump Intake Depth (ft btoc): _____
 Bailer: Poly Teflon S. steel Other Describe: _____
 Bailer Volume (gals): _____ (0.25 / 0.33) Required Bailer Volumes: _____ Total purge volume (gals): _____

Criteria for Stable Parameters

Parameter	Working Range (YSI 556MPS)	Stability Criteria	Depth to Water Stabilization	
			Time	DTW
Temperature	-5 to 45°C	± 1.0 °C		
pH	0 to 14 NTU	± 0.1		
Conductivity	0 to 200 mS/cm	± 3%		
ORP	-999 to +999 mV	± 10 mV		
Dissolved Oxygen	0 to 50 mg/L	± 10% or 0.2 mg/L		
Turbidity	0 to 1000 NTU	± 10% (≤10 NTU)		

Instrument Observations

Round	Time	Water Level (ft BTOC)	Volume Purged (gallons)	pH	Cond (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	ORP (mV)
1	1641	13.61				84.4			
2	1737	13.53		6.61	643.4	70.77	2.52	1.3	72.3
3	1742	13.62	360	6.74	631.7	25.71	4.70	1.2	31.1
4	1747	13.64		6.75	623.6	18.05	0.49	1.1	18.9
5	1752	13.64	375	6.75	617.9	7.45	0.40	1.2	8.8
6	1757	13.64		6.75	610.8	8.53	0.30	1.1	3.7
7	1802	13.63	390	6.75	606.0	6.85	0.29	1.1	0.2
8									
9	*								

Notes: Draw-down should ideally be less than 0.3 feet from the original depth to groundwater.
 Minimal draw-down achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes or .1 gal/min) and 2) continually measuring water levels in the well.

Sensory Observations

Color: Clear, Amber, Tan, Brown, Gray, Milky White, Other: _____
 Odor: None, Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
 Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

Comments:

Ran out of room in overpack; 400 gallons pumped; well developed.

SOP-09 Attachment 1
WELL DEVELOPMENT DATASHEET

SHEET 1 OF 1

Well ID: F7001-MW019

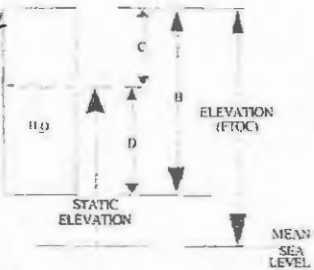
Project: Galena FOL
 Location: Galena, AK
 Project #: _____
 Development Contractor/Geologist: _____
 Field Notebook #: _____ Date Well Installed: _____

Date: 08/08/23
 Start Time: 0930
 End Time: _____

Well Information and Purge Volume Calculation

Casing ID (inch):	Unit Casing Volume (A) (gal/ft):
0.75	0.02
1	0.04
1.5	0.09
2	0.16
3	0.37
4	0.65
5	1.02
6	1.47
7	2.00
8	2.61
10	4.08
12	5.88

Total Well Depth (B) (ft btoc): 43.51
 Depth to Water (C) (ft btoc): 18.14 ft
 Length of Static Water Column in Well (feet):
 (B - C = D) = 25.37
 Unit Casing Volume (A) (gal/ft) x 0.163
 Well Casing Volume (E) (gal):
 (D x A = E) = 4.14
 x 10
 Total Purge Volume (F) (gal):
 (E x 10 well volumes = F) = _____



Well Screened Interval (ft btoc): 33-43 Approx. Sediment Depth in Well (ft): _____

Development Methods

Method: Surging Pumping Bailing Other Describe: _____
 Surge time per interval (min): _____ Number of development intervals: 2
 Pump: Perist. Bladder Subm. Other Describe: _____
 Purge time per interval (min): _____ Purge Flow Rate (gpm): 1.67 gpm Total purge volume (gals): _____
 Total purge time (min): _____ Pump Intake Depth (ft btoc): _____
 Bailer: Poly Teflon S.steel Other Describe: _____
 Bailer Volume (gals): _____ (0.25 / 0.33) Required Bailer Volumes: _____ Total purge volume (gals): _____

Criteria for Stable Parameters

Parameter	Working Range (YSI 556MPS)	Stability Criteria	Depth to Water Stabilization	
			Time	DTW
Temperature	-5 to 45°C	± 1.0 °C		
pH	0 to 14 NTU	± 0.1		
Conductivity	0 to 200 mS/cm	± 3%		
ORP	-999 to +999 mV	± 10 mV		
Dissolved Oxygen	0 to 50 mg/L	± 10% or 0.2 mg/L		
Turbidity	0 to 1000 NTU	± 10% (±10 NTU)		

Instrument Observations

Round	Time	Water Level (ft BTWC)	Volume Purged (gallons)	pH	Cond (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	ORP (mV)
1	15:12	18.60				127.7			
2	16:23	18.59		6.33	968	26.71	2.81	1.0	59.3
3	16:26	18.58		6.50	951	7.48	1.14	0.9	48.0
4	16:29	18.58		6.61	944	5.17	0.83	0.9	43.9
5	16:32	18.57		6.65	938	3.41	0.65	0.9	42.3
6	16:35	18.58		6.68	935	3.07	0.56	0.9	40.8
7	16:38	18.56		6.69	929	2.41	0.49	1.0	40.2
8									
9									

Notes: Draw-down should ideally be less than 0.3 feet from the original depth to groundwater.
 Minimal draw-down achieved and measured by: 1) pumping at a low rate (approximately 1 liter/3 minutes or .1 gal/min) and 2) continuously measuring water levels in the well.

Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:
 Odor: None, Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
 Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

Comments:

SOP-09 Attachment 1
WELL DEVELOPMENT DATASHEET

SHEET 1 OF 1

Well ID: FTool-MW020

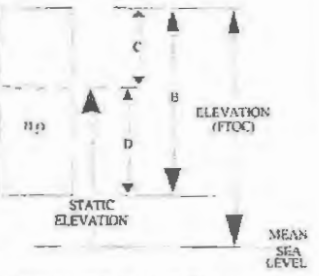
Project: Galena PFAS Rt
 Location: _____
 Project #: _____
 Development Contractor/Geologist: _____
 Field Notebook #: _____ Date Well Installed: _____

Date: 8/31/23
 Start Time: 0900
 End Time: 1130

Well Information and Purge Volume Calculation

Casing ID (inch):	Unit Casing Volume (A) (gal/ft):
0.75	0.02
1	0.04
1.5	0.09
2	0.16
3	0.37
4	0.65
5	1.02
6	1.47
7	2.00
8	2.61
10	4.08
12	5.88

Total Well Depth (B) (ft btoc): 100.35
 Depth to Water (C) (ft btoc): -23.37
 Length of Static Water Column in Well (feet):
 (B - C = D) = 76.98
 Unit Casing Volume (A) (gal/ft): x _____
 Well Casing Volume (E) (gal):
 (D x A = E) = 12.54
 x 10
 Total Purge Volume (F) (gal):
 (E x 10 well volumes = F) = _____
 Well Screened Interval (ft btoc): 80-90 Approx. Sediment Depth in Well (ft): _____



Development Methods

Method: Surging Pumping Bailing Other Describe: _____
 Surge time per interval (min): _____ Number of development intervals: _____
 Pump: Perist. Bladder Subm. Other Describe: _____
 Purge time per interval (min): _____ Purge Flow Rate (gpm): 1.33 Total purge volume (gals): _____
 Total purge time (min): _____ Pump Intake Depth (ft btoc): _____
 Bailer: Poly Teflon S. steel Other Describe: _____
 Bailer Volume (gals): _____ (0.25 / 0.33) Required Bailer Volumes: _____ Total purge volume (gals): _____

Criteria for Stable Parameters

Parameter	Working Range (YSI 556MPS)	Stability Criteria	Depth to Water Stabilization	
			Time	DTW
Temperature	-5 to 45°C	± 1.0 °C		
pH	0 to 14 NTU	± 0.1		
Conductivity	0 to 200 mS/cm	± 3%		
ORP	-999 to +999 mV	± 10 mV		
Dissolved Oxygen	0 to 50 mg/L	± 10% or 0.2 mg/L		
Turbidity	0 to 1000 NTU	± 10% (≤10 NTU)		

Instrument Observations

Round	Time	Water Level (ft BTOC)	Volume Purged (gallons)	pH	Cond (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	ORP (mV)
1									
2									
3									
4									
5									
6									
7									
8									
9									

Notes: Draw-down should ideally be less than 0.3 feet from the original depth to groundwater.
 Minimal draw-down achieved and measured by: 1) pumping at a low rate (approximately 1 liter/3 minutes or .1 gal/min) and 2) continually measuring water levels in the well.

Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other: _____
 Odor: None, Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
 Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

Comments: Pumped ~ 50 to 60 gallons on 8/31 at pump rate initially 1.33 gpm
Decreased to ~ 0.25 gpm. Pump not suitable for develop wells.
EA will get pump suitable for develop MW020 & MW023

SOP-09 Attachment 1
WELL DEVELOPMENT DATASHEET

SHEET 1 OF 1

Well ID: MW-20

Project: Former Galena Forward Operating Location

Date: 3/4/23

Location: _____

Start Time: 0920

Project #: _____

End Time: _____

Development Contractor/Geologist: EA / Matt Hartman

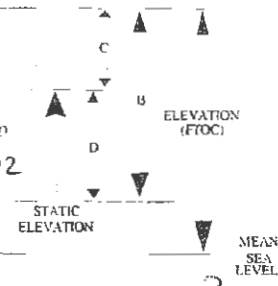
Field Notebook #: _____ Date Well Installed: _____

Well Information and Purge Volume Calculation

Casing ID (inch):	Unit Casing Volume (A) (gal/ft):
0.75	0.02
1	0.04
1.5	0.09
(2)	0.16
3	0.37
4	0.65
5	1.02
6	1.47
7	2.00
8	2.61
10	4.08
12	5.88

Total Well Depth (B) (ft btoc): 99.82
 Depth to Water (C) (ft btoc): -20.31
 Length of Static Water Column in Well (feet):
 (B - C = D) = 79.51

Unit Casing Volume (A) (gal/ft): x 0.16
 Well Casing Volume (E) (gal):
 (D x A = E) = 12.72
 x 10
 Total Purge Volume (F) (gal):
 (E x 10 well volumes = F) = 127.22



Well Screened Interval (ft btoc): 90-100 Approx. Sediment Depth in Well (ft): 3

Development Methods

Method: Surging Pumping Bailing Other Describe: _____
 Surge time per interval (min): 10 Number of development intervals: 5
 Pump: Perist. Bladder Subm. Other Describe: Foot pump
 Purge time per interval (min): 10 Purge Flow Rate (gpm): 1.1 Total purge volume (gals): 400
 Total purge time (min): _____ Pump Intake Depth (ft btoc): _____
 Bailer: Poly Teflon S.steel Other Describe: _____
 Bailer Volume (gals): _____ (0.25 / 0.33) Required Bailer Volumes: _____ Total purge volume (gals): _____

Criteria for Stable Parameters

Parameter	Working Range (YSI 556MPS)	Stability Criteria	Depth to Water Stabilization	
Temperature	-5 to 45°C	± 1.0°C	Time	DTW
pH	0 to 14 NTU	± 0.1		
Conductivity	0 to 200 mS/cm	± 3%		
ORP	-999 to +999 mV	± 10 mV		
Dissolved Oxygen	0 to 50 mg/L	± 10% or 0.2 mg/L		
Turbidity	0 to 1000 NTU	± 10% (≤10 NTU)		

Instrument Observations

Round	Time	Water Level (ft BTOC)	Volume Purged (gallons)	pH	Cond (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	ORP (mV)
1	1550		375	6.81	0.744	11.2	2.30	1.4	-71.3
2	1555		378.5	6.83	0.730	10.04	0.99	1.3	-39.9
3	1600		382	6.92	0.716	6.74	0.70	1.3	-58.7
4	1605		385.5	6.94	0.705	7.04	1.58	1.3	-68.9
5	1610		389	6.94	0.694	8.43	0.49	1.3	-76.5
6	1615		392.5	7.00	0.684	7.01	0.49	1.5	-80.2
7	1620		396	6.97	0.683	8.65	0.49	1.4	-83.9
8	1625		399.5	7.00	0.678	7.82	0.42	1.3	-85.9
9									

Notes: Draw-down should ideally be less than 0.3 feet from the original depth to groundwater.
 Minimal draw-down achieved and measured by: 1) pumping at a low rate (approximately 1 liter/3 minutes or .1 gal/min) and 2) continually measuring water levels in the well.

Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:
 Odor: None, Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
 Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

Comments: 2 ft intervals w/in screen

SOP-09 Attachment 1
WELL DEVELOPMENT DATASHEET

Well ID: FT001-11022 SHEET 1 OF 1

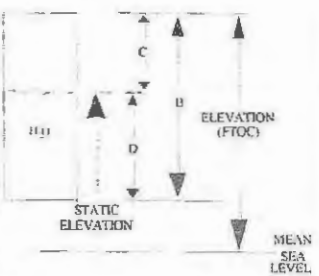
Project: Galena PFAS II
 Location: _____
 Project #: _____
 Development Contractor/Geologist: Hannah N / K Smith
 Field Notebook #: _____ Date Well Installed: _____

Date: 9/2/23
 Start Time: 0852
 End Time: _____

Well Information and Purge Volume Calculation

Casing ID (inch):	Unit Casing Volume (A) (gal/ft):
0.75	0.02
1	0.04
1.5	0.09
2	0.16
3	0.37
4	0.65
5	1.02
6	1.47
7	2.00
8	2.61
10	4.08
12	5.88

Total Well Depth (B) (ft btoc): 31.79
 Depth to Water (C) (ft btoc): 17.34
 Length of Static Water Column in Well (feet):
 (B - C = D) = _____
 Unit Casing Volume (A) (gal/ft): x _____
 Well Casing Volume (E) (gal):
 (D x A = E) = _____
 x 10
 Total Purge Volume (F) (gal):
 (E x 10 well volumes = F) = _____



Development Methods

Method: Surging Pumping Bailing Other Describe: _____
 Surge time per interval (min): _____ Number of development intervals: _____
 Pump: Perist. Bladder Subm. Other Describe: _____
 Purge time per interval (min): _____ Purge Flow Rate (gpm): 1.7 Total purge volume (gals): _____
 Total purge time (min): _____ Pump Intake Depth (ft btoc): _____
 Bailer: Poly Teflon S.steel Other Describe: _____
 Bailer Volume (gals): _____ (0.25 / 0.33) Required Bailer Volumes: _____ Total purge volume (gals): _____

Criteria for Stable Parameters

Parameter	Working Range (YSI 556MPS)	Stability Criteria	Depth to Water Stabilization	
			Time	DTW
Temperature	-5 to 45°C	± 1.0 °C		
pH	0 to 14 NTU	± 0.1		
Conductivity	0 to 200 mS/cm	± 3%		
ORP	-999 to +999 mV	± 10 mV		
Dissolved Oxygen	0 to 50 mg/L	± 10% or 0.2 mg/L		
Turbidity	0 to 1000 NTU	± 10% (≤10 NTU)		

Instrument Observations

Round	Time	Water Level (ft BTWC)	Volume Purged (gallons)	pH	Cond (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	ORP (mV)
1	1211	1771		6.75	1.232	20.79	35.0	2.0	166.9
2	1214	1772		6.62	1.203	9.88	23.5	2.0	58.9
3	1217	1772		6.62	1.168	4.01	20.0	2.0	49.5
4	1220	1772		6.64	1.142	3.10	18.7	1.9	42.0
5	1223	1773		6.65	1.124	1.70	2.55	1.9	38.6
6									
7									
8									
9									

Notes: Draw-down should ideally be less than 0.3 feet from the original depth to groundwater.
 Minimal draw-down achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes or .1 gal/min) and 2) continually measuring water levels in the well.

Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:
 Odor: None, Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
 Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

Comments:

DO was collected as (% DO); last reading is in mg/L

SOP-09 Attachment 1
WELL DEVELOPMENT DATASHEET

SHEET 1 OF 1

FT001-mw023

Well ID: MW-23

Project: _____

Date: 8/7/23

Location: FT001

Start Time: 0940

Project #: _____

End Time: _____

Development Contractor/Geologist: EA / Matt Hartman

Field Notebook #: _____ Date Well Installed: _____

Well Information and Purge Volume Calculation

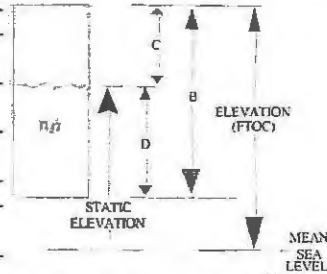
Casing ID (inch):	Unit Casing Volume (A) (gal/ft):
0.75	0.02
1	0.04
1.5	0.09
2	0.16
3	0.37
4	0.65
5	1.02
6	1.47
7	2.00
8	2.61
10	4.08
12	5.88

Total Well Depth (B) (ft btoc): 90.03
 Depth to Water (C) (ft btoc): -16.54
 Length of Static Water Column in Well (feet):
 (B - C = D) = 73.49

Unit Casing Volume (A) (gal/ft) x 0.16
 Well Casing Volume (E) (gal):
 (D x A = E) = 11.76
 x 10

Total Purge Volume (F) (gal):
 (E x 10 well volumes = F) = 117.6

Well Screened Interval (ft btoc): ~~10-12~~
 Approx. Sediment Depth in Well (ft): 3



Development Methods

Method: Surging Pumping Bailing Other Describe: _____
 Surge time per interval (min): 10 Number of development intervals: 5
 Pump: Perist. Bladder Subm. Other Describe: Foot Pump
 Purge time per interval (min): 10 Purge Flow Rate (gpm): 1.1 Total purge volume (gals): _____
 Total purge time (min): _____ Pump Intake Depth (ft btoc): _____
 Bailer: Poly Teflon S.steel Other Describe: _____
 Bailer Volume (gals): (0.25 / 0.33) Required Bailer Volumes: _____ Total purge volume (gals): _____

Criteria for Stable Parameters

Parameter	Working Range (YSI 556MPS)	Stability Criteria	Depth to Water Stabilization	
Temperature	-5 to 45°C	± 1.0 °C	Time	DTW
pH	0 to 14 NTU	± 0.1		
Conductivity	0 to 200 mS/cm	± 3%		
ORP	-999 to +999 mV	± 10 mV		
Dissolved Oxygen	0 to 50 mg/L	± 10% or 0.2 mg/L		
Turbidity	0 to 1000 NTU	± 10% (≤10 NTU)		

Instrument Observations

Round	Time	Water Level (ft BTOC)	Volume Purged (gallons)	pH	Cond (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	ORP (mV)
1	1810		460	6.82	0.604	64.68	0.41	2.6	-90.8
2	1815		463.5	6.87	0.602	44.72	0.42	2.5	-91.9
3	1820		467	6.87	0.603	40.47	0.37	2.4	-93.0
4	1825		470.5	6.87	0.604	34.44	0.36	2.5	-94.1
5	1830		474	6.88	0.606	33.09	0.34	2.6	-95.2
6	1835		477.5	6.88	0.605	28.83	0.34	2.7	-96.0
7	1840		481	6.90	0.609	32.49	0.50	2.8	-96.3
8									
9									

Notes: Draw-down should ideally be less than 0.3 feet from the original depth to groundwater.
 Minimal draw-down achieved and measured by: 1) pumping at a low rate (approximately 1 liter/3 minutes or .1 gal/min) and 2) continually measuring water levels in the well.

Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:
 Odor: None, Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
 Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

Comments:

27 intervals
 water visually cleared Turbidity meter reading 60's - 40's

Appendix E
Groundwater Sampling Records

Project Name: Galena FOL

Well ID: FT001-MWC10

Project Number: 100288.0000.110228.04000 Sampled By: Gilbert M. / Ben L.

Weather: Cloudy, 61°F, Calm

Static Water Level (ft): 21.97 Total Depth: 38 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 16.13 Casing Volume (gal): 34.44 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump Waterra Pump

Purge Rate (100-300 mL/min): 200 Screen Interval: 13-38 Pump Intake (ft bgs): 25.5

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1215							
1219	4.5	6.74	862	1.37	-31.5	6.14	22.14
1221	4.7	6.71	798	0.67	-38.5	3.04	22.11
1224	4.1	6.72	794	0.65	-39.5	1.16	22.11
1227	4.3	6.70	795	0.61	-41.2	1.57	22.11
1230	Purge concluded, sample collected						

Total Volume Removed (gal): 1

Sample ID: FT001-MWC10 Date Sampled: 8/19/23 Time Sampled: 1230

Duplicate Sample ID: Duplicate Time: MS/MSD ANALYSIS? Yes / No

Observations (color, odor, appearance): Clear, no odor

Laboratory Analytical Methods:
 PFAS 1633 (500 mL poly) PFAS EPA 537 (2 x 250 mL poly w/Trizma)
 115 mL poly

Project Name: **Galena FOL** Well ID: FT001-MW013

Project Number: 100288.0000.110228.04000 Sampled By: Jacob Pratt/James B

Weather: Cloudy

Static Water Level (ft): 11.37 Total Depth: 32 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 19.63 Casing Volume (gal): 3.19 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump Waterra Pump

Purge Rate (100-300 mL/min): 300 ml/min Screen Interval: _____ Pump Intake (ft bgs): _____

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1119	10.5	5.8	0.920	5.77	-64.4	729.8	12.55 ^{11.55}
1122	8.7	6.65	0.901	2.86	-74.0	395.8	12.14 ^{11.53}
1125	8.3	6.67	0.893	2.39	-74.0	440.3	11.53
1128	8.4	6.68	0.890	2.14	-74.5	307.1	11.53
1131	8.2	6.69	0.889	2.05	-74.1	300.3	11.53

Total Volume Removed (gal): _____
 Sample ID: FT001-MW013 Date Sampled: 07 Aug 03 Time Sampled: 1133
 Duplicate Sample ID FT001-MW013 Duplicate Time: 1143 MS/MSD collected? Yes No
 Observations (color, odor, appearance): light brown color

Laboratory Analytical Methods:
 PFAS 1633 (1 500 mL poly) (1 125 mL poly) PFAS EPA 537 (2 x 250 mL poly w/Trizma)

Parsons

Groundwater Sampling Form

Project Name: **Galena FOL**

Well ID: **FT001-MW013**

Project Number: 100261.0001.110216

Sampled By: **AB/BC**

Weather: **Sunny**

Static Water Level (ft): **11.53** Total Depth: **32 FT.** Casing Diameter (in): 1 in. **2 in.** 4 in.

Water Column (ft): **20.47** Casing Volume (gal): **3.33** gal/foot: 0.04 **0.163** 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): **250** Screen Interval: **12-32** Pump Intake (ft bgs): **27**

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1008		START		PUMP			11.53
1011	6.8	6.70	836	1.77	35.4	150	11.64
1016	6.4	6.83	852	1.00	-11.7	28.0	11.64
1021	6.1	6.88	849	0.70	-24.9	23.9	11.66
1026	6.1	6.89	848	0.63	-30.7	22.0	11.66
1031	6.0	6.90	849	0.59	-34.1	22.4	11.66
1036	6.1	6.90	850	0.57	-36.9	28.6	11.66
1041	6.0	6.90	847	0.56	-38.0	13.4	11.66
1046	6.0	6.90	840	0.55	-38.5	17.6	11.66
1051	6.1	6.90	838	0.54	-38.8	13.5	11.66
1052		collect	SAMPLE				
1057		stop	purge				

Total Volume Removed (gal): **3.5**

Sample ID: **FT001-MW013** Date Sampled: **07/20/24** Time Sampled: **1052**

Duplicate Sample ID: **N/A** Duplicate Time: **N/A** MS/MSD collected? Yes No

Observations (color, odor, appearance): _____

Laboratory Analytical Methods:

- VOCs by SW8260C (3 x 40 ml HCl)
- GRO by AK101 (2 x 40ml amber HCl)
- DRO by AK102 (2 x 1 L amber HCl)
- RRO by AK103
- PAHs by SW8270D-SIM (2 x 1 L amber none)
- DHC/DHC Functional Genes (microbe filter)
- Sulfate by SW9056A (1 x 125 mL poly none)
- Sulfide by SM4500S2F (250 ml poly ZnAc)
- Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
- Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
- MEE by RSK-175 (3 x 40 mL clear HCl)
- Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

X PFA'S 1633 3x 125 poly

Project Name: Galena FOL

Well ID: FT001-MW014

Project Number: 100288.0000.110228.04000 Sampled By: James B + Jacob P

Weather: Mostly cloudy

Static Water Level (ft): 11.45 Total Depth: 80 ft Casing Diameter (in): 1 in. (2 in.) 4 in.

Water Column (ft): 38.55 Casing Volume (gal): 6.28 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump Waterra Pump

Purge Rate (100-300 mL/min): 300 mL/min Screen Interval: 40-50 Pump Intake (ft bgs): 45

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
10:55	5.2	6.67	102.2	3.82	-14.5	157.6	11.70
10:58	4.8	6.79	102.9	2.03	-35.9	132.8	11.70
11:01	4.6	6.79	100.8	2.19	-40.6	128.5	11.70
11:04	4.4	6.77	99.8	1.85	-42.1	62.91	11.70
11:07	4.3	6.77	99.6	1.48	-44.7	68.82	11.70
11:11	4.6	6.77	99.3	1.38	-46.4	40.01	11.70
11:14	4.5	6.77	98.5	0.81	-48.6	67.95	11.70
11:17	4.9	6.77	99.5	0.64	-50.7	52.16	11.70
11:20	4.8	6.77	99.3	0.60	-52.9	66.03	11.70
11:23	4.6	6.80	99.6	0.62	-54.7	31.80	11.70
11:25	4.5	6.80	100.1	0.67	-57.0	28.47	11.70
11:28	4.6	6.79	99.7	0.71	-57.5	30.82	11.70

Total Volume Removed (gal): 4

Sample ID: FT001-MW014 Date Sampled: 08/09/23 Time Sampled: 11:31

Duplicate Sample ID Duplicate Time: MS/MSD collected? Yes (N)

Observations (color, odor, appearance): slight yellow hue in water

Laboratory Analytical Methods: PFAS 1633 (500 mL poly) (125 mL poly)

PFAS EPA 537 (2 x 250 mL poly w/Trizma)

Project Name: Galena FOL

Well ID: FT001-MW018

Project Number: 100261.0001.110216

Sampled By: Max B. & James B

Weather: Partly Cloudy, Low 40's °F

Static Water Level (ft): 13.16 Total Depth: 50ft Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 36.84 Casing Volume (gal): 6.00 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (100-300 mL/min): 300 Screen Interval: 30-50ft Pump Intake (ft bgs): 40ft

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
08:24	2.1	6.63	785.5	10.2	-45.7	23.73	13.20
08:27	1.5	6.66	785.5	6.0	-63.5	19.07	13.20
08:30	1.4	6.40	788.2	4.3	-80.0	13.33	13.20
08:33	1.4	6.84	781.7	3.2	-87.5	17.21	13.20
08:36	1.4	6.90	775.3	2.6	-95.2	16.74	13.20

Total Volume Removed (gal): 1.5

Sample ID: FT001-MW018 Date Sampled: 9/4/23 Time Sampled: 08:39

Duplicate Sample ID: Duplicate Time: MS/MSD collected? Yes / No

Observations (color, odor, appearance):

Laboratory Analytical Methods:

- | | |
|---|---|
| <input type="checkbox"/> VOCs by SW8260C (3 x 40 ml HCl) | <input type="checkbox"/> Sulfate by SW9056A (1 x 125 mL poly none) |
| <input type="checkbox"/> GRO by AK101 (2 x 40ml amber HCl) | <input type="checkbox"/> PAHs by SW8270D-SIM (2 x 1 L amber none) |
| <input type="checkbox"/> DRO by AK102 (2 x 1 L amber HCl) | <input type="checkbox"/> Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3) |
| <input type="checkbox"/> RRO by AK103 | <input type="checkbox"/> Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3) |
| <input type="checkbox"/> Dissolved Arsenic by 6020A (filtered 1x250ml plastic HNO3) | <input type="checkbox"/> MEE by RSK-175 (3 x 40 mL clear HCl) |
| <input type="checkbox"/> DHC/DHC Functional Genes (microbe filter) | <input type="checkbox"/> Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL) |

✓ 1633

Project Name: **Galena FOL**

Well ID: FT001-MW019

Project Number: 100261.0001.110216

Sampled By: Max B. + James B.

Weather: Partly Cloudy low 40s °F

Static Water Level (ft): 13.71 Total Depth: 43ft Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 29.29 Casing Volume (gal): 4.77 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (100-300 mL/min): 300 Screen Interval: 32-43ft Pump Intake (ft bgs): 40ft

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
09:13	1.8	6.54	786.0	8.7	67.6	121.4	13.73
09:16	1.5	6.57	767.4	4.3	57.2	153.9	13.73
09:19	1.4	6.62	752.9	3.5	50.2	158.0	13.73
09:22	1.5	6.64	737.5	3.2	44.9	96.60	13.73
09:25	1.5	6.63	728.0	3.4	41.5	99.34	13.70
09:28	1.5	6.66	720.6	3.3	38.3	51.18	13.70
09:31	1.4	6.65	713.7	2.8	35.1	39.34	13.70
09:34	1.5	6.66	706.5	2.4	32.6	26.36	13.70
09:37	1.4	6.67	699.7	2.2	30.3	20.49	13.70
09:40	1.4	6.66	694.0	1.8	28.2	7.27	13.70

Total Volume Removed (gal): 3.0

Sample ID: FT001-MW019 Date Sampled: 9/4/23 Time Sampled: 09:43

Duplicate Sample ID: - Duplicate Time: - MS/MSD collected? Yes No

Observations (color, odor, appearance): _____

Laboratory Analytical Methods:

- ___ VOCs by SW8260C (3 x 40 ml HCl)
- ___ GRO by AK101 (2 x 40ml amber HCl)
- ___ DRO by AK102 (2 x 1 L amber HCl)
- ___ RRO by AK103
- ___ Dissolved Arsenic by 6020A (filtered 1x250ml plastic HNO3)
- ___ DHC/DHC Functional Genes (microbe filter)
- ___ Sulfate by SW9056A (1 x 125 mL poly none)
- ___ PAHs by SW8270D-SIM (2 x 1 L amber none)
- ___ Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
- ___ Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
- ___ MEE by RSK-175 (3 x 40 mL clear HCl)
- ___ Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

X1633

Project Name: **Galena FOL**

Well ID: **FT001-MW020**

Project Number: 100261.0001.110216

Sampled By: **Matt Hartman / Jen Barnett**

Weather: **40°F, partly cloudy, 0 mph wind, 91% humidity**

Static Water Level (ft): **20.80** Total Depth: **100** Casing Diameter (in): 1 in. **(2 in)** 4 in.

Water Column (ft): **12.91** Casing Volume (gal): **110.3** gal/foot: 0.04 **(0.163)** 0.653

Purging Method (circle one): Submersible **(Peristaltic Pump)** Bladder Pump

Purge Rate (100-300 mL/min): **219** Screen Interval: **90-100** Pump Intake (ft bgs): **95**

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1007	2.7	6.87	0.797	7.14	-14.8	27.27	20.83
1010	2.6	6.78	0.805	6.45	-19.4	25.03	20.83
1013	2.6	5.95	0.800	5.92	-26.8	24.84	20.83
1016	2.6	6.81	0.801	5.51	-32.8	28.94	20.83
1019	2.6	6.82	0.791	4.84	-37.6	28.04	20.83
1022	2.6 ✓	6.84 ✓	0.779 ✓	3.71 ✓	-41.8 ✓	26.05	20.83
1025	2.6 ✓	6.85 ✓	0.772 ✓	1.33 ✓	-45.8	26.61	20.83
1028	2.6 ✓	6.86 ✓	0.762 ✓	0.70	-49.2 ✓	26.06 ✓	20.83
1031	2.5 ✓	6.87 ✓	0.756	0.65	-51.9 ✓	22.05	20.83
1034	2.4 ✓	6.90 ✓	0.748	0.70 ✓	-54.4 ✓	21.45	20.83
1037	2.4 ✓	6.89 ✓	0.742	0.61 ✓	-56.4 ✓	14.11	20.83
1040	2.5 ✓	6.89 ✓	0.732 ✓	0.56	-59.4	14.08	20.83
1043	2.6 ✓	6.90 ✓	0.725	0.56 ✓	-61.2 ✓	16.01	20.83
1046	2.5 ✓	6.91 ✓	0.721 ✓	0.55 ✓	-62.8 ✓	10.12	20.83
1049	2.5 ✓	6.90 ✓	0.719 ✓	0.55 ✓	-64.4 ✓	9.69	20.83

Total Volume Removed (gal): **4**

Sample ID: **FT001-MW20** Date Sampled: **9/12/2023** Time Sampled: **1055**

Duplicate Sample ID: _____ Duplicate Time: _____ MS/MSD collected? Yes **(No)**

Observations (color, odor, appearance): **clear, slight fuel odor**
Final DTW - 20.83

- Laboratory Analytical Methods:**
- GRO by AK101 (2 x 40ml amber HCl)
 - RRO by AK103 (2 x 1 L amber HCl)
 - Sulfate by SW9056A (1 x 125 mL poly none)
 - Sulfide by SM4500S²-F (1 x 250mL poly NaOH+ZnA)
 - Dissolved Arsenic by 6020A (filtered 1x250ml plastic HNO3)
 - DHC/DHC Functional Genes (microbe filter)
 - VOCs by SW8260C (3 x 40 ml HCl)
 - DRO by AK102 (2 x 1 L amber HCl)
 - PAHs by SW8270D-SIM (2 x 1 L amber none)
 - Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
 - Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
 - MEE by RSK-175 (3 x 40 mL clear HCl)
 - Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

X PFAS

Project Name: **Galena FOL**

Well ID: **FT001-MW022**

Project Number: 100261.0001.110216

Sampled By: **Max G. & James B.**

Weather: **Partly cloudy, mid 40s °F**

Static Water Level (ft): **16.96** Total Depth: **32 ft** Casing Diameter (in): 1 in. **2 in.** 4 in.

Water Column (ft): **15.04** Casing Volume (gal): **2.45** gal/foot: 0.04 **0.163** 0.653

Purging Method (circle one): Submersible **Peristaltic Pump** Bladder Pump

Purge Rate (100-300 mL/min): **240** Screen Interval: **12-32** Pump Intake (ft bgs): **23**

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
10:58	2.7	6.50	982	4.4	115.1	4.82	16.97
10:59	2.5	6.55	969	5.7	98.5	8.35	16.97
11:02	2.5	6.55	962	4.3	84.9	3.98	16.97
11:05	2.6	6.59	953	3.5	74.0	3.03	16.97
11:08	2.5	6.57	944	3.0	65.5	2.38	16.97

Total Volume Removed (gal): 1.0
 Sample ID: FT001-MW022 Date Sampled: 9/4/23 Time Sampled: 11:13
 Duplicate Sample ID: Duplicate Time: MS/MSD collected? Yes /No
 Observations (color, odor, appearance):

Laboratory Analytical Methods:

- PFAS 1633 (2 x 500 + 1 x 125 ml poly none)
- Dissolved Mn, Fe (1 x 500 ml poly HNO3) *120 bags*
- TDS/Ferrous Iron/Sulfate (1 x 1 L poly none)
- TOC/Nitrate/Nitrite (1x500 mL amber H2SO4)
- Sulfide by SM4500S²-F (1 x 250mL poly NaOH+ZnA)
- Hardness by SM2340B/C (filtered 1 x 250 mL poly HNO3)
- Carbon Dioxide by RSK-175 (2 x 40 mL clear none)
- Methane by RSK-175 (3 x 40 mL clear HCl)

Project Name: **Galena FOL**

Well ID: **F7001-MW023**

Project Number: 100261.0001.110216

Sampled By: **Matt Hartman / Jen Barnett**

Weather: **44°F partly cloudy**

0 mph wind 82% humidity

Static Water Level (ft): **16.74**

Total Depth: **90**

Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): **11.94**

Casing Volume (gal): **14.67**

gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible **Peristaltic Pump** Bladder Pump

Purge Rate (100-300 mL/min): **240**

Screen Interval: **80-90**

Pump Intake (ft bgs): **85**

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1148	3.3	6.85	0.634	2.31	-32.3	85.94	16.74
1151	3.3	6.88	0.636	1.07	-39.1	55.53	16.74
1154	3.2 ✓	6.91-	0.630-	0.88	-43.7-	53.01	16.74
1157	3.2-	6.91-	0.620	0.79	-47.4-	51.56	16.74
1200	3.2	6.93	0.614	0.75	-50.2	43.64	16.74
1203	3.3 ✓	6.95-	0.604	1.04	-54.3-	39.61	16.74
1206	3.3 ✓	6.94-	0.599-	0.74	-57.5	36.73	16.74
1209	3.3	6.94	0.594	0.72	-59.6	34.20	16.74
1212	3.3	6.95	0.591	0.70	-60.5	34.50	16.74
1215	3.2 ✓	6.94 ✓	0.586-	0.69 ✓	-62.0-	30.28	16.74
1218	3.3 ✓	6.95-	0.585-	0.67-	-62.8-	32.73	16.74
1221	3.3 ✓	6.95-	0.581-	0.66-	-63.5-	29.48	16.74
1224	3.3 ✓	6.96-	0.579-	0.65-	-64.2-	28.28	16.74
1227	3.3	6.95	0.579	0.67	-64.7	33.36	16.74
1230	3.3	6.95	0.579	0.62	-65.7	27.30	16.74
1233	3.2	6.96	0.578	0.60	-66.2	23.06	16.74

Total Volume Removed (gal): **5**

Sample ID: **F7001-MW023**

Date Sampled: **9/12/2023**

Time Sampled: **1249**

Duplicate Sample ID: _____

Duplicate Time: _____

MS/MSD collected? Yes / No

Observations (color, odor, appearance): **Clear, No odor**

Final DTW - 17.78

Laboratory Analytical Methods:

GRO by AK101 (2 x 40ml amber HCl)

VOCs by SW8260C (3 x 40 ml HCl)

RRO by AK103 (2 x 1 L amber HCl)

DRO by AK102 (2 x 1 L amber HCl)

Sulfate by SW9056A (1 x 125 mL poly none)

PAHs by SW8270D-SIM (2 x 1 L amber none)

Sulfide by SM4500S²-F (1 x 250mL poly NaOH+ZnA)

Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)

Dissolved Arsenic by 6020A (filtered 1x250ml plastic HNO3)

Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)

DHC/DHC Functional Genes (microbe filter)

MEE by RSK-175 (3 x 40 mL clear HCl)

PFAS

Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

Total Organic Carbon

Nitrate / Nitrite

Methane RSK-175

Ferrous Iron (SM 3500-FEB)

Hardness

TDS

Pg 1 of 1
PFA's

Parsons

Groundwater Sampling Form

Project Name: **Galena FOL**

Well ID: 01-MW-03

Project Number: 100261.0001.110216

Sampled By: AB, BC

Weather: Sunny, warm

Static Water Level (ft): 14.99 Total Depth: 22.5 Casing Diameter (in): 1 in. 6 in. 4 in.

Water Column (ft): 14.39 Casing Volume (gal): 52.77 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): 310 Screen Interval: 12.5 - 22.5 Pump Intake (ft bgs): _____

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1442							14.39
1443	7.2	7.22	1200	5.37	136.4	7.73	14.82
1448	3.8	7.07	1191	1.58	141.7	7.48	14.82
1453	3.7	7.06	1189	1.52	143.0	3.89	14.82
1458	3.0	7.05	1191	1.33	146.6	2.15	14.82
1503	3.6	7.04	1190	1.25	148.7	1.65	14.82
1508	3.5	7.04	1185	1.50	151.3	1.97	14.82
1513	3.7	7.04	1187	1.03	153.4	1.73	14.82
1518	3.6	7.04	1190	0.97	154.0	2.77	14.82
1523	3.6	7.03	1189	0.95	156.2	3.99	14.82
1524							
1528							

Total Volume Removed (gal): 4

Sample ID: 01-MW-03

Date Sampled: 7/20/24

Time Sampled: 1524

Duplicate Sample ID: N/A

Duplicate Time: N/A

MS/MSD collected? Yes No

Observations (color, odor, appearance):

FB-01-072024 AT 1756

Laboratory Analytical Methods:

- ___ VOCs by SW8260C (3 x 40 ml HCl)
- ___ GRO by AK101 (2 x 40ml amber HCl)
- ___ DRO by AK102 (2 x 1 L amber HCl)
- ___ RRO by AK103
- ___ PAHs by SW8270D-SIM (2 x 1 L amber none)
- ___ DHC/DHC Functional Genes (microbe filter)
- ___ Sulfate by SW9056A (1 x 125 mL poly none)
- ___ Sulfide by SM4500S2F (250 ml poly ZnAc)
- ___ Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
- ___ Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
- ___ MEE by RSK-175 (3 x 40 mL clear HCl)
- ___ Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

X PFA's 1633 3x125 poly



Groundwater Sampling Form

Project Name: Galena FOL Well ID: FT001-MW007

Project Number: 100288.0000.110228.04000 Sampled By: Gilbert M. Benjamin

Weather: Cloudy, Light Breeze, 59°F

Static Water Level (ft): 16.78 Total Depth: 46 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 29.22 Casing Volume (gal): 4.76 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump Waterra Pump

Purge Rate (100-300 mL/min): 250 Screen Interval: 6.7-46.0 Pump Intake (ft bgs): 31.5

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
0907							29.22 16.78
0910	5.9	6.80	722	12.97	111.7	89.91	
0913	5.9	6.87	710	10.85	109.7	69.98	17.25
0916	5.9	6.84	702	8.07	111.1	69.28	17.10
0919	7.5	6.86	736	6.11	108.5	66.15	17.07
0922	7.9	6.88	749	6.89	107.7	61.44	17.03
0925	8.0	6.89	750	6.89	107.2	58.13	17.00
0928	8.6	6.89	768	7.07	107.0	64.08	17.00
0931	7.6	6.89	728	7.83	108.3	61.10	17.03
0934	7.4	6.92	732	7.90	102.4	60.21	17.05
0937	7.8	6.92	741	8.13	100.3	54.56	17.05
0939	Parameters stable sample						

Total Volume Removed (gal): 2

Sample ID: FT001-MW007 Date Sampled: 8/10/23 Time Sampled: 0939

Duplicate Sample ID: Duplicate Time: MS/MSD collected? Yes (No)

Observations (color, odor, appearance): 0913 Reduce flow 100 ml/min
Reddish/Grey color, no odor - medium turbidity.

Laboratory Analytical Methods:

PFAS 1633 (2 x 500 + 1 x 125 ml mL poly) PFAS EPA 537 (2 x 250 mL poly w/Trizma)
16 Poly



Project Name: Galena FOL Well ID: 01-MW-08R

Project Number: 100288.0000.110228.04000 Sampled By: Jacob P / James B

Weather: Overcast cloudy

Static Water Level (ft): 19.00 Total Depth: 43.9 Casing Diameter (in): 1 in. (2 in) 4 in.

Water Column (ft): 24.90 Casing Volume (gal): 4.05 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump Waterra Pump

Purge Rate (100-300 mL/min): 1.25 gal/min Screen Interval: 3.9 - 43.9 Pump Intake (ft bgs): _____

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
0900	5.1	6.58	993	2.70	66.9	163.7	19.00
0903	4.7	6.76	982	1.96	58.4	273.9	19.00
0906	4.6	6.83	971	2.38	55.8	112.2	19.00
0909	4.5	6.85	964	2.14	54.9	102.5	19.00
0912	4.3	6.85	956	2.75	55.2	96.87	19.00
0915	4.4	6.84	951	2.22	55.8	85.76	19.00
0918	4.4	6.84	947	2.08	56.6	68.81	19.00
0921	4.4	6.83	940	1.98	57.2	55.15	19.00
0924	4.3	6.82	936	1.93	57.7	53.12	19.00
0927	4.4	6.82	931	1.84	58.1	48.45	19.00
0930	4.4	6.83	926	1.69	58.5	41.96	19.00
0933	4.4	6.83	922	1.59	59.1	36.50	19.00
0936	4.4	6.83	917	1.57	59.5	28.92	19.00
0939	4.4	6.81	912	1.70	59.9	26.08	19.00
0942	4.5	6.81	910	1.43	60.0	28.53	19.00

Total Volume Removed (gal): 3.5

Sample ID: 01-MW-08R Date Sampled: 08/15/23 Time Sampled: 0945

Duplicate Sample ID 01-MW-48R Duplicate Time: 0955 MS/MSD collected? Yes No

Observations (color, odor, appearance): Clear color
Well fastener not threading with receptacle
Bolt does not seat properly

Laboratory Analytical Methods:
 PFAS 1633 (1 500 mL poly) PFAS EPA 537 (2 x 250 mL poly w/Trizma)

Project Name: Galena FOL Well ID: BK6D-MW005

Project Number: 100288.0000.110228.04000 Sampled By: Jacob P/James B

Weather: Sunny with smoke

Static Water Level (ft): 12.95 Total Depth: 32 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 19.05 Casing Volume (gal): 3.10 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump Waterra Pump

Purge Rate (100-300 mL/min): 300 mL/min Screen Interval: _____ Pump Intake (ft bgs): _____

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1257	4.0	6.51	630.0	2.33	64.0	7.72	12.97
1300	3.9	6.62	632.4	1.94	57.8	2.15	12.97
1303	4.0	6.69	644.3	1.79	54.9	1.36	12.97
1306	4.0	6.63	652.9	1.70	55.7	1.25	12.97
1309	3.8	6.67	658.8	1.52	56.8	1.89	12.97

Total Volume Removed (gal): 1.25

Sample ID: BK6D-MW005 Date Sampled: 08/12/23 Time Sampled: 1310

Duplicate Sample ID: - Duplicate Time: - MS/MSD collected? Yes / No

Observations (color, odor, appearance): Clear color

Laboratory Analytical Methods:
 PFAS 1633 (2 x 500 + 1 x 125 ml mL poly) PFAS EPA 537 (2 x 250 mL poly w/Trizma)

Project Name: Galena FOL

Well ID: CPL006 - MW001

Project Number: 100288.0000.110228.04000 Sampled By: B. Leach G. Manning

Weather: Partly Cloudy, light breeze, light smoke 65[°]F

Static Water Level (ft): 11.67 Total Depth: 39 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 22.33 Casing Volume (gal): 3.64 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump Waterra Pump

Purge Rate (100-300 mL/min): 200 Screen Interval: 19-39 Pump Intake (ft bgs): 29

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1140	<u>Begin Purge</u>						
1143	10.0	6.62	853	1.28	-72.7	29.32	16.67
1146	9.8	6.66	836	0.81	-86.5	20.07	16.67
1149	10.1	6.69	842	0.59	-93.8	19.96	16.67
1152	10.0	6.72	835	0.46	-98.9	19.89	16.67
1155	10.2	6.73	837	0.39	-102.5	19.59	16.67
1158	9.9	6.73	834	0.37	-105.1	20.50	16.67
1201	<u>Concluded Purge, collected sample.</u>						

Total Volume Removed (gal): _____

Sample ID: CPL006-MW001 Date Sampled: 8/13/23 Time Sampled: 1201

Duplicate Sample ID: _____ Duplicate Time: _____ MS/MSD collected? Yes / No

Observations (color, odor, appearance): Strong Petroleum odor, slight yellow color, slightly turbid. Well casing in good condition, but missing name.

Laboratory Analytical Methods:

PFAS 1633 (2 x 500 + 1 x 125 ml mL poly) PFAS EPA 537 (2 x 250 mL poly w/Trizma)

Project Name: Galena FOL

Well ID: SE-MW-01

Project Number: 100261.0001.110216

Sampled By: B. KS

Weather: Sunny 65°

Static Water Level (ft): 11.90 Total Depth: 25.6 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 13.7 Casing Volume (gal): 8.9 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): 320 Screen Interval: 5.6-25.6 Pump Intake (ft bgs): 20

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
0930	Start	Pump					
0933	11.1	6.48	929	1.13	-48.0	11.6	12.02
0938	11.2	6.56	926	0.69	-60.0	10.1	12.04
0943	10.9	6.57	920	0.63	-65.0	10.8	
0948	11.1	6.58	916	0.55	-70.8	10.7	12.0
0953	11.2	6.58	914	0.53	-72.1	11.2	
0958	11.2	6.58	910	0.51	-74.1	11.2	12.10

Total Volume Removed (gal): 2.5

Sample ID: SE-MW-01 Date Sampled: 7/24/24 Time Sampled: 1005

Duplicate Sample ID: Duplicate Time: MS/MSD collected? Yes (No)

Observations (color, odor, appearance): Collect FB061-072424 @ 1010

Regrind & Reset complete - cut 2" off top deck made in PVC, Labeled

Laboratory Analytical Methods:

- VOCs by SW8260C (3 x 40 ml HCl)
- GRO by AK101 (2 x 40ml amber HCl)
- DRO by AK102 (2 x 1 L amber HCl)
- RRO by AK103
- PAHs by SW8270D-SIM (2 x 1 L amber none)
- DHC/DHC Functional Genes (microbe filter)
- PFAS (3 x 125 poly)
- Sulfate by SW9056A (1 x 125 mL poly none)
- Sulfide by SM4500S2F (250 ml poly ZnAc)
- Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
- Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
- MEE by RSK-175 (3 x 40 mL clear HCl)
- Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

Parsons

Groundwater Sampling Form

Project Name: **Galena FOL**

Well ID: SE-MW-04

Project Number: 100261.0001.110216

Sampled By: BC, KS

Weather: _____

Static Water Level (ft): 9.02 Total Depth: 24.7 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): _____ Casing Volume (gal): _____ gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): 380 Screen Interval: 5-24.7 Pump Intake (ft bgs): _____

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1415	Start	Pump					
1417	5.3	6.66	626	1.86	156.0	19.0	9.02
1422	4.5	6.64	624	0.93	133.8	13.2	
1427	4.6	6.64	624	0.78	120.8	11.4	
1432	4.6	6.64	625	0.72	111.1	6.97	9.02
1437	4.7	6.64	629	0.68	102.7	5.99	
1442	4.7	6.65	629	0.65	94.7	5.55	
1447	4.9	6.64	626	0.62	80.8	4.59	
1452	4.6	6.64	625	0.61	59.4	3.71	9.02
1457	4.7	6.64	628	0.60	46.2	5.68	
1502	4.6	6.64	630	0.61	32.7	3.81	
1507	4.9	6.64	626	0.60	22.1	5.35	
1512	4.9	6.64	628	0.60	15.1	3.77	9.02
1517	4.7	6.64	626	0.59	8.3	3.27	
1522	4.8	6.64	625	0.61	5.7	2.69	9.02
Collect Sample							

Total Volume Removed (gal): _____

Sample ID: SE-MW-04

Date Sampled: 7/25/24

Time Sampled: 1530

Duplicate Sample ID SE-MW-904

Duplicate Time: 1540

MS/MSD collected? Yes No

Observations (color, odor, appearance): _____

Good water, labeled & marked

Laboratory Analytical Methods:

____ VOCs by SW8260C (3 x 40 ml HCl)

____ Sulfate by SW9056A (1 x 125 mL poly none)

____ GRO by AK101 (2 x 40ml amber HCl)

____ Sulfide by SM4500S2F (250 ml poly ZnAc)

____ DRO by AK102 (2 x 1 L amber HCl)

____ Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)

____ RRO by AK103

____ Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)

____ PAHs by SW8270D-SIM (2 x 1 L amber none)

____ MEE by RSK-175 (3 x 40 mL clear HCl)

____ DHC/DHC Functional Genes (microbe filter)

____ Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

PFAS (3 x 125 poly)

Project Name: Galena FOL

Well ID: SE-MW-05

Project Number: 100261.0001.110216

Sampled By: RC, IC3

Weather: Sunny 77°

Static Water Level (ft): 18.69 Total Depth: 34.5 Casing Diameter (in): 1 in. (2 in.) 4 in.

Water Column (ft): 23.81 Casing Volume (gal): 3.9 gal/foot: 0.04 (0.163) 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): 460 Screen Interval: 5-34.5 Pump Intake (ft bgs): 25

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1610	Start	pump					
1612	5.1	6.78	775	2.2	114.5	54.3	10.95
1617	5.5	6.74	807	1.01	113.4	49.8	
1622	5.3	6.74	816	0.75	112.6	49.9	
1627	5.1	6.73	819	0.69	112.5	54.3 50.4	
1632	4.7	6.73	825	0.65	112.5	39.4	10.94
1637	5.5	6.73	826	0.63	110.8	26.3	
1642	5.2	6.73	823	0.62	107.4	22.5	10.94
1647	4.7	6.73	825	0.59	101.5	19.3	
1652	4.8	6.73	821	0.58	93.3	20.4	
1657	5.3	6.73	825	0.58	86.3	22.0	
1702	5.5	6.73	826	0.59	79.8	14.3	10.94
1707	5.8	6.73	831	0.59	72.8	9.66	
1712	5.4	6.73	830	0.59	65.9	7.98	10.94
1717	5.8	6.73	837	0.59	63.3	2.51	

Total Volume Removed (gal): 6

Sample ID: SE-MW-05 Date Sampled: 7/23/25 Time Sampled: 1725

Duplicate Sample ID: Duplicate Time: MS/MSD collected? Yes No

Observations (color, odor, appearance):

Added well ID to J-play

Laboratory Analytical Methods:

- VOCs by SW8260C (3 x 40 ml HCl)
- GRO by AK101 (2 x 40ml amber HCl)
- DRO by AK102 (2 x 1 L amber HCl)
- RRO by AK103
- PAHs by SW8270D-SIM (2 x 1 L amber none)
- DHC/DHC Functional Genes (microbe filter)
- PFAS (3 x 125 poly)
- Sulfate by SW9056A (1 x 125 mL poly none)
- Sulfide by SM4500S2F (250 ml poly ZnAc)
- Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
- Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
- MEE by RSK-175 (3 x 40 mL clear HCl)
- Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

Project Name: Galena FOL

Well ID: ST010-MW010

Project Number: 100261.0001.110216

Sampled By: R.C.KS

Weather: Sunny 70's

Static Water Level (ft): 9.09 Total Depth: 38 Casing Diameter (in): 1 in. 2 in 4 in.

Water Column (ft): 28.91 Casing Volume (gal): 4.7 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): 380 Screen Interval: 18-38 Pump Intake (ft bgs): 28

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1024	Start	Pump					
1029	3.6	6.65	558	1.35	-37.7	10.2	11.84
1034	3.3	6.62	550	0.81	-50.2	8.72	
1039	3.3	6.61	570	0.70	-55.0	9.72	11.78
1044	3.4	6.61	576	0.65	-59.5	8.98	11.65
1049	3.4	6.61	662	0.61	-63.1	9.57	11.59
1054	3.5	6.62	682	0.59	-67.3	9.57	11.60
1059	3.4	6.63	6709	0.57	-70.6	9.36	
1104	3.4	6.63	781	0.56	-74.9	9.66	11.64
1109	3.5	6.64	818	0.58	-77.0	10.5	11.60
1114	3.3	6.64	851	0.55	-79.2	9.67	
1119	3.5	6.64	884	0.54	-81.0	9.91	11.60
1124	3.5	6.64	911	0.54	-82.9	9.35	11.60
1129	3.5	6.65	917	0.54	-84.7	8.23	
1134	3.5	6.65	928	0.53	-85.7	9.45	

Total Volume Removed (gal): 8

Sample ID: _____ Date Sampled: 7/23/24 LS ST010-MW010 Time Sampled: 1140

Duplicate Sample ID _____ Duplicate Time: _____ MS/MSD collected? Yes (No)

Observations (color, odor, appearance): Swampy / Sewerage odor

Laboratory Analytical Methods:

- VOCs by SW8260C (3 x 40 ml HCl)
- GRO by AK101 (2 x 40ml amber HCl)
- DRO by AK102 (2 x 1 L amber HCl)
- RRO by AK103
- PAHs by SW8270D-SIM (2 x 1 L amber none)
- DHC/DHC Functional Genes (microbe filter)
- PFAS (3 x 125 poly)
- Sulfate by SW9056A (1 x 125 mL poly none)
- Sulfide by SM4500S2F (250 ml poly ZnAc)
- Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
- Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
- MEE by RSK-175 (3 x 40 mL clear HCl)
- Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

Parsons

Groundwater Sampling Form

Project Name: Galena FOL

Well ID: ST010-MW011

Project Number: 100261.0001.110216

Sampled By: BGKS

Weather: Sunny high 70's

Static Water Level (ft): 9.99 Total Depth: 59 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 8.61 Casing Volume (gal): 8.2 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): 400 Screen Interval: 49-59 Pump Intake (ft bgs): 54

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
<u>0950</u>	<u>Start</u>	<u>Param</u>					
<u>0952</u>	<u>3.2</u>	<u>6.78</u>	<u>896</u>	<u>2.34</u>	<u>-25.9</u>	<u>2.89</u>	<u>9.01</u>
<u>0957</u>	<u>3.5</u>	<u>6.74</u>	<u>891</u>	<u>0.99</u>	<u>-39.7</u>	<u>2.45</u>	<u>9.01</u>
<u>1002</u>	<u>3.5</u>	<u>6.73</u>	<u>890</u>	<u>0.77</u>	<u>-41.0</u>	<u>1.22</u>	<u>9.01</u>
<u>1007</u>	<u>3.4</u>	<u>6.73</u>	<u>887</u>	<u>0.69</u>	<u>-45.7</u>	<u>1.13</u>	<u>9.01</u>
<u>1012</u>	<u>3.4</u>	<u>6.73</u>	<u>887</u>	<u>0.65</u>	<u>-48.7</u>	<u>0.80</u>	<u>9.01</u>
<u>1017</u>							
<u>1020</u>	<u>collected</u>	<u>sample</u>					

Total Volume Removed (gal): _____

Sample ID: ST010-MW011 Date Sampled: 7/23/24 Time Sampled: 1020

Duplicate Sample ID _____ Duplicate Time: _____ MS/MSD collected? Yes (No)

Observations (color, odor, appearance): _____

Added ID tag to 1-plug

- Laboratory Analytical Methods:**
- VOCs by SW8260C (3 x 40 ml HCl)
 - GRO by AK101 (2 x 40ml amber HCl)
 - DRO by AK102 (2 x 1 L amber HCl)
 - RRO by AK103
 - PAHs by SW8270D-SIM (2 x 1 L amber none)
 - DHC/DHC Functional Genes (microbe filter)
 - PFAS (3 x 125 poly)
 - Sulfate by SW9056A (1 x 125 mL poly none)
 - Sulfide by SM4500S2F (250 ml poly ZnAc)
 - Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
 - Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
 - MEE by RSK-175 (3 x 40 mL clear HCl)
 - Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

Project Name: Galena FOL

Well ID: 5010-MW012

Project Number: 100288.0000.110228.04000 Sampled By: Gilbert M. Benjamin

Weather: Cloudy, Light Breeze

Static Water Level (ft): 9.12 Total Depth: 83 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 73.88 Casing Volume (gal): 12.04 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump Waterra Pump

Purge Rate (100-300 mL/min): 250 Screen Interval: 73-63 Pump Intake (ft bgs): 78

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1556							9.12
1559	6.0	7.76	317.0	0.483	-139.1	62.17	9.80
1602	8.4	7.51	353.1	8.77	-130.7	8.19	9.71
1605	8.10.2	7.42	488	7.49.29	-132.0	10.59	9.52
1608	10.4	7.37	550	9.27	-128.8	23.48	9.52
1611	10.1	7.36	561	9.55	-126.8	33.24	9.52
1614	10.0	7.34	575	9.57	-123.3	34.23	9.52
1617	7.3	7.33	489	7.47	-137.5	23.33	9.82
1620	7.5	7.53	342.6	7.02	-130.1	6.34	9.81
1623	7.3	7.54	322.6	6.37	-122.2	4.36	9.80
1626	7.9	7.59	356.0	5.69	-123.1	4.22	9.76
1629	7.7	7.53	375.4	5.68	-125.2	4.05	9.80
1632	7.5	7.45	406.4	6.60	-125.9	5.02	9.80
1635	7.2	7.29	526	5.70	-125.9	5.35	9.80
1638	6.8	7.27	538	5.55	-127.0	5.68	9.80
1641	7.0	7.27	550	5.22	-126.7	5.80	9.80
1644	6.9	7.28	556	5.18	-124.7	5.45	9.80
1647	6.6	7.25	549	5.06	-121.9	5.85	9.80
Parsons Stabilize Sample Well @ 1650							

Total Volume Removed (gal): 2.59 gal

Sample ID: STC10-MW012 Date Sampled: 8/1/23 Time Sampled: 1650

Duplicate Sample ID: _____ Duplicate Time: _____ MS/MSD collected? Yes () No (X)

Observations (color, odor, appearance): Flow rate changed to 100 mL/min at 1559 1614 Issues with intermittent flow 1617 Resumed normal flow after adjusting tubing ft. Black organic material in well

Laboratory Analytical Methods:

PFAS 1633 (2-500 mL poly) 1 125 mL poly

PFAS EPA 537 (2 x 250 mL poly w/Trizma)

Parsons

Groundwater Sampling Form

Project Name: Galena FOL

Well ID: ST010-MW012

Project Number: 100261.0001.110216

Sampled By: KS/BC

Weather: Sunny / Hot

Static Water Level (ft): 8.93 Total Depth: 83 ft Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 8.93 Casing Volume (gal): gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): 400 Screen Interval: 73-83 Pump Intake (ft bgs): 78

Table with 8 columns: Time, Temp. (°C), pH (SU), Electrical Conductivity (µS/cm), Dissolved Oxygen (mg/L), Redox Potential (mV), Turbidity/Appearance (NTU), Depth to Water (feet). Rows include stabilization data and multiple sampling points from 0904 to 0940.

0905M

Total Volume Removed (gal): 3

Sample ID: ST010-MW012 Date Sampled: 7/23/24 Time Sampled: 0940

Duplicate Sample ID Duplicate Time: MS/MSD collected? Yes/No

Observations (color, odor, appearance): FB001-072324 @ 0855

Placed ID tag on y-plug

Laboratory Analytical Methods:

- VOCs by SW8260C (3 x 40 ml HCl)
GRO by AK101 (2 x 40ml amber HCl)
DRO by AK102 (2 x 1 L amber HCl)
RRO by AK103
PAHs by SW8270D-SIM (2 x 1 L amber none)
DHC/DHC Functional Genes (microbe filter)
PFAS (3 x 125 poly)
Sulfate by SW9056A (1 x 125 mL poly none)
Sulfide by SM4500S2F (250 ml poly ZnAc)
Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
MEE by RSK-175 (3 x 40 mL clear HCl)
Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

Project Name: Galena FOL

Well ID: ST010 - MW014

Project Number: 100261.0001.110216

Sampled By: BC/KS

Weather: Partly cloudy 70

Static Water Level (ft): 7.44 Total Depth: 32 Casing Diameter (in): 1 in. 2 in. 4 in.

Water Column (ft): 24.56 Casing Volume (gal): 4.00 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): 200 Screen Interval: 12-32 Pump Intake (ft bgs): 22

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1304	Start	pump					
1309	6.6	6.83	772	1.14	5.4	9.71	7.51
1314	6.1	6.95	675	0.76	-12.7	7.35	7.53
1319	6.0	7.08	628	0.65	-25.0	6.84	7.53
1324	6.1	7.09	614	0.61	-28.6	5.86	7.53
1332	6.0	7.12	595	0.58	-32.1	2.51	7.53
1337	6.0	7.13	503	0.57	-33.5	2.27	7.53
1342	5.9	7.12	500	0.55	-33.5	1.84	7.53
1345		Sample	Time				

Total Volume Removed (gal): 3.5

Sample ID: _____ Date Sampled: 7/21/24 Time Sampled: 1345

Duplicate Sample ID: - Duplicate Time: - MS/MSD collected? Yes (No)

Observations (color, odor, appearance): 1320 collect FB01-072124

Laboratory Analytical Methods:

- VOCs by SW8260C (3 x 40 ml HCl)
- GRO by AK101 (2 x 40ml amber HCl)
- DRO by AK102 (2 x 1 L amber HCl)
- RRO by AK103
- PAHs by SW8270D-SIM (2 x 1 L amber none)
- DHC/DHC Functional Genes (microbe filter)
- PFAS (3 x 125 poly)
- Sulfate by SW9056A (1 x 125 mL poly none)
- Sulfide by SM4500S2F (250 ml poly ZnAc)
- Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
- Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
- MEE by RSK-175 (3 x 40 mL clear HCl)
- Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

Project Name: Galena FOL

Well ID: STO10-MW015

Project Number: 100261.0001.110216

Sampled By: KS, BC

Weather: Partly cloudy

Static Water Level (ft): 12.47 Total Depth: 32 Casing Diameter (in): 1 in. (2 in.) 4 in.

Water Column (ft): 19.23 Casing Volume (gal): 3.2 gal/foot: 0.04 0.163 0.653

Purging Method (circle one): Submersible Peristaltic Pump Bladder Pump

Purge Rate (500 mL/min or less): 240 Screen Interval: 12-32 Pump Intake (ft bgs): 22

Time	Temp. (°C)	pH (SU)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity/Appearance (NTU)	Depth to Water (feet)
Stabilization:	+/- 1 °C	+/- 0.1	+/- 3%	+/- 10% (if > 0.5 mg/L)	+/- 10 mV	+/- 10% (if > 10 NTUs)	
1501	Start	6.72					
1507	12.5	6.72	1261	0.60	-12.4	81.7	12.49
1516	12.1	6.73	1253	0.48	-24.4	32.7	
1521	12.0	6.73	1251	0.46	-28.2	30.0	12.49
1526	11.9	6.73	1252	0.45	-30.2	27.4	
1531	11.8	6.73	1245	0.43	-28.8	23.4	
1536	11.7	6.73	1244	0.43	-32.9	22.4	12.49
1541	11.7	6.73	1244	0.42	-33.9	19.2	
1546	11.7	6.73	1243	0.42	-34.8	20.7	12.49

Total Volume Removed (gal): 3

Sample ID: STO10-MW015 Date Sampled: 7/21/24 Time Sampled: 1555

Duplicate Sample ID: _____ Duplicate Time: _____ MS/MSD collected? Yes (No)

Observations (color, odor, appearance): _____

Laboratory Analytical Methods:

- VOCs by SW8260C (3 x 40 ml HCl)
- GRO by AK101 (2 x 40ml amber HCl)
- DRO by AK102 (2 x 1 L amber HCl)
- RRO by AK103
- PAHs by SW8270D-SIM (2 x 1 L amber none)
- DHC/DHC Functional Genes (microbe filter)
- PFAS (3 x 125 poly)
- Sulfate by SW9056A (1 x 125 mL poly none)
- Sulfide by SM4500S2F (250 ml poly ZnAc)
- Dissolved Mn by SW6020A (filtered 1 x 250 mL poly HNO3)
- Dissolved Fe (II) by SW6020A (filtered 1 x 250 mL poly HNO3)
- MEE by RSK-175 (3 x 40 mL clear HCl)
- Dissolved Organic Carbon by SM5031B (filtered 1x125ml plastic HCL)

Appendix F
Survey Data

2023 Galena Monitor Well Survey

The survey was conducted by F.R. Bell & Associates (BELL) on October 13 - 14, 2023. BELL was familiar with the area and the control since a similar survey was conducted in 2021 & 2022. Once in Galena, we started the survey by recovering survey control point GAL A and setting up a GPS RTK Base on it. This monument was found in good condition and as previously found in 2022.

We then proceeded to find all the borings by using the GPS coordinates and sketches provided by John Jones. We were able to find most locations, which were identified with a pin and an orange flag with the label written on it. At these locations, the observations were made on the boring at ground elevation using RTK GPS.

There was one location that could not be found (SS018_GP021), but a stake nearby with flagging labeled GP018 (stored as point 1024) was found and measured. We also found an actual pin and orange flag labeled SS018_GP018 (stored as point 1021) which corresponds to the photo received. The only locations that was not found was FT001-MW021, but after consulting with Joh Jones, we learned that the monitor well was not installed.

There were some discrepancies in the SS018 group between the table in Figure 1 of the 2023 Environmental Investigations Proposed Work Locations Edward G Pitka Airport drawing, and the labels found on the ground for group SS018. The table calls for locations SS018_GP015 to SS018_GP024, but on the ground we found SS018_GP018 to SS018_GP027 at similar locations.

BELL also conducted differential leveling to measure elevations at the nine monitor well locations that had wells installed. The survey control benchmarks used were GAL A & GAL B. The level loop elevations on the wells were measured at the top north rim of the PVC pipe inside the metal casing. The level loops were closed loops, closing at the starting point, and meet Second Order, Class II vertical accuracy standards. The following monitor wells were observed by differential leveling.

- CG109-MW003
- CG109-MW004
- CG109-MW007
- FT001-MW018
- FT001-MW019
- FT001-MW020
- FT001-MW022
- FT001-MW023
- ST010-MW015

BELL demobilized and departed Galena on October 14, 2023.

Project file data		Coordinate System	
Name:	V:\OPS\2023-2967 Galena Survey\survey \TBC\2023-2967 NAD83 AKSP Z6_Geoid 12B_US Feet.vce	Name:	United States/State Plane 1983
Size:	75 KB	Datum:	NAD 1983 (Alaska)
Modified:	10/16/2023 3:09:55 PM (UTC:-8)	Zone:	Alaska Zone 6 5006
Time zone:	Alaskan Standard Time	Geoid:	GEOID12B (Alaska)
Reference number:		Vertical datum:	NAVD88
Description:		Calibrated site:	
Comment 1:			
Comment 2:			
Comment 3:			

Point List

ID	Northing (US survey foot)	Easting (US survey foot)	Elevation (US survey foot)	Feature Code
1001	3925975.23	1804245.10	144.87	CG109_GP028
1002	3926049.63	1804527.87	143.56	CG109_GP029
1003	3925948.43	1804662.06	144.24	CG109_GP030
1004	3925666.86	1804507.96	144.67	CG109_GP031
1005	3925945.99	1804488.22	144.65	CG109_GP032
1006	3925881.22	1803820.04	144.56	CG109_GP033
1007	3925080.97	1809231.88	150.83	CPL006-VMP09
1008	3925081.60	1809112.71	149.71	CPL006-VMP10
1009	3925904.37	1811266.79	146.40	AFFF1_GP029
1010	3925538.67	1811487.05	144.73	AFFF1_GP030
1011	3925518.46	1811171.47	143.79	AFFF1_GP031
1012	3924564.81	1810307.37	146.41	FT001-MW018_Ground
1013	3924884.28	1811688.34	148.13	FT001-MW019_Ground
1014	3924866.85	1811332.89	155.37	FT001-MW020_Ground
1016	3925215.32	1810555.14	149.59	FT001-MW022_Ground
1017	3925216.98	1811203.12	151.34	FT001-MW023_Ground
1018	3925336.55	1803784.58	142.03	SS022-VMP05
1019	3925337.55	1803801.94	142.71	SS022-VW03
1020	3924641.32	1808941.66	145.94	ST010-MW015_Ground
1021	3926435.71	1803226.10	146.23	SS018_GP018
1022	3926429.89	1803324.79	145.91	SS018_GP019
1023	3926419.40	1803294.58	145.13	SS018_GP020
1024	3926456.01	1803247.61	143.80	SS018_GP018
1025	3926301.84	1803214.37	141.65	SS018_GP023

1027	3926336.27	1803297.40	141.54	SS018_GP024
1028	3926300.83	1803300.63	141.30	SS018_GP025
1029	3926250.41	1803287.07	142.43	SS018_GP026
1030	3926323.81	1803234.48	141.23	SS018_GP027
1031	3925864.77	1804490.46	143.82	CG109-MW003_Ground
1032	3925859.75	1804490.35	143.77	CG109-MW004_Ground
1033	3925872.20	1803713.99	143.92	CG109-MW007_Ground
1052	3926266.25	1803205.97	142.82	SS018_GP022
CG109-MW003	3925864.77	1804490.46	143.45	Top N. edge of PVC pipe
CG109-MW004	3925859.75	1804490.35	143.32	Top N. edge of PVC pipe
CG109-MW007	3925872.20	1803713.99	143.45	Top N. edge of PVC pipe
FT001-MW018	3924564.81	1810307.37	145.86	Top N. edge of PVC pipe
FT001-MW019	3924884.28	1811688.34	147.54	Top N. edge of PVC pipe
FT001-MW020	3924866.85	1811332.89	154.88	Top N. edge of PVC pipe
FT001-MW022	3925215.32	1810555.14	149.26	Top N. edge of PVC pipe
FT001-MW023	3925216.98	1811203.12	150.90	Top N. edge of PVC pipe
ST010-MW015	3924641.32	1808941.66	145.36	Top N. edge of PVC pipe

10/16/2023 3:13:14 PM	V:\OPS\2023-2967 Galena Survey\survey\TBC \2023-2967 NAD83 AKSP Z6_Geoid 12B_US Feet.vce	Trimble Business Center
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Project file data		Coordinate System	
Name:	V:\OPS\2023-2967 Galena Survey\survey \TBC\2023-2967 NAD83 AKSP Z6_Geoid 12B_US Feet.vce	Name:	World wide/UTM
Size:	75 KB	Datum:	WGS 1984
Modified:	10/16/2023 3:15:49 PM (UTC:-8)	Zone:	4 North
Time zone:	Alaskan Standard Time	Geoid:	GEOID12B (Alaska)
Reference number:		Vertical datum:	NAVD88
Description:		Calibrated site:	
Comment 1:			
Comment 2:			
Comment 3:			

Point List

ID	Northing (Meter)	Easting (Meter)	Elevation (Meter)	Feature Code
1001	7180966.067	597524.515	44.156	CG109_GP028
1002	7180990.097	597610.318	43.756	CG109_GP029
1003	7180959.905	597651.690	43.963	CG109_GP030
1004	7180873.370	597606.092	44.095	CG109_GP031
1005	7180958.326	597598.734	44.090	CG109_GP032
1006	7180935.376	597395.453	44.061	CG109_GP033
1007	7180717.575	599048.277	45.974	CPL006-VMP09
1008	7180717.195	599011.965	45.632	CPL006-VMP10
1009	7180978.253	599664.349	44.622	AFFF1_GP029
1010	7180867.883	599733.223	44.114	AFFF1_GP030
1011	7180860.208	599637.163	43.829	AFFF1_GP031
1012	7180565.476	599378.461	44.627	FT001-MW018_Ground
1013	7180669.463	599797.702	45.151	FT001-MW019_Ground
1014	7180662.442	599689.481	47.357	FT001-MW020_Ground
1016	7180764.879	599450.825	45.595	FT001-MW022_Ground
1017	7180768.499	599648.255	46.127	FT001-MW023_Ground
1018	7180769.248	597387.269	43.292	SS022-VMP05
1019	7180769.636	597392.553	43.499	SS022-VW03
1020	7180582.220	598961.963	44.481	ST010-MW015_Ground
1021	7181101.472	597211.813	44.570	SS018_GP018
1022	7181100.174	597241.913	44.473	SS018_GP019
1023	7181096.832	597232.758	44.235	SS018_GP020
1024	7181107.760	597218.271	43.831	SS018_GP018
1025	7181060.625	597208.884	43.175	SS018_GP023

1027	7181071.516	597234.018	43.140	SS018_GP024
1028	7181060.733	597235.171	43.070	SS018_GP025
1029	7181045.304	597231.281	43.412	SS018_GP026
1030	7181067.416	597214.905	43.048	SS018_GP027
1031	7180933.588	597599.809	43.836	CG109-MW003_Ground
1032	7180932.060	597599.797	43.820	CG109-MW004_Ground
1033	7180932.119	597363.183	43.865	CG109-MW007_Ground
1052	7181049.739	597206.495	43.531	SS018_GP022
CG109-MW003	7180933.588	597599.809	43.723	Top N. edge of PVC pipe
CG109-MW004	7180932.060	597599.797	43.684	Top N. edge of PVC pipe
CG109-MW007	7180932.119	597363.183	43.722	Top N. edge of PVC pipe
FT001-MW018	7180565.476	599378.461	44.459	Top N. edge of PVC pipe
FT001-MW019	7180669.463	599797.702	44.970	Top N. edge of PVC pipe
FT001-MW020	7180662.442	599689.481	47.206	Top N. edge of PVC pipe
FT001-MW022	7180764.879	599450.825	45.495	Top N. edge of PVC pipe
FT001-MW023	7180768.499	599648.255	45.994	Top N. edge of PVC pipe
ST010-MW015	7180582.220	598961.963	44.306	Top N. edge of PVC pipe

10/16/2023 3:18:57 PM	V:\OPS\2023-2967 Galena Survey\survey\TBC \2023-2967 NAD83 AKSP Z6_Geoid 12B_US Feet.vce	Trimble Business Center
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2024 Survey Data

Site Name	Sample Matrix	Location Name	WGS 1984 UTM Zone 4N		Location Ground Surface Elevation (feet)
			Easting (meters)	Northing (meters)	
FT001	SO	AFFF1_HA019	599569.728	7180782.108	147.06
FT001	SO	AFFF1_HA020	599562.915	7180735.123	151.5
FT001	SO	AFFF1_HA021	599604.262	7180716.329	152.7

Appendix G
Laboratory Analytical Reports (provided electronically)

Appendix H
RI and Supplemental RI Sample Results

Table H.1
2022 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID Depth (feet bgs) Sample Date Sample Type	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP002	AFFF1_GP002	AFFF1_GP002	AFFF1_GP002
			AFFF1_GP001-SO_00-02 0 - 2 2022/09/24 N µg/kg	AFFF1_GP001-SO_03-05 3 - 5 2022/09/24 N µg/kg	AFFF1_GP001-SO_06-08 6 - 8 2022/09/24 N µg/kg	AFFF1_GP001-SO_13-15 13 - 15 2022/09/24 N µg/kg	AFFF1_GP001-SO_18-20 18 - 20 2022/09/24 N µg/kg	AFFF1_GP001-SO_25-27 25 - 27 2022/09/24 N µg/kg	AFFF1_GP001-SO_30-32 30 - 32 2022/09/24 N µg/kg	AFFF1_GP002-SO_00-02 0 - 2 2022/09/27 N µg/kg	AFFF1_GP002-SO_03-05 3 - 5 2022/09/27 N µg/kg	AFFF1_GP002-SO_06-08 6 - 8 2022/09/27 N µg/kg	AFFF1_GP002-SO_06-08 6 - 8 2022/09/27 FD µg/kg	AFFF1_GP002-SO_13-15 13 - 15 2022/09/27 N µg/kg
<i>Perfluorocarboxylates</i>														
PERFLUOROBUTANOIC ACID	PFBA	7800	0.15 J	3.8	26 J	3.5	1.3	0.47	0.25 J	1.1	0.8	0.18 J	0.19 J	0.15 J
PERFLUOROPENTANOIC ACID	PFPeA	NA	0.36	15	72	16	5.8	1.9	0.89	2.8	3.3	1	0.97	0.58
PERFLUOROHEXANOIC ACID	PFHxA	3200	1	60	660	95	22	8	3.9	13	16	20	19	2.6
PERFLUOROHEPTANOIC ACID	PFHpA	NA	0.41	33	390	21	4.4	1.6	0.66	3.3	7.2	17	17	0.78
PERFLUOROOCCTANOIC ACID	PFOA	19	3.9	710	1600	140	21	7.2	2.3	63	390	14	12	2.8
PERFLUORONONANOIC ACID	PFNA	19	0.39	1.6 J	0.15 J	0.031 U	0.029 U	0.024 U	0.027 U	10	0.84	0.026 U	0.025 U	0.027 U
PERFLUORODECANOIC ACID	PFDA	NA	0.84 J	0.69	0.061 U	0.068 U	0.063 U	0.052 U	0.059 U	2.9	0.063 J	0.056 U	0.055 U	0.06 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	0.36	0.052 U	0.053 U	0.06 U	0.055 U	0.046 U	0.052 U	0.22 J	0.054 U	0.049 U	0.048 U	0.052 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	0.19 J	0.037 U	0.038 U	0.043 U	0.04 U	0.033 U	0.037 U	0.37	0.039 U	0.035 U	0.034 U	0.037 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	0.035 J	0.026 U	0.027 U	0.03 U	0.028 U	0.023 U	0.026 U	0.034 J	0.027 U	0.025 U	0.024 U	0.026 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	0.037 U	0.046 U	0.047 U	0.053 U	0.049 U	0.04 U	0.045 U	0.044 U	0.048 U	0.043 U	0.042 U	0.046 U
<i>Perfluorosulfonates</i>														
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	0.073 J	9.8	220	20	5.5	1.8	0.78	2	6.7	4.2	4.3	0.61
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	0.12 J	29	930	79	10	4.4	1.8	6.9	12	34	32	2
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	5.2 J	2000	1700	180	70	26	8.4	470	810	210	190	15
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	0.49 J	75	3.7	0.095 J	1.1 J	2.1	0.42	36	8.6	0.057 U	0.056 U	0.061 U
PERFLUOROOCCTANESULFONIC ACID	PFOS	13	230	2600 J	230	3.5	0.73	4.4	1.6	1700 J	59	0.28 J	0.22 J	0.7
PERFLUORONONANE SULFONIC ACID	PFNS	NA	5.4 J	1.5 J	0.037 U	0.041 U	0.038 U	0.032 U	0.036 U	1.9 J	0.037 U	0.034 U	0.033 U	0.036 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	6.3	1.4 J	0.066 U	0.074 U	0.069 U	0.057 U	0.064 U	1.9 J	0.067 U	0.061 U	0.059 U	0.065 U
<i>Fluorotelomer Sulfonates</i>														
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	0.052 U	0.18 J	9.2	0.43	0.067 U	0.055 U	0.063 U	0.061 U	0.066 U	0.06 U	0.058 U	0.063 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	0.63	110	26 J	9.8	17	6.9	1.9	0.32 J	0.035 U	0.11 J	0.074 J	0.035 J
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	17	18 J	0.62 J	0.05 U	0.046 U	0.038 U	0.043 U	0.2 J	0.045 U	0.041 U	0.04 U	0.044 U
<i>Fluorosulfonamides</i>														
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	360	120	15	0.094 J	0.045 J	0.25	0.15 J	69	1.2	0.039 U	0.038 U	0.041 U
N-METHYL-HEPTADECALUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	0.36	0.11 J	0.062 U	0.07 U	0.065 U	0.053 U	0.06 U	0.72	0.063 U	0.057 U	0.056 U	0.061 U
<i>Fluorosulfonamidoacetic acids</i>														
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	1.2 J	0.53 J	0.029 U	0.033 U	0.03 U	0.025 U	0.028 U	1.3 J	0.03 U	0.027 U	0.026 U	0.029 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	0.44	0.38 J	0.061 U	0.068 U	0.063 U	0.052 U	0.059 U	0.19 J	0.062 U	0.056 U	0.055 U	0.06 U

Table H.1
2022 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID Depth (feet bgs) Sample Date Sample Type	AFFF1_GP002	AFFF1_GP002	AFFF1_GP002	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003	AFFF1_GP004	AFFF1_GP004
			AFFF1_GP002-SO_18-20 18 - 20 2022/09/27 N µg/kg	AFFF1_GP002-SO_25-27 25 - 27 2022/09/27 N µg/kg	AFFF1_GP002-SO_30-32 30 - 32 2022/09/27 N µg/kg	AFFF1_GP003-SO_00-02 0 - 2 2022/09/28 N µg/kg	AFFF1_GP003-SO_03-05 3 - 5 2022/09/28 N µg/kg	AFFF1_GP003-SO_06-09 6 - 9 2022/09/28 N µg/kg	AFFF1_GP003-SO_13-15 13 - 15 2022/09/28 N µg/kg	AFFF1_GP003-SO_18-20 18 - 20 2022/09/28 N µg/kg	AFFF1_GP003-SO_25-28 25 - 28 2022/09/28 N µg/kg	AFFF1_GP003-SO_30-32 30 - 32 2022/09/28 N µg/kg	AFFF1_GP004-SO_00-02 0 - 2 2022/09/27 N µg/kg	AFFF1_GP004-SO_03-05 3 - 5 2022/09/27 N µg/kg
Units Screening Level ^{a/}														
<i>Perfluorocarboxylates</i>														
PERFLUOROBUTANOIC ACID	PFBA	7800	0.06 J	0.057 U	0.055 U	2.3	1.4	2.5	2.1	3.3	1.8	0.059 U	5.5 U	5.3 U
PERFLUOROPENTANOIC ACID	PFPeA	NA	0.19 J	0.051 U	0.07 J	11	8.6	9.3	7	8.9	6.4	0.09 J	4.9 U	4.7 J
PERFLUOROHEXANOIC ACID	PFHxA	3200	0.43	0.038 U	0.12 J	21	26	26	120	33	19	0.35	5.5 J	19 J
PERFLUOROHEPTANOIC ACID	PFHpA	NA	0.051 J	0.047 U	0.045 U	2.5	4.7	8.9	14	3.5	1.3	0.052 J	4.6 U	5.4 J
PERFLUOROOCCTANOIC ACID	PFOA	19	0.24 J	0.084 J	0.063 U	15	1200	2200	1.2	70	6.7	1.1	16 J	69
PERFLUORONONANOIC ACID	PFNA	19	0.026 U	0.027 U	0.026 U	7 J	0.084 J	0.74	0.028 U	0.026 U	0.028 U	0.028 U	11 J	21 J
PERFLUORODECANOIC ACID	PFDA	NA	0.056 U	0.059 U	0.057 U	2.1	0.054 U	0.062 U	0.06 U	0.057 U	0.061 U	0.061 U	5.8 U	5.5 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	0.049 U	0.052 U	0.05 U	0.098 J	0.047 U	0.054 U	0.053 U	0.05 U	0.053 U	0.054 U	5.1 U	4.8 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	0.035 U	0.037 U	0.036 U	0.045 J	0.034 U	0.039 U	0.038 U	0.036 U	0.038 U	0.038 U	3.6 U	3.5 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	0.024 U	0.026 U	0.025 U	0.027 U	0.024 U	0.027 U	0.026 U	0.025 U	0.027 U	0.027 U	2.5 U	2.4 U
PERFLUOROTETRADECANOIC ACID	PFTTeDA	NA	0.043 U	0.046 U	0.044 U	0.047 U	0.042 U	0.048 U	0.047 U	0.044 U	0.047 U	0.047 U	4.5 U	4.3 U
<i>Perfluorosulfonates</i>														
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	0.11 J	0.047 U	0.045 U	8.6	5.6	10	27	11	4.9	0.086 J	4.6 U	5.1 J
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	0.11 J	0.046 U	0.044 U	14	20 J	24	51	13	5.2	0.16 J	4.5 U	9.5 J
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	0.74	0.21 J	0.17 J	170	1100	1700	17	79	16	1.5	88	400
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	0.057 U	0.06 U	0.058 U	12 J	2.4 J	3.8	0.062 U	0.14 J	0.31	0.063 U	8.1 J	140
PERFLUOROOCCTANESULFONIC ACID	PFOS	13	0.14 J	0.43	0.12 J	3000 J	21	400	0.054 U	0.051 U	3.4	1.5	3100 J	5200 J
PERFLUORONONANE SULFONIC ACID	PFNS	NA	0.034 U	0.036 U	0.034 U	1.5 J	0.033 U	0.038 U	0.036 U	0.035 U	0.037 U	0.037 U	3.5 U	3.3 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	0.061 U	0.064 U	0.062 U	1 J	0.059 U	0.067 U	0.065 U	0.062 U	0.066 U	0.066 U	6.3 U	6 U
<i>Fluorotelomer Sulfonates</i>														
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	0.059 U	0.063 U	0.061 U	0.065 U	0.057 U	0.066 U	0.1 J	0.43	0.22 J	0.065 U	6.2 U	5.9 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	0.031 U	0.033 U	0.032 U	0.76	37	40	0.078 J	13	2.3	0.22 J	3.3 U	15 J
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	0.041 U	0.043 U	0.042 U	0.26	0.039 U	0.2 J	0.044 U	0.042 U	0.044 U	0.045 U	7.2 J	6.9 J
<i>Fluorosulfonamides</i>														
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	0.038 U	0.041 U	0.039 U	130	0.85	0.29	0.041 U	0.039 U	0.042 U	0.042 U	160	4.4 J
N-METHYL-HEPTADECALFLUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	0.057 U	0.06 U	0.058 U	0.66	0.055 U	0.064 U	0.062 U	0.059 U	0.062 U	0.063 U	5.9 U	5.7 U
<i>Fluorosulfonamidoacetic acids</i>														
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	0.027 U	0.028 U	0.027 U	0.029 U	0.026 U	0.03 U	0.029 U	0.027 U	0.029 U	0.029 U	2.8 U	2.7 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	0.056 U	0.059 U	0.057 U	0.35	0.054 U	0.062 U	0.06 U	0.057 U	0.061 U	0.061 U	5.8 U	5.5 U

Table H.1
2022 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID Depth (feet bgs) Sample Date Sample Type	AFFF1_GP004	AFFF1_GP004	AFFF1_GP004	AFFF1_GP004	AFFF1_GP004	AFFF1_GP004	AFFF1_GP004	AFFF1_GP005	AFFF1_GP005	AFFF1_GP005	AFFF1_GP005	AFFF1_GP005	AFFF1_GP005
			AFFF1_GP904-SO_03-05 3 - 5 2022/09/27 FD µg/kg	AFFF1_GP004-SO_06-08 6 - 8 2022/09/27 N µg/kg	AFFF1_GP004-SO_13-15 13 - 15 2022/09/27 N µg/kg	AFFF1_GP004-SO_18-20 18 - 20 2022/09/27 N µg/kg	AFFF1_GP004-SO_25-27 25 - 27 2022/09/27 N µg/kg	AFFF1_GP004-SO_30-32 30 - 32 2022/09/27 N µg/kg	AFFF1_GP005-SO_00-02 0 - 2 2022/09/24 N µg/kg	AFFF1_GP005-SO_05-08 5 - 8 2022/09/24 N µg/kg	AFFF1_GP005-SO_05-08 5 - 8 2022/09/24 FD µg/kg	AFFF1_GP005-SO_10-12 10 - 12 2022/09/24 N µg/kg	AFFF1_GP005-SO_13-15 13 - 15 2022/09/24 N µg/kg	AFFF1_GP005-SO_20-23 20 - 23 2022/09/24 N µg/kg	
		Units Screening Level ^{a/}													
<i>Perfluorocarboxylates</i>															
PERFLUOROBUTANOIC ACID	PFBA	7800	5 U	5.6 U	5.7 U	5.4 U	5.3 U	5.1 U	1.4	0.37	0.32 J	0.34 J	0.37 J	0.67	
PERFLUOROPENTANOIC ACID	PFPeA	NA	4.9 J	5 U	9.3 J	5.5 J	4.7 U	4.6 U	2.3	0.86	0.79	1.1	1.3	2.3	
PERFLUOROHEXANOIC ACID	PFHxA	3200	20 J	5.6 J	18 J	14 J	3.5 U	3.4 U	10	7.2	6.3	5.1	4.9	6.7	
PERFLUOROHEPTANOIC ACID	PFHpA	NA	5.8 J	4.6 U	4.7 U	4.4 U	4.3 U	4.2 U	3	16	13	1.6	1.8	0.93	
PERFLUOROOCCTANOIC ACID	PFOA	19	65	16 J	33 J	21 J	8.9 J	5.9 U	88	100	85	24	19	46	
PERFLUORONONANOIC ACID	PFNA	19	21 J	2.7 U	2.7 U	2.6 U	2.5 U	2.4 U	2.4	0.27 J	0.38 J	2.1 J	0.61	0.025 U	
PERFLUORODECANOIC ACID	PFDA	NA	5.2 U	5.8 U	5.9 U	5.6 U	5.5 U	5.3 U	2.3	0.057 U	0.056 U	0.12 J	0.063 U	0.055 U	
PERFLUOROUNDECANOIC ACID	PFUnA	NA	4.6 U	5.1 U	5.2 U	4.9 U	4.8 U	4.7 U	0.33	0.05 U	0.049 U	0.056 U	0.055 U	0.048 U	
PERFLUORODODECANOIC ACID	PFDoDA	NA	3.3 U	3.6 U	3.7 U	3.5 U	3.4 U	3.3 U	0.7	0.036 U	0.035 U	0.04 U	0.039 U	0.034 U	
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	2.3 U	2.5 U	2.6 U	2.5 U	2.4 U	2.3 U	0.14 J	0.025 U	0.024 U	0.028 U	0.027 U	0.024 U	
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	4 U	4.5 U	4.6 U	4.3 U	4.2 U	4.1 U	0.075 J	0.044 U	0.043 U	0.049 U	0.048 U	0.042 U	
<i>Perfluorosulfonates</i>															
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	4.4 J	5.1 J	4.7 U	4.4 U	4.3 U	4.2 U	0.87	3.9	3.7	1.5	0.7	1.7	
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	9.6 J	5.7 J	4.6 J	4.3 U	4.2 U	4.1 U	5.5	17	14	3.8	2.5	2.4	
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	480	90	130	70	28	6.9 J	450	370	380	96	93	80	
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	150	6.6 J	18 J	11 J	5.6 U	5.4 U	29	7.1 J	11 J	13 J	50	0.12 J	
PERFLUOROOCCTANESULFONIC ACID	PFOS	13	4700 J	910	4000 J	1000	450	230	1400	260	350	2300	160	0.69	
PERFLUORONONANE SULFONIC ACID	PFNS	NA	3.2 U	3.5 U	3.6 U	3.4 U	3.3 U	3.2 U	2.3	0.035 U	0.034 U	0.039 UJ	0.038 U	0.033 U	
PERFLUORODECANANE SULFONIC ACID	PFDS	NA	5.7 U	6.3 U	6.4 U	6.1 U	5.9 U	5.8 U	4.2	0.062 U	0.06 U	0.069 UJ	0.068 U	0.059 U	
<i>Fluorotelomer Sulfonates</i>															
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	5.6 U	6.2 U	6.3 U	6 U	5.8 U	5.7 U	0.063 U	0.061 U	0.059 U	0.068 U	0.067 U	0.058 U	
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	17 J	7.2 J	81	54	17 J	3.9 J	0.033 U	0.39 J	0.57 J	3.2	6.7	40	
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	5.3 J	7.2 J	33	7.6 J	4 U	3.9 U	0.043 U	1.1 J	1.5 J	16	0.046 U	0.04 U	
<i>Fluorosulfonamides</i>															
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	5.5 J	11 J	4.1 U	3.9 U	3.8 U	3.7 U	380	0.34 J	0.49 J	1.2	0.083 J	0.038 U	
N-METHYL-HEPTADECALFLUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	5.3 U	5.9 U	6.1 U	5.7 U	5.6 U	5.4 U	2.6	0.059 U	0.057 U	0.065 U	0.064 U	0.056 U	
<i>Fluorosulfonamidoacetic acids</i>															
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	2.5 U	2.8 U	2.9 U	2.7 U	2.6 U	2.6 U	0.028 U	0.028 U	0.027 U	0.031 U	0.03 U	0.026 U	
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	5.2 U	5.8 U	5.9 U	5.6 U	5.5 U	5.3 U	0.51 J	0.057 U	0.056 U	0.064 U	0.063 U	0.055 U	

Table H.1
2022 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID Depth (feet bgs) Sample Date Sample Type	AFFF1_GP005	AFFF1_GP005	AFFF1_GP006	AFFF1_GP006	AFFF1_GP006	AFFF1_GP006	AFFF1_GP006	AFFF1_GP006	AFFF1_GP006	AFFF1_GP006	AFFF1_GP007	AFFF1_GP007
			AFFF1_GP005-SO_28-30 28 - 30 2022/09/24 N µg/kg	AFFF1_GP005-SO_33-35 33 - 35 2022/09/24 N µg/kg	AFFF1_GP006-SO_00-02 0 - 2 2022/09/27 N µg/kg	AFFF1_GP006-SO_05-07 5 - 7 2022/09/27 N µg/kg	AFFF1_GP006-SO_10-12 10 - 12 2022/09/27 N µg/kg	AFFF1_GP006-SO_13-15 13 - 15 2022/09/27 N µg/kg	AFFF1_GP006-SO_20-22 20 - 22 2022/09/27 N µg/kg	AFFF1_GP006-SO_20-22 20 - 22 2022/09/27 FD µg/kg	AFFF1_GP006-SO_28-30 28 - 30 2022/09/27 N µg/kg	AFFF1_GP006-SO_33-35 33 - 35 2022/09/27 N µg/kg	AFFF1_GP007-SO_00-02 0 - 2 2022/09/28 N µg/kg	AFFF1_GP007-SO_05-07 5 - 7 2022/09/28 N µg/kg
Units Screening Level ^{a/}														
<i>Perfluorocarboxylates</i>														
PERFLUOROBUTANOIC ACID	PFBA	7800	0.49	0.054 U	0.34	0.17 J	0.054 U	0.081 J	0.18 J	0.23 J	0.056 U	0.051 UJ	0.39	0.12 J
PERFLUOROPENTANOIC ACID	PFPeA	NA	1.5	0.048 U	0.75	0.4	0.23	0.37	0.68	0.72	0.065 J	0.07 J	0.52	0.4
PERFLUOROHEXANOIC ACID	PFHxA	3200	2.9	0.13 J	3.1	7.2	8.3	9.5	1.8	2.2	0.15 J	0.16 J	0.98	2.8
PERFLUOROHEPTANOIC ACID	PFHpA	NA	0.35	0.044 U	0.94	22	1.1	1.7	0.18 J	0.2 J	0.046 U	0.042 U	0.27	0.97
PERFLUOROOCCTANOIC ACID	PFOA	19	3.1	0.7	12	5.4	0.088 J	0.18 J	0.95 J	1.3 J	0.097 J	0.075 J	3.3	0.06 U
PERFLUORONONANOIC ACID	PFNA	19	0.026 U	0.026 U	0.69 J	0.028 U	0.026 U	0.029 U	0.028 U	0.029 U	0.027 U	0.024 U	2.9 J	0.025 U
PERFLUORODECANOIC ACID	PFDA	NA	0.056 U	0.056 U	2.9	0.06 U	0.056 U	0.064 U	0.062 U	0.064 U	0.058 U	0.053 U	0.17 J	0.054 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	0.049 U	0.049 U	0.28	0.053 U	0.049 U	0.056 U	0.054 U	0.056 U	0.051 U	0.047 U	0.051 U	0.048 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	0.035 U	0.035 U	0.25	0.038 U	0.035 U	0.04 U	0.039 U	0.04 U	0.036 U	0.033 U	0.036 U	0.034 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	0.024 U	0.025 U	0.023 U	0.026 U	0.025 U	0.028 U	0.027 U	0.028 U	0.025 U	0.023 U	0.025 U	0.024 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	0.043 U	0.043 U	0.041 U	0.047 U	0.043 U	0.049 U	0.048 U	0.049 U	0.045 U	0.041 U	0.045 U	0.042 U
<i>Perfluorosulfonates</i>														
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	1.6	0.057 J	0.34	2.1	1.2	2	0.58	0.66	0.05 J	0.042 U	0.22 J	1.5
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	0.92	0.056 J	1.2	21	3.8	4.6	0.62	0.69	0.054 J	0.042 J	0.53	7.4
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	8.3	1.7	58	99	1.2	0.87	3.4	4.6	0.33	0.23	33	0.033 U
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	0.32	0.13 J	8.4 J	0.062 U	0.057 U	0.065 U	0.063 U	0.065 U	0.059 U	0.054 U	7.3 J	0.056 U
PERFLUOROOCCTANESULFONIC ACID	PFOS	13	2.5	2.2	1800	0.54	0.05 U	0.057 U	0.056 U	0.057 U	0.35 J	0.13 J	1000	0.19 J
PERFLUORONONANE SULFONIC ACID	PFNS	NA	0.034 U	0.034 U	3.9 J	0.037 U	0.034 U	0.039 U	0.037 U	0.039 U	0.035 U	0.032 U	0.57 J	0.033 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	0.06 U	0.061 U	3.2 J	0.065 U	0.061 U	0.069 U	0.067 U	0.069 U	0.063 U	0.058 U	0.2 J	0.059 U
<i>Fluorotelomer Sulfonates</i>														
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	0.059 U	0.06 U	0.056 U	0.064 U	0.06 U	0.068 U	0.066 U	0.068 U	0.062 U	0.057 U	0.061 U	0.058 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	3.3	0.61	0.03 U	0.034 U	0.032 U	0.036 U	0.3 J	0.6	0.068 J	0.052 J	0.033 U	0.031 U
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	0.041 U	0.066 J	0.038 U	0.044 U	0.041 U	0.047 U	0.045 U	0.047 U	0.042 U	0.039 U	0.042 U	0.04 U
<i>Fluorosulfonamides</i>														
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	0.074 J	0.07 J	240	0.17 J	0.039 U	0.044 U	0.043 U	0.044 U	0.093 J	0.037 U	0.84	0.037 U
N-METHYL-HEPTADECALFLUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	0.057 U	0.057 U	3.7	0.062 U	0.057 U	0.065 U	0.063 U	0.065 U	0.059 U	0.054 U	0.059 U	0.056 U
<i>Fluorosulfonamidoacetic acids</i>														
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	0.027 U	0.027 U	4.3 J	0.029 U	0.027 U	0.031 U	0.03 U	0.031 U	0.028 U	0.026 U	0.028 U	0.026 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	0.056 U	0.056 U	0.45 J	0.06 U	0.056 U	0.064 U	0.062 U	0.064 U	0.058 U	0.053 U	0.058 U	0.054 U

Table H.1
2022 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID Depth (feet bgs) Sample Date Sample Type	AFFF1_GP007	AFFF1_GP007	AFFF1_GP007	AFFF1_GP007	AFFF1_GP007	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008
			AFFF1_GP007-SO_10-12 2022/09/28 N µg/kg	AFFF1_GP007-SO_13-15 2022/09/28 N µg/kg	AFFF1_GP007-SO_20-22 2022/09/28 N µg/kg	AFFF1_GP007-SO_28-30 2022/09/28 N µg/kg	AFFF1_GP007-SO_33-35 2022/09/28 N µg/kg	AFFF1_GP008-SO_00-02 0 - 2 2022/09/28 N µg/kg	AFFF1_GP008-SO_00-02 0 - 2 2022/09/28 FD µg/kg	AFFF1_GP008-SO_05-07 5 - 7 2022/09/28 N µg/kg	AFFF1_GP008-SO_10-12 10 - 12 2022/09/28 N µg/kg	AFFF1_GP008-SO_13-15 13 - 15 2022/09/28 N µg/kg	AFFF1_GP008-SO_18-20 18 - 20 2022/09/28 N µg/kg	AFFF1_GP008-SO_25-27 25 - 27 2022/09/28 N µg/kg
Units Screening Level ^{a/}														
<i>Perfluorocarboxylates</i>														
PERFLUOROBUTANOIC ACID	PFBA	7800	0.38 J	0.59	1.4	3.5	1.2	0.5	0.47	0.35 J	0.86 J	0.3 J	0.27 J	0.059 U
PERFLUOROPENTANOIC ACID	PFPeA	NA	1.4	2.5	4.6 J	9.8	3	0.69	0.71	0.81	5	1.7	1.4	0.2 J
PERFLUOROHEXANOIC ACID	PFHxA	3200	11	11	28	52	10	0.8	0.81	3	10	3.5	1.8	0.26
PERFLUOROHEPTANOIC ACID	PFHpA	NA	0.049 U	0.11 J	3.1	7.9	1.2	0.57	0.6	5	4.2	1.4	0.45	0.06 J
PERFLUOROOCCTANOIC ACID	PFOA	19	0.069 U	0.096 J	8.4 J	25	6.5	10	12	0.069 U	34	23	8.8	0.82
PERFLUORONONANOIC ACID	PFNA	19	0.029 U	0.028 U	0.027 U	0.14 U	0.028 U	2.5	2.5	0.029 U	0.032 U	0.21 J	0.63	0.028 U
PERFLUORODECANOIC ACID	PFDA	NA	0.062 U	0.062 U	0.06 U	0.31 U	0.061 U	0.068 J	0.082 J	0.062 U	0.07 U	0.055 U	0.06 U	0.062 U
PERFLUOROUNDACANOIC ACID	PFUnA	NA	0.055 U	0.054 U	0.052 U	0.27 U	0.054 U	0.05 U	0.048 U	0.054 U	0.061 U	0.048 U	0.052 U	0.054 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	0.039 U	0.039 U	0.037 U	0.2 U	0.038 U	0.036 U	0.034 U	0.039 U	0.044 U	0.034 U	0.037 U	0.039 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	0.027 U	0.027 U	0.026 U	0.14 U	0.027 U	0.025 U	0.024 U	0.027 U	0.031 U	0.024 U	0.026 U	0.027 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	0.048 U	0.048 U	0.046 U	0.24 U	0.047 U	0.044 U	0.042 U	0.048 U	0.054 U	0.042 U	0.046 U	0.048 U
<i>Perfluorosulfonates</i>														
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	4.4	3.5	8.8	14	2	0.1 J	0.11 J	0.57	2.3	0.76	0.33	0.049 U
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	0.6	0.88	14	25	3.4	0.36	0.39	7	7.2	2.3	0.64	0.094 J
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	0.081 J	0.49	25	52	19	25	28	12	120	59	20	2.1
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	0.064 U	0.063 U	0.18 J	0.68 J	0.48	7.2	6	0.064 U	0.071 U	14	26	0.7
PERFLUOROOCCTANESULFONIC ACID	PFOS	13	0.17 J	0.055 U	0.054 U	13	5.8	180	170	0.28 J	0.55	0.049 U	0.053 U	5.1
PERFLUORONONANE SULFONIC ACID	PFNS	NA	0.038 U	0.037 U	0.036 U	0.19 U	0.037 U	0.071 J	0.087 J	0.038 U	0.042 U	0.033 U	0.036 U	0.037 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	0.067 U	0.067 U	0.065 U	0.34 U	0.067 U	0.062 U	0.06 U	0.067 U	0.076 U	0.06 U	0.065 U	0.067 U
<i>Fluorotelomer Sulfonates</i>														
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	0.066 U	0.066 U	0.21 J	0.51 J	0.093 J	0.061 U	0.059 U	0.066 U	0.074 U	0.059 U	0.063 U	0.066 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	0.035 U	0.072 J	1.7 J	7.3	4	0.032 U	0.031 U	0.035 U	1.5	9.8	9.8	1.2
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	0.045 U	0.045 U	0.044 U	0.23 U	0.045 U	0.042 U	0.04 U	0.045 U	0.051 U	0.04 U	0.044 U	0.045 U
<i>Fluorosulfonamides</i>														
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	0.043 U	0.043 U	0.041 U	0.22 U	0.042 U	0.15 J	0.22 J	0.043 U	0.048 U	0.038 U	0.041 U	0.043 U
N-METHYL-HEPTADECALFLUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	0.064 U	0.063 U	0.061 U	0.32 U	0.063 U	0.058 U	0.056 U	0.064 U	0.071 U	0.056 U	0.061 U	0.063 U
<i>Fluorosulfonamidoacetic acids</i>														
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	0.03 U	0.03 U	0.029 U	0.15 U	0.029 U	0.027 U	0.026 U	0.03 U	0.034 U	0.026 U	0.029 U	0.03 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	0.062 U	0.062 U	0.06 U	0.31 U	0.061 U	0.057 U	0.055 U	0.062 U	0.07 U	0.055 U	0.06 U	0.062 U

Table H.1
2022 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID Depth (feet bgs) Sample Date Sample Type	AFFF1_GP008	AFFF1_GP009	AFFF1_GP009	AFFF1_GP009	AFFF1_GP009	AFFF1_GP009	AFFF1_GP009	AFFF1_GP010	AFFF1_GP010	AFFF1_GP010	AFFF1_GP010	AFFF1_GP010	AFFF1_HA001
			AFFF1_GP008-SO_33-35 2022/09/28 N µg/kg	AFFF1_GP009-SO_13-15 2022/09/28 N µg/kg	AFFF1_GP009-SO_15-17 2022/09/28 N µg/kg	AFFF1_GP009-SO_25-27 2022/09/28 N µg/kg	AFFF1_GP009-SO_32-34 2022/09/28 N µg/kg	AFFF1_GP009-SO_38-40 2022/09/28 N µg/kg	AFFF1_GP010-SO_13-16 2022/09/25 N µg/kg	AFFF1_GP010-SO_18-23 2022/09/25 N µg/kg	AFFF1_GP010-SO_18-23 2022/09/25 FD µg/kg	AFFF1_GP010-SO_25-27 2022/09/25 N µg/kg	AFFF1_GP010-SO_35-37 2022/09/25 N µg/kg	AFFF1_HA001-SO_00-02_051022 0 - 2 2022/05/10 N µg/kg	
<i>Perfluorocarboxylates</i>															
PERFLUOROBUTANOIC ACID	PFBA	7800	0.081 J	0.23 J	0.41	0.52	0.58 J	0.057 U	0.063 U	0.058 U	0.059 U	0.06 U	0.052 U	0.72	
PERFLUOROPENTANOIC ACID	PFPeA	NA	0.37	1.2	1.1	1.7	2	0.11 J	0.056 U	0.052 U	0.052 U	0.053 U	0.055 J	0.76	
PERFLUOROHEXANOIC ACID	PFHxA	3200	0.47	3.7	0.19 J	5.9	5.1	0.27	0.043 U	0.21 J	0.23 J	0.3	0.17 J	0.69	
PERFLUOROHEPTANOIC ACID	PFHpA	NA	0.12 J	0.04 U	0.047 U	0.49	1.2	0.059 J	0.052 U	0.048 U	0.06 J	0.39	0.043 U	0.16 J	
PERFLUOROOCCTANOIC ACID	PFOA	19	0.92	0.056 U	0.066 U	0.39	7.1	0.53	0.073 U	0.08 J	0.068 U	0.54	0.78	2.3	
PERFLUORONONANOIC ACID	PFNA	19	0.027 U	0.023 U	0.027 U	0.027 U	0.13 U	0.027 U	0.03 U	0.028 U	0.028 U	0.029 U	0.025 U	0.23 J	
PERFLUORODECANOIC ACID	PFDA	NA	0.059 U	0.051 U	0.059 U	0.058 U	0.27 U	0.059 U	0.066 U	0.061 U	0.061 U	0.062 U	0.055 U	0.064 U	
PERFLUOROUNDACANOIC ACID	PFUnA	NA	0.051 U	0.044 U	0.052 U	0.051 U	0.24 U	0.052 U	0.058 U	0.053 U	0.054 U	0.054 U	0.048 U	0.056 U	
PERFLUORODODECANOIC ACID	PFDoDA	NA	0.037 U	0.032 U	0.037 U	0.037 U	0.17 U	0.037 U	0.041 U	0.038 U	0.038 U	0.039 U	0.034 U	0.04 U	
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	0.026 U	0.022 U	0.026 U	0.026 U	0.12 U	0.026 U	0.029 U	0.027 U	0.027 U	0.027 U	0.024 U	0.028 U	
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	0.045 U	0.039 U	0.046 U	0.045 U	0.21 U	0.046 U	0.051 U	0.047 U	0.047 U	0.048 U	0.042 U	0.049 U	
<i>Perfluorosulfonates</i>															
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	0.07 J	3.2	0.47	4.6	1.2	0.055 J	0.052 U	0.057 J	0.059 J	0.068 J	0.057 J	0.081 J	
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	0.16 J	0.039 U	0.046 U	2.7	2	0.093 J	0.051 U	0.13 J	0.18 J	0.85	0.079 J	0.14 J	
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	2.9	0.031 U	0.036 U	3.4	27	1.9	0.04 U	0.29	0.33	4.5	1.1	5.2	
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	0.12 J	0.052 U	0.061 U	0.06 U	1.5	0.21 J	0.067 U	0.062 U	0.063 U	0.064 U	0.19 J	0.68	
PERFLUOROOCCTANESULFONIC ACID	PFOS	13	2	0.045 U	0.053 U	0.052 U	20	12	0.059 U	0.055 U	0.055 U	0.056 U	3.8	30	
PERFLUORONONANE SULFONIC ACID	PFNS	NA	0.035 U	0.031 U	0.036 U	0.035 U	0.17 U	0.036 U	0.04 U	0.037 U	0.037 U	0.038 U	0.033 U	0.038 U	
PERFLUORODECANE SULFONIC ACID	PFDS	NA	0.063 U	0.055 U	0.064 U	0.063 U	0.3 U	0.064 U	0.072 U	0.066 U	0.066 U	0.067 U	0.059 U	0.069 U	
<i>Fluorotelomer Sulfonates</i>															
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	0.062 U	0.054 U	0.063 U	0.069 J	0.29 U	0.063 U	0.07 U	0.065 U	0.065 U	0.066 U	0.058 U	0.068 U	
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	1.3	0.028 U	0.033 U	0.033 U	7.9	0.68	0.037 U	0.034 U	0.034 U	0.035 U	0.45	0.036 U	
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	0.043 U	0.037 U	0.043 U	0.043 U	0.2 U	0.043 U	0.048 U	0.044 U	0.045 U	0.045 U	0.04 U	0.046 U	
<i>Fluorosulfonamides</i>															
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	0.04 U	0.035 U	0.041 U	0.04 U	0.19 U	0.041 U	0.045 U	0.042 U	0.042 U	0.043 U	0.038 U	0.18 J	
N-METHYL-HEPTADECALFLUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	0.06 U	0.052 U	0.061 U	0.06 U	0.28 U	0.061 U	0.067 U	0.062 U	0.063 U	0.064 U	0.056 U	0.065 U	
<i>Fluorosulfonamidoacetic acids</i>															
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	0.028 U	0.024 U	0.028 U	0.028 U	0.13 U	0.028 U	0.032 U	0.029 U	0.029 U	0.03 U	0.026 U	0.031 U	
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	0.059 U	0.051 U	0.059 U	0.058 U	0.27 U	0.059 U	0.066 U	0.061 U	0.061 U	0.062 U	0.055 U	0.064 U	

Table H.1
2022 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID Depth (feet bgs) Sample Date Sample Type	AFFF1_HA002	AFFF1_HA002	AFFF1_HA003	AFFF1_HA004	AFFF1_HA005	AFFF1_HA006	AFFF1_HA007	AFFF1_HA008	AFFF1_HA009	AFFF1_HA010	AFFF1_HA011	AFFF1_HA012
			AFFF1HA002-SO_00-02_051022 0 - 2 2022/05/10 N µg/kg	AFFF1HA902-SO_00-02_051022 0 - 2 2022/05/10 FD µg/kg	AFFF1HA003-SO_00-02_051022 0 - 2 2022/05/10 N µg/kg	AFFF1HA004-SO_00-02_051022 0 - 2 2022/05/10 N µg/kg	AFFF1HA005-SO_00-02_051022 0 - 2 2022/05/10 N µg/kg	AFFF1HA006-SO_00-02_051022 0 - 2 2022/05/10 N µg/kg	AFFF1_HA007-AFFF1_HA007-SO_00-02 0 - 2 2022/09/03 N µg/kg	AFFF1_HA008-AFFF1_HA008-SO_00-02 0 - 2 2022/09/03 N µg/kg	AFFF1_HA009-AFFF1_HA009-SO_00-02 0 - 2 2022/09/03 N µg/kg	AFFF1_HA010-AFFF1_HA010-SO_00-02 0 - 2 2022/09/03 N µg/kg	AFFF1_HA011-AFFF1_HA011-SO_00-02 0 - 2 2022/09/03 N µg/kg	AFFF1_HA012-AFFF1_HA012-SO_00-02 0 - 2 2022/09/03 N µg/kg
		Units Screening Level ^{a/}												
<i>Perfluorocarboxylates</i>														
PERFLUOROBUTANOIC ACID	PFBA	7800	0.8	0.78	1.2	1.2	0.79	0.25 J	0.16 J	0.17 J	2.5 U	2.6 U	2.8 U	2.7 U
PERFLUOROPENTANOIC ACID	PFPeA	NA	0.92	1	1.5	3.3	1.3	0.37	0.052 U	0.055 U	2.3 U	2.3 U	3.1 J	2.4 U
PERFLUOROHEXANOIC ACID	PFHxA	3200	0.68	0.72	1.2	2.8	1.2	0.76	0.11 J	0.1 J	1.9 J	1.7 U	2.9 J	1.8 U
PERFLUOROHEPTANOIC ACID	PFHpA	NA	0.23 J	0.21 J	0.25 J	1.7	0.93	0.21 J	0.059 J	0.051 U	2.1 U	2.1 U	2.3 U	2.3 U
PERFLUOROOCCTANOIC ACID	PFOA	19	1.5	1.3	3.1	5.7	5.9	2	0.46	0.1 J	32	2.9 U	13 J	3.7 J
PERFLUORONONANOIC ACID	PFNA	19	1.9	1.6	1.2	2.4	1.5	1.1	0.18 J	0.046 J	4.1 J	1.2 U	28	1.5 J
PERFLUORODECANOIC ACID	PFDA	NA	0.21 J	0.19 J	0.25 J	1.1	0.093 J	0.086 J	0.061 U	0.064 U	2.6 U	2.7 U	2.9 U	2.9 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	0.075 J	0.062 U	0.2 J	0.6	0.06 U	0.062 U	0.053 U	0.056 U	2.3 U	2.3 U	2.6 U	2.5 U
PERFLUORODODECANOIC ACID	PFDODA	NA	0.044 U	0.045 U	0.073 J	0.11 J	0.043 U	0.044 U	0.038 U	0.04 U	1.7 U	1.7 U	1.8 U	1.8 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	0.031 U	0.031 U	0.037 U	0.028 U	0.03 U	0.031 U	0.027 U	0.028 U	1.2 U	1.2 U	1.3 U	1.3 U
PERFLUOROTETRADECANOIC ACID	PFTTeDA	NA	0.055 U	0.055 U	0.065 U	0.049 U	0.053 U	0.054 U	0.047 U	0.049 U	2 U	2.1 U	2.3 U	2.2 U
<i>Perfluorosulfonates</i>														
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	0.092 J	0.091 J	0.21 J	0.66	0.11 J	0.21 J	0.081 J	0.051 U	2.1 U	2.1 U	2.3 U	2.3 U
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	0.13 J	0.13 J	0.28 J	0.91	0.19 J	0.32	0.047 U	0.049 U	2 U	2.1 U	2.3 U	2.2 U
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	3.9	3.6	9.1	33	19	14	1.9	0.69	110	5.7 J	55	13
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	0.71 J	0.51 J	1.6	5.4	1.9	1.2	0.23 J	0.065 U	3.2 J	2.7 U	4.9 J	2.9 U
PERFLUOROOCCTANESULFONIC ACID	PFOS	13	250	230	130	1100	80	120	17	5.9	490	210	1000	290
PERFLUORONONANE SULFONIC ACID	PFNS	NA	0.37 J	0.043 UJ	0.7	3.8	0.042 U	0.066 J	0.037 U	0.039 U	2.6 J	1.6 U	1.8 U	1.7 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	0.37 J	0.53 J	1.1	1.7 J	0.22 J	0.076 U	0.066 U	0.069 U	2.9 U	2.9 U	3.2 U	3.1 U
<i>Fluorotelomer Sulfonates</i>														
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	0.076 U	0.076 U	0.09 U	0.067 U	0.073 U	0.075 U	0.065 U	0.068 U	2.8 U	2.8 UJ	3.1 U	3 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	0.04 U	0.04 U	0.047 U	3.5	0.039 U	0.04 U	0.034 U	0.036 U	1.5 U	1.5 U	4.4 J	1.6 U
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	0.2 J	0.18 J	0.29 J	15	0.21 J	0.08 J	0.045 U	0.047 U	1.9 U	1.9 U	2.2 U	2.1 U
<i>Fluorosulfonamides</i>														
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	2.1	2.1	5.2	4.1	0.5	1.2	0.071 J	0.08 J	9.1 J	1.8 U	7.4 J	2 U
N-METHYL-HEPTADECALFLUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	0.073 U	0.073 U	0.12 J	0.065 U	0.07 U	0.072 U	0.062 U	0.065 U	2.7 U	2.7 U	3 U	2.9 U
<i>Fluorosulfonamidoacetic acids</i>														
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	0.034 U	0.034 U	0.04 U	0.14 J	0.033 U	0.034 U	0.029 U	0.031 U	1.3 U	1.3 U	1.4 U	1.4 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	0.071 U	0.071 U	0.084 U	0.063 U	0.069 U	0.07 U	0.061 U	0.064 U	2.6 U	2.7 U	2.9 U	2.9 U

Notes:
^{a/} USEPA Regional Screening Level calculated for hazard quotient of 0.1 (USEPA, November 2023).
 - = not applicable
 µg/kg = microgram per kilogram
 bgs = below ground surface
 FD = field duplicate
 J = Analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
 N = normal sample
 PFAS = per- and polyfluoroalkyl substances
 U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.
 UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.
Bold indicates the analyte was detected
 Gray shading indicates the result exceeds the screening criteria.

Table H.2
2022 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation		Location Sample ID	01-MW-01	01-MW-01	01-MW-03	01-MW-03	01-MW-03	01-MW-08R	01-MW-08R	BKGD-MW005	BKGD-MW005	BKGD-MW006
				01-MW-01	01-MW-01-	01-MW-03	01-MW-03	01-MW-03-	01-MW-08R	01-MW-08R	BKGD-MW005	BKGD-MW005	BKGD-MW006
				01-MW-01	01-MW-01-	01-MW-03	01-MW-03	01-MW-03-	01-MW-08R	01-MW-08R	BKGD-MW005	BKGD-MW005	BKGD-MW006
				01-MW-01	01-MW-01-	01-MW-03	01-MW-03	01-MW-03-	01-MW-08R	01-MW-08R	BKGD-MW005	BKGD-MW005	BKGD-MW006
			Depth (feet bgs)	7_19 - 46_8	7_19 - 46_8	13 - 23	13 - 23	13 - 23	4 - 44	3_86 - 43_86	12 - 32	061622	061622
			Sample Date	2022/09/02	2022/05/11	2022/08/23	2022/08/23	2022/05/11	2022/08/29	2022/05/10	2022/08/25	2022/06/16	2022/06/16
			Sample Type	N	N	N	FD	N	N	N	N	N	N
			Units	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
			Screening Level ^{a/}										
			MCL										
			RSL										
<i>Perfluorocarboxylates</i>													
PERFLUOROBUTANOIC ACID	PFBA	NA	1800	160	640	1200	1100	920	2200	3100	14	19	5.6
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	590	2700	4400	4300	4200	8200	11000	23	33	9.1
PERFLUOROHEXANOIC ACID	PFHxA	NA	990	1700	4200	17000	16000	16000 J	15000	25000	120	140	27
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	250	1000	500	490	310	3600	5800	13	13	4.6
PERFLUOROOCCTANOIC ACID	PFOA	4	6	1300	3700	31	32	1.5 J	15000	26000 J	57	64	30
PERFLUORONONANOIC ACID	PFNA	10	5.9	26	200	0.51 U	0.53 U	0.5 U	48	56	0.51 U	0.51 U	0.53 U
PERFLUORODECANOIC ACID	PFDA	NA	NA	0.3 U	2.9	0.3 U	0.31 U	0.29 U	0.29 U	0.3 U	0.3 U	0.3 U	0.31 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	NA	0.66 U	0.69 U	0.67 U	0.69 U	0.65 U	0.65 U	0.67 U	0.66 U	0.66 U	0.69 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	0.38 U	0.4 U	0.38 U	0.39 U	0.37 U	0.37 U	0.39 U	0.38 U	0.38 U	0.4 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	NA	0.62 U	0.65 U	0.63 U	0.65 U	0.61 U	0.61 U	0.63 U	0.63 U	0.63 U	0.65 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	0.46 U	0.48 U	0.46 U	0.48 U	0.45 U	0.45 U	0.47 U	0.46 U	0.46 U	0.48 U
<i>Perfluorosulfonates</i>													
PERFLUOROBUTANE SULFONIC ACID	PFBS	NA	600	200	510	4400	4100	4600	4200	6500	27	40	13
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	NA	330	870	2300	2100	1900	6300	12000	21	20	10
PERFLUOROHEXANE SULFONIC ACID	PFHxS	10	39	5300	18000	290	340	57	51000 J	46000 J	220	190	150
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	NA	460	1200	0.65 U	0.67 U	0.63 U	1800	2100	1.4 J	2	1.5 J
PERFLUOROOCCTANESULFONIC ACID	PFOS	4	4	27000	74000 J	7.1	8.3	4.1	32000	26000 J	0.53 U	4.1 B	1.6 B
PERFLUORONONANE SULFONIC ACID	PFNS	NA	NA	0.6 U	21	0.6 U	0.62 U	0.58 U	0.59 U	0.61 U	0.6 U	0.6 U	0.62 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	0.5 U	0.52 U	0.5 U	0.52 U	0.49 U	0.49 U	0.5 U	0.5 U	0.5 U	0.52 U
<i>Fluorotelomer Sulfonates</i>													
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	NA	12	31	0.33 UJ	0.34 UJ	0.32 UJ	160	320 J	0.33 U	0.33 U	0.34 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	NA	2000	4900	0.35 U	0.57 J	8.6	8100 J	6500	0.34 U	0.35 U	0.53 J
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	NA	31	150	0.57 U	0.58 U	0.55 U	12	17	0.56 U	0.56 U	0.59 U
<i>Fluorosulfonamides</i>													
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	NA	2.3	10	0.47 U	0.65 J	0.72 J	0.75 J	1.2 J	0.47 U	0.47 U	0.74 B
N-METHYL-HEPTADECANFLUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	NA	0.67 U	0.7 U	0.67 U	0.7 U	0.65 U	0.66 U	0.68 U	0.67 U	0.67 U	0.7 U
<i>Fluorosulfonamidoacetic acids</i>													
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	NA	0.42 U	0.43 U	0.42 U	0.43 U	0.41 U	0.41 U	0.42 U	0.42 U	0.42 U	0.43 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	NA	0.31 U	0.32 U	0.31 U	0.32 U	0.3 U	0.3 U	0.31 U	0.31 U	0.31 U	0.32 U

Table H.2
2022 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation		Location Sample ID	CPL006-MW001	FT001-MW009	FT001-MW009	FT001-MW010	FT001-MW010	FT001-MW011	FT001-MW011	FT001-MW012	FT001-MW012	FT001-MW013
				CPL006-MW001	FT001-MW009	MW009_05102	MW010_05102	MW010_05102	MW011_05102	MW011_05102	MW012_050722	MW013	
				19 - 39	50 - 60	50 - 60	13 - 38	13 - 38	48 - 58	48 - 58	70 - 80	70 - 80	12 - 32
				2022/08/28	2022/08/29	2022/05/10	2022/08/24	2022/05/10	2022/08/24	2022/05/10	2022/08/24	2022/05/07	2022/08/23
			Sample Type	N	N	N	N	N	N	N	N	N	N
			Units	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
			Screening Level ^{a/}										
			MCL										
			RSL										
<i>Perfluorocarboxylates</i>													
PERFLUOROBUTANOIC ACID	PFBA	NA	1800	1.2 UJ	350	2100	1000	730	1700	1500	450	32	17000 J
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	26	1100	6200	3600	3100	5300	5700	1300	89	26000 J
PERFLUOROHEXANOIC ACID	PFHxA	NA	990	65	3000	17000	9800	7300	12000	14000	4500	270	83000 J
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	15 J	560	2400	1500	870	2600	2100	600	47	15000 J
PERFLUOROOCANOIC ACID	PFOA	4	6	9.2 J	2700	15000	4700	2700	11000	9700	3000	250	67000 J
PERFLUORONONANOIC ACID	PFNA	10	5.9	2.8 U	16	50	3.4	0.74 J	52 U	13	6	1.1 J	51 UJ
PERFLUORODECANOIC ACID	PFDA	NA	NA	1.7 U	0.3 U	0.61 J	0.3 U	0.31 U	31 U	0.31 U	0.31 U	0.29 U	30 UJ
PERFLUOROUNDECANOIC ACID	PFUnA	NA	NA	3.7 U	0.65 U	0.68 U	0.66 U	0.69 U	68 U	0.68 U	0.68 U	0.65 U	66 UJ
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	2.1 U	0.38 U	0.39 U	0.38 U	0.4 U	39 U	0.39 U	0.39 U	0.37 U	38 UJ
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	NA	3.5 U	0.62 U	0.65 U	0.63 U	0.65 U	65 U	0.64 U	0.64 U	0.62 U	62 UJ
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	2.6 U	0.46 U	0.48 U	0.46 U	0.48 U	48 U	0.48 U	0.47 U	0.45 U	46 UJ
<i>Perfluorosulfonates</i>													
PERFLUOROBUTANE SULFONIC ACID	PFBS	NA	600	45	540	2500	2400	1800	3600	3100	800	65	39000 J
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	NA	62	1000	5100	3700	2600	6000	5000	1500	110	30000 J
PERFLUOROHEXANE SULFONIC ACID	PFHxS	10	39	78	7800	38000 J	15000	9400	27000	20000	8800	840	210000 J
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	NA	3.6 U	460	1800	200	170	720	590	220	20	1900 J
PERFLUOROOCANESULFONIC ACID	PFOS	4	4	2.9 U	16000	29000 J	1200	370	12000	12000	6000	440	27000 J
PERFLUORONONANE SULFONIC ACID	PFNS	NA	NA	3.3 U	0.59 U	0.62 U	0.6 U	0.62 U	62 U	0.62 U	0.61 U	0.59 U	60 UJ
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	2.8 U	0.49 U	0.52 U	0.5 U	0.52 U	51 U	0.51 U	0.51 U	0.49 U	50 UJ
<i>Fluorotelomer Sulfonates</i>													
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	NA	1.8 U	23	150 J	98	69	170 J	150 J	36	2.6	5500 J
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	NA	3.5 J	3100	8200	3200	2500	5400	4400	2600	130	14000 J
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	NA	3.1 U	15	26	0.56 U	0.59 U	58 U	1.6 J	2	0.55 U	56 UJ
<i>Fluorosulfonamides</i>													
PERFLUOROOCANE SULFONAMIDE	PFOSA/FOSA	NA	NA	2.6 U	0.94 J	1.4 J	0.47 U	0.49 U	49 U	0.6 J	0.48 U	0.46 U	47 UJ
N-METHYL-HEPTADECANFLUOROOCANE SULFONAMIDE	N-MeFOSA	NA	NA	3.7 U	0.66 U	0.69 U	0.67 U	0.7 U	69 UJ	0.69 U	0.69 U	0.66 U	67 UJ
<i>Fluorosulfonamidoacetic acids</i>													
N-METHYL PERFLUOROOCANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	NA	2.3 U	0.41 U	0.43 U	0.42 U	0.44 U	43 U	0.43 U	0.43 U	0.41 U	42 UJ
N-ETHYL PERFLUOROOCANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	NA	1.7 U	0.3 U	0.32 U	0.31 U	0.32 U	32 U	0.32 U	0.31 U	0.3 U	31 UJ

Table H.2
2022 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation		Location Sample ID	FT001-MW013	FT001-MW014	FT001-MW014	FT001-MW015	FT001-MW015	FT001-MW016	FT001-MW017	SE-MW-03	ST010-MW010	ST010-MW010
				FT001-MW913	FT001-MW014	061622	FT001-MW015	MW015_05142	FT001-MW016	FT001-MW017	SE-MW-03	ST010-MW010	MW010_05112
				12 - 32	40 - 50	40 - 50	60 - 70	60 - 70	12_97 - 22_97	9_9 - 24_9	5 - 24_6	18 - 38	18 - 38
				2022/08/23	2022/08/22	2022/06/16	2022/08/23	2022/05/14	2022/09/29	2022/09/26	2022/08/25	2022/08/17	2022/05/11
			Sample Type	N	N	N	N	N	N	N	N	N	
			Units	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
			Screening Level ^{a/}										
			MCL										
			RSL										
<i>Perfluorocarboxylates</i>													
PERFLUOROBUTANOIC ACID	PFBA	NA	1800	19000 J	76 J	78	73 J	76 J	710	4.7	4.1	9.1	7.5
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	35000 J	260	270	230	260	3500	4	0.21 U	6.5	2.7
PERFLUOROHEXANOIC ACID	PFHxA	NA	990	120000 J	860	730	710	780	11000	10	0.99 J	21	2.5
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	16000 J	16	15	11	10	3000	0.45 U	1.2 J	4.1	1.7 J
PERFLUOROOCCTANOIC ACID	PFOA	4	6	100000 J	48 J	51	30	30	27000	1.5 J	1.6 J	6.2	3.7
PERFLUORONONANOIC ACID	PFNA	10	5.9	51 UJ	0.52 U	0.53 U	0.52 U	0.75 J	0.5 U	0.53 U	0.5 U	1.7 J	2.7
PERFLUORODECANOIC ACID	PFDA	NA	NA	30 UJ	0.3 U	0.31 U	0.31 U	0.29 U	0.3 U	0.31 U	0.29 U	0.31 U	0.32 U
PERFLUOROUNDDECANOIC ACID	PFUnA	NA	NA	66 UJ	0.67 U	0.69 U	0.68 U	0.64 U	0.66 U	0.69 U	0.65 U	0.68 U	0.7 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	38 UJ	0.39 U	0.4 U	0.39 U	0.37 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	NA	63 UJ	0.63 U	0.65 U	0.64 U	0.61 U	0.62 U	0.65 U	0.61 U	0.64 U	0.66 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	46 UJ	0.47 U	0.48 U	0.47 U	0.45 U	0.46 U	0.48 U	0.45 U	0.47 U	0.49 UJ
<i>Perfluorosulfonates</i>													
PERFLUOROBUTANE SULFONIC ACID	PFBS	NA	600	54000 J	260	280	190	210	2900	4.7	1.1 J	15	1.1 J
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	NA	41000 J	51	47	48	43	4300	2	0.71 J	10	1.2 J
PERFLUOROHEXANE SULFONIC ACID	PFHxS	10	39	290000 J	220 J	230	150	150	32000	2.3	11	37	10
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	NA	2200 J	0.65 U	0.67 U	2	2.8	0.64 U	0.67 U	0.63 U	0.66 U	0.7 J
PERFLUOROOCCTANESULFONIC ACID	PFOS	4	4	32000 J	11	11	160	240	0.67 J	5.8	22	47	120
PERFLUORONONANE SULFONIC ACID	PFNS	NA	NA	60 UJ	0.61 U	0.62 U	0.61 U	0.58 U	0.59 U	0.62 U	0.59 U	0.61 U	0.63 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	50 UJ	0.51 U	0.52 U	0.51 U	0.48 U	0.49 U	0.52 U	0.49 U	0.51 U	0.53 U
<i>Fluorotelomer Sulfonates</i>													
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	NA	4100 J	0.33 U	0.34 U	0.33 U	0.32 U	0.32 U	0.34 U	0.32 U	0.33 U	0.34 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	NA	10000 J	0.47 J	0.47 J	1.8 J	13	110	0.36 U	0.34 U	0.83 J	0.96 B
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	NA	56 UJ	0.57 U	0.58 U	0.57 U	0.55 U	0.56 U	0.59 U	0.55 U	0.58 U	0.99 J
<i>Fluorosulfonamides</i>													
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	NA	47 UJ	0.86 J	1.2 B	3.3	2.7	0.47 U	0.86 J	0.46 J	0.48 U	0.5 U
N-METHYL-HEPTADECANFLUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	NA	67 UJ	0.68 U	0.7 U	0.69 U	0.65 U	0.67 U	0.7 U	0.66 U	0.69 U	0.71 U
<i>Fluorosulfonamidoacetic acids</i>													
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	NA	42 UJ	0.42 U	0.43 U	0.43 U	0.41 U	0.41 U	0.43 U	0.41 U	0.43 U	0.44 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	NA	31 UJ	0.31 U	0.32 U	0.32 U	0.3 U	0.31 U	0.32 U	0.3 U	0.32 U	0.33 U

Table H.2
2022 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation		Location Sample ID	ST010-MW011	ST010-MW011	ST010-MW011	ST010-MW011	ST010-MW012	ST010-MW012
				ST010-MW011	ST010-MW911	MW011_05112	MW911_05112	ST010-MW012	MW012_05122
				49 - 59	49 - 59	49 - 59	49 - 59	73 - 83	73 - 83
				2022/08/17	2022/08/17	2022/05/11	2022/05/11	2022/08/17	2022/05/12
			Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date
			Sample Type	Sample Type	Sample Type	Sample Type	Sample Type	Sample Type	Sample Type
			Units	Units	Units	Units	Units	Units	Units
			ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
Screening Level ^{a/}									
MCL									
RSL									
<i>Perfluorocarboxylates</i>									
PERFLUOROBUTANOIC ACID	PFBA	NA	1800	8 J	20 J	33	35	7.9	12
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	25	25	28	30	11	12
PERFLUOROHEXANOIC ACID	PFHxA	NA	990	75	74	89	90	30	32
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	19	19	20	20	7.2	6.5
PERFLUOROOCCTANOIC ACID	PFOA	4	6	37	33	45	45	13	11
PERFLUORONONANOIC ACID	PFNA	10	5.9	0.55 U	0.53 U	0.54 U	0.53 U	0.57 U	0.5 U
PERFLUORODECANOIC ACID	PFDA	NA	NA	0.32 U	0.31 U	0.32 U	0.31 U	0.33 U	0.29 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	NA	0.71 U	0.69 U	0.71 U	0.69 U	0.74 U	0.65 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	0.41 U	0.4 U	0.41 U	0.4 U	0.43 U	0.37 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	NA	0.67 U	0.66 U	0.67 U	0.65 U	0.7 U	0.61 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	0.5 U	0.48 U	0.49 U	0.48 U	0.52 U	0.45 U
<i>Perfluorosulfonates</i>									
PERFLUOROBUTANE SULFONIC ACID	PFBS	NA	600	40	41	54	52	14	17
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	NA	58	58	65	63	21	20
PERFLUOROHEXANE SULFONIC ACID	PFHxS	10	39	230	220	270	260	81	74
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	NA	0.72 J	0.93 J	1.3 J	1.2 J	0.72 U	0.63 U
PERFLUOROOCCTANESULFONIC ACID	PFOS	4	4	4.3	4.9	5.4	5.7	12	13
PERFLUORONONANE SULFONIC ACID	PFNS	NA	NA	0.64 U	0.63 U	0.64 U	0.62 U	0.67 U	0.59 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	0.54 U	0.52 U	0.53 U	0.52 U	0.56 U	0.49 U
<i>Fluorotelomer Sulfonates</i>									
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	NA	0.35 U	0.34 U	0.35 U	0.43 J	0.37 U	0.32 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	NA	12	11	12	14	5 J	4.8
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	NA	0.61 U	0.59 U	0.6 U	0.58 U	0.63 U	0.55 U
<i>Fluorosulfonamides</i>									
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	NA	0.51 U	0.49 U	0.5 U	0.49 U	0.53 U	0.46 U
N-METHYL-HEPTADECALFLUOROOCCTANE SULFONAMIDE	N-MeFOSA	NA	NA	0.72 U	0.7 U	0.72 U	0.7 U	0.75 U	0.66 U
<i>Fluorosulfonamidoacetic acids</i>									
N-METHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-MeFOSAA	NA	NA	0.45 U	0.44 U	0.45 U	0.43 U	0.47 U	0.41 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDOACETIC ACID	N-EtFOSAA	NA	NA	0.33 U	0.32 U	0.33 U	0.32 U	0.35 U	0.3 U

Notes:

^{a/} Groundwater Screening Level is the lower value of 1.) USEPA Tapwater Regional Screening Level calculated for hazard quotient of 0.1 (USEPA, November 2023), and 2.) Maximum Contaminant Level (MCL).

- = not applicable

bgs = below ground surface

FD = field duplicate

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

N = normal sample

ng/L = nanogram per liter

PFAS = per- and polyfluoroalkyl substances

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Blue and bold indicates the analyte was detected

Blue and bold indicates the result exceeds the MCL but not RSL

Gray shading indicates the result exceeds the screening criteria.

Table H.3

2023 and 2024 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID Depth (feet bgs) Sample Date Sample Type	AFFF1_GP029	AFFF1_GP029	AFFF1_GP029	AFFF1_GP029	AFFF1_GP029	AFFF1_GP029	AFFF1_GP029	AFFF1_GP029	AFFF1_GP029	AFFF1_GP030	AFFF1_GP030	AFFF1_GP030
			AFFF1_GP029_00-02 0 - 2 2023/09/27 N µg/kg	AFFF1_GP029_03-05 3 - 5 2023/09/27 N µg/kg	AFFF1_GP029_06-08 6 - 8 2023/09/27 N µg/kg	AFFF1_GP029_06-08 6 - 8 2023/09/27 FD µg/kg	AFFF1_GP029_13-15 13 - 15 2023/09/27 N µg/kg	AFFF1_GP029_18-20 18 - 20 2023/09/27 N µg/kg	AFFF1_GP029_26-28 26 - 28 2023/09/27 N µg/kg	AFFF1_GP029_30-32 30 - 32 2023/09/27 N µg/kg	AFFF1_GP030_00-02 0 - 2 2023/09/27 N µg/kg	AFFF1_GP030_05-07 5 - 7 2023/09/27 N µg/kg	AFFF1_GP030_10-12 10 - 12 2023/09/27 N µg/kg	
<i>Perfluorocarboxylates</i>														
PERFLUOROBUTANOIC ACID	PFBA	7800	0.039 U	0.049 U	0.049 U	0.049 U	0.056 U	0.05 U	0.045 U	0.044 U	0.11 J	0.045 U	0.052 U	
PERFLUOROPENTANOIC ACID	PFPeA	NA	0.022 U	0.028 U	0.028 U	0.028 U	0.032 U	0.028 U	0.026 U	0.025 U	0.1 J	0.025 U	0.029 U	
PERFLUOROHEXANOIC ACID	PFHxA	3200	0.022 U	0.028 U	0.028 U	0.028 U	0.034 J	0.07 J	0.026 U	0.025 U	0.16 J	0.025 U	0.029 U	
PERFLUOROHEPTANOIC ACID	PFHpA	NA	0.023 U	0.029 U	0.029 U	0.029 U	0.057 J	0.03 U	0.027 U	0.026 U	0.058 J	0.026 U	0.031 U	
PERFLUOROOCCTANOIC ACID	PFOA	19	0.044 U	0.055 U	0.055 U	0.055 U	0.3 J	0.057 U	0.051 U	0.05 U	0.11 J	0.55	0.075 J	
PERFLUORONONANOIC ACID	PFNA	19	0.013 U	0.016 U	0.016 U	0.016 U	0.018 U	0.016 U	0.015 U	0.014 U	0.11 J	0.014 U	0.017 U	
PERFLUORODECANOIC ACID	PFDA	NA	0.078 U	0.099 U	0.099 U	0.099 U	0.11 U	0.1 U	0.091 U	0.089 U	0.098 U	0.09 U	0.1 U	
PERFLUOROUNDECANOIC ACID	PFUnA	NA	0.029 U	0.037 U	0.037 U	0.037 U	0.043 U	0.038 U	0.034 U	0.033 U	0.037 U	0.034 U	0.039 U	
PERFLUORODODECANOIC ACID	PFDoDA	NA	0.059 U	0.074 U	0.074 U	0.074 U	0.085 U	0.076 U	0.068 U	0.066 U	0.073 U	0.067 U	0.078 U	
PERFLUOROTRIDECANOIC ACID	PFTrDA	NA	0.029 U	0.037 U	0.037 U	0.037 U	0.043 U	0.038 U	0.034 U	0.033 U	0.037 U	0.034 U	0.039 U	
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	0.018 U	0.022 U	0.022 U	0.022 U	0.026 U	0.023 U	0.021 U	0.02 U	0.022 U	0.02 U	0.024 U	
<i>Perfluorosulfonates</i>														
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	0.015 U	0.018 U	0.018 U	0.018 U	0.021 U	0.019 U	0.017 U	0.017 U	0.018 U	0.017 U	0.02 U	
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	0.014 U	0.017 U	0.017 U	0.017 U	0.083 J	0.018 U	0.016 U	0.015 U	0.017 U	0.016 U	0.018 U	
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	0.021 U	0.082 J	0.17 J	0.15 J	2.1	0.098 J	0.058 J	0.042 J	1.6	1	0.79	
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	0.029 U	0.037 U	0.037 U	0.037 U	0.043 U	0.038 U	0.034 U	0.033 U	0.037 U	0.034 U	0.039 U	
PERFLUOROOCCTANE SULFONIC ACID	PFOS	13	0.3	0.17 J	2.7	2.4	0.085 U	0.076 U	0.068 U	0.08 J	18	0.65	0.95	
PERFLUORONONANE SULFONIC ACID	PFNS	NA	0.029 U	0.037 U	0.037 U	0.037 U	0.043 U	0.038 U	0.034 U	0.033 U	0.037 U	0.034 U	0.039 U	
PERFLUORODECANE SULFONIC ACID	PFDS	NA	0.021 U	0.026 U	0.026 U	0.026 U	0.031 U	0.027 U	0.024 U	0.024 U	0.026 U	0.024 U	0.028 U	
PERFLUORODODECANE SULFONIC ACID	PFDoDS	NA	0.018 U	0.022 U	0.022 U	0.022 U	0.026 U	0.023 U	0.021 U	0.02 U	0.022 U	0.02 U	0.024 U	
<i>Fluorotelomer Sulfonates</i>														
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	0.081 U	0.1 U	0.1 U	0.1 U	0.12 U	0.1 U	0.094 U	0.091 U	0.1 U	0.093 U	0.11 U	
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	0.51 U	0.64 U	0.64 U	0.64 U	0.74 U	0.65 U	0.59 U	0.57 U	0.63 U	0.58 U	0.67 U	
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	0.12 U	0.15 U	0.15 U	0.15 U	0.18 U	0.16 U	0.14 U	0.14 U	0.15 U	0.14 U	0.16 U	
<i>Fluorotelomer Carboxylic Acids</i>														
3-PERFLUOROPROPYL PROPANOIC ACID	3:3 FTCA	NA	0.18 U	0.23 U	0.23 U	0.23 U	0.27 U	0.24 U	0.21 U	0.21 U	0.23 U	0.21 U	0.25 U	
2H,2H,3H,3H-PERFLUOROOCCTANOIC ACID	5:3 FTCA	NA	0.38 U	0.48 U	0.48 U	0.48 U	0.56 U	0.49 U	0.45 U	0.43 U	0.48 U	0.44 U	0.51 U	
3-PERFLUOROHEPTYL PROPANOIC ACID	7:3 FTCA	NA	0.32 U	0.4 U	0.4 U	0.41 U	0.47 U	0.41 U	0.37 U	0.36 U	0.4 U	0.37 U	0.43 U	
<i>Fluorosulfonamides</i>														
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	0.013 U	0.016 U	0.016 U	0.042 J	0.018 U	0.016 U	0.015 U	0.014 U	0.095 J	0.014 U	0.017 U	
N-METHYL-HEPTADEC AFLUOROOCCTANE SULFONAMIDE (NMEFOSA)	NMeFOSA	NA	0.025 U	0.032 U	0.032 U	0.032 U	0.037 U	0.032 U	0.029 U	0.028 U	0.031 U	0.029 U	0.033 U	
N-ETHYL PERFLUOROOCCTANESULFONAMIDE	NEtFOSA	NA	0.032 U	0.041 U	0.041 U	0.041 U	0.047 U	0.042 U	0.038 U	0.037 U	0.041 U	0.037 U	0.043 U	

Table H.3

2023 and 2024 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP029_00-02	AFFF1_GP029_03-05	AFFF1_GP029_06-08	AFFF1_GP029_06-08	AFFF1_GP029_13-15	AFFF1_GP029_18-20	AFFF1_GP029_26-28	AFFF1_GP029_30-32	AFFF1_GP030_00-02	AFFF1_GP030_05-07	AFFF1_GP030_10-12
			0 - 2	3 - 5	6 - 8	6 - 8	13 - 15	18 - 20	26 - 28	30 - 32	0 - 2	5 - 7	10 - 12
		Depth (feet bgs)	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27
		Sample Date	N	N	N	FD	N	N	N	N	N	N	N
		Sample Type	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		Units											
		Screening Level ^{a/}											
<i>Fluorosulfonamidoacetic acids</i>													
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	NMeFOSAA	NA	0.026 U	0.033 U	0.033 U	0.033 U	0.038 U	0.034 U	0.03 U	0.03 U	0.033 U	0.03 U	0.035 U
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	NEFOSAA	NA	0.025 U	0.032 U	0.032 U	0.032 U	0.037 U	0.032 U	0.029 U	0.028 U	0.031 U	0.029 U	0.033 U
<i>Fluorosulfonamidoethanols</i>													
N-METHYL PERFLUOROOCTANE- SULFONAMIDOETHANOL	NMeFOSE	NA	0.1 U	0.13 U	0.13 U	0.13 U	0.15 U	0.13 U	0.12 U	0.12 U	0.13 U	0.12 U	0.14 U
N-ETHYL PERFLUOROOCTANE- SULFONAMIDOETHANOL	NEFOSE	NA	0.12 U	0.14 U	0.14 U	0.15 U	0.17 U	0.15 U	0.13 U	0.13 U	0.14 U	0.13 U	0.15 U
<i>Perfluoroalkyl ether carboxylic acids</i>													
PERFLUORO-3-METHOXYPROPANOIC ACID	PFMPA	NA	0.095 U	0.12 U	0.12 U	0.12 U	0.14 U	0.12 U	0.11 U	0.11 U	0.12 U	0.11 U	0.13 U
PERFLUORO-4-METHOXYBUTANOIC ACID	PFMBA	NA	0.02 U	0.025 U	0.025 U	0.025 U	0.029 U	0.026 U	0.023 U	0.023 U	0.025 U	0.023 U	0.026 U
NONAFLUORO-3,6-DIOXAHEPTANOIC ACID	NFDHA	NA	0.05 U	0.063 U	0.063 U	0.063 U	0.073 U	0.065 U	0.059 U	0.057 U	0.063 U	0.058 U	0.067 U
HEXAFLUOROPROPYLENE OXIDE DIMER ACID	HFPO-DA/GenX	23	0.098 U	0.12 U	0.12 U	0.12 U	0.14 U	0.13 U	0.11 U	0.11 U	0.12 U	0.11 U	0.13 U
4,8-DIOXA-3H-PERFLUORONONANOIC ACID	ADONA	NA	0.085 U	0.11 U	0.11 U	0.11 U	0.12 U	0.11 U	0.099 U	0.096 U	0.11 U	0.097 U	0.11 U
<i>Perfluoroalkyl ether sulfonic acids</i>													
PERFLUORO(2-ETHOXYETHANE)SULFONIC ACID	PFEESA	NA	0.042 U	0.053 U	0.053 U	0.053 U	0.061 U	0.054 U	0.049 U	0.047 U	0.052 U	0.048 U	0.056 U
11-CHLOROEICOSAFULUOR-3-OXAUNDECANE-1-SULFONIC ACID	11Cl-PF3OUdSA	NA	0.13 U	0.16 U	0.16 U	0.16 U	0.18 U	0.16 U	0.15 U	0.14 U	0.16 U	0.14 U	0.17 U
9-CHLOROHEXADECAFLUORO-3-OXANONANE-1-SULFONIC ACID	9Cl-PF3ONSA	NA	0.053 U	0.067 U	0.067 U	0.067 U	0.078 U	0.069 U	0.062 U	0.06 U	0.067 U	0.061 U	0.071 U

Table H.3

2023 and 2024 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP030_13-15	AFFF1_GP030_20-22	AFFF1_GP030_20-22	AFFF1_GP030_28-30	AFFF1_GP030_33-35	AFFF1_GP031_00-02	AFFF1_GP031_03-05	AFFF1_GP031_08-10	AFFF1_GP031_08-10	AFFF1_GP031_13-15	AFFF1_GP031_18-20
			13 - 15	20 - 22	20 - 22	28 - 30	33 - 35	0 - 2	3 - 5	8 - 10	8 - 10	13 - 15	18 - 20
		Depth (feet bgs)	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27
		Sample Date	N	N	FD	N	N	N	N	N	FD	N	N
		Sample Type											
		Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		Screening Level ^{a/}											
<i>Perfluorocarboxylates</i>													
PERFLUOROBUTANOIC ACID	PFBA	7800	0.047 U	0.05 U	0.046 U	0.048 U	0.046 U	1.4	0.9 J	0.97 J	0.98 J	0.74 J	0.67 J
PERFLUOROPENTANOIC ACID	PFPeA	NA	0.027 U	0.028 U	0.026 U	0.027 U	0.026 U	3	4.3	6.5	5.8	5.5	4.1
PERFLUOROHEXANOIC ACID	PFHxA	3200	0.027 U	0.028 U	0.026 U	0.027 U	0.026 U	8.6	12	12	11	9.4	6.3
PERFLUOROHEPTANOIC ACID	PFHpA	NA	0.028 U	0.03 U	0.028 U	0.028 U	0.027 U	3.1	4.5	2.7	2.3	2.6	1.4
PERFLUOROOCCTANOIC ACID	PFOA	19	0.1 J	0.072 J	0.053 U	0.054 U	0.052 U	34	59	53	48	23	12
PERFLUORONONANOIC ACID	PFNA	19	0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	8.8	21	5.3	4.6	2.1	0.94
PERFLUORODECANOIC ACID	PFDA	NA	0.096 U	0.1 U	0.094 U	0.096 U	0.093 U	10	0.092 U	0.26	0.2 J	0.58	0.11 J
PERFLUOROUNDECANOIC ACID	PFUnA	NA	0.036 U	0.038 U	0.035 U	0.036 U	0.035 U	10	0.034 U	0.037 U	0.036 U	0.034 U	0.032 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	0.072 U	0.076 U	0.07 U	0.072 U	0.069 U	2.2	0.069 U	0.073 U	0.073 U	0.069 U	0.065 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	0.036 U	0.038 U	0.035 U	0.036 U	0.035 U	0.34	0.034 U	0.037 U	0.036 U	0.034 U	0.032 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	0.022 U	0.023 U	0.021 U	0.022 U	0.021 U	0.022 U	0.021 U	0.022 U	0.022 U	0.021 U	0.02 U
<i>Perfluorosulfonates</i>													
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	0.018 U	0.019 U	0.018 U	0.018 U	0.017 U	2	4.6	3.1	3.1	1.5	0.73
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	0.017 U	0.018 U	0.016 U	0.017 U	0.016 U	2.9	5.3	5.3	5.4	2.8	1.4
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	0.69	0.41	0.16 J	0.026 U	0.025 U	110	300	150	190	81	38
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	0.036 U	0.038 U	0.035 U	0.036 U	0.035 U	7.3	46 J	51	43	20 J	12
PERFLUOROOCCTANE SULFONIC ACID	PFOS	13	0.16 J	0.69 J	0.38 J	0.22 J	0.11 J	2700	4100	1800	2300	5000	1200
PERFLUORONONANE SULFONIC ACID	PFNS	NA	0.036 U	0.038 U	0.035 U	0.036 U	0.035 U	53	0.034 U	2.6 J	0.036 UJ	0.034 U	0.032 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	0.026 U	0.027 U	0.025 U	0.026 U	0.025 U	51	0.025 U	0.026 U	0.026 U	0.025 U	0.023 U
PERFLUORODODECANE SULFONIC ACID	PFDoDS	NA	0.022 U	0.023 U	0.021 U	0.022 U	0.021 U	29	0.021 U	0.022 U	0.022 U	0.021 U	0.02 U
<i>Fluorotelomer Sulfonates</i>													
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	0.099 U	0.1 U	0.096 U	0.099 U	0.096 U	0.099 U	0.095 U	0.1 U	0.1 U	0.17 J	0.092 J
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	0.62 U	0.66 U	0.61 U	0.62 U	0.6 U	2.9	20	42	40	53	29
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	0.15 U	0.16 U	0.15 U	0.15 U	0.14 U	17	10	18	16	72 J	11
<i>Fluorotelomer Carboxylic Acids</i>													
3-PERFLUOROPROPYL PROPANOIC ACID	3:3 FTCA	NA	0.23 U	0.24 U	0.22 U	0.23 U	0.22 U	0.23 U	0.22 U	0.23 U	0.23 U	0.22 U	0.2 U
2H,2H,3H,3H-PERFLUOROOCCTANOIC ACID	5:3 FTCA	NA	0.47 U	0.49 U	0.46 U	0.47 U	0.45 U	2.2 J	0.45 U	0.52 J	0.48 U	1.2 J	0.42 U
3-PERFLUOROHEPTYL PROPANOIC ACID	7:3 FTCA	NA	0.39 U	0.42 U	0.38 U	0.39 U	0.38 U	5 J	0.38 U	0.4 U	0.4 U	0.38 U	0.36 U
<i>Fluorosulfonamides</i>													
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	340	18 J	2.7 J	2.7	3.1 J	1.6
N-METHYL-HEPTADEC AFLUOROOCCTANE SULFONAMIDE (NMEFOSA)	NMeFOSA	NA	0.031 U	0.032 U	0.03 U	0.031 U	0.03 U	3.8 J	0.03 U	0.031 U	0.031 U	0.029 U	0.028 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDE	NEtFOSA	NA	0.04 U	0.042 U	0.039 U	0.04 U	0.038 U	0.25 J	0.038 U	0.041 U	0.04 U	0.038 U	0.036 U

Table H.3

2023 and 2024 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP030_13-15	AFFF1_GP030_20-22	AFFF1_GP030_20-22	AFFF1_GP030_28-30	AFFF1_GP030_33-35	AFFF1_GP031_00-02	AFFF1_GP031_03-05	AFFF1_GP031_08-10	AFFF1_GP031_08-10	AFFF1_GP031_13-15	AFFF1_GP031_18-20
			13 - 15	20 - 22	20 - 22	28 - 30	33 - 35	0 - 2	3 - 5	8 - 10	8 - 10	13 - 15	18 - 20
		Depth (feet bgs)	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27	2023/09/27
		Sample Date	N	N	FD	N	N	N	N	N	FD	N	N
		Sample Type	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		Units											
		Screening Level ^{a/}											
<i>Fluorosulfonamidoacetic acids</i>													
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	NMeFOSAA	NA	0.032 U	0.034 U	0.031 U	0.032 U	0.031 U	14 J	0.031 U	0.033 U	0.033 U	0.031 U	0.029 U
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	NEFOSAA	NA	0.031 U	0.032 U	0.03 U	0.031 U	0.03 U	0.031 U	0.03 U	0.031 U	0.031 U	0.029 U	0.028 U
<i>Fluorosulfonamidoethanols</i>													
N-METHYL PERFLUOROOCTANE- SULFONAMIDOETHANOL	NMeFOSE	NA	0.13 U	0.13 U	0.12 U	0.13 U	0.12 U	0.13 U	0.12 U	0.13 U	0.13 U	0.12 U	0.11 U
N-ETHYL PERFLUOROOCTANE- SULFONAMIDOETHANOL	NEFOSE	NA	0.14 U	0.15 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U
<i>Perfluoroalkyl ether carboxylic acids</i>													
PERFLUORO-3-METHOXYPROPANOIC ACID	PFMPA	NA	0.12 U	0.12 U	0.11 U	0.12 U	0.11 U	0.12 U	0.11 U	0.12 U	0.12 U	0.11 U	0.11 U
PERFLUORO-4-METHOXYBUTANOIC ACID	PFMBA	NA	0.024 U	0.026 U	0.024 U	0.024 U	0.024 U	0.024 U	0.023 U	0.025 U	0.025 U	0.023 U	0.022 U
NONAFLUORO-3,6-DIOXAHEPTANOIC ACID	NFDHA	NA	0.062 U	0.065 U	0.06 U	0.062 U	0.06 U	0.062 U	0.059 U	0.063 U	0.063 U	0.059 U	0.056 U
HEXAFLUOROPROPYLENE OXIDE DIMER ACID	HFPO-DA/GenX	23	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.11 U
4,8-DIOXA-3H-PERFLUORONONANOIC ACID	ADONA	NA	0.1 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11 U	0.11 U	0.1 U	0.094 U
<i>Perfluoroalkyl ether sulfonic acids</i>													
PERFLUORO(2-ETHOXYETHANE)SULFONIC ACID	PFEESA	NA	0.051 U	0.054 U	0.05 U	0.051 U	0.05 U	0.051 U	0.049 U	0.052 U	0.052 U	0.049 U	0.046 U
11-CHLOROEICOSAFULUOR-3-OXAUNDECANE-1-SULFONIC ACID	11Cl-PF3OUdSA	NA	0.15 U	0.16 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.16 U	0.16 U	0.15 U	0.14 U
9-CHLOROHEXADECAFLUORO-3-OXANONANE-1-SULFONIC ACID	9Cl-PF3ONSA	NA	0.065 U	0.069 U	0.064 U	0.066 U	0.063 U	0.066 U	0.063 U	0.067 U	0.066 U	0.063 U	0.059 U

Table H.3

2023 and 2024 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP031	AFFF1_GP031	AFFF1_HA013	AFFF1_HA014	AFFF1_HA015	AFFF1_HA016	AFFF1_HA017	AFFF1_HA018	AFFF1_HA019	AFFF1_HA020	AFFF1_HA021
			AFFF1_GP031_26-28	AFFF1_GP031_32-34	AFFF1_HA013-SO_00-02	AFFF1_HA014-SO_00-02	AFFF1_HA015-SO_00-02	AFFF1_HA016-SO_00-02	AFFF1_HA017-SO_00-02	AFFF1_HA018-SO_00-02	AFFF1_HA019-SO_00-02	AFFF1_HA020-SO_00-02	AFFF1_HA021-SO_00-02
		Depth (feet bgs)	26 - 28	32 - 34	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2
		Sample Date	2023/09/27	2023/09/27	2023/09/30	2023/09/30	2023/09/30	2023/09/30	2023/09/30	2023/09/30	2023/09/30	2024/07/25	2024/07/25
		Sample Type	N	N	N	N	N	N	N	N	N	N	N
		Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		Screening Level ^{a/}											
<i>Perfluorocarboxylates</i>													
PERFLUOROBUTANOIC ACID	PFBA	7800	0.7 J	0.63 J	0.049 U	0.064 J	0.039 U	0.039 U	0.13 J	0.16 J	0.24 J	0.18 J	0.21 J
PERFLUOROPENTANOIC ACID	PFPeA	NA	3.4	2.9	0.028 U	0.022 U	0.022 U	0.043 J	0.36 J	0.41 J	0.48 J	0.011 U	0.13 J
PERFLUOROHEXANOIC ACID	PFHxA	3200	8	5.7	0.073 J	0.089 J	0.09 J	0.046 J	5	0.54	0.45	0.018 U	0.017 U
PERFLUOROHEPTANOIC ACID	PFHpA	NA	1.7	1.6	0.11 J	0.023 U	0.023 U	0.077 J	3.7	0.53	0.29	0.024 U	0.13 J
PERFLUOROOCCTANOIC ACID	PFOA	19	12	6.5	0.57	0.44	0.45	0.17 J	170	1.1	5.1 J	0.091 J	0.15 J
PERFLUORONONANOIC ACID	PFNA	19	0.56	0.35	0.096 J	0.021 J	0.027 J	0.17 J	1.6	0.051 J	0.33	0.061 U	0.21
PERFLUORODECANOIC ACID	PFDA	NA	0.095 U	0.086 U	0.098 U	0.079 U	0.079 U	0.097 J	1.4	0.1 U	0.061 U	0.047 U	0.047 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	0.035 U	0.032 U	0.037 U	0.029 U	0.03 U	0.03 U	0.16 J	0.039 U	0.043 U	0.034 U	0.2
PERFLUORODODECANOIC ACID	PFDoDA	NA	0.071 U	0.064 U	0.074 U	0.059 U	0.059 U	0.059 U	0.13 J	0.078 U	0.024 U	0.018 U	0.018 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	0.035 U	0.032 U	0.037 U	0.029 U	0.03 U	0.03 U	0.027 U	0.039 U	0.033 U	0.026 U	0.026 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	0.022 U	0.02 U	0.022 U	0.018 U	0.018 U	0.018 U	0.016 U	0.024 U	0.041 U	0.032 U	0.031 U
<i>Perfluorosulfonates</i>													
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	1.3	0.93	0.032 J	0.015 U	0.015 U	0.015 U	0.095 J	0.078 J	0.15 J	0.0073 U	0.12 J
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	2.2	1.5	0.017 U	0.014 U	0.014 U	0.014 U	1.2	0.06 J	0.19 J	0.021 U	0.021 U
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	46	33	1.9	1.4	1.9	0.43	150	14	20	0.022 U	0.022 U
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	8.6	2.2	0.091 J	0.062 J	0.064 J	0.065 J	11	0.2 J	3 J	0.031 U	0.031 U
PERFLUOROOCCTANE SULFONIC ACID	PFOS	13	560	430	3.3	3.1	6	15	330	9	100	0.97	0.77
PERFLUORONONANE SULFONIC ACID	PFNS	NA	0.035 U	0.032 U	0.037 U	0.029 U	0.03 U	1.4 J	0.99 J	0.039 U	0.036 U	0.028 U	0.028 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	0.025 U	0.023 U	0.026 U	0.021 U	0.021 U	0.19 J	1	0.028 U	0.029 U	0.023 U	0.023 U
PERFLUORODODECANE SULFONIC ACID	PFDoDS	NA	0.022 U	0.02 U	0.022 U	0.018 U	0.018 U	0.21	0.37	0.024 U	0.019 U	0.014 U	0.014 U
<i>Fluorotelomer Sulfonates</i>													
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	0.098 U	0.089 U	0.1 U	0.081 U	0.081 U	0.081 U	0.074 U	0.11 U	0.057 U	0.045 U	0.045 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	25	11	0.64 U	0.51 U	0.51 U	0.51 U	3.5	0.67 U	0.079 U	0.062 U	0.061 U
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	1.4	4	0.15 U	0.12 U	0.12 U	0.48 J	4.3	0.16 U	0.077 U	0.06 U	0.06 U
<i>Fluorotelomer Carboxylic Acids</i>													
3-PERFLUOROPROPYL PROPANOIC ACID	3:3 FTCA	NA	0.22 U	0.2 U	0.23 U	0.18 U	0.19 U	0.19 U	0.17 U	0.24 U	0.049 U	0.038 U	0.038 U
2H,2H,3H,3H-PERFLUOROOCCTANOIC ACID	5:3 FTCA	NA	0.46 U	0.42 U	0.48 U	0.38 U	0.39 U	0.39 U	0.35 U	0.51 U	0.14 U	0.15 J	0.11 U
3-PERFLUOROHEPTYL PROPANOIC ACID	7:3 FTCA	NA	0.39 U	0.35 U	0.4 U	0.32 U	0.32 U	0.32 U	0.3 U	0.43 U	0.22 U	0.26 J	0.17 U
<i>Fluorosulfonamides</i>													
PERFLUOROOCCTANE SULFONAMIDE	PFOSA/FOSA	NA	0.19 J	0.11 J	0.063 J	0.14 J	0.38	0.97	770	0.031 J	0.04 U	0.29	0.27
N-METHYL-HEPTADEC AFLUOROOCCTANE SULFONAMIDE (NMEFOSA)	NMeFOSA	NA	0.03 U	0.028 U	0.032 U	0.025 U	0.025 U	0.025 U	6.4 J	0.033 U	0.033 U	0.026 U	0.025 U
N-ETHYL PERFLUOROOCCTANESULFONAMIDE	NEtFOSA	NA	0.039 U	0.036 U	0.041 U	0.033 U	0.033 U	0.033 U	0.03 U	0.043 U	0.081 U	0.063 U	0.063 U

Table H.3

2023 and 2024 PFAS Remedial Investigation, Soil Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP031	AFFF1_GP031	AFFF1_HA013	AFFF1_HA014	AFFF1_HA015	AFFF1_HA016	AFFF1_HA017	AFFF1_HA018	AFFF1_HA019	AFFF1_HA020	AFFF1_HA021
			AFFF1_GP031_26-28	AFFF1_GP031_32-34	AFFF1_HA013-SO_00-02	AFFF1_HA014-SO_00-02	AFFF1_HA015-SO_00-02	AFFF1_HA016-SO_00-02	AFFF1_HA017-SO_00-02	AFFF1_HA018-SO_00-02	AFFF1_HA019-SO_00-02	AFFF1_HA020-SO_00-02	AFFF1_HA021-SO_00-02
		Depth (feet bgs)	26 - 28	32 - 34	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2
		Sample Date	2023/09/27	2023/09/27	2023/09/30	2023/09/30	2023/09/30	2023/09/30	2023/09/30	2023/09/30	2023/09/30	2024/07/25	2024/07/25
		Sample Type	N	N	N	N	N	N	N	N	N	N	N
		Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		Screening Level ^{a/}											
<i>Fluorosulfonamidoacetic acids</i>													
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	NMeFOSAA	NA	0.032 U	0.029 U	0.033 U	0.026 U	0.026 U	0.026 U	1.9	0.035 U	0.065 U	0.051 U	0.05 U
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	NEtFOSAA	NA	0.03 U	0.028 U	0.032 U	0.025 U	0.025 U	0.025 U	0.49	0.033 U	0.063 U	0.049 U	0.049 U
<i>Fluorosulfonamidoethanols</i>													
N-METHYL PERFLUOROOCTANE- SULFONAMIDOETHANOL	NMeFOSE	NA	0.13 U	0.11 U	0.13 U	0.1 U	0.1 U	0.1 U	0.095 U	0.14 U	0.091 U	0.071 U	0.071 U
N-ETHYL PERFLUOROOCTANE- SULFONAMIDOETHANOL	NEtFOSE	NA	0.14 U	0.13 U	0.14 U	0.12 U	0.12 U	0.12 U	0.11 U	0.15 U	0.15 U	0.12 U	0.12 U
<i>Perfluoroalkyl ether carboxylic acids</i>													
PERFLUORO-3-METHOXYPROPANOIC ACID	PFMPA	NA	0.12 U	0.1 U	0.12 U	0.095 U	0.096 U	0.096 U	0.088 U	0.13 U	0.0082 U	0.0064 U	0.057 J
PERFLUORO-4-METHOXYBUTANOIC ACID	PFMBA	NA	0.024 U	0.022 U	0.025 U	0.02 U	0.02 U	0.02 U	0.018 U	0.026 U	0.017 U	0.013 U	0.013 U
NONAFLUORO-3,6-DIOXAHEPTANOIC ACID	NFDHA	NA	0.061 U	0.055 U	0.063 U	0.05 U	0.051 U	0.051 U	0.046 U	0.066 U	0.047 U	0.037 U	0.037 U
HEXAFLUOROPROPYLENE OXIDE DIMER ACID	HFPO-DA/GenX	23	0.12 U	0.11 U	0.12 U	0.099 U	0.099 U	0.099 U	0.09 U	0.13 U	0.035 U	0.027 U	0.069 J
4,8-DIOXA-3H-PERFLUORONONANOIC ACID	ADONA	NA	0.1 U	0.093 U	0.11 U	0.085 U	0.086 U	0.086 U	0.078 U	0.11 U	0.012 U	0.0097 U	0.0097 U
<i>Perfluoroalkyl ether sulfonic acids</i>													
PERFLUORO(2-ETHOXYETHANE)SULFONIC ACID	PFEESA	NA	0.051 U	0.046 U	0.053 U	0.042 U	0.042 U	0.042 U	0.038 U	0.055 U	0.026 U	0.02 U	0.02 U
11-CHLOROEICOSAFULUOR-3-OXAUNDECANE-1-SULFONIC ACID	11Cl-PF3OUdSA	NA	0.15 U	0.14 U	0.16 U	0.13 U	0.13 U	0.13 U	0.12 U	0.17 U	0.027 U	0.021 U	0.021 U
9-CHLOROHEXADECAFLUORO-3-OXANONANE-1-SULFONIC ACID	9Cl-PF3ONSA	NA	0.065 U	0.059 U	0.067 U	0.053 U	0.054 U	0.054 U	0.049 U	0.071 U	0.026 U	0.02 U	0.02 U

Notes:

^{a/} USEPA Regional Screening Level calculated for hazard quotient of 0.1 (USEPA, November 2023).

- = not applicable

µg/kg = microgram per kilogram

bgs = below ground surface

FD = field duplicate

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

N = normal sample

PFAS = per- and polyfluoroalkyl substances

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Bold indicates the analyte was detected

Gray shading indicates the result exceeds the screening criteria.

Table H.4

2023 and 2024 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	Depth (feet bgs) Sample Date Sample Type	01-MW-01	01-MW-03	01-MW-03	01-MW-07	01-MW-08R	01-MW-08R	BKGD-MW005	CPL006-MW001	FT001-MW009	FT001-MW010	FT001-MW011
				01-MW-01	01-MW-03	01-MW-03	01-MW-07	01-MW-08R	01-MW-98R	BKGD-MW005	CLP006-MW001	FT001-MW009	FT001-MW010	FT001-MW011
				7_19 - 46_8	12_5 - 22_5	13 - 23	6_7 - 46	4 - 44	4 - 44	12 - 32	19 - 39	50 - 60	13 - 38	48 - 58
				2023/08/20	2024/07/20	2023/08/09	2023/08/10	2023/08/15	2023/08/15	2023/08/12	2023/08/13	2023/08/09	2023/08/09	2023/08/09
Units			ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
Screening Level ^{al}														
MCL														
RSL														
<i>Perfluorocarboxylates</i>														
PERFLUOROBUTANOIC ACID	PFBA	NA	1800	410	1300	1400	990	2500	2500	12	14	320	930	1400
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	1500	4000	4300	4100	7900	8100	16	0.5 U	1000	3200	3800
PERFLUOROHEXANOIC ACID	PFHxA	NA	990	2600	18000	28000	13000	22000	23000	83	65	2600	8600	14000
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	750	260	430	3400	3400	3300	10	13	460	1100	1700
PERFLUOROOCCTANOIC ACID	PFOA	4	6	4600	68 J	33	9300	17000	16000	52	9.2	2800	4300	12000
PERFLUORONONANOIC ACID	PFNA	10	5.9	61	33 U	1.8 U	2 J	54	49	0.18 U	0.24 U	24	4.5 J	22
PERFLUORODECANOIC ACID	PFDA	NA	NA	0.083 U	16 U	0.85 U	0.35 U	1.8 U	1.7 U	0.085 U	0.12 U	0.35 U	0.35 U	0.87 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	NA	0.27 U	22 U	2.7 U	1.1 U	5.6 U	5.5 U	0.27 U	0.37 U	1.1 U	1.1 U	2.8 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	33 U	14 U	3.5 U	1.4 U	7.2 U	7.1 U	0.35 U	0.48 U	1.4 U	1.4 U	3.6 U
PERFLUOROTRIDECANOIC ACID	PFTrDA	NA	NA	15 U	24 U	1.6 U	0.65 U	3.3 U	3.2 U	0.16 U	0.22 U	0.66 U	0.65 U	1.6 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	19 U	33 U	2 U	0.83 U	4.2 U	4.1 U	0.2 U	0.28 U	0.84 U	0.83 U	2.1 U
<i>Perfluorosulfonates</i>														
PERFLUOROBUTANE SULFONIC ACID	PFBS	NA	600	410	4400	6000	2900	6300	6400	21	34	470	2400	3100
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	NA	930	1500	3500	4200	12000 J	8800 J	17	47	1400	3800	5300
PERFLUOROHEXANE SULFONIC ACID	PFHxS	10	39	17000	170	340	16000	63000	65000	190	86	11000	17000	31000
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	NA	1400	35 U	3.9 U	46	2600	2300	0.39 U	0.53 U	970	230	870
PERFLUOROOCCTANE SULFONIC ACID	PFOS	4	4	59000	15 U	11 J	510	34000	31000	0.31 U	0.43 U	22000	1100 J	14000
PERFLUORONONANE SULFONIC ACID	PFNS	NA	NA	14 U	22 U	1.5 U	0.61 U	3.1 U	3 U	0.15 U	0.2 U	0.62 U	0.61 U	1.5 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	22 U	24 U	2.4 U	0.97 U	4.9 U	4.8 U	0.24 U	0.32 U	0.97 U	0.97 U	2.4 U
PERFLUORODODECANE SULFONIC ACID	PFDoDS	NA	NA	20 U	38 U	2.2 U	0.88 U	4.4 U	4.3 U	0.22 U	0.29 U	0.89 U	0.88 U	2.2 U
<i>Fluorotelomer Sulfonates</i>														
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	NA	62 U	46 U	6.7 U	27 U	140 U	130 U	0.66 U	0.9 U	27 U	87 J	100 J
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	NA	5300	160 U	5.7 U	380	18000	17000	0.57 U	3.5 J	3000	3200	6500
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	NA	56	140 U	7.5 U	3.1 U	15 U	15 U	0.75 U	1 U	22 J	3.1 U	7.6 U
<i>Fluorotelomer Carboxylic Acids</i>														
3-PERFLUOROPROPYL PROPANOIC ACID	3:3 FTCA	NA	NA	12	52 U	17 U	7.1 U	36 U	35 U	1.7 U	2.4 U	7.1 U	7.1 U	19 J
2H,2H,3H,3H-PERFLUOROOCCTANOIC ACID	5:3 FTCA	NA	NA	15 J	61 U	50 U	21 U	100 U	100 U	5 U	6.8 U	41 J	21 U	110 J
3-PERFLUOROHEPTYL PROPANOIC ACID	7:3 FTCA	NA	NA	5.3 U	120 U	54 U	22 U	110 U	110 U	5.4 U	7.4 U	22 U	22 U	55 U

Table H.4

2023 and 2024 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	MCL	RSL	Location Sample ID	01-MW-01 01-MW-01 7_19 - 46_8 2023/08/20 N	01-MW-03 01-MW-03 12_5 - 22_5 2024/07/20 N	01-MW-03 01-MW-03 13 - 23 2023/08/09 N	01-MW-07 01-MW-07 6_7 - 46 2023/08/10 N	01-MW-08R 01-MW-08R 4 - 44 2023/08/15 N	01-MW-08R 01-MW-98R 4 - 44 2023/08/15 FD	BKGD-MW005 BKGD-MW005 12 - 32 2023/08/12 N	CPL006-MW001 CLP006-MW001 19 - 39 2023/08/13 N	FT001-MW009 FT001-MW009 50 - 60 2023/08/09 N	FT001-MW010 FT001-MW010 13 - 38 2023/08/09 N	FT001-MW011 FT001-MW011 48 - 58 2023/08/09 N			
				Depth (feet bgs)	Sample Date	Sample Type	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
				Units	Screening Level ^{al}													
Fluorosulfonamides																		
PERFLUOROOCTANE SULFONAMIDE	PFOSA/FOSA	NA	NA		5.2	33 U	1.7 J	76	2.1 U	2.1 U	0.1 U	0.6 J	4.2 U	0.42 U	1.8 J			
N-METHYL-HEPTADEC AFLUOROOCTANE SULFONAMIDE (NMEFOSA)	NMeFOSA	NA	NA		0.29 U	53 U	3 U	1.2 U	6.2 U	6.1 U	0.3 U	0.41 U	1.2 U	1.2 U	3.1 U			
N-ETHYL PERFLUOROOCTANESULFONAMIDE	NEtFOSA	NA	NA		18 U	61 U	1.9 U	0.78 U	3.9 U	3.8 U	0.19 U	0.26 U	0.79 U	0.78 U	1.9 U			
Fluorosulfonamidoacetic acids																		
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	NMeFOSAA	NA	NA		0.4 U	67 U	4.1 U	1.7 U	8.4 U	8.2 U	0.41 U	0.56 U	1.7 U	1.7 U	4.2 U			
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	NEtFOSAA	NA	NA		32 U	45 U	3.5 U	1.4 U	7.2 U	7 U	0.35 U	0.48 U	1.4 U	1.4 U	3.6 U			
Fluorosulfonamidoethanols																		
N-METHYL PERFLUOROOCTANE-SULFONAMIDOETHANOL	NMeFOSE	NA	NA		96 U	140 U	10 U	4.2 U	21 U	21 U	1 U	1.4 U	4.3 U	4.3 U	11 U			
N-ETHYL PERFLUOROOCTANE-SULFONAMIDOETHANOL	NEtFOSE	NA	NA		100 U	130 U	11 U	4.6 U	23 U	23 U	1.1 U	1.5 U	4.6 U	4.6 U	11 U			
Perfluoroalkyl ether carboxylic acids																		
PERFLUORO-3-METHOXYPROPANOIC ACID	PFMPA	NA	NA		0.57 J	13 U	4.9 U	2.9 J	10 U	9.8 U	0.49 U	0.66 U	2 U	2.1 J	5 U			
PERFLUORO-4-METHOXYBUTANOIC ACID	PFMBA	NA	NA		0.99 J	17 U	7.9 J	4.5 J	9.6 U	9.4 U	0.47 U	0.64 U	1.9 U	3.3 J	4.8 U			
NONAFLUORO-3,6-DIOXAHEPTANOIC ACID	NFDHA	NA	NA		0.36 U	44 U	3.7 U	1.5 U	7.7 U	7.5 U	0.37 U	0.51 U	1.5 U	1.5 U	3.8 U			
HEXAFLUOROPROPYLENE OXIDE DIMER ACID	HFPO-DA/GenX	10	1.5		0.45 U	44 U	4.6 U	1.9 U	9.5 U	9.3 U	0.46 U	0.63 U	1.9 U	1.9 U	4.7 U			
4,8-DIOXA-3H-PERFLUORONONANOIC ACID	ADONA	NA	NA		0.41 U	21 U	4.3 U	1.7 U	8.7 U	8.5 U	0.42 U	0.58 U	1.7 U	1.7 U	4.3 U			
Perfluoroalkyl ether sulfonic acids																		
PERFLUORO(2-ETHOXYETHANE)SULFONIC ACID	PFEESA	NA	NA		0.32 U	14 U	3.3 U	8.6 J	6.8 U	6.6 U	0.33 U	0.45 U	1.3 U	1.3 U	3.3 U			
11-CHLOROEICOSAFULUOR-3-OXAUNDECANE-1-SULFONIC ACID	11Cl-PF3OUdSA	NA	NA		1.2 U	23 U	120 U	4.9 U	25 U	24 U	1.2 U	1.6 U	49 U	4.9 U	12 U			
9-CHLOROHEXADEC AFLUORO-3-OXANONANE-1-SULFONIC ACID	9Cl-PF3ONSA	NA	NA		1 U	24 U	110 U	4.4 U	22 U	21 U	1.1 U	1.5 U	44 U	44 U	110 U			

Table H.4

2023 and 2024 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	Depth (feet bgs) Sample Date Sample Type	FT001-MW012	FT001-MW013	FT001-MW013	FT001-MW013	FT001-MW014	FT001-MW015	FT001-MW016	FT001-MW017	FT001-MW018	FT001-MW018	FT001-MW019	
				FT001-MW012	FT001-MW013	FT001-MW913	FT001-MW013	FT001-MW014	FT001-MW015	FT001-MW016	FT001-MW017	FT001-MW018	FT001-MW018	FT001-MW018	FT001-MW019
				70 - 80	12 - 32	12 - 32	12 - 32	40 - 50	60 - 70	12_97 - 22_97	9_9 - 24_9	30 - 50	30 - 50	30 - 50	32 - 43
				2023/08/09	2023/08/06	2023/08/06	2024/07/20	2023/08/09	2023/08/09	2023/08/09	2023/08/09	2023/09/04	2024/07/24	2023/09/04	2023/09/04
				ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	
			Units												
			Screening Level ^{a/}												
			MCL												
			RSL												
<i>Perfluorocarboxylates</i>															
PERFLUOROBUTANOIC ACID	PFBA	NA	1800	210	5300	5400	13000	65	73	840	5.6 J	2.5 J	2.8 J	10	
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	580	13000	14000	32000	190	220	3900	5.4	0.73 J	0.69 J	24	
PERFLUOROHEXANOIC ACID	PFHxA	NA	990	1700	39000	42000	99000	580	810	11000	11	0.69 J	1.3 J	71	
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	230	4700	4900	11000	11	11	2300	0.78 J	0.24 U	0.16 U	7.9	
PERFLUOROOCCTANOIC ACID	PFOA	4	6	1200	27000	27000	65000	42	35	36000	0.6 U	0.77 U	0.47 U	34	
PERFLUORONONANOIC ACID	PFNA	10	5.9	4.5	71	67	490 U	0.17 U	0.53 J	1.8 U	0.17 U	0.22 U	0.32 U	0.18 U	
PERFLUORODECANOIC ACID	PFDA	NA	NA	0.17 U	1.6 U	1.7 U	250 U	0.082 U	0.079 U	0.86 U	0.08 U	0.1 U	0.16 U	0.085 U	
PERFLUOROUNDECANOIC ACID	PFUnA	NA	NA	0.56 U	5.2 U	5.4 U	330 U	0.26 U	0.25 U	2.8 U	0.26 U	0.33 U	0.21 U	0.27 U	
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	0.72 U	6.8 U	7 U	200 U	0.34 U	0.33 U	3.6 U	0.33 U	0.43 U	0.13 U	0.35 U	
PERFLUOROTRIDECANOIC ACID	PFTrDA	NA	NA	0.33 U	3.1 U	3.2 U	360 U	0.15 U	0.15 U	1.6 U	0.15 U	0.19 U	0.24 UJ	0.15 U	
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	0.42 U	3.9 U	4 U	490 U	0.2 U	0.19 U	2.1 U	0.19 U	0.25 U	0.32 UJ	0.2 U	
<i>Perfluorosulfonates</i>															
PERFLUOROBUTANE SULFONIC ACID	PFBS	NA	600	390	16000	15000	34000	180	190	2700	6.7	0.73 J	1.1 J	21	
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	NA	850	12000	13000	26000	38	43	3800	2.2	0.36 J	0.78 J	34	
PERFLUOROHEXANE SULFONIC ACID	PFHxS	10	39	4300	82000	85000	130000	170	150	41000	3.5	1.1 J	2.4	95	
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	NA	180	2300	2300	2500	0.37 U	3 J	3.9 U	0.37 U	0.47 U	0.34 UJ	0.39 U	
PERFLUOROOCCTANE SULFONIC ACID	PFOS	4	4	3000	6.1 U	6.2 U	23000	11	160	3.2 U	0.3 U	2.2	0.15 UJ	6.7	
PERFLUORONONANE SULFONIC ACID	PFNS	NA	NA	0.31 U	2.9 U	3 U	330 U	0.14 U	0.14 U	1.5 U	0.14 U	0.18 U	0.21 UJ	0.15 U	
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	0.48 U	4.6 U	4.7 U	360 U	0.23 U	0.22 U	2.4 U	0.22 U	0.29 U	0.23 UJ	0.24 U	
PERFLUORODODECANE SULFONIC ACID	PFDoDS	NA	NA	0.44 U	4.2 U	4.3 U	570 U	0.21 U	0.2 U	2.2 U	0.2 U	0.26 U	0.37 UJ	0.22 U	
<i>Fluorotelomer Sulfonates</i>															
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	NA	16 J	1200	1200	2600 J	0.64 U	0.62 U	67 U	0.63 U	0.81 U	0.45 U	0.67 U	
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	NA	1000	11000	11000	19000	0.55 U	5.3 U	320 J	0.54 U	0.7 U	1.5 U	16	
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	NA	2.4 J	14 U	15 U	2000 U	0.72 U	0.7 U	7.6 U	0.71 U	0.91 U	1.3 U	0.75 U	
<i>Fluorotelomer Carboxylic Acids</i>															
3-PERFLUOROPROPYL PROPANOIC ACID	3:3 FTCA	NA	NA	3.5 U	100 J	110 J	780 U	1.7 U	1.6 U	18 U	1.6 U	2.1 U	0.51 U	1.7 U	
2H,2H,3H,3H-PERFLUOROOCCTANOIC ACID	5:3 FTCA	NA	NA	21 J	97 U	100 U	920 U	4.8 U	4.7 U	51 U	4.7 U	6.1 U	0.6 U	5 U	
3-PERFLUOROHEPTYL PROPANOIC ACID	7:3 FTCA	NA	NA	11 U	100 U	110 U	1800 U	5.2 U	5 U	55 U	5.1 U	6.6 U	1.2 U	5.4 U	

Table H.4

2023 and 2024 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	Depth (feet bgs) Sample Date Sample Type	FT001-MW012	FT001-MW013	FT001-MW013	FT001-MW013	FT001-MW014	FT001-MW015	FT001-MW016	FT001-MW017	FT001-MW018	FT001-MW018	FT001-MW019	
				FT001-MW012	FT001-MW013	FT001-MW913	FT001-MW013	FT001-MW014	FT001-MW015	FT001-MW016	FT001-MW017	FT001-MW018	FT001-MW018	FT001-MW018	FT001-MW019
				70 - 80	12 - 32	12 - 32	12 - 32	40 - 50	60 - 70	12_97 - 22_97	9_9 - 24_9	30 - 50	30 - 50	30 - 50	32 - 43
				2023/08/09	2023/08/06	2023/08/06	2024/07/20	2023/08/09	2023/08/09	2023/08/09	2023/08/09	2023/09/04	2024/07/24	2023/09/04	2023/09/04
		Units		ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	
		Screening Level ^{al}													
		MCL	RSL												
<i>Fluorosulfonamides</i>															
PERFLUOROOCTANE SULFONAMIDE	PFOSA/FOSA	NA	NA	0.21 U	13 J	14 J	500 U	1.3 J	3.9	1 U	0.22 J	0.13 U	0.32 U	0.51 J	
N-METHYL-HEPTADEC AFLUOROOCTANE SULFONAMIDE (NMEFOSA)	NMeFOSA	NA	NA	0.62 U	5.8 U	6 U	800 U	0.29 U	0.28 U	3.1 U	0.28 U	0.37 U	0.52 U	0.29 U	
N-ETHYL PERFLUOROOCTANESULFONAMIDE	NEtFOSA	NA	NA	0.39 U	3.7 U	3.8 U	920 U	0.18 U	0.18 U	1.9 U	0.18 U	0.23 U	0.6 U	0.18 U	
<i>Fluorosulfonamidoacetic acids</i>															
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	NMeFOSAA	NA	NA	0.84 U	7.9 U	8.1 U	1000 U	0.39 U	0.38 U	4.2 U	0.39 U	0.5 U	0.65 U	0.41 U	
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	NEtFOSAA	NA	NA	0.72 U	6.7 U	6.9 U	680 U	0.34 U	0.32 U	3.5 U	0.33 U	0.43 U	0.44 U	0.35 U	
<i>Fluorosulfonamidoethanols</i>															
N-METHYL PERFLUOROOCTANE-SULFONAMIDOETHANOL	NMeFOSE	NA	NA	2.1 U	20 U	21 U	2100 U	1 U	0.96 U	11 U	0.98 U	1.3 U	1.4 UJ	1 U	
N-ETHYL PERFLUOROOCTANE-SULFONAMIDOETHANOL	NEtFOSE	NA	NA	2.3 U	22 U	22 U	1900 U	1.1 U	1 U	11 U	1.1 U	1.4 U	7.7 U	1.1 U	
<i>Perfluoroalkyl ether carboxylic acids</i>															
PERFLUORO-3-METHOXYPROPANOIC ACID	PFMPA	NA	NA	1 U	10 J	9.8 J	190 U	0.47 U	2.7 J	4.9 U	0.46 U	0.59 U	0.12 U	0.49 U	
PERFLUORO-4-METHOXYBUTANOIC ACID	PFMBA	NA	NA	0.96 U	12 J	12 J	250 U	0.45 U	0.44 U	4.7 U	0.44 U	0.57 U	0.17 U	0.47 U	
NONAFLUORO-3,6-DIOXAHEPTANOIC ACID	NFDHA	NA	NA	0.76 U	7.2 U	7.4 U	660 U	0.36 U	0.35 U	3.8 U	0.35 U	0.45 U	0.43 U	0.37 U	
HEXAFLUOROPROPYLENE OXIDE DIMER ACID	HFPO-DA/GenX	10	1.5	0.94 U	8.9 U	9.1 U	660 U	0.44 U	0.43 U	4.7 U	0.43 U	0.56 U	0.43 U	0.46 U	
4,8-DIOXA-3H-PERFLUORONONANOIC ACID	ADONA	NA	NA	0.87 U	8.2 U	8.4 U	310 U	0.41 U	0.39 U	4.3 U	0.4 U	0.52 U	0.2 U	0.42 U	
<i>Perfluoroalkyl ether sulfonic acids</i>															
PERFLUORO(2-ETHOXYETHANE)SULFONIC ACID	PFEESA	NA	NA	0.67 U	6.3 U	6.5 U	210 U	0.31 U	0.3 U	3.3 U	0.31 U	0.4 U	0.14 U	0.33 U	
11-CHLOROEICOSAFULUOR-3-OXAUNDECANE-1-SULFONIC ACID	11Cl-PF3OUdSA	NA	NA	2.4 U	23 U	24 U	350 U	1.1 U	11 U	120 U	1.1 U	1.5 U	0.23 U	1.2 U	
9-CHLOROHEXADEC AFLUORO-3-OXANONANE-1-SULFONIC ACID	9Cl-PF3ONSA	NA	NA	22 U	21 U	21 U	360 U	1 U	9.9 U	110 U	1 U	1.3 U	0.24 U	1.1 U	

Table H.4

2023 and 2024 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	Depth (feet bgs) Sample Date Sample Type	FT001-MW019	FT001-MW020	FT001-MW022	FT001-MW023	SE-MW-01	SE-MW-03	SE-MW-03	SE-MW-04	SE-MW-04	SE-MW-05	ST010-MW009
				FT001-MW019	FT001-MW020	FT001-MW022	FT001-MW023	SE-MW-01	SE-MW-03	SE-MW-03	SE-MW-04	SE-MW-904	SE-MW-05	ST010-MW009
				32 - 43	90 - 100	12 - 32	80 - 90	6 - 26	5 - 24_6	5 - 24_6	5 - 25	5 - 25	5 - 35	50 - 60
				2024/07/24	2023/09/12	2023/09/04	2023/09/12	2024/07/24	2023/08/11	2024/07/23	2024/07/23	2024/07/23	2024/07/23	2024/07/23
Units		ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	
Screening Level ^{al}		MCL	RSL											
Perfluorocarboxylates														
PERFLUOROBUTANOIC ACID	PFBA	NA	1800	12	4.9 J	110	5.6 J	300	9.5	11	9.9	9.8	18	13
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	34	10	350	11	340 J	1.3 J	0.98 J	19	20	26	22
PERFLUOROHEXANOIC ACID	PFHxA	NA	990	85	35	530	25	46	2.4	2 J	25	24	57	49
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	9.8	4.1	94	5.3	14	1.2 J	1.1 J	5.5	5.2	15	11
PERFLUOROOCCTANOIC ACID	PFOA	4	6	55	23	89	33	16	1.8	1.9	14	13	24	22
PERFLUORONONANOIC ACID	PFNA	10	5.9	0.28 U	0.16 U	0.18 U	0.36 J	1 J	0.18 U	0.29 U	0.43 J	0.29 U	0.3 U	0.76 U
PERFLUORODECANOIC ACID	PFDA	NA	NA	0.14 UJ	0.079 U	0.085 U	0.082 U	0.14 U	0.084 U	0.14 U	0.16 U	0.14 U	0.15 U	0.38 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	NA	0.19 UJ	0.25 U	0.27 U	0.26 U	0.19 U	0.27 U	0.19 U	0.21 U	0.19 U	0.2 U	0.51 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	1.6 U	0.32 U	0.35 U	0.34 U	0.12 U	0.35 U	0.12 U	0.13 U	0.12 U	0.12 U	0.32 U
PERFLUOROTRIDECANOIC ACID	PFTriDA	NA	NA	2.8 U	0.15 U	0.16 U	0.15 U	0.21 U	0.16 U	0.21 U	0.23 UJ	0.21 UJ	0.22 U	0.56 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	3.8 U	0.19 U	0.2 U	0.2 U	0.28 U	0.2 U	0.29 U	0.32 UJ	0.29 UJ	0.3 U	0.76 U
Perfluorosulfonates														
PERFLUOROBUTANE SULFONIC ACID	PFBS	NA	600	26	7.2	220	6.5	21	1.7	1.8	7.5	6.6	31	24
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	NA	74 J	11	370	10	36	0.96 J	1.1 J	17	16	58	36
PERFLUOROHEXANE SULFONIC ACID	PFHxS	10	39	160 J	63	1000	98	170	12	8.8	140	120	170	150
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	NA	4.1 U	1.8	2.9	7.5	0.31 U	0.39 U	0.31 U	0.34 UJ	0.31 UJ	0.32 U	0.82 U
PERFLUOROOCCTANE SULFONIC ACID	PFOS	4	4	1.8 U	28	0.31 U	260	25	11	15	29 J	28 J	17	12
PERFLUORONONANE SULFONIC ACID	PFNS	NA	NA	2.5 U	0.14 U	0.15 U	0.15 U	0.19 U	0.15 U	0.19 U	0.21 UJ	0.19 UJ	0.2 U	0.51 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	2.7 U	0.22 U	0.24 U	0.23 U	0.21 U	0.23 U	0.21 U	0.23 UJ	0.21 UJ	0.22 UJ	0.55 U
PERFLUORODODECANE SULFONIC ACID	PFDoDS	NA	NA	4.4 U	0.2 U	0.21 U	0.21 U	0.33 U	0.21 U	0.33 U	0.37 UJ	0.34 UJ	0.35 UJ	0.89 U
Fluorotelomer Sulfonates														
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	NA	0.4 U	0.61 U	0.66 U	0.64 U	0.4 U	0.66 U	0.4 U	0.44 U	0.4 U	0.42 U	1.1 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	NA	24	14	13	32	1.4 U	0.57 U	1.4 U	1.5 U	1.4 U	10	8.6
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	NA	1.2 UJ	0.69 U	0.75 U	1.9 J	1.2 U	0.74 U	1.2 U	1.3 U	1.2 U	1.2 U	3.1 U
Fluorotelomer Carboxylic Acids														
3-PERFLUOROPROPYL PROPANOIC ACID	3:3 FTCA	NA	NA	0.45 U	1.6 U	1.7 U	1.7 U	0.45 U	1.7 U	0.45 U	0.5 U	0.46 U	0.47 U	1.2 U
2H,2H,3H,3H-PERFLUOROOCCTANOIC ACID	5:3 FTCA	NA	NA	0.53 U	4.6 U	5 U	4.9 U	0.53 U	5 U	0.54 U	0.59 U	0.54 U	0.55 U	1.4 U
3-PERFLUOROHEPTYL PROPANOIC ACID	7:3 FTCA	NA	NA	1.1 U	5 U	5.4 U	5.3 U	1.1 U	5.4 U	1.1 U	1.2 U	1.1 U	1.1 U	2.8 U

Table H.4

2023 and 2024 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	Depth (feet bgs) Sample Date Sample Type	FT001-MW019	FT001-MW020	FT001-MW022	FT001-MW023	SE-MW-01	SE-MW-03	SE-MW-03	SE-MW-04	SE-MW-04	SE-MW-05	ST010-MW009
				FT001-MW019	FT001-MW020	FT001-MW022	FT001-MW023	SE-MW-01	SE-MW-03	SE-MW-03	SE-MW-04	SE-MW-904	SE-MW-05	ST010-MW009
				32 - 43	90 - 100	12 - 32	80 - 90	6 - 26	5 - 24_6	5 - 24_6	5 - 25	5 - 25	5 - 35	50 - 60
				2024/07/24	2023/09/12	2023/09/04	2023/09/12	2024/07/24	2023/08/11	2024/07/23	2024/07/23	2024/07/23	2024/07/23	2024/07/23
Units		Units		Units		Units		Units		Units		Units		
Screening Level ^{al}		Screening Level ^{al}		Screening Level ^{al}		Screening Level ^{al}		Screening Level ^{al}		Screening Level ^{al}		Screening Level ^{al}		
MCL		RSL		MCL		RSL		MCL		RSL		MCL		
<i>Fluorosulfonamides</i>														
PERFLUOROOCTANE SULFONAMIDE	PFOSA/FOSA	NA	NA	0.29 UJ	0.45 J	0.11 J	0.27 J	0.29 U	0.26 J	0.29 U	0.32 U	0.54 J	0.3 U	0.77 U
N-METHYL-HEPTADEC AFLUOROOCTANE SULFONAMIDE (NMEFOSA)	NMeFOSA	NA	NA	0.46 UJ	0.28 U	0.3 U	0.29 U	0.46 U	0.3 U	0.47 U	0.51 U	0.47 U	0.48 U	1.2 U
N-ETHYL PERFLUOROOCTANESULFONAMIDE	NEtFOSA	NA	NA	7.1 U	0.18 U	0.19 U	0.18 U	0.53 U	0.19 U	0.54 U	0.59 U	0.54 U	0.56 U	1.4 U
<i>Fluorosulfonamidoacetic acids</i>														
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	NMeFOSAA	NA	NA	0.58 UJ	0.38 U	0.41 U	0.4 U	0.58 U	0.41 U	0.59 U	0.65 U	0.59 U	0.61 U	1.6 U
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	NEtFOSAA	NA	NA	0.39 UJ	0.32 U	0.35 U	0.34 U	0.39 U	0.35 U	0.4 U	0.44 U	0.4 U	0.41 U	1.1 U
<i>Fluorosulfonamidoethanols</i>														
N-METHYL PERFLUOROOCTANE-SULFONAMIDOETHANOL	NMeFOSE	NA	NA	16 U	0.96 U	1 U	1 U	1.2 U	1 U	1.2 U	8.3 U	1.2 UJ	1.3 U	3.3 U
N-ETHYL PERFLUOROOCTANE-SULFONAMIDOETHANOL	NEtFOSE	NA	NA	15 U	1 U	1.1 U	1.1 U	1.1 UJ	1.1 U	1.1 U	7.5 U	7.4 U	1.2 U	3 U
<i>Perfluoroalkyl ether carboxylic acids</i>														
PERFLUORO-3-METHOXYPROPANOIC ACID	PFMPA	NA	NA	0.11 U	0.45 U	0.49 U	0.47 U	0.11 U	0.48 U	0.11 U	0.12 U	0.11 U	0.23 J	0.3 U
PERFLUORO-4-METHOXYBUTANOIC ACID	PFMBA	NA	NA	0.15 U	0.43 U	0.47 U	0.45 U	0.15 U	0.46 U	0.15 U	0.16 U	0.15 U	0.15 U	0.39 U
NONAFLUORO-3,6-DIOXAHEPTANOIC ACID	NFDHA	NA	NA	0.39 U	0.34 U	0.37 U	0.36 U	0.39 U	0.37 U	0.39 U	0.43 U	0.39 U	0.4 U	1 U
HEXAFLUOROPROPYLENE OXIDE DIMER ACID	HFPO-DA/GenX	10	1.5	0.39 U	0.42 U	0.46 U	0.45 U	0.39 U	0.45 U	0.39 U	0.43 U	0.39 U	0.4 U	1 U
4,8-DIOXA-3H-PERFLUORONONANOIC ACID	ADONA	NA	NA	0.18 U	0.39 U	0.42 U	0.41 U	0.18 U	0.42 U	0.18 U	0.2 U	0.18 U	0.19 U	0.48 U
<i>Perfluoroalkyl ether sulfonic acids</i>														
PERFLUORO(2-ETHOXYETHANE)SULFONIC ACID	PFEESA	NA	NA	0.12 U	0.3 U	0.33 U	0.32 U	0.12 U	0.32 U	0.13 U	0.14 U	0.13 U	0.13 U	0.33 U
11-CHLOROEICOSAFULUOR-3-OXAUNDECANE-1-SULFONIC ACID	11Cl-PF3OUdSA	NA	NA	0.2 U	1.1 U	1.2 U	1.2 U	0.2 U	1.2 U	0.21 U	0.23 U	0.21 U	0.21 UJ	0.54 U
9-CHLOROHEXADEC AFLUORO-3-OXANONANE-1-SULFONIC ACID	9Cl-PF3ONSA	NA	NA	0.21 U	0.98 U	1.1 U	1 U	0.21 U	1.1 U	0.21 U	0.23 U	0.21 U	0.22 UJ	0.56 U

Table H.4

2023 and 2024 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	Depth (feet bgs) Sample Date Sample Type	ST010-MW009 ST010-MW909 50 - 60 2024/07/23 FD	ST010-MW010 ST010-MW010 18 - 38 2023/08/10 N	ST010-MW010 ST010-MW010 18 - 38 2024/07/23 N	ST010-MW011 ST010-MW011 49 - 59 2023/08/10 N	ST010-MW011 ST010-MW911 49 - 59 2023/08/10 FD	ST010-MW011 ST010-MW011 49 - 59 2024/07/23 N	ST010-MW012 ST010-MW012 73 - 83 2023/08/09 N	ST010-MW012 ST010-MW012 73 - 83 2024/07/23 N	ST010-MW014 ST010-MW014 12 - 32 2024/07/21 N	ST010-MW015 ST010-MW015 12 - 32 2024/07/21 N		
				Units	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	
				Screening Level ^{al}											
		MCL	RSL												
<i>Perfluorocarboxylates</i>															
PERFLUOROBUTANOIC ACID	PFBA	NA	1800	13	12	7.9	51 J	23 J	15	10 J	7.7 J	20	370		
PERFLUOROPENTANOIC ACID	PFPeA	NA	NA	21	8.8	8.2	24	25	25	11 J	11 J	3.8 J	18 J		
PERFLUOROHEXANOIC ACID	PFHxA	NA	990	49	21	26	77	77	65	27	25	19	32		
PERFLUOROHEPTANOIC ACID	PFHpA	NA	NA	11	5.9	4.8	17	18	17	6.4	4.9 J	4 J	7.9 J		
PERFLUOROOCCTANOIC ACID	PFOA	4	6	21	15	9.6	34	36	41	8.5	13 J	16	14 J		
PERFLUORONONANOIC ACID	PFNA	10	5.9	0.78 U	2.4	1.5 J	0.19 U	0.18 U	0.77 U	0.53 J	3.8 U	1.9 U	3.9 U		
PERFLUORODECANOIC ACID	PFDA	NA	NA	0.39 U	0.11 U	0.39 U	0.09 U	0.088 U	0.39 U	0.21 U	1.9 U	0.97 U	2 U		
PERFLUOROUNDECANOIC ACID	PFUnA	NA	NA	0.52 U	0.36 U	0.52 U	0.29 U	0.28 U	0.52 U	0.66 U	2.6 U	1.3 U	2.6 U		
PERFLUORODODECANOIC ACID	PFDoDA	NA	NA	0.32 U	0.47 U	0.32 U	0.37 U	0.36 U	0.32 U	0.86 U	1.6 U	0.81 U	1.6 U		
PERFLUOROTRIDECANOIC ACID	PFTrDA	NA	NA	0.58 U	0.21 U	0.58 U	0.17 U	0.16 U	0.58 U	0.39 U	2.9 U	1.4 U	2.9 U		
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	NA	0.78 U	0.27 U	0.78 U	0.21 U	0.21 U	0.78 U	0.5 U	3.9 U	1.9 U	3.9 U		
<i>Perfluorosulfonates</i>															
PERFLUOROBUTANE SULFONIC ACID	PFBS	NA	600	24	11	16	39	38	35	16	12 J	7.3 J	13 J		
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	NA	38	12	16	56	57	52	17	15 J	7.2 J	25		
PERFLUOROHEXANE SULFONIC ACID	PFHxS	10	39	150	55	45	230	230	210	65	55	100	100		
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	NA	0.84 U	0.52 U	0.84 U	0.96 J	0.87 J	0.84 U	0.95 U	4.2 U	2.1 U	4.2 U		
PERFLUOROOCCTANE SULFONIC ACID	PFOS	4	4	12	43	37	5.4 J	4.8 J	4.3	24	23	8.5 J	1.9 U		
PERFLUORONONANE SULFONIC ACID	PFNS	NA	NA	0.52 U	0.2 U	0.52 U	0.16 U	0.15 U	0.52 U	0.36 U	2.6 U	1.3 U	2.6 U		
PERFLUORODECANE SULFONIC ACID	PFDS	NA	NA	0.56 U	0.31 U	0.56 U	0.25 U	0.24 U	0.56 U	0.58 U	2.8 U	1.4 U	2.8 U		
PERFLUORODODECANE SULFONIC ACID	PFDoDS	NA	NA	0.91 U	0.29 U	0.91 U	0.23 U	0.22 U	0.91 U	0.52 U	4.5 U	2.3 U	4.6 U		
<i>Fluorotelomer Sulfonates</i>															
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	NA	1.1 U	0.88 U	1.1 U	0.7 U	0.68 U	1.1 U	1.6 U	5.4 U	2.7 U	5.5 U		
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	NA	8.4	2.4 J	3.7 U	11 J	11 J	11	14 U	19 U	9.3 U	19 U		
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	NA	3.2 U	1 U	3.2 U	0.79 U	0.77 U	3.2 U	1.8 U	16 U	8 U	16 U		
<i>Fluorotelomer Carboxylic Acids</i>															
3-PERFLUOROPROPYL PROPANOIC ACID	3:3 FTCA	NA	NA	1.2 U	2.3 U	1.2 U	1.8 U	1.8 U	1.2 U	4.2 U	6.1 U	3.1 U	6.2 U		
2H,2H,3H,3H-PERFLUOROOCCTANOIC ACID	5:3 FTCA	NA	NA	1.5 U	6.7 U	1.5 U	5.3 U	5.2 U	1.5 U	12 U	7.2 U	3.6 U	7.3 U		
3-PERFLUOROHEPTYL PROPANOIC ACID	7:3 FTCA	NA	NA	2.9 U	7.2 U	2.9 U	5.7 U	5.6 U	2.9 U	13 U	14 U	7.2 U	15 U		

Table H.4

2023 and 2024 PFAS Remedial Investigation, Groundwater Results
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	Depth (feet bgs) Sample Date Sample Type	ST010-MW009	ST010-MW010	ST010-MW010	ST010-MW011	ST010-MW011	ST010-MW011	ST010-MW012	ST010-MW012	ST010-MW014	ST010-MW015
				ST010-MW909	ST010-MW010	ST010-MW010	ST010-MW011	ST010-MW911	ST010-MW011	ST010-MW012	ST010-MW012	ST010-MW014	ST010-MW015
				50 - 60	18 - 38	18 - 38	49 - 59	49 - 59	49 - 59	73 - 83	73 - 83	12 - 32	12 - 32
				2024/07/23	2023/08/10	2024/07/23	2023/08/10	2023/08/10	2024/07/23	2023/08/09	2024/07/23	2024/07/21	2024/07/21
		Units		ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	
		Screening Level ^{a/}											
		MCL	RSL										
<i>Fluorosulfonamides</i>													
PERFLUOROOCTANE SULFONAMIDE	PFOSA/FOSA	NA	NA	2.9 J	0.26 J	0.79 U	0.12 J	0.11 U	2.5 J	0.25 U	3.9 U	2 U	4 U
N-METHYL-HEPTADEC AFLUOROOCTANE SULFONAMIDE (NMEFOSA)	NMeFOSA	NA	NA	1.3 U	0.4 U	1.3 U	0.32 U	0.31 U	1.3 U	0.73 U	6.3 U	3.2 U	6.4 U
N-ETHYL PERFLUOROOCTANESULFONAMIDE	NEtFOSA	NA	NA	1.5 U	0.25 U	1.5 U	0.2 U	0.2 U	1.5 U	0.46 U	7.2 U	3.6 U	7.4 U
<i>Fluorosulfonamidoacetic acids</i>													
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	NMeFOSAA	NA	NA	1.6 U	0.54 U	1.6 U	0.43 U	0.42 U	1.6 U	1 U	7.9 U	4 U	8 U
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	NEtFOSAA	NA	NA	1.1 U	0.46 U	1.1 U	0.37 U	0.36 U	1.1 U	0.85 U	5.3 U	2.7 U	5.4 U
<i>Fluorosulfonamidoethanols</i>													
N-METHYL PERFLUOROOCTANE-SULFONAMIDOETHANOL	NMeFOSE	NA	NA	3.4 U	1.4 U	3.4 U	1.1 U	1.1 U	3.3 U	2.5 U	17 U	8.4 U	17 U
N-ETHYL PERFLUOROOCTANE-SULFONAMIDOETHANOL	NEtFOSE	NA	NA	3 U	1.5 U	3 U	1.2 U	1.2 U	3 U	2.7 U	15 U	7.6 U	15 U
<i>Perfluoroalkyl ether carboxylic acids</i>													
PERFLUORO-3-METHOXYPROPANOIC ACID	PFMPA	NA	NA	0.3 U	0.65 U	0.3 U	0.51 U	0.5 U	0.3 U	1.2 U	1.5 U	0.76 U	1.5 U
PERFLUORO-4-METHOXYBUTANOIC ACID	PFMBA	NA	NA	0.4 U	0.62 U	0.4 U	0.49 U	0.48 U	0.4 U	1.1 U	2 U	1 U	2 U
NONAFLUORO-3,6-DIOXAHEPTANOIC ACID	NFDHA	NA	NA	1.1 U	0.49 U	1.1 U	0.39 U	0.38 U	1.1 U	0.91 U	5.2 U	2.6 U	5.3 U
HEXAFLUOROPROPYLENE OXIDE DIMER ACID	HFPO-DA/GenX	10	1.5	1.1 U	0.61 U	1.1 U	0.48 U	0.47 U	1.1 U	1.1 U	5.2 U	2.6 U	5.3 U
4,8-DIOXA-3H-PERFLUORONONANOIC ACID	ADONA	NA	NA	0.49 U	0.56 U	0.49 U	0.45 U	0.44 U	0.49 U	1 U	2.4 U	1.2 U	2.5 U
<i>Perfluoroalkyl ether sulfonic acids</i>													
PERFLUORO(2-ETHOXYETHANE)SULFONIC ACID	PFEESA	NA	NA	0.34 U	0.44 U	0.34 U	0.35 U	0.34 U	0.34 U	0.8 U	1.7 U	0.85 U	1.7 U
11-CHLOROICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID	11Cl-PF3OUdSA	NA	NA	0.56 U	1.6 U	0.56 U	1.3 U	1.2 U	0.56 U	2.9 U	2.8 U	1.4 U	2.8 U
9-CHLOROHEXADEC AFLUORO-3-OXANONANE-1-SULFONIC ACID	9Cl-PF3ONSA	NA	NA	0.57 U	1.4 U	0.57 U	1.1 U	1.1 U	0.57 U	26 U	2.8 U	1.4 U	2.9 U

Notes:

^{a/} Groundwater Screening Level is the lower value of 1.) USEPA Tapwater Regional Screening Level calculated for hazard quotient of 0.1 (USEPA, November 2023), and 2.) Maximum Contaminant Level (MCL).

- = not applicable

ng/L= nanogram per liter

bgs = below ground surface

FD = field duplicate

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

N = normal sample

PFAS = per- and polyfluoroalkyl substances

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Blue and bold indicates the result exceeds the MCL but not RSL

Gray shading indicates the result exceeds the screening criteria.

Table H.5
Comparison of Soil Results by QSM 5.3 Table 15-3 and EPA 1633 Methods
Site FT001 (AFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP004	AFFF1_GP031	AFFF1_GP004	AFFF1_GP004	AFFF1_GP031	AFFF1_GP004	AFFF1_GP031	AFFF1_GP031	AFFF1_GP004	AFFF1_GP031	AFFF1_GP004	AFFF1_GP031	AFFF1_GP004	AFFF1_GP031	AFFF1_GP004	AFFF1_GP031
			AFFF1_GP004-SO_00-02	AFFF1_GP031_00-02	AFFF1_GP004-SO_03-05	AFFF1_GP004-SO_03-05	AFFF1_GP031_03-05	AFFF1_GP004-SO_06-08	AFFF1_GP031_08-10	AFFF1_GP031_08-10	AFFF1_GP004-SO_13-15	AFFF1_GP031_13-15	AFFF1_GP004-SO_18-20	AFFF1_GP031_18-20	AFFF1_GP004-SO_25-27	AFFF1_GP031_26-28	AFFF1_GP004-SO_30-32	AFFF1_GP031_32-34
Depth (feet bgs)	Sample Date	Sample Type	0 - 2	0 - 2	3 - 5	3 - 5	3 - 5	6 - 8	8 - 10	8 - 10	13 - 15	13 - 15	18 - 20	18 - 20	25 - 27	26 - 28	30 - 32	32 - 34
Units			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Screening Level ^{a/}			QSM 5.3 Table 15-3 ^{b/}	USEPA Method 1633 ^{c/}	QSM 5.3 Table 15-3 ^{b/}		USEPA Method 1633 ^{c/}	QSM 5.3 Table 15-3 ^{b/}	USEPA Method 1633 ^{c/}		QSM 5.3 Table 15-3 ^{b/}	USEPA Method 1633 ^{c/}	QSM 5.3 Table 15-3 ^{b/}	USEPA Method 1633 ^{c/}	QSM 5.3 Table 15-3 ^{b/}	USEPA Method 1633 ^{c/}	QSM 5.3 Table 15-3 ^{b/}	USEPA Method 1633 ^{c/}
Perfluorocarboxylates																		
PERFLUOROBUTANOIC ACID	PFBA	7800	5.5 U	1.4	5.3 U	5 U	0.9 J	5.6 U	0.97 J	0.98 J	5.7 U	0.74 J	5.4 U	0.67 J	5.3 U	0.7 J	5.1 U	0.63 J
PERFLUOROPENTANOIC ACID	PFPeA	NA	4.9 U	3	4.7 J	4.9 J	4.3	5 U	6.5	5.8	9.3 J	5.5	5.5 J	4.1	4.7 U	3.4	4.6 U	2.9
PERFLUOROHEXANOIC ACID	PFHxA	3200	5.5 J	8.6	19 J	20 J	12	5.6 J	12	11	18 J	9.4	14 J	6.3	3.5 U	8	3.4 U	5.7
PERFLUOROHEPTANOIC ACID	PFHpA	NA	4.6 U	3.1	5.4 J	5.8 J	4.5	4.6 U	2.7	2.3	4.7 U	2.6	4.4 U	1.4	4.3 U	1.7	4.2 U	1.6
PERFLUOROOCANOIC ACID	PFOA	19	16 J	34	69	65	59	16 J	53	48	33 J	23	21 J	12	8.9 J	12	5.9 U	6.5
PERFLUORONONANOIC ACID	PFNA	19	11 J	8.8	21 J	21 J	21	2.7 U	5.3	4.6	2.7 U	2.1	2.6 U	0.94	2.5 U	0.56	2.4 U	0.35
PERFLUORODECANOIC ACID	PFDA	NA	5.8 U	10	5.5 U	5.2 U	0.092 U	5.8 U	0.26	0.2 J	5.9 U	0.58	5.6 U	0.11 J	5.5 U	0.095 U	5.3 U	0.086 U
PERFLUOROUNDECANOIC ACID	PFUnA	NA	5.1 U	10	4.8 U	4.6 U	0.034 U	5.1 U	0.037 U	0.036 U	5.2 U	0.034 U	4.9 U	0.032 U	4.8 U	0.035 U	4.7 U	0.032 U
PERFLUORODODECANOIC ACID	PFDoDA	NA	3.6 U	2.2	3.5 U	3.3 U	0.069 U	3.6 U	0.073 U	0.073 U	3.7 U	0.069 U	3.5 U	0.065 U	3.4 U	0.071 U	3.3 U	0.064 U
PERFLUOROTRIDECANOIC ACID	PFTTrDA	NA	2.5 U	0.34	2.4 U	2.3 U	0.034 U	2.5 U	0.037 U	0.036 U	2.6 U	0.034 U	2.5 U	0.032 U	2.4 U	0.035 U	2.3 U	0.032 U
PERFLUOROTETRADECANOIC ACID	PFTeDA	NA	4.5 U	0.022 U	4.3 U	4 U	0.021 U	4.5 U	0.022 U	0.022 U	4.6 U	0.021 U	4.3 U	0.02 U	4.2 U	0.022 U	4.1 U	0.02 U
Perfluorosulfonates																		
PERFLUOROBUTANE SULFONIC ACID	PFBS	1900	4.6 U	2	5.1 J	4.4 J	4.6	5.1 J	3.1	3.1	4.7 U	1.5	4.4 U	0.73	4.3 U	1.3	4.2 U	0.93
PERFLUOROPENTANE SULFONIC ACID	PFPeS	NA	4.5 U	2.9	9.5 J	9.6 J	5.3	5.7 J	5.3	5.4	4.6 J	2.8	4.3 U	1.4	4.2 U	2.2	4.1 U	1.5
PERFLUOROHEXANE SULFONIC ACID	PFHxS	130	88	110	400	480	300	90	150	190	130	81	70	38	28	46	6.9 J	33
PERFLUOROHEPTANE SULFONIC ACID	PFHpS	NA	8.1 J	7.3	140	150	46 J	6.6 J	51	43	18 J	20 J	11 J	12	5.6 U	8.6	5.4 U	2.2
PERFLUOROOCANE SULFONIC ACID	PFOS	13	3100 J	2700	5200 J	4700 J	4100	910	1800	2300	4000 J	5000	1000	1200	450	560	230	430
PERFLUORONONANE SULFONIC ACID	PFNS	NA	3.5 U	53	3.3 U	3.2 U	0.034 U	3.5 U	2.6 J	0.036 UJ	3.6 U	0.034 U	3.4 U	0.032 U	3.3 U	0.035 U	3.2 U	0.032 U
PERFLUORODECANE SULFONIC ACID	PFDS	NA	6.3 U	51	6 U	5.7 U	0.025 U	6.3 U	0.026 U	0.026 U	6.4 U	0.025 U	6.1 U	0.023 U	5.9 U	0.025 U	5.8 U	0.023 U
Fluorotelomer Sulfonates																		
4:2 FLUOROTELOMER SULFONIC ACID	4:2 FTS	NA	6.2 U	0.099 U	5.9 U	5.6 U	0.095 U	6.2 U	0.1 U	0.1 U	6.3 U	0.17 J	6 U	0.092 J	5.8 U	0.098 U	5.7 U	0.089 U
6:2 FLUOROTELOMER SULFONIC ACID	6:2 FTS	NA	3.3 U	2.9	15 J	17 J	20	7.2 J	42	40	81	53	54	29	17 J	25	3.9 J	11
8:2 FLUOROTELOMER SULFONIC ACID	8:2 FTS	NA	7.2 J	17	6.9 J	5.3 J	10	7.2 J	18	16	33	72 J	7.6 J	11	4 U	1.4	3.9 U	4
Fluorosulfonamides																		
PERFLUOROOCANE SULFONAMIDE	PFOSA/FOSA	NA	160	340	4.4 J	5.5 J	18 J	11 J	2.7 J	2.7	4.1 U	3.1 J	3.9 U	1.6	3.8 U	0.19 J	3.7 U	0.11 J
N-METHYL-HEPTADECYLFLUORO-OCTANE SULFONAMIDE	NMeFOSA	NA	5.9 U	3.8 J	5.7 U	5.3 U	0.03 U	5.9 U	0.031 U	0.031 U	6.1 U	0.029 U	5.7 U	0.028 U	5.6 U	0.03 U	5.4 U	0.028 U
Fluorosulfonamidoacetic acids																		
N-METHYL PERFLUOROOCANE-SULFONAMIDOACETIC ACID	NMeFOSAA	NA	2.8 U	14 J	2.7 U	2.5 U	0.031 U	2.8 U	0.033 U	0.033 U	2.9 U	0.031 U	2.7 U	0.029 U	2.6 U	0.032 U	2.6 U	0.029 U
N-ETHYL PERFLUOROOCANE-SULFONAMIDOACETIC ACID	NEtFOSAA	NA	5.8 U	0.031 U	5.5 U	5.2 U	0.03 U	5.8 U	0.031 U	0.031 U	5.9 U	0.029 U	5.6 U	0.028 U	5.5 U	0.03 U	5.3 U	0.028 U

Notes:

^{a/} US Environmental Protection Agency (USEPA) Regional Screening Level calculated for hazard quotient of 0.1 (USEPA, November 2023).

^{b/} QSM 5.3 Table 15-3 refers to the analytical procedure compliant with the requirements in Department of Defense (DoD) and Department of Energy (DoE) Consolidated Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (May 2019), Table B-15

^{c/} USEPA Method 1633 = US Environmental Protection Agency (USEPA) Method 1633

µg/kg = microgram per kilogram

bgs = below ground surface

FD = field duplicate

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

N = normal sample

NA = not applicable

PFAS = per- and polyfluoroalkyl substances

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Bold indicates the analyte was detected

Gray shading indicates the result exceeds the screening criteria.

Appendix I
Comparison of RI Soil Sample Results to ADEC Migration to
Groundwater CULs

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP001	AFFF1_GP002	AFFF1_GP002	AFFF1_GP002	AFFF1_GP002
		AFFF1_GP001-SO_00-02	AFFF1_GP001-SO_03-05	AFFF1_GP001-SO_06-08	AFFF1_GP001-SO_13-15	AFFF1_GP001-SO_18-20	AFFF1_GP001-SO_25-27	AFFF1_GP001-SO_30-32	AFFF1_GP002-SO_00-02	AFFF1_GP002-SO_03-05	AFFF1_GP002-SO_06-08	AFFF1_GP002-SO_13-15		
		Depth (feet)	0 - 2	3 - 5	6 - 8	13 - 15	18 - 20	25 - 27	30 - 32	0 - 2	3 - 5	6 - 8	13 - 15	
Sample Date	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	
Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	
Screening Level ^{af}														
<i>Perfluorocarboxylates</i>														
Perfluorobutanoic Acid	PFBA	-	0.15 J	3.8	26 J	3.5	1.3	0.47	0.25 J	1.1	0.8	0.18 J	0.15 J	
Perfluoropentanoic Acid	PFPeA	-	0.36	15	72	16	5.8	1.9	0.89	2.8	3.3	1	0.58	
Perfluorohexanoic Acid	PFHxA	-	1	60	660	95	22	8	3.9	13	16	20	2.6	
Perfluorheptanoic Acid	PFHpA	-	0.41	33	390	21	4.4	1.6	0.66	3.3	7.2	17	0.78	
Perfluorooctanoic Acid	PFOA	1.7	3.9	710	1600	140	21	7.2	2.3	63	390	14	2.8	
Perfluorononanoic Acid	PFNA	-	0.39	1.6 J	0.15 J	0.031 U	0.029 U	0.024 U	0.027 U	10	0.84	0.026 U	0.027 U	
Perfluorodecanoic Acid	PFDA	-	0.84 J	0.69	0.061 U	0.068 U	0.063 U	0.052 U	0.059 U	2.9	0.063 J	0.056 U	0.06 U	
Perfluoroundecanoic Acid	PFUnA	-	0.36	0.052 U	0.053 U	0.06 U	0.055 U	0.046 U	0.052 U	0.22 J	0.054 U	0.049 U	0.052 U	
Perfluorododecanoic Acid	PFDaDA	-	0.19 J	0.037 U	0.038 U	0.043 U	0.04 U	0.033 U	0.037 U	0.37	0.039 U	0.035 U	0.037 U	
Perfluorotridecanoic Acid	PFTTrDA	-	0.035 J	0.026 U	0.027 U	0.03 U	0.028 U	0.023 U	0.026 U	0.034 J	0.027 U	0.025 U	0.026 U	
Perfluorotetradecanoic Acid	PFTeDA	-	0.037 U	0.046 U	0.047 U	0.053 U	0.049 U	0.04 U	0.045 U	0.044 U	0.048 U	0.043 U	0.046 U	
<i>Perfluorosulfonates</i>														
Perfluorobutane Sulfonic Acid	PFBS	-	0.073 J	9.8	220	20	5.5	1.8	0.78	2	6.7	4.2	0.61	
Perfluoropentane Sulfonic Acid	PFPeS	-	0.12 J	29	930	79	10	4.4	1.8	6.9	12	34	2	
Perfluorohexane Sulfonic Acid	PFHxS	-	5.2 J	2000	1700	180	70	26	8.4	470	810	210	15	
Perfluoroheptane Sulfonic Acid	PFHpS	-	0.49 J	75	3.7	0.095 J	1.1 J	2.1	0.42	36	8.6	0.057 U	0.061 U	
Perfluorooctane Sulfonic Acid	PFOS	3	230	2600 J	230	3.5	0.73	4.4	1.6	1700 J	59	0.28 J	0.7	
Perfluorononane Sulfonic Acid	PFNS	-	5.4 J	1.5 J	0.037 U	0.041 U	0.038 U	0.032 U	0.036 U	1.9 J	0.037 U	0.034 U	0.036 U	
Perfluorodecane Sulfonic Acid	PFDS	-	6.3	1.4 J	0.066 U	0.074 U	0.069 U	0.057 U	0.064 U	1.9 J	0.067 U	0.061 U	0.065 U	
Perfluorododecane Sulfonic Acid	PFDaDS	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Fluorotelomer Sulfonates</i>														
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.052 U	0.18 J	9.2	0.43	0.067 U	0.055 U	0.063 U	0.061 U	0.066 U	0.06 U	0.063 U	
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	0.63	110	26 J	9.8	17	6.9	1.9	0.32 J	0.035 U	0.11 J	0.035 J	
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	17	18 J	0.62 J	0.05 U	0.046 U	0.038 U	0.043 U	0.2 J	0.045 U	0.041 U	0.044 U	
<i>Fluorotelomer Carboxylic Acids</i>														
3-Perfluoropropyl propanoic acid	3:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-	
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-	
3-Perfluoroheptyl propanoic acid	7:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-	

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP001 AFFF1_GP001- SO_00-02	AFFF1_GP001 AFFF1_GP001- SO_03-05	AFFF1_GP001 AFFF1_GP001- SO_06-08	AFFF1_GP001 AFFF1_GP001- SO_13-15	AFFF1_GP001 AFFF1_GP001- SO_18-20	AFFF1_GP001 AFFF1_GP001- SO_25-27	AFFF1_GP001 AFFF1_GP001- SO_30-32	AFFF1_GP002 AFFF1_GP002- SO_00-02	AFFF1_GP002 AFFF1_GP002- SO_03-05	AFFF1_GP002 AFFF1_GP002- SO_06-08	AFFF1_GP002 AFFF1_GP002- SO_13-15
		Depth (feet)	0 - 2	3 - 5	6 - 8	13 - 15	18 - 20	25 - 27	30 - 32	0 - 2	3 - 5	6 - 8	13 - 15
		Sample Date	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022
		Sample Type	N	N	N	N	N	N	N	N	N	N	N
		Screening Level ^{af}											
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	360	120	15	0.094 J	0.045 J	0.25	0.15 J	69	1.2	0.039 U	0.041 U
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.36	0.11 J	0.062 U	0.07 U	0.065 U	0.053 U	0.06 U	0.72	0.063 U	0.057 U	0.061 U
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	1.2 J	0.53 J	0.029 U	0.033 U	0.03 U	0.025 U	0.028 U	1.3 J	0.03 U	0.027 U	0.029 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.44	0.38 J	0.061 U	0.068 U	0.063 U	0.052 U	0.059 U	0.19 J	0.062 U	0.056 U	0.06 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-4-methoxybutanoic acid	PFMBA	-	-	-	-	-	-	-	-	-	-	-	-
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	-	-	-	-	-	-	-	-	-	-	-	-
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	-	-	-	-	-	-	-	-	-	-	-
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	-	-	-	-	-	-	-	-	-	-	-
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	-	-	-	-	-	-	-	-	-	-	-
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP002	AFFF1_GP002	AFFF1_GP002	AFFF1_GP002	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003	AFFF1_GP003
		AFFF1_GP002-SO_18-20	AFFF1_GP002-SO_25-27	AFFF1_GP002-SO_30-32	AFFF1_GP002-SO_06-08	AFFF1_GP003-SO_00-02	AFFF1_GP003-SO_03-05	AFFF1_GP003-SO_06-09	AFFF1_GP003-SO_13-15	AFFF1_GP003-SO_18-20	AFFF1_GP003-SO_25-28	AFFF1_GP003-SO_30-32	AFFF1_GP003-SO_30-32
		18 - 20	25 - 27	30 - 32	6 - 8	0 - 2	3 - 5	6 - 9	13 - 15	18 - 20	25 - 28	30 - 32	30 - 32
Depth (feet)	Sample Date	Sample Type	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022
Screening Level ^{af}			N	N	N	FD	N	N	N	N	N	N	N
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	-	0.06 J	0.057 U	0.055 U	0.19 J	2.3	1.4	2.5	2.1	3.3	1.8	0.059 U
Perfluoropentanoic Acid	PFPeA	-	0.19 J	0.051 U	0.07 J	0.97	11	8.6	9.3	7	8.9	6.4	0.09 J
Perfluorohexanoic Acid	PFHxA	-	0.43	0.038 U	0.12 J	19	21	26	26	120	33	19	0.35
Perfluorheptanoic Acid	PFHpA	-	0.051 J	0.047 U	0.045 U	17	2.5	4.7	8.9	14	3.5	1.3	0.052 J
Perfluorooctanoic Acid	PFOA	1.7	0.24 J	0.084 J	0.063 U	12	15	1200	2200	1.2	70	6.7	1.1
Perfluorononanoic Acid	PFNA	-	0.026 U	0.027 U	0.026 U	0.025 U	7 J	0.084 J	0.74	0.028 U	0.026 U	0.028 U	0.028 U
Perfluorodecanoic Acid	PFDA	-	0.056 U	0.059 U	0.057 U	0.055 U	2.1	0.054 U	0.062 U	0.06 U	0.057 U	0.061 U	0.061 U
Perfluoroundecanoic Acid	PFUnA	-	0.049 U	0.052 U	0.05 U	0.048 U	0.098 J	0.047 U	0.054 U	0.053 U	0.05 U	0.053 U	0.054 U
Perfluorododecanoic Acid	PFDODA	-	0.035 U	0.037 U	0.036 U	0.034 U	0.045 J	0.034 U	0.039 U	0.038 U	0.036 U	0.038 U	0.038 U
Perfluorotridecanoic Acid	PFTTrDA	-	0.024 U	0.026 U	0.025 U	0.024 U	0.027 U	0.024 U	0.027 U	0.026 U	0.025 U	0.027 U	0.027 U
Perfluorotetradecanoic Acid	PFTeDA	-	0.043 U	0.046 U	0.044 U	0.042 U	0.047 U	0.042 U	0.048 U	0.047 U	0.044 U	0.047 U	0.047 U
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	-	0.11 J	0.047 U	0.045 U	4.3	8.6	5.6	10	27	11	4.9	0.086 J
Perfluoropentane Sulfonic Acid	PFPeS	-	0.11 J	0.046 U	0.044 U	32	14	20 J	24	51	13	5.2	0.16 J
Perfluorohexane Sulfonic Acid	PFHxS	-	0.74	0.21 J	0.17 J	190	170	1100	1700	17	79	16	1.5
Perfluoroheptane Sulfonic Acid	PFHpS	-	0.057 U	0.06 U	0.058 U	0.056 U	12 J	2.4 J	3.8	0.062 U	0.14 J	0.31	0.063 U
Perfluorooctane Sulfonic Acid	PFOS	3	0.14 J	0.43	0.12 J	0.22 J	3000 J	21	400	0.054 U	0.051 U	3.4	1.5
Perfluorononane Sulfonic Acid	PFNS	-	0.034 U	0.036 U	0.034 U	0.033 U	1.5 J	0.033 U	0.038 U	0.036 U	0.035 U	0.037 U	0.037 U
Perfluorodecane Sulfonic Acid	PFDS	-	0.061 U	0.064 U	0.062 U	0.059 U	1 J	0.059 U	0.067 U	0.065 U	0.062 U	0.066 U	0.066 U
Perfluorododecane Sulfonic Acid	PFDODS	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorotelomer Sulfonates</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.059 U	0.063 U	0.061 U	0.058 U	0.065 U	0.057 U	0.066 U	0.1 J	0.43	0.22 J	0.065 U
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	0.031 U	0.033 U	0.032 U	0.074 J	0.76	37	40	0.078 J	13	2.3	0.22 J
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	0.041 U	0.043 U	0.042 U	0.04 U	0.26	0.039 U	0.2 J	0.044 U	0.042 U	0.044 U	0.045 U
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-
3-Perfluoroheptyl propanoic acid	7:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP002 AFFF1_GP002- SO_18-20	AFFF1_GP002 AFFF1_GP002- SO_25-27	AFFF1_GP002 AFFF1_GP002- SO_30-32	AFFF1_GP002 AFFF1_GP002- SO_06-08	AFFF1_GP003 AFFF1_GP003- SO_00-02	AFFF1_GP003 AFFF1_GP003- SO_03-05	AFFF1_GP003 AFFF1_GP003- SO_06-09	AFFF1_GP003 AFFF1_GP003- SO_13-15	AFFF1_GP003 AFFF1_GP003- SO_18-20	AFFF1_GP003 AFFF1_GP003- SO_25-28	AFFF1_GP003 AFFF1_GP003- SO_30-32
		Depth (feet)	18 - 20	25 - 27	30 - 32	6 - 8	0 - 2	3 - 5	6 - 9	13 - 15	18 - 20	25 - 28	30 - 32
		Sample Date	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022
		Sample Type	N	N	N	FD	N	N	N	N	N	N	N
		Screening Level ^{af}											
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	0.038 U	0.041 U	0.039 U	0.038 U	130	0.85	0.29	0.041 U	0.039 U	0.042 U	0.042 U
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.057 U	0.06 U	0.058 U	0.056 U	0.66	0.055 U	0.064 U	0.062 U	0.059 U	0.062 U	0.063 U
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	0.027 U	0.028 U	0.027 U	0.026 U	0.029 U	0.026 U	0.03 U	0.029 U	0.027 U	0.029 U	0.029 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.056 U	0.059 U	0.057 U	0.055 U	0.35	0.054 U	0.062 U	0.06 U	0.057 U	0.061 U	0.061 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-4-methoxybutanoic acid	PFMBA	-	-	-	-	-	-	-	-	-	-	-	-
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	-	-	-	-	-	-	-	-	-	-	-	-
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	-	-	-	-	-	-	-	-	-	-	-
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	-	-	-	-	-	-	-	-	-	-	-
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	-	-	-	-	-	-	-	-	-	-	-
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP004 AFFF1_GP004- SO_00-02	AFFF1_GP004 AFFF1_GP004- SO_03-05	AFFF1_GP004 AFFF1_GP004- SO_06-08	AFFF1_GP004 AFFF1_GP004- SO_13-15	AFFF1_GP004 AFFF1_GP004- SO_18-20	AFFF1_GP004 AFFF1_GP004- SO_25-27	AFFF1_GP004 AFFF1_GP004- SO_30-32	AFFF1_GP004 AFFF1_GP904- SO_03-05	AFFF1_GP005 AFFF1_GP005- SO_00-02	AFFF1_GP005 AFFF1_GP005- SO_05-08	AFFF1_GP005 AFFF1_GP005- SO_10-12
		Depth (feet)	0 - 2	3 - 5	6 - 8	13 - 15	18 - 20	25 - 27	30 - 32	3 - 5	0 - 2	5 - 8	10 - 12
		Sample Date	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/24/2022	9/24/2022	9/24/2022
		Sample Type	N	N	N	N	N	N	N	N	N	N	N
		Screening Level ^{af}											
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	-	5.5 U	5.3 U	5.6 U	5.7 U	5.4 U	5.3 U	5.1 U	5 U	1.4	0.37	0.34 J
Perfluoropentanoic Acid	PFPeA	-	4.9 U	4.7 J	5 U	9.3 J	5.5 J	4.7 U	4.6 U	4.9 J	2.3	0.86	1.1
Perfluorohexanoic Acid	PFHxA	-	5.5 J	19 J	5.6 J	18 J	14 J	3.5 U	3.4 U	20 J	10	7.2	5.1
Perfluorheptanoic Acid	PFHpA	-	4.6 U	5.4 J	4.6 U	4.7 U	4.4 U	4.3 U	4.2 U	5.8 J	3	16	1.6
Perfluorooctanoic Acid	PFOA	1.7	16 J	69	16 J	33 J	21 J	8.9 J	5.9 U	65	88	100	24
Perfluorononanoic Acid	PFNA	-	11 J	21 J	2.7 U	2.7 U	2.6 U	2.5 U	2.4 U	21 J	2.4	0.27 J	2.1 J
Perfluorodecanoic Acid	PFDA	-	5.8 U	5.5 U	5.8 U	5.9 U	5.6 U	5.5 U	5.3 U	5.2 U	2.3	0.057 U	0.12 J
Perfluoroundecanoic Acid	PFUnA	-	5.1 U	4.8 U	5.1 U	5.2 U	4.9 U	4.8 U	4.7 U	4.6 U	0.33	0.05 U	0.056 U
Perfluorododecanoic Acid	PFDoDA	-	3.6 U	3.5 U	3.6 U	3.7 U	3.5 U	3.4 U	3.3 U	3.3 U	0.7	0.036 U	0.04 U
Perfluorotridecanoic Acid	PFTTrDA	-	2.5 U	2.4 U	2.5 U	2.6 U	2.5 U	2.4 U	2.3 U	2.3 U	0.14 J	0.025 U	0.028 U
Perfluorotetradecanoic Acid	PFTeDA	-	4.5 U	4.3 U	4.5 U	4.6 U	4.3 U	4.2 U	4.1 U	4 U	0.075 J	0.044 U	0.049 U
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	-	4.6 U	5.1 J	5.1 J	4.7 U	4.4 U	4.3 U	4.2 U	4.4 J	0.87	3.9	1.5
Perfluoropentane Sulfonic Acid	PFPeS	-	4.5 U	9.5 J	5.7 J	4.6 J	4.3 U	4.2 U	4.1 U	9.6 J	5.5	17	3.8
Perfluorohexane Sulfonic Acid	PFHxS	-	88	400	90	130	70	28	6.9 J	480	450	370	96
Perfluoroheptane Sulfonic Acid	PFHpS	-	8.1 J	140	6.6 J	18 J	11 J	5.6 U	5.4 U	150	29	7.1 J	13 J
Perfluorooctane Sulfonic Acid	PFOS	3	3100 J	5200 J	910	4000 J	1000	450	230	4700 J	1400	260	2300
Perfluorononane Sulfonic Acid	PFNS	-	3.5 U	3.3 U	3.5 U	3.6 U	3.4 U	3.3 U	3.2 U	3.2 U	2.3	0.035 U	0.039 UJ
Perfluorodecane Sulfonic Acid	PFDS	-	6.3 U	6 U	6.3 U	6.4 U	6.1 U	5.9 U	5.8 U	5.7 U	4.2	0.062 U	0.069 UJ
Perfluorododecane Sulfonic Acid	PFDoDS	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorotelomer Sulfonates</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	6.2 U	5.9 U	6.2 U	6.3 U	6 U	5.8 U	5.7 U	5.6 U	0.063 U	0.061 U	0.068 U
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	3.3 U	15 J	7.2 J	81	54	17 J	3.9 J	17 J	0.033 U	0.39 J	3.2
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	7.2 J	6.9 J	7.2 J	33	7.6 J	4 U	3.9 U	5.3 J	0.043 U	1.1 J	16
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-
3-Perfluoroheptyl propanoic acid	7:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP004 AFFF1_GP004- SO_00-02	AFFF1_GP004 AFFF1_GP004- SO_03-05	AFFF1_GP004 AFFF1_GP004- SO_06-08	AFFF1_GP004 AFFF1_GP004- SO_13-15	AFFF1_GP004 AFFF1_GP004- SO_18-20	AFFF1_GP004 AFFF1_GP004- SO_25-27	AFFF1_GP004 AFFF1_GP004- SO_30-32	AFFF1_GP004 AFFF1_GP904- SO_03-05	AFFF1_GP005 AFFF1_GP005- SO_00-02	AFFF1_GP005 AFFF1_GP005- SO_05-08	AFFF1_GP005 AFFF1_GP005- SO_10-12
		Depth (feet)	0 - 2	3 - 5	6 - 8	13 - 15	18 - 20	25 - 27	30 - 32	3 - 5	0 - 2	5 - 8	10 - 12
		Sample Date	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/24/2022	9/24/2022	9/24/2022
		Sample Type	N	N	N	N	N	N	N	N	FD	N	N
		Screening Level ^{af}											
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	160	4.4 J	11 J	4.1 U	3.9 U	3.8 U	3.7 U	5.5 J	380	0.34 J	1.2
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	5.9 U	5.7 U	5.9 U	6.1 U	5.7 U	5.6 U	5.4 U	5.3 U	2.6	0.059 U	0.065 U
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	2.8 U	2.7 U	2.8 U	2.9 U	2.7 U	2.6 U	2.6 U	2.5 U	0.028 U	0.028 U	0.031 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	5.8 U	5.5 U	5.8 U	5.9 U	5.6 U	5.5 U	5.3 U	5.2 U	0.51 J	0.057 U	0.064 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-4-methoxybutanoic acid	PFMBA	-	-	-	-	-	-	-	-	-	-	-	-
Nonafluoro-3,6-dioxahexanoic acid	NFDHA	-	-	-	-	-	-	-	-	-	-	-	-
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	-	-	-	-	-	-	-	-	-	-	-
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	-	-	-	-	-	-	-	-	-	-	-
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	-	-	-	-	-	-	-	-	-	-	-
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP005	AFFF1_GP005	AFFF1_GP005	AFFF1_GP005	AFFF1_GP005	AFFF1_GP005	AFFF1_GP006	AFFF1_GP006	AFFF1_GP006	AFFF1_GP006	AFFF1_GP006
		AFFF1_GP005- SO_13-15	AFFF1_GP005- SO_20-23	AFFF1_GP005- SO_28-30	AFFF1_GP005- SO_33-35	AFFF1_GP005- SO_05-08	AFFF1_GP006- SO_00-02	AFFF1_GP006- SO_05-07	AFFF1_GP006- SO_10-12	AFFF1_GP006- SO_13-15	AFFF1_GP006- SO_20-22	AFFF1_GP006- SO_28-30	AFFF1_GP006- SO_28-30
		Depth (feet) Sample Date Sample Type	13 - 15 9/24/2022 N	20 - 23 9/24/2022 N	28 - 30 9/24/2022 N	33 - 35 9/24/2022 N	5 - 8 9/24/2022 FD	0 - 2 9/27/2022 N	5 - 7 9/27/2022 N	10 - 12 9/27/2022 N	13 - 15 9/27/2022 N	20 - 22 9/27/2022 N	28 - 30 9/27/2022 N
Screening Level ^{af}													
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	-	0.37 J	0.67	0.49	0.054 U	0.32 J	0.34	0.17 J	0.054 U	0.081 J	0.18 J	0.056 U
Perfluoropentanoic Acid	PFPeA	-	1.3	2.3	1.5	0.048 U	0.79	0.75	0.4	0.23	0.37	0.68	0.065 J
Perfluorohexanoic Acid	PFHxA	-	4.9	6.7	2.9	0.13 J	6.3	3.1	7.2	8.3	9.5	1.8	0.15 J
Perfluorheptanoic Acid	PFHpA	-	1.8	0.93	0.35	0.044 U	13	0.94	22	1.1	1.7	0.18 J	0.046 U
Perfluorooctanoic Acid	PFOA	1.7	19	46	3.1	0.7	85	12	5.4	0.088 J	0.18 J	0.95 J	0.097 J
Perfluorononanoic Acid	PFNA	-	0.61	0.025 U	0.026 U	0.026 U	0.38 J	0.69 J	0.028 U	0.026 U	0.029 U	0.028 U	0.027 U
Perfluorodecanoic Acid	PFDA	-	0.063 U	0.055 U	0.056 U	0.056 U	0.056 U	2.9	0.06 U	0.056 U	0.064 U	0.062 U	0.058 U
Perfluoroundecanoic Acid	PFUnA	-	0.055 U	0.048 U	0.049 U	0.049 U	0.049 U	0.28	0.053 U	0.049 U	0.056 U	0.054 U	0.051 U
Perfluorododecanoic Acid	PFDoDA	-	0.039 U	0.034 U	0.035 U	0.035 U	0.035 U	0.25	0.038 U	0.035 U	0.04 U	0.039 U	0.036 U
Perfluorotridecanoic Acid	PFTTrDA	-	0.027 U	0.024 U	0.024 U	0.025 U	0.024 U	0.023 U	0.026 U	0.025 U	0.028 U	0.027 U	0.025 U
Perfluorotetradecanoic Acid	PFTeDA	-	0.048 U	0.042 U	0.043 U	0.043 U	0.043 U	0.041 U	0.047 U	0.043 U	0.049 U	0.048 U	0.045 U
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	-	0.7	1.7	1.6	0.057 J	3.7	0.34	2.1	1.2	2	0.58	0.05 J
Perfluoropentane Sulfonic Acid	PFPeS	-	2.5	2.4	0.92	0.056 J	14	1.2	21	3.8	4.6	0.62	0.054 J
Perfluorohexane Sulfonic Acid	PFHxS	-	93	80	8.3	1.7	380	58	99	1.2	0.87	3.4	0.33
Perfluoroheptane Sulfonic Acid	PFHpS	-	50	0.12 J	0.32	0.13 J	11 J	8.4 J	0.062 U	0.057 U	0.065 U	0.063 U	0.059 U
Perfluorooctane Sulfonic Acid	PFOS	3	160	0.69	2.5	2.2	350	1800	0.54	0.05 U	0.057 U	0.056 U	0.35 J
Perfluorononane Sulfonic Acid	PFNS	-	0.038 U	0.033 U	0.034 U	0.034 U	0.034 U	3.9 J	0.037 U	0.034 U	0.039 U	0.037 U	0.035 U
Perfluorodecane Sulfonic Acid	PFDS	-	0.068 U	0.059 U	0.06 U	0.061 U	0.06 U	3.2 J	0.065 U	0.061 U	0.069 U	0.067 U	0.063 U
Perfluorododecane Sulfonic Acid	PFDoDS	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorotelomer Sulfonates</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.067 U	0.058 U	0.059 U	0.06 U	0.059 U	0.056 U	0.064 U	0.06 U	0.068 U	0.066 U	0.062 U
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	6.7	40	3.3	0.61	0.57 J	0.03 U	0.034 U	0.032 U	0.036 U	0.3 J	0.068 J
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	0.046 U	0.04 U	0.041 U	0.066 J	1.5 J	0.038 U	0.044 U	0.041 U	0.047 U	0.045 U	0.042 U
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-
3-Perfluoroheptyl propanoic acid	7:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP005 AFFF1_GP005- SO_13-15	AFFF1_GP005 AFFF1_GP005- SO_20-23	AFFF1_GP005 AFFF1_GP005- SO_28-30	AFFF1_GP005 AFFF1_GP005- SO_33-35	AFFF1_GP005 AFFF1_GP005- SO_05-08	AFFF1_GP006 AFFF1_GP006- SO_00-02	AFFF1_GP006 AFFF1_GP006- SO_05-07	AFFF1_GP006 AFFF1_GP006- SO_10-12	AFFF1_GP006 AFFF1_GP006- SO_13-15	AFFF1_GP006 AFFF1_GP006- SO_20-22	AFFF1_GP006 AFFF1_GP006- SO_28-30
		Depth (feet)	13 - 15	20 - 23	28 - 30	33 - 35	5 - 8	0 - 2	5 - 7	10 - 12	13 - 15	20 - 22	28 - 30
		Sample Date	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/24/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N
		Screening Level ^{af}											
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	0.083 J	0.038 U	0.074 J	0.07 J	0.49 J	240	0.17 J	0.039 U	0.044 U	0.043 U	0.093 J
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.064 U	0.056 U	0.057 U	0.057 U	0.057 U	3.7	0.062 U	0.057 U	0.065 U	0.063 U	0.059 U
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	0.03 U	0.026 U	0.027 U	0.027 U	0.027 U	4.3 J	0.029 U	0.027 U	0.031 U	0.03 U	0.028 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.063 U	0.055 U	0.056 U	0.056 U	0.056 U	0.45 J	0.06 U	0.056 U	0.064 U	0.062 U	0.058 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-4-methoxybutanoic acid	PFMBA	-	-	-	-	-	-	-	-	-	-	-	-
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	-	-	-	-	-	-	-	-	-	-	-	-
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	-	-	-	-	-	-	-	-	-	-	-
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	-	-	-	-	-	-	-	-	-	-	-
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	-	-	-	-	-	-	-	-	-	-	-
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP006	AFFF1_GP006	AFFF1_GP007	AFFF1_GP007	AFFF1_GP007	AFFF1_GP007	AFFF1_GP007	AFFF1_GP007	AFFF1_GP007	AFFF1_GP007	AFFF1_GP008	AFFF1_GP008	
		Depth (feet)	AFFF1_GP006-SO_33-35	AFFF1_GP006-SO_20-22	AFFF1_GP007-SO_00-02	AFFF1_GP007-SO_05-07	AFFF1_GP007-SO_10-12	AFFF1_GP007-SO_13-15	AFFF1_GP007-SO_20-22	AFFF1_GP007-SO_28-30	AFFF1_GP007-SO_33-35	AFFF1_GP008-SO_00-02	AFFF1_GP008-SO_05-07	AFFF1_GP008-SO_00-02	AFFF1_GP008-SO_05-07
		Sample Date	33 - 35	20 - 22	0 - 2	5 - 7	10 - 12	13 - 15	20 - 22	28 - 30	33 - 35	0 - 2	5 - 7	0 - 2	5 - 7
Sample Type	9/27/2022	9/27/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	
Screening Level ^{af}															
<i>Perfluorocarboxylates</i>															
Perfluorobutanoic Acid	PFBA	-	0.051 UJ	0.23 J	0.39	0.12 J	0.38 J	0.59	1.4	3.5	1.2	0.5	0.35 J		
Perfluoropentanoic Acid	PFPeA	-	0.07 J	0.72	0.52	0.4	1.4	2.5	4.6 J	9.8	3	0.69	0.81		
Perfluorohexanoic Acid	PFHxA	-	0.16 J	2.2	0.98	2.8	11	11	28	52	10	0.8	3		
Perfluorheptanoic Acid	PFHpA	-	0.042 U	0.2 J	0.27	0.97	0.049 U	0.11 J	3.1	7.9	1.2	0.57	5		
Perfluorooctanoic Acid	PFOA	1.7	0.075 J	1.3 J	3.3	0.06 U	0.069 U	0.096 J	8.4 J	25	6.5	10	0.069 U		
Perfluorononanoic Acid	PFNA	-	0.024 U	0.029 U	2.9 J	0.025 U	0.029 U	0.028 U	0.027 U	0.14 U	0.028 U	2.5	0.029 U		
Perfluorodecanoic Acid	PFDA	-	0.053 U	0.064 U	0.17 J	0.054 U	0.062 U	0.062 U	0.06 U	0.31 U	0.061 U	0.068 J	0.062 U		
Perfluoroundecanoic Acid	PFUnA	-	0.047 U	0.056 U	0.051 U	0.048 U	0.055 U	0.054 U	0.052 U	0.27 U	0.054 U	0.05 U	0.054 U		
Perfluorododecanoic Acid	PFDODA	-	0.033 U	0.04 U	0.036 U	0.034 U	0.039 U	0.039 U	0.037 U	0.2 U	0.038 U	0.036 U	0.039 U		
Perfluorotridecanoic Acid	PFTTrDA	-	0.023 U	0.028 U	0.025 U	0.024 U	0.027 U	0.027 U	0.026 U	0.14 U	0.027 U	0.025 U	0.027 U		
Perfluorotetradecanoic Acid	PFTeDA	-	0.041 U	0.049 U	0.045 U	0.042 U	0.048 U	0.048 U	0.046 U	0.24 U	0.047 U	0.044 U	0.048 U		
<i>Perfluorosulfonates</i>															
Perfluorobutane Sulfonic Acid	PFBS	-	0.042 U	0.66	0.22 J	1.5	4.4	3.5	8.8	14	2	0.1 J	0.57		
Perfluoropentane Sulfonic Acid	PFPeS	-	0.042 J	0.69	0.53	7.4	0.6	0.88	14	25	3.4	0.36	7		
Perfluorohexane Sulfonic Acid	PFHxS	-	0.23	4.6	33	0.033 U	0.081 J	0.49	25	52	19	25	12		
Perfluoroheptane Sulfonic Acid	PFHpS	-	0.054 U	0.065 U	7.3 J	0.056 U	0.064 U	0.063 U	0.18 J	0.68 J	0.48	7.2	0.064 U		
Perfluorooctane Sulfonic Acid	PFOS	3	0.13 J	0.057 U	1000	0.19 J	0.17 J	0.055 U	0.054 U	13	5.8	180	0.28 J		
Perfluorononane Sulfonic Acid	PFNS	-	0.032 U	0.039 U	0.57 J	0.033 U	0.038 U	0.037 U	0.036 U	0.19 U	0.037 U	0.071 J	0.038 U		
Perfluorodecane Sulfonic Acid	PFDS	-	0.058 U	0.069 U	0.2 J	0.059 U	0.067 U	0.067 U	0.065 U	0.34 U	0.067 U	0.062 U	0.067 U		
Perfluorododecane Sulfonic Acid	PFDODS	-	-	-	-	-	-	-	-	-	-	-	-		
<i>Fluorotelomer Sulfonates</i>															
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.057 U	0.068 U	0.061 U	0.058 U	0.066 U	0.066 U	0.21 J	0.51 J	0.093 J	0.061 U	0.066 U		
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	0.052 J	0.6	0.033 U	0.031 U	0.035 U	0.072 J	1.7 J	7.3	4	0.032 U	0.035 U		
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	0.039 U	0.047 U	0.042 U	0.04 U	0.045 U	0.045 U	0.044 U	0.23 U	0.045 U	0.042 U	0.045 U		
<i>Fluorotelomer Carboxylic Acids</i>															
3-Perfluoropropyl propanoic acid	3:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-		
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-		
3-Perfluoroheptyl propanoic acid	7:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-		

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP006 AFFF1_GP006- SO_33-35	AFFF1_GP006 AFFF1_GP906- SO_20-22	AFFF1_GP007 AFFF1_GP007- SO_00-02	AFFF1_GP007 AFFF1_GP007- SO_05-07	AFFF1_GP007 AFFF1_GP007- SO_10-12	AFFF1_GP007 AFFF1_GP007- SO_13-15	AFFF1_GP007 AFFF1_GP007- SO_20-22	AFFF1_GP007 AFFF1_GP007- SO_28-30	AFFF1_GP007 AFFF1_GP007- SO_33-35	AFFF1_GP008 AFFF1_GP008- SO_00-02	AFFF1_GP008 AFFF1_GP008- SO_05-07
		Depth (feet)	33 - 35	20 - 22	0 - 2	5 - 7	10 - 12	13 - 15	20 - 22	28 - 30	33 - 35	0 - 2	5 - 7
		Sample Date	9/27/2022	9/27/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022
		Sample Type	N	FD	N	N	N	N	N	N	N	N	N
		Screening Level ^{af}											
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	0.037 U	0.044 U	0.84	0.037 U	0.043 U	0.043 U	0.041 U	0.22 U	0.042 U	0.15 J	0.043 U
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.054 U	0.065 U	0.059 U	0.056 U	0.064 U	0.063 U	0.061 U	0.32 U	0.063 U	0.058 U	0.064 U
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	0.026 U	0.031 U	0.028 U	0.026 U	0.03 U	0.03 U	0.029 U	0.15 U	0.029 U	0.027 U	0.03 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.053 U	0.064 U	0.058 U	0.054 U	0.062 U	0.062 U	0.06 U	0.31 U	0.061 U	0.057 U	0.062 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-4-methoxybutanoic acid	PFMBA	-	-	-	-	-	-	-	-	-	-	-	-
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	-	-	-	-	-	-	-	-	-	-	-	-
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	-	-	-	-	-	-	-	-	-	-	-
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	-	-	-	-	-	-	-	-	-	-	-
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	-	-	-	-	-	-	-	-	-	-	-
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008	AFFF1_GP008	AFFF1_GP009	AFFF1_GP009	AFFF1_GP009	AFFF1_GP009
		AFFF1_GP008-SO_10-12	AFFF1_GP008-SO_13-15	AFFF1_GP008-SO_18-20	AFFF1_GP008-SO_25-27	AFFF1_GP008-SO_33-35	AFFF1_GP008-SO_00-02	AFFF1_GP009-SO_13-15	AFFF1_GP009-SO_15-17	AFFF1_GP009-SO_25-27	AFFF1_GP009-SO_32-34	AFFF1_GP009-SO_38-40	
		Depth (feet)	10 - 12	13 - 15	18 - 20	25 - 27	33 - 35	0 - 2	13 - 15	15 - 17	25 - 27	32 - 34	38 - 40
Sample Date	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	
Sample Type	N	N	N	N	N	N	FD	N	N	N	N	N	
Screening Level ^{af}													
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	-	0.86 J	0.3 J	0.27 J	0.059 U	0.081 J	0.47	0.23 J	0.41	0.52	0.58 J	0.057 U
Perfluoropentanoic Acid	PFPeA	-	5	1.7	1.4	0.2 J	0.37	0.71	1.2	1.1	1.7	2	0.11 J
Perfluorohexanoic Acid	PFHxA	-	10	3.5	1.8	0.26	0.47	0.81	3.7	0.19 J	5.9	5.1	0.27
Perfluorheptanoic Acid	PFHpA	-	4.2	1.4	0.45	0.06 J	0.12 J	0.6	0.04 U	0.047 U	0.49	1.2	0.059 J
Perfluorooctanoic Acid	PFOA	1.7	34	23	8.8	0.82	0.92	12	0.056 U	0.066 U	0.39	7.1	0.53
Perfluorononanoic Acid	PFNA	-	0.032 U	0.21 J	0.63	0.028 U	0.027 U	2.5	0.023 U	0.027 U	0.027 U	0.13 U	0.027 U
Perfluorodecanoic Acid	PFDA	-	0.07 U	0.055 U	0.06 U	0.062 U	0.059 U	0.082 J	0.051 U	0.059 U	0.058 U	0.27 U	0.059 U
Perfluoroundecanoic Acid	PFUnA	-	0.061 U	0.048 U	0.052 U	0.054 U	0.051 U	0.048 U	0.044 U	0.052 U	0.051 U	0.24 U	0.052 U
Perfluorododecanoic Acid	PFDoDA	-	0.044 U	0.034 U	0.037 U	0.039 U	0.037 U	0.034 U	0.032 U	0.037 U	0.037 U	0.17 U	0.037 U
Perfluorotridecanoic Acid	PFTTrDA	-	0.031 U	0.024 U	0.026 U	0.027 U	0.026 U	0.024 U	0.022 U	0.026 U	0.026 U	0.12 U	0.026 U
Perfluorotetradecanoic Acid	PFTeDA	-	0.054 U	0.042 U	0.046 U	0.048 U	0.045 U	0.042 U	0.039 U	0.046 U	0.045 U	0.21 U	0.046 U
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	-	2.3	0.76	0.33	0.049 U	0.07 J	0.11 J	3.2	0.47	4.6	1.2	0.055 J
Perfluoropentane Sulfonic Acid	PFPeS	-	7.2	2.3	0.64	0.094 J	0.16 J	0.39	0.039 U	0.046 U	2.7	2	0.093 J
Perfluorohexane Sulfonic Acid	PFHxS	-	120	59	20	2.1	2.9	28	0.031 U	0.036 U	3.4	27	1.9
Perfluoroheptane Sulfonic Acid	PFHpS	-	0.071 U	14	26	0.7	0.12 J	6	0.052 U	0.061 U	0.06 U	1.5	0.21 J
Perfluorooctane Sulfonic Acid	PFOS	3	0.55	0.049 U	0.053 U	5.1	2	170	0.045 U	0.053 U	0.052 U	20	12
Perfluorononane Sulfonic Acid	PFNS	-	0.042 U	0.033 U	0.036 U	0.037 U	0.035 U	0.087 J	0.031 U	0.036 U	0.035 U	0.17 U	0.036 U
Perfluorodecane Sulfonic Acid	PFDS	-	0.076 U	0.06 U	0.065 U	0.067 U	0.063 U	0.06 U	0.055 U	0.064 U	0.063 U	0.3 U	0.064 U
Perfluorododecane Sulfonic Acid	PFDoDS	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorotelomer Sulfonates</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.074 U	0.059 U	0.063 U	0.066 U	0.062 U	0.059 U	0.054 U	0.063 U	0.069 J	0.29 U	0.063 U
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	1.5	9.8	9.8	1.2	1.3	0.031 U	0.028 U	0.033 U	0.033 U	7.9	0.68
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	0.051 U	0.04 U	0.044 U	0.045 U	0.043 U	0.04 U	0.037 U	0.043 U	0.043 U	0.2 U	0.043 U
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-
3-Perfluoroheptyl propanoic acid	7:3 FTCA	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP008 AFFF1_GP008- SO_10-12	AFFF1_GP008 AFFF1_GP008- SO_13-15	AFFF1_GP008 AFFF1_GP008- SO_18-20	AFFF1_GP008 AFFF1_GP008- SO_25-27	AFFF1_GP008 AFFF1_GP008- SO_33-35	AFFF1_GP008 AFFF1_GP908- SO_00-02	AFFF1_GP009 AFFF1_GP009- SO_13-15	AFFF1_GP009 AFFF1_GP009- SO_15-17	AFFF1_GP009 AFFF1_GP009- SO_25-27	AFFF1_GP009 AFFF1_GP009- SO_32-34	AFFF1_GP009 AFFF1_GP009- SO_38-40
		Depth (feet)	10 - 12	13 - 15	18 - 20	25 - 27	33 - 35	0 - 2	13 - 15	15 - 17	25 - 27	32 - 34	38 - 40
		Sample Date	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022
		Sample Type	N	N	N	N	N	FD	N	N	N	N	N
		Screening Level ^{af}											
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	0.048 U	0.038 U	0.041 U	0.043 U	0.04 U	0.22 J	0.035 U	0.041 U	0.04 U	0.19 U	0.041 U
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.071 U	0.056 U	0.061 U	0.063 U	0.06 U	0.056 U	0.052 U	0.061 U	0.06 U	0.28 U	0.061 U
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	0.034 U	0.026 U	0.029 U	0.03 U	0.028 U	0.026 U	0.024 U	0.028 U	0.028 U	0.13 U	0.028 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.07 U	0.055 U	0.06 U	0.062 U	0.059 U	0.055 U	0.051 U	0.059 U	0.058 U	0.27 U	0.059 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-4-methoxybutanoic acid	PFMBA	-	-	-	-	-	-	-	-	-	-	-	-
Nonafluoro-3,6-dioxahexanoic acid	NFDHA	-	-	-	-	-	-	-	-	-	-	-	-
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	-	-	-	-	-	-	-	-	-	-	-
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	-	-	-	-	-	-	-	-	-	-	-
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	-	-	-	-	-	-	-	-	-	-	-
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	-	-	-	-	-	-	-	-	-	-	-
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	-	-	-	-	-	-	-	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP010 AFFF1_GP010- SO_13-16	AFFF1_GP010 AFFF1_GP010- SO_18-23	AFFF1_GP010 AFFF1_GP010- SO_25-27	AFFF1_GP010 AFFF1_GP010- SO_35-37	AFFF1_GP010 AFFF1_GP010- SO_18-23	AFFF1_GP029 AFFF1_GP029- 00-02	AFFF1_GP029 AFFF1_GP029- 03-05	AFFF1_GP029 AFFF1_GP029- 06-08	AFFF1_GP029 AFFF1_GP029- 06-08	AFFF1_GP029 AFFF1_GP029- 13-15	AFFF1_GP029 AFFF1_GP029- 18-20
		Depth (feet)	13 - 16	18 - 23	25 - 27	35 - 37	18 - 23	0 - 2	3 - 5	6 - 8	6 - 8	13 - 15	18 - 20
		Sample Date	9/25/2022	9/25/2022	9/25/2022	9/25/2022	9/25/2022	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023
Sample Type	N	N	N	N	FD	N	N	N	FD	N	N		
Screening Level ^{af}													
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	-	0.063 U	0.058 U	0.06 U	0.052 U	0.059 U	0.039 U	0.049 U	0.049 U	0.056 U	0.05 U	0.045 U
Perfluoropentanoic Acid	PFPeA	-	0.056 U	0.052 U	0.053 U	0.055 J	0.052 U	0.022 U	0.028 U	0.028 U	0.032 U	0.028 U	0.026 U
Perfluorohexanoic Acid	PFHxA	-	0.043 U	0.21 J	0.3	0.17 J	0.23 J	0.022 U	0.028 U	0.028 U	0.034 J	0.07 J	0.026 U
Perfluorheptanoic Acid	PFHpA	-	0.052 U	0.048 U	0.39	0.043 U	0.06 J	0.023 U	0.029 U	0.029 U	0.057 J	0.03 U	0.027 U
Perfluorooctanoic Acid	PFOA	1.7	0.073 U	0.08 J	0.54	0.78	0.068 U	0.044 U	0.055 U	0.055 U	0.3 J	0.057 U	0.051 U
Perfluorononanoic Acid	PFNA	-	0.03 U	0.028 U	0.029 U	0.025 U	0.028 U	0.013 U	0.016 U	0.016 U	0.018 U	0.016 U	0.015 U
Perfluorodecanoic Acid	PFDA	-	0.066 U	0.061 U	0.062 U	0.055 U	0.061 U	0.078 U	0.099 U	0.099 U	0.11 U	0.1 U	0.091 U
Perfluoroundecanoic Acid	PFUnA	-	0.058 U	0.053 U	0.054 U	0.048 U	0.054 U	0.029 U	0.037 U	0.037 U	0.043 U	0.038 U	0.034 U
Perfluorododecanoic Acid	PFDODA	-	0.041 U	0.038 U	0.039 U	0.034 U	0.038 U	0.059 U	0.074 U	0.074 U	0.085 U	0.076 U	0.068 U
Perfluorotridecanoic Acid	PFTTrDA	-	0.029 U	0.027 U	0.027 U	0.024 U	0.027 U	0.029 U	0.037 U	0.037 U	0.043 U	0.038 U	0.034 U
Perfluorotetradecanoic Acid	PFTeDA	-	0.051 U	0.047 U	0.048 U	0.042 U	0.047 U	0.018 U	0.022 U	0.022 U	0.026 U	0.023 U	0.021 U
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	-	0.052 U	0.057 J	0.068 J	0.057 J	0.059 J	0.015 U	0.018 U	0.018 U	0.021 U	0.019 U	0.017 U
Perfluoropentane Sulfonic Acid	PFPeS	-	0.051 U	0.13 J	0.85	0.079 J	0.18 J	0.014 U	0.017 U	0.017 U	0.083 J	0.018 U	0.016 U
Perfluorohexane Sulfonic Acid	PFHxS	-	0.04 U	0.29	4.5	1.1	0.33	0.021 U	0.082 J	0.17 J	2.1	0.098 J	0.058 J
Perfluoroheptane Sulfonic Acid	PFHpS	-	0.067 U	0.062 U	0.064 U	0.19 J	0.063 U	0.029 U	0.037 U	0.037 U	0.043 U	0.038 U	0.034 U
Perfluorooctane Sulfonic Acid	PFOS	3	0.059 U	0.055 U	0.056 U	3.8	0.055 U	0.3	0.17 J	2.7	0.085 U	0.076 U	0.068 U
Perfluorononane Sulfonic Acid	PFNS	-	0.04 U	0.037 U	0.038 U	0.033 U	0.037 U	0.029 U	0.037 U	0.037 U	0.043 U	0.038 U	0.034 U
Perfluorodecane Sulfonic Acid	PFDS	-	0.072 U	0.066 U	0.067 U	0.059 U	0.066 U	0.021 U	0.026 U	0.026 U	0.031 U	0.027 U	0.024 U
Perfluorododecane Sulfonic Acid	PFDODS	-	-	-	-	-	-	0.018 U	0.022 U	0.022 U	0.026 U	0.023 U	0.021 U
<i>Fluorotelomer Sulfonates</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.07 U	0.065 U	0.066 U	0.058 U	0.065 U	0.081 U	0.1 U	0.1 U	0.12 U	0.1 U	0.094 U
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	0.037 U	0.034 U	0.035 U	0.45	0.034 U	0.51 U	0.64 U	0.64 U	0.74 U	0.65 U	0.59 U
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	0.048 U	0.044 U	0.045 U	0.04 U	0.045 U	0.12 U	0.15 U	0.15 U	0.18 U	0.16 U	0.14 U
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA	-	-	-	-	-	-	0.18 U	0.23 U	0.23 U	0.27 U	0.24 U	0.21 U
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	-	-	-	-	-	-	0.38 U	0.48 U	0.48 U	0.56 U	0.49 U	0.45 U
3-Perfluoroheptyl propanoic acid	7:3 FTCA	-	-	-	-	-	-	0.32 U	0.4 U	0.4 U	0.47 U	0.41 U	0.37 U

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP010 AFFF1_GP010- SO_13-16	AFFF1_GP010 AFFF1_GP010- SO_18-23	AFFF1_GP010 AFFF1_GP010- SO_25-27	AFFF1_GP010 AFFF1_GP010- SO_35-37	AFFF1_GP010 AFFF1_GP010- SO_18-23	AFFF1_GP029 AFFF1_GP029_ 00-02	AFFF1_GP029 AFFF1_GP029_ 03-05	AFFF1_GP029 AFFF1_GP029_ 06-08	AFFF1_GP029 AFFF1_GP029_ 06-08	AFFF1_GP029 AFFF1_GP029_ 13-15	AFFF1_GP029 AFFF1_GP029_ 18-20
		Depth (feet)	13 - 16	18 - 23	25 - 27	35 - 37	18 - 23	0 - 2	3 - 5	6 - 8	6 - 8	13 - 15	18 - 20
		Sample Date	9/25/2022	9/25/2022	9/25/2022	9/25/2022	9/25/2022	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023
		Sample Type	N	N	N	N	FD	N	N	N	FD	N	N
		Screening Level ^{af}											
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	0.045 U	0.042 U	0.043 U	0.038 U	0.042 U	0.013 U	0.016 U	0.016 U	0.018 U	0.016 U	0.015 U
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.067 U	0.062 U	0.064 U	0.056 U	0.063 U	0.025 U	0.032 U	0.032 U	0.037 U	0.032 U	0.029 U
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	-	-	-	-	-	0.032 U	0.041 U	0.041 U	0.047 U	0.042 U	0.038 U
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	0.032 U	0.029 U	0.03 U	0.026 U	0.029 U	0.026 U	0.033 U	0.033 U	0.038 U	0.034 U	0.03 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.066 U	0.061 U	0.062 U	0.055 U	0.061 U	0.025 U	0.032 U	0.032 U	0.037 U	0.032 U	0.029 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	-	-	-	-	-	0.1 U	0.13 U	0.13 U	0.15 U	0.13 U	0.12 U
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	-	-	-	-	-	0.12 U	0.14 U	0.14 U	0.17 U	0.15 U	0.13 U
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	-	-	-	-	-	0.095 U	0.12 U	0.12 U	0.14 U	0.12 U	0.11 U
Perfluoro-4-methoxybutanoic acid	PFMBA	-	-	-	-	-	-	0.02 U	0.025 U	0.025 U	0.029 U	0.026 U	0.023 U
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	-	-	-	-	-	-	0.05 U	0.063 U	0.063 U	0.073 U	0.065 U	0.059 U
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	-	-	-	-	-	0.098 U	0.12 U	0.12 U	0.14 U	0.13 U	0.11 U
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	-	-	-	-	-	0.085 U	0.11 U	0.11 U	0.12 U	0.11 U	0.099 U
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	-	-	-	-	-	0.042 U	0.053 U	0.053 U	0.061 U	0.054 U	0.049 U
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	-	-	-	-	-	0.13 U	0.16 U	0.16 U	0.18 U	0.16 U	0.15 U
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	-	-	-	-	-	0.053 U	0.067 U	0.067 U	0.078 U	0.069 U	0.062 U

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP029 AFFF1_GP029_26-28	AFFF1_GP029 AFFF1_GP029_30-32	AFFF1_GP030 AFFF1_GP030_00-02	AFFF1_GP030 AFFF1_GP030_05-07	AFFF1_GP030 AFFF1_GP030_10-12	AFFF1_GP030 AFFF1_GP030_13-15	AFFF1_GP030 AFFF1_GP030_20-22	AFFF1_GP030 AFFF1_GP030_20-22	AFFF1_GP030 AFFF1_GP030_28-30	AFFF1_GP030 AFFF1_GP030_33-35	AFFF1_GP031 AFFF1_GP031_00-02
		Depth (feet)	26 - 28	30 - 32	0 - 2	5 - 7	10 - 12	13 - 15	20 - 22	20 - 22	28 - 30	33 - 35	0 - 2
		Sample Date	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023
		Sample Type	N	N	N	N	N	N	N	N	N	N	N
		Screening Level ^{af}											
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	-	0.044 U	0.049 U	0.11 J	0.045 U	0.052 U	0.047 U	0.05 U	0.046 U	0.048 U	0.046 U	1.4
Perfluoropentanoic Acid	PFPeA	-	0.025 U	0.028 U	0.1 J	0.025 U	0.029 U	0.027 U	0.028 U	0.026 U	0.027 U	0.026 U	3
Perfluorohexanoic Acid	PFHxA	-	0.025 U	0.028 U	0.16 J	0.025 U	0.029 U	0.027 U	0.028 U	0.026 U	0.027 U	0.026 U	8.6
Perfluorheptanoic Acid	PFHpA	-	0.026 U	0.029 U	0.058 J	0.026 U	0.031 U	0.028 U	0.03 U	0.028 U	0.028 U	0.027 U	3.1
Perfluorooctanoic Acid	PFOA	1.7	0.05 U	0.055 U	0.11 J	0.55	0.075 J	0.1 J	0.072 J	0.053 U	0.054 U	0.052 U	34
Perfluorononanoic Acid	PFNA	-	0.014 U	0.016 U	0.11 J	0.014 U	0.017 U	0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	8.8
Perfluorodecanoic Acid	PFDA	-	0.089 U	0.099 U	0.098 U	0.09 U	0.1 U	0.096 U	0.1 U	0.094 U	0.096 U	0.093 U	10
Perfluoroundecanoic Acid	PFUnA	-	0.033 U	0.037 U	0.037 U	0.034 U	0.039 U	0.036 U	0.038 U	0.035 U	0.036 U	0.035 U	10
Perfluorododecanoic Acid	PFDoDA	-	0.066 U	0.074 U	0.073 U	0.067 U	0.078 U	0.072 U	0.076 U	0.07 U	0.072 U	0.069 U	2.2
Perfluorotridecanoic Acid	PFTTrDA	-	0.033 U	0.037 U	0.037 U	0.034 U	0.039 U	0.036 U	0.038 U	0.035 U	0.036 U	0.035 U	0.34
Perfluorotetradecanoic Acid	PFTeDA	-	0.02 U	0.022 U	0.022 U	0.02 U	0.024 U	0.022 U	0.023 U	0.021 U	0.022 U	0.021 U	0.022 U
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	-	0.017 U	0.018 U	0.018 U	0.017 U	0.02 U	0.018 U	0.019 U	0.018 U	0.018 U	0.017 U	2
Perfluoropentane Sulfonic Acid	PFPeS	-	0.015 U	0.017 U	0.017 U	0.016 U	0.018 U	0.017 U	0.018 U	0.016 U	0.017 U	0.016 U	2.9
Perfluorohexane Sulfonic Acid	PFHxS	-	0.042 J	0.15 J	1.6	1	0.79	0.69	0.41	0.16 J	0.026 U	0.025 U	110
Perfluoroheptane Sulfonic Acid	PFHpS	-	0.033 U	0.037 U	0.037 U	0.034 U	0.039 U	0.036 U	0.038 U	0.035 U	0.036 U	0.035 U	7.3
Perfluorooctane Sulfonic Acid	PFOS	3	0.08 J	2.4	18	0.65	0.95	0.16 J	0.69 J	0.38 J	0.22 J	0.11 J	2700
Perfluorononane Sulfonic Acid	PFNS	-	0.033 U	0.037 U	0.037 U	0.034 U	0.039 U	0.036 U	0.038 U	0.035 U	0.036 U	0.035 U	53
Perfluorodecane Sulfonic Acid	PFDS	-	0.024 U	0.026 U	0.026 U	0.024 U	0.028 U	0.026 U	0.027 U	0.025 U	0.026 U	0.025 U	51
Perfluorododecane Sulfonic Acid	PFDoDS	-	0.02 U	0.022 U	0.022 U	0.02 U	0.024 U	0.022 U	0.023 U	0.021 U	0.022 U	0.021 U	29
<i>Fluorotelomer Sulfonates</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.091 U	0.1 U	0.1 U	0.093 U	0.11 U	0.099 U	0.1 U	0.096 U	0.099 U	0.096 U	0.099 U
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	0.57 U	0.64 U	0.63 U	0.58 U	0.67 U	0.62 U	0.66 U	0.61 U	0.62 U	0.6 U	2.9
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	0.14 U	0.15 U	0.15 U	0.14 U	0.16 U	0.15 U	0.16 U	0.15 U	0.15 U	0.14 U	17
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA		0.21 U	0.23 U	0.23 U	0.21 U	0.25 U	0.23 U	0.24 U	0.22 U	0.23 U	0.22 U	0.23 U
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA		0.43 U	0.48 U	0.48 U	0.44 U	0.51 U	0.47 U	0.49 U	0.46 U	0.47 U	0.45 U	2.2 J
3-Perfluoroheptyl propanoic acid	7:3 FTCA		0.36 U	0.41 U	0.4 U	0.37 U	0.43 U	0.39 U	0.42 U	0.38 U	0.39 U	0.38 U	5 J

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP029	AFFF1_GP029	AFFF1_GP030	AFFF1_GP030	AFFF1_GP030	AFFF1_GP030	AFFF1_GP030	AFFF1_GP030	AFFF1_GP030	AFFF1_GP030	AFFF1_GP031
		Depth (feet)	AFFF1_GP029_26-28	AFFF1_GP029_30-32	AFFF1_GP030_00-02	AFFF1_GP030_05-07	AFFF1_GP030_10-12	AFFF1_GP030_13-15	AFFF1_GP030_20-22	AFFF1_GP030_20-22	AFFF1_GP030_20-22	AFFF1_GP030_28-30	AFFF1_GP030_33-35
		Sample Date	26 - 28	30 - 32	0 - 2	5 - 7	10 - 12	13 - 15	20 - 22	20 - 22	20 - 22	28 - 30	33 - 35
		Sample Type	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023
		Screening Level ^{af}	N	N	N	N	N	N	N	N	FD	N	N
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	0.014 U	0.042 J	0.095 J	0.014 U	0.017 U	0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	340
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.028 U	0.032 U	0.031 U	0.029 U	0.033 U	0.031 U	0.032 U	0.03 U	0.031 U	0.03 U	3.8 J
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	0.037 U	0.041 U	0.041 U	0.037 U	0.043 U	0.04 U	0.042 U	0.039 U	0.04 U	0.038 U	0.25 J
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	0.03 U	0.033 U	0.033 U	0.03 U	0.035 U	0.032 U	0.034 U	0.031 U	0.032 U	0.031 U	14 J
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.028 U	0.032 U	0.031 U	0.029 U	0.033 U	0.031 U	0.032 U	0.03 U	0.031 U	0.03 U	0.031 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	0.12 U	0.13 U	0.13 U	0.12 U	0.14 U	0.13 U	0.13 U	0.12 U	0.13 U	0.12 U	0.13 U
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	0.13 U	0.15 U	0.14 U	0.13 U	0.15 U	0.14 U	0.15 U	0.14 U	0.14 U	0.14 U	0.14 U
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	0.11 U	0.12 U	0.12 U	0.11 U	0.13 U	0.12 U	0.12 U	0.11 U	0.12 U	0.11 U	0.12 U
Perfluoro-4-methoxybutanoic acid	PFMBA	-	0.023 U	0.025 U	0.025 U	0.023 U	0.026 U	0.024 U	0.026 U	0.024 U	0.024 U	0.024 U	0.024 U
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	-	0.057 U	0.063 U	0.063 U	0.058 U	0.067 U	0.062 U	0.065 U	0.06 U	0.062 U	0.06 U	0.062 U
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	0.11 U	0.12 U	0.12 U	0.11 U	0.13 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	0.096 U	0.11 U	0.11 U	0.097 U	0.11 U	0.1 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	0.047 U	0.053 U	0.052 U	0.048 U	0.056 U	0.051 U	0.054 U	0.05 U	0.051 U	0.05 U	0.051 U
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	0.14 U	0.16 U	0.16 U	0.14 U	0.17 U	0.15 U	0.16 U	0.15 U	0.15 U	0.15 U	0.15 U
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	0.06 U	0.067 U	0.067 U	0.061 U	0.071 U	0.065 U	0.069 U	0.064 U	0.066 U	0.063 U	0.066 U

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP031 AFFF1_GP031_03-05	AFFF1_GP031 AFFF1_GP031_08-10	AFFF1_GP031 AFFF1_GP931_08-10	AFFF1_GP031 AFFF1_GP031_13-15	AFFF1_GP031 AFFF1_GP031_18-20	AFFF1_GP031 AFFF1_GP031_26-28	AFFF1_GP031 AFFF1_GP031_32-34	AFFF1_HA001 AFFF1HA001-SO_00-02_051022	AFFF1_HA002 AFFF1HA002-SO_00-02_051022	AFFF1_HA002 AFFF1HA902-SO_00-02_051022	AFFF1_HA003 AFFF1HA003-SO_00-02_051022
		Depth (feet)	3 - 5	8 - 10	8 - 10	13 - 15	18 - 20	26 - 28	32 - 34	0 - 2	0 - 2	0 - 2	0 - 2
		Sample Date	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	5/10/2022	5/10/2022	5/10/2022	5/10/2022
		Sample Type	N	N	FD	N	N	N	N	N	N	FD	N
		Screening Level ^{af}											
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	-	0.9 J	0.97 J	0.98 J	0.74 J	0.67 J	0.7 J	0.63 J	0.72	0.8	0.78	1.2
Perfluoropentanoic Acid	PFPeA	-	4.3	6.5	5.8	5.5	4.1	3.4	2.9	0.76	0.92	1	1.5
Perfluorohexanoic Acid	PFHxA	-	12	12	11	9.4	6.3	8	5.7	0.69	0.68	0.72	1.2
Perfluorheptanoic Acid	PFHpA	-	4.5	2.7	2.3	2.6	1.4	1.7	1.6	0.16 J	0.23 J	0.21 J	0.25 J
Perfluorooctanoic Acid	PFOA	1.7	59	53	48	23	12	12	6.5	2.3	1.5	1.3	3.1
Perfluorononanoic Acid	PFNA	-	21	5.3	4.6	2.1	0.94	0.56	0.35	0.23 J	1.9	1.6	1.2
Perfluorodecanoic Acid	PFDA	-	0.092 U	0.26	0.2 J	0.58	0.11 J	0.095 U	0.086 U	0.064 U	0.21 J	0.19 J	0.25 J
Perfluoroundecanoic Acid	PFUnA	-	0.034 U	0.037 U	0.036 U	0.034 U	0.032 U	0.035 U	0.032 U	0.056 U	0.075 J	0.062 U	0.2 J
Perfluorododecanoic Acid	PFDODA	-	0.069 U	0.073 U	0.073 U	0.069 U	0.065 U	0.071 U	0.064 U	0.04 U	0.044 U	0.045 U	0.073 J
Perfluorotridecanoic Acid	PFTTrDA	-	0.034 U	0.037 U	0.036 U	0.034 U	0.032 U	0.035 U	0.032 U	0.028 U	0.031 U	0.031 U	0.037 U
Perfluorotetradecanoic Acid	PFTeDA	-	0.021 U	0.022 U	0.022 U	0.021 U	0.02 U	0.022 U	0.02 U	0.049 U	0.055 U	0.055 U	0.065 U
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	-	4.6	3.1	3.1	1.5	0.73	1.3	0.93	0.081 J	0.092 J	0.091 J	0.21 J
Perfluoropentane Sulfonic Acid	PFPeS	-	5.3	5.3	5.4	2.8	1.4	2.2	1.5	0.14 J	0.13 J	0.13 J	0.28 J
Perfluorohexane Sulfonic Acid	PFHxS	-	300	150	190	81	38	46	33	5.2	3.9	3.6	9.1
Perfluoroheptane Sulfonic Acid	PFHpS	-	46 J	51	43	20 J	12	8.6	2.2	0.68	0.71 J	0.51 J	1.6
Perfluorooctane Sulfonic Acid	PFOS	3	4100	1800	2300	5000	1200	560	430	30	250	230	130
Perfluorononane Sulfonic Acid	PFNS	-	0.034 U	2.6 J	0.036 UJ	0.034 U	0.032 U	0.035 U	0.032 U	0.038 U	0.37 J	0.043 UJ	0.7
Perfluorodecane Sulfonic Acid	PFDS	-	0.025 U	0.026 U	0.026 U	0.025 U	0.023 U	0.025 U	0.023 U	0.069 U	0.37 J	0.53 J	1.1
Perfluorododecane Sulfonic Acid	PFDODS	-	0.021 U	0.022 U	0.022 U	0.021 U	0.02 U	0.022 U	0.02 U	-	-	-	-
<i>Fluorotelomer Sulfonates</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.095 U	0.1 U	0.1 U	0.17 J	0.092 J	0.098 U	0.089 U	0.068 U	0.076 U	0.076 U	0.09 U
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	20	42	40	53	29	25	11	0.036 U	0.04 U	0.04 U	0.047 U
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	10	18	16	72 J	11	1.4	4	0.046 U	0.2 J	0.18 J	0.29 J
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA		0.22 U	0.23 U	0.23 U	0.22 U	0.2 U	0.22 U	0.2 U	-	-	-	-
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA		0.45 U	0.52 J	0.48 U	1.2 J	0.42 U	0.46 U	0.42 U	-	-	-	-
3-Perfluoroheptyl propanoic acid	7:3 FTCA		0.38 U	0.4 U	0.4 U	0.38 U	0.36 U	0.39 U	0.35 U	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_GP031_03-05	AFFF1_GP031_08-10	AFFF1_GP031_08-10	AFFF1_GP031_13-15	AFFF1_GP031_18-20	AFFF1_GP031_26-28	AFFF1_GP031_32-34	AFFF1_HA001-SO_00-02_051022	AFFF1_HA002-SO_00-02_051022	AFFF1_HA002-SO_00-02_051022	AFFF1_HA003-SO_00-02_051022
		Depth (feet)	3 - 5	8 - 10	8 - 10	13 - 15	18 - 20	26 - 28	32 - 34	0 - 2	0 - 2	0 - 2	0 - 2
		Sample Date	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	9/27/2023	5/10/2022	5/10/2022	5/10/2022	5/10/2022
		Sample Type	N	N	FD	N	N	N	N	N	N	FD	N
		Screening Level ^{af}											
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	18 J	2.7 J	2.7	3.1 J	1.6	0.19 J	0.11 J	0.18 J	2.1	2.1	5.2
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.03 U	0.031 U	0.031 U	0.029 U	0.028 U	0.03 U	0.028 U	0.065 U	0.073 U	0.073 U	0.12 J
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	0.038 U	0.041 U	0.04 U	0.038 U	0.036 U	0.039 U	0.036 U	-	-	-	-
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	0.031 U	0.033 U	0.033 U	0.031 U	0.029 U	0.032 U	0.029 U	0.031 U	0.034 U	0.034 U	0.04 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.03 U	0.031 U	0.031 U	0.029 U	0.028 U	0.03 U	0.028 U	0.064 U	0.071 U	0.071 U	0.084 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	0.12 U	0.13 U	0.13 U	0.12 U	0.11 U	0.13 U	0.11 U	-	-	-	-
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.13 U	-	-	-	-
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	0.11 U	0.12 U	0.12 U	0.11 U	0.11 U	0.12 U	0.1 U	-	-	-	-
Perfluoro-4-methoxybutanoic acid	PFMBA	-	0.023 U	0.025 U	0.025 U	0.023 U	0.022 U	0.024 U	0.022 U	-	-	-	-
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	-	0.059 U	0.063 U	0.063 U	0.059 U	0.056 U	0.061 U	0.055 U	-	-	-	-
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	0.12 U	0.12 U	0.12 U	0.12 U	0.11 U	0.12 U	0.11 U	-	-	-	-
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	0.1 U	0.11 U	0.11 U	0.1 U	0.094 U	0.1 U	0.093 U	-	-	-	-
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	0.049 U	0.052 U	0.052 U	0.049 U	0.046 U	0.051 U	0.046 U	-	-	-	-
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	0.15 U	0.16 U	0.16 U	0.15 U	0.14 U	0.15 U	0.14 U	-	-	-	-
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	0.063 U	0.067 U	0.066 U	0.063 U	0.059 U	0.065 U	0.059 U	-	-	-	-

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_HA004 AFFF1HA004-SO_00-02_051022	AFFF1_HA005 AFFF1HA005-SO_00-02_051022	AFFF1_HA006 AFFF1HA006-SO_00-02_051022	AFFF1_HA007 AFFF1_HA007-SO_00-02_0-2_9/3/2022	AFFF1_HA008 AFFF1_HA008-SO_00-02_0-2_9/3/2022	AFFF1_HA009 AFFF1_HA009-SO_00-02_0-2_9/3/2022	AFFF1_HA010 AFFF1_HA010-SO_00-02_0-2_9/3/2022	AFFF1_HA011 AFFF1_HA011-SO_00-02_0-2_9/3/2022	AFFF1_HA012 AFFF1_HA012-SO_00-02_0-2_9/3/2022	AFFF1_HA013 AFFF1_HA013-SO_00-02_0-2_9/30/2023	AFFF1_HA014 AFFF1_HA014-SO_00-02_0-2_9/30/2023
		Depth (feet)	Sample Date	Sample Type	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}
<i>Perfluorocarboxylates</i>													
Perfluorobutanoic Acid	PFBA	-	1.2	0.79	0.25 J	0.16 J	0.17 J	2.5 U	2.6 U	2.8 U	2.7 U	0.049 U	0.064 J
Perfluoropentanoic Acid	PFPeA	-	3.3	1.3	0.37	0.052 U	0.055 U	2.3 U	2.3 U	3.1 J	2.4 U	0.028 U	0.022 U
Perfluorohexanoic Acid	PFHxA	-	2.8	1.2	0.76	0.11 J	0.1 J	1.9 J	1.7 U	2.9 J	1.8 U	0.073 J	0.089 J
Perfluorheptanoic Acid	PFHpA	-	1.7	0.93	0.21 J	0.059 J	0.051 U	2.1 U	2.1 U	2.3 U	2.3 U	0.11 J	0.023 U
Perfluorooctanoic Acid	PFOA	1.7	5.7	5.9	2	0.46	0.1 J	32	2.9 U	13 J	3.7 J	0.57	0.44
Perfluorononanoic Acid	PFNA	-	2.4	1.5	1.1	0.18 J	0.046 J	4.1 J	1.2 U	28	1.5 J	0.096 J	0.021 J
Perfluorodecanoic Acid	PFDA	-	1.1	0.093 J	0.086 J	0.061 U	0.064 U	2.6 U	2.7 U	2.9 U	2.9 U	0.098 U	0.079 U
Perfluoroundecanoic Acid	PFUnA	-	0.6	0.06 U	0.062 U	0.053 U	0.056 U	2.3 U	2.3 U	2.6 U	2.5 U	0.037 U	0.029 U
Perfluorododecanoic Acid	PFDoDA	-	0.11 J	0.043 U	0.044 U	0.038 U	0.04 U	1.7 U	1.7 U	1.8 U	1.8 U	0.074 U	0.059 U
Perfluorotridecanoic Acid	PFTTrDA	-	0.028 U	0.03 U	0.031 U	0.027 U	0.028 U	1.2 U	1.2 U	1.3 U	1.3 U	0.037 U	0.029 U
Perfluorotetradecanoic Acid	PFTeDA	-	0.049 U	0.053 U	0.054 U	0.047 U	0.049 U	2 U	2.1 U	2.3 U	2.2 U	0.022 U	0.018 U
<i>Perfluorosulfonates</i>													
Perfluorobutane Sulfonic Acid	PFBS	-	0.66	0.11 J	0.21 J	0.081 J	0.051 U	2.1 U	2.1 U	2.3 U	2.3 U	0.032 J	0.015 U
Perfluoropentane Sulfonic Acid	PFPeS	-	0.91	0.19 J	0.32	0.047 U	0.049 U	2 U	2.1 U	2.3 U	2.2 U	0.017 U	0.014 U
Perfluorohexane Sulfonic Acid	PFHxS	-	33	19	14	1.9	0.69	110	5.7 J	55	13	1.9	1.4
Perfluoroheptane Sulfonic Acid	PFHpS	-	5.4	1.9	1.2	0.23 J	0.065 U	3.2 J	2.7 U	4.9 J	2.9 U	0.091 J	0.062 J
Perfluorooctane Sulfonic Acid	PFOS	3	1100	80	120	17	5.9	490	210	1000	290	3.3	3.1
Perfluorononane Sulfonic Acid	PFNS	-	3.8	0.042 U	0.066 J	0.037 U	0.039 U	2.6 J	1.6 U	1.8 U	1.7 U	0.037 U	0.029 U
Perfluorodecane Sulfonic Acid	PFDS	-	1.7 J	0.22 J	0.076 U	0.066 U	0.069 U	2.9 U	2.9 U	3.2 U	3.1 U	0.026 U	0.021 U
Perfluorododecane Sulfonic Acid	PFDoDS	-	-	-	-	-	-	-	-	-	-	0.022 U	0.018 U
<i>Fluorotelomer Sulfonates</i>													
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.067 U	0.073 U	0.075 U	0.065 U	0.068 U	2.8 U	2.8 UJ	3.1 U	3 U	0.1 U	0.081 U
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	3.5	0.039 U	0.04 U	0.034 U	0.036 U	1.5 U	1.5 U	4.4 J	1.6 U	0.64 U	0.51 U
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	15	0.21 J	0.08 J	0.045 U	0.047 U	1.9 U	1.9 U	2.2 U	2.1 U	0.15 U	0.12 U
<i>Fluorotelomer Carboxylic Acids</i>													
3-Perfluoropropyl propanoic acid	3:3 FTCA	-	-	-	-	-	-	-	-	-	-	0.23 U	0.18 U
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	-	-	-	-	-	-	-	-	-	-	0.48 U	0.38 U
3-Perfluoroheptyl propanoic acid	7:3 FTCA	-	-	-	-	-	-	-	-	-	-	0.4 U	0.32 U

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_HA004 AFFF1HA004-SO_00-02_051022	AFFF1_HA005 AFFF1HA005-SO_00-02_051022	AFFF1_HA006 AFFF1HA006-SO_00-02_051022	AFFF1_HA007 AFFF1_HA007-SO_00-02_0-2_9/3/2022	AFFF1_HA008 AFFF1_HA008-SO_00-02_0-2_9/3/2022	AFFF1_HA009 AFFF1_HA009-SO_00-02_0-2_9/3/2022	AFFF1_HA010 AFFF1_HA010-SO_00-02_0-2_9/3/2022	AFFF1_HA011 AFFF1_HA011-SO_00-02_0-2_9/3/2022	AFFF1_HA012 AFFF1_HA012-SO_00-02_0-2_9/3/2022	AFFF1_HA013 AFFF1_HA013-SO_00-02_0-2_9/30/2023	AFFF1_HA014 AFFF1_HA014-SO_00-02_0-2_9/30/2023
		Depth (feet)	Sample Date	Sample Type	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}	Screening Level ^{af}
<i>Fluorosulfonamides</i>													
Perfluorooctane sulfonamide	PFOSA/FOSA	-	4.1	0.5	1.2	0.071 J	0.08 J	9.1 J	1.8 U	7.4 J	2 U	0.063 J	0.14 J
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.065 U	0.07 U	0.072 U	0.062 U	0.065 U	2.7 U	2.7 U	3 U	2.9 U	0.032 U	0.025 U
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	-	-	-	-	-	-	-	-	-	0.041 U	0.033 U
<i>Fluorosulfonamidoacetic acids</i>													
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	0.14 J	0.033 U	0.034 U	0.029 U	0.031 U	1.3 U	1.3 U	1.4 U	1.4 U	0.033 U	0.026 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.063 U	0.069 U	0.07 U	0.061 U	0.064 U	2.6 U	2.7 U	2.9 U	2.9 U	0.032 U	0.025 U
<i>Perfluoroalkane sulfonamidoethanols</i>													
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	-	-	-	-	-	-	-	-	-	0.13 U	0.1 U
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	-	-	-	-	-	-	-	-	-	0.14 U	0.12 U
<i>Perfluoroalkyl ether carboxylic acids</i>													
Perfluoro-3-methoxypropanoic acid	PFMPA	-	-	-	-	-	-	-	-	-	-	0.12 U	0.095 U
Perfluoro-4-methoxybutanoic acid	PFMBA	-	-	-	-	-	-	-	-	-	-	0.025 U	0.02 U
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	-	-	-	-	-	-	-	-	-	-	0.063 U	0.05 U
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	-	-	-	-	-	-	-	-	-	0.12 U	0.099 U
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	-	-	-	-	-	-	-	-	-	0.11 U	0.085 U
<i>Perfluoroalkyl ether sulfonic acids</i>													
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	-	-	-	-	-	-	-	-	-	0.053 U	0.042 U
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	-	-	-	-	-	-	-	-	-	0.16 U	0.13 U
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	-	-	-	-	-	-	-	-	-	0.067 U	0.053 U

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_HA015 AFFF1_HA015- SO_00-02	AFFF1_HA016 AFFF1_HA016- SO_00-02	AFFF1_HA017 AFFF1_HA017- SO_00-02	AFFF1_HA018 AFFF1_HA018- SO_00-02	AFFF1_HA019 AFFF1_HA019- SO_00-02	AFFF1_HA020 AFFF1_HA020- SO_00-02	AFFF1_HA021 AFFF1_HA021- SO_00-02
		Depth (feet)	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2
		Sample Date	9/30/2023	9/30/2023	9/30/2023	9/30/2023	7/25/2024	7/25/2024	7/25/2024
Sample Type	N	N	N	N	N	N	N	N	
Screening Level ^{af}									
<i>Perfluorocarboxylates</i>									
Perfluorobutanoic Acid	PFBA	-	0.039 U	0.039 U	0.13 J	0.16 J	0.24 J	0.18 J	0.21 J
Perfluoropentanoic Acid	PFPeA	-	0.022 U	0.043 J	0.36 J	0.41 J	0.48 J	0.011 U	0.13 J
Perfluorohexanoic Acid	PFHxA	-	0.09 J	0.046 J	5	0.54	0.45	0.018 U	0.017 U
Perfluorheptanoic Acid	PFHpA	-	0.023 U	0.077 J	3.7	0.53	0.29	0.024 U	0.13 J
Perfluorooctanoic Acid	PFOA	1.7	0.45	0.17 J	170	1.1	5.1	0.091 J	0.15 J
Perfluorononanoic Acid	PFNA	-	0.027 J	0.17 J	1.6	0.051 J	0.33	0.061 U	0.21
Perfluorodecanoic Acid	PFDA	-	0.079 U	0.097 J	1.4	0.1 U	0.061 U	0.047 U	0.047 U
Perfluoroundecanoic Acid	PFUnA	-	0.03 U	0.03 U	0.16 J	0.039 U	0.043 U	0.034 U	0.2
Perfluorododecanoic Acid	PFDoDA	-	0.059 U	0.059 U	0.13 J	0.078 U	0.024 U	0.018 U	0.018 U
Perfluorotridecanoic Acid	PFTTrDA	-	0.03 U	0.03 U	0.027 U	0.039 U	0.033 U	0.026 U	0.026 U
Perfluorotetradecanoic Acid	PFTeDA	-	0.018 U	0.018 U	0.016 U	0.024 U	0.041 U	0.032 U	0.031 U
<i>Perfluorosulfonates</i>									
Perfluorobutane Sulfonic Acid	PFBS	-	0.015 U	0.015 U	0.095 J	0.078 J	0.15 J	0.0073 U	0.12 J
Perfluoropentane Sulfonic Acid	PFPeS	-	0.014 U	0.014 U	1.2	0.06 J	0.19 J	0.021 U	0.021 U
Perfluorohexane Sulfonic Acid	PFHxS	-	1.9	0.43	150	14	20	0.022 U	0.022 U
Perfluoroheptane Sulfonic Acid	PFHpS	-	0.064 J	0.065 J	11	0.2 J	3	0.031 U	0.031 U
Perfluorooctane Sulfonic Acid	PFOS	3	6	15	330	9	100	0.97	0.77
Perfluorononane Sulfonic Acid	PFNS	-	0.03 U	1.4 J	0.99 J	0.039 U	0.036 U	0.028 U	0.028 U
Perfluorodecane Sulfonic Acid	PFDS	-	0.021 U	0.19 J	1	0.028 U	0.029 U	0.023 U	0.023 U
Perfluorododecane Sulfonic Acid	PFDoDS	-	0.018 U	0.21	0.37	0.024 U	0.019 U	0.014 U	0.014 U
<i>Fluorotelomer Sulfonates</i>									
4:2 Fluorotelomer Sulfonic Acid	4:2 FTSA	-	0.081 U	0.081 U	0.074 U	0.11 U	0.057 U	0.045 U	0.045 U
6:2 Fluorotelomer Sulfonic Acid	6:2 FTSA	-	0.51 U	0.51 U	3.5	0.67 U	0.079 U	0.062 U	0.061 U
8:2 Fluorotelomer Sulfonic Acid	8:2 FTSA	-	0.12 U	0.48 J	4.3	0.16 U	0.077 U	0.06 U	0.06 U
<i>Fluorotelomer Carboxylic Acids</i>									
3-Perfluoropropyl propanoic acid	3:3 FTCA		0.19 U	0.19 U	0.17 U	0.24 U	0.049 U	0.038 U	0.038 U
2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA		0.39 U	0.39 U	0.35 U	0.51 U	0.14 U	0.15 J	0.11 U
3-Perfluoroheptyl propanoic acid	7:3 FTCA		0.32 U	0.32 U	0.3 U	0.43 U	0.22 U	0.26 J	0.17 U

Table I.1
PFAS Remedial Investigation, Soil Results Screened to ADEC Method 2
Migration to Groundwater Cleanup Levels
Site FT001 (AFFF Area 1)

Analyte	Analyte Abbreviation	Location Sample ID	AFFF1_HA015 AFFF1_HA015- SO_00-02	AFFF1_HA016 AFFF1_HA016- SO_00-02	AFFF1_HA017 AFFF1_HA017- SO_00-02	AFFF1_HA018 AFFF1_HA018- SO_00-02	AFFF1_HA019 AFFF1_HA019- SO_00-02	AFFF1_HA020 AFFF1_HA020- SO_00-02	AFFF1_HA021 AFFF1_HA021- SO_00-02
		Depth (feet)	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2
		Sample Date	9/30/2023	9/30/2023	9/30/2023	9/30/2023	7/25/2024	7/25/2024	7/25/2024
		Sample Type	N	N	N	N	N	N	N
		Screening Level ^{a/}							
<i>Fluorosulfonamides</i>									
Perfluorooctane sulfonamide	PFOSA/FOSA	-	0.38	0.97	770	0.031 J	0.04 U	0.29	0.27
n-Methyl-Heptadecafluorooctane Sulfonamide	NMeFOSA	-	0.025 U	0.025 U	6.4 J	0.033 U	0.033 U	0.026 U	0.025 U
N-ethyl perfluorooctanesulfonamide	NEtFOSA	-	0.033 U	0.033 U	0.03 U	0.043 U	0.081 U	0.063 U	0.063 U
<i>Fluorosulfonamidoacetic acids</i>									
n-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	-	0.026 U	0.026 U	1.9	0.035 U	0.065 U	0.051 U	0.05 U
n-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	-	0.025 U	0.025 U	0.49	0.033 U	0.063 U	0.049 U	0.049 U
<i>Perfluoroalkane sulfonamidoethanols</i>									
N-methyl perfluorooctane- sulfonamidoethanol	NMeFOSE	-	0.1 U	0.1 U	0.095 U	0.14 U	0.091 U	0.071 U	0.071 U
N-ethyl perfluorooctane- sulfonamidoethanol	NEtFOSE	-	0.12 U	0.12 U	0.11 U	0.15 U	0.15 U	0.12 U	0.12 U
<i>Perfluoroalkyl ether carboxylic acids</i>									
Perfluoro-3-methoxypropanoic acid	PFMPA	-	0.096 U	0.096 U	0.088 U	0.13 U	0.0082 U	0.0064 U	0.057 J
Perfluoro-4-methoxybutanoic acid	PFMBA	-	0.02 U	0.02 U	0.018 U	0.026 U	0.017 U	0.013 U	0.013 U
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	-	0.051 U	0.051 U	0.046 U	0.066 U	0.047 U	0.037 U	0.037 U
Hexafluoropropylene oxide dimer acid	HFPO-DA /GenX	-	0.099 U	0.099 U	0.09 U	0.13 U	0.035 U	0.027 U	0.069 J
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	-	0.086 U	0.086 U	0.078 U	0.11 U	0.012 U	0.0097 U	0.0097 U
<i>Perfluoroalkyl ether sulfonic acids</i>									
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	-	0.042 U	0.042 U	0.038 U	0.055 U	0.026 U	0.02 U	0.02 U
11-Chloroeicosafuor-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	-	0.13 U	0.13 U	0.12 U	0.17 U	0.027 U	0.021 U	0.021 U
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	-	0.054 U	0.054 U	0.049 U	0.071 U	0.026 U	0.02 U	0.02 U

Notes:

^{a/} Screening levels are the Alaska Department of Environmental Conservation (ADEC) Method Two cleanup levels (CULs) for migration to groundwater (ADEC, February 2023).

- = not applicable

µg/kg = microgram per kilogram

bgs = below ground surface

FD = field duplicate

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

N = normal sample

PFAS = per- and polyfluoroalkyl substances

U = Analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ = Analyte was below the reported sample quantitation limit. The reported value is approximate.

Bold indicates the analyte was detected

Gray shading indicates the result exceeds the screening criteria.

Appendix J
ADEC Comments on Draft RI Addendum Report

Document: Draft PFAS Remedial Investigation Addendum Report for Site FT001, Galena Former Forward Operating Location

Comment No.	Page/ Section	DEC Comment/Recommendation: 8/6/2025	Response: 09/18/2025 DEC Response: 9/19/2025
1.	Section 5.2	<p>Statement: “PFNA is not considered a COI because it was detected above its SL in less than 4 percent of soil samples and would not drive risk.”</p> <p>DEC expects this statement was derived from the Risk Assessment Guidance for Superfund reference. Please cite the reference that is being used to justify the off ramping of PFNA for risk and explain the justification in a summary, addressing each of the concerns identified below.</p> <p>From EPA RAGS Section 5.9.3, a chemical may be considered for elimination from quantitative risk assessment if it is not detected in any other sampled media. PFNA is a COI in groundwater, which implies concentrations in soil are meaningfully contributing to impacts to groundwater above risk-based levels. Additionally, PFNA was expected to be present due to the source area. RAGS Section 5.9.3 states “[chemicals] expected to be present should not be eliminated.”</p> <p>PFNA also may be present in “hot spots”, which may be important for short-term exposure scenarios.</p>	<p>Concur. A single exceedance of a SL is considered in identifying COIs. The text has been revised to include PFNA as a COI in soil.</p> <p>The text has been updated to: <i>PFNA is considered a COI; however, it was detected above its SL in less than 4 percent of soil samples and is present at much lower frequency and over a much smaller area than other COIs.</i></p> <p>Tables 5.1 and 6.1 have been updated to include PFNA in soils as a COI.</p> <p>Text in Sections 5.3.1, 5.3.2, and 8.1 has been updated to reflect the inclusion of PFNA as a COI in soils.</p> <p>DEC Response: Accepted with backcheck.</p>
2.	Section 5.4	<p>Statement: “maximum concentration may not be representative of the current concentrations, as the PFAS plumes are either stable or decreasing.”</p> <p>There has not been a Mann-Kendall trend analysis of the PFAS concentrations at the site. Section 8.1 states later, “There are currently too few data points available to confirm trends in groundwater concentrations over time.”</p>	<p>Concur. The clause “as the PFAS plumes are either stable or decreasing” has been deleted from the text in Section 5.4.</p> <p>DEC Response: Accepted with backcheck.</p>
3.	Section 5.4	<p>At the source zone of the civilian air crash, is it possible lower perfluoroalkyl acids (PFAA) concentrations in the source zone were observed due to the high biochemical oxygen demand (BOD) as a result of petroleum contamination, while higher concentrations of PFAAs further downgradient were identified due to the comparatively lower BOD, which would allow anionic PFAA terminal products (such as PFOS and PFOA) to form? These compounds additionally have increased mobility due to being shorter chain compounds.</p>	<p>Comment acknowledged. The Air Force acknowledges DEC’s question. There is evidence that more than a single release has impacted groundwater in the vicinity of ST010, based on the fact that markers of older AFFF formulations (i.e., PFOA and PFOS) and newer formulations (e.g., telefluoromers) are both present in groundwater in this area. Text has been added to Section 5.4 (5th paragraph under Summary of Lateral Distribution) to clarify that in addition to the Civilian Aircraft Crash (AFFF Area 8), the PFAS releases at the former FPTA may have contributed to PFAS observed in groundwater at Site ST010. Also,</p>

Comment No.	Page/ Section	DEC Comment/Recommendation: 8/6/2025	Response: 09/18/2025 DEC Response: 9/19/2025
			<p>precursors are comprised of larger molecules that generally sorb strongly to soil, so their leaching to groundwater, and transport by groundwater for subsequent oxidation seems unlikely. Please note the following, Sections 5.2.3 and 5.2.4 of the RI report (Parsons, April 2024) present detailed discussions of PFAA degradation and precursor transformation.</p> <p>DEC Response: Accepted with backcheck.</p>
4.	Section 7.2	<p>As fluorotelomer sulfonates 6:2 FTS, 4:2 FTS, and 8:2 FTS were not present in earlier formulations of the 3M brand AFFF, could detections of these compounds imply that there were releases of AFFF after the removal of the aircraft mock-up in 1992? Could this be attributed to the 2003 civilian air crash?</p>	<p>Clarification. The references cited indicated that other AFFF brands, such as Ansul, Chemguard, and National Foam have produced fluorotelomer-based AFFF, and that the source area at FT001 also has relatively high concentrations of FTS. The discussion in the text did not clarify the dates of production of fluorotelomer-based AFFF however, and the following text has been added to Section 7.2: <i>Ansul and National Foam telefluoromer-based AFFF products were approved for U.S. military use starting in 1976 (Houtz et al, 2013).</i></p> <p>DEC Response: Accepted with backcheck.</p>
5.	Appendix H	<p>The 2024 Galena PFAS Soil data package does not appear to have a completed Lab Data Review Checklist associated with it. Please include this in the revised report for review or clarify.</p>	<p>The Lab Data Review Checklist will be provided with the draft final submittal.</p> <p>Note that lab data review checklists for this project have typically been provided with the data quality assessment reports. The requested checklist was included as Attachment B of the <i>Final Data Quality Assessment, 2024 Remedial Investigation (RI) Soil Sampling, Former Galena Forward Operating Location (FOL), Alaska</i> (Parsons March 2025).</p> <p>DEC Response: Accepted, thank you.</p>
6.		End of comments.	