VALLEY

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Valley Fire Control Site Investigation

217 Main St SE, Albany, Oregon

Valley Fire Control
Albany, Oregon
July 2022

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Valley Fire Control Site Investigation
217 Main St SE
Valley Fire Control - Albany, Oregon

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Report Date:	July 22, 2022
Project Number:	2022240005
Submitted By:	

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EXECUTIVE SUMMARY

Valley Fire Control, located at 217 Main St SE in Albany, Oregon (Site), services fire extinguishers, performs hydrotesting, and provides other related fire and safety services. A prospective buyer of the business completed a Phase I and limited Phase II Environmental Site Assessment, which identified potential on-site and off-site sources of per- and poly-fluoroalkyl substances (PFAS), substances commonly found in fire extinguishing foam.

On June 1, 2022, Valley Science and Engineering (Valley) performed a Site investigation consisting of soil and groundwater sampling in soil borings around Site.

Based on the investigations performed, Valley presents the following conclusions:

- PFAS compounds were detected in both soil and groundwater.
- PFAS concentrations were highest in the loading dock area.
- Upgradient groundwater samples indicated the potential for off-Site sources of PFAS based on preliminary data. However, local and seasonal groundwater flow has not been established.

Based on the results of these conclusions, Valley makes the following recommendations:

- Additional investigations to evaluate groundwater concentrations from potential off-site and on-site sources should be implemented in the future. The DEQ should be consulted prior to performing additional investigations. These investigations may include the installation of permanent monitoring wells.

1.0 INTRODUCTION

Valley Fire Control, located at 217 Main St SE in Albany, Oregon (Site), services fire extinguishers, performs hydrotesting, and provides other related fire and safety services. As part of due diligence during a previously pending sale of the business, a prospective buyer completed a Phase I and limited Phase II Environmental Site Assessment (ESA). The findings of the ESA identified the need for additional site investigation and characterization related to per- and poly-fluoroalkyl substances (PFAS) found in soil and groundwater.

1.1 Background

Currently considered "emerging contaminants", PFAS are chemicals of concern that are not typically monitored in the environment but have the potential to adversely impact the environment or health. PFAS are synthetic chemicals that can be found in many products including fire extinguishing foam (aqueous film forming foam, or AFFF), food packaging, cleaners, fabrics, and personal care products (U.S. Environmental Protection Agency, n.d.).

According to Valley Fire Control, the business stopped handling fire extinguishers with AFFF in 2019. Contents of fire extinguishers were generally emptied into a sump inside the building. In a handful of instances, AFFF was discharged to the concrete loading dock on the north side of the building. The sump inside the building drained to another sump north of the building, located below the loading dock. A sump pump then pumped the contents to the storm sewer line. In 2015, the City of Albany connected the sump inside the building directly to sanitary sewers as part of a street realignment project.

The Phase I ESA performed by Haley and Aldrich (H&A) identified 2 Recognized Environmental Conditions (REC) and a data gap:

- "REC 1 – A former underground storage tank (UST) reportedly closed in place with no documentation of decommissioning or closure sampling."
- "REC 2 – Potential groundwater impacts from upgradient offsite leaking USTs."
- "Data gap – Unknown condition of hydrostatic testing system subsurface components."

The limited Phase II ESA investigated the 2 RECs and the data gap. Based on the results from the H&A investigation, the data gap, which is related to the potential extent of PFAS on-site, required additional investigation. Further investigation into REC 1 and 2 beyond the limited Phase II investigation did not appear warranted (Haley & Aldrich, Inc., 2022).

1.2 Objectives and Scope

Valley Science and Engineering (Valley) performed a Site investigation consisting of soil and groundwater sampling at the Site to further characterize the potential extent of PFAS contamination, potential on-site sources of PFAS, and evaluate the potential for off-site sources in groundwater.

The Environmental Protection Agency (EPA) does not currently regulate PFAS as toxic substances. Therefore, the Oregon Department of Environmental Quality (DEQ) has not established groundwater or soil levels under the cleanup program. The Oregon Health Authority (OHA) has set non-regulatory

Health Advisory Limits (HAL) for PFAS in drinking water. Groundwater concentrations were compared to the HAL (Section 3).

2.0 SITE DESCRIPTION

General information regarding the Site and its surroundings are included in this section to provide context for interpreting the environmental monitoring data from the Site.

2.1 Location and Legal Description

The location of the Site is shown in Figure 1, which is based on the United States Geological Survey (USGS) 7.5 Minute Albany Quadrangle. The legal description is given as the southeast quarter of the southeast quarter Section 6, Township 11 South, Range 3 West of the Willamette Meridian, Linn County, Oregon (latitude is 44° 38' 16" north and the longitude is 123° 5' 30" west).

2.2 Site Characteristics

Important features of the Site are referenced in the following sections. Figure 2 shows approximate assessment boundaries and Site characteristics.

2.2.1 Description of Site

The Site is located in downtown Albany on Main Street between 2nd Ave and SE Salem Ave. The Site consists of a building, 2 parking lots (one on each the north and south sides of the building), and a loading dock on the north side of the building. The surrounding areas include commercial and residential properties.

2.2.2 Soils and Geology

The Site is located within the Willamette Valley physiographic province, an elongated alluvial plain in northwestern Oregon. Thick layers of Late Pleistocene and Holocene alluvium cover the majority of the valley floor. Older foundation rocks located in the Willamette Valley consist of volcanics that erupted as part of a submarine island archipelago. During the Pleistocene, breaching of glacial lakes in Montana resulted in several large-scale floods, which deposited material throughout the province (Orr & Orr, 1999). These deposits are "Older Alluvium", which consists of sand and gravel, with mixtures of sand, silt, clay. Included with the older alluvium is Willamette Silt, and thin layers of younger alluvial deposits of fine sand and silt. Below depths of 5- to 15-feet below ground surface (ft bgs), the deposit is comprised of interconnected lenses of coarse sand and gravel derived from volcanic rocks interspersed with fine sand and silt. Below 50 ft bgs, coarse alluvial deposits grade into and interfinger with lenses of sand, silt, clay, and pebbles (Frank, 1974).

Soils at the Site are mapped as Amity silt loam (U.S. Department of Agriculture - Natural Resources Conservation Service, 2021), which consists of silt loams and silty clay loams, classified as somewhat poorly drained soils.

2.3 Groundwater

Regional groundwater near the Site generally flows towards the Willamette River (Conlon, et al., 2005). In the Albany area, groundwater flows to the northwest (Frank, 1974), but the actual local

groundwater flow patterns may deviate. The depth to groundwater in the vicinity of the Site was measured between approximately 8- and 10-ft bgs in temporary well points; with soil saturation observed in soil cores between approximately 13- and 15-ft bgs (see Section 3).

3.0 FIELD INVESTIGATIONS

Valley conducted soil and groundwater sampling of soil borings on June 1, 2022. Photographic documentation of field sampling activities is presented in Appendix A and daily field notes and boring logs are located in Appendix B. Figure 2 shows the approximate sampling locations. All samples were placed in PFAS-free laboratory-provided containers and immediately placed in a cooler on ice. Samples were shipped under chain-of-custody protocol to Eurofins TestAmerica (Eurofins) in Sacramento, California for analyses. The sampling locations and analytical results are discussed below. Laboratory reports are included in Appendix C.

3.1 Analytical Methods

Samples were analyzed for a list of 36 common PFAS compounds. The following analytical methods, published by the US Environmental Protection Agency (EPA) unless otherwise noted, were used for soil and groundwater samples:

- PFAS, standard list of 36 analytes by method 537 (modified).

3.2 Quality Assurance / Quality Control

A field blank sample was collected during the sampling. The field blank was collected using PFAS-free water poured over sampling equipment. A duplicate sample was collected at a rate of one per 20 samples, per sample matrix. In this event, 1 duplicate sample for each soil and groundwater was collected.

Laboratory quality assurance/quality control (QA/QC) procedures are documented in the laboratory report (Appendix C). Method blanks, laboratory control samples, matrix spikes, and matrix spike duplicates were analyzed and reported. The Case Narrative discusses all anomalies, including elevated method reporting limits, relative percent difference (RPD) criteria, surrogate exceptions, matrix interference, and calibration exceptions. EuroFins followed all requirements for analyses and reporting including laboratory blanks, laboratory duplicates, matrix spikes, and matrix spike duplicates. The case narrative was reviewed and laboratory QA/QC is considered generally acceptable for this investigation.

3.3 Previous Investigations

The Phase II investigation, conducted by H&A, consisted of 6 soil borings (Figure 2) to investigate the RECs and data gap (Haley & Aldrich, Inc., 2022).

The sampling to investigate the former UST or REC 1 (DP-5 and DP-6, Photograph 1) did not indicate soil impacts from the decommissioned UST. Chloroform, which is a common laboratory contaminant, was detected at low levels in the groundwater at DP-5, while a chlorinated solvent (1,2-dichloroethane) was detected in groundwater at DP-6 above the Oregon Department of Environmental Quality (DEQ) Risk-Based Concentrations (RBC) for inhalation and ingestion. In either case, these contaminants are unlikely to be related to the UST, which reportedly contained gasoline.

The sampling to investigate potential off-site impacts or REC 2 (DP-2 and DP-3) indicated minimal groundwater impacts. One volatile organic compound (1,2-dibromoethane, an additive in leaded gasoline, and also a pesticide) was detected at DP-02 above the ingestion and inhalation RBC but was not detected elsewhere on-site.

Several borings (DP-1, DP-2, DP-4, and DP-5) were advanced to investigate the potential extent of PFAS, or the data gap. Various PFAS were detected in both soil and groundwater (Figures 3 and 4, respectively) in multiple locations. Concentrations of PFAS exceeded the drinking water HAL at DP-1, DP-2, DP-4, and DP-5. PFAS were detected in soils at DP-1 and DP-4. The highest concentrations in soil and groundwater were detected at DP-4 (Photograph 2), which was near the old drain line from the sump inside the building. These results indicate the potential for on-site sources of PFAS.

Low levels of polycyclic aromatic hydrocarbons were detected in several soil samples, but below applicable RBC.

3.4 Current Investigations

This section discusses the investigations performed by Valley. Continuous soil cores were collected with a direct push drill rig to a maximum depth of 20 ft bgs and soils were screened with a photoionization detector (PID). No visual or olfactory evidence of contamination was observed in any of the soil cores. Soil sample depths were selected based on the depth of site features (sumps or piping) or at the 6-inch interval above the soil-water interface, as observed by soil saturation in core samples.

3.4.1 Sampling Locations

The boring locations (Figure 2) were selected based on Site operations and the previous sampling results. All samples were analyzed for the standard list of 36 PFAS.

- SS-01 and SS-02: These locations are in the upgradient direction of the Site. Mr. Cliff Martin, owner of Valley Fire Control, indicated that fire extinguishers were not serviced in this area. One soil sample above the soil-water interface and one groundwater sample were collected in each location. A duplicate sample was collected at SS-02. The upgradient area is shown in Photograph 3.
- SS-03: This location is inside the building and located next to the sump (Photographs 4 and 5) where AFFF was previously discharged. One soil sample was collected at the depth of the sump (3.5 feet bgs) and another soil sample was collected at the soil-water interface. One groundwater sample was collected.
- SS-04: This location is adjacent to the sump (Photographs 6 and 7) below the loading dock. The sump inside the building drained to this sump prior to 2015. One soil sample was collected at the depth of the sump (2.1 feet bgs) and another soil sample was collected at the soil-water interface. One groundwater sample was collected.
- SS-05: This location is in the downgradient direction. One soil sample above the soil-water interface and one groundwater sample were collected.
- SS-06: This location (Photograph 8) is in the downgradient direction and also adjacent to the sewer line that currently drains from the sump inside the building. As previously noted, the building sump was connected to this sewer line in 2015. One soil sample was collected at the

depth of the sewer line (estimated at 5.8 feet bgs based on sewer cleanout depths) and another soil sample was collected at the soil-water interface. One groundwater sample was collected.

3.4.2 Soil Laboratory Testing Results

Soil sampling results are shown on Table 1 and Figure 3. PFAS were detected at sample locations SS-03 for the sample collected at the depth corresponding to the base of the sump, SS-04 for both samples depths, SS-05, and SS-06 for the sample corresponding to the depth of the sewer pipe. No PFAS were detected in soils in the upgradient samples (SS-01 and SS-02).

3.4.3 Groundwater Laboratory Testing Results

Groundwater sampling results are shown on Table 2 and Figure 4. The non-regulatory HAL of 30 parts per trillion (ppt) or nanograms per liter have been established for 4 PFAS compounds including perfluorooctanesulfonic acid, perfluorooctanoic acid, perfluorononanoic acid, and perfluorohexane sulfonate (Oregon Health Authority, 2022). The HAL is exceeded when any of these four PFAS chemicals with results showing detections exceeds 30 ppt, or when the sum of these four PFAS chemicals with results showing detections exceeds 30 ppt. PFAS chemicals with a HAL that are not detected and other PFAS chemicals that do not have a HAL would not be included in the calculation.

PFAS compounds were detected in groundwater at all locations. For individual PFAS, the HAL was exceeded at SS-04GW, SS-05GW, and SS-06GW. The sum of the 4 PFAS chemicals with HAL exceeded the HAL at SS-03GW, SS-04GW, SS-05GW, and SS-06GW.

4.0 PRELIMINARY CONCEPTUAL SITE MODEL

PFAS compounds were detected in both soil and groundwater. Due to the lack of regulatory framework for PFAS compounds, a full conceptual site model cannot be developed at this time. However, the investigations completed provide some basic information required for a conceptual site model.

4.1 Soil

Sampling data indicate on-site sources of PFAS with the highest concentrations detected near the sump in the loading dock (SS-04) and its former drain line (DP-4). Lower concentrations were detected near other potential sources including the sump inside the building (SS-03) and the current sewer drain line (SS-06). In addition, PFAS were detected in soil near the northern Site boundary (DP-1 and SS-05) where no known on-site sources were located; however these samples were collected at the groundwater interface. No PFAS were detected in upgradient soil samples (DP-2, SS-01, and SS-02).

The Site is covered with impervious surfaces, such as concrete and asphalt. Although currently protected, direct contact with contaminated soils is a concern if excavation activities are performed.

4.2 Groundwater

Sampling data indicate on-site and potential off-site sources of PFAS. Upgradient samples (DP-2, SS-01GW, and SS-02GW) had detections of PFAS compounds, including an exceedance to the HAL at DP-2. Without permanent monitoring wells at the Site, the groundwater gradient during the wet and

dry seasons have not been established. The upgradient concentrations may be due to seasonal fluctuations in water levels.

The highest concentrations of PFAS compounds were near the loading dock (SS-04GW) and piping (DP-4 and SS-06GW). Lower levels were detected near the sump inside the building (SS-03GW). Two PFAS compounds were also detected in downgradient sample locations (DP-1, DP-5, and SS-05) above the HAL but at lesser concentrations than those near historical operations. The potential extent of PFAS in the downgradient direction in groundwater has not been delineated as investigations have only been conducted on-Site.

Perfluorooctanesulfonic acid generally had the highest concentrations detected in all locations. Data from the investigations indicate that concentrations generally attenuate from on-site sources to the downgradient locations. In some instances, perfluorobutanesulfonic acid had higher concentrations in the upgradient direction than on-site and downgradient.

Drinking water at the Site and surrounding area is provided by the City of Albany as evidenced by City water lines around the Site (Figure 2). Although a formal beneficial use study and well survey were beyond the scope of this assessment, ingestion and inhalation of contaminated groundwater does not appear to be a pathway of concern.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the investigations performed, Valley presents the following conclusions:

- PFAS compounds were detected in both soil and groundwater.
- PFAS concentrations were highest in the loading dock area.
- Upgradient groundwater samples indicated the potential for off-Site sources of PFAS based on preliminary data. However, local and seasonal groundwater flow has not been established.

Based on the results of these conclusions, Valley makes the following recommendations:

- Additional investigations to evaluate groundwater concentrations from potential off-site and on-site sources should be implemented in the future. The DEQ should be consulted prior to performing additional investigations. These investigations may include the installation of permanent monitoring wells.

6.0 LIMITATIONS

The conclusions presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, Site location, and project indicated. In addition, Valley bases the conclusions presented in this report on the assumption that Site conditions do not deteriorate from those observed during the investigation and as described in this report. This report is not a definitive study of contamination at the Site and should not be interpreted as such. Additional sampling may be required by the DEQ.

Valley prepared this report for Valley Fire Control, pursuant to a May 2022 agreement and it is accurate to the best of Valley's knowledge and belief. This report is based in part on unverified

information supplied to Valley by third-party sources. While Valley has made efforts to substantiate this third-party information, we cannot guarantee its completeness or accuracy. Valley staff participating in this investigation are engineers and scientists, not attorneys. Therefore, it must be clear to all parties that this Report does not offer any legal opinion, representation, or interpretation of environmental laws, rules, regulations, or policies of federal, state, or local government agencies.

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TABLES

Table 1. Soil Analytical Results
Table 2. Groundwater Analytical Results

Table 1. Soil Analytical Results

Sample ID	Date Collected	Sample Depth		PFAS	
			PFHxS	PFUnA	PFOS
		feet	milligrams per kilogram		
SS01-14.5	6/1/2022	14.5-15.0	<0.00020	<0.00020	<0.00020
SS02-14.5	6/1/2022	14.5-15.0	<0.00023	<0.00023	<0.00023
SS02D	6/1/2022	14.5-15.0	<0.00021	<0.00021	<0.00021
SS03-3.5	6/1/2022	3.5-4.0	0.00039	<0.00023	<0.00023
SS03-14.5	6/1/2022	14.5-15.0	<0.00022	<0.00022	<0.00022
SS04-2.1	6/1/2022	2.1-2.6	<0.00025	0.002	0.00052
SS04-12.8	6/1/2022	12.8-13.3	<0.00020	<0.00020	0.00025
SS05-12.5	6/1/2022	12.5-13.0	<0.00024	<0.00024	0.00032
SS06-5.8	6/1/2022	5.8-6.3	<0.00024	<0.00024	0.00058
SS06-13.5	6/1/2022	13.5-14.0	<0.00025	<0.00025	<0.00025

NOTES:
No Risk Based Concentrations (RBC) have been established for PFAS by the Department of Environmental Quality.
Sample SS02D is a duplicate sample of SS02-14.5.
Only compounds with at least one detection are shown.
Analytical method: Standard 36 PFAS by Environmental Protection Agency method 537 (modified).
Abbreviations: < = below method detection limits, ID = identification, PFAS = per and polyfluoroalkyl substances, PFHxS = perfluorohexanesulfonic acid, PFOS = perfluorooctanesulfonic acid, PFUnA = perfluoroundecanoic acid.

Table 2. Groundwater Analytical Results

Sample ID	Date Collected	Depth to Groundwater	Temperature	pH	Conductivity	PFAS														
						PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFBS	PFPeS	PFHxS	PFHpS	PFOS	6:2 FTS	8:2 FTS
		feet	°C	s.u.	µS/cm	nanograms per liter														
SS-01GW	6/1/2022	10.6	18.4	7.23	352	9.3	8.2	3.3	<2.0	4.6	<2.0	<2.0	<2.0	32	<2.0	5.8	<2.0	16.0	<4.9	<2.0
SS-01GWD	6/1/2022	--	--	--	--	8.9	7.7	3.2	<1.9	4.4	<1.9	<1.9	<1.9	33	<1.9	5.2	<1.9	14.0	<4.7	<1.9
SS-02GW	6/1/2022	10.3	19.6	7.06	327	6.0	15.0	6.1	2.3	4.4	<1.9	<1.9	<1.9	11	<1.9	3.6	<1.9	14.0	<4.6	<1.9
SS-03GW	6/1/2022	15.0	17.4	7.42	357	6.0	16.0	7.3	2.7	5.2	<1.8	<1.8	<1.8	12	<1.8	7.3	<1.8	22.0	<4.6	<1.8
SS-04GW	6/1/2022	7.9	18.5	7.06	404	19.0	68.0	48.0	24.0	23.0	29.0	<1.8	5.5	44	26.0	**180.0**	5.4	**380 E**	23.0	3.9
SS-05GW	6/1/2022	9.9	1.3	7.11	394	7.6	23.0	17.0	8.9	13.0	7.9	<1.9	2.0	22	6.9	**42.0**	<1.9	**130.0**	<4.7	<1.9
SS-06GW	6/1/2022	14.0	19.9	7.04	443	13.0	37.0	33.0	15.0	18.0	**54.0**	4.0	2.4	24	17.0	**120.0**	7.7	**320.0**	8.1	<1.9
Oregon Health Authority Health Advisory Limits [1]						NS	NS	NS	NS	30.0	30.0	NS	NS	NS	NS	30.0	NS	30.0	NS	NS

NOTES:

No Risk Based Concentrations (RBC) have been established for PFAS by the Department of Environmental Quality. The Health Advisory Limits established by the Oregon Health Authority are non-regulatory.

Sample SS-01GWD is a duplicate of sample SS-01GW.

Only compounds with at least one detection are shown.

Analytical method: Standard 36 PFAS by Environmental Protection Agency method 537 (modified).

Abbreviations: < = below method detection limits, -- = not measured, E = result exceeded calibration range, FTS = fluorotelomer sulfonate, NS = no standard, uS/cm = microSiemens per centimeter, PFBA = perfluorobutanoic acid, PFBS = perfluorobutanesulfonic acid, PFDA = perfluorodecanoic acid, PFHpS = perfluoroheptanesulfonic acid, PFHpA = perfluoroheptanoic acid, PFHxA = perfluorohexanoic acid, PFHxS = perfluorohexane sulfonate, PFNA = perfluorononanoic acid, PFOA = perfluorooctanoic acid, PFOS = perfluorooctanesulfonic acid, PFPeA = perfluoropentanoic acid, PFPeS = perfluoropentanesulfonic acid, PFUnA = perfluoroundecanoic acid.

1 Oregon Heath Authority Health Advisory Limits (Oregon Health Authority, 2022).

FIGURES

Figure 1. Site Location
Figure 2. Site Layout and Sampling Locations
Figure 3. Selected Soil Analytical Results
Figure 4. Selected Groundwater Analytical Results

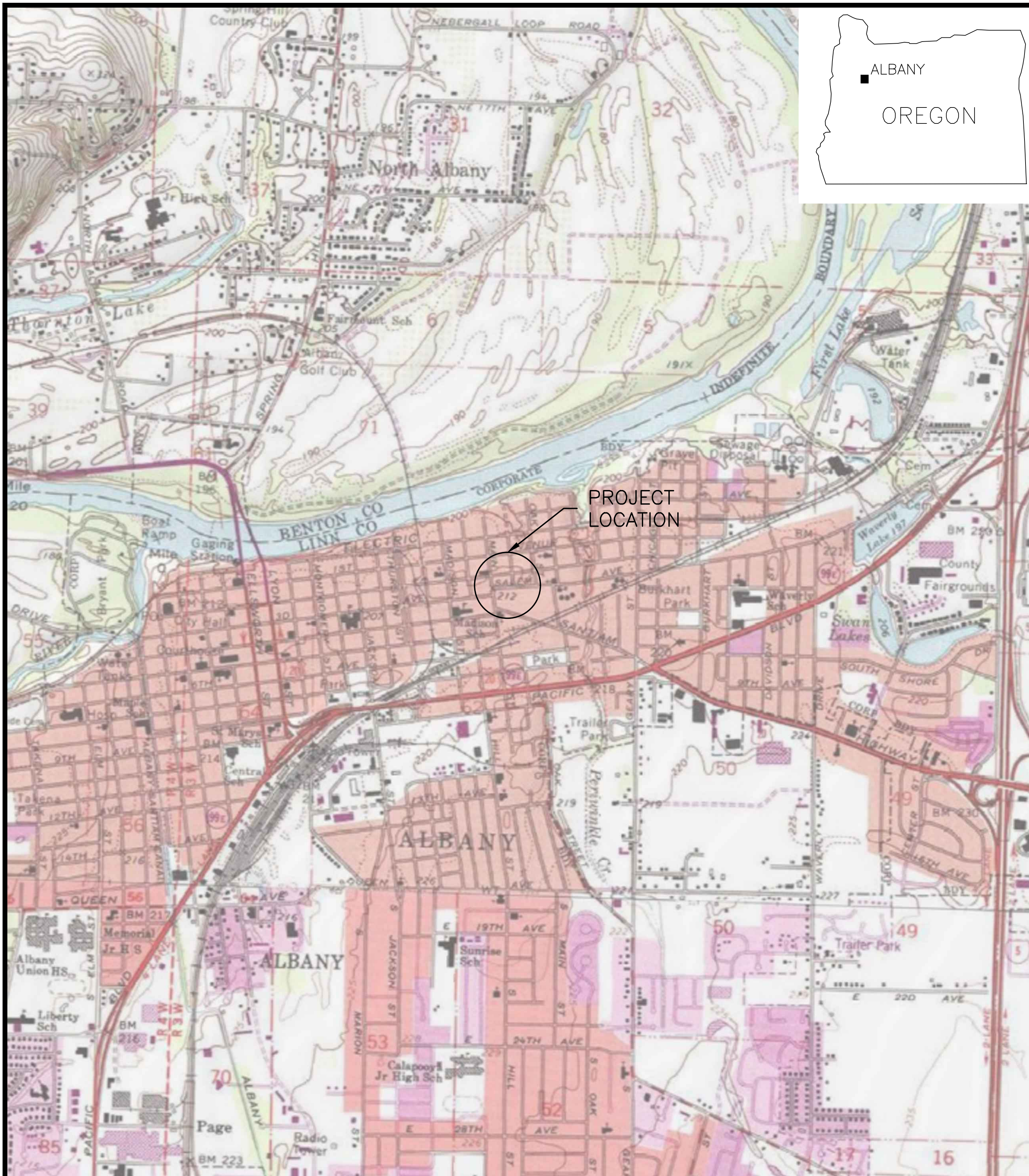


Figure 1. Site Location

0 2000'

1"=2000'

(SCALE AND LOCATIONS ARE APPROXIMATE)

N

(SOURCE: ©2013 National Geographic Society, i-cubed)

PROJECT NUMBER: 2022240005	Site Investigation Report
DATE: 7/7/2022	
DWG NO: 2022240005 F1-4.DWG	Valley Fire Control 217 Main Street SE Albany, Oregon
DWG BY: 6NSG / PROJECT MANAGER: 1JAP	
REVISED:	VALLEY SCIENCE AND ENGINEERING

LEGEND:

- PRIVATE SANITARY SEWER
- CATCH BASIN
- STORM SEWER
- SANITARY SEWER
- WATER MAIN
- SS-02 ⊗ VALLEY BORING LOCATIONS
- DP-2 △ PREVIOUS BORING LOCATIONS

(SOURCE: Google Earth Pro Image August 2020, ©2022 Google™
Utility Service Locations in the City of Albany, City of Albany Maps)

N

0 30'

1"=30'

(SCALE AND LOCATIONS ARE APPROXIMATE)

Figure 2. Site Layout and Sampling Locations

PROJECT NUMBER: 2022240005	Site Investigation Report
DATE: 7/7/2022	
DWG NO: 2022240005 F1-4.DWG	Valley Fire Control 217 Main Street SE Albany, Oregon
DWG BY: 6NSG / PROJECT MANAGER: 1JAP	
REVISED:	VALLEY SCIENCE AND ENGINEERING

C:\Users\NG711452\Desktop\Working Drafting Gulati\2022240005 Valley Fire Control\DWG\2022240005 F1-4.dwg July 7, 2022 NG711452

LEGEND:

- ⊗ VALLEY BORING LOCATIONS
- △ PREVIOUS BORING LOCATIONS

ABBREVIATIONS:

PFOS – PERFLUOROOCTANESULFONIC ACID
PFAS – PER– AND POLY–FLUOROALKYL SUBSTANCES
PFHxS – PERFLUOROHEXANESULFONIC ACID
PFUnA – PERFLUOROUNDECANOIC ACID
ND – NOT DETECTED

NOTES:

ONLY PFAS COMPOUNDS WITH DETECTIONS ARE SHOWN. THE STANDARD LIST OF 36 COMPOUNDS WERE ANALYZED.
SAMPLES FROM DECEMBER 2021 WERE COLLECTED BY HALEY AND ALDRICH.
NO RISK–BASED CRITERIA FOR PFAS HAVE BEEN DEVELOPED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY.
SAMPLE RESULTS ARE SHOWN IN mg/kg.
DEPTHS ARE IN FEET BELOW GROUND SURFACE.

(SOURCE: Google Earth Pro Image August 2020, ©2022 Google™)

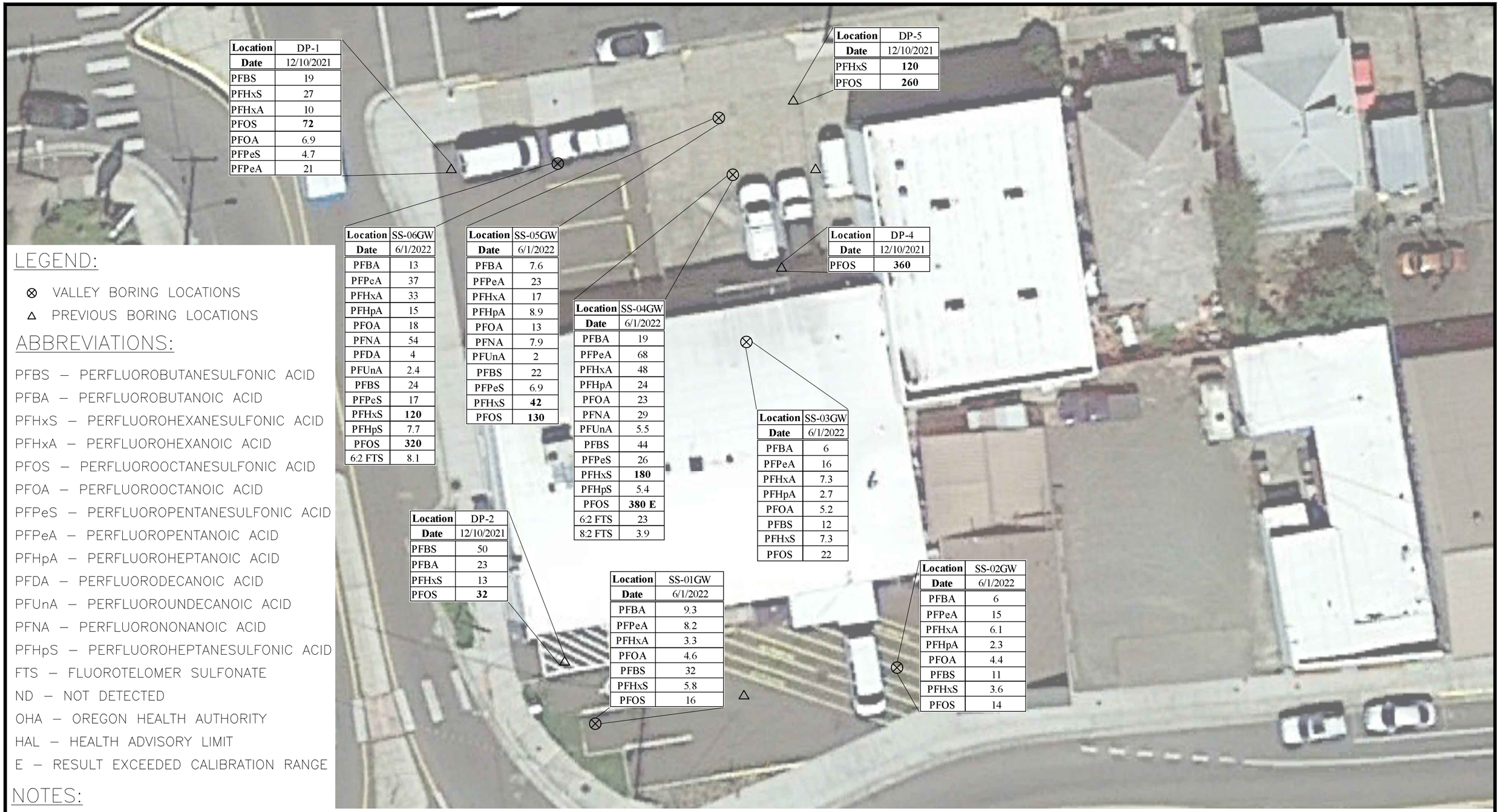
0 20'
1"=20'
(SCALE AND LOCATIONS ARE APPROXIMATE)

N

Figure 3. Selected Soil Analytical Results

PROJECT NUMBER: 2022240005	Site Investigation Report
DATE: 7/7/2022	
DWG NO: 2022240005 F1–4.DWG	Valley Fire Control 217 Main Street SE Albany, Oregon
DWG BY: 6NSG / PROJECT MANAGER: 1JAP	
REVISED:	VALLEY SCIENCE AND ENGINEERING

C:\Users\NG711452\Desktop\Working Drafting Gulati\2022240005 Valley Fire Control\DWG\2022240005 F1–4.dwg July 16, 2022 NG711452



Location	DP-1
Date	12/10/2021
PFBS	19
PFHxS	27
PFHxA	10
PFOS	**72**
PFOA	6.9
PFPeS	4.7
PFPeA	21

Location	DP-5
Date	12/10/2021
PFHxS	**120**
PFOS	**260**

Location	SS-06GW
Date	6/1/2022
PFBA	13
PFPeA	37
PFHxA	33
PFHpA	15
PFOA	18
PFNA	54
PFDA	4
PFUnA	2.4
PFBS	24
PFPeS	17
PFHxS	**120**
PFHpS	7.7
PFOS	**320**
6:2 FTS	8.1

Location	SS-05GW
Date	6/1/2022
PFBA	7.6
PFPeA	23
PFHxA	17
PFHpA	8.9
PFOA	13
PFNA	7.9
PFUnA	2
PFBS	22
PFPeS	6.9
PFHxS	**42**
PFOS	**130**

Location	DP-4
Date	12/10/2021
PFOS	**360**

Location	SS-04GW
Date	6/1/2022
PFBA	19
PFPeA	68
PFHxA	48
PFHpA	24
PFOA	23
PFNA	29
PFUnA	5.5
PFBS	44
PFPeS	26
PFHxS	**180**
PFHpS	5.4
PFOS	**380 E**
6:2 FTS	23
8:2 FTS	3.9

Location	SS-03GW
Date	6/1/2022
PFBA	6
PFPeA	16
PFHxA	7.3
PFHpA	2.7
PFOA	5.2
PFBS	12
PFHxS	7.3
PFOS	22

Location	DP-2
Date	12/10/2021
PFBS	50
PFBA	23
PFHxS	13
PFOS	**32**

Location	SS-01GW
Date	6/1/2022
PFBA	9.3
PFPeA	8.2
PFHxA	3.3
PFOA	4.6
PFBS	32
PFHxS	5.8
PFOS	16

Location	SS-02GW
Date	6/1/2022
PFBA	6
PFPeA	15
PFHxA	6.1
PFHpA	2.3
PFOA	4.4
PFBS	11
PFHxS	3.6
PFOS	14

LEGEND:

- ⊗ VALLEY BORING LOCATIONS
- △ PREVIOUS BORING LOCATIONS

ABBREVIATIONS:

PFBS – PERFLUOROBUTANESULFONIC ACID
PFBA – PERFLUOROBUTANOIC ACID
PFHxS – PERFLUOROHEXANESULFONIC ACID
PFHxA – PERFLUOROHEXANOIC ACID
PFOS – PERFLUOROOCTANESULFONIC ACID
PFOA – PERFLUOROOCTANOIC ACID
PFPeS – PERFLUOROPENTANESULFONIC ACID
PFPeA – PERFLUOROPENTANOIC ACID
PFHpA – PERFLUOROHEPTANOIC ACID
PFDA – PERFLUORODECANOIC ACID
PFUnA – PERFLUOROUNDECANOIC ACID
PFNA – PERFLUORONONANOIC ACID
PFHpS – PERFLUOROHEPTANESULFONIC ACID
FTS – FLUOROTELOMER SULFONATE
ND – NOT DETECTED
OHA – OREGON HEALTH AUTHORITY
HAL – HEALTH ADVISORY LIMIT
E – RESULT EXCEEDED CALIBRATION RANGE

NOTES:

SAMPLES RESULTS ARE SHOWN IN NANOGRAMS PER LITER (ng/L), OR PARTS PER TRILLION (ppt).
ONLY PFAS COMPOUNDS WITH DETECTIONS ARE SHOWN. THE STANDARD LIST OF 36 COMPOUNDS WERE ANALYZED.
SAMPLES FROM DECEMBER 2021 WERE COLLECTED BY HALEY AND ALDRICH.
NO RISK-BASED CRITERIA FOR PFAS HAVE BEEN DEVELOPED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY.
HAL ARE NON-REGULATORY LIMITS.
BOLD VALUES EXCEED OHA HAL.
(SOURCE: Google Earth Pro Image August 2020, ©2022 Google™)

OHA HAL	
Compound	HAL (ng/L)
PFOS	30
PFOA	30
PFNA	30
PFHxS	30

0 20'
1"=20'
(SCALE AND LOCATIONS ARE APPROXIMATE)

N

Figure 4. Selected Groundwater Analytical Results

PROJECT NUMBER: 2022240005	Site Investigation Report
DATE: 7/7/2022	
DWG NO: 2022240005 F1-4.DWG	Valley Fire Control 217 Main Street SE Albany, Oregon
DWG BY: 6NSG / PROJECT MANAGER: 1JAP	
REVISED:	VALLEY SCIENCE AND ENGINEERING

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APPENDICES

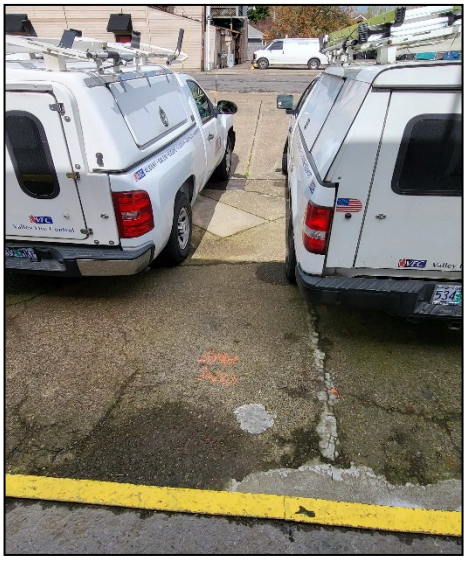
Appendix A. **Photo Log**
Appendix B. **Soil Boring Logs and Field Notes**
Appendix C. **Laboratory Reports**

Appendix A.

Photo Log

Photograph 1.

Former underground storage tank location and associated borings (DP-5 and DP-6), view to the southeast (Valley, April 2022).



Photograph 2.

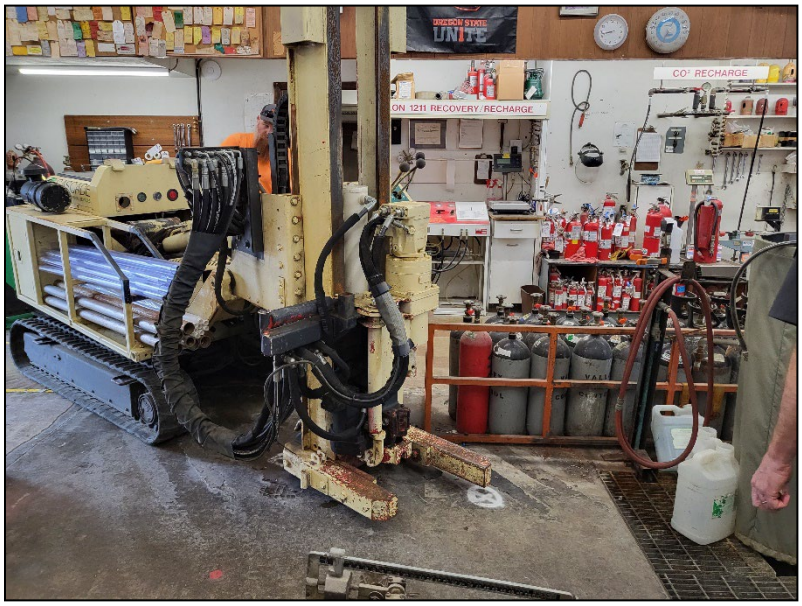
DP-4 location, view to the north (Valley, April 2022).

Photograph 3.

SS-01 location, view to the east (Valley, June 2022).

Photograph 4.

Sump inside building (Valley, May 2022).



Photograph 5.

SS-03 location (Valley, June 2022).

Photograph 6.

Sump and pump in loading dock (Valley, April 2022).

Photograph 7.

SS-04 location, view to the east (Valley, June 2022).

Photograph 8.

SS-06 location, view to the north (Valley, June 2022).

Appendix B.

Soil Boring Logs and Field Notes

PROJECT: Valley Fire Control	VALLEY SCIENCE AND ENGINEERING A Valmont Industries Company	PROJECT NUMBER: 2022240005	SOIL BORING NUMBER: SS-01
BORING LOCATION: SS-01		LOGGED BY: JP CHECKED BY:	PERMIT NO.
DRILLED BY: Cascade Remediation Services		START DATE: 6/1/22	COMPLETION DATE: 6/1/22
DRILLING EQUIPMENT: 6610DT (low clearance)		SAMPLING EQUIPMENT: Acetate Liner and Trowel	

SOIL BORING DATA (MEASURED FROM BELOW GROUND SURFACE)

TOTAL DEPTH: 20 ft	BOREHOLE DIA.(IN): 4	GROUND SURFACE ELEV. (FT MSL):	WATER LEVEL/DATE 15 ft (observed soil saturation), 10.6 ft (temporary well)
BACKFILL INT. TYPE:			SURFACE SEAL INT: TYPE:

GROUP SYMBOL	DESCRIPTION OF LITHOLOGY INTERVAL (FT. B.G.S.)	DEPTH FT. BGS	SAMPLE BLOW COUNT	SAMPLE RECOVERY	SAMPLE TYPE	SAMPLE NUMBER	REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
		0					Ground surface
FILL	0.0 - 1.1: ASPHALT, fill, dry			4.5 ft			
CL	1.1 - 2.0: CLAY, dark brown, stiff, moist	2					PID = 0.0 ppm (measured every 6-inch interval)
CL	2.0 - 3.9: SILTY CLAY, brown, moist, stiff						
ML	3.9 - 5.0: CLAYEY SILT, gray, moist	4					
ML	5.0 - 10.0: CLAYEY SILT, gray, moist	6		5 ft			PID = 0.0 ppm (measured every 6-inch interval)
		8					
ML	10.0 - 10.5: CLAYEY SILT, gray, moist	10					
GP	10.5 - 10.7: GRAVEL, wet			5 ft			
GP	10.7 - 13.4: GRAVEL and SAND, gray, coarse, moist	12					PID = 0.0 ppm (measured every 6-inch interval)
GP	13.4 - 15.0: GRAVEL and SAND, gray, coarse, moist	14				SS-01-14.5	
ML	15.0 - 15.6: CLAYEY SILT, gray brown, wet			5 ft			
SM	15.6 - 16.1: SAND and SILT, gray, coarse, wet	16					PID = 0.0 ppm (measured every 6-inch interval)
GP	16.1 - 17.4: GRAVEL and SAND, gray, coarse, wet						
ML	17.4 - 17.8: SILT, some gravel, gray, wet	18					
GP	17.8 - 19.1: GRAVEL and SAND, gray, coarse, wet						
GP	19.1 - 20.0: GRAVEL and SAND, brown red, coarse, moist	20				SS-01GW SS-01GWD	SS01-GWD is a duplicate sample
		22					
		24					
		26					
		28					
		30					
		32					

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE INFORMATION PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

Surveyed data is accurate to +/- 0.5 feet.

PROJECT: Valley Fire Control	VALLEY SCIENCE AND ENGINEERING A Valmont Industries Company	PROJECT NUMBER: 2022240005	SOIL BORING NUMBER: SS-02
BORING LOCATION: SS-02		LOGGED BY: JP CHECKED BY:	PERMIT NO.
DRILLED BY: Cascade Remediation Services		START DATE: 6/1/2022	COMPLETION DATE: 6/1/2022
DRILLING EQUIPMENT: 6610DT (low clearance)		SAMPLING EQUIPMENT: Acetate Liner and Trowel	

SOIL BORING DATA (MEASURED FROM BELOW GROUND SURFACE)

TOTAL DEPTH: 20 ft	BOREHOLE DIA.(IN): 4	GROUND SURFACE ELEV. (FT MSL):	WATER LEVEL/DATE 15 ft (observed soil saturation), 10.3 ft (temporary well)
BACKFILL INT. TYPE:			SURFACE SEAL INT: TYPE:

GROUP SYMBOL	DESCRIPTION OF LITHOLOGY INTERVAL (FT. B.G.S.)	DEPTH FT. BGS	SAMPLE BLOW COUNT	SAMPLE RECOVERY	SAMPLE TYPE	SAMPLE NUMBER	REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
		0					Ground surface
FILL	0.0 - 1.0: ASPHALT, subbase, fill			2.5 ft			
GP →	1.0 - 1.4: SAND and GRAVEL, tan, coarse, dry						
	1.4 - 3.6: SILT, dark brown, moist	2					PID = 0.0 ppm (measured every 6-inch interval)
	3.6 - 5.0: CLAYEY SILT, firm, moist	4					
	5.0 - 6.7: CLAYEY SILT, brown, moist	6		5 ft			
ML	6.7 - 7.1: CLAYEY SILT, trace sand, brown, moist						PID = 0.0 ppm (measured every 6-inch interval)
	7.1 - 10.0: CLAYEY SILT, brown, moist	8					
	10.0 - 12.5: CLAYEY SILT, brown, moist	10		5 ft			
	12.5 - 12.9: CLAYEY SILT, little sand, brown, moist						PID = 0.0 ppm (measured every 6-inch interval)
	12.9 - 14.1: CLAYEY SILT, trace cobbles, brown, moist	12					
GP	14.1 - 15.0: SAND and GRAVEL, little silt, brown, medium, moist	14				SS-02-14.5 SS02-D	SS-02D is a duplicate sample
ML	15.0 - 17.2: SILTY CLAY, brown, soft, wet	16		3.8 ft			PID = 0.0 ppm (measured every 6-inch interval)
GP	17.2 - 20.0: SAND and GRAVEL, dark brown, coarse, wet	18				SS-02GW	
		20					
		22					
		24					
		26					
		28					
		30					
		32					

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE INFORMATION PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

Surveyed data is accurate to +/- 0.5 feet.

PROJECT: Valley Fire Control	SCIENCE AND ENGINEERING A Valmont Industries Company	PROJECT NUMBER: 2022240005	SOIL BORING NUMBER: SS-03
BORING LOCATION: SS-03		LOGGED BY: JP CHECKED BY:	PERMIT NO.
DRILLED BY: Cascade Remediation Services		START DATE: 6/1/2022	COMPLETION DATE: 6/1/2022
DRILLING EQUIPMENT: 6610DT (low clearance)		SAMPLING EQUIPMENT: Acetate Liner and Trowel	

SOIL BORING DATA (MEASURED FROM BELOW GROUND SURFACE)

TOTAL DEPTH: 20 ft	BOREHOLE DIA.(IN): 4	GROUND SURFACE ELEV. (FT MSL):	WATER LEVEL/DATE 15 ft (observed soil saturation), 10.2 ft (temporary well)
BACKFILL INT. TYPE:			SURFACE SEAL INT: TYPE:

GROUP SYMBOL	DESCRIPTION OF LITHOLOGY INTERVAL (FT. B.G.S.)	DEPTH FT. BGS	SAMPLE BLOW COUNT	RECOVERY	TYPE	NUMBER	REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
							Ground surface
GP	0.0 - 0.5: CONCRETE core 0.5 - 1.0: GRAVEL and SAND, medium, some silt, dark brown, moist	0		2.5 ft			
ML	1.0 - 2.2: CLAYEY SILT, dark brown, moist 2.2 - 5.0: CLAYEY SILT, light brown, moist	2 4				SS-03-3.5	PID = 0.0 ppm (measured every 6-inch interval)
SM	5.0 - 7.0: SILT, little clay, brown, moist 7.0 - 7.4: SAND, medium, brown, some silt, moist	6		5 ft			PID = 0.0 ppm (measured every 6-inch interval)
CL	7.4 - 10.0: SILTY CLAY, light brown, soft, moist, little sand lenses	8 10					
ML	10.0 - 11.1: CLAYEY SILT, brown, moist			4.2 ft			
GM	11.1 - 11.3: SILT and COBBLES, medium, brown, moist						
CL	11.3 - 12.8: SILTY CLAY, light brown, stiff	12					PID = 0.0 ppm (measured every 6-inch interval)
SM	12.8 - 13.5: SILTY SAND, fine, brown, moist						
GP	13.5 - 15.0: SAND and GRAVEL, medium, brown, moist	14				SS-03-14.5	
ML	15.0 - 16.2: CLAYEY SILT, brown, wet	16		4.7 ft			PID = 0.0 ppm (measured every 6-inch interval)
GP	16.2 - 20.0: SAND and GRAVEL, medium, wet	18 20				SS-03GW	
		22 24 26 28 30 32					

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE INFORMATION PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

Surveyed data is accurate to +/- 0.5 feet.

PROJECT: Valley Fire Control	SCIENCE AND ENGINEERING A Valmont Industries Company	PROJECT NUMBER: 2022240005	SOIL BORING NUMBER: SS-04
BORING LOCATION: SS-04		LOGGED BY: JP CHECKED BY:	PERMIT NO.
DRILLED BY: Cascade Remediation Services		START DATE: 6/1/22	COMPLETION DATE: 6/1/22
DRILLING EQUIPMENT: 6610DT (low clearance)		SAMPLING EQUIPMENT: Acetate Liner and Trowel	

SOIL BORING DATA (MEASURED FROM BELOW GROUND SURFACE)

TOTAL DEPTH: 15 ft	BOREHOLE DIA.(IN): 4	GROUND SURFACE ELEV. (FT MSL):	WATER LEVEL/DATE 12.8 ft (observed soil saturation), 7.9 ft (temporary well)
BACKFILL INT. TYPE:			SURFACE SEAL INT: TYPE:

GROUP SYMBOL	DESCRIPTION OF LITHOLOGY INTERVAL (FT. B.G.S.)	DEPTH FT. BGS	SAMPLE BLOW COUNT	RECOVERY	TYPE	NUMBER	REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
		0					Ground surface
FILL	0.0 - 0.5: CONCRETE core			2.5 ft			
ML	0.5 - 0.8: CLAYEY SILT, brown, moist 0.8 - 4.5: CLAYEY SILT, gray, moist	2				SS-04-2.1	PID = 0.0 ppm (measured every 6-inch interval)
	4.5 - 5.0: CLAYEY SILT, trace SAND, gray, moist	4					
CL	5.0 - 6.5: SILTY CLAY, gray, soft, moist	6		5 ft			
ML	6.5 - 7.6: SANDY SILT, brown, moist						PID = 0.0 ppm (measured every 6-inch interval)
CL	7.6 - 9.4: SILTY CLAY, brown, firm, moist	8					
ML	9.4 - 10.0: SANDY SILT, brown, moist	10					
CL	10.0 - 11.3: SILTY CLAY, brown, stiff, moist			5 ft			
	11.3 - 12.5: SILTY CLAY, gray, brown, soft	12				SS-04-12.8	PID = 0.0 ppm (measured every 6-inch interval)
GP	12.5 - 15.0: SAND and GRAVEL, red brown, coarse, saturated at 12.8	14				SS-04GW	
		16					
		18					
		20					
		22					
		24					
		26					
		28					
		30					
		32					

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE INFORMATION PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

Surveyed data is accurate to +/- 0.5 feet.

PROJECT: Valley Fire Control	SCIENCE AND ENGINEERING A Valmont Industries Company	PROJECT NUMBER: 2022240005	SOIL BORING NUMBER: SS-05
BORING LOCATION: SS-05		LOGGED BY: JP CHECKED BY:	PERMIT NO.
DRILLED BY: Cascade Remediation Services		START DATE: 6/1/22	COMPLETION DATE: 6/1/22
DRILLING EQUIPMENT: 6610DT (low clearance)		SAMPLING EQUIPMENT: Acetate Liner and Trowel	

SOIL BORING DATA (MEASURED FROM BELOW GROUND SURFACE)

TOTAL DEPTH: 20 ft	BOREHOLE DIA.(IN): 4	GROUND SURFACE ELEV. (FT MSL):	WATER LEVEL/DATE 13 ft (observed soil saturation), 9.9 ft (temporary well)
BACKFILL INT. TYPE:			SURFACE SEAL INT: TYPE:

GROUP SYMBOL	DESCRIPTION OF LITHOLOGY INTERVAL (FT. B.G.S.)	DEPTH FT. BGS	SAMPLE BLOW COUNT	RECOVERY	TYPE	NUMBER	REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
		0					Ground surface
FILL	0.0 - 0.6: CONCRETE						
GP	0.6 - 1.6: COBBLES, some sand, fill			2.7 ft			
	1.6 - 5.0: SILTY CLAY, brown, moist, stiff	2					PID = 0.0 ppm (measured every 6-inch interval)
		4					
	5.0 - 6.1: SILTY CLAY, some cobbles, brown, stiff, moist	6		5 ft			
ML							PID = 0.0 ppm (measured every 6-inch interval)
	6.1 - 10.0: SILTY CLAY, brown, medium soft to stiff, moist	8					
	10.0 - 12.1: SILTY CLAY, brown, medium soft, moist	10					
	12.1 - 12.5: SILTY CLAY, some cobbles, brown, medium soft, moist			5 ft			
	12.5 - 13.0: SILTY CLAY, brown, stiff, moist	12				SS-05-12.5	PID = 0.0 ppm (measured every 6-inch interval)
	13.0 - 13.4: SILT, little sand, brown, saturated						
GP	13.4 - 15.0: SAND and GRAVEL, brown, coarse, moist	14					
	15.0 - 20.0: No Recovery	16		None			
		18					
		20				SS-05GW	
		22					
		24					
		26					
		28					
		30					
		32					

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE INFORMATION PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

Surveyed data is accurate to +/- 0.5 feet.

PROJECT: Valley Fire Control	VALLEY SCIENCE AND ENGINEERING A Valmont Industries Company	PROJECT NUMBER: 2022240005	SOIL BORING NUMBER: SS-06
BORING LOCATION: SS-06		LOGGED BY: JP CHECKED BY:	PERMIT NO.
DRILLED BY: Cascade Remediation Services		START DATE: 6/1/22	COMPLETION DATE: 6/1/22
DRILLING EQUIPMENT: 6610DT (low clearance)		SAMPLING EQUIPMENT: Acetate Liner and Trowel	

SOIL BORING DATA (MEASURED FROM BELOW GROUND SURFACE)

TOTAL DEPTH: 20 ft	BOREHOLE DIA.(IN): 4	GROUND SURFACE ELEV. (FT MSL):	WATER LEVEL/DATE 14 ft (observed soil saturation), 10.3 ft (temporary well)
BACKFILL INT. TYPE:			SURFACE SEAL INT: TYPE:

GROUP SYMBOL	DESCRIPTION OF LITHOLOGY INTERVAL (FT. B.G.S.)	DEPTH FT. BGS	SAMPLE BLOW COUNT	RECOVERY	TYPE	NUMBER	REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
							Ground surface
FILL	0.0 - 0.5: GRAVEL and ASPHALT, fill	0		3 ft			
	0.5 - 5.0: CLAYEY SILT, brown, moist	2					PID = 0.0 ppm (measured every 6-inch interval)
		4					
ML	5.0 - 10.0: CLAYEY SILT, brown, moist	6		5 ft		SS-06-5.8	PID = 0.0 ppm (measured every 6-inch interval)
		8					
		10		5 ft			
	10.0 - 14.0: CLAYEY SILT, little cobble lenses, brown, moist	12					PID = 0.0 ppm (measured every 6-inch interval)
		14				SS-06.13.5	
GP	14.0 - 15.0: SAND and GRAVEL, brown, saturated						
	15.0 - 20.0: No Recovery	16		None			
		18					
		20				SS-06GW	
		22					
		24					
		26					
		28					
		30					
		32					

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE INFORMATION PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

Surveyed data is accurate to +/- 0.5 feet.

VALLEY STANDARD DAILY FIELD REPORT

Project:	Valley Fire Control		**Date:** 5/10/22
Location:	Albany, OR	**Project #:** 20222400005	**Billing Group #:** ___ **Task #:** ___
Valley Personnel:	J. Pinetar (JP)		
Visitors:	APS Locates (Jeff + Chase).		
Weather:	Cloudy, 50° F		
Valley Equipment Used?	☒ No ☐ Yes (Equipment Usage Report Attached ☐ Yes ☐ No)		
Valley Equipment Onsite:	—		
Rental Equipment Onsite:	—		

Time*	Description of Work
854	Valley on-site for utility locates.
857	Jeff of APS on-site. He's training - waiting for Chase. JP gives him map. w/ locations
901	Chase on-site. He did mark outs for original borings. JP to mark locations and show them inside.
955	Potential old UST on south side of building. Will ask Cliff about it.
1010	All locations cleared. Fill out paperwork.
1015	Check in at office. Cliff is traveling. JP off-site.

* Use the 24-hour clock entries required with task change or location change.

Notes Approved: JP

VALLEY STANDARD DAILY FIELD REPORT

Project:	Valley Fire Control		**Date:** 6/1/22
Location:	Albany OR	**Project #:** 2022240.005	**Billing Group #:** 002 **Task #:** 203
Valley Personnel:	J Penfor		
Visitors:	Cascade Remediation Services - Drillers, Cliff Martin - Client		
Weather:	Cloudy 60°F		
Valley Equipment Used?	☐ No ☒ Yes (Equipment Usage Report Attached ☐ Yes ☒ No)		
Valley Equipment Onsite:	pH meter		
Rental Equipment Onsite:	PID		

Time*	Description of Work
754	Valley on-site for drilling - GW + soil investigation. Speak w/ Cliff about plan.
800	Caleb + Liam of Cascade on-site. Look at scope of work, conduct H+S meeting - discuss PFAS, traffic, noise, PPE, Rig ID 06Z3052, low clearance.
838	Measure depths of Sewer clean out. 47" next to building, 73" in side walk. Elevation change of ~2', based on location of sample, will collect @ 5.75' bgs. Mobilize to SS-03, inside building. Base of Sump is at 3.5' bgs. Need to core concrete.
859	Calibrate pH probe. Concrete ~ 7" thick SS03 Int 0-5 Rec 2.5' PID all 0.0 0.5-1 gravel and med sands, some silt dk br, moist 1-2.2 dk br. clayey SILT, moist 2.2-5 lt br clayey SILT, moist.
911	Collect SS03-3.5 from 3.5-4' bgs for PFAS.
	SS03 Int 5-10 Rec 5' PID: all 0.0. 5-7 br silt, little clay, moist 7-7.4 br medium SAND, some silt moist

* Use the 24-hour clock entries required with task change or location change.

Notes Approved: JP

VALLEY DAILY FIELD REPORT

Project #: 2022240005	Date: 6/1/22

Time*	Description of Work
	SS-03 Cont
	7.4-10 lt. br Silty CLAY, soft, moist, little sand lenses
	Int 10-15 Rec 4.2' PID all 0.0
	10-11.1 br ~~silt~~ (JP) clay SILT, moist
	11.1-11.3 br SILT and med cobbles, moist
	11.3-12.8 lt br Silty Clay, hard,
	12.8-13.5 br Silty SAND, Fine, moist
	13.5-15 med sand and Gravel, brown
	Int 15-20 Rec 4.7 PID. all 0.0
	15-16.2 br clay SILT, wet
	16.2-20 med SAND and GRAVEL, wet
	Set Temp well point.
942	Collect SS03-14.5 from 14.5-15' bgs, based
	on observed Saturation at 15'
945	DTW = 10.2 in temp well point
952	Start purging, very turbid
	Time pH Temp °C Cond (uS) Comments
	956 7.15 18.7 417 turbid, no odor
	1001 7.37 17.9 364 turbid "
	1006 7.45 17.5 360 " "
	1011 7.42 17.4 357 " "
1013	Collect SS03-GW for PFAS. Water did not clear
	Clean up decon (no steam cleaner)
1040	Mob to SS01 moved from proposed location due to gas line
	SS01 Int 0-5 Rec 4.5 PID all 0.0
	0-1.1 Asphalt, fill / aggregate, dry
	1.1-2.0 dk br Clay stiff, moist
	~~2.0-4.6~~ ~~2.0-2.6~~ (JP) br silty Clay, stiff, moist 2.0-3.9
	3.9-5 gray clayey Silt, moist (JP)

* Use the 24-hour clock entries required with task change or location change.

Notes Approved: JP

VALLEY STANDARD DAILY FIELD REPORT

Project: Valley Fire Control		**Date:** 6/1/22
Location:	**Project #:**	**Billing Group #:** ___ **Task #:** ___
Valley Personnel: J. Provetas		
Visitors:		
Weather:		
Valley Equipment Used? ☐ No ☐ Yes (Equipment Usage Report Attached ☐ Yes ☐ No)		
Valley Equipment Onsite:		
Rental Equipment Onsite:		

Time*	Description of Work
	SS01 Int 5-10 Rec S PID all 0.0
	5-10 gray clayey silt, moist.
	Int 10-15 Rec S PID all 0.0
	10-10.5 gray clayey SILT, moist
	10.5-10.7 gravel, wet
	10.7-13.4 gray, clayey silt, moist
	13.4-15 gravel + gray coarse sand, moist
	Int 15-20 Rec S PID all 0.0
	15-15.6 gray br. clayey silt, wet
	15.6-16.1 gray coarse sand & silt, wet
	16.1-17.4 gravel, gray coarse sand, wet
	17.4-17.8 gray silt, some gravel, wet
	17.8-19.1 gravel and gray coarse sand wet
	19.1-20 br red coarse sand, and gravel, moist
1133	Collect SS01-14.5 from 14.5-15 ft bgs based on observed saturation.
1134	Begin purging SS-01 DTW @ 10.6

Time	pH	temp °C	cond µS	notes
1136	7.16	21.5	348	slightly turbid
1141	7.15	19.7	346	"
1146	7.16	19.1	345	"
1151	7.23	18.4	352	slightly turb'd

* Use the 24-hour clock entries required with task change or location change.

Notes Approved: JP

~~10.6~~ JP

VALLEY DAILY FIELD REPORT

Project #: Valley Fire Control	Date: 6/1/22

Time*	Description of Work
1153	Collect SS01GW and SS-01GWD for PFAS.
	SS01GWD is a duplicate
1209	Collect FB-20220601 field blank by pouring PFAS
	free water over sampling trowel and tubing
	Mob to SS-02
	Int 0-5 Rec 2.5 PID all 0.0
	0-1 asphalt, subbase, fill
	1-1.4 tan coarse sand + gravel, dry
	1.4-3.6 dk br SILT, moist
	3.6-5 br Clayey SILT, moist, firm
	Int 5-10 Rec 5 PID all 0.0
	5-6.7 br clayey SILT, moist
	6.7-~~6.9~~ 7.1 br clayey SILT, tr sand, moist
	7.1-10 br clayey SILT, moist
	Int 10-15 Rec 5 PID 0.0 (all)
	10-12.5 br clayey Silt moist
	12.5-12.9 br Clayey silt, little sand moist
	12.9-14.1 br clayey silt, moist tr. cobbles
	14.1-15 br med Sand and Gravel little silt, moist
	Int 15-20 Rec 3.8 PID all 0.0
	15-17.2 br silty CLAY, soft, wet
	17.2-20 dk br coarse SAND and GRAVEL, wet
1250	Collect SS02-14.5 and SS-02D (duplicate) for
	PFAS from 14.5-15' bgs based on soil
	saturation. Time on dup of 13:00
1253	Start purging at SS-02 Very turbid, silty
	DTW @ 10.3' bgs

Time	pH	temp °C	cond (uS)	Notes
1259	7.06	24.8	346	Very turbid.
1304	7.08	21.7	328	" "
1309	7.07	20.~~6~~	326	"
1314	7.06	19.6	327	Sun out, may heat water

* Use the 24-hour clock entries required with task change or location change.

Notes Approved: JP

10.3

VALLEY STANDARD DAILY FIELD REPORT

Project:	Valley Fire Control		**Date:** 6/1/22
Location:	Albany, OR	**Project #:**	**Billing Group #:** ___ **Task #:** ___
Valley Personnel:			
Visitors:			
Weather:	Sunny 70° f		
Valley Equipment Used? ☐ No ☐ Yes (Equipment Usage Report Attached ☐ Yes ☐ No)			
Valley Equipment Onsite:			
Rental Equipment Onsite:			

Time*	Description of Work
1316	Collect SS02-GW for PFAS
1348	Mob to SS-04 Sump is 26" deep bgs.
	Need to core concrete. ~7" thick
	Int 0-5 Rec 2.5 PID: all 0.0
	0.5-0.8 br clayey SILT, moist
	0.8-4.5 gray clayey SILT, moist
	4.5-5 gray clayey SILT tr. sand, moist
1410	Collect ~~SS04-2.7 from 2.7 to 3.2' bgs~~ JP
	~~SS04-2.6 from 2.6 to~~ JP
	SS04-2.1 from 2.1 to 2.6' bgs
	Int 5-10 Rec 5' PID: all 0.0
	5-6.5 gray silty CLAY, moist, soft
	6.5-7.6 br sandy SILT, moist
6.5-9.4	6.5-~~9.4~~ JP br silty clay, firm, moist
JP	9.4-10 br sandy SILT, moist
	Int 10-15 Rec: 5 PID all 0.0
	10-11.3 br silty CLAY stiff, moist
	11.3-12.5 gr. bry silty clay, soft
	12.5-15.0 red br. coarse SAND + GRAVEL, saturated at 12.8
1435	Collect SS04-12.8 from 12.8-13.2 above observed water column in soils

* Use the 24-hour clock entries required with task change or location change.

Notes Approved: JP

Project #:	Valley fire Control	Date:	6/1/22

Time*	Description of Work
1436	Begin purging DTW = 7.9' bgs
	Time pH Temp (°C) Cond (µS)
	1439 7.16 24.9 437 Very turbid
	1444 7.07 20.4 416 "
	1449 7.06 19.4 407 "
	1454 7.06 18.5 404 Very sunny - may have warmed water
1456	Collect SS04-GW0 for PFAS
	Move to SS-05 after decon. Need to core concrete
	SS-05
	Int 0-5 Rec 2.7 PID all 0.0
	0-0.6 Concrete
	0.6-1.6 cobbles, coarse sand, fill
	1.6-5 br silty clay stiff moist
	Int 5-10 Rec 10 PID all 0.0
	5-6.1 br silty clay, stiff, moist, some cobbles
	6.1-10 br Silty Clay, med. soft to stiff, moist
	Int 10-15 Rec 5 PID all 0.0
	10-12.1 br Silty clay, med soft, moist
	12.1-12.5 br silty Clay, med soft, moist, some cobbles
	12.5-13 br silty clay Stiff Moist
	13-13.4 br SILT, little Sand, saturated
	13.4-15 br Coarse SAND and GRAVEL, moist
1555	Collect SS05-12.5 for PFAS, 6" above observed water level in core from 12.5-13
	Break for water. Hole is collapsing, need to set temp well differently.
	Note: Temp wells w/ PVC slotted screens.
1614	Measure DTW @ 13.9' bgs.
1620	Start purging SS-05, 0 Very turbid.
1624	Very little recharge. Will advance point another 5', will not be able to log soils, will reset temp well down to 20'

* Use the 24-hour clock entries required with task change or location change.

Notes Approved: JP

VALLEY STANDARD DAILY FIELD REPORT

Project: Valley Fire Control		**Date:** 6/1/22
Location: Albany, OR	**Project #:**	**Billing Group #:** ___ **Task #:** ___
Valley Personnel:		
Visitors:		
Weather:		
Valley Equipment Used? ☐ No ☐ Yes (Equipment Usage Report Attached ☐ Yes ☐ No)		
Valley Equipment Onsite:		
Rental Equipment Onsite:		

Time*	Description of Work
1641	Remeasure Water table at SS-05, 9.9' bgs
1644	start purging.
	Time / Temp (°C) / pH / Cond (µS) / notes
	1645 / 7.10 / 23.7 / 429 / very turbid, silty
	1650 / 7.03 / 21.0 / 414 / " "
	1655 / 7.10 / 20.3 / 397 / "
	1700 / 7.11 / 19.3 / 394 / "
1702	Collect SS05-GW for PFAS.
	Move truck to Mob to SS-06
	SS06
	Int. 0-5 Rec 3 PID: all 0.0
	0-0.5 Gravel, fill, asphalt
	0.5-5 Ft br clayey SILT, moist
	Int 5-10 Rec 5' PID all 0.0
	5-10 br Clayey silt, moist
1740	Collect SS06-5.8 from 5.8 to 6.5 ft bgs for
~~1740~~	PFAS, approximate depth of pipe
	Int 10-15 Rec 5 PID all 0.0
	10-14' br clayey silt, moist, little cobble lenses
	14-15 br Sand + Gravel, saturated
1753	collect SS06-13.5 from 13.5-14' bgs based on
	observed saturation in soil.

* Use the 24-hour clock entries required with task change or location change.

Notes Approved: JP

VALLEY DAILY FIELD REPORT

Project #:	2022240005	Date:	6/1/22

Time*	Description of Work
	SS06 DTW = 10.3, advanced to 20', no soil core for 15-20
1809	Start purging SS-06. Very turbid

Time	Temp °C	pH	Cond (µS)	notes
1811	~~25.0~~ 24.8	6.97	545	very turbid, silty
1816	21.4	7.03 SP	462	turbid
1821	20.6	7.05	446	"
1826	19.9	7.04	443	turbid

1828	Collect SS06-GW for PFAS
	Clean up
1845	all parties ~~off-site~~

* Use the 24-hour clock entries required with task change or location change.

Notes Approved: JP

Appendix C.

Laboratory Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-88570-1
Client Project/Site: Albany, OR-2022

For:
Valley Science and Engineering
3511 Pacific Blvd Sw
Albany, Oregon 97321

Attn: Jessica Penetar

Authorized for release by:
6/23/2022 1:36:06 PM

Jill Kellmann, Client Service Manager
(916)374-4402
Jill.Kellmann@et.eurofinsus.com

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Definitions/Glossary

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 320-88570-1

Laboratory: Eurofins Sacramento

Narrative

Receipt
The samples were received on 6/3/2022 12:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 6.0º C.

Receipt Exceptions

The following sample was submitted for analysis, however, it was not listed on the Chain-of-Custody (COC): FB-20220601 (320-88570-18).

LCMS
Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: SS01GW (320-88570-11). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method 537 (modified): The concentration of Perfluorooctanesulfonic acid (PFOS) associated with the following sample exceeded the instrument calibration range: SS04GW (320-88570-15). These analytes have been qualified; however, the peak did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 3535: The following samples were observed to be brown in color and contained a thin layer of sediment at the bottom of the bottle prior to extraction: SS01GW (320-88570-11), SS01GWD (320-88570-12), SS02GW (320-88570-13), SS03GW (320-88570-14), SS04GW (320-88570-15), SS05GW (320-88570-16) and SS06GW (320-88570-17). Preparation batch 320-595066

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-595066.

Method 3535: During the solid phase extraction process, the following samples contained non-settable particulates which clogged the solid phase extraction column: SS01GW (320-88570-11), SS01GWD (320-88570-12), SS02GW (320-88570-13), SS03GW (320-88570-14), SS04GW (320-88570-15), SS05GW (320-88570-16) and SS06GW (320-88570-17). Preparation batch 320-595066

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS01-14.5 — Lab Sample ID: 320-88570-1

No Detections.

Client Sample ID: SS02-14.5 — Lab Sample ID: 320-88570-2

No Detections.

Client Sample ID: SS03-3.5 — Lab Sample ID: 320-88570-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.39		0.23		ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS03-14.5 — Lab Sample ID: 320-88570-4

No Detections.

Client Sample ID: SS02D — Lab Sample ID: 320-88570-5

No Detections.

Client Sample ID: SS04-2.1 — Lab Sample ID: 320-88570-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroundecanoic acid (PFUnA)	2.0		0.25		ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.52		0.25		ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS04-12.8 — Lab Sample ID: 320-88570-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.25		0.20		ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS05-12.5 — Lab Sample ID: 320-88570-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.32		0.24		ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS06-5.8 — Lab Sample ID: 320-88570-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.58		0.24		ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS06-13.5 — Lab Sample ID: 320-88570-10

No Detections.

Client Sample ID: SS01GW — Lab Sample ID: 320-88570-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	9.3		4.9		ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	8.2		2.0		ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.3		2.0		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.6		2.0		ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	32		2.0		ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.8		2.0		ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	16		2.0		ng/L	1		537 (modified)	Total/NA

Client Sample ID: SS01GWD — Lab Sample ID: 320-88570-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	8.9		4.7		ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

Client Sample ID: SS01GWD (Continued) — Lab Sample ID: 320-88570-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	7.7		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.2		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.4		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	33		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.2		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	14		1.9		ng/L	1		537 (modified)	Total/NA

Client Sample ID: SS02GW — Lab Sample ID: 320-88570-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.0		4.6		ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	15		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.1		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.3		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.4		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	11		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.6		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	14		1.9		ng/L	1		537 (modified)	Total/NA

Client Sample ID: SS03GW — Lab Sample ID: 320-88570-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.0		4.6		ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	16		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	7.3		1.8		ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.7		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.2		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	12		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.3		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	22		1.8		ng/L	1		537 (modified)	Total/NA

Client Sample ID: SS04GW — Lab Sample ID: 320-88570-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	19		4.6		ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	68		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	48		1.8		ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	24		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	23		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	29		1.8		ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	5.5		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	44		1.8		ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	26		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	180		1.8		ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	5.4		1.8		ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	380	E	1.8		ng/L	1		537 (modified)	Total/NA
6:2 FTS	23		4.6		ng/L	1		537 (modified)	Total/NA
8:2 FTS	3.9		1.8		ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS05GW — Lab Sample ID: 320-88570-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	7.6		4.7		ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	23		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	17		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	8.9		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	13		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	7.9		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	2.0		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	22		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	6.9		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	42		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	130		1.9		ng/L	1		537 (modified)	Total/NA

Client Sample ID: SS06GW — Lab Sample ID: 320-88570-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	13		4.8		ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	37		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	33		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	15		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	18		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	54		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	4.0		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	2.4		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	24		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	17		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	120		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	7.7		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	320		1.9		ng/L	1		537 (modified)	Total/NA
6:2 FTS	8.1		4.8		ng/L	1		537 (modified)	Total/NA

Client Sample ID: FB-20220601 — Lab Sample ID: 320-88570-18

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS01-14.5
Date Collected: 06/01/22 11:33
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-1
Matrix: Solid
Percent Solids: 90.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluoropentanoic acid (PFPeA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorohexanoic acid (PFHxA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorooctanoic acid (PFOA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorononanoic acid (PFNA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorodecanoic acid (PFDA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorododecanoic acid (PFDoA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorononanesulfonic acid (PFNS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
Perfluorooctanesulfonamide (FOSA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
NEtFOSA	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
NMeFOSA	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
NMeFOSAA	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
NEtFOSAA	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
NMeFOSE	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
NEtFOSE	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
4:2 FTS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
6:2 FTS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
8:2 FTS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
10:2 FTS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
HFPO-DA (GenX)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
9Cl-PF3ONS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1
11Cl-PF3OUdS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 00:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:44*	*1*
13C5 PFPeA	*86*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:44*	*1*
13C2 PFHxA	*90*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:44*	*1*
13C4 PFHpA	*97*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:44*	*1*
13C4 PFOA	*95*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:44*	*1*
13C5 PFNA	*94*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:44*	*1*
13C2 PFDA	*92*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:44*	*1*
13C2 PFUnA	*97*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:44*	*1*

Client Sample ID: SS01-14.5

Date Collected: 06/01/22 11:33
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-1

Matrix: Solid
Percent Solids: 90.8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	93		25 - 150	06/08/22 11:50	06/22/22 00:44	1
13C2 PFTeDA	79		25 - 150	06/08/22 11:50	06/22/22 00:44	1
13C2 PFHxDA	73		25 - 150	06/08/22 11:50	06/22/22 00:44	1
13C3 PFBS	83		25 - 150	06/08/22 11:50	06/22/22 00:44	1
18O2 PFHxS	93		25 - 150	06/08/22 11:50	06/22/22 00:44	1
13C4 PFOS	89		25 - 150	06/08/22 11:50	06/22/22 00:44	1
13C8 FOSA	86		25 - 150	06/08/22 11:50	06/22/22 00:44	1
d3-NMeFOSAA	94		25 - 150	06/08/22 11:50	06/22/22 00:44	1
d5-NEtFOSAA	102		25 - 150	06/08/22 11:50	06/22/22 00:44	1
d-N-MeFOSA-M	51		25 - 150	06/08/22 11:50	06/22/22 00:44	1
d-N-EtFOSA-M	55		25 - 150	06/08/22 11:50	06/22/22 00:44	1
d7-N-MeFOSE-M	76		10 - 120	06/08/22 11:50	06/22/22 00:44	1
d9-N-EtFOSE-M	75		10 - 120	06/08/22 11:50	06/22/22 00:44	1
M2-4:2 FTS	99		25 - 150	06/08/22 11:50	06/22/22 00:44	1
M2-6:2 FTS	95		25 - 150	06/08/22 11:50	06/22/22 00:44	1
M2-8:2 FTS	103		25 - 150	06/08/22 11:50	06/22/22 00:44	1
13C3 HFPO-DA	89		25 - 150	06/08/22 11:50	06/22/22 00:44	1
13C2 10:2 FTS	104		25 - 150	06/08/22 11:50	06/22/22 00:44	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.2		0.1		%			06/06/22 16:14	1
Percent Solids	90.8		0.1		%			06/06/22 16:14	1

Client Sample ID: SS02-14.5

Date Collected: 06/01/22 12:50
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-2

Matrix: Solid
Percent Solids: 83.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluoropentanoic acid (PFPeA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorohexanoic acid (PFHxA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorooctanoic acid (PFOA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorononanoic acid (PFNA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorodecanoic acid (PFDA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorododecanoic acid (PFDoA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS02-14.5
Date Collected: 06/01/22 12:50
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-2
Matrix: Solid
Percent Solids: 83.8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorononanesulfonic acid (PFNS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
Perfluorooctanesulfonamide (FOSA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
NEtFOSA	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
NMeFOSA	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
NMeFOSAA	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
NEtFOSAA	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
NMeFOSE	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
NEtFOSE	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
4:2 FTS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
6:2 FTS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
8:2 FTS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
10:2 FTS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
HFPO-DA (GenX)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
9Cl-PF3ONS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1
11Cl-PF3OUdS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 00:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C5 PFPeA	*79*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C2 PFHxA	*79*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C4 PFHpA	*95*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C4 PFOA	*87*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C5 PFNA	*88*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C2 PFDA	*86*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C2 PFUnA	*85*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C2 PFDoA	*88*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C2 PFTeDA	*74*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C2 PFHxDA	*70*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C3 PFBS	*79*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
18O2 PFHxS	*84*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C4 PFOS	*82*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C8 FOSA	*96*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
d3-NMeFOSAA	*90*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
d5-NEtFOSAA	*92*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
d-N-MeFOSA-M	*78*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
d-N-EtFOSA-M	*77*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
d7-N-MeFOSE-M	*69*		*10 - 120*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
d9-N-EtFOSE-M	*68*		*10 - 120*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
M2-4:2 FTS	*81*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
M2-6:2 FTS	*86*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
M2-8:2 FTS	*105*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C3 HFPO-DA	*86*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*
13C2 10:2 FTS	*96*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:54*	*1*

Client Sample ID: SS02-14.5

Lab Sample ID: 320-88570-2

Date Collected: 06/01/22 12:50
Matrix: Solid
Date Received: 06/03/22 12:30
Percent Solids: 83.8

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.2**		0.1		%			06/06/22 16:14	1
Percent Solids	**83.8**		0.1		%			06/06/22 16:14	1

Client Sample ID: SS03-3.5

Lab Sample ID: 320-88570-3

Date Collected: 06/01/22 09:11
Matrix: Solid
Date Received: 06/03/22 12:30
Percent Solids: 78.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluoropentanoic acid (PFPeA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorohexanoic acid (PFHxA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorooctanoic acid (PFOA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorononanoic acid (PFNA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorodecanoic acid (PFDA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorododecanoic acid (PFDoA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorohexanesulfonic acid (PFHxS)	**0.39**		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorononanesulfonic acid (PFNS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
Perfluorooctanesulfonamide (FOSA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
NEtFOSA	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
NMeFOSA	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
NMeFOSAA	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
NEtFOSAA	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
NMeFOSE	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
NEtFOSE	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
4:2 FTS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
6:2 FTS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
8:2 FTS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
10:2 FTS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
HFPO-DA (GenX)	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
9Cl-PF3ONS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1
11Cl-PF3OUdS	ND		0.23		ug/Kg	☼	06/08/22 11:50	06/22/22 01:04	1

Client Sample ID: SS03-3.5

Date Collected: 06/01/22 09:11
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-3

Matrix: Solid
Percent Solids: 78.8

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	76		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C5 PFPeA	76		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C2 PFHxA	79		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C4 PFHpA	83		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C4 PFOA	83		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C5 PFNA	83		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C2 PFDA	83		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C2 PFUnA	72		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C2 PFDoA	68		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C2 PFTeDA	65		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C2 PFHxDA	72		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C3 PFBS	80		25 - 150	06/08/22 11:50	06/22/22 01:04	1
18O2 PFHxS	79		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C4 PFOS	77		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C8 FOSA	77		25 - 150	06/08/22 11:50	06/22/22 01:04	1
d3-NMeFOSAA	74		25 - 150	06/08/22 11:50	06/22/22 01:04	1
d5-NEtFOSAA	72		25 - 150	06/08/22 11:50	06/22/22 01:04	1
d-N-MeFOSA-M	51		25 - 150	06/08/22 11:50	06/22/22 01:04	1
d-N-EtFOSA-M	52		25 - 150	06/08/22 11:50	06/22/22 01:04	1
d7-N-MeFOSE-M	63		10 - 120	06/08/22 11:50	06/22/22 01:04	1
d9-N-EtFOSE-M	63		10 - 120	06/08/22 11:50	06/22/22 01:04	1
M2-4:2 FTS	84		25 - 150	06/08/22 11:50	06/22/22 01:04	1
M2-6:2 FTS	94		25 - 150	06/08/22 11:50	06/22/22 01:04	1
M2-8:2 FTS	94		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C3 HFPO-DA	77		25 - 150	06/08/22 11:50	06/22/22 01:04	1
13C2 10:2 FTS	85		25 - 150	06/08/22 11:50	06/22/22 01:04	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21.2		0.1		%			06/06/22 16:14	1
Percent Solids	78.8		0.1		%			06/06/22 16:14	1

Client Sample ID: SS03-14.5

Date Collected: 06/01/22 09:42
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-4

Matrix: Solid
Percent Solids: 86.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluoropentanoic acid (PFPeA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorohexanoic acid (PFHxA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorooctanoic acid (PFOA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorononanoic acid (PFNA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorodecanoic acid (PFDA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorododecanoic acid (PFDoA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS03-14.5
Date Collected: 06/01/22 09:42
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-4
Matrix: Solid
Percent Solids: 86.8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorononanesulfonic acid (PFNS)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
Perfluorooctanesulfonamide (FOSA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
NEtFOSA	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
NMeFOSA	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
NMeFOSAA	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
NEtFOSAA	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
NMeFOSE	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
NEtFOSE	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
4:2 FTS	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
6:2 FTS	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
8:2 FTS	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
10:2 FTS	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
HFPO-DA (GenX)	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
9Cl-PF3ONS	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1
11Cl-PF3OUdS	ND		0.22		ug/Kg	☼	06/08/22 11:50	06/22/22 01:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*92*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C5 PFPeA	*91*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C2 PFHxA	*92*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C4 PFHpA	*100*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C4 PFOA	*92*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C5 PFNA	*94*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C2 PFDA	*90*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C2 PFUnA	*90*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C2 PFDoA	*88*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C2 PFTeDA	*73*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C2 PFHxDA	*71*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C3 PFBS	*88*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
18O2 PFHxS	*94*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C4 PFOS	*87*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C8 FOSA	*88*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
d3-NMeFOSAA	*99*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
d5-NEtFOSAA	*100*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
d-N-MeFOSA-M	*49*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
d-N-EtFOSA-M	*47*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
d7-N-MeFOSE-M	*69*		*10 - 120*	*06/08/22 11:50*	*06/22/22 01:14*	*1*

Client Sample ID: SS03-14.5

Date Collected: 06/01/22 09:42
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-4

Matrix: Solid
Percent Solids: 86.8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d9-N-EtFOSE-M	*69*		*10 - 120*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
M2-4:2 FTS	*104*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
M2-6:2 FTS	*101*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
M2-8:2 FTS	*112*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C3 HFPO-DA	*94*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*
13C2 10:2 FTS	*105*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:14*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**13.1**		0.1		%			06/06/22 16:14	1
Percent Solids	**86.9**		0.1		%			06/06/22 16:14	1

Client Sample ID: SS02D

Date Collected: 06/01/22 13:00
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-5

Matrix: Solid
Percent Solids: 85.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluoropentanoic acid (PFPeA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorohexanoic acid (PFHxA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorooctanoic acid (PFOA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorononanoic acid (PFNA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorodecanoic acid (PFDA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorododecanoic acid (PFDoA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorononanesulfonic acid (PFNS)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
Perfluorooctanesulfonamide (FOSA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
NEtFOSA	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
NMeFOSA	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
NMeFOSAA	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
NEtFOSAA	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
NMeFOSE	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
NEtFOSE	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1

Client Sample ID: SS02D

Date Collected: 06/01/22 13:00
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-5

Matrix: Solid
Percent Solids: 85.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
6:2 FTS	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
8:2 FTS	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
10:2 FTS	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
HFPO-DA (GenX)	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
9Cl-PF3ONS	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1
11Cl-PF3OUdS	ND		0.21		ug/Kg	☼	06/08/22 11:50	06/22/22 01:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C5 PFPeA	*84*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C2 PFHxA	*83*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C4 PFHpA	*92*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C4 PFOA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C5 PFNA	*90*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C2 PFDA	*90*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C2 PFUnA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C2 PFDoA	*90*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C2 PFTeDA	*79*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C2 PFHxDA	*80*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C3 PFBS	*87*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
18O2 PFHxS	*91*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C4 PFOS	*83*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C8 FOSA	*94*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
d3-NMeFOSAA	*92*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
d5-NEtFOSAA	*106*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
d-N-MeFOSA-M	*77*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
d-N-EtFOSA-M	*69*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
d7-N-MeFOSE-M	*69*		*10 - 120*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
d9-N-EtFOSE-M	*67*		*10 - 120*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
M2-4:2 FTS	*86*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
M2-6:2 FTS	*96*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
M2-8:2 FTS	*105*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C3 HFPO-DA	*83*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*
13C2 10:2 FTS	*99*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:24*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**14.5**		0.1		%			06/06/22 16:14	1
Percent Solids	**85.5**		0.1		%			06/06/22 16:14	1

Client Sample ID: SS04-2.1

Date Collected: 06/01/22 14:10
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-6

Matrix: Solid
Percent Solids: 77.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluoropentanoic acid (PFPeA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1

Client Sample ID: SS04-2.1
Date Collected: 06/01/22 14:10
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-6
Matrix: Solid
Percent Solids: 77.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorooctanoic acid (PFOA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorononanoic acid (PFNA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorodecanoic acid (PFDA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluoroundecanoic acid (PFUnA)	**2.0**		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorododecanoic acid (PFDoA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorooctanesulfonic acid (PFOS)	**0.52**		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorononanesulfonic acid (PFNS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
Perfluorooctanesulfonamide (FOSA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
NEtFOSA	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
NMeFOSA	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
NMeFOSAA	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
NEtFOSAA	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
NMeFOSE	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
NEtFOSE	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
4:2 FTS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
6:2 FTS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
8:2 FTS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
10:2 FTS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
HFPO-DA (GenX)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
9Cl-PF3ONS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1
11Cl-PF3OUdS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 01:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:34*	*1*
13C5 PFPeA	*83*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:34*	*1*
13C2 PFHxA	*84*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:34*	*1*
13C4 PFHpA	*95*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:34*	*1*
13C4 PFOA	*82*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:34*	*1*
13C5 PFNA	*91*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:34*	*1*
13C2 PFDA	*83*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:34*	*1*
13C2 PFUnA	*83*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:34*	*1*

Client Sample ID: SS04-2.1

Date Collected: 06/01/22 14:10
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-6

Matrix: Solid
Percent Solids: 77.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	83		25 - 150	06/08/22 11:50	06/22/22 01:34	1
13C2 PFTeDA	69		25 - 150	06/08/22 11:50	06/22/22 01:34	1
13C2 PFHxDA	64		25 - 150	06/08/22 11:50	06/22/22 01:34	1
13C3 PFBS	76		25 - 150	06/08/22 11:50	06/22/22 01:34	1
18O2 PFHxS	77		25 - 150	06/08/22 11:50	06/22/22 01:34	1
13C4 PFOS	78		25 - 150	06/08/22 11:50	06/22/22 01:34	1
13C8 FOSA	79		25 - 150	06/08/22 11:50	06/22/22 01:34	1
d3-NMeFOSAA	91		25 - 150	06/08/22 11:50	06/22/22 01:34	1
d5-NEtFOSAA	91		25 - 150	06/08/22 11:50	06/22/22 01:34	1
d-N-MeFOSA-M	57		25 - 150	06/08/22 11:50	06/22/22 01:34	1
d-N-EtFOSA-M	53		25 - 150	06/08/22 11:50	06/22/22 01:34	1
d7-N-MeFOSE-M	69		10 - 120	06/08/22 11:50	06/22/22 01:34	1
d9-N-EtFOSE-M	68		10 - 120	06/08/22 11:50	06/22/22 01:34	1
M2-4:2 FTS	80		25 - 150	06/08/22 11:50	06/22/22 01:34	1
M2-6:2 FTS	88		25 - 150	06/08/22 11:50	06/22/22 01:34	1
M2-8:2 FTS	89		25 - 150	06/08/22 11:50	06/22/22 01:34	1
13C3 HFPO-DA	85		25 - 150	06/08/22 11:50	06/22/22 01:34	1
13C2 10:2 FTS	87		25 - 150	06/08/22 11:50	06/22/22 01:34	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22.5		0.1		%			06/06/22 16:14	1
Percent Solids	77.5		0.1		%			06/06/22 16:14	1

Client Sample ID: SS04-12.8

Date Collected: 06/01/22 14:35
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-7

Matrix: Solid
Percent Solids: 89.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluoropentanoic acid (PFPeA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorohexanoic acid (PFHxA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorooctanoic acid (PFOA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorononanoic acid (PFNA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorodecanoic acid (PFDA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorododecanoic acid (PFDoA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1

Client Sample ID: SS04-12.8
Date Collected: 06/01/22 14:35
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-7
Matrix: Solid
Percent Solids: 89.6

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.25**		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorononanesulfonic acid (PFNS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
Perfluorooctanesulfonamide (FOSA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
NEtFOSA	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
NMeFOSA	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
NMeFOSAA	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
NEtFOSAA	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
NMeFOSE	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
NEtFOSE	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
4:2 FTS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
6:2 FTS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
8:2 FTS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
10:2 FTS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
HFPO-DA (GenX)	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
9Cl-PF3ONS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1
11Cl-PF3OUdS	ND		0.20		ug/Kg	☼	06/08/22 11:50	06/22/22 01:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*85*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C5 PFPeA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C2 PFHxA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C4 PFHpA	*97*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C4 PFOA	*88*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C5 PFNA	*96*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C2 PFDA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C2 PFUnA	*91*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C2 PFDoA	*84*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C2 PFTeDA	*69*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C2 PFHxDA	*68*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C3 PFBS	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
18O2 PFHxS	*91*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C4 PFOS	*86*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C8 FOSA	*94*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
d3-NMeFOSAA	*91*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
d5-NEtFOSAA	*90*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
d-N-MeFOSA-M	*51*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
d-N-EtFOSA-M	*51*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
d7-N-MeFOSE-M	*65*		*10 - 120*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
d9-N-EtFOSE-M	*68*		*10 - 120*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
M2-4:2 FTS	*99*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
M2-6:2 FTS	*99*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
M2-8:2 FTS	*103*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C3 HFPO-DA	*93*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*
13C2 10:2 FTS	*100*		*25 - 150*	*06/08/22 11:50*	*06/22/22 01:45*	*1*

Client Sample ID: SS04-12.8

Lab Sample ID: 320-88570-7

Date Collected: 06/01/22 14:35
Matrix: Solid
Date Received: 06/03/22 12:30
Percent Solids: 89.6

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.4**		0.1		%			06/06/22 16:14	1
Percent Solids	**89.6**		0.1		%			06/06/22 16:14	1

Client Sample ID: SS05-12.5

Lab Sample ID: 320-88570-8

Date Collected: 06/01/22 15:55
Matrix: Solid
Date Received: 06/03/22 12:30
Percent Solids: 80.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluoropentanoic acid (PFPeA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorohexanoic acid (PFHxA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorooctanoic acid (PFOA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorononanoic acid (PFNA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorodecanoic acid (PFDA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorododecanoic acid (PFDoA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorooctanesulfonic acid (PFOS)	**0.32**		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorononanesulfonic acid (PFNS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
Perfluorooctanesulfonamide (FOSA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
NEtFOSA	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
NMeFOSA	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
NMeFOSAA	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
NEtFOSAA	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
NMeFOSE	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
NEtFOSE	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
4:2 FTS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
6:2 FTS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
8:2 FTS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
10:2 FTS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
HFPO-DA (GenX)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
9Cl-PF3ONS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1
11Cl-PF3OUdS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 01:55	1

Client Sample ID: SS05-12.5

Date Collected: 06/01/22 15:55
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-8

Matrix: Solid
Percent Solids: 80.5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	70		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C5 PFPeA	81		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C2 PFHxA	81		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C4 PFHpA	91		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C4 PFOA	83		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C5 PFNA	85		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C2 PFDA	83		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C2 PFUnA	88		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C2 PFDoA	83		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C2 PFTeDA	78		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C2 PFHxDA	62		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C3 PFBS	81		25 - 150	06/08/22 11:50	06/22/22 01:55	1
18O2 PFHxS	88		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C4 PFOS	82		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C8 FOSA	96		25 - 150	06/08/22 11:50	06/22/22 01:55	1
d3-NMeFOSAA	88		25 - 150	06/08/22 11:50	06/22/22 01:55	1
d5-NEtFOSAA	89		25 - 150	06/08/22 11:50	06/22/22 01:55	1
d-N-MeFOSA-M	84		25 - 150	06/08/22 11:50	06/22/22 01:55	1
d-N-EtFOSA-M	84		25 - 150	06/08/22 11:50	06/22/22 01:55	1
d7-N-MeFOSE-M	71		10 - 120	06/08/22 11:50	06/22/22 01:55	1
d9-N-EtFOSE-M	80		10 - 120	06/08/22 11:50	06/22/22 01:55	1
M2-4:2 FTS	83		25 - 150	06/08/22 11:50	06/22/22 01:55	1
M2-6:2 FTS	94		25 - 150	06/08/22 11:50	06/22/22 01:55	1
M2-8:2 FTS	103		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C3 HFPO-DA	85		25 - 150	06/08/22 11:50	06/22/22 01:55	1
13C2 10:2 FTS	105		25 - 150	06/08/22 11:50	06/22/22 01:55	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.5		0.1		%			06/06/22 16:14	1
Percent Solids	80.5		0.1		%			06/06/22 16:14	1

Client Sample ID: SS06-5.8

Date Collected: 06/01/22 17:40
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-9

Matrix: Solid
Percent Solids: 75.1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluoropentanoic acid (PFPeA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorohexanoic acid (PFHxA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorooctanoic acid (PFOA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorononanoic acid (PFNA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorodecanoic acid (PFDA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS06-5.8
Date Collected: 06/01/22 17:40
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-9
Matrix: Solid
Percent Solids: 75.1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorooctanesulfonic acid (PFOS)	**0.58**		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorononanesulfonic acid (PFNS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
Perfluorooctanesulfonamide (FOSA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
NEtFOSA	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
NMeFOSA	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
NMeFOSAA	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
NEtFOSAA	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
NMeFOSE	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
NEtFOSE	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
4:2 FTS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
6:2 FTS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
8:2 FTS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
10:2 FTS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
HFPO-DA (GenX)	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
9Cl-PF3ONS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1
11Cl-PF3OUdS	ND		0.24		ug/Kg	☼	06/08/22 11:50	06/22/22 02:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*68*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C5 PFPeA	*77*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C2 PFHxA	*72*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C4 PFHpA	*80*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C4 PFOA	*80*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C5 PFNA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C2 PFDA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C2 PFUnA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C2 PFDoA	*91*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C2 PFTeDA	*78*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C2 PFHxDA	*69*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C3 PFBS	*75*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
18O2 PFHxS	*81*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C4 PFOS	*86*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C8 FOSA	*95*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
d3-NMeFOSAA	*94*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
d5-NEtFOSAA	*93*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
d-N-MeFOSA-M	*81*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
d-N-EtFOSA-M	*79*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
d7-N-MeFOSE-M	*71*		*10 - 120*	*06/08/22 11:50*	*06/22/22 02:25*	*1*

Client Sample ID: SS06-5.8

Lab Sample ID: 320-88570-9

Date Collected: 06/01/22 17:40
Matrix: Solid
Date Received: 06/03/22 12:30
Percent Solids: 75.1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d9-N-EtFOSE-M	*72*		*10 - 120*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
M2-4:2 FTS	*91*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
M2-6:2 FTS	*92*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
M2-8:2 FTS	*108*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C3 HFPO-DA	*77*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*
13C2 10:2 FTS	*105*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:25*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**24.9**		0.1		%			06/06/22 16:14	1
Percent Solids	**75.1**		0.1		%			06/06/22 16:14	1

Client Sample ID: SS06-13.5

Lab Sample ID: 320-88570-10

Date Collected: 06/01/22 17:53
Matrix: Solid
Date Received: 06/03/22 12:30
Percent Solids: 78.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluoropentanoic acid (PFPeA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorohexanoic acid (PFHxA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorooctanoic acid (PFOA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorononanoic acid (PFNA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorodecanoic acid (PFDA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorododecanoic acid (PFDoA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorononanesulfonic acid (PFNS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
Perfluorooctanesulfonamide (FOSA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
NEtFOSA	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
NMeFOSA	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
NMeFOSAA	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
NEtFOSAA	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
NMeFOSE	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
NEtFOSE	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1

Client Sample ID: SS06-13.5

Date Collected: 06/01/22 17:53
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-10

Matrix: Solid
Percent Solids: 78.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
6:2 FTS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
8:2 FTS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
10:2 FTS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
HFPO-DA (GenX)	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
9Cl-PF3ONS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1
11Cl-PF3OUdS	ND		0.25		ug/Kg	☼	06/08/22 11:50	06/22/22 02:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*56*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C5 PFPeA	*83*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C2 PFHxA	*85*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C4 PFHpA	*94*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C4 PFOA	*87*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C5 PFNA	*90*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C2 PFDA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C2 PFUnA	*89*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C2 PFDoA	*93*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C2 PFTeDA	*79*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C2 PFHxDA	*68*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C3 PFBS	*85*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
18O2 PFHxS	*84*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C4 PFOS	*85*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C8 FOSA	*94*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
d3-NMeFOSAA	*99*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
d5-NEtFOSAA	*105*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
d-N-MeFOSA-M	*79*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
d-N-EtFOSA-M	*81*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
d7-N-MeFOSE-M	*72*		*10 - 120*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
d9-N-EtFOSE-M	*72*		*10 - 120*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
M2-4:2 FTS	*95*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
M2-6:2 FTS	*95*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
M2-8:2 FTS	*104*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C3 HFPO-DA	*87*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*
13C2 10:2 FTS	*102*		*25 - 150*	*06/08/22 11:50*	*06/22/22 02:35*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**22.0**		0.1		%			06/06/22 16:14	1
Percent Solids	**78.0**		0.1		%			06/06/22 16:14	1

Client Sample ID: SS01GW

Date Collected: 06/01/22 11:53
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-11

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**9.3**		4.9		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluoropentanoic acid (PFPeA)	**8.2**		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1

Client Sample ID: SS01GW
Date Collected: 06/01/22 11:53
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-11
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	**3.3**		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorooctanoic acid (PFOA)	**4.6**		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorobutanesulfonic acid (PFBS)	**32**		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorohexanesulfonic acid (PFHxS)	**5.8**		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorooctanesulfonic acid (PFOS)	**16**		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorononanesulfonic acid (PFNS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
NEtFOSA	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
NMeFOSA	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
NMeFOSAA	ND		4.9		ng/L		06/13/22 11:49	06/15/22 10:52	1
NEtFOSAA	ND		4.9		ng/L		06/13/22 11:49	06/15/22 10:52	1
NMeFOSE	ND		3.9		ng/L		06/13/22 11:49	06/15/22 10:52	1
NEtFOSE	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
4:2 FTS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
6:2 FTS	ND		4.9		ng/L		06/13/22 11:49	06/15/22 10:52	1
8:2 FTS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
10:2 FTS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
HFPO-DA (GenX)	ND		3.9		ng/L		06/13/22 11:49	06/15/22 10:52	1
9Cl-PF3ONS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1
11Cl-PF3OUdS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*25*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:52*	*1*
13C5 PFPeA	*27*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:52*	*1*
13C2 PFHxA	*24*	**5-*	*25 - 150*	*06/13/22 11:49*	*06/15/22 10:52*	*1*
13C4 PFHpA	*24*	**5-*	*25 - 150*	*06/13/22 11:49*	*06/15/22 10:52*	*1*
13C4 PFOA	*24*	**5-*	*25 - 150*	*06/13/22 11:49*	*06/15/22 10:52*	*1*
13C5 PFNA	*25*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:52*	*1*
13C2 PFDA	*21*	**5-*	*25 - 150*	*06/13/22 11:49*	*06/15/22 10:52*	*1*

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS01GW

Date Collected: 06/01/22 11:53
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-11

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFUnA	19	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
13C2 PFDoA	19	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
13C2 PFTeDA	19	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
13C2 PFHxDA	22	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
13C3 PFBS	23	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
18O2 PFHxS	23	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
13C4 PFOS	23	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
13C8 FOSA	23	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
d3-NMeFOSAA	19	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
d5-NEtFOSAA	18	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
d-N-MeFOSA-M	15	*5-	20 - 150	06/13/22 11:49	06/15/22 10:52	1
d-N-EtFOSA-M	15	*5-	20 - 150	06/13/22 11:49	06/15/22 10:52	1
d7-N-MeFOSE-M	16		10 - 120	06/13/22 11:49	06/15/22 10:52	1
d9-N-EtFOSE-M	17		10 - 120	06/13/22 11:49	06/15/22 10:52	1
M2-4:2 FTS	23	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
M2-6:2 FTS	25		25 - 150	06/13/22 11:49	06/15/22 10:52	1
M2-8:2 FTS	19	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1
13C3 HFPO-DA	25		25 - 150	06/13/22 11:49	06/15/22 10:52	1
13C2 10:2 FTS	17	*5-	25 - 150	06/13/22 11:49	06/15/22 10:52	1

Client Sample ID: SS01GWD

Date Collected: 06/01/22 11:53
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-12

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**8.9**		4.7		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluoropentanoic acid (PFPeA)	**7.7**		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorohexanoic acid (PFHxA)	**3.2**		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorooctanoic acid (PFOA)	**4.4**		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorobutanesulfonic acid (PFBS)	**33**		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorohexanesulfonic acid (PFHxS)	**5.2**		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorooctanesulfonic acid (PFOS)	**14**		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorononanesulfonic acid (PFNS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS01GWD
Date Collected: 06/01/22 11:53
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-12
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
NEtFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
NMeFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
NMeFOSAA	ND		4.7		ng/L		06/13/22 11:49	06/15/22 11:02	1
NEtFOSAA	ND		4.7		ng/L		06/13/22 11:49	06/15/22 11:02	1
NMeFOSE	ND		3.8		ng/L		06/13/22 11:49	06/15/22 11:02	1
NEtFOSE	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
4:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
6:2 FTS	ND		4.7		ng/L		06/13/22 11:49	06/15/22 11:02	1
8:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
10:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
HFPO-DA (GenX)	ND		3.8		ng/L		06/13/22 11:49	06/15/22 11:02	1
9Cl-PF3ONS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1
11Cl-PF3OUdS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*50*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C5 PFPeA	*54*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C2 PFHxA	*50*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C4 PFHpA	*50*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C4 PFOA	*49*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C5 PFNA	*51*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C2 PFDA	*47*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C2 PFUnA	*38*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C2 PFDoA	*33*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C2 PFTeDA	*37*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C2 PFHxDA	*48*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C3 PFBS	*48*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
18O2 PFHxS	*52*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C4 PFOS	*49*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C8 FOSA	*50*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
d3-NMeFOSAA	*38*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
d5-NEtFOSAA	*35*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
d-N-MeFOSA-M	*30*		*20 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
d-N-EtFOSA-M	*31*		*20 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
d7-N-MeFOSE-M	*31*		*10 - 120*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
d9-N-EtFOSE-M	*31*		*10 - 120*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
M2-4:2 FTS	*44*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
M2-6:2 FTS	*50*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
M2-8:2 FTS	*42*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C3 HFPO-DA	*50*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*
13C2 10:2 FTS	*31*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:02*	*1*

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS02GW

Date Collected: 06/01/22 13:16
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-13

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.0**		4.6		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluoropentanoic acid (PFPeA)	**15**		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorohexanoic acid (PFHxA)	**6.1**		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluoroheptanoic acid (PFHpA)	**2.3**		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorooctanoic acid (PFOA)	**4.4**		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorobutanesulfonic acid (PFBS)	**11**		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorohexanesulfonic acid (PFHxS)	**3.6**		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorooctanesulfonic acid (PFOS)	**14**		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorononanesulfonic acid (PFNS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
NEtFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
NMeFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
NMeFOSAA	ND		4.6		ng/L		06/13/22 11:49	06/15/22 11:12	1
NEtFOSAA	ND		4.6		ng/L		06/13/22 11:49	06/15/22 11:12	1
NMeFOSE	ND		3.7		ng/L		06/13/22 11:49	06/15/22 11:12	1
NEtFOSE	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
4:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
6:2 FTS	ND		4.6		ng/L		06/13/22 11:49	06/15/22 11:12	1
8:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
10:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
HFPO-DA (GenX)	ND		3.7		ng/L		06/13/22 11:49	06/15/22 11:12	1
9Cl-PF3ONS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1
11Cl-PF3OUdS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 11:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*50*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:12*	*1*
13C5 PFPeA	*52*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:12*	*1*
13C2 PFHxA	*48*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:12*	*1*
13C4 PFHpA	*49*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:12*	*1*
13C4 PFOA	*46*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:12*	*1*

Client Sample ID: SS02GW

Lab Sample ID: 320-88570-13

Date Collected: 06/01/22 13:16

Matrix: Water

Date Received: 06/03/22 12:30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	51		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C2 PFDA	46		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C2 PFUnA	37		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C2 PFDoA	36		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C2 PFTeDA	37		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C2 PFHxDA	35		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C3 PFBS	44		25 - 150	06/13/22 11:49	06/15/22 11:12	1
18O2 PFHxS	44		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C4 PFOS	46		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C8 FOSA	47		25 - 150	06/13/22 11:49	06/15/22 11:12	1
d3-NMeFOSAA	40		25 - 150	06/13/22 11:49	06/15/22 11:12	1
d5-NEtFOSAA	33		25 - 150	06/13/22 11:49	06/15/22 11:12	1
d-N-MeFOSA-M	30		20 - 150	06/13/22 11:49	06/15/22 11:12	1
d-N-EtFOSA-M	29		20 - 150	06/13/22 11:49	06/15/22 11:12	1
d7-N-MeFOSE-M	31		10 - 120	06/13/22 11:49	06/15/22 11:12	1
d9-N-EtFOSE-M	31		10 - 120	06/13/22 11:49	06/15/22 11:12	1
M2-4:2 FTS	43		25 - 150	06/13/22 11:49	06/15/22 11:12	1
M2-6:2 FTS	47		25 - 150	06/13/22 11:49	06/15/22 11:12	1
M2-8:2 FTS	40		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C3 HFPO-DA	47		25 - 150	06/13/22 11:49	06/15/22 11:12	1
13C2 10:2 FTS	35		25 - 150	06/13/22 11:49	06/15/22 11:12	1

Client Sample ID: SS03GW

Lab Sample ID: 320-88570-14

Date Collected: 06/01/22 10:13

Matrix: Water

Date Received: 06/03/22 12:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.0**		4.6		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluoropentanoic acid (PFPeA)	**16**		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorohexanoic acid (PFHxA)	**7.3**		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluoroheptanoic acid (PFHpA)	**2.7**		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorooctanoic acid (PFOA)	**5.2**		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorononanoic acid (PFNA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorodecanoic acid (PFDA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorododecanoic acid (PFDoA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorobutanesulfonic acid (PFBS)	**12**		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorohexanesulfonic acid (PFHxS)	**7.3**		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1

Client Sample ID: SS03GW
Date Collected: 06/01/22 10:13
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-14
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**22**		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorononanesulfonic acid (PFNS)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
NEtFOSA	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
NMeFOSA	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
NMeFOSAA	ND		4.6		ng/L		06/13/22 11:49	06/15/22 11:22	1
NEtFOSAA	ND		4.6		ng/L		06/13/22 11:49	06/15/22 11:22	1
NMeFOSE	ND		3.7		ng/L		06/13/22 11:49	06/15/22 11:22	1
NEtFOSE	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
4:2 FTS	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
6:2 FTS	ND		4.6		ng/L		06/13/22 11:49	06/15/22 11:22	1
8:2 FTS	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
10:2 FTS	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
HFPO-DA (GenX)	ND		3.7		ng/L		06/13/22 11:49	06/15/22 11:22	1
9Cl-PF3ONS	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1
11Cl-PF3OUdS	ND		1.8		ng/L		06/13/22 11:49	06/15/22 11:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*62*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C5 PFPeA	*62*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C2 PFHxA	*57*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C4 PFHpA	*58*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C4 PFOA	*56*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C5 PFNA	*62*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C2 PFDA	*59*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C2 PFUnA	*45*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C2 PFDoA	*41*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C2 PFTeDA	*42*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C2 PFHxDA	*47*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C3 PFBS	*57*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
18O2 PFHxS	*56*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C4 PFOS	*56*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C8 FOSA	*61*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
d3-NMeFOSAA	*49*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
d5-NEtFOSAA	*40*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
d-N-MeFOSA-M	*36*		*20 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
d-N-EtFOSA-M	*34*		*20 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
d7-N-MeFOSE-M	*35*		*10 - 120*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
d9-N-EtFOSE-M	*35*		*10 - 120*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
M2-4:2 FTS	*56*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
M2-6:2 FTS	*57*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
M2-8:2 FTS	*53*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C3 HFPO-DA	*57*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*
13C2 10:2 FTS	*41*		*25 - 150*	*06/13/22 11:49*	*06/15/22 11:22*	*1*

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS04GW
Date Collected: 06/01/22 14:56
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-15
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**19**		4.6		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluoropentanoic acid (PFPeA)	**68**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorohexanoic acid (PFHxA)	**48**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluoroheptanoic acid (PFHpA)	**24**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorooctanoic acid (PFOA)	**23**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorononanoic acid (PFNA)	**29**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorodecanoic acid (PFDA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluoroundecanoic acid (PFUnA)	**5.5**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorododecanoic acid (PFDoA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorobutanesulfonic acid (PFBS)	**44**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluoropentanesulfonic acid (PFPeS)	**26**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorohexanesulfonic acid (PFHxS)	**180**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluoroheptanesulfonic acid (PFHpS)	**5.4**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorooctanesulfonic acid (PFOS)	**380**	**E**	1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorononanesulfonic acid (PFNS)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
NEtFOSA	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
NMeFOSA	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
NMeFOSAA	ND		4.6		ng/L		06/13/22 11:49	06/15/22 13:34	1
NEtFOSAA	ND		4.6		ng/L		06/13/22 11:49	06/15/22 13:34	1
NMeFOSE	ND		3.7		ng/L		06/13/22 11:49	06/15/22 13:34	1
NEtFOSE	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
4:2 FTS	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
6:2 FTS	**23**		4.6		ng/L		06/13/22 11:49	06/15/22 13:34	1
8:2 FTS	**3.9**		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
10:2 FTS	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
HFPO-DA (GenX)	ND		3.7		ng/L		06/13/22 11:49	06/15/22 13:34	1
9Cl-PF3ONS	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1
11Cl-PF3OUdS	ND		1.8		ng/L		06/13/22 11:49	06/15/22 13:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*63*		*25 - 150*	*06/13/22 11:49*	*06/15/22 13:34*	*1*
13C5 PFPeA	*62*		*25 - 150*	*06/13/22 11:49*	*06/15/22 13:34*	*1*
13C2 PFHxA	*59*		*25 - 150*	*06/13/22 11:49*	*06/15/22 13:34*	*1*
13C4 PFHpA	*60*		*25 - 150*	*06/13/22 11:49*	*06/15/22 13:34*	*1*
13C4 PFOA	*60*		*25 - 150*	*06/13/22 11:49*	*06/15/22 13:34*	*1*

Client Sample ID: SS04GW

Date Collected: 06/01/22 14:56
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-15
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	62		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C2 PFDA	60		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C2 PFUnA	55		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C2 PFDoA	53		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C2 PFTeDA	52		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C2 PFHxDA	54		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C3 PFBS	58		25 - 150	06/13/22 11:49	06/15/22 13:34	1
18O2 PFHxS	58		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C4 PFOS	60		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C8 FOSA	64		25 - 150	06/13/22 11:49	06/15/22 13:34	1
d3-NMeFOSAA	59		25 - 150	06/13/22 11:49	06/15/22 13:34	1
d5-NEtFOSAA	50		25 - 150	06/13/22 11:49	06/15/22 13:34	1
d-N-MeFOSA-M	46		20 - 150	06/13/22 11:49	06/15/22 13:34	1
d-N-EtFOSA-M	44		20 - 150	06/13/22 11:49	06/15/22 13:34	1
d7-N-MeFOSE-M	48		10 - 120	06/13/22 11:49	06/15/22 13:34	1
d9-N-EtFOSE-M	45		10 - 120	06/13/22 11:49	06/15/22 13:34	1
M2-4:2 FTS	57		25 - 150	06/13/22 11:49	06/15/22 13:34	1
M2-6:2 FTS	60		25 - 150	06/13/22 11:49	06/15/22 13:34	1
M2-8:2 FTS	54		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C3 HFPO-DA	60		25 - 150	06/13/22 11:49	06/15/22 13:34	1
13C2 10:2 FTS	51		25 - 150	06/13/22 11:49	06/15/22 13:34	1

Client Sample ID: SS05GW

Date Collected: 06/01/22 17:02
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-16
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**7.6**		4.7		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluoropentanoic acid (PFPeA)	**23**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorohexanoic acid (PFHxA)	**17**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluoroheptanoic acid (PFHpA)	**8.9**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorooctanoic acid (PFOA)	**13**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorononanoic acid (PFNA)	**7.9**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluoroundecanoic acid (PFUnA)	**2.0**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorobutanesulfonic acid (PFBS)	**22**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluoropentanesulfonic acid (PFPeS)	**6.9**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorohexanesulfonic acid (PFHxS)	**42**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1

Client Sample ID: SS05GW
Date Collected: 06/01/22 17:02
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-16
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**130**		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorononanesulfonic acid (PFNS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
NEtFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
NMeFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
NMeFOSAA	ND		4.7		ng/L		06/13/22 11:49	06/15/22 14:34	1
NEtFOSAA	ND		4.7		ng/L		06/13/22 11:49	06/15/22 14:34	1
NMeFOSE	ND		3.7		ng/L		06/13/22 11:49	06/15/22 14:34	1
NEtFOSE	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
4:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
6:2 FTS	ND		4.7		ng/L		06/13/22 11:49	06/15/22 14:34	1
8:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
10:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
HFPO-DA (GenX)	ND		3.7		ng/L		06/13/22 11:49	06/15/22 14:34	1
9Cl-PF3ONS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1
11Cl-PF3OUdS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C5 PFPeA	*73*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C2 PFHxA	*63*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C4 PFHpA	*64*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C4 PFOA	*63*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C5 PFNA	*70*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C2 PFDA	*61*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C2 PFUnA	*55*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C2 PFDoA	*48*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C2 PFTeDA	*50*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C2 PFHxDA	*54*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C3 PFBS	*63*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
18O2 PFHxS	*65*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C4 PFOS	*65*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C8 FOSA	*68*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
d3-NMeFOSAA	*56*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
d5-NEtFOSAA	*48*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
d-N-MeFOSA-M	*42*		*20 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
d-N-EtFOSA-M	*42*		*20 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
d7-N-MeFOSE-M	*41*		*10 - 120*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
d9-N-EtFOSE-M	*42*		*10 - 120*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
M2-4:2 FTS	*64*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
M2-6:2 FTS	*66*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
M2-8:2 FTS	*55*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C3 HFPO-DA	*63*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*
13C2 10:2 FTS	*46*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:34*	*1*

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS06GW
Date Collected: 06/01/22 18:28
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-17
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**13**		4.8		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluoropentanoic acid (PFPeA)	**37**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorohexanoic acid (PFHxA)	**33**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluoroheptanoic acid (PFHpA)	**15**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorooctanoic acid (PFOA)	**18**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorononanoic acid (PFNA)	**54**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorodecanoic acid (PFDA)	**4.0**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluoroundecanoic acid (PFUnA)	**2.4**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorobutanesulfonic acid (PFBS)	**24**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluoropentanesulfonic acid (PFPeS)	**17**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorohexanesulfonic acid (PFHxS)	**120**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluoroheptanesulfonic acid (PFHpS)	**7.7**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorooctanesulfonic acid (PFOS)	**320**		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorononanesulfonic acid (PFNS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
NEtFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
NMeFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
NMeFOSAA	ND		4.8		ng/L		06/13/22 11:49	06/15/22 14:44	1
NEtFOSAA	ND		4.8		ng/L		06/13/22 11:49	06/15/22 14:44	1
NMeFOSE	ND		3.8		ng/L		06/13/22 11:49	06/15/22 14:44	1
NEtFOSE	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
4:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
6:2 FTS	**8.1**		4.8		ng/L		06/13/22 11:49	06/15/22 14:44	1
8:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
10:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
HFPO-DA (GenX)	ND		3.8		ng/L		06/13/22 11:49	06/15/22 14:44	1
9Cl-PF3ONS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1
11Cl-PF3OUdS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*49*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:44*	*1*
13C5 PFPeA	*54*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:44*	*1*
13C2 PFHxA	*48*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:44*	*1*
13C4 PFHpA	*51*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:44*	*1*
13C4 PFOA	*49*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:44*	*1*

Client Sample ID: SS06GW

Lab Sample ID: 320-88570-17

Date Collected: 06/01/22 18:28

Matrix: Water

Date Received: 06/03/22 12:30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	53		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C2 PFDA	51		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C2 PFUnA	42		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C2 PFDoA	38		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C2 PFTeDA	39		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C2 PFHxDA	42		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C3 PFBS	49		25 - 150	06/13/22 11:49	06/15/22 14:44	1
18O2 PFHxS	49		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C4 PFOS	49		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C8 FOSA	53		25 - 150	06/13/22 11:49	06/15/22 14:44	1
d3-NMeFOSAA	46		25 - 150	06/13/22 11:49	06/15/22 14:44	1
d5-NEtFOSAA	38		25 - 150	06/13/22 11:49	06/15/22 14:44	1
d-N-MeFOSA-M	34		20 - 150	06/13/22 11:49	06/15/22 14:44	1
d-N-EtFOSA-M	34		20 - 150	06/13/22 11:49	06/15/22 14:44	1
d7-N-MeFOSE-M	32		10 - 120	06/13/22 11:49	06/15/22 14:44	1
d9-N-EtFOSE-M	33		10 - 120	06/13/22 11:49	06/15/22 14:44	1
M2-4:2 FTS	43		25 - 150	06/13/22 11:49	06/15/22 14:44	1
M2-6:2 FTS	51		25 - 150	06/13/22 11:49	06/15/22 14:44	1
M2-8:2 FTS	42		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C3 HFPO-DA	51		25 - 150	06/13/22 11:49	06/15/22 14:44	1
13C2 10:2 FTS	37		25 - 150	06/13/22 11:49	06/15/22 14:44	1

Client Sample ID: FB-20220601

Lab Sample ID: 320-88570-18

Date Collected: 06/01/22 12:09

Matrix: Water

Date Received: 06/03/22 12:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		4.7		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluoropentanoic acid (PFPeA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorononanesulfonic acid (PFNS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: FB-20220601
Date Collected: 06/01/22 12:09
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-18
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
NEtFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
NMeFOSA	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
NMeFOSAA	ND		4.7		ng/L		06/13/22 11:49	06/15/22 14:54	1
NEtFOSAA	ND		4.7		ng/L		06/13/22 11:49	06/15/22 14:54	1
NMeFOSE	ND		3.7		ng/L		06/13/22 11:49	06/15/22 14:54	1
NEtFOSE	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
4:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
6:2 FTS	ND		4.7		ng/L		06/13/22 11:49	06/15/22 14:54	1
8:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
10:2 FTS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
HFPO-DA (GenX)	ND		3.7		ng/L		06/13/22 11:49	06/15/22 14:54	1
9Cl-PF3ONS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1
11Cl-PF3OUdS	ND		1.9		ng/L		06/13/22 11:49	06/15/22 14:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*100*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C5 PFPeA	*105*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C2 PFHxA	*99*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C4 PFHpA	*98*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C4 PFOA	*94*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C5 PFNA	*105*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C2 PFDA	*102*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C2 PFUnA	*97*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C2 PFDoA	*99*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C2 PFTeDA	*98*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C2 PFHxDA	*99*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C3 PFBS	*94*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
18O2 PFHxS	*100*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C4 PFOS	*102*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C8 FOSA	*101*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
d3-NMeFOSAA	*97*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
d5-NEtFOSAA	*90*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
d-N-MeFOSA-M	*82*		*20 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
d-N-EtFOSA-M	*83*		*20 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
d7-N-MeFOSE-M	*92*		*10 - 120*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
d9-N-EtFOSE-M	*94*		*10 - 120*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
M2-4:2 FTS	*91*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
M2-6:2 FTS	*96*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
M2-8:2 FTS	*89*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C3 HFPO-DA	*95*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*
13C2 10:2 FTS	*98*		*25 - 150*	*06/13/22 11:49*	*06/15/22 14:54*	*1*

Isotope Dilution Summary

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-88570-1	SS01-14.5	91	86	90	97	95	94	92	97
320-88570-2	SS02-14.5	69	79	79	95	87	88	86	85
320-88570-3	SS03-3.5	76	76	79	83	83	83	83	72
320-88570-4	SS03-14.5	92	91	92	100	92	94	90	90
320-88570-5	SS02D	82	84	83	92	89	90	90	89
320-88570-6	SS04-2.1	79	83	84	95	82	91	83	83
320-88570-7	SS04-12.8	85	89	89	97	88	96	89	91
320-88570-8	SS05-12.5	70	81	81	91	83	85	83	88
320-88570-9	SS06-5.8	68	77	72	80	80	89	89	89
320-88570-10	SS06-13.5	56	83	85	94	87	90	89	89
320-88570-10 MS	SS06-13.5	85	92	88	92	89	93	87	84
320-88570-10 MSD	SS06-13.5	76	76	89	85	85	94	87	88
LCS 320-593768/2-A	Lab Control Sample	90	91	93	93	98	98	96	89
MB 320-593768/1-A	Method Blank	96	93	96	117	96	100	93	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)
320-88570-1	SS01-14.5	93	79	73	83	93	89	86	94
320-88570-2	SS02-14.5	88	74	70	79	84	82	96	90
320-88570-3	SS03-3.5	68	65	72	80	79	77	77	74
320-88570-4	SS03-14.5	88	73	71	88	94	87	88	99
320-88570-5	SS02D	90	79	80	87	91	83	94	92
320-88570-6	SS04-2.1	83	69	64	76	77	78	79	91
320-88570-7	SS04-12.8	84	69	68	89	91	86	94	91
320-88570-8	SS05-12.5	83	78	62	81	88	82	96	88
320-88570-9	SS06-5.8	91	78	69	75	81	86	95	94
320-88570-10	SS06-13.5	93	79	68	85	84	85	94	99
320-88570-10 MS	SS06-13.5	86	77	71	87	88	88	89	92
320-88570-10 MSD	SS06-13.5	94	77	70	81	84	89	93	90
LCS 320-593768/2-A	Lab Control Sample	101	87	92	95	92	92	90	103
MB 320-593768/1-A	Method Blank	103	94	94	98	99	99	102	110

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (25-150)	dEtFOSA (25-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
320-88570-1	SS01-14.5	102	51	55	76	75	99	95	103
320-88570-2	SS02-14.5	92	78	77	69	68	81	86	105
320-88570-3	SS03-3.5	72	51	52	63	63	84	94	94
320-88570-4	SS03-14.5	100	49	47	69	69	104	101	112
320-88570-5	SS02D	106	77	69	69	67	86	96	105
320-88570-6	SS04-2.1	91	57	53	69	68	80	88	89
320-88570-7	SS04-12.8	90	51	51	65	68	99	99	103
320-88570-8	SS05-12.5	89	84	84	71	80	83	94	103
320-88570-9	SS06-5.8	93	81	79	71	72	91	92	108
320-88570-10	SS06-13.5	105	79	81	72	72	95	95	104
320-88570-10 MS	SS06-13.5	91	58	57	70	75	96	94	98
320-88570-10 MSD	SS06-13.5	93	75	80	73	77	94	91	98
LCS 320-593768/2-A	Lab Control Sample	100	48	49	73	76	103	106	114
MB 320-593768/1-A	Method Blank	99	61	65	80	84	115	111	114

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	HFPODA (25-150)	M102FTS (25-150)								
320-88570-1	SS01-14.5	89	104								
320-88570-2	SS02-14.5	86	96								
320-88570-3	SS03-3.5	77	85								
320-88570-4	SS03-14.5	94	105								
320-88570-5	SS02D	83	99								
320-88570-6	SS04-2.1	85	87								
320-88570-7	SS04-12.8	93	100								
320-88570-8	SS05-12.5	85	105								
320-88570-9	SS06-5.8	77	105								
320-88570-10	SS06-13.5	87	102								
320-88570-10 MS	SS06-13.5	88	98								
320-88570-10 MSD	SS06-13.5	87	98								
LCS 320-593768/2-A	Lab Control Sample	91	109								
MB 320-593768/1-A	Method Blank	95	126								

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
PFHxDA = 13C2 PFHxDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M
dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
M102FTS = 13C2 10:2 FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-88570-11	SS01GW	25	27	24 *5-	24 *5-	24 *5-	25	21 *5-	19 *5-
320-88570-12	SS01GWD	50	54	50	50	49	51	47	38

Isotope Dilution Summary

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-88570-13	SS02GW	50	52	48	49	46	51	46	37
320-88570-14	SS03GW	62	62	57	58	56	62	59	45
320-88570-15	SS04GW	63	62	59	60	60	62	60	55
320-88570-16	SS05GW	69	73	63	64	63	70	61	55
320-88570-17	SS06GW	49	54	48	51	49	53	51	42
320-88570-18	FB-20220601	100	105	99	98	94	105	102	97
LCS 320-595066/2-A	Lab Control Sample	100	104	95	98	93	100	101	96
LCSD 320-595066/3-A	Lab Control Sample Dup	91	94	87	90	88	94	93	89
MB 320-595066/1-A	Method Blank	65	66	62	67	62	64	66	63

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOSA (25-150)
320-88570-11	SS01GW	19 *5-	19 *5-	22 *5-	23 *5-	23 *5-	23 *5-	23 *5-	19 *5-
320-88570-12	SS01GWD	33	37	48	48	52	49	50	38
320-88570-13	SS02GW	36	37	35	44	44	46	47	40
320-88570-14	SS03GW	41	42	47	57	56	56	61	49
320-88570-15	SS04GW	53	52	54	58	58	60	64	59
320-88570-16	SS05GW	48	50	54	63	65	65	68	56
320-88570-17	SS06GW	38	39	42	49	49	49	53	46
320-88570-18	FB-20220601	99	98	99	94	100	102	101	97
LCS 320-595066/2-A	Lab Control Sample	96	98	105	93	95	96	98	98
LCSD 320-595066/3-A	Lab Control Sample Dup	90	92	95	86	86	89	90	91
MB 320-595066/1-A	Method Blank	63	66	69	61	65	65	68	66

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOSA (25-150)	dMeFOSAA (20-150)	dEtFOSAA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
320-88570-11	SS01GW	18 *5-	15 *5-	15 *5-	16	17	23 *5-	25	19 *5-
320-88570-12	SS01GWD	35	30	31	31	31	44	50	42
320-88570-13	SS02GW	33	30	29	31	31	43	47	40
320-88570-14	SS03GW	40	36	34	35	35	56	57	53
320-88570-15	SS04GW	50	46	44	48	45	57	60	54
320-88570-16	SS05GW	48	42	42	41	42	64	66	55
320-88570-17	SS06GW	38	34	34	32	33	43	51	42
320-88570-18	FB-20220601	90	82	83	92	94	91	96	89
LCS 320-595066/2-A	Lab Control Sample	89	80	85	89	87	88	101	84
LCSD 320-595066/3-A	Lab Control Sample Dup	82	68	69	82	82	85	93	80
MB 320-595066/1-A	Method Blank	60	50	50	58	59	55	68	57

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)	M102FTS (25-150)
320-88570-11	SS01GW	25	17 *5-
320-88570-12	SS01GWD	50	31
320-88570-13	SS02GW	47	35
320-88570-14	SS03GW	57	41
320-88570-15	SS04GW	60	51
320-88570-16	SS05GW	63	46
320-88570-17	SS06GW	51	37
320-88570-18	FB-20220601	95	98
LCS 320-595066/2-A	Lab Control Sample	96	91

Isotope Dilution Summary

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)									
Lab Sample ID	**Client Sample ID**	**HFPODA (25-150)**	**M102FTS (25-150)**								
LCSD 320-595066/3-A	Lab Control Sample Dup	85	81								
MB 320-595066/1-A	Method Blank	63	62								

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
PFHxDA = 13C2 PFHxDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M
dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
M102FTS = 13C2 10:2 FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-593768/1-A
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593768

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluoropentanoic acid (PFPeA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorohexanoic acid (PFHxA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorooctanoic acid (PFOA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorononanoic acid (PFNA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorodecanoic acid (PFDA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorododecanoic acid (PFDoA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorononanesulfonic acid (PFNS)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
Perfluorooctanesulfonamide (FOSA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
NEtFOSA	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
NMeFOSA	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
NMeFOSAA	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
NEtFOSAA	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
NMeFOSE	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
NEtFOSE	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
4:2 FTS	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
6:2 FTS	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
8:2 FTS	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
10:2 FTS	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
HFPO-DA (GenX)	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
9Cl-PF3ONS	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1
11Cl-PF3OUdS	ND		0.20		ug/Kg		06/08/22 11:50	06/22/22 00:23	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:23*	*1*
13C5 PFPeA	*93*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:23*	*1*
13C2 PFHxA	*96*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:23*	*1*
13C4 PFHpA	*117*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:23*	*1*
13C4 PFOA	*96*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:23*	*1*
13C5 PFNA	*100*		*25 - 150*	*06/08/22 11:50*	*06/22/22 00:23*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-593768/1-A
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593768

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	93		25 - 150	06/08/22 11:50	06/22/22 00:23	1
13C2 PFUnA	98		25 - 150	06/08/22 11:50	06/22/22 00:23	1
13C2 PFDoA	103		25 - 150	06/08/22 11:50	06/22/22 00:23	1
13C2 PFTeDA	94		25 - 150	06/08/22 11:50	06/22/22 00:23	1
13C2 PFHxDA	94		25 - 150	06/08/22 11:50	06/22/22 00:23	1
13C3 PFBS	98		25 - 150	06/08/22 11:50	06/22/22 00:23	1
18O2 PFHxS	99		25 - 150	06/08/22 11:50	06/22/22 00:23	1
13C4 PFOS	99		25 - 150	06/08/22 11:50	06/22/22 00:23	1
13C8 FOSA	102		25 - 150	06/08/22 11:50	06/22/22 00:23	1
d3-NMeFOSAA	110		25 - 150	06/08/22 11:50	06/22/22 00:23	1
d5-NEtFOSAA	99		25 - 150	06/08/22 11:50	06/22/22 00:23	1
d-N-MeFOSA-M	61		25 - 150	06/08/22 11:50	06/22/22 00:23	1
d-N-EtFOSA-M	65		25 - 150	06/08/22 11:50	06/22/22 00:23	1
d7-N-MeFOSE-M	80		10 - 120	06/08/22 11:50	06/22/22 00:23	1
d9-N-EtFOSE-M	84		10 - 120	06/08/22 11:50	06/22/22 00:23	1
M2-4:2 FTS	115		25 - 150	06/08/22 11:50	06/22/22 00:23	1
M2-6:2 FTS	111		25 - 150	06/08/22 11:50	06/22/22 00:23	1
M2-8:2 FTS	114		25 - 150	06/08/22 11:50	06/22/22 00:23	1
13C3 HFPO-DA	95		25 - 150	06/08/22 11:50	06/22/22 00:23	1
13C2 10:2 FTS	126		25 - 150	06/08/22 11:50	06/22/22 00:23	1

Lab Sample ID: LCS 320-593768/2-A
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593768

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	2.00	2.13		ug/Kg		106	76 - 136
Perfluoropentanoic acid (PFPeA)	2.00	2.17		ug/Kg		109	69 - 129
Perfluorohexanoic acid (PFHxA)	2.00	1.96		ug/Kg		98	71 - 131
Perfluoroheptanoic acid (PFHpA)	2.00	2.15		ug/Kg		108	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.03		ug/Kg		102	72 - 132
Perfluorononanoic acid (PFNA)	2.00	1.92		ug/Kg		96	73 - 133
Perfluorodecanoic acid (PFDA)	2.00	1.88		ug/Kg		94	72 - 132
Perfluoroundecanoic acid (PFUnA)	2.00	2.22		ug/Kg		111	66 - 126
Perfluorododecanoic acid (PFDoA)	2.00	1.90		ug/Kg		95	71 - 131
Perfluorotridecanoic acid (PFTrDA)	2.00	1.92		ug/Kg		96	71 - 131
Perfluorotetradecanoic acid (PFTeA)	2.00	2.04		ug/Kg		102	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	2.12		ug/Kg		106	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	2.00	2.01		ug/Kg		101	53 - 130
Perfluorobutanesulfonic acid (PFBS)	1.77	1.75		ug/Kg		99	69 - 129
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.83		ug/Kg		98	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.71		ug/Kg		94	62 - 122

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-593768/2-A
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593768

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroheptanesulfonic acid (PFHpS)	1.90	1.94		ug/Kg		102	76 - 136
Perfluorooctanesulfonic acid (PFOS)	1.86	1.85		ug/Kg		100	68 - 141
Perfluorononanesulfonic acid (PFNS)	1.92	1.98		ug/Kg		103	72 - 132
Perfluorodecanesulfonic acid (PFDS)	1.93	1.91		ug/Kg		99	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.87		ug/Kg		97	70 - 130
Perfluorooctanesulfonamide (FOSA)	2.00	2.00		ug/Kg		100	77 - 137
NEtFOSA	2.00	2.12		ug/Kg		106	47 - 161
NMeFOSA	2.00	2.01		ug/Kg		100	63 - 148
NMeFOSAA	2.00	1.88		ug/Kg		94	72 - 132
NEtFOSAA	2.00	2.16		ug/Kg		108	72 - 132
NMeFOSE	2.00	2.17		ug/Kg		108	43 - 153
NEtFOSE	2.00	2.12		ug/Kg		106	44 - 155
4:2 FTS	1.87	1.86		ug/Kg		100	68 - 143
6:2 FTS	1.90	2.00		ug/Kg		106	73 - 139
8:2 FTS	1.92	1.97		ug/Kg		103	75 - 135
10:2 FTS	1.93	1.99		ug/Kg		103	69 - 145
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	2.19		ug/Kg		116	79 - 139
HFPO-DA (GenX)	2.00	1.97		ug/Kg		98	53 - 158
9Cl-PF3ONS	1.86	2.00		ug/Kg		107	74 - 134
11Cl-PF3OUdS	1.88	1.88		ug/Kg		100	66 - 136

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*90*		*25 - 150*
13C5 PFPeA	*91*		*25 - 150*
13C2 PFHxA	*93*		*25 - 150*
13C4 PFHpA	*93*		*25 - 150*
13C4 PFOA	*98*		*25 - 150*
13C5 PFNA	*98*		*25 - 150*
13C2 PFDA	*96*		*25 - 150*
13C2 PFUnA	*89*		*25 - 150*
13C2 PFDoA	*101*		*25 - 150*
13C2 PFTeDA	*87*		*25 - 150*
13C2 PFHxDA	*92*		*25 - 150*
13C3 PFBS	*95*		*25 - 150*
18O2 PFHxS	*92*		*25 - 150*
13C4 PFOS	*92*		*25 - 150*
13C8 FOSA	*90*		*25 - 150*
d3-NMeFOSAA	*103*		*25 - 150*
d5-NEtFOSAA	*100*		*25 - 150*
d-N-MeFOSA-M	*48*		*25 - 150*
d-N-EtFOSA-M	*49*		*25 - 150*
d7-N-MeFOSE-M	*73*		*10 - 120*
d9-N-EtFOSE-M	*76*		*10 - 120*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-593768/2-A
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593768

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-4:2 FTS	*103*		*25 - 150*
M2-6:2 FTS	*106*		*25 - 150*
M2-8:2 FTS	*114*		*25 - 150*
13C3 HFPO-DA	*91*		*25 - 150*
13C2 10:2 FTS	*109*		*25 - 150*

Lab Sample ID: 320-88570-10 MS
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: SS06-13.5
Prep Type: Total/NA
Prep Batch: 593768

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	ND		2.46	2.52		ug/Kg	☼	100	76 - 136
Perfluoropentanoic acid (PFPeA)	ND		2.46	2.33		ug/Kg	☼	95	69 - 129
Perfluorohexanoic acid (PFHxA)	ND		2.46	2.41		ug/Kg	☼	98	71 - 131
Perfluoroheptanoic acid (PFHpA)	ND		2.46	2.40		ug/Kg	☼	97	71 - 131
Perfluorooctanoic acid (PFOA)	ND		2.46	2.53		ug/Kg	☼	103	72 - 132
Perfluorononanoic acid (PFNA)	ND		2.46	2.49		ug/Kg	☼	101	73 - 133
Perfluorodecanoic acid (PFDA)	ND		2.46	2.38		ug/Kg	☼	97	72 - 132
Perfluoroundecanoic acid (PFUnA)	ND		2.46	2.73		ug/Kg	☼	111	66 - 126
Perfluorododecanoic acid (PFDoA)	ND		2.46	2.28		ug/Kg	☼	93	71 - 131
Perfluorotridecanoic acid (PFTrDA)	ND		2.46	2.26		ug/Kg	☼	92	71 - 131
Perfluorotetradecanoic acid (PFTeA)	ND		2.46	2.46		ug/Kg	☼	100	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.46	2.48		ug/Kg	☼	101	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.46	2.15		ug/Kg	☼	87	53 - 130
Perfluorobutanesulfonic acid (PFBS)	ND		2.17	2.20		ug/Kg	☼	101	69 - 129
Perfluoropentanesulfonic acid (PFPeS)	ND		2.31	2.45		ug/Kg	☼	106	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	ND		2.24	2.11		ug/Kg	☼	91	62 - 122
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.34	2.35		ug/Kg	☼	100	76 - 136
Perfluorooctanesulfonic acid (PFOS)	ND		2.28	2.43		ug/Kg	☼	101	68 - 141
Perfluorononanesulfonic acid (PFNS)	ND		2.36	2.25		ug/Kg	☼	95	72 - 132
Perfluorodecanesulfonic acid (PFDS)	ND		2.37	2.08		ug/Kg	☼	88	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	ND		2.38	1.98		ug/Kg	☼	83	70 - 130
Perfluorooctanesulfonamide (FOSA)	ND		2.46	2.43		ug/Kg	☼	99	77 - 137
NEtFOSA	ND		2.46	2.60		ug/Kg	☼	106	47 - 161
NMeFOSA	ND		2.46	2.46		ug/Kg	☼	100	63 - 148
NMeFOSAA	ND		2.46	2.17		ug/Kg	☼	88	72 - 132
NEtFOSAA	ND		2.46	2.47		ug/Kg	☼	100	72 - 132
NMeFOSE	ND		2.46	2.75		ug/Kg	☼	112	43 - 153

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-88570-10 MS
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: SS06-13.5
Prep Type: Total/NA
Prep Batch: 593768

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
NEtFOSE	ND		2.46	2.51		ug/Kg	☼	102	44 - 155
4:2 FTS	ND		2.30	2.27		ug/Kg	☼	99	68 - 143
6:2 FTS	ND		2.33	2.56		ug/Kg	☼	110	73 - 139
8:2 FTS	ND		2.36	2.49		ug/Kg	☼	106	75 - 135
10:2 FTS	ND		2.37	2.37		ug/Kg	☼	100	69 - 145
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.32	2.58		ug/Kg	☼	111	79 - 139
HFPO-DA (GenX)	ND		2.46	2.44		ug/Kg	☼	99	53 - 158
9Cl-PF3ONS	ND		2.29	2.25		ug/Kg	☼	98	74 - 134
11Cl-PF3OUdS	ND		2.32	2.16		ug/Kg	☼	93	66 - 136

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*85*		*25 - 150*
13C5 PFPeA	*92*		*25 - 150*
13C2 PFHxA	*88*		*25 - 150*
13C4 PFHpA	*92*		*25 - 150*
13C4 PFOA	*89*		*25 - 150*
13C5 PFNA	*93*		*25 - 150*
13C2 PFDA	*87*		*25 - 150*
13C2 PFUnA	*84*		*25 - 150*
13C2 PFDoA	*86*		*25 - 150*
13C2 PFTeDA	*77*		*25 - 150*
13C2 PFHxDA	*71*		*25 - 150*
13C3 PFBS	*87*		*25 - 150*
18O2 PFHxS	*88*		*25 - 150*
13C4 PFOS	*88*		*25 - 150*
13C8 FOSA	*89*		*25 - 150*
d3-NMeFOSAA	*92*		*25 - 150*
d5-NEtFOSAA	*91*		*25 - 150*
d-N-MeFOSA-M	*58*		*25 - 150*
d-N-EtFOSA-M	*57*		*25 - 150*
d7-N-MeFOSE-M	*70*		*10 - 120*
d9-N-EtFOSE-M	*75*		*10 - 120*
M2-4:2 FTS	*96*		*25 - 150*
M2-6:2 FTS	*94*		*25 - 150*
M2-8:2 FTS	*98*		*25 - 150*
13C3 HFPO-DA	*88*		*25 - 150*
13C2 10:2 FTS	*98*		*25 - 150*

Lab Sample ID: 320-88570-10 MSD
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: SS06-13.5
Prep Type: Total/NA
Prep Batch: 593768

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	ND		2.34	2.46		ug/Kg	☼	102	76 - 136	3	30
Perfluoropentanoic acid (PFPeA)	ND		2.34	2.43		ug/Kg	☼	104	69 - 129	4	30
Perfluorohexanoic acid (PFHxA)	ND		2.34	2.25		ug/Kg	☼	96	71 - 131	7	30
Perfluoroheptanoic acid (PFHpA)	ND		2.34	2.40		ug/Kg	☼	103	71 - 131	0	30
Perfluorooctanoic acid (PFOA)	ND		2.34	2.46		ug/Kg	☼	105	72 - 132	3	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-88570-10 MSD
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: SS06-13.5
Prep Type: Total/NA
Prep Batch: 593768

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorononanoic acid (PFNA)	ND		2.34	2.18		ug/Kg	☼	93	73 - 133	13	30
Perfluorodecanoic acid (PFDA)	ND		2.34	2.30		ug/Kg	☼	98	72 - 132	3	30
Perfluoroundecanoic acid (PFUnA)	ND		2.34	2.55		ug/Kg	☼	109	66 - 126	7	30
Perfluorododecanoic acid (PFDoA)	ND		2.34	2.16		ug/Kg	☼	92	71 - 131	5	30
Perfluorotridecanoic acid (PFTrDA)	ND		2.34	2.02		ug/Kg	☼	86	71 - 131	11	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.34	2.38		ug/Kg	☼	102	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.34	2.38		ug/Kg	☼	102	75 - 135	4	30
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.34	2.09		ug/Kg	☼	89	53 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	ND		2.07	2.19		ug/Kg	☼	106	69 - 129	0	30
Perfluoropentanesulfonic acid (PFPeS)	ND		2.19	2.36		ug/Kg	☼	107	66 - 126	4	30
Perfluorohexanesulfonic acid (PFHxS)	ND		2.13	2.06		ug/Kg	☼	93	62 - 122	3	30
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.23	2.19		ug/Kg	☼	99	76 - 136	7	30
Perfluorooctanesulfonic acid (PFOS)	ND		2.17	2.19		ug/Kg	☼	95	68 - 141	11	30
Perfluorononanesulfonic acid (PFNS)	ND		2.25	2.23		ug/Kg	☼	99	72 - 132	1	30
Perfluorodecanesulfonic acid (PFDS)	ND		2.25	2.25		ug/Kg	☼	100	71 - 131	8	30
Perfluorododecanesulfonic acid (PFDoS)	ND		2.26	1.97		ug/Kg	☼	87	70 - 130	1	30
Perfluorooctanesulfonamide (FOSA)	ND		2.34	2.31		ug/Kg	☼	99	77 - 137	5	30
NEtFOSA	ND		2.34	2.30		ug/Kg	☼	99	47 - 161	12	30
NMeFOSA	ND		2.34	2.35		ug/Kg	☼	100	63 - 148	4	30
NMeFOSAA	ND		2.34	2.29		ug/Kg	☼	98	72 - 132	6	30
NEtFOSAA	ND		2.34	2.55		ug/Kg	☼	109	72 - 132	3	30
NMeFOSE	ND		2.34	2.51		ug/Kg	☼	107	43 - 153	9	30
NEtFOSE	ND		2.34	2.44		ug/Kg	☼	104	44 - 155	3	30
4:2 FTS	ND		2.18	2.06		ug/Kg	☼	94	68 - 143	9	30
6:2 FTS	ND		2.22	2.38		ug/Kg	☼	107	73 - 139	7	30
8:2 FTS	ND		2.24	2.64		ug/Kg	☼	118	75 - 135	6	30
10:2 FTS	ND		2.25	2.43		ug/Kg	☼	108	69 - 145	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.20	2.23		ug/Kg	☼	101	79 - 139	15	30
HFPO-DA (GenX)	ND		2.34	2.32		ug/Kg	☼	99	53 - 158	5	30
9Cl-PF3ONS	ND		2.18	2.10		ug/Kg	☼	96	74 - 134	7	30
11Cl-PF3OUdS	ND		2.20	2.07		ug/Kg	☼	94	66 - 136	4	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*76*		*25 - 150*
13C5 PFPeA	*76*		*25 - 150*
13C2 PFHxA	*89*		*25 - 150*
13C4 PFHpA	*85*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-88570-10 MSD
Matrix: Solid
Analysis Batch: 597487

Client Sample ID: SS06-13.5
Prep Type: Total/NA
Prep Batch: 593768

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFOA	85		25 - 150
13C5 PFNA	94		25 - 150
13C2 PFDA	87		25 - 150
13C2 PFUnA	88		25 - 150
13C2 PFDoA	94		25 - 150
13C2 PFTeDA	77		25 - 150
13C2 PFHxDA	70		25 - 150
13C3 PFBS	81		25 - 150
18O2 PFHxS	84		25 - 150
13C4 PFOS	89		25 - 150
13C8 FOSA	93		25 - 150
d3-NMeFOSAA	90		25 - 150
d5-NEtFOSAA	93		25 - 150
d-N-MeFOSA-M	75		25 - 150
d-N-EtFOSA-M	80		25 - 150
d7-N-MeFOSE-M	73		10 - 120
d9-N-EtFOSE-M	77		10 - 120
M2-4:2 FTS	94		25 - 150
M2-6:2 FTS	91		25 - 150
M2-8:2 FTS	98		25 - 150
13C3 HFPO-DA	87		25 - 150
13C2 10:2 FTS	98		25 - 150

Lab Sample ID: MB 320-595066/1-A
Matrix: Water
Analysis Batch: 595986

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 595066

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		5.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluoropentanoic acid (PFPeA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-595066/1-A
Matrix: Water
Analysis Batch: 595986

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 595066

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanesulfonic acid (PFNS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
NEtFOSA	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
NMeFOSA	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
NMeFOSAA	ND		5.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
NEtFOSAA	ND		5.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
NMeFOSE	ND		4.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
NEtFOSE	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
4:2 FTS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
6:2 FTS	ND		5.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
8:2 FTS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
10:2 FTS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
HFPO-DA (GenX)	ND		4.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
9Cl-PF3ONS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1
11Cl-PF3OUdS	ND		2.0		ng/L		06/13/22 11:49	06/15/22 10:21	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*65*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C5 PFPeA	*66*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C2 PFHxA	*62*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C4 PFHpA	*67*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C4 PFOA	*62*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C5 PFNA	*64*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C2 PFDA	*66*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C2 PFUnA	*63*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C2 PFDoA	*63*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C2 PFTeDA	*66*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C2 PFHxDA	*69*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C3 PFBS	*61*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
18O2 PFHxS	*65*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C4 PFOS	*65*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C8 FOSA	*68*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
d3-NMeFOSAA	*66*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
d5-NEtFOSAA	*60*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
d-N-MeFOSA-M	*50*		*20 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
d-N-EtFOSA-M	*50*		*20 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
d7-N-MeFOSE-M	*58*		*10 - 120*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
d9-N-EtFOSE-M	*59*		*10 - 120*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
M2-4:2 FTS	*55*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
M2-6:2 FTS	*68*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
M2-8:2 FTS	*57*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C3 HFPO-DA	*63*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*
13C2 10:2 FTS	*62*		*25 - 150*	*06/13/22 11:49*	*06/15/22 10:21*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-595066/2-A
Matrix: Water
Analysis Batch: 595986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 595066

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	40.0	38.5		ng/L		96	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	37.1		ng/L		93	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	38.1		ng/L		95	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	38.7		ng/L		97	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	37.9		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	40.0	40.2		ng/L		101	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	40.9		ng/L		102	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	38.2		ng/L		95	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	40.7		ng/L		102	71 - 131
Perfluorotridecanoic acid (PFTrDA)	40.0	40.8		ng/L		102	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	39.6		ng/L		99	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	41.2		ng/L		103	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	36.6		ng/L		91	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	38.0		ng/L		107	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	39.0		ng/L		104	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.0		ng/L		104	59 - 119
Perfluoroheptanesulfonic acid (PFHpS)	38.1	41.3		ng/L		108	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	39.1		ng/L		105	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	37.2		ng/L		97	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	36.4		ng/L		94	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	37.7		ng/L		97	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	40.8		ng/L		102	73 - 133
NEtFOSA	40.0	39.7		ng/L		99	78 - 138
NMeFOSA	40.0	40.1		ng/L		100	67 - 154
NMeFOSAA	40.0	39.6		ng/L		99	76 - 136
NEtFOSAA	40.0	40.9		ng/L		102	76 - 136
NMeFOSE	40.0	42.6		ng/L		107	70 - 130
NEtFOSE	40.0	39.6		ng/L		99	71 - 131
4:2 FTS	37.4	35.3		ng/L		95	79 - 139
6:2 FTS	37.9	33.7		ng/L		89	59 - 175
8:2 FTS	38.3	43.2		ng/L		113	75 - 135
10:2 FTS	38.6	36.6		ng/L		95	64 - 142
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	39.2		ng/L		104	79 - 139
HFPO-DA (GenX)	40.0	39.3		ng/L		98	51 - 173
9Cl-PF3ONS	37.3	35.8		ng/L		96	75 - 135
11Cl-PF3OUdS	37.7	40.5		ng/L		108	54 - 114

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	100		25 - 150
13C5 PFPeA	104		25 - 150
13C2 PFHxA	95		25 - 150
13C4 PFHpA	98		25 - 150
13C4 PFOA	93		25 - 150
13C5 PFNA	100		25 - 150
13C2 PFDA	101		25 - 150
13C2 PFUnA	96		25 - 150
13C2 PFDoA	96		25 - 150
13C2 PFTeDA	98		25 - 150
13C2 PFHxDA	105		25 - 150
13C3 PFBS	93		25 - 150
18O2 PFHxS	95		25 - 150
13C4 PFOS	96		25 - 150
13C8 FOSA	98		25 - 150
d3-NMeFOSAA	98		25 - 150
d5-NEtFOSAA	89		25 - 150
d-N-MeFOSA-M	80		20 - 150
d-N-EtFOSA-M	85		20 - 150
d7-N-MeFOSE-M	89		10 - 120
d9-N-EtFOSE-M	87		10 - 120
M2-4:2 FTS	88		25 - 150
M2-6:2 FTS	101		25 - 150
M2-8:2 FTS	84		25 - 150
13C3 HFPO-DA	96		25 - 150
13C2 10:2 FTS	91		25 - 150

Lab Sample ID: LCSD 320-595066/3-A
Matrix: Water
Analysis Batch: 595986

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 595066

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	40.1		ng/L		100	76 - 136	4	30
Perfluoropentanoic acid (PFPeA)			40.0	40.2		ng/L		101	71 - 131	8	30
Perfluorohexanoic acid (PFHxA)			40.0	38.7		ng/L		97	73 - 133	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	36.4		ng/L		91	72 - 132	6	30
Perfluorooctanoic acid (PFOA)			40.0	40.9		ng/L		102	70 - 130	8	30
Perfluorononanoic acid (PFNA)			40.0	40.7		ng/L		102	75 - 135	1	30
Perfluorodecanoic acid (PFDA)			40.0	40.9		ng/L		102	76 - 136	0	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.9		ng/L		100	68 - 128	4	30
Perfluorododecanoic acid (PFDoA)			40.0	41.3		ng/L		103	71 - 131	1	30
Perfluorotridecanoic acid (PFTrDA)			40.0	40.8		ng/L		102	71 - 131	0	30
Perfluorotetradecanoic acid (PFTeA)			40.0	40.5		ng/L		101	70 - 130	2	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	40.4		ng/L		101	76 - 136	2	30
Perfluoro-n-octadecanoic acid (PFODA)			40.0	34.4		ng/L		86	58 - 145	6	30
Perfluorobutanesulfonic acid (PFBS)			35.4	38.0		ng/L		108	67 - 127	0	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-595066/3-A
Matrix: Water
Analysis Batch: 595986

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 595066

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanesulfonic acid (PFPeS)			37.5	37.9		ng/L		101	66 - 126	3	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	35.9		ng/L		99	59 - 119	6	30
Perfluoroheptanesulfonic acid (PFHpS)			38.1	40.7		ng/L		107	76 - 136	1	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.2		ng/L		103	70 - 130	2	30
Perfluorononanesulfonic acid (PFNS)			38.4	35.3		ng/L		92	75 - 135	5	30
Perfluorodecanesulfonic acid (PFDS)			38.6	36.6		ng/L		95	71 - 131	1	30
Perfluorododecanesulfonic acid (PFDoS)			38.7	36.7		ng/L		95	67 - 127	3	30
Perfluorooctanesulfonamide (FOSA)			40.0	39.5		ng/L		99	73 - 133	3	30
NEtFOSA			40.0	41.9		ng/L		105	78 - 138	5	30
NMeFOSA			40.0	40.3		ng/L		101	67 - 154	1	30
NMeFOSAA			40.0	37.5		ng/L		94	76 - 136	5	30
NEtFOSAA			40.0	42.4		ng/L		106	76 - 136	4	30
NMeFOSE			40.0	43.4		ng/L		109	70 - 130	2	30
NEtFOSE			40.0	40.7		ng/L		102	71 - 131	3	30
4:2 FTS			37.4	36.8		ng/L		98	79 - 139	4	30
6:2 FTS			37.9	31.7		ng/L		84	59 - 175	6	30
8:2 FTS			38.3	39.7		ng/L		104	75 - 135	8	30
10:2 FTS			38.6	39.9		ng/L		104	64 - 142	9	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			37.7	37.9		ng/L		101	79 - 139	3	30
HFPO-DA (GenX)			40.0	43.5		ng/L		109	51 - 173	10	30
9Cl-PF3ONS			37.3	35.6		ng/L		95	75 - 135	1	30
11Cl-PF3OUdS			37.7	40.6		ng/L		108	54 - 114	0	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*91*		*25 - 150*
13C5 PFPeA	*94*		*25 - 150*
13C2 PFHxA	*87*		*25 - 150*
13C4 PFHpA	*90*		*25 - 150*
13C4 PFOA	*88*		*25 - 150*
13C5 PFNA	*94*		*25 - 150*
13C2 PFDA	*93*		*25 - 150*
13C2 PFUnA	*89*		*25 - 150*
13C2 PFDoA	*90*		*25 - 150*
13C2 PFTeDA	*92*		*25 - 150*
13C2 PFHxDA	*95*		*25 - 150*
13C3 PFBS	*86*		*25 - 150*
18O2 PFHxS	*86*		*25 - 150*
13C4 PFOS	*89*		*25 - 150*
13C8 FOSA	*90*		*25 - 150*
d3-NMeFOSAA	*91*		*25 - 150*
d5-NEtFOSAA	*82*		*25 - 150*
d-N-MeFOSA-M	*68*		*20 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-595066/3-A
Matrix: Water
Analysis Batch: 595986

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 595066

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
d-N-EtFOSA-M	69		20 - 150
d7-N-MeFOSE-M	82		10 - 120
d9-N-EtFOSE-M	82		10 - 120
M2-4:2 FTS	85		25 - 150
M2-6:2 FTS	93		25 - 150
M2-8:2 FTS	80		25 - 150
13C3 HFPO-DA	85		25 - 150
13C2 10:2 FTS	81		25 - 150

LCMS

Prep Batch: 593768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-88570-1	SS01-14.5	Total/NA	Solid	SHAKE	
320-88570-2	SS02-14.5	Total/NA	Solid	SHAKE	
320-88570-3	SS03-3.5	Total/NA	Solid	SHAKE	
320-88570-4	SS03-14.5	Total/NA	Solid	SHAKE	
320-88570-5	SS02D	Total/NA	Solid	SHAKE	
320-88570-6	SS04-2.1	Total/NA	Solid	SHAKE	
320-88570-7	SS04-12.8	Total/NA	Solid	SHAKE	
320-88570-8	SS05-12.5	Total/NA	Solid	SHAKE	
320-88570-9	SS06-5.8	Total/NA	Solid	SHAKE	
320-88570-10	SS06-13.5	Total/NA	Solid	SHAKE	
MB 320-593768/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-593768/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-88570-10 MS	SS06-13.5	Total/NA	Solid	SHAKE	
320-88570-10 MSD	SS06-13.5	Total/NA	Solid	SHAKE	

Prep Batch: 595066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-88570-11	SS01GW	Total/NA	Water	3535	
320-88570-12	SS01GWD	Total/NA	Water	3535	
320-88570-13	SS02GW	Total/NA	Water	3535	
320-88570-14	SS03GW	Total/NA	Water	3535	
320-88570-15	SS04GW	Total/NA	Water	3535	
320-88570-16	SS05GW	Total/NA	Water	3535	
320-88570-17	SS06GW	Total/NA	Water	3535	
320-88570-18	FB-20220601	Total/NA	Water	3535	
MB 320-595066/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-595066/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-595066/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 595986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-88570-11	SS01GW	Total/NA	Water	537 (modified)	595066
320-88570-12	SS01GWD	Total/NA	Water	537 (modified)	595066
320-88570-13	SS02GW	Total/NA	Water	537 (modified)	595066
320-88570-14	SS03GW	Total/NA	Water	537 (modified)	595066
MB 320-595066/1-A	Method Blank	Total/NA	Water	537 (modified)	595066
LCS 320-595066/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	595066
LCSD 320-595066/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	595066

Analysis Batch: 595989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-88570-15	SS04GW	Total/NA	Water	537 (modified)	595066

Analysis Batch: 595991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-88570-16	SS05GW	Total/NA	Water	537 (modified)	595066
320-88570-17	SS06GW	Total/NA	Water	537 (modified)	595066
320-88570-18	FB-20220601	Total/NA	Water	537 (modified)	595066

LCMS

Analysis Batch: 597487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-88570-1	SS01-14.5	Total/NA	Solid	537 (modified)	593768
320-88570-2	SS02-14.5	Total/NA	Solid	537 (modified)	593768
320-88570-3	SS03-3.5	Total/NA	Solid	537 (modified)	593768
320-88570-4	SS03-14.5	Total/NA	Solid	537 (modified)	593768
320-88570-5	SS02D	Total/NA	Solid	537 (modified)	593768
320-88570-6	SS04-2.1	Total/NA	Solid	537 (modified)	593768
320-88570-7	SS04-12.8	Total/NA	Solid	537 (modified)	593768
320-88570-8	SS05-12.5	Total/NA	Solid	537 (modified)	593768
320-88570-9	SS06-5.8	Total/NA	Solid	537 (modified)	593768
320-88570-10	SS06-13.5	Total/NA	Solid	537 (modified)	593768
MB 320-593768/1-A	Method Blank	Total/NA	Solid	537 (modified)	593768
LCS 320-593768/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	593768
320-88570-10 MS	SS06-13.5	Total/NA	Solid	537 (modified)	593768
320-88570-10 MSD	SS06-13.5	Total/NA	Solid	537 (modified)	593768

General Chemistry

Analysis Batch: 593245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-88570-1	SS01-14.5	Total/NA	Solid	D 2216	
320-88570-2	SS02-14.5	Total/NA	Solid	D 2216	
320-88570-3	SS03-3.5	Total/NA	Solid	D 2216	
320-88570-4	SS03-14.5	Total/NA	Solid	D 2216	
320-88570-5	SS02D	Total/NA	Solid	D 2216	
320-88570-6	SS04-2.1	Total/NA	Solid	D 2216	
320-88570-7	SS04-12.8	Total/NA	Solid	D 2216	
320-88570-8	SS05-12.5	Total/NA	Solid	D 2216	
320-88570-9	SS06-5.8	Total/NA	Solid	D 2216	
320-88570-10	SS06-13.5	Total/NA	Solid	D 2216	

Client Sample ID: SS01-14.5
Date Collected: 06/01/22 11:33
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Client Sample ID: SS01-14.5
Date Collected: 06/01/22 11:33
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-1
Matrix: Solid
Percent Solids: 90.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.55 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 00:44	RS1	TAL SAC

Client Sample ID: SS02-14.5
Date Collected: 06/01/22 12:50
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Client Sample ID: SS02-14.5
Date Collected: 06/01/22 12:50
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-2
Matrix: Solid
Percent Solids: 83.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 00:54	RS1	TAL SAC

Client Sample ID: SS03-3.5
Date Collected: 06/01/22 09:11
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Client Sample ID: SS03-3.5
Date Collected: 06/01/22 09:11
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-3
Matrix: Solid
Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.57 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 01:04	RS1	TAL SAC

Client Sample ID: SS03-14.5
Date Collected: 06/01/22 09:42
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Lab Chronicle

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS03-14.5
Date Collected: 06/01/22 09:42
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-4
Matrix: Solid
Percent Solids: 86.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 01:14	RS1	TAL SAC

Client Sample ID: SS02D
Date Collected: 06/01/22 13:00
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Client Sample ID: SS02D
Date Collected: 06/01/22 13:00
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-5
Matrix: Solid
Percent Solids: 85.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.44 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 01:24	RS1	TAL SAC

Client Sample ID: SS04-2.1
Date Collected: 06/01/22 14:10
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Client Sample ID: SS04-2.1
Date Collected: 06/01/22 14:10
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-6
Matrix: Solid
Percent Solids: 77.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.13 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 01:34	RS1	TAL SAC

Client Sample ID: SS04-12.8
Date Collected: 06/01/22 14:35
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Client Sample ID: SS04-12.8
Lab Sample ID: 320-88570-7

Date Collected: 06/01/22 14:35
Matrix: Solid
Date Received: 06/03/22 12:30
Percent Solids: 89.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.64 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 01:45	RS1	TAL SAC

Client Sample ID: SS05-12.5
Lab Sample ID: 320-88570-8

Date Collected: 06/01/22 15:55
Matrix: Solid
Date Received: 06/03/22 12:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Client Sample ID: SS05-12.5
Lab Sample ID: 320-88570-8

Date Collected: 06/01/22 15:55
Matrix: Solid
Date Received: 06/03/22 12:30
Percent Solids: 80.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 01:55	RS1	TAL SAC

Client Sample ID: SS06-5.8
Lab Sample ID: 320-88570-9

Date Collected: 06/01/22 17:40
Matrix: Solid
Date Received: 06/03/22 12:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Client Sample ID: SS06-5.8
Lab Sample ID: 320-88570-9

Date Collected: 06/01/22 17:40
Matrix: Solid
Date Received: 06/03/22 12:30
Percent Solids: 75.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.48 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 02:25	RS1	TAL SAC

Client Sample ID: SS06-13.5
Lab Sample ID: 320-88570-10

Date Collected: 06/01/22 17:53
Matrix: Solid
Date Received: 06/03/22 12:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			593245	06/06/22 16:14	TCS	TAL SAC

Lab Chronicle

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS06-13.5
Date Collected: 06/01/22 17:53
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-10
Matrix: Solid
Percent Solids: 78.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.03 g	10.0 mL	593768	06/08/22 11:50	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1			597487	06/22/22 02:35	RS1	TAL SAC

Client Sample ID: SS01GW
Date Collected: 06/01/22 11:53
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.3 mL	10.0 mL	595066	06/13/22 11:49	RAC	TAL SAC
Total/NA	Analysis	537 (modified)		1			595986	06/15/22 10:52	RS1	TAL SAC

Client Sample ID: SS01GWD
Date Collected: 06/01/22 11:53
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			263.7 mL	10.0 mL	595066	06/13/22 11:49	RAC	TAL SAC
Total/NA	Analysis	537 (modified)		1			595986	06/15/22 11:02	RS1	TAL SAC

Client Sample ID: SS02GW
Date Collected: 06/01/22 13:16
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			269.7 mL	10.0 mL	595066	06/13/22 11:49	RAC	TAL SAC
Total/NA	Analysis	537 (modified)		1			595986	06/15/22 11:12	RS1	TAL SAC

Client Sample ID: SS03GW
Date Collected: 06/01/22 10:13
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			271.3 mL	10.0 mL	595066	06/13/22 11:49	RAC	TAL SAC
Total/NA	Analysis	537 (modified)		1			595986	06/15/22 11:22	RS1	TAL SAC

Client Sample ID: SS04GW
Date Collected: 06/01/22 14:56
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			272.2 mL	10.0 mL	595066	06/13/22 11:49	RAC	TAL SAC
Total/NA	Analysis	537 (modified)		1			595989	06/15/22 13:34	S1M	TAL SAC

Lab Chronicle

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Client Sample ID: SS05GW
Date Collected: 06/01/22 17:02
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-16
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			266.9 mL	10.0 mL	595066	06/13/22 11:49	RAC	TAL SAC
Total/NA	Analysis	537 (modified)		1			595991	06/15/22 14:34	K1S	TAL SAC

Client Sample ID: SS06GW
Date Collected: 06/01/22 18:28
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.1 mL	10.0 mL	595066	06/13/22 11:49	RAC	TAL SAC
Total/NA	Analysis	537 (modified)		1			595991	06/15/22 14:44	K1S	TAL SAC

Client Sample ID: FB-20220601
Date Collected: 06/01/22 12:09
Date Received: 06/03/22 12:30

Lab Sample ID: 320-88570-18
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			268.1 mL	10.0 mL	595066	06/13/22 11:49	RAC	TAL SAC
Total/NA	Analysis	537 (modified)		1			595991	06/15/22 14:54	K1S	TAL SAC

Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Valley Science and Engineering
Job ID: 320-88570-1
Project/Site: Albany, OR-2022

Laboratory: Eurofins Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4040	01-29-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
D 2216		Solid	Percent Moisture
D 2216		Solid	Percent Solids

Method Summary

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Valley Science and Engineering
Project/Site: Albany, OR-2022

Job ID: 320-88570-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-88570-1	SS01-14.5	Solid	06/01/22 11:33	06/03/22 12:30
320-88570-2	SS02-14.5	Solid	06/01/22 12:50	06/03/22 12:30
320-88570-3	SS03-3.5	Solid	06/01/22 09:11	06/03/22 12:30
320-88570-4	SS03-14.5	Solid	06/01/22 09:42	06/03/22 12:30
320-88570-5	SS02D	Solid	06/01/22 13:00	06/03/22 12:30
320-88570-6	SS04-2.1	Solid	06/01/22 14:10	06/03/22 12:30
320-88570-7	SS04-12.8	Solid	06/01/22 14:35	06/03/22 12:30
320-88570-8	SS05-12.5	Solid	06/01/22 15:55	06/03/22 12:30
320-88570-9	SS06-5.8	Solid	06/01/22 17:40	06/03/22 12:30
320-88570-10	SS06-13.5	Solid	06/01/22 17:53	06/03/22 12:30
320-88570-11	SS01GW	Water	06/01/22 11:53	06/03/22 12:30
320-88570-12	SS01GWD	Water	06/01/22 11:53	06/03/22 12:30
320-88570-13	SS02GW	Water	06/01/22 13:16	06/03/22 12:30
320-88570-14	SS03GW	Water	06/01/22 10:13	06/03/22 12:30
320-88570-15	SS04GW	Water	06/01/22 14:56	06/03/22 12:30
320-88570-16	SS05GW	Water	06/01/22 17:02	06/03/22 12:30
320-88570-17	SS06GW	Water	06/01/22 18:28	06/03/22 12:30
320-88570-18	FB-20220601	Water	06/01/22 12:09	06/03/22 12:30

Chain of Custody Record

602758

eurofins | Environment Testing TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: Oregon DEQ

TAL-8210

Client Contact	Project Manager: J. Penetar	Site Contact:	Date:	COC No:
Company Name: Valley science and Eng	Tel/Email: jessica.penetar@valleyenv.com	Lab Contact:	Carrier:	1 of 2 COCs
Address: 3511 Pacific Blvd SW	Analysis Turnaround Time			Sampler:
City/State/Zip: Albany OR 97321	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 541-926-7737	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: Valley Fire Control				Job / SDG No.:
Site:				
PO# 2022290005				

320-88570 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Standard PFAS	Sample Specific Notes:
SS01-14.5	6/1	1133	G	S	2			X	
SS02-14.5		1250							
SS03-3.5		911							
SS03-14.5		942							
SS02D		1300							
SS04-2.1		1410							
SS04-12.8		1435							
SS05-12.5		1555							
SS06-5.8		1740							
SS06-13.5		1753							

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☑ Yes ☐ No | Custody Seal No.: 1840039 | Cooler Temp. (°C): Obs'd: 6.0 Corr'd: 6.0 | Therm ID No.: 158

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jessica Penetar	Valley	6/2/22 1300		EE15x	6-3-22 1230 1044
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 6-3-22
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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6/23/2022

Address: ______

Chain of Custody Record 602761

eurofins | Environment Testing TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact		Project Manager: J. Peretas	Site Contact:	Date:	COC No: 2 of 2 COCs
Company Name: Valley Science and Eng		Tel/Email:	Lab Contact:	Carrier:	Sampler:
Address:		Analysis Turnaround Time			For Lab Use Only:
City/State/Zip:		☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
Phone:		TAT if different from Below			Lab Sampling:
Fax:		☐ 2 weeks			
Project Name: Valley Fire Control		☐ 1 week			Job / SDG No.:
Site:		☐ 2 days			
P O #		☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Standard PFAS	Sample Specific Notes:
SS01 GW	6/1	1153	G	GW	2			X	
SS01 GWD	↓	1153	↓	↓	↓			↓	
SS02 GW	↓	1316	↓	↓	↓			↓	
SS03 GW	↓	1013	↓	↓	↓			↓	
SS04 GW	↓	1456	↓	↓	↓			↓	
SS05 GW	↓	1702	↓	↓	↓			↓	
SS06 GW	↓	1828	↓	↓	↓			↓	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ______ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☑ Yes ☐ No | Custody Seal No.: 1840039 | Cooler Temp. (°C): Obs'd: 6.0 Corr'd: 6.0 | Therm ID No.: [illegible]

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
J. Peretas	Valley	6/2/22 1300	[signature]	EETSE	6-3-22 1230
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
					SD 6-3-22
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: Valley Science and Engineering

Job Number: 320-88570-1

Login Number: 88570
List Number: 1
Creator: Maldonado, Letzi A

List Source: Eurofins Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1840039
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Kellmann, Jill

From: Penetar, Jessica A. <Jessica.Penetar@valmont.com>
Sent: Monday, June 6, 2022 7:01 PM
To: Kellmann, Jill
Subject: RE: Eurofins Environment Testing Northern California, LLC sample confirmation files from 320-88570-1 Albany, OR-2022 (External E-Mail)

EXTERNAL EMAIL*

Hi Jill,

I forgot to include that sample on the COC. Please do run the analysis for the 36 PFAS.

Thanks.

Jessica Penetar, PE | Project Engineer
Valley Science and Engineering | 3511 Pacific Blvd SW | Albany, OR 97321
Phone +1 541.812.6621 | Mobile +1 609.227.1195
jessica.penetar@valmont.com | www.valleyirrigation.com/se

From: Jill Kellmann <Jill.Kellmann@et.eurofinsus.com>
Sent: Monday, June 6, 2022 3:40 PM
To: Penetar, Jessica A. <Jessica.Penetar@valmont.com>
Subject: Eurofins Environment Testing Northern California, LLC sample confirmation files from 320-88570-1 Albany, OR-2022 (External E-Mail)

DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

Attached please find the sample confirmation files for job 320-88570-1; Albany, OR-2022.

Receipt
The samples were received on 6/3/2022 12:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 6.0º C.

Receipt Exceptions

The following sample was submitted for analysis, however, it was not listed on the Chain-of-Custody (COC): FB-20220601 (320-88570-18). Please confirm if the laboratory should proceed with the analysis.

Please feel free to contact me if you have any questions.

Thank you.

Jill Kellmann
Client Services Manager

Eurofins Sacramento
Phone: 916-374-4402

E-mail: Jill.Kellmann@et.eurofinsus.com
www.eurofinsus.com/env

Reference: [320-448569]
Attachments: 2