

Expanded Preliminary Assessment

Gresham Fire Training Station

19204 NE San Raphael, Gresham
Multnomah County, Oregon
SEMS No. ORN001020774
ECSI 6458

Submitted to:
Brandon Perkins
Assessment & Brownfields Unit
US Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

October 17, 2023

DRAFT



State of Oregon
DEQ Department of Environmental Quality

This document was prepared by
Oregon Department of Environmental Quality
Site Assessment Program
700 NE Multnomah Street, Suite 600
Portland Oregon, 97232
Contact: Ray Hoy
Phone: 503-229-5069
Ray.Hoy@deq.oregon.gov
www.oregon.gov/deq



DRAFT

Translation or other formats

Español | 한국어 | 繁體中文 | Русский | Tiếng Việt | العربية
800-452-4011 | TTY: 711 | deqinfo@deq.oregon.gov

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age, or sex in administration of its programs or activities. Visit DEQ's Civil Rights and Environmental Justice page.

Table of Contents

List of Acronyms & Abbreviations ..... **v**
1. Introduction **1**
2. Site Description, Operational History, and Waste Characteristics **2**
2.1 Project Location 2
2.2 Site Description and Current Use 2
2.3 Site Ownership History 3
2.4 Site Operations and Waste Characteristics Source Areas 3
2.5 Potential Sources 4
2.6 Previous Investigations 4
2.7 Site Visit 4
3. Limited Sampling Methods and Results **5**
3.1 Sample Collection Methods and Rationale 5
3.1.1 Soil Borings 5
3.1.2 Catch Basins 6
3.1.2 Sediment and Surface Water Samples 6
3.1.3 Quality Assurance and Quality Control 6
3.1.4 Investigation-Derived Waste 6
3.2 Laboratory Analytical Methods 6
3.3 Analytical Results 7
3.3.1 Soil Samples 7
3.3.2 Catch Basin Samples 8
3.3.3 Surface Water and Sediment Analytical Results 8
3.3.4 Groundwater Analytical Results 8
3.4 Screening Detected Concentrations 8
3.4.1 Soil 9
3.4.2 Catch Basins 9
3.4.3 Surface Water and Sediment 9
3.4.4 Groundwater 9
4. Groundwater Migration Pathway **10**
4.1 Geology 10
4.2 Hydrogeology & Aquifers 10
4.3 Groundwater Targets 11
4.3.1 Community Water Systems Information 11
4.3.2 Domestic Well Information 13
4.3.3 Groundwater Resources 13
4.4 Groundwater Conclusions 13

DRAFT

Table of Contents (continued)

5. Surface Water Pathway 14
5.1 Area Setting 14
5.2 Surface Runoff and Probable Point of Entry 14
5.3 Surface Water Targets 15
5.4 Surface Water Conclusions 15
6. Soil Exposure Pathway 16
6.1 Physical Conditions 16
6.2 Soil Targets 16
6.3 Soil Exposure Pathway Conclusions 16
7. Air Migration Pathway 17
7.1 Likelihood of a Release 17
7.2 Air Targets 17
7.3 Air Migration Pathway Conclusions 18
8. Summary and Conclusions 19
9. References 20

Figures

Figure 1 – Site Location Map
Figure 2 – Sample Locations Map
Figure 3 – Portland Water Bureau Well
Figure 4 – PPE Columbia Slough
Figure 5 – Site Radial Distance Map
Figure 6 – Well Location Map
Figure 7 – Fifteen Mile Target Distance Limit (TDL) to Probable Point of Entry (PPE) Map

Tables

Table 1 – Soil Analytical Results PFAS
Table 2 – Groundwater, Surface Water and Sediment Analytical Results PFAS
Table 3 – PCB, SVOC, VOC Analytical Results
Table 4 – Water Well and Groundwater Drinking Water Population Summary
Table 5 – Fishery Data
Table 6 – Summary of Threatened and Endangered Species
Table 7 – Wetlands Frontage Per Water Body
Table 8 – Population Summary
Table 9 – Wetlands Acreage Summary

Appendices

Appendix A – Aerial & Site Photographs
Appendix B – Expanded Preliminary Assessment Work Plan, April 25, 2023
Appendix C – Gresham Fire Station Expanded Preliminary Assessment Memo, August 15, 2023
Appendix D – Analytical Reports, VOCs, SVOCs, and PCBs
Appendix E – Water System Information, Select Water Well Logs

DRAFT

List of Acronyms & Abbreviations

bgs	Below ground surface
cfs	Cubic feet per second
DEQ/ODEQ	Oregon Department of Environmental Quality
DPT	Direct push technology
DWP	Drinking Water Program
EPA	Environmental Protection Agency
mg/kg	Milligrams per kilograms
NOAA	National Oceanic and Atmospheric Administration
NW	Northwest
ODF&W	Oregon Department of Fish & Wildlife
ODHS	Oregon Department of Human Services
OR	Oregon
OWRD	Oregon Water Resource Department
PA	Preliminary Assessment
PCBs	Polychlorinated biphenyls
PFAS	Per- and polyfluoroalkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate acid
PPE	Probable point of entry
PWS	Public Water System
PUD	Public Utility District
PWB	Portland Water Bureau
RBC	Risk based concentration
Rd	Road
SEMS	Superfund Enterprise Management System
SGA	Sandstone Gravel Aquifer
TGA	Troutdale Sandstone Aquifer
TSA	Troutdale Sandstone Aquifer
SI	Site Inspection
TDL	Target distance limit
TPH	Total petroleum hydrocarbons
µg/l	Micrograms per liter
US	United States
VOCs	Volatile organic compounds

DRAFT

1. Introduction

Pursuant to Cooperative Agreements (V-96089707-2 and V-96089708-0) between the Environmental Protection Agency and the Oregon Department of Environmental Quality, the DEQ conducted an Expanded Preliminary Assessment at the Gresham Fire Training Center located at 19204 NE San Raphael St in Gresham, Oregon (Site).

Preliminary Assessments are intended generally to identify potential hazards at a site, identify sites that require immediate action, and to establish priorities for sites requiring in-depth investigations. The Preliminary Assessment is based on readily available information about the Site and is not a full investigation or characterization of the Site. An Expanded Preliminary Assessment includes limited sampling.

The Gresham Fire Training Center Expanded Preliminary Assessment was conducted to identify potential public health and environmental threats related to the Site. The Expanded Preliminary Assessment is based on both data collected from the Site and data derived from the sources listed in the reference section of this report. The scope of the investigation includes review of available file information, interviews, a comprehensive target survey, and limited soil, sediment, surface water, and groundwater sampling.

DRAFT

2. Site Description, Operational History, and Waste Characteristics

The Site is a fire-fighting training facility and has been operating as a fire-fighting facility since the1970's. A site location map is included as Figure 1.

2.1 Project Location

Site Name:	Gresham Fire Training Center
SEMS No.:	ORN001020774
Site Address:	19204 NE San Raphael St, Gresham, Oregon 97230
County:	Multnomah
Congressional District:	Oregon's 3rd District
Latitude:	45°32'02.64" North
Longitude:	122°27'57.14" West
Legal Description:	Multnomah County Map ID 1N3E29D Tax lot: 900
Site Owner(s)	Rural Fire District No 10 Lease – Hughes Fire Equipment Inc PO Box 517 Troutdale, OR 97060 (503) 618-2847
Site Operator(s)/Contact(s):	Peter Graves Gresham Fire Chief 19204 NE San Raphael Gresham, Oregon 97230 (503) 586-9998

2.2 Site Description and Current Use

The Site is an active fire-fighting training facility supporting the City of Gresham and City of Portland Fire Fighting programs. Information regarding operational fire training history is limited, however, Captain Greg Renfro, interviewed during DEQ's site visit on March 7, 2023, stated fire-fighting training activities have been conducted at the Site for the past 30 to 40 years.

The 3.65 acres rectangular Site has four buildings, two built in 1970, one built in 1975, and the last built in 2010 [1]. Additionally, a fire-training tower is present located in the center of the Site. Aside from the buildings, the majority of the property is asphalt, with a graveled parking area, and several grass/vegetation areas. The Site is relatively flat at

DRAFT

an elevation of 323 feet above mean sea level with a gentle slope to the north towards NE San Rafael Street.

The Site is located in a commercial zone along with a mix of residential, manufacturing, agricultural, and vacant properties. The Site is bordered to the north by NE San Rafael St and industrial businesses, to the east by a welding supply business and mini storage facility, to the south by NE Halsey St and single-family residential, and to the west by NE 192nd Ave and industrial businesses.

An Oregon Water Resources Department (OWRD) Oregon Water Supply Well Report, dated May 13, 2009, shows a community water well is located on the property immediately adjacent to the southern end of the Site (see Figure 2). The well is owned by Rockwood Water People's Utility District (PUD) and completed to a depth of 734 feet below ground surface (bgs).

2.3 Site Ownership History

The current owner of the property is Rural Fire District No 10. The Rural Fire District has owned the property since 1970 when it was purchased for the purpose of fire district according to Chief, Peter Graves. Multnomah County records show that 2 buildings were built in 1970. Prior to the construction of the Fire Training Center, the property was undeveloped.

Aerial photographs of the Site were obtained from the University of Oregon Library for the following years: 1948, 1956, 1964, 1970, 1975, 1980, 1990, 2000, 2012 and 2023. Google Earth was utilized to obtain a 2023 aerial photograph. The property appears to be first developed in 1970 with the main current buildings. The 1980 aerial photograph shows all the current day buildings are present. The aerial photographs are included in Appendix A.

2.4 Site Operations and Waste Characteristics Source Areas

The Site has operated as a Fire District Center for approximately 53 years. Operations at the Site include fire-fighting training. Training exercises, that use fire-fighting foam, have been performed for decades at the property. Fire-fighting training facilities, including the Site, used fire-fighting foam that contained per- and polyfluoroalkyl substances, commonly known as PFAS, including perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) for fire-fighting training activities. Fire-fighting foam containing PFAS was used at the Site for over 20 years.

DRAFT

Historical releases of PFAS have not been documented at the Site. No previous investigations, cleanup activities, previous regulatory actions, permitting activities nor enforcement actions have occurred at the Site.

Fire Captain, Greg Renfro, indicated fire-fighting foam with PFAS and other formulations have been used at the Site. Most fire-fighting jurisdictions have been using fire-fighting foam with PFAS formulations over the past two decades but have recently been moving towards non-PFAS formulations over the past year. According to the Fire Captain, storage of fire-fighting foam is carried on the fire trucks directly, and stored in containers on the fire trucks. Bulk storage of PFAS is stored at the Portland International Airport and not at the Site.

2.5 Potential Sources

Areas of potential contamination are based on areas where foam was historically applied, primarily through fire training activities. In general, the areas include the grass covered training area in the vicinity of boring S2 shown on Figure 2, the tower located in the middle of the Site, and the catch basins G1 shown on Figure 2. These three locations are the places where past releases are most likely to occur. Site photos are included in Appendix A.

2.6 Previous Investigations

The City of Portland Water Bureau (PWB) has sampled for PFAS in PWB municipal wells. Concentrations of PFAS was detected in well PWB-1, located approximately 1.1 miles north of the Site (see Figure 3). The source of PFAS contamination in well PWB-1 is unknown and the Site is part of a larger effort to evaluate potential PFAS sources.

DEQ completed a site screening in June 2022 and ranked the Site as a high priority for further assessment based on the former use of fire-fighting foam containing PFAS. No previous investigations have been performed at the Site to DEQ's knowledge.

2.7 Site Visit

A site visit was conducted by DEQ on March 7, 2023 for the purpose of confirming sampling locations and interviewing the Fire Captain. Site photographs are included in Appendix A.

DRAFT

3. Limited Sampling Methods and Results

In order to further evaluate potential source areas identified at the Site, DEQ performed a limited sampling effort as part of the Expanded Preliminary Assessment on May 24-25, 2023. The sampling effort included the collection of subsurface soil, sediment, surface water, and groundwater samples. Sampling was performed in accordance with the *Expanded Preliminary Assessment Gresham Fire Training Center Work Plan* (Work Plan) dated April 25, 2023 and the DEQ/EPA PA/SI Investigations Quality Assurance Project Plan dated December 17, 2017.

Prior to performing ground disturbing actions, DEQ consulted with the Oregon State Historic Preservation Office and tribal partners as required by Section 106 of the National Historic Preservation Act. An Inadvertent Discovery Plan was also prepared for this project. A review of threatened and endangered species within the vicinity of the Site was performed by DEQ in accordance with the Endangered Species Act. Documentation of consultations and threatened and endangered species review was provided to EPA prior to field work.

3.1 Sample Collection Methods and Rationale

DEQ's contractor, Apex Companies, LLC, performed all sampling activities in accordance with its Standard Operating Procedures (SOPs) included in the Work Plan. PFAS contamination prevention protocols and SOPs for PFAS were implemented during the field activities and are described in more detail in the Work Plan. The Work Plan including the SOPs is included in Appendix B.

Apex's August 15, 2023 *Gresham Fire Station Expanded Preliminary Site Assessment* Memorandum (Memo) summarizes field activities and observations performed to collect samples. The Memo is included in Appendix C and includes boring logs, OWRD geotechnical hole reports, and analytical reports for analysis performed by Pace Analytical National. Analytical reports for analysis performed by the EPA Region 10 laboratory are included in Appendix D.

3.1.1 Soil Borings

Yellow Jacket Drilling Services LLC, under Apex's oversight, advanced four soil borings (S-1 to S-4) using sonic drilling methods on May 24 and 25, 2023. Continuous soil cores were collected and logged by Apex using the Unified Soil Classification System. Apex screened soil for the potential presence of petroleum hydrocarbons and volatile organic

compounds (VOCs) by sheen testing and measuring with a photoionization detector (PID).

Borings S-1 was advanced to a total depth of 60 feet bgs. Borings S-2 and S-3 were advanced to a total depth of 30 feet bgs. Borings S-4 was advanced to a total depth of 40 feet bgs. Groundwater was only encountered in boring S-2 at a depth of 14 feet bgs. Boring logs are included in Appendix C.

One soil sample was collected from each boring at 5 feet bgs and submitted for analysis. A groundwater sample was collected from boring S-2 and submitted for analysis.

3.1.2 Catch Basins

Apex collected samples G-1 and G-2 from accumulated solids from two stormwater catch basins located one the northern portion of the property were the topography slopes down. The samples were submitted for analysis.

3.1.2 Sediment and Surface Water Samples

Preliminary stormwater conveyance system mapping indicates the probable point of entry from the Site is an outfall on the Columbia Slough (see Figure 4). The nearest address to the outfall location is 19255 NE Sandy Blvd, Portland, OR 97230.

Apex collected one sediment (SED-1) and one surface water (SW-1) sample at the outfall and submitted the samples for analysis.

3.1.3 Quality Assurance and Quality Control

Two soil, one groundwater, and one surface water duplicate samples, two trip blanks, and two rinsate samples were collected and submitted for the same analysis as the parent sample.

3.1.4 Investigation-Derived Waste

Investigation-derived wastes (IDW) consisted of purge water, decontamination water, and soil cuttings. IDW was stored in labeled drums and characterized for disposal. IDW was transported to Chemical Waste Management of the Northwest disposal facility on August 17, 2023.

3.2 Laboratory Analytical Methods

Apex followed chain-of-custody procedures during transport of samples to Pace Analytical and US EPA Region 10 Laboratory.

DRAFT

Soil, catch basin residuals, and groundwater samples were analyzed for one or more of the analytical methods listed below by the indicated laboratory.

Pace Analytical Laboratory of Minneapolis, Maryland

- PFAS by EPA Method 537.1.

US EPA Region 10 Laboratory

- VOCs by EPA Method 8260D;
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270E; and
- Polychlorinated biphenyls (PCBs) by EPA Method 8082).

Sediment and surface water samples were analyzed for PFAS by EPA Method 537.1 by Pace Analytical Laboratory of Minneapolis, Maryland.

Additional samples were collected and analyzed for quality assurance and IDW disposal purposes.

3.3 Analytical Results

Analytical results are summarized on Table 1 through Table 3. Sample locations are shown on Figures 2 and 4. Complete analytical reports are included in Appendices C and D.

3.3.1 Soil Samples

One or more PFAS compound was detected in each of the soil samples and duplicate samples analyzed from each soil boring at 5 feet bgs. PFAS chemicals detected include PFOS, PFOA, perfluorohexanoic acid (PFHxA), perfluorohexanesulfonic acid (PFHxS), and perfluorobutanoic acid (PFBA) (all commonly associated with fire training). Newer-formulation “telomer” PFAS chemicals (e.g., 8:2 FTS) were also detected in two soil samples indicating multiple formulations of PFAS have been used at the site. The maximum PFAS concentration detected is PFOS at 47.7 micrograms per kilograms (µg/kg).

One soil sample from each soil boring collected at 5 feet bgs was analyzed for VOCs. Concentrations of VOCs were not detected in the soil samples or duplicate samples.

One soil sample from each soil boring collected at 5 feet bgs was analyzed for SVOCs. Bis(2-ethylhexyl) phthalate was detected in the soil samples collected at 5 feet bgs from borings S-2, S-3, and S-4 at 61 µg/kg, 59 µg/kg, and 63 µg/kg, respectively. No other SVOCs were detected.

DRAFT

The soil sample from boring S1 was also analyzed for PCBs. Concentrations of PCBs were not detected in the soil sample or duplicate sample.

3.3.2 Catch Basin Samples

Grab samples (G-1, G-2) were collected from residuals in two catch basins and analyzed for PFAS. PFAS was detected in each soil sample and the duplicate. The maximum PFAS concentration detected is PFOS at 330 µg/kg. PFAS chemicals detected in addition to PFOS include PFOA, PFHxA, PFHxS, and PFBA (all commonly associated with fire training). Newer-formulation "telomer" PFAS chemicals (e.g., 8:2 FTS) were also detected in two catch basin samples and the duplicate sample.

3.3.3 Surface Water and Sediment Analytical Results

One surface water sample (SW-1) and one sediment sample (SED-1) were collected at the Columbia Slough and analyzed for PFAS. The surface water sample had detections of five PFAS compounds: PFOS (35.2 nanograms per liter [ng/L]), PFOA (12.2 ng/L), PFBA (6.7 ng/L), PFHxS (7.9 ng/L), and PFNA (6.8 ng/L).

The sediment sample collected from the presumed outfall had detections of four PFAS compounds: PFOS (1.0 µg/kg), PFHxS (0.13 µg/kg), NEtFOSE (0.14 µg/kg) and PFOSA (0.61 µg/kg).

3.3.4 Groundwater Analytical Results

The groundwater sample (S-2) collected from boring S-2 was analyzed for PFAS, VOCs, and SVOCs.

The groundwater sample had detections of seven PFAS compounds: PFOS (482 ng/L), PFOA (79.6 ng/L), PFHxA (54.5 ng/L), PFBA (26.8 ng/L), PFHxS (42.9 ng/L), PFPeA (102 ng/L), and perfluoroheptanoic acid (21.4 ng/L).

Concentrations of 2-propanone (1.1 micrograms per liter [µg/L]) and benzo(a)anthracene (1.0 µg/L) were also detected in the groundwater sample.

3.4 Screening Detected Concentrations

Detected PFAS concentrations in soil and groundwater were compared to EPA regional screening levels (RSLs) [2]. Detected concentrations of SVOCs and VOCs in soil and groundwater were compared to generic risk-based concentrations (RBCs) [3] to identify contaminants of potential concern, receptors, and pathways. Screening levels are included on Tables 1 through 3.

DRAFT

3.4.1 Soil

PFOS concentrations detected in catch basin residual samples G-2 and the duplicate sample of G-1 (G-1 DUP) exceeded the direct contact value for residential exposure (130 µg/kg), but did not exceed the industrial direct contact screening level (1,600 µg/kg).

PFOS and PFNA concentrations detected in soil samples S-1, S-1 DUP, S-2, and S-3, PFOA concentrations detected samples S-1 and S-3, and PFHxS concentrations detected in soil samples S-1, S-1 DUP, S-2, S-3, S-4, and S-4 DUP exceeded EPAs groundwater protection RSLs.

3.4.2 Catch Basins

PFOS, PFHxA, and PFHxS concentrations detected in soil samples G-1, G-1 DUP, and G-2, PFOA and PFNA concentrations detected samples G-1 DUP and G-2 exceeded EPAs groundwater protection RSLs.

1,2,4-trimethylbenzene, toluene, anthracene, benzo(a)anthracene, and benzo(a)pyrene exceeded one or more generic RBC.

3.4.3 Surface Water and Sediment

The PFOS concentration detected in sediment sample SED-1 exceeded EPAs groundwater protection RSLs.

PFOS detected in the surface water sample SW-1 exceeded EPA drinking water health advisory level (HAL), EPA drinking water proposed maximum contaminant level (MCL), and Oregon Health Authority (OHA) drinking water HAL.

PFOA detected in surface water sample SW-1 exceeded EPA drinking water HAL, EPA drinking water proposed MCL.

3.4.4 Groundwater

PFOS and PFOA detected in groundwater sample S-2 exceeded EPA tapwater RSL, EPA drinking water HAL, EPA drinking water proposed MCL, and OHA drinking water HAL.

PFHxS detected in groundwater sample S-2 exceeded the OHA drinking water HAL.

There were no VOC or SVOC groundwater exceedances above screening levels.

DRAFT

4. Groundwater Migration Pathway

The groundwater pathway evaluates the potential for contamination to have migrated to groundwater and the potential impact to identified receptors. The target area for the groundwater migration pathway is a four-mile radius extending from sources at the former Gresham Fire Training Center site. The four-mile radius is shown on Figure 5.

4.1 Geology

The principal geologic units beneath the Site, from shallowest to deepest, include alluvial floodplain deposits (referred to as the Troutdale Gravel, Blue Lake Gravel, and Floodplain sand and silt), siltstone unit 1, a sandstone unit, a conglomerate unit, siltstone unit 2, and a deeper conglomerate unit. These geologic units include four primary aquifers which include, from shallowest to deepest, the Troutdale Gravel Aquifer (TGA) generally ranging from 0 to 100 ft bgs [4,5], the Troutdale Sandstone Aquifer (TSA, also referred as the Upper TSA) generally ranging from 100 to 200 ft bgs and the Troutdale Conglomerate Aquifer (also referred to as the Lower TSA) generally ranging from 50 to 300 feet bgs, and the Sand and Gravel Aquifer (SGA) generally ranging from 300-600 bgs. The TGA is separated from the TSA by Confining Unit 1 (CU1), while the TSA is separated from the SGA by a second confining layer identified as Confining Unit 2 (CU2) [6]. Both confining layers have distinct subunits of siltstone interbedded with sandstone [7].

4.2 Hydrogeology & Aquifers

In natural conditions, shallow TGA groundwater flow is to the north and TGA thickness ranges from 10 to 100 ft bgs. The TSA in the project area consists of the two subunits (CU1 and CU2) are generally unsaturated siltstone/claystone units, although sandstone interbeds are occasionally water-bearing is often encountered within a few feet of ground surface, and artesian conditions have been described historically in portions of the area. The hydraulic conductivity of the entire saturated thickness of the TSA is estimated to range from 30 to 90 feet per day with an average of 50 feet per day. CU1 and CU2 both have an estimated vertical hydraulic conductivity in the range of 10^{-6} to 10^{-4} ft/day. Based on estimated aquifer parameters in the project area, the groundwater velocities in the TSA sandstone range from 93 to 810 feet per year and the TSA conglomerate range from 93 to 930 feet per year. Regional groundwater flow in the TSA and the SGA is generally northward towards the Columbia River. The TGA is isolated from the deeper TSA and SGA aquifers by aquitards.

DRAFT

4.3 Groundwater Targets

A search of the OWRD's well log query database was completed for a 4-mile radius of the Site in order to identify the location of domestic or community water wells [8]. In addition, the Oregon Department of Human Service (ODHS) Drinking Water Program (DWP) database was searched for information on community water systems [9]. The radial distance of domestic, community, and municipal wells from the Site are presented on Table 4. This table also includes the secondary target population data for people served by wells at various distances from the Site. The 4-mile radial search distance is shown on Figure 6. Information on municipal and community water systems and domestic wells is presented below.

4.3.1 Community Water Systems Information

Eight community water systems utilizing groundwater are located within a 4 mile radius of the Site. Community water systems located in Oregon are regulated by the DWP or other delegated authority. To be a regulated system, in Oregon, the water system must have at least four service connections or serve water to public or commercial premises which are used by an average of at least 10 individuals daily at least 60 days each year. Community water systems include municipal water systems [9].

4.3.1.1 Rockwood PUD

Most properties in the area are connected to the Rockwood PUD. The Rockwood PUD municipal system primarily utilizes surface water from the Bull Run Watershed, purchased from the City of Portland [10]. Three wells (Cascade #3, Cascade #4, and Cascade #5) are used to augment purchased water during emergencies or periods of high demand. The system serves a population of 66,000. One well (Cascade #5) is located adjacent to the site (within 0.25 mile) with the other two wells (Cascade #3 and Cascade #4) located 0.25 to 0.5 mile of the site. The system is blended when the wells are in use. Based on the depth of the Cascade wells, the Rockwood PUD wells draw from the Troutdale Conglomerate Aquifer.

4.3.1.2 Sandy Blvd Mobile Villa

The Sandy Blvd Mobile Villa community system utilizes one well. The system serves a population of 269. The well is located within 0.5 to 1 mile. Based on the depth of the Sandy Blvd Mobile Villa well, groundwater would draw from both the Troutdale Sandstone Aquifer and the Troutdale Conglomerate Aquifer.

DRAFT

4.3.1.3 Terrand Mobile Terrance

The Terrand Mobile Terrance community system utilizes one well. The system serves a population of 95. The well is located within 0.5 to 1 mile. Based on the depth of the Terrand Mobile Terrance well, groundwater would draw from Troutdale Conglomerate Aquifer.

4.3.1.4 City of Fairview

City of Fairview system utilizes 2 wells. The systems serves a population of 4,122. One well is located within 1 to 2 miles, and the other well is a blended well located within 2 to 3 miles. Based on the depth of all wells the City of Fairview well draws from Troutdale Conglomerate Aquifer.

4.3.1.5 Interlachen

The Interlachen system utilizes 4 wells and serves a population of 369. All 4 wells are located within 1 to 2 miles. Based on the depth of the wells draw from the Troutdale Sandstone Aquifer and the Troutdale Conglomerate Aquifer.

4.3.1.6 Portland Water Bureau

The PWB provides drinking water to the City of Portland and some surrounding communities. This system serves a population of 444,734. They system consists of both surface water and groundwater sources. The Bull Run Watershed is located over 25 miles east of Gresham and is the primary source used in the system.

The Columbia South Shore Well Field (CSSWF) is a well field used as a secondary source and also provides supplemental supply during high-demand periods. The CSSWF consists of 27 wells. Of these 27 wells, 10 are located between 1 to 2 miles; 9 wells are located between 2 to 3 miles; and 2 wells are located between 3-4 miles of the Site. Based on the 27 wells the PWB utilizes, the wells draw from four different aquifers including the Troutdale Sandstone Aquifer, the Troutdale Conglomerate Aquifer, the Sandstone Gravel Aquifer, and the Blue Lake Aquifer (Appendix E)

A PWB backup well was previously used in water shortage situations, and after the detection of PFAS in this well, the well has been listed as abandoned. This well (PWB-1) is located 1.1 miles to the north of training center (Figure 6).

4.3.1.7 City of Troutdale

The City of Troutdale utilizes 7 wells and serves a population of 111,183. Two wells are located between 2 to 3 miles, and 5 wells 3 to 4 miles of the site. Based on the depth of the 7 wells, both the Sandstone Gravel Aquifer and the Troutdale Conglomerate Aquifer are utilized.

4.3.1.8 City of Wood Village

The City of Wood Village utilizes 4 wells and serves a population of 1,492. All 4 wells are located between 2 to 3 miles of the site. Based on the depth of the 7 wells, both the Sandstone Gravel Aquifer and the Troutdale Conglomerate Aquifer are utilized.

4.3.2 Domestic Well Information

A water well is not located on the Site. There are over 335 domestic wells located with a 4 mile radius of the Site. Using the US Census Bureau average people per household in Multnomah County, domestic wells serve approximately 797 people [11].

4.3.3 Groundwater Resources

Groundwater is used for community and domestic use within the 4 mile radius. Groundwater is not used to irrigate areas greater than 5 acres within the 4 mile radius.

4.4 Groundwater Conclusions

Groundwater was encountered at the Site at approximately 14 feet bgs. Based on the results of limited sampling performed at the Site, a historic release of PFAS has occurred. Additional assessment will be necessary to fully determine the impact to groundwater at the Site.

DRAFT

5. Surface Water Pathway

The surface water pathway evaluates the potential for contamination to have migrated to surface water and the potential impacts to identified receptors. The target area for the surface water migration pathway is 15 miles extending from probably point of entry (PPE) of the discharge outfall into a surface water body. The PPE and the 15-mile in total distance limit (TDL) are shown on Figure 7.

5.1 Area Setting

The Site is located in the Columbia River Watershed Basin. Streams and rivers in the basin flow into the Columbia River. The Columbia Slough (Slough) runs parallel to the Columbia River on the south end and flows in a westerly direction. The Slough extends 31-miles from Fairview Lake (northeast of the Site) to the confluence of the Willamette and Columbia Rivers. The Slough is a tributary to the Willamette River which in turn is a tributary to the Columbia River. The Columbia River discharges into the Pacific Ocean.

Industrial, agricultural, and urban development along the Slough has resulted in the accumulation of a variety of contaminants in Slough sediments. Multiple sources of contaminants have historically entered the Slough from agricultural, industrial, and residential activities along it's 31 miles of water way. PCB, pesticides, and PFAS have accumulated in Slough sediments. Investigations in the Slough will continue to evaluate contributing sources [12].

This area, including the Site, has a temperate marine climate and receives approximately 36 inches of precipitation annually. The average low temperature is 46 degrees Fahrenheit and the average high temperature is 63 degrees Fahrenheit [13]. The annual number of days with measurable precipitation is 153 [14].

The 2 year, 24 hour precipitation event is 2.7 inches. The Site is primarily located in an area of determined to be outside of the 500 year flood plain (Zone X). No portion of the property along the lies within the 100 year flood plain (Zone AE) [15].

5.2 Surface Runoff and Probable Point of Entry

The property is relatively flat and consists of several buildings, a large asphalt parking lot, gravel parking area, a grass lawn, and vegetated areas next to the adjacent road (<5 percent). A total of four catch basins were observed in the parking/fire training areas in the vicinity of the Site. Based on the Site's grade, storm water enters numerous catch basins on the Site and flow down-gradient and towards catch basin G2 (CBG2) (see Figure 2). Stormwater travels from CBG2 laterally to NE 192nd Avenue, before the line

joins with the city stormwater main which flows north towards the Slough. Stormwater flows through the City of Gresham's natural retention pond before discharging from the outfall into the slough. This outfall discharge point is the PPE. The outfall location is shown on Figure 4 and Figure 7.

After stormwater enters the Slough at the PPE, water flows approximately 18 miles before discharging into the Columbia River. The 15-mile TDL endpoint is located adjacent to the Smith and Bybee Wetlands Natural Area (see Figure 7). The annual average discharge rate for the Slough for the 2022 water year (October 2021 to September 2022) is 846 cubic feet per second (cfs) [16].

5.3 Surface Water Targets

The Slough was evaluated for a 15-mile downstream TDL from the probable PPE. Intakes for domestic or community (including municipal) use were not identified within the PPE. Surface water in the Columbia Slough is not usable for drinking water.

Surface water resources are not present within the TDL for irrigation of commercial foods or forage crops, commercial livestock watering, and ingredients in commercial food preparation. Slough is used for boating and canoeing with eight boat launch sites and the Smith and Bybee Natural Area located within the TDL [17]. The fishery within the TDL is used for sport and recreational fishing. Fishing is primarily from the bank. Some of the fish present in the fisheries are sought for consumption. and include chinook salmon, coastal cutthroat trout, coho salmon, black crappie, largemouth bass, bluegill, bullhead catfish, sunfish, and carp. The type of fish found in the Slough fishery is listed on Table 5. A City of Portland Survey indicates local residents eat fish from the Slough [18]. An Oregon Health Authority Fish Advisory recommends eating only 1-fillet meal each month [19].

Federal and state threatened, endangered and rare species are located within and likely utilize or interact with the water bodies within the TDL [20]. The species, listing status, and water bodies are listed on Table 6.

There are numerous wetlands, primarily freshwater emergent, located along the Slough, and within the TDL [21]. Wetlands frontage by water body is shown on Table 7. Wetland locations are shown on Figure 7.

5.4 Surface Water Conclusions

Wetlands, numerous endangered and threatened species and species of concern, and sports and recreational fishing are located within the 15-mile TDL.

DRAFT

6. Soil Exposure Pathway

The soil exposure pathway evaluates the potential for contamination located in the upper two feet to impact nearby receptors.

6.1 Physical Conditions

The property is completely covered by the 2 large buildings, 2 smaller buildings, a large the asphalt parking lot, a gravel parking lot, and a grass lawn. Site photographs are included in Appendix A. The Site is an active commercial property (Fire Fighting Training Center). No sources with contamination were identified within two feet of the ground surface.

6.2 Soil Targets

Land use in the vicinity of the Site is primarily commercial and industrial. The Site is an active fire-fighting training center and 3 to 4 full-time workers are assumed. When training activities commence, as many as 5 to 10 workers may be training at one time. There are no residences, schools, or daycares within the property boundary or within 200 feet. The closest residence is located 500 feet directly to the south of the Site.

There are one daycare and two schools within 0.25 mile to 0.5 mile, two daycares and no schools within 0.5 mile and 1.0 mile, and two daycares and thirteen schools within 1.0 mile to 2.0 miles of the Site. The nearest day care facility is located 0.48 miles to the southwest. The nearest school is located 0.53 mile to the southwest. The school population located in the vicinity of the Site is provided on Table 8. There are no resource uses (commercial agriculture, silviculture, livestock) on the property. No terrestrial sensitive environments were identified on the property.

There are 15,643 people living within a 1-mile radius of the Site. There are 24,005 total school population within 4 miles of the Site. The Circular Area Profile population tool at the Missouri State Data Center was utilized to determine the estimated radial population [22]. The Public School Review was utilized to estimate school population data [23]. The population located in the vicinity of the Site is provided on Table 8.

6.3 Soil Exposure Pathway Conclusions

Soil exposure would primarily occur through subsurface excavation activities.

7. Air Migration Pathway

The air migration pathway evaluates the potential that contamination released to the air could be detected.

7.1 Likelihood of a Release

Compounds, if released, would most likely have migrated into subsurface soil and groundwater. PFAS does not have a primary air migration pathway nor a vapor intrusion from contamination present in the subsurface. Based on current Site conditions a release to the air pathway is not a potential concern.

7.2 Air Targets

The Site is a commercial property and is an fire-fighting training facility. Three to four full-time workers are assumed. When training activities commence, as many as 5 to 10 workers may be training at one time. The closest residence is located 500 feet directly to the south of the Site.

There are one daycare and two schools within 0.25 mile to 0.5 mile, two daycares and no schools within 0.5 mile and 1.0 mile, and two daycares and thirteen schools within 1.0 mile to 2.0 miles of the Site. The nearest day care facility is located 0.48 miles to the southwest. The nearest school is located 0.53 mile to the southwest. The school population located in the vicinity of the Site is provided on Table 8.

There are 15,643 living within a 1-mile radius of the Site. There are 24,055 total school population within 4 miles of the Site. The Circular Area Profile population tool at the Missouri State Data Center was utilized to determine the estimated radial population. The Circular Area Profile population tool uses the population data from the 2020 Census. The population located in the vicinity of the Site is provided on Table 8.

Federal and state threatened, endangered and rare species are located within 4 miles of the Site and are listed on Table 6.

There are numerous wetlands, primarily freshwater emergent, located along the Slough, Columbia River, Salish Ponds, and Sandy River within 4 miles of the Site. Wetlands acreage by water body is shown on Table 7.

There are no resource uses (commercial agriculture, silviculture, livestock) on the property or within 0.5 mile.

DRAFT

7.3 Air Migration Pathway Conclusions

Based on current Site conditions a release to the air pathway from the Site is not potential concern.

DRAFT

8. Summary and Conclusions

The Site has operated as a Fire District Center for an approximately 53 years. Based on the results of limited sampling performed at the Site, releases of the PFAS have been documented at the Site in both soil and groundwater at the Site. PFAS was also found at the outfall in sediment and surface water at the PPE, however the outfall accepts stormwater and groundwater from multiple sources and therefore the PFAS can't be attributed solely to the Site

Groundwater was encountered at the Site at approximately 14 feet bgs. Additional assessment will be necessary to fully determine the impact to groundwater at the Site.

Wetlands, numerous endangered and threatened species and species of concern, and sports and recreational fishing are located within the 15 mile TDL.

Soil exposure would primarily occur through subsurface excavation activities.

Based on current Site conditions a release to the air pathway through vapor intrusion into the Site building is a not a potential concern.

DRAFT

9. References

[1] Multnomah County Records, May 2023 Division, of Assessment and Taxation, https://www.multco.us/records/property-ownership-and-tax-information

[2] US Environmental Protection Agency (EPA), May 2023, Regional Screening Levels (RSLs) – Generic Tables, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.

[3] Oregon Department of Environmental Quality (ODEQ), September 22, 2003 updated November 2015, *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* guidance, http://www.deq.state.or.us/lq/rbdm.htm.

[4] Swanson, R.D., McFarland, W.D., Gonthier, J.B., and Wilkinson, J.M., 1993, A description of hydrogeologic units in the Portland basin, Oregon, and Washington; U.S. Geological Survey Water Resources Investigations Report 90-4196, 64 p.

[5] Landau Associates, 1995. Report, Phase III RCRA Facility Investigation, Boeing Portland, Gresham, Oregon. Prepared for the Boeing Company. July 31.

[6] Oregon Department of Environmental Quality (DEQ), 1996. DEQ Remedial Action Record of Decision for the East Multnomah County Groundwater Contamination Site, Troutdale Sandstone Aquifer. Oregon Department of Environmental Quality, Waste Management & Cleanup Division. 31 December.

[7] Oregon Department of Environmental Quality, 2020a. DEQ Approval of Data Gaps Investigation Work Plan – East Multnomah County Troutdale Sandstone Aquifer Remedy (ECSI 1479), 12 March 2020. Orr, Elizabeth L., Orr, William N., 2000, *Geology of Oregon*, Fifth Edition, Kendall/Hunt Publishing Company

[8] Oregon Water Resources Department, *Well Log Query Application*, http://apps.wrd.state.or.us/apps/gw/well_log/. Accessed online July 27, 2023.

[9] ODHS, Drinking Water Program (DWP), *Drinking Water Program Data,* https://yourwater.oregon.gov/. Accessed online July 27, 2023.

[10] Portland Water Bureau, About Portland's Water System, https://www.portland.gov/water/about-portlands-water-system#toc-where-does-my-tap-water-come-from-. Accessed July 27, 2023.

[11] U.S. Census 2010, American Fact Finder, http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed online July 27, 2023.

[12] Oregon Department of Environmental Quality. Columbia Slough Sediment Project. https://www.oregon.gov/deq/hazards-and-cleanup/cleanupsites/pages/columbia-slough.aspx. Accessed online October 13, 2023

[13] U.S. Climate Data, https://www.usclimatedata.com/climate/portland/oregon/united-states/usor0275. Accessed online July 23, 2023.

[14] National Oceanic and Atmospheric Administration (NOAA), NOAA Atlas 2 Precipitation Frequency Estimates, http://www.nws.noaa.gov/oh/hdsc/noaaatlas2.htm. Accessed online July 23, 2023.

DRAFT

[15] Federal Emergency Management Agency (FEMA), *Flood Insurance Rate Map, Multnomah County, Oregon and Unincorporated Areas*, June 2, 1999, https://msc.fema.gov/portal. Accessed online July 25, 2023.

[16] U.S. Geological Survey. About Water Data For the Nation. https://waterdata.usgs.gov/monitoring-location/14211820/#parameterCode=00060&period=P365D&showMedian=true. Accessed online July 27, 2023.

[17] Columbia Slough. Wikipedia. https://en.wikipedia.org/wiki/Columbia_Slough. Accessed online October 16, 2023.

[18] City of Portland, August, 2023, Fish Included in the Columbia Slough Fish Advisory; https://www.portland.gov/bes/protecting-rivers-streams/columbia-slough-fish-advisory/resident-fish. Accessed online on August 9, 2023.

[19] Oregon Health Authority Fish Advisory. 2023. https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/FISHCONSUMPTION/Documents/FINAL%20PUBS%20Columbia%20Slough%20Tech%20Report%20Document.pdf. Accessed online October 16, 2023.

[20] Oregon Biodiversity Information Center, February 28, 2023, Rare, threatened, and endangered plant, and animal records search.

[21] U.S. Fish & Wildlife Service, Wetlands Information, Oregon Natural Heritage Information Center Statewide Wetlands geodatabase, April, 2023.

[22] Missouri Census Data Center, *Circular Area Profiles (CAPS)*, https://mcdc.missouri.edu/. Accessed online August 9, 2023.

[23] Public School Review webpage: http://www.publicschoolreview.com/find-schools, Accessed online August 9, 2023.

DRAFT

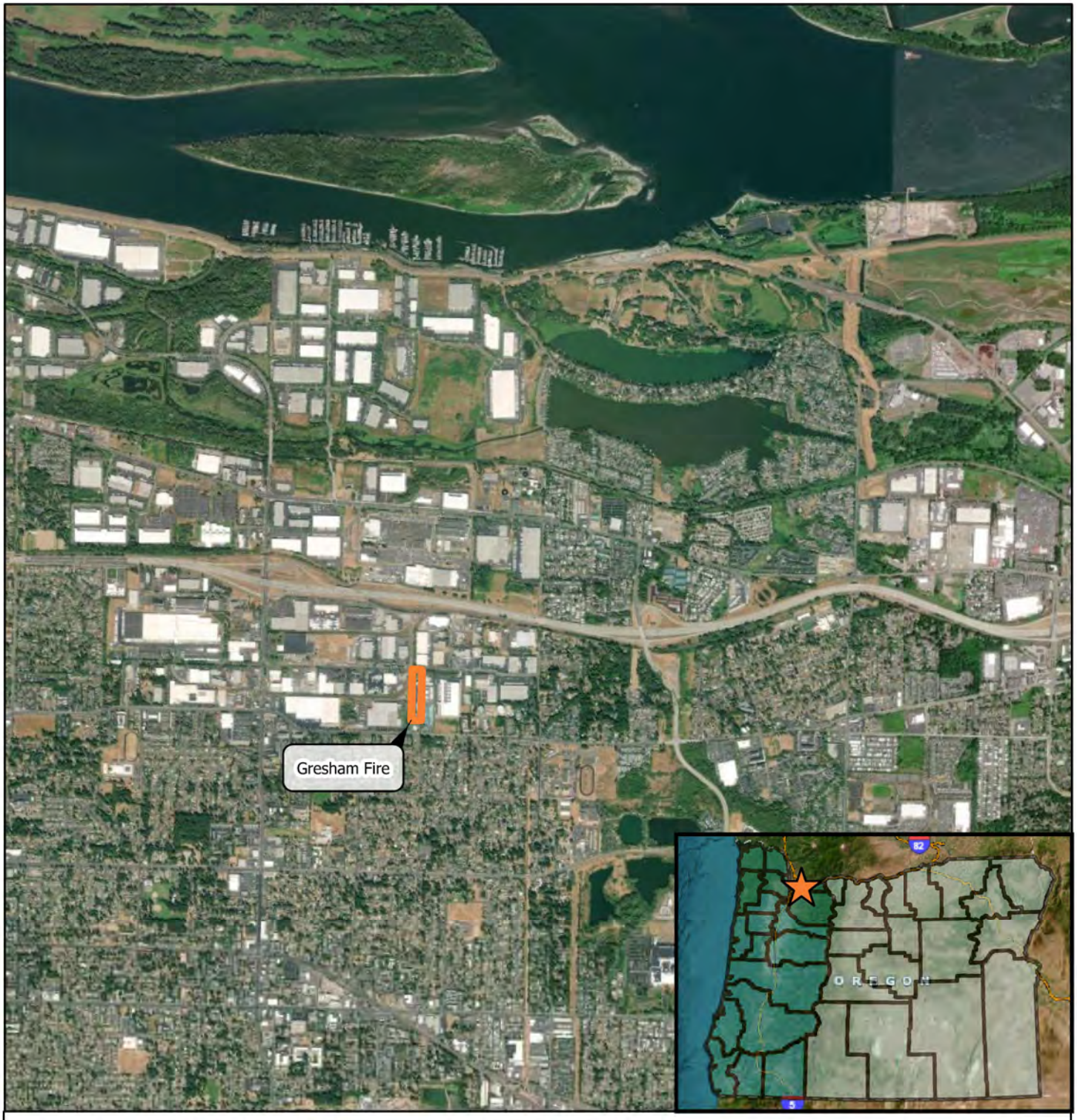


Figure 1: Site Location Map
Gresham Fire Training Center
ECSI# 6458
19203 NE San Rafael St.
Gresham, Oregon

Site

0 0.5 1 1.5
Miles

N

DEQ
State of Oregon
Department of
Environmental
Quality

Last updated on 5/15/2023.

Sources: Earthstar Geographics, Oregon Department of Transportation, Geographic Information Services Unit, Maxar



Figure 2: Sample Location Map
Gresham Fire Training Center
ECSI# 6458
19203 NE San Rafael St.
Gresham, Oregon

Site
Catch Basin
Soil Boring
Wellhead

0 130 260 390 520
Feet

N

DEQ
State of Oregon
Department of
Environmental
Quality

Last updated on 5/11/2023.

Sources: Maxar, Microsoft, Oregon Department of Transportation, Geographic Information Services Unit



Figure 3: Portland Water Bureau well (PWB-1)
Gresham Fire Training Center
ECSI# 6458
19203 NE San Rafael St.
Gresham, Oregon

0 0.5 1 1.5
Miles

N

DEQ
State of Oregon
Department of Environmental Quality

Last updated on 7/3/2023.

Sources: Earthstar Geographics, Oregon Department of Transportation, Geographic Information Services Unit, Maxar



Figure 4: Probable Point of Entry (PPE) Columbia Slough Map
Gresham Fire Training Center
ECSI# 6458
19203 NE San Rafael St.
Gresham, Oregon

NOTE: Base map prepared from Microsoft Bing imagery (2023).

Sediment and Surface Water Sample Location

N

State of Oregon **Department of Environmental Quality**

Last updated on 5/15/2023.

Sources: Earthstar Geographics



Figure 5: Site Radial Distance Map
Gresham Fire Training Center
ECSI# 6458
19203 NE San Rafael St.
Gresham, Oregon

Site

Distance (miles)

0 1 2 3 4
Miles

N

DEQ
State of Oregon
Department of Environmental Quality

Last updated on 5/15/2023.

Sources: Earthstar Geographics

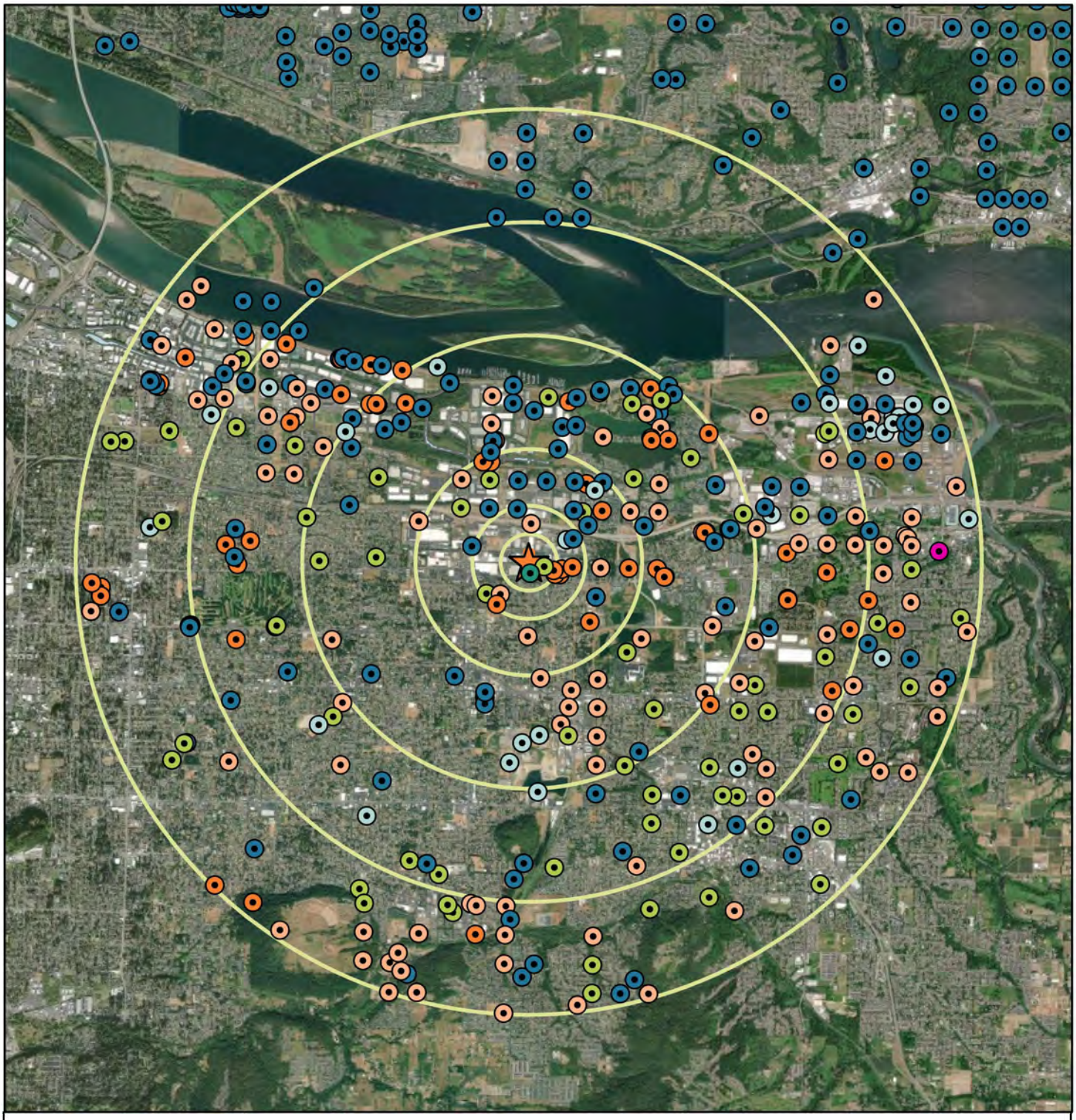


Figure 6: Well Location Map
Gresham Fire Training Center
ECSI# 6458
19203 NE San Rafael St.
Gresham, Oregon

Last updated on 5/23/2023.

Sources: Earthstar Geographics
Oregon Water Resources Department Well Report and Washington Department of Ecology Well Report

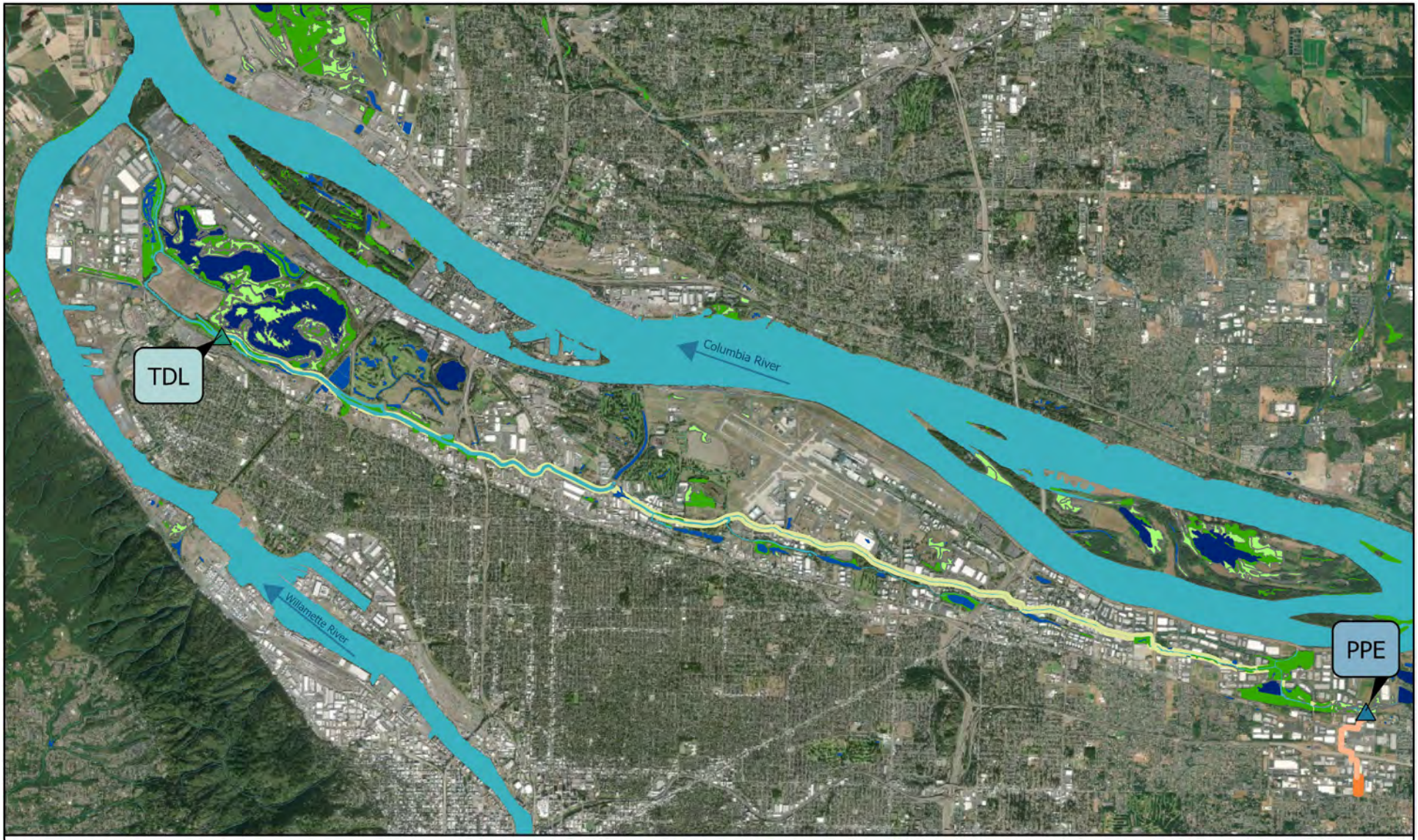


Figure 7: Probable Point of Entry (PPE) to Total Distance Limit (TDL)
Gresham Fire Training Center
ECSI# 6458
19203 NE San Rafael St.
Gresham, Oregon

0 1.5 3 4.5 6
Miles

- Site
- Site to PPE stormwater conveyance
- Probable Point of Entry (PPE)
- Total Distance Limit (TDL)
- PPE to TDL path
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

N

DEQ
State of Oregon Department of Environmental Quality

Last updated on 5/15/2023.

Sources: Earthstar Geographics and U.S. Fish and Wildlife Service, National Wetlands Inventory

Table 1
Soil/Sediment Analytical Data - PFAS

Gresham Fire Training Center
Gresham, Oregon
SEMS No. ORN001020774

Sample Identification	S-1	S-1 DUP	S-2	S-3	S-4	S-4 DUP	G-1	G-1 DUP	G-2	SED-1	**EPA Regional Screening Levels**		
Date Sampled	5/25/2023	5/25/2023	5/25/2023	5/24/2023	5/24/2023	5/24/2023	5/25/2023	5/25/2023	5/25/2023	5/31/2023			Groundwater
Sample Depth (feet)	5.0	5.0	5.0	5.0	5.0	5.0	grab	grab	grab	sediment	Resident	Industrial	Protection
Parameters	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Perfluorooctanesulfonic acid (PFOS)	11.1	7.2	47.7	12.7	0.3	0.16	14.7	**275**	**330**	1.0	**130**	1,600	3.1
Perfluorooctanoic acid (PFOA)	3.5	0.7	0.5	3.3	0.16	0.14	0.39	5.9	7.4	ND	190	2,500	9.1
Perfluorohexanoic acid (PFHxA)	0.63	4.2	3.5	0.94	ND	ND	48	3.0	4.1	ND	320,000	410,000	2.4
Perfluorobutanoic acid (PFBA)	0.75	4.1	3.7	0.65	ND	ND	ND	1.3	1.6	ND	780,000	1,200,000	6.5
Perfluorohexanesulfonic acid (PFHxS)	3.4	2.5	2.7	1.4	0.78	0.72	0.84	27.3	38.9	0.13	1,300	16,000	0.17
Perfluorononanoic acid (PFNA)	0.95	3.0	3.1	0.86	ND	ND	0.14	2.3	2.2	ND	190	2,500	0.25
Perfluorobutanesulfonic acid (PFBS)	ND	ND	ND	ND	ND	ND	ND	1.5	1.8	ND	19,000	250,000	1.9
Hexafluoropropylene oxide dimer acid (HFPO-DA; GenX)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	230	3,500	--
10:2 FTS	ND	ND	ND	0.2	ND	ND	1.2	1.8	1.9	ND	--	--	--
11Cl-PF3OUdS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--
4:2 FTS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--
6:2 FTS	0.15	0.11	ND	3.6	ND	ND	2.3	2.7	3.4	ND	--	--	--
8:2 FTS	ND	0.17	ND	10	ND	ND	1.4	8.4	10.2	ND	--	--	--
9Cl-PF3ONS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--
ADONA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--
NEtFOSAA	ND	ND	ND	ND	ND	ND	0.69	6.8	10.1	ND	--	--	--
NEtFOSA	ND	ND	ND	ND	ND	ND	0.35	0.43	0.47	ND	--	--	--
NEtFOSE	ND	ND	ND	ND	ND	ND	2.1	6.2	7.9	0.14	--	--	--
NMeFOSAA	ND	ND	ND	ND	ND	ND	ND	9.0	1.2	ND	--	--	--
NMeFOSA	ND	ND	ND	0.3	ND	ND	0.29	0.98	1.6	ND	--	--	--
NMeFOSE	ND	ND	ND	ND	ND	ND	ND	ND	1.8	ND	--	--	--
Perfluorodecanoic acid	0.15	0.11	ND	0.23	ND	ND	0.19	0.56	0.52	ND	--	--	--
PFDS	ND	ND	ND	ND	ND	ND	ND	3.9	4.4	ND	--	--	--
PFDoS	ND	ND	ND	ND	ND	ND	ND	2.8	3.1	ND	--	--	--
PFHpS	0.2	0.15	2.7	0.18	ND	ND	ND	1.9	2.2	ND	--	--	--
PFHxDA	ND	ND	ND	ND	ND	ND	0.29	0.32	0.32	ND	--	--	--
PFNS	ND	ND	ND	ND	ND	ND	ND	2.8	3.3	ND	--	--	--
PFDA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--
PFOSA	ND	0.36	0.23	3.6	ND	ND	25.1	128	193	0.61	--	--	--
PFPeA	1.6	1.1	0.52	1.1	ND	ND	0.15	2.4	2.6	ND	--	--	--
PFPeS	ND	ND	0.19	1.4	ND	ND	ND	1.9	2.4	ND	--	--	--
Perfluorododecanoic acid	ND	ND	ND	ND	ND	ND	0.43	1.5	1.7	ND	--	--	--
Perfluoroheptanoic acid	1.2	0.70	0.13	1.3	ND	ND	0.15	1.4	1.5	ND	--	--	--
Perfluorotetradecanoic acid	ND	ND	ND	ND	ND	ND	0.98	1.1	ND	ND	--	--	--
Perfluorotridecanoic acid	ND	ND	ND	ND	ND	ND	0.28	1.8	2.0	ND	--	--	--
Perfluoroundecanoic acid	ND	ND	ND	ND	ND	ND	0.38	5.3	5.0	ND	--	--	--

Notes:
EPA = U.S. Environmental Protection Agency
µg/kg = micrograms per kilogram
ND = Not Detected. See analytical reports for detection limits.
PFAS = Per- and polyfluoroalkyl substances
-- = Screening level not available
Bolded text indicates value exceeds residential soil screening level
Shading indicates value exceeds soil screening levels for protection of groundwater
Samples S-1, S-2, and S-3 were collected from soil borings, Samples G-1 and G-2 were collected from catch basins, and Sample Outfall was collected from a Columbia Slough sediment
S-1 Dup is duplicate sample of S-1, S-4 Dup is duplicate sample of S-4, G-1 Dup is duplicate sample of G-1
EPA Regional Screening Levels, May 2023. www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.

Table 2
Groundwater/Surface Water Analytical Data - PFAS

Gresham Fire Training Center
Gresham, Oregon
SEMS No. ORN001020774

Sample Idenitification	S-2	SW-1	**EPA Screening Levels**			**OHA**
Sample Date	5/25/2023	5/31/2023	Tapwater RSLs	Drinking Water HALs	Drinking Water Proposed MCLs	Drinking Water HALs
Parameters	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
Perfluorooctanesulfonic acid (PFOS)	**482**	**35.2**	40	0.02	4.0	30
Perfluorooctanoic acid (PFOA)	**79.6**	**12.2**	60	0.004	4.0	30
Perfluorohexanoic acid (PFHxA)	54.5	ND	9,900	--	--	--
Perfluorobutanoic acid (PFBA)	26.8	6.7	18,000	--	--	--
Perfluorohexanesulfonic acid (PFHxS)	**42.9**	7.9	390	--	HI 1.0	30
Perfluorononanoic acid (PFNA)	ND	6.8	59	--	HI 1.0	30
Perfluorobutanesulfonic acid (PFBS)	ND	ND	6,000	2000	HI 1.0	--
Hexafluoropropylene oxide dimer acid (HFPO-DA; GenX)	ND	ND	60	10	HI 1.0	--
10:2 FTS	ND	ND	--	--	--	--
11Cl-PF3OUdS	ND	ND	--	--	--	--
4:2 FTS	ND	ND	--	--	--	--
6:2 FTS	ND	ND	--	--	--	--
8:2 FTS	ND	ND	--	--	--	--
9Cl-PF3ONS	ND	ND	--	--	--	--
ADONA	ND	ND	--	--	--	--
NEtFOSAA	ND	ND	--	--	--	--
NEtFOSA	ND	ND	--	--	--	--
NEtFOSE	ND	ND	--	--	--	--
NMeFOSAA	ND	ND	--	--	--	--
NMeFOSA	ND	ND	--	--	--	--
NMeFOSE	ND	ND	--	--	--	--
Perfluorodecanoic acid	ND	ND	--	--	--	--
PFDS	ND	ND	--	--	--	--
PFDoS	ND	ND	--	--	--	--
PFHpS	ND	ND	--	--	--	--
PFHxDA	ND	ND	--	--	--	--
PFNS	ND	ND	--	--	--	--
PFDA	ND	ND	--	--	--	--
PFOSA	ND	ND	--	--	--	--
PFPeA	102	ND	--	--	--	--
PFPeS	ND	ND	--	--	--	--
Perfluorododecanoic acid	ND	ND	--	--	--	--
Perfluoroheptanoic acid	21.4	ND	--	--	--	--
Perfluorotetradecanoic acid	ND	ND	--	--	--	--
Perfluorotridecanoic acid	ND	ND	--	--	--	--
Perfluoroundecanoic acid	ND	ND	--	--	--	--

Notes:
EPA = U.S. Environmental Protection Agency
HALs = health advisory levels
HI = hazard index
MCLs = maximum contaminant levels
ND = Not Detected. See analytical reports for detection limits.
ng/L = nanogram per liter
OHA = Oregon Health Authority
RSLs = Regional Screening Levels
-- = Screening level not available
Bold indicates value exceeds one or more screening level
Sample S-2 is a groundwater sample collected from boring S-2. Sample SW-1 is a surface water sample collected from the probably point of entry outfall to Columbia Slough.
EPA Regional Screening Levels for Tapwater, May 2023. www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.
EPA drinking water HALs, June 2022. www.epa.gov/system/files/documents/2022-06/drinking-water-ha-pfas-factsheet-communities.pdf
EPA proposed MCLs. www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas
OHA drinking water lifetime HALs, individually or combined.
www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/OPERATIONS/Pages/PFAS.aspx

Table 3
Soil Analytical Data - VOCs, SVOCs, PCBs

Gresham Fire Training Center
Gresham, Oregon
SEMS No. ORN001020774

										Risk-Based Concentrations								
										Soil				Soil		Groundwater		Groundwater
Sample Identification	S-1	S-1 DUP	S-2	S-3	S-4	G-1	G-1 DUP	G-2	S-2	Ingestion, Dermal Contact, and Inhalation				Leaching to Groundwater		Ingestion & Inhalation Tapwater		In Excavation
Date Sampled	5/25/2023	5/25/2023	5/25/2023	5/24/2023	5/24/2023	5/25/2023	5/25/2023	5/25/2023	5/24/2023									
Sample Depth (feet)	5.0	5.0	5.0	5.0	5.0	grab	grab	grab	groundwater	Residential	Occupational	Construction Worker	Excavation Worker	Residential	Occupational	Residential	Occupational	
Parameters	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/L	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/L	µg/L	µg/L
Volatile Organic Compounds																		
2-Butanone	<1.2	<0.99	<2.7	<2.5	<1.1	**90**	<1.6	**21**	<1.0	--	--	--	--	--	--	--	--	--
2-Hexanone	<1.2	<0.99	<2.7	<2.5	<1.1	**4.3**	<1.6	<1.8	<1.0	--	--	--	--	--	--	--	--	--
2-Pentanone, 4-methyl-	<1.3	<0.99	<2.7	<2.5	<1.2	**8.3**	<1.6	<1.8	<1.0	--	--	--	--	--	--	--	--	--
2-Propanone	<2.4	<2.0	<5.5	<4.9	<2.1	**90**	<3.3	**38**	**1.1**	--	--	--	--	--	--	--	--	--
Benzene, 1,2,4-trimethyl-	<1.2	<0.99	<2.7	<2.5	<1.1	**2.4**	<1.6	<1.8	<1.0	0.43	6.9	2.9	81	0.01	0.048	54	250	6,300
Benzene, 1-methyl-4-(1-methylethyl)-	<1.2	<0.99	<2.7	<2.5	<1.1	**5.1**	<1.6	**9.0**	<1.0	--	--	--	--	--	--	--	--	--
Benzene, ethenyl-	<1.2	<0.99	<2.7	<2.5	<1.1	**1.3**	<1.6	**2.2**	<1.0	--	--	--	--	--	--	--	--	--
Toluene	<1.3	<0.99	<2.7	<2.5	<1.2	1700	<1.6	**190**	<1.0	5.8	88	28	770	0.084	0.49	1,100	6,300	220,000
All Other VOCs	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
Semi-Volatile Organic Compounds																		
4-Methylphenol	<55	<52	<56	<55	<55	**1600**	**91**	**830**	<1.0	--	--	--	--	--	--	--	--	--
Acenaphthylene	<55	<52	<56	<55	<55	<54	**130**	**170**	<1.0	--	--	--	--	--	--	--	--	--
Anthracene	<55	<52	<56	<55	<55	<54	**91**	**110**	<1.0	23	350	110	--	--	--	--	--	--
Benzaldehyde	<55	<52	<56	<55	<55	**55**	<67	<69	<1.0	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	<55	<52	<56	<55	<55	<54	**290**	**360**	**1.0**	0.001	0.021	0.17	4.8	0.0016	0.006	0.03	0.11	--
Benzo(a)pyrene	<55	<52	<56	<55	<55	**150**	**530**	**660**	<1.0	110	2100	170	490,000	0.0044	--	0.03	0.47	--
Benzo(g,h,i)perylene	<55	<52	<56	<55	<55	**240**	**650**	**770**	<1.0	--	--	--	--	--	--	--	--	--
Benzo[b]Fluoranthene	<55	<52	<56	<55	<55	**220**	**620**	**730**	<1.0	1,100	2,100	170,000	4,900,000			0.25	--	--
Benzo[k]fluoranthene	<55	<52	<56	<55	<55	**65**	**220**	**270**	<1.0	11,000	210,000	1,700,000	49,000,000	--	--	40	330	--
Bis(2-ethylhexyl) phthalate	<55	<52	**61**	**59**	**63**	**2,700**	**440**	**610**	<1.0	39,000	160,000	1,300,000	37,000,000	--	--	5.6	33	--
Butylbenzylphthalate	<55	<52	<56	<55	<55	**150**	**110**	**75**	<1.0	--	--	--	--	--	--	--	--	--
Chrysene	<55	<52	<56	<55	<55	**100**	**430**	**520**	<1.0	110,000	2,100,000	17,000,000	490,000,000	--	--			--
Dibenzo[a,h]anthracene	<55	<52	<56	<55	<55	<54	**84**	**98**	<1.0	110	2,100	17,000	490,000	--	--	0.025	0.47	--
Di-n-octylphthalate	<55	<52	<56	<55	<55	**500**	<67	<69	<1.0	--	--	--	--	--	--	--	--	--
Fluoranthene	<55	<52	<56	<55	<55	**81**	**680**	**840**	<1.0	2,400,000	30,000,000	10,000,000	280,000,000	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	<55	<52	<56	<55	<55	**170**	**450**	**540**	<1.0	1,100	21,000	170,000	470,000	--	--	--	--	--
Pentachlorophenol	<55	<52	<56	<55	<55	**220**	**290**	**300**	<4.0	1,000	4,000	34,000	960,000	--	--	--	--	--
Phenanthrene	<55	<52	<56	<55	<55	**68**	**260**	**350**	<1.0	--	--	--	--	--	--	--	--	--
Phenol	<55	<52	<56	<55	<55	**100**	**93**	**130**	<1.0	--	--	--	--	--	--	--	--	--
Phenol, 2-methyl-	<55	<52	<56	<55	<55	**80**	<67	<69	<1.0	--	--	--	--	--	--	--	--	--
Pyrene	<55	<52	<56	<55	<55	**110**	**860**	**1,100**	<1.0	1,800,000	23,000,000	7,500,000	210,000,000	--	--	110	--	--
All Other SVOCs	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
Polychlorinated Biphenyls																		
PCB-1016	<5.7	<5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-1221	<5.7	<5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-1232	<5.7	<5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-1242	<5.7	<5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-1248	<5.7	<5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-1254	<5.7	<5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-1260	<5.7	<5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
EPA = U.S. Environmental Protection Agency
µg/kg = micrograms per kilogram
µg/L = micrograms per liter
ND = Not Detected. See analytical reports for detection limits
-- = Not Applicable or Screening level not available
Bold indicates concentration detected above reporting limits
Shading indicates value exceeds one or more DEQ RBC screening level
Samples S-1, S-2, and S-3 were collected from soil borings, Samples G-1 and G-2 were collected from catch basins
S-1 Dup is duplicate sample of S-1, G-1 Dup is duplicate sample of G-1
DEQ Risk-Based Concentrations, amended June 2023, www.oregon.gov/deq/filterdocs/rbdmtable.pdf

Table 4
Water Well and Groundwater Drinking Water Population Summary

Gresham Fire Training Center
Gresham, Oregon
SEMS No. ORN001020774

Radial Distance from Site (miles)	Type of Well	Number of Wells	Population Served Within Radius (Domestic[1] and Community)
On Site	0	0	0
0 - 0.25	Irrigation	2	--
	Municipal System[2]	1	22,000
0.25 - 0.5	Domestic	10	24
	Industrial	3	--
	Irrigation	1	--
	Municipal System[2]	2	44,000
0.5 - 1	Community System[3]	2	364
	Domestic	13	31
	Industrial	3	--
	Irrigation	5	--
1-2	Community System[3]	4	369
	Domestic	63	150
	Industrial	8	--
	Irrigation	23	--
	Municipal System[2,4]	12	43,927
2-3	Domestic	77	183
	Industrial	21	--
	Irrigation	31	--
	Municipal System[2,4]	15	41,526
3-4	Domestic	172	409
	Industrial	61	--
	Irrigation	67	--
	Municipal System[2,4]	5	13,033
Totals	**Community**	**6**	**733**
	Domestic	**335**	**797**
	Industrial	**96**	**--**
	Irrigation	**127**	**--**
	Municipal	**35**	**164,486**
	Other	**222**	**--**

Note:

[1] Domestic well population served assumes 2.38 people per household in Multnomah County, Oregon. Population numbers are rounded to the nearest whole number.

[2] The Rockwood PUD (1 well within 0.25 mile; 2 wells 0.25 to 0.5 miles), City of Fairview (2 wells 1 to 2 miles, 1 well 2 to 3 miles), Portland Water Bureau (10 wells 1 to 2 miles; 9 wells 2 to 3 miles; 2 wells 3-4 miles), City of Troutdale (1 well 2 to 3 miles, 3 wells 3 to 4 miles); City of Wood Village (4 wells 2 to 3 miles)

[3] Community systems: Sandy Blvd Mobile Villa (1 well 0.25 to 0.5 mile), Terrand Mobile Terrance (1 well 0.25 to 0.5 mile), Interlachen PUD (4 wells 1 to 2 miles)

[4] The Portland Water Bureau system consists of both surface water and groundwater sources. The surface water source is the primary water source. The groundwater well field is a secondary source and supplemental supply during high-demand periods. For purposes of calculating population, 75% of the source was attributed to the surface water source. The remaining 25% was attributed to the well field with each well assumed to contribute equally.

Table 5
Fishery Data

Gresham Fire Training Center
Gresham, Oregon
SEMS No. ORN001020774

Fishery Name	Fish Species	Number of Fish Caught	Catch Data (pounds)
Upper and Lower Slough	Black Crappie	600	600
	Largemouth Bass	600	600
	Bluegill	600	600
	Bullhead catfish	600	600
	Carp	600	9,000
	Sunfish	600	600
Lower Slough	Chinook Salmon	600	9,000
	Coastal Cutthroat Trout	600	600
	Coho Salmon	600	600
Totals	**Upper and Lower Slough**	**3,600**	**12,000**
	Lower Slough	**1,800**	**10,200**

Notes: Fish catches are not tracked in the Columbia Slough. The City of Portland performed a survey as part of an outreach effort to anglers and their families who may consume fish caught in the Slough in December 2020 and January 2021. A total of 326 responses to the Fish Consumption Questionnaire were received. Of the 326 response, 43 (13.5%) indicated they caught fish from the Columbia Slough. The health advisory on the Columbia Slough recommends limiting consumption to 1 fillet per month. DEQ assumed 50 people caught one of each species each month for one year.

Table 6
Summary of Threatened and Endangered Species

Gresham Fire Training Center
Gresham, Oregon
SEMS No. ORN001020774

Surface Water Body Within Total Distance Limit	Common Name	Scientific Name	Federal Status	State Status
Columbia Slough	Coho Salmon	*Oncorhynchus kisutch pop. 1*	Listed Threatened	Listed Endangered
Columbia Slough	Western Pond Turtle	*Actinemys marmorata*	Species of Concern	Listed Threatened
Columbia Slough	Winged Floater (mussel)	*Anodonta nuttalliana*	Species of Concern	Sensitive-critical
Columbia Slough	Purple Martin	*Progne subis*	--	Sensitive-critical
Columbia Slough	Townsend's big-eared bat	*Corynorhinus townsendii*	--	Sensitive-critical
Columbia Slough	Painted turtle	*Chrysemys picta*	--	Sensitive-critical

Table 7
Wetlands Frontage Per Water Body

Gresham Fire Training Center
Gresham, Oregon
SEMS No. ORN001020774

Water Body	Linear Distance of TDL Along Water Body (Miles)	Linear Wetlands Frontage	
		Miles	Feet
Columbia Slough	15	8.4	44,283

Notes:

PPE - Probable Point of Entry

TDL - Total Distance Limit

Table 8
Population Summary

Gresham Fire Training Center
Gresham, Oregon
SEMS No. ORN001020774

Radial Distance from Site (miles)	Residential Population Served Within Radius	School Population Served Within Radius
On Site	0	0
0 - 0.25	40	0
0.25 - 0.5	3122	1147
0.5 - 1	15,643	0
1-2	59,284	4,892
2-3	119,546	11,235
3-4	192,456	6,781
Total	**390,091**	**24,055**

Table 9
Wetlands Acreage Summary

Gresham Fire Training Center
Gresham, Oregon
SEMS No. ORN001020774

Radial Distance from Site (miles)	Wetlands (acreage)
On Site	0
0 - 0.25	0
0.25 - 0.5	0
0.5 - 1	85
1-2	867
2-3	2,036
3-4	1,994
Total	**4,982**

Appendix A

Aerial & Site Photographs

DRAFT

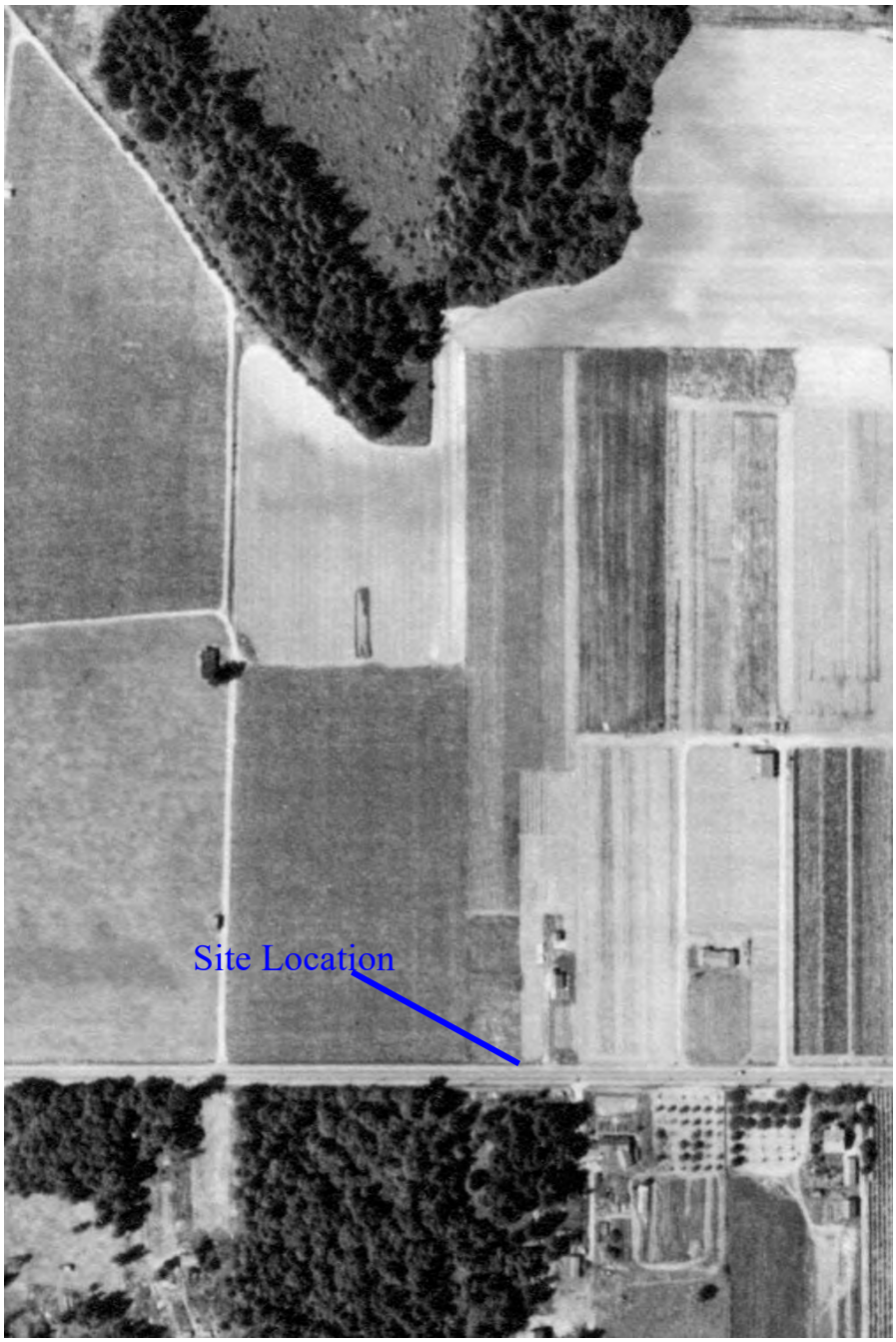


Photo Date: 1948
Source: University of Oregon Aerial Photo Library

DEQ	**Gresham Fire Training Center, Gresham, Oregon**	FIGURE
	1948 AERIAL PHOTOGRAPH	**A-1**

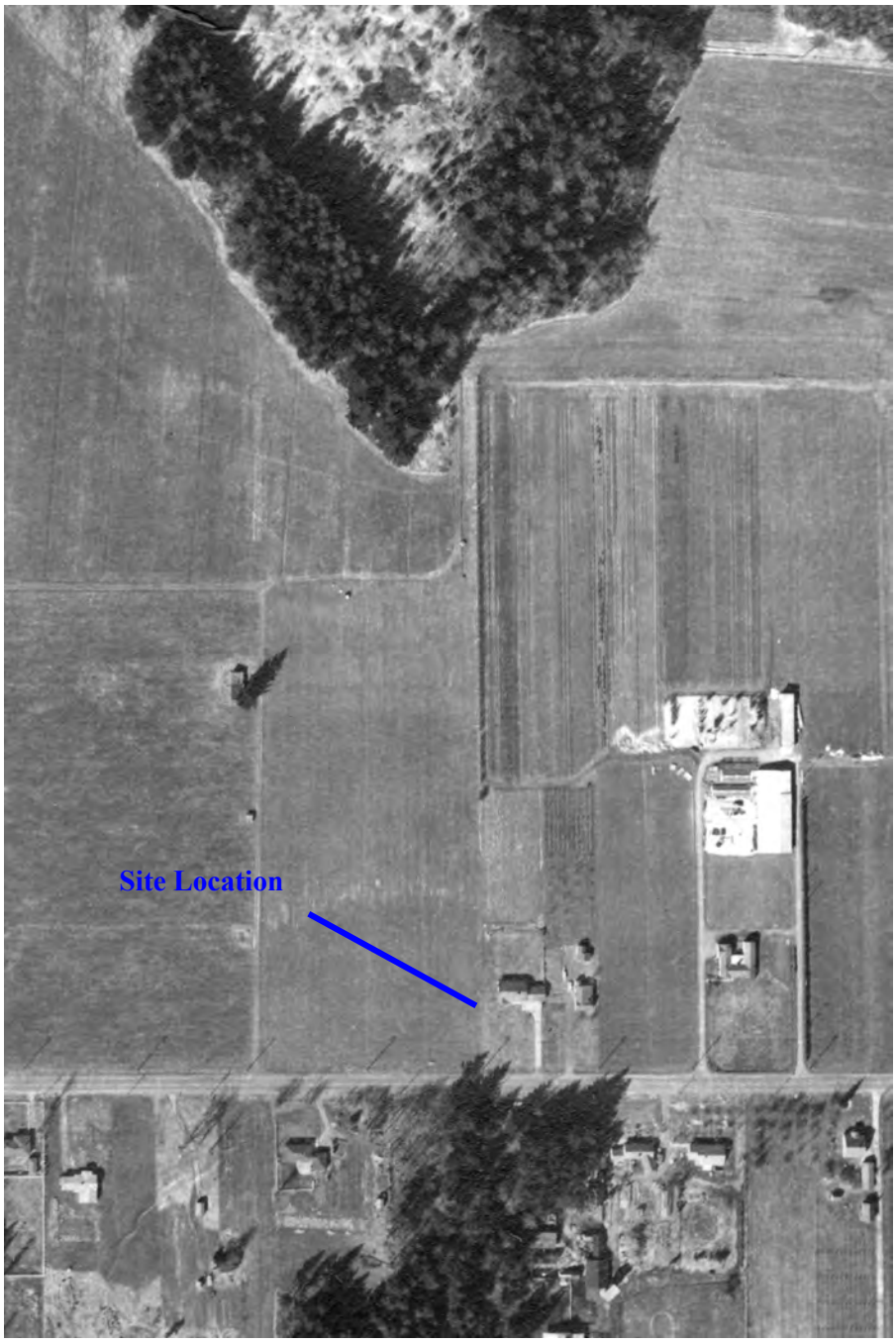


Photo Date: 1956
Source: University of Oregon Aerial Photo Library

DEQ	**Gresham Fire Training Center, Gresham, Oregon**	FIGURE **A-2**
	1956 AERIAL PHOTOGRAPH	

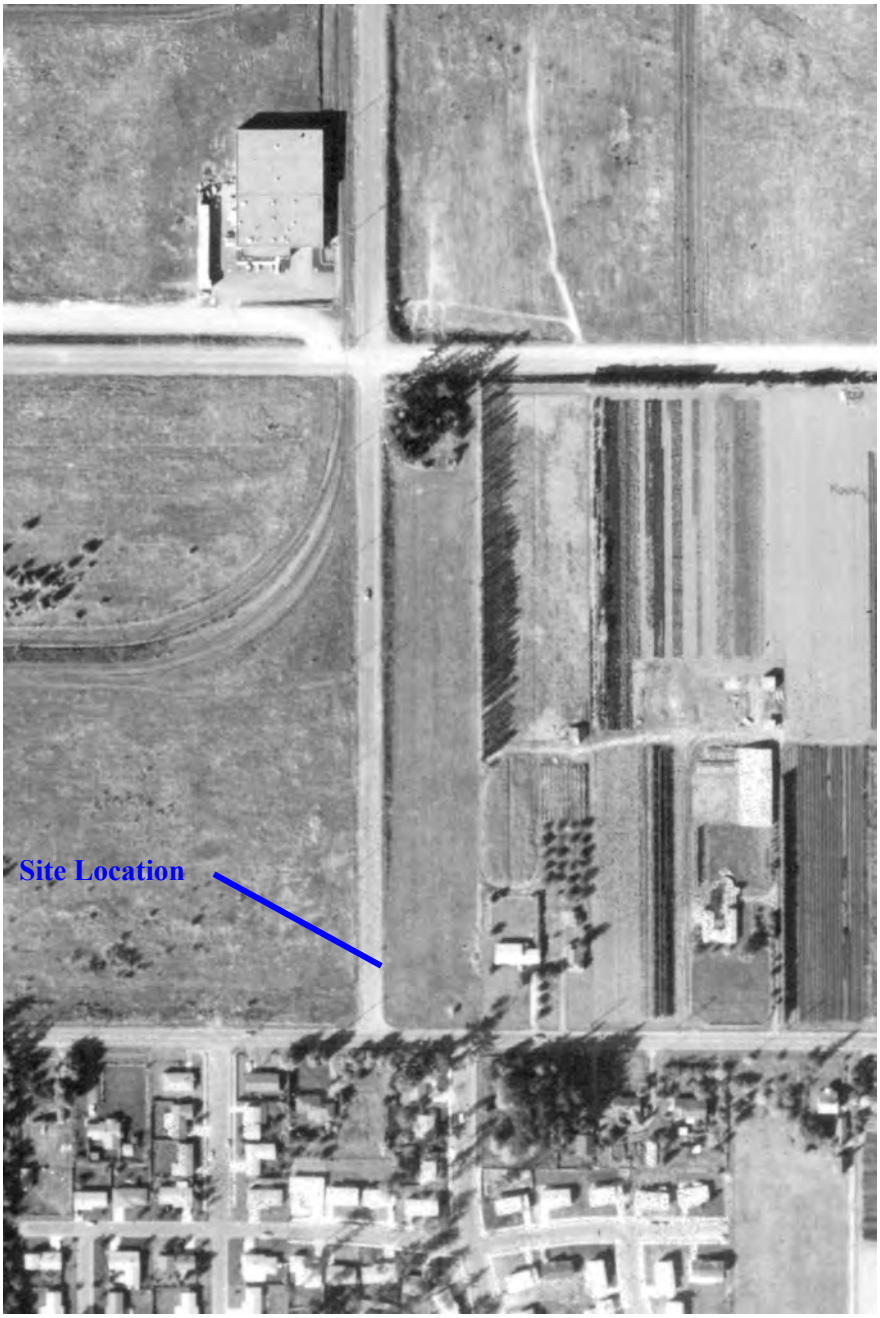


Photo Date: 1964
Source: University of Oregon Aerial Photo Library

DEQ	**Gresham Fire Training Center, Gresham, Oregon**	FIGURE
	1964 AERIAL PHOTOGRAPH	**A-3**

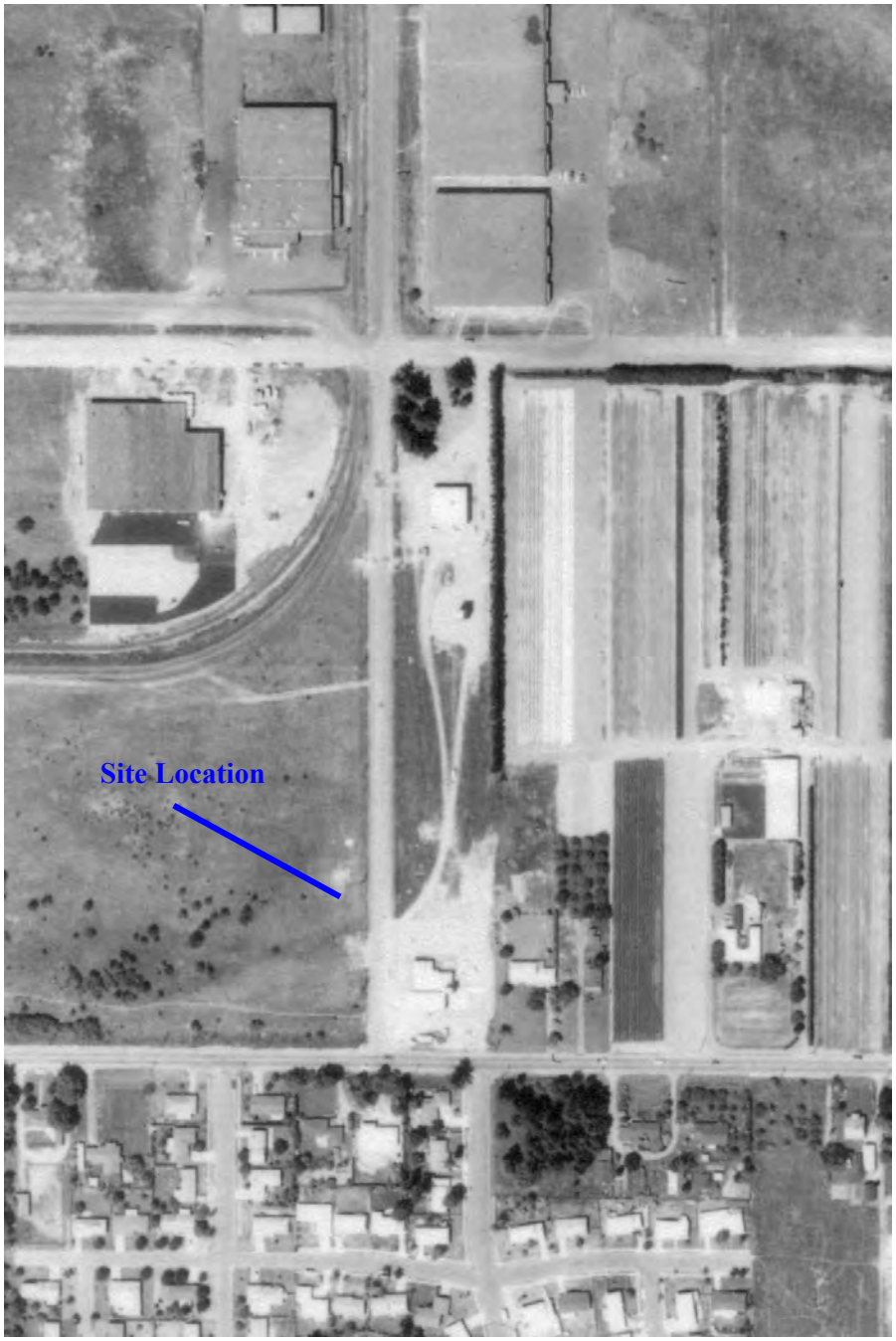


Photo Date: 1970
Source: University of Oregon Aerial Photo Library

DEQ	**Gresham Fire Training Center, Gresham, Oregon**	FIGURE
	1970 AERIAL PHOTOGRAPH	**A-4**

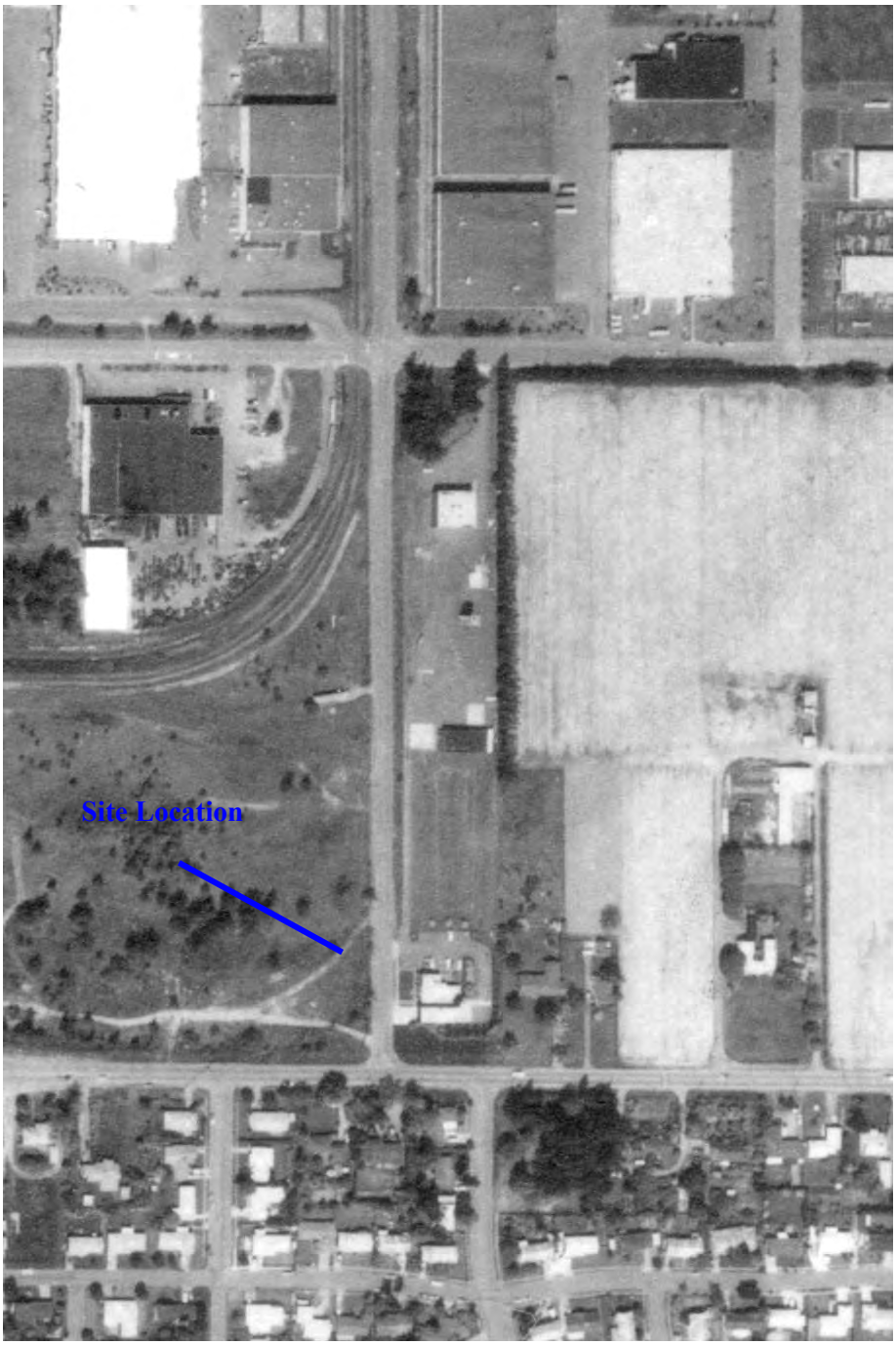


Photo Date: 1980
Source: University of Oregon Aerial Photo Library

DEQ	**Gresham Fire Training Center, Gresham, Oregon**	FIGURE **A-5**
	1980 AERIAL PHOTOGRAPH	



Photo Date: 1990
Source: University of Oregon Aerial Photo Library

DEQ	**Gresham Fire Training Center, Gresham, Oregon**	FIGURE **A-6**
	1990 AERIAL PHOTOGRAPH	

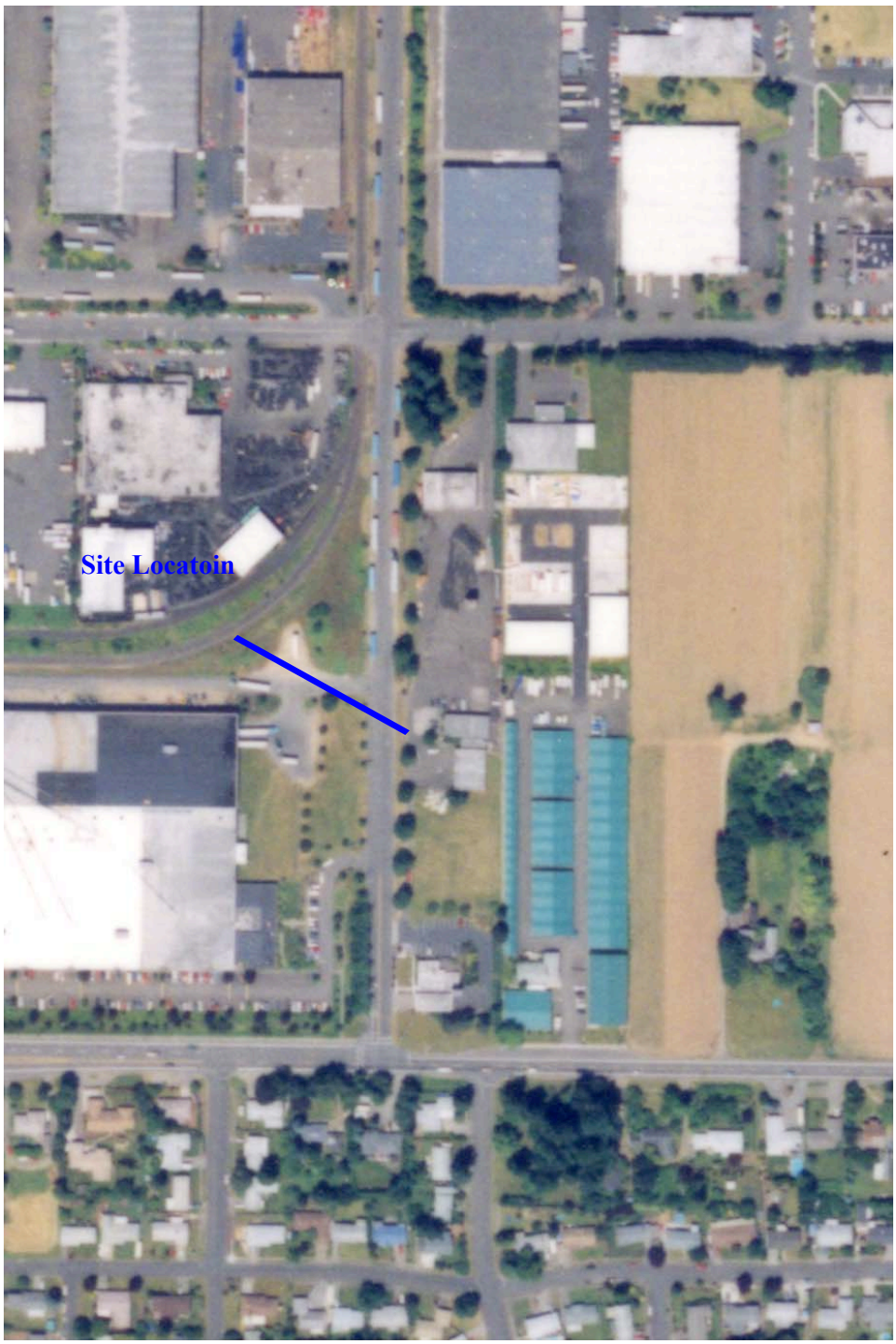


Photo Date: 2000
Source: University of Oregon Aerial Photo Library

DEQ	**Gresham Fire Training Center, Gresham, Oregon**	FIGURE **A-7**
	2000 AERIAL PHOTOGRAPH	



Photo Date: 2012
Source: University of Oregon Aerial Photo Library

DEQ	**Gresham Fire Training Center, Gresham, Oregon**	FIGURE
	2012 AERIAL PHOTOGRAPH	**A-8**

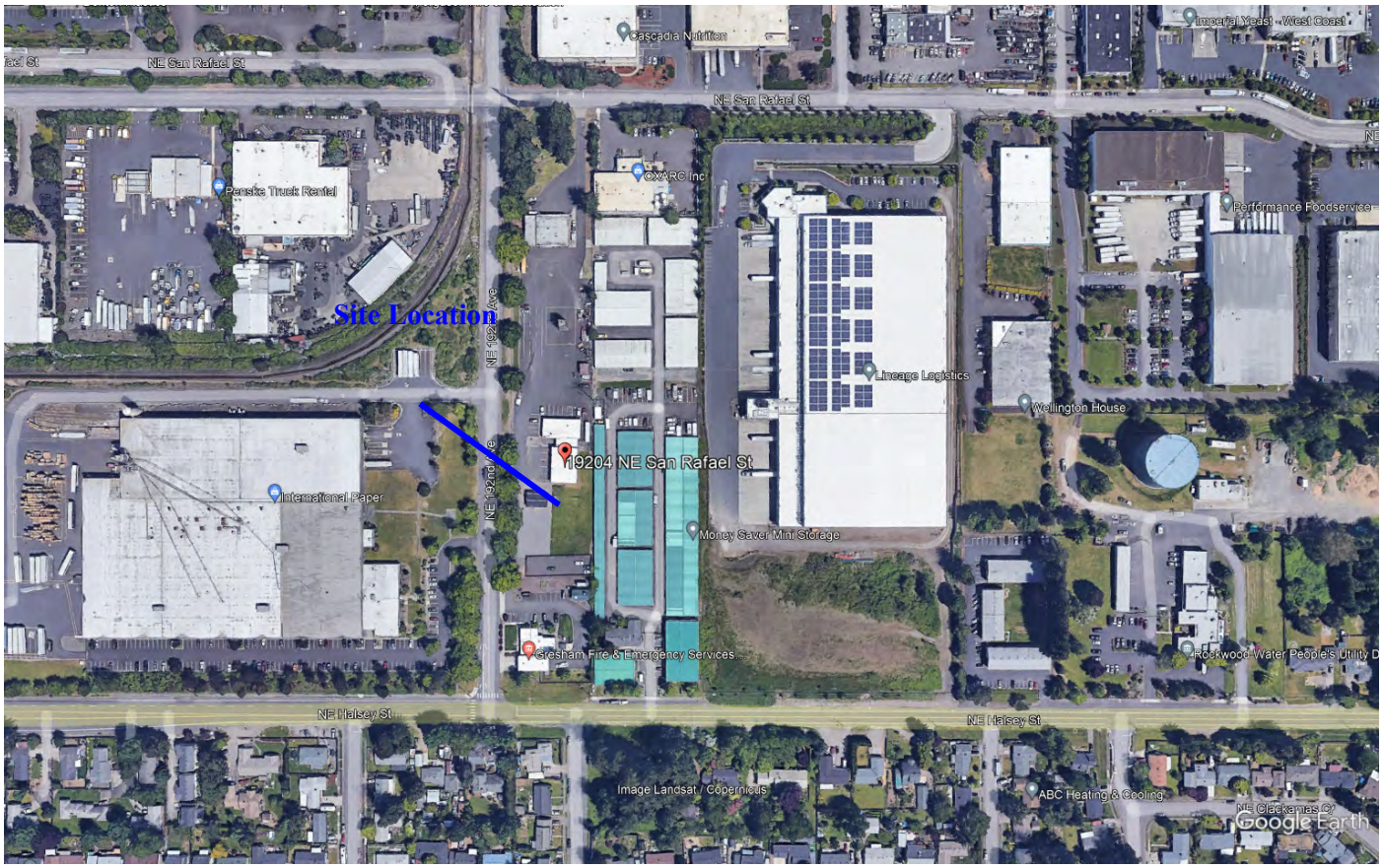


Photo Date: 2023
Source: Google Earth Pro Image

DEQ	**Gresham Fire Training Center, Gresham, Oregon**	FIGURE **A-9**
	2023 AERIAL PHOTOGRAPH	

Appendix A
Site Photographs
Gresham Fire Training Center

Looking North across the asphalt parking lot. Fire Training Tower March 7, 2023	
Looking south across asphalt parking lot. March 7, 2023	

Appendix A
Site Photographs
Gresham Fire Training Center

Looking southwest at location Sample (S1). March 7, 2023	
Looking south at location Sample (S2) March 7, 2023	

Appendix A
Site Photographs
Gresham Fire Training Center

Sample Location (S3) in front of tower March 7, 2023	
Sample Location (S3). March 7, 2023	

Appendix A
Site Photographs
Gresham Fire Training Center

Catch Basin Sample (G1) looking south March 7, 2023	
Catch Basin Sample (G1) looking east March 7, 2023	

Appendix A
Site Photographs
Gresham Fire Training Center

Looking west at location of catchbasin sampling location near G-2 March 7, 2023	
Looking west at at sampling location G2. March 7, 2023	

Appendix A
Site Photographs
Gresham Fire Training Center

Looking west at at sampling location S4. May 24, 2023	
Soil Samples May 24, 2023	

Appendix A
Site Photographs
Gresham Fire Training Center

Outfall Sampling Columbia Slough May 17, 2023	
Outfall Sampling Columbia Slough May 17, 2023	

Appendix B

Expanded Preliminary Assessment Work Plan

April 25, 2023

DRAFT

Gresham Fire Training Center
SEMS No. ORN001020774

EXPANDED PRELIMINARY ASSESSMENT WORK PLAN
GRESHAM FIRE TRAINING CENTER
CERCLIS No. ORN001020774

The Oregon Department of Environmental Quality's (DEQ) Northwest Region Site Assessment Program requested and received approval from the Environmental Protection Agency (EPA) to perform an Expanded Preliminary Assessment (XPA) at the City of Gresham Fire & Emergency Services Training Center ("Site"). The Site is located at 19204 NE San Rafael Street in Gresham, Multnomah County, Oregon (tax lot 1N3E29D 00900). DEQ will perform the XPA under a PA/SI cooperative agreement with EPA. The XPA will include the collection of a minimal number of soil and groundwater samples from the site to assess potential contamination specific to fire-fighting foam used during fire training activities.

Site History

The Site consists of the Gresham Fire & Emergency Services Training Center. According to Fire Captain Goeden who was interviewed during DEQ's site visit, the training facility used fire-fighting foam that contained per- and polyfluoroalkyl substances – known as PFAS – including PFOA and PFOS for fire-fighting training activities. Fire-fighting training activities at this location served the City of Gresham and City of Portland fire personnel and training has been conducted at the Site for the past 30-40 years.

Site Description

According to Multnomah County online property records, the Site totals 3.65-acres and is improved with two buildings, one built in 1970 and the other in 1975, and a fire tower. The Site slopes gently downgradient to the north from approximately 200 feet to 175 feet towards NE San Rafael Street (Figure 1). According to an Oregon Water Supply Well Report, date amended May 13, 2009, a community water well is located on tax lot 1400 and owned by Rockwood Water People's Utility District (PUD). The depth of completed well is 734 feet.

The Site is in an area of mixed industrial and residential use (Figure 2). It is bordered to the north by NE San Rafael Street and industrial businesses, the east a welding supply business and mini storage facility, the south by NE Halsey Street and single-family residential, and the west by NE 192nd Avenue and industrial businesses.

Areas of Potential Concern

Historical releases of the PFAS and PFOA related compounds have not been documented at the Site. However, fire-fighting jurisdictions have been using fire-fighting compounds, including PFAS and PFOA compounds in foam for over 20 years. The Site is a known fire-fighting training center with years of activity conducting exercises at the property. No previous investigations, cleanup activities, previous regulatory actions, permitting activities nor enforcement actions have occurred at the Site, except for drinking water sampling for PFAS conducted by Rockwood Water PUD. PFAS contamination in groundwater was confirmed in a Portland Water Bureau well (PWB-1), located approximately 1.1 miles north of the Site

Project Members

The following is a list of project members with contact information:

DEQ Project Manager
Ray Hoy
700 NE Multnomah St, Suite 600
Portland, OR 97232
(503) 229-5069
ray.hoy@deq.oregon.gov

EPA Project Officer
Ken Marcy
288 Martin Street, Suite 309
Blaine, WA 98230
(206) 707-4805
marcy.ken@epa.gov

Property Owner (Site)
Rural Fire District No 10
Lease – Hughes Fire Equipment Inc
PO Box 517
Troutdale, OR 97060
(503) 618-2847

Rockwood Water PUD (supply well)
Kari Duncan
19601 NE Halsey St
Portland, OR 97230
(503) 674-4507
kduncan@rwpud.org

Pace Laboratory Project Manager
Brian Ford
Pace Analytical
12065 Lebanon Road
Mt. Juliet, TN 37122
(615) 773-9772
brian.ford@pacelabs.com

EPA Regional Sample Control Coordinator
Meghan Dunn
EPA R10
1200 Sixth Ave.
Seattle, WA 98101
(206) 553-8561
dunn.meghan@epa.gov

DEQ Contractor
Carmen Owens
Apex Companies
15618 SW 72nd Ave
Tigard, OR 97224
(319) 360-4128
carmen.owens@apexcos.com

EPA Laboratory Contact
Gerald Dodo
EPA R10 Manchester Laboratory
7411 Beach Dr E
Port Orchard, WA 98366
(360) 871-8728
dodo.gerald@epa.gov

Scope of Work

The scope of work includes the collection of soil, groundwater, catch basin solids, sediment, and surface water samples to determine if a release has occurred at the site and evaluate potential contaminant migration pathways. All field work and sample collection activities will be performed in accordance with the DEQ *EPA PA/SI Investigations Quality Assurance Project Plan*, dated December 2017. Since this QAPP does not specifically cover PFAS, DEQ has incorporated information into this SAP to address PFAS sampling and analysis activities. The QAPP is supplemented but the contractor's Standard Operating Procedures (SOPs) for PFAS. These SOPs are attached.

All field personnel present during soil sampling activities are required to be 40-hour Hazardous Waste Operations certified with current 8-hour annual refreshers. Prior to performing onsite work, DEQ's contractor will prepare a Health and Safety Plan, including Job Hazard Analyses for project-specific activities. An access agreement has been executed with the Site's property owner.

Migration Pathways and Targets

This subsection discusses the groundwater, surface water, and soil migration pathways and potential targets within the site's range of influence. Air and subsurface vapor intrusion migration pathways and targets will not be evaluated in this XPA.

Groundwater Migration Pathway and Drinking Water Targets

The target distance limit (TDL) for the groundwater migration pathway is a 4-mile radius around the Gresham Fire Training Station Site. An Oregon Water Resources Department (OWRD) well search will be conducted to determine if domestic wells are used in the 4-mile radius and identify drinking water targets. The immediate area is zoned

"General Industrial", and most properties in the area are connected to the Rockwood Water PUD or Portland Water Bureau (PWB) municipal water systems. A Rockwood Water PUD municipal well is located on the south end of the Site and is deeper than 500 feet. The Rockwood Water PUD provides water to users in a 10 square mile area with 66,000 users. While the Rockwood Water PUD system includes 5 productions wells, the water provided by the PUD is usually from the Bull Run Watershed, purchased from the City of Portland. The PUD wells are used to augment purchased water during emergencies or periods of high demand. A PWB backup well, used in water shortage situations, is located 1.1 miles to the north of training center.

Surface Water Migration Pathway, Human Food Chain Targets and Environmental Targets

The surface water migration pathway TDL begins at the probable point of entry (PPE) from the Site through the stormwater conveyance system and discharges from an outfall to a surface water body near the Columbia Slough (Figure 3). The surface water migration pathway TDL extends for 15 miles downstream within the Columbia Slough to Smith and Bybee Wetlands. Human food chain and environmental targets will be identified and discussed in further detail in the XPA report.

Soil Migration Pathway and Targets

The soil migration pathway begins at the Site. The entire site is paved with asphalt and includes buildings. The Site is primarily flat with a slight grade to the north. Currently, there is no soil migration pathway.

Cultural Resources and Endangered Species Act Consultations

In compliance with Section 106 of the National Historic Preservation Act (NHPA), DEQ has performed initial consultations with the appropriate Native American Tribe(s) and the Oregon State Historic Preservation Office (SHPO). An Inadvertent Discovery Plan has also been prepared for this project. Pursuant to the NHPA, the sampling strategy will consider the potential effects of sampling activities on historic and/or pre-historic resources. EPA will be responsible for formally consulting with Tribe(s) and SHPO, if required. DEQ will gather threatened and endangered species information in accordance with the Endangered Species Act. This information will be provided to EPA for determination of "No Effect".

Underground Utility Locate

DEQ's contractor will submit a locate request through the state underground utility "one call" number prior to subsurface assessment activities. In addition, a private company will be contracted to provide utility clearances of probe locations.

Soil Boring Explorations

Up to four (4) soil borings will be advanced at the site to evaluate soil and groundwater conditions. Temporary groundwater monitoring wells will be installed using sonic drilling and in accordance with DEQ guidance document "Groundwater Monitoring Well Drilling, Construction, and Decommissioning". All soil borings will be logged by an Oregon registered geologist using the Unified Soil Classification System. Groundwater is expected to be encountered within 20 feet of ground surface and flow to the north. Borings will be advanced up to 30 feet below ground surface (bgs). Proposed soil boring locations are presented on Figure 4.

Grab Samples

Two (2) grab samples for catch basin solids will be collected from two downgradient stormwater catch basins. Proposed catch basin grab samples are also presented on Figure 4.

Preliminary stormwater conveyance system mapping indicates the probable point of entry from the Site is an outfall near the Columbia Slough. DEQ will attempt to confirm the outfall location and secure access to the area. If the outfall area is accessible, one (1) grab sample for sediment and one (1) for surface water (if present) will be collected. The presumed outfall sample location is depicted on Figure 3 as "Outfall & PPE".

Community Supply Well Testing

Due to the community supply well located on the fire station parcel, DEQ contacted the Rockwood Water PUD to discuss collection of a wellhead sample for PFAS analysis. Rockwood Water PUD provided well water testing results from May 2020 to DEQ for review. According to the laboratory results, PFAS compounds were not detected

in the well at the time of the study. If data from this XPA indicate PFAS as a chemical of concern, DEQ will coordinate with the water district to conduct sampling from the wellhead.

Sample Collection

Soil will be collected in general accordance with SOP 2.9 (Apex, 2021). A minimum of one soil sample will be collected from each soil boring. However, decisions regarding soil samples to submit for laboratory analysis will be based on field observations. If contamination is observed, additional soil samples may be collected to further document the vertical extent of impacted soil.

Groundwater samples will be collected in general accordance with SOP 2.5 (Apex, 2021) from temporary well screens placed in each soil boring using dedicated PFAS-free tubing (e.g., HDPE) and peristaltic pump. Depth to water will be measured prior to collection of groundwater samples. The temporary wells will be purged a minimum of three casing volumes or until pH, temperature, and conductivity readings have stabilized to within 10%. Groundwater samples will be collected directly from the screened interval by dedicated disposable tubing. Samples will be transferred directly into the appropriate sample containers. Water sample collection should start with wells suspected to be least contaminated and end with wells suspected to be most contaminated.

A grab sample using manual methods for catch basin solids will be collected from two catch basins. Catch basin solids will be collected in general accordance with the City of Portland SOP "Guidance for Sampling of Catch Basin Solids," dated July 2003, and SOP 2.2 "Surface Soil Sampling Procedures for PFAS" (Apex, 2021). A grab sample for sediment and surface water will be collected from the suspected stormwater conveyance outfall area. The sediment sample will be collected in accordance with SOP 2.18 (Apex, 2022). The surface water sample will be collected in accordance with SOP 2.12 (Apex, 2021).

Future sampling of the Rockwood Water PUD community supply well will be based on evaluation of data collected during this XPA. DEQ will coordinate with the utility district if future sampling is warranted. Sampling procedures for water well sampling will be adapted from SOP 2.12 (Apex, 2021) and include purging of the system prior to sample collection.

Sample Handling Procedure

Soil samples will be field screened using a photoionization detector (PID) with a 10.2 eV lamp and sheen tests. PID readings will be recorded on the soil boring logs. The PID will be calibrated, daily, prior to field use, using a manufacturer-supplied standard gas.

When applicable and appropriate, collected material from each sample location will be placed in a stainless-steel bowl or sealable bag, thoroughly homogenized and placed into pre-labeled sample containers. Samples will be placed in certified clean jars provided by the laboratory, labeled, and placed on ice in a cooler. Sample labels will include sample number, project name, date and time of collection, analysis required, and preservative when applicable. A chain-of-custody form will be filled out and placed inside the cooler prior to shipping. The cooler will be sealed with tape and custody seals will be placed on the outside cooler to ensure that samples have not been compromised. PFAS samples will be shipped by overnight courier to Pace Analytical within 24-hours of sampling. Samples collected for other compounds will be submitted to EPA Region 10's Manchester Environmental Laboratory (Region 10 Laboratory) for analysis.

In order to avoid PFAS contamination of the groundwater samples, sampling personnel should avoid using items containing polytetrafluoroethylene (PTFE, also known as Teflon) during the sampling process; LDPE or polypropylene as well as other items that contain PFAS, such as aluminum foil, post-it notes, waterproof field books, markers, chemical ice packs (e.g., blue ice), certain decontamination soaps, and certain product packaging (e.g., such as that found on pre-wrapped foods and snacks). Similarly, many clothing items contain PFAS, such as those coated with Teflon or incorporating a Gore-Tex membrane. Clothing items should only be worn if they have been washed at least 6 times and known PFAS-containing products should be avoided during sample collection. Field personnel will avoid the use of cosmetics, moisturizers, and hand cream. Insect repellant and sunscreen will be avoided and alternative skins barriers (e.g., long sleeve clothing, wide-brimmed hat, etc.) implemented. PFAS contamination prevention protocols will be reviewed with subcontractors and personnel daily during the field

activities. Before any samples are to be collected, the sample handler must wash their hands and wear nitrile gloves while collecting and sealing sample containers.

Decontamination Procedures

To the greatest extent possible, disposable and/or dedicated personal protective and sampling equipment will be used to avoid cross-contamination. The drilling equipment will be steam cleaned using a high-pressure washer before and after each boring. Fluids generated during decontamination activities will be stored in DOT-approved 55-gallon drums and tested before appropriate disposal.

Investigation-Derived Wastes

DEQ's contractor will make every effort to minimize the generation of investigation-derived wastes (IDW) throughout the fieldwork. Soil cuttings and water generated during decontamination of the sampling equipment will be stored in drums and tested before disposal. All drums will be labeled accordingly. The label will include at a minimum the following information: site name, date generated, contents, contact name, and contact phone number. All drummed waste will be characterized and properly disposed by DEQ's contractor within 60 days of the date of generation.

Analytical Program

All PFAS samples will be submitted to Pace Analytical for analysis. All other samples will be submitted to the Region 10 Laboratory. Chain-of-custody procedures will be followed during transport of samples to Pace Analytical and Region 10 Laboratory. The following analytical program has been developed for the Site. Four soil samples, four groundwater samples, two catch basin solids samples, one sediment, one surface water, one drinking water sample, IDW samples, four duplicate samples, trip blanks, and rinsate samples are anticipated to be collected during site assessment activities.

Soil, sediment, groundwater, and surface water samples collected will be analyzed for one or more of the following:

- VOCs by EPA Method 8260 (See Table 2a);
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270E (See Table 2b);
- Polychlorinated biphenyls (PCBs) by EPA Method 8082 (See Table 2c), and
- PFAS by EPA Method 537.1, utilizing isotope dilution (See Table 2d).

Quality Assurance and Quality Control

All sampling activities performed under this work plan will be conducted in accordance with DEQ's *EPA PA/SI Investigations Quality Assurance Project Plan*, dated December 2017. QA/QC sampling for this project will include:

1. **Trip Blanks.** A trip blank, consisting of clean water samples prepared prior to field activities, will be included with each cooler shipped and will be analyzed for PFAS and VOCs.
2. **Rinsate Blanks.** A rinsate blank, consisting of clean water samples prepared in the field, will be collected at a rate of 1/20 samples during field activities and analyzed for PFAS and VOCs. Rinsate blanks consist of water aliquots for both soil and water field samples.
3. **Duplicate Samples.** Duplicate samples will be collected at a rate of 1/20 samples per matrix. The duplicate samples will be analyzed for the same parameters as the original sample.

Detection limits will be consistent with industry standards and, when practicable, below or comparable to promulgated regulatory standards, unless raised due to high analyte concentrations in the sample or matrix effects.

Reporting

An Expanded Preliminary Assessment report will be prepared following the completion of field activities and the receipt of laboratory analyses. Generic risk-based concentrations listed in the *"Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites"* guidance dated September 22, 2003 (including subsequent updates) will be used to screen detected compounds and exposure pathways of concern (see Tables 3a, 3b, & 3c). PFAS compounds will be screened against EPA's Regional Screening Levels (RSLs) and Health Advisory Limits

(see Table 4). The report will include a discussion of site investigation activities and findings, a site map displaying the locations of soil borings, tables of laboratory analytical results, comparisons of analytical results with RSLs and Health Advisory Limits, soil boring logs, chain-of-custody records, laboratory analytical data, and QA/QC reports.

Project Schedule

The following is the proposed schedule for implementing this XPA.

Activity	Start	Complete
Cultural Resource and ESA; draft SAP	February 2023	April 2023
Field Work	May 23, 2023	May 25, 2023
Laboratory Receipt of Samples	May 25, 2023	May 26, 2023
Laboratory Analysis (Pace)	May 26, 2023	June 9, 2023
Laboratory Analysis (Manchester)	May 26, 2023	July 26,2023
Writing of Project Report	May 2023	August 2023
Submit Draft Report to EPA	August 2023	
Incorporate EPA's comments and submit final XPA to EPA	September 2023	September 2023
Target Project Completion Date		September 2023

Work Plan Prepared by

Ray HOY
Ray HOY (Apr 25, 2023 08:10 PDT)

Ray Hoy
Project Manager

Work Plan Approved by

Paul SEIDEL
Paul SEIDEL (Apr 25, 2023 08:31 PDT)

Paul Seidel
Manager, Northwest Region Cleanup Program

Tables

Table 1 – Analytical & Sample Summary
Table 2a –Target Compounds (VOCs) and Detection Limits
Table 2b –Target Compounds (SVOCs) and Detection Limits
Table 2c –Target Compounds (PCBs) and Detection Limits
Table 2d –Target Compounds (PFAS) and Detection Limits
Table 3a Target Compounds (VOCs) and Risk-Based Concentrations
Table 3b Target Compounds (SVOCs) and Risk-Based Concentrations
Table 3c Target Compounds (PCBs) and Risk-Based Concentrations
Table 4 – Target Compounds (PCBs) and RSLs/HALs

Figures

Figure 1 – Topographic Map
Figure 2 – Site Location Map

Figure 3 – 15-Mile Target Distance Limit Map
Figure 4 – Proposed Sample Location Map

Attachments
Attachment 1 – Standard Operating Procedure (SOP 2.9) Sonic Drilling Exploration Procedures for PFAS
Attachment 2 – Standard Operating Procedure (SOP 2.5) Low Flow Groundwater Sampling Procedure for PFAS
Attachment 3 – Standard Operating Procedure (SOP 2.2) Surface Soil Sampling Procedure for PFAS
Attachment 4 – Standard Operating Procedure (SOP 2.18) Sediment Sampling Procedures for PFAS
Attachment 5 – Standard Operating Procedure (SOP 2.12) Grab Water Sampling Procedure for PFAS

Table 1
Analytical & Sample Summary
Gresham Fire Training Center

Sample Type	Media	Number of Samples[1]	Parameters	Analytical Method	Sample Preservation	Holding Time	Sample Container
Soil Boring/ Grab Samples	Soil/ Solids/ Sediment	6	VOCs	EPA Method 8260D	2 pre-tared VOAs containing approx. 5 g sample w/ methanol	14 days	Three 40mL VOAs with Teflon-lined septum caps
					1 pre-tared VOAs containing approx. 5 g sample w/ no preservative		
					All containers Cool, ≤ 6°C		
				% solids analysis			One 4 oz. glass jar
		6	SVOCs	EPA Method 8270E	Cool, ≤ 6°C	14 days	One 8 oz. amber glass jar
		7	PFAS	EPA Method 537.1	Cool, 0 - 6°C	14 days	Wide-mouth HDPE jar
		1	PCBs	EPA Method 8082A	Cool, ≤ 6°C	14 days	One 4 oz. amber glass jar
Soil Boring/ Community Supply Well[2]/ Outfall	Groundwater/ Drinking Water/ Surface Water	4	VOCs	EPA Method 8260D	HCL pH<2 Cool, ≤ 6°C	7 days	Three 40mL VOAs
		4	SVOCs	EPA Method 8270E	Cool, ≤ 6°C	7 days	1-L amber glass jar
		6	PFAS	EPA Method 537.1	Cool, 0 - 6°C	14 days	500-mL HDPE bottle
Trip Blank[3]	QA/QC	1 per cooler	VOCs	EPA Method 8260D	HCL pH<2 Cool, ≤ 6°C	14 days	Three 40ml VOAs

Notes:

1 The number of samples presented is an estimate; the actual number of samples to be collected/analyzed will be determined in the field based on field observations.

2 Included as a placeholder for future sampling, if data support collection of a sample from the wellhead.

3 The total number of trip blanks could vary depending on the total number of sample shipments. This number is based on the estimated number of shipping containers. Up to 4 trip blanks are anticipated.

QA Sample Media	QA Sample Type	Analyses Requested	Anticipated Number of Samples
Soil/Solids	Field Duplicate	All	2
	Rinsate Blank	All	2
Groundwater	Field Duplicate	All	2
	Rinsate Blank	All	2

Table 2a
Target Compounds (VOCs) and Detection Limits
Gresham Fire Training Center

Target Analytes	Laboratory Reporting Limit		Target Analytes	Laboratory Reporting Limit	
	Soil (mg/kg)	Water (µg/L)		Soil (mg/kg)	Water (µg/L)
Dichlorodifluoromethane	0.001	1.0	Bromodichloromethane	0.001	1.0
Chloromethane	0.001	1.0	cis-1,3-Dichloropropene	0.001	1.0
Vinyl chloride	0.001	1.0	4-Methyl-2-pentanone	0.001	1.0
Bromomethane	0.001	1.0	Toluene	0.001	1.0
Chloroethane	0.001	1.0	trans-1,3-Dichloropropene	0.001	1.0
Trichlorofluoromethane	0.001	1.0	1,1,2-Trichloroethane	0.001	1.0
Freon 113	0.001	1.0	Tetrachloroethene	0.001	1.0
1,1-Dichloroethene	0.001	1.0	2-Hexanone	0.001	1.0
Acetone	0.001	1.0	Dibromochloromethane	0.001	1.0
Carbon disulfide	0.001	1.0	1,2-Dibromoethane	0.001	1.0
Methyl acetate	0.001	1.0	Chlorobenzene	0.001	1.0
Methylene chloride	0.001	1.0	1,1,1,2-Tetrachloroethane	0.001	1.0
Acrylonitrile	0.001	1.0	Ethylbenzene	0.001	1.0
Methyl-tert-butyl ether	0.001	1.0	m- + p-Xylene	0.001	1.0
trans-1,2-Dichloroethene	0.001	1.0	o-Xylene	0.001	1.0
1,1-Dichloroethane	0.001	1.0	Styrene	0.001	1.0
2-Butanone	0.001	1.0	1,1,2,2-Tetrachloroethane	0.001	1.0
cis-1,2-Dichloroethene	0.001	1.0	Bromoform	0.001	1.0
Bromochloromethane	0.001	1.0	Isopropylbenzene	0.001	1.0
Chloroform	0.001	1.0	1,2,3-Trichloropropane	0.001	1.0
1,2-Dichloroethane	0.001	1.0	1,3-Dichlorobenzene	0.001	1.0
1,1,1-Trichloroethane	0.001	1.0	1,4-Dichlorobenzene	0.001	1.0
Cyclohexane	0.001	1.0	1,2-Dichlorobenzene	0.001	1.0
Carbon tetrachloride	0.001	1.0	1,2-Dibromo-3-chloropropane	0.001	1.0
Benzene	0.001	1.0	1,2,4-Trichlorobenzene	0.001	1.0
Trichloroethene	0.001	1.0	Hexachlorobutadiene	0.001	1.0
Methylcyclohexane	0.001	1.0	Naphthalene	0.001	1.0
1,2-Dichloropropane	0.001	1.0	1,2,3-Trichlorobenzene	0.001	1.0
Dibromomethane	0.001	1.0		0.001	1.0

Notes:
VOCs – Volatile organic compounds
mg/kg – milligrams per kilograms
µg/L – micrograms per liter

Table 2b
Target Compounds (SVOCs) and Detection Limits
Gresham Fire Training Center

Target Analytes	Laboratory Reporting Limit		Target Analytes	Laboratory Reporting Limit	
	Soil (mg/kg)	Water (µg/L)		Soil (mg/kg)	Water (µg/L)
N-Nitrosodimethylamine	0.05	1.0	Acenaphthene	0.05	1.0
Benzaldehyde	0.05	1.0	2,4-Dinitrophenol	0.05	1.0
Phenol	0.05	1.0	4-Nitrophenol	0.05	1.0
bis(2-Chloroethyl)ether	0.05	1.0	Dibenzofuran	0.05	1.0
2-Chlorophenol	0.05	1.0	2,4-Dinitrotoluene	0.05	1.0
2-Methylphenol	0.05	1.0	2,3,4,6-Tetrachlorophenol	0.05	1.0
2,2'-Oxybis[1-chloropropane]	0.05	1.0	Diethylphthalate	0.05	1.0
Acetophenone	0.05	1.0	Fluorene	0.05	1.0
4-Methylphenol	0.05	1.0	4-Chlorophenylphenylether	0.05	1.0
N-Nitrosodi-n-propylamine	0.05	1.0	4-Nitroaniline	0.05	1.0
Hexachloroethane	0.05	1.0	N-Nitrosodiphenylamine	0.05	1.0
Nitrobenzene	0.05	1.0	4,6-Dinitro-2-methylphenol	0.05	1.0
Isophorone	0.05	1.0	4-Bromophenylphenylether	0.05	1.0
2-Nitrophenol	0.05	1.0	Hexachlorobenzene	0.05	1.0
2,4-Dimethylphenol	0.05	1.0	Atrazine	0.05	1.0
bis(2-Chloroethoxy)methane	0.05	1.0	Pentachlorophenol	0.05	1.0
2,4-Dichlorophenol	0.05	1.0	Phenanthrene	0.05	1.0
1,2,4-Trichlorobenzene	0.05	1.0	Anthracene	0.05	1.0
Naphthalene	0.05	1.0	Caffeine	0.05	1.0
4-Chloroaniline	0.05	1.0	Carbazole	0.05	1.0
Hexachlorobutadiene	0.05	1.0	di-n-Butylphthalate	0.05	1.0
Caprolactam	0.05	1.0	Fluoranthene	0.05	1.0
4-Chloro-3-methylphenol	0.05	1.0	Pyrene	0.05	1.0
2-Methylnaphthalene	0.05	1.0	Butylbenzylphthalate	0.05	1.0
1-Methylnaphthalene	0.05	1.0	Benzo(a)anthracene	0.05	1.0
Hexachlorocyclopentadiene	0.05	1.0	3,3'-Dichlorobenzidene	0.05	1.0
1,2,4,5-Tetrachlorobenzene	0.05	1.0	Chrysene	0.05	1.0
2,4,6-Trichlorophenol	0.05	1.0	bis(2-Ethylhexyl)phthalate	0.05	1.0
2,4,5-Trichlorophenol	0.05	1.0	di-n-Octylphthalate	0.05	1.0
Biphenyl	0.05	1.0	Benzo(b)fluoranthene	0.05	1.0
2-Chloronaphthalene	0.05	1.0	Benzo(k)fluoranthene	0.05	1.0
2-Nitroaniline	0.05	1.0	Benzo(a)pyrene	0.05	1.0
Dimethylphthalate	0.05	1.0	Indeno(1,2,3-cd)pyrene	0.05	1.0
Acenaphthylene	0.05	1.0	Dibenz(ah)anthracene	0.05	1.0
2,6-Dinitrotoluene	0.05	1.0	Benzo(ghi)perylene	0.05	1.0
3-Nitroaniline	0.05	1.0		0.05	1.0

Notes:
SVOCs – Semivolatile organics compounds
mg/kg – milligrams per kilograms
µg/L – micrograms per liter

Table 2c
Target Compounds (PCBs) and Detection Limits
Gresham Fire Training Center

Target Analytes	Laboratory Reporting Limit	
	Soil (mg/kg)	Water (µg/L)
Aroclor 1016	0.01	0.25
Aroclor 1221	0.01	0.25
Aroclor 1232	0.01	0.25
Aroclor 1242	0.01	0.25
Aroclor 1248	0.01	0.25
Aroclor 1254	0.01	0.25
Aroclor 1260	0.01	0.25

Notes:
PCBs - Polychlorinated biphenyls
mg/kg – milligrams per kilograms
µg/L – micrograms per liter

Table 2d
Target Compounds (PFAS) and Detection Limits
Gresham Fire Training Center

Target Analytes	Laboratory Reporting Limit
	Water (ng/L)
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.0
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.0
Perfluorobutanesulfonic acid (PFBS)	2.0
Perfluorodecanoic acid (PFDA)	2.0
Perfluorododecanoic acid (PFDoA)	2.0
Perfluoroheptanoic acid (PFHpA)	2.0
Perfluorohexanesulfonoic acid (PFHxS)	2.0
Perfluorohexanoic acid (PFHxA)	2.0
Perfluorononaoic acid (PFNA)	2.0
Perfluorooctanesulfonic acid (PFOS)	1.0
Perfluorooctanoic acid (PFOA)	2.0
Perfluorotetradecanoic acid (PFTA)	2.0
Perfluorotridecanoic acid (PFTrDA)	2.0
Perfluoroundecanoic acid (PFUnA)	2.0

Notes:
PFAS - Per- and Polyfluoroalkyl Substances
ng/L – nanograms per liter

Table 3a
Target Compounds (VOCs) and Risk-Based Concentrations
Gresham Fire Training Center

Target Analytes	RBC[1]		Target Analytes	RBC[1]	
	Soil[2] (mg/kg)	Water[3] (µg/L)		Soil[2] (mg/kg)	Water[3] (µg/L)
Dichlorodifluoromethane	--	--	Bromodichloromethane	6,300	0.13
Chloromethane	700,000	190	cis-1,3-Dichloropropene	--	--
Vinyl chloride	950	0.027	4-Methyl-2-pentanone	--	--
Bromomethane	10,000	7.5	Toluene	770,000	1,100
Chloroethane	>Max	21,000	trans-1,3-Dichloropropene	--	--
Trichlorofluoromethane	--	--	1,1,2-Trichloroethane	8,900	0.28
Freon 113	>Max	55,000	Tetrachloroethene	280,000	12
1,1-Dichloroethene	370,000	280	2-Hexanone	--	--
Acetone	--	--	Dibromochloromethane	5,800	0.17
Carbon disulfide	--	--	1,2-Dibromoethane	250	0.0075
Methyl acetate	--	--	Chlorobenzene	130,000	77
Methylene chloride	--	--	1,1,1,2-Tetrachloroethane	--	--
Acrylonitrile	--	--	Ethylbenzene	49,000	1.5
Methyl-tert-butyl ether	320,000	14	Xylene	560,000	190
trans-1,2-Dichloroethene	200,000	360	Styrene	>Max	1,200
1,1-Dichloroethane	89,000	2.8	1,1,2,2-Tetrachloroethane	--	--
2-Butanone	--	--	Bromoform	74,000	3.3
cis-1,2-Dichloroethene	20,000	36	Isopropylbenzene	750,000	440
Bromochloromethane	6,300	0.13	1,2,3-Trichloropropane	--	--
Chloroform	11,000	0.22	1,3-Dichlorobenzene	--	--
1,2-Dichloroethane	5,600	0.17	1,4-Dichlorobenzene	36,000	0.48
1,1,1-Trichloroethane	>Max		1,2-Dichlorobenzene	560,000	300
Cyclohexane	--	--	1,2-Dibromo-3-chloropropane	--	--
Carbon tetrachloride	8,900	0.46	1,2,4-Trichlorobenzene	--	--
Benzene	11,000	0.46	Hexachlorobutadiene	--	--
Trichloroethene	3,700	0.49	Naphthalene	16,000	0.17
Methylcyclohexane	--	--	1,2,3-Trichlorobenzene	--	--
1,2-Dichloropropane	--	--	Dibromomethane	--	--

Notes:
[1]Generic risk-based concentrations listed in the *"Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites"* guidance dated September 22, 2003 (including subsequent updates)
[2]Excavation Worker RBC
[3]Residential drinking water RBC
RBC - risk-based concentration
VOCs – Volatile organic compounds
mg/kg – milligrams per kilograms
µg/L – micrograms per liter
-- = Not available or not applicable.
>Max = The constituent RBC for this pathway is greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, these substances are not expected to pose risks in the scenario shown

Table 3b
Target Compounds (SVOCs) and Risk-Based Concentrations
Gresham Fire Training Center

Target Analytes	RBC[1]		Target Analytes	RBC[1]	
	Soil[2] (mg/kg)	Water[3] (µg/L)		Soil[2] (mg/kg)	Water[3] (µg/L)
N-Nitrosodimethylamine	--	--	Acenaphthene	590,000	510
Benzaldehyde	--	--	2,4-Dinitrophenol	--	--
Phenol	--	--	4-Nitrophenol	--	--
bis(2-Chloroethyl)ether	--	--	Dibenzofuran	--	--
2-Chlorophenol	--	--	2,4-Dinitrotoluene	--	--
2-Methylphenol	--	--	2,3,4,6-Tetrachlorophenol	--	--
2,2'-Oxybis[1-chloropropane]	--	--	Diethylphthalate	--	--
Acetophenone	--	--	Fluorene	390,000	280
4-Methylphenol	--	--	4-Chlorophenylphenylether	--	--
N-Nitrosodi-n-propylamine	--	--	4-Nitroaniline	--	--
Hexachloroethane	--	--	N-Nitrosodiphenylamine	--	--
Nitrobenzene	--	--	4,6-Dinitro-2-methylphenol	--	--
Isophorone	--	--	4-Bromophenylphenylether	--	--
2-Nitrophenol	--	--	Hexachlorobenzene	--	--
2,4-Dimethylphenol	--	--	Atrazine	--	--
bis(2-Chloroethoxy)methane	--	--	Pentachlorophenol	960	0.044
2,4-Dichlorophenol	--	--	Phenanthrene	--	--
1,2,4-Trichlorobenzene	--	--	Anthracene	>Max	>S
Naphthalene	16,000	0.17	Caffeine	--	--
4-Chloroaniline	--	--	Carbazole	--	--
Hexachlorobutadiene	--	--	di-n-Butylphthalate	--	--
Caprolactam	--	--	Fluoranthene	280,000	>S
4-Chloro-3-methylphenol	--	--	Pyrene	--	110
2-Methylnaphthalene	--	--	Butylbenzylphthalate	--	--
1-Methylnaphthalene	--	--	Benzo(a)anthracene	4,800	0.3
Hexachlorocyclopentadiene	--	--	3,3'-Dichlorobenzidene	--	--
1,2,4,5-Tetrachlorobenzene	--	--	Chrysene	490,000	>S
2,4,6-Trichlorophenol	--	--	bis(2-Ethylhexyl)phthalate	37,000	5.6
2,4,5-Trichlorophenol	--	--	di-n-Octylphthalate	--	--
Biphenyl	--	--	Benzo(b)fluoranthene	4,900	0.25
2-Chloronaphthalene	--	--	Benzo(k)fluoranthene	49,000	>S
2-Nitroaniline	--	--	Benzo(a)pyrene [BaP equivalents]	790	0.025
Dimethylphthalate	--	--	Indeno(1,2,3-cd)pyrene	4,900	>S
Acenaphthylene	--	--	Dibenz(a,h)anthracene	490	0.025
2,6-Dinitrotoluene	--	--	Benzo(ghi)perylene	--	--
3-Nitroaniline	--	--			

Notes:
[1]Generic risk-based concentrations listed in the *"Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites"* guidance dated September 22, 2003 (including subsequent updates)
[2]Excavation Worker RBC
[3]Residential ingestion, dermal & inhalation from tapwater RBC
-- = Not applicable
SVOCs – Semivolatile organics compounds
mg/kg – milligrams per kilograms
µg/L – micrograms per liter
>Max = The constituent RBC for this pathway is greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, these substances are not expected to pose risks in the scenario shown
>S = The groundwater RBC exceeds the limit of three-phase equilibrium partitioning

Table 3c
Target Compounds (PCBs) and Risk-Based Concentrations
Gresham Fire Training Center

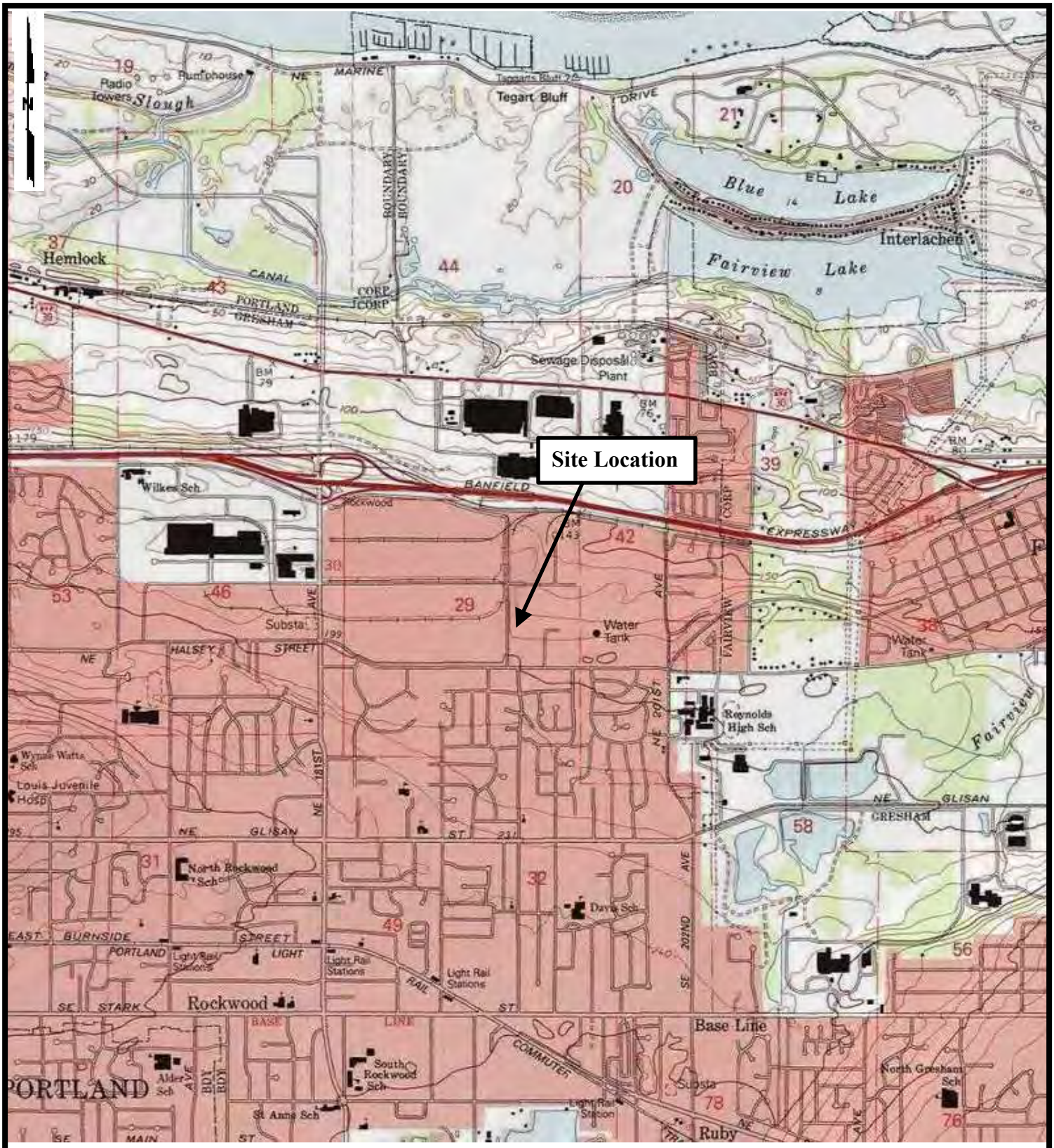
Target Analytes	RBC[1]	
	Soil[2] (mg/kg)	Water[3] (µg/L)
Aroclor 1016	--	--
Aroclor 1221	--	--
Aroclor 1232	--	--
Aroclor 1242	--	--
Aroclor 1248	--	--
Aroclor 1254	--	--
Aroclor 1260	--	--
Total PCBs	230	0.006

Notes:
[1]Generic risk-based concentrations listed in the *"Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites"* guidance dated September 22, 2003 (including subsequent updates)
[2]Excavation Worker RBC
[3]Residential ingestion, dermal & inhalation from tapwater RBC
-- = Not applicable
PCBs - Polychlorinated biphenyls
mg/kg – milligrams per kilograms
µg/L – micrograms per liter

Table 4
Target Compounds (PCBs) and RSLs/HALs
Gresham Fire Training Center

		Water (ng/L)			Soil (µg/kg)		
	Agency	EPA[a]	OHA[b]	EPA[c]	EPA[a]		
	Screening Level	Tapwater RSLs	Drinking Water HALs	Drinking Water HALs	Resident Soil RSLs	Industrial Soil RSLs	SSL for Groundwater Protection RSLs
Acid forms	PFOS	40	30	0.02[d]	130	1,600	0.038
	PFOA	60	30	0.004[d]	190	2,500	0.91
	PFHxS	390	30	-	1,300	16,000	0.17
	PFNA	59	30	-	190	2,500	0.25
	PFBS	6,000	-	2000[e]	19,000	250,000	1.9
	GenX	60	-	10[e]	230	3,500	-

Notes:
PFAS - Per- and Polyfluoroalkyl Substances
RSL – Regional screening levels
HAL – Health advisory levels
ng/L – nanograms per liter
µg/kg - micrograms per kilogram
EPA – U.S. Environmental Protection Agency
OHA – Oregon Health Authority
SSL – Soil screening level
PFOS - Perfluorooctanesulfonic acid
PFOA - Perfluorooctanoic acid
PFHxS - Perfluorohexanesulfonoic acid
PFNA - Perfluorononaoic acid
PFBS - Perfluorobutanesulfonic acid
[a]EPA Regional Screening Levels, May 2022, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables . Note that values for potassium-PFOS, potassium-PFBS, and ammonium-GenX are also available.
[b]Oregon Health Authority drinking water lifetime health advisories (values are individually or combined), https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/OPERATIONS/Pages/PFAS.aspx
[c]EPA drinking water lifetime health advisory levels, June 2022, https://www.epa.gov/system/files/documents/2022-06/drinking-water-ha-pfas-factsheet-communities.pdf
[d]Interim updated HAL, previous 2016 EPA HAL was 70 ng/L for PFOS and PFOA combined
[e]Final HAL



REFERENCE
USGS 7.5 Topographical Maps
Camas, WA-OR 1993

DEQ

Gresham Fire Training Center
19204 NE San Rafael St
Gresham, Oregon

FIGURE
1

TOPOGRAPHIC MAP

ECSI 6458



0 112 225 450

Approx. Scale in Feet

Aerial image, date: USDA Web Soil Survey, Oct. 2018

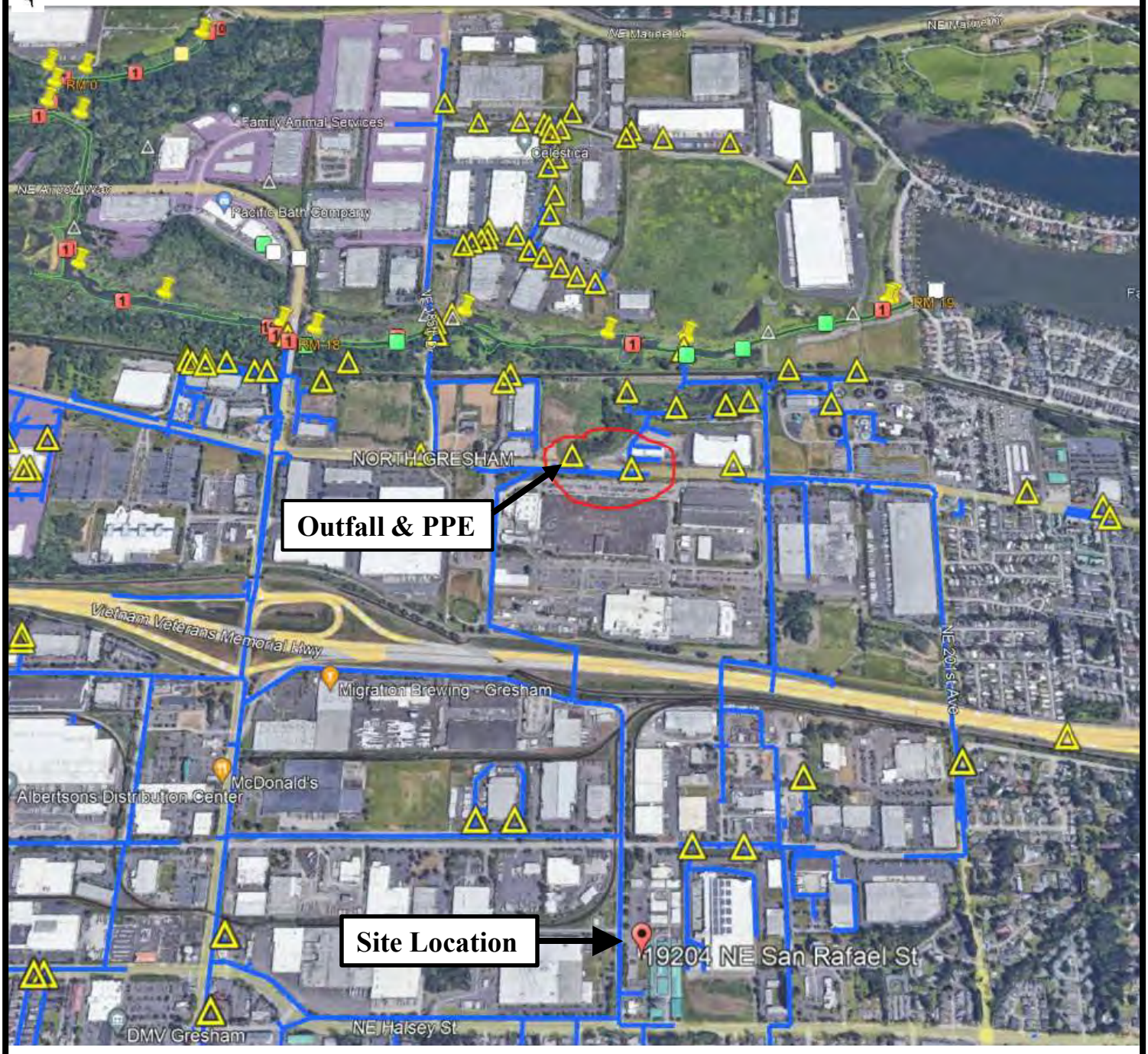
DEQ

Gresham Fire Training Center
19204 NE San Rafael St
Gresham, Oregon

FIGURE
2

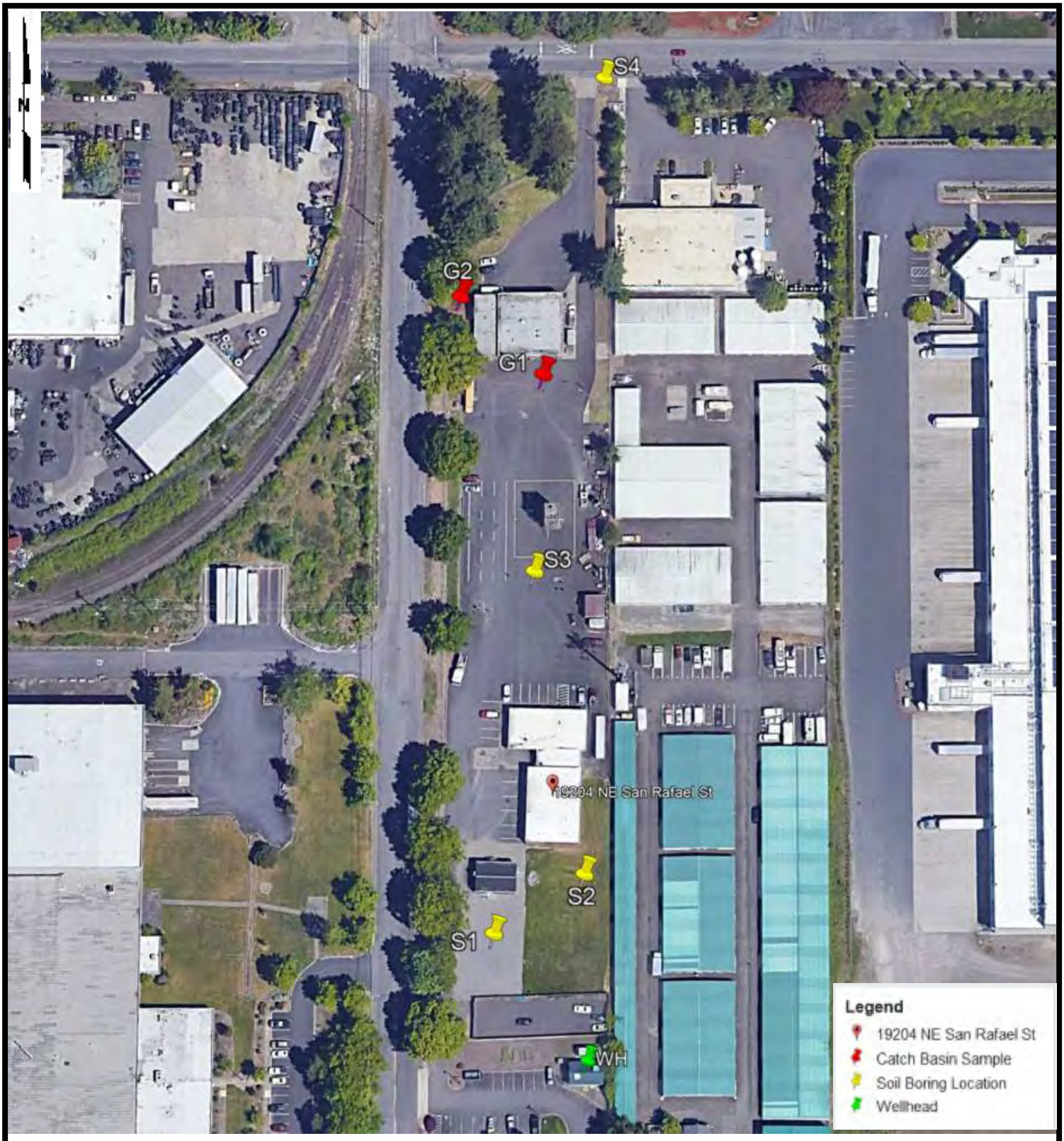
SITE LOCATION MAP

ECSI 6458



Aerial image: Google Earth

DEQ	**Gresham Fire Training Center** 19204 NE San Rafael St Gresham, Oregon	FIGURE **3**
	STORMWATER CONVEYANCE MAP	ECSI 6458



Aerial image, 2021: Google Earth

Approx. Scale in Feet

DEQ

Gresham Fire Training Center
19204 NE San Rafael St
Gresham, Oregon

FIGURE
4

SAMPLE LOCATION MAP

ECSI 6458

ATTACHMENTS

ATTACHMENT

SOP 2.9	Standard Operating Procedure	
Rev 0.03	Sonic Drilling Exploration Procedures for PFAS	
Page 1 of 6	Owner: Heather Gosack Review by: 2022	Issued: May 28, 2021 Revised: May 28, 2021

1. Purpose

This Standard Operating Procedure (SOP) describes the methods for observing and sampling using sonic drilling techniques. Subsurface soil cores may be obtained using this system for the purposes of determining subsurface soil conditions and for obtaining soil samples for physical and/or chemical evaluation. Grab groundwater samples may be collected using temporary well screens. Groundwater monitoring wells may also be installed using sonic drilling methods. This procedure is applicable during Apex Companies, LLC (Apex) drilling activities using sonic drilling methods to collect grab soil and/or groundwater samples for analysis of per- and polyfluorinated alkyl substances (PFAS). The protocols in this SOP are consistent with sonic drilling activities for non-PFAS compounds with added protocols to address potential for cross-contamination from materials containing PFAS.

2. Scope

This SOP applies to all Apex field events where grab soil and groundwater samples will be collected for analysis of PFAS using sonic drilling methods.

3. Equipment and Materials

The following materials are necessary for this procedure:

- Traffic cones, measuring tape, spatula, and buckets/drums.
- Groundwater sampling equipment (water level probe, pumps, tubing).
- Soil sampling equipment (spoons, scoops, and/or trowels). Stainless steel is preferred.
- Stainless steel bowls.
- Laboratory-supplied PFAS-free (high-density polyethylene [HDPE]) sample containers. Sample containers should not have Teflon®-lined lids. PFAS may adsorb to glass containers; therefore, glass should be avoided for both water and soil samples.
- Field documentation materials.
- Decontamination materials.
- Personal protective equipment (as required by project Health and Safety Plan).

Prior to conducting the sampling event, a materials screening should be performed to identify field equipment and personal protective equipment (PPE) that are PFAS-free to reduce the risk of cross-contamination. The materials screening should include a review of safety data sheets (SDS) and ingredient lists (in personal care products, sunscreens, insect repellants, etc.). Additional details regarding which materials are allowed and which are prohibited are provided below.

The following PFAS-containing equipment and materials are PROHIBITED and should be avoided when sampling soil for PFAS:

- Teflon®-containing materials (polytetrafluoroethylene [PFTE]) (e.g. sample containers, tubing, bailers, plumbing paste, tape, etc.). In cases where Teflon®-containing materials are unavoidable, ensure adequate purging is performed prior to sampling and equipment blanks are collected prior to sampling.
- Low-density polyethylene (LDPE)-containing materials (e.g. disposable plastic storage bags, or containers used to transport samples, tubing). In cases where LDPE-containing materials are unavoidable, an equipment blank can be collected to ensure the LDPE is PFAS-free. LDPE does not typically contain PFAS in the raw materials; however, LDPE products are often cross-contaminated with PFAS during manufacturing.
- Materials containing polyvinylidene fluoride (PVDF; Kynar®), which can be found in tubing, films/coatings on aluminum, lithium-ion batteries, and wire insulators.
- Materials containing polychlorotrifluoroethylene (PCTFE; Neoflon®), which can be found on food packaging, valves, seals, and gaskets.
- Materials containing ethylene-tetrafluoroethylene (ETFE; Tefzel®), which can be found on wire insulation, pipe liners, and cable tie wraps.
- Materials containing fluorinated ethylene propylene (FEP; Teflon®; Hostaflon®; Neoflon®), which can be found in labware, wire insulation, and pipe linings.
- Paper products such as waterproof field books (e.g. Rite-in-the-Rain), plastic clipboards, binders, spiral hard cover notebooks, sticky notes, or glue materials.
- Markers.
- Chemical (blue) ice packs.
- Latex gloves.
- Coated materials, including aluminum foil.
- Decontamination soaps containing fluorosurfactants such as Decon 90.
- Water that is not verified to be "PFAS-free" by the laboratory to be used for trip, equipment, and decontamination blanks and decontamination processes.
- Water resistant, waterproof, stain-treated clothing or shoes, including Gore-Tex™ and Tyvek® materials. If PFAS-free shoes cannot be used, PFAS-free over-boots may be worn and donned in the staging area prior to sampling.

Additionally, there is documentation that some personal care products, as well as food and drinks, may introduce PFAS contaminants to the samples. Therefore, these additional precautions should be taken during the sampling event:

- Many personal care products, such as cosmetics, moisturizers, and hand creams, contain PFAS. These products should be avoided during sampling events and 24 hours prior to sampling. Please note that many products marketed as 'natural' or 'organic' contain PFAS. If personal care products must be used, the ingredient list should be checked for PFAS.
- Many manufactured sunblocks and insect repellents contain PFAS. Only PFAS-free sunblock and insect repellent should be used during sampling events. If sunscreens or insect repellants are used during a PFAS sampling event, the product(s) should be applied in the staging area. After application, hands should be washed and new nitrile gloves used.
- Many food and drink wrappers and containers, paper plates, aluminum foil, and paper towels contain PFAS. Food containers and related items should be kept out of the sampling area. Samplers should wash hands thoroughly with PFAS-free water and soap after handling food wrappers and containers.

The following equipment and materials are typically PFAS-free and recommended for use when collecting samples for PFAS analysis:

- HDPE, polypropylene, acetate, nylon, polyvinyl chloride (PVC), cotton, stainless steel, natural rubber, and silicone materials (e.g. tubing, bailers, tape, plumbing paste).
- Nitrile gloves that are changed frequently.
- Loose paper with Masonite or aluminum clipboards.
- Bags of ice.
- Alconox® or Liquinox®.
- Laboratory-supplied and verified PFAS-free water to be used for trip, equipment, and decontamination blanks and decontamination processes.
- Cotton textiles are recommended for field clothing and should be laundered a minimum of 6 times from time of purchase due to possible PFAS-related treatments. Fabric softener must be avoided. Rain gear should be made from polyurethane, polyvinyl chloride (PVC), and/or wax-coated materials.

There is some documentation that field vehicles could have seats treated with stain resistant products and could represent a source of cross-contamination. If possible, cover treated vehicle seats with a well-laundered cotton blanket or sheet. Do not handle sample containers on the vehicle seats. Always change gloves after exiting the vehicle.

4. Methodology

Field Preparation:

Prior to sampling, set up separate eating, staging, and sampling areas to help avoid PFAS cross-contamination. Due to the high risk of cross-contamination, any visitors to the site should remain at a distance from the sampling area. A sequence should be set up prior to sampling. Sample collection should start with areas suspected to be least contaminated and end with areas suspected to be most contaminated.

Coring Procedure (Conducted by Drilling Subcontractor):

Sonic drilling advances a temporary casing while drilling, thereby eliminating communication between strata of different elevations during the drilling process. The sonic drilling technology combines harmonics (vibration) and rotation as the basis for tool advancement and reduces the volume of investigation-derived wastes (IDW) created during the completion of the boring. Drilling is conducted using an inner casing (a 6-inch diameter core barrel) followed by an outer casing that sleeves over the inner casing. The core barrel advances 5 to10 feet into the subsurface, followed by the outer casing. The core barrel is then removed from the borehole and the soil is bagged for preservation (and sampling) or for disposal. The core barrel is put back into the borehole and pushed another 5 to10 feet. An additional 5 to 10-foot length of outer casing is added to the outer casing that is in the ground and it is drilled to meet the bottom of the core barrel. This process continues until total depth is reached. Soil cores are collected continuously to the full depth of the exploration unless otherwise specified in a project-specific sampling and analysis plan (SAP). Verify that the subcontractor decontaminates the sampling device prior to its initial use and following collection of each soil sample. Also verify that the subcontractor uses PFAS-free soil collection bags. Decontamination will consist of steam washing with PFAS-free water. Care should be taken to contain the steam and water; PFAS may aerosolize during decontamination procedures and deposit on the site surface, creating a contamination risk.

Logging and Soil Sample Collection:

The driller will transfer the soil core from the sampler into a plastic tube bag by vibrating and moving the sampler so that the full soil core is laid flat within the bag. Inspect the soil core and expose for field screening, description, and placement into sample jars as needed by opening the side of the sample bag. Soil samples will generally be collected for field screening and possible chemical analysis at two- to five-foot intervals unless otherwise specified in a project-specific SAP. The sampling interval will be determined in the field based on recovery, soil variability, and evidence of contamination. Complete field screening as specified in SOP-2.1. With PFAS

specifically, considering soil sample depth is important and may affect the concentration of PFAS detected at the laboratory. Current research suggests that PFAS concentrate in the air/water interfaces; therefore, sampling soil just above the water table may generate a different (generally higher) PFAS concentration than sampling other soil intervals. PFAS concentrations in soil can also be heavily influenced via downward leaching during precipitation events.

Soil samples for PFAS analysis will be thoroughly homogenized in a stainless steel bowl prior to bottling. Sample homogenizing is accomplished by manually mixing the entire soil sample in the stainless steel bowl with a clean sampling tool until a uniform mixture is achieved. The sample jar should be filled completely.

Any extra soil generated during probing activities will be placed in Department of Transportation (DOT)-approved drums or ground-applied based on client preferences and/or local regulations and guidance.

Place collected samples into cooler(s) kept at temperatures that do not exceed 6 degrees Celsius (°C). Chemical/blue ice packs should not be used to keep PFAS samples chilled. The samples and regular ice should be double bagged using bags made of non-PFAS materials.

Grab Groundwater Sample Collection:

Collect grab groundwater samples by installing a temporary well casing in the boring (i.e., 1 to 2-inch PVC well casing with a 4 to 5-foot-long temporary screen), including sand pack. Obtain samples using the methods described in SOP 2.5 (low flow sampling procedures). High volume purge methods should not be used. Record field parameters (e.g., temperature, conductivity, and pH) prior to sampling. Temporary well screen is pulled from boring and materials drilled out of hole prior to abandonment.

Place collected samples into cooler(s) kept at temperatures that do not exceed 6 °C. Chemical/blue ice packs should not be used to keep PFAS samples chilled. The samples and regular ice should be double bagged using bags made of non-PFAS materials.

Backfilling the Excavation (Conducted by Drilling Subcontractor):

After sampling activities are completed, abandon each exploration in accordance with local regulations and procedures. The abandonment procedure typically consists of filling the exploration with granular bentonite and hydrating the bentonite with water. Match the surface completion to the surrounding materials.

Decontamination Procedures:

Field sampling equipment, including water level indicators, oil/water interface meters, pumps, stainless steel bowls and trowels, and other non-dedicated equipment, should be decontaminated before first use and in between sampling each boring location. The SDS of detergents or soaps used for decontamination procedures should be reviewed to ensure that fluorosurfactants are not listed as ingredients. Laboratory-certified PFAS-free water should be used for the final rinse during decontamination of sampling equipment. When possible, equipment should also be rinsed with PFAS-free water immediately prior to first use. Sampling equipment can be scrubbed with a polyethylene or PVC brush as needed to remove particulates.

5. References

California State Water Quality Control Board, Division of Water Quality, 2020. Per-and Polyfluoroalkyl Substances (PFAS) Sampling Guidelines for Non-Drinking Water. September 2020.

Massachusetts Department of Environmental Protection, 2019. Fact Sheet, Interim Guidance on Sampling and Analysis for PFAS at Disposal Sites Regulated under the Massachusetts Contingency Plan. June 19, 2018. Updated December 27, 2019.

Michigan Department of Environmental Quality, 2018. General PFAS Sampling Guidance. October 16, 2018.

New Hampshire Department of Environmental Services, 2019. Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection Guidance. May 2019.

New York Department of Environmental Conservation, 2021. Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS). January 2021.

ATTACHMENT

SOP 2.5	Standard Operating Procedure	
Rev 0.05	Low Flow Groundwater Sampling Procedures for PFAS	APEX
Page 1 of 6	Owner: Heather Gosack Review by: 2022	Issued: Feb 7, 2019 Revised: May 28, 2021

1. Purpose

This Standard Operating Procedure (SOP) describes the methods for collection of groundwater samples for per- and polyfluorinated alkyl substances (PFAS) from monitoring wells applying low flow protocols. Low flow sampling is a method of collecting samples that does not require the removal of large volumes of water and therefore does not overly agitate the water, suspend particles, or potentially aspirate volatile organic compounds (VOCs). Typical flow rates for low flow sampling range from 0.1 liters per minute (L/min) to 0.5 L/min depending on site characteristics. Low-flow purge methods are the preferred sampling method for PFAS based on their chemical characteristics, to ensure the most representative groundwater sample is collected. The groundwater monitoring activities will consist of measuring water levels, purging and sampling groundwater, and measuring groundwater field parameters. This procedure is applicable during Apex Companies low flow groundwater sampling activities where the analytical program includes PFAS compounds. The procedures in this SOP are consistent with low flow sampling for non-PFAS compounds and include protocols to address potential for cross-contamination from materials containing PFAS.

2. Scope

This SOP applies to all Apex field events where low flow methods will be used to collect groundwater samples for analysis of PFAS.

3. Equipment and Materials

The following materials are necessary for this procedure:

- Traffic cones, tools, keys, and buckets/drums.
- Water quality meter with calibration solutions (record daily calibration/calibration check in field notes).
- Sampling equipment including a PFAS-free water level probe, PFAS-free pumps, PFAS-free tubing (high-density polyethylene [HDPE] or silicone tubing), and laboratory-supplied PFAS-free (HDPE) sample containers. Sample containers should not have Teflon®-lined lids. PFAS may adsorb to glass containers; therefore, glass should be avoided for water samples.
- Field documentation materials.
- PFAS-free decontamination materials that do not contain fluorosurfactants.
- Personal protective equipment (as required by project Health and Safety Plan).

Prior to conducting the sampling event, a materials screening should be performed to identify field equipment and personal protective equipment (PPE) that are PFAS-free to reduce the risk of cross-contamination. The materials screening should include a review of safety data sheets (SDS) and ingredient lists (in personal care products, sunscreens, insect repellants, etc.). Additional details regarding which materials are allowed and which are prohibited are provided below.

The following PFAS-containing equipment and materials are PROHIBITED and should be avoided when sampling soil for PFAS:

- Teflon®-containing materials (polytetrafluoroethylene [PTFE]) (e.g. sample containers, tubing, bailers, tape, plumbing paste). In cases where Teflon®-containing materials are unavoidable, ensure adequate purging is performed prior to sampling and equipment blanks are collected prior to sampling.
- Low-density polyethylene (LDPE)-containing materials (e.g. disposable plastic storage bags, or containers used to transport samples, tubing). In cases where LDPE-containing materials are unavoidable, an equipment blank can be collected to ensure the LDPE is PFAS-free. LDPE does not typically contain PFAS in the raw materials; however, LDPE products are often cross-contaminated with PFAS during manufacturing.
- Materials containing polyvinylidene fluoride (PVDF; Kynar®), which can be found in tubing, films/coatings on aluminum, lithium-ion batteries, and wire insulators.
- Materials containing polychlorotrifluoroethylene (PCTFE; Neoflon®), which can be found on food packaging, valves, seals, and gaskets.
- Materials containing ethylene-tetrafluoroethylene (ETFE; Tefzel®), which can be found on wire insulation, pipe liners, and cable tie wraps.
- Materials containing fluorinated ethylene propylene (FEP; Teflon®; Hostaflon®; Neoflon®), which can be found in labware, wire insulation, and pipe linings.
- Paper products such as waterproof field books (e.g. Rite-in-the-Rain), plastic clipboards, binders, spiral hard cover notebooks, sticky notes, or glue materials.
- Markers.
- Chemical (blue) ice packs.
- Latex gloves.
- Coated materials, including aluminum foil.
- Decontamination soaps containing fluorosurfactants such as Decon 90.
- Water that is not verified to be "PFAS-free" by the laboratory to be used for trip, equipment, and decontamination blanks and decontamination processes.

- Water resistant, waterproof, stain-treated clothing or shoes, including Gore-Tex™ and Tyvek® materials. If PFAS-free shoes cannot be used, PFAS-free over-boots may be worn and donned in the staging area prior to sampling.

Additionally, there is documentation that some personal care products, as well as food and drinks, may introduce PFAS contaminants to the samples. Therefore, these additional precautions should be taken during the sampling event:

- Many personal care products, such as cosmetics, moisturizers, and hand creams, contain PFAS. These products should be avoided during sampling events and 24 hours prior to sampling. Please note that many products marketed as 'natural' or 'organic' contain PFAS. If personal care products must be used, the ingredient list should be checked for PFAS.
- Many manufactured sunblocks and insect repellents contain PFAS. Only PFAS-free sunblock and insect repellent should be used during sampling events. If sunscreens or insect repellants are used during a PFAS sampling event, the product(s) should be applied in the staging area. After application, hands should be washed, and new nitrile gloves used.
- Many food and drink wrappers and containers, paper plates, aluminum foil, and paper towels contain PFAS. Food containers and related items should be kept out of the sampling area. Samplers should wash hands thoroughly with PFAS-free water and soap after handling food wrappers and containers.

The following equipment and materials are typically PFAS-free and recommended for use when collecting samples for PFAS analysis:

- HDPE, polypropylene, acetate, nylon, polyvinyl chloride (PVC), cotton, stainless steel, natural rubber, and silicone materials (e.g. tubing, bailers, tape, plumbing paste).
- Nitrile gloves that are frequently changed.
- Loose paper with Masonite or aluminum clipboards.
- Bags of ice.
- Alconox® or Liquinox®.
- Laboratory-supplied and verified PFAS-free water to be used for trip, equipment, and decontamination blanks and decontamination processes.
- Cotton textiles are recommended for field clothing and should be laundered a minimum of 6 times from time of purchase due to possible PFAS-related treatments. Fabric softener must be avoided. Rain gear should be made from polyurethane, PVC, and/or wax-coated materials.

There is some documentation that field vehicles could have seats treated with stain resistant products and could represent a source of cross-contamination. If possible, cover treated vehicle seats with a well-laundered cotton blanket or sheet. Do not handle sample containers on the vehicle seats. Always change gloves after exiting the vehicle.

4. Methodology

Field Preparation:

Prior to sampling, set up separate eating, staging, and sampling areas to help avoid PFAS cross-contamination. Due to the high risk of cross-contamination, any visitors to the site should remain at a distance from the sampling area. A sequence should be set up prior to sampling. Water sample collection should start with wells suspected to be least contaminated and end with wells suspected to be most contaminated.

Water Levels:

Water levels in the wells will be measured and recorded for the purpose of determining groundwater elevations and gradient. The wells will be opened and the water level allowed to equilibrate before the measurements are taken. When opening monitoring wells, take precautions to prevent injury from the well-cap in the event the well is over-pressured. Measurements of the depth to water will be made to the nearest 0.01 foot using an electronic probe.

Purging:

Purge using low-flow sampling equipment (e.g., peristaltic pump or bladder pump) at a low-flow rate to limit water table drawdown. Unless specified otherwise in the project-specific sampling and analysis plan (SAP), the sample tubing/pump will be lowered to the middle of the saturated screened interval. To assess the effectiveness of purging, groundwater field parameters (pH, dissolved oxygen [DO], oxidation-reduction potential [ORP], electrical conductivity, and temperature) will be measured using a flow cell connected to the discharge tubing of the sample pump. Purging will generally be considered complete when the water quality parameters (i.e., pH, temperature, DO, ORP, and specific conductance) stabilize within 10 percent for three consecutive 3-minute intervals. Consult the project-specific SAP for additional parameters, stabilization criteria, and required pump depth, as these parameters may vary based on project site and local requirements and guidance. Purge water will be placed in Department of Transportation (DOT)-approved drums or ground-applied based on client preferences and/or local regulations and guidance.

Sample Collection:

After the purging of each well is complete, collect groundwater samples for chemical analyses using the same pump used for the well purging. Place collected samples into cooler(s) kept at temperatures that do not exceed 6 degrees Celsius (°C). Chemical/blue ice packs should not be used to keep PFAS samples chilled. The samples and regular ice should be double bagged using bags made of non-PFAS materials.

Low Yield Sampling Procedure:

If drawdown of the water table is unavoidable and a well pumps dry during purging, discontinue measurement of water quality parameters. Collect groundwater samples once the water level recovers to 90 percent of the pre-purge water column. Contact project manager in the event of slow recharge conditions.

Decontamination Procedures:

Field sampling equipment, including water level indicators, oil/water interface meters, pumps, and other non-dedicated equipment, should be decontaminated before first use and in between sampling each well location. The SDS of detergents or soaps used for decontamination procedures should be reviewed to ensure that fluorosurfactants are not listed as ingredients. Laboratory-certified PFAS-free water should be used for the final rinse during decontamination of sampling equipment. When possible, equipment should also be rinsed with PFAS-free water immediately prior to first use. Sampling equipment can be scrubbed with a polyethylene or PVC brush as needed to remove particulates.

5. References

California State Water Quality Control Board, Division of Water Quality, 2020. Per-and Polyfluoroalkyl Substances (PFAS) Sampling Guidelines for Non-Drinking Water. September 2020.

Massachusetts Department of Environmental Protection, 2019. Fact Sheet, Interim Guidance on Sampling and Analysis for PFAS at Disposal Sites Regulated under the Massachusetts Contingency Plan. June 19, 2018. Updated December 27, 2019.

Michigan Department of Environmental Quality, 2018. General PFAS Sampling Guidance. October 16, 2018.

New Hampshire Department of Environmental Services, 2019. Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection Guidance. May 2019.

New York Department of Environmental Conservation, 2021. Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS). January 2021.

ATTACHMENT

SOP 2.2	Standard Operating Procedure	
Rev 0.03	Surface Soil Sampling Procedures for PFAS	APEX
Page 1 of 5	Owner: Heather Gosack Review by: 2022	Issued: Oct 23, 2019 Revised: May 28, 2021

1. Purpose

This Standard Operating Procedure (SOP) describes the methods used for obtaining surface soil samples for analysis of per- and polyfluorinated alkyl substances (PFAS). For the purposes of this SOP, surface soil (including shallow subsurface soil) is loosely defined as soil that is present within 3 feet of the ground surface at the time of sampling. Various types of sampling equipment are used to collect surface soil samples including spoons, scoops, trowels, shovels, and hand augers. The procedures in this SOP are consistent with soil sampling methods for non-PFAS compounds. They include added protocols to address potential for cross-contamination from materials containing PFAS, as well as information regarding potential bias of a PFAS sample due to the air-water interface.

2. Scope

This SOP applies to all Apex field events where shallow soil will be collected for analysis of PFAS.

3. Equipment and Materials

The following materials are necessary for this procedure:

- Spoons, scoops, trowels, shovels, and/or hand augers. Stainless steel is preferred. All sampling equipment must be PFAS-free.
- Stainless steel bowls.
- Laboratory-supplied PFAS-free (high-density polyethylene [HDPE]) sample containers. Sample containers should not have Teflon®-lined lids. PFAS may adsorb to glass containers; therefore, glass should be avoided for samples.
- Field documentation materials.
- PFAS-free decontamination materials that do not contain fluorosurfactants.
- Personal protective equipment (as required by the Health and Safety Plan).

Prior to conducting the sampling event, a materials screening should be performed to identify field equipment and personal protective equipment (PPE) that are PFAS-free to reduce the risk of cross-contamination. The materials screening should include a review of safety data sheets (SDS) and ingredient lists (in personal care products, sunscreens, insect repellants, etc.). Additional details regarding which materials are allowed and which are prohibited are provided below.

The following PFAS-containing equipment and materials are PROHIBITED and should be avoided when sampling soil for PFAS:

- Teflon®-containing materials (polytetrafluoroethylene [PFTE]) (e.g. sample containers, tape, etc.).
- Low-density polyethylene (LDPE)-containing materials (e.g. disposable plastic storage bags, or containers used to transport samples). In cases where LDPE-containing materials are unavoidable, an equipment blank can be collected to ensure the LDPE is PFAS-free. LDPE does not typically contain PFAS in the raw materials; however, LDPE products are often cross-contaminated with PFAS during manufacturing.
- Materials containing polyvinylidene fluoride (PVDF; Kynar®), which can be found in tubing, films/coatings on aluminum, lithium-ion batteries, and wire insulators.
- Materials containing polychlorotrifluoroethylene (PCTFE; Neoflon®), which can be found on food packaging, valves, seals, and gaskets.
- Materials containing ethylene-tetrafluoroethylene (ETFE; Tefzel®), which can be found on wire insulation, pipe liners, and cable tie wraps.
- Materials containing fluorinated ethylene propylene (FEP; Teflon®; Hostaflon®; Neoflon®), which can be found in labware, wire insulation, and pipe linings.
- Paper products such as waterproof field books (e.g. Rite-in-the-Rain), plastic clipboards, binders, spiral hard cover notebooks, sticky notes, or glue materials.
- Markers.
- Chemical (blue) ice packs.
- Latex gloves.
- Coated materials, including aluminum foil.
- Decontamination soaps containing fluorosurfactants such as Decon 90.
- Water that is not verified to be "PFAS-free" by the laboratory to be used for trip, equipment, and decontamination blanks and decontamination processes.
- Water resistant, waterproof, stain-treated clothing or shoes, including Gore-Tex™ and Tyvek® materials. If PFAS-free shoes cannot be used, PFAS-free over-boots may be worn and donned in the staging area prior to sampling.

Additionally, there is documentation that some personal care products, as well as food and drinks, may introduce PFAS contaminants to the samples. Therefore, these additional precautions should be taken during the sampling event:

- Many personal care products, such as cosmetics, moisturizers, and hand creams contain PFAS. These products should be avoided during sampling events and 24 hours prior to sampling. Please note that many products marketed as 'natural' or 'organic' contain PFAS. If personal care products must be used, the ingredient list should be checked for PFAS.

- Many manufactured sunblocks and insect repellents contain PFAS. Only PFAS-free sunblock and insect repellent should be used during sampling events. If sunscreens or insect repellants are used during a PFAS sampling event, the product(s) should be applied in the staging area. After application, hands should be washed, and new nitrile gloves should be used.
- Many food and drink wrappers and containers, paper plates, aluminum foil, and paper towels contain PFAS. Food containers and related items should be kept out of the sampling area. Samplers should wash hands thoroughly with PFAS-free water and soap after handling food wrappers and containers.

The following equipment and materials are typically PFAS-free and recommended for use when collecting samples for PFAS analysis:

- HDPE, polypropylene, acetate, nylon, polyvinyl chloride (PVC), cotton, stainless steel, natural rubber, and silicone materials.
- Nitrile gloves that are changed frequently.
- Loose paper with Masonite or aluminum clipboards.
- Bags of ice.
- Alconox® or Liquinox®.
- Laboratory-supplied and verified PFAS-free water to be used for trip, equipment, and decontamination blanks and decontamination processes.
- Cotton textiles are recommended for field clothing and should be laundered a minimum of 6 times from time of purchase due to possible PFAS-related treatments. Fabric softener must be avoided. Rain gear should be made from polyurethane, PVC, and/or wax-coated materials.

There is some documentation that field vehicles could have seats treated with stain-resistant products and could represent a source of cross-contamination. If possible, cover treated vehicle seats with a well-laundered cotton blanket or sheet. Do not handle sample containers on the vehicle seats. Always change gloves after exiting the vehicle.

4. Methodology

Project-specific requirements will generally dictate the preferred type of sampling equipment used at a particular site. The following parameters should be considered: sampling depth, soil density, soil moisture, and the PFAS analytical suite. With PFAS specifically, considering soil sample depth is important and may affect the concentration of PFAS detected at the laboratory. Current research suggests that PFAS concentrate in the air/water interfaces; therefore, sampling soil just above the water table may generate a different (generally higher) PFAS concentration

than sampling other soil intervals. PFAS concentrations in soil can also be heavily influenced by downward leaching during precipitation events. Analytical testing requirements will indicate sample volume requirements, which also will influence the selection of the appropriate type of sampling tool. The project sampling plan should define the specific requirements for collection of surface soil samples at a particular site, including proposed depths and rationale.

Collection of Samples:

PFAS Analyses. Once the targeted sample interval has been collected, the soil sample will be thoroughly homogenized in a stainless steel bowl prior to bottling. Sample homogenizing is accomplished by manually mixing the entire soil sample in the stainless steel bowl with the sampling tool or with a clean teaspoon or spatula until a uniform mixture is achieved. If packing of the samples into the bottles is necessary, a clean stainless steel teaspoon or spatula may be used.

General Sampling Procedure:

- Prior to sampling, set up separate eating, staging, and sampling areas to help avoid PFAS cross-contamination. Due to the high risk of cross-contamination, any visitors to the site should remain at a distance from the sampling area.
- Set up a sampling sequence prior to sampling. Soil sample collection should start with areas suspected to be least contaminated and end with areas suspected to be most contaminated. The specific depth of the sample collection must be specified in the project work plan.
- Decontaminate sampling equipment in accordance with the Sampling and Analysis Plan (SAP) before and after each individual soil sample using PFAS-free soap and water. The SDS of detergents or soaps used for decontamination procedures should be reviewed to ensure that fluorosurfactants are not listed as ingredients. Laboratory-certified PFAS-free water should be used for the final rinse during decontamination of sampling equipment. When possible, equipment should also be rinsed with PFAS-free water immediately prior to first use. Sampling equipment can be scrubbed with a polyethylene or PVC brush as needed to remove particulates.
- Remove surface debris that blocks access to the actual soil surface, or loosen dense surface soils, such as those encountered in heavy traffic areas. If sampling equipment is used to remove surface debris, the equipment should be decontaminated as described above prior to sampling to reduce the potential for sample interferences.
- When using a hand auger, push and rotate downward until the auger becomes filled with soil. Usually a 6- to 12-inch long core of soil is obtained each time the auger is inserted. Once filled, remove the auger from the ground and empty into a stainless steel bowl.

Repeat the augering process until the desired sample interval has been augered and placed into the stainless steel bowl.

- Place collected samples into cooler(s) kept at temperatures that do not exceed 6 degrees Celsius (°C). Chemical/blue ice packs should not be used to keep PFAS samples chilled. The samples and regular ice should be double bagged using bags made of non-PFAS materials.

Backfilling Sampling Locations:

Backfill in accordance with federal and state regulations and review local requirements (e.g., use of bentonite in backfill) prior to conducting the sampling event. The soils from the excavation will be used as backfill unless project-specific or state requirements include the use of clean backfill material.

5. References

California State Water Quality Control Board, Division of Water Quality, 2020. Per-and Polyfluoroalkyl Substances (PFAS) Sampling Guidelines for Non-Drinking Water. September 2020.

Massachusetts Department of Environmental Protection, 2019. Fact Sheet, Interim Guidance on Sampling and Analysis for PFAS at Disposal Sites Regulated under the Massachusetts Contingency Plan. June 19, 2018. Updated December 27, 2019.

Michigan Department of Environmental Quality, 2018. General PFAS Sampling Guidance. October 16, 2018.

New Hampshire Department of Environmental Services, 2019. Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection Guidance. May 2019.

New York Department of Environmental Conservation, 2021. Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS). January 2021.

SOP 2.18	Standard Operating Procedure	
Rev 0.00	Sediment Sampling Procedures for PFAS	APEX
Page 1 of 6	Owner: Kelsi Evans Review by: Carmen Owens	Issued: April 7, 2022 Revised: --

1. Purpose

This Standard Operating Procedure (SOP) describes the methods used for obtaining sediment samples for analysis of per- and polyfluorinated alkyl substances (PFAS). Various types of sampling equipment are used to collect sediment samples including ponar grab samplers, dredging devices, or coring equipment. The procedures in this SOP are consistent with sediment sampling methods for non-PFAS compounds. They include added protocols to address potential for cross-contamination from materials containing PFAS, as well as information regarding potential bias of a PFAS sample due to the air-water interface.

2. Scope

This SOP applies to all Apex field events where sediment will be collected for analysis of PFAS.

3. Equipment and Materials

The following materials are necessary for this procedure:

- Sediment sampling equipment such as ponar grab samplers, dredging devices, or coring equipment. All sampling equipment must be PFAS-free.
- Stainless steel bowls, spoons, and scoops.
- Laboratory-supplied PFAS-free (high-density polyethylene [HDPE]) sample containers. Sample containers should not have Teflon®-lined lids. PFAS may adsorb to glass containers; therefore, glass should be avoided for samples.
- Field documentation materials.
- PFAS-free decontamination materials that do not contain fluorosurfactants.
- Personal protective equipment (as required by the Health and Safety Plan).

Prior to conducting the sampling event, a materials screening should be performed to identify field equipment and personal protective equipment (PPE) that are PFAS-free to reduce the risk of cross-contamination. The materials screening should include a review of safety data sheets (SDS) and ingredient lists (in personal care products, sunscreens, insect repellants, etc.). Additional details regarding which materials are allowed and which are prohibited are provided below.

The following PFAS-containing equipment and materials are PROHIBITED and should be avoided when sampling sediment for PFAS:

- Teflon®-containing materials (polytetrafluoroethylene [PFTE]) (e.g. sample containers, tape, etc.).
- Low-density polyethylene (LDPE)-containing materials (e.g. disposable plastic storage bags, or containers used to transport samples). In cases where LDPE-containing materials are unavoidable, an equipment blank can be collected to ensure the LDPE is PFAS-free. LDPE does not typically contain PFAS in the raw materials; however, LDPE products are often cross-contaminated with PFAS during manufacturing.
- Materials containing polyvinylidene fluoride (PVDF; Kynar®), which can be found in tubing, films/coatings on aluminum, lithium-ion batteries, and wire insulators.
- Materials containing polychlorotrifluoroethylene (PCTFE; Neoflon®), which can be found on food packaging, valves, seals, and gaskets.
- Materials containing ethylene-tetrafluoroethylene (ETFE; Tefzel®), which can be found on wire insulation, pipe liners, and cable tie wraps.
- Materials containing fluorinated ethylene propylene (FEP; Teflon®; Hostaflon®; Neoflon®), which can be found in labware, wire insulation, and pipe linings.
- Paper products such as waterproof field books (e.g. Rite-in-the-Rain), plastic clipboards, binders, spiral hard cover notebooks, sticky notes, or glue materials.
- Markers.
- Chemical (blue) ice packs.
- Latex gloves.
- Coated materials, including aluminum foil.
- Decontamination soaps containing fluorosurfactants such as Decon 90.
- Water that is not verified to be "PFAS-free" by the laboratory to be used for trip, equipment, and decontamination blanks and decontamination processes.
- Water resistant, waterproof, stain-treated clothing or shoes, including Gore-Tex™ and Tyvek® materials. If PFAS-free shoes cannot be used, PFAS-free over-boots may be worn and donned in the staging area prior to sampling.

Additionally, there is documentation that some personal care products, as well as food and drinks, may introduce PFAS contaminants to the samples. Therefore, these additional precautions should be taken during the sampling event:

- Many personal care products, such as cosmetics, moisturizers, and hand creams contain PFAS. These products should be avoided during sampling events and 24 hours prior to sampling. Please note that many products marketed as 'natural' or 'organic' contain PFAS. If personal care products must be used, the ingredient list should be checked for PFAS.

- Many manufactured sunblocks and insect repellents contain PFAS. Only PFAS-free sunblock and insect repellent should be used during sampling events. If sunscreens or insect repellants are used during a PFAS sampling event, the product(s) should be applied in the staging area. After application, hands should be washed, and new nitrile gloves should be used.
- Many food and drink wrappers and containers, paper plates, aluminum foil, and paper towels contain PFAS. Food containers and related items should be kept out of the sampling area. Samplers should wash hands thoroughly with PFAS-free water and soap after handling food wrappers and containers.

The following equipment and materials are typically PFAS-free and recommended for use when collecting samples for PFAS analysis:

- HDPE, polypropylene, acetate, nylon, polyvinyl chloride (PVC), cotton, stainless steel, natural rubber, and silicone materials.
- Nitrile gloves that are changed frequently.
- Loose paper with Masonite or aluminum clipboards.
- Bags of ice.
- Alconox® or Liquinox®.
- Laboratory-supplied and verified PFAS-free water to be used for trip, equipment, and decontamination blanks and decontamination processes.
- Cotton textiles are recommended for field clothing and should be laundered a minimum of 6 times from time of purchase due to possible PFAS-related treatments. Fabric softener must be avoided. Rain gear should be made from polyurethane, PVC, and/or wax-coated materials.

There is some documentation that field vehicles could have seats treated with stain-resistant products and could represent a source of cross-contamination. If possible, cover treated vehicle seats with a well-laundered cotton blanket or sheet. Do not handle sample containers on the vehicle seats. Always change gloves after exiting the vehicle.

4. Methodology

The project sampling plan should define the specific requirements for collection of sediment samples at a particular site, including proposed depths and rationale.

Sediment Sampling Methods:

Loose and cored sediment samples can be collected to determine the lithologic and physical makeup of the sample and for chemical analyses. Loose sediment samples are collected using ponar grab samplers or dredging processes, where loose sediment is delivered to the surface. Cored sediment samples are collected with a coring type of mechanism such as a steel core barrel. If the core barrel is lined with a clear plastic liner, the liner must be constructed out of acetate or other PFAS-free material. When the sediment is brought to the surface, the sampler is opened to expose the sediment. The sediment is then cut open to reveal a clean face where the evaluation of lithology, structure, field screening, and sample collection can be conducted.

PFAS Analyses. Sediments collected for chemical analysis are usually collected using a sediment coring method. For a side filling chambered-type coring device, sediment is collected from the chamber. For a full barrel coring device, sediment samples are collected by removing the liner and cutting it open. Sediment should not be collected from the exterior of the full barrel coring device since this area may be contaminated from smearing as the sediment enters the core. Once the targeted sample interval has been collected, the sediment sample will be thoroughly homogenized in a stainless steel bowl prior to bottling. Sample homogenizing is accomplished by manually mixing the entire soil sample in the stainless steel bowl with the sampling tool or with a clean teaspoon or spatula until a uniform mixture is achieved. If packing of the samples into the bottles is necessary, a clean stainless steel teaspoon or spatula may be used.

General Sampling Procedure:

- Prior to sampling, set up separate eating, staging, and sampling areas to help avoid PFAS cross-contamination. Due to the high risk of cross-contamination, any visitors to the site should remain at a distance from the sampling area.
- Set up a sampling sequence prior to sampling. Sediment sample collection should start with areas suspected to be least contaminated and end with areas suspected to be most contaminated. The specific depth of the sample collection must be specified in the project work plan.
- Decontaminate sampling equipment in accordance with the Sampling and Analysis Plan (SAP) before and after each individual sediment sample using PFAS-free soap and water. The SDS of detergents or soaps used for decontamination procedures should be reviewed to ensure that fluorosurfactants are not listed as ingredients. Laboratory-certified PFAS-

free water should be used for the final rinse during decontamination of sampling equipment. When possible, equipment should also be rinsed with PFAS-free water immediately prior to first use. Sampling equipment can be scrubbed with a polyethylene or PVC brush as needed to remove particulates.

- Place collected samples into cooler(s) kept at temperatures that do not exceed 6 degrees Celsius (°C). Chemical/blue ice packs should not be used to keep PFAS samples chilled. The samples and regular ice should be double bagged using bags made of non-PFAS materials.

5. References

California State Water Quality Control Board, Division of Water Quality, 2020. Per-and Polyfluoroalkyl Substances (PFAS) Sampling Guidelines for Non-Drinking Water. September 2020.

Massachusetts Department of Environmental Protection, 2019. Fact Sheet, Interim Guidance on Sampling and Analysis for PFAS at Disposal Sites Regulated under the Massachusetts Contingency Plan. June 19, 2018. Updated December 27, 2019.

Michigan Department of Environmental Quality, 2018. Sediment PFAS Sampling Guidance. December 2018.

New Hampshire Department of Environmental Services, 2019. Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection Guidance. May 2019.

New York Department of Environmental Conservation, 2021. Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS). January 2021.

SOP 2.12	Standard Operating Procedure	
Rev 0.03	Grab Water Sampling Procedures for PFAS	APEX
Page 1 of 6	Owner: Heather Gosack Review by: 2022	Issued: Aug 23, 2019 Revised: May 28, 2021

1. Purpose

This Standard Operating Procedure (SOP) describes the methods used for obtaining grab-type water samples from storm drains, outfalls, flumes or surface waters for analysis of per- and polyfluorinated alkyl substances (PFAS). For a grab sample, a discrete aliquot is collected representing a specific location at a given time. This SOP does not include collection of samples with an automated sampler. Automated samplers are more difficult to use for PFAS analysis due to the increased potential for cross-contamination (due to the tubing, valves, and other parts that may include PFAS-containing materials). Various methods are used to collect grab water samples including peristaltic pumps, telescoping samplers, or directly filling laboratory-supplied sample containers. This procedure is applicable during all Apex Companies, LLC (Apex) outfall water sampling activities where the analytical program includes PFAS compounds. The procedures in this SOP are consistent with sampling for non-PFAS chemical compounds with added protocols to address potential cross-contamination from materials containing PFAS and information regarding potential bias of a PFAS sample from foam and/or the surface PFAS microlayer on a water body.

2. Scope

This SOP applies to all Apex field events where grab water samples will be collected for analysis of PFAS.

3. Equipment and Materials

The following materials are necessary for this procedure:

- Telescoping swing sampler, and/or peristaltic pump and tubing. Sampling equipment must be PFAS-free and PFAS-free tubing (high-density polyethylene [HDPE] or silicone) must be used.
- Laboratory-supplied PFAS-free (HDPE) sample containers. Containers should not have Teflon®-lined lids. PFAS may adsorb to glass containers; therefore, glass should be avoided for water samples.
- Field documentation materials.
- PFAS-free decontamination materials that do not contain fluorosurfactants.
- Personal protective equipment (as required by Health and Safety Plan).

Prior to conducting the sampling event, a materials screening should be performed to identify field equipment and personal protective equipment (PPE) that are PFAS-free to reduce the risk of cross-contamination. The materials screening should include a review of safety data sheets (SDS)

and ingredient lists (in personal care products, sunscreens, insect repellants, etc.). Additional details regarding which materials are allowed and which are prohibited are provided below.

The following PFAS-containing equipment and materials are PROHIBITED and should be avoided when sampling soil for PFAS:

- Teflon®-containing materials (polytetrafluoroethylene [PTFE]) (e.g. sample containers, tubing, bailers, tape, plumbing paste). In cases where Teflon®-containing materials are unavoidable, ensure adequate purging is performed prior to sampling and equipment blanks are collected prior to sampling.
- Low-density polyethylene (LDPE)-containing materials (e.g. disposable plastic storage bags, or containers used to transport samples, tubing). In cases where LDPE-containing materials are unavoidable, an equipment blank can be collected to ensure the LDPE is PFAS-free. LDPE does not typically contain PFAS in the raw materials; however, LDPE products are often cross-contaminated with PFAS during manufacturing.
- Materials containing polyvinylidene fluoride (PVDF; Kynar®), which can be found in tubing, films/coatings on aluminum, lithium-ion batteries, and wire insulators.
- Materials containing polychlorotrifluoroethylene (PCTFE; Neoflon®), which can be found on food packaging, valves, seals, and gaskets.
- Materials containing ethylene-tetrafluoroethylene (ETFE; Tefzel®), which can be found on wire insulation, pipe liners, and cable tie wraps.
- Materials containing fluorinated ethylene propylene (FEP; Teflon®; Hostaflon®; Neoflon®), which can be found in labware, wire insulation, and pipe linings.
- Paper products such as waterproof field books (e.g. Rite-in-the-Rain), plastic clipboards, binders, spiral hard cover notebooks, sticky notes, or glue materials.
- Markers.
- Chemical (blue) ice packs.
- Latex gloves.
- Coated materials, including aluminum foil.
- Decontamination soaps containing fluorosurfactants such as Decon 90.
- Water that is not verified to be "PFAS-free" by the laboratory to be used for trip, equipment, and decontamination blanks and decontamination processes.
- Water-resistant, waterproof, stain-treated clothing or shoes, including Gore-Tex™ and Tyvek® materials. If PFAS-free shoes cannot be used, PFAS-free over-boots may be worn and donned in the staging area prior to sampling.

Additionally, there is documentation that some personal care products, as well as food and drinks, may introduce PFAS contaminants to the samples. Therefore, these additional precautions should be taken during the sampling event:

- Many personal care products, such as cosmetics, moisturizers, and hand creams, contain PFAS. These products should be avoided during sampling events and 24 hours prior to sampling. Please note that many products marketed as 'natural' or 'organic' contain PFAS. If personal care products must be used, the ingredient list should be checked for PFAS.
- Many manufactured sunblocks and insect repellents contain PFAS. Only PFAS-free sunblock and insect repellent should be used during sampling events. If sunscreens or insect repellants are used during a PFAS sampling event, the product(s) should be applied in the staging area. After application, hands should be washed, and new nitrile gloves used.
- Many food and drink wrappers and containers, paper plates, aluminum foil, and paper towels contain PFAS. Food containers and related items should be kept out of the sampling area. Samplers should wash hands thoroughly with PFAS-free water and soap after handling food wrappers and containers.

The following equipment and materials are typically PFAS-free and recommended for use when collecting samples for PFAS analysis:

- HDPE, polypropylene, acetate, nylon, polyvinyl chloride (PVC), cotton, stainless steel, natural rubber, and silicone materials (e.g. tubing, bailers, tape, plumbing paste).
- Nitrile gloves that are frequently changed.
- Loose paper with Masonite or aluminum clipboards.
- Bags of ice.
- Alconox® or Liquinox®.
- Laboratory-supplied and verified PFAS-free water to be used for trip, equipment, and decontamination blanks and decontamination processes.
- Cotton textiles for field clothing. These should be laundered a minimum of six times from time of purchase due to possible PFAS-related treatments. Fabric softener must be avoided. Rain gear should be made from polyurethane, PVC, and/or wax-coated materials.

There is some documentation that field vehicles could have seats treated with stain resistant products and could represent a source of cross-contamination. If possible, cover treated vehicle seats with a well-laundered cotton blanket or sheet. Do not handle sample containers on the vehicle seats. Always change gloves after exiting the vehicle.

4. Methodology

Project-specific requirements will generally dictate the preferred type of sampling equipment used at a particular site. The following parameters should be considered: accessibility of sampling point, sampling depth, and flow rate. With PFAS specifically, considering sampling depth prior to sample collection is vital and will affect the concentration of PFAS detected at the laboratory. Current research suggests that PFAS concentrate in the air-water interface and in any foam/scum present on the surface of the water body. Therefore, sampling the foam and/or surface microlayer of a water body will provide a different (generally higher) PFAS concentration than sampling deeper in a water body. The project-specific requirements should clarify how to handle this potential bias. In general, sampling the surface foam/scum and surface microlayer should be avoided unless specifically required based on project objectives. Analytical testing requirements will indicate sample volume requirements. This will influence the selection of the appropriate type of sampling method. The project sampling plan should define the specific requirements for collection of outfall water samples at a particular site.

Collection of Samples:

- Record weather conditions at the time of sampling and last known rain fall event(s). Record and describe site conditions upon arrival and during sampling.
- Prior to sampling, set up separate eating, staging, and sampling areas to help avoid PFAS cross-contamination. Due to the high risk of cross-contamination, any visitors to the site should remain at a distance from the sampling area.
- Set up a sampling sequence prior to sampling. Water sample collection should start with areas suspected to be least contaminated and end with areas suspected to be most contaminated.
- Collect samples using the "Clean Hands/Dirty Hands" sampling technique. Operations involving direct contact with the sample bottle, sample bottle lid, sample suction tubing, and the transfer of the sample from the sample collection device to the sample bottle are handled by "clean hands." "Dirty hands" are responsible for preparation of the sampler (except the sample container itself), operation of any machinery, and for all activities that do not involve handling items that have direct contact with the sample.
- The water sample can be collected directly by dipping a new PFAS-free laboratory-supplied container (i.e. HDPE) into the water or under the flow path and filling. The liquid is then transferred to a laboratory-supplied sample container. The container must be kept sealed and should only be opened during sample collection. Do not insert tubing or other materials into the sample containers. Samples to be analyzed for PFAS should not be filtered in the field due to the potential for PFAS to adsorb to the filter materials. If filtration is necessary, it should be pre-arranged with the laboratory, and

centrifuging should be discussed. Be careful not to touch the sides of the vault, manhole, or outfall pipe. If bias of the surface microlayer and/or foam/scum is preferred based on project-specific requirements, the sample bottle should be side-filled from the surface. This will generally result in a higher PFAS concentration. If the PFAS concentration of the bulk water body is preferred, the sampler shall scoop deeper to avoid collecting a large volume of surface microlayer. The specific depth of the sample collection must be specified in the project work plan.

- A telescoping swing sampler can be used if an extension is necessary to access the sample point. Attach a new laboratory-supplied container (i.e. HDPE) to the sampler. This transfer device (if needed) is used to transfer liquid from the sampling point to a sample bottle. Direct sampling is preferred.
- A peristaltic pump with disposable tubing constructed from recommended materials can be used to collect a water sample from a manhole. The downhole tubing can be attached to a telescoping sampling pole to provide better control. Lower the tubing downstream of any standing water and take care to avoid stirring up the sediment.
- Place collected samples into cooler(s) kept at temperatures that do not exceed 6 degrees Celsius (°C). Chemical/blue ice packs should not be used to keep PFAS samples chilled. The samples and regular ice should be double bagged using bags made of non-PFAS materials.

Decontamination Procedures:

- Field sampling equipment including telescoping swing samplers, pumps, and other non-dedicated equipment should be decontaminated before first use and between sampling each location. The SDS of detergents or soaps used for decontamination procedures should be reviewed to ensure that fluorosurfactants are not listed as ingredients. Laboratory-certified PFAS-free water should be used for the final rinse during decontamination of sampling equipment. When possible, equipment should also be rinsed with PFAS-free water immediately prior to first use.
- Sampling equipment can be scrubbed with a polyethylene or PVC brush as needed to remove particulates.

5. References

California State Water Quality Control Board, Division of Water Quality, 2020. Per-and Polyfluoroalkyl Substances (PFAS) Sampling Guidelines for Non-Drinking Water. September 2020.

Massachusetts Department of Environmental Protection, 2019. Fact Sheet, Interim Guidance on Sampling and Analysis for PFAS at Disposal Sites Regulated under the Massachusetts Contingency Plan. June 19, 2018. Updated December 27, 2019.

Michigan Department of Environmental Quality, 2018. General PFAS Sampling Guidance. October 16, 2018.

New Hampshire Department of Environmental Services, 2019. Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection Guidance. May 2019.

New York Department of Environmental Conservation, 2021. Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS). January 2021.

Appendix C

Gresham Fire Station Expanded Preliminary Site Assessment Memorandum

August 15, 2023

DRAFT

Gresham Fire Training Center
SEMS No. ORN001020774

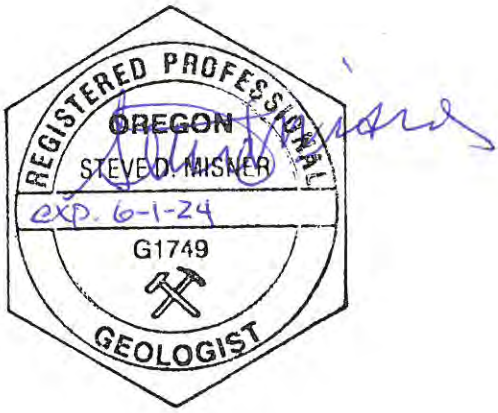
MEMORANDUM

Date: August 15, 2023

To: Katie Daugherty
Oregon Department of Environmental Quality

From: Carmen Owens, P.E., Apex Companies, LLC
Steve Misner, R.G., Apex Companies, LLC

Re: Gresham Fire Station Expanded Preliminary Site Assessment
32-23004694



1.0 INTRODUCTION

This memorandum summarizes the site exploration activities completed at the City of Gresham Fire and Emergency Services Training Center located at 19204 NE San Raphael Street in Gresham, Oregon (the Site; Figure 1). These activities were completed to support an expanded preliminary assessment (XPA) of the Site. The goal of the XPA is to assess potential contamination specific to fire-fighting foam that contained per- and polyfluoroalkyl substances (PFAS) used during fire training activities.

All field work and sample collection activities were performed in accordance with the Environmental Protection Agency Preliminary Assessment/Site Inspection Investigations Quality Assurance Project Plan (QAPP; Oregon Department of Environment Quality [DEQ], 2017). Since the QAPP does not specifically cover PFAS, DEQ incorporated procedures to address PFAS sampling and analysis activities, including standard operating procedures (SOPs) specific to PFAS.

2.0 INVESTIGATION ACTIVITIES

The scope of work for the XPA included collection of soil, groundwater, catch basin solids, sediment, and surface water samples. Four soil borings were completed via sonic drilling methods for the collection of grab soil and groundwater samples. Additional work included sample management (i.e. containers, storage, and shipment), decontamination, and the handling of investigation-derived wastes (IDW). The site investigation activities are described in the sections below. The boring logs related to the sonic drilling are provided in Attachment A; Oregon Water Resources Department (OWRD) geotechnical hole reports are included in Attachment B; and the analytical laboratory reports are provided in Attachment C.

2.1 Preparatory Activities

Site Health and Safety Plan. A Site-specific health and safety plan (HASP) was prepared for the site investigation activities. The HASP was prepared in general accordance with the Occupational Safety and Health Administration (OSHA) and the Oregon Administrative Rules (OAR). A copy of the HASP was maintained on-site during the field

activities. Prior to performing any on-site work, Apex prepared a Job Safety Analysis (JSA) guiding task-specific activities, risks, and safety protocols for each task. All field staff supporting the project were required to review and follow the HASP and JSAs. A daily tailgate form was completed and signed by all attendees.

Subcontractor Procurement. Apex solicited subcontractor bids for sonic drilling services, utility locating services, and disposal of IDW. Bids were evaluated and Apex provided vendor recommendations for each subcontractor service to DEQ. Laboratory analytical services were provided by Pace Analytical National under their existing price agreement with the State of Oregon and the Environmental Protection Agency (EPA) Region 10 Laboratory.

Underground Utility Location. Apex contacted the Oregon Utility Notification Center for a public mark-out of underground utilities. A private utility locator (NW Locates) also field-marked utilities on-site prior to commencing the field work.

2.2 Sonic Drilling Explorations

On May 24 and 25, Apex oversaw the completion of four soil borings to collect soil and groundwater samples. The borings were advanced using sonic drilling methods. The soil boring locations are presented on Figure 2. Continuous soil cores were collected during the advancement of each boring. Soil samples were collected in accordance with the SOP *Sonic Drilling Procedures for PFAS* (Apex, 2021c). Groundwater sampling was completed in accordance with the SOP *Low Flow Groundwater Sampling Procedures for PFAS* (Apex, 2021b). Soil borings were logged according to the Unified Soil Classification System. Soil was screened for the potential presence of petroleum hydrocarbons and volatile organic compounds (VOCs) by sheen testing and measuring with a photoionization detector (PID). Boring logs are presented in Attachment A. Below is a summary of observations at each boring:

- Boring S-1: One soil sample and one field duplicate were collected at a depth of 5 feet below ground surface (bgs). The sample depth corresponded with the highest PID reading observed during the completion of this boring (PID readings ranged from 0.3 to 51.7 parts per million [ppm]). No sheen was observed. Groundwater was not encountered at this location through the full depth of the boring; therefore, no groundwater sample was collected. The total depth of the boring was 40 feet bgs.

  Fill material consisting of crushed rock was observed from the ground surface to a depth of approximately 4 feet bgs. Observed soil consisted of sandy silt from 4 to 7 feet bgs and again from 32 to 33 feet bgs, sandy gravel from 7 to 27 feet and from 36 to 60 feet bgs, and clay with some gravel being observed from 28 to 32 feet bgs.

- Boring S-2: One soil sample was collected at 5 feet bgs. The sample depth corresponded with the relatively highest PID reading of 8 ppm (PID readings ranged from 0.2 to 0.9 ppm). No sheen was observed. Groundwater was observed at a depth of 14 feet bgs and one groundwater sample was collected. The total depth of the boring was 30 feet bgs.

  Observed soil consisted of silt with some gravel from ground surface to a depth of 8 feet bgs and again from 15 to 25 feet bgs. Gravel with sand was observed from 8 to 15 feet and from 25 to 30 feet bgs.

- Boring S-3: One soil sample was collected at 5 feet below ground surface (bgs). PID readings ranged from 0.0 to 4.0 ppm. No sheen was observed. Groundwater was not observed at this location; therefore, no groundwater sample was collected. The total depth of the boring was 30 feet bgs.

  Asphalt concrete was observed from the ground surface to a depth of approximately 1 foot bgs. Observed soil consisted of silt from the base of the asphalt to 8 feet bgs and gravel with cobbles was observed from 8 to 30 feet bgs.

- Boring S-4: One soil sample and one field duplicate were collected at 5 feet below ground surface (bgs). PID readings ranged from 0.0 to 1.2 ppm. No sheen was observed. Groundwater was not observed at this location; therefore, no groundwater sample was collected. The total depth of the boring was 60 feet bgs.

Observed soil consisted of silt from ground surface to 7 feet bgs with burnt wood and crushed rock encountered at depths of 3 feet bgs and 6 feet bgs, respectively. Sandy gravel was encountered from 7 to 40 feet bgs.

Following the completion of the sample collection, each of the boreholes were properly abandoned, including patching the finished surfaces to match the surrounding surface. The geotechnical hole reports submitted to OWRD are presented in Attachment B.

2.3 Catch Basin Samples

Samples of accumulated solids were collected from two catch basins at the Site. The locations of these samples are shown on Figure 2. The samples were collected following the SOP *Surface Soil Sampling Procedures for PFAS* (Apex, 2021d).

2.4 Sediment and Surface Water Samples

A sediment sample and a surface water sample were collected at the likely location of stormwater discharge from the Site to the Columbia Slough. The discharge location is approximately 0.75 miles north of the Site, near 19255 NE Sandy Boulevard. A field duplicate sample was collected of the surface water. The location of the discharge in relation to the Site is shown on Figure 1, and the specific locations of the off-Site samples can be seen on Figure 3. These samples were collected following the SOP *Sediment Sampling Procedures for PFAS* (Apex, 2022) and SOP *Grab Water Sampling Procedures for PFAS* (Apex, 2021a).

2.5 Sample Handling and Quality Assurance Samples

All samples were placed into laboratory-supplied containers, stored at 4 degrees Celsius (°C), and submitted to Pace Analytical National and the EPA Region 10 Laboratory under chain-of-custody protocol.

In addition to the field duplicate samples collected as described above, quality assurance (QA) samples collected included a rinsate blank for soil and groundwater and two trip blanks.

2.6 Investigation-Derived Waste

IDW consisted of purge water, decontamination water, and soil cuttings. IDW was placed into properly-labeled Oregon Department of Transportation (ODOT)-approved drums. The drums were transferred to a designated storage area, and a sample of each media (soil and water) was collected. Based on the results of the chemical analysis, the IDW will be profiled and transported to an appropriate landfill for disposal. Sampling materials and personal protective equipment (PPE) were disposed of as solid waste.

2.7 Deviations from Scope of Work

The original scope of work was completed with the exception of the collection of groundwater samples. As noted above, four soil borings were completed but groundwater was encountered in only one boring.

3.0 CHEMICAL ANALYSIS

Chemical analyses were performed on the collected soil and groundwater samples. The contaminants of interest for this project are associated with the historical use of the Site as a fire training center and include: PFAS, semi-volatile organic compounds (SVOCs), VOCs, and polychlorinated biphenyls (PCBs). Therefore, the collected soil, sediment, groundwater, and QA samples were submitted for the following analyses:

- PFAS by EPA Method 537.1;
- SVOCs by EPA Method 8270E;
- VOCs by EPA Method 8260D; and
- PCBs by EPA Method 8082A.

Samples collected from IDW were additionally submitted for Toxicity Characteristic Leaching Procedure (TCLP) analysis for metals and VOCs to facilitate disposal. The laboratory reports are presented in Attachment C.

The table below lists the collected samples and what analysis was performed on each. The sample locations are shown on Figure 2 for the soil boring and catch basin samples, and Figure 3 for the surface water and sediment samples.

Table 1. Sample Analysis Summary

Sample Name	Sample Type	Media	Analysis				
			PFAS	SVOCs	VOCs	PCBs	TCLP
S-1	Primary	Soil	X	X	X	X	
S-1 DUP	Field Duplicate	Soil	X	X	X	X	
S-2	Primary	Soil	X	X	X	X	
S-2	Primary	Groundwater	X	X	X	X	
S-3	Primary	Soil	X	X	X	X	
S-4	Primary	Soil	X	X	X	X	
S-4	Field Duplicate	Soil	X	X	X	X	
G-1	Primary	Soil	X	X	X	X	
G-1 DUP	Field Duplicate	Soil	X	X	X	X	
G-2	Primary	Soil	X	X	X	X	
SW-1	Primary	Surface Water	X	X	X	X	
SW-1 DUP	Field Duplicate	Surface Water	X	X	X	X	
Sed-1	Primary	Sediment	X	X	X	X	
Rinsate - Soil	Rinsate	Water	X	X	X	X	
Rinsate - GW	Rinsate	Water	X	X	X	X	
Trip Blank 1	Trip Blank	Water			X		
Trip Blank 2	Trip Blank	Water			X		
IDW-Soil	Primary	Soil	X				X
IDW-Water	Primary	Water	X				X

REFERENCES

Apex Companies, LLC (Apex), 2021a. *Standard Operating Procedure – Grab Water Sampling Procedures for PFAS*. May 28, 2021.

Apex, 2021b. *Standard Operating Procedure – Low Flow Groundwater Sampling Procedures for PFAS*. May 28, 2021.

Apex, 2021c. *Standard Operating Procedure – Sonic Drilling Sampling Procedures for PFAS*. May 28, 2021.

Apex, 2021d. *Standard Operating Procedure – Surface Soil Sampling Procedures for PFAS*. May 28, 2021.

Apex, 2022. *Standard Operating Procedure – Sediment Sampling Procedures for PFAS*. April 7, 2022.

Oregon Department of Environmental Quality, 2017. *Quality Assurance Project Plan EPA PA/SI Investigations.* December 2017.

FIGURES

Figure 1 Site Location Map

Figure 2 Site Plan

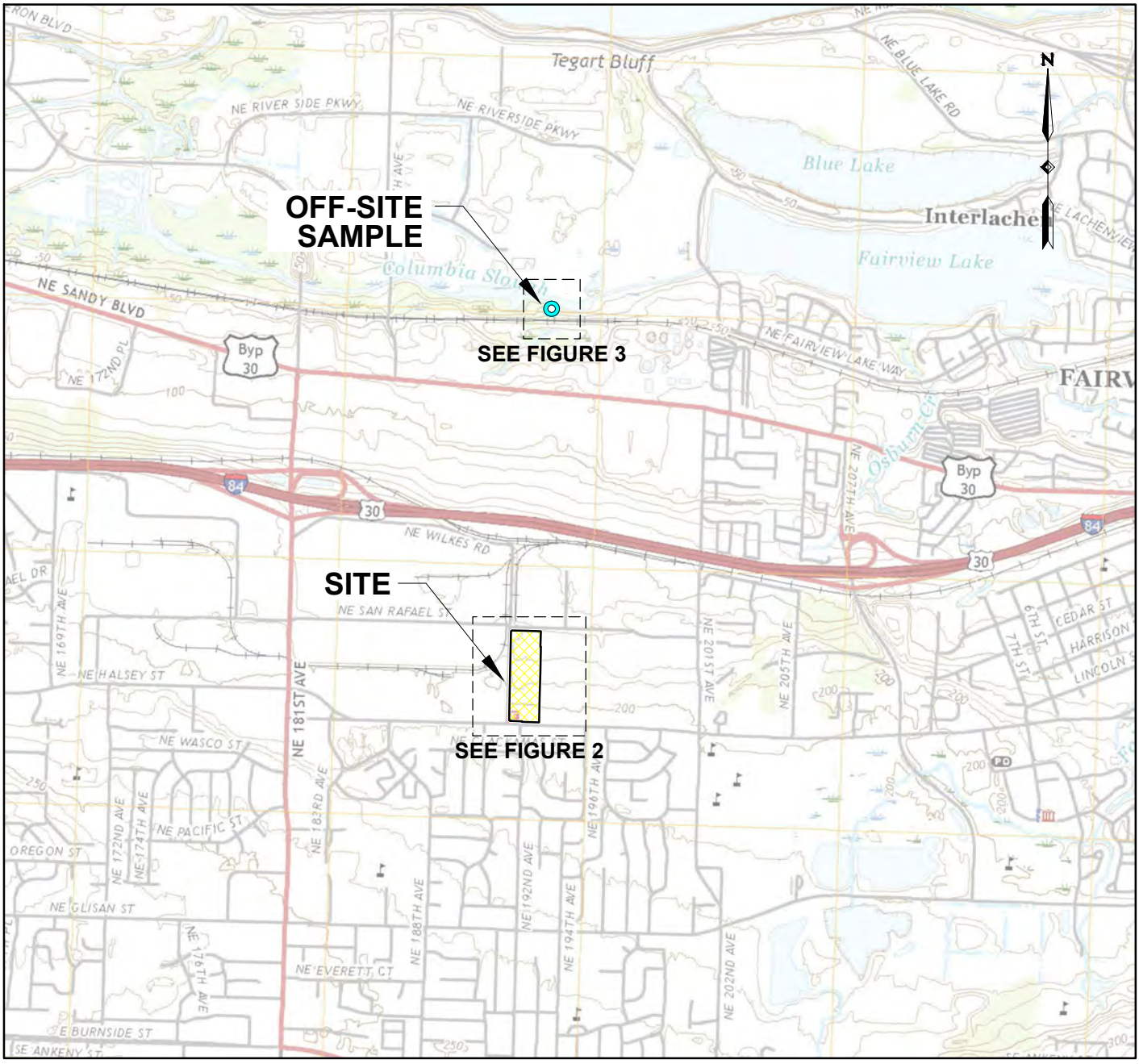
Figure 3 Off-Site Sample Location

ATTACHMENTS

Attachment A Boring Logs

Attachment B Geotechnical Hole Reports

Attachment C Laboratory Reports



Camas, Washington-Oregon
United States Geological Survey
7.5 Minute Series Topographic Map
Contour Interval: 10 feet
Scale: 1 inch = 24,000 feet
Date: 2020

0 2,000 4,000
Scale in Feet



OREGON

Site Location Map

Gresham Fire Training Center
19204 NE San Rafael Street
Gresham, Oregon

Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-23004694	Drawn: JP	Approved: CO	Figure 1
	August 2023			

I:\Client\DEQ\Oregon\32-23004694 Gresham Fire Station\Technical Memo\32-23004694 01 (Site Location).dwg Modified 6/27/2023 by JPoore



NOTE: Base map prepared from Microsoft Bing imagery (2023). Parcel information from ©Oregon Metro www.oregonmetro.gov/rlis (2022).

0 200 400

Scale in Feet

Legend:

- Catch Basin Sample Location
- Soil Boring Sample Location

Site Plan

Gresham Fire Training Center
19204 NE San Rafael Street
Gresham, Oregon

Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-23004694	Drawn: JP	Approved: CO	Figure **2**
	August 2023			

I:\Client\DEQ\Oregon\32-23004694 Gresham Fire Station\Technical Memo\32-23004694 02, 03 (Site Plans).dwg Modified 6/27/2023 by JPoore



NOTE: Base map prepared from Microsoft Bing imagery (2023).

0 200 400

Scale in Feet

Legend:

Sediment and Surface Water Sample Location

Off-Site Sample Location

Gresham Fire Training Center
19204 NE San Rafael Street
Gresham, Oregon

Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-23004694	Drawn: JP	Approved: CO	Figure **3**
	August 2023			

I:\Client\DEQ\Oregon\32-23004694 Gresham Fire Station\Technical Memo\32-23004694 02, 03 (Site Plans).dwg Modified 6/27/2023 by JPoore

Attachment A

Boring Logs

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, and grain size, and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:
MAJOR CONSTITUENT with additional remarks; color, moisture, minor constituents, density/consistency.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits and push probe explorations is estimated based on visual observation and is presented parenthetically on test pit and push probe exploration logs.

SAND and GRAVEL Density	Standard Penetration Resistance in Blows/Foot
Very loose	0 - 4
Loose	4 - 10
Medium dense	10 - 30
Dense	30 - 50
Very dense	>50

SILT or CLAY Density	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
Very soft	0 - 2	<0.125
Soft	2 - 4	0.125 - 0.25
Medium stiff	4 - 8	0.25 - 0.5
Stiff	8 - 15	0.5 - 1.0
Very Stiff	15 - 30	1.0 - 2.0
Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture.
Sl. Moist	Some perceptible moisture, probably below optimum.
Moist	Probably near optimum moisture content.
Wet	Much perceptible moisture, probably above optimum.

Minor Constituents

	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Sampling Symbols

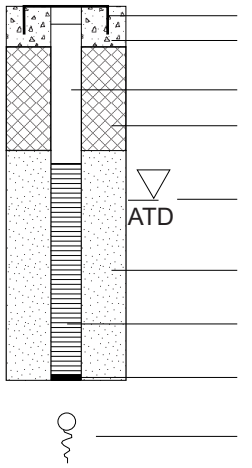
BORING AND PUSH-PROBE SYMBOLS

- Recovery
- No Recovery
- Temporarily Screened Interval
- PID — Photoionization Detector Reading
- W — Water Sample
- Sample Submitted for Chemical Analysis
- NS — No Sheen
- SS — Slight Sheen
- MS — Moderate Sheen
- HS — Heavy Sheen
- BF — Biogenic Film

TEST PIT SOIL SAMPLES

- Grab (Jar)
- Bag
- Shelby Tube

Groundwater Observations and Monitoring Well Construction



- Flush Mounted Monument Concrete Surface Seal
- Well Casing
- Bentonite Seal
- Groundwater Level on Date or (ATD) At Time of Drilling
- Sand Pack
- Well Screen
- End Cap
- Groundwater Seepage (Test Pits)

Key to Exploration Logs

Gresham Fire Station Preliminary Assessment
Oregon Department of Environmental Quality
Gresham, Oregon

APEX	Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-23004649	Drawn: JP	Approved: CO
		June 2023		Figure **Key**

I:\Client\DEQ\Oregon\32-23004694 Gresham Fire Station\Technical Memo Logs

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Gresham Fire Station
Oregon Department of Environmental Quality
Gresham, Oregon

Boring Number: **S-1**

Project Number: **32-23004694**
Logged By: R. Schettler
Date: May 24, 2023
Site Conditions: Grass Lot
Drilling Contractor: Yellow Jacket Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic
Depth to Water (ATD): Not Encountered
Surface Elevation: Not Measured

Boring Details and Notes:

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
	Hand Auger		<5	NS	Gravel surface FILL (3/4" crushed rock); gray, dry.
			<5	NS	
5			<5	NS	Sandy SILT; medium brown, moist, medium dense.
			<5	NS	Sandy GRAVEL; gray with yellow/orange/brown, dry, dense. Increasing sand with depth.
10			<5	NS	
			<5	NS	
			<5	NS	
15			<5	NS	
			<5	NS	
			<5	NS	
20			<5	NS	
			<5	NS	
			<5	NS	
			<5	NS	
25			<5	NS	
			<5	NS	Gravelly CLAY; yellow/orange mottled, moist, trace sand, medium stiff.
			<5	NS	CLAY; gray/yellow mottled, slightly moist, trace sand, stiff.
30			<5	NS	
			<5	NS	Sandy SILT; gray with brown, slightly moist, trace gravel, very stiff.
			<5	NS	
35			<5	NS	
			<5	NS	Sandy GRAVEL; gray with brown, dry, trace silt, dense, poorly sorted gravel ranging from small to cobbles.
			<5	NS	

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Gresham Fire Station
Oregon Department of Environmental Quality
Gresham, Oregon

Boring Number: **S-1**

Project Number: **32-23004694**
Logged By: R. Schettler
Date: May 24, 2023
Site Conditions: Grass Lot
Drilling Contractor: Yellow Jacket Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic
Depth to Water (ATD): Not Encountered
Surface Elevation: Not Measured

Boring Details and Notes:

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
45			<5	NS	Sandy GRAVEL (same as above).
			<5	NS	
			<5	NS	
			<5	NS	
50			<5	NS	
			<5	NS	
			<5	NS	
55			<5	NS	
			<5	NS	
			<5	NS	
60			<5	NS	
					Bottom of Boring at 60.0' BGS.
65					
70					
75					

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Gresham Fire Station
Oregon Department of Environmental Quality
Gresham, Oregon

Boring Number: **S-2**

Project Number: **32-23004694**
Logged By: R. Schettler
Date: May 24, 2023
Site Conditions: Grass Lot
Drilling Contractor: Yellow Jacket Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic
Depth to Water (ATD): 14'
Surface Elevation: Not Measured

Boring Details and Notes:

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
0	Hand Auger		<5	NS	SILT; medium brown, slightly moist, trace sand, trace gravel, trace organics, medium stiff. More moisture with depth.
5			<5	NS	
			<5	NS	
			<5	NS	
			<5	NS	
10			<5	NS	Sandy GRAVEL; gray with brown/yellow/orange, slightly moist, trace cobbles, poorly sorted.
			<5	NS	
			<5	NS	
15			<5	NS	Gravelly SILT; gray with brown/yellow/orange, slightly moist, dense, micaceous, trace wood fragments.
			<5	NS	SILT; gray/tan mottled, moist, trace gravel, trace sand fines, stiff, micaceous.
20			<5	NS	
			<5	NS	
			<5	NS	
25			<5	NS	Sandy GRAVEL gray with brown/yellow, moist, trace silt, poorly sorted.
			<5	NS	
			<5	NS	
30			<5	NS	Bottom of Boring at 30.0' BGS.
35					

Bottom of Boring at 40.0' BGS.

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Gresham Fire Station
Oregon Department of Environmental Quality
Gresham, Oregon

Boring Number: **S-3**

Project Number: **32-23004694**
Logged By: R. Schettler
Date: May 24, 2023
Site Conditions: Grass Lot
Drilling Contractor: Yellow Jacket Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic
Depth to Water (ATD): 14'
Surface Elevation: Not Measured

Boring Details and Notes:

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
0	Hand Auger		<5	NS	SILT; medium brown, slightly moist, trace sand, trace gravel, medium stiff. More moisture with depth.
			<5	NS	
5			<5	NS	
			<5	NS	
			<5	NS	Cobbly GRAVEL; gray with red/brown/yellow, dense, dry, poorly sorted.
10			<5	NS	
			<5	NS	
			<5	NS	
15			<5	NS	
			<5	NS	
			<5	NS	
20			<5	NS	
			<5	NS	
			<5	NS	
25			<5	NS	
			<5	NS	
			<5	NS	
30			<5	NS	Bottom of Boring at 30.0' BGS.
35					

Bottom of Boring at 40.0' BGS.

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Gresham Fire Station
Oregon Department of Environmental Quality
Gresham, Oregon

Boring Number: S-4

Project Number: **32-23004694**
Logged By: R. Schettler
Date: May 24, 2023
Site Conditions: Grass Lot
Drilling Contractor: Yellow Jacket Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic
Depth to Water (ATD): Not Encountered
Surface Elevation: Not Measured

Boring Details and Notes:

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
0	Hand Auger		<5	NS	SILT; medium brown with some rust color, moist, trace sand, trace organics, stiff, micaceous.
			12	NS	Encountered burnt wood.
5			51	NS	Encountered crushed rock.
			<5	NS	Sandy GRAVEL; gray with some yellow/orange, dry, medium dense, poorly sorted.
10			<5	NS	
			<5	NS	
			<5	NS	
15			<5	NS	
			<5	NS	
			<5	NS	
20			<5	NS	
			<5	NS	
			<5	NS	
25			<5	NS	
			<5	NS	
			<5	NS	
30			<5	NS	
			<5	NS	
			<5	NS	
35			<5	NS	
			<5	NS	
			<5	NS	

Bottom of Boring at 40.0' BGS.

Attachment B

Geotechnical Hole Reports

MULT 139886

STATE OF OREGON
GEOTECHNICAL HOLE REPORT
(as required by OAR 690-240-0035)

5/31/2023

(1) OWNER/PROJECT

Hole Number S-4

PROJECT NAME/NBR: GRESHAM FIRE STATION

First Name _____ Last Name _____
Company CITY OF GRESHAM
Address 1333 NW EASTMAN PARKWAY
City GRESHAM State OR Zip 97030

(2) TYPE OF WORK

☒ New ☐ Deepening ☒ Abandonment
☐ Alteration (repair/recondition)

(3) CONSTRUCTION

☐ Rotary Air ☐ Hand Auger ☐ Hollow stem auger
☐ Rotary Mud ☐ Cable ☐ Push Probe
☒ Other SONIC

(4) TYPE OF HOLE:

◯ Uncased Temporary ◯ Cased Permanent
◯ Uncased Permanent ◯ Slope Stablity
◯ Other
Other: _____

(5) USE OF HOLE

SOIL SAMPLING

(6) BORE HOLE CONSTRUCTION

Special Standard ☐ (Attach copy)
Depth of Completed Hole 40.00 ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
6	0	40	Concrete	0	1	1	S
			Bentonite Chips	1	40	570	P

Backfill placed from 1 ft. to 40 ft. Material BENTONITE CHIPS
Filter pack from _____ ft. to _____ ft. Material _____ Size _____

(7) CASING/SCREEN

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐

(8) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration(hr)

Temperature _____ °F Lab analysis ☐ Yes By _____
Supervising Geologist/Engineer _____
Water quality concerns? ☐ Yes (describe below) TDS amount _____ _____

From	To	Description	Amount	Units

(9) LOCATION OF HOLE (legal description)

County MULTNOMAH Twp 1.00 N N/S Range 3.00 E E/W WM
Sec 29 SE 1/4 of the SW 1/4 Tax Lot 00900
Tax Map Number _____ Lot _____
Lat ° ' " or 45.53700610 DMS or DD
Long ° ' " or -122.46555210 DMS or DD
◉ Street address of hole ◯ Nearest address
19204 NE SAN RAPHAEL ST, GRESHAM OR 97230

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐
WATER BEARING ZONES
Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(11) SUBSURFACE LOG

Ground Elevation _____

Material	From	To
sand and cobbles	0	10
hard cemented sands and gravels	10	30
cobbles with sand -dry	30	40

Date Started 5/24/2023 Completed 5/24/2023

(12) ABANDONMENT LOG:

Material	From	To	Amt	sacks/ lbs
Concrete	0	1	1	S
Bentonite Chips	1	40	570	P

Date Started 5/24/2023 Completed 5/24/2023

Professional Certification

(to be signed by an Oregon licensed water or monitoring well constructor, Oregon registered geologist or professional engineer).

I accept responsibility for the construction, deepening, alteration, or abandonment work performed during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License/Registration Number 10432 Date 5/31/2023
First Name DONALD Last Name LARSON
Affiliation YELLOW JACKET DRILLING SERVICES LLC

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

(6) BORE HOLE CONSTRUCTION

BORE HOLE

Dia	From	To

SEAL

Material	From	To	Amt	sacks/ lbs

FILTER PACK

From	To	Material	Size

(7) CASING/SCREENS

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		

(8) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

Comments/Remarks

dry hole

(10) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) SUBSURFACE LOG

Material	From	To

(12) ABANDONMENT LOG

Material	From	To	Amt	sacks/ lbs

GEOTECHNICAL HOLE REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 139886

5/31/2023

Map of Hole

STATE OF OREGON
WELL LOCATION MAP

This map is supplemental to the WATER SUPPLY WELL REPORT

Oregon Water Resources Department
725 Summer St NE, Salem OR 97301
(503)986-0900

LOCATION OF WELL

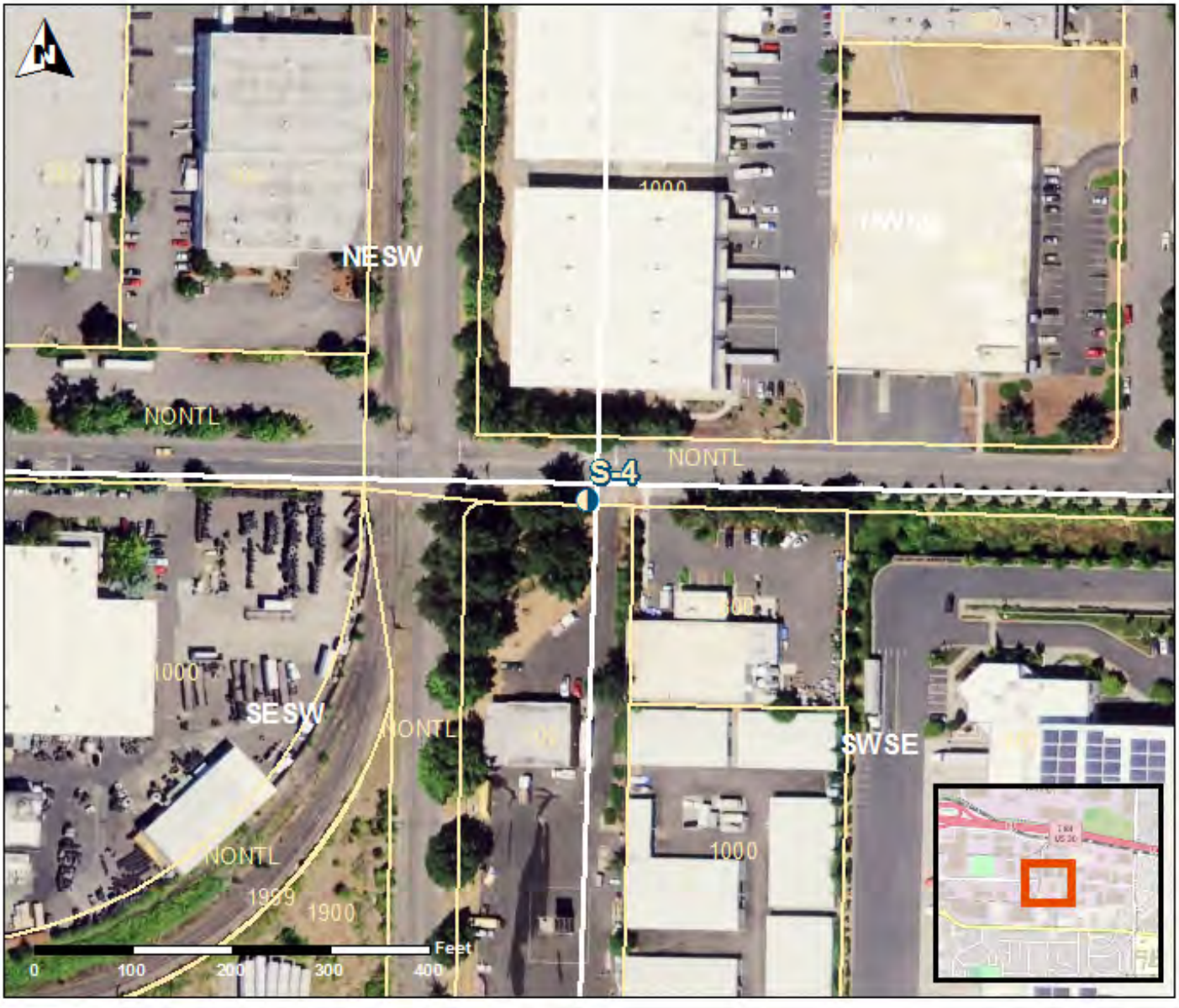
Latitude: 45.53700610 Datum: WGS84
Longitude: -122.46555210
Township/Range/Section/Quarter-Quarter Section:
WM1.00N3.00E29SESW
Address of Well:
19204 NE SAN RAPHAEL ST, GRESHAM OR 97230

Hole Nbr: S-4

Printed: May 31, 2023

DISCLAIMER: This map is intended to represent the approximate location the well. It is not intended to be construed as survey accurate in any manner.

Provided by well constructor



MULT 139887

STATE OF OREGON
GEOTECHNICAL HOLE REPORT
(as required by OAR 690-240-0035)

5/31/2023

(1) OWNER/PROJECT

Hole Number S-3

PROJECT NAME/NBR: CITY OF GRESHAM

First Name _____ Last Name _____

Company CITY OF GRESHAM

Address 1333 NW EASTMAN PARKWAY

City GRESHAM State OR Zip 97030

(2) TYPE OF WORK

☒ New ☐ Deepening ☒ Abandonment
☐ Alteration (repair/recondition)

(3) CONSTRUCTION

☐ Rotary Air ☐ Hand Auger ☐ Hollow stem auger
☐ Rotary Mud ☐ Cable ☐ Push Probe
☒ Other SONIC

(4) TYPE OF HOLE:

◯ Uncased Temporary ◯ Cased Permanent
◯ Uncased Permanent ◯ Slope Stablity
◯ Other
Other: _____

(5) USE OF HOLE

SOIL SAMPLING

(6) BORE HOLE CONSTRUCTION

Special Standard ☐ (Attach copy)

Depth of Completed Hole 30.00 ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
6	0	30	Concrete	0	1	1	S
			Bentonite Chips	1	30	450	P

Backfill placed from 1 ft. to 30 ft. Material BENTONITE CHIPS
Filter pack from _____ ft. to _____ ft. Material _____ Size _____

(7) CASING/SCREEN

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐

(8) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration(hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below) TDS amount _____ _____

From	To	Description	Amount	Units

(9) LOCATION OF HOLE (legal description)

County MULTNOMAH Twp 1.00 N N/S Range 3.00 E E/W WM
Sec 29 SE 1/4 of the SW 1/4 Tax Lot 00900
Tax Map Number _____ Lot _____
Lat ° ' " or 45.53568160 DMS or DD
Long ° ' " or -122.46567010 DMS or DD
◉ Street address of hole ◯ Nearest address

19204 NE SAN RAPHAEL ST, GRESHAM OR 97230

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐

WATER BEARING ZONES

Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(11) SUBSURFACE LOG

Ground Elevation _____

Material	From	To
asphalt	0	1
brown sand with cobbles	1	10
hard packed sand with cobbles	10	30

Date Started 5/24/2023 Completed 5/24/2023

(12) ABANDONMENT LOG:

Material	From	To	Amt	sacks/ lbs
Concrete	0	1	1	S
Bentonite Chips	1	30	450	P

Date Started 5/24/2023 Completed 5/24/2023

Professional Certification

(to be signed by an Oregon licensed water or monitoring well constructor, Oregon registered geologist or professional engineer).

I accept responsibility for the construction, deepening, alteration, or abandonment work performed during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License/Registration Number 10432 Date 5/31/2023

First Name DONALD Last Name LARSON

Affiliation YELLOW JACKET DRILLING SERVICES LLC

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

(6) BORE HOLE CONSTRUCTION

BORE HOLE

Dia	From	To

SEAL

Material	From	To	Amt	sacks/ lbs

FILTER PACK

From	To	Material	Size

(7) CASING/SCREENS

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(8) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

Comments/Remarks

dry hole

(10) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) SUBSURFACE LOG

Material	From	To

(12) ABANDONMENT LOG

Material	From	To	Amt	sacks/ lbs

GEOTECHNICAL HOLE REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 139887

5/31/2023

Map of Hole

STATE OF OREGON
WELL LOCATION MAP

This map is supplemental to the WATER SUPPLY WELL REPORT

Oregon Water Resources Department
725 Summer St NE, Salem OR 97301
(503)986-0900

OREGON WATER RESOURCES DEPARTMENT

LOCATION OF WELL
Latitude: 45.53568160 Datum: WGS84
Longitude: -122.46567010
Township/Range/Section/Quarter-Quarter Section:
WM1.00N3.00E29SESW
Address of Well:
19204 NE SAN RAPHAEL ST, GRESHAM OR 97230

Hole Nbr: S-3

Printed: May 31, 2023

DISCLAIMER: This map is intended to represent the approximate location the well. It is not intended to be construed as survey accurate in any manner.

Provided by well constructor



MULT 139888

STATE OF OREGON
GEOTECHNICAL HOLE REPORT
(as required by OAR 690-240-0035)

5/31/2023

(1) OWNER/PROJECT

Hole Number S-2

PROJECT NAME/NBR: GRESHAM FIRE STATION

First Name _____ Last Name _____

Company CITY OF GRESHAM

Address 1333 NW EASTMAN PARKWAY

City GRESHAM State OR Zip 97030

(2) TYPE OF WORK

☒ New ☐ Deepening ☒ Abandonment
☐ Alteration (repair/recondition)

(3) CONSTRUCTION

☐ Rotary Air ☐ Hand Auger ☐ Hollow stem auger
☐ Rotary Mud ☐ Cable ☐ Push Probe
☒ Other SONIC

(4) TYPE OF HOLE:

◯ Uncased Temporary ◯ Cased Permanent
◯ Uncased Permanent ◯ Slope Stablity
◯ Other
Other: _____

(5) USE OF HOLE

SOIL SAMPLING

(6) BORE HOLE CONSTRUCTION

Special Standard ☐ (Attach copy)

Depth of Completed Hole 30.00 ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
6	0	30	Concrete	0	1	1	S
			Bentonite Chips	1	30	450	P

Backfill placed from 1 ft. to 30 ft. Material BENTONITE CHIPS
Filter pack from _____ ft. to _____ ft. Material _____ Size _____

(7) CASING/SCREEN

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◯	◯						◯	◯		
◯	◯						◯	◯		
◯	◯						◯	◯		
◯	◯						◯	◯		
◯	◯						◯	◯		

(8) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration(hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below) TDS amount _____ _____

From	To	Description	Amount	Units

(9) LOCATION OF HOLE (legal description)

County MULTNOMAH Twp 1.00 N N/S Range 3.00 E E/W WM
Sec 29 SW 1/4 of the SE 1/4 Tax Lot 00900
Tax Map Number _____ Lot _____
Lat ° ' " or 45.53479780 DMS or DD
Long ° ' " or -122.46550020 DMS or DD
◉ Street address of hole ◯ Nearest address
19204 NE SAN RAPHAEL ST, GRESHAM OR 97230

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐
Depth water was first found _____

WATER BEARING ZONES

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(11) SUBSURFACE LOG

Ground Elevation _____

Material	From	To
grass/top soil	0	0.5
brown sand with cobbles	0.5	10
silty sands	10	30

Date Started 5/24/2023 Completed 5/24/2023

(12) ABANDONMENT LOG:

Material	From	To	Amt	sacks/ lbs
Other	0	1	50	P
Bentonite Chips	1	30	450	P

Date Started 5/25/2023 Completed 5/25/2023

Professional Certification

(to be signed by an Oregon licensed water or monitoring well constructor, Oregon registered geologist or professional engineer).

I accept responsibility for the construction, deepening, alteration, or abandonment work performed during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License/Registration Number 10432 Date 5/31/2023

First Name DONALD Last Name LARSON

Affiliation YELLOW JACKET DRILLING SERVICES LLC

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

GEOTECHNICAL HOLE REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 139888

5/31/2023

Map of Hole

STATE OF OREGON
WELL LOCATION MAP

This map is supplemental to the WATER SUPPLY WELL REPORT

Oregon Water Resources Department
725 Summer St NE, Salem OR 97301
(503)986-0900

LOCATION OF WELL

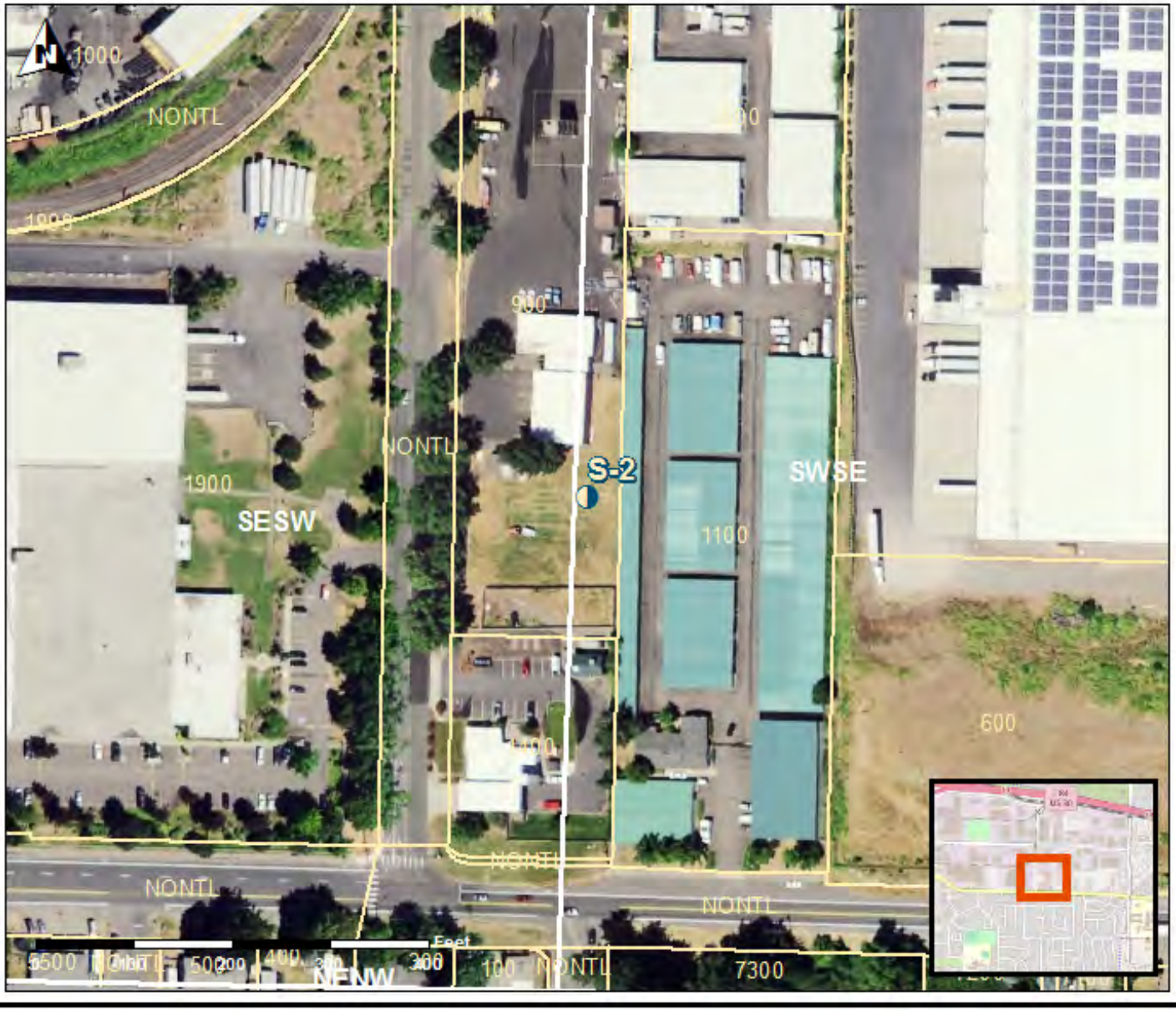
Latitude: 45.53479780 Datum: WGS84
Longitude: -122.46550020
Township/Range/Section/Quarter-Quarter Section:
WM1.00N3.00E29SWSE
Address of Well:
19204 NE SAN RAPHAEL ST, GRESHAM OR 97230

Hole Nbr: S-2

Printed: May 31, 2023

DISCLAIMER: This map is intended to represent the approximate location the well. It is not intended to be construed as survey accurate in any manner.

Provided by well constructor



MULT 139889

STATE OF OREGON
GEOTECHNICAL HOLE REPORT
(as required by OAR 690-240-0035)

5/31/2023

(1) OWNER/PROJECT

Hole Number S-1

PROJECT NAME/NBR: GRESHAM FIRE STATION

First Name _____ Last Name _____
Company CITY OF GRESHAM
Address 1333 NW EASTMAN PARKWAY
City GRESHAM State OR Zip 97030

(2) TYPE OF WORK

☒ New ☐ Deepening ☒ Abandonment
☐ Alteration (repair/recondition)

(3) CONSTRUCTION

☐ Rotary Air ☐ Hand Auger ☐ Hollow stem auger
☐ Rotary Mud ☐ Cable ☐ Push Probe
☒ Other SONIC

(4) TYPE OF HOLE:

◯ Uncased Temporary ◯ Cased Permanent
◯ Uncased Permanent ◯ Slope Stablity
◯ Other
Other: _____

(5) USE OF HOLE

SOIL SAMPLING

(6) BORE HOLE CONSTRUCTION

Special Standard ☐ (Attach copy)
Depth of Completed Hole 60.00 ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
6	0	60	Concrete	0	1	1	S
			Bentonite Chips	1	60	850	P

Backfill placed from 1 ft. to 60 ft. Material BENTONITE CHIPS
Filter pack from _____ ft. to _____ ft. Material _____ Size _____

(7) CASING/SCREEN

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐
◯	◯		☐				◯	◯	☐	☐

(8) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration(hr)

Temperature _____ °F Lab analysis ☐ Yes By _____
Supervising Geologist/Engineer _____
Water quality concerns? ☐ Yes (describe below) TDS amount _____ _____

From	To	Description	Amount	Units

(9) LOCATION OF HOLE (legal description)

County MULTNOMAH Twp 1.00 N N/S Range 3.00 E E/W WM
Sec 29 SE 1/4 of the SW 1/4 Tax Lot 00900
Tax Map Number _____ Lot _____
Lat ° ' " or 45.53464750 DMS or DD
Long ° ' " or -122.46583980 DMS or DD
◉ Street address of hole ◯ Nearest address
19204 NE SAN RAPHAEL ST, GRESHAM OR 97230

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐
WATER BEARING ZONES
Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(11) SUBSURFACE LOG

Ground Elevation _____

Material	From	To
gravel	0	1
brown sand with cobbles	1	30
hard cemented gravels	30	60

Date Started 5/25/2023 Completed 5/25/2023

(12) ABANDONMENT LOG:

Material	From	To	Amt	sacks/ lbs
Concrete	0	1	1	S
Bentonite Chips	1	60	850	P

Date Started 5/25/2023 Completed 5/25/2023

Professional Certification

(to be signed by an Oregon licensed water or monitoring well constructor, Oregon registered geologist or professional engineer).

I accept responsibility for the construction, deepening, alteration, or abandonment work performed during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License/Registration Number 10432 Date 5/31/2023
First Name DONALD Last Name LARSON
Affiliation YELLOW JACKET DRILLING SERVICES LLC

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

(6) BORE HOLE CONSTRUCTION

BORE HOLE

Dia	From	To

SEAL

Material	From	To	Amt	sacks/ lbs

FILTER PACK

From	To	Material	Size

(7) CASING/SCREENS

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		

(8) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

Comments/Remarks

dry hole

(10) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) SUBSURFACE LOG

Material	From	To

(12) ABANDONMENT LOG

Material	From	To	Amt	sacks/ lbs

GEOTECHNICAL HOLE REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 139889

5/31/2023

Map of Hole

STATE OF OREGON
WELL LOCATION MAP

This map is supplemental to the WATER SUPPLY WELL REPORT

Oregon Water Resources Department
725 Summer St NE, Salem OR 97301
(503)986-0900

LOCATION OF WELL

Latitude: 45.53464750 Datum: WGS84
Longitude: -122.46583980
Township/Range/Section/Quarter-Quarter Section:
WM1.00N3.00E29SESW
Address of Well:
19204 NE SAN RAPHAEL ST, GRESHAM OR 97230

Hole Nbr: S-1

Printed: May 31, 2023

DISCLAIMER: This map is intended to represent the approximate location the well. It is not intended to be construed as survey accurate in any manner.

Provided by well constructor



Attachment C

Laboratory Reports

ANALYTICAL REPORT

June 09, 2023

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group:	L1620947
Samples Received:	05/27/2023
Project Number:	32-23004694
Description:	Gresham Fire Station SSA
Report To:	Katie Daugherty

Entire Report Reviewed By:

Brian Ford

Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

IDW-WATER L1620947-01 5

IDW-SOIL L1620947-02 6

Qc: Quality Control Summary 7

Mercury by Method 7470A 7

Metals (ICP) by Method 6010D 8

Volatile Organic Compounds (GC/MS) by Method 8260D 10

Gl: Glossary of Terms 12

Al: Accreditations & Locations 13

Sc: Sample Chain of Custody 14

SAMPLE SUMMARY

IDW-WATER L1620947-01 Waste

			Collected by	Collected date/time	Received date/time
				05/25/23 13:15	05/27/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Preparation by Method 1311	WG2069804	1	06/01/23 14:12	06/01/23 14:12	JTM	Mt. Juliet, TN
Preparation by Method 1311	WG2070207	1	06/02/23 12:39	06/02/23 12:39	JTM	Mt. Juliet, TN
Mercury by Method 7470A	WG2071470	1	06/07/23 11:17	06/08/23 17:12	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2072178	1	06/06/23 09:27	06/06/23 13:49	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2072358	1	06/07/23 02:49	06/07/23 02:49	DWR	Mt. Juliet, TN

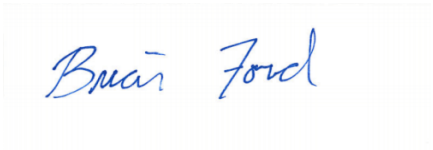
IDW-SOIL L1620947-02 Waste

			Collected by	Collected date/time	Received date/time
				05/25/23 13:15	05/27/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Preparation by Method 1311	WG2069804	1	06/01/23 14:12	06/01/23 14:12	JTM	Mt. Juliet, TN
Preparation by Method 1311	WG2070207	1	06/02/23 12:39	06/02/23 12:39	JTM	Mt. Juliet, TN
Mercury by Method 7470A	WG2071470	1	06/07/23 11:17	06/08/23 18:12	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2072178	1	06/06/23 09:27	06/06/23 14:50	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2072358	1	06/07/23 03:08	06/07/23 03:08	DWR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		6/1/2023 2:12:32 PM	WG2069804
TCLP ZHE Extraction	-		6/2/2023 12:39:04 PM	WG2070207
Initial pH	N/A		6/1/2023 2:12:32 PM	WG2069804
Final pH	N/A		6/1/2023 2:12:32 PM	WG2069804

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND	J6 O1	0.0100	0.20	1	06/08/2023 17:12	WG2071470

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	06/06/2023 13:49	WG2072178
Barium	0.157		0.100	100	1	06/06/2023 13:49	WG2072178
Cadmium	ND		0.100	1	1	06/06/2023 13:49	WG2072178
Chromium	ND		0.100	5	1	06/06/2023 13:49	WG2072178
Lead	ND		0.100	5	1	06/06/2023 13:49	WG2072178
Selenium	ND		0.100	1	1	06/06/2023 13:49	WG2072178
Silver	ND		0.100	5	1	06/06/2023 13:49	WG2072178

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	06/07/2023 02:49	WG2072358
Carbon tetrachloride	ND	J3	0.0500	0.50	1	06/07/2023 02:49	WG2072358
Chlorobenzene	ND		0.0500	100	1	06/07/2023 02:49	WG2072358
Chloroform	ND		0.250	6	1	06/07/2023 02:49	WG2072358
1,4-Dichlorobenzene	ND		0.0500	7.50	1	06/07/2023 02:49	WG2072358
1,2-Dichloroethane	ND		0.0500	0.50	1	06/07/2023 02:49	WG2072358
1,1-Dichloroethene	ND	J3	0.0500	0.70	1	06/07/2023 02:49	WG2072358
2-Butanone (MEK)	ND		0.500	200	1	06/07/2023 02:49	WG2072358
Tetrachloroethene	ND		0.0500	0.70	1	06/07/2023 02:49	WG2072358
Trichloroethene	ND		0.0500	0.50	1	06/07/2023 02:49	WG2072358
Vinyl chloride	ND		0.0500	0.20	1	06/07/2023 02:49	WG2072358
(S) Toluene-d8	*112*		*80.0-120*			*06/07/2023 02:49*	WG2072358
(S) 4-Bromofluorobenzene	*94.5*		*77.0-126*			*06/07/2023 02:49*	WG2072358
(S) 1,2-Dichloroethane-d4	*122*		*70.0-130*			*06/07/2023 02:49*	WG2072358

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		6/1/2023 2:12:32 PM	WG2069804
TCLP ZHE Extraction	-		6/2/2023 12:39:04 PM	WG2070207
Initial pH	7.12		6/1/2023 2:12:32 PM	WG2069804
Final pH	7.01		6/1/2023 2:12:32 PM	WG2069804

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	06/08/2023 18:12	WG2071470

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	06/06/2023 14:50	WG2072178
Barium	1.02		0.100	100	1	06/06/2023 14:50	WG2072178
Cadmium	ND		0.100	1	1	06/06/2023 14:50	WG2072178
Chromium	ND		0.100	5	1	06/06/2023 14:50	WG2072178
Lead	ND		0.100	5	1	06/06/2023 14:50	WG2072178
Selenium	ND		0.100	1	1	06/06/2023 14:50	WG2072178
Silver	ND		0.100	5	1	06/06/2023 14:50	WG2072178

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	06/07/2023 03:08	WG2072358
Carbon tetrachloride	ND		0.0500	0.50	1	06/07/2023 03:08	WG2072358
Chlorobenzene	ND		0.0500	100	1	06/07/2023 03:08	WG2072358
Chloroform	ND		0.250	6	1	06/07/2023 03:08	WG2072358
1,4-Dichlorobenzene	ND		0.0500	7.50	1	06/07/2023 03:08	WG2072358
1,2-Dichloroethane	ND		0.0500	0.50	1	06/07/2023 03:08	WG2072358
1,1-Dichloroethene	ND		0.0500	0.70	1	06/07/2023 03:08	WG2072358
2-Butanone (MEK)	ND		0.500	200	1	06/07/2023 03:08	WG2072358
Tetrachloroethene	ND		0.0500	0.70	1	06/07/2023 03:08	WG2072358
Trichloroethene	ND		0.0500	0.50	1	06/07/2023 03:08	WG2072358
Vinyl chloride	ND		0.0500	0.20	1	06/07/2023 03:08	WG2072358
(S) Toluene-d8	*111*		*80.0-120*			*06/07/2023 03:08*	WG2072358
(S) 4-Bromofluorobenzene	*92.9*		*77.0-126*			*06/07/2023 03:08*	WG2072358
(S) 1,2-Dichloroethane-d4	*123*		*70.0-130*			*06/07/2023 03:08*	WG2072358

Method Blank (MB)

(MB) R3934564-1 06/08/23 17:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.00330	0.0100

Laboratory Control Sample (LCS)

(LCS) R3934564-2 06/08/23 17:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.0300	0.0292	97.3	80.0-120	

L1620678-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620678-14 06/08/23 17:06 • (MS) R3934564-3 06/08/23 17:08 • (MSD) R3934564-4 06/08/23 17:10

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0284	0.0126	94.7	42.0	1	75.0-125		J3 J6	77.1	20

L1620947-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620947-01 06/08/23 17:12 • (MS) R3934564-5 06/08/23 17:14 • (MSD) R3934564-6 06/08/23 17:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	ND	ND	31.1	31.6	1	75.0-125	J6	J6	0.000	20

Method Blank (MB)

(MB) R3933385-1 06/06/23 13:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0333	0.100
Cadmium	U		0.0333	0.100
Chromium	U		0.0333	0.100
Lead	U		0.0333	0.100
Selenium	0.0470	J	0.0333	0.100
Silver	U		0.0333	0.100

Laboratory Control Sample (LCS)

(LCS) R3933385-2 06/06/23 13:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	10.0	10.1	101	80.0-120	
Barium	10.0	9.85	98.5	80.0-120	
Cadmium	10.0	9.73	97.3	80.0-120	
Chromium	10.0	9.48	94.8	80.0-120	
Lead	10.0	9.31	93.1	80.0-120	
Selenium	10.0	10.2	102	80.0-120	
Silver	2.00	1.89	94.5	80.0-120	

L1620678-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620678-06 06/06/23 13:38 • (MS) R3933385-4 06/06/23 13:44 • (MSD) R3933385-5 06/06/23 13:46

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	10.4	10.5	104	105	1	75.0-125			0.411	20
Barium	10.0	1.08	10.9	10.9	98.5	97.9	1	75.0-125			0.605	20
Cadmium	10.0	ND	10.1	10.1	101	101	1	75.0-125			0.822	20
Chromium	10.0	ND	9.70	9.52	97.0	95.2	1	75.0-125			1.86	20
Lead	10.0	ND	9.60	9.51	96.0	95.1	1	75.0-125			0.995	20
Selenium	10.0	ND	10.6	10.7	106	107	1	75.0-125			0.847	20
Silver	2.00	ND	1.97	1.93	98.6	96.7	1	75.0-125			1.96	20

L1620947-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620947-01 06/06/23 13:49 • (MS) R3933385-6 06/06/23 13:51 • (MSD) R3933385-7 06/06/23 13:54

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	10.1	10.1	101	101	1	75.0-125			0.679	20
Barium	10.0	0.157	10.3	10.4	101	102	1	75.0-125			1.25	20
Cadmium	10.0	ND	9.84	9.93	98.4	99.3	1	75.0-125			0.862	20
Chromium	10.0	ND	9.58	9.63	95.8	96.3	1	75.0-125			0.548	20
Lead	10.0	ND	9.44	9.53	94.4	95.3	1	75.0-125			0.977	20
Selenium	10.0	ND	10.1	10.2	101	102	1	75.0-125			0.770	20
Silver	2.00	ND	1.88	1.90	94.1	95.0	1	75.0-125			0.912	20

Method Blank (MB)

(MB) R3934193-3 06/06/23 23:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,4-Dichlorobenzene	U		0.0167	0.0500
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	*113*			*80.0-120*
(S) 4-Bromofluorobenzene	*95.0*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*126*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3934193-1 06/06/23 21:26 • (LCSD) R3934193-2 06/06/23 21:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.250	0.262	0.238	105	95.2	70.0-123			9.60	20
Carbon tetrachloride	0.250	0.282	0.215	113	86.0	68.0-126		J3	27.0	20
Chlorobenzene	0.250	0.246	0.236	98.4	94.4	80.0-121			4.15	20
Chloroform	0.250	0.254	0.241	102	96.4	73.0-120			5.25	20
1,4-Dichlorobenzene	0.250	0.261	0.253	104	101	79.0-120			3.11	20
1,2-Dichloroethane	0.250	0.280	0.262	112	105	70.0-128			6.64	20
1,1-Dichloroethene	0.250	0.242	0.194	96.8	77.6	71.0-124		J3	22.0	20
2-Butanone (MEK)	1.25	1.42	1.34	114	107	44.0-160			5.80	20
Tetrachloroethene	0.250	0.255	0.224	102	89.6	72.0-132			12.9	20
Trichloroethene	0.250	0.254	0.221	102	88.4	78.0-124			13.9	20
Vinyl chloride	0.250	0.220	0.184	88.0	73.6	67.0-131			17.8	20
(S) Toluene-d8				*109*	*112*	*80.0-120*				
(S) 4-Bromofluorobenzene				*93.6*	*96.6*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*121*	*122*	*70.0-130*				

L1620947-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620947-02 06/07/23 03:08 • (MS) R3934193-4 06/07/23 08:52 • (MSD) R3934193-5 06/07/23 09:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.250	ND	0.205	0.202	82.0	80.8	1	17.0-158			1.47	27
Carbon tetrachloride	0.250	ND	0.201	0.192	80.4	76.8	1	23.0-159			4.58	28
Chlorobenzene	0.250	ND	0.204	0.206	81.6	82.4	1	33.0-152			0.976	27
Chloroform	0.250	ND	ND	ND	86.8	84.8	1	29.0-154			2.33	28
1,4-Dichlorobenzene	0.250	ND	0.218	0.211	87.2	84.4	1	35.0-142			3.26	27
1,2-Dichloroethane	0.250	ND	0.228	0.238	91.2	95.2	1	29.0-151			4.29	27
1,1-Dichloroethene	0.250	ND	0.178	0.158	71.2	63.2	1	11.0-160			11.9	29
2-Butanone (MEK)	1.25	ND	1.35	1.35	108	108	1	10.0-160			0.000	32
Tetrachloroethene	0.250	ND	0.184	0.179	73.6	71.6	1	10.0-160			2.75	27
Trichloroethene	0.250	ND	0.189	0.182	75.6	72.8	1	10.0-160			3.77	25
Vinyl chloride	0.250	ND	0.150	0.134	60.0	53.6	1	10.0-160			11.3	27
(S) Toluene-d8					*110*	*110*		*80.0-120*				
(S) 4-Bromofluorobenzene					*98.4*	*97.8*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*120*	*126*		*70.0-130*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Agency, Authorized Purchaser or Agent: Oregon DEQ

Contract Laboratory Name: Pace National

Lab Batch #:

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☐ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Send Lab Report To:
Address: Katie Daugherty
700 NE Multnomah St,
Suite 600
Portland, OR 97232

E-mail: katie.daugherty@deq.oregon.gov

Invoice To: ODEQ/Business Office
Address: 700 NE Multnomah St,
Suite 600
Portland, OR 97232

Tel. #: (800) 452-4011

Project Name: **Gresham Fire Station SSA**
Project #: **32-23004694**

L1620947

Sample Preservative

Requested Analyses

Sample ID#	Collection Date/Time	Matrix	Number of Containers	TCLP – Volatiles and Metals (EPA 1311)	Comments
IDW – Water	5/25/23 1315	W	1	X	-01
IDW - Soil	5/25/23 1315	S	2	X	-02
SED-1	5/26/23	WS	1	X	
SW-1	5/26/23	W	2	X	
SW-1 DUP	5/26/23	W	2	X	

B083

Notes: Report Results to: MStevens@apexcos.com; Kelsi.Evans@apexcos.com; cowens@apexcos.com; katie.daugherty@deq.oregon.gov
Bill to: Katie Daugherty, katie.daugherty@deq.oregon.gov

Relinquished By: Robert Schettler	Agency/Agent: Apex Companies	Received By: ALEXA Mitchell	Agency: PACE
Signature:	Time & Date: 1800 05/25/23	Signature: Alexa Mitchell	Time & Date: 5/27/23 0900
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #**102-1098-07** AND PRICE AGREEMENT # **8903**. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

T# 012606531478 5

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N	.5+0=.5	

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

July 14, 2023

Katie Daugherty
Oregon DEQ
700 NE Multnomah Street
Portland, OR 97232

RE: Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Dear Katie Daugherty:

Enclosed are the analytical results for sample(s) received by the laboratory on June 02, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kirsten Hogberg
kirsten.hogberg@pacelabs.com
(612)607-1700
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10655802001	**SED-1**	Solid	05/31/23 14:00	06/02/23 10:15
10655802002	**SW-1**	Water	05/31/23 13:30	06/02/23 10:15
10655802003	**SW-1 DUP**	Water	05/31/23 13:35	06/02/23 10:15

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10655802001	**SED-1**	ASTM D2974	JDL	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655802002	**SW-1**	ENV-SOP-MIN4-0178	MM4	61	PASI-M
10655802003	**SW-1 DUP**	ENV-SOP-MIN4-0178	MM4	61	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID SL
Client: Oregon DEQ
Date: July 14, 2023

General Information:
1 sample was analyzed for ENV-SOP-MIN4-0178 by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with ENV-SOP-MIN4-0178 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 888326

S0: Surrogate recovery outside laboratory control limits.

- MS (Lab ID: 4681092)
  - 13C26:2FTS (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- MSD (Lab ID: 4681093)
  - 13C26:2FTS (S)
  - 13C2PFHxDA (S)
  - 13C8-PFOSA (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
  - d9-NEtFOSE (S)
- SED-1 (Lab ID: 10655802001)
  - 13C24:2FTS (S)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - 13C2PFHxDA (S)
  - 13C8-PFOSA (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID SL
Client: Oregon DEQ
Date: July 14, 2023

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 888326

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10655868026,10655868027

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4681090)
  - NEtFOSAA
  - Perfluorooctanesulfonic acid
- MS (Lab ID: 4681092)
  - Perfluorooctanesulfonic acid
- MSD (Lab ID: 4681091)
  - NEtFOSE
  - Perfluorooctanesulfonic acid
- MSD (Lab ID: 4681093)
  - NEtFOSA
  - NMeFOSA
  - PFDS
  - PFODA
  - Perfluorooctanesulfonic acid
  - Perfluorooctanoic acid

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID NPW
Client: Oregon DEQ
Date: July 14, 2023

General Information:
2 samples were analyzed for ENV-SOP-MIN4-0178 by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- SW-1 (Lab ID: 10655802002)
- SW-1 DUP (Lab ID: 10655802003)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with ENV-SOP-MIN4-0178 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 887315

S0: Surrogate recovery outside laboratory control limits.
- BLANK (Lab ID: 4675796)
  - d5-NEtFOSA (S)
- DUP (Lab ID: 4678123)
  - 13C26:2FTS (S)
- LCS (Lab ID: 4675797)
  - 13C26:2FTS (S)
- LCSD (Lab ID: 4678121)
  - 13C26:2FTS (S)
- MS (Lab ID: 4678122)
  - 13C26:2FTS (S)
- SW-1 (Lab ID: 10655802002)
  - 13C2-PFDoA (S)
  - 13C2-PFTA (S)
  - 13C24:2FTS (S)
  - 13C26:2FTS (S)

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID NPW
Client: Oregon DEQ
Date: July 14, 2023

QC Batch: 887315

S0: Surrogate recovery outside laboratory control limits.

- 13C28:2FTS (S)
- 13C2PFHxDA (S)
- 13C3-PFBS (S)
- 13C3-PFHxS (S)
- 13C3HFPO-DA (S)
- 13C4-PFBA (S)
- 13C4-PFHpA (S)
- 13C5-PFHxA (S)
- 13C5-PFPeA (S)
- 13C6-PFDA (S)
- 13C7-PFUdA (S)
- 13C8-PFOA (S)
- 13C8-PFOS (S)
- 13C8-PFOSA (S)
- 13C9-PFNA (S)
- d3-MeFOSAA (S)
- d3-NMeFOSA (S)
- d5-EtFOSAA (S)
- d5-NEtFOSA (S)
- d7-NMeFOSE (S)
- d9-NEtFOSE (S)

- SW-1 DUP (Lab ID: 10655802003)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - 13C2PFHxDA (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

- BLANK (Lab ID: 4675796)
  - 13C26:2FTS (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID NPW
Client: Oregon DEQ
Date: July 14, 2023

QC Batch: 887315

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10655198002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4678122)
  - PFBA

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Sample: SED-1 **Lab ID: 10655802001** Collected: 05/31/23 14:00 Received: 06/02/23 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**25.5**	%	0.10	1		06/29/23 15:17		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:22	763051-92-9	
4:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:22	757124-72-4	
6:2 FTS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	27619-97-2	
8:2 FTS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:22	756426-58-1	
ADONA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	919005-14-4	
HFPO-DA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	13252-13-6	
NEtFOSAA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	2991-50-6	
NEtFOSA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	4151-50-2	
NEtFOSE	**0.14**	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	1691-99-2	
NMeFOSAA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	2355-31-9	
NMeFOSA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	31506-32-8	
NMeFOSE	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:22	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	307-24-4	
PFBA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	375-22-4	
PFDS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	335-77-3	
PFDoS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	79780-39-5	
PFHpS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	375-92-8	
PFHxDA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	67905-19-5	
PFNS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	68259-12-1	
PFODA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	16517-11-6	
PFOSA	**0.61**	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	754-91-6	
PFPeA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	2706-90-3	
PFPeS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:22	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	375-85-9	
Perfluorohexanesulfonic acid	**0.13**	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:22	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	375-95-1	
Perfluorooctanesulfonic acid	**1.0**	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:22	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:22	2058-94-8	
Surrogates								
13C24:2FTS (S)	299	%.	50-150	1	06/20/23 13:12	07/07/23 14:22		S0
13C26:2FTS (S)	371	%.	50-150	1	06/20/23 13:12	07/07/23 14:22		S0
13C28:2FTS (S)	454	%.	50-150	1	06/20/23 13:12	07/07/23 14:22		S0
13C2-PFDoA (S)	69	%.	50-150	1	06/20/23 13:12	07/07/23 14:22		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Sample: SED-1 **Lab ID: 10655802001** Collected: 05/31/23 14:00 Received: 06/02/23 10:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	41	%.	50-150	1	06/20/23 13:12	07/07/23 14:22		S0
13C2-PFTA (S)	68	%.	50-150	1	06/20/23 13:12	07/07/23 14:22		
13C3HFPO-DA (S)	105	%.	50-150	1	06/20/23 13:12	07/07/23 14:22		
13C3-PFBS (S)	116	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	375-73-5	
13C3-PFHxS (S)	94	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	355-46-4	
13C4-PFBA (S)	129	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	375-22-4	
13C4-PFHpA (S)	104	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	375-85-9	
13C5-PFHxA (S)	118	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	307-24-4	
13C5-PFPeA (S)	129	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	2706-90-3	
13C6-PFDA (S)	87	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	335-76-2	
13C7-PFUdA (S)	100	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	2058-94-8	
13C8-PFOA (S)	97	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	335-67-1	
13C8-PFOS (S)	102	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	1763-23-1	
13C8-PFOSA (S)	49	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	754-91-6	S0
13C9-PFNA (S)	91	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	375-95-1	
d3-MeFOSAA (S)	89	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	2355-31-9	
d3-NMeFOSA (S)	5	%.	10-150	1	06/20/23 13:12	07/07/23 14:22	31506-32-8	S0
d5-EtFOSAA (S)	145	%.	50-150	1	06/20/23 13:12	07/07/23 14:22	2991-50-6	
d5-NEtFOSA (S)	5	%.	10-150	1	06/20/23 13:12	07/07/23 14:22	4151-50-2	S0
d7-NMeFOSE (S)	17	%.	10-150	1	06/20/23 13:12	07/07/23 14:22	24448-09-7	
d9-NEtFOSE (S)	11	%.	10-150	1	06/20/23 13:12	07/07/23 14:22	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Sample: SW-1 **Lab ID: 10655802002** Collected: 05/31/23 13:30 Received: 06/02/23 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:33	120226-60-0	
11Cl-PF3OUdS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:33	763051-92-9	
4:2 FTS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:33	757124-72-4	
6:2 FTS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:33	27619-97-2	
8:2 FTS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:33	39108-34-4	
9Cl-PF3ONS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:33	756426-58-1	
ADONA	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:33	919005-14-4	
HFPO-DA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	13252-13-6	
NEtFOSAA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	2991-50-6	
NEtFOSA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	4151-50-2	
NEtFOSE	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	1691-99-2	
NMeFOSAA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	2355-31-9	
NMeFOSA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	31506-32-8	
NMeFOSE	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	24448-09-7	
Perfluorobutanesulfonic acid	ND	ng/L	3.9	1	06/20/23 12:11	06/27/23 20:33	375-73-5	
Perfluorodecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	335-76-2	
Perfluorohexanoic acid	**6.8**	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	307-24-4	
PFBA	**6.7**	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	375-22-4	
PFDS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:33	335-77-3	
PFDoS	ND	ng/L	4.3	1	06/20/23 12:11	06/27/23 20:33	79780-39-5	
PFHpS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:33	375-92-8	
PFHxDA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	67905-19-5	
PFNS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:33	68259-12-1	
PFODA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	16517-11-6	L2
PFOSA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	754-91-6	
PFPeA	**7.6**	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	2706-90-3	
PFPeS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:33	2706-91-4	
Perfluorododecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	307-55-1	
Perfluoroheptanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	375-85-9	
Perfluorohexanesulfonic acid	**7.9**	ng/L	4.0	1	06/20/23 12:11	06/27/23 20:33	355-46-4	
Perfluorononanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	375-95-1	
Perfluorooctanesulfonic acid	**35.2**	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:33	1763-23-1	
Perfluorooctanoic acid	**12.2**	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	335-67-1	
Perfluorotetradecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	376-06-7	
Perfluorotridecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	72629-94-8	
Perfluoroundecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:33	2058-94-8	
Surrogates								
13C26:2FTS (S)	17	%.	50-150	1	06/20/23 12:11	06/27/23 20:33		S0
13C28:2FTS (S)	13	%.	50-150	1	06/20/23 12:11	06/27/23 20:33		S0
13C24:2FTS (S)	11	%.	50-150	1	06/20/23 12:11	06/27/23 20:33		S0
13C2-PFDoA (S)	9	%.	50-150	1	06/20/23 12:11	06/27/23 20:33		S0
13C2PFHxDA (S)	7	%.	50-150	1	06/20/23 12:11	06/27/23 20:33		S0
13C2-PFTA (S)	7	%.	50-150	1	06/20/23 12:11	06/27/23 20:33		S0
13C3HFPO-DA (S)	11	%.	50-150	1	06/20/23 12:11	06/27/23 20:33		S0
13C3-PFBS (S)	10	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	375-73-5	S0
13C3-PFHxS (S)	10	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	355-46-4	S0

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Sample: SW-1 **Lab ID: 10655802002** Collected: 05/31/23 13:30 Received: 06/02/23 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C4-PFBA (S)	8	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	375-22-4	S0
13C4-PFHpA (S)	9	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	375-85-9	S0
13C5-PFHxA (S)	10	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	307-24-4	S0
13C5-PFPeA (S)	10	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	2706-90-3	S0
13C6-PFDA (S)	9	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	335-76-2	S0
13C7-PFUdA (S)	8	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	2058-94-8	S0
13C8-PFOA (S)	9	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	335-67-1	S0
13C8-PFOS (S)	9	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	1763-23-1	S0
13C8-PFOSA (S)	7	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	754-91-6	S0
13C9-PFNA (S)	8	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	375-95-1	S0
d3-MeFOSAA (S)	8	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	2355-31-9	S0
d3-NMeFOSA (S)	2	%.	10-150	1	06/20/23 12:11	06/27/23 20:33	31506-32-8	S0
d5-EtFOSAA (S)	9	%.	50-150	1	06/20/23 12:11	06/27/23 20:33	2991-50-6	S0
d5-NEtFOSA (S)	2	%.	10-150	1	06/20/23 12:11	06/27/23 20:33	4151-50-2	S0
d7-NMeFOSE (S)	6	%.	10-150	1	06/20/23 12:11	06/27/23 20:33	24448-09-7	S0
d9-NEtFOSE (S)	4	%.	10-150	1	06/20/23 12:11	06/27/23 20:33	1691-99-2	S0

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Sample: SW-1 DUP **Lab ID: 10655802003** Collected: 05/31/23 13:35 Received: 06/02/23 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:41	120226-60-0	
11Cl-PF3OUdS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:41	763051-92-9	
4:2 FTS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:41	757124-72-4	
6:2 FTS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:41	27619-97-2	
8:2 FTS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:41	39108-34-4	
9Cl-PF3ONS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:41	756426-58-1	
ADONA	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:41	919005-14-4	
HFPO-DA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	13252-13-6	
NEtFOSAA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	2991-50-6	
NEtFOSA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	4151-50-2	
NEtFOSE	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	1691-99-2	
NMeFOSAA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	2355-31-9	
NMeFOSA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	31506-32-8	
NMeFOSE	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	24448-09-7	
Perfluorobutanesulfonic acid	**4.7**	ng/L	3.9	1	06/20/23 12:11	06/27/23 20:41	375-73-5	
Perfluorodecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	335-76-2	
Perfluorohexanoic acid	**6.8**	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	307-24-4	
PFBA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	375-22-4	
PFDS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:41	335-77-3	
PFDoS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:41	79780-39-5	
PFHpS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:41	375-92-8	
PFHxDA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	67905-19-5	
PFNS	ND	ng/L	4.2	1	06/20/23 12:11	06/27/23 20:41	68259-12-1	
PFODA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	16517-11-6	L2
PFOSA	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	754-91-6	
PFPeA	**8.2**	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	2706-90-3	
PFPeS	ND	ng/L	4.1	1	06/20/23 12:11	06/27/23 20:41	2706-91-4	
Perfluorododecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	307-55-1	
Perfluoroheptanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	375-85-9	
Perfluorohexanesulfonic acid	**7.0**	ng/L	4.0	1	06/20/23 12:11	06/27/23 20:41	355-46-4	
Perfluorononanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	375-95-1	
Perfluorooctanesulfonic acid	**34.7**	ng/L	4.0	1	06/20/23 12:11	06/27/23 20:41	1763-23-1	
Perfluorooctanoic acid	**12.4**	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	335-67-1	
Perfluorotetradecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	376-06-7	
Perfluorotridecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	72629-94-8	
Perfluoroundecanoic acid	ND	ng/L	4.4	1	06/20/23 12:11	06/27/23 20:41	2058-94-8	
Surrogates								
13C26:2FTS (S)	248	%.	50-150	1	06/20/23 12:11	06/27/23 20:41		S0
13C28:2FTS (S)	154	%.	50-150	1	06/20/23 12:11	06/27/23 20:41		S0
13C24:2FTS (S)	127	%.	50-150	1	06/20/23 12:11	06/27/23 20:41		
13C2-PFDoA (S)	99	%.	50-150	1	06/20/23 12:11	06/27/23 20:41		
13C2PFHxDA (S)	45	%.	50-150	1	06/20/23 12:11	06/27/23 20:41		S0
13C2-PFTA (S)	76	%.	50-150	1	06/20/23 12:11	06/27/23 20:41		
13C3HFPO-DA (S)	103	%.	50-150	1	06/20/23 12:11	06/27/23 20:41		
13C3-PFBS (S)	95	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	375-73-5	
13C3-PFHxS (S)	95	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	355-46-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Sample: SW-1 DUP **Lab ID: 10655802003** Collected: 05/31/23 13:35 Received: 06/02/23 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C4-PFBA (S)	89	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	375-22-4	
13C4-PFHpA (S)	98	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	375-85-9	
13C5-PFHxA (S)	96	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	307-24-4	
13C5-PFPeA (S)	96	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	2706-90-3	
13C6-PFDA (S)	94	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	335-76-2	
13C7-PFUdA (S)	95	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	2058-94-8	
13C8-PFOA (S)	97	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	335-67-1	
13C8-PFOS (S)	86	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	1763-23-1	
13C8-PFOSA (S)	73	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	754-91-6	
13C9-PFNA (S)	85	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	375-95-1	
d3-MeFOSAA (S)	102	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	2355-31-9	
d3-NMeFOSA (S)	4	%.	10-150	1	06/20/23 12:11	06/27/23 20:41	31506-32-8	S0
d5-EtFOSAA (S)	99	%.	50-150	1	06/20/23 12:11	06/27/23 20:41	2991-50-6	
d5-NEtFOSA (S)	2	%.	10-150	1	06/20/23 12:11	06/27/23 20:41	4151-50-2	S0
d7-NMeFOSE (S)	42	%.	10-150	1	06/20/23 12:11	06/27/23 20:41	24448-09-7	
d9-NEtFOSE (S)	22	%.	10-150	1	06/20/23 12:11	06/27/23 20:41	1691-99-2	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

QC Batch: 890760
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10655802001

SAMPLE DUPLICATE: 4693660

Parameter	Units	10657760015 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	3.9	3.9	0	30	N2

SAMPLE DUPLICATE: 4693661

Parameter	Units	10657760024 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.5	4.4	2	30	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

QC Batch: 888326
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: PFAS ID SL
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10655802001

METHOD BLANK: 4681088 Matrix: Solid
Associated Lab Samples: 10655802001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ug/kg	ND	0.095	07/07/23 13:53	
11Cl-PF3OUdS	ug/kg	ND	0.092	07/07/23 13:53	
4:2 FTS	ug/kg	ND	0.092	07/07/23 13:53	
6:2 FTS	ug/kg	ND	0.093	07/07/23 13:53	
8:2 FTS	ug/kg	ND	0.095	07/07/23 13:53	
9Cl-PF3ONS	ug/kg	ND	0.091	07/07/23 13:53	
ADONA	ug/kg	ND	0.093	07/07/23 13:53	
HFPO-DA	ug/kg	ND	0.098	07/07/23 13:53	
NEtFOSA	ug/kg	ND	0.098	07/07/23 13:53	
NEtFOSAA	ug/kg	ND	0.098	07/07/23 13:53	
NEtFOSE	ug/kg	ND	0.098	07/07/23 13:53	
NMeFOSA	ug/kg	ND	0.098	07/07/23 13:53	
NMeFOSAA	ug/kg	ND	0.098	07/07/23 13:53	
NMeFOSE	ug/kg	ND	0.098	07/07/23 13:53	
Perfluorobutanesulfonic acid	ug/kg	ND	0.088	07/07/23 13:53	
Perfluorodecanoic acid	ug/kg	ND	0.098	07/07/23 13:53	
Perfluorododecanoic acid	ug/kg	ND	0.098	07/07/23 13:53	
Perfluoroheptanoic acid	ug/kg	ND	0.098	07/07/23 13:53	
Perfluorohexanesulfonic acid	ug/kg	ND	0.090	07/07/23 13:53	
Perfluorohexanoic acid	ug/kg	ND	0.098	07/07/23 13:53	
Perfluorononanoic acid	ug/kg	ND	0.098	07/07/23 13:53	
Perfluorooctanesulfonic acid	ug/kg	ND	0.091	07/07/23 13:53	
Perfluorooctanoic acid	ug/kg	ND	0.098	07/07/23 13:53	
Perfluorotetradecanoic acid	ug/kg	ND	0.098	07/07/23 13:53	
Perfluorotridecanoic acid	ug/kg	ND	0.098	07/07/23 13:53	
Perfluoroundecanoic acid	ug/kg	ND	0.098	07/07/23 13:53	
PFBA	ug/kg	ND	0.098	07/07/23 13:53	
PFDoS	ug/kg	ND	0.095	07/07/23 13:53	
PFDS	ug/kg	ND	0.095	07/07/23 13:53	
PFHpS	ug/kg	ND	0.093	07/07/23 13:53	
PFHxDA	ug/kg	ND	0.098	07/07/23 13:53	
PFNS	ug/kg	ND	0.094	07/07/23 13:53	
PFODA	ug/kg	ND	0.098	07/07/23 13:53	
PFOSA	ug/kg	ND	0.098	07/07/23 13:53	
PFPeA	ug/kg	ND	0.098	07/07/23 13:53	
PFPeS	ug/kg	ND	0.092	07/07/23 13:53	
13C2-PFDoA (S)	%.	100	50-150	07/07/23 13:53	
13C2-PFTA (S)	%.	99	50-150	07/07/23 13:53	
13C24:2FTS (S)	%.	142	50-150	07/07/23 13:53	
13C26:2FTS (S)	%.	91	50-150	07/07/23 13:53	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

METHOD BLANK: 4681088 Matrix: Solid
Associated Lab Samples: 10655802001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C28:2FTS (S)	%.	94	50-150	07/07/23 13:53	
13C2PFHxDA (S)	%.	83	50-150	07/07/23 13:53	
13C3-PFBS (S)	%.	92	50-150	07/07/23 13:53	
13C3-PFHxS (S)	%.	94	50-150	07/07/23 13:53	
13C3HFPO-DA (S)	%.	102	50-150	07/07/23 13:53	
13C4-PFBA (S)	%.	90	50-150	07/07/23 13:53	
13C4-PFHpA (S)	%.	103	50-150	07/07/23 13:53	
13C5-PFHxA (S)	%.	98	50-150	07/07/23 13:53	
13C5-PFPeA (S)	%.	104	50-150	07/07/23 13:53	
13C6-PFDA (S)	%.	96	50-150	07/07/23 13:53	
13C7-PFUdA (S)	%.	111	50-150	07/07/23 13:53	
13C8-PFOA (S)	%.	99	50-150	07/07/23 13:53	
13C8-PFOS (S)	%.	91	50-150	07/07/23 13:53	
13C8-PFOSA (S)	%.	87	50-150	07/07/23 13:53	
13C9-PFNA (S)	%.	96	50-150	07/07/23 13:53	
d3-MeFOSAA (S)	%.	89	50-150	07/07/23 13:53	
d3-NMeFOSA (S)	%.	81	10-150	07/07/23 13:53	
d5-EtFOSAA (S)	%.	93	50-150	07/07/23 13:53	
d5-NEtFOSA (S)	%.	80	10-150	07/07/23 13:53	
d7-NMeFOSE (S)	%.	72	10-150	07/07/23 13:53	
d9-NEtFOSE (S)	%.	73	10-150	07/07/23 13:53	

LABORATORY CONTROL SAMPLE: 4681089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
10:2 FTS	ug/kg	0.19	0.20	107	70-140	
11Cl-PF3OUdS	ug/kg	0.18	0.16	86	70-140	
4:2 FTS	ug/kg	0.18	0.17	95	62-145	
6:2 FTS	ug/kg	0.19	0.20	109	64-140	
8:2 FTS	ug/kg	0.19	0.16	85	65-137	
9Cl-PF3ONS	ug/kg	0.18	0.16	88	70-140	
ADONA	ug/kg	0.18	0.16	89	70-140	
HFPO-DA	ug/kg	0.2	0.20	101	70-140	
NEtFOSA	ug/kg	0.2	0.19	95	70-140	
NEtFOSAA	ug/kg	0.2	0.17	86	61-139	
NEtFOSE	ug/kg	0.2	0.19	96	70-140	
NMeFOSA	ug/kg	0.2	0.20	102	70-140	
NMeFOSAA	ug/kg	0.2	0.20	101	63-144	
NMeFOSE	ug/kg	0.2	0.19	96	70-140	
Perfluorobutanesulfonic acid	ug/kg	0.17	0.16	94	72-128	
Perfluorodecanoic acid	ug/kg	0.2	0.18	90	69-133	
Perfluorododecanoic acid	ug/kg	0.2	0.18	95	69-135	
Perfluoroheptanoic acid	ug/kg	0.2	0.19	100	71-131	
Perfluorohexanesulfonic acid	ug/kg	0.18	0.16	92	67-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

LABORATORY CONTROL SAMPLE: 4681089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Perfluorohexanoic acid	ug/kg	0.2	0.20	100	70-132	
Perfluorononanoic acid	ug/kg	0.2	0.19	98	72-129	
Perfluorooctanesulfonic acid	ug/kg	0.18	0.16	87	68-136	
Perfluorooctanoic acid	ug/kg	0.2	0.20	103	69-133	
Perfluorotetradecanoic acid	ug/kg	0.2	0.19	98	69-133	
Perfluorotridecanoic acid	ug/kg	0.2	0.17	89	66-139	
Perfluoroundecanoic acid	ug/kg	0.2	0.18	90	64-136	
PFBA	ug/kg	0.2	0.18	94	71-135	
PFDoS	ug/kg	0.19	0.17	88	70-140	
PFDS	ug/kg	0.19	0.16	87	59-134	
PFHpS	ug/kg	0.19	0.18	95	70-132	
PFHxDA	ug/kg	0.2	0.19	98	70-140	
PFNS	ug/kg	0.19	0.19	99	69-125	
PFODA	ug/kg	0.2	0.24	121	70-140	
PFOSA	ug/kg	0.2	0.20	102	67-137	
PFPeA	ug/kg	0.2	0.19	96	69-132	
PFPeS	ug/kg	0.18	0.17	90	73-123	
13C2-PFDoA (S)	%.			105	50-150	
13C2-PFTA (S)	%.			100	50-150	
13C24:2FTS (S)	%.			149	50-150	
13C26:2FTS (S)	%.			85	50-150	
13C28:2FTS (S)	%.			105	50-150	
13C2PFHxDA (S)	%.			85	50-150	
13C3-PFBS (S)	%.			92	50-150	
13C3-PFHxS (S)	%.			98	50-150	
13C3HFPO-DA (S)	%.			108	50-150	
13C4-PFBA (S)	%.			96	50-150	
13C4-PFHpA (S)	%.			103	50-150	
13C5-PFHxA (S)	%.			103	50-150	
13C5-PFPeA (S)	%.			110	50-150	
13C6-PFDA (S)	%.			101	50-150	
13C7-PFUdA (S)	%.			103	50-150	
13C8-PFOA (S)	%.			103	50-150	
13C8-PFOS (S)	%.			94	50-150	
13C8-PFOSA (S)	%.			85	50-150	
13C9-PFNA (S)	%.			100	50-150	
d3-MeFOSAA (S)	%.			93	50-150	
d3-NMeFOSA (S)	%.			76	10-150	
d5-EtFOSAA (S)	%.			105	50-150	
d5-NEtFOSA (S)	%.			83	10-150	
d7-NMeFOSE (S)	%.			76	10-150	
d9-NEtFOSE (S)	%.			75	10-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4681090 4681091

Parameter	Units	10655868026 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
10:2 FTS	ug/kg	ND	0.22	0.22	0.21	0.23	97	102	70-130	7	30	
11Cl-PF3OUdS	ug/kg	ND	0.21	0.22	0.20	0.20	95	94	70-130	1	30	
4:2 FTS	ug/kg	ND	0.21	0.22	0.19	0.21	91	96	70-130	7	30	
6:2 FTS	ug/kg	ND	0.22	0.22	0.21	0.28	91	121	70-130	29	30	
8:2 FTS	ug/kg	ND	0.22	0.22	0.21	0.23	98	103	70-130	6	30	
9Cl-PF3ONS	ug/kg	ND	0.21	0.22	0.22	0.23	105	105	70-130	3	30	
ADONA	ug/kg	ND	0.21	0.22	0.19	0.20	88	91	70-130	6	30	
HFPO-DA	ug/kg	ND	0.22	0.23	0.21	0.22	94	96	70-130	5	30	
NEtFOSA	ug/kg	ND	0.22	0.23	0.24	0.23	105	98	70-130	5	30	
NEtFOSAA	ug/kg	0.19	0.22	0.23	0.33	0.39	62	88	70-130	18	30	M1
NEtFOSE	ug/kg	ND	0.22	0.23	0.29	0.36	116	144	70-130	22	30	M1
NMeFOSA	ug/kg	ND	0.22	0.23	0.22	0.24	95	106	70-130	13	30	
NMeFOSAA	ug/kg	ND	0.22	0.23	0.17	0.20	75	86	70-130	16	30	
NMeFOSE	ug/kg	ND	0.22	0.23	0.25	0.23	111	98	70-130	10	30	
Perfluorobutanesulfonic acid	ug/kg	ND	0.2	0.21	0.19	0.20	95	100	70-130	7	30	
Perfluorodecanoic acid	ug/kg	ND	0.22	0.23	0.24	0.31	84	113	70-130	26	30	
Perfluorododecanoic acid	ug/kg	ND	0.22	0.23	0.23	0.24	93	94	70-130	3	30	
Perfluoroheptanoic acid	ug/kg	ND	0.22	0.23	0.22	0.24	79	86	70-130	9	30	
Perfluorohexanesulfonic acid	ug/kg	ND	0.21	0.21	0.20	0.20	96	94	70-130	0	30	
Perfluorohexanoic acid	ug/kg	ND	0.22	0.23	0.23	0.26	84	94	70-130	11	30	
Perfluorononanoic acid	ug/kg	0.12	0.22	0.23	0.30	0.37	83	112	70-130	21	30	
Perfluorooctanesulfonic acid	ug/kg	6.6	0.21	0.22	7.1	7.3	223	328	70-130	3	30	M1
Perfluorooctanoic acid	ug/kg	0.60	0.22	0.23	0.82	0.86	97	113	70-130	5	30	
Perfluorotetradecanoic acid	ug/kg	ND	0.22	0.23	0.21	0.22	89	90	70-130	3	30	
Perfluorotridecanoic acid	ug/kg	ND	0.22	0.23	0.20	0.22	81	88	70-130	9	30	
Perfluoroundecanoic acid	ug/kg	ND	0.22	0.23	0.27	0.32	94	112	70-130	16	30	
PFBA	ug/kg	ND	0.22	0.23	0.26	0.27	89	89	70-130	2	30	
PFDoS	ug/kg	ND	0.22	0.22	0.21	0.25	94	112	70-130	20	30	
PFDS	ug/kg	ND	0.22	0.22	0.18	0.19	82	85	70-130	5	30	
PFHpS	ug/kg	ND	0.22	0.22	0.26	0.26	113	110	70-130	1	30	
PFHxDA	ug/kg	ND	0.22	0.23	0.22	0.23	89	92	70-130	5	30	
PFNS	ug/kg	ND	0.22	0.22	0.20	0.21	92	93	70-130	3	30	
PFODA	ug/kg	ND	0.22	0.23	0.23	0.25	85	92	70-130	9	30	
PFOSA	ug/kg	ND	0.22	0.23	0.25	0.26	91	94	70-130	4	30	
PFPeA	ug/kg	ND	0.22	0.23	0.24	0.25	95	99	70-130	5	30	
PFPeS	ug/kg	ND	0.21	0.22	0.19	0.20	89	90	70-130	4	30	
13C2-PFDoA (S)	%.						86	94	50-150			
13C2-PFTA (S)	%.						86	94	50-150			
13C24:2FTS (S)	%.						112	118	50-150			
13C26:2FTS (S)	%.						65	64	50-150			
13C28:2FTS (S)	%.						96	89	50-150			
13C2PFHxDA (S)	%.						77	80	50-150			
13C3-PFBS (S)	%.						87	89	50-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4681090 4681091

Parameter	Units	10655868026 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
13C3-PFHxS (S)	%.						81	88	50-150			
13C3HFPO-DA (S)	%.						108	111	50-150			
13C4-PFBA (S)	%.						109	111	50-150			
13C4-PFHpA (S)	%.						87	91	50-150			
13C5-PFHxA (S)	%.						85	88	50-150			
13C5-PFPeA (S)	%.						97	95	50-150			
13C6-PFDA (S)	%.						93	85	50-150			
13C7-PFUdA (S)	%.						85	85	50-150			
13C8-PFOA (S)	%.						87	86	50-150			
13C8-PFOS (S)	%.						70	73	50-150			
13C8-PFOSA (S)	%.						74	74	50-150			
13C9-PFNA (S)	%.						81	78	50-150			
d3-MeFOSAA (S)	%.						87	89	50-150			
d3-NMeFOSA (S)	%.						43	45	10-150			
d5-EtFOSAA (S)	%.						91	86	50-150			
d5-NEtFOSA (S)	%.						36	43	10-150			
d7-NMeFOSE (S)	%.						45	56	10-150			
d9-NEtFOSE (S)	%.						40	40	10-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4681092 4681093

Parameter	Units	10655868027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
10:2 FTS	ug/kg	ND	0.23	0.23	0.19	0.17	83	77	70-130	12	30	
11Cl-PF3OUdS	ug/kg	ND	0.23	0.21	0.22	0.22	97	99	70-130	2	30	
4:2 FTS	ug/kg	ND	0.23	0.21	0.21	0.21	92	97	70-130	1	30	
6:2 FTS	ug/kg	ND	0.23	0.21	0.23	0.24	100	109	70-130	5	30	
8:2 FTS	ug/kg	ND	0.23	0.21	0.24	0.19	104	84	70-130	25	30	
9Cl-PF3ONS	ug/kg	ND	0.23	0.21	0.21	0.23	95	106	70-130	7	30	
ADONA	ug/kg	ND	0.23	0.21	0.21	0.21	93	95	70-130	1	30	
HFPO-DA	ug/kg	ND	0.24	0.23	0.23	0.24	97	104	70-130	4	30	
NEtFOSA	ug/kg	ND	0.24	0.23	0.18	ND	77	0	70-130		30	M1
NEtFOSAA	ug/kg	ND	0.24	0.23	0.20	0.20	85	86	70-130	3	30	
NEtFOSE	ug/kg	ND	0.24	0.23	0.27	0.22	113	94	70-130	22	30	
NMeFOSA	ug/kg	ND	0.24	0.23	0.27	ND	114	0	70-130		30	M1
NMeFOSAA	ug/kg	ND	0.24	0.23	0.22	0.21	91	90	70-130	4	30	
NMeFOSE	ug/kg	ND	0.24	0.23	0.24	0.25	101	110	70-130	5	30	
Perfluorobutanesulfonic acid	ug/kg	ND	0.21	0.2	0.21	0.21	95	100	70-130	2	30	
Perfluorodecanoic acid	ug/kg	ND	0.24	0.23	0.25	0.24	105	103	70-130	5	30	
Perfluorododecanoic acid	ug/kg	ND	0.24	0.23	0.25	0.23	106	102	70-130	7	30	
Perfluoroheptanoic acid	ug/kg	ND	0.24	0.23	0.22	0.23	82	92	70-130	7	30	
Perfluorohexanesulfonic acid	ug/kg	ND	0.21	0.21	0.21	0.22	96	107	70-130	7	30	
Perfluorohexanoic acid	ug/kg	ND	0.24	0.23	0.24	0.24	90	95	70-130	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4681092 4681093

Parameter	Units	10655868027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Perfluorononanoic acid	ug/kg	ND	0.24	0.23	0.26	0.26	100	107	70-130	3	30	
Perfluorooctanesulfonic acid	ug/kg	0.70	0.23	0.21	0.81	1.1	52	166	70-130	26	30	M1
Perfluorooctanoic acid	ug/kg	0.13	0.24	0.23	0.36	0.45	97	137	70-130	20	30	M1
Perfluorotetradecanoic acid	ug/kg	ND	0.24	0.23	0.21	0.23	88	99	70-130	7	30	
Perfluorotridecanoic acid	ug/kg	ND	0.24	0.23	0.24	0.22	102	97	70-130	8	30	
Perfluoroundecanoic acid	ug/kg	ND	0.24	0.23	0.21	0.23	88	99	70-130	8	30	
PFBA	ug/kg	ND	0.24	0.23	0.25	0.27	91	104	70-130	9	30	
PFDoS	ug/kg	ND	0.23	0.23	0.21	0.23	93	103	70-130	6	30	
PFDS	ug/kg	ND	0.23	0.23	0.18	0.15	78	69	70-130	15	30	M1
PFHpS	ug/kg	ND	0.23	0.21	0.23	0.26	103	117	70-130	10	30	
PFHxDA	ug/kg	ND	0.24	0.23	0.24	0.23	96	96	70-130	3	30	
PFNS	ug/kg	ND	0.23	0.21	0.20	0.23	89	104	70-130	12	30	
PFODA	ug/kg	ND	0.24	0.23	0.24	.085J	102	37	70-130		30	M1
PFOSA	ug/kg	ND	0.24	0.23	0.22	0.22	90	93	70-130	0	30	
PFPeA	ug/kg	ND	0.24	0.23	0.23	0.24	92	98	70-130	2	30	
PFPeS	ug/kg	ND	0.23	0.21	0.21	0.21	92	96	70-130	1	30	
13C2-PFDoA (S)	%.						74	75	50-150			
13C2-PFTA (S)	%.						85	76	50-150			
13C24:2FTS (S)	%.						98	95	50-150			
13C26:2FTS (S)	%.						43	44	50-150			S0
13C28:2FTS (S)	%.						53	60	50-150			
13C2PFHxDA (S)	%.						61	45	50-150			S0
13C3-PFBS (S)	%.						82	82	50-150			
13C3-PFHxS (S)	%.						77	77	50-150			
13C3HFPO-DA (S)	%.						102	99	50-150			
13C4-PFBA (S)	%.						98	101	50-150			
13C4-PFHpA (S)	%.						79	79	50-150			
13C5-PFHxA (S)	%.						77	78	50-150			
13C5-PFPeA (S)	%.						85	89	50-150			
13C6-PFDA (S)	%.						74	76	50-150			
13C7-PFUdA (S)	%.						74	66	50-150			
13C8-PFOA (S)	%.						76	77	50-150			
13C8-PFOS (S)	%.						69	65	50-150			
13C8-PFOSA (S)	%.						60	41	50-150			S0
13C9-PFNA (S)	%.						69	75	50-150			
d3-MeFOSAA (S)	%.						59	54	50-150			
d3-NMeFOSA (S)	%.						6	0	10-150			S0
d5-EtFOSAA (S)	%.						63	60	50-150			
d5-NEtFOSA (S)	%.						5	0	10-150			S0
d7-NMeFOSE (S)	%.						40	10	10-150			
d9-NEtFOSE (S)	%.						32	7	10-150			S0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

QC Batch: 887315
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: PFAS Compounds, Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10655802002, 10655802003

METHOD BLANK: 4675796 Matrix: Water
Associated Lab Samples: 10655802002, 10655802003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ng/L	ND	1.9	06/27/23 17:47	
11Cl-PF3OUdS	ng/L	ND	1.8	06/27/23 17:47	
4:2 FTS	ng/L	ND	1.8	06/27/23 17:47	
6:2 FTS	ng/L	ND	1.8	06/27/23 17:47	
8:2 FTS	ng/L	ND	1.9	06/27/23 17:47	
9Cl-PF3ONS	ng/L	ND	1.8	06/27/23 17:47	
ADONA	ng/L	ND	1.8	06/27/23 17:47	
HFPO-DA	ng/L	ND	1.9	06/27/23 17:47	
NEtFOSA	ng/L	ND	1.9	06/27/23 17:47	
NEtFOSAA	ng/L	ND	1.9	06/27/23 17:47	
NEtFOSE	ng/L	ND	1.9	06/27/23 17:47	
NMeFOSA	ng/L	ND	1.9	06/27/23 17:47	
NMeFOSAA	ng/L	ND	1.9	06/27/23 17:47	
NMeFOSE	ng/L	ND	1.9	06/27/23 17:47	
Perfluorobutanesulfonic acid	ng/L	ND	1.7	06/27/23 17:47	
Perfluorodecanoic acid	ng/L	ND	1.9	06/27/23 17:47	
Perfluorododecanoic acid	ng/L	ND	1.9	06/27/23 17:47	
Perfluoroheptanoic acid	ng/L	ND	1.9	06/27/23 17:47	
Perfluorohexanesulfonic acid	ng/L	ND	1.8	06/27/23 17:47	
Perfluorohexanoic acid	ng/L	ND	1.9	06/27/23 17:47	
Perfluorononanoic acid	ng/L	ND	1.9	06/27/23 17:47	
Perfluorooctanesulfonic acid	ng/L	ND	1.8	06/27/23 17:47	
Perfluorooctanoic acid	ng/L	ND	1.9	06/27/23 17:47	
Perfluorotetradecanoic acid	ng/L	ND	1.9	06/27/23 17:47	
Perfluorotridecanoic acid	ng/L	ND	1.9	06/27/23 17:47	
Perfluoroundecanoic acid	ng/L	ND	1.9	06/27/23 17:47	
PFBA	ng/L	ND	1.9	06/27/23 17:47	
PFDoS	ng/L	ND	1.9	06/27/23 17:47	
PFDS	ng/L	ND	1.9	06/27/23 17:47	
PFHpS	ng/L	ND	1.8	06/27/23 17:47	
PFHxDA	ng/L	ND	1.9	06/27/23 17:47	
PFNS	ng/L	ND	1.9	06/27/23 17:47	
PFODA	ng/L	ND	1.9	06/27/23 17:47	
PFOSA	ng/L	ND	1.9	06/27/23 17:47	
PFPeA	ng/L	ND	1.9	06/27/23 17:47	
PFPeS	ng/L	ND	1.8	06/27/23 17:47	
13C2-PFDoA (S)	%.	88	50-150	06/27/23 17:47	
13C2-PFTA (S)	%.	82	50-150	06/27/23 17:47	
13C24:2FTS (S)	%.	104	50-150	06/27/23 17:47	
13C26:2FTS (S)	%.	174	50-150	06/27/23 17:47	S3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

METHOD BLANK: 4675796 Matrix: Water
Associated Lab Samples: 10655802002, 10655802003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C28:2FTS (S)	%.	109	50-150	06/27/23 17:47	
13C2PFHxDA (S)	%.	58	50-150	06/27/23 17:47	
13C3-PFBS (S)	%.	97	50-150	06/27/23 17:47	
13C3-PFHxS (S)	%.	98	50-150	06/27/23 17:47	
13C3HFPO-DA (S)	%.	109	50-150	06/27/23 17:47	
13C4-PFBA (S)	%.	100	50-150	06/27/23 17:47	
13C4-PFHpA (S)	%.	102	50-150	06/27/23 17:47	
13C5-PFHxA (S)	%.	100	50-150	06/27/23 17:47	
13C5-PFPeA (S)	%.	100	50-150	06/27/23 17:47	
13C6-PFDA (S)	%.	90	50-150	06/27/23 17:47	
13C7-PFUdA (S)	%.	90	50-150	06/27/23 17:47	
13C8-PFOA (S)	%.	106	50-150	06/27/23 17:47	
13C8-PFOS (S)	%.	80	50-150	06/27/23 17:47	
13C8-PFOSA (S)	%.	73	50-150	06/27/23 17:47	
13C9-PFNA (S)	%.	83	50-150	06/27/23 17:47	
d3-MeFOSAA (S)	%.	93	50-150	06/27/23 17:47	
d3-NMeFOSA (S)	%.	10	10-150	06/27/23 17:47	
d5-EtFOSAA (S)	%.	88	50-150	06/27/23 17:47	
d5-NEtFOSA (S)	%.	7	10-150	06/27/23 17:47	S0
d7-NMeFOSE (S)	%.	51	10-150	06/27/23 17:47	
d9-NEtFOSE (S)	%.	45	10-150	06/27/23 17:47	

LABORATORY CONTROL SAMPLE & LCSD: 4675797 4678121

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
10:2 FTS	ng/L	3.7	3.8	3.8	105	99	70-140	1	30	
11Cl-PF3OUdS	ng/L	3.6	3.6	4.3	99	114	70-140	18	30	
4:2 FTS	ng/L	3.6	3.5	3.8	99	101	63-143	6	30	
6:2 FTS	ng/L	3.6	4.6	3.8	127	101	64-140	18	30	
8:2 FTS	ng/L	3.7	3.7	3.3	100	85	67-138	12	30	
9Cl-PF3ONS	ng/L	3.6	3.7	3.9	103	105	70-140	6	30	
ADONA	ng/L	3.6	3.3	3.5	93	93	70-140	4	30	
HFPO-DA	ng/L	3.8	3.6	3.8	94	96	70-140	6	30	
NEtFOSA	ng/L	3.8	4.0	3.6	105	92	70-140	10	30	
NEtFOSAA	ng/L	3.8	3.2	3.5	84	89	61-135	10	30	
NEtFOSE	ng/L	3.8	3.3	3.6	86	91	70-140	10	30	
NMeFOSA	ng/L	3.8	3.6	3.6	95	90	68-141	2	30	
NMeFOSAA	ng/L	3.8	3.6	3.8	95	97	65-136	6	30	
NMeFOSE	ng/L	3.8	3.4	3.5	89	87	70-140	2	30	
Perfluorobutanesulfonic acid	ng/L	3.4	3.2	3.3	94	94	72-130	4	30	
Perfluorodecanoic acid	ng/L	3.8	3.3	3.6	88	90	71-129	7	30	
Perfluorododecanoic acid	ng/L	3.8	3.8	3.9	99	98	72-134	2	30	
Perfluoroheptanoic acid	ng/L	3.8	3.6	3.8	95	97	72-130	7	30	
Perfluorohexanesulfonic acid	ng/L	3.5	3.2	3.6	93	100	68-131	12	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

LABORATORY CONTROL SAMPLE & LCSD: 4675797 4678121

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Perfluorohexanoic acid	ng/L	3.8	3.6	3.8	94	96	72-129	5	30	
Perfluorononanoic acid	ng/L	3.8	3.4	3.6	90	91	69-130	6	30	
Perfluorooctanesulfonic acid	ng/L	3.5	3.5	3.5	100	96	65-140	0	30	
Perfluorooctanoic acid	ng/L	3.8	3.5	3.6	93	92	71-133	3	30	
Perfluorotetradecanoic acid	ng/L	3.8	3.6	3.6	94	91	71-132	0	30	
Perfluorotridecanoic acid	ng/L	3.8	3.5	3.8	93	97	65-144	8	30	
Perfluoroundecanoic acid	ng/L	3.8	3.4	3.8	89	97	69-133	12	30	
PFBA	ng/L	3.8	3.6	3.8	95	96	73-129	5	30	
PFDoS	ng/L	3.7	3.6	3.8	98	100	60-140	6	30	
PFDS	ng/L	3.7	4.1	4.3	111	112	53-142	6	30	
PFHpS	ng/L	3.6	3.8	4.2	105	110	69-134	9	30	
PFHxDA	ng/L	3.8	3.6	3.7	95	94	70-140	4	30	
PFNS	ng/L	3.7	3.6	4.5	99	117	69-127	21	30	
PFODA	ng/L	3.8	ND	2.5	49	63	60-140		30	L2
PFOSA	ng/L	3.8	3.4	4.1	91	105	67-137	18	30	
PFPeA	ng/L	3.8	3.6	3.7	95	94	72-129	3	30	
PFPeS	ng/L	3.6	3.2	3.6	90	95	71-127	10	30	
13C2-PFDoA (S)	%.				98	93	50-150			
13C2-PFTA (S)	%.				88	88	50-150			
13C24:2FTS (S)	%.				107	99	50-150			
13C26:2FTS (S)	%.				159	186	50-150			S0
13C28:2FTS (S)	%.				116	127	50-150			
13C2PFHxDA (S)	%.				75	74	50-150			
13C3-PFBS (S)	%.				100	99	50-150			
13C3-PFHxS (S)	%.				102	101	50-150			
13C3HFPO-DA (S)	%.				111	105	50-150			
13C4-PFBA (S)	%.				103	97	50-150			
13C4-PFHpA (S)	%.				105	102	50-150			
13C5-PFHxA (S)	%.				104	99	50-150			
13C5-PFPeA (S)	%.				103	99	50-150			
13C6-PFDA (S)	%.				98	97	50-150			
13C7-PFUdA (S)	%.				99	94	50-150			
13C8-PFOA (S)	%.				105	102	50-150			
13C8-PFOS (S)	%.				87	83	50-150			
13C8-PFOSA (S)	%.				88	80	50-150			
13C9-PFNA (S)	%.				89	87	50-150			
d3-MeFOSAA (S)	%.				91	90	50-150			
d3-NMeFOSA (S)	%.				46	55	10-150			
d5-EtFOSAA (S)	%.				94	93	50-150			
d5-NEtFOSA (S)	%.				38	56	10-150			
d7-NMeFOSE (S)	%.				82	79	10-150			
d9-NEtFOSE (S)	%.				77	72	10-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

MATRIX SPIKE SAMPLE: 4678122

Parameter	Units	10655198002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
10:2 FTS	ng/L	ND	4.2	4.1	98	70-130	
11Cl-PF3OUdS	ng/L	ND	4.1	4.3	106	70-130	
4:2 FTS	ng/L	ND	4	4.4	108	70-130	
6:2 FTS	ng/L	ND	4.1	4.1	100	70-130	
8:2 FTS	ng/L	ND	4.1	3.9	95	70-130	
9Cl-PF3ONS	ng/L	ND	4	4.4	109	70-130	
ADONA	ng/L	ND	4.1	3.8	94	70-130	
HFPO-DA	ng/L	ND	4.3	4.1	96	70-130	
NEtFOSA	ng/L	ND	4.3	4.2	98	70-130	
NEtFOSAA	ng/L	ND	4.3	4.1	95	70-130	
NEtFOSE	ng/L	ND	4.3	4.0	94	70-130	
NMeFOSA	ng/L	ND	4.3	4.0	93	70-130	
NMeFOSAA	ng/L	ND	4.3	4.2	98	70-130	
NMeFOSE	ng/L	ND	4.3	4.2	98	70-130	
Perfluorobutanesulfonic acid	ng/L	2.6	3.8	6.4	97	70-130	
Perfluorodecanoic acid	ng/L	ND	4.3	4.1	95	70-130	
Perfluorododecanoic acid	ng/L	ND	4.3	4.1	95	70-130	
Perfluoroheptanoic acid	ng/L	2.4	4.3	6.9	103	70-130	
Perfluorohexanesulfonic acid	ng/L	3.9	3.9	7.8	98	70-130	
Perfluorohexanoic acid	ng/L	9.2	4.3	14.3	117	70-130	
Perfluorononanoic acid	ng/L	ND	4.3	3.8	87	70-130	
Perfluorooctanesulfonic acid	ng/L	ND	4	4.8	91	70-130	
Perfluorooctanoic acid	ng/L	11.9	4.3	16.0	95	70-130	
Perfluorotetradecanoic acid	ng/L	ND	4.3	4.0	92	70-130	
Perfluorotridecanoic acid	ng/L	ND	4.3	4.1	94	70-130	
Perfluoroundecanoic acid	ng/L	ND	4.3	3.9	91	70-130	
PFBA	ng/L	341	4.3	341	-6	70-130	M1
PFDoS	ng/L	ND	4.2	4.1	99	70-130	
PFDS	ng/L	ND	4.2	4.5	108	70-130	
PFHpS	ng/L	ND	4.1	4.3	105	70-130	
PFHxDA	ng/L	ND	4.3	4.4	99	70-130	
PFNS	ng/L	ND	4.1	4.4	106	70-130	
PFODA	ng/L	ND	4.3	3.5	81	70-130	
PFOSA	ng/L	ND	4.3	4.2	98	70-130	
PFPeA	ng/L	21.3	4.3	26.0	109	70-130	
PFPeS	ng/L	ND	4.1	4.9	101	70-130	
13C2-PFDoA (S)	%.				98	50-150	
13C2-PFTA (S)	%.				90	50-150	
13C24:2FTS (S)	%.				80	50-150	
13C26:2FTS (S)	%.				163	50-150	S0
13C28:2FTS (S)	%.				124	50-150	
13C2PFHxDA (S)	%.				82	50-150	
13C3-PFBS (S)	%.				93	50-150	
13C3-PFHxS (S)	%.				93	50-150	
13C3HFPO-DA (S)	%.				103	50-150	
13C4-PFBA (S)	%.				89	50-150	
13C4-PFHpA (S)	%.				96	50-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

MATRIX SPIKE SAMPLE: 4678122

Parameter	Units	10655198002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
13C5-PFHxA (S)	%.				96	50-150	
13C5-PFPeA (S)	%.				95	50-150	
13C6-PFDA (S)	%.				96	50-150	
13C7-PFUdA (S)	%.				92	50-150	
13C8-PFOA (S)	%.				99	50-150	
13C8-PFOS (S)	%.				86	50-150	
13C8-PFOSA (S)	%.				77	50-150	
13C9-PFNA (S)	%.				88	50-150	
d3-MeFOSAA (S)	%.				93	50-150	
d3-NMeFOSA (S)	%.				58	10-150	
d5-EtFOSAA (S)	%.				96	50-150	
d5-NEtFOSA (S)	%.				54	10-150	
d7-NMeFOSE (S)	%.				69	10-150	
d9-NEtFOSE (S)	%.				65	10-150	

SAMPLE DUPLICATE: 4678123

Parameter	Units	10655996003 Result	Dup Result	RPD	Max RPD	Qualifiers
10:2 FTS	ng/L	ND	ND		30	
11Cl-PF3OUdS	ng/L	ND	ND		30	
4:2 FTS	ng/L	ND	ND		30	
6:2 FTS	ng/L	ND	ND		30	
8:2 FTS	ng/L	ND	ND		30	
9Cl-PF3ONS	ng/L	ND	ND		30	
ADONA	ng/L	ND	ND		30	
HFPO-DA	ng/L	ND	ND		30	
NEtFOSA	ng/L	ND	ND		30	
NEtFOSAA	ng/L	ND	ND		30	
NEtFOSE	ng/L	ND	ND		30	
NMeFOSA	ng/L	ND	ND		30	
NMeFOSAA	ng/L	ND	ND		30	
NMeFOSE	ng/L	ND	ND		30	
Perfluorobutanesulfonic acid	ng/L	ND	ND		30	
Perfluorodecanoic acid	ng/L	ND	ND		30	
Perfluorododecanoic acid	ng/L	ND	ND		30	
Perfluoroheptanoic acid	ng/L	ND	ND		30	
Perfluorohexanesulfonic acid	ng/L	ND	ND		30	
Perfluorohexanoic acid	ng/L	ND	ND		30	
Perfluorononanoic acid	ng/L	ND	ND		30	
Perfluorooctanesulfonic acid	ng/L	ND	ND		30	
Perfluorooctanoic acid	ng/L	ND	ND		30	
Perfluorotetradecanoic acid	ng/L	ND	ND		30	
Perfluorotridecanoic acid	ng/L	ND	ND		30	
Perfluoroundecanoic acid	ng/L	ND	ND		30	
PFBA	ng/L	124	124	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

SAMPLE DUPLICATE: 4678123

Parameter	Units	10655996003 Result	Dup Result	RPD	Max RPD	Qualifiers
PFDoS	ng/L	ND	ND		30	
PFDS	ng/L	ND	ND		30	
PFHpS	ng/L	ND	ND		30	
PFHxDA	ng/L	ND	ND		30	
PFNS	ng/L	ND	ND		30	
PFODA	ng/L	ND	ND		30	
PFOSA	ng/L	ND	ND		30	
PFPeA	ng/L	ND	ND		30	
PFPeS	ng/L	ND	ND		30	
13C2-PFDoA (S)	%.	97	100			
13C2-PFTA (S)	%.	84	91			
13C24:2FTS (S)	%.	111	107			
13C26:2FTS (S)	%.	179	201			S0
13C28:2FTS (S)	%.	133	132			
13C2PFHxDA (S)	%.	70	79			
13C3-PFBS (S)	%.	100	97			
13C3-PFHxS (S)	%.	105	98			
13C3HFPO-DA (S)	%.	111	107			
13C4-PFBA (S)	%.	102	100			
13C4-PFHpA (S)	%.	104	101			
13C5-PFHxA (S)	%.	105	100			
13C5-PFPeA (S)	%.	102	100			
13C6-PFDA (S)	%.	100	103			
13C7-PFUdA (S)	%.	100	102			
13C8-PFOA (S)	%.	103	100			
13C8-PFOS (S)	%.	84	88			
13C8-PFOSA (S)	%.	82	74			
13C9-PFNA (S)	%.	88	89			
d3-MeFOSAA (S)	%.	89	98			
d3-NMeFOSA (S)	%.	22	22			
d5-EtFOSAA (S)	%.	89	98			
d5-NEtFOSA (S)	%.	18	19			
d7-NMeFOSE (S)	%.	59	58			
d9-NEtFOSE (S)	%.	60	50			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655802

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10655802001	**SED-1**	ASTM D2974	890760		
10655802001	**SED-1**	ENV-SOP-MIN4-0178	888326	ENV-SOP-MIN4-0178	891631
10655802002	**SW-1**	ENV-SOP-MIN4-0178	887315	ENV-SOP-MIN4-0178	890800
10655802003	**SW-1 DUP**	ENV-SOP-MIN4-0178	887315	ENV-SOP-MIN4-0178	890800

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Agency, Authorized Purchaser or Agent: Oregon DEQ

Send Lab Report To:
Address: Katie Daugherty
700 NE Multnomah St,
Suite 600
Portland, OR 97232

E-mail: katie.daugherty@deq.oregon.gov

Contract Laboratory Name: Pace Minneapolis

Lab Batch #:

Invoice To: ODEQ/Business Office
Address: 700 NE Multnomah St, Suite 600, Portland, OR 97232

Tel. #: (800) 452-4011

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☐ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Project Name: **Gresham Fire Station SSA**
Project #: **32-23004694**

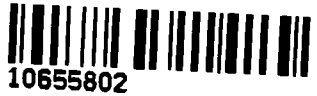
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Sample Preservative	Requested Analyses: PFAS (EPA 537)	Comments
SED-1	5/31/2023 1400	S	1		X	001
SW-1	5/31/2023 1330	W	2		X	002
SW-1 DUP	5/31/2023 1335	W	2		X	003

Notes: Report Results to: MStevens@apexcos.com; Kelsi.Evans@apexcos.com; cowens@apexcos.com; katie.daugherty@deq.oregon.gov
Bill to: Katie Daugherty, katie.daugherty@deq.oregon.gov

Relinquished By: Alex Evernden	Agency/Agent: Apex Companies	Received By:	Agency:
Signature:	Time & Date: 6/3/23 1000	Signature:	Time & Date: 6/2/23 1615
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #**102-1098-07** AND PRICE AGREEMENT # **8903**. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

WO# : 10655802



Sample Condition Upon Receipt

Client Name: Oregon DEQ

Project #: **WO#: 10655802**

PM: KNH **Due Date: 07/17/23**

CLIENT: Oregon DEQ

Courier: ☑ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 7723 6627 0648 ☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other **Temp Blank?** ☐ Yes ☒ No

Thermometer: ☐ T1 (0461) ☑ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9(0727) ☐ 01339252/1710 **Type of Ice:** ☐ Wet ☐ Blue ☐ Dry ☐ None ☑ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6 °C **Cooler temp Read w/Temp Blank:** _____ °C

Average Corrected Temp (no temp blank only): 1.5 °C

Correction Factor: +.2 **Cooler Temp Corrected w/temp blank:** _____ °C

☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/other: _____)

Date/Initials of Person Examining Contents: 6/2/23

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): ☐ Duluth ☐ Minneapolis ☐ Virginia				**COMMENTS**
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☑ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Sample Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☐ Yes	☑ No	☐ N/A	8.
-Pace Containers Used?	☐ Yes	☑ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☑ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
Matrix: ☐ Water ☑ Soil ☐ Oil ☐ Other				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	☐ Yes	☐ No	☑ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142
				pH Paper Lot #
				Residual Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Kirsten Hogberg **Date:** 6/5/2023

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: NF **Line:** 2

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form
	Effective Date: 09/22/2022

Workorder #: 10655802

No Temp Blank		
Read Temp	**Corrected Temp**	**Average temp**
0.3	0.5	1.5
0.7	0.9	
2.0	2.2	
2.2	2.2	

PM Notified of Out of Temp Cooler? ☐ Yes ☐ No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

Multiple Cooler Project? ☐ Yes ☐ No

If anything is OVER 6.0° C, you MUST document containers in this section HERE

Tracking Number	Temperature

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	

Comments:

Qualtrax ID: 52763

Page 1 of 1

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

July 20, 2023

Katie Daugherty
Oregon DEQ
700 NE Multnomah Street
Portland, OR 97232

RE: Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Dear Katie Daugherty:

Enclosed are the analytical results for sample(s) received by the laboratory on May 27, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kirsten Hogberg
kirsten.hogberg@pacelabs.com
(612)607-1700
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10655049001	**S-1**	Solid	05/25/23 08:30	05/27/23 09:20
10655049002	**S-1 DUP**	Solid	05/25/23 12:45	05/27/23 09:20
10655049003	**S-2**	Solid	05/25/23 17:28	05/27/23 09:20
10655049004	**S-2**	Water	05/25/23 17:00	05/27/23 09:20
10655049005	**S-3**	Solid	05/24/23 14:50	05/27/23 09:20
10655049006	**S-4**	Solid	05/24/23 09:37	05/27/23 09:20
10655049007	**S-4 DUP**	Solid	05/24/23 12:45	05/27/23 09:20
10655049008	**G-1**	Solid	05/25/23 14:20	05/27/23 09:20
10655049009	**G-1 DUP**	Solid	05/25/23 13:45	05/27/23 09:20
10655049010	**G-2**	Solid	05/25/23 13:45	05/27/23 09:20
10655049011	**Rinsate-Soil**	Water	05/25/23 11:30	05/27/23 09:20
10655049012	**IDW-Soil**	Solid	05/25/23 13:15	05/27/23 09:20
10655049013	**IDW-Water**	Water	05/25/23 13:30	05/27/23 09:20
10655049014	**Rinsate GW1**	Water	05/25/23 13:00	05/27/23 09:20

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10655049001	**S-1**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049002	**S-1 DUP**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049003	**S-2**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049004	**S-2**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049005	**S-3**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049006	**S-4**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049007	**S-4 DUP**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049008	**G-1**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049009	**G-1 DUP**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049010	**G-2**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049011	**Rinsate-Soil**	ENV-SOP-MIN4-0178	MM4	61	PASI-M
10655049012	**IDW-Soil**	ASTM D2974	IMB	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10655049013	**IDW-Water**	ENV-SOP-MIN4-0178	MM4, NBH	61	PASI-M
10655049014	**Rinsate GW1**	ENV-SOP-MIN4-0178	MM4	61	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID SL
Client: Oregon DEQ
Date: July 20, 2023

General Information:
10 samples were analyzed for ENV-SOP-MIN4-0178 by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with ENV-SOP-MIN4-0178 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 884118

S0: Surrogate recovery outside laboratory control limits.

- G-1 (Lab ID: 10655049008)
  - 13C2-PFDoA (S)
  - 13C2-PFTA (S)
  - 13C2PFHxDA (S)
  - 13C3-PFBS (S)
  - 13C3-PFHxS (S)
  - 13C3HFPO-DA (S)
  - 13C4-PFBA (S)
  - 13C4-PFHpA (S)
  - 13C5-PFHxA (S)
  - 13C5-PFPeA (S)
  - 13C6-PFDA (S)
  - 13C7-PFUdA (S)
  - 13C8-PFOA (S)
  - 13C8-PFOS (S)
  - 13C8-PFOSA (S)
  - 13C9-PFNA (S)
  - d3-MeFOSAA (S)
  - d3-NMeFOSA (S)
  - d5-EtFOSAA (S)

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID SL
Client: Oregon DEQ
Date: July 20, 2023

QC Batch: 884118

S0: Surrogate recovery outside laboratory control limits.
- d5-NEtFOSA (S)

- G-1 DUP (Lab ID: 10655049009)
  - 13C2-PFTA (S)
  - 13C24:2FTS (S)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - 13C2PFHxDA (S)
  - 13C7-PFUdA (S)
  - 13C8-PFOS (S)
  - 13C8-PFOSA (S)
  - 13C9-PFNA (S)
  - d3-MeFOSAA (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- G-2 (Lab ID: 10655049010)
  - 13C2-PFTA (S)
  - 13C24:2FTS (S)
  - 13C2PFHxDA (S)
  - 13C7-PFUdA (S)
  - 13C8-PFOS (S)
  - 13C8-PFOSA (S)
  - 13C9-PFNA (S)
  - d3-MeFOSAA (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- MS (Lab ID: 4658427)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- MSD (Lab ID: 4658428)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- S-1 (Lab ID: 10655049001)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- S-3 (Lab ID: 10655049005)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID SL
Client: Oregon DEQ
Date: July 20, 2023

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 884118

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10655049001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4658427)
  - 10:2 FTS
  - PFPeA
  - Perfluoroheptanoic acid
  - Perfluorohexanesulfonic acid
  - Perfluorononanoic acid
  - Perfluorooctanesulfonic acid
  - Perfluorooctanoic acid
- MSD (Lab ID: 4658428)
  - 10:2 FTS
  - PFBA
  - Perfluorohexanesulfonic acid
  - Perfluorononanoic acid
  - Perfluorooctanesulfonic acid
  - Perfluorooctanoic acid
  - Perfluoroundecanoic acid

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID NPW
Client: Oregon DEQ
Date: July 20, 2023

General Information:
4 samples were analyzed for ENV-SOP-MIN4-0178 by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- IDW-Water (Lab ID: 10655049013)
- Rinsate GW1 (Lab ID: 10655049014)
- Rinsate-Soil (Lab ID: 10655049011)
- S-2 (Lab ID: 10655049004)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with ENV-SOP-MIN4-0178 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 887636

S0: Surrogate recovery outside laboratory control limits.
- LCS (Lab ID: 4677272)
  - 13C28:2FTS (S)
- MS (Lab ID: 4678662)
  - 13C24:2FTS (S)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - 13C4-PFBA (S)
- S-2 (Lab ID: 10655049004)
  - 13C28:2FTS (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.
- BLANK (Lab ID: 4677271)

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID NPW
Client: Oregon DEQ
Date: July 20, 2023

QC Batch: 887636

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.
- 13C28:2FTS (S)
- DUP (Lab ID: 4678663)
  - 13C28:2FTS (S)

QC Batch: 887737

S0: Surrogate recovery outside laboratory control limits.
- BLANK (Lab ID: 4677688)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- IDW-Water (Lab ID: 10655049013)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - d3-NMeFOSA (S)
  - d5-EtFOSAA (S)
  - d5-NEtFOSA (S)
- LCS (Lab ID: 4677689)
  - 13C28:2FTS (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- LCSD (Lab ID: 4679242)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- MS (Lab ID: 4679244)
  - 13C28:2FTS (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
  - d9-NEtFOSE (S)
- Rinsate-Soil (Lab ID: 10655049011)
  - d5-NEtFOSA (S)

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.
- BLANK (Lab ID: 4677688)
  - 13C28:2FTS (S)
- Rinsate GW1 (Lab ID: 10655049014)
  - 13C28:2FTS (S)
- Rinsate-Soil (Lab ID: 10655049011)
  - 13C28:2FTS (S)
  - 13C6-PFDA (S)

S4: Surrogate recovery not evaluated against control limits due to sample dilution.
- DUP (Lab ID: 4679247)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID NPW
Client: Oregon DEQ
Date: July 20, 2023

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 887636

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10656014001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 4678662)
  - 10:2 FTS

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4678662)
  - PFBA
  - PFPeA
  - Perfluorobutanesulfonic acid
  - Perfluoroheptanoic acid
  - Perfluorohexanesulfonic acid
  - Perfluorohexanoic acid
  - Perfluorooctanoic acid

QC Batch: 887737

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10655049014

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 4679244)
  - 10:2 FTS
  - PFODA

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4679244)
  - NEtFOSA
  - NMeFOSA

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 887737

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 4679247)
  - NEtFOSAA

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Method: **ENV-SOP-MIN4-0178**
Description: PFAS ID NPW
Client: Oregon DEQ
Date: July 20, 2023

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-1 **Lab ID: 10655049001** Collected: 05/25/23 08:30 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**17.3**	%	0.10	1		06/26/23 08:19		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	120226-60-0	M1
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	757124-72-4	
6:2 FTS	**0.15**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 13:28	375-73-5	
Perfluorodecanoic acid	**0.15**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	335-76-2	
Perfluorohexanoic acid	**0.63**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	307-24-4	
PFBA	**0.75**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	375-22-4	M1
PFDS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	79780-39-5	
PFHpS	**0.20**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	754-91-6	
PFPeA	**1.6**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	2706-90-3	M1
PFPeS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	307-55-1	
Perfluoroheptanoic acid	**1.2**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	375-85-9	M1
Perfluorohexanesulfonic acid	**3.4**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 13:28	355-46-4	M1
Perfluorononanoic acid	**0.95**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	375-95-1	M1
Perfluorooctanesulfonic acid	**11.1**	ug/kg	0.55	5	06/01/23 12:34	06/14/23 09:24	1763-23-1	M1
Perfluorooctanoic acid	**3.5**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	335-67-1	M1
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 13:28	2058-94-8	M1
Surrogates								
13C24:2FTS (S)	56	%.	50-150	1	06/01/23 12:34	06/13/23 13:28		
13C26:2FTS (S)	56	%.	50-150	1	06/01/23 12:34	06/13/23 13:28		
13C28:2FTS (S)	74	%.	50-150	1	06/01/23 12:34	06/13/23 13:28		
13C2-PFDoA (S)	82	%.	50-150	1	06/01/23 12:34	06/13/23 13:28		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-1 **Lab ID: 10655049001** Collected: 05/25/23 08:30 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	77	%.	50-150	1	06/01/23 12:34	06/13/23 13:28		
13C2-PFTA (S)	74	%.	50-150	1	06/01/23 12:34	06/13/23 13:28		
13C3HFPO-DA (S)	77	%.	50-150	1	06/01/23 12:34	06/13/23 13:28		
13C3-PFBS (S)	83	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	375-73-5	
13C3-PFHxS (S)	81	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	355-46-4	
13C4-PFBA (S)	82	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	375-22-4	
13C4-PFHpA (S)	74	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	375-85-9	
13C5-PFHxA (S)	75	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	307-24-4	
13C5-PFPeA (S)	80	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	2706-90-3	
13C6-PFDA (S)	79	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	335-76-2	
13C7-PFUdA (S)	76	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	2058-94-8	
13C8-PFOA (S)	77	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	335-67-1	
13C8-PFOS (S)	86	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	1763-23-1	
13C8-PFOSA (S)	78	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	754-91-6	
13C9-PFNA (S)	74	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	375-95-1	
d3-MeFOSAA (S)	85	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	2355-31-9	
d3-NMeFOSA (S)	7	%.	10-150	1	06/01/23 12:34	06/13/23 13:28	31506-32-8	S0
d5-EtFOSAA (S)	91	%.	50-150	1	06/01/23 12:34	06/13/23 13:28	2991-50-6	
d5-NEtFOSA (S)	7	%.	10-150	1	06/01/23 12:34	06/13/23 13:28	4151-50-2	S0
d7-NMeFOSE (S)	58	%.	10-150	1	06/01/23 12:34	06/13/23 13:28	24448-09-7	
d9-NEtFOSE (S)	63	%.	10-150	1	06/01/23 12:34	06/13/23 13:28	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-1 DUP **Lab ID: 10655049002** Collected: 05/25/23 12:45 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**10.1**	%	0.10	1		06/26/23 08:20		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 19:09	763051-92-9	
4:2 FTS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 19:09	757124-72-4	
6:2 FTS	**0.11**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	27619-97-2	
8:2 FTS	**0.17**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 19:09	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	13252-13-6	
NEtFOSAA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	2991-50-6	
NEtFOSA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	4151-50-2	
NEtFOSE	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.099	1	06/01/23 12:34	06/13/23 19:09	375-73-5	
Perfluorodecanoic acid	**0.11**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	335-76-2	
Perfluorohexanoic acid	**0.42**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	307-24-4	
PFBA	**0.41**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	79780-39-5	
PFHpS	**0.15**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	16517-11-6	
PFOSA	**0.36**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	754-91-6	
PFPeA	**1.1**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	2706-90-3	
PFPeS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 19:09	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	307-55-1	
Perfluoroheptanoic acid	**0.70**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	375-85-9	
Perfluorohexanesulfonic acid	**2.5**	ug/kg	0.10	1	06/01/23 12:34	06/13/23 19:09	355-46-4	
Perfluorononanoic acid	**0.70**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	375-95-1	
Perfluorooctanesulfonic acid	**7.2**	ug/kg	0.10	1	06/01/23 12:34	06/13/23 19:09	1763-23-1	
Perfluorooctanoic acid	**3.0**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:09	2058-94-8	
Surrogates								
13C24:2FTS (S)	60	%.	50-150	1	06/01/23 12:34	06/13/23 19:09		
13C26:2FTS (S)	64	%.	50-150	1	06/01/23 12:34	06/13/23 19:09		
13C28:2FTS (S)	99	%.	50-150	1	06/01/23 12:34	06/13/23 19:09		
13C2-PFDoA (S)	83	%.	50-150	1	06/01/23 12:34	06/13/23 19:09		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-1 DUP **Lab ID: 10655049002** Collected: 05/25/23 12:45 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	86	%.	50-150	1	06/01/23 12:34	06/13/23 19:09		
13C2-PFTA (S)	90	%.	50-150	1	06/01/23 12:34	06/13/23 19:09		
13C3HFPO-DA (S)	79	%.	50-150	1	06/01/23 12:34	06/13/23 19:09		
13C3-PFBS (S)	86	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	375-73-5	
13C3-PFHxS (S)	87	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	355-46-4	
13C4-PFBA (S)	89	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	375-22-4	
13C4-PFHpA (S)	81	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	375-85-9	
13C5-PFHxA (S)	78	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	307-24-4	
13C5-PFPeA (S)	85	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	2706-90-3	
13C6-PFDA (S)	92	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	335-76-2	
13C7-PFUdA (S)	83	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	2058-94-8	
13C8-PFOA (S)	83	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	335-67-1	
13C8-PFOS (S)	93	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	1763-23-1	
13C8-PFOSA (S)	91	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	754-91-6	
13C9-PFNA (S)	87	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	375-95-1	
d3-MeFOSAA (S)	91	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	2355-31-9	
d3-NMeFOSA (S)	78	%.	10-150	1	06/01/23 12:34	06/13/23 19:09	31506-32-8	
d5-EtFOSAA (S)	106	%.	50-150	1	06/01/23 12:34	06/13/23 19:09	2991-50-6	
d5-NEtFOSA (S)	83	%.	10-150	1	06/01/23 12:34	06/13/23 19:09	4151-50-2	
d7-NMeFOSE (S)	117	%.	10-150	1	06/01/23 12:34	06/13/23 19:09	24448-09-7	
d9-NEtFOSE (S)	118	%.	10-150	1	06/01/23 12:34	06/13/23 19:09	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-2 **Lab ID: 10655049003** Collected: 05/25/23 17:28 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**17.9**	%	0.10	1		06/26/23 08:20		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 14:48	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 14:48	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 14:48	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 14:48	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 14:48	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 14:48	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	335-76-2	
Perfluorohexanoic acid	**0.35**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	307-24-4	
PFBA	**0.37**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	79780-39-5	
PFHpS	**0.27**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 14:48	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	16517-11-6	
PFOSA	**0.23**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	754-91-6	
PFPeA	**0.52**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	2706-90-3	
PFPeS	**0.19**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 14:48	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	307-55-1	
Perfluoroheptanoic acid	**0.13**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	375-85-9	
Perfluorohexanesulfonic acid	**2.7**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 14:48	355-46-4	
Perfluorononanoic acid	**0.31**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	375-95-1	
Perfluorooctanesulfonic acid	**47.7**	ug/kg	1.1	10	06/01/23 12:34	06/14/23 10:24	1763-23-1	
Perfluorooctanoic acid	**0.50**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 14:48	2058-94-8	
Surrogates								
13C24:2FTS (S)	56	%.	50-150	1	06/01/23 12:34	06/13/23 14:48		
13C26:2FTS (S)	54	%.	50-150	1	06/01/23 12:34	06/13/23 14:48		
13C28:2FTS (S)	73	%.	50-150	1	06/01/23 12:34	06/13/23 14:48		
13C2-PFDoA (S)	89	%.	50-150	1	06/01/23 12:34	06/13/23 14:48		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-2 **Lab ID: 10655049003** Collected: 05/25/23 17:28 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	76	%.	50-150	1	06/01/23 12:34	06/13/23 14:48		
13C2-PFTA (S)	79	%.	50-150	1	06/01/23 12:34	06/13/23 14:48		
13C3HFPO-DA (S)	78	%.	50-150	1	06/01/23 12:34	06/13/23 14:48		
13C3-PFBS (S)	84	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	375-73-5	
13C3-PFHxS (S)	82	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	355-46-4	
13C4-PFBA (S)	85	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	375-22-4	
13C4-PFHpA (S)	79	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	375-85-9	
13C5-PFHxA (S)	77	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	307-24-4	
13C5-PFPeA (S)	82	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	2706-90-3	
13C6-PFDA (S)	84	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	335-76-2	
13C7-PFUdA (S)	82	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	2058-94-8	
13C8-PFOA (S)	81	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	335-67-1	
13C8-PFOS (S)	79	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	1763-23-1	
13C8-PFOSA (S)	83	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	754-91-6	
13C9-PFNA (S)	72	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	375-95-1	
d3-MeFOSAA (S)	89	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	2355-31-9	
d3-NMeFOSA (S)	15	%.	10-150	1	06/01/23 12:34	06/13/23 14:48	31506-32-8	
d5-EtFOSAA (S)	78	%.	50-150	1	06/01/23 12:34	06/13/23 14:48	2991-50-6	
d5-NEtFOSA (S)	11	%.	10-150	1	06/01/23 12:34	06/13/23 14:48	4151-50-2	
d7-NMeFOSE (S)	45	%.	10-150	1	06/01/23 12:34	06/13/23 14:48	24448-09-7	
d9-NEtFOSE (S)	42	%.	10-150	1	06/01/23 12:34	06/13/23 14:48	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-2 **Lab ID: 10655049004** Collected: 05/25/23 17:00 Received: 05/27/23 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178							
	Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ng/L	19.1	1	06/20/23 17:07	07/12/23 18:50	120226-60-0	L2
11Cl-PF3OUdS	ND	ng/L	18.6	1	06/20/23 17:07	07/12/23 18:50	763051-92-9	
4:2 FTS	ND	ng/L	18.5	1	06/20/23 17:07	07/12/23 18:50	757124-72-4	
6:2 FTS	ND	ng/L	18.8	1	06/20/23 17:07	07/12/23 18:50	27619-97-2	
8:2 FTS	ND	ng/L	19.1	1	06/20/23 17:07	07/12/23 18:50	39108-34-4	
9Cl-PF3ONS	ND	ng/L	18.5	1	06/20/23 17:07	07/12/23 18:50	756426-58-1	
ADONA	ND	ng/L	18.7	1	06/20/23 17:07	07/12/23 18:50	919005-14-4	
HFPO-DA	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	13252-13-6	
NEtFOSAA	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	2991-50-6	
NEtFOSA	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	4151-50-2	
NEtFOSE	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	1691-99-2	
NMeFOSAA	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	2355-31-9	
NMeFOSA	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	31506-32-8	
NMeFOSE	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	24448-09-7	
Perfluorobutanesulfonic acid	ND	ng/L	17.6	1	06/20/23 17:07	07/12/23 18:50	375-73-5	
Perfluorodecanoic acid	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	335-76-2	
Perfluorohexanoic acid	**54.5**	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	307-24-4	
PFBA	**26.8**	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	375-22-4	
PFDS	ND	ng/L	19.1	1	06/20/23 17:07	07/12/23 18:50	335-77-3	
PFDoS	ND	ng/L	19.2	1	06/20/23 17:07	07/12/23 18:50	79780-39-5	
PFHpS	ND	ng/L	18.8	1	06/20/23 17:07	07/12/23 18:50	375-92-8	
PFHxDA	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	67905-19-5	
PFNS	ND	ng/L	19.0	1	06/20/23 17:07	07/12/23 18:50	68259-12-1	
PFODA	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	16517-11-6	
PFOSA	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	754-91-6	
PFPeA	**102**	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	2706-90-3	
PFPeS	ND	ng/L	18.6	1	06/20/23 17:07	07/12/23 18:50	2706-91-4	
Perfluorododecanoic acid	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	307-55-1	
Perfluoroheptanoic acid	**21.4**	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	375-85-9	
Perfluorohexanesulfonic acid	**42.9**	ng/L	18.1	1	06/20/23 17:07	07/12/23 18:50	355-46-4	
Perfluorononanoic acid	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	375-95-1	
Perfluorooctanesulfonic acid	**482**	ng/L	18.4	1	06/20/23 17:07	07/12/23 18:50	1763-23-1	
Perfluorooctanoic acid	**79.6**	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	335-67-1	
Perfluorotetradecanoic acid	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	376-06-7	
Perfluorotridecanoic acid	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	72629-94-8	
Perfluoroundecanoic acid	ND	ng/L	19.8	1	06/20/23 17:07	07/12/23 18:50	2058-94-8	
Surrogates								
13C26:2FTS (S)	115	%.	50-150	1	06/20/23 17:07	07/12/23 18:50		
13C28:2FTS (S)	212	%.	50-150	1	06/20/23 17:07	07/12/23 18:50		S0
13C24:2FTS (S)	102	%.	50-150	1	06/20/23 17:07	07/12/23 18:50		
13C2-PFDoA (S)	106	%.	50-150	1	06/20/23 17:07	07/12/23 18:50		
13C2PFHxDA (S)	69	%.	50-150	1	06/20/23 17:07	07/12/23 18:50		
13C2-PFTA (S)	92	%.	50-150	1	06/20/23 17:07	07/12/23 18:50		
13C3HFPO-DA (S)	102	%.	50-150	1	06/20/23 17:07	07/12/23 18:50		
13C3-PFBS (S)	104	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	375-73-5	
13C3-PFHxS (S)	107	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	355-46-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-2 **Lab ID: 10655049004** Collected: 05/25/23 17:00 Received: 05/27/23 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C4-PFBA (S)	101	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	375-22-4	
13C4-PFHpA (S)	108	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	375-85-9	
13C5-PFHxA (S)	106	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	307-24-4	
13C5-PFPeA (S)	103	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	2706-90-3	
13C6-PFDA (S)	119	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	335-76-2	
13C7-PFUdA (S)	117	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	2058-94-8	
13C8-PFOA (S)	116	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	335-67-1	
13C8-PFOS (S)	102	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	1763-23-1	
13C8-PFOSA (S)	58	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	754-91-6	
13C9-PFNA (S)	107	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	375-95-1	
d3-MeFOSAA (S)	99	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	2355-31-9	
d3-NMeFOSA (S)	3	%.	10-150	1	06/20/23 17:07	07/12/23 18:50	31506-32-8	S0
d5-EtFOSAA (S)	102	%.	50-150	1	06/20/23 17:07	07/12/23 18:50	2991-50-6	
d5-NEtFOSA (S)	2	%.	10-150	1	06/20/23 17:07	07/12/23 18:50	4151-50-2	S0
d7-NMeFOSE (S)	34	%.	10-150	1	06/20/23 17:07	07/12/23 18:50	24448-09-7	
d9-NEtFOSE (S)	31	%.	10-150	1	06/20/23 17:07	07/12/23 18:50	1691-99-2	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-3 **Lab ID: 10655049005** Collected: 05/24/23 14:50 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**19.0**	%	0.10	1		06/26/23 08:21		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	**0.20**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:49	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:49	757124-72-4	
6:2 FTS	**3.6**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:49	27619-97-2	
8:2 FTS	**10.0**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:49	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:49	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	2355-31-9	
NMeFOSA	**0.30**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:49	375-73-5	
Perfluorodecanoic acid	**0.23**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	335-76-2	
Perfluorohexanoic acid	**0.94**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	307-24-4	
PFBA	**0.65**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	79780-39-5	
PFHpS	**0.18**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:49	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	16517-11-6	
PFOSA	**3.6**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	754-91-6	
PFPeA	**1.1**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	2706-90-3	
PFPeS	**0.14**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:49	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	307-55-1	
Perfluoroheptanoic acid	**1.3**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	375-85-9	
Perfluorohexanesulfonic acid	**1.4**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 19:49	355-46-4	
Perfluorononanoic acid	**0.86**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	375-95-1	
Perfluorooctanesulfonic acid	**12.7**	ug/kg	0.56	5	06/01/23 12:34	06/14/23 10:44	1763-23-1	
Perfluorooctanoic acid	**3.3**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 19:49	2058-94-8	
Surrogates								
13C24:2FTS (S)	64	%.	50-150	1	06/01/23 12:34	06/13/23 19:49		
13C26:2FTS (S)	64	%.	50-150	1	06/01/23 12:34	06/13/23 19:49		
13C28:2FTS (S)	79	%.	50-150	1	06/01/23 12:34	06/13/23 19:49		
13C2-PFDoA (S)	91	%.	50-150	1	06/01/23 12:34	06/13/23 19:49		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-3 **Lab ID: 10655049005** Collected: 05/24/23 14:50 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	71	%.	50-150	1	06/01/23 12:34	06/13/23 19:49		
13C2-PFTA (S)	88	%.	50-150	1	06/01/23 12:34	06/13/23 19:49		
13C3HFPO-DA (S)	80	%.	50-150	1	06/01/23 12:34	06/13/23 19:49		
13C3-PFBS (S)	90	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	375-73-5	
13C3-PFHxS (S)	89	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	355-46-4	
13C4-PFBA (S)	95	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	375-22-4	
13C4-PFHpA (S)	84	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	375-85-9	
13C5-PFHxA (S)	81	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	307-24-4	
13C5-PFPeA (S)	88	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	2706-90-3	
13C6-PFDA (S)	83	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	335-76-2	
13C7-PFUdA (S)	83	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	2058-94-8	
13C8-PFOA (S)	83	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	335-67-1	
13C8-PFOS (S)	90	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	1763-23-1	
13C8-PFOSA (S)	84	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	754-91-6	
13C9-PFNA (S)	83	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	375-95-1	
d3-MeFOSAA (S)	95	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	2355-31-9	
d3-NMeFOSA (S)	2	%.	10-150	1	06/01/23 12:34	06/13/23 19:49	31506-32-8	S0
d5-EtFOSAA (S)	95	%.	50-150	1	06/01/23 12:34	06/13/23 19:49	2991-50-6	
d5-NEtFOSA (S)	2	%.	10-150	1	06/01/23 12:34	06/13/23 19:49	4151-50-2	S0
d7-NMeFOSE (S)	51	%.	10-150	1	06/01/23 12:34	06/13/23 19:49	24448-09-7	
d9-NEtFOSE (S)	47	%.	10-150	1	06/01/23 12:34	06/13/23 19:49	1691-99-2	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-4 **Lab ID: 10655049006** Collected: 05/24/23 09:37 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**11.2**	%	0.10	1		06/26/23 08:21		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.10	1	06/01/23 12:34	06/14/23 08:44	763051-92-9	
4:2 FTS	ND	ug/kg	0.10	1	06/01/23 12:34	06/14/23 08:44	757124-72-4	
6:2 FTS	ND	ug/kg	0.10	1	06/01/23 12:34	06/14/23 08:44	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/01/23 12:34	06/14/23 08:44	756426-58-1	
ADONA	ND	ug/kg	0.10	1	06/01/23 12:34	06/14/23 08:44	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	13252-13-6	
NEtFOSAA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	2991-50-6	
NEtFOSA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	4151-50-2	
NEtFOSE	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.097	1	06/01/23 12:34	06/14/23 08:44	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	79780-39-5	
PFHpS	ND	ug/kg	0.10	1	06/01/23 12:34	06/14/23 08:44	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	67905-19-5	
PFNS	ND	ug/kg	0.10	1	06/01/23 12:34	06/14/23 08:44	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	16517-11-6	
PFOSA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	2706-90-3	
PFPeS	ND	ug/kg	0.10	1	06/01/23 12:34	06/14/23 08:44	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	375-85-9	
Perfluorohexanesulfonic acid	**0.78**	ug/kg	0.099	1	06/01/23 12:34	06/14/23 08:44	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	375-95-1	
Perfluorooctanesulfonic acid	**0.30**	ug/kg	0.10	1	06/01/23 12:34	06/14/23 08:44	1763-23-1	
Perfluorooctanoic acid	**0.16**	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 08:44	2058-94-8	
Surrogates								
13C24:2FTS (S)	91	%.	50-150	1	06/01/23 12:34	06/14/23 08:44		
13C26:2FTS (S)	121	%.	50-150	1	06/01/23 12:34	06/14/23 08:44		
13C28:2FTS (S)	114	%.	50-150	1	06/01/23 12:34	06/14/23 08:44		
13C2-PFDoA (S)	85	%.	50-150	1	06/01/23 12:34	06/14/23 08:44		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-4 **Lab ID: 10655049006** Collected: 05/24/23 09:37 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	77	%.	50-150	1	06/01/23 12:34	06/14/23 08:44		
13C2-PFTA (S)	82	%.	50-150	1	06/01/23 12:34	06/14/23 08:44		
13C3HFPO-DA (S)	73	%.	50-150	1	06/01/23 12:34	06/14/23 08:44		
13C3-PFBS (S)	91	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	375-73-5	
13C3-PFHxS (S)	90	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	355-46-4	
13C4-PFBA (S)	98	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	375-22-4	
13C4-PFHpA (S)	88	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	375-85-9	
13C5-PFHxA (S)	88	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	307-24-4	
13C5-PFPeA (S)	92	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	2706-90-3	
13C6-PFDA (S)	87	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	335-76-2	
13C7-PFUdA (S)	78	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	2058-94-8	
13C8-PFOA (S)	84	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	335-67-1	
13C8-PFOS (S)	86	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	1763-23-1	
13C8-PFOSA (S)	91	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	754-91-6	
13C9-PFNA (S)	88	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	375-95-1	
d3-MeFOSAA (S)	107	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	2355-31-9	
d3-NMeFOSA (S)	31	%.	10-150	1	06/01/23 12:34	06/14/23 08:44	31506-32-8	
d5-EtFOSAA (S)	115	%.	50-150	1	06/01/23 12:34	06/14/23 08:44	2991-50-6	
d5-NEtFOSA (S)	28	%.	10-150	1	06/01/23 12:34	06/14/23 08:44	4151-50-2	
d7-NMeFOSE (S)	84	%.	10-150	1	06/01/23 12:34	06/14/23 08:44	24448-09-7	
d9-NEtFOSE (S)	82	%.	10-150	1	06/01/23 12:34	06/14/23 08:44	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-4 DUP **Lab ID: 10655049007** Collected: 05/24/23 12:45 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**15.9**	%	0.10	1		06/26/23 08:21		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/01/23 12:34	06/14/23 09:04	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	375-85-9	
Perfluorohexanesulfonic acid	**0.72**	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	375-95-1	
Perfluorooctanesulfonic acid	**0.16**	ug/kg	0.11	1	06/01/23 12:34	06/14/23 09:04	1763-23-1	
Perfluorooctanoic acid	**0.14**	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/14/23 09:04	2058-94-8	
Surrogates								
13C24:2FTS (S)	93	%.	50-150	1	06/01/23 12:34	06/14/23 09:04		
13C26:2FTS (S)	122	%.	50-150	1	06/01/23 12:34	06/14/23 09:04		
13C28:2FTS (S)	120	%.	50-150	1	06/01/23 12:34	06/14/23 09:04		
13C2-PFDoA (S)	95	%.	50-150	1	06/01/23 12:34	06/14/23 09:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: S-4 DUP **Lab ID: 10655049007** Collected: 05/24/23 12:45 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	84	%.	50-150	1	06/01/23 12:34	06/14/23 09:04		
13C2-PFTA (S)	89	%.	50-150	1	06/01/23 12:34	06/14/23 09:04		
13C3HFPO-DA (S)	84	%.	50-150	1	06/01/23 12:34	06/14/23 09:04		
13C3-PFBS (S)	90	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	375-73-5	
13C3-PFHxS (S)	87	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	355-46-4	
13C4-PFBA (S)	99	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	375-22-4	
13C4-PFHpA (S)	90	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	375-85-9	
13C5-PFHxA (S)	90	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	307-24-4	
13C5-PFPeA (S)	93	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	2706-90-3	
13C6-PFDA (S)	86	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	335-76-2	
13C7-PFUdA (S)	84	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	2058-94-8	
13C8-PFOA (S)	89	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	335-67-1	
13C8-PFOS (S)	87	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	1763-23-1	
13C8-PFOSA (S)	90	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	754-91-6	
13C9-PFNA (S)	93	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	375-95-1	
d3-MeFOSAA (S)	111	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	2355-31-9	
d3-NMeFOSA (S)	16	%.	10-150	1	06/01/23 12:34	06/14/23 09:04	31506-32-8	
d5-EtFOSAA (S)	111	%.	50-150	1	06/01/23 12:34	06/14/23 09:04	2991-50-6	
d5-NEtFOSA (S)	13	%.	10-150	1	06/01/23 12:34	06/14/23 09:04	4151-50-2	
d7-NMeFOSE (S)	75	%.	10-150	1	06/01/23 12:34	06/14/23 09:04	24448-09-7	
d9-NEtFOSE (S)	74	%.	10-150	1	06/01/23 12:34	06/14/23 09:04	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: G-1 **Lab ID: 10655049008** Collected: 05/25/23 14:20 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**25.9**	%	0.10	1		06/26/23 08:22		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	**1.2**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	763051-92-9	
4:2 FTS	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	757124-72-4	
6:2 FTS	**2.3**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	27619-97-2	
8:2 FTS	**1.4**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	756426-58-1	
ADONA	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	919005-14-4	
HFPO-DA	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	13252-13-6	
NEtFOSAA	**0.69**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	2991-50-6	
NEtFOSA	**0.35**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	4151-50-2	
NEtFOSE	**2.1**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	1691-99-2	
NMeFOSAA	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	2355-31-9	
NMeFOSA	**0.29**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	31506-32-8	
NMeFOSE	**0.20**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.12	1	06/01/23 12:34	06/13/23 20:49	375-73-5	
Perfluorodecanoic acid	**0.19**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	335-76-2	
Perfluorohexanoic acid	**0.48**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	307-24-4	
PFBA	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	375-22-4	
PFDS	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	335-77-3	
PFDoS	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	79780-39-5	
PFHpS	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	375-92-8	
PFHxDA	**0.29**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	67905-19-5	
PFNS	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	68259-12-1	
PFODA	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	16517-11-6	
PFOSA	**25.1**	ug/kg	0.67	5	06/01/23 12:34	06/14/23 11:24	754-91-6	
PFPeA	**0.15**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	2706-90-3	
PFPeS	ND	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	2706-91-4	
Perfluorododecanoic acid	**0.43**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	307-55-1	
Perfluoroheptanoic acid	**0.15**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	375-85-9	
Perfluorohexanesulfonic acid	**0.84**	ug/kg	0.12	1	06/01/23 12:34	06/13/23 20:49	355-46-4	
Perfluorononanoic acid	**0.14**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	375-95-1	
Perfluorooctanesulfonic acid	**14.7**	ug/kg	0.63	5	06/01/23 12:34	06/14/23 11:24	1763-23-1	
Perfluorooctanoic acid	**0.39**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	335-67-1	
Perfluorotetradecanoic acid	**0.98**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	376-06-7	
Perfluorotridecanoic acid	**0.28**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	72629-94-8	
Perfluoroundecanoic acid	**0.38**	ug/kg	0.13	1	06/01/23 12:34	06/13/23 20:49	2058-94-8	
Surrogates								
13C24:2FTS (S)	84	%.	50-150	1	06/01/23 12:34	06/13/23 20:49		
13C26:2FTS (S)	76	%.	50-150	1	06/01/23 12:34	06/13/23 20:49		
13C28:2FTS (S)	72	%.	50-150	1	06/01/23 12:34	06/13/23 20:49		
13C2-PFDoA (S)	31	%.	50-150	1	06/01/23 12:34	06/13/23 20:49		S0

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: G-1 **Lab ID: 10655049008** Collected: 05/25/23 14:20 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	8	%.	50-150	1	06/01/23 12:34	06/13/23 20:49		S0
13C2-PFTA (S)	15	%.	50-150	1	06/01/23 12:34	06/13/23 20:49		S0
13C3HFPO-DA (S)	27	%.	50-150	1	06/01/23 12:34	06/13/23 20:49		S0
13C3-PFBS (S)	39	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	375-73-5	S0
13C3-PFHxS (S)	33	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	355-46-4	S0
13C4-PFBA (S)	47	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	375-22-4	S0
13C4-PFHpA (S)	22	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	375-85-9	S0
13C5-PFHxA (S)	31	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	307-24-4	S0
13C5-PFPeA (S)	36	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	2706-90-3	S0
13C6-PFDA (S)	26	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	335-76-2	S0
13C7-PFUdA (S)	19	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	2058-94-8	S0
13C8-PFOA (S)	26	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	335-67-1	S0
13C8-PFOS (S)	30	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	1763-23-1	S0
13C8-PFOSA (S)	15	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	754-91-6	S0
13C9-PFNA (S)	27	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	375-95-1	S0
d3-MeFOSAA (S)	19	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	2355-31-9	S0
d3-NMeFOSA (S)	6	%.	10-150	1	06/01/23 12:34	06/13/23 20:49	31506-32-8	S0
d5-EtFOSAA (S)	23	%.	50-150	1	06/01/23 12:34	06/13/23 20:49	2991-50-6	S0
d5-NEtFOSA (S)	6	%.	10-150	1	06/01/23 12:34	06/13/23 20:49	4151-50-2	S0
d7-NMeFOSE (S)	12	%.	10-150	1	06/01/23 12:34	06/13/23 20:49	24448-09-7	
d9-NEtFOSE (S)	13	%.	10-150	1	06/01/23 12:34	06/13/23 20:49	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: G-1 DUP **Lab ID: 10655049009** Collected: 05/25/23 13:45 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**36.4**	%	0.10	1		06/26/23 08:22		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	**1.8**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.14	1	06/01/23 12:34	06/13/23 21:09	763051-92-9	
4:2 FTS	ND	ug/kg	0.14	1	06/01/23 12:34	06/13/23 21:09	757124-72-4	
6:2 FTS	**2.7**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	27619-97-2	
8:2 FTS	**8.4**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.14	1	06/01/23 12:34	06/13/23 21:09	756426-58-1	
ADONA	ND	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	919005-14-4	
HFPO-DA	ND	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	13252-13-6	
NEtFOSAA	**6.8**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	2991-50-6	
NEtFOSA	**0.43**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	4151-50-2	
NEtFOSE	**6.2**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	1691-99-2	
NMeFOSAA	**0.90**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	2355-31-9	
NMeFOSA	**0.98**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	31506-32-8	
NMeFOSE	ND	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	24448-09-7	
Perfluorobutanesulfonic acid	**1.5**	ug/kg	0.14	1	06/01/23 12:34	06/13/23 21:09	375-73-5	
Perfluorodecanoic acid	**0.56**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	335-76-2	
Perfluorohexanoic acid	**3.0**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	307-24-4	
PFBA	**1.3**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	375-22-4	
PFDS	**3.9**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	335-77-3	
PFDoS	**2.8**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	79780-39-5	
PFHpS	**1.9**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	375-92-8	
PFHxDA	**0.32**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	67905-19-5	
PFNS	**2.8**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	68259-12-1	
PFODA	ND	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	16517-11-6	
PFOSA	**128**	ug/kg	7.7	50	06/01/23 12:34	06/14/23 11:44	754-91-6	
PFPeA	**2.4**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	2706-90-3	
PFPeS	**1.9**	ug/kg	0.14	1	06/01/23 12:34	06/13/23 21:09	2706-91-4	
Perfluorododecanoic acid	**1.5**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	307-55-1	
Perfluoroheptanoic acid	**1.4**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	375-85-9	
Perfluorohexanesulfonic acid	**27.3**	ug/kg	7.0	50	06/01/23 12:34	06/14/23 11:44	355-46-4	
Perfluorononanoic acid	**2.3**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	375-95-1	
Perfluorooctanesulfonic acid	**275**	ug/kg	7.2	50	06/01/23 12:34	06/14/23 11:44	1763-23-1	
Perfluorooctanoic acid	**5.9**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	335-67-1	
Perfluorotetradecanoic acid	**1.1**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	376-06-7	
Perfluorotridecanoic acid	**1.8**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	72629-94-8	
Perfluoroundecanoic acid	**5.3**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:09	2058-94-8	
Surrogates								
13C24:2FTS (S)	172	%.	50-150	1	06/01/23 12:34	06/13/23 21:09		S0
13C26:2FTS (S)	152	%.	50-150	1	06/01/23 12:34	06/13/23 21:09		S0
13C28:2FTS (S)	153	%.	50-150	1	06/01/23 12:34	06/13/23 21:09		S0
13C2-PFDoA (S)	79	%.	50-150	1	06/01/23 12:34	06/13/23 21:09		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: G-1 DUP **Lab ID: 10655049009** Collected: 05/25/23 13:45 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	21	%.	50-150	1	06/01/23 12:34	06/13/23 21:09		S0
13C2-PFTA (S)	29	%.	50-150	1	06/01/23 12:34	06/13/23 21:09		S0
13C3HFPO-DA (S)	56	%.	50-150	1	06/01/23 12:34	06/13/23 21:09		
13C3-PFBS (S)	76	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	375-73-5	
13C3-PFHxS (S)	69	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	355-46-4	
13C4-PFBA (S)	87	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	375-22-4	
13C4-PFHpA (S)	65	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	375-85-9	
13C5-PFHxA (S)	69	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	307-24-4	
13C5-PFPeA (S)	72	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	2706-90-3	
13C6-PFDA (S)	61	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	335-76-2	
13C7-PFUdA (S)	44	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	2058-94-8	S0
13C8-PFOA (S)	63	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	335-67-1	
13C8-PFOS (S)	48	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	1763-23-1	S0
13C8-PFOSA (S)	32	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	754-91-6	S0
13C9-PFNA (S)	47	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	375-95-1	S0
d3-MeFOSAA (S)	48	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	2355-31-9	S0
d3-NMeFOSA (S)	5	%.	10-150	1	06/01/23 12:34	06/13/23 21:09	31506-32-8	S0
d5-EtFOSAA (S)	62	%.	50-150	1	06/01/23 12:34	06/13/23 21:09	2991-50-6	
d5-NEtFOSA (S)	4	%.	10-150	1	06/01/23 12:34	06/13/23 21:09	4151-50-2	S0
d7-NMeFOSE (S)	20	%.	10-150	1	06/01/23 12:34	06/13/23 21:09	24448-09-7	
d9-NEtFOSE (S)	21	%.	10-150	1	06/01/23 12:34	06/13/23 21:09	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: G-2 **Lab ID: 10655049010** Collected: 05/25/23 13:45 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**39.5**	%	0.10	1		06/26/23 08:23		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	**1.9**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:29	763051-92-9	
4:2 FTS	ND	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:29	757124-72-4	
6:2 FTS	**3.4**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:29	27619-97-2	
8:2 FTS	**10.2**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:29	756426-58-1	
ADONA	ND	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:29	919005-14-4	
HFPO-DA	ND	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	13252-13-6	
NEtFOSAA	**10.1**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	2991-50-6	
NEtFOSA	**0.47**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	4151-50-2	
NEtFOSE	**7.9**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	1691-99-2	
NMeFOSAA	**1.2**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	2355-31-9	
NMeFOSA	**1.6**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	31506-32-8	
NMeFOSE	ND	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	24448-09-7	
Perfluorobutanesulfonic acid	**1.8**	ug/kg	0.14	1	06/01/23 12:34	06/13/23 21:29	375-73-5	
Perfluorodecanoic acid	**0.52**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	335-76-2	
Perfluorohexanoic acid	**4.1**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	307-24-4	
PFBA	**1.6**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	375-22-4	
PFDS	**4.4**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	335-77-3	
PFDoS	**3.1**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	79780-39-5	
PFHpS	**2.2**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:29	375-92-8	
PFHxDA	**0.32**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	67905-19-5	
PFNS	**3.3**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	68259-12-1	
PFODA	ND	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	16517-11-6	
PFOSA	**193**	ug/kg	8.1	50	06/01/23 12:34	06/14/23 12:04	754-91-6	
PFPeA	**2.6**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	2706-90-3	
PFPeS	**2.4**	ug/kg	0.15	1	06/01/23 12:34	06/13/23 21:29	2706-91-4	
Perfluorododecanoic acid	**1.7**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	307-55-1	
Perfluoroheptanoic acid	**1.5**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	375-85-9	
Perfluorohexanesulfonic acid	**38.9**	ug/kg	7.4	50	06/01/23 12:34	06/14/23 12:04	355-46-4	
Perfluorononanoic acid	**2.2**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	375-95-1	
Perfluorooctanesulfonic acid	**330**	ug/kg	7.5	50	06/01/23 12:34	06/14/23 12:04	1763-23-1	
Perfluorooctanoic acid	**7.4**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	335-67-1	
Perfluorotetradecanoic acid	**1.2**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	376-06-7	
Perfluorotridecanoic acid	**2.0**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	72629-94-8	
Perfluoroundecanoic acid	**5.5**	ug/kg	0.16	1	06/01/23 12:34	06/13/23 21:29	2058-94-8	
Surrogates								
13C24:2FTS (S)	173	%.	50-150	1	06/01/23 12:34	06/13/23 21:29		S0
13C26:2FTS (S)	149	%.	50-150	1	06/01/23 12:34	06/13/23 21:29		
13C28:2FTS (S)	146	%.	50-150	1	06/01/23 12:34	06/13/23 21:29		
13C2-PFDoA (S)	66	%.	50-150	1	06/01/23 12:34	06/13/23 21:29		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: G-2 **Lab ID: 10655049010** Collected: 05/25/23 13:45 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	9	%.	50-150	1	06/01/23 12:34	06/13/23 21:29		S0
13C2-PFTA (S)	27	%.	50-150	1	06/01/23 12:34	06/13/23 21:29		S0
13C3HFPO-DA (S)	54	%.	50-150	1	06/01/23 12:34	06/13/23 21:29		
13C3-PFBS (S)	74	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	375-73-5	
13C3-PFHxS (S)	67	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	355-46-4	
13C4-PFBA (S)	84	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	375-22-4	
13C4-PFHpA (S)	63	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	375-85-9	
13C5-PFHxA (S)	65	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	307-24-4	
13C5-PFPeA (S)	69	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	2706-90-3	
13C6-PFDA (S)	54	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	335-76-2	
13C7-PFUdA (S)	40	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	2058-94-8	S0
13C8-PFOA (S)	59	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	335-67-1	
13C8-PFOS (S)	46	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	1763-23-1	S0
13C8-PFOSA (S)	30	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	754-91-6	S0
13C9-PFNA (S)	44	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	375-95-1	S0
d3-MeFOSAA (S)	41	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	2355-31-9	S0
d3-NMeFOSA (S)	4	%.	10-150	1	06/01/23 12:34	06/13/23 21:29	31506-32-8	S0
d5-EtFOSAA (S)	50	%.	50-150	1	06/01/23 12:34	06/13/23 21:29	2991-50-6	
d5-NEtFOSA (S)	3	%.	10-150	1	06/01/23 12:34	06/13/23 21:29	4151-50-2	S0
d7-NMeFOSE (S)	16	%.	10-150	1	06/01/23 12:34	06/13/23 21:29	24448-09-7	
d9-NEtFOSE (S)	17	%.	10-150	1	06/01/23 12:34	06/13/23 21:29	1691-99-2	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: Rinsate-Soil **Lab ID: 10655049011** Collected: 05/25/23 11:30 Received: 05/27/23 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	120226-60-0	L2
11Cl-PF3OUdS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:18	763051-92-9	
4:2 FTS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:18	757124-72-4	
6:2 FTS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:18	27619-97-2	
8:2 FTS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	39108-34-4	
9Cl-PF3ONS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:18	756426-58-1	
ADONA	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:18	919005-14-4	
HFPO-DA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	13252-13-6	
NEtFOSAA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	2991-50-6	
NEtFOSA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	4151-50-2	L2
NEtFOSE	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	1691-99-2	
NMeFOSAA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	2355-31-9	
NMeFOSA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	31506-32-8	L2
NMeFOSE	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	24448-09-7	
Perfluorobutanesulfonic acid	ND	ng/L	1.7	1	06/21/23 15:00	07/14/23 00:18	375-73-5	
Perfluorodecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	335-76-2	
Perfluorohexanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	307-24-4	
PFBA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	375-22-4	
PFDS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	335-77-3	
PFDoS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	79780-39-5	
PFHpS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:18	375-92-8	
PFHxDA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	67905-19-5	
PFNS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	68259-12-1	
PFODA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	16517-11-6	L2
PFOSA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	754-91-6	
PFPeA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	2706-90-3	
PFPeS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:18	2706-91-4	
Perfluorododecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	307-55-1	
Perfluoroheptanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	375-85-9	
Perfluorohexanesulfonic acid	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:18	355-46-4	
Perfluorononanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	375-95-1	
Perfluorooctanesulfonic acid	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:18	1763-23-1	
Perfluorooctanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	335-67-1	
Perfluorotetradecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	376-06-7	
Perfluorotridecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	72629-94-8	
Perfluoroundecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:18	2058-94-8	
Surrogates								
13C26:2FTS (S)	119	%.	50-150	1	06/21/23 15:00	07/14/23 00:18		
13C28:2FTS (S)	257	%.	50-150	1	06/21/23 15:00	07/14/23 00:18		S3
13C24:2FTS (S)	114	%.	50-150	1	06/21/23 15:00	07/14/23 00:18		
13C2-PFDoA (S)	115	%.	50-150	1	06/21/23 15:00	07/14/23 00:18		
13C2PFHxDA (S)	91	%.	50-150	1	06/21/23 15:00	07/14/23 00:18		
13C2-PFTA (S)	121	%.	50-150	1	06/21/23 15:00	07/14/23 00:18		
13C3HFPO-DA (S)	114	%.	50-150	1	06/21/23 15:00	07/14/23 00:18		
13C3-PFBS (S)	116	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	375-73-5	
13C3-PFHxS (S)	118	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	355-46-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: Rinsate-Soil **Lab ID: 10655049011** Collected: 05/25/23 11:30 Received: 05/27/23 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C4-PFBA (S)	112	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	375-22-4	
13C4-PFHpA (S)	114	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	375-85-9	
13C5-PFHxA (S)	115	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	307-24-4	
13C5-PFPeA (S)	113	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	2706-90-3	
13C6-PFDA (S)	151	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	335-76-2	S3
13C7-PFUdA (S)	124	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	2058-94-8	
13C8-PFOA (S)	119	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	335-67-1	
13C8-PFOS (S)	114	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	1763-23-1	
13C8-PFOSA (S)	92	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	754-91-6	
13C9-PFNA (S)	122	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	375-95-1	
d3-MeFOSAA (S)	106	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	2355-31-9	
d3-NMeFOSA (S)	11	%.	10-150	1	06/21/23 15:00	07/14/23 00:18	31506-32-8	
d5-EtFOSAA (S)	109	%.	50-150	1	06/21/23 15:00	07/14/23 00:18	2991-50-6	
d5-NEtFOSA (S)	9	%.	10-150	1	06/21/23 15:00	07/14/23 00:18	4151-50-2	S0
d7-NMeFOSE (S)	57	%.	10-150	1	06/21/23 15:00	07/14/23 00:18	24448-09-7	
d9-NEtFOSE (S)	52	%.	10-150	1	06/21/23 15:00	07/14/23 00:18	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: IDW-Soil **Lab ID: 10655049012** Collected: 05/25/23 13:15 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**9.1**	%	0.10	1		06/26/23 08:23		N2
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	**0.51**	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	763051-92-9	
4:2 FTS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	757124-72-4	
6:2 FTS	**0.26**	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	27619-97-2	
8:2 FTS	**1.2**	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	756426-58-1	
ADONA	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	13252-13-6	
NEtFOSAA	**0.24**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	2991-50-6	
NEtFOSA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	4151-50-2	
NEtFOSE	**0.35**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.096	1	06/01/23 12:34	06/13/23 21:49	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	335-76-2	
Perfluorohexanoic acid	**0.20**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	375-22-4	
PFDS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	335-77-3	
PFDoS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	79780-39-5	
PFHpS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	67905-19-5	
PFNS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	16517-11-6	
PFOSA	**6.6**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	754-91-6	
PFPeA	**0.22**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	2706-90-3	
PFPeS	ND	ug/kg	0.10	1	06/01/23 12:34	06/13/23 21:49	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	307-55-1	
Perfluoroheptanoic acid	**0.22**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	375-85-9	
Perfluorohexanesulfonic acid	**1.1**	ug/kg	0.098	1	06/01/23 12:34	06/13/23 21:49	355-46-4	
Perfluorononanoic acid	**0.34**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	375-95-1	
Perfluorooctanesulfonic acid	**13.7**	ug/kg	0.50	5	06/01/23 12:34	06/14/23 12:24	1763-23-1	
Perfluorooctanoic acid	**1.1**	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/01/23 12:34	06/13/23 21:49	2058-94-8	
Surrogates								
13C24:2FTS (S)	86	%.	50-150	1	06/01/23 12:34	06/13/23 21:49		
13C26:2FTS (S)	100	%.	50-150	1	06/01/23 12:34	06/13/23 21:49		
13C28:2FTS (S)	149	%.	50-150	1	06/01/23 12:34	06/13/23 21:49		
13C2-PFDoA (S)	107	%.	50-150	1	06/01/23 12:34	06/13/23 21:49		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: IDW-Soil **Lab ID: 10655049012** Collected: 05/25/23 13:15 Received: 05/27/23 09:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C2PFHxDA (S)	84	%.	50-150	1	06/01/23 12:34	06/13/23 21:49		
13C2-PFTA (S)	89	%.	50-150	1	06/01/23 12:34	06/13/23 21:49		
13C3HFPO-DA (S)	85	%.	50-150	1	06/01/23 12:34	06/13/23 21:49		
13C3-PFBS (S)	96	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	375-73-5	
13C3-PFHxS (S)	94	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	355-46-4	
13C4-PFBA (S)	100	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	375-22-4	
13C4-PFHpA (S)	92	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	375-85-9	
13C5-PFHxA (S)	89	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	307-24-4	
13C5-PFPeA (S)	97	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	2706-90-3	
13C6-PFDA (S)	97	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	335-76-2	
13C7-PFUdA (S)	90	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	2058-94-8	
13C8-PFOA (S)	93	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	335-67-1	
13C8-PFOS (S)	97	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	1763-23-1	
13C8-PFOSA (S)	92	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	754-91-6	
13C9-PFNA (S)	93	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	375-95-1	
d3-MeFOSAA (S)	113	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	2355-31-9	
d3-NMeFOSA (S)	62	%.	10-150	1	06/01/23 12:34	06/13/23 21:49	31506-32-8	
d5-EtFOSAA (S)	120	%.	50-150	1	06/01/23 12:34	06/13/23 21:49	2991-50-6	
d5-NEtFOSA (S)	64	%.	10-150	1	06/01/23 12:34	06/13/23 21:49	4151-50-2	
d7-NMeFOSE (S)	101	%.	10-150	1	06/01/23 12:34	06/13/23 21:49	24448-09-7	
d9-NEtFOSE (S)	103	%.	10-150	1	06/01/23 12:34	06/13/23 21:49	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: IDW-Water **Lab ID: 10655049013** Collected: 05/25/23 13:30 Received: 05/27/23 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ng/L	9.8	1	06/21/23 15:00	07/14/23 00:26	120226-60-0	L2
11Cl-PF3OUdS	ND	ng/L	9.5	1	06/21/23 15:00	07/14/23 00:26	763051-92-9	
4:2 FTS	ND	ng/L	9.5	1	06/21/23 15:00	07/14/23 00:26	757124-72-4	
6:2 FTS	ND	ng/L	9.6	1	06/21/23 15:00	07/14/23 00:26	27619-97-2	
8:2 FTS	ND	ng/L	9.8	1	06/21/23 15:00	07/14/23 00:26	39108-34-4	
9Cl-PF3ONS	ND	ng/L	9.4	1	06/21/23 15:00	07/14/23 00:26	756426-58-1	
ADONA	ND	ng/L	9.6	1	06/21/23 15:00	07/14/23 00:26	919005-14-4	
HFPO-DA	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	13252-13-6	
NEtFOSAA	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	2991-50-6	
NEtFOSA	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	4151-50-2	L2
NEtFOSE	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	1691-99-2	
NMeFOSAA	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	2355-31-9	
NMeFOSA	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	31506-32-8	L2
NMeFOSE	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	24448-09-7	
Perfluorobutanesulfonic acid	**18.5**	ng/L	9.0	1	06/21/23 15:00	07/14/23 00:26	375-73-5	
Perfluorodecanoic acid	**25.9**	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	335-76-2	
Perfluorohexanoic acid	**89.7**	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	307-24-4	
PFBA	**71.0**	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	375-22-4	
PFDS	**19.8**	ng/L	9.8	1	06/21/23 15:00	07/14/23 00:26	335-77-3	
PFDoS	ND	ng/L	9.8	1	06/21/23 15:00	07/14/23 00:26	79780-39-5	
PFHpS	**60.1**	ng/L	9.6	1	06/21/23 15:00	07/14/23 00:26	375-92-8	
PFHxDA	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	67905-19-5	
PFNS	**39.1**	ng/L	9.7	1	06/21/23 15:00	07/14/23 00:26	68259-12-1	
PFODA	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	16517-11-6	L2
PFOSA	**49.4**	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	754-91-6	
PFPeA	**159**	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	2706-90-3	
PFPeS	**36.2**	ng/L	9.5	1	06/21/23 15:00	07/14/23 00:26	2706-91-4	
Perfluorododecanoic acid	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	307-55-1	
Perfluoroheptanoic acid	**35.6**	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	375-85-9	
Perfluorohexanesulfonic acid	**447**	ng/L	9.2	1	06/21/23 15:00	07/14/23 00:26	355-46-4	
Perfluorononanoic acid	**49.0**	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	375-95-1	
Perfluorooctanesulfonic acid	**10900**	ng/L	187	20	06/21/23 15:00	07/19/23 18:47	1763-23-1	
Perfluorooctanoic acid	**126**	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	335-67-1	
Perfluorotetradecanoic acid	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	376-06-7	
Perfluorotridecanoic acid	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	72629-94-8	
Perfluoroundecanoic acid	ND	ng/L	10.1	1	06/21/23 15:00	07/14/23 00:26	2058-94-8	
Surrogates								
13C26:2FTS (S)	153	%.	50-150	1	06/21/23 15:00	07/14/23 00:26		S0
13C28:2FTS (S)	181	%.	50-150	1	06/21/23 15:00	07/14/23 00:26		S0
13C24:2FTS (S)	122	%.	50-150	1	06/21/23 15:00	07/14/23 00:26		
13C2-PFDoA (S)	124	%.	50-150	1	06/21/23 15:00	07/14/23 00:26		
13C2PFHxDA (S)	84	%.	50-150	1	06/21/23 15:00	07/14/23 00:26		
13C2-PFTA (S)	108	%.	50-150	1	06/21/23 15:00	07/14/23 00:26		
13C3HFPO-DA (S)	109	%.	50-150	1	06/21/23 15:00	07/14/23 00:26		
13C3-PFBS (S)	115	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	375-73-5	
13C3-PFHxS (S)	116	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	355-46-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: IDW-Water **Lab ID: 10655049013** Collected: 05/25/23 13:30 Received: 05/27/23 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C4-PFBA (S)	109	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	375-22-4	
13C4-PFHpA (S)	115	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	375-85-9	
13C5-PFHxA (S)	113	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	307-24-4	
13C5-PFPeA (S)	111	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	2706-90-3	
13C6-PFDA (S)	140	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	335-76-2	
13C7-PFUdA (S)	143	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	2058-94-8	
13C8-PFOA (S)	120	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	335-67-1	
13C8-PFOS (S)	74	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	1763-23-1	
13C8-PFOSA (S)	81	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	754-91-6	
13C9-PFNA (S)	80	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	375-95-1	
d3-MeFOSAA (S)	115	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	2355-31-9	
d3-NMeFOSA (S)	7	%.	10-150	1	06/21/23 15:00	07/14/23 00:26	31506-32-8	S0
d5-EtFOSAA (S)	158	%.	50-150	1	06/21/23 15:00	07/14/23 00:26	2991-50-6	S0
d5-NEtFOSA (S)	6	%.	10-150	1	06/21/23 15:00	07/14/23 00:26	4151-50-2	S0
d7-NMeFOSE (S)	40	%.	10-150	1	06/21/23 15:00	07/14/23 00:26	24448-09-7	
d9-NEtFOSE (S)	34	%.	10-150	1	06/21/23 15:00	07/14/23 00:26	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: Rinsate GW1 **Lab ID: 10655049014** Collected: 05/25/23 13:00 Received: 05/27/23 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
10:2 FTS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	120226-60-0	L2,M0
11Cl-PF3OUdS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:33	763051-92-9	
4:2 FTS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:33	757124-72-4	
6:2 FTS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:33	27619-97-2	
8:2 FTS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	39108-34-4	
9Cl-PF3ONS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:33	756426-58-1	
ADONA	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:33	919005-14-4	
HFPO-DA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	13252-13-6	
NEtFOSAA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	2991-50-6	
NEtFOSA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	4151-50-2	L2,M1
NEtFOSE	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	1691-99-2	
NMeFOSAA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	2355-31-9	
NMeFOSA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	31506-32-8	L2,M1
NMeFOSE	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	24448-09-7	
Perfluorobutanesulfonic acid	ND	ng/L	1.7	1	06/21/23 15:00	07/14/23 00:33	375-73-5	
Perfluorodecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	335-76-2	
Perfluorohexanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	307-24-4	
PFBA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	375-22-4	
PFDS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	335-77-3	
PFDoS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	79780-39-5	
PFHpS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:33	375-92-8	
PFHxDA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	67905-19-5	
PFNS	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	68259-12-1	
PFODA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	16517-11-6	L2,M0
PFOSA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	754-91-6	
PFPeA	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	2706-90-3	
PFPeS	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:33	2706-91-4	
Perfluorododecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	307-55-1	
Perfluoroheptanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	375-85-9	
Perfluorohexanesulfonic acid	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:33	355-46-4	
Perfluorononanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	375-95-1	
Perfluorooctanesulfonic acid	ND	ng/L	1.8	1	06/21/23 15:00	07/14/23 00:33	1763-23-1	
Perfluorooctanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	335-67-1	
Perfluorotetradecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	376-06-7	
Perfluorotridecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	72629-94-8	
Perfluoroundecanoic acid	ND	ng/L	1.9	1	06/21/23 15:00	07/14/23 00:33	2058-94-8	
Surrogates								
13C26:2FTS (S)	122	%.	50-150	1	06/21/23 15:00	07/14/23 00:33		
13C28:2FTS (S)	282	%.	50-150	1	06/21/23 15:00	07/14/23 00:33		S3
13C24:2FTS (S)	120	%.	50-150	1	06/21/23 15:00	07/14/23 00:33		
13C2-PFDoA (S)	117	%.	50-150	1	06/21/23 15:00	07/14/23 00:33		
13C2PFHxDA (S)	67	%.	50-150	1	06/21/23 15:00	07/14/23 00:33		
13C2-PFTA (S)	97	%.	50-150	1	06/21/23 15:00	07/14/23 00:33		
13C3HFPO-DA (S)	115	%.	50-150	1	06/21/23 15:00	07/14/23 00:33		
13C3-PFBS (S)	118	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	375-73-5	
13C3-PFHxS (S)	120	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	355-46-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Sample: Rinsate GW1 **Lab ID: 10655049014** Collected: 05/25/23 13:00 Received: 05/27/23 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C4-PFBA (S)	114	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	375-22-4	
13C4-PFHpA (S)	115	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	375-85-9	
13C5-PFHxA (S)	118	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	307-24-4	
13C5-PFPeA (S)	115	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	2706-90-3	
13C6-PFDA (S)	146	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	335-76-2	
13C7-PFUdA (S)	123	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	2058-94-8	
13C8-PFOA (S)	121	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	335-67-1	
13C8-PFOS (S)	108	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	1763-23-1	
13C8-PFOSA (S)	102	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	754-91-6	
13C9-PFNA (S)	123	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	375-95-1	
d3-MeFOSAA (S)	110	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	2355-31-9	
d3-NMeFOSA (S)	42	%.	10-150	1	06/21/23 15:00	07/14/23 00:33	31506-32-8	
d5-EtFOSAA (S)	109	%.	50-150	1	06/21/23 15:00	07/14/23 00:33	2991-50-6	
d5-NEtFOSA (S)	33	%.	10-150	1	06/21/23 15:00	07/14/23 00:33	4151-50-2	
d7-NMeFOSE (S)	77	%.	10-150	1	06/21/23 15:00	07/14/23 00:33	24448-09-7	
d9-NEtFOSE (S)	77	%.	10-150	1	06/21/23 15:00	07/14/23 00:33	1691-99-2	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

QC Batch: 889873
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10655049001, 10655049002, 10655049003, 10655049005, 10655049006, 10655049007, 10655049008, 10655049009, 10655049010, 10655049012

SAMPLE DUPLICATE: 4689322

Parameter	Units	10655049001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.3	17.0	2	30	N2

SAMPLE DUPLICATE: 4689323

Parameter	Units	10657464014 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.0	15.6	4	30	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

QC Batch: 884118
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: PFAS ID SL
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10655049001, 10655049002, 10655049003, 10655049005, 10655049006, 10655049007, 10655049008, 10655049009, 10655049010, 10655049012

METHOD BLANK: 4658213
Matrix: Solid
Associated Lab Samples: 10655049001, 10655049002, 10655049003, 10655049005, 10655049006, 10655049007, 10655049008, 10655049009, 10655049010, 10655049012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ug/kg	ND	0.096	06/13/23 17:49	
11Cl-PF3OUdS	ug/kg	ND	0.093	06/13/23 17:49	
4:2 FTS	ug/kg	ND	0.093	06/13/23 17:49	
6:2 FTS	ug/kg	ND	0.094	06/13/23 17:49	
8:2 FTS	ug/kg	ND	0.096	06/13/23 17:49	
9Cl-PF3ONS	ug/kg	ND	0.092	06/13/23 17:49	
ADONA	ug/kg	ND	0.094	06/13/23 17:49	
HFPO-DA	ug/kg	ND	0.099	06/13/23 17:49	
NEtFOSA	ug/kg	ND	0.099	06/13/23 17:49	
NEtFOSAA	ug/kg	ND	0.099	06/13/23 17:49	
NEtFOSE	ug/kg	ND	0.099	06/13/23 17:49	
NMeFOSA	ug/kg	ND	0.099	06/13/23 17:49	
NMeFOSAA	ug/kg	ND	0.099	06/13/23 17:49	
NMeFOSE	ug/kg	ND	0.099	06/13/23 17:49	
Perfluorobutanesulfonic acid	ug/kg	ND	0.088	06/13/23 17:49	
Perfluorodecanoic acid	ug/kg	ND	0.099	06/13/23 17:49	
Perfluorododecanoic acid	ug/kg	ND	0.099	06/13/23 17:49	
Perfluoroheptanoic acid	ug/kg	ND	0.099	06/13/23 17:49	
Perfluorohexanesulfonic acid	ug/kg	ND	0.090	06/13/23 17:49	
Perfluorohexanoic acid	ug/kg	ND	0.099	06/13/23 17:49	
Perfluorononanoic acid	ug/kg	ND	0.099	06/13/23 17:49	
Perfluorooctanesulfonic acid	ug/kg	ND	0.092	06/13/23 17:49	
Perfluorooctanoic acid	ug/kg	ND	0.099	06/13/23 17:49	
Perfluorotetradecanoic acid	ug/kg	ND	0.099	06/13/23 17:49	
Perfluorotridecanoic acid	ug/kg	ND	0.099	06/13/23 17:49	
Perfluoroundecanoic acid	ug/kg	ND	0.099	06/13/23 17:49	
PFBA	ug/kg	ND	0.099	06/13/23 17:49	
PFDoS	ug/kg	ND	0.096	06/13/23 17:49	
PFDS	ug/kg	ND	0.096	06/13/23 17:49	
PFHpS	ug/kg	ND	0.094	06/13/23 17:49	
PFHxDA	ug/kg	ND	0.099	06/13/23 17:49	
PFNS	ug/kg	ND	0.095	06/13/23 17:49	
PFODA	ug/kg	ND	0.099	06/13/23 17:49	
PFOSA	ug/kg	ND	0.099	06/13/23 17:49	
PFPeA	ug/kg	ND	0.099	06/13/23 17:49	
PFPeS	ug/kg	ND	0.093	06/13/23 17:49	
13C2-PFDoA (S)	%.	84	50-150	06/13/23 17:49	
13C2-PFTA (S)	%.	75	50-150	06/13/23 17:49	
13C24:2FTS (S)	%.	56	50-150	06/13/23 17:49	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

METHOD BLANK: 4658213 Matrix: Solid

Associated Lab Samples: 10655049001, 10655049002, 10655049003, 10655049005, 10655049006, 10655049007, 10655049008, 10655049009, 10655049010, 10655049012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C26:2FTS (S)	%.	60	50-150	06/13/23 17:49	
13C28:2FTS (S)	%.	68	50-150	06/13/23 17:49	
13C2PFHxDA (S)	%.	72	50-150	06/13/23 17:49	
13C3-PFBS (S)	%.	80	50-150	06/13/23 17:49	
13C3-PFHxS (S)	%.	80	50-150	06/13/23 17:49	
13C3HFPO-DA (S)	%.	72	50-150	06/13/23 17:49	
13C4-PFBA (S)	%.	84	50-150	06/13/23 17:49	
13C4-PFHpA (S)	%.	74	50-150	06/13/23 17:49	
13C5-PFHxA (S)	%.	76	50-150	06/13/23 17:49	
13C5-PFPeA (S)	%.	81	50-150	06/13/23 17:49	
13C6-PFDA (S)	%.	81	50-150	06/13/23 17:49	
13C7-PFUdA (S)	%.	71	50-150	06/13/23 17:49	
13C8-PFOA (S)	%.	76	50-150	06/13/23 17:49	
13C8-PFOS (S)	%.	85	50-150	06/13/23 17:49	
13C8-PFOSA (S)	%.	83	50-150	06/13/23 17:49	
13C9-PFNA (S)	%.	79	50-150	06/13/23 17:49	
d3-MeFOSAA (S)	%.	95	50-150	06/13/23 17:49	
d3-NMeFOSA (S)	%.	80	10-150	06/13/23 17:49	
d5-EtFOSAA (S)	%.	94	50-150	06/13/23 17:49	
d5-NEtFOSA (S)	%.	86	10-150	06/13/23 17:49	
d7-NMeFOSE (S)	%.	92	10-150	06/13/23 17:49	
d9-NEtFOSE (S)	%.	99	10-150	06/13/23 17:49	

LABORATORY CONTROL SAMPLE: 4658214

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
10:2 FTS	ug/kg	0.19	0.25	132	70-140	
11Cl-PF3OUdS	ug/kg	0.18	0.19	105	70-140	
4:2 FTS	ug/kg	0.18	0.18	99	62-145	
6:2 FTS	ug/kg	0.19	0.20	107	64-140	
8:2 FTS	ug/kg	0.19	0.19	104	65-137	
9Cl-PF3ONS	ug/kg	0.18	0.18	100	70-140	
ADONA	ug/kg	0.18	0.19	102	70-140	
HFPO-DA	ug/kg	0.2	0.19	96	70-140	
NEtFOSA	ug/kg	0.2	0.18	92	70-140	
NEtFOSAA	ug/kg	0.2	0.22	111	61-139	
NEtFOSE	ug/kg	0.2	0.20	100	70-140	
NMeFOSA	ug/kg	0.2	0.19	96	70-140	
NMeFOSAA	ug/kg	0.2	0.17	86	63-144	
NMeFOSE	ug/kg	0.2	0.16	84	70-140	
Perfluorobutanesulfonic acid	ug/kg	0.17	0.18	107	72-128	
Perfluorodecanoic acid	ug/kg	0.2	0.15	78	69-133	
Perfluorododecanoic acid	ug/kg	0.2	0.18	92	69-135	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

LABORATORY CONTROL SAMPLE: 4658214

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Perfluoroheptanoic acid	ug/kg	0.2	0.22	111	71-131	
Perfluorohexanesulfonic acid	ug/kg	0.18	0.19	106	67-130	
Perfluorohexanoic acid	ug/kg	0.2	0.22	111	70-132	
Perfluorononanoic acid	ug/kg	0.2	0.21	107	72-129	
Perfluorooctanesulfonic acid	ug/kg	0.18	0.19	106	68-136	
Perfluorooctanoic acid	ug/kg	0.2	0.21	107	69-133	
Perfluorotetradecanoic acid	ug/kg	0.2	0.20	100	69-133	
Perfluorotridecanoic acid	ug/kg	0.2	0.21	106	66-139	
Perfluoroundecanoic acid	ug/kg	0.2	0.22	111	64-136	
PFBA	ug/kg	0.2	0.20	102	71-135	
PFDoS	ug/kg	0.19	0.20	103	70-140	
PFDS	ug/kg	0.19	0.20	108	59-134	
PFHpS	ug/kg	0.19	0.19	100	70-132	
PFHxDA	ug/kg	0.2	0.21	106	70-140	
PFNS	ug/kg	0.19	0.20	105	69-125	
PFODA	ug/kg	0.2	0.24	121	70-140	
PFOSA	ug/kg	0.2	0.20	100	67-137	
PFPeA	ug/kg	0.2	0.21	107	69-132	
PFPeS	ug/kg	0.18	0.20	108	73-123	
13C2-PFDoA (S)	%.			104	50-150	
13C2-PFTA (S)	%.			94	50-150	
13C24:2FTS (S)	%.			71	50-150	
13C26:2FTS (S)	%.			76	50-150	
13C28:2FTS (S)	%.			96	50-150	
13C2PFHxDA (S)	%.			88	50-150	
13C3-PFBS (S)	%.			101	50-150	
13C3-PFHxS (S)	%.			101	50-150	
13C3HFPO-DA (S)	%.			90	50-150	
13C4-PFBA (S)	%.			106	50-150	
13C4-PFHpA (S)	%.			91	50-150	
13C5-PFHxA (S)	%.			91	50-150	
13C5-PFPeA (S)	%.			99	50-150	
13C6-PFDA (S)	%.			101	50-150	
13C7-PFUdA (S)	%.			99	50-150	
13C8-PFOA (S)	%.			96	50-150	
13C8-PFOS (S)	%.			108	50-150	
13C8-PFOSA (S)	%.			114	50-150	
13C9-PFNA (S)	%.			99	50-150	
d3-MeFOSAA (S)	%.			136	50-150	
d3-NMeFOSA (S)	%.			102	10-150	
d5-EtFOSAA (S)	%.			110	50-150	
d5-NEtFOSA (S)	%.			115	10-150	
d7-NMeFOSE (S)	%.			121	10-150	
d9-NEtFOSE (S)	%.			122	10-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4658427 4658428

Parameter	Units	10655049001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
10:2 FTS	ug/kg	ND	0.23	0.23	0.38	0.37	156	151	70-130	4	30	M1
11Cl-PF3OUdS	ug/kg	ND	0.23	0.23	0.25	0.24	108	109	70-130	0	30	
4:2 FTS	ug/kg	ND	0.23	0.22	0.24	0.24	106	110	70-130	2	30	
6:2 FTS	ug/kg	0.15	0.23	0.23	0.37	0.37	98	97	70-130	1	30	
8:2 FTS	ug/kg	ND	0.23	0.23	0.32	0.27	121	104	70-130	14	30	
9Cl-PF3ONS	ug/kg	ND	0.23	0.22	0.23	0.23	103	105	70-130	0	30	
ADONA	ug/kg	ND	0.23	0.23	0.26	0.25	114	112	70-130	3	30	
HFPO-DA	ug/kg	ND	0.24	0.24	0.22	0.22	90	90	70-130	1	30	
NEtFOSA	ug/kg	ND	0.24	0.24	0.27	0.27	114	115	70-130	0	30	
NEtFOSAA	ug/kg	ND	0.24	0.24	0.25	0.25	105	106	70-130	1	30	
NEtFOSE	ug/kg	ND	0.24	0.24	0.24	0.24	92	93	70-130	1	30	
NMeFOSA	ug/kg	ND	0.24	0.24	0.23	0.29	96	121	70-130	22	30	
NMeFOSAA	ug/kg	ND	0.24	0.24	0.24	0.23	100	98	70-130	3	30	
NMeFOSE	ug/kg	ND	0.24	0.24	0.22	0.21	83	84	70-130	1	30	
Perfluorobutanesulfonic acid	ug/kg	ND	0.22	0.21	0.26	0.24	109	104	70-130	5	30	
Perfluorodecanoic acid	ug/kg	0.15	0.24	0.24	0.41	0.40	108	102	70-130	4	30	
Perfluorododecanoic acid	ug/kg	ND	0.24	0.24	0.25	0.24	101	98	70-130	4	30	
Perfluoroheptanoic acid	ug/kg	1.2	0.24	0.24	1.5	1.5	132	119	70-130	2	30	M1
Perfluorohexanesulfonic acid	ug/kg	3.4	0.22	0.22	4.1	4.1	317	332	70-130	1	30	M1
Perfluorohexanoic acid	ug/kg	0.63	0.24	0.24	0.87	0.85	97	92	70-130	2	30	
Perfluorononanoic acid	ug/kg	0.95	0.24	0.24	1.5	1.4	212	203	70-130	2	30	M1
Perfluorooctanesulfonic acid	ug/kg	11.1	0.23	0.22	14.4	13.5	1480	1120	70-130	6	30	M1
Perfluorooctanoic acid	ug/kg	3.5	0.24	0.24	4.6	4.6	431	455	70-130	1	30	M1
Perfluorotetradecanoic acid	ug/kg	ND	0.24	0.24	0.25	0.24	104	101	70-130	4	30	
Perfluorotridecanoic acid	ug/kg	ND	0.24	0.24	0.28	0.27	116	111	70-130	6	30	
Perfluoroundecanoic acid	ug/kg	ND	0.24	0.24	0.34	0.37	129	145	70-130	9	30	M1
PFBA	ug/kg	0.75	0.24	0.24	0.96	0.90	87	66	70-130	6	30	M1
PFDoS	ug/kg	ND	0.23	0.23	0.26	0.24	110	104	70-130	7	30	
PFDS	ug/kg	ND	0.23	0.23	0.24	0.24	104	104	70-130	2	30	
PFHpS	ug/kg	0.20	0.23	0.23	0.48	0.47	122	119	70-130	2	30	
PFHxDA	ug/kg	ND	0.24	0.24	0.25	0.25	97	100	70-130	2	30	
PFNS	ug/kg	ND	0.23	0.23	0.27	0.27	112	116	70-130	2	30	
PFODA	ug/kg	ND	0.24	0.24	0.20	0.22	85	91	70-130	5	30	
PFOSA	ug/kg	ND	0.24	0.24	0.41	0.37	125	110	70-130	10	30	
PFPeA	ug/kg	1.6	0.24	0.24	1.9	1.8	147	106	70-130	5	30	M1
PFPeS	ug/kg	ND	0.23	0.22	0.30	0.29	104	102	70-130	3	30	
13C2-PFDoA (S)	%.						76	79	50-150			
13C2-PFTA (S)	%.						78	75	50-150			
13C24:2FTS (S)	%.						58	54	50-150			
13C26:2FTS (S)	%.						53	53	50-150			
13C28:2FTS (S)	%.						69	69	50-150			
13C2PFHxDA (S)	%.						75	75	50-150			
13C3-PFBS (S)	%.						84	84	50-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4658427 4658428

Parameter	Units	10655049001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
13C3-PFHxS (S)	%.						83	83	50-150			
13C3HFPO-DA (S)	%.						81	78	50-150			
13C4-PFBA (S)	%.						85	82	50-150			
13C4-PFHpA (S)	%.						77	74	50-150			
13C5-PFHxA (S)	%.						77	75	50-150			
13C5-PFPeA (S)	%.						80	78	50-150			
13C6-PFDA (S)	%.						82	74	50-150			
13C7-PFUdA (S)	%.						72	78	50-150			
13C8-PFOA (S)	%.						76	74	50-150			
13C8-PFOS (S)	%.						84	85	50-150			
13C8-PFOSA (S)	%.						77	81	50-150			
13C9-PFNA (S)	%.						74	74	50-150			
d3-MeFOSAA (S)	%.						83	84	50-150			
d3-NMeFOSA (S)	%.						5	1	10-150			S0
d5-EtFOSAA (S)	%.						86	88	50-150			
d5-NEtFOSA (S)	%.						5	1	10-150			S0
d7-NMeFOSE (S)	%.						46	38	10-150			
d9-NEtFOSE (S)	%.						43	34	10-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

QC Batch: 887636
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: PFAS Compounds, Water
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10655049004

METHOD BLANK: 4677271 Matrix: Water
Associated Lab Samples: 10655049004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ng/L	ND	1.8	07/12/23 15:56	
11Cl-PF3OUdS	ng/L	ND	1.8	07/12/23 15:56	
4:2 FTS	ng/L	ND	1.8	07/12/23 15:56	
6:2 FTS	ng/L	ND	1.8	07/12/23 15:56	
8:2 FTS	ng/L	ND	1.8	07/12/23 15:56	
9Cl-PF3ONS	ng/L	ND	1.8	07/12/23 15:56	
ADONA	ng/L	ND	1.8	07/12/23 15:56	
HFPO-DA	ng/L	ND	1.9	07/12/23 15:56	
NEtFOSA	ng/L	ND	1.9	07/12/23 15:56	
NEtFOSAA	ng/L	ND	1.9	07/12/23 15:56	
NEtFOSE	ng/L	ND	1.9	07/12/23 15:56	
NMeFOSA	ng/L	ND	1.9	07/12/23 15:56	
NMeFOSAA	ng/L	ND	1.9	07/12/23 15:56	
NMeFOSE	ng/L	ND	1.9	07/12/23 15:56	
Perfluorobutanesulfonic acid	ng/L	ND	1.7	07/12/23 15:56	
Perfluorodecanoic acid	ng/L	ND	1.9	07/12/23 15:56	
Perfluorododecanoic acid	ng/L	ND	1.9	07/12/23 15:56	
Perfluoroheptanoic acid	ng/L	ND	1.9	07/12/23 15:56	
Perfluorohexanesulfonic acid	ng/L	ND	1.7	07/12/23 15:56	
Perfluorohexanoic acid	ng/L	ND	1.9	07/12/23 15:56	
Perfluorononanoic acid	ng/L	ND	1.9	07/12/23 15:56	
Perfluorooctanesulfonic acid	ng/L	ND	1.8	07/12/23 15:56	
Perfluorooctanoic acid	ng/L	ND	1.9	07/12/23 15:56	
Perfluorotetradecanoic acid	ng/L	ND	1.9	07/12/23 15:56	
Perfluorotridecanoic acid	ng/L	ND	1.9	07/12/23 15:56	
Perfluoroundecanoic acid	ng/L	ND	1.9	07/12/23 15:56	
PFBA	ng/L	ND	1.9	07/12/23 15:56	
PFDoS	ng/L	ND	1.9	07/12/23 15:56	
PFDS	ng/L	ND	1.8	07/12/23 15:56	
PFHpS	ng/L	ND	1.8	07/12/23 15:56	
PFHxDA	ng/L	ND	1.9	07/12/23 15:56	
PFNS	ng/L	ND	1.8	07/12/23 15:56	
PFODA	ng/L	ND	1.9	07/12/23 15:56	
PFOSA	ng/L	ND	1.9	07/12/23 15:56	
PFPeA	ng/L	ND	1.9	07/12/23 15:56	
PFPeS	ng/L	ND	1.8	07/12/23 15:56	
13C2-PFDoA (S)	%.	92	50-150	07/12/23 15:56	
13C2-PFTA (S)	%.	96	50-150	07/12/23 15:56	
13C24:2FTS (S)	%.	96	50-150	07/12/23 15:56	
13C26:2FTS (S)	%.	103	50-150	07/12/23 15:56	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

METHOD BLANK: 4677271 Matrix: Water
Associated Lab Samples: 10655049004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C28:2FTS (S)	%.	388	50-150	07/12/23 15:56	S3
13C2PFHxDA (S)	%.	82	50-150	07/12/23 15:56	
13C3-PFBS (S)	%.	97	50-150	07/12/23 15:56	
13C3-PFHxS (S)	%.	100	50-150	07/12/23 15:56	
13C3HFPO-DA (S)	%.	99	50-150	07/12/23 15:56	
13C4-PFBA (S)	%.	94	50-150	07/12/23 15:56	
13C4-PFHpA (S)	%.	96	50-150	07/12/23 15:56	
13C5-PFHxA (S)	%.	98	50-150	07/12/23 15:56	
13C5-PFPeA (S)	%.	97	50-150	07/12/23 15:56	
13C6-PFDA (S)	%.	113	50-150	07/12/23 15:56	
13C7-PFUdA (S)	%.	92	50-150	07/12/23 15:56	
13C8-PFOA (S)	%.	100	50-150	07/12/23 15:56	
13C8-PFOS (S)	%.	92	50-150	07/12/23 15:56	
13C8-PFOSA (S)	%.	79	50-150	07/12/23 15:56	
13C9-PFNA (S)	%.	93	50-150	07/12/23 15:56	
d3-MeFOSAA (S)	%.	85	50-150	07/12/23 15:56	
d3-NMeFOSA (S)	%.	60	10-150	07/12/23 15:56	
d5-EtFOSAA (S)	%.	89	50-150	07/12/23 15:56	
d5-NEtFOSA (S)	%.	61	10-150	07/12/23 15:56	
d7-NMeFOSE (S)	%.	78	10-150	07/12/23 15:56	
d9-NEtFOSE (S)	%.	76	10-150	07/12/23 15:56	

LABORATORY CONTROL SAMPLE & LCSD: 4677272 4678661

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
10:2 FTS	ng/L	3.9	1.4J	3.0	37	75	70-140		30	L2
11Cl-PF3OUdS	ng/L	3.8	3.4	3.2	90	84	70-140	4	30	
4:2 FTS	ng/L	3.8	3.6	3.3	95	86	63-143	8	30	
6:2 FTS	ng/L	3.8	3.1	3.3	82	85	64-140	5	30	
8:2 FTS	ng/L	3.9	3.5	3.3	91	83	67-138	7	30	
9Cl-PF3ONS	ng/L	3.8	3.4	3.2	89	85	70-140	3	30	
ADONA	ng/L	3.8	3.6	3.0	94	78	70-140	17	30	
HFPO-DA	ng/L	4	3.8	4.1	95	99	70-140	6	30	
NEtFOSA	ng/L	4	3.8	4.4	93	107	70-140	15	30	
NEtFOSAA	ng/L	4	3.8	3.9	94	95	61-135	3	30	
NEtFOSE	ng/L	4	3.8	4.4	94	107	70-140	15	30	
NMeFOSA	ng/L	4	3.9	4.3	97	105	68-141	9	30	
NMeFOSAA	ng/L	4	3.9	3.7	96	89	65-136	5	30	
NMeFOSE	ng/L	4	3.8	4.2	94	103	70-140	11	30	
Perfluorobutanesulfonic acid	ng/L	3.5	4.0	3.9	114	107	72-130	5	30	
Perfluorodecanoic acid	ng/L	4	4.0	3.9	99	95	71-129	2	30	
Perfluorododecanoic acid	ng/L	4	3.7	3.7	93	90	72-134	2	30	
Perfluoroheptanoic acid	ng/L	4	3.9	3.8	97	93	72-130	3	30	
Perfluorohexanesulfonic acid	ng/L	3.7	3.5	3.4	95	90	68-131	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

LABORATORY CONTROL SAMPLE & LCSD: 4677272 4678661

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Perfluorohexanoic acid	ng/L	4	4.2	4.1	104	101	72-129	1	30	
Perfluorononanoic acid	ng/L	4	3.9	3.9	97	94	69-130	1	30	
Perfluorooctanesulfonic acid	ng/L	3.7	4.2	4.2	112	111	65-140	1	30	
Perfluorooctanoic acid	ng/L	4	3.9	4.0	97	96	71-133	2	30	
Perfluorotetradecanoic acid	ng/L	4	3.8	3.7	96	91	71-132	3	30	
Perfluorotridecanoic acid	ng/L	4	3.5	4.0	88	98	65-144	13	30	
Perfluoroundecanoic acid	ng/L	4	4.0	3.7	99	91	69-133	6	30	
PFBA	ng/L	4	4.4	4.0	109	98	73-129	9	30	
PFDoS	ng/L	3.9	3.1	3.1	79	79	60-140	2	30	
PFDS	ng/L	3.9	3.6	3.5	93	89	53-142	2	30	
PFHpS	ng/L	3.8	3.7	3.7	96	94	69-134	1	30	
PFHxDA	ng/L	4	3.9	4.5	97	111	70-140	16	30	
PFNS	ng/L	3.9	3.7	3.4	97	87	69-127	9	30	
PFODA	ng/L	4	4.0	3.8	101	92	60-140	8	30	
PFOSA	ng/L	4	4.2	3.9	105	95	67-137	9	30	
PFPeA	ng/L	4	3.9	3.8	97	93	72-129	2	30	
PFPeS	ng/L	3.8	3.5	3.5	93	90	71-127	2	30	
13C2-PFDoA (S)	%.				94	104	50-150			
13C2-PFTA (S)	%.				89	94	50-150			
13C24:2FTS (S)	%.				95	97	50-150			
13C26:2FTS (S)	%.				99	97	50-150			
13C28:2FTS (S)	%.				421	136	50-150			S0
13C2PFHxDA (S)	%.				73	74	50-150			
13C3-PFBS (S)	%.				96	92	50-150			
13C3-PFHxS (S)	%.				96	101	50-150			
13C3HFPO-DA (S)	%.				93	90	50-150			
13C4-PFBA (S)	%.				90	97	50-150			
13C4-PFHpA (S)	%.				94	100	50-150			
13C5-PFHxA (S)	%.				95	96	50-150			
13C5-PFPeA (S)	%.				93	95	50-150			
13C6-PFDA (S)	%.				106	107	50-150			
13C7-PFUdA (S)	%.				90	106	50-150			
13C8-PFOA (S)	%.				95	119	50-150			
13C8-PFOS (S)	%.				93	111	50-150			
13C8-PFOSA (S)	%.				68	89	50-150			
13C9-PFNA (S)	%.				96	115	50-150			
d3-MeFOSAA (S)	%.				84	97	50-150			
d3-NMeFOSA (S)	%.				55	66	10-150			
d5-EtFOSAA (S)	%.				88	94	50-150			
d5-NEtFOSA (S)	%.				62	68	10-150			
d7-NMeFOSE (S)	%.				72	71	10-150			
d9-NEtFOSE (S)	%.				76	63	10-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

MATRIX SPIKE SAMPLE: 4678662

Parameter	Units	10656014001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
10:2 FTS	ng/L	ND	4	2.1	53	70-130	M0
11Cl-PF3OUdS	ng/L	ND	3.9	2.8	72	70-130	
4:2 FTS	ng/L	ND	3.9	3.8	98	70-130	
6:2 FTS	ng/L	ND	4	3.6	91	70-130	
8:2 FTS	ng/L	ND	4	3.6	89	70-130	
9Cl-PF3ONS	ng/L	ND	3.9	3.2	83	70-130	
ADONA	ng/L	ND	3.9	3.7	94	70-130	
HFPO-DA	ng/L	ND	4.2	4.1	99	70-130	
NEtFOSA	ng/L	ND	4.2	3.5	83	70-130	
NEtFOSAA	ng/L	ND	4.2	3.2	78	70-130	
NEtFOSE	ng/L	ND	4.2	3.8	90	70-130	
NMeFOSA	ng/L	ND	4.2	3.6	86	70-130	
NMeFOSAA	ng/L	ND	4.2	4.2	102	70-130	
NMeFOSE	ng/L	ND	4.2	3.4	81	70-130	
Perfluorobutanesulfonic acid	ng/L	26.3	3.7	31.6	142	70-130	M1
Perfluorodecanoic acid	ng/L	ND	4.2	4.1	95	70-130	
Perfluorododecanoic acid	ng/L	ND	4.2	4.3	103	70-130	
Perfluoroheptanoic acid	ng/L	79.0	4.2	79.5	12	70-130	M1
Perfluorohexanesulfonic acid	ng/L	87.4	3.8	88.4	27	70-130	M1
Perfluorohexanoic acid	ng/L	190	4.2	190	-17	70-130	M1
Perfluorononanoic acid	ng/L	ND	4.2	5.4	95	70-130	
Perfluorooctanesulfonic acid	ng/L	6.5	3.9	10.1	93	70-130	
Perfluorooctanoic acid	ng/L	126	4.2	126	5	70-130	M1
Perfluorotetradecanoic acid	ng/L	ND	4.2	3.9	93	70-130	
Perfluorotridecanoic acid	ng/L	ND	4.2	4.1	98	70-130	
Perfluoroundecanoic acid	ng/L	ND	4.2	3.9	93	70-130	
PFBA	ng/L	142	4.2	142	-6	70-130	M1
PFDoS	ng/L	ND	4	3.3	81	70-130	
PFDS	ng/L	ND	4	3.8	94	70-130	
PFHpS	ng/L	ND	4	4.9	105	70-130	
PFHxDA	ng/L	ND	4.2	4.2	96	70-130	
PFNS	ng/L	ND	4	3.4	86	70-130	
PFODA	ng/L	ND	4.2	4.8	108	70-130	
PFOSA	ng/L	ND	4.2	3.9	94	70-130	
PFPeA	ng/L	245	4.2	237	-194	70-130	M1
PFPeS	ng/L	15.9	3.9	20.3	114	70-130	
13C2-PFDoA (S)	%.				83	50-150	
13C2-PFTA (S)	%.				79	50-150	
13C24:2FTS (S)	%.				191	50-150	S0
13C26:2FTS (S)	%.				195	50-150	S0
13C28:2FTS (S)	%.				221	50-150	S0
13C2PFHxDA (S)	%.				66	50-150	
13C3-PFBS (S)	%.				93	50-150	
13C3-PFHxS (S)	%.				101	50-150	
13C3HFPO-DA (S)	%.				90	50-150	
13C4-PFBA (S)	%.				33	50-150	S0
13C4-PFHpA (S)	%.				97	50-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

MATRIX SPIKE SAMPLE: 4678662

Parameter	Units	10656014001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
13C5-PFHxA (S)	%.				91	50-150	
13C5-PFPeA (S)	%.				75	50-150	
13C6-PFDA (S)	%.				100	50-150	
13C7-PFUdA (S)	%.				93	50-150	
13C8-PFOA (S)	%.				97	50-150	
13C8-PFOS (S)	%.				103	50-150	
13C8-PFOSA (S)	%.				73	50-150	
13C9-PFNA (S)	%.				102	50-150	
d3-MeFOSAA (S)	%.				78	50-150	
d3-NMeFOSA (S)	%.				33	10-150	
d5-EtFOSAA (S)	%.				89	50-150	
d5-NEtFOSA (S)	%.				30	10-150	
d7-NMeFOSE (S)	%.				64	10-150	
d9-NEtFOSE (S)	%.				58	10-150	

SAMPLE DUPLICATE: 4678663

Parameter	Units	10656014002 Result	Dup Result	RPD	Max RPD	Qualifiers
10:2 FTS	ng/L	ND	ND		30	
11Cl-PF3OUdS	ng/L	ND	ND		30	
4:2 FTS	ng/L	ND	ND		30	
6:2 FTS	ng/L	ND	ND		30	
8:2 FTS	ng/L	ND	ND		30	
9Cl-PF3ONS	ng/L	ND	ND		30	
ADONA	ng/L	ND	ND		30	
HFPO-DA	ng/L	ND	ND		30	
NEtFOSA	ng/L	ND	ND		30	
NEtFOSAA	ng/L	ND	ND		30	
NEtFOSE	ng/L	ND	ND		30	
NMeFOSA	ng/L	ND	ND		30	
NMeFOSAA	ng/L	ND	ND		30	
NMeFOSE	ng/L	ND	ND		30	
Perfluorobutanesulfonic acid	ng/L	ND	ND		30	
Perfluorodecanoic acid	ng/L	ND	ND		30	
Perfluorododecanoic acid	ng/L	ND	ND		30	
Perfluoroheptanoic acid	ng/L	ND	ND		30	
Perfluorohexanesulfonic acid	ng/L	ND	ND		30	
Perfluorohexanoic acid	ng/L	ND	ND		30	
Perfluorononanoic acid	ng/L	ND	ND		30	
Perfluorooctanesulfonic acid	ng/L	ND	ND		30	
Perfluorooctanoic acid	ng/L	ND	ND		30	
Perfluorotetradecanoic acid	ng/L	ND	ND		30	
Perfluorotridecanoic acid	ng/L	ND	ND		30	
Perfluoroundecanoic acid	ng/L	ND	ND		30	
PFBA	ng/L	ND	ND		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

SAMPLE DUPLICATE: 4678663

Parameter	Units	10656014002 Result	Dup Result	RPD	Max RPD	Qualifiers
PFDoS	ng/L	ND	ND		30	
PFDS	ng/L	ND	ND		30	
PFHpS	ng/L	ND	ND		30	
PFHxDA	ng/L	ND	ND		30	
PFNS	ng/L	ND	ND		30	
PFODA	ng/L	ND	ND		30	
PFOSA	ng/L	ND	ND		30	
PFPeA	ng/L	ND	ND		30	
PFPeS	ng/L	ND	ND		30	
13C2-PFDoA (S)	%.	87	93			
13C2-PFTA (S)	%.	82	83			
13C24:2FTS (S)	%.	101	122			
13C26:2FTS (S)	%.	110	119			
13C28:2FTS (S)	%.	253	351			S3
13C2PFHxDA (S)	%.	70	74			
13C3-PFBS (S)	%.	98	114			
13C3-PFHxS (S)	%.	100	113			
13C3HFPO-DA (S)	%.	95	109			
13C4-PFBA (S)	%.	84	99			
13C4-PFHpA (S)	%.	95	109			
13C5-PFHxA (S)	%.	93	110			
13C5-PFPeA (S)	%.	95	109			
13C6-PFDA (S)	%.	104	123			
13C7-PFUdA (S)	%.	90	99			
13C8-PFOA (S)	%.	101	116			
13C8-PFOS (S)	%.	100	112			
13C8-PFOSA (S)	%.	67	92			
13C9-PFNA (S)	%.	93	110			
d3-MeFOSAA (S)	%.	88	94			
d3-NMeFOSA (S)	%.	27	39			
d5-EtFOSAA (S)	%.	88	95			
d5-NEtFOSA (S)	%.	27	37			
d7-NMeFOSE (S)	%.	55	61			
d9-NEtFOSE (S)	%.	58	63			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

QC Batch:	887737	Analysis Method:	ENV-SOP-MIN4-0178
QC Batch Method:	ENV-SOP-MIN4-0178	Analysis Description:	PFAS Compounds, Water
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10655049011, 10655049013, 10655049014

METHOD BLANK: 4677688 Matrix: Water

Associated Lab Samples: 10655049011, 10655049013, 10655049014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ng/L	ND	1.9	07/13/23 23:56	
11Cl-PF3OUdS	ng/L	ND	1.9	07/13/23 23:56	
4:2 FTS	ng/L	ND	1.8	07/13/23 23:56	
6:2 FTS	ng/L	ND	1.9	07/13/23 23:56	
8:2 FTS	ng/L	ND	1.9	07/13/23 23:56	
9Cl-PF3ONS	ng/L	ND	1.8	07/13/23 23:56	
ADONA	ng/L	ND	1.9	07/13/23 23:56	
HFPO-DA	ng/L	ND	2.0	07/13/23 23:56	
NEtFOSA	ng/L	ND	2.0	07/13/23 23:56	
NEtFOSAA	ng/L	ND	2.0	07/13/23 23:56	
NEtFOSE	ng/L	ND	2.0	07/13/23 23:56	
NMeFOSA	ng/L	ND	2.0	07/13/23 23:56	
NMeFOSAA	ng/L	ND	2.0	07/13/23 23:56	
NMeFOSE	ng/L	ND	2.0	07/13/23 23:56	
Perfluorobutanesulfonic acid	ng/L	ND	1.7	07/13/23 23:56	
Perfluorodecanoic acid	ng/L	ND	2.0	07/13/23 23:56	
Perfluorododecanoic acid	ng/L	ND	2.0	07/13/23 23:56	
Perfluoroheptanoic acid	ng/L	ND	2.0	07/13/23 23:56	
Perfluorohexanesulfonic acid	ng/L	ND	1.8	07/13/23 23:56	
Perfluorohexanoic acid	ng/L	ND	2.0	07/13/23 23:56	
Perfluorononanoic acid	ng/L	ND	2.0	07/13/23 23:56	
Perfluorooctanesulfonic acid	ng/L	ND	1.8	07/13/23 23:56	
Perfluorooctanoic acid	ng/L	ND	2.0	07/13/23 23:56	
Perfluorotetradecanoic acid	ng/L	ND	2.0	07/13/23 23:56	
Perfluorotridecanoic acid	ng/L	ND	2.0	07/13/23 23:56	
Perfluoroundecanoic acid	ng/L	ND	2.0	07/13/23 23:56	
PFBA	ng/L	ND	2.0	07/13/23 23:56	
PFDoS	ng/L	ND	1.9	07/13/23 23:56	
PFDS	ng/L	ND	1.9	07/13/23 23:56	
PFHpS	ng/L	ND	1.9	07/13/23 23:56	
PFHxDA	ng/L	ND	2.0	07/13/23 23:56	
PFNS	ng/L	ND	1.9	07/13/23 23:56	
PFODA	ng/L	ND	2.0	07/13/23 23:56	
PFOSA	ng/L	ND	2.0	07/13/23 23:56	
PFPeA	ng/L	ND	2.0	07/13/23 23:56	
PFPeS	ng/L	ND	1.9	07/13/23 23:56	
13C2-PFDoA (S)	%.	117	50-150	07/13/23 23:56	
13C2-PFTA (S)	%.	117	50-150	07/13/23 23:56	
13C24:2FTS (S)	%.	109	50-150	07/13/23 23:56	
13C26:2FTS (S)	%.	115	50-150	07/13/23 23:56	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

METHOD BLANK: 4677688 Matrix: Water
Associated Lab Samples: 10655049011, 10655049013, 10655049014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C28:2FTS (S)	%.	242	50-150	07/13/23 23:56	S3
13C2PFHxDA (S)	%.	100	50-150	07/13/23 23:56	
13C3-PFBS (S)	%.	114	50-150	07/13/23 23:56	
13C3-PFHxS (S)	%.	115	50-150	07/13/23 23:56	
13C3HFPO-DA (S)	%.	112	50-150	07/13/23 23:56	
13C4-PFBA (S)	%.	109	50-150	07/13/23 23:56	
13C4-PFHpA (S)	%.	112	50-150	07/13/23 23:56	
13C5-PFHxA (S)	%.	113	50-150	07/13/23 23:56	
13C5-PFPeA (S)	%.	111	50-150	07/13/23 23:56	
13C6-PFDA (S)	%.	139	50-150	07/13/23 23:56	
13C7-PFUdA (S)	%.	123	50-150	07/13/23 23:56	
13C8-PFOA (S)	%.	117	50-150	07/13/23 23:56	
13C8-PFOS (S)	%.	107	50-150	07/13/23 23:56	
13C8-PFOSA (S)	%.	90	50-150	07/13/23 23:56	
13C9-PFNA (S)	%.	115	50-150	07/13/23 23:56	
d3-MeFOSAA (S)	%.	107	50-150	07/13/23 23:56	
d3-NMeFOSA (S)	%.	6	10-150	07/13/23 23:56	S0
d5-EtFOSAA (S)	%.	105	50-150	07/13/23 23:56	
d5-NEtFOSA (S)	%.	5	10-150	07/13/23 23:56	S0
d7-NMeFOSE (S)	%.	54	10-150	07/13/23 23:56	
d9-NEtFOSE (S)	%.	53	10-150	07/13/23 23:56	

LABORATORY CONTROL SAMPLE & LCSD: 4677689 4679242

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
10:2 FTS	ng/L	3.8	1.4J	3.3	37	87	70-140		30	L2
11Cl-PF3OUdS	ng/L	3.8	3.4	2.8	90	75	70-140	19	30	
4:2 FTS	ng/L	3.7	3.6	3.1	95	84	63-143	14	30	
6:2 FTS	ng/L	3.8	3.8	3.5	101	94	64-140	7	30	
8:2 FTS	ng/L	3.8	3.6	4.2	94	111	67-138	16	30	
9Cl-PF3ONS	ng/L	3.7	3.5	3.0	94	81	70-140	16	30	
ADONA	ng/L	3.8	3.3	2.8	87	74	70-140	16	30	
HFPO-DA	ng/L	4	3.6	3.8	90	97	70-140	7	30	
NEtFOSA	ng/L	4	3.5	ND	89	0	70-140		30	L2
NEtFOSAA	ng/L	4	3.2	3.3	81	84	61-135	4	30	
NEtFOSE	ng/L	4	3.4	3.4	86	85	70-140	2	30	
NMeFOSA	ng/L	4	3.0	ND	76	0	68-141		30	L2
NMeFOSAA	ng/L	4	3.9	3.6	98	91	65-136	8	30	
NMeFOSE	ng/L	4	3.2	4.0	80	101	70-140	23	30	
Perfluorobutanesulfonic acid	ng/L	3.5	3.2	3.1	92	89	72-130	4	30	
Perfluorodecanoic acid	ng/L	4	3.4	3.7	86	94	71-129	7	30	
Perfluorododecanoic acid	ng/L	4	3.5	4.0	87	102	72-134	15	30	
Perfluoroheptanoic acid	ng/L	4	3.8	3.6	94	90	72-130	6	30	
Perfluorohexanesulfonic acid	ng/L	3.7	3.2	3.3	87	92	68-131	5	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

LABORATORY CONTROL SAMPLE & LCSD: 4677689 4679242

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Perfluorohexanoic acid	ng/L	4	3.7	3.5	93	89	72-129	5	30	
Perfluorononanoic acid	ng/L	4	3.3	3.6	83	91	69-130	9	30	
Perfluorooctanesulfonic acid	ng/L	3.7	3.7	3.4	99	93	65-140	6	30	
Perfluorooctanoic acid	ng/L	4	3.7	3.7	92	94	71-133	2	30	
Perfluorotetradecanoic acid	ng/L	4	3.5	3.7	89	93	71-132	4	30	
Perfluorotridecanoic acid	ng/L	4	3.4	3.8	86	95	65-144	9	30	
Perfluoroundecanoic acid	ng/L	4	3.5	3.4	87	85	69-133	3	30	
PFBA	ng/L	4	3.7	3.6	92	91	73-129	2	30	
PFDoS	ng/L	3.9	3.2	2.7	81	70	60-140	15	30	
PFDS	ng/L	3.8	3.7	3.0	97	79	53-142	20	30	
PFHpS	ng/L	3.8	3.9	3.5	103	93	69-134	11	30	
PFHxDA	ng/L	4	3.5	4.3	88	109	70-140	20	30	
PFNS	ng/L	3.8	4.5	3.3	116	87	69-127	29	30	
PFODA	ng/L	4	1.3J	1J	33	26	60-140		30	L2
PFOSA	ng/L	4	3.7	3.6	93	90	67-137	3	30	
PFPeA	ng/L	4	3.6	3.5	91	89	72-129	4	30	
PFPeS	ng/L	3.7	3.5	3.2	93	87	71-127	8	30	
13C2-PFDoA (S)	%.				115	98	50-150			
13C2-PFTA (S)	%.				104	93	50-150			
13C24:2FTS (S)	%.				107	94	50-150			
13C26:2FTS (S)	%.				123	53	50-150			
13C28:2FTS (S)	%.				234	140	50-150			S0
13C2PFHxDA (S)	%.				69	53	50-150			
13C3-PFBS (S)	%.				115	95	50-150			
13C3-PFHxS (S)	%.				116	102	50-150			
13C3HFPO-DA (S)	%.				112	92	50-150			
13C4-PFBA (S)	%.				111	100	50-150			
13C4-PFHpA (S)	%.				112	102	50-150			
13C5-PFHxA (S)	%.				113	99	50-150			
13C5-PFPeA (S)	%.				112	98	50-150			
13C6-PFDA (S)	%.				134	107	50-150			
13C7-PFUdA (S)	%.				117	103	50-150			
13C8-PFOA (S)	%.				116	122	50-150			
13C8-PFOS (S)	%.				106	114	50-150			
13C8-PFOSA (S)	%.				75	70	50-150			
13C9-PFNA (S)	%.				119	121	50-150			
d3-MeFOSAA (S)	%.				97	90	50-150			
d3-NMeFOSA (S)	%.				2	1	10-150			S0
d5-EtFOSAA (S)	%.				105	92	50-150			
d5-NEtFOSA (S)	%.				2	1	10-150			S0
d7-NMeFOSE (S)	%.				34	30	10-150			
d9-NEtFOSE (S)	%.				31	25	10-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

MATRIX SPIKE SAMPLE: 4679244

Parameter	Units	10655049014 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
10:2 FTS	ng/L	ND	3.9	1.3J	34	70-130	M0
11Cl-PF3OUdS	ng/L	ND	3.9	3.4	89	70-130	
4:2 FTS	ng/L	ND	3.8	3.5	92	70-130	
6:2 FTS	ng/L	ND	3.9	4.0	104	70-130	
8:2 FTS	ng/L	ND	3.9	3.4	87	70-130	
9Cl-PF3ONS	ng/L	ND	3.8	3.5	93	70-130	
ADONA	ng/L	ND	3.9	3.3	87	70-130	
HFPO-DA	ng/L	ND	4.1	3.6	89	70-130	
NEtFOSA	ng/L	ND	4.1	ND	0	70-130	M1
NEtFOSAA	ng/L	ND	4.1	3.8	92	70-130	
NEtFOSE	ng/L	ND	4.1	3.3	79	70-130	
NMeFOSA	ng/L	ND	4.1	ND	0	70-130	M1
NMeFOSAA	ng/L	ND	4.1	3.7	92	70-130	
NMeFOSE	ng/L	ND	4.1	3.3	81	70-130	
Perfluorobutanesulfonic acid	ng/L	ND	3.6	3.3	92	70-130	
Perfluorodecanoic acid	ng/L	ND	4.1	3.6	88	70-130	
Perfluorododecanoic acid	ng/L	ND	4.1	3.8	93	70-130	
Perfluoroheptanoic acid	ng/L	ND	4.1	3.9	95	70-130	
Perfluorohexanesulfonic acid	ng/L	ND	3.7	3.5	92	70-130	
Perfluorohexanoic acid	ng/L	ND	4.1	3.8	94	70-130	
Perfluorononanoic acid	ng/L	ND	4.1	3.5	85	70-130	
Perfluorooctanesulfonic acid	ng/L	ND	3.8	3.5	93	70-130	
Perfluorooctanoic acid	ng/L	ND	4.1	3.7	89	70-130	
Perfluorotetradecanoic acid	ng/L	ND	4.1	3.8	93	70-130	
Perfluorotridecanoic acid	ng/L	ND	4.1	3.9	95	70-130	
Perfluoroundecanoic acid	ng/L	ND	4.1	3.7	90	70-130	
PFBA	ng/L	ND	4.1	3.7	91	70-130	
PFDoS	ng/L	ND	4	3.3	84	70-130	
PFDS	ng/L	ND	3.9	3.6	92	70-130	
PFHpS	ng/L	ND	3.9	3.9	99	70-130	
PFHxDA	ng/L	ND	4.1	3.8	90	70-130	
PFNS	ng/L	ND	3.9	3.9	101	70-130	
PFODA	ng/L	ND	4.1	1J	25	70-130	M0
PFOSA	ng/L	ND	4.1	3.6	88	70-130	
PFPeA	ng/L	ND	4.1	3.8	93	70-130	
PFPeS	ng/L	ND	3.8	3.6	93	70-130	
13C2-PFDoA (S)	%.				118	50-150	
13C2-PFTA (S)	%.				115	50-150	
13C24:2FTS (S)	%.				116	50-150	
13C26:2FTS (S)	%.				116	50-150	
13C28:2FTS (S)	%.				273	50-150	S0
13C2PFHxDA (S)	%.				82	50-150	
13C3-PFBS (S)	%.				115	50-150	
13C3-PFHxS (S)	%.				116	50-150	
13C3HFPO-DA (S)	%.				112	50-150	
13C4-PFBA (S)	%.				109	50-150	
13C4-PFHpA (S)	%.				113	50-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

MATRIX SPIKE SAMPLE: 4679244

Parameter	Units	10655049014 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
13C5-PFHxA (S)	%.				112	50-150	
13C5-PFPeA (S)	%.				111	50-150	
13C6-PFDA (S)	%.				143	50-150	
13C7-PFUdA (S)	%.				120	50-150	
13C8-PFOA (S)	%.				117	50-150	
13C8-PFOS (S)	%.				111	50-150	
13C8-PFOSA (S)	%.				53	50-150	
13C9-PFNA (S)	%.				124	50-150	
d3-MeFOSAA (S)	%.				104	50-150	
d3-NMeFOSA (S)	%.				0	10-150	S0
d5-EtFOSAA (S)	%.				98	50-150	
d5-NEtFOSA (S)	%.				0	10-150	S0
d7-NMeFOSE (S)	%.				11	10-150	
d9-NEtFOSE (S)	%.				7	10-150	S0

SAMPLE DUPLICATE: 4679247

Parameter	Units	10655486003 Result	Dup Result	RPD	Max RPD	Qualifiers
10:2 FTS	ng/L	ND	ND		30	
11Cl-PF3OUdS	ng/L	ND	ND		30	
4:2 FTS	ng/L	ND	ND		30	
6:2 FTS	ng/L	ND	ND		30	
8:2 FTS	ng/L	ND	ND		30	
9Cl-PF3ONS	ng/L	ND	ND		30	
ADONA	ng/L	ND	ND		30	
HFPO-DA	ng/L	ND	ND		30	
NEtFOSA	ng/L	ND	ND		30	
NEtFOSAA	ng/L	185	304	49	30	D6
NEtFOSE	ng/L	ND	ND		30	
NMeFOSA	ng/L	ND	ND		30	
NMeFOSAA	ng/L	ND	ND		30	
NMeFOSE	ng/L	ND	ND		30	
Perfluorobutanesulfonic acid	ng/L	ND	ND		30	
Perfluorodecanoic acid	ng/L	ND	ND		30	
Perfluorododecanoic acid	ng/L	ND	ND		30	
Perfluoroheptanoic acid	ng/L	ND	ND		30	
Perfluorohexanesulfonic acid	ng/L	ND	ND		30	
Perfluorohexanoic acid	ng/L	ND	ND		30	
Perfluorononanoic acid	ng/L	ND	ND		30	
Perfluorooctanesulfonic acid	ng/L	503	675	29	30	
Perfluorooctanoic acid	ng/L	ND	12.8J		30	
Perfluorotetradecanoic acid	ng/L	ND	ND		30	
Perfluorotridecanoic acid	ng/L	ND	ND		30	
Perfluoroundecanoic acid	ng/L	ND	ND		30	
PFBA	ng/L	ND	ND		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

SAMPLE DUPLICATE: 4679247

Parameter	Units	10655486003 Result	Dup Result	RPD	Max RPD	Qualifiers
PFDoS	ng/L	ND	ND		30	
PFDS	ng/L	ND	ND		30	
PFHpS	ng/L	ND	ND		30	
PFHxDA	ng/L	ND	ND		30	
PFNS	ng/L	ND	ND		30	
PFODA	ng/L	ND	ND		30	
PFOSA	ng/L	ND	12.8J		30	
PFPeA	ng/L	ND	ND		30	
PFPeS	ng/L	ND	ND		30	
13C2-PFDoA (S)	%.	92	89			
13C2-PFTA (S)	%.	86	80			
13C24:2FTS (S)	%.	95	101			
13C26:2FTS (S)	%.	101	123			
13C28:2FTS (S)	%.	111	111			
13C2PFHxDA (S)	%.	67	61			
13C3-PFBS (S)	%.	102	91			
13C3-PFHxS (S)	%.	107	96			
13C3HFPO-DA (S)	%.	93	87			
13C4-PFBA (S)	%.	89	84			
13C4-PFHpA (S)	%.	100	93			
13C5-PFHxA (S)	%.	98	91			
13C5-PFPeA (S)	%.	95	88			
13C6-PFDA (S)	%.	103	104			
13C7-PFUdA (S)	%.	91	84			
13C8-PFOA (S)	%.	107	99			
13C8-PFOS (S)	%.	90	90			
13C8-PFOSA (S)	%.	58	51			
13C9-PFNA (S)	%.	103	105			
d3-MeFOSAA (S)	%.	78	80			
d3-NMeFOSA (S)	%.	0	2			S4
d5-EtFOSAA (S)	%.	87	77			
d5-NEtFOSA (S)	%.	2	1			S4
d7-NMeFOSE (S)	%.	18	16			
d9-NEtFOSE (S)	%.	18	16			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

WORKORDER QUALIFIERS

WO: 10655049

[1]	The samples were received outside of required temperature range. Analysis was completed upon client approval.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 32-23004694 Gresham Fire Stati
Pace Project No.: 10655049

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10655049001	**S-1**	ASTM D2974	889873		
10655049002	**S-1 DUP**	ASTM D2974	889873		
10655049003	**S-2**	ASTM D2974	889873		
10655049005	**S-3**	ASTM D2974	889873		
10655049006	**S-4**	ASTM D2974	889873		
10655049007	**S-4 DUP**	ASTM D2974	889873		
10655049008	**G-1**	ASTM D2974	889873		
10655049009	**G-1 DUP**	ASTM D2974	889873		
10655049010	**G-2**	ASTM D2974	889873		
10655049012	**IDW-Soil**	ASTM D2974	889873		
10655049001	**S-1**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049002	**S-1 DUP**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049003	**S-2**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049005	**S-3**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049006	**S-4**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049007	**S-4 DUP**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049008	**G-1**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049009	**G-1 DUP**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049010	**G-2**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049012	**IDW-Soil**	ENV-SOP-MIN4-0178	884118	ENV-SOP-MIN4-0178	887761
10655049004	**S-2**	ENV-SOP-MIN4-0178	887636	ENV-SOP-MIN4-0178	891634
10655049011	**Rinsate-Soil**	ENV-SOP-MIN4-0178	887737	ENV-SOP-MIN4-0178	893601
10655049013	**IDW-Water**	ENV-SOP-MIN4-0178	887737	ENV-SOP-MIN4-0178	893601
10655049014	**Rinsate GW1**	ENV-SOP-MIN4-0178	887737	ENV-SOP-MIN4-0178	893601

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Agency, Authorized Purchaser or Agent: Oregon DEQ

Send Lab Report To:
Address: Katie Daugherty
700 NE Multnomah St,
Suite 600
Portland, OR 97232

E-mail: katie.daugherty@deq.oregon.gov

Contract Laboratory Name: Pace Minneapolis

Lab Batch #:

Invoice To: ODEQ/Business Office
Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232

Tel. #: (800) 452-4011

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☐ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Project Name: **Gresham Fire Station SSA**
Project #: **32-23004694**

Sample ID#	Collection Date/Time	Matrix	Number of Containers	Sample Preservative	Requested Analyses: PFAS (EPA 537)	Comments
S-1 (5)	5/25/23 0850	S	1		X	(5) Omitted from labels. Please report with (5) added. Do not EDDs.
S-1 DUP (5)	5/25/23 1245	S	1		X	
S-2 (5)	5/25/23 1728	S	1		X	
S-2	5/25/23 1700	W	2		X	
S-3 (5)	5/24/23 1450	S	1		X	
S-4 (5)	5/24/23 0937	S	1		X	
S4 DUP (5)	5/24/23 1245	S	1		X	
G-1 (5)	5/25/23 1420	S	1		X	
G-1 DUP (5)	5/25/23 1345	S	1		X	
G-2 (5)	5/25/23 1345	S	1		X	
Rinsate- Soil	5/25/23 1245 1130	W	2		X	
IDW- Soil (5)	5/25/23 1315	S	1		X	

001 002 003 004 005 006 007 008 009 010 011 012

WO# : 10655049

10655049

Notes: Report Results to: MStevens@apexcos.com; Kelsi.Evans@apexcos.com; cowens@apexcos.com; katie.daugherty@deq.oregon.gov
Bill to: Katie Daugherty, katie.daugherty@deq.oregon.gov

Relinquished By: Robert Schuth	Agency/Agent: Apex Companies	Received By: M Uffen	Agency:
Signature:	Time & Date: 1800 5/25/23	Signature: M Uffen	Time & Date: 5/27/23 920
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #**102-1098-07** AND PRICE AGREEMENT # **8903**. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

(5)
8-VJ

Agency, Authorized Purchaser or Agent: Oregon DEQ

Send Lab Report To:
Address: Katie Daugherty
700 NE Multnomah St,
Suite 600
Portland, OR 97232

E-mail: katie.daugherty@deq.oregon.gov

Contract Laboratory Name: Pace Minneapolis
Lab Batch #:

Invoice To: ODEQ/Business Office
Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232
Tel. #: (800) 452-4011

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☐ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Project Name: **Gresham Fire Station SSA**
Project #: **32-23004694**

Sample ID#	Collection Date/Time	Matrix	Number of Containers	Sample Preservative	Requested Analyses: PFAS (EPA 537)	Comments
IDW- Water	5/25/23 1330	W	2		X	013
Rinsate GW1	5/25/23 1300	W	2		X	014

Notes: Report Results to: MStevens@apexcos.com; Kelsi.Evans@apexcos.com; cowens@apexcos.com; katie.daugherty@deq.oregon.gov
Bill to: Katie Daugherty, katie.daugherty@deq.oregon.gov

Relinquished By: Rhett Schell	Agency/Agent: Apex Companies	Received By: Michael M	Agency:
Signature:	Time & Date: 1800 5/25/23	Signature:	Time & Date: 5/27/23 920
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION **#102-1098-07** AND PRICE AGREEMENT **# 8903**. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

8.4

Pace ANALYTICAL SERVICES	**DC#_Title: ENV-FRM-MIN4-0154 v02_USDA Regulated Soil Checklist**
	Effective Date: 08/19/2022

USDA Regulated Soil Checklist

To be Completed by Sample Receiving:

WO: 10655049 **Date:** 5/30/23 **Initials:** MS

Sample Origin (check one): ☑ DOMESTIC ☐ QUARANTINED ☐ FOREIGN

NOTE: Soil samples from Hawaii, Guam, Puerto Rico, and the US Virgin Islands are Foreign originated.

If **DOMESTIC**, circle state of origin: AL AR AZ CA FL GA LA MS NC NM NY OK (OR) SC TN TX VA

Includes: IFA, SOD, Golden Nematode, Karnal Bunt, and Witchweed List County: Multnomah

(USDA Permit/Compliance Agreement authorizes movement of samples from these domestic regulated zones)

If **QUARANTINED**, circle state of origin: CA ID NY TX

Includes: Fruit Fly and Pale Cyst Nematode List County: _____

(Movement is not authorized for Pale Cyst Nematode (ID)—remaining quarantines require additional paperwork)

If **FOREIGN**, list country of origin: _____

(Movement from some Canadian Provinces is not allowed. Refer to ENV-FRM-MIN4-0137 *Regulated Soil Flow Chart*)

REQUIREMENT	ACTION	COMPLETED		
PPQ-530 Paperwork must be included for any samples from counties with a Fruit Fly Quarantine in CA, NY, and TX. Reference ENV-SOP-MIN4-0095.	Scan PPQ-530 to the corresponding Project folder on the X:drive. If PPQ-530 is not present, contact the laboratory's designated USDA permit holder. **Do NOT continue processing samples.**	YES	NO	(N/A)
Samples from ID may not be moved from the quarantined region. Reference ENV-SOP-MIN4-0095.	If samples originated in a quarantined zone, contact the laboratory's designated USDA permit holder. **Do NOT continue processing samples.**	YES	NO	(N/A)

REQUIREMENT	ACTION	COMPLETED		
"Special Handling" stickers are to be placed on all samples.	Did "special handling" stickers get placed on all sample containers?	YES	NO	(N/A)
Samples must be segregated and stored in designated bins, shelves, and coolers.	Were samples placed in a designated cooler, containers, and shelves?	YES	NO	(N/A)
Samples must be double contained to prevent accidental release.	Were there any signs of breakage or leakage (check for broken glass and/or loose soil in the cooler)? *NOTE: If NO, ice and melt water can be disposed of by normal process (ex: down the drain).*	YES	NO	(N/A)
	If **YES**, were ice and melt water separated from the cooler and disposed of properly?	YES	NO	(N/A)
	Any broken glass and/or loose soil are to be bagged and placed in a USDA Regulated satellite container or active drum (see Waste Coordinator). **Ice and melt water should be baked at a temperature range of 121-154°F for 2 hours and then cooled before going down the drain.**			
Equipment and supplies that have come into contact samples must be decontaminated.	Was the cooler(s) and/or countertop(s) decontaminated using either a fresh 10% bleach solution or 70% ethanol? (Gloves and other lab supplies will be bagged and placed in the USDA Regulated satellite container or active drum).	YES	(NO)	

COMMENTS:

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-MIN4-0154 v02_USDA Regulated Soil Checklist
	Effective Date: 08/19/2022

To be Completed by Project Management (PM and/or PC):

Sample analysis will be conducted (circle all that apply): (MN) Subcontract Lab

If **subcontract**, list lab(s): _____

REQUIREMENT	ACTION	COMPLETED		
Permission to ship untreated soil must be on file prior to shipping to any subcontract lab, including IR Pace Labs.	Go to: *S:\CLIENTSVR\10_Client Services Department Documents\Regulated Soils Permits\Permission to Ship* If permission to ship letter is not there, contact the laboratory's designated USDA permit holder.	YES	NO	(N/A)
Shipment must include a valid copy of the receiving lab's permit as well as permission to ship letter.	Is a copy of all needed paperwork included with the COC? **Do NOT ship samples until all necessary paperwork is compiled.**	YES	NO	(N/A)

COMMENTS:

PM Signature: Kirsten Hoffberg **Date:** 5/30/2023

Sample Condition Upon Receipt

Client Name: Oregon DEQ

Project #: WO#: 10655049

PM: KNH Due Date: 06/13/23
CLIENT: Oregon DEQ

Courier: ☑ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 7722 6087 9406 ☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other **Temp Blank?** ☐ Yes ☑ No

Thermometer: ☐ T1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☑ T7 (0042) ☐ T8 (0775) ☐ T9(0727) ☐ 01339252/1710

Type of Ice: ☑ Wet ☑ Blue ☐ Dry ☐ None ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☑ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6 °C **Cooler temp Read w/Temp Blank:** _____ °C

Correction Factor: +.1 **Cooler Temp Corrected w/temp blank:** _____ °C

Average Corrected Temp (no temp blank only): 8.4 °C

☑ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/other: _____)

Date/Initials of Person Examining Contents: 5/30/23 MS

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☑ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): ☐ Duluth ☑ Minneapolis ☐ Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☐ Yes	☑ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Sample Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☑ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
Matrix: ☑ Water ☑ Soil ☐ Oil ☐ Other				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	☐ Yes	☐ No	☑ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142 **pH Paper Lot #** Residual Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Kirsten Hogberg **Date:** 5/30/2023

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: ML 5 **Line:** 2

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form
	Effective Date: 09/22/2022

Workorder #: 10655049

No Temp Blank		
Read Temp	Corrected Temp	Average temp
8.9	9.0	
8.1	8.2	8.4
9.1	9.2	
7.1	7.2	

PM Notified of Out of Temp Cooler? ☐ Yes ☐ No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

Multiple Cooler Project? ☐ Yes ☐ No

If anything is OVER 6.0° C, you MUST document containers in this section HERE

Tracking Number	Temperature

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	

Comments:

Qualtrax ID: 52763

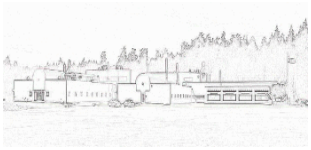
Appendix D

Analytical Reports

VOCs, SVOCs, and PCBs

DRAFT

Gresham Fire Training Center
SEMS No. ORN001020774



US EPA Region 10 Laboratory

Multi-Analyte Final Report

Project Code : SFP-187A
Site : GRESHAM FIRE TRAINING: Extended Preliminary Assessment
Contact : Ken Marcy
Account : 2023T10P000FD210ZZLA00

Sample : 23214100

Information : Field Sample/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 8:30:00AM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.2	ug/kg	U	6/ 5/23	1
71556	1,1,1-Trichloroethane	1.2	ug/kg	U	6/ 5/23	1
79005	1,1,2-Trichloroethane	1.2	ug/kg	U	6/ 5/23	1
75343	1,1-Dichloroethane	1.2	ug/kg	U	6/ 5/23	1
75354	1,1-Dichloroethene	1.2	ug/kg	U	6/ 5/23	1
87616	1,2,3-Trichlorobenzene	1.2	ug/kg	U	6/ 5/23	1
96184	1,2,3-Trichloropropane	1.2	ug/kg	U	6/ 5/23	1
120821	1,2,4-Trichlorobenzene	1.2	ug/kg	U	6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	1.2	ug/kg	U	6/ 5/23	1
107062	1,2-Dichloroethane	1.2	ug/kg	U	6/ 5/23	1
78875	1,2-Dichloropropane	1.2	ug/kg	U	6/ 5/23	1
78933	2-Butanone	1.2	ug/kg	U	6/ 5/23	1
591786	2-Hexanone	1.2	ug/kg	U	6/ 5/23	1
108101	2-Pentanone, 4-methyl-	1.2	ug/kg	U	6/ 5/23	1
67641	2-Propanone	2.4	ug/kg	U	6/ 5/23	1
79209	Acetic acid, methyl ester	1.2	ug/kg	U	6/ 5/23	1
107131	Acrylonitrile	1.2	ug/kg	U	6/ 5/23	1
71432	Benzene	1.2	ug/kg	U	6/ 5/23	1
98828	Benzene, (1-methylethyl)-	1.2	ug/kg	U	6/ 5/23	1
95636	Benzene, 1,2,4-trimethyl-	1.2	ug/kg	U	6/ 5/23	1
95501	Benzene, 1,2-dichloro-	1.2	ug/kg	U	6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	1.2	ug/kg	U	6/ 5/23	1
541731	Benzene, 1,3-dichloro-	1.2	ug/kg	U	6/ 5/23	1
106467	Benzene, 1,4-dichloro-	1.2	ug/kg	U	6/ 5/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.2	ug/kg	U	6/ 5/23	1
108907	Benzene, chloro-	1.2	ug/kg	U	6/ 5/23	1
100425	Benzene, ethenyl-	1.2	ug/kg	U	6/ 5/23	1
103651	Benzene, propyl-, (103651)	1.2	ug/kg	U	6/ 5/23	1
98066	Benzene, tert-butyl-	1.2	ug/kg	U	6/ 5/23	1
74975	Bromochloromethane	1.2	ug/kg	U	6/ 5/23	1

Target Analyte Results (cont.):

75274	Bromodichloromethane	1.2	ug/kg	U	6/ 5/23	1
75252	Bromoform	1.2	ug/kg	U	6/ 5/23	1
74839	Bromomethane	2.4	ug/kg	U	6/ 5/23	1
75150	Carbon disulfide	1.2	ug/kg	U	6/ 5/23	1
56235	Carbon Tetrachloride	1.2	ug/kg	U	6/ 5/23	1
156592	cis-1,2-Dichloroethene	1.2	ug/kg	U	6/ 5/23	1
10061015	cis-1,3-Dichloropropene	1.2	ug/kg	U	6/ 5/23	1
110827	Cyclohexane	1.2	ug/kg	U	6/ 5/23	1
108872	Cyclohexane, methyl-	1.2	ug/kg	U	6/ 5/23	1
124481	Dibromochloromethane	1.2	ug/kg	U	6/ 5/23	1
74953	Dibromomethane	1.2	ug/kg	U	6/ 5/23	1
75092	Dichloromethane	1.2	ug/kg	U	6/ 5/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.2	ug/kg	U	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	1.2	ug/kg	U	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.2	ug/kg	U	6/ 5/23	1
79016	Ethene, trichloro-	1.2	ug/kg	U	6/ 5/23	1
75003	Ethyl Chloride	1.2	ug/kg	U	6/ 5/23	1
100414	Ethylbenzene	1.2	ug/kg	U	6/ 5/23	1
75694	Freon 11	1.2	ug/kg	U	6/ 5/23	1
76131	Freon 113	1.2	ug/kg	U	6/ 5/23	1
75718	Freon 12	2.4	ug/kg	U	6/ 5/23	1
87683	Hexachlorobutadiene	1.2	ug/kg	U	6/ 5/23	1
74873	Methane, chloro-	1.2	ug/kg	U	6/ 5/23	1
67663	Methane, trichloro-	1.2	ug/kg	U	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	1.2	ug/kg	U	6/ 5/23	1
*1330207	MP-Xylene	2.4	ug/kg	U	6/ 5/23	1
91203	Naphthalene	1.2	ug/kg	U	6/ 5/23	1
104518	n-Butylbenzene	1.2	ug/kg	U	6/ 5/23	1
95476	o-Xylene	1.2	ug/kg	U	6/ 5/23	1
135988	sec-Butylbenzene	1.2	ug/kg	U	6/ 5/23	1
127184	Tetrachloroethene	1.2	ug/kg	U	6/ 5/23	1
108883	Toluene	1.2	ug/kg	U	6/ 5/23	1
10061026	Trans-1,3-Dichloropropene	1.2	ug/kg	U	6/ 5/23	1
75014	Vinyl Chloride	1.2	ug/kg	U	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	104	%Rec		6/ 5/23	1
460004	p-Bromofluorobenzene	100	%Rec		6/ 5/23	1
2037265	Toluene-d8	100	%Rec		6/ 5/23	1

Sample : 23214102

Information : Field Duplicate/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 12:45:00PM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	0.99	ug/kg	U	6/ 6/23	1
71556	1,1,1-Trichloroethane	0.99	ug/kg	U	6/ 6/23	1
79005	1,1,2-Trichloroethane	0.99	ug/kg	U	6/ 6/23	1
75343	1,1-Dichloroethane	0.99	ug/kg	U	6/ 6/23	1
75354	1,1-Dichloroethene	0.99	ug/kg	U	6/ 6/23	1
87616	1,2,3-Trichlorobenzene	0.99	ug/kg	U	6/ 6/23	1
96184	1,2,3-Trichloropropane	0.99	ug/kg	U	6/ 6/23	1
120821	1,2,4-Trichlorobenzene	0.99	ug/kg	U	6/ 6/23	1
96128	1,2-Dibromo-3-chloropropane	0.99	ug/kg	U	6/ 6/23	1
107062	1,2-Dichloroethane	0.99	ug/kg	U	6/ 6/23	1
78875	1,2-Dichloropropane	0.99	ug/kg	U	6/ 6/23	1
78933	2-Butanone	0.99	ug/kg	U	6/ 6/23	1
591786	2-Hexanone	0.99	ug/kg	U	6/ 6/23	1
108101	2-Pentanone, 4-methyl-	0.99	ug/kg	U	6/ 6/23	1
67641	2-Propanone	2.0	ug/kg	U	6/ 6/23	1
79209	Acetic acid, methyl ester	0.99	ug/kg	U	6/ 6/23	1
107131	Acrylonitrile	0.99	ug/kg	U	6/ 6/23	1
71432	Benzene	0.99	ug/kg	U	6/ 6/23	1
98828	Benzene, (1-methylethyl)-	0.99	ug/kg	U	6/ 6/23	1
95636	Benzene, 1,2,4-trimethyl-	0.99	ug/kg	U	6/ 6/23	1
95501	Benzene, 1,2-dichloro-	0.99	ug/kg	U	6/ 6/23	1
108678	Benzene, 1,3,5-trimethyl-	0.99	ug/kg	U	6/ 6/23	1
541731	Benzene, 1,3-dichloro-	0.99	ug/kg	U	6/ 6/23	1
106467	Benzene, 1,4-dichloro-	0.99	ug/kg	U	6/ 6/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	0.99	ug/kg	U	6/ 6/23	1
108907	Benzene, chloro-	0.99	ug/kg	U	6/ 6/23	1
100425	Benzene, ethenyl-	0.99	ug/kg	U	6/ 6/23	1
103651	Benzene, propyl-, (103651)	0.99	ug/kg	U	6/ 6/23	1
98066	Benzene, tert-butyl-	0.99	ug/kg	U	6/ 6/23	1
74975	Bromochloromethane	0.99	ug/kg	U	6/ 6/23	1
75274	Bromodichloromethane	0.99	ug/kg	U	6/ 6/23	1
75252	Bromoform	0.99	ug/kg	U	6/ 6/23	1
74839	Bromomethane	2.0	ug/kg	U	6/ 6/23	1
75150	Carbon disulfide	0.99	ug/kg	U	6/ 6/23	1
56235	Carbon Tetrachloride	0.99	ug/kg	U	6/ 6/23	1
156592	cis-1,2-Dichloroethene	0.99	ug/kg	U	6/ 6/23	1
10061015	cis-1,3-Dichloropropene	0.99	ug/kg	U	6/ 6/23	1
110827	Cyclohexane	0.99	ug/kg	U	6/ 6/23	1
108872	Cyclohexane, methyl-	0.99	ug/kg	U	6/ 6/23	1
124481	Dibromochloromethane	0.99	ug/kg	U	6/ 6/23	1
74953	Dibromomethane	0.99	ug/kg	U	6/ 6/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	0.99	ug/kg	U	6/ 6/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	0.99	ug/kg	U	6/ 6/23	1
106934	Ethane, 1,2-dibromo-	0.99	ug/kg	U	6/ 6/23	1
156605	Ethene, 1,2-dichloro-, (E)-	0.99	ug/kg	U	6/ 6/23	1
79016	Ethene, trichloro-	0.99	ug/kg	U	6/ 6/23	1
75003	Ethyl Chloride	0.99	ug/kg	U	6/ 6/23	1
100414	Ethylbenzene	0.99	ug/kg	U	6/ 6/23	1
75694	Freon 11	0.99	ug/kg	U	6/ 6/23	1
76131	Freon 113	0.99	ug/kg	U	6/ 6/23	1
75718	Freon 12	2.0	ug/kg	U	6/ 6/23	1
87683	Hexachlorobutadiene	0.99	ug/kg	U	6/ 6/23	1
74873	Methane, chloro-	0.99	ug/kg	U	6/ 6/23	1
67663	Methane, trichloro-	0.99	ug/kg	U	6/ 6/23	1
1634044	Methyl tert butylether (MTBE)	0.99	ug/kg	U	6/ 6/23	1
*1330207	MP-Xylene	2.0	ug/kg	U	6/ 6/23	1
91203	Naphthalene	0.99	ug/kg	U	6/ 6/23	1
104518	n-Butylbenzene	0.99	ug/kg	U	6/ 6/23	1
95476	o-Xylene	0.99	ug/kg	U	6/ 6/23	1
135988	sec-Butylbenzene	0.99	ug/kg	U	6/ 6/23	1
127184	Tetrachloroethene	0.99	ug/kg	U	6/ 6/23	1
108883	Toluene	0.99	ug/kg	U	6/ 6/23	1
10061026	Trans-1,3-Dichloropropene	0.99	ug/kg	U	6/ 6/23	1
75014	Vinyl Chloride	0.99	ug/kg	U	6/ 6/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	96	%Rec		6/ 6/23	1
460004	p-Bromofluorobenzene	100	%Rec		6/ 6/23	1
2037265	Toluene-d8	99	%Rec		6/ 6/23	1

Sample : 23214104

Information : Field Sample/ S-2/ 5ft
Matrix : Soil
Collected : 5/24/2023 5:28:00PM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	2.7	ug/kg	U	6/ 5/23	1
71556	1,1,1-Trichloroethane	2.7	ug/kg	U	6/ 5/23	1
79005	1,1,2-Trichloroethane	2.7	ug/kg	U	6/ 5/23	1
75343	1,1-Dichloroethane	2.7	ug/kg	U	6/ 5/23	1
75354	1,1-Dichloroethene	2.7	ug/kg	U	6/ 5/23	1
87616	1,2,3-Trichlorobenzene	2.7	ug/kg	U	6/ 5/23	1
96184	1,2,3-Trichloropropane	2.7	ug/kg	U	6/ 5/23	1
120821	1,2,4-Trichlorobenzene	2.7	ug/kg	U	6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	2.7	ug/kg	U	6/ 5/23	1
107062	1,2-Dichloroethane	2.7	ug/kg	U	6/ 5/23	1
78875	1,2-Dichloropropane	2.7	ug/kg	U	6/ 5/23	1
78933	2-Butanone	2.7	ug/kg	U	6/ 5/23	1
591786	2-Hexanone	2.7	ug/kg	U	6/ 5/23	1
108101	2-Pentanone, 4-methyl-	2.7	ug/kg	U	6/ 5/23	1
67641	2-Propanone	5.5	ug/kg	U	6/ 5/23	1
79209	Acetic acid, methyl ester	2.7	ug/kg	U	6/ 5/23	1
107131	Acrylonitrile	2.7	ug/kg	U	6/ 5/23	1
71432	Benzene	2.7	ug/kg	U	6/ 5/23	1
98828	Benzene, (1-methylethyl)-	2.7	ug/kg	U	6/ 5/23	1
95636	Benzene, 1,2,4-trimethyl-	2.7	ug/kg	U	6/ 5/23	1
95501	Benzene, 1,2-dichloro-	2.7	ug/kg	U	6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	2.7	ug/kg	U	6/ 5/23	1
541731	Benzene, 1,3-dichloro-	2.7	ug/kg	U	6/ 5/23	1
106467	Benzene, 1,4-dichloro-	2.7	ug/kg	U	6/ 5/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	2.7	ug/kg	U	6/ 5/23	1
108907	Benzene, chloro-	2.7	ug/kg	U	6/ 5/23	1
100425	Benzene, ethenyl-	2.7	ug/kg	U	6/ 5/23	1
103651	Benzene, propyl-, (103651)	2.7	ug/kg	U	6/ 5/23	1
98066	Benzene, tert-butyl-	2.7	ug/kg	U	6/ 5/23	1
74975	Bromochloromethane	2.7	ug/kg	U	6/ 5/23	1
75274	Bromodichloromethane	2.7	ug/kg	U	6/ 5/23	1
75252	Bromoform	2.7	ug/kg	U	6/ 5/23	1
74839	Bromomethane	5.5	ug/kg	U	6/ 5/23	1
75150	Carbon disulfide	2.7	ug/kg	U	6/ 5/23	1
56235	Carbon Tetrachloride	2.7	ug/kg	U	6/ 5/23	1
156592	cis-1,2-Dichloroethene	2.7	ug/kg	U	6/ 5/23	1
10061015	cis-1,3-Dichloropropene	2.7	ug/kg	U	6/ 5/23	1
110827	Cyclohexane	2.7	ug/kg	U	6/ 5/23	1
108872	Cyclohexane, methyl-	2.7	ug/kg	U	6/ 5/23	1
124481	Dibromochloromethane	2.7	ug/kg	U	6/ 5/23	1
74953	Dibromomethane	2.7	ug/kg	U	6/ 5/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	2.7	ug/kg	U	6/ 5/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	2.7	ug/kg	U	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	2.7	ug/kg	U	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	2.7	ug/kg	U	6/ 5/23	1
79016	Ethene, trichloro-	2.7	ug/kg	U	6/ 5/23	1
75003	Ethyl Chloride	2.7	ug/kg	U	6/ 5/23	1
100414	Ethylbenzene	2.7	ug/kg	U	6/ 5/23	1
75694	Freon 11	2.7	ug/kg	U	6/ 5/23	1
76131	Freon 113	2.7	ug/kg	U	6/ 5/23	1
75718	Freon 12	5.5	ug/kg	U	6/ 5/23	1
87683	Hexachlorobutadiene	2.7	ug/kg	U	6/ 5/23	1
74873	Methane, chloro-	2.7	ug/kg	U	6/ 5/23	1
67663	Methane, trichloro-	2.7	ug/kg	U	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	2.7	ug/kg	U	6/ 5/23	1
*1330207	MP-Xylene	5.5	ug/kg	U	6/ 5/23	1
91203	Naphthalene	2.7	ug/kg	U	6/ 5/23	1
104518	n-Butylbenzene	2.7	ug/kg	U	6/ 5/23	1
95476	o-Xylene	2.7	ug/kg	U	6/ 5/23	1
135988	sec-Butylbenzene	2.7	ug/kg	U	6/ 5/23	1
127184	Tetrachloroethene	2.7	ug/kg	U	6/ 5/23	1
108883	Toluene	2.7	ug/kg	U	6/ 5/23	1
10061026	Trans-1,3-Dichloropropene	2.7	ug/kg	U	6/ 5/23	1
75014	Vinyl Chloride	2.7	ug/kg	U	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	108	%Rec		6/ 5/23	1
460004	p-Bromofluorobenzene	103	%Rec		6/ 5/23	1
2037265	Toluene-d8	97	%Rec		6/ 5/23	1

Sample : 23214105

Information : Field Sample/ S-2
Matrix : Water
Collected : 5/24/2023 5:00:00PM

Parameter : VOA
Prep Method: 5030C - P&T for Aqueous Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	6/ 1/23	1
71556	1,1,1-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
79005	1,1,2-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
75343	1,1-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
75354	1,1-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
87616	1,2,3-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96184	1,2,3-Trichloropropane	1.0	ug/L	U	6/ 1/23	1
120821	1,2,4-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	1.0	ug/L	U	6/ 1/23	1
107062	1,2-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
78875	1,2-Dichloropropane	1.0	ug/L	U	6/ 1/23	1
78933	2-Butanone	1.0	ug/L	U	6/ 1/23	1
591786	2-Hexanone	1.0	ug/L	U	6/ 1/23	1
108101	2-Pentanone, 4-methyl-	1.0	ug/L	U	6/ 1/23	1
67641	**2-Propanone**	**1.1**	**ug/L**		6/ 1/23	1
79209	Acetic acid, methyl ester	1.0	ug/L	U	6/ 1/23	1
107131	Acrylonitrile	1.0	ug/L	U	6/ 1/23	1
71432	Benzene	1.0	ug/L	U	6/ 1/23	1
98828	Benzene, (1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	1.0	ug/L	U	6/ 1/23	1
95501	Benzene, 1,2-dichloro-	1.0	ug/L	U	6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	1.0	ug/L	U	6/ 1/23	1
541731	Benzene, 1,3-dichloro-	1.0	ug/L	U	6/ 1/23	1
106467	Benzene, 1,4-dichloro-	1.0	ug/L	U	6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
108907	Benzene, chloro-	1.0	ug/L	U	6/ 1/23	1
100425	Benzene, ethenyl-	1.0	ug/L	U	6/ 1/23	1
103651	Benzene, propyl-, (103651)	1.0	ug/L	U	6/ 1/23	1
98066	Benzene, tert-butyl-	1.0	ug/L	U	6/ 1/23	1
74975	Bromochloromethane	1.0	ug/L	U	6/ 1/23	1
75274	Bromodichloromethane	1.0	ug/L	U	6/ 1/23	1
75252	Bromoform	1.0	ug/L	U	6/ 1/23	1
74839	Bromomethane	1.0	ug/L	U	6/ 1/23	1
75150	Carbon disulfide	1.0	ug/L	U	6/ 1/23	1
56235	Carbon Tetrachloride	1.0	ug/L	U	6/ 1/23	1
156592	cis-1,2-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
10061015	cis-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
110827	Cyclohexane	1.0	ug/L	U	6/ 1/23	1
108872	Cyclohexane, methyl-	1.0	ug/L	U	6/ 1/23	1
124481	Dibromochloromethane	1.0	ug/L	U	6/ 1/23	1
74953	Dibromomethane	1.0	ug/L	U	6/ 1/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	1.0	ug/L	U	6/ 1/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.0	ug/L	U	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	1.0	ug/L	U	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.0	ug/L	U	6/ 1/23	1
79016	Ethene, trichloro-	1.0	ug/L	U	6/ 1/23	1
75003	Ethyl Chloride	1.0	ug/L	U	6/ 1/23	1
100414	Ethylbenzene	1.0	ug/L	U	6/ 1/23	1
75694	Freon 11	1.0	ug/L	U	6/ 1/23	1
76131	Freon 113	1.0	ug/L	U	6/ 1/23	1
75718	Freon 12	1.0	ug/L	U	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	U	6/ 1/23	1
74873	Methane, chloro-	1.0	ug/L	U	6/ 1/23	1
67663	Methane, trichloro-	1.0	ug/L	U	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	1.0	ug/L	U	6/ 1/23	1
*1330207	MP-Xylene	2.0	ug/L	U	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	U	6/ 1/23	1
104518	n-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
95476	o-Xylene	1.0	ug/L	U	6/ 1/23	1
135988	sec-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
127184	Tetrachloroethene	1.0	ug/L	U	6/ 1/23	1
108883	Toluene	1.0	ug/L	U	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
75014	Vinyl Chloride	1.0	ug/L	U	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	101	%Rec		6/ 1/23	1
460004	p-Bromofluorobenzene	87	%Rec		6/ 1/23	1
2037265	Toluene-d8	102	%Rec		6/ 1/23	1

Sample : 23214106

Information : Field Sample/ S-3/ 5ft
Matrix : Soil
Collected : 5/24/2023 2:50:00PM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	2.5	ug/kg	U	6/ 5/23	1
71556	1,1,1-Trichloroethane	2.5	ug/kg	U	6/ 5/23	1
79005	1,1,2-Trichloroethane	2.5	ug/kg	U	6/ 5/23	1
75343	1,1-Dichloroethane	2.5	ug/kg	U	6/ 5/23	1
75354	1,1-Dichloroethene	2.5	ug/kg	U	6/ 5/23	1
87616	1,2,3-Trichlorobenzene	2.5	ug/kg	U	6/ 5/23	1
96184	1,2,3-Trichloropropane	2.5	ug/kg	U	6/ 5/23	1
120821	1,2,4-Trichlorobenzene	2.5	ug/kg	U	6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	2.5	ug/kg	U	6/ 5/23	1
107062	1,2-Dichloroethane	2.5	ug/kg	U	6/ 5/23	1
78875	1,2-Dichloropropane	2.5	ug/kg	U	6/ 5/23	1
78933	2-Butanone	2.5	ug/kg	U	6/ 5/23	1
591786	2-Hexanone	2.5	ug/kg	U	6/ 5/23	1
108101	2-Pentanone, 4-methyl-	2.5	ug/kg	U	6/ 5/23	1
67641	2-Propanone	4.9	ug/kg	U	6/ 5/23	1
79209	Acetic acid, methyl ester	2.5	ug/kg	U	6/ 5/23	1
107131	Acrylonitrile	2.5	ug/kg	U	6/ 5/23	1
71432	Benzene	2.5	ug/kg	U	6/ 5/23	1
98828	Benzene, (1-methylethyl)-	2.5	ug/kg	U	6/ 5/23	1
95636	Benzene, 1,2,4-trimethyl-	2.5	ug/kg	U	6/ 5/23	1
95501	Benzene, 1,2-dichloro-	2.5	ug/kg	U	6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	2.5	ug/kg	U	6/ 5/23	1
541731	Benzene, 1,3-dichloro-	2.5	ug/kg	U	6/ 5/23	1
106467	Benzene, 1,4-dichloro-	2.5	ug/kg	U	6/ 5/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	2.5	ug/kg	U	6/ 5/23	1
108907	Benzene, chloro-	2.5	ug/kg	U	6/ 5/23	1
100425	Benzene, ethenyl-	2.5	ug/kg	U	6/ 5/23	1
103651	Benzene, propyl-, (103651)	2.5	ug/kg	U	6/ 5/23	1
98066	Benzene, tert-butyl-	2.5	ug/kg	U	6/ 5/23	1
74975	Bromochloromethane	2.5	ug/kg	U	6/ 5/23	1
75274	Bromodichloromethane	2.5	ug/kg	U	6/ 5/23	1
75252	Bromoform	2.5	ug/kg	U	6/ 5/23	1
74839	Bromomethane	4.9	ug/kg	U	6/ 5/23	1
75150	Carbon disulfide	2.5	ug/kg	U	6/ 5/23	1
56235	Carbon Tetrachloride	2.5	ug/kg	U	6/ 5/23	1
156592	cis-1,2-Dichloroethene	2.5	ug/kg	U	6/ 5/23	1
10061015	cis-1,3-Dichloropropene	2.5	ug/kg	U	6/ 5/23	1
110827	Cyclohexane	2.5	ug/kg	U	6/ 5/23	1
108872	Cyclohexane, methyl-	2.5	ug/kg	U	6/ 5/23	1
124481	Dibromochloromethane	2.5	ug/kg	U	6/ 5/23	1
74953	Dibromomethane	2.5	ug/kg	U	6/ 5/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	2.5	ug/kg	U	6/ 5/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	2.5	ug/kg	U	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	2.5	ug/kg	U	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	2.5	ug/kg	U	6/ 5/23	1
79016	Ethene, trichloro-	2.5	ug/kg	U	6/ 5/23	1
75003	Ethyl Chloride	2.5	ug/kg	U	6/ 5/23	1
100414	Ethylbenzene	2.5	ug/kg	U	6/ 5/23	1
75694	Freon 11	2.5	ug/kg	U	6/ 5/23	1
76131	Freon 113	2.5	ug/kg	U	6/ 5/23	1
75718	Freon 12	4.9	ug/kg	U	6/ 5/23	1
87683	Hexachlorobutadiene	2.5	ug/kg	U	6/ 5/23	1
74873	Methane, chloro-	2.5	ug/kg	U	6/ 5/23	1
67663	Methane, trichloro-	2.5	ug/kg	U	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	2.5	ug/kg	U	6/ 5/23	1
*1330207	MP-Xylene	4.9	ug/kg	U	6/ 5/23	1
91203	Naphthalene	2.5	ug/kg	U	6/ 5/23	1
104518	n-Butylbenzene	2.5	ug/kg	U	6/ 5/23	1
95476	o-Xylene	2.5	ug/kg	U	6/ 5/23	1
135988	sec-Butylbenzene	2.5	ug/kg	U	6/ 5/23	1
127184	Tetrachloroethene	2.5	ug/kg	U	6/ 5/23	1
108883	Toluene	2.5	ug/kg	U	6/ 5/23	1
10061026	Trans-1,3-Dichloropropene	2.5	ug/kg	U	6/ 5/23	1
75014	Vinyl Chloride	2.5	ug/kg	U	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	111	%Rec		6/ 5/23	1
460004	p-Bromofluorobenzene	100	%Rec		6/ 5/23	1
2037265	Toluene-d8	98	%Rec		6/ 5/23	1

Sample : 23214108

Information : Field Sample/ S-4/ 5ft
Matrix : Soil
Collected : 5/24/2023 9:37:00AM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.1	ug/kg	U	6/ 5/23	1
71556	1,1,1-Trichloroethane	1.1	ug/kg	U	6/ 5/23	1
79005	1,1,2-Trichloroethane	1.1	ug/kg	U	6/ 5/23	1
75343	1,1-Dichloroethane	1.1	ug/kg	U	6/ 5/23	1
75354	1,1-Dichloroethene	1.1	ug/kg	U	6/ 5/23	1
87616	1,2,3-Trichlorobenzene	1.1	ug/kg	U	6/ 5/23	1
96184	1,2,3-Trichloropropane	1.1	ug/kg	U	6/ 5/23	1
120821	1,2,4-Trichlorobenzene	1.1	ug/kg	U	6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	1.1	ug/kg	U	6/ 5/23	1
107062	1,2-Dichloroethane	1.1	ug/kg	U	6/ 5/23	1
78875	1,2-Dichloropropane	1.1	ug/kg	U	6/ 5/23	1
78933	2-Butanone	1.1	ug/kg	U	6/ 5/23	1
591786	2-Hexanone	1.1	ug/kg	U	6/ 5/23	1
108101	2-Pentanone, 4-methyl-	1.1	ug/kg	U	6/ 5/23	1
67641	2-Propanone	2.1	ug/kg	U	6/ 5/23	1
79209	Acetic acid, methyl ester	1.1	ug/kg	U	6/ 5/23	1
107131	Acrylonitrile	1.1	ug/kg	U	6/ 5/23	1
71432	Benzene	1.1	ug/kg	U	6/ 5/23	1
98828	Benzene, (1-methylethyl)-	1.1	ug/kg	U	6/ 5/23	1
95636	Benzene, 1,2,4-trimethyl-	1.1	ug/kg	U	6/ 5/23	1
95501	Benzene, 1,2-dichloro-	1.1	ug/kg	U	6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	1.1	ug/kg	U	6/ 5/23	1
541731	Benzene, 1,3-dichloro-	1.1	ug/kg	U	6/ 5/23	1
106467	Benzene, 1,4-dichloro-	1.1	ug/kg	U	6/ 5/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.1	ug/kg	U	6/ 5/23	1
108907	Benzene, chloro-	1.1	ug/kg	U	6/ 5/23	1
100425	Benzene, ethenyl-	1.1	ug/kg	U	6/ 5/23	1
103651	Benzene, propyl-, (103651)	1.1	ug/kg	U	6/ 5/23	1
98066	Benzene, tert-butyl-	1.1	ug/kg	U	6/ 5/23	1
74975	Bromochloromethane	1.1	ug/kg	U	6/ 5/23	1
75274	Bromodichloromethane	1.1	ug/kg	U	6/ 5/23	1
75252	Bromoform	1.1	ug/kg	U	6/ 5/23	1
74839	Bromomethane	2.1	ug/kg	U	6/ 5/23	1
75150	Carbon disulfide	1.1	ug/kg	U	6/ 5/23	1
56235	Carbon Tetrachloride	1.1	ug/kg	U	6/ 5/23	1
156592	cis-1,2-Dichloroethene	1.1	ug/kg	U	6/ 5/23	1
10061015	cis-1,3-Dichloropropene	1.1	ug/kg	U	6/ 5/23	1
110827	Cyclohexane	1.1	ug/kg	U	6/ 5/23	1
108872	Cyclohexane, methyl-	1.1	ug/kg	U	6/ 5/23	1
124481	Dibromochloromethane	1.1	ug/kg	U	6/ 5/23	1
74953	Dibromomethane	1.1	ug/kg	U	6/ 5/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	1.1	ug/kg	U	6/ 5/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.1	ug/kg	U	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	1.1	ug/kg	U	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.1	ug/kg	U	6/ 5/23	1
79016	Ethene, trichloro-	1.1	ug/kg	U	6/ 5/23	1
75003	Ethyl Chloride	1.1	ug/kg	U	6/ 5/23	1
100414	Ethylbenzene	1.1	ug/kg	U	6/ 5/23	1
75694	Freon 11	1.1	ug/kg	U	6/ 5/23	1
76131	Freon 113	1.1	ug/kg	U	6/ 5/23	1
75718	Freon 12	2.1	ug/kg	U	6/ 5/23	1
87683	Hexachlorobutadiene	1.1	ug/kg	U	6/ 5/23	1
74873	Methane, chloro-	1.1	ug/kg	U	6/ 5/23	1
67663	Methane, trichloro-	1.1	ug/kg	U	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	1.1	ug/kg	U	6/ 5/23	1
*1330207	MP-Xylene	2.1	ug/kg	U	6/ 5/23	1
91203	Naphthalene	1.1	ug/kg	U	6/ 5/23	1
104518	n-Butylbenzene	1.1	ug/kg	U	6/ 5/23	1
95476	o-Xylene	1.1	ug/kg	U	6/ 5/23	1
135988	sec-Butylbenzene	1.1	ug/kg	U	6/ 5/23	1
127184	Tetrachloroethene	1.1	ug/kg	U	6/ 5/23	1
108883	Toluene	1.1	ug/kg	U	6/ 5/23	1
10061026	Trans-1,3-Dichloropropene	1.1	ug/kg	U	6/ 5/23	1
75014	Vinyl Chloride	1.1	ug/kg	U	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	108	%Rec		6/ 5/23	1
460004	p-Bromofluorobenzene	113	%Rec		6/ 5/23	1
2037265	Toluene-d8	104	%Rec		6/ 5/23	1

Sample : 23214111

Information : Field Sample/ G-1
Matrix : Soil
Collected : 5/25/2023 2:20:00PM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.3	ug/kg	U	6/ 5/23	1
71556	1,1,1-Trichloroethane	1.3	ug/kg	U	6/ 5/23	1
79005	1,1,2-Trichloroethane	1.3	ug/kg	U	6/ 5/23	1
75343	1,1-Dichloroethane	1.3	ug/kg	U	6/ 5/23	1
75354	1,1-Dichloroethene	1.3	ug/kg	U	6/ 5/23	1
87616	1,2,3-Trichlorobenzene	1.3	ug/kg	U	6/ 5/23	1
96184	1,2,3-Trichloropropane	1.3	ug/kg	U	6/ 5/23	1
120821	1,2,4-Trichlorobenzene	1.3	ug/kg	U	6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	1.3	ug/kg	U	6/ 5/23	1
107062	1,2-Dichloroethane	1.3	ug/kg	U	6/ 5/23	1
78875	1,2-Dichloropropane	1.3	ug/kg	U	6/ 5/23	1
78933	2-Butanone	90	ug/kg	UJ	6/ 6/23	69
591786	**2-Hexanone**	**4.3**	**ug/kg**		6/ 5/23	1
108101	**2-Pentanone, 4-methyl-**	**8.3**	**ug/kg**		6/ 5/23	1
67641	2-Propanone	90	ug/kg	UJ	6/ 6/23	69
79209	Acetic acid, methyl ester	1.3	ug/kg	U	6/ 5/23	1
107131	Acrylonitrile	1.3	ug/kg	U	6/ 5/23	1
71432	Benzene	1.3	ug/kg	U	6/ 5/23	1
98828	Benzene, (1-methylethyl)-	1.3	ug/kg	U	6/ 5/23	1
95636	**Benzene, 1,2,4-trimethyl-**	**2.4**	**ug/kg**		6/ 5/23	1
95501	Benzene, 1,2-dichloro-	1.3	ug/kg	U	6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	1.3	ug/kg	U	6/ 5/23	1
541731	Benzene, 1,3-dichloro-	1.3	ug/kg	U	6/ 5/23	1
106467	Benzene, 1,4-dichloro-	1.3	ug/kg	U	6/ 5/23	1
99876	**Benzene, 1-methyl-4-(1-methylethyl)-**	**5.1**	**ug/kg**		6/ 5/23	1
108907	Benzene, chloro-	1.3	ug/kg	U	6/ 5/23	1
100425	Benzene, ethenyl-	1.3	ug/kg	U	6/ 5/23	1
103651	Benzene, propyl-, (103651)	1.3	ug/kg	U	6/ 5/23	1
98066	Benzene, tert-butyl-	1.3	ug/kg	U	6/ 5/23	1
74975	Bromochloromethane	1.3	ug/kg	U	6/ 5/23	1
75274	Bromodichloromethane	1.3	ug/kg	U	6/ 5/23	1
75252	Bromoform	1.3	ug/kg	U	6/ 5/23	1
74839	Bromomethane	2.7	ug/kg	U	6/ 5/23	1
75150	Carbon disulfide	2.7	ug/kg	U	6/ 5/23	1
56235	Carbon Tetrachloride	1.3	ug/kg	U	6/ 5/23	1
156592	cis-1,2-Dichloroethene	1.3	ug/kg	U	6/ 5/23	1
10061015	cis-1,3-Dichloropropene	1.3	ug/kg	U	6/ 5/23	1
110827	Cyclohexane	1.3	ug/kg	U	6/ 5/23	1
108872	Cyclohexane, methyl-	1.3	ug/kg	U	6/ 5/23	1
124481	Dibromochloromethane	1.3	ug/kg	U	6/ 5/23	1
74953	Dibromomethane	1.3	ug/kg	U	6/ 5/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	1.3	ug/kg	U	6/ 5/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.3	ug/kg	U	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	1.3	ug/kg	U	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.3	ug/kg	U	6/ 5/23	1
79016	Ethene, trichloro-	1.3	ug/kg	U	6/ 5/23	1
75003	Ethyl Chloride	1.3	ug/kg	U	6/ 5/23	1
100414	Ethylbenzene	1.3	ug/kg	U	6/ 5/23	1
75694	Freon 11	1.3	ug/kg	U	6/ 5/23	1
76131	Freon 113	1.3	ug/kg	U	6/ 5/23	1
75718	Freon 12	2.7	ug/kg	U	6/ 5/23	1
87683	Hexachlorobutadiene	1.3	ug/kg	U	6/ 5/23	1
74873	Methane, chloro-	1.3	ug/kg	U	6/ 5/23	1
67663	Methane, trichloro-	1.3	ug/kg	U	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	1.3	ug/kg	U	6/ 5/23	1
*1330207	MP-Xylene	2.7	ug/kg	U	6/ 5/23	1
91203	Naphthalene	1.3	ug/kg	U	6/ 5/23	1
104518	n-Butylbenzene	1.3	ug/kg	U	6/ 5/23	1
95476	o-Xylene	1.3	ug/kg	U	6/ 5/23	1
135988	sec-Butylbenzene	1.3	ug/kg	U	6/ 5/23	1
127184	Tetrachloroethene	1.3	ug/kg	U	6/ 5/23	1
108883	**Toluene**	**1700**	**ug/kg**		6/ 6/23	69
10061026	Trans-1,3-Dichloropropene	1.3	ug/kg	U	6/ 5/23	1
75014	Vinyl Chloride	1.3	ug/kg	U	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	100	%Rec		6/ 6/23	69
17060070	1,2-Dichloroethane-d4	109	%Rec		6/ 5/23	1
460004	p-Bromofluorobenzene	84	%Rec		6/ 6/23	69
460004	p-Bromofluorobenzene	122	%Rec		6/ 5/23	1
2037265	Toluene-d8	103	%Rec		6/ 6/23	69
2037265	Toluene-d8	106	%Rec		6/ 5/23	1

Sample : 23214112

Information : Field Duplicate/ G-2
Matrix : Soil
Collected : 5/25/2023 1:45:00PM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.6	ug/kg	U	6/ 6/23	1
71556	1,1,1-Trichloroethane	1.6	ug/kg	U	6/ 6/23	1
79005	1,1,2-Trichloroethane	1.6	ug/kg	U	6/ 6/23	1
75343	1,1-Dichloroethane	1.6	ug/kg	U	6/ 6/23	1
75354	1,1-Dichloroethene	1.6	ug/kg	U	6/ 6/23	1
87616	1,2,3-Trichlorobenzene	1.6	ug/kg	U	6/ 6/23	1
96184	1,2,3-Trichloropropane	1.6	ug/kg	U	6/ 6/23	1
120821	1,2,4-Trichlorobenzene	1.6	ug/kg	U	6/ 6/23	1
96128	1,2-Dibromo-3-chloropropane	1.6	ug/kg	U	6/ 6/23	1
107062	1,2-Dichloroethane	1.6	ug/kg	U	6/ 6/23	1
78875	1,2-Dichloropropane	1.6	ug/kg	U	6/ 6/23	1
78933	2-Butanone	1.6	ug/kg	U	6/ 6/23	1
591786	2-Hexanone	1.6	ug/kg	U	6/ 6/23	1
108101	2-Pentanone, 4-methyl-	1.6	ug/kg	U	6/ 6/23	1
67641	2-Propanone	3.3	ug/kg	U	6/ 6/23	1
79209	Acetic acid, methyl ester	1.6	ug/kg	U	6/ 6/23	1
107131	Acrylonitrile	1.6	ug/kg	U	6/ 6/23	1
71432	Benzene	1.6	ug/kg	U	6/ 6/23	1
98828	Benzene, (1-methylethyl)-	1.6	ug/kg	U	6/ 6/23	1
95636	Benzene, 1,2,4-trimethyl-	1.6	ug/kg	U	6/ 6/23	1
95501	Benzene, 1,2-dichloro-	1.6	ug/kg	U	6/ 6/23	1
108678	Benzene, 1,3,5-trimethyl-	1.6	ug/kg	U	6/ 6/23	1
541731	Benzene, 1,3-dichloro-	1.6	ug/kg	U	6/ 6/23	1
106467	Benzene, 1,4-dichloro-	1.6	ug/kg	U	6/ 6/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.6	ug/kg	U	6/ 6/23	1
108907	Benzene, chloro-	1.6	ug/kg	U	6/ 6/23	1
100425	Benzene, ethenyl-	1.6	ug/kg	U	6/ 6/23	1
103651	Benzene, propyl-, (103651)	1.6	ug/kg	U	6/ 6/23	1
98066	Benzene, tert-butyl-	1.6	ug/kg	U	6/ 6/23	1
74975	Bromochloromethane	1.6	ug/kg	U	6/ 6/23	1
75274	Bromodichloromethane	1.6	ug/kg	U	6/ 6/23	1
75252	Bromoform	1.6	ug/kg	U	6/ 6/23	1
74839	Bromomethane	3.2	ug/kg	U	6/ 6/23	1
75150	Carbon disulfide	1.6	ug/kg	U	6/ 6/23	1
56235	Carbon Tetrachloride	1.6	ug/kg	U	6/ 6/23	1
156592	cis-1,2-Dichloroethene	1.6	ug/kg	U	6/ 6/23	1
10061015	cis-1,3-Dichloropropene	1.6	ug/kg	U	6/ 6/23	1
110827	Cyclohexane	1.6	ug/kg	U	6/ 6/23	1
108872	Cyclohexane, methyl-	1.6	ug/kg	U	6/ 6/23	1
124481	Dibromochloromethane	1.6	ug/kg	U	6/ 6/23	1
74953	Dibromomethane	1.6	ug/kg	U	6/ 6/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	1.6	ug/kg	U	6/ 6/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.6	ug/kg	U	6/ 6/23	1
106934	Ethane, 1,2-dibromo-	1.6	ug/kg	U	6/ 6/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.6	ug/kg	U	6/ 6/23	1
79016	Ethene, trichloro-	1.6	ug/kg	U	6/ 6/23	1
75003	Ethyl Chloride	1.6	ug/kg	U	6/ 6/23	1
100414	Ethylbenzene	1.6	ug/kg	U	6/ 6/23	1
75694	Freon 11	1.6	ug/kg	U	6/ 6/23	1
76131	Freon 113	1.6	ug/kg	U	6/ 6/23	1
75718	Freon 12	3.2	ug/kg	U	6/ 6/23	1
87683	Hexachlorobutadiene	1.6	ug/kg	U	6/ 6/23	1
74873	Methane, chloro-	1.6	ug/kg	U	6/ 6/23	1
67663	Methane, trichloro-	1.6	ug/kg	U	6/ 6/23	1
1634044	Methyl tert butylether (MTBE)	1.6	ug/kg	U	6/ 6/23	1
*1330207	MP-Xylene	3.2	ug/kg	U	6/ 6/23	1
91203	Naphthalene	1.6	ug/kg	U	6/ 6/23	1
104518	n-Butylbenzene	1.6	ug/kg	U	6/ 6/23	1
95476	o-Xylene	1.6	ug/kg	U	6/ 6/23	1
135988	sec-Butylbenzene	1.6	ug/kg	U	6/ 6/23	1
127184	Tetrachloroethene	1.6	ug/kg	U	6/ 6/23	1
108883	Toluene	1.6	ug/kg	U	6/ 6/23	1
10061026	Trans-1,3-Dichloropropene	1.6	ug/kg	U	6/ 6/23	1
75014	Vinyl Chloride	1.6	ug/kg	U	6/ 6/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	102	%Rec		6/ 6/23	1
460004	p-Bromofluorobenzene	135	%Rec		6/ 6/23	1
2037265	Toluene-d8	113	%Rec		6/ 6/23	1

Sample : 23214113

Information : Field Sample/ G-2
Matrix : Soil
Collected : 5/25/2023 1:45:00PM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.8	ug/kg	U	6/ 6/23	1
71556	1,1,1-Trichloroethane	1.8	ug/kg	U	6/ 6/23	1
79005	1,1,2-Trichloroethane	1.8	ug/kg	U	6/ 6/23	1
75343	1,1-Dichloroethane	1.8	ug/kg	U	6/ 6/23	1
75354	1,1-Dichloroethene	1.8	ug/kg	U	6/ 6/23	1
87616	1,2,3-Trichlorobenzene	1.8	ug/kg	U	6/ 6/23	1
96184	1,2,3-Trichloropropane	1.8	ug/kg	U	6/ 6/23	1
120821	1,2,4-Trichlorobenzene	1.8	ug/kg	U	6/ 6/23	1
96128	1,2-Dibromo-3-chloropropane	1.8	ug/kg	U	6/ 6/23	1
107062	1,2-Dichloroethane	1.8	ug/kg	U	6/ 6/23	1
78875	1,2-Dichloropropane	1.8	ug/kg	U	6/ 6/23	1
78933	**2-Butanone**	**21**	**ug/kg**		6/ 6/23	1
591786	2-Hexanone	1.8	ug/kg	U	6/ 6/23	1
108101	2-Pentanone, 4-methyl-	1.8	ug/kg	U	6/ 6/23	1
67641	**2-Propanone**	**38**	**ug/kg**		6/ 6/23	1
79209	Acetic acid, methyl ester	1.8	ug/kg	U	6/ 6/23	1
107131	Acrylonitrile	1.8	ug/kg	U	6/ 6/23	1
71432	Benzene	1.8	ug/kg	U	6/ 6/23	1
98828	Benzene, (1-methylethyl)-	1.8	ug/kg	U	6/ 6/23	1
95636	Benzene, 1,2,4-trimethyl-	1.8	ug/kg	U	6/ 6/23	1
95501	Benzene, 1,2-dichloro-	1.8	ug/kg	U	6/ 6/23	1
108678	Benzene, 1,3,5-trimethyl-	1.8	ug/kg	U	6/ 6/23	1
541731	Benzene, 1,3-dichloro-	1.8	ug/kg	U	6/ 6/23	1
106467	Benzene, 1,4-dichloro-	1.8	ug/kg	U	6/ 6/23	1
99876	**Benzene, 1-methyl-4-(1-methylethyl)-**	**9.0**	**ug/kg**		6/ 6/23	1
108907	Benzene, chloro-	1.8	ug/kg	U	6/ 6/23	1
100425	**Benzene, ethenyl-**	**2.2**	**ug/kg**		6/ 6/23	1
103651	Benzene, propyl-, (103651)	1.8	ug/kg	U	6/ 6/23	1
98066	Benzene, tert-butyl-	1.8	ug/kg	U	6/ 6/23	1
74975	Bromochloromethane	1.8	ug/kg	U	6/ 6/23	1
75274	Bromodichloromethane	1.8	ug/kg	U	6/ 6/23	1
75252	Bromoform	1.8	ug/kg	U	6/ 6/23	1
74839	Bromomethane	3.5	ug/kg	U	6/ 6/23	1
75150	Carbon disulfide	1.8	ug/kg	U	6/ 6/23	1
56235	Carbon Tetrachloride	1.8	ug/kg	U	6/ 6/23	1
156592	cis-1,2-Dichloroethene	1.8	ug/kg	U	6/ 6/23	1
10061015	cis-1,3-Dichloropropene	1.8	ug/kg	U	6/ 6/23	1
110827	Cyclohexane	1.8	ug/kg	U	6/ 6/23	1
108872	Cyclohexane, methyl-	1.8	ug/kg	U	6/ 6/23	1
124481	Dibromochloromethane	1.8	ug/kg	U	6/ 6/23	1
74953	Dibromomethane	1.8	ug/kg	U	6/ 6/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	1.8	ug/kg	U	6/ 6/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.8	ug/kg	U	6/ 6/23	1
106934	Ethane, 1,2-dibromo-	1.8	ug/kg	U	6/ 6/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.8	ug/kg	U	6/ 6/23	1
79016	Ethene, trichloro-	1.8	ug/kg	U	6/ 6/23	1
75003	Ethyl Chloride	1.8	ug/kg	U	6/ 6/23	1
100414	Ethylbenzene	1.8	ug/kg	U	6/ 6/23	1
75694	Freon 11	1.8	ug/kg	U	6/ 6/23	1
76131	Freon 113	1.8	ug/kg	U	6/ 6/23	1
75718	Freon 12	3.5	ug/kg	U	6/ 6/23	1
87683	Hexachlorobutadiene	1.8	ug/kg	U	6/ 6/23	1
74873	Methane, chloro-	1.8	ug/kg	U	6/ 6/23	1
67663	Methane, trichloro-	1.8	ug/kg	U	6/ 6/23	1
1634044	Methyl tert butylether (MTBE)	1.8	ug/kg	U	6/ 6/23	1
*1330207	MP-Xylene	3.5	ug/kg	U	6/ 6/23	1
91203	Naphthalene	1.8	ug/kg	U	6/ 6/23	1
104518	n-Butylbenzene	1.8	ug/kg	U	6/ 6/23	1
95476	o-Xylene	1.8	ug/kg	U	6/ 6/23	1
135988	sec-Butylbenzene	1.8	ug/kg	U	6/ 6/23	1
127184	Tetrachloroethene	1.8	ug/kg	U	6/ 6/23	1
108883	**Toluene**	**190**	**ug/kg**		6/ 6/23	67
10061026	Trans-1,3-Dichloropropene	1.8	ug/kg	U	6/ 6/23	1
75014	Vinyl Chloride	1.8	ug/kg	U	6/ 6/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	84	%Rec		6/ 6/23	1
17060070	1,2-Dichloroethane-d4	104	%Rec		6/ 6/23	67
460004	p-Bromofluorobenzene	128	%Rec		6/ 6/23	1
460004	p-Bromofluorobenzene	85	%Rec		6/ 6/23	67
2037265	Toluene-d8	111	%Rec		6/ 6/23	1
2037265	Toluene-d8	101	%Rec		6/ 6/23	67

Sample : 23214114

Information : Rinsate Blank Soil
Matrix : Water
Collected : 5/25/2023 11:30:00AM

Parameter : VOA
Prep Method: 5030C - P&T for Aqueous Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	6/ 1/23	1
71556	1,1,1-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
79005	1,1,2-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
75343	1,1-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
75354	1,1-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
87616	1,2,3-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96184	1,2,3-Trichloropropane	1.0	ug/L	U	6/ 1/23	1
120821	1,2,4-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	1.0	ug/L	U	6/ 1/23	1
107062	1,2-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
78875	1,2-Dichloropropane	1.0	ug/L	U	6/ 1/23	1
78933	2-Butanone	1.0	ug/L	U	6/ 1/23	1
591786	2-Hexanone	1.0	ug/L	U	6/ 1/23	1
108101	2-Pentanone, 4-methyl-	1.0	ug/L	U	6/ 1/23	1
67641	**2-Propanone**	**2.6**	**ug/L**		6/ 1/23	1
79209	Acetic acid, methyl ester	1.0	ug/L	U	6/ 1/23	1
107131	Acrylonitrile	1.0	ug/L	U	6/ 1/23	1
71432	Benzene	1.0	ug/L	U	6/ 1/23	1
98828	Benzene, (1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	1.0	ug/L	U	6/ 1/23	1
95501	Benzene, 1,2-dichloro-	1.0	ug/L	U	6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	1.0	ug/L	U	6/ 1/23	1
541731	Benzene, 1,3-dichloro-	1.0	ug/L	U	6/ 1/23	1
106467	Benzene, 1,4-dichloro-	1.0	ug/L	U	6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
108907	Benzene, chloro-	1.0	ug/L	U	6/ 1/23	1
100425	Benzene, ethenyl-	1.0	ug/L	U	6/ 1/23	1
103651	Benzene, propyl-, (103651)	1.0	ug/L	U	6/ 1/23	1
98066	Benzene, tert-butyl-	1.0	ug/L	U	6/ 1/23	1
74975	Bromochloromethane	1.0	ug/L	U	6/ 1/23	1
75274	Bromodichloromethane	1.0	ug/L	U	6/ 1/23	1
75252	Bromoform	1.0	ug/L	U	6/ 1/23	1
74839	Bromomethane	1.0	ug/L	U	6/ 1/23	1
75150	Carbon disulfide	1.0	ug/L	U	6/ 1/23	1
56235	Carbon Tetrachloride	1.0	ug/L	U	6/ 1/23	1
156592	cis-1,2-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
10061015	cis-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
110827	Cyclohexane	1.0	ug/L	U	6/ 1/23	1
108872	Cyclohexane, methyl-	1.0	ug/L	U	6/ 1/23	1
124481	Dibromochloromethane	1.0	ug/L	U	6/ 1/23	1
74953	Dibromomethane	1.0	ug/L	U	6/ 1/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	1.0	ug/L	U	6/ 1/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.0	ug/L	U	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	1.0	ug/L	U	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.0	ug/L	U	6/ 1/23	1
79016	Ethene, trichloro-	1.0	ug/L	U	6/ 1/23	1
75003	Ethyl Chloride	1.0	ug/L	U	6/ 1/23	1
100414	Ethylbenzene	1.0	ug/L	U	6/ 1/23	1
75694	Freon 11	1.0	ug/L	U	6/ 1/23	1
76131	Freon 113	1.0	ug/L	U	6/ 1/23	1
75718	Freon 12	1.0	ug/L	U	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	U	6/ 1/23	1
74873	Methane, chloro-	1.0	ug/L	U	6/ 1/23	1
67663	Methane, trichloro-	1.0	ug/L	U	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	1.0	ug/L	U	6/ 1/23	1
*1330207	MP-Xylene	2.0	ug/L	U	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	U	6/ 1/23	1
104518	n-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
95476	o-Xylene	1.0	ug/L	U	6/ 1/23	1
135988	sec-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
127184	Tetrachloroethene	1.0	ug/L	UJ	6/ 1/23	1
108883	Toluene	1.0	ug/L	U	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
75014	Vinyl Chloride	1.0	ug/L	U	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	101	%Rec		6/ 1/23	1
460004	p-Bromofluorobenzene	87	%Rec		6/ 1/23	1
2037265	Toluene-d8	102	%Rec		6/ 1/23	1

Sample : 23214115

Information : Rinsate Blank/ GW1
Matrix : Water
Collected : 5/25/2023 1:30:00PM

Parameter : VOA
Prep Method: 5030C - P&T for Aqueous Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	6/ 1/23	1
71556	1,1,1-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
79005	1,1,2-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
75343	1,1-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
75354	1,1-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
87616	1,2,3-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96184	1,2,3-Trichloropropane	1.0	ug/L	U	6/ 1/23	1
120821	1,2,4-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	1.0	ug/L	U	6/ 1/23	1
107062	1,2-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
78875	1,2-Dichloropropane	1.0	ug/L	U	6/ 1/23	1
78933	2-Butanone	1.0	ug/L	U	6/ 1/23	1
591786	2-Hexanone	1.0	ug/L	U	6/ 1/23	1
108101	2-Pentanone, 4-methyl-	1.0	ug/L	U	6/ 1/23	1
67641	**2-Propanone**	**1.9**	**ug/L**		6/ 1/23	1
79209	Acetic acid, methyl ester	1.0	ug/L	U	6/ 1/23	1
107131	Acrylonitrile	1.0	ug/L	U	6/ 1/23	1
71432	Benzene	1.0	ug/L	U	6/ 1/23	1
98828	Benzene, (1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	1.0	ug/L	U	6/ 1/23	1
95501	Benzene, 1,2-dichloro-	1.0	ug/L	U	6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	1.0	ug/L	U	6/ 1/23	1
541731	Benzene, 1,3-dichloro-	1.0	ug/L	U	6/ 1/23	1
106467	Benzene, 1,4-dichloro-	1.0	ug/L	U	6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
108907	Benzene, chloro-	1.0	ug/L	U	6/ 1/23	1
100425	Benzene, ethenyl-	1.0	ug/L	U	6/ 1/23	1
103651	Benzene, propyl-, (103651)	1.0	ug/L	U	6/ 1/23	1
98066	Benzene, tert-butyl-	1.0	ug/L	U	6/ 1/23	1
74975	Bromochloromethane	1.0	ug/L	U	6/ 1/23	1
75274	Bromodichloromethane	1.0	ug/L	U	6/ 1/23	1
75252	Bromoform	1.0	ug/L	U	6/ 1/23	1
74839	Bromomethane	1.0	ug/L	U	6/ 1/23	1
75150	Carbon disulfide	1.0	ug/L	U	6/ 1/23	1
56235	Carbon Tetrachloride	1.0	ug/L	U	6/ 1/23	1
156592	cis-1,2-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
10061015	cis-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
110827	Cyclohexane	1.0	ug/L	U	6/ 1/23	1
108872	Cyclohexane, methyl-	1.0	ug/L	U	6/ 1/23	1
124481	Dibromochloromethane	1.0	ug/L	U	6/ 1/23	1
74953	Dibromomethane	1.0	ug/L	U	6/ 1/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	1.0	ug/L	U	6/ 1/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.0	ug/L	U	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	1.0	ug/L	U	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.0	ug/L	U	6/ 1/23	1
79016	Ethene, trichloro-	1.0	ug/L	U	6/ 1/23	1
75003	Ethyl Chloride	1.0	ug/L	U	6/ 1/23	1
100414	Ethylbenzene	1.0	ug/L	U	6/ 1/23	1
75694	Freon 11	1.0	ug/L	U	6/ 1/23	1
76131	Freon 113	1.0	ug/L	U	6/ 1/23	1
75718	Freon 12	1.0	ug/L	U	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	U	6/ 1/23	1
74873	Methane, chloro-	1.0	ug/L	U	6/ 1/23	1
67663	Methane, trichloro-	1.0	ug/L	U	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	1.0	ug/L	U	6/ 1/23	1
*1330207	MP-Xylene	2.0	ug/L	U	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	U	6/ 1/23	1
104518	n-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
95476	o-Xylene	1.0	ug/L	U	6/ 1/23	1
135988	sec-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
127184	Tetrachloroethene	1.0	ug/L	UJ	6/ 1/23	1
108883	Toluene	1.0	ug/L	U	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
75014	Vinyl Chloride	1.0	ug/L	U	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	105	%Rec		6/ 1/23	1
460004	p-Bromofluorobenzene	87	%Rec		6/ 1/23	1
2037265	Toluene-d8	100	%Rec		6/ 1/23	1

Sample : 23214118

Information : Trip Blank/ Cooler 1
Matrix : Water
Collected : 5/25/2023

Parameter : VOA
Prep Method: 5030C - P&T for Aqueous Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	6/ 1/23	1
71556	1,1,1-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
79005	1,1,2-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
75343	1,1-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
75354	1,1-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
87616	1,2,3-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96184	1,2,3-Trichloropropane	1.0	ug/L	U	6/ 1/23	1
120821	1,2,4-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	1.0	ug/L	U	6/ 1/23	1
107062	1,2-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
78875	1,2-Dichloropropane	1.0	ug/L	U	6/ 1/23	1
78933	2-Butanone	1.0	ug/L	U	6/ 1/23	1
591786	2-Hexanone	1.0	ug/L	U	6/ 1/23	1
108101	2-Pentanone, 4-methyl-	1.0	ug/L	U	6/ 1/23	1
67641	2-Propanone	1.0	ug/L	U	6/ 1/23	1
79209	Acetic acid, methyl ester	1.0	ug/L	U	6/ 1/23	1
107131	Acrylonitrile	1.0	ug/L	U	6/ 1/23	1
71432	Benzene	1.0	ug/L	U	6/ 1/23	1
98828	Benzene, (1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	1.0	ug/L	U	6/ 1/23	1
95501	Benzene, 1,2-dichloro-	1.0	ug/L	U	6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	1.0	ug/L	U	6/ 1/23	1
541731	Benzene, 1,3-dichloro-	1.0	ug/L	U	6/ 1/23	1
106467	Benzene, 1,4-dichloro-	1.0	ug/L	U	6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
108907	Benzene, chloro-	1.0	ug/L	U	6/ 1/23	1
100425	Benzene, ethenyl-	1.0	ug/L	U	6/ 1/23	1
103651	Benzene, propyl-, (103651)	1.0	ug/L	U	6/ 1/23	1
98066	Benzene, tert-butyl-	1.0	ug/L	U	6/ 1/23	1
74975	Bromochloromethane	1.0	ug/L	U	6/ 1/23	1
75274	Bromodichloromethane	1.0	ug/L	U	6/ 1/23	1
75252	Bromoform	1.0	ug/L	U	6/ 1/23	1
74839	Bromomethane	1.0	ug/L	U	6/ 1/23	1
75150	Carbon disulfide	1.0	ug/L	U	6/ 1/23	1
56235	Carbon Tetrachloride	1.0	ug/L	U	6/ 1/23	1
156592	cis-1,2-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
10061015	cis-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
110827	Cyclohexane	1.0	ug/L	U	6/ 1/23	1
108872	Cyclohexane, methyl-	1.0	ug/L	U	6/ 1/23	1
124481	Dibromochloromethane	1.0	ug/L	U	6/ 1/23	1
74953	Dibromomethane	1.0	ug/L	U	6/ 1/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	1.0	ug/L	U	6/ 1/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.0	ug/L	U	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	1.0	ug/L	U	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.0	ug/L	U	6/ 1/23	1
79016	Ethene, trichloro-	1.0	ug/L	U	6/ 1/23	1
75003	Ethyl Chloride	1.0	ug/L	U	6/ 1/23	1
100414	Ethylbenzene	1.0	ug/L	U	6/ 1/23	1
75694	Freon 11	1.0	ug/L	U	6/ 1/23	1
76131	Freon 113	1.0	ug/L	U	6/ 1/23	1
75718	Freon 12	1.0	ug/L	U	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	U	6/ 1/23	1
74873	Methane, chloro-	1.0	ug/L	U	6/ 1/23	1
67663	Methane, trichloro-	1.0	ug/L	U	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	1.0	ug/L	U	6/ 1/23	1
*1330207	MP-Xylene	2.0	ug/L	U	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	U	6/ 1/23	1
104518	n-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
95476	o-Xylene	1.0	ug/L	U	6/ 1/23	1
135988	sec-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
127184	Tetrachloroethene	1.0	ug/L	UJ	6/ 1/23	1
108883	Toluene	1.0	ug/L	U	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
75014	Vinyl Chloride	1.0	ug/L	U	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	105	%Rec		6/ 1/23	1
460004	p-Bromofluorobenzene	87	%Rec		6/ 1/23	1
2037265	Toluene-d8	102	%Rec		6/ 1/23	1

Sample : 23214119

Information : Trip Blank/ Cooler 2
Matrix : Water
Collected : 5/25/2023

Parameter : VOA
Prep Method: 5030C - P&T for Aqueous Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	6/ 1/23	1
71556	1,1,1-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
79005	1,1,2-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
75343	1,1-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
75354	1,1-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
87616	1,2,3-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96184	1,2,3-Trichloropropane	1.0	ug/L	U	6/ 1/23	1
120821	1,2,4-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	1.0	ug/L	U	6/ 1/23	1
107062	1,2-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
78875	1,2-Dichloropropane	1.0	ug/L	U	6/ 1/23	1
78933	2-Butanone	1.0	ug/L	U	6/ 1/23	1
591786	2-Hexanone	1.0	ug/L	U	6/ 1/23	1
108101	2-Pentanone, 4-methyl-	1.0	ug/L	U	6/ 1/23	1
67641	2-Propanone	1.0	ug/L	U	6/ 1/23	1
79209	Acetic acid, methyl ester	1.0	ug/L	U	6/ 1/23	1
107131	Acrylonitrile	1.0	ug/L	U	6/ 1/23	1
71432	Benzene	1.0	ug/L	U	6/ 1/23	1
98828	Benzene, (1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	1.0	ug/L	U	6/ 1/23	1
95501	Benzene, 1,2-dichloro-	1.0	ug/L	U	6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	1.0	ug/L	U	6/ 1/23	1
541731	Benzene, 1,3-dichloro-	1.0	ug/L	U	6/ 1/23	1
106467	Benzene, 1,4-dichloro-	1.0	ug/L	U	6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
108907	Benzene, chloro-	1.0	ug/L	U	6/ 1/23	1
100425	Benzene, ethenyl-	1.0	ug/L	U	6/ 1/23	1
103651	Benzene, propyl-, (103651)	1.0	ug/L	U	6/ 1/23	1
98066	Benzene, tert-butyl-	1.0	ug/L	U	6/ 1/23	1
74975	Bromochloromethane	1.0	ug/L	U	6/ 1/23	1
75274	Bromodichloromethane	1.0	ug/L	U	6/ 1/23	1
75252	Bromoform	1.0	ug/L	U	6/ 1/23	1
74839	Bromomethane	1.0	ug/L	U	6/ 1/23	1
75150	Carbon disulfide	1.0	ug/L	U	6/ 1/23	1
56235	Carbon Tetrachloride	1.0	ug/L	U	6/ 1/23	1
156592	cis-1,2-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
10061015	cis-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
110827	Cyclohexane	1.0	ug/L	U	6/ 1/23	1
108872	Cyclohexane, methyl-	1.0	ug/L	U	6/ 1/23	1
124481	Dibromochloromethane	1.0	ug/L	U	6/ 1/23	1
74953	Dibromomethane	1.0	ug/L	U	6/ 1/23	1

Target Analyte Results (cont.):

75092	Dichloromethane	1.0	ug/L	U	6/ 1/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.0	ug/L	U	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	1.0	ug/L	U	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.0	ug/L	U	6/ 1/23	1
79016	Ethene, trichloro-	1.0	ug/L	U	6/ 1/23	1
75003	Ethyl Chloride	1.0	ug/L	U	6/ 1/23	1
100414	Ethylbenzene	1.0	ug/L	U	6/ 1/23	1
75694	Freon 11	1.0	ug/L	U	6/ 1/23	1
76131	Freon 113	1.0	ug/L	U	6/ 1/23	1
75718	Freon 12	1.0	ug/L	U	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	U	6/ 1/23	1
74873	Methane, chloro-	1.0	ug/L	U	6/ 1/23	1
67663	Methane, trichloro-	1.0	ug/L	U	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	1.0	ug/L	U	6/ 1/23	1
*1330207	MP-Xylene	2.0	ug/L	U	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	U	6/ 1/23	1
104518	n-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
95476	o-Xylene	1.0	ug/L	U	6/ 1/23	1
135988	sec-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
127184	Tetrachloroethene	1.0	ug/L	UJ	6/ 1/23	1
108883	Toluene	1.0	ug/L	U	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
75014	Vinyl Chloride	1.0	ug/L	U	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	100	%Rec		6/ 1/23	1
460004	p-Bromofluorobenzene	89	%Rec		6/ 1/23	1
2037265	Toluene-d8	101	%Rec		6/ 1/23	1

Sample : 23214100 Matrix Spike

Information : Field Sample/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 8:30:00AM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
630206	1,1,1,2-Tetrachloroethane	89	%Rec		6/ 5/23	1
71556	1,1,1-Trichloroethane	85	%Rec		6/ 5/23	1
79005	1,1,2-Trichloroethane	91	%Rec		6/ 5/23	1
75343	1,1-Dichloroethane	86	%Rec		6/ 5/23	1
75354	1,1-Dichloroethene	90	%Rec		6/ 5/23	1
87616	1,2,3-Trichlorobenzene	75	%Rec		6/ 5/23	1
96184	1,2,3-Trichloropropane	89	%Rec		6/ 5/23	1
120821	1,2,4-Trichlorobenzene	71	%Rec		6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	83	%Rec		6/ 5/23	1
107062	1,2-Dichloroethane	89	%Rec		6/ 5/23	1
78875	1,2-Dichloropropane	90	%Rec		6/ 5/23	1
78933	2-Butanone	79	%Rec		6/ 5/23	1
591786	2-Hexanone	81	%Rec		6/ 5/23	1
108101	2-Pentanone, 4-methyl-	88	%Rec		6/ 5/23	1
67641	2-Propanone	63	%Rec		6/ 5/23	1
79209	Acetic acid, methyl ester	88	%Rec		6/ 5/23	1
107131	Acrylonitrile	81	%Rec		6/ 5/23	1
71432	Benzene	87	%Rec		6/ 5/23	1
98828	Benzene, (1-methylethyl)-	81	%Rec		6/ 5/23	1
95636	Benzene, 1,2,4-trimethyl-	81	%Rec		6/ 5/23	1
95501	Benzene, 1,2-dichloro-	81	%Rec		6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	80	%Rec		6/ 5/23	1
541731	Benzene, 1,3-dichloro-	78	%Rec		6/ 5/23	1
106467	Benzene, 1,4-dichloro-	79	%Rec		6/ 5/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	76	%Rec		6/ 5/23	1
108907	Benzene, chloro-	88	%Rec		6/ 5/23	1
100425	Benzene, ethenyl-	82	%Rec		6/ 5/23	1
103651	Benzene, propyl-, (103651)	81	%Rec		6/ 5/23	1
98066	Benzene, tert-butyl-	79	%Rec		6/ 5/23	1
74975	Bromochloromethane	90	%Rec		6/ 5/23	1
75274	Bromodichloromethane	89	%Rec		6/ 5/23	1
75252	Bromoform	92	%Rec		6/ 5/23	1
74839	Bromomethane	96	%Rec		6/ 5/23	1
75150	Carbon disulfide	88	%Rec		6/ 5/23	1
56235	Carbon Tetrachloride	84	%Rec		6/ 5/23	1
156592	cis-1,2-Dichloroethene	86	%Rec		6/ 5/23	1
10061015	cis-1,3-Dichloropropene	88	%Rec		6/ 5/23	1
110827	Cyclohexane	84	%Rec		6/ 5/23	1
108872	Cyclohexane, methyl-	80	%Rec		6/ 5/23	1
124481	Dibromochloromethane	92	%Rec		6/ 5/23	1
74953	Dibromomethane	91	%Rec		6/ 5/23	1

Spiked Compounds (cont.):

75092	Dichloromethane	83	%Rec	6/ 5/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	93	%Rec	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	93	%Rec	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	88	%Rec	6/ 5/23	1
79016	Ethene, trichloro-	86	%Rec	6/ 5/23	1
75003	Ethyl Chloride	85	%Rec	6/ 5/23	1
100414	Ethylbenzene	85	%Rec	6/ 5/23	1
75694	Freon 11	92	%Rec	6/ 5/23	1
76131	Freon 113	87	%Rec	6/ 5/23	1
75718	Freon 12	90	%Rec	6/ 5/23	1
87683	Hexachlorobutadiene	69	%Rec	6/ 5/23	1
74873	Methane, chloro-	89	%Rec	6/ 5/23	1
67663	Methane, trichloro-	88	%Rec	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	92	%Rec	6/ 5/23	1
*1330207	MP-Xylene	84	%Rec	6/ 5/23	1
91203	Naphthalene	83	%Rec	6/ 5/23	1
104518	n-Butylbenzene	74	%Rec	6/ 5/23	1
95476	o-Xylene	84	%Rec	6/ 5/23	1
135988	sec-Butylbenzene	78	%Rec	6/ 5/23	1
127184	Tetrachloroethene	83	%Rec	6/ 5/23	1
108883	Toluene	85	%Rec	6/ 5/23	1
10061026	Trans-1,3-Dichloropropene	88	%Rec	6/ 5/23	1
75014	Vinyl Chloride	107	%Rec	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	104	%Rec	6/ 5/23	1
460004	p-Bromofluorobenzene	101	%Rec	6/ 5/23	1
2037265	Toluene-d8	100	%Rec	6/ 5/23	1

Sample : 23214105 Matrix Spike

Information : Field Sample/ S-2
Matrix : Water
Collected : 5/24/2023 5:00:00PM

Parameter : VOA
Prep Method: 5030C - P&T for Aqueous Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
630206	1,1,1,2-Tetrachloroethane	97	%Rec		6/ 1/23	1
71556	1,1,1-Trichloroethane	98	%Rec		6/ 1/23	1
79005	1,1,2-Trichloroethane	94	%Rec		6/ 1/23	1
75343	1,1-Dichloroethane	90	%Rec		6/ 1/23	1
75354	1,1-Dichloroethene	92	%Rec		6/ 1/23	1
87616	1,2,3-Trichlorobenzene	85	%Rec		6/ 1/23	1
96184	1,2,3-Trichloropropane	85	%Rec		6/ 1/23	1
120821	1,2,4-Trichlorobenzene	87	%Rec		6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	83	%Rec		6/ 1/23	1
107062	1,2-Dichloroethane	89	%Rec		6/ 1/23	1
78875	1,2-Dichloropropane	96	%Rec		6/ 1/23	1
78933	2-Butanone	82	%Rec		6/ 1/23	1
591786	2-Hexanone	89	%Rec		6/ 1/23	1
108101	2-Pentanone, 4-methyl-	93	%Rec		6/ 1/23	1
67641	2-Propanone	87	%Rec		6/ 1/23	1
79209	Acetic acid, methyl ester	86	%Rec		6/ 1/23	1
107131	Acrylonitrile	89	%Rec		6/ 1/23	1
71432	Benzene	98	%Rec		6/ 1/23	1
98828	Benzene, (1-methylethyl)-	87	%Rec		6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	88	%Rec		6/ 1/23	1
95501	Benzene, 1,2-dichloro-	85	%Rec		6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	88	%Rec		6/ 1/23	1
541731	Benzene, 1,3-dichloro-	87	%Rec		6/ 1/23	1
106467	Benzene, 1,4-dichloro-	86	%Rec		6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	87	%Rec		6/ 1/23	1
108907	Benzene, chloro-	98	%Rec		6/ 1/23	1
100425	Benzene, ethenyl-	98	%Rec		6/ 1/23	1
103651	Benzene, propyl-, (103651)	87	%Rec		6/ 1/23	1
98066	Benzene, tert-butyl-	86	%Rec		6/ 1/23	1
74975	Bromochloromethane	89	%Rec		6/ 1/23	1
75274	Bromodichloromethane	96	%Rec		6/ 1/23	1
75252	Bromoform	83	%Rec		6/ 1/23	1
74839	Bromomethane	92	%Rec		6/ 1/23	1
75150	Carbon disulfide	92	%Rec		6/ 1/23	1
56235	Carbon Tetrachloride	99	%Rec		6/ 1/23	1
156592	cis-1,2-Dichloroethene	89	%Rec		6/ 1/23	1
10061015	cis-1,3-Dichloropropene	95	%Rec		6/ 1/23	1
110827	Cyclohexane	102	%Rec		6/ 1/23	1
108872	Cyclohexane, methyl-	100	%Rec		6/ 1/23	1
124481	Dibromochloromethane	95	%Rec		6/ 1/23	1
74953	Dibromomethane	96	%Rec		6/ 1/23	1

Spiked Compounds (cont.):

75092	Dichloromethane	91	%Rec	6/ 1/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	97	%Rec	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	94	%Rec	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	93	%Rec	6/ 1/23	1
79016	Ethene, trichloro-	98	%Rec	6/ 1/23	1
75003	Ethyl Chloride	96	%Rec	6/ 1/23	1
100414	Ethylbenzene	100	%Rec	6/ 1/23	1
75694	Freon 11	89	%Rec	6/ 1/23	1
76131	Freon 113	95	%Rec	6/ 1/23	1
75718	Freon 12	102	%Rec	6/ 1/23	1
87683	Hexachlorobutadiene	89	%Rec	6/ 1/23	1
74873	Methane, chloro-	93	%Rec	6/ 1/23	1
67663	Methane, trichloro-	94	%Rec	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	86	%Rec	6/ 1/23	1
*1330207	MP-Xylene	99	%Rec	6/ 1/23	1
91203	Naphthalene	84	%Rec	6/ 1/23	1
104518	n-Butylbenzene	90	%Rec	6/ 1/23	1
95476	o-Xylene	97	%Rec	6/ 1/23	1
135988	sec-Butylbenzene	88	%Rec	6/ 1/23	1
127184	Tetrachloroethene	79	%Rec	6/ 1/23	1
108883	Toluene	98	%Rec	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	94	%Rec	6/ 1/23	1
75014	Vinyl Chloride	99	%Rec	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	103	%Rec	6/ 1/23	1
460004	p-Bromofluorobenzene	86	%Rec	6/ 1/23	1
2037265	Toluene-d8	103	%Rec	6/ 1/23	1

Sample : 23214100 Matrix Spike#2

Information : Field Sample/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 8:30:00AM

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
630206	1,1,1,2-Tetrachloroethane	96	%Rec		6/ 5/23	1
71556	1,1,1-Trichloroethane	93	%Rec		6/ 5/23	1
79005	1,1,2-Trichloroethane	102	%Rec		6/ 5/23	1
75343	1,1-Dichloroethane	94	%Rec		6/ 5/23	1
75354	1,1-Dichloroethene	96	%Rec		6/ 5/23	1
87616	1,2,3-Trichlorobenzene	80	%Rec		6/ 5/23	1
96184	1,2,3-Trichloropropane	104	%Rec		6/ 5/23	1
120821	1,2,4-Trichlorobenzene	77	%Rec		6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	95	%Rec		6/ 5/23	1
107062	1,2-Dichloroethane	99	%Rec		6/ 5/23	1
78875	1,2-Dichloropropane	98	%Rec		6/ 5/23	1
78933	2-Butanone	87	%Rec		6/ 5/23	1
591786	2-Hexanone	89	%Rec		6/ 5/23	1
108101	2-Pentanone, 4-methyl-	98	%Rec		6/ 5/23	1
67641	2-Propanone	74	%Rec		6/ 5/23	1
79209	Acetic acid, methyl ester	96	%Rec		6/ 5/23	1
107131	Acrylonitrile	91	%Rec		6/ 5/23	1
71432	Benzene	95	%Rec		6/ 5/23	1
98828	Benzene, (1-methylethyl)-	89	%Rec		6/ 5/23	1
95636	Benzene, 1,2,4-trimethyl-	90	%Rec		6/ 5/23	1
95501	Benzene, 1,2-dichloro-	91	%Rec		6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	89	%Rec		6/ 5/23	1
541731	Benzene, 1,3-dichloro-	89	%Rec		6/ 5/23	1
106467	Benzene, 1,4-dichloro-	88	%Rec		6/ 5/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	84	%Rec		6/ 5/23	1
108907	Benzene, chloro-	95	%Rec		6/ 5/23	1
100425	Benzene, ethenyl-	91	%Rec		6/ 5/23	1
103651	Benzene, propyl-, (103651)	89	%Rec		6/ 5/23	1
98066	Benzene, tert-butyl-	89	%Rec		6/ 5/23	1
74975	Bromochloromethane	97	%Rec		6/ 5/23	1
75274	Bromodichloromethane	98	%Rec		6/ 5/23	1
75252	Bromoform	101	%Rec		6/ 5/23	1
74839	Bromomethane	102	%Rec		6/ 5/23	1
75150	Carbon disulfide	93	%Rec		6/ 5/23	1
56235	Carbon Tetrachloride	92	%Rec		6/ 5/23	1
156592	cis-1,2-Dichloroethene	94	%Rec		6/ 5/23	1
10061015	cis-1,3-Dichloropropene	95	%Rec		6/ 5/23	1
110827	Cyclohexane	92	%Rec		6/ 5/23	1
108872	Cyclohexane, methyl-	84	%Rec		6/ 5/23	1
124481	Dibromochloromethane	101	%Rec		6/ 5/23	1
74953	Dibromomethane	98	%Rec		6/ 5/23	1

Spiked Compounds (cont.):

75092	Dichloromethane	90	%Rec	6/ 5/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	104	%Rec	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	103	%Rec	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	93	%Rec	6/ 5/23	1
79016	Ethene, trichloro-	94	%Rec	6/ 5/23	1
75003	Ethyl Chloride	96	%Rec	6/ 5/23	1
100414	Ethylbenzene	93	%Rec	6/ 5/23	1
75694	Freon 11	101	%Rec	6/ 5/23	1
76131	Freon 113	94	%Rec	6/ 5/23	1
75718	Freon 12	94	%Rec	6/ 5/23	1
87683	Hexachlorobutadiene	65	%Rec	6/ 5/23	1
74873	Methane, chloro-	92	%Rec	6/ 5/23	1
67663	Methane, trichloro-	96	%Rec	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	103	%Rec	6/ 5/23	1
*1330207	MP-Xylene	92	%Rec	6/ 5/23	1
91203	Naphthalene	91	%Rec	6/ 5/23	1
104518	n-Butylbenzene	80	%Rec	6/ 5/23	1
95476	o-Xylene	94	%Rec	6/ 5/23	1
135988	sec-Butylbenzene	84	%Rec	6/ 5/23	1
127184	Tetrachloroethene	90	%Rec	6/ 5/23	1
108883	Toluene	93	%Rec	6/ 5/23	1
10061026	Trans-1,3-Dichloropropene	97	%Rec	6/ 5/23	1
75014	Vinyl Chloride	113	%Rec	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	102	%Rec	6/ 5/23	1
460004	p-Bromofluorobenzene	100	%Rec	6/ 5/23	1
2037265	Toluene-d8	99	%Rec	6/ 5/23	1

Sample : 23214105 Matrix Spike#2

Information : Field Sample/ S-2
Matrix : Water
Collected : 5/24/2023 5:00:00PM

Parameter : VOA
Prep Method: 5030C - P&T for Aqueous Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
630206	1,1,1,2-Tetrachloroethane	100	%Rec		6/ 1/23	1
71556	1,1,1-Trichloroethane	103	%Rec		6/ 1/23	1
79005	1,1,2-Trichloroethane	99	%Rec		6/ 1/23	1
75343	1,1-Dichloroethane	94	%Rec		6/ 1/23	1
75354	1,1-Dichloroethene	95	%Rec		6/ 1/23	1
87616	1,2,3-Trichlorobenzene	92	%Rec		6/ 1/23	1
96184	1,2,3-Trichloropropane	88	%Rec		6/ 1/23	1
120821	1,2,4-Trichlorobenzene	93	%Rec		6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	88	%Rec		6/ 1/23	1
107062	1,2-Dichloroethane	92	%Rec		6/ 1/23	1
78875	1,2-Dichloropropane	100	%Rec		6/ 1/23	1
78933	2-Butanone	86	%Rec		6/ 1/23	1
591786	2-Hexanone	94	%Rec		6/ 1/23	1
108101	2-Pentanone, 4-methyl-	102	%Rec		6/ 1/23	1
67641	2-Propanone	90	%Rec		6/ 1/23	1
79209	Acetic acid, methyl ester	91	%Rec		6/ 1/23	1
107131	Acrylonitrile	92	%Rec		6/ 1/23	1
71432	Benzene	101	%Rec		6/ 1/23	1
98828	Benzene, (1-methylethyl)-	90	%Rec		6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	92	%Rec		6/ 1/23	1
95501	Benzene, 1,2-dichloro-	90	%Rec		6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	91	%Rec		6/ 1/23	1
541731	Benzene, 1,3-dichloro-	91	%Rec		6/ 1/23	1
106467	Benzene, 1,4-dichloro-	89	%Rec		6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	91	%Rec		6/ 1/23	1
108907	Benzene, chloro-	102	%Rec		6/ 1/23	1
100425	Benzene, ethenyl-	101	%Rec		6/ 1/23	1
103651	Benzene, propyl-, (103651)	92	%Rec		6/ 1/23	1
98066	Benzene, tert-butyl-	90	%Rec		6/ 1/23	1
74975	Bromochloromethane	93	%Rec		6/ 1/23	1
75274	Bromodichloromethane	100	%Rec		6/ 1/23	1
75252	Bromoform	85	%Rec		6/ 1/23	1
74839	Bromomethane	100	%Rec		6/ 1/23	1
75150	Carbon disulfide	96	%Rec		6/ 1/23	1
56235	Carbon Tetrachloride	103	%Rec		6/ 1/23	1
156592	cis-1,2-Dichloroethene	94	%Rec		6/ 1/23	1
10061015	cis-1,3-Dichloropropene	101	%Rec		6/ 1/23	1
110827	Cyclohexane	106	%Rec		6/ 1/23	1
108872	Cyclohexane, methyl-	107	%Rec		6/ 1/23	1
124481	Dibromochloromethane	100	%Rec		6/ 1/23	1
74953	Dibromomethane	101	%Rec		6/ 1/23	1

Spiked Compounds (cont.):

75092	Dichloromethane	96	%Rec	6/ 1/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	101	%Rec	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	100	%Rec	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	96	%Rec	6/ 1/23	1
79016	Ethene, trichloro-	103	%Rec	6/ 1/23	1
75003	Ethyl Chloride	101	%Rec	6/ 1/23	1
100414	Ethylbenzene	105	%Rec	6/ 1/23	1
75694	Freon 11	96	%Rec	6/ 1/23	1
76131	Freon 113	98	%Rec	6/ 1/23	1
75718	Freon 12	106	%Rec	6/ 1/23	1
87683	Hexachlorobutadiene	95	%Rec	6/ 1/23	1
74873	Methane, chloro-	96	%Rec	6/ 1/23	1
67663	Methane, trichloro-	96	%Rec	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	91	%Rec	6/ 1/23	1
*1330207	MP-Xylene	104	%Rec	6/ 1/23	1
91203	Naphthalene	90	%Rec	6/ 1/23	1
104518	n-Butylbenzene	94	%Rec	6/ 1/23	1
95476	o-Xylene	103	%Rec	6/ 1/23	1
135988	sec-Butylbenzene	92	%Rec	6/ 1/23	1
127184	Tetrachloroethene	82	%Rec	6/ 1/23	1
108883	Toluene	102	%Rec	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	99	%Rec	6/ 1/23	1
75014	Vinyl Chloride	103	%Rec	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	101	%Rec	6/ 1/23	1
460004	p-Bromofluorobenzene	86	%Rec	6/ 1/23	1
2037265	Toluene-d8	104	%Rec	6/ 1/23	1

Sample : DS060523B2 Blank

Information : Blank
Matrix : Solid

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.0	ug/kg	U	6/ 5/23	1
71556	1,1,1-Trichloroethane	1.0	ug/kg	U	6/ 5/23	1
79005	1,1,2-Trichloroethane	1.0	ug/kg	U	6/ 5/23	1
75343	1,1-Dichloroethane	1.0	ug/kg	U	6/ 5/23	1
75354	1,1-Dichloroethene	1.0	ug/kg	U	6/ 5/23	1
87616	1,2,3-Trichlorobenzene	1.0	ug/kg	U	6/ 5/23	1
96184	1,2,3-Trichloropropane	1.0	ug/kg	U	6/ 5/23	1
120821	1,2,4-Trichlorobenzene	1.0	ug/kg	U	6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	1.0	ug/kg	U	6/ 5/23	1
107062	1,2-Dichloroethane	1.0	ug/kg	U	6/ 5/23	1
78875	1,2-Dichloropropane	1.0	ug/kg	U	6/ 5/23	1
78933	2-Butanone	1.0	ug/kg	U	6/ 5/23	1
591786	2-Hexanone	1.0	ug/kg	U	6/ 5/23	1
108101	2-Pentanone, 4-methyl-	1.0	ug/kg	U	6/ 5/23	1
67641	2-Propanone	2.0	ug/kg	U	6/ 5/23	1
79209	Acetic acid, methyl ester	1.0	ug/kg	U	6/ 5/23	1
107131	Acrylonitrile	1.0	ug/kg	U	6/ 5/23	1
71432	Benzene	1.0	ug/kg	U	6/ 5/23	1
98828	Benzene, (1-methylethyl)-	1.0	ug/kg	U	6/ 5/23	1
95636	Benzene, 1,2,4-trimethyl-	1.0	ug/kg	U	6/ 5/23	1
95501	Benzene, 1,2-dichloro-	1.0	ug/kg	U	6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	1.0	ug/kg	U	6/ 5/23	1
541731	Benzene, 1,3-dichloro-	1.0	ug/kg	U	6/ 5/23	1
106467	Benzene, 1,4-dichloro-	1.0	ug/kg	U	6/ 5/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.0	ug/kg	U	6/ 5/23	1
108907	Benzene, chloro-	1.0	ug/kg	U	6/ 5/23	1
100425	Benzene, ethenyl-	1.0	ug/kg	U	6/ 5/23	1
103651	Benzene, propyl-, (103651)	1.0	ug/kg	U	6/ 5/23	1
98066	Benzene, tert-butyl-	1.0	ug/kg	U	6/ 5/23	1
74975	Bromochloromethane	1.0	ug/kg	U	6/ 5/23	1
75274	Bromodichloromethane	1.0	ug/kg	U	6/ 5/23	1
75252	Bromoform	1.0	ug/kg	U	6/ 5/23	1
74839	Bromomethane	2.0	ug/kg	U	6/ 5/23	1
75150	Carbon disulfide	1.0	ug/kg	U	6/ 5/23	1
56235	Carbon Tetrachloride	1.0	ug/kg	U	6/ 5/23	1
156592	cis-1,2-Dichloroethene	1.0	ug/kg	U	6/ 5/23	1
10061015	cis-1,3-Dichloropropene	1.0	ug/kg	U	6/ 5/23	1
110827	Cyclohexane	1.0	ug/kg	U	6/ 5/23	1
108872	Cyclohexane, methyl-	1.0	ug/kg	U	6/ 5/23	1
124481	Dibromochloromethane	1.0	ug/kg	U	6/ 5/23	1
74953	Dibromomethane	1.0	ug/kg	U	6/ 5/23	1
75092	Dichloromethane	1.0	ug/kg	U	6/ 5/23	1

Target Analyte Results (cont.):

79345	Ethane, 1,1,2,2-tetrachloro-	1.0	ug/kg	U	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	1.0	ug/kg	U	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.0	ug/kg	U	6/ 5/23	1
79016	Ethene, trichloro-	1.0	ug/kg	U	6/ 5/23	1
75003	Ethyl Chloride	1.0	ug/kg	U	6/ 5/23	1
100414	Ethylbenzene	1.0	ug/kg	U	6/ 5/23	1
75694	Freon 11	1.0	ug/kg	U	6/ 5/23	1
76131	Freon 113	1.0	ug/kg	U	6/ 5/23	1
75718	Freon 12	2.0	ug/kg	U	6/ 5/23	1
87683	Hexachlorobutadiene	1.0	ug/kg	U	6/ 5/23	1
74873	Methane, chloro-	1.0	ug/kg	U	6/ 5/23	1
67663	Methane, trichloro-	1.0	ug/kg	U	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	1.0	ug/kg	U	6/ 5/23	1
*1330207	MP-Xylene	2.0	ug/kg	U	6/ 5/23	1
91203	Naphthalene	1.0	ug/kg	U	6/ 5/23	1
104518	n-Butylbenzene	1.0	ug/kg	U	6/ 5/23	1
95476	o-Xylene	1.0	ug/kg	U	6/ 5/23	1
135988	sec-Butylbenzene	1.0	ug/kg	U	6/ 5/23	1
127184	Tetrachloroethene	1.0	ug/kg	U	6/ 5/23	1
108883	Toluene	1.0	ug/kg	U	6/ 5/23	1
10061026	Trans-1,3-Dichloropropene	1.0	ug/kg	U	6/ 5/23	1
75014	Vinyl Chloride	1.0	ug/kg	U	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	99	%Rec		6/ 5/23	1
460004	p-Bromofluorobenzene	101	%Rec		6/ 5/23	1
2037265	Toluene-d8	99	%Rec		6/ 5/23	1

Sample : DS060623B1 Blank

Information : Blank
Matrix : Solid

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.0	ug/kg	U	6/ 6/23	1
630206	1,1,1,2-Tetrachloroethane	50	ug/kg	U	6/ 6/23	1
71556	1,1,1-Trichloroethane	1.0	ug/kg	U	6/ 6/23	1
71556	1,1,1-Trichloroethane	50	ug/kg	U	6/ 6/23	1
79005	1,1,2-Trichloroethane	1.0	ug/kg	U	6/ 6/23	1
79005	1,1,2-Trichloroethane	50	ug/kg	U	6/ 6/23	1
75343	1,1-Dichloroethane	1.0	ug/kg	U	6/ 6/23	1
75343	1,1-Dichloroethane	50	ug/kg	U	6/ 6/23	1
75354	1,1-Dichloroethene	1.0	ug/kg	U	6/ 6/23	1
75354	1,1-Dichloroethene	50	ug/kg	U	6/ 6/23	1
87616	1,2,3-Trichlorobenzene	1.0	ug/kg	U	6/ 6/23	1
87616	1,2,3-Trichlorobenzene	50	ug/kg	U	6/ 6/23	1
96184	1,2,3-Trichloropropane	1.0	ug/kg	U	6/ 6/23	1
96184	1,2,3-Trichloropropane	50	ug/kg	U	6/ 6/23	1
120821	1,2,4-Trichlorobenzene	1.0	ug/kg	U	6/ 6/23	1
120821	1,2,4-Trichlorobenzene	50	ug/kg	U	6/ 6/23	1
96128	1,2-Dibromo-3-chloropropane	1.0	ug/kg	U	6/ 6/23	1
96128	1,2-Dibromo-3-chloropropane	50	ug/kg	U	6/ 6/23	1
107062	1,2-Dichloroethane	1.0	ug/kg	U	6/ 6/23	1
107062	1,2-Dichloroethane	50	ug/kg	U	6/ 6/23	1
78875	1,2-Dichloropropane	1.0	ug/kg	U	6/ 6/23	1
78875	1,2-Dichloropropane	50	ug/kg	U	6/ 6/23	1
78933	2-Butanone	1.0	ug/kg	U	6/ 6/23	1
78933	2-Butanone	50	ug/kg	U	6/ 6/23	1
591786	2-Hexanone	1.0	ug/kg	U	6/ 6/23	1
591786	2-Hexanone	50	ug/kg	U	6/ 6/23	1
108101	2-Pentanone, 4-methyl-	1.0	ug/kg	U	6/ 6/23	1
108101	2-Pentanone, 4-methyl-	50	ug/kg	U	6/ 6/23	1
67641	2-Propanone	2.0	ug/kg	U	6/ 6/23	1
67641	2-Propanone	50	ug/kg	U	6/ 6/23	1
79209	Acetic acid, methyl ester	1.0	ug/kg	U	6/ 6/23	1
79209	Acetic acid, methyl ester	50	ug/kg	U	6/ 6/23	1
107131	Acrylonitrile	1.0	ug/kg	U	6/ 6/23	1
107131	Acrylonitrile	50	ug/kg	U	6/ 6/23	1
71432	Benzene	1.0	ug/kg	U	6/ 6/23	1
71432	Benzene	50	ug/kg	U	6/ 6/23	1
98828	Benzene, (1-methylethyl)-	1.0	ug/kg	U	6/ 6/23	1
98828	Benzene, (1-methylethyl)-	50	ug/kg	U	6/ 6/23	1
95636	Benzene, 1,2,4-trimethyl-	1.0	ug/kg	U	6/ 6/23	1
95636	Benzene, 1,2,4-trimethyl-	50	ug/kg	U	6/ 6/23	1
95501	Benzene, 1,2-dichloro-	1.0	ug/kg	U	6/ 6/23	1
95501	Benzene, 1,2-dichloro-	50	ug/kg	U	6/ 6/23	1

Target Analyte Results (cont.):

108678	Benzene, 1,3,5-trimethyl-	1.0	ug/kg	U	6/ 6/23	1
108678	Benzene, 1,3,5-trimethyl-	50	ug/kg	U	6/ 6/23	1
541731	Benzene, 1,3-dichloro-	1.0	ug/kg	U	6/ 6/23	1
541731	Benzene, 1,3-dichloro-	50	ug/kg	U	6/ 6/23	1
106467	Benzene, 1,4-dichloro-	1.0	ug/kg	U	6/ 6/23	1
106467	Benzene, 1,4-dichloro-	50	ug/kg	U	6/ 6/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.0	ug/kg	U	6/ 6/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	50	ug/kg	U	6/ 6/23	1
108907	Benzene, chloro-	1.0	ug/kg	U	6/ 6/23	1
108907	Benzene, chloro-	50	ug/kg	U	6/ 6/23	1
100425	Benzene, ethenyl-	1.0	ug/kg	U	6/ 6/23	1
100425	Benzene, ethenyl-	50	ug/kg	U	6/ 6/23	1
103651	Benzene, propyl-, (103651)	1.0	ug/kg	U	6/ 6/23	1
103651	Benzene, propyl-, (103651)	50	ug/kg	U	6/ 6/23	1
98066	Benzene, tert-butyl-	1.0	ug/kg	U	6/ 6/23	1
98066	Benzene, tert-butyl-	50	ug/kg	U	6/ 6/23	1
74975	Bromochloromethane	1.0	ug/kg	U	6/ 6/23	1
74975	Bromochloromethane	50	ug/kg	U	6/ 6/23	1
75274	Bromodichloromethane	1.0	ug/kg	U	6/ 6/23	1
75274	Bromodichloromethane	50	ug/kg	U	6/ 6/23	1
75252	Bromoform	1.0	ug/kg	U	6/ 6/23	1
75252	Bromoform	50	ug/kg	U	6/ 6/23	1
74839	Bromomethane	2.0	ug/kg	U	6/ 6/23	1
74839	Bromomethane	50	ug/kg	U	6/ 6/23	1
75150	Carbon disulfide	1.0	ug/kg	U	6/ 6/23	1
75150	Carbon disulfide	50	ug/kg	U	6/ 6/23	1
56235	Carbon Tetrachloride	1.0	ug/kg	U	6/ 6/23	1
56235	Carbon Tetrachloride	50	ug/kg	U	6/ 6/23	1
156592	cis-1,2-Dichloroethene	1.0	ug/kg	U	6/ 6/23	1
156592	cis-1,2-Dichloroethene	50	ug/kg	U	6/ 6/23	1
10061015	cis-1,3-Dichloropropene	1.0	ug/kg	U	6/ 6/23	1
10061015	cis-1,3-Dichloropropene	50	ug/kg	U	6/ 6/23	1
110827	Cyclohexane	1.0	ug/kg	U	6/ 6/23	1
110827	Cyclohexane	50	ug/kg	U	6/ 6/23	1
108872	Cyclohexane, methyl-	1.0	ug/kg	U	6/ 6/23	1
108872	Cyclohexane, methyl-	50	ug/kg	U	6/ 6/23	1
124481	Dibromochloromethane	1.0	ug/kg	U	6/ 6/23	1
124481	Dibromochloromethane	50	ug/kg	U	6/ 6/23	1
74953	Dibromomethane	1.0	ug/kg	U	6/ 6/23	1
74953	Dibromomethane	50	ug/kg	U	6/ 6/23	1
75092	Dichloromethane	1.0	ug/kg	U	6/ 6/23	1
75092	Dichloromethane	50	ug/kg	U	6/ 6/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	1.0	ug/kg	U	6/ 6/23	1
79345	Ethane, 1,1,2,2-tetrachloro-	50	ug/kg	U	6/ 6/23	1
106934	Ethane, 1,2-dibromo-	1.0	ug/kg	U	6/ 6/23	1
106934	Ethane, 1,2-dibromo-	50	ug/kg	U	6/ 6/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.0	ug/kg	U	6/ 6/23	1
156605	Ethene, 1,2-dichloro-, (E)-	50	ug/kg	U	6/ 6/23	1
79016	Ethene, trichloro-	1.0	ug/kg	U	6/ 6/23	1
79016	Ethene, trichloro-	50	ug/kg	U	6/ 6/23	1
75003	Ethyl Chloride	1.0	ug/kg	U	6/ 6/23	1
75003	Ethyl Chloride	50	ug/kg	U	6/ 6/23	1

Target Analyte Results (cont.):

100414	Ethylbenzene	1.0	ug/kg	U	6/ 6/23	1
100414	Ethylbenzene	50	ug/kg	U	6/ 6/23	1
75694	Freon 11	1.0	ug/kg	U	6/ 6/23	1
75694	Freon 11	50	ug/kg	U	6/ 6/23	1
76131	Freon 113	1.0	ug/kg	U	6/ 6/23	1
76131	Freon 113	50	ug/kg	U	6/ 6/23	1
75718	Freon 12	2.0	ug/kg	U	6/ 6/23	1
75718	Freon 12	50	ug/kg	U	6/ 6/23	1
87683	Hexachlorobutadiene	1.0	ug/kg	U	6/ 6/23	1
87683	**Hexachlorobutadiene**	**31**	**ug/kg**	J	6/ 6/23	1
74873	Methane, chloro-	1.0	ug/kg	U	6/ 6/23	1
74873	Methane, chloro-	50	ug/kg	U	6/ 6/23	1
67663	Methane, trichloro-	1.0	ug/kg	U	6/ 6/23	1
67663	Methane, trichloro-	50	ug/kg	U	6/ 6/23	1
1634044	Methyl tert butylether (MTBE)	1.0	ug/kg	U	6/ 6/23	1
1634044	Methyl tert butylether (MTBE)	50	ug/kg	U	6/ 6/23	1
*1330207	MP-Xylene	2.0	ug/kg	U	6/ 6/23	1
*1330207	MP-Xylene	100	ug/kg	U	6/ 6/23	1
91203	Naphthalene	1.0	ug/kg	U	6/ 6/23	1
91203	Naphthalene	50	ug/kg	U	6/ 6/23	1
104518	n-Butylbenzene	1.0	ug/kg	U	6/ 6/23	1
104518	n-Butylbenzene	50	ug/kg	U	6/ 6/23	1
95476	o-Xylene	1.0	ug/kg	U	6/ 6/23	1
95476	o-Xylene	50	ug/kg	U	6/ 6/23	1
135988	sec-Butylbenzene	1.0	ug/kg	U	6/ 6/23	1
135988	sec-Butylbenzene	50	ug/kg	U	6/ 6/23	1
127184	Tetrachloroethene	1.0	ug/kg	U	6/ 6/23	1
127184	Tetrachloroethene	50	ug/kg	U	6/ 6/23	1
108883	Toluene	1.0	ug/kg	U	6/ 6/23	1
108883	Toluene	50	ug/kg	U	6/ 6/23	1
10061026	Trans-1,3-Dichloropropene	1.0	ug/kg	U	6/ 6/23	1
10061026	Trans-1,3-Dichloropropene	50	ug/kg	U	6/ 6/23	1
75014	Vinyl Chloride	1.0	ug/kg	U	6/ 6/23	1
75014	Vinyl Chloride	50	ug/kg	U	6/ 6/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	102	%Rec		6/ 6/23	1
17060070	1,2-Dichloroethane-d4	103	%Rec		6/ 6/23	1
460004	p-Bromofluorobenzene	103	%Rec		6/ 6/23	1
460004	p-Bromofluorobenzene	84	%Rec		6/ 6/23	1
2037265	Toluene-d8	100	%Rec		6/ 6/23	1
2037265	Toluene-d8	100	%Rec		6/ 6/23	1

Sample : DW060123B1 Blank

Information : Blank
Matrix : Liquid

Parameter : VOA
Prep Method: 5030C - P&T for Aqueous Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
630206	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	6/ 1/23	1
71556	1,1,1-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
79005	1,1,2-Trichloroethane	1.0	ug/L	U	6/ 1/23	1
75343	1,1-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
75354	1,1-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
87616	1,2,3-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96184	1,2,3-Trichloropropane	1.0	ug/L	U	6/ 1/23	1
120821	1,2,4-Trichlorobenzene	1.0	ug/L	U	6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	1.0	ug/L	U	6/ 1/23	1
107062	1,2-Dichloroethane	1.0	ug/L	U	6/ 1/23	1
78875	1,2-Dichloropropane	1.0	ug/L	U	6/ 1/23	1
78933	2-Butanone	1.0	ug/L	U	6/ 1/23	1
591786	2-Hexanone	1.0	ug/L	U	6/ 1/23	1
108101	2-Pentanone, 4-methyl-	1.0	ug/L	U	6/ 1/23	1
67641	2-Propanone	1.0	ug/L	U	6/ 1/23	1
79209	Acetic acid, methyl ester	1.0	ug/L	U	6/ 1/23	1
107131	Acrylonitrile	1.0	ug/L	U	6/ 1/23	1
71432	Benzene	1.0	ug/L	U	6/ 1/23	1
98828	Benzene, (1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	1.0	ug/L	U	6/ 1/23	1
95501	Benzene, 1,2-dichloro-	1.0	ug/L	U	6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	1.0	ug/L	U	6/ 1/23	1
541731	Benzene, 1,3-dichloro-	1.0	ug/L	U	6/ 1/23	1
106467	Benzene, 1,4-dichloro-	1.0	ug/L	U	6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	1.0	ug/L	U	6/ 1/23	1
108907	Benzene, chloro-	1.0	ug/L	U	6/ 1/23	1
100425	Benzene, ethenyl-	1.0	ug/L	U	6/ 1/23	1
103651	Benzene, propyl-, (103651)	1.0	ug/L	U	6/ 1/23	1
98066	Benzene, tert-butyl-	1.0	ug/L	U	6/ 1/23	1
74975	Bromochloromethane	1.0	ug/L	U	6/ 1/23	1
75274	Bromodichloromethane	1.0	ug/L	U	6/ 1/23	1
75252	Bromoform	1.0	ug/L	U	6/ 1/23	1
74839	Bromomethane	1.0	ug/L	U	6/ 1/23	1
75150	Carbon disulfide	1.0	ug/L	U	6/ 1/23	1
56235	Carbon Tetrachloride	1.0	ug/L	U	6/ 1/23	1
156592	cis-1,2-Dichloroethene	1.0	ug/L	U	6/ 1/23	1
10061015	cis-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
110827	Cyclohexane	1.0	ug/L	U	6/ 1/23	1
108872	Cyclohexane, methyl-	1.0	ug/L	U	6/ 1/23	1
124481	Dibromochloromethane	1.0	ug/L	U	6/ 1/23	1
74953	Dibromomethane	1.0	ug/L	U	6/ 1/23	1
75092	Dichloromethane	1.0	ug/L	U	6/ 1/23	1

Target Analyte Results (cont.):

79345	Ethane, 1,1,2,2-tetrachloro-	1.0	ug/L	U	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	1.0	ug/L	U	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	1.0	ug/L	U	6/ 1/23	1
79016	Ethene, trichloro-	1.0	ug/L	U	6/ 1/23	1
75003	Ethyl Chloride	1.0	ug/L	U	6/ 1/23	1
100414	Ethylbenzene	1.0	ug/L	U	6/ 1/23	1
75694	Freon 11	1.0	ug/L	U	6/ 1/23	1
76131	Freon 113	1.0	ug/L	U	6/ 1/23	1
75718	Freon 12	1.0	ug/L	U	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	U	6/ 1/23	1
74873	Methane, chloro-	1.0	ug/L	U	6/ 1/23	1
67663	Methane, trichloro-	1.0	ug/L	U	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	1.0	ug/L	U	6/ 1/23	1
*1330207	MP-Xylene	2.0	ug/L	U	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	U	6/ 1/23	1
104518	n-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
95476	o-Xylene	1.0	ug/L	U	6/ 1/23	1
135988	sec-Butylbenzene	1.0	ug/L	U	6/ 1/23	1
127184	Tetrachloroethene	1.0	ug/L	U	6/ 1/23	1
108883	Toluene	1.0	ug/L	U	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	1.0	ug/L	U	6/ 1/23	1
75014	Vinyl Chloride	1.0	ug/L	U	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	102	%Rec		6/ 1/23	1
460004	p-Bromofluorobenzene	88	%Rec		6/ 1/23	1
2037265	Toluene-d8	103	%Rec		6/ 1/23	1

Sample : DS060523L1 Lab Control Std

Information : Lab Control Standard
Matrix : Solid

Parameter : VOA
Prep Method: 5035A - P&T for Solid Samples
Analysis Method: 8260D - Volatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
630206	1,1,1,2-Tetrachloroethane	103	%Rec		6/ 5/23	1
71556	1,1,1-Trichloroethane	103	%Rec		6/ 5/23	1
79005	1,1,2-Trichloroethane	102	%Rec		6/ 5/23	1
75343	1,1-Dichloroethane	101	%Rec		6/ 5/23	1
75354	1,1-Dichloroethene	103	%Rec		6/ 5/23	1
87616	1,2,3-Trichlorobenzene	101	%Rec		6/ 5/23	1
96184	1,2,3-Trichloropropane	105	%Rec		6/ 5/23	1
120821	1,2,4-Trichlorobenzene	101	%Rec		6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	103	%Rec		6/ 5/23	1
107062	1,2-Dichloroethane	99	%Rec		6/ 5/23	1
78875	1,2-Dichloropropane	104	%Rec		6/ 5/23	1
78933	2-Butanone	105	%Rec		6/ 5/23	1
591786	2-Hexanone	103	%Rec		6/ 5/23	1
108101	2-Pentanone, 4-methyl-	102	%Rec		6/ 5/23	1
67641	2-Propanone	120	%Rec		6/ 5/23	1
79209	Acetic acid, methyl ester	104	%Rec		6/ 5/23	1
107131	Acrylonitrile	103	%Rec		6/ 5/23	1
71432	Benzene	104	%Rec		6/ 5/23	1
98828	Benzene, (1-methylethyl)-	107	%Rec		6/ 5/23	1
95636	Benzene, 1,2,4-trimethyl-	107	%Rec		6/ 5/23	1
95501	Benzene, 1,2-dichloro-	103	%Rec		6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	106	%Rec		6/ 5/23	1
541731	Benzene, 1,3-dichloro-	105	%Rec		6/ 5/23	1
106467	Benzene, 1,4-dichloro-	105	%Rec		6/ 5/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	107	%Rec		6/ 5/23	1
108907	Benzene, chloro-	104	%Rec		6/ 5/23	1
100425	Benzene, ethenyl-	104	%Rec		6/ 5/23	1
103651	Benzene, propyl-, (103651)	108	%Rec		6/ 5/23	1
98066	Benzene, tert-butyl-	107	%Rec		6/ 5/23	1
74975	Bromochloromethane	99	%Rec		6/ 5/23	1
75274	Bromodichloromethane	102	%Rec		6/ 5/23	1
75252	Bromoform	101	%Rec		6/ 5/23	1
74839	Bromomethane	107	%Rec		6/ 5/23	1
75150	Carbon disulfide	102	%Rec		6/ 5/23	1
56235	Carbon Tetrachloride	103	%Rec		6/ 5/23	1
156592	cis-1,2-Dichloroethene	102	%Rec		6/ 5/23	1
10061015	cis-1,3-Dichloropropene	103	%Rec		6/ 5/23	1
110827	Cyclohexane	103	%Rec		6/ 5/23	1
108872	Cyclohexane, methyl-	104	%Rec		6/ 5/23	1
124481	Dibromochloromethane	103	%Rec		6/ 5/23	1
74953	Dibromomethane	100	%Rec		6/ 5/23	1
75092	Dichloromethane	96	%Rec		6/ 5/23	1

Spiked Compounds (cont.):

79345	Ethane, 1,1,2,2-tetrachloro-	104	%Rec	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	104	%Rec	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	104	%Rec	6/ 5/23	1
79016	Ethene, trichloro-	106	%Rec	6/ 5/23	1
75003	Ethyl Chloride	98	%Rec	6/ 5/23	1
100414	Ethylbenzene	105	%Rec	6/ 5/23	1
75694	Freon 11	110	%Rec	6/ 5/23	1
76131	Freon 113	102	%Rec	6/ 5/23	1
75718	Freon 12	77	%Rec	6/ 5/23	1
87683	Hexachlorobutadiene	104	%Rec	6/ 5/23	1
74873	Methane, chloro-	90	%Rec	6/ 5/23	1
67663	Methane, trichloro-	103	%Rec	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	99	%Rec	6/ 5/23	1
*1330207	MP-Xylene	106	%Rec	6/ 5/23	1
91203	Naphthalene	105	%Rec	6/ 5/23	1
104518	n-Butylbenzene	108	%Rec	6/ 5/23	1
95476	o-Xylene	105	%Rec	6/ 5/23	1
135988	sec-Butylbenzene	108	%Rec	6/ 5/23	1
127184	Tetrachloroethene	104	%Rec	6/ 5/23	1
108883	Toluene	104	%Rec	6/ 5/23	1
10061026	Trans-1,3-Dichloropropene	103	%Rec	6/ 5/23	1
75014	Vinyl Chloride	99	%Rec	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	100	%Rec	6/ 5/23	1
460004	p-Bromofluorobenzene	101	%Rec	6/ 5/23	1
2037265	Toluene-d8	101	%Rec	6/ 5/23	1

Sample : DW060123L1 Lab Control Std

Information : Lab Control Standard

Matrix : Liquid

Parameter : VOA

Prep Method: 5030C - P&T for Aqueous Samples

Analysis Method: 8260D - Volatiles by GC/MS

Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
630206	1,1,1,2-Tetrachloroethane	96	%Rec		6/ 1/23	1
71556	1,1,1-Trichloroethane	97	%Rec		6/ 1/23	1
79005	1,1,2-Trichloroethane	95	%Rec		6/ 1/23	1
75343	1,1-Dichloroethane	89	%Rec		6/ 1/23	1
75354	1,1-Dichloroethene	89	%Rec		6/ 1/23	1
87616	1,2,3-Trichlorobenzene	87	%Rec		6/ 1/23	1
96184	1,2,3-Trichloropropane	91	%Rec		6/ 1/23	1
120821	1,2,4-Trichlorobenzene	90	%Rec		6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	86	%Rec		6/ 1/23	1
107062	1,2-Dichloroethane	91	%Rec		6/ 1/23	1
78875	1,2-Dichloropropane	96	%Rec		6/ 1/23	1
78933	2-Butanone	87	%Rec		6/ 1/23	1
591786	2-Hexanone	93	%Rec		6/ 1/23	1
108101	2-Pentanone, 4-methyl-	93	%Rec		6/ 1/23	1
67641	2-Propanone	88	%Rec		6/ 1/23	1
79209	Acetic acid, methyl ester	90	%Rec		6/ 1/23	1
107131	Acrylonitrile	93	%Rec		6/ 1/23	1
71432	Benzene	97	%Rec		6/ 1/23	1
98828	Benzene, (1-methylethyl)-	89	%Rec		6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	90	%Rec		6/ 1/23	1
95501	Benzene, 1,2-dichloro-	90	%Rec		6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	91	%Rec		6/ 1/23	1
541731	Benzene, 1,3-dichloro-	90	%Rec		6/ 1/23	1
106467	Benzene, 1,4-dichloro-	89	%Rec		6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	90	%Rec		6/ 1/23	1
108907	Benzene, chloro-	98	%Rec		6/ 1/23	1
100425	Benzene, ethenyl-	98	%Rec		6/ 1/23	1
103651	Benzene, propyl-, (103651)	91	%Rec		6/ 1/23	1
98066	Benzene, tert-butyl-	89	%Rec		6/ 1/23	1
74975	Bromochloromethane	90	%Rec		6/ 1/23	1
75274	Bromodichloromethane	98	%Rec		6/ 1/23	1
75252	Bromoform	87	%Rec		6/ 1/23	1
74839	Bromomethane	89	%Rec		6/ 1/23	1
75150	Carbon disulfide	90	%Rec		6/ 1/23	1
56235	Carbon Tetrachloride	97	%Rec		6/ 1/23	1
156592	cis-1,2-Dichloroethene	91	%Rec		6/ 1/23	1
10061015	cis-1,3-Dichloropropene	96	%Rec		6/ 1/23	1
110827	Cyclohexane	99	%Rec		6/ 1/23	1
108872	Cyclohexane, methyl-	100	%Rec		6/ 1/23	1
124481	Dibromochloromethane	96	%Rec		6/ 1/23	1
74953	Dibromomethane	96	%Rec		6/ 1/23	1
75092	Dichloromethane	91	%Rec		6/ 1/23	1

Spiked Compounds (cont.):

79345	Ethane, 1,1,2,2-tetrachloro-	96	%Rec	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	96	%Rec	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	92	%Rec	6/ 1/23	1
79016	Ethene, trichloro-	99	%Rec	6/ 1/23	1
75003	Ethyl Chloride	93	%Rec	6/ 1/23	1
100414	Ethylbenzene	99	%Rec	6/ 1/23	1
75694	Freon 11	85	%Rec	6/ 1/23	1
76131	Freon 113	93	%Rec	6/ 1/23	1
75718	Freon 12	85	%Rec	6/ 1/23	1
87683	Hexachlorobutadiene	94	%Rec	6/ 1/23	1
74873	Methane, chloro-	85	%Rec	6/ 1/23	1
67663	Methane, trichloro-	92	%Rec	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	89	%Rec	6/ 1/23	1
*1330207	MP-Xylene	99	%Rec	6/ 1/23	1
91203	Naphthalene	89	%Rec	6/ 1/23	1
104518	n-Butylbenzene	93	%Rec	6/ 1/23	1
95476	o-Xylene	97	%Rec	6/ 1/23	1
135988	sec-Butylbenzene	90	%Rec	6/ 1/23	1
127184	Tetrachloroethene	81	%Rec	6/ 1/23	1
108883	Toluene	97	%Rec	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	96	%Rec	6/ 1/23	1
75014	Vinyl Chloride	91	%Rec	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	102	%Rec	6/ 1/23	1
460004	p-Bromofluorobenzene	88	%Rec	6/ 1/23	1
2037265	Toluene-d8	102	%Rec	6/ 1/23	1

Sample : DS060523L2 Lab Control Std#2

Information : Lab Control Standard Dup.

Matrix : Solid

Parameter : VOA

Prep Method: 5035A - P&T for Solid Samples

Analysis Method: 8260D - Volatiles by GC/MS

Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
630206	1,1,1,2-Tetrachloroethane	96	%Rec		6/ 5/23	1
71556	1,1,1-Trichloroethane	93	%Rec		6/ 5/23	1
79005	1,1,2-Trichloroethane	95	%Rec		6/ 5/23	1
75343	1,1-Dichloroethane	94	%Rec		6/ 5/23	1
75354	1,1-Dichloroethene	94	%Rec		6/ 5/23	1
87616	1,2,3-Trichlorobenzene	94	%Rec		6/ 5/23	1
96184	1,2,3-Trichloropropane	94	%Rec		6/ 5/23	1
120821	1,2,4-Trichlorobenzene	91	%Rec		6/ 5/23	1
96128	1,2-Dibromo-3-chloropropane	93	%Rec		6/ 5/23	1
107062	1,2-Dichloroethane	94	%Rec		6/ 5/23	1
78875	1,2-Dichloropropane	94	%Rec		6/ 5/23	1
78933	2-Butanone	90	%Rec		6/ 5/23	1
591786	2-Hexanone	89	%Rec		6/ 5/23	1
108101	2-Pentanone, 4-methyl-	91	%Rec		6/ 5/23	1
67641	2-Propanone	94	%Rec		6/ 5/23	1
79209	Acetic acid, methyl ester	92	%Rec		6/ 5/23	1
107131	Acrylonitrile	91	%Rec		6/ 5/23	1
71432	Benzene	95	%Rec		6/ 5/23	1
98828	Benzene, (1-methylethyl)-	97	%Rec		6/ 5/23	1
95636	Benzene, 1,2,4-trimethyl-	98	%Rec		6/ 5/23	1
95501	Benzene, 1,2-dichloro-	95	%Rec		6/ 5/23	1
108678	Benzene, 1,3,5-trimethyl-	97	%Rec		6/ 5/23	1
541731	Benzene, 1,3-dichloro-	96	%Rec		6/ 5/23	1
106467	Benzene, 1,4-dichloro-	94	%Rec		6/ 5/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	98	%Rec		6/ 5/23	1
108907	Benzene, chloro-	95	%Rec		6/ 5/23	1
100425	Benzene, ethenyl-	95	%Rec		6/ 5/23	1
103651	Benzene, propyl-, (103651)	97	%Rec		6/ 5/23	1
98066	Benzene, tert-butyl-	97	%Rec		6/ 5/23	1
74975	Bromochloromethane	94	%Rec		6/ 5/23	1
75274	Bromodichloromethane	94	%Rec		6/ 5/23	1
75252	Bromoform	95	%Rec		6/ 5/23	1
74839	Bromomethane	97	%Rec		6/ 5/23	1
75150	Carbon disulfide	92	%Rec		6/ 5/23	1
56235	Carbon Tetrachloride	93	%Rec		6/ 5/23	1
156592	cis-1,2-Dichloroethene	94	%Rec		6/ 5/23	1
10061015	cis-1,3-Dichloropropene	95	%Rec		6/ 5/23	1
110827	Cyclohexane	94	%Rec		6/ 5/23	1
108872	Cyclohexane, methyl-	95	%Rec		6/ 5/23	1
124481	Dibromochloromethane	95	%Rec		6/ 5/23	1
74953	Dibromomethane	95	%Rec		6/ 5/23	1
75092	Dichloromethane	82	%Rec		6/ 5/23	1

Spiked Compounds (cont.):

79345	Ethane, 1,1,2,2-tetrachloro-	93	%Rec	6/ 5/23	1
106934	Ethane, 1,2-dibromo-	96	%Rec	6/ 5/23	1
156605	Ethene, 1,2-dichloro-, (E)-	94	%Rec	6/ 5/23	1
79016	Ethene, trichloro-	96	%Rec	6/ 5/23	1
75003	Ethyl Chloride	90	%Rec	6/ 5/23	1
100414	Ethylbenzene	96	%Rec	6/ 5/23	1
75694	Freon 11	97	%Rec	6/ 5/23	1
76131	Freon 113	93	%Rec	6/ 5/23	1
75718	Freon 12	70	%Rec	6/ 5/23	1
87683	Hexachlorobutadiene	96	%Rec	6/ 5/23	1
74873	Methane, chloro-	81	%Rec	6/ 5/23	1
67663	Methane, trichloro-	95	%Rec	6/ 5/23	1
1634044	Methyl tert butylether (MTBE)	95	%Rec	6/ 5/23	1
*1330207	MP-Xylene	97	%Rec	6/ 5/23	1
91203	Naphthalene	95	%Rec	6/ 5/23	1
104518	n-Butylbenzene	97	%Rec	6/ 5/23	1
95476	o-Xylene	94	%Rec	6/ 5/23	1
135988	sec-Butylbenzene	98	%Rec	6/ 5/23	1
127184	Tetrachloroethene	96	%Rec	6/ 5/23	1
108883	Toluene	95	%Rec	6/ 5/23	1
10061026	Trans-1,3-Dichloropropene	95	%Rec	6/ 5/23	1
75014	Vinyl Chloride	101	%Rec	6/ 5/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	99	%Rec	6/ 5/23	1
460004	p-Bromofluorobenzene	100	%Rec	6/ 5/23	1
2037265	Toluene-d8	99	%Rec	6/ 5/23	1

Sample : DW060123L2 Lab Control Std#2

Information : Lab Control Standard Dup.

Matrix : Liquid

Parameter : VOA

Prep Method: 5030C - P&T for Aqueous Samples

Analysis Method: 8260D - Volatiles by GC/MS

Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
630206	1,1,1,2-Tetrachloroethane	92	%Rec		6/ 1/23	1
71556	1,1,1-Trichloroethane	95	%Rec		6/ 1/23	1
79005	1,1,2-Trichloroethane	93	%Rec		6/ 1/23	1
75343	1,1-Dichloroethane	89	%Rec		6/ 1/23	1
75354	1,1-Dichloroethene	87	%Rec		6/ 1/23	1
87616	1,2,3-Trichlorobenzene	84	%Rec		6/ 1/23	1
96184	1,2,3-Trichloropropane	85	%Rec		6/ 1/23	1
120821	1,2,4-Trichlorobenzene	84	%Rec		6/ 1/23	1
96128	1,2-Dibromo-3-chloropropane	78	%Rec		6/ 1/23	1
107062	1,2-Dichloroethane	87	%Rec		6/ 1/23	1
78875	1,2-Dichloropropane	96	%Rec		6/ 1/23	1
78933	2-Butanone	82	%Rec		6/ 1/23	1
591786	2-Hexanone	87	%Rec		6/ 1/23	1
108101	2-Pentanone, 4-methyl-	89	%Rec		6/ 1/23	1
67641	2-Propanone	83	%Rec		6/ 1/23	1
79209	Acetic acid, methyl ester	83	%Rec		6/ 1/23	1
107131	Acrylonitrile	85	%Rec		6/ 1/23	1
71432	Benzene	95	%Rec		6/ 1/23	1
98828	Benzene, (1-methylethyl)-	87	%Rec		6/ 1/23	1
95636	Benzene, 1,2,4-trimethyl-	86	%Rec		6/ 1/23	1
95501	Benzene, 1,2-dichloro-	85	%Rec		6/ 1/23	1
108678	Benzene, 1,3,5-trimethyl-	87	%Rec		6/ 1/23	1
541731	Benzene, 1,3-dichloro-	86	%Rec		6/ 1/23	1
106467	Benzene, 1,4-dichloro-	86	%Rec		6/ 1/23	1
99876	Benzene, 1-methyl-4-(1-methylethyl)-	86	%Rec		6/ 1/23	1
108907	Benzene, chloro-	96	%Rec		6/ 1/23	1
100425	Benzene, ethenyl-	97	%Rec		6/ 1/23	1
103651	Benzene, propyl-, (103651)	86	%Rec		6/ 1/23	1
98066	Benzene, tert-butyl-	86	%Rec		6/ 1/23	1
74975	Bromochloromethane	88	%Rec		6/ 1/23	1
75274	Bromodichloromethane	95	%Rec		6/ 1/23	1
75252	Bromoform	79	%Rec		6/ 1/23	1
74839	Bromomethane	92	%Rec		6/ 1/23	1
75150	Carbon disulfide	89	%Rec		6/ 1/23	1
56235	Carbon Tetrachloride	97	%Rec		6/ 1/23	1
156592	cis-1,2-Dichloroethene	89	%Rec		6/ 1/23	1
10061015	cis-1,3-Dichloropropene	94	%Rec		6/ 1/23	1
110827	Cyclohexane	97	%Rec		6/ 1/23	1
108872	Cyclohexane, methyl-	98	%Rec		6/ 1/23	1
124481	Dibromochloromethane	93	%Rec		6/ 1/23	1
74953	Dibromomethane	94	%Rec		6/ 1/23	1
75092	Dichloromethane	90	%Rec		6/ 1/23	1

Spiked Compounds (cont.):

79345	Ethane, 1,1,2,2-tetrachloro-	90	%Rec	6/ 1/23	1
106934	Ethane, 1,2-dibromo-	90	%Rec	6/ 1/23	1
156605	Ethene, 1,2-dichloro-, (E)-	93	%Rec	6/ 1/23	1
79016	Ethene, trichloro-	96	%Rec	6/ 1/23	1
75003	Ethyl Chloride	92	%Rec	6/ 1/23	1
100414	Ethylbenzene	96	%Rec	6/ 1/23	1
75694	Freon 11	92	%Rec	6/ 1/23	1
76131	Freon 113	92	%Rec	6/ 1/23	1
75718	Freon 12	85	%Rec	6/ 1/23	1
87683	Hexachlorobutadiene	90	%Rec	6/ 1/23	1
74873	Methane, chloro-	86	%Rec	6/ 1/23	1
67663	Methane, trichloro-	92	%Rec	6/ 1/23	1
1634044	Methyl tert butylether (MTBE)	84	%Rec	6/ 1/23	1
*1330207	MP-Xylene	97	%Rec	6/ 1/23	1
91203	Naphthalene	82	%Rec	6/ 1/23	1
104518	n-Butylbenzene	89	%Rec	6/ 1/23	1
95476	o-Xylene	94	%Rec	6/ 1/23	1
135988	sec-Butylbenzene	86	%Rec	6/ 1/23	1
127184	Tetrachloroethene	88	%Rec	6/ 1/23	1
108883	Toluene	96	%Rec	6/ 1/23	1
10061026	Trans-1,3-Dichloropropene	89	%Rec	6/ 1/23	1
75014	Vinyl Chloride	92	%Rec	6/ 1/23	1

Surrogate Compounds:

17060070	1,2-Dichloroethane-d4	100	%Rec	6/ 1/23	1
460004	p-Bromofluorobenzene	87	%Rec	6/ 1/23	1
2037265	Toluene-d8	102	%Rec	6/ 1/23	1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 LABORATORY
7411 Beach Drive East
Port Orchard, Washington 98366

QUALITY ASSURANCE MEMORANDUM FOR ORGANIC CHEMICAL ANALYSES

June 30, 2023

From: Chris Pace
Laboratory Services & Applied Sciences Division, US EPA Region 10 Laboratory

To: Ken Marcy
RE: GRESHAM FIRE TRAINING: Extended Preliminary Assessment
Project Code: SFP-187A
Account Code: 2023T10P000FD210ZZLA00

VOA

23214100, 23214102, 23214104, 23214105, 23214106, 23214108, 23214111, 23214112, 23214113, 23214114, 23214115, 23214118, 23214119

The following describes the quality assurance review of the data for the analysis parameters and samples listed above. The analyses were performed by the US EPA Region 10 Laboratory in Port Orchard, WA, following US EPA and Laboratory guidelines.

1. Data Qualifications

The US EPA Region 10 Laboratory has been accredited by the ANSI National Accreditation Board (ANAB) and has Certificate Number AT-3121. For those tests for which the Laboratory has been accredited by ANAB, results in this report comply with ISO IEC 17025:2017

Field information was provided to the laboratory from other sources, such as Chain of Custody records.

The data and associated documents were reviewed against the quality control criteria outlined in the Laboratory's current Quality Assurance Manual, Standard Operating Procedures (SOPs) and the Quality Assurance Project Plan (QAPP). The following areas were reviewed against these quality control measures:

Sample Transport and Receipt
Sample Holding Times
Sample Preparation
Initial Calibration
Continuing Calibration Verification
Laboratory Control Samples
Blank Analysis
Surrogate Spikes
Matrix Spikes
Internal Standard Performance
Quantitation
Identification

2. Areas Not Meeting Laboratory/QAPP Criteria

Continuing Calibration Verification (CCV)

The CCV associated with all water samples resulted <80% accuracy for tetrachloroethene. Tetrachloroethene was non-detected in all water samples and qualified as estimated, "UJ".

The CCV associated with the methanol dilution analysis of soil sample 23214111 resulted <80% accuracy for acetone and 2-butanone. 2-propanone (acetone) and 2-butanone were non-detects in the methanol dilution of sample 23214111 and were qualified as estimated, "UJ".

Quantitation/Identification

The initial analysis of sample 23214111 contained 2-propanone, 2-butanone and toluene above the calibration range of the instrument. Methanol dilution of the sample detected only toluene. 2-Propanone and 2-butanone are common laboratory (and possibly field sampling) contaminants. The 2-propanone and 2-butanone results were qualified as non-detected at the elevated reporting limits from the methanol dilution results.

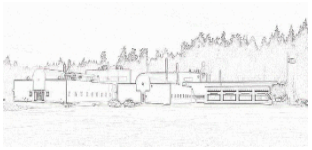
Samples 23214112 and 23214113 were indicated as field duplicates on the chain of custody. Sample 23214113 required a methanol dilution analysis for toluene. Toluene in sample 23214112 was non-detected. This may be due to non-homogeneity of the samples collected.

3. Data Qualifiers

Data for all samples and analytes were assessed for compliance with each of the requirements described in Section 1. Data qualifiers were assigned, as necessary, to alert the user to instances where data did not meet all requirements. In cases where more than one QC failure occurred, the most restrictive data qualifier has been applied to the data.

The usefulness of qualified data should be treated according to the severity of the qualifier considering the project's data quality objectives. Should questions arise regarding the data, contact Chris Pace at the Region 10 Laboratory, phone number (360) 871-8703.

Qualifier	Definition
U	The analyte was not detected at or above the reported value.
J	The identification of the analyte is acceptable; however, the reported value is an estimate.
UJ	The analyte was not detected at or above the reported value. The reported value is an estimate.
R	The presence or absence of the analyte cannot be determined from the data due to severe quality control problems. The data are rejected and considered unusable. No value is reported with this qualification.
NA	Not Applicable, the parameter was not analyzed for, or there is no analytical result for this parameter. No value is reported with this qualification.



US EPA Region 10 Laboratory

Multi-Analyte Final Report

Project Code : SFP-187A
Site : GRESHAM FIRE TRAINING: Extended Preliminary Assessment
Contact : Ken Marcy
Account : 2023T10P000FD210ZZLA00

Sample : 23214100

Information : Field Sample/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 8:30:00AM

Parameter : PCB
Prep Method: 3541 - Automated soxhlet extraction
Analysis Method: 8082A - Polychlorinated Biphenyls by GC/ECD
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
12674112	PCB-1016	5.7	ug/kg	U	6/ 8/23	1
11104282	PCB-1221	5.7	ug/kg	U	6/ 8/23	1
11141165	PCB-1232	5.7	ug/kg	U	6/ 8/23	1
53469219	PCB-1242	5.7	ug/kg	U	6/ 8/23	1
12672296	PCB-1248	5.7	ug/kg	U	6/ 8/23	1
11097691	PCB-1254	5.7	ug/kg	U	6/ 8/23	1
11096825	PCB-1260	5.7	ug/kg	U	6/ 8/23	1
Surrogate Compounds:						
2051243	PCB Congener 209	90	%Rec		6/ 8/23	1
877098	Tetrachlorometaxylene	81	%Rec		6/ 8/23	1

Sample : 23214102

Information : Field Duplicate/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 12:45:00PM

Parameter : PCB
Prep Method: 3541 - Automated soxhlet extraction
Analysis Method: 8082A - Polychlorinated Biphenyls by GC/ECD
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
12674112	PCB-1016	5.4	ug/kg	U	6/ 8/23	1
11104282	PCB-1221	5.4	ug/kg	U	6/ 8/23	1
11141165	PCB-1232	5.4	ug/kg	U	6/ 8/23	1
53469219	PCB-1242	5.4	ug/kg	U	6/ 8/23	1
12672296	PCB-1248	5.4	ug/kg	U	6/ 8/23	1
11097691	PCB-1254	5.4	ug/kg	U	6/ 8/23	1
11096825	PCB-1260	5.4	ug/kg	U	6/ 8/23	1
Surrogate Compounds:						
2051243	PCB Congener 209	81	%Rec		6/ 8/23	1
877098	Tetrachlorometaxylene	85	%Rec		6/ 8/23	1

Sample : 23214100 Matrix Spike

Information : Field Sample/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 8:30:00AM

Parameter : PCB
Prep Method: 3541 - Automated soxhlet extraction
Analysis Method: 8082A - Polychlorinated Biphenyls by GC/ECD
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
12674112	PCB-1016	82	%Rec		6/ 8/23	1
11096825	PCB-1260	86	%Rec		6/ 8/23	1
Surrogate Compounds:						
2051243	PCB Congener 209	81	%Rec		6/ 8/23	1
877098	Tetrachlorometaxylene	78	%Rec		6/ 8/23	1

Sample : 23214100 Matrix Spike#2

Information : Field Sample/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 8:30:00AM

Parameter : PCB
Prep Method: 3541 - Automated soxhlet extraction
Analysis Method: 8082A - Polychlorinated Biphenyls by GC/ECD
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
12674112	PCB-1016	90	%Rec		6/ 8/23	1
11096825	PCB-1260	93	%Rec		6/ 8/23	1
Surrogate Compounds:						
2051243	PCB Congener 209	85	%Rec		6/ 8/23	1
877098	Tetrachlorometaxylene	89	%Rec		6/ 8/23	1

Sample : 105S060223B1 Blank

Information : Blank
Matrix : Solid

Parameter : PCB
Prep Method: 3541 - Automated soxhlet extraction
Analysis Method: 8082A - Polychlorinated Biphenyls by GC/ECD
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
12674112	PCB-1016	5.0	ug/kg	U	6/ 8/23	1
11104282	PCB-1221	5.0	ug/kg	U	6/ 8/23	1
11141165	PCB-1232	5.0	ug/kg	U	6/ 8/23	1
53469219	PCB-1242	5.0	ug/kg	U	6/ 8/23	1
12672296	PCB-1248	5.0	ug/kg	U	6/ 8/23	1
11097691	PCB-1254	5.0	ug/kg	U	6/ 8/23	1
11096825	PCB-1260	5.0	ug/kg	U	6/ 8/23	1
Surrogate Compounds:						
2051243	PCB Congener 209	89	%Rec		6/ 8/23	1
877098	Tetrachlorometaxylene	86	%Rec		6/ 8/23	1

Sample : 105O060223L1 Lab Control Std

Information : Lab Control Standard
Matrix : Solid

Parameter : PCB
Prep Method: 3541 - Automated soxhlet extraction
Analysis Method: 8082A - Polychlorinated Biphenyls by GC/ECD
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
12674112	PCB-1016	76	%Rec		6/ 8/23	1
11096825	PCB-1260	88	%Rec		6/ 8/23	1
Surrogate Compounds:						
2051243	PCB Congener 209	89	%Rec		6/ 8/23	1
877098	Tetrachlorometaxylene	69	%Rec		6/ 8/23	1

Sample : 105O060223L2 Lab Control Std#2

Information : Lab Control Standard Dup.
Matrix : Solid

Parameter : PCB
Prep Method: 3541 - Automated soxhlet extraction
Analysis Method: 8082A - Polychlorinated Biphenyls by GC/ECD
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
12674112	PCB-1016	81	%Rec		6/ 8/23	1
11096825	PCB-1260	90	%Rec		6/ 8/23	1
Surrogate Compounds:						
2051243	PCB Congener 209	91	%Rec		6/ 8/23	1
877098	Tetrachlorometaxylene	76	%Rec		6/ 8/23	1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 LABORATORY
7411 Beach Drive East
Port Orchard, Washington 98366

QUALITY ASSURANCE MEMORANDUM FOR ORGANIC CHEMICAL ANALYSES

June 29, 2023

From: Chris Pace
Laboratory Services & Applied Sciences Division, US EPA Region 10 Laboratory

To: Ken Marcy
RE: GRESHAM FIRE TRAINING: Extended Preliminary Assessment
Project Code: SFP-187A
Account Code: 2023T10P000FD210ZZLA00

PCB Aroclor

23214100, 23214102

The following describes the quality assurance review of the data for the analysis parameters and samples listed above. The analyses were performed by the US EPA Region 10 Laboratory in Port Orchard, WA, following US EPA and Laboratory guidelines.

1. Data Qualifications

The US EPA Region 10 Laboratory has been accredited by the ANSI National Accreditation Board (ANAB) and has Certificate Number AT-3121. For those tests for which the Laboratory has been accredited by ANAB, results in this report comply with ISO IEC 17025:2017.

Field information was provided to the laboratory from other sources, such as Chain of Custody records.

The data and associated documents were reviewed against the quality control criteria outlined in the Laboratory's current Quality Assurance Manual, Standard Operating Procedures (SOPs) and the Quality Assurance Project Plan (QAPP). The following areas were reviewed against these quality control measures:

Sample Transport and Receipt
Sample Holding Times
Sample Preparation
Initial Calibration
Continuing Calibration Verification
Laboratory Control Samples
Blank Analysis
Surrogate Spikes
Matrix Spikes
Quantitation
Identification

2. Areas Not Meeting Laboratory/QAPP Criteria

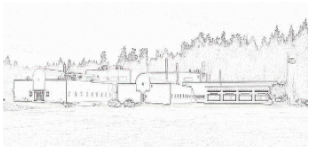
None

3. Data Qualifiers

Data for all samples and analytes were assessed for compliance with each of the requirements described in Section 1. Data qualifiers were assigned, as necessary, to alert the user to instances where data did not meet all requirements. In cases where more than one QC failure occurred, the most restrictive data qualifier has been applied to the data.

The usefulness of qualified data should be treated according to the severity of the qualifier considering the project's data quality objectives. Should questions arise regarding the data, contact Chris Pace at the Region 10 Laboratory, phone number (360) 871-8703.

Qualifier	Definition
U	The analyte was not detected at or above the reported value.
J	The identification of the analyte is acceptable; however, the reported value is an estimate.
UJ	The analyte was not detected at or above the reported value. The reported value is an estimate.
R	The presence or absence of the analyte cannot be determined from the data due to severe quality control problems. The data are rejected and considered unusable. No value is reported with this qualification.
NA	Not Applicable, the parameter was not analyzed for, or there is no analytical result for this parameter. No value is reported with this qualification.



US EPA Region 10 Laboratory

Multi-Analyte Final Report

Project Code : SFP-187A
Site : GRESHAM FIRE TRAINING: Extended Preliminary Assessment
Contact : Ken Marcy
Account : 2023T10P000FD210ZZLA00

Sample : 23214100

Information : Field Sample/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 8:30:00AM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	55	ug/kg	U	6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	55	ug/kg	U	6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	110	ug/kg	U	6/ 7/23	1
95954	2,4,5-Trichlorophenol	55	ug/kg	U	6/ 7/23	1
88062	2,4,6-Trichlorophenol	55	ug/kg	U	6/ 7/23	1
120832	2,4-Dichlorophenol	55	ug/kg	U	6/ 7/23	1
105679	2,4-Dimethylphenol	110	ug/kg	U	6/ 7/23	1
51285	2,4-Dinitrophenol	440	ug/kg	U	6/ 7/23	1
121142	2,4-Dinitrotoluene	55	ug/kg	U	6/ 7/23	1
606202	2,6-Dinitrotoluene	55	ug/kg	U	6/ 7/23	1
91587	2-Chloronaphthalene	55	ug/kg	U	6/ 7/23	1
95578	2-Chlorophenol	55	ug/kg	U	6/ 7/23	1
88744	2-Nitroaniline	55	ug/kg	U	6/ 7/23	1
88755	2-Nitrophenol	55	ug/kg	U	6/ 7/23	1
91941	3,3'-Dichlorobenzidine			R	6/ 7/23	1
99092	3-Nitroaniline	55	ug/kg	UJ	6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	55	ug/kg	U	6/ 7/23	1
101553	4-Bromophenyl-Phenylether	55	ug/kg	U	6/ 7/23	1
59507	4-Chloro-3-methylphenol	55	ug/kg	U	6/ 7/23	1
106478	4-Chloroaniline	110	ug/kg	UJ	6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	55	ug/kg	U	6/ 7/23	1
106445	4-Methylphenol	55	ug/kg	U	6/ 7/23	1
100016	4-Nitroaniline	110	ug/kg	UJ	6/ 7/23	1
100027	4-Nitrophenol	55	ug/kg	U	6/ 7/23	1
86748	9H-Carbazole	55	ug/kg	U	6/ 7/23	1
86737	9H-Fluorene	55	ug/kg	U	6/ 7/23	1
83329	Acenaphthene	55	ug/kg	U	6/ 7/23	1
208968	Acenaphthylene	55	ug/kg	U	6/ 7/23	1
120127	Anthracene	55	ug/kg	U	6/ 7/23	1
1912249	Atrazine	55	ug/kg	U	6/ 7/23	1

Target Analyte Results (cont.):

100527	Benzaldehyde	55	ug/kg	U	6/ 7/23	1
56553	Benzo(a)anthracene	55	ug/kg	U	6/ 7/23	1
50328	Benzo(a)pyrene	55	ug/kg	U	6/ 7/23	1
191242	Benzo(g,h,i)perylene	55	ug/kg	U	6/ 7/23	1
205992	Benzo[b]Fluoranthene	55	ug/kg	U	6/ 7/23	1
207089	Benzo[k]fluoranthene	55	ug/kg	U	6/ 7/23	1
111444	bis(2-Chloroethyl)ether	55	ug/kg	U	6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	55	ug/kg	U	6/ 7/23	1
117817	Bis(2-ethylhexyl) phthalate	55	ug/kg	U	6/ 7/23	1
85687	Butylbenzylphthalate	55	ug/kg	U	6/ 7/23	1
105602	Caprolactam	55	ug/kg	U	6/ 7/23	1
218019	Chrysene	55	ug/kg	U	6/ 7/23	1
53703	Dibenzo[a,h]anthracene	55	ug/kg	U	6/ 7/23	1
132649	Dibenzofuran	55	ug/kg	U	6/ 7/23	1
84662	Diethyl phthalate	55	ug/kg	U	6/ 7/23	1
131113	Dimethylphthalate	55	ug/kg	U	6/ 7/23	1
84742	Di-n-Butylphthalate	110	ug/kg	U	6/ 7/23	1
117840	Di-n-octylphthalate	55	ug/kg	U	6/ 7/23	1
98862	Ethanone, 1-phenyl-	55	ug/kg	U	6/ 7/23	1
206440	Fluoranthene	55	ug/kg	U	6/ 7/23	1
118741	Hexachlorobenzene	55	ug/kg	U	6/ 7/23	1
87683	Hexachlorobutadiene	55	ug/kg	U	6/ 7/23	1
77474	Hexachlorocyclopentadiene	55	ug/kg	U	6/ 7/23	1
67721	Hexachloroethane	55	ug/kg	U	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	55	ug/kg	U	6/ 7/23	1
78591	Isophorone	910	ug/kg	U	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	55	ug/kg	U	6/ 7/23	1
91203	Naphthalene	55	ug/kg	U	6/ 7/23	1
90120	Naphthalene, 1-methyl-	55	ug/kg	U	6/ 7/23	1
91576	Naphthalene, 2-methyl-	55	ug/kg	U	6/ 7/23	1
98953	Nitrobenzene	55	ug/kg	U	6/ 7/23	1
62759	N-Nitrosodimethylamine	55	ug/kg	U	6/ 7/23	1
621647	N-Nitrosodinpropylamine	55	ug/kg	U	6/ 7/23	1
86306	n-Nitrosodiphenylamine	55	ug/kg	U	6/ 7/23	1
87865	Pentachlorophenol	220	ug/kg	U	6/ 7/23	1
85018	Phenanthrene	55	ug/kg	U	6/ 7/23	1
108952	Phenol	55	ug/kg	U	6/ 7/23	1
95487	Phenol, 2-methyl-	55	ug/kg	U	6/ 7/23	1
129000	Pyrene	55	ug/kg	U	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	96	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	96	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	58	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	34	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	97	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	96	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	98	%Rec		6/ 7/23	1
1719068	Anthracene-D10	100	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	111	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	87	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	92	%Rec		6/ 7/23	1
1718521	D10-Pyrene	108	%Rec		6/ 7/23	1

Surrogate Compounds (cont.):

93951747	d3-2,4-Dichlorophenol	97	%Rec	6/ 7/23	1
93951894	Dimethylphthalate-D6	103	%Rec	6/ 7/23	1
4165600	Nitrobenzene-d5	100	%Rec	6/ 7/23	1
4165622	Phenol-d5	95	%Rec	6/ 7/23	1

Sample : 23214102

Information : Field Duplicate/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 12:45:00PM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	52	ug/kg	U	6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	52	ug/kg	U	6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	100	ug/kg	U	6/ 7/23	1
95954	2,4,5-Trichlorophenol	52	ug/kg	U	6/ 7/23	1
88062	2,4,6-Trichlorophenol	52	ug/kg	U	6/ 7/23	1
120832	2,4-Dichlorophenol	52	ug/kg	U	6/ 7/23	1
105679	2,4-Dimethylphenol	100	ug/kg	U	6/ 7/23	1
51285	2,4-Dinitrophenol	420	ug/kg	U	6/ 7/23	1
121142	2,4-Dinitrotoluene	52	ug/kg	U	6/ 7/23	1
606202	2,6-Dinitrotoluene	52	ug/kg	U	6/ 7/23	1
91587	2-Chloronaphthalene	52	ug/kg	U	6/ 7/23	1
95578	2-Chlorophenol	52	ug/kg	U	6/ 7/23	1
88744	2-Nitroaniline	52	ug/kg	U	6/ 7/23	1
88755	2-Nitrophenol	52	ug/kg	U	6/ 7/23	1
91941	3,3'-Dichlorobenzidine	52	ug/kg	U	6/ 7/23	1
99092	3-Nitroaniline	52	ug/kg	U	6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	52	ug/kg	U	6/ 7/23	1
101553	4-Bromophenyl-Phenylether	52	ug/kg	U	6/ 7/23	1
59507	4-Chloro-3-methylphenol	52	ug/kg	U	6/ 7/23	1
106478	4-Chloroaniline	100	ug/kg	UJ	6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	52	ug/kg	U	6/ 7/23	1
106445	4-Methylphenol	52	ug/kg	U	6/ 7/23	1
100016	4-Nitroaniline	100	ug/kg	U	6/ 7/23	1
100027	4-Nitrophenol	52	ug/kg	U	6/ 7/23	1
86748	9H-Carbazole	52	ug/kg	U	6/ 7/23	1
86737	9H-Fluorene	52	ug/kg	U	6/ 7/23	1
83329	Acenaphthene	52	ug/kg	U	6/ 7/23	1
208968	Acenaphthylene	52	ug/kg	U	6/ 7/23	1
120127	Anthracene	52	ug/kg	U	6/ 7/23	1
1912249	Atrazine	52	ug/kg	U	6/ 7/23	1
100527	Benzaldehyde	52	ug/kg	U	6/ 7/23	1
56553	Benzo(a)anthracene	52	ug/kg	U	6/ 7/23	1
50328	Benzo(a)pyrene	52	ug/kg	U	6/ 7/23	1
191242	Benzo(g,h,i)perylene	52	ug/kg	U	6/ 7/23	1
205992	Benzo[b]Fluoranthene	52	ug/kg	U	6/ 7/23	1
207089	Benzo[k]fluoranthene	52	ug/kg	U	6/ 7/23	1
111444	bis(2-Chloroethyl)ether	52	ug/kg	U	6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	52	ug/kg	U	6/ 7/23	1
117817	Bis(2-ethylhexyl) phthalate	52	ug/kg	U	6/ 7/23	1
85687	Butylbenzylphthalate	52	ug/kg	U	6/ 7/23	1
105602	Caprolactam	52	ug/kg	U	6/ 7/23	1

Target Analyte Results (cont.):

218019	Chrysene	52	ug/kg	U	6/ 7/23	1
53703	Dibenzo[a,h]anthracene	52	ug/kg	U	6/ 7/23	1
132649	Dibenzofuran	52	ug/kg	U	6/ 7/23	1
84662	Diethyl phthalate	52	ug/kg	U	6/ 7/23	1
131113	Dimethylphthalate	52	ug/kg	U	6/ 7/23	1
84742	Di-n-Butylphthalate	120	ug/kg	U	6/ 7/23	1
117840	Di-n-octylphthalate	52	ug/kg	U	6/ 7/23	1
98862	Ethanone, 1-phenyl-	52	ug/kg	U	6/ 7/23	1
206440	Fluoranthene	52	ug/kg	U	6/ 7/23	1
118741	Hexachlorobenzene	52	ug/kg	U	6/ 7/23	1
87683	Hexachlorobutadiene	52	ug/kg	U	6/ 7/23	1
77474	Hexachlorocyclopentadiene	52	ug/kg	U	6/ 7/23	1
67721	Hexachloroethane	52	ug/kg	U	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	52	ug/kg	U	6/ 7/23	1
78591	Isophorone	800	ug/kg	U	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	52	ug/kg	U	6/ 7/23	1
91203	Naphthalene	52	ug/kg	U	6/ 7/23	1
90120	Naphthalene, 1-methyl-	52	ug/kg	U	6/ 7/23	1
91576	Naphthalene, 2-methyl-	52	ug/kg	U	6/ 7/23	1
98953	Nitrobenzene	52	ug/kg	U	6/ 7/23	1
62759	N-Nitrosodimethylamine	52	ug/kg	U	6/ 7/23	1
621647	N-Nitrosodinpropylamine	52	ug/kg	U	6/ 7/23	1
86306	n-Nitrosodiphenylamine	52	ug/kg	U	6/ 7/23	1
87865	Pentachlorophenol	210	ug/kg	U	6/ 7/23	1
85018	Phenanthrene	52	ug/kg	U	6/ 7/23	1
108952	Phenol	52	ug/kg	U	6/ 7/23	1
95487	Phenol, 2-methyl-	52	ug/kg	U	6/ 7/23	1
129000	Pyrene	52	ug/kg	U	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	95	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	93	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	42	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	28	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	98	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	97	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	97	%Rec		6/ 7/23	1
1719068	Anthracene-D10	99	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	111	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	87	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	92	%Rec		6/ 7/23	1
1718521	D10-Pyrene	107	%Rec		6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	101	%Rec		6/ 7/23	1
93951894	Dimethylphthalate-D6	100	%Rec		6/ 7/23	1
4165600	Nitrobenzene-d5	99	%Rec		6/ 7/23	1
4165622	Phenol-d5	97	%Rec		6/ 7/23	1

Sample : 23214104

Information : Field Sample/ S-2/ 5ft
Matrix : Soil
Collected : 5/24/2023 5:28:00PM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	56	ug/kg	U	6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	56	ug/kg	U	6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	110	ug/kg	U	6/ 7/23	1
95954	2,4,5-Trichlorophenol	56	ug/kg	U	6/ 7/23	1
88062	2,4,6-Trichlorophenol	56	ug/kg	U	6/ 7/23	1
120832	2,4-Dichlorophenol	56	ug/kg	U	6/ 7/23	1
105679	2,4-Dimethylphenol	110	ug/kg	U	6/ 7/23	1
51285	2,4-Dinitrophenol	450	ug/kg	U	6/ 7/23	1
121142	2,4-Dinitrotoluene	56	ug/kg	U	6/ 7/23	1
606202	2,6-Dinitrotoluene	56	ug/kg	U	6/ 7/23	1
91587	2-Chloronaphthalene	56	ug/kg	U	6/ 7/23	1
95578	2-Chlorophenol	56	ug/kg	U	6/ 7/23	1
88744	2-Nitroaniline	56	ug/kg	U	6/ 7/23	1
88755	2-Nitrophenol	56	ug/kg	U	6/ 7/23	1
91941	3,3'-Dichlorobenzidine	56	ug/kg	U	6/ 7/23	1
99092	3-Nitroaniline	56	ug/kg	U	6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	56	ug/kg	U	6/ 7/23	1
101553	4-Bromophenyl-Phenylether	56	ug/kg	U	6/ 7/23	1
59507	4-Chloro-3-methylphenol	56	ug/kg	U	6/ 7/23	1
106478	4-Chloroaniline	110	ug/kg	UJ	6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	56	ug/kg	U	6/ 7/23	1
106445	4-Methylphenol	56	ug/kg	U	6/ 7/23	1
100016	4-Nitroaniline	110	ug/kg	U	6/ 7/23	1
100027	4-Nitrophenol	56	ug/kg	U	6/ 7/23	1
86748	9H-Carbazole	56	ug/kg	U	6/ 7/23	1
86737	9H-Fluorene	56	ug/kg	U	6/ 7/23	1
83329	Acenaphthene	56	ug/kg	U	6/ 7/23	1
208968	Acenaphthylene	56	ug/kg	U	6/ 7/23	1
120127	Anthracene	56	ug/kg	U	6/ 7/23	1
1912249	Atrazine	56	ug/kg	U	6/ 7/23	1
100527	Benzaldehyde	56	ug/kg	U	6/ 7/23	1
56553	Benzo(a)anthracene	56	ug/kg	U	6/ 7/23	1
50328	Benzo(a)pyrene	56	ug/kg	U	6/ 7/23	1
191242	Benzo(g,h,i)perylene	56	ug/kg	U	6/ 7/23	1
205992	Benzo[b]Fluoranthene	56	ug/kg	U	6/ 7/23	1
207089	Benzo[k]fluoranthene	56	ug/kg	U	6/ 7/23	1
111444	bis(2-Chloroethyl)ether	56	ug/kg	U	6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	56	ug/kg	U	6/ 7/23	1
117817	**Bis(2-ethylhexyl) phthalate**	**61**	**ug/kg**		6/ 7/23	1
85687	Butylbenzylphthalate	56	ug/kg	U	6/ 7/23	1
105602	Caprolactam	56	ug/kg	U	6/ 7/23	1

Target Analyte Results (cont.):

218019	Chrysene	56	ug/kg	U	6/ 7/23	1
53703	Dibenzo[a,h]anthracene	56	ug/kg	U	6/ 7/23	1
132649	Dibenzofuran	56	ug/kg	U	6/ 7/23	1
84662	Diethyl phthalate	56	ug/kg	U	6/ 7/23	1
131113	Dimethylphthalate	56	ug/kg	U	6/ 7/23	1
84742	Di-n-Butylphthalate	110	ug/kg	U	6/ 7/23	1
117840	Di-n-octylphthalate	56	ug/kg	U	6/ 7/23	1
98862	Ethanone, 1-phenyl-	56	ug/kg	U	6/ 7/23	1
206440	Fluoranthene	56	ug/kg	U	6/ 7/23	1
118741	Hexachlorobenzene	56	ug/kg	U	6/ 7/23	1
87683	Hexachlorobutadiene	56	ug/kg	U	6/ 7/23	1
77474	Hexachlorocyclopentadiene	56	ug/kg	U	6/ 7/23	1
67721	Hexachloroethane	56	ug/kg	U	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	56	ug/kg	U	6/ 7/23	1
78591	Isophorone	660	ug/kg	U	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	56	ug/kg	U	6/ 7/23	1
91203	Naphthalene	56	ug/kg	U	6/ 7/23	1
90120	Naphthalene, 1-methyl-	56	ug/kg	U	6/ 7/23	1
91576	Naphthalene, 2-methyl-	56	ug/kg	U	6/ 7/23	1
98953	Nitrobenzene	56	ug/kg	U	6/ 7/23	1
62759	N-Nitrosodimethylamine	56	ug/kg	U	6/ 7/23	1
621647	N-Nitrosodinpropylamine	56	ug/kg	U	6/ 7/23	1
86306	n-Nitrosodiphenylamine	56	ug/kg	U	6/ 7/23	1
87865	Pentachlorophenol	220	ug/kg	U	6/ 7/23	1
85018	Phenanthrene	56	ug/kg	U	6/ 7/23	1
108952	Phenol	56	ug/kg	U	6/ 7/23	1
95487	Phenol, 2-methyl-	56	ug/kg	U	6/ 7/23	1
129000	Pyrene	56	ug/kg	U	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	92	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	96	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	70	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	25	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	96	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	99	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	92	%Rec		6/ 7/23	1
1719068	Anthracene-D10	96	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	108	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	83	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	86	%Rec		6/ 7/23	1
1718521	D10-Pyrene	104	%Rec		6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	96	%Rec		6/ 7/23	1
93951894	Dimethylphthalate-D6	97	%Rec		6/ 7/23	1
4165600	Nitrobenzene-d5	97	%Rec		6/ 7/23	1
4165622	Phenol-d5	96	%Rec		6/ 7/23	1

Sample : 23214105

Information : Field Sample/ S-2
Matrix : Water
Collected : 5/24/2023 5:00:00PM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	1.0	ug/L	UJ	6/ 1/23	1
95943	1,2,4,5-Tetrachlorobenzene	1.0	ug/L	UJ	6/ 1/23	1
58902	2,3,4,6-Tetrachlorophenol	2.0	ug/L	UJ	6/ 1/23	1
95954	2,4,5-Trichlorophenol	1.0	ug/L	UJ	6/ 1/23	1
88062	2,4,6-Trichlorophenol	1.0	ug/L	UJ	6/ 1/23	1
120832	2,4-Dichlorophenol	1.0	ug/L	UJ	6/ 1/23	1
105679	2,4-Dimethylphenol	1.0	ug/L	UJ	6/ 1/23	1
51285	2,4-Dinitrophenol	8.0	ug/L	UJ	6/ 1/23	1
121142	2,4-Dinitrotoluene	1.0	ug/L	UJ	6/ 1/23	1
606202	2,6-Dinitrotoluene	1.0	ug/L	UJ	6/ 1/23	1
91587	2-Chloronaphthalene	1.0	ug/L	UJ	6/ 1/23	1
95578	2-Chlorophenol	1.0	ug/L	UJ	6/ 1/23	1
88744	2-Nitroaniline	1.0	ug/L	UJ	6/ 1/23	1
88755	2-Nitrophenol	1.0	ug/L	UJ	6/ 1/23	1
91941	3,3'-Dichlorobenzidine			R	6/ 1/23	1
99092	3-Nitroaniline	1.0	ug/L	UJ	6/ 1/23	1
534521	4,6-Dinitro-2-methylphenol	2.0	ug/L	UJ	6/ 1/23	1
101553	4-Bromophenyl-Phenylether	1.0	ug/L	UJ	6/ 1/23	1
59507	4-Chloro-3-methylphenol	1.0	ug/L	UJ	6/ 1/23	1
106478	4-Chloroaniline			R	6/ 1/23	1
7005723	4-Chlorophenyl-Phenylether	1.0	ug/L	UJ	6/ 1/23	1
106445	4-Methylphenol	1.0	ug/L	UJ	6/ 1/23	1
100016	4-Nitroaniline	1.0	ug/L	UJ	6/ 1/23	1
100027	4-Nitrophenol	1.0	ug/L	UJ	6/ 1/23	1
86748	9H-Carbazole	1.0	ug/L	UJ	6/ 1/23	1
86737	9H-Fluorene	1.0	ug/L	UJ	6/ 1/23	1
83329	Acenaphthene	1.0	ug/L	UJ	6/ 1/23	1
208968	Acenaphthylene	1.0	ug/L	UJ	6/ 1/23	1
120127	Anthracene	1.0	ug/L	UJ	6/ 1/23	1
1912249	Atrazine	1.0	ug/L	UJ	6/ 1/23	1
100527	Benzaldehyde	1.0	ug/L	UJ	6/ 1/23	1
56553	Benzo(a)anthracene	1.0	ug/L	UJ	6/ 1/23	1
50328	Benzo(a)pyrene	1.0	ug/L	UJ	6/ 1/23	1
191242	Benzo(g,h,i)perylene	1.0	ug/L	UJ	6/ 1/23	1
205992	Benzo[b]Fluoranthene	1.0	ug/L	UJ	6/ 1/23	1
207089	Benzo[k]fluoranthene	1.0	ug/L	UJ	6/ 1/23	1
111444	bis(2-Chloroethyl)ether	1.0	ug/L	UJ	6/ 1/23	1
108601	Bis(2-Chloroisopropyl)ether	1.0	ug/L	UJ	6/ 1/23	1
117817	Bis(2-ethylhexyl) phthalate	1.0	ug/L	UJ	6/ 1/23	1
85687	Butylbenzylphthalate	1.0	ug/L	UJ	6/ 1/23	1
105602	Caprolactam			R	6/ 1/23	1

Target Analyte Results (cont.):

218019	Chrysene	1.0	ug/L	UJ	6/ 1/23	1
53703	Dibenzo[a,h]anthracene	1.0	ug/L	UJ	6/ 1/23	1
132649	Dibenzofuran	1.0	ug/L	UJ	6/ 1/23	1
84662	Diethyl phthalate	1.0	ug/L	UJ	6/ 1/23	1
131113	Dimethylphthalate	1.0	ug/L	UJ	6/ 1/23	1
84742	Di-n-Butylphthalate	1.0	ug/L	UJ	6/ 1/23	1
117840	Di-n-octylphthalate	1.0	ug/L	UJ	6/ 1/23	1
98862	Ethanone, 1-phenyl-	1.0	ug/L	UJ	6/ 1/23	1
206440	Fluoranthene	1.0	ug/L	UJ	6/ 1/23	1
118741	Hexachlorobenzene	1.0	ug/L	UJ	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	UJ	6/ 1/23	1
77474	Hexachlorocyclopentadiene	1.0	ug/L	UJ	6/ 1/23	1
67721	Hexachloroethane	1.0	ug/L	UJ	6/ 1/23	1
193395	Indeno(1,2,3-cd)pyrene	1.0	ug/L	UJ	6/ 1/23	1
78591	Isophorone	1.0	ug/L	UJ	6/ 1/23	1
111911	Methane, bis(2-chloroethoxy)-	1.0	ug/L	UJ	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	UJ	6/ 1/23	1
90120	Naphthalene, 1-methyl-	1.0	ug/L	UJ	6/ 1/23	1
91576	Naphthalene, 2-methyl-	1.0	ug/L	UJ	6/ 1/23	1
98953	Nitrobenzene	1.0	ug/L	UJ	6/ 1/23	1
621647	N-Nitrosodinpropylamine	1.0	ug/L	UJ	6/ 1/23	1
86306	n-Nitrosodiphenylamine	1.0	ug/L	UJ	6/ 1/23	1
87865	Pentachlorophenol	4.0	ug/L	UJ	6/ 1/23	1
85018	Phenanthrene	1.0	ug/L	UJ	6/ 1/23	1
108952	Phenol	1.0	ug/L	UJ	6/ 1/23	1
95487	Phenol, 2-methyl-	1.0	ug/L	UJ	6/ 1/23	1
129000	Pyrene	1.0	ug/L	UJ	6/ 1/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	96	%Rec		6/ 1/23	1
93951781	2-Nitrophenol-D4	101	%Rec		6/ 1/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	99	%Rec		6/ 1/23	1
191656334	4-Chloroaniline-D4	3	%Rec		6/ 1/23	1
190780666	4-Methylphenol-D8	95	%Rec		6/ 1/23	1
93951792	4-Nitrophenol-D4	101	%Rec		6/ 1/23	1
93951974	Acenaphthylene-D8	89	%Rec		6/ 1/23	1
1719068	Anthracene-D10	97	%Rec		6/ 1/23	1
63466717	Benzo[a]pyrene-D12	113	%Rec		6/ 1/23	1
93952024	Bis(2chloroethyl)ether-D8	94	%Rec		6/ 1/23	1
81103799	D10-Fluorene (SS)	93	%Rec		6/ 1/23	1
1718521	D10-Pyrene	111	%Rec		6/ 1/23	1
93951747	d3-2,4-Dichlorophenol	87	%Rec		6/ 1/23	1
93951894	Dimethylphthalate-D6	100	%Rec		6/ 1/23	1
4165600	Nitrobenzene-d5	101	%Rec		6/ 1/23	1
4165622	Phenol-d5	98	%Rec		6/ 1/23	1

Sample : 23214106

Information : Field Sample/ S-3/ 5ft
Matrix : Soil
Collected : 5/24/2023 2:50:00PM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	55	ug/kg	U	6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	55	ug/kg	U	6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	110	ug/kg	U	6/ 7/23	1
95954	2,4,5-Trichlorophenol	55	ug/kg	U	6/ 7/23	1
88062	2,4,6-Trichlorophenol	55	ug/kg	U	6/ 7/23	1
120832	2,4-Dichlorophenol	55	ug/kg	U	6/ 7/23	1
105679	2,4-Dimethylphenol	110	ug/kg	U	6/ 7/23	1
51285	2,4-Dinitrophenol	440	ug/kg	U	6/ 7/23	1
121142	2,4-Dinitrotoluene	55	ug/kg	U	6/ 7/23	1
606202	2,6-Dinitrotoluene	55	ug/kg	U	6/ 7/23	1
91587	2-Chloronaphthalene	55	ug/kg	U	6/ 7/23	1
95578	2-Chlorophenol	55	ug/kg	U	6/ 7/23	1
88744	2-Nitroaniline	55	ug/kg	U	6/ 7/23	1
88755	2-Nitrophenol	55	ug/kg	U	6/ 7/23	1
91941	3,3'-Dichlorobenzidine	55	ug/kg	U	6/ 7/23	1
99092	3-Nitroaniline	55	ug/kg	U	6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	55	ug/kg	U	6/ 7/23	1
101553	4-Bromophenyl-Phenylether	55	ug/kg	U	6/ 7/23	1
59507	4-Chloro-3-methylphenol	55	ug/kg	U	6/ 7/23	1
106478	4-Chloroaniline	110	ug/kg	UJ	6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	55	ug/kg	U	6/ 7/23	1
106445	4-Methylphenol	55	ug/kg	U	6/ 7/23	1
100016	4-Nitroaniline	110	ug/kg	U	6/ 7/23	1
100027	4-Nitrophenol	55	ug/kg	U	6/ 7/23	1
86748	9H-Carbazole	55	ug/kg	U	6/ 7/23	1
86737	9H-Fluorene	55	ug/kg	U	6/ 7/23	1
83329	Acenaphthene	55	ug/kg	U	6/ 7/23	1
208968	Acenaphthylene	55	ug/kg	U	6/ 7/23	1
120127	Anthracene	55	ug/kg	U	6/ 7/23	1
1912249	Atrazine	55	ug/kg	U	6/ 7/23	1
100527	Benzaldehyde	55	ug/kg	U	6/ 7/23	1
56553	Benzo(a)anthracene	55	ug/kg	U	6/ 7/23	1
50328	Benzo(a)pyrene	55	ug/kg	U	6/ 7/23	1
191242	Benzo(g,h,i)perylene	55	ug/kg	U	6/ 7/23	1
205992	Benzo[b]Fluoranthene	55	ug/kg	U	6/ 7/23	1
207089	Benzo[k]fluoranthene	55	ug/kg	U	6/ 7/23	1
111444	bis(2-Chloroethyl)ether	55	ug/kg	U	6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	55	ug/kg	U	6/ 7/23	1
117817	**Bis(2-ethylhexyl) phthalate**	**59**	**ug/kg**		6/ 7/23	1
85687	Butylbenzylphthalate	55	ug/kg	U	6/ 7/23	1
105602	Caprolactam	55	ug/kg	U	6/ 7/23	1

Target Analyte Results (cont.):

218019	Chrysene	55	ug/kg	U	6/ 7/23	1
53703	Dibenzo[a,h]anthracene	55	ug/kg	U	6/ 7/23	1
132649	Dibenzofuran	55	ug/kg	U	6/ 7/23	1
84662	Diethyl phthalate	55	ug/kg	U	6/ 7/23	1
131113	Dimethylphthalate	55	ug/kg	U	6/ 7/23	1
84742	Di-n-Butylphthalate	110	ug/kg	U	6/ 7/23	1
117840	Di-n-octylphthalate	55	ug/kg	U	6/ 7/23	1
98862	Ethanone, 1-phenyl-	55	ug/kg	U	6/ 7/23	1
206440	Fluoranthene	55	ug/kg	U	6/ 7/23	1
118741	Hexachlorobenzene	55	ug/kg	U	6/ 7/23	1
87683	Hexachlorobutadiene	55	ug/kg	U	6/ 7/23	1
77474	Hexachlorocyclopentadiene	55	ug/kg	U	6/ 7/23	1
67721	Hexachloroethane	55	ug/kg	U	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	55	ug/kg	U	6/ 7/23	1
78591	Isophorone	910	ug/kg	U	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	55	ug/kg	U	6/ 7/23	1
91203	Naphthalene	55	ug/kg	U	6/ 7/23	1
90120	Naphthalene, 1-methyl-	55	ug/kg	U	6/ 7/23	1
91576	Naphthalene, 2-methyl-	55	ug/kg	U	6/ 7/23	1
98953	Nitrobenzene	55	ug/kg	U	6/ 7/23	1
62759	N-Nitrosodimethylamine	55	ug/kg	U	6/ 7/23	1
621647	N-Nitrosodinpropylamine	55	ug/kg	U	6/ 7/23	1
86306	n-Nitrosodiphenylamine	55	ug/kg	U	6/ 7/23	1
87865	Pentachlorophenol	220	ug/kg	U	6/ 7/23	1
85018	Phenanthrene	55	ug/kg	U	6/ 7/23	1
108952	Phenol	55	ug/kg	U	6/ 7/23	1
95487	Phenol, 2-methyl-	55	ug/kg	U	6/ 7/23	1
129000	Pyrene	55	ug/kg	U	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	95	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	96	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	86	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	14	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	98	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	102	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	89	%Rec		6/ 7/23	1
1719068	Anthracene-D10	96	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	109	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	86	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	89	%Rec		6/ 7/23	1
1718521	D10-Pyrene	104	%Rec		6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	99	%Rec		6/ 7/23	1
93951894	Dimethylphthalate-D6	97	%Rec		6/ 7/23	1
4165600	Nitrobenzene-d5	98	%Rec		6/ 7/23	1
4165622	Phenol-d5	100	%Rec		6/ 7/23	1

Sample : 23214108

Information : Field Sample/ S-4/ 5ft
Matrix : Soil
Collected : 5/24/2023 9:37:00AM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	55	ug/kg	U	6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	55	ug/kg	U	6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	110	ug/kg	U	6/ 7/23	1
95954	2,4,5-Trichlorophenol	55	ug/kg	U	6/ 7/23	1
88062	2,4,6-Trichlorophenol	55	ug/kg	U	6/ 7/23	1
120832	2,4-Dichlorophenol	55	ug/kg	U	6/ 7/23	1
105679	2,4-Dimethylphenol	110	ug/kg	U	6/ 7/23	1
51285	2,4-Dinitrophenol	440	ug/kg	U	6/ 7/23	1
121142	2,4-Dinitrotoluene	55	ug/kg	U	6/ 7/23	1
606202	2,6-Dinitrotoluene	55	ug/kg	U	6/ 7/23	1
91587	2-Chloronaphthalene	55	ug/kg	U	6/ 7/23	1
95578	2-Chlorophenol	55	ug/kg	U	6/ 7/23	1
88744	2-Nitroaniline	55	ug/kg	U	6/ 7/23	1
88755	2-Nitrophenol	55	ug/kg	U	6/ 7/23	1
91941	3,3'-Dichlorobenzidine	55	ug/kg	U	6/ 7/23	1
99092	3-Nitroaniline	55	ug/kg	U	6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	55	ug/kg	U	6/ 7/23	1
101553	4-Bromophenyl-Phenylether	55	ug/kg	U	6/ 7/23	1
59507	4-Chloro-3-methylphenol	55	ug/kg	U	6/ 7/23	1
106478	4-Chloroaniline	110	ug/kg	UJ	6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	55	ug/kg	U	6/ 7/23	1
106445	4-Methylphenol	55	ug/kg	U	6/ 7/23	1
100016	4-Nitroaniline	110	ug/kg	U	6/ 7/23	1
100027	4-Nitrophenol	55	ug/kg	U	6/ 7/23	1
86748	9H-Carbazole	55	ug/kg	U	6/ 7/23	1
86737	9H-Fluorene	55	ug/kg	U	6/ 7/23	1
83329	Acenaphthene	55	ug/kg	U	6/ 7/23	1
208968	Acenaphthylene	55	ug/kg	U	6/ 7/23	1
120127	Anthracene	55	ug/kg	U	6/ 7/23	1
1912249	Atrazine	55	ug/kg	U	6/ 7/23	1
100527	Benzaldehyde	55	ug/kg	U	6/ 7/23	1
56553	Benzo(a)anthracene	55	ug/kg	U	6/ 7/23	1
50328	Benzo(a)pyrene	55	ug/kg	U	6/ 7/23	1
191242	Benzo(g,h,i)perylene	55	ug/kg	U	6/ 7/23	1
205992	Benzo[b]Fluoranthene	55	ug/kg	U	6/ 7/23	1
207089	Benzo[k]fluoranthene	55	ug/kg	U	6/ 7/23	1
111444	bis(2-Chloroethyl)ether	55	ug/kg	U	6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	55	ug/kg	U	6/ 7/23	1
117817	**Bis(2-ethylhexyl) phthalate**	**63**	**ug/kg**		6/ 7/23	1
85687	Butylbenzylphthalate	55	ug/kg	U	6/ 7/23	1
105602	Caprolactam	55	ug/kg	U	6/ 7/23	1

Target Analyte Results (cont.):

218019	Chrysene	55	ug/kg	U	6/ 7/23	1
53703	Dibenzo[a,h]anthracene	55	ug/kg	U	6/ 7/23	1
132649	Dibenzofuran	55	ug/kg	U	6/ 7/23	1
84662	Diethyl phthalate	55	ug/kg	U	6/ 7/23	1
131113	Dimethylphthalate	55	ug/kg	U	6/ 7/23	1
84742	Di-n-Butylphthalate	110	ug/kg	U	6/ 7/23	1
117840	Di-n-octylphthalate	55	ug/kg	U	6/ 7/23	1
98862	Ethanone, 1-phenyl-	55	ug/kg	U	6/ 7/23	1
206440	Fluoranthene	55	ug/kg	U	6/ 7/23	1
118741	Hexachlorobenzene	55	ug/kg	U	6/ 7/23	1
87683	Hexachlorobutadiene	55	ug/kg	U	6/ 7/23	1
77474	Hexachlorocyclopentadiene	55	ug/kg	U	6/ 7/23	1
67721	Hexachloroethane	55	ug/kg	U	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	55	ug/kg	U	6/ 7/23	1
78591	Isophorone	820	ug/kg	U	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	55	ug/kg	U	6/ 7/23	1
91203	Naphthalene	55	ug/kg	U	6/ 7/23	1
90120	Naphthalene, 1-methyl-	55	ug/kg	U	6/ 7/23	1
91576	Naphthalene, 2-methyl-	55	ug/kg	U	6/ 7/23	1
98953	Nitrobenzene	55	ug/kg	U	6/ 7/23	1
62759	N-Nitrosodimethylamine	55	ug/kg	U	6/ 7/23	1
621647	N-Nitrosodinpropylamine	55	ug/kg	U	6/ 7/23	1
86306	n-Nitrosodiphenylamine	55	ug/kg	U	6/ 7/23	1
87865	Pentachlorophenol	220	ug/kg	U	6/ 7/23	1
85018	Phenanthrene	55	ug/kg	U	6/ 7/23	1
108952	Phenol	55	ug/kg	U	6/ 7/23	1
95487	Phenol, 2-methyl-	55	ug/kg	U	6/ 7/23	1
129000	Pyrene	55	ug/kg	U	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	92	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	96	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	87	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	20	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	95	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	103	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	93	%Rec		6/ 7/23	1
1719068	Anthracene-D10	96	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	107	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	83	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	87	%Rec		6/ 7/23	1
1718521	D10-Pyrene	104	%Rec		6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	95	%Rec		6/ 7/23	1
93951894	Dimethylphthalate-D6	96	%Rec		6/ 7/23	1
4165600	Nitrobenzene-d5	96	%Rec		6/ 7/23	1
4165622	Phenol-d5	98	%Rec		6/ 7/23	1

Sample : 23214111

Information : Field Sample/ G-1
Matrix : Soil
Collected : 5/25/2023 2:20:00PM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	54	ug/kg	U	6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	54	ug/kg	U	6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	110	ug/kg	U	6/ 7/23	1
95954	2,4,5-Trichlorophenol	54	ug/kg	U	6/ 7/23	1
88062	2,4,6-Trichlorophenol	54	ug/kg	U	6/ 7/23	1
120832	2,4-Dichlorophenol	54	ug/kg	U	6/ 7/23	1
105679	2,4-Dimethylphenol	110	ug/kg	U	6/ 7/23	1
51285	2,4-Dinitrophenol	430	ug/kg	U	6/ 7/23	1
121142	2,4-Dinitrotoluene	54	ug/kg	U	6/ 7/23	1
606202	2,6-Dinitrotoluene	54	ug/kg	U	6/ 7/23	1
91587	2-Chloronaphthalene	54	ug/kg	U	6/ 7/23	1
95578	2-Chlorophenol	54	ug/kg	U	6/ 7/23	1
88744	2-Nitroaniline	54	ug/kg	U	6/ 7/23	1
88755	2-Nitrophenol	54	ug/kg	U	6/ 7/23	1
91941	3,3'-Dichlorobenzidine	54	ug/kg	U	6/ 7/23	1
99092	3-Nitroaniline	54	ug/kg	U	6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	54	ug/kg	U	6/ 7/23	1
101553	4-Bromophenyl-Phenylether	54	ug/kg	U	6/ 7/23	1
59507	4-Chloro-3-methylphenol	54	ug/kg	U	6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	54	ug/kg	U	6/ 7/23	1
106445	**4-Methylphenol**	**1600**	**ug/kg**		6/ 7/23	1
100016	4-Nitroaniline	110	ug/kg	U	6/ 7/23	1
100027	4-Nitrophenol	54	ug/kg	U	6/ 7/23	1
86748	9H-Carbazole	54	ug/kg	U	6/ 7/23	1
86737	9H-Fluorene	54	ug/kg	U	6/ 7/23	1
83329	Acenaphthene	54	ug/kg	U	6/ 7/23	1
208968	Acenaphthylene	54	ug/kg	U	6/ 7/23	1
120127	Anthracene	54	ug/kg	U	6/ 7/23	1
1912249	Atrazine	54	ug/kg	U	6/ 7/23	1
100527	**Benzaldehyde**	**55**	**ug/kg**		6/ 7/23	1
56553	Benzo(a)anthracene	54	ug/kg	U	6/ 7/23	1
50328	**Benzo(a)pyrene**	**150**	**ug/kg**		6/ 7/23	1
191242	**Benzo(g,h,i)perylene**	**240**	**ug/kg**		6/ 7/23	1
205992	**Benzo[b]Fluoranthene**	**220**	**ug/kg**		6/ 7/23	1
207089	**Benzo[k]fluoranthene**	**65**	**ug/kg**		6/ 7/23	1
111444	bis(2-Chloroethyl)ether	54	ug/kg	U	6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	54	ug/kg	U	6/ 7/23	1
85687	**Butylbenzylphthalate**	**150**	**ug/kg**		6/ 7/23	1
105602	Caprolactam	54	ug/kg	U	6/ 7/23	1
218019	**Chrysene**	**100**	**ug/kg**		6/ 7/23	1
53703	Dibenzo[a,h]anthracene	54	ug/kg	U	6/ 7/23	1

Target Analyte Results (cont.):

132649	Dibenzofuran	54	ug/kg	U	6/ 7/23	1
84662	Diethyl phthalate	54	ug/kg	U	6/ 7/23	1
131113	Dimethylphthalate	54	ug/kg	U	6/ 7/23	1
84742	Di-n-Butylphthalate	300	ug/kg	U	6/ 7/23	1
117840	**Di-n-octylphthalate**	**500**	**ug/kg**		6/ 7/23	1
98862	Ethanone, 1-phenyl-	54	ug/kg	U	6/ 7/23	1
206440	**Fluoranthene**	**81**	**ug/kg**		6/ 7/23	1
118741	Hexachlorobenzene	54	ug/kg	U	6/ 7/23	1
87683	Hexachlorobutadiene	54	ug/kg	U	6/ 7/23	1
77474	Hexachlorocyclopentadiene	54	ug/kg	U	6/ 7/23	1
67721	Hexachloroethane	54	ug/kg	U	6/ 7/23	1
193395	**Indeno(1,2,3-cd)pyrene**	**170**	**ug/kg**		6/ 7/23	1
78591	Isophorone	1800	ug/kg	U	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	54	ug/kg	U	6/ 7/23	1
91203	Naphthalene	54	ug/kg	U	6/ 7/23	1
90120	Naphthalene, 1-methyl-	54	ug/kg	U	6/ 7/23	1
91576	Naphthalene, 2-methyl-	54	ug/kg	U	6/ 7/23	1
98953	Nitrobenzene	54	ug/kg	U	6/ 7/23	1
62759	N-Nitrosodimethylamine	54	ug/kg	U	6/ 7/23	1
621647	N-Nitrosodinpropylamine	54	ug/kg	U	6/ 7/23	1
86306	n-Nitrosodiphenylamine	54	ug/kg	U	6/ 7/23	1
87865	**Pentachlorophenol**	**220**	**ug/kg**		6/ 7/23	1
85018	**Phenanthrene**	**68**	**ug/kg**		6/ 7/23	1
108952	**Phenol**	**100**	**ug/kg**		6/ 7/23	1
95487	**Phenol, 2-methyl-**	**80**	**ug/kg**		6/ 7/23	1
129000	**Pyrene**	**110**	**ug/kg**		6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	86	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	92	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	47	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	1	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	102	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	106	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	99	%Rec		6/ 7/23	1
1719068	Anthracene-D10	100	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	108	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	67	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	92	%Rec		6/ 7/23	1
1718521	D10-Pyrene	105	%Rec		6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	103	%Rec		6/ 7/23	1
93951894	Dimethylphthalate-D6	97	%Rec		6/ 7/23	1
4165600	Nitrobenzene-d5	94	%Rec		6/ 7/23	1
4165622	Phenol-d5	98	%Rec		6/ 7/23	1

Sample : 23214111RE

Information : Field Sample/ G-1
Matrix : Soil
Collected : 5/25/2023

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
106478	4-Chloroaniline	440	ug/kg	UJ	6/ 7/23	1
117817	**Bis(2-ethylhexyl) phthalate**	**2700**	**ug/kg**		6/ 7/23	1
Surrogate Compounds:						
93951736	2-chlorophenol-d4	88	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	91	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	73	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	31	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	98	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	100	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	97	%Rec		6/ 7/23	1
1719068	Anthracene-D10	95	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	107	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	74	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	90	%Rec		6/ 7/23	1
1718521	D10-Pyrene	103	%Rec		6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	99	%Rec		6/ 7/23	1
93951894	Dimethylphthalate-D6	95	%Rec		6/ 7/23	1
4165600	Nitrobenzene-d5	92	%Rec		6/ 7/23	1
4165622	Phenol-d5	94	%Rec		6/ 7/23	1

Sample : 23214112

Information : Field Duplicate/ G-2
Matrix : Soil
Collected : 5/25/2023 1:45:00PM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	67	ug/kg	U	6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	67	ug/kg	U	6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	130	ug/kg	U	6/ 7/23	1
95954	2,4,5-Trichlorophenol	67	ug/kg	U	6/ 7/23	1
88062	2,4,6-Trichlorophenol	67	ug/kg	U	6/ 7/23	1
120832	2,4-Dichlorophenol	67	ug/kg	U	6/ 7/23	1
105679	2,4-Dimethylphenol	130	ug/kg	U	6/ 7/23	1
51285	2,4-Dinitrophenol	540	ug/kg	U	6/ 7/23	1
121142	2,4-Dinitrotoluene	67	ug/kg	U	6/ 7/23	1
606202	2,6-Dinitrotoluene	67	ug/kg	U	6/ 7/23	1
91587	2-Chloronaphthalene	67	ug/kg	U	6/ 7/23	1
95578	2-Chlorophenol	67	ug/kg	U	6/ 7/23	1
88744	2-Nitroaniline	67	ug/kg	U	6/ 7/23	1
88755	2-Nitrophenol	67	ug/kg	U	6/ 7/23	1
91941	3,3'-Dichlorobenzidine	67	ug/kg	U	6/ 7/23	1
99092	3-Nitroaniline	67	ug/kg	U	6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	67	ug/kg	U	6/ 7/23	1
101553	4-Bromophenyl-Phenylether	67	ug/kg	U	6/ 7/23	1
59507	4-Chloro-3-methylphenol	67	ug/kg	U	6/ 7/23	1
106478	4-Chloroaniline			R	6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	67	ug/kg	U	6/ 7/23	1
106445	**4-Methylphenol**	**91**	**ug/kg**		6/ 7/23	1
100016	4-Nitroaniline	130	ug/kg	U	6/ 7/23	1
100027	4-Nitrophenol	67	ug/kg	U	6/ 7/23	1
86748	9H-Carbazole	67	ug/kg	U	6/ 7/23	1
86737	9H-Fluorene	67	ug/kg	U	6/ 7/23	1
83329	Acenaphthene	67	ug/kg	U	6/ 7/23	1
208968	**Acenaphthylene**	**130**	**ug/kg**		6/ 7/23	1
120127	**Anthracene**	**91**	**ug/kg**		6/ 7/23	1
1912249	Atrazine	67	ug/kg	U	6/ 7/23	1
100527	Benzaldehyde	67	ug/kg	U	6/ 7/23	1
56553	**Benzo(a)anthracene**	**290**	**ug/kg**		6/ 7/23	1
50328	**Benzo(a)pyrene**	**530**	**ug/kg**		6/ 7/23	1
191242	**Benzo(g,h,i)perylene**	**650**	**ug/kg**		6/ 7/23	1
205992	**Benzo[b]Fluoranthene**	**620**	**ug/kg**		6/ 7/23	1
207089	**Benzo[k]fluoranthene**	**220**	**ug/kg**		6/ 7/23	1
111444	bis(2-Chloroethyl)ether	67	ug/kg	U	6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	67	ug/kg	U	6/ 7/23	1
117817	**Bis(2-ethylhexyl) phthalate**	**440**	**ug/kg**		6/ 7/23	1
85687	**Butylbenzylphthalate**	**110**	**ug/kg**		6/ 7/23	1
105602	Caprolactam	67	ug/kg	U	6/ 7/23	1

Target Analyte Results (cont.):

218019	**Chrysene**	**430**	**ug/kg**		6/ 7/23	1
53703	**Dibenzo[a,h]anthracene**	**84**	**ug/kg**		6/ 7/23	1
132649	Dibenzofuran	67	ug/kg	U	6/ 7/23	1
84662	Diethyl phthalate	67	ug/kg	U	6/ 7/23	1
131113	Dimethylphthalate	67	ug/kg	U	6/ 7/23	1
84742	Di-n-Butylphthalate	180	ug/kg	U	6/ 7/23	1
117840	Di-n-octylphthalate	67	ug/kg	U	6/ 7/23	1
98862	Ethanone, 1-phenyl-	67	ug/kg	U	6/ 7/23	1
206440	**Fluoranthene**	**680**	**ug/kg**		6/ 7/23	1
118741	Hexachlorobenzene	67	ug/kg	U	6/ 7/23	1
87683	Hexachlorobutadiene	67	ug/kg	U	6/ 7/23	1
77474	Hexachlorocyclopentadiene	67	ug/kg	U	6/ 7/23	1
67721	Hexachloroethane	67	ug/kg	U	6/ 7/23	1
193395	**Indeno(1,2,3-cd)pyrene**	**450**	**ug/kg**		6/ 7/23	1
78591	Isophorone	2800	ug/kg	U	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	67	ug/kg	U	6/ 7/23	1
91203	Naphthalene	67	ug/kg	U	6/ 7/23	1
90120	Naphthalene, 1-methyl-	67	ug/kg	U	6/ 7/23	1
91576	Naphthalene, 2-methyl-	67	ug/kg	U	6/ 7/23	1
98953	Nitrobenzene	67	ug/kg	U	6/ 7/23	1
62759	N-Nitrosodimethylamine	67	ug/kg	U	6/ 7/23	1
621647	N-Nitrosodinpropylamine	67	ug/kg	U	6/ 7/23	1
86306	n-Nitrosodiphenylamine	67	ug/kg	U	6/ 7/23	1
87865	**Pentachlorophenol**	**290**	**ug/kg**		6/ 7/23	1
85018	**Phenanthrene**	**260**	**ug/kg**		6/ 7/23	1
108952	**Phenol**	**93**	**ug/kg**		6/ 7/23	1
95487	Phenol, 2-methyl-	67	ug/kg	U	6/ 7/23	1
129000	**Pyrene**	**860**	**ug/kg**		6/ 7/23	1
Surrogate Compounds:						
93951736	2-chlorophenol-d4	89	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	91	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	55	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	0	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	98	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	108	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	99	%Rec		6/ 7/23	1
1719068	Anthracene-D10	100	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	109	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	71	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	93	%Rec		6/ 7/23	1
1718521	D10-Pyrene	106	%Rec		6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	103	%Rec		6/ 7/23	1
93951894	Dimethylphthalate-D6	100	%Rec		6/ 7/23	1
4165600	Nitrobenzene-d5	88	%Rec		6/ 7/23	1
4165622	Phenol-d5	99	%Rec		6/ 7/23	1

Sample : 23214113

Information : Field Sample/ G-2
Matrix : Soil
Collected : 5/25/2023 1:45:00PM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	69	ug/kg	U	6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	69	ug/kg	U	6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	140	ug/kg	U	6/ 7/23	1
95954	2,4,5-Trichlorophenol	69	ug/kg	U	6/ 7/23	1
88062	2,4,6-Trichlorophenol	69	ug/kg	U	6/ 7/23	1
120832	2,4-Dichlorophenol	69	ug/kg	U	6/ 7/23	1
105679	2,4-Dimethylphenol	140	ug/kg	U	6/ 7/23	1
51285	2,4-Dinitrophenol	560	ug/kg	U	6/ 7/23	1
121142	2,4-Dinitrotoluene	69	ug/kg	U	6/ 7/23	1
606202	2,6-Dinitrotoluene	69	ug/kg	U	6/ 7/23	1
91587	2-Chloronaphthalene	69	ug/kg	U	6/ 7/23	1
95578	2-Chlorophenol	69	ug/kg	U	6/ 7/23	1
88744	2-Nitroaniline	69	ug/kg	U	6/ 7/23	1
88755	2-Nitrophenol	69	ug/kg	U	6/ 7/23	1
91941	3,3'-Dichlorobenzidine	69	ug/kg	U	6/ 7/23	1
99092	3-Nitroaniline	69	ug/kg	U	6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	69	ug/kg	U	6/ 7/23	1
101553	4-Bromophenyl-Phenylether	69	ug/kg	U	6/ 7/23	1
59507	4-Chloro-3-methylphenol	69	ug/kg	U	6/ 7/23	1
106478	4-Chloroaniline			R	6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	69	ug/kg	U	6/ 7/23	1
106445	**4-Methylphenol**	**830**	**ug/kg**		6/ 7/23	1
100016	4-Nitroaniline	140	ug/kg	U	6/ 7/23	1
100027	4-Nitrophenol	69	ug/kg	U	6/ 7/23	1
86748	9H-Carbazole	69	ug/kg	U	6/ 7/23	1
86737	9H-Fluorene	69	ug/kg	U	6/ 7/23	1
83329	Acenaphthene	69	ug/kg	U	6/ 7/23	1
208968	**Acenaphthylene**	**170**	**ug/kg**		6/ 7/23	1
120127	**Anthracene**	**110**	**ug/kg**		6/ 7/23	1
1912249	Atrazine	69	ug/kg	U	6/ 7/23	1
100527	Benzaldehyde	69	ug/kg	U	6/ 7/23	1
56553	**Benzo(a)anthracene**	**360**	**ug/kg**		6/ 7/23	1
50328	**Benzo(a)pyrene**	**660**	**ug/kg**		6/ 7/23	1
191242	**Benzo(g,h,i)perylene**	**770**	**ug/kg**		6/ 7/23	1
205992	**Benzo[b]Fluoranthene**	**730**	**ug/kg**		6/ 7/23	1
207089	**Benzo[k]fluoranthene**	**270**	**ug/kg**		6/ 7/23	1
111444	bis(2-Chloroethyl)ether	69	ug/kg	U	6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	69	ug/kg	U	6/ 7/23	1
117817	**Bis(2-ethylhexyl) phthalate**	**610**	**ug/kg**		6/ 7/23	1
85687	**Butylbenzylphthalate**	**75**	**ug/kg**		6/ 7/23	1
105602	Caprolactam	69	ug/kg	U	6/ 7/23	1

Target Analyte Results (cont.):

218019	**Chrysene**	**520**	**ug/kg**		6/ 7/23	1
53703	**Dibenzo[a,h]anthracene**	**98**	**ug/kg**		6/ 7/23	1
132649	Dibenzofuran	69	ug/kg	U	6/ 7/23	1
84662	Diethyl phthalate	69	ug/kg	U	6/ 7/23	1
131113	Dimethylphthalate	69	ug/kg	U	6/ 7/23	1
84742	Di-n-Butylphthalate	280	ug/kg	U	6/ 7/23	1
117840	Di-n-octylphthalate	69	ug/kg	U	6/ 7/23	1
98862	Ethanone, 1-phenyl-	69	ug/kg	U	6/ 7/23	1
206440	**Fluoranthene**	**840**	**ug/kg**		6/ 7/23	1
118741	Hexachlorobenzene	69	ug/kg	U	6/ 7/23	1
87683	Hexachlorobutadiene	69	ug/kg	U	6/ 7/23	1
77474	Hexachlorocyclopentadiene	69	ug/kg	U	6/ 7/23	1
67721	Hexachloroethane	69	ug/kg	U	6/ 7/23	1
193395	**Indeno(1,2,3-cd)pyrene**	**540**	**ug/kg**		6/ 7/23	1
78591	Isophorone	3300	ug/kg	U	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	69	ug/kg	U	6/ 7/23	1
91203	Naphthalene	69	ug/kg	U	6/ 7/23	1
90120	Naphthalene, 1-methyl-	69	ug/kg	U	6/ 7/23	1
91576	Naphthalene, 2-methyl-	69	ug/kg	U	6/ 7/23	1
98953	Nitrobenzene	69	ug/kg	U	6/ 7/23	1
62759	N-Nitrosodimethylamine	69	ug/kg	U	6/ 7/23	1
621647	N-Nitrosodinpropylamine	69	ug/kg	U	6/ 7/23	1
86306	n-Nitrosodiphenylamine	69	ug/kg	U	6/ 7/23	1
87865	**Pentachlorophenol**	**300**	**ug/kg**		6/ 7/23	1
85018	**Phenanthrene**	**350**	**ug/kg**		6/ 7/23	1
108952	**Phenol**	**130**	**ug/kg**		6/ 7/23	1
95487	Phenol, 2-methyl-	69	ug/kg	U	6/ 7/23	1
129000	**Pyrene**	**1100**	**ug/kg**		6/ 7/23	1
Surrogate Compounds:						
93951736	2-chlorophenol-d4	94	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	96	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	51	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	0	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	105	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	109	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	103	%Rec		6/ 7/23	1
1719068	Anthracene-D10	98	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	109	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	73	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	94	%Rec		6/ 7/23	1
1718521	D10-Pyrene	105	%Rec		6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	106	%Rec		6/ 7/23	1
93951894	Dimethylphthalate-D6	98	%Rec		6/ 7/23	1
4165600	Nitrobenzene-d5	97	%Rec		6/ 7/23	1
4165622	Phenol-d5	105	%Rec		6/ 7/23	1

Sample : 23214114

Information : Rinsate Blank Soil
Matrix : Water
Collected : 5/25/2023 11:30:00AM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	1.0	ug/L	UJ	6/ 1/23	1
95943	1,2,4,5-Tetrachlorobenzene	1.0	ug/L	UJ	6/ 1/23	1
58902	2,3,4,6-Tetrachlorophenol	2.0	ug/L	UJ	6/ 1/23	1
95954	2,4,5-Trichlorophenol	1.0	ug/L	UJ	6/ 1/23	1
88062	2,4,6-Trichlorophenol	1.0	ug/L	UJ	6/ 1/23	1
120832	2,4-Dichlorophenol	1.0	ug/L	UJ	6/ 1/23	1
105679	2,4-Dimethylphenol	1.0	ug/L	UJ	6/ 1/23	1
51285	2,4-Dinitrophenol	8.0	ug/L	UJ	6/ 1/23	1
121142	2,4-Dinitrotoluene	1.0	ug/L	UJ	6/ 1/23	1
606202	2,6-Dinitrotoluene	1.0	ug/L	UJ	6/ 1/23	1
91587	2-Chloronaphthalene	1.0	ug/L	UJ	6/ 1/23	1
95578	2-Chlorophenol	1.0	ug/L	UJ	6/ 1/23	1
88744	2-Nitroaniline	1.0	ug/L	UJ	6/ 1/23	1
88755	2-Nitrophenol	1.0	ug/L	UJ	6/ 1/23	1
91941	3,3'-Dichlorobenzidine			R	6/ 1/23	1
99092	3-Nitroaniline	1.0	ug/L	UJ	6/ 1/23	1
534521	4,6-Dinitro-2-methylphenol	2.0	ug/L	UJ	6/ 1/23	1
101553	4-Bromophenyl-Phenylether	1.0	ug/L	UJ	6/ 1/23	1
59507	4-Chloro-3-methylphenol	1.0	ug/L	UJ	6/ 1/23	1
106478	4-Chloroaniline	1.0	ug/L	UJ	6/ 1/23	1
7005723	4-Chlorophenyl-Phenylether	1.0	ug/L	UJ	6/ 1/23	1
106445	4-Methylphenol	1.0	ug/L	UJ	6/ 1/23	1
100016	4-Nitroaniline	1.0	ug/L	UJ	6/ 1/23	1
100027	4-Nitrophenol	1.0	ug/L	UJ	6/ 1/23	1
86748	9H-Carbazole	1.0	ug/L	UJ	6/ 1/23	1
86737	9H-Fluorene	1.0	ug/L	UJ	6/ 1/23	1
83329	Acenaphthene	1.0	ug/L	UJ	6/ 1/23	1
208968	Acenaphthylene	1.0	ug/L	UJ	6/ 1/23	1
120127	Anthracene	1.0	ug/L	UJ	6/ 1/23	1
1912249	Atrazine	1.0	ug/L	UJ	6/ 1/23	1
100527	Benzaldehyde	1.0	ug/L	UJ	6/ 1/23	1
56553	Benzo(a)anthracene	1.0	ug/L	UJ	6/ 1/23	1
50328	Benzo(a)pyrene	1.0	ug/L	UJ	6/ 1/23	1
191242	Benzo(g,h,i)perylene	1.0	ug/L	UJ	6/ 1/23	1
205992	Benzo[b]Fluoranthene	1.0	ug/L	UJ	6/ 1/23	1
207089	Benzo[k]fluoranthene	1.0	ug/L	UJ	6/ 1/23	1
111444	bis(2-Chloroethyl)ether	1.0	ug/L	UJ	6/ 1/23	1
108601	Bis(2-Chloroisopropyl)ether	1.0	ug/L	UJ	6/ 1/23	1
117817	Bis(2-ethylhexyl) phthalate	1.0	ug/L	UJ	6/ 1/23	1
85687	Butylbenzylphthalate	1.0	ug/L	UJ	6/ 1/23	1
105602	Caprolactam			R	6/ 1/23	1

Target Analyte Results (cont.):

218019	Chrysene	1.0	ug/L	UJ	6/ 1/23	1
53703	Dibenzo[a,h]anthracene	1.0	ug/L	UJ	6/ 1/23	1
132649	Dibenzofuran	1.0	ug/L	UJ	6/ 1/23	1
84662	Diethyl phthalate	1.0	ug/L	UJ	6/ 1/23	1
131113	Dimethylphthalate	1.0	ug/L	UJ	6/ 1/23	1
84742	Di-n-Butylphthalate	1.0	ug/L	UJ	6/ 1/23	1
117840	Di-n-octylphthalate	1.0	ug/L	UJ	6/ 1/23	1
98862	Ethanone, 1-phenyl-	1.0	ug/L	UJ	6/ 1/23	1
206440	Fluoranthene	1.0	ug/L	UJ	6/ 1/23	1
118741	Hexachlorobenzene	1.0	ug/L	UJ	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	UJ	6/ 1/23	1
77474	Hexachlorocyclopentadiene	1.0	ug/L	UJ	6/ 1/23	1
67721	Hexachloroethane	1.0	ug/L	UJ	6/ 1/23	1
193395	Indeno(1,2,3-cd)pyrene	1.0	ug/L	UJ	6/ 1/23	1
78591	Isophorone	1.0	ug/L	UJ	6/ 1/23	1
111911	Methane, bis(2-chloroethoxy)-	1.0	ug/L	UJ	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	UJ	6/ 1/23	1
90120	Naphthalene, 1-methyl-	1.0	ug/L	UJ	6/ 1/23	1
91576	Naphthalene, 2-methyl-	1.0	ug/L	UJ	6/ 1/23	1
98953	Nitrobenzene	1.0	ug/L	UJ	6/ 1/23	1
621647	N-Nitrosodinpropylamine	1.0	ug/L	UJ	6/ 1/23	1
86306	n-Nitrosodiphenylamine	1.0	ug/L	UJ	6/ 1/23	1
87865	Pentachlorophenol	4.0	ug/L	UJ	6/ 1/23	1
85018	Phenanthrene	1.0	ug/L	UJ	6/ 1/23	1
108952	Phenol	1.0	ug/L	UJ	6/ 1/23	1
95487	Phenol, 2-methyl-	1.0	ug/L	UJ	6/ 1/23	1
129000	Pyrene	1.0	ug/L	UJ	6/ 1/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	105	%Rec		6/ 1/23	1
93951781	2-Nitrophenol-D4	108	%Rec		6/ 1/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	90	%Rec		6/ 1/23	1
191656334	4-Chloroaniline-D4	31	%Rec		6/ 1/23	1
190780666	4-Methylphenol-D8	103	%Rec		6/ 1/23	1
93951792	4-Nitrophenol-D4	82	%Rec		6/ 1/23	1
93951974	Acenaphthylene-D8	99	%Rec		6/ 1/23	1
1719068	Anthracene-D10	98	%Rec		6/ 1/23	1
63466717	Benzo[a]pyrene-D12	107	%Rec		6/ 1/23	1
93952024	Bis(2chloroethyl)ether-D8	100	%Rec		6/ 1/23	1
81103799	D10-Fluorene (SS)	96	%Rec		6/ 1/23	1
1718521	D10-Pyrene	105	%Rec		6/ 1/23	1
93951747	d3-2,4-Dichlorophenol	95	%Rec		6/ 1/23	1
93951894	Dimethylphthalate-D6	103	%Rec		6/ 1/23	1
4165600	Nitrobenzene-d5	110	%Rec		6/ 1/23	1
4165622	Phenol-d5	97	%Rec		6/ 1/23	1

Sample : 23214115

Information : Rinsate Blank/ GW1
Matrix : Water
Collected : 5/25/2023 1:30:00PM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	1.0	ug/L	UJ	6/ 1/23	1
95943	1,2,4,5-Tetrachlorobenzene	1.0	ug/L	UJ	6/ 1/23	1
58902	2,3,4,6-Tetrachlorophenol	2.0	ug/L	UJ	6/ 1/23	1
95954	2,4,5-Trichlorophenol	1.0	ug/L	UJ	6/ 1/23	1
88062	2,4,6-Trichlorophenol	1.0	ug/L	UJ	6/ 1/23	1
120832	2,4-Dichlorophenol	1.0	ug/L	UJ	6/ 1/23	1
105679	2,4-Dimethylphenol	1.0	ug/L	UJ	6/ 1/23	1
51285	2,4-Dinitrophenol	8.0	ug/L	UJ	6/ 1/23	1
121142	2,4-Dinitrotoluene	1.0	ug/L	UJ	6/ 1/23	1
606202	2,6-Dinitrotoluene	1.0	ug/L	UJ	6/ 1/23	1
91587	2-Chloronaphthalene	1.0	ug/L	UJ	6/ 1/23	1
95578	2-Chlorophenol	1.0	ug/L	UJ	6/ 1/23	1
88744	2-Nitroaniline	1.0	ug/L	UJ	6/ 1/23	1
88755	2-Nitrophenol	1.0	ug/L	UJ	6/ 1/23	1
91941	3,3'-Dichlorobenzidine			R	6/ 1/23	1
99092	3-Nitroaniline	1.0	ug/L	UJ	6/ 1/23	1
534521	4,6-Dinitro-2-methylphenol	2.0	ug/L	UJ	6/ 1/23	1
101553	4-Bromophenyl-Phenylether	1.0	ug/L	UJ	6/ 1/23	1
59507	4-Chloro-3-methylphenol	1.0	ug/L	UJ	6/ 1/23	1
106478	4-Chloroaniline	1.0	ug/L	UJ	6/ 1/23	1
7005723	4-Chlorophenyl-Phenylether	1.0	ug/L	UJ	6/ 1/23	1
106445	4-Methylphenol	1.0	ug/L	UJ	6/ 1/23	1
100016	4-Nitroaniline	1.0	ug/L	UJ	6/ 1/23	1
100027	4-Nitrophenol	1.0	ug/L	UJ	6/ 1/23	1
86748	9H-Carbazole	1.0	ug/L	UJ	6/ 1/23	1
86737	9H-Fluorene	1.0	ug/L	UJ	6/ 1/23	1
83329	Acenaphthene	1.0	ug/L	UJ	6/ 1/23	1
208968	Acenaphthylene	1.0	ug/L	UJ	6/ 1/23	1
120127	Anthracene	1.0	ug/L	UJ	6/ 1/23	1
1912249	Atrazine	1.0	ug/L	UJ	6/ 1/23	1
100527	Benzaldehyde	1.0	ug/L	UJ	6/ 1/23	1
56553	Benzo(a)anthracene	1.0	ug/L	UJ	6/ 1/23	1
50328	Benzo(a)pyrene	1.0	ug/L	UJ	6/ 1/23	1
191242	Benzo(g,h,i)perylene	1.0	ug/L	UJ	6/ 1/23	1
205992	Benzo[b]Fluoranthene	1.0	ug/L	UJ	6/ 1/23	1
207089	Benzo[k]fluoranthene	1.0	ug/L	UJ	6/ 1/23	1
111444	bis(2-Chloroethyl)ether	1.0	ug/L	UJ	6/ 1/23	1
108601	Bis(2-Chloroisopropyl)ether	1.0	ug/L	UJ	6/ 1/23	1
117817	Bis(2-ethylhexyl) phthalate	1.0	ug/L	UJ	6/ 1/23	1
85687	Butylbenzylphthalate	1.0	ug/L	UJ	6/ 1/23	1
105602	Caprolactam			R	6/ 1/23	1

Target Analyte Results (cont.):

218019	Chrysene	1.0	ug/L	UJ	6/ 1/23	1
53703	Dibenzo[a,h]anthracene	1.0	ug/L	UJ	6/ 1/23	1
132649	Dibenzofuran	1.0	ug/L	UJ	6/ 1/23	1
84662	Diethyl phthalate	1.0	ug/L	UJ	6/ 1/23	1
131113	Dimethylphthalate	1.0	ug/L	UJ	6/ 1/23	1
84742	Di-n-Butylphthalate	1.2	ug/L	UJ	6/ 1/23	1
117840	Di-n-octylphthalate	1.0	ug/L	UJ	6/ 1/23	1
98862	Ethanone, 1-phenyl-	1.0	ug/L	UJ	6/ 1/23	1
206440	Fluoranthene	1.0	ug/L	UJ	6/ 1/23	1
118741	Hexachlorobenzene	1.0	ug/L	UJ	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	UJ	6/ 1/23	1
77474	Hexachlorocyclopentadiene	1.0	ug/L	UJ	6/ 1/23	1
67721	Hexachloroethane	1.0	ug/L	UJ	6/ 1/23	1
193395	Indeno(1,2,3-cd)pyrene	1.0	ug/L	UJ	6/ 1/23	1
78591	Isophorone	1.0	ug/L	UJ	6/ 1/23	1
111911	Methane, bis(2-chloroethoxy)-	1.0	ug/L	UJ	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	UJ	6/ 1/23	1
90120	Naphthalene, 1-methyl-	1.0	ug/L	UJ	6/ 1/23	1
91576	Naphthalene, 2-methyl-	1.0	ug/L	UJ	6/ 1/23	1
98953	Nitrobenzene	1.0	ug/L	UJ	6/ 1/23	1
621647	N-Nitrosodinpropylamine	1.0	ug/L	UJ	6/ 1/23	1
86306	n-Nitrosodiphenylamine	1.0	ug/L	UJ	6/ 1/23	1
87865	Pentachlorophenol	4.0	ug/L	UJ	6/ 1/23	1
85018	Phenanthrene	1.0	ug/L	UJ	6/ 1/23	1
108952	Phenol	1.0	ug/L	UJ	6/ 1/23	1
95487	Phenol, 2-methyl-	1.0	ug/L	UJ	6/ 1/23	1
129000	Pyrene	1.0	ug/L	UJ	6/ 1/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	104	%Rec		6/ 1/23	1
93951781	2-Nitrophenol-D4	106	%Rec		6/ 1/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	84	%Rec		6/ 1/23	1
191656334	4-Chloroaniline-D4	28	%Rec		6/ 1/23	1
190780666	4-Methylphenol-D8	103	%Rec		6/ 1/23	1
93951792	4-Nitrophenol-D4	83	%Rec		6/ 1/23	1
93951974	Acenaphthylene-D8	99	%Rec		6/ 1/23	1
1719068	Anthracene-D10	99	%Rec		6/ 1/23	1
63466717	Benzo[a]pyrene-D12	109	%Rec		6/ 1/23	1
93952024	Bis(2chloroethyl)ether-D8	102	%Rec		6/ 1/23	1
81103799	D10-Fluorene (SS)	96	%Rec		6/ 1/23	1
1718521	D10-Pyrene	107	%Rec		6/ 1/23	1
93951747	d3-2,4-Dichlorophenol	95	%Rec		6/ 1/23	1
93951894	Dimethylphthalate-D6	103	%Rec		6/ 1/23	1
4165600	Nitrobenzene-d5	105	%Rec		6/ 1/23	1
4165622	Phenol-d5	99	%Rec		6/ 1/23	1

Sample : 23214100 Matrix Spike

Information : Field Sample/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 8:30:00AM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
92524	1,1'-Biphenyl	88	%Rec		6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	85	%Rec		6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	99	%Rec		6/ 7/23	1
95954	2,4,5-Trichlorophenol	110	%Rec		6/ 7/23	1
88062	2,4,6-Trichlorophenol	97	%Rec		6/ 7/23	1
120832	2,4-Dichlorophenol	100	%Rec		6/ 7/23	1
105679	2,4-Dimethylphenol	89	%Rec		6/ 7/23	1
51285	2,4-Dinitrophenol	52	%Rec		6/ 7/23	1
121142	2,4-Dinitrotoluene	94	%Rec		6/ 7/23	1
606202	2,6-Dinitrotoluene	96	%Rec		6/ 7/23	1
91587	2-Chloronaphthalene	89	%Rec		6/ 7/23	1
95578	2-Chlorophenol	90	%Rec		6/ 7/23	1
88744	2-Nitroaniline	92	%Rec		6/ 7/23	1
88755	2-Nitrophenol	92	%Rec		6/ 7/23	1
91941	3,3'-Dichlorobenzidine	6	%Rec		6/ 7/23	1
99092	3-Nitroaniline	44	%Rec		6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	75	%Rec		6/ 7/23	1
101553	4-Bromophenyl-Phenylether	97	%Rec		6/ 7/23	1
59507	4-Chloro-3-methylphenol	105	%Rec		6/ 7/23	1
106478	4-Chloroaniline	45	%Rec		6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	89	%Rec		6/ 7/23	1
106445	4-Methylphenol	93	%Rec		6/ 7/23	1
100016	4-Nitroaniline	50	%Rec		6/ 7/23	1
100027	4-Nitrophenol	100	%Rec		6/ 7/23	1
86748	9H-Carbazole	102	%Rec		6/ 7/23	1
86737	9H-Fluorene	91	%Rec		6/ 7/23	1
83329	Acenaphthene	89	%Rec		6/ 7/23	1
208968	Acenaphthylene	95	%Rec		6/ 7/23	1
120127	Anthracene	96	%Rec		6/ 7/23	1
1912249	Atrazine	110	%Rec		6/ 7/23	1
100527	Benzaldehyde	78	%Rec		6/ 7/23	1
56553	Benzo(a)anthracene	100	%Rec		6/ 7/23	1
50328	Benzo(a)pyrene	105	%Rec		6/ 7/23	1
191242	Benzo(g,h,i)perylene	103	%Rec		6/ 7/23	1
205992	Benzo[b]Fluoranthene	103	%Rec		6/ 7/23	1
207089	Benzo[k]fluoranthene	106	%Rec		6/ 7/23	1
111444	bis(2-Chloroethyl)ether	81	%Rec		6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	84	%Rec		6/ 7/23	1
117817	Bis(2-ethylhexyl) phthalate	103	%Rec		6/ 7/23	1
85687	Butylbenzylphthalate	107	%Rec		6/ 7/23	1
105602	Caprolactam	98	%Rec		6/ 7/23	1

Spiked Compounds (cont.):

218019	Chrysene	96	%Rec	6/ 7/23	1
53703	Dibenzo[a,h]anthracene	106	%Rec	6/ 7/23	1
132649	Dibenzofuran	89	%Rec	6/ 7/23	1
84662	Diethyl phthalate	98	%Rec	6/ 7/23	1
131113	Dimethylphthalate	95	%Rec	6/ 7/23	1
84742	Di-n-Butylphthalate	96	%Rec	6/ 7/23	1
117840	Di-n-octylphthalate	107	%Rec	6/ 7/23	1
98862	Ethanone, 1-phenyl-	86	%Rec	6/ 7/23	1
206440	Fluoranthene	100	%Rec	6/ 7/23	1
118741	Hexachlorobenzene	90	%Rec	6/ 7/23	1
87683	Hexachlorobutadiene	82	%Rec	6/ 7/23	1
77474	Hexachlorocyclopentadiene	76	%Rec	6/ 7/23	1
67721	Hexachloroethane	75	%Rec	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	107	%Rec	6/ 7/23	1
78591	Isophorone	99	%Rec	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	87	%Rec	6/ 7/23	1
91203	Naphthalene	83	%Rec	6/ 7/23	1
90120	Naphthalene, 1-methyl-	87	%Rec	6/ 7/23	1
91576	Naphthalene, 2-methyl-	86	%Rec	6/ 7/23	1
98953	Nitrobenzene	90	%Rec	6/ 7/23	1
62759	N-Nitrosodimethylamine	74	%Rec	6/ 7/23	1
621647	N-Nitrosodinpropylamine	91	%Rec	6/ 7/23	1
86306	n-Nitrosodiphenylamine	101	%Rec	6/ 7/23	1
87865	Pentachlorophenol	102	%Rec	6/ 7/23	1
85018	Phenanthrene	92	%Rec	6/ 7/23	1
108952	Phenol	93	%Rec	6/ 7/23	1
95487	Phenol, 2-methyl-	94	%Rec	6/ 7/23	1
129000	Pyrene	100	%Rec	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	93	%Rec	6/ 7/23	1
93951781	2-Nitrophenol-D4	97	%Rec	6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	76	%Rec	6/ 7/23	1
191656334	4-Chloroaniline-D4	46	%Rec	6/ 7/23	1
190780666	4-Methylphenol-D8	96	%Rec	6/ 7/23	1
93951792	4-Nitrophenol-D4	106	%Rec	6/ 7/23	1
93951974	Acenaphthylene-D8	98	%Rec	6/ 7/23	1
1719068	Anthracene-D10	98	%Rec	6/ 7/23	1
63466717	Benzo[a]pyrene-D12	111	%Rec	6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	85	%Rec	6/ 7/23	1
81103799	D10-Fluorene (SS)	94	%Rec	6/ 7/23	1
1718521	D10-Pyrene	105	%Rec	6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	103	%Rec	6/ 7/23	1
93951894	Dimethylphthalate-D6	99	%Rec	6/ 7/23	1
4165600	Nitrobenzene-d5	97	%Rec	6/ 7/23	1
4165622	Phenol-d5	96	%Rec	6/ 7/23	1

Sample : 23214105 Matrix Spike

Information : Field Sample/ S-2
Matrix : Water
Collected : 5/24/2023 5:00:00PM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
92524	1,1'-Biphenyl	93	%Rec		6/ 1/23	1
95943	1,2,4,5-Tetrachlorobenzene	84	%Rec		6/ 1/23	1
58902	2,3,4,6-Tetrachlorophenol	103	%Rec		6/ 1/23	1
95954	2,4,5-Trichlorophenol	90	%Rec		6/ 1/23	1
88062	2,4,6-Trichlorophenol	95	%Rec		6/ 1/23	1
120832	2,4-Dichlorophenol	101	%Rec		6/ 1/23	1
105679	2,4-Dimethylphenol	100	%Rec		6/ 1/23	1
51285	2,4-Dinitrophenol	148	%Rec		6/ 1/23	1
121142	2,4-Dinitrotoluene	103	%Rec		6/ 1/23	1
606202	2,6-Dinitrotoluene	106	%Rec		6/ 1/23	1
91587	2-Chloronaphthalene	94	%Rec		6/ 1/23	1
95578	2-Chlorophenol	102	%Rec		6/ 1/23	1
88744	2-Nitroaniline	96	%Rec		6/ 1/23	1
88755	2-Nitrophenol	110	%Rec		6/ 1/23	1
91941	3,3'-Dichlorobenzidine	0	%Rec		6/ 1/23	1
99092	3-Nitroaniline	39	%Rec		6/ 1/23	1
534521	4,6-Dinitro-2-methylphenol	113	%Rec		6/ 1/23	1
101553	4-Bromophenyl-Phenylether	102	%Rec		6/ 1/23	1
59507	4-Chloro-3-methylphenol	101	%Rec		6/ 1/23	1
106478	4-Chloroaniline	14	%Rec		6/ 1/23	1
7005723	4-Chlorophenyl-Phenylether	93	%Rec		6/ 1/23	1
106445	4-Methylphenol	99	%Rec		6/ 1/23	1
100016	4-Nitroaniline	52	%Rec		6/ 1/23	1
100027	4-Nitrophenol	96	%Rec		6/ 1/23	1
86748	9H-Carbazole	104	%Rec		6/ 1/23	1
86737	9H-Fluorene	96	%Rec		6/ 1/23	1
83329	Acenaphthene	91	%Rec		6/ 1/23	1
208968	Acenaphthylene	97	%Rec		6/ 1/23	1
120127	Anthracene	97	%Rec		6/ 1/23	1
1912249	Atrazine	109	%Rec		6/ 1/23	1
100527	Benzaldehyde	99	%Rec		6/ 1/23	1
56553	Benzo(a)anthracene	102	%Rec		6/ 1/23	1
50328	Benzo(a)pyrene	103	%Rec		6/ 1/23	1
191242	Benzo(g,h,i)perylene	98	%Rec		6/ 1/23	1
205992	Benzo[b]Fluoranthene	99	%Rec		6/ 1/23	1
207089	Benzo[k]fluoranthene	110	%Rec		6/ 1/23	1
111444	bis(2-Chloroethyl)ether	94	%Rec		6/ 1/23	1
108601	Bis(2-Chloroisopropyl)ether	91	%Rec		6/ 1/23	1
117817	Bis(2-ethylhexyl) phthalate	104	%Rec		6/ 1/23	1
85687	Butylbenzylphthalate	123	%Rec		6/ 1/23	1
105602	Caprolactam	0	%Rec		6/ 1/23	1

Spiked Compounds (cont.):

218019	Chrysene	96	%Rec	6/ 1/23	1
53703	Dibenzo[a,h]anthracene	102	%Rec	6/ 1/23	1
132649	Dibenzofuran	94	%Rec	6/ 1/23	1
84662	Diethyl phthalate	102	%Rec	6/ 1/23	1
131113	Dimethylphthalate	99	%Rec	6/ 1/23	1
84742	Di-n-Butylphthalate	103	%Rec	6/ 1/23	1
117840	Di-n-octylphthalate	125	%Rec	6/ 1/23	1
98862	Ethanone, 1-phenyl-	102	%Rec	6/ 1/23	1
206440	Fluoranthene	101	%Rec	6/ 1/23	1
118741	Hexachlorobenzene	92	%Rec	6/ 1/23	1
87683	Hexachlorobutadiene	76	%Rec	6/ 1/23	1
77474	Hexachlorocyclopentadiene	77	%Rec	6/ 1/23	1
67721	Hexachloroethane	80	%Rec	6/ 1/23	1
193395	Indeno(1,2,3-cd)pyrene	103	%Rec	6/ 1/23	1
78591	Isophorone	86	%Rec	6/ 1/23	1
111911	Methane, bis(2-chloroethoxy)-	98	%Rec	6/ 1/23	1
91203	Naphthalene	95	%Rec	6/ 1/23	1
90120	Naphthalene, 1-methyl-	96	%Rec	6/ 1/23	1
91576	Naphthalene, 2-methyl-	97	%Rec	6/ 1/23	1
98953	Nitrobenzene	103	%Rec	6/ 1/23	1
621647	N-Nitrosodinpropylamine	94	%Rec	6/ 1/23	1
86306	n-Nitrosodiphenylamine	104	%Rec	6/ 1/23	1
87865	Pentachlorophenol	133	%Rec	6/ 1/23	1
85018	Phenanthrene	95	%Rec	6/ 1/23	1
108952	Phenol	100	%Rec	6/ 1/23	1
95487	Phenol, 2-methyl-	103	%Rec	6/ 1/23	1
129000	Pyrene	101	%Rec	6/ 1/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	108	%Rec	6/ 1/23	1
93951781	2-Nitrophenol-D4	118	%Rec	6/ 1/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	115	%Rec	6/ 1/23	1
191656334	4-Chloroaniline-D4	15	%Rec	6/ 1/23	1
190780666	4-Methylphenol-D8	110	%Rec	6/ 1/23	1
93951792	4-Nitrophenol-D4	109	%Rec	6/ 1/23	1
93951974	Acenaphthylene-D8	104	%Rec	6/ 1/23	1
1719068	Anthracene-D10	101	%Rec	6/ 1/23	1
63466717	Benzo[a]pyrene-D12	112	%Rec	6/ 1/23	1
93952024	Bis(2chloroethyl)ether-D8	96	%Rec	6/ 1/23	1
81103799	D10-Fluorene (SS)	100	%Rec	6/ 1/23	1
1718521	D10-Pyrene	108	%Rec	6/ 1/23	1
93951747	d3-2,4-Dichlorophenol	108	%Rec	6/ 1/23	1
93951894	Dimethylphthalate-D6	105	%Rec	6/ 1/23	1
4165600	Nitrobenzene-d5	116	%Rec	6/ 1/23	1
4165622	Phenol-d5	105	%Rec	6/ 1/23	1

Sample : 23214100 Matrix Spike#2

Information : Field Sample/ S-1/ 5ft
Matrix : Soil
Collected : 5/25/2023 8:30:00AM

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
92524	1,1'-Biphenyl	88	%Rec		6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	85	%Rec		6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	102	%Rec		6/ 7/23	1
95954	2,4,5-Trichlorophenol	110	%Rec		6/ 7/23	1
88062	2,4,6-Trichlorophenol	100	%Rec		6/ 7/23	1
120832	2,4-Dichlorophenol	102	%Rec		6/ 7/23	1
105679	2,4-Dimethylphenol	91	%Rec		6/ 7/23	1
51285	2,4-Dinitrophenol	70	%Rec		6/ 7/23	1
121142	2,4-Dinitrotoluene	95	%Rec		6/ 7/23	1
606202	2,6-Dinitrotoluene	97	%Rec		6/ 7/23	1
91587	2-Chloronaphthalene	89	%Rec		6/ 7/23	1
95578	2-Chlorophenol	94	%Rec		6/ 7/23	1
88744	2-Nitroaniline	94	%Rec		6/ 7/23	1
88755	2-Nitrophenol	95	%Rec		6/ 7/23	1
91941	3,3'-Dichlorobenzidine	3	%Rec		6/ 7/23	1
99092	3-Nitroaniline	31	%Rec		6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	88	%Rec		6/ 7/23	1
101553	4-Bromophenyl-Phenylether	97	%Rec		6/ 7/23	1
59507	4-Chloro-3-methylphenol	109	%Rec		6/ 7/23	1
106478	4-Chloroaniline	31	%Rec		6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	89	%Rec		6/ 7/23	1
106445	4-Methylphenol	98	%Rec		6/ 7/23	1
100016	4-Nitroaniline	41	%Rec		6/ 7/23	1
100027	4-Nitrophenol	104	%Rec		6/ 7/23	1
86748	9H-Carbazole	102	%Rec		6/ 7/23	1
86737	9H-Fluorene	92	%Rec		6/ 7/23	1
83329	Acenaphthene	90	%Rec		6/ 7/23	1
208968	Acenaphthylene	96	%Rec		6/ 7/23	1
120127	Anthracene	96	%Rec		6/ 7/23	1
1912249	Atrazine	111	%Rec		6/ 7/23	1
100527	Benzaldehyde	82	%Rec		6/ 7/23	1
56553	Benzo(a)anthracene	102	%Rec		6/ 7/23	1
50328	Benzo(a)pyrene	104	%Rec		6/ 7/23	1
191242	Benzo(g,h,i)perylene	102	%Rec		6/ 7/23	1
205992	Benzo[b]Fluoranthene	99	%Rec		6/ 7/23	1
207089	Benzo[k]fluoranthene	110	%Rec		6/ 7/23	1
111444	bis(2-Chloroethyl)ether	85	%Rec		6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	84	%Rec		6/ 7/23	1
117817	Bis(2-ethylhexyl) phthalate	106	%Rec		6/ 7/23	1
85687	Butylbenzylphthalate	111	%Rec		6/ 7/23	1
105602	Caprolactam	104	%Rec		6/ 7/23	1

Spiked Compounds (cont.):

218019	Chrysene	94	%Rec	6/ 7/23	1
53703	Dibenzo[a,h]anthracene	105	%Rec	6/ 7/23	1
132649	Dibenzofuran	89	%Rec	6/ 7/23	1
84662	Diethyl phthalate	98	%Rec	6/ 7/23	1
131113	Dimethylphthalate	95	%Rec	6/ 7/23	1
84742	Di-n-Butylphthalate	96	%Rec	6/ 7/23	1
117840	Di-n-octylphthalate	111	%Rec	6/ 7/23	1
98862	Ethanone, 1-phenyl-	91	%Rec	6/ 7/23	1
206440	Fluoranthene	101	%Rec	6/ 7/23	1
118741	Hexachlorobenzene	91	%Rec	6/ 7/23	1
87683	Hexachlorobutadiene	83	%Rec	6/ 7/23	1
77474	Hexachlorocyclopentadiene	83	%Rec	6/ 7/23	1
67721	Hexachloroethane	76	%Rec	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	106	%Rec	6/ 7/23	1
78591	Isophorone	104	%Rec	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	87	%Rec	6/ 7/23	1
91203	Naphthalene	85	%Rec	6/ 7/23	1
90120	Naphthalene, 1-methyl-	89	%Rec	6/ 7/23	1
91576	Naphthalene, 2-methyl-	88	%Rec	6/ 7/23	1
98953	Nitrobenzene	92	%Rec	6/ 7/23	1
62759	N-Nitrosodimethylamine	75	%Rec	6/ 7/23	1
621647	N-Nitrosodinpropylamine	96	%Rec	6/ 7/23	1
86306	n-Nitrosodiphenylamine	100	%Rec	6/ 7/23	1
87865	Pentachlorophenol	114	%Rec	6/ 7/23	1
85018	Phenanthrene	93	%Rec	6/ 7/23	1
108952	Phenol	99	%Rec	6/ 7/23	1
95487	Phenol, 2-methyl-	100	%Rec	6/ 7/23	1
129000	Pyrene	99	%Rec	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	99	%Rec	6/ 7/23	1
93951781	2-Nitrophenol-D4	101	%Rec	6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	89	%Rec	6/ 7/23	1
191656334	4-Chloroaniline-D4	32	%Rec	6/ 7/23	1
190780666	4-Methylphenol-D8	104	%Rec	6/ 7/23	1
93951792	4-Nitrophenol-D4	108	%Rec	6/ 7/23	1
93951974	Acenaphthylene-D8	101	%Rec	6/ 7/23	1
1719068	Anthracene-D10	99	%Rec	6/ 7/23	1
63466717	Benzo[a]pyrene-D12	112	%Rec	6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	90	%Rec	6/ 7/23	1
81103799	D10-Fluorene (SS)	96	%Rec	6/ 7/23	1
1718521	D10-Pyrene	105	%Rec	6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	107	%Rec	6/ 7/23	1
93951894	Dimethylphthalate-D6	102	%Rec	6/ 7/23	1
4165600	Nitrobenzene-d5	104	%Rec	6/ 7/23	1
4165622	Phenol-d5	102	%Rec	6/ 7/23	1

Sample : 105S060623B1 Blank

Information : Blank
Matrix : Solid

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	50	ug/kg	U	6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	50	ug/kg	U	6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	100	ug/kg	U	6/ 7/23	1
95954	2,4,5-Trichlorophenol	50	ug/kg	U	6/ 7/23	1
88062	2,4,6-Trichlorophenol	50	ug/kg	U	6/ 7/23	1
120832	2,4-Dichlorophenol	50	ug/kg	U	6/ 7/23	1
105679	2,4-Dimethylphenol	100	ug/kg	U	6/ 7/23	1
51285	2,4-Dinitrophenol	400	ug/kg	U	6/ 7/23	1
121142	2,4-Dinitrotoluene	50	ug/kg	U	6/ 7/23	1
606202	2,6-Dinitrotoluene	50	ug/kg	U	6/ 7/23	1
91587	2-Chloronaphthalene	50	ug/kg	U	6/ 7/23	1
95578	2-Chlorophenol	50	ug/kg	U	6/ 7/23	1
88744	2-Nitroaniline	50	ug/kg	U	6/ 7/23	1
88755	2-Nitrophenol	50	ug/kg	U	6/ 7/23	1
91941	3,3'-Dichlorobenzidine	50	ug/kg	U	6/ 7/23	1
99092	3-Nitroaniline	50	ug/kg	U	6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	50	ug/kg	U	6/ 7/23	1
101553	4-Bromophenyl-Phenylether	50	ug/kg	U	6/ 7/23	1
59507	4-Chloro-3-methylphenol	50	ug/kg	U	6/ 7/23	1
106478	4-Chloroaniline	100	ug/kg	U	6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	50	ug/kg	U	6/ 7/23	1
106445	4-Methylphenol	50	ug/kg	U	6/ 7/23	1
100016	4-Nitroaniline	100	ug/kg	U	6/ 7/23	1
100027	4-Nitrophenol	50	ug/kg	U	6/ 7/23	1
86748	9H-Carbazole	50	ug/kg	U	6/ 7/23	1
86737	9H-Fluorene	50	ug/kg	U	6/ 7/23	1
83329	Acenaphthene	50	ug/kg	U	6/ 7/23	1
208968	Acenaphthylene	50	ug/kg	U	6/ 7/23	1
120127	Anthracene	50	ug/kg	U	6/ 7/23	1
1912249	Atrazine	50	ug/kg	U	6/ 7/23	1
100527	Benzaldehyde	50	ug/kg	U	6/ 7/23	1
56553	Benzo(a)anthracene	50	ug/kg	U	6/ 7/23	1
50328	Benzo(a)pyrene	50	ug/kg	U	6/ 7/23	1
191242	Benzo(g,h,i)perylene	50	ug/kg	U	6/ 7/23	1
205992	Benzo[b]Fluoranthene	50	ug/kg	U	6/ 7/23	1
207089	Benzo[k]fluoranthene	50	ug/kg	U	6/ 7/23	1
111444	bis(2-Chloroethyl)ether	50	ug/kg	U	6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	50	ug/kg	U	6/ 7/23	1
117817	Bis(2-ethylhexyl) phthalate	50	ug/kg	U	6/ 7/23	1
85687	Butylbenzylphthalate	50	ug/kg	U	6/ 7/23	1
105602	Caprolactam	50	ug/kg	U	6/ 7/23	1
218019	Chrysene	50	ug/kg	U	6/ 7/23	1

Target Analyte Results (cont.):

53703	Dibenzo[a,h]anthracene	50	ug/kg	U	6/ 7/23	1
132649	Dibenzofuran	50	ug/kg	U	6/ 7/23	1
84662	Diethyl phthalate	50	ug/kg	U	6/ 7/23	1
131113	Dimethylphthalate	50	ug/kg	U	6/ 7/23	1
84742	Di-n-Butylphthalate	100	ug/kg	U	6/ 7/23	1
117840	Di-n-octylphthalate	50	ug/kg	U	6/ 7/23	1
98862	Ethanone, 1-phenyl-	50	ug/kg	U	6/ 7/23	1
206440	Fluoranthene	50	ug/kg	U	6/ 7/23	1
118741	Hexachlorobenzene	50	ug/kg	U	6/ 7/23	1
87683	Hexachlorobutadiene	50	ug/kg	U	6/ 7/23	1
77474	Hexachlorocyclopentadiene	50	ug/kg	U	6/ 7/23	1
67721	Hexachloroethane	50	ug/kg	U	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	50	ug/kg	U	6/ 7/23	1
78591	Isophorone	50	ug/kg	U	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	50	ug/kg	U	6/ 7/23	1
91203	Naphthalene	50	ug/kg	U	6/ 7/23	1
90120	Naphthalene, 1-methyl-	50	ug/kg	U	6/ 7/23	1
91576	Naphthalene, 2-methyl-	50	ug/kg	U	6/ 7/23	1
98953	Nitrobenzene	50	ug/kg	U	6/ 7/23	1
62759	N-Nitrosodimethylamine	50	ug/kg	U	6/ 7/23	1
621647	N-Nitrosodinpropylamine	50	ug/kg	U	6/ 7/23	1
86306	n-Nitrosodiphenylamine	50	ug/kg	U	6/ 7/23	1
87865	Pentachlorophenol	200	ug/kg	U	6/ 7/23	1
85018	Phenanthrene	50	ug/kg	U	6/ 7/23	1
108952	Phenol	50	ug/kg	U	6/ 7/23	1
95487	Phenol, 2-methyl-	50	ug/kg	U	6/ 7/23	1
129000	Pyrene	50	ug/kg	U	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	96	%Rec		6/ 7/23	1
93951781	2-Nitrophenol-D4	91	%Rec		6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	80	%Rec		6/ 7/23	1
191656334	4-Chloroaniline-D4	53	%Rec		6/ 7/23	1
190780666	4-Methylphenol-D8	97	%Rec		6/ 7/23	1
93951792	4-Nitrophenol-D4	84	%Rec		6/ 7/23	1
93951974	Acenaphthylene-D8	95	%Rec		6/ 7/23	1
1719068	Anthracene-D10	95	%Rec		6/ 7/23	1
63466717	Benzo[a]pyrene-D12	105	%Rec		6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	90	%Rec		6/ 7/23	1
81103799	D10-Fluorene (SS)	90	%Rec		6/ 7/23	1
1718521	D10-Pyrene	107	%Rec		6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	93	%Rec		6/ 7/23	1
93951894	Dimethylphthalate-D6	96	%Rec		6/ 7/23	1
4165600	Nitrobenzene-d5	94	%Rec		6/ 7/23	1
4165622	Phenol-d5	96	%Rec		6/ 7/23	1

Sample : 105W053123B1 Blank

Information : Blank
Matrix : Liquid

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Target Analyte Results:						
92524	1,1'-Biphenyl	1.0	ug/L	U	6/ 1/23	1
95943	1,2,4,5-Tetrachlorobenzene	1.0	ug/L	U	6/ 1/23	1
58902	2,3,4,6-Tetrachlorophenol	2.0	ug/L	U	6/ 1/23	1
95954	2,4,5-Trichlorophenol	1.0	ug/L	U	6/ 1/23	1
88062	2,4,6-Trichlorophenol	1.0	ug/L	U	6/ 1/23	1
120832	2,4-Dichlorophenol	1.0	ug/L	U	6/ 1/23	1
105679	2,4-Dimethylphenol	1.0	ug/L	U	6/ 1/23	1
51285	2,4-Dinitrophenol	8.0	ug/L	U	6/ 1/23	1
121142	2,4-Dinitrotoluene	1.0	ug/L	U	6/ 1/23	1
606202	2,6-Dinitrotoluene	1.0	ug/L	U	6/ 1/23	1
91587	2-Chloronaphthalene	1.0	ug/L	U	6/ 1/23	1
95578	2-Chlorophenol	1.0	ug/L	U	6/ 1/23	1
88744	2-Nitroaniline	1.0	ug/L	U	6/ 1/23	1
88755	2-Nitrophenol	1.0	ug/L	U	6/ 1/23	1
91941	3,3'-Dichlorobenzidine	1.0	ug/L	U	6/ 1/23	1
99092	3-Nitroaniline	1.0	ug/L	U	6/ 1/23	1
534521	4,6-Dinitro-2-methylphenol	2.0	ug/L	U	6/ 1/23	1
101553	4-Bromophenyl-Phenylether	1.0	ug/L	U	6/ 1/23	1
59507	4-Chloro-3-methylphenol	1.0	ug/L	U	6/ 1/23	1
106478	4-Chloroaniline	1.0	ug/L	U	6/ 1/23	1
7005723	4-Chlorophenyl-Phenylether	1.0	ug/L	U	6/ 1/23	1
106445	4-Methylphenol	1.0	ug/L	U	6/ 1/23	1
100016	4-Nitroaniline	1.0	ug/L	U	6/ 1/23	1
100027	4-Nitrophenol	1.0	ug/L	U	6/ 1/23	1
86748	9H-Carbazole	1.0	ug/L	U	6/ 1/23	1
86737	9H-Fluorene	1.0	ug/L	U	6/ 1/23	1
83329	Acenaphthene	1.0	ug/L	U	6/ 1/23	1
208968	Acenaphthylene	1.0	ug/L	U	6/ 1/23	1
120127	Anthracene	1.0	ug/L	U	6/ 1/23	1
1912249	Atrazine	1.0	ug/L	U	6/ 1/23	1
100527	Benzaldehyde	1.0	ug/L	U	6/ 1/23	1
56553	Benzo(a)anthracene	1.0	ug/L	U	6/ 1/23	1
50328	Benzo(a)pyrene	1.0	ug/L	U	6/ 1/23	1
191242	Benzo(g,h,i)perylene	1.0	ug/L	U	6/ 1/23	1
205992	Benzo[b]Fluoranthene	1.0	ug/L	U	6/ 1/23	1
207089	Benzo[k]fluoranthene	1.0	ug/L	U	6/ 1/23	1
111444	bis(2-Chloroethyl)ether	1.0	ug/L	U	6/ 1/23	1
108601	Bis(2-Chloroisopropyl)ether	1.0	ug/L	U	6/ 1/23	1
117817	**Bis(2-ethylhexyl) phthalate**	**3.1**	**ug/L**		6/ 1/23	1
85687	Butylbenzylphthalate	1.0	ug/L	U	6/ 1/23	1
105602	Caprolactam	4.0	ug/L	U	6/ 1/23	1
218019	Chrysene	1.0	ug/L	U	6/ 1/23	1

Target Analyte Results (cont.):

53703	Dibenzo[a,h]anthracene	1.0	ug/L	U	6/ 1/23	1
132649	Dibenzofuran	1.0	ug/L	U	6/ 1/23	1
84662	Diethyl phthalate	1.0	ug/L	U	6/ 1/23	1
131113	Dimethylphthalate	1.0	ug/L	U	6/ 1/23	1
84742	Di-n-Butylphthalate	1.0	ug/L	U	6/ 1/23	1
117840	Di-n-octylphthalate	1.0	ug/L	U	6/ 1/23	1
98862	Ethanone, 1-phenyl-	1.0	ug/L	U	6/ 1/23	1
206440	Fluoranthene	1.0	ug/L	U	6/ 1/23	1
118741	Hexachlorobenzene	1.0	ug/L	U	6/ 1/23	1
87683	Hexachlorobutadiene	1.0	ug/L	U	6/ 1/23	1
77474	Hexachlorocyclopentadiene	1.0	ug/L	U	6/ 1/23	1
67721	Hexachloroethane	1.0	ug/L	U	6/ 1/23	1
193395	Indeno(1,2,3-cd)pyrene	1.0	ug/L	U	6/ 1/23	1
78591	Isophorone	1.0	ug/L	U	6/ 1/23	1
111911	Methane, bis(2-chloroethoxy)-	1.0	ug/L	U	6/ 1/23	1
91203	Naphthalene	1.0	ug/L	U	6/ 1/23	1
90120	Naphthalene, 1-methyl-	1.0	ug/L	U	6/ 1/23	1
91576	Naphthalene, 2-methyl-	1.0	ug/L	U	6/ 1/23	1
98953	Nitrobenzene	1.0	ug/L	U	6/ 1/23	1
621647	N-Nitrosodinpropylamine	1.0	ug/L	U	6/ 1/23	1
86306	n-Nitrosodiphenylamine	1.0	ug/L	U	6/ 1/23	1
87865	Pentachlorophenol	4.0	ug/L	U	6/ 1/23	1
85018	Phenanthrene	1.0	ug/L	U	6/ 1/23	1
108952	Phenol	1.0	ug/L	U	6/ 1/23	1
95487	Phenol, 2-methyl-	1.0	ug/L	U	6/ 1/23	1
129000	Pyrene	1.0	ug/L	U	6/ 1/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	76	%Rec		6/ 1/23	1
93951781	2-Nitrophenol-D4	74	%Rec		6/ 1/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	65	%Rec		6/ 1/23	1
191656334	4-Chloroaniline-D4	64	%Rec		6/ 1/23	1
190780666	4-Methylphenol-D8	78	%Rec		6/ 1/23	1
93951792	4-Nitrophenol-D4	67	%Rec		6/ 1/23	1
93951974	Acenaphthylene-D8	74	%Rec		6/ 1/23	1
1719068	Anthracene-D10	86	%Rec		6/ 1/23	1
63466717	Benzo[a]pyrene-D12	102	%Rec		6/ 1/23	1
93952024	Bis(2chloroethyl)ether-D8	78	%Rec		6/ 1/23	1
81103799	D10-Fluorene (SS)	78	%Rec		6/ 1/23	1
1718521	D10-Pyrene	102	%Rec		6/ 1/23	1
93951747	d3-2,4-Dichlorophenol	67	%Rec		6/ 1/23	1
93951894	Dimethylphthalate-D6	83	%Rec		6/ 1/23	1
4165600	Nitrobenzene-d5	77	%Rec		6/ 1/23	1
4165622	Phenol-d5	76	%Rec		6/ 1/23	1

Sample : 105S060623L1 Lab Control Std

Information : Lab Control Standard
Matrix : Solid

Parameter : BNA
Prep Method: 3535A - Solid Phase Extraction
Analysis Method: 8270E - Semivolatiles by GC/MS
Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
92524	1,1'-Biphenyl	91	%Rec		6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	90	%Rec		6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	98	%Rec		6/ 7/23	1
95954	2,4,5-Trichlorophenol	108	%Rec		6/ 7/23	1
88062	2,4,6-Trichlorophenol	97	%Rec		6/ 7/23	1
120832	2,4-Dichlorophenol	99	%Rec		6/ 7/23	1
105679	2,4-Dimethylphenol	99	%Rec		6/ 7/23	1
51285	2,4-Dinitrophenol	108	%Rec		6/ 7/23	1
121142	2,4-Dinitrotoluene	96	%Rec		6/ 7/23	1
606202	2,6-Dinitrotoluene	96	%Rec		6/ 7/23	1
91587	2-Chloronaphthalene	92	%Rec		6/ 7/23	1
95578	2-Chlorophenol	95	%Rec		6/ 7/23	1
88744	2-Nitroaniline	94	%Rec		6/ 7/23	1
88755	2-Nitrophenol	96	%Rec		6/ 7/23	1
91941	3,3'-Dichlorobenzidine	65	%Rec		6/ 7/23	1
99092	3-Nitroaniline	80	%Rec		6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	101	%Rec		6/ 7/23	1
101553	4-Bromophenyl-Phenylether	99	%Rec		6/ 7/23	1
59507	4-Chloro-3-methylphenol	100	%Rec		6/ 7/23	1
106478	4-Chloroaniline	62	%Rec		6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	93	%Rec		6/ 7/23	1
106445	4-Methylphenol	96	%Rec		6/ 7/23	1
100016	4-Nitroaniline	87	%Rec		6/ 7/23	1
100027	4-Nitrophenol	99	%Rec		6/ 7/23	1
86748	9H-Carbazole	103	%Rec		6/ 7/23	1
86737	9H-Fluorene	94	%Rec		6/ 7/23	1
83329	Acenaphthene	92	%Rec		6/ 7/23	1
208968	Acenaphthylene	98	%Rec		6/ 7/23	1
120127	Anthracene	99	%Rec		6/ 7/23	1
1912249	Atrazine	108	%Rec		6/ 7/23	1
100527	Benzaldehyde	78	%Rec		6/ 7/23	1
56553	Benzo(a)anthracene	102	%Rec		6/ 7/23	1
50328	Benzo(a)pyrene	106	%Rec		6/ 7/23	1
191242	Benzo(g,h,i)perylene	102	%Rec		6/ 7/23	1
205992	Benzo[b]Fluoranthene	94	%Rec		6/ 7/23	1
207089	Benzo[k]fluoranthene	113	%Rec		6/ 7/23	1
111444	bis(2-Chloroethyl)ether	89	%Rec		6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	90	%Rec		6/ 7/23	1
117817	Bis(2-ethylhexyl) phthalate	101	%Rec		6/ 7/23	1
85687	Butylbenzylphthalate	100	%Rec		6/ 7/23	1
105602	Caprolactam	93	%Rec		6/ 7/23	1
218019	Chrysene	96	%Rec		6/ 7/23	1

Spiked Compounds (cont.):

53703	Dibenzo[a,h]anthracene	103	%Rec	6/ 7/23	1
132649	Dibenzofuran	92	%Rec	6/ 7/23	1
84662	Diethyl phthalate	99	%Rec	6/ 7/23	1
131113	Dimethylphthalate	96	%Rec	6/ 7/23	1
84742	Di-n-Butylphthalate	98	%Rec	6/ 7/23	1
117840	Di-n-octylphthalate	99	%Rec	6/ 7/23	1
98862	Ethanone, 1-phenyl-	93	%Rec	6/ 7/23	1
206440	Fluoranthene	100	%Rec	6/ 7/23	1
118741	Hexachlorobenzene	95	%Rec	6/ 7/23	1
87683	Hexachlorobutadiene	84	%Rec	6/ 7/23	1
77474	Hexachlorocyclopentadiene	85	%Rec	6/ 7/23	1
67721	Hexachloroethane	80	%Rec	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	104	%Rec	6/ 7/23	1
78591	Isophorone	99	%Rec	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	90	%Rec	6/ 7/23	1
91203	Naphthalene	86	%Rec	6/ 7/23	1
90120	Naphthalene, 1-methyl-	89	%Rec	6/ 7/23	1
91576	Naphthalene, 2-methyl-	89	%Rec	6/ 7/23	1
98953	Nitrobenzene	96	%Rec	6/ 7/23	1
62759	N-Nitrosodimethylamine	78	%Rec	6/ 7/23	1
621647	N-Nitrosodinpropylamine	95	%Rec	6/ 7/23	1
86306	n-Nitrosodiphenylamine	102	%Rec	6/ 7/23	1
87865	Pentachlorophenol	112	%Rec	6/ 7/23	1
85018	Phenanthrene	94	%Rec	6/ 7/23	1
108952	Phenol	96	%Rec	6/ 7/23	1
95487	Phenol, 2-methyl-	97	%Rec	6/ 7/23	1
129000	Pyrene	99	%Rec	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	100	%Rec	6/ 7/23	1
93951781	2-Nitrophenol-D4	99	%Rec	6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	102	%Rec	6/ 7/23	1
191656334	4-Chloroaniline-D4	60	%Rec	6/ 7/23	1
190780666	4-Methylphenol-D8	101	%Rec	6/ 7/23	1
93951792	4-Nitrophenol-D4	104	%Rec	6/ 7/23	1
93951974	Acenaphthylene-D8	102	%Rec	6/ 7/23	1
1719068	Anthracene-D10	100	%Rec	6/ 7/23	1
63466717	Benzo[a]pyrene-D12	111	%Rec	6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	91	%Rec	6/ 7/23	1
81103799	D10-Fluorene (SS)	96	%Rec	6/ 7/23	1
1718521	D10-Pyrene	103	%Rec	6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	103	%Rec	6/ 7/23	1
93951894	Dimethylphthalate-D6	101	%Rec	6/ 7/23	1
4165600	Nitrobenzene-d5	104	%Rec	6/ 7/23	1
4165622	Phenol-d5	100	%Rec	6/ 7/23	1

Sample : 105W053123L1 Lab Control Std

Information : Lab Control Standard

Matrix : Liquid

Parameter : BNA

Prep Method: 3535A - Solid Phase Extraction

Analysis Method: 8270E - Semivolatiles by GC/MS

Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
92524	1,1'-Biphenyl	89	%Rec		6/ 1/23	1
95943	1,2,4,5-Tetrachlorobenzene	82	%Rec		6/ 1/23	1
58902	2,3,4,6-Tetrachlorophenol	92	%Rec		6/ 1/23	1
95954	2,4,5-Trichlorophenol	81	%Rec		6/ 1/23	1
88062	2,4,6-Trichlorophenol	84	%Rec		6/ 1/23	1
120832	2,4-Dichlorophenol	90	%Rec		6/ 1/23	1
105679	2,4-Dimethylphenol	95	%Rec		6/ 1/23	1
51285	2,4-Dinitrophenol	97	%Rec		6/ 1/23	1
121142	2,4-Dinitrotoluene	98	%Rec		6/ 1/23	1
606202	2,6-Dinitrotoluene	94	%Rec		6/ 1/23	1
91587	2-Chloronaphthalene	89	%Rec		6/ 1/23	1
95578	2-Chlorophenol	94	%Rec		6/ 1/23	1
88744	2-Nitroaniline	85	%Rec		6/ 1/23	1
88755	2-Nitrophenol	94	%Rec		6/ 1/23	1
91941	3,3'-Dichlorobenzidine	73	%Rec		6/ 1/23	1
99092	3-Nitroaniline	90	%Rec		6/ 1/23	1
534521	4,6-Dinitro-2-methylphenol	102	%Rec		6/ 1/23	1
101553	4-Bromophenyl-Phenylether	94	%Rec		6/ 1/23	1
59507	4-Chloro-3-methylphenol	96	%Rec		6/ 1/23	1
106478	4-Chloroaniline	82	%Rec		6/ 1/23	1
7005723	4-Chlorophenyl-Phenylether	90	%Rec		6/ 1/23	1
106445	4-Methylphenol	94	%Rec		6/ 1/23	1
100016	4-Nitroaniline	96	%Rec		6/ 1/23	1
100027	4-Nitrophenol	89	%Rec		6/ 1/23	1
86748	9H-Carbazole	102	%Rec		6/ 1/23	1
86737	9H-Fluorene	91	%Rec		6/ 1/23	1
83329	Acenaphthene	89	%Rec		6/ 1/23	1
208968	Acenaphthylene	94	%Rec		6/ 1/23	1
120127	Anthracene	96	%Rec		6/ 1/23	1
1912249	Atrazine	109	%Rec		6/ 1/23	1
100527	Benzaldehyde	87	%Rec		6/ 1/23	1
56553	Benzo(a)anthracene	100	%Rec		6/ 1/23	1
50328	Benzo(a)pyrene	104	%Rec		6/ 1/23	1
191242	Benzo(g,h,i)perylene	99	%Rec		6/ 1/23	1
205992	Benzo[b]Fluoranthene	97	%Rec		6/ 1/23	1
207089	Benzo[k]fluoranthene	110	%Rec		6/ 1/23	1
111444	bis(2-Chloroethyl)ether	89	%Rec		6/ 1/23	1
108601	Bis(2-Chloroisopropyl)ether	87	%Rec		6/ 1/23	1
117817	Bis(2-ethylhexyl) phthalate	106	%Rec		6/ 1/23	1
85687	Butylbenzylphthalate	109	%Rec		6/ 1/23	1
105602	Caprolactam	12	%Rec		6/ 1/23	1
218019	Chrysene	96	%Rec		6/ 1/23	1

Spiked Compounds (cont.):

53703	Dibenzo[a,h]anthracene	101	%Rec	6/ 1/23	1
132649	Dibenzofuran	90	%Rec	6/ 1/23	1
84662	Diethyl phthalate	101	%Rec	6/ 1/23	1
131113	Dimethylphthalate	96	%Rec	6/ 1/23	1
84742	Di-n-Butylphthalate	100	%Rec	6/ 1/23	1
117840	Di-n-octylphthalate	109	%Rec	6/ 1/23	1
98862	Ethanone, 1-phenyl-	93	%Rec	6/ 1/23	1
206440	Fluoranthene	100	%Rec	6/ 1/23	1
118741	Hexachlorobenzene	90	%Rec	6/ 1/23	1
87683	Hexachlorobutadiene	74	%Rec	6/ 1/23	1
77474	Hexachlorocyclopentadiene	73	%Rec	6/ 1/23	1
67721	Hexachloroethane	75	%Rec	6/ 1/23	1
193395	Indeno(1,2,3-cd)pyrene	102	%Rec	6/ 1/23	1
78591	Isophorone	86	%Rec	6/ 1/23	1
111911	Methane, bis(2-chloroethoxy)-	91	%Rec	6/ 1/23	1
91203	Naphthalene	88	%Rec	6/ 1/23	1
90120	Naphthalene, 1-methyl-	90	%Rec	6/ 1/23	1
91576	Naphthalene, 2-methyl-	89	%Rec	6/ 1/23	1
98953	Nitrobenzene	94	%Rec	6/ 1/23	1
621647	N-Nitrosodinpropylamine	88	%Rec	6/ 1/23	1
86306	n-Nitrosodiphenylamine	100	%Rec	6/ 1/23	1
87865	Pentachlorophenol	87	%Rec	6/ 1/23	1
85018	Phenanthrene	92	%Rec	6/ 1/23	1
108952	Phenol	90	%Rec	6/ 1/23	1
95487	Phenol, 2-methyl-	93	%Rec	6/ 1/23	1
129000	Pyrene	99	%Rec	6/ 1/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	99	%Rec	6/ 1/23	1
93951781	2-Nitrophenol-D4	101	%Rec	6/ 1/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	107	%Rec	6/ 1/23	1
191656334	4-Chloroaniline-D4	87	%Rec	6/ 1/23	1
190780666	4-Methylphenol-D8	100	%Rec	6/ 1/23	1
93951792	4-Nitrophenol-D4	96	%Rec	6/ 1/23	1
93951974	Acenaphthylene-D8	100	%Rec	6/ 1/23	1
1719068	Anthracene-D10	100	%Rec	6/ 1/23	1
63466717	Benzo[a]pyrene-D12	114	%Rec	6/ 1/23	1
93952024	Bis(2chloroethyl)ether-D8	90	%Rec	6/ 1/23	1
81103799	D10-Fluorene (SS)	96	%Rec	6/ 1/23	1
1718521	D10-Pyrene	106	%Rec	6/ 1/23	1
93951747	d3-2,4-Dichlorophenol	97	%Rec	6/ 1/23	1
93951894	Dimethylphthalate-D6	104	%Rec	6/ 1/23	1
4165600	Nitrobenzene-d5	106	%Rec	6/ 1/23	1
4165622	Phenol-d5	95	%Rec	6/ 1/23	1

Sample : 105S060623L2 Lab Control Std#2

Information : Lab Control Standard Dup.

Matrix : Solid

Parameter : BNA

Prep Method: 3535A - Solid Phase Extraction

Analysis Method: 8270E - Semivolatiles by GC/MS

Weight Basis : Dry

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
92524	1,1'-Biphenyl	87	%Rec		6/ 7/23	1
95943	1,2,4,5-Tetrachlorobenzene	86	%Rec		6/ 7/23	1
58902	2,3,4,6-Tetrachlorophenol	97	%Rec		6/ 7/23	1
95954	2,4,5-Trichlorophenol	105	%Rec		6/ 7/23	1
88062	2,4,6-Trichlorophenol	92	%Rec		6/ 7/23	1
120832	2,4-Dichlorophenol	95	%Rec		6/ 7/23	1
105679	2,4-Dimethylphenol	94	%Rec		6/ 7/23	1
51285	2,4-Dinitrophenol	110	%Rec		6/ 7/23	1
121142	2,4-Dinitrotoluene	94	%Rec		6/ 7/23	1
606202	2,6-Dinitrotoluene	93	%Rec		6/ 7/23	1
91587	2-Chloronaphthalene	89	%Rec		6/ 7/23	1
95578	2-Chlorophenol	91	%Rec		6/ 7/23	1
88744	2-Nitroaniline	93	%Rec		6/ 7/23	1
88755	2-Nitrophenol	91	%Rec		6/ 7/23	1
91941	3,3'-Dichlorobenzidine	66	%Rec		6/ 7/23	1
99092	3-Nitroaniline	77	%Rec		6/ 7/23	1
534521	4,6-Dinitro-2-methylphenol	99	%Rec		6/ 7/23	1
101553	4-Bromophenyl-Phenylether	94	%Rec		6/ 7/23	1
59507	4-Chloro-3-methylphenol	98	%Rec		6/ 7/23	1
106478	4-Chloroaniline	58	%Rec		6/ 7/23	1
7005723	4-Chlorophenyl-Phenylether	89	%Rec		6/ 7/23	1
106445	4-Methylphenol	92	%Rec		6/ 7/23	1
100016	4-Nitroaniline	86	%Rec		6/ 7/23	1
100027	4-Nitrophenol	98	%Rec		6/ 7/23	1
86748	9H-Carbazole	99	%Rec		6/ 7/23	1
86737	9H-Fluorene	90	%Rec		6/ 7/23	1
83329	Acenaphthene	88	%Rec		6/ 7/23	1
208968	Acenaphthylene	95	%Rec		6/ 7/23	1
120127	Anthracene	95	%Rec		6/ 7/23	1
1912249	Atrazine	106	%Rec		6/ 7/23	1
100527	Benzaldehyde	76	%Rec		6/ 7/23	1
56553	Benzo(a)anthracene	98	%Rec		6/ 7/23	1
50328	Benzo(a)pyrene	102	%Rec		6/ 7/23	1
191242	Benzo(g,h,i)perylene	97	%Rec		6/ 7/23	1
205992	Benzo[b]Fluoranthene	91	%Rec		6/ 7/23	1
207089	Benzo[k]fluoranthene	106	%Rec		6/ 7/23	1
111444	bis(2-Chloroethyl)ether	84	%Rec		6/ 7/23	1
108601	Bis(2-Chloroisopropyl)ether	87	%Rec		6/ 7/23	1
117817	Bis(2-ethylhexyl) phthalate	99	%Rec		6/ 7/23	1
85687	Butylbenzylphthalate	99	%Rec		6/ 7/23	1
105602	Caprolactam	95	%Rec		6/ 7/23	1
218019	Chrysene	91	%Rec		6/ 7/23	1

Spiked Compounds (cont.):

53703	Dibenzo[a,h]anthracene	100	%Rec	6/ 7/23	1
132649	Dibenzofuran	88	%Rec	6/ 7/23	1
84662	Diethyl phthalate	96	%Rec	6/ 7/23	1
131113	Dimethylphthalate	93	%Rec	6/ 7/23	1
84742	Di-n-Butylphthalate	94	%Rec	6/ 7/23	1
117840	Di-n-octylphthalate	98	%Rec	6/ 7/23	1
98862	Ethanone, 1-phenyl-	89	%Rec	6/ 7/23	1
206440	Fluoranthene	97	%Rec	6/ 7/23	1
118741	Hexachlorobenzene	90	%Rec	6/ 7/23	1
87683	Hexachlorobutadiene	82	%Rec	6/ 7/23	1
77474	Hexachlorocyclopentadiene	82	%Rec	6/ 7/23	1
67721	Hexachloroethane	78	%Rec	6/ 7/23	1
193395	Indeno(1,2,3-cd)pyrene	100	%Rec	6/ 7/23	1
78591	Isophorone	94	%Rec	6/ 7/23	1
111911	Methane, bis(2-chloroethoxy)-	87	%Rec	6/ 7/23	1
91203	Naphthalene	84	%Rec	6/ 7/23	1
90120	Naphthalene, 1-methyl-	88	%Rec	6/ 7/23	1
91576	Naphthalene, 2-methyl-	88	%Rec	6/ 7/23	1
98953	Nitrobenzene	92	%Rec	6/ 7/23	1
62759	N-Nitrosodimethylamine	75	%Rec	6/ 7/23	1
621647	N-Nitrosodinpropylamine	93	%Rec	6/ 7/23	1
86306	n-Nitrosodiphenylamine	97	%Rec	6/ 7/23	1
87865	Pentachlorophenol	109	%Rec	6/ 7/23	1
85018	Phenanthrene	90	%Rec	6/ 7/23	1
108952	Phenol	93	%Rec	6/ 7/23	1
95487	Phenol, 2-methyl-	92	%Rec	6/ 7/23	1
129000	Pyrene	93	%Rec	6/ 7/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	95	%Rec	6/ 7/23	1
93951781	2-Nitrophenol-D4	95	%Rec	6/ 7/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	100	%Rec	6/ 7/23	1
191656334	4-Chloroaniline-D4	56	%Rec	6/ 7/23	1
190780666	4-Methylphenol-D8	97	%Rec	6/ 7/23	1
93951792	4-Nitrophenol-D4	104	%Rec	6/ 7/23	1
93951974	Acenaphthylene-D8	99	%Rec	6/ 7/23	1
1719068	Anthracene-D10	96	%Rec	6/ 7/23	1
63466717	Benzo[a]pyrene-D12	106	%Rec	6/ 7/23	1
93952024	Bis(2chloroethyl)ether-D8	87	%Rec	6/ 7/23	1
81103799	D10-Fluorene (SS)	93	%Rec	6/ 7/23	1
1718521	D10-Pyrene	97	%Rec	6/ 7/23	1
93951747	d3-2,4-Dichlorophenol	99	%Rec	6/ 7/23	1
93951894	Dimethylphthalate-D6	97	%Rec	6/ 7/23	1
4165600	Nitrobenzene-d5	99	%Rec	6/ 7/23	1
4165622	Phenol-d5	97	%Rec	6/ 7/23	1

Sample : 105W053123L2 Lab Control Std#2

Information : Lab Control Standard Dup.

Matrix : Liquid

Parameter : BNA

Prep Method: 3535A - Solid Phase Extraction

Analysis Method: 8270E - Semivolatiles by GC/MS

Weight Basis : Unspecified

Analyte Code	Analyte Name	Result	Unit	Qual.	Analysis Date	Dilution
Spiked Compounds:						
92524	1,1'-Biphenyl	82	%Rec		6/ 1/23	1
95943	1,2,4,5-Tetrachlorobenzene	72	%Rec		6/ 1/23	1
58902	2,3,4,6-Tetrachlorophenol	94	%Rec		6/ 1/23	1
95954	2,4,5-Trichlorophenol	76	%Rec		6/ 1/23	1
88062	2,4,6-Trichlorophenol	81	%Rec		6/ 1/23	1
120832	2,4-Dichlorophenol	81	%Rec		6/ 1/23	1
105679	2,4-Dimethylphenol	88	%Rec		6/ 1/23	1
51285	2,4-Dinitrophenol	108	%Rec		6/ 1/23	1
121142	2,4-Dinitrotoluene	101	%Rec		6/ 1/23	1
606202	2,6-Dinitrotoluene	95	%Rec		6/ 1/23	1
91587	2-Chloronaphthalene	81	%Rec		6/ 1/23	1
95578	2-Chlorophenol	85	%Rec		6/ 1/23	1
88744	2-Nitroaniline	85	%Rec		6/ 1/23	1
88755	2-Nitrophenol	89	%Rec		6/ 1/23	1
91941	3,3'-Dichlorobenzidine	75	%Rec		6/ 1/23	1
99092	3-Nitroaniline	96	%Rec		6/ 1/23	1
534521	4,6-Dinitro-2-methylphenol	110	%Rec		6/ 1/23	1
101553	4-Bromophenyl-Phenylether	93	%Rec		6/ 1/23	1
59507	4-Chloro-3-methylphenol	88	%Rec		6/ 1/23	1
106478	4-Chloroaniline	49	%Rec		6/ 1/23	1
7005723	4-Chlorophenyl-Phenylether	86	%Rec		6/ 1/23	1
106445	4-Methylphenol	85	%Rec		6/ 1/23	1
100016	4-Nitroaniline	101	%Rec		6/ 1/23	1
100027	4-Nitrophenol	90	%Rec		6/ 1/23	1
86748	9H-Carbazole	106	%Rec		6/ 1/23	1
86737	9H-Fluorene	89	%Rec		6/ 1/23	1
83329	Acenaphthene	83	%Rec		6/ 1/23	1
208968	Acenaphthylene	90	%Rec		6/ 1/23	1
120127	Anthracene	96	%Rec		6/ 1/23	1
1912249	Atrazine	112	%Rec		6/ 1/23	1
100527	Benzaldehyde	81	%Rec		6/ 1/23	1
56553	Benzo(a)anthracene	101	%Rec		6/ 1/23	1
50328	Benzo(a)pyrene	104	%Rec		6/ 1/23	1
191242	Benzo(g,h,i)perylene	100	%Rec		6/ 1/23	1
205992	Benzo[b]Fluoranthene	99	%Rec		6/ 1/23	1
207089	Benzo[k]fluoranthene	109	%Rec		6/ 1/23	1
111444	bis(2-Chloroethyl)ether	80	%Rec		6/ 1/23	1
108601	Bis(2-Chloroisopropyl)ether	80	%Rec		6/ 1/23	1
117817	Bis(2-ethylhexyl) phthalate	113	%Rec		6/ 1/23	1
85687	Butylbenzylphthalate	114	%Rec		6/ 1/23	1
105602	Caprolactam	12	%Rec		6/ 1/23	1
218019	Chrysene	96	%Rec		6/ 1/23	1

Spiked Compounds (cont.):

53703	Dibenzo[a,h]anthracene	103	%Rec	6/ 1/23	1
132649	Dibenzofuran	85	%Rec	6/ 1/23	1
84662	Diethyl phthalate	104	%Rec	6/ 1/23	1
131113	Dimethylphthalate	97	%Rec	6/ 1/23	1
84742	Di-n-Butylphthalate	103	%Rec	6/ 1/23	1
117840	Di-n-octylphthalate	113	%Rec	6/ 1/23	1
98862	Ethanone, 1-phenyl-	88	%Rec	6/ 1/23	1
206440	Fluoranthene	102	%Rec	6/ 1/23	1
118741	Hexachlorobenzene	87	%Rec	6/ 1/23	1
87683	Hexachlorobutadiene	62	%Rec	6/ 1/23	1
77474	Hexachlorocyclopentadiene	63	%Rec	6/ 1/23	1
67721	Hexachloroethane	63	%Rec	6/ 1/23	1
193395	Indeno(1,2,3-cd)pyrene	104	%Rec	6/ 1/23	1
78591	Isophorone	79	%Rec	6/ 1/23	1
111911	Methane, bis(2-chloroethoxy)-	84	%Rec	6/ 1/23	1
91203	Naphthalene	82	%Rec	6/ 1/23	1
90120	Naphthalene, 1-methyl-	84	%Rec	6/ 1/23	1
91576	Naphthalene, 2-methyl-	82	%Rec	6/ 1/23	1
98953	Nitrobenzene	88	%Rec	6/ 1/23	1
621647	N-Nitrosodinpropylamine	81	%Rec	6/ 1/23	1
86306	n-Nitrosodiphenylamine	101	%Rec	6/ 1/23	1
87865	Pentachlorophenol	97	%Rec	6/ 1/23	1
85018	Phenanthrene	93	%Rec	6/ 1/23	1
108952	Phenol	83	%Rec	6/ 1/23	1
95487	Phenol, 2-methyl-	86	%Rec	6/ 1/23	1
129000	Pyrene	100	%Rec	6/ 1/23	1

Surrogate Compounds:

93951736	2-chlorophenol-d4	90	%Rec	6/ 1/23	1
93951781	2-Nitrophenol-D4	93	%Rec	6/ 1/23	1
93951769	4,6-Dinitro-2-methylphenol-d2	111	%Rec	6/ 1/23	1
191656334	4-Chloroaniline-D4	50	%Rec	6/ 1/23	1
190780666	4-Methylphenol-D8	94	%Rec	6/ 1/23	1
93951792	4-Nitrophenol-D4	96	%Rec	6/ 1/23	1
93951974	Acenaphthylene-D8	93	%Rec	6/ 1/23	1
1719068	Anthracene-D10	100	%Rec	6/ 1/23	1
63466717	Benzo[a]pyrene-D12	113	%Rec	6/ 1/23	1
93952024	Bis(2chloroethyl)ether-D8	82	%Rec	6/ 1/23	1
81103799	D10-Fluorene (SS)	92	%Rec	6/ 1/23	1
1718521	D10-Pyrene	107	%Rec	6/ 1/23	1
93951747	d3-2,4-Dichlorophenol	84	%Rec	6/ 1/23	1
93951894	Dimethylphthalate-D6	102	%Rec	6/ 1/23	1
4165600	Nitrobenzene-d5	97	%Rec	6/ 1/23	1
4165622	Phenol-d5	88	%Rec	6/ 1/23	1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 LABORATORY
7411 Beach Drive East
Port Orchard, Washington 98366

QUALITY ASSURANCE MEMORANDUM FOR ORGANIC CHEMICAL ANALYSES

July 18, 2023

For Dana Walker

From: Dana Walker
Laboratory Services & Applied Sciences Division, US EPA Region 10 Laboratory

To: Ken Marcy
RE: GRESHAM FIRE TRAINING: Extended Preliminary Assessment
Project Code: SFP-187A
Account Code: 2023T10P000FD210ZZLA00

BNAs

Soils

23214100	23214102	23214104	23214106	23214108	23214111
23214111RE	23214112	23214113			

Waters

23214105	23214114	23214115

The following describes the quality assurance review of the data for the analysis parameters and samples listed above. The analyses were performed by the US EPA Region 10 Laboratory in Port Orchard, WA, following US EPA and Laboratory guidelines.

1. Data Qualifications

The US EPA Region 10 Laboratory has been accredited by the ANSI National Accreditation Board (ANAB) and has Certificate Number AT-3121. For those tests for which the Laboratory has been accredited by ANAB, results in this report comply with ISO IEC 17025:2017.

Field information was provided to the laboratory from other sources, such as Chain of Custody records.

The data and associated documents were reviewed against the quality control criteria outlined in the Laboratory's current Quality Assurance Manual, Standard Operating Procedures (SOPs) and the Quality Assurance Project Plan (QAPP). The following areas were reviewed, as appropriate, against these quality control measures:

Sample Transport and Receipt
Sample Holding Times
Sample Preparation
Initial Calibration/Continuing Calibration Verification
Laboratory Control Samples

Blank Analysis
Surrogate Spikes
Duplicate Analysis
Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Internal Standard Performance
Reference Materials
Compound Quantitation
Analyte Identification

2. Areas Not Meeting Laboratory/QAPP Criteria

Blank Analysis—Soils
Isophorone has been determined to be a laboratory contaminant in the extraction thimbles used during sample preparation. Isophorone was qualified as non-detected, "U", at the detected concentration in all soil samples. Di-n-butylphthalate was detected below the reporting limit in the method blank 105S060623B1. Di-n-butylphthalate detected in the soil samples at concentrations ≤5X the blank concentration was qualified as non-detected, "U", at the detected concertation.

Surrogate Spikes—Soils
4-Chloroaniline-d4 resulted with low recovery in samples 23214100, 23214100S1/S2, 23214102, 23214104, 23214106, 23214108 and 23214111RE. Furthermore, 4-Chloroaniline-d4 had a recovery <10% in 23214111, 23214112 and 23214113. As a result of these issues, 4-Chloroaniline is qualified as rejected ,"R", for samples 23214112 and 23214113 and in samples 23214100, 23214102, 23214104, 23214106, 23214108 and 23214111RE is qualified as estimated, "UJ." Sample matrix is thought to be the cause of the low recoveries.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)—Soils
4-Chloroaniline, 3-nitroaniline, and 4-nitroaniline resulted with recoveries less than 60% and 3,3'-dichlorobenzidine resulted with less than 10% recovery in matrix spikes 23214100S1/S2. As a result, 3,3'-dichlorobenzidine was flagged as rejected ,"R", 4-Chloroaniline, 3-nitroaniline, and 4-nitroaniline are flagged as estimated, "UJ", in the native sample. Sample matrix is thought to be the cause of the low recoveries.

Laboratory Control Samples—Waters
Because the LCS and LCSD (HCl added) were prepared differently, a QC summary report was not appropriate. Caprolactam resulted with a recovery of less than 60% in 105W053123L1. 4-Chloroaniline and caprolactam resulted with a recovery of less than 60% in 105W053123L2. Flagging of results is discussed in Section 3.

Blank Analysis—Waters
Di-n-butylphthalate was detected below the reporting limit and bis(2-ethylhexl)phthalate was detected slightly above the reporting limit in the method blank 105W053123B1. Di-n-butylphthalate and bis(2-ethylhexl)phthalate detected in the water samples at concentrations ≤5X the blank concentration were qualified as non-detected, "U", at the detected concertation.

Surrogate Spikes—Waters
4-Chloroaniline-d4 resulted with low recovery in 23214105S1, 23214114 and 23214115. Most likely the result of the HCl preservation. 4-Chloroaniline is the only target analyte associated with this surrogate. Flagging of results is discussed in Section 3. 4-Chloroaniline-d4 resulted with <10% recovery in 23214105. The 4-chloroaniline result in 23214105 was qualified as rejected, "R".

Matrix Spike/Matrix Spike Duplicate (MS/MSD)—Waters
Insufficient sample volume was provided to perform an MS/MSD (only an MS was prepared and analyzed). 4-Chloroaniline, 3-nitroaniline and 4-nitroaniline resulted with recoveries less than 60% in the matrix spike 23214105S1. Caprolactam and 3,3'-dichlorobenzidine resulted with a 0% recovery in matrix spike 23214105S1. Most likely the result of the HCl preservation. Because of this, caprolactam and 3,3'-dichlorobenzidine were flagged rejected ,"R", in all samples and the others as estimated, "UJ", in all samples as noted in Section 3.

3. Sample Preparation Discussion

Soils

Sample 23214111 was initially prepared using 12.84 g. The extract was very dark and had difficulty concentrating to the proper final volume. A second extraction was performed using 3.13 g, this sample was loaded into LIMS as 23214111RE. Both sample extracts were analyzed. All analytes were reported from 23214111 except for 4-chloroaniline (which had an associated surrogate issue, 1% 4-chloroaniline-d4 surrogate recovery) and bis(2-ethylhexyl)phthlate (which was above the calibration range). Both 4-chloroaniline (31% 4-chloroaniline-d4 surrogate recovery) and bis(2-ethylhexyl)phthlate were reported from 23214111RE.

Waters

BNA water samples were inadvertently acid preserved with HCl to a pH <2 in the field. Note that the method does not call for acid preservation. Per SOP Or_P027A (3535A), samples and QC are buffered to pH 4.5 with KH2PO4 prior to extraction. All samples/QC were buffered with 6g KH2PO4. Samples that had been preserved with HCl showed a pH of about 3.5 after the addition of the KH2PO4, which is lower than what is required by the SOP and reference method. HCl was added to LCSD (L2) to mimic the sample preservation. HCl was not added to the blank or LCS. Because of the improper sample preservation, all target results for each sample are flagged as estimate, "J," and all non-detects as "UJ." Exceptions to this are noted in the QC sections above.

4. Data Qualifiers

Data for all samples and analytes were assessed for compliance with each of the requirements described in Section 1. Data qualifiers were assigned, as necessary, to alert the user to instances where data did not meet all requirements. In cases where more than one QC failure occurred, the most restrictive data qualifier has been applied to the data.

The usefulness of qualified data should be treated according to the severity of the qualifier considering the project's data quality objectives. Should questions arise regarding the data, contact Dana Walker at the Region 10 Laboratory, phone number (360) 871-8704.

Qualifier	Definition
U	The analyte was not detected at or above the reported value.
J	The identification of the analyte is acceptable; however, the reported value is an estimate.
UJ	The analyte was not detected at or above the reported value. The reported value is an estimate.
R	The presence or absence of the analyte cannot be determined from the data due to severe quality control problems. The data are rejected and considered unusable. No value is reported with this qualification.
NA	Not Applicable, the parameter was not analyzed for, or there is no analytical result for this parameter. No value is reported with this qualification.

EPA Region 10, 1200 6th Avenue, Seattle, WA 98101
Form Effective Date: January 2021

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700
Revision 0

Project Name	Project Code (format: XXX-NNNX where X is a letter and N is a number, e.g. WTR-162R)	Method of Shipment/carrier	Airbill Number (if known prior to sealing)
Gresham Fire Training XPA	SFP-187A	FedEx	

Account Code	EPA Project Manager/phone number	Type X in all "boxes" that apply
2023T10P000FD210ZZLA00	Ken Marcy 360-366-8868	[ ] Enforce/Custody [ ] Possible Toxic/Hazardous [ ] Data Confidential

Sampler Names
Type (R) after name of principal recorder.

Robert Schettler (R)

If applicable, circle the set of selected metals, or type a list of names:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(1) Matrix Codes:
11 Water (Total) 10 Liquid
20 Water, Filtered (Dissolved)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent 42 Swab
44 Air filter 43 Wipe
Enter other next to 00 below:
00

#C (2) enter the number of containers for each preservative type AND the preservation code P (3):
A - HCl G - $Na_2S_2O_3$+EDTA
B - HNO_3 H - EDTA
C - NaOH N - No chemical preservation
D - H_2SO_4 P - Bottles pre-preserved at lab
E - $Ne_2S_2O_3$ T - To be preserved at the lab
F - ascorbic acid[2], then HCl ([2] $Na_2S_2O_3$ if required by plan.)
W- enter preservative: W = Methanol
X Type X in box if the cooler is iced

Sampler's comments for the laboratory (in box or cell below):
QC samples are 23214100

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

EPA Sample number (8 digits) Yr (2) | Wk (2) | Sequence (4)	Sampling Date & Time Date (mm/dd/yyyy)	Time (hh:mm)	Matrix (1)	#C	P (3)	#C	P (3)	#C (2)	P (3)	#C (2)	P (3)	Sampler Initials	Sample/Station Description/Field Measurements	Organics: VOA	BNA	Pest	PCB	PAH	Metals: CLP	Selected	Mercury	Micro: Escherichia Coli (E. Coli)	Fecal Coliform	Total Coliform	General Chemistry: TSS	TDS	BOD 5	NO_2+NO_3	Oil & Grease	Asbestos	Additional Analyses
23214100	05/25/2023	0830	40	6	W	4	N					RS	Field Sample/S-1/5 ft	X	X		X														
~~[redacted]~~			~~11~~	~~9~~	~~A~~	~~4~~	~~N~~					~~RS~~	~~Field Sample/S-1~~	X	X																
23214102	05/25/2023	1245	40	2	W	4	N	3				RS	Field Duplicate/S-1/5 ft	X	X		X														
[redacted]			~~11~~	~~3~~	~~A~~	~~2~~	~~N~~					~~RS~~	~~Field Duplicate/S-1~~	X	X																
23214104	05/24/2023	1728	40	2	W	4	N					RS	Field Sample/S-2/5 ft	X	X																
23214105	05/24/2023	1700	11	3	A	2	N					RS	Field Sample/S-2	X	X																
23214106	05/24/2023	1450	40	2	W	4	N	3				RS	Field Sample/S-3/5 ft	X	X																
[redacted]			~~11~~	~~3~~	~~A~~	~~2~~	~~N~~					~~RS~~	~~Field Sample/S-3~~	X	X																
23214108	05/24/2023	0937	40	2	W	4	N	3				RS	Field Sample/s-4/5 ft	X	X																
[redacted]			~~11~~	~~3~~	~~A~~	~~2~~	~~N~~					~~RS~~	~~Field Sample/S-4~~	X	X																
[redacted]			~~11~~	~~3~~	~~A~~	~~2~~	~~N~~					~~RS~~	~~Field Duplicate/S-4~~	X	X																
23214111	05/25/2023	1420	40	2	W	3	N					RS	Field Sample/G-1	X	X																
23214112	05/25/2023	1845	40	2	W	3	N					RS	Field Duplicate/G-2	X	X																
23214113	05/25/2023	1345	40	2	W	3	N	4				RS	Field Sample/G-2	X	X																
23214114	05/25/2023	1130	11	3	A	2	N					RS	Rinsate Blank/Soil	X	X																
23214115	05/25/2023	1330	11	3	A	2	N					RS	Rinsate Blank/GW 1	X	X																

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date 5/26/23	Time 1640	Received by (Signature)	Date 5/26/23	Time 1640
Shipped by (Signature)	Date	Time	Received for Lab by (Signature)	Date 5/26/23	Time 16:40

Receiving Laboratory Information: Condition of Samples upon Receipt at Lab:
4C
+ 2C

Custody Seals Intact: [ ] yes [ ] no [ ] none

Additional Directions:

Additional Matrix Codes: 30 Leachate 50 Sludge 60 Air

Matrix codes: these are the codes in use at the EPA Region 10 Laboratory. Pick the matrix code that best matches the sample matrix. If in the opinion of the sampler, the sample matrix needs to be specially described, use 00 and type a matrix description. Remember, tissue can be animal or vegetable in nature.

ANALYSES: Type in the name of the analysis names as needed. Try to use the bolded analyte symbol/abbreviation (some analyses are not abbreviated).

Organics pre-printed on the form:
PAH Polynuclear Aromatic Hydrocarbons (these are a subset of the compounds reported from GCMS analyses for BNA - PAH by HPLC or SIM-GC/MS methods are usually requested in order to get low reporting limits).
Pest Organochlorine Pesticides **PCB** Polychlorinated Biphenyls aka Aroclors **VOA** (aka VOC) - volatile

Organics that can be typed instead:

CONTAINER GUIDANCE:
Note: this is general information only - consult the QA Project Plan on appropriate containers and preservatives for each project. Modifying methods may require modifying the number/type of containers. Freezing samples for one or more analyses may require collection of individual containers. Contact the laboratory for minimum sample volumes in situations where sample material is limited. Minimum volumes required for analysis will depend on the analysis and required reporting limits.

EPA Region 10, 1200 6th Avenue, Seattle, WA 98101
Form Effective Date: January 2021

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700
Revision 0

Project Name	Project Code (format: XXX-NNNX where X is a letter and N is a number, e.g. WTR-162R)	Method of Shipment/carrier	Airbill Number (if known prior to sealing)
Gresham Fire Training XPA	SFP-187A	FedEx	

Account Code	EPA Project Manager/phone number	Type X in all "boxes" that apply
2023T10P000FD210ZZLA00	Ken Marcy 360-366-8868	[ ] Enforce/Custody [ ] Possible Toxic/Hazardous [ ] Data Confidential

Sampler Names
Type (R) after name of principal recorder.

Robert Schettler (R)

If applicable, circle the set of selected metals, or type a list of nemes:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(1) Matrix Codes:
11 Water (Total) 10 Liquid
20 Water, Filtered (Dissolved)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent 42 Swab
44 Air filter 43 Wipe
Enter other next to 00 below:
00

#C (2) enter the number of containers for each preservative type AND the preservation code P (3):
A - HCl G - $Na_2S_2O_3$+EDTA
B - HNO_3 H - EDTA
C - NaOH N - No chemical preservation
D - H_2SO_4 P - Bottles pre-preserved at lab
E - $Na_2S_2O_3$ T - To be preserved at the lab
F - ascorbic acid[2], then HCl ([2] $Na_2S_2O_3$ if required by plan.)
W- enter preservative: W = Methanol
[X] Type X in box if the cooler is iced

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Sampler's comments for the laboratory (in box or cell below):
QC samples are 23214100

EPA Sample number (8 digits) Yr (2) | Wk (2) | Sequence (4)	Sampling Date & Time Date (mm/dd/yyyy)	Time (hh:mm)	Matrix (1)	#C (2)	P (3)	#C (2)	P (3)	#C (2)	P (3)	#C (2)	P (3)	Sampler Initials	Sample/Station Description/Field Measurements	Organics: VOA	BNA	Pest	PCB	PAH	Metals: CLP	Selected	Mercury	Micro: Escherichia Coli (E. Coli)	Fecal Coliform	Total Coliform	General Chemistry: TSS	TDS	BOD 5	NO_2+NO_3	Oil & Grease	Asbestos	Additional Analyses
232[illegible]6			11	3	A	2	N					RS	~~Rinsate Blank/GW 2~~	X	X																
232[illegible]17			11	3	A	2	N					RS	~~Rinsate Blank/CB~~	X	X																
232[illegible]18			11	3	A							RS	Trip Blank/Cooler 1	X																	
232[illegible]19			11	3	A							RS	Trip Blank/Cooler 2	X																	
232[illegible]20			~~11~~	~~3~~	~~A~~							~~RS~~	~~Trip Blank/Cooler 3~~	X																	
232[illegible]21			~~11~~	~~3~~	~~A~~							~~RS~~	~~Trip Blank/Cooler 4~~	X																	
232[illegible]22			~~40~~	~~2~~	~~W~~	~~3~~	~~N~~					~~RS~~	~~Field Sample/~~	X	X																
232[illegible]23			~~40~~	~~2~~	~~W~~	~~3~~	~~N~~					~~RS~~	~~Field Sample/~~	X	X																
[illegible]																															

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	05/25/23	1800			
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Shipped by (Signature)	Date	Time	Received for Lab by (Signature)	Date	Time
			[signature]	5/26/23	1640

Receiving Laboratory Information: Condition of Samples upon Receipt at Lab:

Custody Seals Intact: [ ] yes [ ] no [ ] none

Additional Directions:

Additional Matrix Codes: 30 Leachate 50 Sludge 60 Air

Matrix codes: these are the codes in use at the EPA Region 10 Laboratory. Pick the matrix code that best matches the sample matrix. If in the opinion of the sampler, the sample matrix needs to be specially described, use 00 and type a matrix description. Remember, tissue can be animal or vegetable in nature.

ANALYSES: Type in the name of the analysis names as needed. Try to use the bolded analyte symbol/abbreviation (some analyses are not abbreviated).

Organics pre-printed on the form:
PAH Polynuclear Aromatic Hydrocarbons (these are a subset of the compounds reported from GCMS analyses for BNA - PAH by HPLC or SIM-GC/MS methods are usually requested in order to get low reporting limits).
Pest Organochlorine Pesticides **PCB** Polychlorinated Biphenyls aka Aroclors **VOA** (aka VOC) - volatile

Organics that can be typed instead:

CONTAINER GUIDANCE:
Note: this is general information only - consult the QA Project Plan on appropriate containers and preservatives for each project. Modifying methods may require modifying the number/type of containers. Freezing samples for one or more analyses may require collection of individual containers. Contact the laboratory for minimum sample volumes in situations where sample material is limited. Minimum volumes required for analysis will depend on the analysis and required reporting limits.

Appendix E

Water System Information

Select Well Logs

DRAFT

OHA Drinking Water Services

OR41 00296 **FAIRVIEW, CITY OF** **Classification**: COMMUNITY

Contact: RANDY LAUER
1300 NE VILLAGE ST
FAIRVIEW, OR 97024

Phone: 503-975-4464
County: MULTNOMAH
Activity Status: ACTIVE -- History
Population: 9,363
Number of Connections: 1,732
Operating Period: January 1 to December 31
Regulating Agency: REGION 1
Certified Operator(s)
Required: Y
Distribution class: 2
Treatment class: None
Filtration Endorsement Required: No
Owner Type: LOCAL GOVERNMENT
Licensed By: N/A
Approved Drinking Water Protection Plan: No
Source Water Assessment: No
Last Survey Date: Oct 06, 2021 - Outstanding Performer!

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-B	**EP FOR WELL #6**	**I**		**GW**
SRC-BA	WELL #6 - MULT3104	I	Emergency	**GW**
EP-C	**EP FOR WELL #7**	**I**		**GW**
SRC-CA	WELL #7 - L3002	I	Emergency	**GW**
EP-D	**EP FOR WELL #8**	**A**		**GW**
SRC-DA	WELL #8 - L56157	A	Permanent	**GW**
EP-F	**EP FOR WELL #5 AND #9**	**A**		**GW**
SRC-FA	WELL #9 - L100774	A	Permanent	**GW**
SRC-FB	WELL #5 - MULT1368	A	Permanent	**GW**

Show Disconnected and Abandoned Sources

Find Purchasers/Sellers

Treatment

Facility ID	Facility Name	Filter Type	Giardia Removal Credit	Treatment Process	Treatment Objective
WTP-D	TP FOR WELL #8			HYPOCHLORINATION, POST SEQUESTRATION	TASTE / ODOR CONTROL MANGANESE REMOVAL
WTP-F	TP FOR WELL # 5 AND #9			RESID. MAINT. HYPOCHLORINATION	OTHER

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2022	6/20/2023	6/20/2023
2021	7/25/2022	7/25/2022
2020	6/22/2021	6/22/2021
2019	6/22/2020	6/22/2020
2018	6/27/2019	6/27/2019

Cross Connection/Backflow Prevention Information (Last 3 Records)

Enabling Authority Received	Annual Summary Report Received	Fee Invoice Paid
Yes (PDF)	2022 (PDF)	2023
	2021 (PDF)	2022
	2020 (PDF)	2021

OHA Drinking Water Services

OR41 00357 **GRESHAM, CITY OF** **Classification**: COMMUNITY

Contact: MIKE WHITELEY
1333 NW EASTMAN PKWY
GRESHAM, OR 97030

Phone: 503-618-2314
County: MULTNOMAH
Activity Status: ACTIVE -- History
Number of Connections: 17,513
Regulating Agency: REGION 1
Owner Type: LOCAL GOVERNMENT
Licensed By: N/A
Approved Drinking Water Protection Plan: No
Source Water Assessment: No
Last Survey Date: Jun 15, 2022

Population: 73,932
Operating Period: January 1 to December 31
Certified Operator(s)
Required: Y
Distribution class: 4
Treatment class: None
Filtration Endorsement Required: No

Sources

Facility ID	Facility Name	Activity Status	Availability	Source Type
EP-A	**EP FOR PORTLAND WATER B.**	**A**		**SW**
SRC-AA	PORTLAND BUREAU OF WATER WORKS	A	Permanent	**SWP**
EP-B	**EP FOR ROCKWOOD PUD (00668) AND PWB**	**A**		**SW**
SRC-BA	ROCKWOOD SRC CA/CB/CC (#00668) AND PWB	A	Permanent	**SWP**
EP-C	**EP FOR ROCKWOOD PUD**	**A**		**GW**
SRC-CA	ROCKWOOD (#00668) (CASCADE WELLS 3,4,5)	A	Permanent	**GWP**

Find Purchasers/Sellers

Treatment

Facility ID	Facility Name	Filter Type	Giardia Removal Credit	Treatment Process	Treatment Objective

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2022	4/12/2023	4/12/2023
2021	4/13/2022	4/13/2022
2020	5/14/2021	5/14/2021
2019	6/5/2020	6/5/2020
2018	5/15/2019	5/15/2019

Cross Connection/Backflow Prevention Information (Last 3 Records)

Enabling Authority Received	Annual Summary Report Received	Fee Invoice Paid
Yes (PDF)	2022 (PDF)	2023
	2021 (PDF)	2022
	2020 (PDF)	2020

OHA Drinking Water Services

OR41 00902 **INTERLACHEN WATER PUD** **Classification**: COMMUNITY

Contact: TOM CAUFIELD
21442 NE INTERLACHEN LN
FAIRVIEW, OR 97024

Phone: 503-318-4363
County: MULTNOMAH
Activity Status: ACTIVE -- History
Population: 360
Number of Connections: 155
Operating Period: January 1 to December 31
Regulating Agency: MULTNOMAH COUNTY
Certified Operator(s)
Owner Type: LOCAL GOVERNMENT
Required: Y
Licensed By: N/A
Distribution class: 1
Approved Drinking Water Protection Plan: No
Treatment class: None
Source Water Assessment: Yes
Filtration Endorsement Required: No
Last Survey Date: Sep 30, 2021

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-A	**EP FOR INTERLACHEN WELL #2**	**A**		**GW**
SRC-AA	INTERLACHEN WELL #2 - MULT1298	A	Permanent	**GW**
EP-B	**EP FOR INTERLACHEN WELL #3**	**A**		**GW**
SRC-BA	INTERLACHEN WELL #3 - MULT1295	A	Permanent	**GW**
EP-C	**EP FOR CITY OF FAIRVIEW**	**I**		**GW**
SRC-CA	CITY OF FAIRVIEW (PWS# 00296)	I	Emergency	**GWP**
EP-D	**EP FOR INTERLACHEN WELL #1**	**A**		**GW**
SRC-DA	INTERLACHEN WELL #1 - MULT1303	A	Permanent	**GW**
EP-E	**EP FOR INTERLACHEN WELL #4**	**A**		**GW**
SRC-EA	INTERLACHEN WELL #4 - MULT1304	A	Permanent	**GW**

Show Disconnected and Abandoned Sources

Find Purchasers/Sellers

Treatment

Facility ID	Facility Name	Filter Type	Giardia Removal Credit	Treatment Process	Treatment Objective

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2022	**Due 7/1/2023**	**Due 10/1/2023**
2021	7/1/2022	*Not received*
2020	7/1/2021	7/1/2021
2019	7/16/2020	*Not received*
2018	7/17/2019	*Not received*

Cross Connection/Backflow Prevention Information (Last 3 Records)

Enabling Authority Received	Annual Summary Report Received	Fee Invoice Paid
Yes (PDF)	2022 (PDF)	2023
	2021 (PDF)	2022
	2020 (PDF)	2021

OHA Drinking Water Services

OR41 00657 **PORTLAND WATER BUREAU** **Classification**: COMMUNITY

Contact: YONE AKAGI
1900 N INTERSTATE AVE
PORTLAND, OR 97227

Phone: 503-823-1251
County: MULTNOMAH
Activity Status: ACTIVE -- History
Population: 614,059
Number of Connections: 186,863
Operating Period: January 1 to December 31
Regulating Agency: REGION 1
Certified Operator(s)
Owner Type: LOCAL GOVERNMENT
Required: Y
Licensed By: N/A
Distribution class: 4
Approved Drinking Water Protection Plan: Yes
Treatment class: 3
Source Water Assessment: Yes
Filtration Endorsement Required: No
Last Survey Date: Nov 19, 2020

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-A	**EP FOR BULL RUN**	**A**		**SW**
SRC-AA	BULL RUN RIVER	A	Permanent	**SW**
EP-B GWPS	**EP FOR GROUNDWATER PUMP STATION**	**A**		**GW**
SRC-BA	SAND&GRAVEL AQ (SGA) - WELL #1 - MULT1190	A	Seasonal	**GW**
SRC-BB	SGA WELL #2 - MULT1189	A	Seasonal	**GW**
SRC-BC	SGA WELL #4 - MULT1264	A	Seasonal	**GW**
SRC-BD	SGA WELL #6 - L120292	A	Seasonal	**GW**
SRC-BE	SGA WELL #7 - MULT1273	A	Seasonal	**GW**
SRC-BF	SGA WELL #8 - MULT1274	A	Seasonal	**GW**
SRC-BG	SGA WELL #9 - MULT1259	A	Seasonal	**GW**
SRC-BH	SGA WELL #11 - MULT1122	A	Seasonal	**GW**
SRC-BI	SGA WELL #14 - MULT1268	A	Seasonal	**GW**
SRC-BJ	SGA WELL #16 - MULT1335	A	Seasonal	**GW**
SRC-BK	SGA WELL #35 - L40157	A	Seasonal	**GW**
SRC-BL	SGA WELL #36 - L40427	A	Seasonal	**GW**
SRC-BM	SGA WELL #37 - L40426	A	Seasonal	**GW**
SRC-BN	SGA WELL #34 - MULT1131	A	Seasonal	**GW**
SRC-BO	SGA WELL #38 - L67558	A	Seasonal	**GW**
SRC-CA	TROUTDALE SANDSTONE AQ WELL #3 - MULT1263	A	Seasonal	**GW**
SRC-CB	TSA WELL #5 - MULT1261	A	Seasonal	**GW**
SRC-CC	TSA WELL #10 - MULT1187	A	Seasonal	**GW**
SRC-CD	TSA WELL #15 - MULT1256	A	Seasonal	**GW**
SRC-CE	TSA WELL #26 - MULT1134	A	Seasonal	**GW**
SRC-CF	TSA WELL #29 - MULT1139	A	Seasonal	**GW**
SRC-CG	TSA WELL #28 - MULT1132	A	Seasonal	**GW**
SRC-DA	BLUE LAKE AQ (BLA) - WELL #12 - MULT1287	A	Seasonal	**GW**
SRC-DB	BLA WELL #13 - MULT1286	A	Seasonal	**GW**
SRC-DC	BLA WELL #17 - MULT1283	A	Seasonal	**GW**
SRC-DD	BLA WELL #18 - MULT1284	A	Seasonal	**GW**
SRC-DE	BLA WELL #19 - MULT1288	A	Seasonal	**GW**
EP-H	**EP FOR VIVIAN WELLS**	**I**		**GW**
SRC-HA	VIVIAN WELL #6 - L33780	I	Emergency	**GW**
SRC-HB	VIVIAN WELL #7 - L33772	I	Emergency	**GW**
SRC-HC	VIVIAN WELL #8 - L48788	I	Emergency	**GW**
SRC-HD	VIVIAN WELL #9 - L48789	I	Emergency	**GW**
Disconnected Sources				
SRC-EA	COL R. SANDS (CRSA) - WELL #32 - MULT1135	I	Other	GW
SRC-FA	TROUTDALE GRAVEL AQ (TGA)- WELL #1 - MULT1160	I	Other	GW
SRC-FB	TGA WELL #2 - MULT1165	I	Other	GW
SRC-FC	TGA WELL #3 - MULT1161	I	Other	GW

Permanently Abandoned Sources

EP-G	EP FOR GILBERT WELLS	I		GW
SRC-GA	GILBERT WELL #4 - MULT5041	I	Other	GW
SRC-GB	GILBERT WELL #3 - MULT2870	I	Other	GW

Find Purchasers/Sellers

Treatment

Treatment Variance

Facility ID	Facility Name	Filter Type	Giardia Removal Credit	Treatment Process	Treatment Objective
WTP-A	TP FOR BULL RUN	Unfiltered	N/A	UNFILTERED, AVOIDING FILT.	OTHER
				GASEOUS CHLORINATION, POST	DISINFECTION
				PH/ALKA ADJ-SODA ASH	CORROSION CONTROL
				PH/ALKALINITY ADJUSTMENT-CO2	CORROSION CONTROL
				CHLORAMINES	DISINFECTION
WTP-B GWPS	TP FOR GROUND WATER PUMP STATION			PH ADJ-CAUSTIC SODA	CORROSION CONTROL
				RESID. MAINT. CHLORAMINES	OTHER

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2022	6/26/2023	6/26/2023
2021	6/24/2022	6/24/2022
2020	6/29/2021	6/29/2021
2019	6/26/2020	6/26/2020
2018	6/28/2019	6/28/2019

Cross Connection/Backflow Prevention Information (Last 3 Records)

Enabling Authority Received	Annual Summary Report Received	Fee Invoice Paid
Yes (PDF)	2022 (PDF)	2023
	2021 (PDF)	2022
	2020 (PDF)	2021

OHA Drinking Water Services

OR41 00668 **ROCKWOOD PUD** **Classification**: COMMUNITY

Contact: ANDY CROCKER
19601 NE HALSEY
PORTLAND, OR 97230

Phone: 503-665-4179
County: MULTNOMAH
Activity Status: ACTIVE -- History
Population: 65,443
Number of Connections: 13,726
Operating Period: January 1 to December 31
Regulating Agency: REGION 1
Certified Operator(s)
Required: Y
Distribution class: 4
Treatment class: None
Filtration Endorsement Required: No
Owner Type: LOCAL GOVERNMENT
Licensed By: N/A
Approved Drinking Water Protection Plan: No
Source Water Assessment: No
Last Survey Date: Oct 26, 2020 - Outstanding Performer!

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-A	**EP FOR PORTLAND WATER B.**	**A**		**SW**
SRC-AA	PORTLAND BUREAU OF WATER WORKS	A	Permanent	**SWP**
EP-C	**EP FOR TREATED CASCADE WELLS**	**A**		**GW**
SRC-CA	CASCADE WELL #3 - L56125	A	Seasonal	**GW**
SRC-CB	CASCADE WELL #4 - L68016	A	Seasonal	**GW**
SRC-CC	CASCADE WELL # 5 - L89355	A	Seasonal	**GW**
Abandoned Sources				
EP-B	EP FOR CASCADE WELLS & PWB (BLENDED)	I		SW
SRC-BA	TREATED CASCADE WELLS	I	Other	SWP
SRC-BB	PORTLAND WB (PWS #00657)	I	Other	SWP

Find Purchasers/Sellers

Treatment

Facility ID	Facility Name	Filter Type	Giardia Removal Credit	Treatment Process	Treatment Objective
WTP-C	TP FOR CASCADE WELLS			CHLORAMINES	OTHER

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2022	6/22/2023	6/22/2023
2021	6/6/2022	8/4/2022
2020	6/18/2021	6/18/2021
2019	6/22/2020	6/22/2020
2018	6/26/2019	6/26/2019

Cross Connection/Backflow Prevention Information (Last 3 Records)

Enabling Authority Received	Annual Summary Report Received	Fee Invoice Paid
Yes (PDF)	2022 (PDF)	2023
	2021 (PDF)	2022
	2020 (PDF)	2021

OHA Drinking Water Services

OR41 01262 **SANDY BOULEVARD MOBILE VILLA** **Classification**: COMMUNITY

Contact: LAURA HALLETT
PO BOX 57
FAIRVIEW, OR 97024

Phone: 503-756-1103
County: MULTNOMAH
Activity Status: ACTIVE Jul 07, 2004 -- History
Number of Connections: 113
Regulating Agency: MULTNOMAH COUNTY
Owner Type: PRIVATE
Licensed By: N/A
Approved Drinking Water Protection Plan: No
Source Water Assessment: No
Last Survey Date: Jul 14, 2021

Population: 350
Operating Period: January 1 to December 31
Certified Operator(s)
Required: Y
Distribution class: S
Treatment class: None
Filtration Endorsement Required: No

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-A	**EP for WELL**	**A**		**GW**
SRC-AB	WELL - L27194	A	Permanent	**GW**
SRC-AC	ROCKWOOD WATER DISTRICT	**I**	Emergency	**SWP**

Show Disconnected and Abandoned Sources

Find Purchasers/Sellers

Treatment

Facility ID	Facility Name	Filter Type	Giardia Removal Credit	Treatment Process	Treatment Objective

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2022	6/24/2023	6/24/2023
2021	6/17/2022	6/17/2022
2020	8/27/2021	8/27/2021
2019	9/1/2020	9/1/2020
2018	7/31/2019	*Not received*

Cross Connection/Backflow Prevention Information (Last 3 Records)

Enabling Authority Received	Annual Summary Report Received	Fee Invoice Paid
Yes (PDF)	2022 (PDF)	2021
	2018 (PDF)	2020
	2017	2018

OHA Drinking Water Services

OR41 01157 **TERRAND MOBILE TERRACE** **Classification**: COMMUNITY

Contact: MIKE LOWRIE
5942 TOWNE DR NE
SILVERTON, OR 97381

Phone: 503-873-3237
County: MULTNOMAH
Activity Status: ACTIVE -- History
Population: 71
Number of Connections: 40
Operating Period: January 1 to December 31
Regulating Agency: MULTNOMAH COUNTY
Certified Operator(s)
Required: Y
Distribution class: S
Treatment class: None
Filtration Endorsement Required: No
Owner Type: PRIVATE
Licensed By: N/A
Approved Drinking Water Protection Plan: No
Source Water Assessment: Yes
Last Survey Date: Feb 10, 2021

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-A	**EP FOR WELL**	**A**		**GW**
SRC-AA	WELL - L4874	A	Permanent	**GW**

Find Purchasers/Sellers

Treatment

Facility ID	Facility Name	Filter Type	Giardia Removal Credit	Treatment Process	Treatment Objective

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2022	6/27/2023	6/27/2023
2021	6/22/2022	6/22/2022
2020	*Not received*	*Not received*
2019	6/25/2020	6/25/2020
2018	6/21/2019	6/21/2019

Cross Connection/Backflow Prevention Information (Last 3 Records)

Enabling Authority Received	Annual Summary Report Received	Fee Invoice Paid
No	2022 (PDF)	2023
	2021 (PDF)	2022
	2020 (PDF)	2020

OHA Drinking Water Services

OR41 00901 **TROUTDALE, CITY OF** **Classification**: COMMUNITY

Contact: DAVID SCHAFFER
342 SW 4TH ST
TROUTDALE, OR 97060

Phone: 503-674-3305
County: MULTNOMAH
Activity Status: ACTIVE -- History
Population: 16,185
Number of Connections: 4,703
Operating Period: January 1 to December 31
Regulating Agency: REGION 1
Certified Operator(s)
Required: Y
Distribution class: 3
Treatment class: None
Filtration Endorsement Required: No
Owner Type: LOCAL GOVERNMENT
Licensed By: N/A
Approved Drinking Water Protection Plan: No
Source Water Assessment: Yes
Last Survey Date: Oct 20, 2020 - Outstanding Performer!

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-A	**EP FOR WELL #2 (STARK)**	**A**		**GW**
SRC-AA	WELL #2 (STARK) - MULT1430	A	Permanent	**GW**
EP-B	**EP FOR WELL #3 (COLUMBIA)**	**I**		**GW**
SRC-BA	WELL #3 (COLUMBIA) - MULT1429	I	Permanent	**GW**
EP-C	**EP FOR WELL #4 (CITY SHOP)**	**A**		**GW**
SRC-CA	WELL #4 (CITY SHOP) - L59040	A	Permanent	**GW**
EP-D	**EP FOR WELL #6 (SWEETBRIAR)**	**A**		**GW**
SRC-DA	WELL #6 (SWEETBRIAR) - MULT67091	A	Permanent	**GW**
EP-E	**EP FOR WELL #7 (SANDEE PALISADES)**	**A**		**GW**
SRC-EA	WELL #7 (SANDEE PALISADES) - MULT3391	A	Permanent	**GW**
EP-F	**EP FOR WELL #8 (SANDEE PALISADES)**	**A**		**GW**
SRC-FA	WELL #8 (SANDEE PALISADES) - MULT4372	A	Permanent	**GW**
EP-G	**EP FOR WELL #5**	**A**		**GW**
SRC-GA	WELL #5 - L91777	A	Permanent	**GW**

Find Purchasers/Sellers

Treatment

Facility ID	Facility Name	Filter Type	Giardia Removal Credit	Treatment Process	Treatment Objective
WTP-A	TP FOR WELL #2 (STARK)			RESID. MAINT. HYPOCHLORINATION	OTHER
WTP-C	TP FOR WELL #4 (CITY SHOP)			HYPOCHLORINATION, PRE	TASTE / ODOR CONTROL
WTP-D	TP FOR WELL #6 (SWEETBRIAR)			HYPOCHLORINATION, PRE	TASTE / ODOR CONTROL
WTP-E	TP FOR WELL #7 (SANDEE PALISADES)			HYPOCHLORINATION, PRE	TASTE / ODOR CONTROL
WTP-F	TP FOR WELL #8 (SANDEE PALISADES)			HYPOCHLORINATION, PRE	TASTE / ODOR CONTROL
WTP-G	TP FOR WELL #5 (L91777)			RESID. MAINT. HYPOCHLORINATION	OTHER

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2022	5/24/2023	5/24/2023
2021	3/30/2023	4/15/2022
2020	5/14/2021	5/14/2021
2019	5/28/2020	5/28/2020
2018	6/4/2019	6/4/2019

Cross Connection/Backflow Prevention Information (Last 3 Records)

Enabling Authority Received	Annual Summary Report Received	Fee Invoice Paid
Yes (PDF)	2022 (PDF)	2023
	2021 (PDF)	2022
	2020 (PDF)	2021

OHA Drinking Water Services

OR41 00904 WOOD VILLAGE, CITY OF **Classification**: COMMUNITY

Contact: JOHN NIIYAMA
24200 NE HALSEY ST
WOOD VILLAGE, OR 97060-1095

Phone: 503-667-6211
County: MULTNOMAH
Activity Status: ACTIVE -- History

Population: 3,907
Number of Connections: 627

Operating Period: January 1 to December 31
Regulating Agency: REGION 1

Certified Operator(s)
Required: Y
Distribution class: 2
Treatment class: None
Filtration Endorsement Required: No

Owner Type: LOCAL GOVERNMENT
Licensed By: N/A
Approved Drinking Water Protection Plan: No
Source Water Assessment: Yes
Last Survey Date: Jun 25, 2019 - Outstanding Performer!

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-A	**EP FOR WELL #1**	**I**		**GW**
SRC-AA	WELL #1 - MULT1426	I	Emergency	GW
EP-B	**EP for WELL #2**	**A**		**GW**
SRC-BA	WELL #2 - MULT1431	A	Permanent	GW
EP-C	**EP for WELL #3**	**A**		**GW**
SRC-CA	WELL #3 - MULT2418	A	Permanent	GW
EP-D	**EP FOR WELL #4**	**A**		**GW**
SRC-DA	WELL #4 - L72470	A	Permanent	GW

Find Purchasers/Sellers

Treatment

Facility ID	Facility Name	Filter Type	Giardia Removal Credit	Treatment Process	Treatment Objective
WTP-B	TP FOR WELL #2			RESID. MAINT. HYPOCHLORINATION	OTHER
WTP-C	TP FOR WELL #3			RESID. MAINT. HYPOCHLORINATION	OTHER
WTP-D	TP FOR WELL #4			RESID. MAINT. HYPOCHLORINATION	OTHER

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2022	6/27/2023	6/30/2023
2021	6/29/2022	6/29/2022
2020	7/1/2021	7/1/2021
2019	5/8/2020	5/8/2020
2018	6/28/2019	6/28/2019

Cross Connection/Backflow Prevention Information (Last 3 Records)

Enabling Authority Received	Annual Summary Report Received	Fee Invoice Paid
Yes (PDF)	2022 (PDF)	2023
	2021 (PDF)	2022
	2020 (PDF)	2021

Oregon Water Resources Department
Groundwater Information System

Groundwater Site: MULT 98998

Site Identification (Click to Collapse...)

GW LogID: MULT 98998 Well Log Database
GW Well Tag Number: 89355
Tag Verified on Well: Yes
Site Type: WELL
Primary Use: MUNICIPAL
Unused Status:
Site Source Organization:
Site Source OWRD:
Established By: WOZNIAKC
Established Date: 02/26/2017
Bonded Company: BOART LONGYEAR
Stage: COMPLETE

Location (Click to Collapse...)

Latitude/Longitude

Latitude: 45.53434400 **Horiz. Error:** 25.00 ft.
Longitude: -122.46548100 **Datum:** WGS1984
Lat/Long Source: OWNER MAP

Location

TRSQQ: WM 1.00N3.00E29SWSE
Tax Map: 1N3E29D -01400
Taxlot: 1400
24 Quad: CAMAS
Basin: 2 - Willamette
County: Multnomah
WM District: 20
WM Region: NW
LSD Elev: 202.00 Accy: 3.00 Datum: NAVD1988
Elev Source: LIDAR
Groundwater Mapping Tool



Water Rights (Click to Expand...)

Well Construction History (Click to Collapse...)

Well Construction History

Well Log id	Well Log	Work Type	Startcard	Well Tag	Owner Name	First Water	Max Case. Diam.	Max Case. Depth.	Max Seal Depth.	Max Depth	Completed Depth	Complete Date
MULT 98998	Log	NEW	1005668	89355	Rockwood Water Peoples Utility District	580.00	30		576.00	734.00	734.00	4/17/2009

Well Log	Aquifer	Aq at Max Depth	System Aquifer	Regional USGS Aquifer	Local USGS Aquifer
MULT 98998	Portland basin Sand and gravel aquifer USGS WRIR 90-4196	Quaternary-Late Tertiary sediment Aq	Quaternary-Late Tertiary Sediment Aquifers	Willamette Lowland basin-fill aquifers	Troutdale Formation

Well Test

Well Log	Test Type	Yield(gpm)	Drawdown	Duration (hr)	Calculated Specific Capacity (gpm/ft)
MULT 98998	Pump	4000.0	120.0	48.0	33.33

Lithology (Click to Expand...)

Well Construction (Click to Expand...)

Measured Water Level (Click to Expand...)

Available Data (Click to Expand...)

Other Documents/Images (Click to Expand...)

Oregon Water Resources Department
Groundwater Information System

Groundwater Site: MULT 70128

Site Identification (Click to Collapse...)

GW LogID: MULT 70128 Well Log Database
GW Well Tag Number: 56125
Tag Verified on Well: Yes
Site Type: WELL
Primary Use: MUNICIPAL
Unused Status:
Site Source Organization:
Site Source OWRD:
Established By: KARL WOZNIAK
Established Date: 11/18/2011
Bonded Company: GEO-TECH EXPLORATIONS
Stage: COMPLETE

Location (Click to Collapse...)

Latitude/Longitude

Latitude: 45.53496100 **Horiz. Error:** 25.00 ft.
Longitude: -122.45975500 **Datum:** WGS1984
Lat/Long Source: WR APPL MAP

Location

TRSQQ: WM 1.00N3.00E29SESE
Tax Map: 1N3E29D -00200
Taxlot: 200
24 Quad: CAMAS
Basin: 2 - Willamette
County: Multnomah
WM District: 20
WM Region: NW
LSD Elev: 195.00 Accy: 3.00 Datum: NAVD1988
Elev Source: LIDAR
Groundwater Mapping Tool



Water Rights (Click to Expand...)

Well Construction History (Click to Collapse...)

Well Construction History

Well Log id	Well Log	Work Type	Startcard	Well Tag	Owner Name	First Water	Max Case. Diam.	Max Case. Depth.	Max Seal Depth.	Max Depth	Completed Depth	Complete Date
MULT 70128	Log	NEW	154597	56125	Rockwood Water Peoples Utility District	185.00	16			665.00	660.00	6/12/2003
MULT 95920	Log	ALTERATION	163394	56125	Rockwood Water Peoples Utility District		16			665.00	665.00	7/22/2004

Well Log	Aquifer	Aq at Max Depth	System Aquifer	Regional USGS Aquifer	Local USGS Aquifer
MULT 70128	Portland basin Sand and gravel aquifer USGS WRIR 90-4196	Quaternary-Late Tertiary sediment Aq	Quaternary-Late Tertiary Sediment Aquifers	Willamette Lowland basin-fill aquifers	Troutdale Formation
MULT 95920	Portland basin Sand and gravel aquifer USGS WRIR 90-4196	Quaternary-Late Tertiary sediment Aq	Quaternary-Late Tertiary Sediment Aquifers	Willamette Lowland basin-fill aquifers	Troutdale Formation

Well Test

Well Log	Test Type	Yield(gpm)	Drawdown	Duration (hr)	Calculated Specific Capacity (gpm/ft)
MULT 70128	Pump	3500.0	62.0	48.0	56.45

Lithology (Click to Expand...)

Well Construction (Click to Expand...)

Measured Water Level (Click to Expand...)

Available Data (Click to Expand...)

Oregon Water Resources Department
Groundwater Information System

Groundwater Site: MULT 72119

Site Identification (Click to Collapse...)

GW LogID: MULT 72119 Well Log Database
GW Well Tag Number: 68016
Tag Verified on Well: Yes
Site Type: WELL
Primary Use: MUNICIPAL
Unused Status:
Site Source Organization:
Site Source OWRD:
Established By: KARL WOZNIAK
Established Date: 11/18/2011
Bonded Company: GEO-TECH EXPLORATIONS
Stage: COMPLETE

Location (Click to Collapse...)

Latitude/Longitude

Latitude: 45.53477200 **Horiz. Error:** 25.00 ft.
Longitude: -122.46121900 **Datum:** WGS1984
Lat/Long Source: OWNER MAP

Location

TRSQQ: WM 1.00N3.00E29SWSE
Tax Map: 01N-03E-29D
Taxlot: 200
24 Quad: CAMAS
Basin: 2 - Willamette
County: Multnomah
WM District: 20
WM Region: NW
LSD Elev: 192.00 Accy: 5.00 Datum: NGVD1929
Elev Source: 7.5-MINUTE MAP
Groundwater Mapping Tool



Water Rights (Click to Expand...)

Well Construction History (Click to Collapse...)

Well Construction History

Well Log id	Well Log	Work Type	Startcard	Well Tag	Owner Name	First Water	Max Case. Diam.	Max Case. Depth.	Max Seal Depth.	Max Depth	Completed Depth	Complete Date
MULT 72119	Log	NEW	160370	68016	Rockwood Water Peoples Utility District	138.00	22			625.00	625.00	1/20/2004
MULT 95921	Log	ALTERATION	164056	68016	Rockwood Water Peoples Utility District		22			625.00		1/24/2005

Well Log	Aquifer	Aq at Max Depth	System Aquifer	Regional USGS Aquifer	Local USGS Aquifer
MULT 72119	Portland basin Sand and gravel aquifer USGS WRIR 90-4196	Quaternary-Late Tertiary sediment Aq	Quaternary-Late Tertiary Sediment Aquifers	Willamette Lowland basin-fill aquifers	Troutdale Formation
MULT 95921	Portland basin Sand and gravel aquifer USGS WRIR 90-4196	Quaternary-Late Tertiary sediment Aq	Quaternary-Late Tertiary Sediment Aquifers	Willamette Lowland basin-fill aquifers	Troutdale Formation

Well Test

Well Log	Test Type	Yield(gpm)	Drawdown	Duration (hr)	Calculated Specific Capacity (gpm/ft)
MULT 72119	Pump	4000.0	80.0	48.0	50.00

Lithology (Click to Expand...)

Well Construction (Click to Expand...)

Measured Water Level (Click to Expand...)

Available Data (Click to Expand...)

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED FEB 5 1981 WATER RESOURCES DEPT SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

MULT 1118

State Well No. 1N/2E 13CDC
State Permit No. G 8755

(1) OWNER:
Name CITY OF PORTLAND, Bureau of Water Works
Address 1800 S.W. 6th Ave., Portland, OR 97201

(2) TYPE OF WORK (check):
New Well XX Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
[redacted] ☐ Jetted ☐
[redacted] ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:
Threaded ☐ Welded ☒
24" Diam. from 0 ft. to 60 ft. Gage .375
18" Diam. from 10 ft. to 467 ft. Gage .375
[redacted]oss Diam. from 444 ft. to 484 ft. Gage .188

(6) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
[redacted]ze of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☒ Yes ☐ No
Manufacturer's Name U.O.P. Johnson Division
Type Stainless steel wirewrap Model No.
Diam. 12"ts Slot size 25 Set from 484 ft. to 558 ft.
Diam. 10 Slot size 0 Set from 558 ft. to 568 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
[redacted] a pump test made? ☒ Yes ☐ No If yes, by whom? Layne-Wes.
Yield: 3000 gal./min. with 167 ft. drawdown after 2 hrs.
" " " "
" " " "
[redacted]r test gal./min. with ft. drawdown after hrs.
[redacted]esian flow 300 g.p.m.
Temperature of water Depth artesian flow encountered 469 ft.

[redacted]) CONSTRUCTION:
[redacted] seal—Material used Neat cement
Well sealed from land surface to 465 ft.
Diameter of well bore to bottom of seal 28" & 23" in.
Diameter of well bore below seal 17¼ in.
Number of sacks of cement used in well seal 515 sacks
How was cement grout placed? Pumped
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☒ Yes ☐ No Size of gravel: 16-30
Gravel placed from 446 ft. to 568 ft.

(10) LOCATION OF WELL:
County Multnomah Driller's well number 5
SE ¼ SW ¼ Section 13 T. 1N R. 2E W.M.
Bearing and distance from section or subdivision corner 4000 feet west by 150 feet north of Se corner, Section 13

(11) WATER LEVEL: Completed well.
Depth at which water was first found 124 ft.
Static level ft. below land surface. Date
Artesian pressure 5 lbs. per square inch. Date 1/30/81

(12) WELL LOG:
Diameter of well below casing 0
Depth drilled 568 ft. Depth of completed well 568 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Clay, silty, yellowish brown	0	20	
Silt & clays, dark grey	20	57	
Gravel, cobbles, boulders, brown sand-basalt & quartzite	57	149	
Gravel, cobbles and sand with olive grey clay & silt	149	174	
Clay, olive grey	174	184	
Sand, grey	184	223	
Sand, grey w/ lenses of clay and silt	223	279	
Sand, grey, with clay & silt	279	350	
Basalt & quartzite gravel& cobbles w/ small amount sand	350	369	
Clay, grayish green with sand	369	469	
Sand, fine w/grey silt & clay	469	480	
Sand, black w/gravel	480	561	
Clay & silt, green w/sand	561	568	

Work started 9/19 19 80 Completed 1/27 1981
Date well drilling machine moved off of well 1/27 1981

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Bob Johnson (Drilling Machine Operator) Date 1/30, 1981.
Drilling Machine Operator's License No. 1315

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief. J.R. Baker
Name LAYNE-WESTERN CO., INC. (Person, firm or corporation) District Manager (Type or print)
Address P.O. Box 336, Moses Lake, WA 98837
[Signed] J.R. Baker (Water Well Contractor)
Contractor's License No. 735 Date 1/30, 1981

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

WATER WELL REPORT

State of Oregon

State Well No. 13CDC
State Permit No. G 8755

OWNER: CITY OF PORTLAND
Bureau of Water Works
1800 S.W. 6th Ave.
Portland, OR 97201

RECEIVED
DEC 18 1980
WATER RESOURCES DEPT
SALEM, OREGON

Continuation of Item No.7 - SCREENS:

DIAMETER	SLOT SIZE	SET (from - to) FEET
5"	Blank	470 - 484
6" Telescope	20	484 - 485
6" "	40	485 - 486
6" "	20	486 - 488
6" "	15	488 - 490
6" "	20	490 - 491
6" "	60	491 - 492
6" "	100	492 - 493
6" "	150	493 - 495
6" "	80	495 - 496
6" "	40	496 - 499
6" "	80	499 - 501
6" "	15	501 - 510
6" "	30	510 - 511
6" "	20	511 - 517
6" "	15	517 - 518
6" "	12	518 - 522
6" "	25	522 - 525
6" "	100	525 - 526
6" "	25	526 - 527
6" "	15	527 - 531
6" "	20	531 - 532
6" "	25	532 - 535
6" "	15	535 - 539
6" "	30	539 - 540
6" "	60	540 - 549
6" "	25	549 - 554
6" "	15	554 - 559
5"	Blank	559 - 568'10"

Layne-Western Company, Inc.
P.O. Box 336
Moses Lake, WA 98837

WATER WELL REPORT
STATE OF OREGON

MULT 1122

RECEIVED
APR 16 1982
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 1N/2E-14dd

State Permit No.

(1) OWNER:
Name CITY OF PORTLAND
Address 1220 SW 5TH AVE
City PORTLAND State ORE. 97204

(2) TYPE OF WORK (check): WELL No. 11
New Well X Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☐ Driven ☐
Rotary Mud ☐ Dug ☐
Cable X Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal X
Irrigation ☐ Test Well ☐ Other ☐
Thermal: ☐ Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel Threaded X ☐ Plastic Welded ☐ X

24" Diam. from +1 ft. to 190 ft. Gauge .375
20" Diam. from -10 ft. to 485 ft. Gauge .375
~~LINER INSTALLED~~ 18 495 .365
10" Diam. from 475 ft. to 585 ft. Gauge .365

(6) PERFORATIONS:
Perforated? ☐ Yes X No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? X Yes ☐ No
Manufacturer's Name JOHNSON
Type STAINLESS STEEL Model No.
Diam. 12 Slot Size 25 Set from 495 ft. to 575 ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? X Yes ☐ No If yes, by whom? STRASSER
2550 gal./min. with 178 ft. drawdown after 24 hrs.
" " " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow 150 g.p.m.
Temperature of water Depth artesian flow encountered 490 ft.

(9) CONSTRUCTION:
Special standards: Yes ☐ No X
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 33 ft.
Diameter of well bore to bottom of seal 30 in.
Diameter of well bore below seal 24 in.
Number of sacks of cement used in well seal 60 sacks
How was cement grout placed? PUMP THE GROUT THROUGH ONE INCH PIPE FROM BOTTOM UP AS CASING WAS REMOVED
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? X Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes X No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? X Yes ☐ No Size of SAND: 16-30
Gravel placed from 497 ft. to 585 ft.

(10) LOCATION OF WELL:
County MULT. Driller's well number 5588
SE ¼ SE ¼ Section 14 T. 1N R. 2E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 58 ft.
Static level ft. below land surface. Date
Artesian pressure 2 lbs. per square inch. Date 4/5/82

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 585 ft. Depth of completed well 585 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SEE ATTACHED SHEET			

Work started DEC 3 19 81 Completed APR 2 1982
Date well drilling machine moved off of well APR 7 1982

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Jerry Johnson (Drilling Machine Operator) Date 4/15 1982
Drilling Machine Operator's License No. 911

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.J. STRASSER DRILLING CO. (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND, ORE
[Signed] Robert L Strasser (Water Well Contractor)
Contractor's License No. 10 Date APR. 15, 1982

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

Phone: 771-2355

R. J. Strasser Drilling Co.
8110 S. E. Sunset Lane
Portland, Oregon 97206

RECEIVED
APR 16 1982
WATER RESOURCES DEPT
SALEM, OREGON

April 14, 1982

Production well #11

clay and silt	0 - 41
silt, gravel and boulders	41 - 70
cemented gravel	70 - 112
brown and grey clay and gravel	112 - 138
gravel and clay	138 - 164
silty grey clay	164 - 186
green clay and gravel	186 - 193
sticky brown and green clay	193 - 2--
green clay	200 - 220
grey clay and sand	220 - 237
sticky grey clay	237 - 243
green sandy clay	243 - 278
grey and green clay	278 - 287
sand, gravel, and clay	287 - 323
sandstone	323 - 347
cemented gravel	347 - 373
cemented gravel, water seams	373 - 382
cemented gravel, clay seams	382 - 396
sand, gravel and clay	396 - 402
green and grey clay	402 - 418
grey clay	418 - 427
green clay, some gravel	427 - 453
brown clay	453 - 466
green clay	466 - 485
sand, gravel, and silt	485 - 513
loose gravel	513 - 520
sand and small gravel	520 - 532
silt, sand and gravel	532 - 573
grey clay	573 - 580
green clay	580 - 585

Phone: 771-2355

14/2E-14dd

R. J. Strasser Drilling Co.
8110 S. E. Sunset Lane
Portland, Oregon 97206

April 27, 1982

RECEIVED
APR 29 1982
WATER RESOURCES DEPT
SALEM, OREGON

City of Portland

addendum to production well #11

(9) Construction

well sealed with cement grout from 170 to 190 feet

well sealed with cement grout from 465 to 485 feet

WATER WELL REPORT
STATE OF OREGON

MULT 1187

RECEIVED
FEB 23 1982
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 1N/2E-24 bA
State Permit No. C
Artesian

(1) OWNER:
Name CITY OF PORTLAND
Address 1120 SW 5TH AVE
City PORTLAND State ORE 97204

(2) TYPE OF WORK (check): WELL NO 10
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air [ ] Driven [ ]
Rotary Mud [ ] Dug [ ]
[X] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]
Thermal: Withdrawal [ ] Reinjection [ ]

(5) CASING INSTALLED:
Steel [X] Threaded [ ] Plastic [ ] Welded [X]
16" Diam. from +25 ft. to 275 ft. Gauge 375
10" Diam. from 270 ft. to 282 ft. Gauge 365
10" Diam. from 365 ft. to 375 ft. Gauge 365

LINER INSTALLED:
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name JOHNSON
Type STAINLESS STEEL Model No.
Diam. SEE ATTACHED SHEET Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
Yield: 2500 gal./min. with 196 ft. drawdown after 48 hrs.
" " " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow 75 g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes [ ] No [X]
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 47 FT. AND 265-275 ft.
Diameter of well bore to bottom of seal 20 in.
Diameter of well bore below seal 16 in.
Number of sacks of cement used in well seal 88 sacks
How was cement grout placed? PUMPED THROUGH ONE INCH PLASTIC PIPE FROM BOTTOM AS CASING WAS REMOVED
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County MULT. Driller's well number 5586
NE ¼ NW ¼ Section 24 T. 1N R. 2E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found ft.
Static level ft. below land surface. Date
Artesian pressure 1.5 lbs. per square inch. Date 1/12/82

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 375 ft. Depth of completed well 375 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SEE ATTACHED SHEET			

Work started SEPT 14 19 81 Completed JAN 20 19 82
Date well drilling machine moved off of well FEB 9 1982

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Floyd Zapp (Drilling Machine Operator) Date 2/22, 19 82
Drilling Machine Operator's License No. 941

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.I. STRASSER DRILLING CO. (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND ORE
[Signed] Robert L Strasser (Water Well Contractor)
Contractor's License No. 10 Date FEB 22, 19 82

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

Phone: 771-2355

RECEIVED
FEB 23 1982
WATER RESOURCES DEPT
SALEM, OREGON

R. J. Strasser Drilling Co.
8110 S. E. Sunset Lane
Portland, Oregon 97206

February 19, 1982

LO - City of Portland
1N/2E-24ba
Mult. Co.

Log of production well #10

top soil	0 - 1
gravel	1 - 2
grey clay	2 - 17
cemented gravel and boulders	17 - 33
cemented gravel, grey clay	33 - 93
grey clay and gravel	93 - 97
sand, gravel and brown clay	97 - 105
cemented gravel, grey clay	105 - 144
green clay, some gravel	144 - 163
green and grey clay	163 - 170
sandy grey clay	170 - 180
grey clay	180 - 188
sandy grey clay	188 - 203
grey and green clay	203 - 210
sandy green clay	210 - 237
sticky grey clay	237 - 250
green clay, gravel and sand	250 - 252
dark green sandy clay	252 - 266
green and grey clay	266 - 278
green clay, sand and gravel	278 - 290
sandstone, clay seams	290 - 300
slightly cemented sand and gravel	300 - 347
cemented sand and gravel	347 - 350
slightly cemented sand and gravel	350 - 375

RECEIVED
FEB 23 1982
WATER RESOURCES DEPT
SALEM, OREGON

(7) SCREENS

DIAM. 12 IN SLOT SIZE 25 FROM 282 TO 310 FT.
DIAM. 12 IN SLOT SIZE 20 FROM 310 TO 316 FT.
DIAM. 12 IN SLOT SIZE 11 FROM 316 TO 332 FT.
DIAM. 12 IN SLOT SIZE 16 FROM 332 TO 345 FT.
DIAM. 12 IN SLOT SIZE 12 FROM 345 TO 358 FT.
DIAM. 12 IN SLOT SIZE 10 FROM 358 TO 365 FT.

20-City of Portland
Well #10
Mult. 1N/2E-24ba

NOTICE TO WATER WELL CONTRACTOR: The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
AUG 20 1980
WATER RESOURCES DEPT
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

MULT 1189

db

State Well No. IN/2E 24[illegible]

State Permit No. G 8755

(1) OWNER:
Name City of Portland, Bureau of Water Works
Address 1800 S.W. 6th Ave., Portland, OR

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [X] Driven [ ]
[illegible] [ ] Jetted [ ]
[illegible] [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]

(5) CASING INSTALLED:
Threaded [ ] Welded [X]
24 " Diam. from +1 ft. to 68 ft. Gage 0.375"
16 " Diam. from 10 ft. to 380 ft. Gage 0.375"
[illegible] " Diam. from ft. to ft. Gage

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No
[illegible]ype of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name U.O.P. Johnson
Type Wire wrap stainless steel Model No.
Diam. ** Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

** SEE ATTACHED

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
[illegible] a pump test made? [ ] Yes [X] No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
[illegible]er test gal./min. with ft. drawdown after hrs.
[illegible]rtesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used High early strength cement
Well sealed from land surface to 380 ft.
Diameter of well bore to bottom of seal 28" X 20" in.
Diameter of well bore below seal 13 in.
Number of sacks of cement used in well seal 575 sacks
How was cement grout placed? Pumped

Was a drive shoe used? [ ] Yes [X] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? Potable depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Multnomah Driller's well number 2
NW ¼ SE ¼ Section 24 T. IN R. 2E W.M.
Bearing and distance from section or subdivision corner
1250 feet west X 2200 feet south of NE corner of Section 24

(11) WATER LEVEL: Completed well.
Depth at which water was first found 229 ft.
Static level ft. below land surface. Date
Artesian pressure 5 lbs. per square inch. Date 8/8/80

(12) WELL LOG:
Diameter of well below casing 0
Depth drilled 538 ft. Depth of completed well 509 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Silty clay, brown	0	10	
Gravel, boulders, & some sand, gray	10	125	
Silty clay, gray, w/gravel & sand	125	190	
Claystone, clay, silt, sand, gray	190	260	
Sandstone, black, coarse	260	340	
Clay, medium gray, w/fine gravel & sandstone	340	407	
Gravel, sand, some silt, gray	407	450	
Sand, fine, gray, w/silt	450	460	
Sand & gravel, some silt	460	506	
Sand, very fine, gray	506	538	

Work started 3/18 1980 Completed 8/1 1980
Date well drilling machine moved off of well 8/4 1980

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Robert F. Johnson (Drilling Machine Operator) Date 8-14, 1980
Drilling Machine Operator's License No. 1315

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name J.R. Baker, Layne-Western Company, Inc. (Person, firm or corporation) (Type or print)
Address P.O. Box 336, Moses Lake, WA 98837
[Signed] J.R. Baker (Water Well Contractor)
Contractor's License No. 735 Date 8-14, 1980

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

WATER WELL REPORT

State of Oregon

State Well No. IN/2E 24~~ABC~~ db
State Permit G 8755

OWNER: CITY OF PORTLAND
Bureau of Water Works
1800 S.W. 6th Ave.
Portland, OR 97201

Continuation of Item No.7 - SCREENS:

DIAMETER	SLOT SIZE	SET (from - to) FEET
12"	Blank	379 - 411
12" Telescope	10	411 - 413
12" Telescope	15	413 - 416
12" Telescope	50	416 - 417
12" Telescope	100	417 - 418
12" Telescope	250	418 - 420
12" Telescope	30	420 - 423
12" Telescope	50	423 - 424
12" Telescope	15	424 - 432
12" Telescope	50	432 - 433
12" Telescope	150	433 - 436
12" Telescope	250	436 - 439
12" Telescope	60	439 - 442
12" Telescope	120	442 - 443
12" Telescope	250	443 - 449
12" Telescope	18	449 - 463
12" Telescope	25	463 - 469
12" Telescope	13	469 - 480
12" Telescope	30	480 - 483
12" Telescope	60	483 - 485
12" Telescope	15	485 - 491
12" Telescope	35	491 - 497
12" Telescope	45	497 - 498
12" Telescope	35	498 - 502
12" Telescope	45	502 - 504
12"	Blank	504 - 509

RECEIVED
AUG 20 1980
WATER RESOURCES DEPT
SALEM, OREGON

D WATER WELL CONTRACTOR
al and first copy of the report
e to be filed with the

RECEIVED
AUG 07 1980
WATER RESOURCES DEPT
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

(Please type or print)

(Do not write above this line)

MULT 1190

State Well No. 1N/2E-24AA5

State Permit No. G 8755

ESOURCES DEPARTMENT
EM, OREGON 97310
0 days from the date
ell completion.

NER:

Name CITY OF PORTLAND, Bureau of Water Works

Address 1800 S.W. 6th Ave., Portland, OR

(2) TYPE OF WORK (check):

New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary [X] Driven [ ]
Cable [ ] Jetted [ ]
[ ] Bored [ ]

(4) PROPOSED USE (check):

Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]

(5) CASING INSTALLED: Threaded [ ] Welded [X]

20 " Diam. from 0 ft. to 73 ft. Gage 0.375"
16 " Diam. from 10 ft. to 400 ft. Gage 0.375"
" Diam. from ft. to ft. Gage

(6) PERFORATIONS: Perforated? [ ] Yes [X] No

Type of perforator used

Size of perforations in. by in.

perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

*SEE ATTACHED

(7) SCREENS: Well screen installed? [X] Yes [ ] No

Manufacturer's Name U.O.P. Johnson

Type Wire Wrap-Stainless Steel Model No.

Diam. * Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? [X] Yes [ ] No If yes, by whom? Layne-Western

Yield: 2400 gal./min. with 80 ft. drawdown after 3 hrs.

" " " "

" " " "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow 300 g.p.m.

Temperature of water 55° Depth artesian flow encountered 224 ft.

(9) CONSTRUCTION:

Well seal—Material used High early strength cement

Well sealed from land surface to 400 ft.

Diameter of well bore to bottom of seal 24" X 19 in.

Diameter of well bore below seal 13 in.

Number of sacks of cement used in well seal 600 sacks

How was cement grout placed? Pumped

Was a drive shoe used? [ ] Yes [X] No Plugs Size: location ft.

Did any strata contain unusable water? [ ] Yes [X] No

Type of water? Potable depth of strata

Method of sealing strata off

Was well gravel packed? [ ] Yes [X] No Size of gravel:

Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Multnomah Driller's well number 1B

NE ¼ NE ¼ Section 24 T. 1N R. 2E W.M.

Bearing and distance from section or subdivision corner

1230 feet west X 520 feet south of NE corner of Section 24

(11) WATER LEVEL: Completed well.

Depth at which water was first found 224 ft.

Static level ft. below land surface. Date

Artesian pressure 5 lbs. per square inch. Date 7/11/80

(12) WELL LOG: Diameter of well below casing 0

Depth drilled 531 ft. Depth of completed well 531 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Silty clay	0		20
Silty sand	20		54
Gravel, cobbles & boulders, some sand	54		114
Clay	114		128
Clay	128		131
Sand	131		138
Sand with clay interbeds	138		197
Clay	197		224
Sandstone (water bearing)	224		242
Clay	242		254
Sandstone (water bearing)	254		287
Gravel & sand (water bearing)	287		326
Sandstone (water bearing	326		329
Sand & silt, grey	329		332
Gravel & sand, grey	332		335
Silty sand, grey	335		345
Silt & clay, grey	345		412
Sand & Gravel, grey	412		531

Work started 5-26 1980 Completed 7-11 1980

Date well drilling machine moved off of well 7-11 1980

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] Charles Bott (Drilling Machine Operator) Date 7/30, 1980

Drilling Machine Operator's License No. 1313

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name J.R. Baker - Layne Western Company, Inc. (Person, firm or corporation) (Type or print)

Address P.O. Box 336, Moses Lake, WA 98837

[Signed] (Water Well Contractor)

Contractor's License No. 735 Date 7/30, 1980

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

WATER WELL REPORT

State of Oregon

State Well No. 1N/2E 24AAB
State Permit No. G8755

Owner: City of Portland
Bureau of Water Works
1800 S.W. 6th Ave.
Portland, OR 97201

Continuation of Item No.7 - SCREENS:

DIAMETER	SLOT SIZE	SET (from - to) FEET
12"	Blank	397'4" - 407'8"
12" Telescope	10	407'8" - 413
12" Telescope	20	413 - 414
12" Telescope	40	414 - 415
12" Telescope	15	415 - 419
12" Telescope	12	419 - 423
12" Telescope	25	423 - 424
12" Telescope	50	424 - 425
12" Telescope	20	425 - 426
12" Telescope	12	426 - 431
12" Telescope	20	431 - 432
12" Telscope	10	432 - 436
12" Telescope	20	436 - 440
12" Telescope	80	440 - 446
12" Telescope	20	446 - 450
12" Telescope	40	450 - 451
12" Telescope	12	451 - 457
12" Telescope	25	457 - 458
12" Telescope	50	458 - 460
12" Telescope	10	460 - 479
12" Telescope	15	479 - 483
12" Telescope	30	483 - 490
12" Telescope	60	490 - 491
12" Telescope	80	491 - 493
12" Telescope	160	493 - 495
12" Telescope	80	495 - 496
12" Telescope	30	496 - 500
12" Telescope	60	500 - 501
12" Telescope	80	501 - 503
12" Telescope	30	503 - 507
12" Telescope	25	507 - 510
12" Telescope	30	510 - 511
12" Telescope	60	511 - 512
12" Telescope	120	512 - 513
12" Telescope	210	513 - 515
12" Telescope	15	515 - 517
12" Telescope	12	517 - 518'8"
12"	Blank	518'8" - 529

RECEIVED
AUG 07 1980
WATER RESOURCES DEPT
SALEM, OREGON

1n/2E-24aab

Layne-Western Company, Inc.

P.O. Box 336/Dover Street at 24th Street/Moses Lake, Washington 98837/Phone: 509/762-5308

July 30, 1980

RECEIVED
AUG 07 1980
WATER RESOURCES DEPT.
SALEM, OREGON

State of Oregon
Water Resources Department
Salem, OR 97310

RE: City of Portland; State Permit No. G8755

Gentlemen:

Enclosed you will find the original and first copies for water well reports for wells 1B and 3B, for the above referenced owner.

I am also enclosing a copy of a previous water well report that we submitted to you. The State Well No. 19BCC on this report should be changed to read State Well No. 19BBC.

Thank you for making this correction on your records.

Yours very truly,

J. R. Baker
District Manager

JRB:jf
Encls.

* Copy not included

WATER WELL REPORT
STATE OF OREGON

MULT 001256

RECEIVED
JUL 12 1983
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 1N/3E-19ad

State Permit No.

(1) OWNER:
Name City of Portland-Bureau of Water Wks
Address 1120 S.W. 5th Avenue
City Portland State Or 97201

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rev
Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dug ☐
[redacted] ☒ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐
Thermal: Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
..." Diam. from ...See Attached Sheet ft. to ... ft.
..." Diam. from ... ft. to ... ft. Gauge ...

[redacted] LINER INSTALLED:
..." Diam. from ... ft. to ... ft. Gauge ...

(6) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.

(7) SCREENS:
Well screen installed? ☒ Yes ☐ No
Manufacturer's Name UOP Johnson
Type 12" PS Stainless Steel Model No. ...
Diam. See attached sheet Slot Size ... Set from ... ft. to ... ft.
Diam. ... Slot Size ... Set from ... ft. to ... ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? SEI
[redacted] 1400 gal./min. with 137 ft. drawdown after 24 hrs.
" " " "
Air test – gal./min. with drill stem at – ft. – hrs.
Bailer test – gal./min. with – ft. drawdown after – hrs.
Artesian flow – g.p.m.
[redacted]erature of water – Depth artesian flow encountered – ft.

(9) CONSTRUCTION:
Special standards: Yes ☒ No ☐
Well seal—Material used ...
Well sealed from land surface to ... ft.
Diameter of well bore to bottom of seal ... See attached sheet
Diameter of well bore below seal ... in.
Number of sacks of cement used in well seal ... sacks
How was cement grout placed? ...pumped through grout pipe from bottom of seal zone upward
Was pump installed? No Type – HP – Depth – ft.
Was a drive shoe used? ☒ Yes ☐ No Plugs – Size: location – ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? – depth of strata –
Method of sealing strata off –
Was well gravel packed? ☒ Yes ☐ No Size of gravel: ...
Gravel placed from ... ft. to See attached sheet ft.

(10) LOCATION OF WELL:
County Multnomah Driller's well number 8303
SE ¼ NE ¼ Section 19 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 34 ft.
Static level 6 ft. below land surface. Date 5-26-83
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing –
Depth drilled 287 ft. Depth of completed well 284 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
See Attached Sheet			

Work started 12-13 19 82 Completed 6-13- 19 83
Date well drilling machine moved off of well 5-27 19 83

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] [redacted] Date 7-7, 19 83
(Drilling Machine Operator)
Drilling Machine Operator's License No. 1121

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Schneider Equipment, Inc.
(Person, firm or corporation) (Type or print)
Address 21081 River Rd NE, St. Paul, Or 97137
[Signed] Stephen J. Schneider
(Water Well Contractor)
Contractor's License No. 649 Date 7-7, 19 83

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

City of Portland Bureau of Water Works

No. 8303

(5) CASING INSTALLED and (7) SCREENS:

16" Diam. from +1.0ft. to 162.66 ft. Gauge .375

12" Diam., .375 wall, stainless steel pipe installed with screen sections as noted below:

Screen Sections

Depth Below Ground	Section Length	Description
156-195	39.	SS pipe w/ packers
195-218	23.	40 slot screen
218-235	17.	SS pipe
235-241	6.	20 slot screen
241-251	10.	18 slot screen
251-258	7.	20 slot screen
258-267	9.	SS pipe
267-275	8.	11 slot screen
275-278	3.	20 slot screen
278-287	9.	SS pipe w/ plate & bail bottom
	131.0 A.L.	

An 8" valve assembly was installed on 6-13-83 at 5 feet below ground after the rig was moved off the well.

City of Portland Bureau of Water Works

No. 8303

(9) CONSTRUCTION:

The well was drilled 20" diameter from 0' to 93'
drilled 16" diameter from 93' to 142'
under reamed to 20" diameter from 142' to 162'
drilled 14" diameter from 162' to 287'

Pea gravel was placed from 0 ft. to 7 ft. and from 33 ft. to 93 ft. between the 16" casing and the 20" borehole as the 20" temporary casing was removed

70 sacks of Type III cement grout were placed from 7 ft. to 33 ft. between the 16" casing and the 20" bore hole as the 20" temporary casing was removed

42 sacks of Type III cement grout were placed in the 20" diameter under reamed hole and the 16" casing then driven from 142' to its final depth to seal the 16" casing to the borehole from 142 ft to 162 ft.

3 sacks of Fondu cement grout were placed from 156 ft. to 162 ft. between the 12" S.S. riser pipe on the screen section and the 16" casing.

#12-20 sand pack was placed between the 12" screen/S.S. pipe section and the 14" bore hole from 162 ft. to 287 ft.

City of Portland Bureau of Water Works

No. 8303

(12) WELL LOG:

Material	From	To
Top soil, brown	0	4
Clay, brown, silty	4	15
Clay, grey	15	27
Clay, grey, silty & gravel	27	34
Gravel, cobbles & boulders	34	38
Boulders, cobbles & gravel	38	40
Gravel w/ some clay, grey	40	43
Gravel & cobbles w/ some clay, grey	43	46
Gravel & cobbles	46	48
Gravel & sand, black	48	55
Gravel & sand, black, some cementation & clay, brown	55	60
Gravel & sand, black, some cementation	60	63
Gravel & sand w/ silt, cementation & cobbles	63	73
Gravel, 4" minus w/ sand, brown	73	76
Gravel & brown silty sand, some cementation & occasional cobbles	76	96
Sandstone w/ clay, brown, silty	96	105
Silt, brown w/ some brown sandstone	105	112
Clay, grey w/ some siltstone	112	122
Sand, black, fine-coarse	122	131
Clay, green & brown	131	133
Clay, green & brown w/ grey silty sand	133	136
Clay, green	136	140
Clay, green w/ claystone & grey silty sand	140	145
Claystone & siltstone, grey	145	151
Clay, grey, silty	151	156
Sand & clay, grey, silty	156	160
Clay, grey, soft, silty	160	165
Clay, grey, sandy	165	169
Sandstone, grey, fine	169	172
Sandstone, black, fine w/ clay	172	185
Clay, grey w/ some claystone/sandstone	185	190
Clay, greenish-grey w/ claystone	190	195

City of Portland Bureau of Water Works

(12) WELL LOG: (cont'd) No. 8303

Material	From	To
Sandstone, green-black, coarse	195	220
Sandstone, green-black, coarse w/ pea gravel	220	223
Claystone, greenish-grey	223	225
Clay, greenish-grey, soft	225	229
Clay, grey, soft	229	234
Clay, black	234	235
Gravel & sandstone, black, coarse	235	236
Gravel, 1" minus, some cemented	236	238
Gravel, 1½" minus & sand, black, medium - coarse	238	245
Sand, black, medium & gravel	245	260
Gravel, 1½" minus & sand, medium-fine	260	276
Cobbles & gravel w/ sand, medium (occasional boulder)	276	279
Claystone, green	279	286
Clay, brown, sticky	286	287

VICTOR ATIYEH
GOVERNOR

Water Resources Department

MILL CREEK OFFICE PARK
555 13th STREET N.E., SALEM, OREGON 97310 PHONE 378-3741
or
1-800-452-7813
(message line)

RECEIVED
JUL 18 1983
WATER RESOURCES DEPT.
SALEM, OREGON

February 24, 1983

Schneider Equipment, Inc.
21881 River Road NE
St. Paul, OR 97137

Attention: Stephen Schneider

Dear Steve:

This letter will serve as formal approval for the special standards requested for the City of Portland Production Well Number 15.

Call or write if I can help on anything else.

Sincerely,

Dan Kennedy

DAN KENNEDY
Administrator
Administrative Services Division

DK:wpc

WELL DRILLING
IRRIGATION
CONTROL SYSTEMS

SCHNEIDER EQUIPMENT, INC.

PUMPS
IRRIGATED WATER SYSTEMS
SALES AND SERVICE

21881 River Road N.E. St. Paul, Oregon 97137 (503) 633-2666

February 21, 1983

Water Resources Department
555-13th Street N.E.
Salem, Oregon 97310

Re: City of Portland Production Well No. 15, Type II, Phase IV Contract; Request for special standards.

Attention: Mr. Dan Kennedy

Dear Dan:

We have initiated construction on the above referenced well and request a special standard to be approved for a 20 foot in lieu of 30 foot subsurface seal as outlined in the attached correspondence. The well is located in Multnomah County in the S.W. ¼ of the N.E. ¼ of Section 19, T1N, R3E.

Your prompt attention to this request will be greatly appreciated. If there are any questions, please do not hesitate to call.

Sincerely,

Steven J. Schneider
General Manager

SJS:cos
Encl:
Copy letter to City of Portland dated 6/10/82
Copy of Portland hrs. to Wm. Reed ~~5/7/82 and~~ 4/14/82

CITY OF
PORTLAND, OREGON
BUREAU OF WATER WORKS

Francis J. Ivancie, Mayor
Carl Geschel, Administrator
1800 S.W. 6th
Portland, Oregon 97201
(503) 248-4178

April 14, 1982

State of Oregon
Department of Water Resources
555 13th Street N.E.
Salem, OR 97310

Attention: Mr. William McCall

Subject: Request for SPECIAL STANDARDS for the EAST WELL FIELD PRODUCTION WELLS -- PHASE IV of the City of Portland

Gentlemen:

Enclosed herewith are specifications titled "East Well Field Production Wells - Phase IV" and Plan No. 1-G-154 which are proposed to serve as the contract documents for the three production wells of the City of Portland's Groundwater Development Program. The manner in which these wells are proposed to be constructed is believed to not conform with all the provisions of the "General Standards for the Construction and Maintenance of Water Wells in Oregon" and Special Standards are requested for those items which are not in conformance with the General Standards.

The Special Standards requested are the same as were granted by the State for Phase I and II of this development by letters dated March 20, 1979 and August 6, 1980.

The proposed production wells, specifically Types I and II on Sheet 2 of Plan 1-G-154, are required by the attached specifications to have a minimum grout seal above a confined aquifer of 20 feet instead of the 30 feet required in the General Standards. This has been done because of the following circumstances:

1. The confining layers above both confined aquifers are not cemented formations, but are instead compacted silts and fine sands which are subject to erosion.

2. The confined aquifers have sufficient head to flow when unrestrained, and the lower aquifer is capable of flows in excess of 500 gpm at the ground surface.

3. The head difference between the two confined aquifers is sufficient to generate considerable flow between the two aquifers if a path for such a flow is created.

4. The confining layers have been found by previous investigations by the City to vary considerably in thickness and they may not be 30 feet thick at all locations.

Given the above characteristics, it is believed that if the contractor were to drill into one of the confined aquifers while drilling the hole for the subsurface seal, sufficient flow would be created outside the well casing to severely erode the confining layer and inhibit the placement of cement grout as a seal. Placement of only 20 feet of grout seal against the confining layer will significantly reduce the likelihood that the lower aquifer will be encountered prior to placement of the grout seal and a Special Standard is requested which will permit the use of 20-foot sub-surface seal.

The requirement for a 30-foot sub-surface grout seal above the confined aquifers could be met by extending the seal into the overlying aquifer. However, the overlying aquifers are not sufficiently consolidated or cemented to stand open hole if drilled by cable tool or air rotary drills. Additionally, these aquifers are sufficiently permeable that grout would flow out into the aquifer and it is unlikely that any such seal will be successful.

The Water Bureau requests a second Special Standard which will permit use of a mechanical-type watertight seal to be placed between the 22-inch outer casings and the 18-inch inner casings of Type I wells. This type of seal is proposed for use because placement of a cement grout seal between two casings so close in size would be very difficult. Additionally, if the grout seal were to leak, it would be extremely difficult, if not impossible, to repair. However, if the mechanical seal were to leak, it could be removed, repaired, and reinstalled.

The seal between the 18 and 22-inch casings could be made by extending the inner casing to the ground surface and welding a plate between the casings. However, the inner casing has been terminated below ground in order to increase the area available in the top of the well for special piping and other specialized equipment required to monitor and safeguard the well.

If there are any questions concerning this communication or other Special Standards required for the proposed wells, please notify Bill Hoffstetter at the above address, or by phone at 254-3678, and the Bureau will furnish whatever additional information or requests are required.

Sincerely,

C. Goebel, Administrator

William F. Hoffstetter
Engineer III

WFH:ls
Enclosures
cc: P. Norseth
Ralph H. Jackson, Water Resources Dept.
Al Smyth, Health Divn., Human Resources Dept.

Water Resources Department

MILL CREEK OFFICE PARK

555 13th STREET N.E., SALEM, OREGON 97310

PHONE 378-2907
or
1-800-452-7813
(message line)

Production Wells, OK II

June 10, 1982

William Hoffstetter
Bureau of Water Works
1800 Southwest 6th
Portland, OR 97392

Dear Bill:

I apologize for the delay in responding to your request for special standards dated April 14, 1982, and updated May 7, 1982.

As you know, special standards must be issued to the drilling contractor. However, I will give tentative approval to the design outlined so that bids may be obtained. It will then be necessary for the contractor to request the identical special standards specifying the locations of the well(s) where these techniques are to be used.

To reiterate: 1) a 20-foot seal will be approved in the confining stratum overlying each confined water bearing zone; and 2) the neoprene/concrete seal between the inner and outer casings as shown in the drawing included with your May 7, 1982 request will be approved.

If I can be of further assistance, please call. I'll try to be more prompt!

Sincerely,

FREDERICK G. LISSNER
Hydrogeologist

FGL:wpc
1151B

WATER WELL REPORT
STATE OF OREGON

MULT 001259

RECEIVED
MAR 31 1982
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 1N/3E-19bd

State Permit No.

(1) OWNER:
Name CITY OF PORTLAND
Address 1220 SW 5TH AVE
City PORTLAND State ORE 97204

(2) TYPE OF WORK (check): WELL No. 9
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air [ ] Driven [ ]
Rotary Mud [ ] Dug [ ]
[ ] [X] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]
Thermal: [ ] Withdrawal [ ] Reinjection [ ]

(5) CASING INSTALLED:
Steel [X] Threaded [ ] Plastic [ ] Welded [X]
24 " Diam. from +1 ft. to 125 ft. Gauge .375
20 " Diam. from -10 ft. to 370 ft. Gauge .375
~~LINER INSTALLED~~: 376 .365
10 " Diam. from 485 ft. to 490 ft. Gauge .365

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name JOHNSON
Type STAINLESS STEEL Model No. 416
Diam. 12 Slot Size 35 Set from 376 ft. to 440 ft.
Diam. 12 Slot Size 10 Set from 416 ft. to 485 ft.
12 Slot Size 35

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
2500 gal./min. with 71 ft. drawdown after 24 hrs.
" " " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow 300 g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes [ ] No [X]
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 33 ft.
Diameter of well bore to bottom of seal 30 in.
Diameter of well bore below seal 24 in.
Number of sacks of cement used in well seal 75 sacks
How was cement grout placed? PUMPED THRU GROUT PIPE FROM BOTTOM UP AS THE CASING WAS PULLED
Was pump installed? No Type HP Depth ft.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? [X] Yes [ ] No Size of gravel: 12-20 SAND
Gravel placed from 348 ft. to 490 ft.

(10) LOCATION OF WELL:
County MULT. Driller's well number 5587
SE¼ NW¼ Section 19 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 287 ft.
Static level ft. below land surface. Date
Artesian pressure 1.5 lbs. per square inch. Date 3/22/82

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 495 ft. Depth of completed well 490 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SEE ATTACHED SHEET			

Work started NOV 13 1981 Completed MAR 22 1982
Date well drilling machine moved off of well MAR 17 1982

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] D. Grant Johnson (Drilling Machine Operator) Date 3/25 1982
Drilling Machine Operator's License No. 57

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.J. STRASSER DRILLING CO (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND ORE
[Signed] Robert L Strasser (Water Well Contractor)
Contractor's License No. 10 Date MAR 25, 1982

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP*12658-690

Phone: 771-2355

RECEIVED
MAR 3 1 1982
WATER RESOURCES DEPT
SALEM, OREGON

R. J. Strasser Drilling Co.

8110 S. E. Sunset Lane
Portland, Oregon 97206

March 29, 1982

No. 9. production well

brown silty sand	0 - 15
sand, gravel and boulders	15 - 43
sand, gravel and clay	43 - 55
cemented gravel	55 - 79
sand, gravel and silt	79 - 83
slightly loose sand and gravel	83 - 86
sand, cobbles and clay	86 - 89
cemented gravel	89 - 103
sand, gravel and clay	103 - 121
green clay, some gravel	121 - 137
grey clay	137 - 155
sticky green clay	155 - 158
grey clay	158 - 167
grey and green clay	167 - 174
sticky green clay	174 - 190
green, brown and grey clay	190 - 215
dark grey sandstone	215 - 256
dark grey sticky clay	256 - 258
cemented gravel	258 - 303
sticky grey clay	303 - 313
cemented gravel	313 - 317
sticky grey, green and tan clay	317 - 371
cemented gravel	371 - 395
green clay, some gravel	395 - 398
cemented gravel	398 - 413
sand, silt and gravel	413 - 447
boulders and gravel	447 - 449
cemented sand and gravel	449 - 469
sand and gravel	469 - 484
sand and silt	484 - 486
black sand, some silt	486 - 490
sandy clay	490 - 495

1N/3E-19bd

Phone: 771-2355

R. J. Strasser Drilling Co.

8110 S. E. Sunset Lane
Portland, Oregon 97206

April 27, 1982

RECEIVED
APR 29 1982
WATER RESOURCES DEPT
SALEM, OREGON

City of Portland

addendum to production well #9

(9) Construction

well sealed with cement grout from 105 to 125 feet

well sealed with cement grout from 350 to 370 feet

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT SALEM, OREGON 97310 within 30 days from the date of well completion.

MULT 001261

WATER WELL REPORT
STATE OF OREGON
(Please type or print) (Do not write above this line)

Driller's Well number 5A - Per J. R. Baker

State Well No. IN/3E - 19 BCC

State Permit No. G 8755

(1) OWNER:
Name CITY OF PORTLAND, Bureau of Water Works
Address 1800 S.W. 6th Ave., Portland, OR 97201

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
[redacted] ☐ Jetted ☐
[redacted] ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:
Threaded ☐ Welded ☒
24" Diam. from 0 ft. to 33 ft. Gage 0.375
16" Diam. from 10 ft. to 230 ft. Gage 0.375
[redacted]" Diam. from ft. to ft. Gage

(6) PERFORATIONS:
Perforated? ☐ Yes ☒ No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☒ Yes ☐ No
Manufacturer's Name U.O.P. Johnson
Type Wire wrap-stainless steel Model No.
Diam. ** Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

** SEE ATTACHED

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
[redacted] a pump test made? ☒ Yes ☐ No If yes, by whom? Layne-Western Co.
Yield: 2430 gal./min. with 115 ft. drawdown after 4 hrs.
" " " "
" " " "
[redacted]er test gal./min. with ft. drawdown after hrs.
[redacted]esian flow g.p.m.
Temperature of water 60° Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used High early strength cement
Well sealed from land surface to 230 ft.
Diameter of well bore to bottom of seal 28 x 22 in.
Diameter of well bore below seal 12¼ in.
Number of sacks of cement used in well seal 350 sacks
How was cement grout placed? Pumped
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Potable depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Multnomah Driller's well number 5B
SW ¼ NW ¼ Section 19 T. IN R. 3E W.M.
Bearing and distance from section or subdivision corner
200 feet east by 2500 feet south of NW corner Section 19

(11) WATER LEVEL: Completed well.
Depth at which water was first found 30 ft.
Static level 5 ft. below land surface. Date 9/24/80
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 0"
Depth drilled 340 ft. Depth of completed well 340 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Clay, Silty, yellowish brown	0	12	
Gravel cobbles boulders with brown sand. Basaltic	12	104	
Sandstone with gravels & blue clay	104	129	
Clay, grey	129	135	
Sand, brown	135	162	
Clay, grey	162	191	
Sand & silt with grey clay	191	234	
Sandstone, black with gravel	234	258	
Sandstone & sand, black	258	260	
Sand, black & gravel	260	328	
Clay, grey	328	340	

RECEIVED
OCT 01 1980
WATER RESOURCES DEPT
SALEM, OREGON

Work started 9/10 19 80 Completed 9/19 1980
Date well drilling machine moved off of well 9/20 1980

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Bob Johnson (Drilling Machine Operator) Date 9/29, 19 80
Drilling Machine Operator's License No. 1315

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief. J.R. Baker
Name LAYNE-WESTERN CO., INC. (Person, firm or corporation) District Mgr. (Type or print)
Address P.O. Box 336, Moses Lake, WA 98837
[Signed] J.R. Baker (Water Well Contractor)
Contractor's License No. 735 Date 9/29, 19 80

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

WATER WELL REPORT

State of Oregon

State Well No. IN/3E - 19 BCC
State Permit No. G 8755

OWNER: City of Portland
Bureau of Water Works
1800 S.W. 6th Ave.
Portland, OR 97201

Continuation of Item No.7 - SCREENS:

DIAMETER	SLOT SIZE	SET (from - to) FEET
12" stainless	Blank	226 - 243
12" telescope	15	243 - 246
12" telescope	20	246 - 250
12" telescope	15	250 - 259
12" telescope	20	259 - 261
12" telescope	25	261 - 267
12" telescope	15	267 - 272
12" telescope	25	272 - 274
12" telescope	20	274 - 280
12" telescope	15	280 - 287
12" telescope	10	287 - 299
12" telescope	20	299 - 300
12" telescope	30	300 - 302
12" telescope	15	302 - 309
12" telescope	35	309 - 322
12" telescope	85	322 - 327
12" stainless	Blank	327 - 337
12" backoff & wash down nipple		337 - 340

Layne-Western Company, Inc.
P.O. Box 336
Moses Lake, WA 98837

RECEIVED
OCT 0 1 1980
WATER RESOURCES DEPT
SALEM, OREGON

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

MULT 1263

RECEIVED
AUG 08 1980
WATER RESOURCES DEPT
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print) (Do not write above this line)

MULT 001263

State Well No. 1N/3E-19BBD
State Permit No. G8755

(1) OWNER:
Name City of Portland, Bureau of Water Works
Address 1800 S.W. 6th Ave., Portland, OR 97201

(2) TYPE OF WORK (check):
New Well XX Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary XX Driven ☐
Cable ☐ Jetted ☐
[redacted] ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal XX
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:
Threaded ☐ Welded XX

20 " Diam. from 0 ft. to 50 ft. Gage 0.375"
14 " Diam. from ft. to 210 ft. Gage 0.375"
" Diam. from ft. to ft. Gage

PERFORATIONS:
Perforated? ☐ Yes XX No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? XX Yes ☐ No
Manufacturer's Name U.O.P. Johnson
Type Wire wrap-stainless steel Model No.
Diam. * Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

*See Attached

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? XX Yes ☐ No If yes, by whom? Layne-Western
[redacted]: 2400 gal./min. with 145 ft. drawdown after 62 hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
[redacted]sian flow g.p.m.
Temperature of water 55° Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used High Early Strength Cement
Well sealed from land surface to 210 ft.
Diameter of well bore to bottom of seal 24" x 19" in.
Diameter of well bore below seal 13 in.
Number of sacks of cement used in well seal 324 sacks
How was cement grout placed? Pumped

Was a drive shoe used? ☐ Yes XX No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes XX No
Type of water? Potable depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes XX No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Multnomah Driller's well number 4A
NW ¼ NW ¼ Section 19 T. 1N R. 3E W.M.
Bearing and distance from section or subdivision corner
700 feet south by 160 feet east of NW Corner Section 19

(11) WATER LEVEL: Completed well.
Depth at which water was first found 24 ft.
Static level 7 ft. below land surface. Date 7-18-80
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 0"
Depth drilled 317 ft. Depth of completed well 317 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Clay,silty,dark,yellowish-brown	0	10	
Silty clay,grey w/sand & silt	10	48	
Gravel,rounded w/sand & silt	48	110	
Sandstone,black,clay & gravel	110	113	
Gravel, fine	113	120	
Clay, greenish grey	120	126	
Gravel, fine with sand	126	136	
Sandstone, black	136	139	
Sand,fine mixed w/clay & silt	139	170	
Clay,brown w/silt & sand	170	214	
Sandstone, black w/sand	214	265	
Sand, black and gravel	265	283	
Gravel, fine black, and sand	283	310	
Clay, grey	310	317	

Work started July 11 19 80 Completed July 18 19 80
Date well drilling machine moved off of well July 18 19 80

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Robert Johnson (Drilling Machine Operator) Date July 30, 1980
Drilling Machine Operator's License No. 1315

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief. J. R. Baker
Name Layne-Western Co., Inc. (Person, firm or corporation) District Manager (Type or print)
Address P.O. Box 336, Moses Lake, WA 98837
[Signed] J. R. Baker (Water Well Contractor)
Contractor's License No. 735 Date July 30, 1980

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

WATER WELL REPORT

State of Oregon

State Well No. 1N/3E 19BB
State Permit No. G8755

Owner: City of Portland
Bureau of Water Works
1800 S.W. 6th Ave.
Portland, OR 97201

Continuation of Item No. 7 - SCREENS

DIAMETER	SLOT SIZE	SET (from - to) FEET
12"	Blank	207 - 238
12" Telescope	12	238 - 240
12" Telescope	15	240 - 243
12" Telescope	20	243 - 257
12" Telescope	30	257 - 262
12" Telescope	40	262 - 270
12" Telescope	50	270 - 273
12" Telescope	30	273 - 280
12" Telescope	50	280 - 283
12" Telescope	60	283 - 285
12" Telescope	100	285 - 286'8"
12"	Blank	286'8" - 317

RECEIVED
AUG 0 8 1980
WATER RESOURCES DEPT
SALEM, OREGON

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

MULT 1264

RECEIVED
AUG 07 1980
WATER RESOURCES DEPT
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

MULT 001264

State Well No. IN/3E-19BP
State Permit No. G 8755

(1) OWNER:
Name CITY OF PORTLAND, Bureau of Water Works
Address 1800 S.W. 6th Ave., Portland, OR

(2) TYPE OF WORK (check):
New Well XX Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary XX Driven ☐
Cable ☐ Jetted ☐
Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal XX
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:
Threaded ☐ Welded XX
24" Diam. from 0 ft. to 80 ft. Gage 0.375
16" Diam. from 10 ft. to 360 ft. Gage 0.375
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:
Perforated? ☐ Yes XX No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

*SEE ATTACHED

(7) SCREENS:
Well screen installed? XX Yes ☐ No
Manufacturer's Name U.O.P. Johnson
Type Wire wrap-stainless steel Model No.
Diam. * Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
gal/min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow 400 g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used High early strength cement
Well sealed from land surface to 210 ft.
Diameter of well bore to bottom of seal 28" X 22 in.
Diameter of well bore below seal 13 in.
Number of sacks of cement used in well seal 550 sacks
How was cement grout placed? Pumped
Was a drive shoe used? ☐ Yes XX No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes XX No
Type of water? Potable depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes XX No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Multnomah Driller's well number 3B
¼ ¼ Section 19 T. IN R. 3E W.M.
Bearing and distance from section or subdivision corner
850 feet south X 1650 feet east of NW corner Section 19

(11) WATER LEVEL: Completed well.
Depth at which water was first found 30 ft.
Static level ft. below land surface. Date
Artesian pressure 5 lbs. per square inch. Date 7/17/80

(12) WELL LOG:
Diameter of well below casing 0
Depth drilled 533'8" ft. Depth of completed well 533'8" ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Clay, silty, brown	0	12	
Silt & clay, grey	12	66	
Sand & silt, black	66	69	
Sand & gravel, black	69	110	
Silt & Clay, w/sand lines, grey	110	182	
Sandstone, black	182	186	
Silt, grey w/fine sand	186	198	
Sandstone & sand, black	198	243	
Gravel & sand, basalt, black	243	295	
Clay w/silt & sand, grey	295	350	
Sand w/grey clay	350	367	
Sand & gravel, grey	367	400	
Sand w/clay, green	400	409	
Clay, green	409	414	
Sand, fine, grey w/gravels	414	517	
Sand, fine, silty, grey	517	533'8"	

Work started 6-16 19 80 Completed 7-15 19 80
Date well drilling machine moved off of well 7-17 19 80

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] James Bott (Drilling Machine Operator) Date 7/30, 19 80
Drilling Machine Operator's License No. 1313

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name J.R. Baker - Layne Western Company, Inc. (Person, firm or corporation) (Type or print)
Address P.O. Box 336, Moses Lake, WA 98837
[Signed] J.R. Baker (Water Well Contractor)
Contractor's License No. 735 Date 7/30, 19 80

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

MULT 1264

WATER WELL REPORT

State of Oregon

State Well No. IN/3E 19BAC BD
State Permit No.G8755

Owner: City of Portland
Bureau of Water Works
1800 S.W. 6th Ave.
Portland, OR 97201

Continuation of Item No.7 - SCREENS:

DIAMETER	SLOT SIZE	SET (from - to) FEET
12"	Blank	357 - 369'4"
12" Telescope	10	369'4" - 370
12" Telescope	30	370 - 371
12" Telescope	60	371 - 372
12" Telescope	100	372 - 375
12" Telescope	150	375 - 376
12" Telescope	80	376 - 381
12" Telescope	120	381 - 386
12" Telescope	80	386 - 390
12" Telescope	100	390 - 400
12" Telescope	150	400 - 402
12" Telescope	200	402 - 407'4"
12"	Blank	407'4" - 428'8"
12" Telescope	12	428'8" - 431
12" Telescope	13	431 - 436
12"	Blank	436 - 444
12" Telescope	12	444 - 460
12" Telescope	13	460 - 497
12" Telescope	20	497 - 499
12" Telescope	15	499 - 504
12" Telescope	20	504 - 520
12" Telescope	13	520 - 523'4"
12"	Blank	523'4" - 533'8"

RECEIVED
AUG 07 1980
WATER RESOURCES DEPT
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

MULT 001268

MULT 1268

RECEIVED
JUL 12 1983
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 1N/3E-20ad

State Permit No.

(1) OWNER:
Name City of Portland-Bureau of Water Wks
Address 1120 S.W. 5th Avenue
City Portland State Or 97201

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rev
Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dug ☐
[redacted] ☒ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐
Thermal: ☐ Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
..." Diam. from See attached sheet ft. to ft. Gauge
..." Diam. from ft. to ft. Gauge

[redacted] LINER INSTALLED:
..." Diam. from ft. to ft. Gauge

(6) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☒ Yes ☐ No
Manufacturer's Name UOP Johnson
Type 12" PS Stainless steel Model No.
Diam. See attached sheet Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? SEI
[redacted]: 2500 gal./min. with 175 ft. drawdown after 48 hrs.
" " " "
Air test — gal./min. with drill stem at — ft. — hrs.
Bailer test — gal./min. with — ft. drawdown after — hrs.
Artesian flow — g.p.m. —
[redacted]erature of water — Depth artesian flow encountered — ft.

(9) CONSTRUCTION:
Special standards: Yes ☒ No ☐
Well seal—Material used Type III cement grout
Well sealed from land surface to ft.
Diameter of well bore to bottom of seal in. } see attached sheet
Diameter of well bore below seal in.
Number of sacks of cement used in well seal sacks
How was cement grout placed? pumped through grout pipe from bottom of seal zone upward
Was pump installed? No Type — HP — Depth — ft.
Was a drive shoe used? ☒ Yes ☐ No Plugs — Size: location — ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? — depth of strata —
Method of sealing strata off —
Was well gravel packed? ☒ Yes ☐ No Size of gravel:
Gravel placed from ft. to see attached sheet ft.

(10) LOCATION OF WELL:
County Multnomah Driller's well number 8304
SE ¼ NE ¼ Section 20 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 13 ft.
Static level 3 ft. below land surface. Date 6-1-83
Artesian pressure — lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 361 ft. Depth of completed well 358 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
See Sheet Attached			

Work started 10-19 19 82 Completed 6-13 1983
Date well drilling machine moved off of well 6-7 1983

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Stephen D. Schneider (Drilling Machine Operator) Date 7-7, 1983
Drilling Machine Operator's License No. 1090

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Schneider Equipment, Inc. (Person, firm or corporation) (Type or print)
Address 21881 River Rd NE, St. Paul, Or 97137
[Signed] Stephen D. Schneider (Water Well Contractor)
Contractor's License No. 649 Date 7-7, 1983

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP*12658-690

City of Portland Bureau of Water Works

No. 8304

(12) WELL LOG:

Material	From	To
Top soil, brown	0	2
Clay, brown	2	12
Boulders	12	14
Gravel & grey clay conglomerate	14	20
Gravel & cobbles w/ occasional clay & sand	20	52
Sandstone & gravel w/ brown clay	52	54
Boulder & gravel w/ brown clay	54	55
Gravel & cobbles w/ brown clay	55	76
Clay, blue green, fine sandy	76	88
Gravel, pea w/ coarse grey sand	88	90
Clay, blue green w/ some sand	90	100
Clay, brown	100	104
Silt & very fine sand, brown	104	123
Gravel, 2" minus	123	134
Gravel & sand, 3" minus, cemented, hard	134	140
Sand & gravel, 1" minus, semi cemented	140	143
Sand, brown, lightly cemented w/ grey siltstone layers	143	148
Gravel, 4" minus, semi cemented w/ occasional brown-green sandstone	148	173
Sand & gravel, 3" minus, cemented, black & green	173	188
Gravel & cobbles, cemented, black w/ green sandstone binder, hard	188	196
Gravel, 3" minus, semi cemented w/ green sandstone	196	205
Sand, green, fine-medium	205	211
Sand, green, fine-medium w/2" minus gravel	211	218
Gravel, semi cemented, 4" minus	218	222
Sandstone, black, coarse, w/ occasional gravel	222	234
Gravel, 2" minus & sand, coarse, semi cemented	234	243
Sandstone, black, med grain	243	244
Sand, coarse w/ trace of clay	244	246
Gravel & sand, coarse, cemented w/ occasional grey siltstone	246	258
Gravel & sand, coarse, cemented w/ occasional greenish grey claystone	258	265
Gravel, 3" minus, cemented	265	277
Gravel, 3" minus & sand, green, med-fine; loosely cemented	277	283

City of Portland-Bureau of Water Works

No. 6304

(12) WELL LOG: (Cont'd)

Material	From	To
Gravel, 4" minus w/ some sand, green, med-fine; cemented	283	289
Gravel, 6" minus, cemented	289	294
Sand, medium, grey-green, loose w/ some 2" minus gravel	294	305
Sand, black, coarse w/ some gravel & cementation	305	308
Sand, black, & gravel, some cementation	308	311
Sand, black, med-fine	311	314
Sand, black, med-coarse w/ some pea gravel & cementation	314	317
Sand, black, med, w/ some gravel, loosely cemented	317	320
Sand, black, fine-med	320	321
Sand, black, & gravel, cemented	321	327
Sand, black, med-coarse w/ 3" minus gravel & some cementation	327	333
Gravel & sand, black, coarse, cemented	333	337
Gravel & sand, black, coarse w/ trace of grey clay	337	339
Clay, grey	339	342
Clay, grey w/ fine grey sand	342	344
Sand & sandstone, grey	344	345
Sand, med-coarse, grey	345	352
Sand, coarse, grey	352	353
Sand, coarse, grey w/ some pea gravel	353	355
Gravel, 2" minus w/ coarse sand & some claystone	355	356
Clay, grey, firm	356	361

City of Portland-Bureau of Water Works

No. 8304

RECEIVED
JUL 12 1983
WATER RESOURCES DEPT.
SALEM, OREGON

(5) CASING INSTALLED and (7) SCREENS:

22" Diam. from +1.0 ft. to 120.0 ft. Gauge .375

18" Diam. from 10.0 ft. to 260.0 ft. Gauge .375

16" Diam. from 360.0 ft. to 361.6 ft. Gauge .375

12" Diam., .375 wall, stainless steel pipe installed with screen sections as noted below:

Screen Sections

Depth Below Ground	Section Length	Description
239.0-249.5	10.5	SS pipe w/ packers
249.5-250.5	1.0	30 slot screen
250.5-260.0	9.5	SS pipe
[illegible]-339.0	79.0	50 slot screen
[illegible]-344.0	5.0	SS pipe
344.0-352.0	8.0	33 slot screen
352.0-360.0	8.0	SS pipe w/ plate & bail bottom
	121.0 O.A.L.	

There is a special slip packer assembly located on top of the screen assembly to seal between the screen assembly and the 18" casing.

An 8" valve assembly was installed on 6/13/83 at 5 ft. below ground after the rig was moved off the well.

City of Portland-Bureau of Water Works

No. 8304

(5) CASING INSTALLED and (7) SCREENS:

22" Diam. from +1.0 ft. to 120.0 ft. Gauge .375

18" Diam. from 10.0 ft. to 260.0 ft. Gauge .375

16" Diam. from 360.0 ft. to 361.6 ft. Gauge .375

12" Diam., .375 wall, stainless steel pipe installed with screen sections as noted below:

	Screen Sections	
Depth Below Ground	Section Length	Description
239.0-249.5	10.5	SS pipe w/ packers
249.5-250.5	1.0	30 slot screen
250.5-260.0	9.5	SS pipe
260.0-339.0	79.0	50 slot screen
339.0-344.0	5.0	SS pipe
344.0-352.0	8.0	33 slot screen
352.0-360.0	8.0	SS pipe w/ plate & bail bottom
	121.0 O.A.L.	

There is a special slip packer assembly located on top of the screen assembly to seal between the screen assembly and the 18" casing.

An 8" valve assembly was installed on 6/13/83 at 5 ft. below ground after the rig was moved off the well.

MULT 1268

VICTOR ATIYEH
GOVERNOR

Water Resources Department

MILL CREEK OFFICE PARK
555 13th STREET N.E., SALEM, OREGON 97310

PHONE 378-3741
or
1-800-452-7813
(message line)

October 20, 1982

RECEIVED
JUL 12 1983
WATER RESOURCES DEPT.
SALEM, OREGON

Stephen Schneider
Schneider Equipment, Incorporated
21881 River Road, NE
St. Paul, OR 97137

Dear Steve:

This letter will serve as approval of your request for special standards for the City of Portland production Well 14. There will be a 20-foot seal in the confining stratum overlying each confined water bearing zone. Either a neoprene/concrete seal or watertight 3/8-inch welded steel ring will be used between the inner and outer casings.

Please let me know if we can be of further help.

Sincerely,

Dan Kennedy

DANIEL KENNEDY
Administrator
Administrative Services Division

DK:wpc

cc: City of Portland

3134B

MULT 1268

WELL DRILLING
IRRIGATION
CONTROL SYSTEMS

SCHNEIDER EQUIPMENT, INC.

PUMPS
ENGINEERED WATER SYSTEMS
SALES AND SERVICE

21881 River Road N.E. St. Paul, Oregon 97137 (503) 633-2666

October 19, 1982

Water Resources Department
555 - 13th Street NE
Salem, Oregon 97310

RE: City of Portland Production Well No. 14 - Phase IV Contract;
Request for Special Standards

Attention: Mr. Frederick Lissner

Dear Fred,

We are about to begin construction on the above referenced well and request a special standard be approved as outlined in the attached correspondence. The well is to be located in Multnomah county in the SE¼ of the NE¼ of Section 20, T1N, R3E. In addition to the neoprene/concrete seal proposed, we would also like to have the option to install a 3/8 inch thick steel plate ring between the inner and outer casings. This plate would be welded in place watertight at the top of the inner casing. We would prefer to use this latter method because we feel it is more secure and reliable; however, because of unknown installation problems that may be encountered (e.g. flowing well), it may be necessary to use the neoprene/concrete seal.

Your prompt attention to this request will be greatly appreciated. If there are any questions, please do not hesitate to call.

Sincerely yours,

Stephen S. Schneider
General Manager

SJS/rs
Encl:
WRD letter to City of Portland dated 6/10/82
City of Portland letters to WRD dated 5/7/82 and 4/14/82

CC: City of Portland, Bureau of Water Works; 1800 SW 6th, Portland, Or. 97201

Water Resources Department

MILL CREEK OFFICE PARK
555 13th STREET N.E., SALEM, OREGON 97310

PHONE 378-2907
or
1-800-452-7813
(message line)

June 10, 1982

William Hoffstetter
Bureau of Water Works
1800 Southwest 6th
Portland, OR 97392

Dear Bill:

I apologize for the delay in responding to your request for special standards dated April 14, 1982, and updated May 7, 1982.

As you know, special standards must be issued to the drilling contractor. However, I will give tentative approval to the design outlined so that bids may be obtained. It will then be necessary for the contractor to request the identical special standards specifying the locations of the well(s) where these techniques are to be used.

To reiterate: 1) a 20-foot seal will be approved in the confining stratum overlying each confined water bearing zone; and 2) the neoprene/concrete seal between the inner and outer casings as shown in the drawing included with your May 7, 1982 request will be approved.

If I can be of further assistance, please call. I'll try to be more prompt!

Sincerely,

FREDERICK G. LISSNER
Hydrogeologist

FGL:wpc
1151B

CITY OF PORTLAND, OREGON
BUREAU OF WATER WORKS

Francis J. Ivancie, Mayor
Carl Goebel, Administrator
1800 S.W. 6th
Portland, Oregon 97201
(503) 248-4178

MULT 1268

Production Wells
PH IV

May 7, 1982

Mr. Fred Lissner
Oregon Water Resources Dept.
555 13th Street N.E.
Salem, Oregon 97310

Dear Mr. Lissner:

Enclosed is a drawing of a typical water tight seal used between the 18" and 22" casings on Type 1, Phase II production wells. We anticipate the use of a similar seal on the Type 1, Phase IV production wells.

Sincerely,
Carl Goebel, Administrator

Bill Hoffstetter
Engineer III

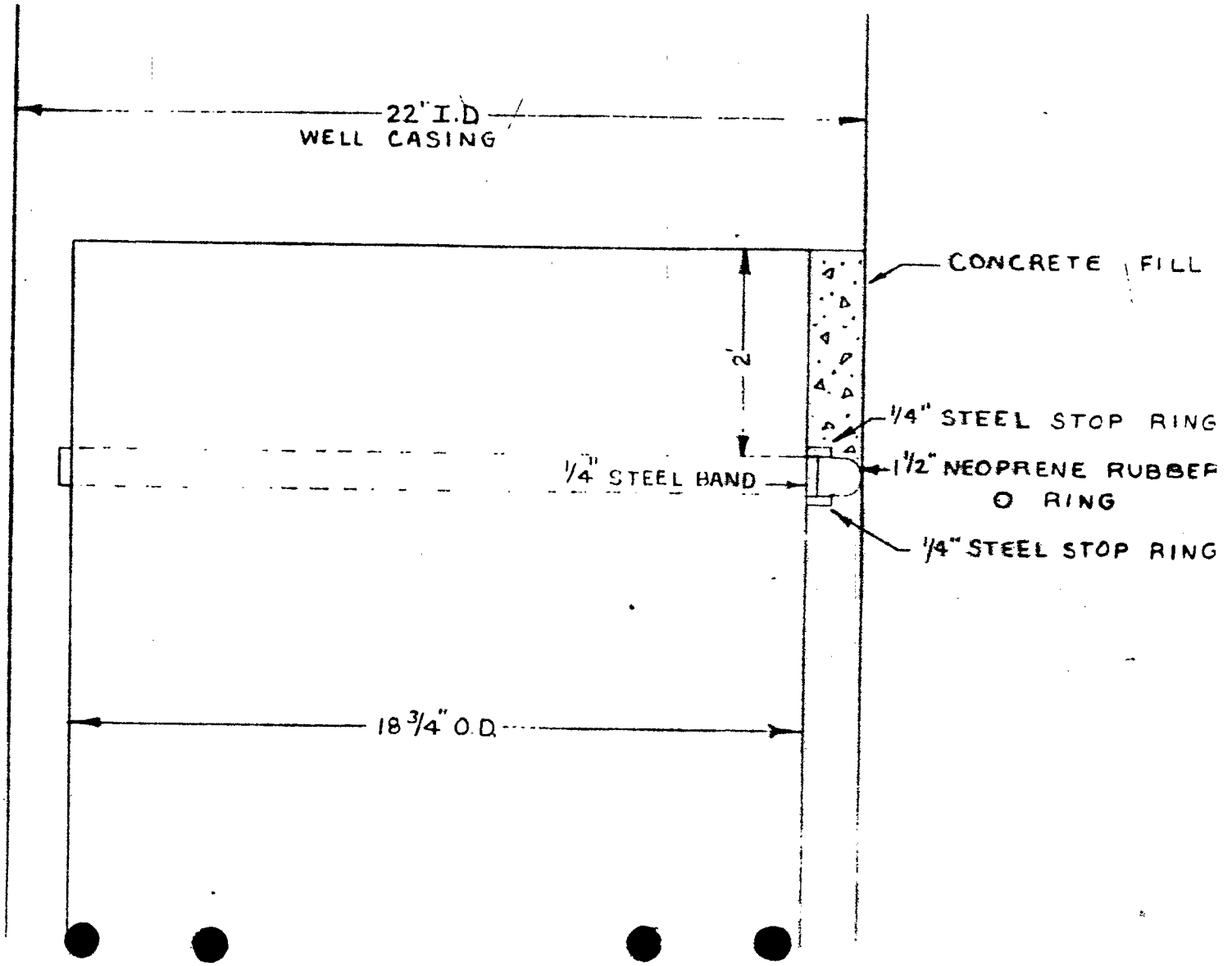
BH:rjm

Enclosure

cc: P. Norseth
B. Willis

TYPICAL WATER TIGHT SEAL USED BETWEEN 18 & 22" CASINGS ON PHASE II PRODUCTION WELLS

SCALE
HORIZ. 1" = 4'
VERT. AS SHOWN



MULT 1268

WATER WELL REPORT
STATE OF OREGON

MULT 1273
001273

RECEIVED
DEC 16 1981
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 1N/3E-20 bc
State Permit No.

(1) OWNER:
Name CITY OF PORTLAND
Address 1220 SW. 5TH AVE
City PORTLAND State ORE 97204

(2) TYPE OF WORK (check): WELL NO 7
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air [ ] Driven [ ]
Rotary Mud [ ] Dug [ ]
Cable [X] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]
Thermal: Withdrawal [ ] Reinjection [ ]

(5) CASING INSTALLED:
Steel [X] Threaded [ ] Plastic [ ] Welded [X]
20" Diam. from +1 ft. to 200 ft. Gauge .375
16" Diam. from -10 ft. to 310 ft. Gauge .375
~~LINER INSTALLED:~~ 303 326 .365
18" Diam. from 430 ft. to 435 ft. Gauge .365

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name UOP JOHNSON
Type STAINLESS STEEL Model No.
Diam. SEE ATTACHED SHEET Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
Yield: 2000 gal./min. with 255 ft. drawdown after 48 hrs.
" " " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes [ ] No [X]
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 66 ft.
Diameter of well bore to bottom of seal 24 in.
Diameter of well bore below seal 20 in.
Number of sacks of cement used in well seal 54 sacks
How was cement grout placed? PUMPED THROUGH ONE INCH PIPE TO BOTTOM OF CASING AS IT WAS REMOVED
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County MULT Driller's well number 5586
SW ¼ NW ¼ Section 20 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 314 ft.
Static level 1 ft. below land surface. Date 11/17/81
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 450 ft. Depth of completed well 435 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SEE ATTACHED SHEET			

Work started DEC 17 19 81 Completed NOV 24 19 81
Date well drilling machine moved off of well DEC 1 19 81

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Barry Johnson (Drilling Machine Operator) Date 12/15/19 81
Drilling Machine Operator's License No. 911

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.J. STRASSER DRILLING CO (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND ORE.
[Signed] Robert J. Strasser (Water Well Contractor)
Contractor's License No. 10 Date DEC 15, 19 81

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310
within 30 days from the date of well completion.

SP*12658-690

MULT 1273

1N/3E-20bc
Multnomah
City of Portland

RECEIVED
DEC 14 1981
WATER RESOURCES DEPT
SALEM, OREGON

Phone: 771-2355

R. J. Strasser Drilling Co.
8110 S. E. Sunset Lane
Portland, Oregon 97206

December 8, 1981

Log of production well #7

brown silty clay	0 - 4
brown and yellow clay	4 - 16
sand, silt and clay	16 - 50
grey and blue clay	50 - 65
sandstone	65 - 104
clay	104 - 113
cemented sand and gravel	113 - 173
grey clay	173 - 205
green and brown clay	205 - 230
grey silt and clay	230 - 238
cemented sand and gravel	238 - 288
grey and green clay, some gravel	288 - 310
sand and silt	310 - 314
sand and gravel	314 - 319
cemented gravel and sand	319 - 340
sandstone	340 - 346
fine grey sand	346 - 361
sand and gravel	361 - 380
black basalt boulders	380 - 408
sand	408 - 425
sand and gravel	425 - 433
sand and silt	433 - 443
blue and green clay	443 - 450

MULT 1273

RECEIVED
DEC 16 1981
WATER RESOURCES DEPT
SALEM, OREGON

1N/3E-20bc
Multnomah

City of Portland
Well #7

(7) SCREENS

DIAM.	12	SLOT SIZE	12	SET FROM 325 FT. TO	345
DIAM.	10	BLANK PIPE		345 FT. TO	355
DIAM.	12	SLOT SIZE	10	SET FROM 355 FT. TO.	365
DIAM.	12	SLOT SIZE	12	SET FROM 365 FT. TO	375
DIAM.	10	BLANK PIPE		SET FROM 375 FT. TO	380
DIAM.	12	SLOT SIZE	12	SET FROM 380 FT. TO	390
DIAM	12	SLOT SIZE	20	SET FROM 390 FT. TO	405
DIAM	12	SLOT SIZE	15	SET FROM 405 FT. TO	415
DIAM	12	SLOT SIZE	10	SET FROM 415 FT TO	430.

MULT 1273

Phone: 771-2355

R. J. Strasser Drilling Co.

8110 S. E. Sunset Lane
Portland, Oregon 97206

April 27, 1982

RECEIVED
APR 29 1982
WATER RESOURCES DEPT
SALEM, OREGON

City of Portland

addendum to production well #7 1N/3E-20bc

(9) Construction

well sealed with cement grout from 180 to 200 feet

well sealed with cement grout from 290 to 310 feet

MULT 1274

WATER WELL REPORT
STATE OF OREGON

MULT
001274

RECEIVED
OCT 27 1981
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 1N/3E-20CC
State Permit No.

(1) OWNER:
Name CITY OF PORTLAND
Address 1220 S.W. 5TH AVE
City PORTLAND State ORE

(2) TYPE OF WORK (check):
New Well X Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☐ Driven ☐
Rotary Mud ☐ Dug ☐
Cable X Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal X
Irrigation ☐ Test Well ☐ Other ☐
Thermal: ☐ Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel X Threaded ☐ Plastic ☐ Welded X

24 " Diam. from +1 ft. to 120 ft. Gauge .375
20 " Diam. from -10 ft. to 330 ft. Gauge .375
LINER INSTALLED: STAINLESS STEEL PIPE
10 " Diam. from 310 ft. to 448 ft. Gauge .365

(6) PERFORATIONS:
Perforated? ☐ Yes X No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? X Yes ☐ No
Manufacturer's Name JOHNSON
Type STAINLESS STEEL Model No. 413
Diam. 12 Tel. Slot Size 30 Set from 343 ft. to 413 ft.
Diam. 12 Tel. Slot Size 8 Set from 413 ft. to 420 ft.
Diam. 12 Tel. Slot Size 20 Set from 420 ft. to 440 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level

Was a pump test made? X Yes ☐ No If yes, by whom? STRASSER
Yield: 2500 gal./min. with 166 ft. drawdown after 72 hrs.
" " " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow 8 g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes ☐ No X
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 60 ft.
Diameter of well bore to bottom of seal 30 in.
Diameter of well bore below seal 24 in.
Number of sacks of cement used in well seal 76 sacks
How was cement grout placed? GROUT WAS PUMPED THROUGH ONE INCH PIPE AS THE 30 IN PIPE WAS REMOVED
Was pump installed? Type HP Depth ft.
Was a drive shoe used? X Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes X No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? X Yes ☐ No Size of gravel: SAND .023-.028
Gravel placed from 310 ft. to 448 ft.

(10) LOCATION OF WELL:
County MULT. Driller's well number 5583
SW ¼ SW ¼ Section 20 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 240 ft.
Static level ft. below land surface. Date
Artesian pressure +31 N. lbs. per square inch. Date 9/21/81

(12) WELL LOG:
Diameter of well below casing
Depth drilled 450 ft. Depth of completed well 448 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SEE ATTACHED SHEET			

Work started MAY 6 19 81 Completed SEPT 28 19 81
Date well drilling machine moved off of well SEPT 29 19 81

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] (Drilling Machine Operator) Date 10/21, 19 81
Drilling Machine Operator's License No. 57

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.J. STRASSER DRILLING CO (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND, ORE
[Signed] Robert L Strasser (Water Well Contractor)
Contractor's License No. 10 Date OCT 21, 19 81

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310
within 30 days from the date of well completion.

SP*12658-690

MULT 1274

Phone: 771-2355

RECEIVED
OCT 27 1981
WATER RESOURCES DEPT
SALEM, OREGON

R. J. Strasser Drilling Co.

8110 S. E. Sunset Lane
Portland, Oregon 97206

October 21, 1981

1N 3E-20cc
Mult.
20 City of Portland

log of well #8

top soil	0 - 1
clay	1 - 10
sandy silt	10 - 41
Packed sand and silt	41 - 44
sand	44 - 56
sand and gravel	56 - 61
loose gravel	61 - 62
sand, gravel and clay	62 - 66
cemented gravel	66 - 83
grey clay and gravel	83 - 90
green, grey and brown clay	90 - 120
green and grey clay	120 - 138
brown and green clay	138 - 144
clay with layers of sandstone	144 - 165
sandy clay	165 - 170
clay with layers of sandstone	170 - 191
slightly cemented sand	191 - 200
cemented sand and gravel	200 - 214
silt, sand and gravel	214 - 240
loose sand and gravel	240 - 245
slightly cemented sand and gravel	245 - 270
loose gravel	270 - 274
sticky clay and gravel	274 - 290
clay	290 - 333
sand, gravel and sandstone seams	333 - 342
sand and gravel	342 - 370
compacted sand and gravel	370 - 380
silty sand and gravel	380 - 393
sand and gravel	393 - 430
sand, gravel and sandstone seams	430 - 433
black sand and gravel	433 - 438
black sand	438 - 446
silt	446 - 450

MULT 1274

1N/3E-20cc

Phone: 771-2355

R. J. Strasser Drilling Co.
8110 S. E. Sunset Lane
Portland, Oregon 97206

April 27, 1982

RECEIVED
APR 29 1982
WATER RESOURCES DEPT
SALEM, OREGON

City of Portland

addendum to production well #8

(9) Construction

well sealed with cement grout from 100 to 120 feet

well sealed with cement grout from 310 to 330 feet

WATER WELL REPORT
STATE OF OREGON

MULT 001283

RECEIVED
DEC 15 1983
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 1N/3E-21bd

State Permit No.

(1) OWNER:
Name CITY OF PORTLAND
Address 1220 SW 5TH AVE
City PORTLAND State ORE 97204

(2) TYPE OF WORK (check): WELL NO 17
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air [ ] Driven [ ]
Rotary Mud [ ] Dug [ ]
[X] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]
Thermal: [ ] Withdrawal [ ] Reinjection [ ]

(5) CASING INSTALLED:
Steel [X] Plastic [ ]
Threaded [ ] Welded [X]

31" Diam. from +1 ft. to 80 ft. Gauge .500
31.5 Diam. from 75 ft. to 80 ft. Gauge .375

~~LINER INSTALLED:~~
31.5 Diam. from 130 ft. to 135 ft. Gauge .375
31.5 Diam. from 160 ft. to 165 ft. Gauge .375

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name UOP JOHNSON
Type STAINLESS STEEL Model No.
Diam. 31.5 Slot Size 100 Set from 80 ft. to 130 ft.
Diam. 31.5 Slot Size 100 Set from 135 ft. to 160 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level

Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
Yield: 10000 gal./min. with 25 ft. drawdown after 24 hrs.
" " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes [ ] No [X]
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 28 ft.
Diameter of well bore to bottom of seal 42 in.
Diameter of well bore below seal 36 in.
Number of sacks of cement used in well seal 116 sacks
How was cement grout placed? PUMPED IN FROM BOTTOM UP AS THE 4½ IN CASING WAS REMOVED
Was pump installed? Type HP Depth ft.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County MULTNOMAH Driller's well number 5599
SE ¼ NW ¼ Section 21 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 41 ft.
Static level 19 ft. below land surface. Date 11/16/83
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 194 ft. Depth of completed well 165 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
TOP SOIL	0	4	
SILTY CLAY	4	13	
SANDY SILT	13	25	
CLAY SAND AND GRAVEL	25	41	
GRAVEL AND SILT	41	75	
GRAVEL AND SAND	75	131	
GRAVEL BOULDERS AND SILT	131	136	
GRAVEL AND COARSE SAND	136	161	
SLIGHTLY CEMENTED GRAVEL	161	187	
GRAVEL, SILT, AND SAND	187	194	

Work started SEPT 13 1983 Completed NOV 18 1983
Date well drilling machine moved off of well NOV 21 1983

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Paul O. Bodman (Drilling Machine Operator) Date 12/13/1983
Drilling Machine Operator's License No. WWC 1246

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.W. Strasser Drilling Co. (Person, firm or corporation) (Type or print)
Address 8110 S.E. Sunset Lane, Portland OR. 97206
[Signed] Robert L Strasser (Water Well Contractor)
Contractor's License No. 10 Date DEC 13, 1983

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

WATER WELL REPORT
STATE OF OREGON

MULT
001284

RECEIVED
NOV 28 1983
WATER RESOURCES DEPT.

State Well No. 1N/3E-21ac

State Permit No.

(1) OWNER:
Name CITY OF PORTLAND
Address 1220 SW 5TH AVE
City PORTLAND State ORE 97204

(2) TYPE OF WORK (check): WELL No. 18
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air [ ] Driven [ ]
Rotary Mud [ ] Dug [ ]
[redacted] [X] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]
Thermal: [ ] Withdrawal [ ] Reinjection [ ]

(5) CASING INSTALLED:
Steel [X] Plastic [ ]
Threaded [ ] Welded [X]

36" Diam. from +6 ft. to 88 ft. Gauge .500
31.5" Diam. from 83 ft. to 88 ft. Gauge .375
~~LINER INSTALLED:~~ 96 to 103 .375
31.5 116 to 124 .375
31.5 Diam. from 190 ft. to 193 ft. Gauge .375

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name UOP JOHNSON
Type 31.5 STAINLESS STEEL 60 Model No. 98 96
Diam. 31.5 Slot Size 100 Set from 103 ft. to 116 ft.
Diam. 31.5 31.5 Slot Size 150 70 Set from 124 141 ft. to 140 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level

Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
8500 gal./min. with 73.1 ft. drawdown after 24 hrs.
" " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes [ ] No [X]
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 28 ft.
Diameter of well bore to bottom of seal 42 in.
Diameter of well bore below seal 36 in.
Number of sacks of cement used in well seal 88 sacks
How was cement grout placed? CEMENT GROUT WAS IN FROM THE BOTTOM UP AS THE CASING WAS REMOVED
Was pump installed? Type HP Depth ft.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County MULTNOMAH Driller's well number 5598
SW ¼ NE ¼ Section 21 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 34 ft.
Static level 10.3 ft. below land surface. Date 10/20/83
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing
Depth drilled 195 ft. Depth of completed well 193 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
BROWN CLAY	0	4	
GREY CLAY	4	16	
GREY SILT AND SAND	16	21	
GRAVEL, BOULDERS AND CLAY	21	34	
GRAVEL AND SAND	34	42	
LOOSE GRAVEL AND SILT	42	61	
BOULDERS AND GRAVEL	61	66	
GRAVEL AND SILT	66	85	
LOOSE GRAVEL	85	96	
BROWN SILT AND GRAVEL	96	126	
LOOSE GRAVEL AND SILT	126	140	
BROWN SILTY SAND	140	145	
SILT, CLAY, AND BOULDERS	145	195	

Work started JULY 20 1983 Completed OCT 31 1983
Date well drilling machine moved off of well NOV 1 1983

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Paul O Strasser (Drilling Machine Operator) Date 11/23 1983
Drilling Machine Operator's License No. WMC 1246

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.L. Strasser Drilling Co. (Person, firm or corporation) (Type or print)
Address 8110 S.E. Sunset Lane, Portland OR. 97206
[Signed] Robert L Strasser (Water Well Contractor)
Contractor's License No. 10 Date Nov 23, 1983

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

WATER WELL REPORT
STATE OF OREGON

MULT 001286

RECEIVED
OCT 3 1983
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 1N/3E-21bd

State Permit No.

(1) OWNER:
Name CITY OF PORTLAND
Address 1220 S.W. 5TH AVE.
City PORTLAND, ORE. 97204

(2) TYPE OF WORK (check): WELL No. 13
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air [ ] Driven [ ]
Rotary Mud [ ] Dug [ ]
[redacted] [X] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]
Thermal: [ ] Withdrawal [ ] Reinjection [ ]

(5) CASING INSTALLED:
Steel Threaded [X] Plastic Welded [ ]
36" Diam. from +1 ft. to 85 ft. Gauge .500
31 7/8 Diam. from 80 ft. to 85 ft. Gauge .375
~~LINER INSTALLED:~~
31 7/8 Diam. from 165 ft. to 169 ft. Gauge .375

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name UOP JOHNSON
Type STAINLESS STEEL Model No.
Diam. 31.5 Slot Size 150 Set from 85 ft. to 145 ft.
Diam. 31.5 Slot Size 80 Set from 145 ft. to 165 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
[redacted] 10000 gal./min. with 24 ft. drawdown after 75 hrs.
" " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
[redacted]erature of water 55° Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes [ ] No [X]
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 28 ft.
Diameter of well bore to bottom of seal 42 in.
Diameter of well bore below seal 36 in.
Number of sacks of cement used in well seal 995KS., 12½ YDS SAND AND CEMENT sacks
How was cement grout placed? CEMENT GROUT WAS PUMPED IN FROM BOTTOM AS THE CASING WAS REMOVED
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County MULTNOMAH Driller's well number 5598
SE ¼ NW ¼ Section 21 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 35 ft.
Static level 22 ft. below land surface. Date 9/6/83
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing –
Depth drilled 171 ft. Depth of completed well 169 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
TAN SILTY CLAY	0	18	
BROWN SILTY CLAY	18	25	
GRAVEL AND BROWN CLAY	25	35	
GRAVEL	35	41	
GRAVEL AND CLAY	41	50	
LOOSE GRAVEL	50	64	
DARK GREY GRAVEL	64	78	
GRAVEL AND BOULDERS	78	83	
LOOSE GRAVEL	83	87	
GRAVEL AND SILT	87	102	
CEMENTED GRAVEL	102	112	
LOOSE GRAVEL AND BOULDERS	112	169	
CEMENTED GRAVEL	169	171	

Work started JUNE 3 19 83 Completed SEPT 13 19 83
Date well drilling machine moved off of well SEPT 14 19 83

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Paul O Pittman Date 9/30 19 83
(Drilling Machine Operator)
Drilling Machine Operator's License No. 1246

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.W. Strasser Drilling Co.
(Person, firm or corporation) (Type or print)
Address 8110 S.E. Sunset Lane, Portland OR. 97206
[Signed] Robert L Strasser
(Water Well Contractor)
Contractor's License No. 10 Date SEPT 30, 1983

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

WATER WELL REPORT
STATE OF OREGON

MULT
061287

RECEIVED
NOV 8 1982
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 1N/3E-21cc

State Permit No.

(1) OWNER:
Name CITY OF PORTLAND
Address 1220 SW 5TH AVE
City PORTLAND State ORE 97204

(2) TYPE OF WORK (check): WELL No. 12
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air [ ] Driven [ ]
Rotary Mud [ ] Dug [ ]
Cable [X] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]
Thermal: [ ] Withdrawal [ ] Reinjection [ ]

(5) CASING INSTALLED:
Steel [X] Plastic [ ]
Threaded [ ] Welded [X]
22" Diam. from +3.5 ft. to 60 ft. Gauge .375
22" Diam. from 118 ft. to 123 ft. Gauge .375

LINER INSTALLED:
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name UOP JOHNSON
Type STAINLESS STEEL Model No. 70
Diam. 22 Slot Size .175 Set from 70 ft. to 78 ft.
Diam. 22 Slot Size .150 Set from 98 ft. to 118 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
5000 gal./min. with 18 ft. drawdown after 191 hrs.
" " " "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 54° Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes [ ] No [X]
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 20 ft.
Diameter of well bore to bottom of seal 30 in.
Diameter of well bore below seal 24 in.
Number of sacks of cement used in well seal 55 sacks
How was cement grout placed? PUMPED FROM BOTTOM UP AS THE CASING WAS REMOVED
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County MULT. Driller's well number 5594
SW ¼ NE ¼ Section 21 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 32 ft.
Static level 13 ft. below land surface. Date 10/13/82
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 123 ft. Depth of completed well 123 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SILTY CLAY	0	18	
GRAVEL BOULDERS AND CLAY	18	32	
GRAVEL AND SAND	32	123	

Work started AUG 18 1982 Completed OCT 26 1982
Date well drilling machine moved off of well OCT 27 1982

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Donald Johnson (Drilling Machine Operator) Date 11/4, 1982
Drilling Machine Operator's License No. 57

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.J. STRASSER DRILLING CO (Person, firm or corporation) (Type or print)
Address 9110 SE SUNSET LANE PORTLAND OREG.
[Signed] Robert L. Strasser (Water Well Contractor)
Contractor's License No. 10 Date NOV 4, 1982

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

WATER WELL REPORT
STATE OF OREGON

Per WWC: #5 - 36" dia. from +1 ft to 55 ft. Csg. 6/12/84

RECEIVED
MAY 18 1984
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 1N/3E-21bc
State Permit No. MULT 001288

(1) OWNER:
Name CITY OF PORTLAND
Address 1220 S.W. 5TH AVE
City PORTLAND State ORE. 97204

(2) TYPE OF WORK (check): WELL NO. 19
New Well X Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☐ Driven ☐
Rotary Mud ☐ Dug ☐
Cable X Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal X
Irrigation ☐ Test Well ☐ Other ☐
Thermal: ☐ Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel Threaded X ☐ Plastic Welded ☐ X

36" Diam. from +1 ft. to 55 ft. Gauge .500
31.5" Diam. from 50 ft. to 55 ft. Gauge .375
~~LINER INSTALLED:~~ 5" 103 .375
31.5" Diam. from 113 ft. to 118 ft. Gauge .375

(6) PERFORATIONS:
Perforated? ☐ Yes X No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? X Yes ☐ No
Manufacturer's Name JOHNSON
Type STAINLESS STEEL Model No.
Diam. SEE ATTACHED SHEET Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level

Was a pump test made? X Yes ☐ No If yes, by whom? STRASSER
8000 gal./min. with 22 ft. drawdown after 14 hrs.
10000 " 30 " 2 "
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes ☐ No X
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 25 ft.
Diameter of well bore to bottom of seal 42 in.
Diameter of well bore below seal 36 in.
Number of sacks of cement used in well seal 90 sacks
How was cement grout placed? PUMPED THROUGH 1¼ PIPE FROM BOTTOM UP AS THE TEMP. CASING WAS PULLED
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? X Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes X No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes X No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County MULTNOMAH Driller's well number 5601
SW ¼ NW ¼ Section 21 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 35 ft.
Static level 6 ft. below land surface. Date 4/19/84
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 123 ft. Depth of completed well 118 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SILTY CLAY	0	20	
LARGE CEMENTED GRAVEL	20	35	
GRAVEL AND BOULDERS	35	54	
LOOSE SAND AND GRAVEL	54	69	
COBBLES, SAND AND GRAVEL	69	78	
GRAVEL AND SILT	78	86	
CLAY, SOME GRAVEL	86	90	
SAND, GRAVEL AND CLAY	90	99	
GRAVEL AND SILT	99	113	
BOULDERS	113	118	
CLAY	118	123	

Work started JAN 16 19 84 Completed MAY 9 19 84
Date well drilling machine moved off of well MAY 10 19 84

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Paul O Strasser (Drilling Machine Operator) Date 5/14 19 84
Drilling Machine Operator's License No. WWC 1246

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R. W. Strasser Drilling Co. (Person, firm or corporation) (Type or print)
Address 8110 S.E. Sunset Lane, Portland OR. 97206
[Signed] Robert L Strasser (Water Well Contractor)
Contractor's License No. 10 Date MAY 14, 19 84

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

WELL No. 19 SCREEN

DIA.	31.5	SLOT SIZE	125	FROM	55	TO	57
DIA.	31.5	SLOT SIZE	200	FROM	57	TO	64
DIA.	31.5	SLOT SIZE	125	FROM	64	TO	69
DIA.	31.5	SLOT SIZE	200	FROM	69	TO	74
DIA.	31.5	SLOT SIZE	150	FROM	74	TO	83
DIA	31.5	SLOT SIZE	125	FROM	83	TO	84
DIA.	31.5	SLOT SIZE	30	FROM	103	TO	104
DIA	31.5	SLOT SIZE	60	FROM	104	TO	113
DIA	31.5						

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
OCT 26 1978
WATER RESOURCES DEPT.
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

MULT 001295

State Well No. 1N/3E-21d6
State Permit No.

(1) OWNER:
Name Richard A. DelPizzo
Address 10400 S. E. 98th Ct., Portland, Or. 97266

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [ ] Driven [ ]
Cable [X] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [XX]
Irrigation [ ] Test Well [ ] Other [ ]

CASING INSTALLED:
Threaded [ ] Welded [X]
8" Diam. from +2 ft. to 130 ft. Gage 0.250
6" Diam. from 120 ft. to 173 ft. Gage 0.250
" Diam. from ft. to ft. Gage

PERFORATIONS:
Perforated? [X] Yes [ ] No.
Type of perforator used Torch
Size of perforations 12 in. by 1/4 in.
88 perforations from 130 ft. to 168 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [ ] Yes [X] No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? Steinman Bros. Dr. Co.
Yield: 200 gal./min. with 33 ft. drawdown after 24 hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 54° Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement
Well sealed from land surface to 26 ft.
Diameter of well bore to bottom of seal 12 in.
Diameter of well bore below seal 10 in.
Number of sacks of cement used in well seal 55 sacks
How was cement grout placed? Pumped through a one inch pipe between 12 inch and 8 inch casing

Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [X] Yes [ ] No Size of gravel: 3/8" minus
Gravel placed from 26 ft. to 170 ft.

(10) LOCATION OF WELL:
County Multnomah Driller's well number 52-78
NW 1/4 SE 1/4 Section 21 T. 1N R. 3E W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 135 ft.
Static level 45 ft. below land surface. Date 10/11/78
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing ---
Depth drilled 173 ft. Depth of completed well 170 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Silt, brown	0	8	
Silt, grey with lenses	8	18	
Siltstone, dark grey	18	36	
Conglomerate	36	93	
Grey Silt	93	97	
Conglomerate	97	104	
Clay, grey	104	135	
Sandstone, green & grey	135	164	45
Conglomerate	164	—	

Work started Sept. 25 19 78 Completed Oct. 19 19 78
Date well drilling machine moved off of well Oct. 20 19 78

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Steinman Bros. (Drilling Machine Operator) Date Oct. 20, 19 78
Drilling Machine Operator's License No. 54

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Steinman Bros. Drilling Co. (Person, firm or corporation) (Type or print)
Address 11912 S.E.Kellogg Ave., Milwaukie, Or. 97222
[Signed] Robert E. McConnell (Water Well Contractor)
Contractor's License No. 1 Date Oct. 20, 19 78

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

WATER WELL CONTRACTOR
Original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

WATER WELL REPORT

STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
MAR 8 1968
STATE ENGINEER
SALEM, OREGON

RECEIVED
FEB 28 1968
STATE ENGINEER
SALEM, OREGON

(returned to sign) 1/3/68

State Well No. 1N/3E-21 MULT

State Permit No. 001298

(1) OWNER:

Name Interlachen, Inc.

Address Rt. 2 Troutdale, Oregon 97060

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

CASING INSTALLED:

Threaded ☐ Welded ☒

10 " Diam. from 0 ft. to 220 ft. Gage .250

" Diam. from ft. to ft. Gage

" Diam. from ft. to ft. Gage

PERFORATIONS:

Perforated? ☒ Yes ☐ No.

Type of perforator used Star 4 way drive down

Size of perforations 3/8 in. by 1½ in.

360 perforations from 201 ft. to 216 ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(8) WATER LEVEL: Completed well.

Static level 10 ft. below land surface Date 10/12/67

Artesian pressure lbs. per square inch Date

(9) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom? BOTTNER DRLNG.CO

Yield: 200 gal./min. with 18 ft. drawdown after 8 hrs.

" 300 " 23 " 12 "

" 350 to 380 a little fine gray sand 27 " 2 "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(10) CONSTRUCTION:

Well seal—Material used cement, sand & gravel

Depth of seal 28 ft.

Diameter of well bore to bottom of seal 12 in.

Were any loose strata cemented off? ☐ Yes ☒ No Depth

Was a drive shoe used? ☒ Yes ☐ No

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

(11) LOCATION OF WELL:

County Multnomah Driller's well number

¼ ¼ Section 21 T. 1N R. 3E W.M.

Bearing and distance from section or subdivision corner

Fairview County Club Estate
Lot No. 5

(12) WELL LOG:

Diameter of well below casing 10"

Depth drilled 226 ft. Depth of completed well 226 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level as drilling proceeds. Note drilling rates.

MATERIAL	From	To	SWL
Clay, brown, sandy	0	13	
Sandrock, gray	13	35	
Sand & gravel, water bearing 10 GPM	35	55	
Gravel, cemented	55	78	
Clay, blue	78	114	
Clay, sandy with gravel water 20GPM at 116 ft	114	130	
Gravel, cemented and boulders, water brng.	130	183	
Sand, gray, some gravel water bearing	183	199	
Gravel & sand, water bearing, bailed 60 GPM at 4ft. draw down	199	220	
Gravel, cemented	220	226	

Work started Aug. 16 19 67 Completed Oct. 17 19 67

Date well drilling machine moved off of well Oct. 23 19 67

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] Not Available (Drilling Machine Operator) Date 3-6-, 1968

Drilling Machine Operator's License No. 116 & 463

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME HAAKON BOTTNER DRILLING COMPANY (Person, firm or corporation) (Type or print)

Address 3424 S.E. 174th. AVE. PORTLAND, ORE

[Signed] Haakon Bottner (Water Well Contractor)

Contractor's License No. 109 Date 1/3/, 1968

(USE ADDITIONAL SHEETS IF NECESSARY)

STATE ENGINEER
Salem, Oregon

Well Record

MULT
001304

STATE WELL NO. 1N/3-21P
COUNTY Multnomah
APPLICATION NO. GR-3915

OWNER: Interlachen, Inc.

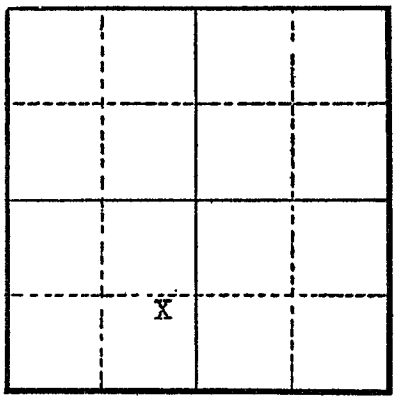
MAILING ADDRESS: Route 2, Box 289

CITY AND STATE: Troutdale, Oregon

LOCATION OF WELL: Owner's No. .....

SE ¼ SW ¼ Sec. 21 T. 1 N., R. 3 E., W.M.

Bearing and distance from section or subdivision corner 250' W. & 1200' N. from S¼ Cor. Sec. 21



Altitude at well .....

TYPE OF WELL: Drilled Date Constructed 4/42

Depth drilled 109 ft. Depth cased 109 ft.

Section 21

CASING RECORD:

8 inch casing from 1 to 109 feet

FINISH:

AQUIFERS:

WATER LEVEL:

11 feet below surface

PUMPING EQUIPMENT: Type 2" x 2½" Advance jet H.P. 2
Capacity 30 G.P.M.

WELL TESTS:
Drawdown 59 ft. after ..... hours 33 G.P.M.
Drawdown 104 ft. after ..... hours 59 G.P.M.

USE OF WATER Municipal Temp. ..... °F. ....., 19....
SOURCE OF INFORMATION Well Registration Statement Cert. # GR-3766
DRILLER or DIGGER O. B. Olson
ADDITIONAL DATA:
Log ..... Water Level Measurements ..... Chemical Analysis ..... Aquifer Test .....

REMARKS:

State Printing 89316

WATER WELL REPORT
STATE OF OREGON

RECEIVED
AUG 28 1980
WATER RESOURCES DEPT
SALEM, OREGON

MULT
OC1340

State Well No. 1N/3E-25cb

State Permit No. .....

(1) OWNER:
Name CITY OF TROUTDALE
Address 104 KIBLING ST.
City TROUTDALE State ORE 97060

(2) TYPE OF WORK (check): WELL No 4.
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
[ ] Rotary Air [ ] Driven [ ]
[ ] Rotary Mud [ ] Dug [ ]
[X] Cable [X] Bored [ ]

(4) PROPOSED USE (check):
[ ] Domestic [ ] Industrial [ ] Municipal [X]
[ ] Irrigation [ ] Test Well [ ] Other [ ]
[ ] Thermal: [ ] Withdrawal [ ] Reinjection [ ]

(5) CASING INSTALLED:
Steel [X] Threaded [ ] Plastic [ ] Welded [X]
16" Diam. from 0 ft. to 38 ft. Gauge .375
12" Diam. from +2 ft. to 494 ft. Gauge .330

LINER INSTALLED:
6" Diam. from 468 ft. to 493 ft. Gauge .250
6" Diam. from 563 ft. to 571 ft. Gauge .250

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name UOP JOHNSON
Type STAINLESS STEEL Model No. .....
Diam. 6 Slot Size 30 Set from 493 ft. to 563 ft.
Diam. WITH 5 FT. OF 6IN PIPE BETWEEN Slot Size Set from ft. to ft.
EACH 10 FT. SECTION OF SCREEN

WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
Yield: 590 gal./min. with 52 ft. drawdown after 24 hrs.
" " " "
[illegible]test gal./min. with drill stem at ft. hrs.
[illegible]er test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 61° Depth artesian flow encountered ..... ft.

(9) CONSTRUCTION:
Special standards: Yes [ ] No [X]
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 18 FT. 38-45 64-75 ft.
Diameter of well bore to bottom of seal 20 AND 16 in.
Diameter of well bore below seal 12 in.
Number of sacks of cement used in well seal 95 sacks
How was cement grout placed? PUMPED THROUGH ONE INCH GROUT PIPE FROM BOTTOM UP IN EACH ZONE
Was pump installed? NO Type ..... HP ..... Depth ..... ft.
Was a drive shoe used? [X] Yes [ ] No Plugs ..... Size: location ..... ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? [X] Yes [ ] No Size of gravel: NO 8 MONTEREY SAND
Gravel placed from 469 ft. to 571 ft.

(10) LOCATION OF WELL:
County MULT. Driller's well number 5570
NW ¼ SW ¼ Section 25 T. 1N R. 3E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location: CITY SHOP TROUTDALE, ORE.

(11) WATER LEVEL: Completed well.
Depth at which water was first found 287 ft.
Static level 118 ft. below land surface. Date 7/30/80
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 573 ft. Depth of completed well 571 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SEE ATTACHED SHEET			

Work started APR 1 1980 Completed AUG 7 1980
Date well drilling machine moved off of well AUG 8 1980

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Jerry Johnson (Drilling Machine Operator) Date 8/27, 1980
Drilling Machine Operator's License No. 911

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.J. STRASSER DRILLING CO (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND ORE
[Signed] Robert J. Strasser (Water Well Contractor)
Contractor's License No. 10 Date AUG 27, 1980

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with
WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310
within 30 days from the date

1N/3G-25cb

Phone: 771-2355

R. J. Strasser Drilling Co.

8110 S. E. Sunset Lane
Portland, Oregon 97206

August 20, 1980

RECEIVED
AUG 28 1980
WATER RESOURCES DEPT
SALEM, OREGON

Log of well No. 4 City of Troutdale

brown sand	0 - 9
cemented gravel	9 - 18
sand and gravel	18 - 23
cemented gravel	23 - 94
brown clay	94 - 100
blue clay	100 - 148
blue and brown clay	148 - 155
blue clay	155 - 218
cemented gravel	218 - 287
sand	287 - 296
blue clay	296 - 302
grey clay	302 - 313
blue and brown clay	313 - 328
grey clay and seams	328 - 348
green clay	348 - 356
conglomerate	356 - 365
cemented gravel	365 - 392
sand and gravel	392 - 405
silty clay	405 - 417
sand and clay stone	417 - 419
sand, silt, some gravel	419 - 485
green sandstone	485 - 486
sand, silt, and gravel	486 - 570
brown sand and claystone	570 - 573

STATE ENGINEER
Salem, Oregon

MULT
001426

Well Record

GR- 1537

STATE WELL NO. 1N/3-34A
COUNTY Multnomah
APPLICATION NO. GR- 1589

OWNER: City of Wood Village

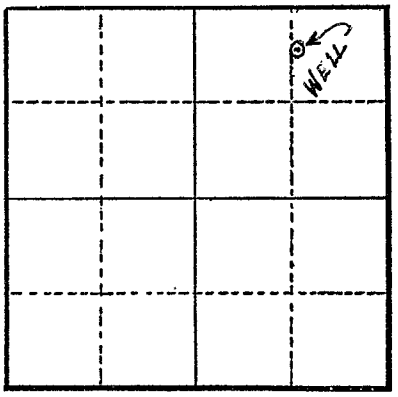
MAILING ADDRESS: Wood Village City Hall

CITY AND STATE: Troutdale, Oregon

LOCATION OF WELL: Owner's No.

NE ¼ NE ¼ Sec. 34 T. 1 ~~S~~ N. R. 3 ~~W~~ E., W.M.

Bearing and distance from section or subdivision corner 1225' W. & 580' S. from NE cor. Sec. 24



Altitude at well 168'

TYPE OF WELL: Drilled Date Constructed 1942

Depth drilled 360' Depth cased 355'

Section 34

CASING RECORD:
10" from 0 to 170 ft.
8" from 170 to 355 ft.

FINISH:
Perforated from: 170 to 180 ft.
284 to 294 ft.
340 to 355 ft.

AQUIFERS:

WATER LEVEL:
65'

PUMPING EQUIPMENT: Type Pomona deep well turbine H.P. 20
Capacity 200 G.P.M.

WELL TESTS:
Drawdown 100 ft. after hours 200 G.P.M.
Drawdown ft. after hours G.P.M.

USE OF WATER Municipal Temp. °F., 19
SOURCE OF INFORMATION GR Record
DRILLER or DIGGER R. J. Strasser
ADDITIONAL DATA:
Log Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

Log:		
	Top soil	0 to 15 ft.
	Gravel & boulders	15 to 40 ft.
	Boulders	40 to 83 ft.
	Cemented gravel	83 to 103 ft.
	Cemented gravel	103 to 290 ft.
	Loose gravel	290 to 294 ft.
	Sandstone	294 to 330 ft.
	Gray sandstone	330 to 350 ft.
	Sandstone	350 to 360 ft.

State Printing 89316

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
MAY 18 1979
WATER RESOURCES DEPT.
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

MULT
State Well No. 35/+ 1N/3E-35ac
State Permit No. 50429

(1) OWNER:
Name CITY OF TROUTDALE
Address 104 KIBLING ST. TROUTDALE, ORE.

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [ ] Driven [ ]
Cable [X] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]

CASING INSTALLED:
Threaded [ ] Welded [X]
12" Diam. from +2 ft. to 508 ft. Gage .330
8" Diam. from 499 ft. to 510 ft. Gage .277
8" Diam. from 530 ft. to 535 ft. Gage .277
8" Diam. from 545 ft. to 550 ft. Gage .277

PERFORATIONS:
Perforated? [ ] Yes [X] No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name JOHNSON
Type STAINLESS STEEL Model No.
Diam. 8 Slot size 60 Set from 510 ft. to 530 ft.
Diam. 8 Slot size 60 Set from 535 ft. to 545 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
Yield: 500 gal./min. with 101 ft. drawdown after 8 hrs.
" " "
" " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 57° Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 60 ft.
Diameter of well bore to bottom of seal 16 in.
Diameter of well bore below seal 12 in.
Number of sacks of cement used in well seal 105 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [X] Yes [ ] No Size of gravel: NO 6 MONTEREY SAND
Gravel placed from 481 ft. to 550 ft.

(10) LOCATION OF WELL:
County MULT. Driller's well number 5548
SW¼ NE¼ Section 35 T. 1N R. 3E W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 334 ft.
Static level 288 ft. below land surface. Date 4/2/79
Artesian pressure [redacted] lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 615 ft. Depth of completed well 550 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
TOP SOIL	0	2	
GRAVEL AND CLAY	2	12	
CEMENTED GRAVEL	12	75	
LOOSE GRAVEL	75	81	
CLAY AND GRAVEL	81	92	
RED, BROWN AND GREY CLAY	92	131	
CEMENTED SAND AND GRAVEL	131	334	
SAND AND GRAVEL	334	339	
CEMENTED GRAVEL	339	356	
SAND AND GRAVEL	356	370	
BROWN AND YELLOW CLAY	370	393	
SANDSTONE	393	403	
BROWN, BLUE AND GREY CLAY	403	497	
SANDSTONE	497	503	
SAND, GRAVEL AND SILT	503	569	
BROWN SANDY CLAY	569	574	
CEMENTED GRAVEL	574	596	
BLUE GREY CLAY	596	615	

Work started DEC 27 1978 Completed APR 11 1979
Date well drilling machine moved off of well APR 11 1979

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Paul O Rydman (Drilling Machine Operator) Date MAY 16, 1979
Drilling Machine Operator's License No. 53

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R.J. STRASSER DRILLING CO. (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LAKE PORTLAND ORE
[Signed] Robert L Strasser (Water Well Contractor)
Contractor's License No. 10 Date MAY 16, 1979

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

MULT 001430

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
OCT 15 1976
WATER RESOURCES DEPT.

State Well No. 1N/3E-35cc
State Permit No.

(1) OWNER:
Name CITY OF TROUTDALE
Address TROUTDALE, ORE.

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [ ] Driven [ ]
Cable [X] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]

CASING INSTALLED:
Threaded [X] Welded [X]
12" Diam. from 0 ft. to 280 ft. Gage .330
10" Diam. from +2 ft. to 448 ft. Gage .279
9.5" Diam. from 445 ft. to 450 ft. Gage .250
9.5" Diam. from 480 ft. to 485 ft. Gage .250

PERFORATIONS:
Perforated? [ ] Yes [X] No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [X] Yes [ ] No
Manufacturer's Name U.O.P. JOHNSON
Type STAINLESS STEEL Model No.
Diam. 10 Slot size 20 Set from 450 ft. to 456 ft.
Diam. 10 Slot size 35 Set from 456 ft. to 480 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
Yield: 350 gal./min. with 79 ft. drawdown after 11 hrs.
" " "
" " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 54° Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 65 ft.
Diameter of well bore to bottom of seal 16 in.
Diameter of well bore below seal 10 in.
Number of sacks of cement used in well seal 90 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County MULT Driller's well number 5521
SW¼ SW¼ Section 35 T. 1N R. 3E W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 446 ft.
Static level 256 ft. below land surface. Date 9/15/76
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 485 ft. Depth of completed well 485 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
TOP SOIL	0	3	
SANDY SILT AND CLAY	3	8	
CLAY GRAVEL AND BOULDERS	8	44	
CEMENTED GRAVEL	44	72	
SAND AND GRAVEL	72	100	
SAND, GRAVEL AND CLAY	100	126	
CEMENTED GRAVEL	126	208	
SAND AND GRAVEL	208	212	
CEMENTED GRAVEL	212	278	
BOULDERS	278	284	
SAND, GRAVEL AND GREEN CLAY	284	320	
SAND, GRAVEL AND BLACK CLAY	320	346	
SAND, GRAVEL AND CLAY	346	386	
GREEN SANDSTONE	386	412	
CEMENTED SAND AND GRAVEL	412	446	
SAND AND GRAVEL	446	480	
GREY CLAY AND GRAVEL	480	485	

Work started JULY 19 1976 Completed SEPT 20 1976
Date well drilling machine moved off of well SEPT. 21, 1976

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Harold C. Smith (Drilling Machine Operator) Date 10/12, 1976
Drilling Machine Operator's License No. 175

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name R. J. STRASSER DRILLING CO (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LAKE PORTLAND, ORE
[Signed] Robert L Strasser (Water Well Contractor)
Contractor's License No. 10 Date OCT. 12, 1976

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
FEB 5 1970
STATE ENGINEER
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

MULT
061431

State Well No. 1N/3-35bd
State Permit No.

(1) OWNER:
Name CITY OF WOOD VILLAGE
Address 2055 NE 238TH DR, TROUTDALE, ORE.

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [ ] Driven [ ]
Cable [X] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]

CASING INSTALLED:
Threaded [ ] Welded [X]
12 " Diam. from 0 ft. to 458 ft. Gage .330
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS:
Perforated? [X] Yes [ ] No.
Type of perforator used STAR
Size of perforations 3/8 in. by 1/4 in.
400 perforations from 439 ft. to 449 ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [ ] Yes [X] No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WATER LEVEL: Completed well.
Static level 250 ft. below land surface Date 12/29/69
Artesian pressure lbs. per square inch Date

(9) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
Yield: 313 gal./min. with 83 ft. drawdown after 24 hrs.
200 " 57 " 25 "
2ND TEST 490 " 166 " 8 "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 54° Was a chemical analysis made? [X] Yes [ ] No

(10) CONSTRUCTION:
Well seal—Material used CEMENT GROUT
Depth of seal FROM SURFACE TO 61 ft.
Diameter of well bore to bottom of seal 16 in.
Were any loose strata cemented off? [ ] Yes [X] No Depth
Was a drive shoe used? [X] Yes [ ] No
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(11) LOCATION OF WELL:
County MULT. Driller's well number 5231
SE ¼ NW ¼ Section 35 T. 1N. R. 3E. W.M.
Bearing and distance from section or subdivision corner

(12) WELL LOG:
Diameter of well below casing 12
Depth drilled 546 ft. Depth of completed well 458 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level as drilling proceeds. Note drilling rates.

MATERIAL	From	To	SWL
GRAVEL AND BOULDERS	0	51	
GRAVEL AND BROWN CLAY	51	78	
BROWN SAND AND CLAY	78	128	
GRAVEL AND CLAY	128	146	
CEMENTED GRAVEL	146	258	
GRAVEL, SOME BINDER	258	270	
CEMENTED GRAVEL	270	279	
LARGE GRAVEL	279	291	
CEMENTED GRAVEL	291	438	
BROWN SAND AND GRAVEL	438	440	
WATER BEARING GRAVEL	440	450	
GREY SHALE	450	546	

Work started SEPT 18 1969 Completed FEB 2 1970
Date well drilling machine moved off of well FEB 3 1970

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Donald J Johnson (Drilling Machine Operator) Date FEB 4, 1970
Drilling Machine Operator's License No. 56

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME R J STRASSER DRILLING CO (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND ORE
[Signed] Robert L. Strasser (Water Well Contractor)
Contractor's License No. 10 Date FEB 4, 1970

(USE ADDITIONAL SHEETS IF NECESSARY)

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310, within 30 days from the date of well completion.

RECEIVED
APR 8 1980
WATER RESOURCES DEPT
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print) (Do not write above this line)

MULT 002418

State Well No. 1s/3E -27 da
State Permit No.

(1) OWNER:
Name City of Wood Village
Address Multnomah County, Oregon

(2) TYPE OF WORK (check):
New Well XX Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal XX
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:
Threaded ☐ Welded XX
12 " Diam. from 0 ft. to 200 ft. Gage 375
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:
Perforated? ☐ Yes XX No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? XX Yes ☐ No
Manufacturer's Name Johnson
Type stainless steel Model No.
Diam. 10P Slot size .250 Set from 200 ft. to 230 ft.
Diam. 10P Slot size .250 Set from 245 ft. to 255 ft.
10P .250 270 280

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? XX Yes ☐ No If yes, by whom? Aqua Pump
250 gal./min. with 20 ft. drawdown after 1/2 hrs.
350 " 26 " 1/2 "
" 500 " 57 " 24 hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used cement
Well sealed from land surface to 22 inch 25 feet
16 inch 25 feet ft.
Diameter of well bore to bottom of seal 12 22 in. & 16 in
Diameter of well bore below seal 12 in.
Number of sacks of cement used in well seal 58 sacks
How was cement grout placed? pressure pumped

Was a drive shoe used? XX Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes XX No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes XX No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Multnomah Driller's well number D 280-80
N E ¼ S E ¼ Section 27 T. 1S R. 3E W.M.
Bearing and distance from section or subdivision corner
1510 feet N. 1290 feet W of SE corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 15 ft.
Static level 98 ft. below land surface. Date 4/8/80
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 12
Depth drilled 300 ft. Depth of completed well 300 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
topsoil	0	2	
clay brown & sandy	2	14	
gravel water bearing	14	16	
gravel cemented	16	28	
gravel, sand boulders	28	60	
gravel & sand cemented	60	110	
sand & gravel	110	135	
gravel & sand water/b	135	230	
sand brown water bearing	230	245	
gravel & sand water/b	245	257	
sand brown fine	257	270	
claystone gray water/b	270	285	
clay gray	285	300	

Work started 1/3/80 19 Completed 3/28/80 19
Date well drilling machine moved off of well 4/8/80 19

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Ivan Grossen (Drilling Machine Operator) Date 4/8/80, 19
Drilling Machine Operator's License No. 1306

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name S & M Drilling & Supply Inc. (Person, firm or corporation) (Type or print)
Address 399 S E Walnut Canby, Ore 97013
[Signed] Walter Mace (Water Well Contractor)
Contractor's License No. 497 Date 4/8/80, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

RECEIVED

JUN 26 1997

WATER RESOURCES DEPT.
SALEM, OREGON

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

mult 53796

WELL I.D.# L04874

(START CARD) # 95675

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number PMY410R

Name Terand Mobile Terrace

Address 2648 NE 201st

City Troutdale State OR Zip 97060

(2) TYPE OF WORK

☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger

☐ Other

(4) PROPOSED USE:

☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☒ No Depth of Completed Well 308 ft.

Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
16	0	141				
12	141	308	Cement	4	225	200 SACKS
			Bent	0	4	4 bags

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from _____ ft. to _____ ft. Material _____

Gravel placed from 308 ft. to 235 ft. Size of gravel 8-12

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8		308	.25	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) 308

(7) PERFORATIONS/SCREENS:

☐ Perforations Method _____

☒ Screens Type VRAP Material SS.

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
286.5	266	.40		8		☐	☐
245	235	.40		8		☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
150		155	1 hr.

Temperature of water 56 Depth Artesian Flow Found _____

Was a water analysis done? ☐ Yes By whom _____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: _____

(9) LOCATION OF WELL by legal description:

County Multnomah Latitude _____ Longitude _____

Township 1N N or S Range 3E E or W. WM.

Section 29 NE 1/4 SE 1/4

Tax Lot 300/400 Block _____ Subdivision _____

Street Address of Well (or nearest address) Same as mailing

(10) STATIC WATER LEVEL:

60 ft. below land surface. Date 6/16/97

Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 160

From	To	Estimated Flow Rate	SWL
160	193	125 GPM	60

(12) WELL LOG:

Ground Elevation _____

Material	From	To	SWL
Top Soil	0	1	
Sand silt brown	1	18	
Sandstone black	18	57	
Gravels & silty sand	57	130	
Silt gray	130	136	
Silt clay green	136	160	
Sandstone black brn	160	173	WB
Gravels fine-med black	173	193	WB
Gravels cemented	193	235	
Sand fine med gravels Sm	235	243	WB
Gravels cemented	243	273	
Gravels & sand med	273	288	WB
Sand fine brn	288	299	WB
Gravels large blk	299	308	WB

RECEIVED
NOV - 3 1998
WATER RESOURCES DEPT
SALEM, OREGON

Date started 5/30/97 Completed 6/16/97

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number 1672

Signed [signature] Date 6-23-97

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1358

Signed [signature] Date 6-24-97

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

RECEIVED

AUG 25 1999

WATER RESOURCES DEPT.
SALEM, OREGON

STATE OF OREGON WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

MULT 58802

WELL I.D. # L 27194

START CARD # 119226

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number

Name JOHN SIMPSON/SANDY BLVD MOBILE VILLA

Address 20140 NE SANDY BLVD #85

City FAIRVIEW State OR Zip 97024

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD:

[ ] Rotary Air [ ] Rotary Mud [X] Cable [ ] Auger

[ ] Other

(4) PROPOSED USE:

[ ] Domestic [X] Community [ ] Industrial [ ] Irrigation

[ ] Thermal [ ] Injection [ ] Livestock [ ] Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval [ ] Yes [X] No Depth of Completed Well 320 ft.

Explosives used [ ] Yes [X] No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
24	0	35	CEMENT	0	230	470 SACKS
20	35	135				
16	135	220				
12	220	320				

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E

[ ] Other

Backfill placed from ____ ft. to ____ ft. Material ____

Gravel placed from 320 ft. to 230 ft. Size of gravel 10-20/8-12

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8	+1	261	.250	X		X	
	8	276	286	.250	X		X	
Liner:	8	315	320	.250	X		X	

Final location of shoe(s) 255.5 & 260.5

(7) PERFORATIONS/SCREENS:

[ ] Perforations Method ____

[X] Screens Type V-WIRE Material S.S.

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
261	276	025		8"	p/s	[ ]	[ ]
286	315	040		8"	p/s	[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour

[X] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
275	87		24

Temperature of water 56 Depth Artesian Flow Found ____

Was a water analysis done? [ ] Yes By whom ____

Did any strata contain water not suitable for intended use? [ ] Too little

[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [ ] Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County MULT. Latitude ____ Longitude ____

Township 1N N or S Range 3E E or W. WM.

Section 28 SW 1/4 NW 1/4

Tax Lot 058 Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) ____

20140 NE SANDY BLVD, SPACE #15

(10) STATIC WATER LEVEL:

72' ft. below land surface. Date 8-2-99

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found 65'

From	To	Estimated Flow Rate	SWL
65	121		61
153	212		67
235	315	300+	72

(12) WELL LOG:

Ground Elevation ____

Material	From	To	SWL
SEE ATTACHED SHEET			

Westerberg Drilling, Inc.
36728 S. Kropf Rd.
Molalla, OR 97038
829-2526

Date started 6-9-99 Completed 7-30-99

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number 1487

Signed ____ Date 8-2-99

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 688

Signed Steven N. Stadeli Date 8-2-99

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

RECEIVED
AUG 25 1999
WATER RESOURCES DEPT.
SALEM, OREGON

MULT 58802

36728 S. Kropf Rd., Molalla, OR 97038 • Phone: (503) 829-2526 FAX (503) 829-7514

JOHN SIMPSON/SANDY BLVD MOBILE VILLA
20140 NE SANDY BLVD #85
FAIRVIEW, OR 97024

201 NE SANDY BLVD, SPACE #15
MULTNOMAH T1N R3E SEC 28 SW¼ NW¼ TAX LOT# 058

WELL LOG:

MATERIAL:	FROM:	TO:
soil brn	0	2
silt brn	2	7
sandstone yellow brn hard	7	14
sand course gravel fine grey tightly cemented	14	47
gravel course cemented basaltic	47	56
gravel grey med to fine w/brn silica matrix cemented	56	91
gravel brn w/clay	91	97
sand & gravel brn cemented dirty small	97	121
clay grey & brn w/gravel	121	126
mudstone grey blue dense	126	151
gravel grey clayey	151	153
sand crse gravel fine very cemented grey	153	181
gravel course cemented	181	184
gravel med to fine cemented	184	212
gravel grey med to course clay grey	212	219
gravel med w/silt	219	235
sand brn fine w/mica & small gravel silty	235	243
gravel med cemented	243	251
sand mica fine brn	251	253
sand brn fine w/scattered gravel	253	260
gravel course cemented	260	264
gravel grey med to small w/sand cemented slightly	264	274
silt grey	274	281
siltstone grey sandy firm	281	286
sand grey very fine packed	286	290
gravel grey med cemented	290	294
sand & gravel med grey	294	302
gravel grey cemented	302	306
gravel med sand fine loosly cemented	306	309
gravel grey med cemented	309	314
gravel grey dense small	314	320

MULT 63853

Mult 63853 Amended Well Report

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

WELL I.D. # L 40427
START CARD # 132773

(1) LAND OWNER Well Number 36
Name City of Portland
Address 1120 SW 5th AVE.
City PORTLAND State OR Zip 97204

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☒ Yes ☐ No Depth of Completed Well 521.5 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
28"	0	60	Cement	0	119	2,337 SACKS
24"	60	398	CEMENT	129	380	↓ ↓
			BENT CHIPS	119	129	85 SACKS
20"	398	521.5				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	24"	+4	60		☒	☐	☒	☐
	20"	-4	398		☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☒ Screens Type V-WIRE Material SS

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
378	393	40		12"	PIPE SIZE	☐	☐
393	398	0		12"	PIPE SIZE	☐	☐
398	510	40		12"	PIPE SIZE	☐	☐
510	521.5	0		12"	PIPE SIZE	☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1,200-3,000	32' to 97'		4 hr.
3,046	104'		28 hr

Temperature of water 57° Depth Artesian Flow Found
Was a water analysis done? ☒ Yes By whom City of Portland
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Multnomah Latitude Longitude
Township 1 ☐ N or S Range 3 ☐ E or W. WM.
Section 19 SW 1/4 NE 1/4
Tax Lot 1300 Lot Block Subdivision
Street Address of Well (or nearest address) 16400 NE Airport Way Portland

(10) STATIC WATER LEVEL:
15 ft. below land surface. Date 4-25-01
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found 20'

From	To	Estimated Flow Rate	SWL
20	145	NA	NA
220	330	NA	NA
386	521	3,000 GPM	15'

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
See Attached Formation Log			

RECEIVED
JAN 10 2002
WATER RESOURCES DEPT.
SALEM, OREGON

Date started 12-12-00 Completed 4-25-01

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1523
Signed Date 1/8/02

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 464
Signed Date 1/8/02

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

MULT 63853

RECEIVED

MAY 21 2001

WATER RESOURCES DEPT
SALEM, OREGON

Amendment

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)
Instructions for completing this report are on the last page of this form.

WELL I.D. # L 40427
START CARD # 132773

(1) LAND OWNER Well Number 3C
Name City of Fer Hand Water Partner
Address 1120 S.W. 5th Ave, Rm 825
City Portland State OR Zip 97204

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

RECEIVED
AUG 08 2001
WATER RESOURCES DEPT
SALEM, OREGON

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☒ Yes ☐ No Depth of Completed Well 520 ft.
Explosives used ☐ Yes ☒ No Type Amount

BORE HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
28	0	60	Cement	0	60	7
24	60	398	Cement	60	380	237 Sacks
20	387	521				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	24	+4	60		☒	☐	☒	☐
	~~24~~	~~398~~			☐	☐	☐	☐
	20	-4	398		☒	☐	☒	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☒ Screens Type V wire Material SS

From	To	Slot size	Number	Diameter	Telescope/pipe size	Casing	Liner
378	393	40		12"	Pipe	☐	☐
393	398	0		12"	Pipe	☐	☐
398	510	40		12"	Pipe	☐	☐
510	520	0		12"	Pipe	☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1200	32	370	1 hr.
3046	104	370	28 hr.
3000	37	370	1 hr

Temperature of water 57° Depth Artesian Flow Found
Was a water analysis done? ☒ Yes By whom Client
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata

(9) LOCATION OF WELL by legal description:
County Multnomah Latitude Longitude
Township 1 N or S Range 3 E or W WM.
Section 19 SW 1/4 NE 1/4
Tax Lot 130 Lot Block Subdivision
Street Address of Well (or nearest address) 16400 NE Airport Way

(10) STATIC WATER LEVEL:
15 ft. below land surface. Date 4-25-01
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found 20'

From	To	Estimated Flow Rate	SWL
20	145	NA	NA
220	330	NA	NA
386	521	3000 GPM	15'

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
Silt brown	0	10	
Silt brown with Sand gravel	10	20	
Gravel fine to coarse	20	114	
Sand and Gravels gray	114	145	
Clay silty gray	145	165	
Silt clay gray	165	195	
Clay Brown	195	200	
Sand fine Med black	200	215	
Silt gravel gray fine sand	215	220	
Sand stone Cobble gravel	220	265	
Sand gravel	265	330	
Clay silt boulder gray	330	386	
Sand fine gray	386	395	
Gravel sand gray black	395	400	
Sand gravel fine Med	400	414	
Gravel sand dark gray	414	422	
Gravel interbedded sand	422	450	
Sand Sandgravel fine med	450	466	
Sand gravel Med	466	521	

Date started 12/7/00 Completed 4/25/01

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1672
Signed Date 5/18/01

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number
Signed Date 5/18/01

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

MULT 63853

RECEIVED
MAY 2 1 2001
WATER RESOURCES DEPT
SALEM, OREGON

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

WELL I.D. # L 40427
START CARD # 132773

(1) LAND OWNER Well Number 3C
Name City of Portland
Address 1120 S.W. 5th Ave, Rm 825
City Portland State OR Zip 97204

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☒ Yes ☐ No Depth of Completed Well 520 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
28	0	60	Cement	0	60	337 Sacks
24	60	398	Cement	60	380	
20	389	521				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	24	+4	60		☒	☐	☒	☐
	~~4~~	~~398~~			☐	☐	☐	☐
	20	-4	398		☒	☐	☒	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☒ Screens Type V Wire Material SS

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
378	393	40		12"	Pipe	☐	☐
393	398	0		12"	Pipe	☐	☐
398	510	40		12"	Pipe	☐	☐
510	520	0		12"	Pipe	☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1200	32	370	1 hr.
3,046	104	370	28 hrs.
3000	37	370	1hr

Temperature of water 57° Depth Artesian Flow Found
Was a water analysis done? ☒ Yes By whom Client
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Multnomah Latitude Longitude
Township 1 ☐ N or ☒ S Range 3 ☒ E or ☐ W. WM.
Section 19 SW 1/4 NE 1/4
Tax Lot 1300 Lot Block Subdivision
Street Address of Well (or nearest address) 16400 NE Airport Way

(10) STATIC WATER LEVEL:
15 ft. below land surface. Date 4-25-01
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found 20'

From	To	Estimated Flow Rate	SWL
20	145	NA	NA
220	330	NA	NA
386	521	3,000 GPM	15'

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
Silt brown	0	10	
Silt brown with Sand gravel	10	20	
Gravel Fine to Coarse	20	114	
Sand and Gravel grey	114	145	
Clay silty grey	145	165	
Silt clay grey	165	195	
Clay Brown	195	200	
Sand Fine Med black	200	215	
Silt green-grey Trace Sand	215	220	
Sand Stone Coarse gravel	220	265	
Sand - gravel	285	330	
Clay silt loose green/grey	330	386	
Sand Fine grey	386	395	
Gravel-Sand grey black	395	400	
Sand gravel Fine - Med.	400	414	
Gravel Sand dark grey	414	422	
Gravel interbedded Sand	422	450	
Sand Some gravel Fine-Med.	450	466	
Sand gravel Mud	466	521	

Date started 12/12/00 Completed 4/25/01

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1672
Signed Date 5/18/01

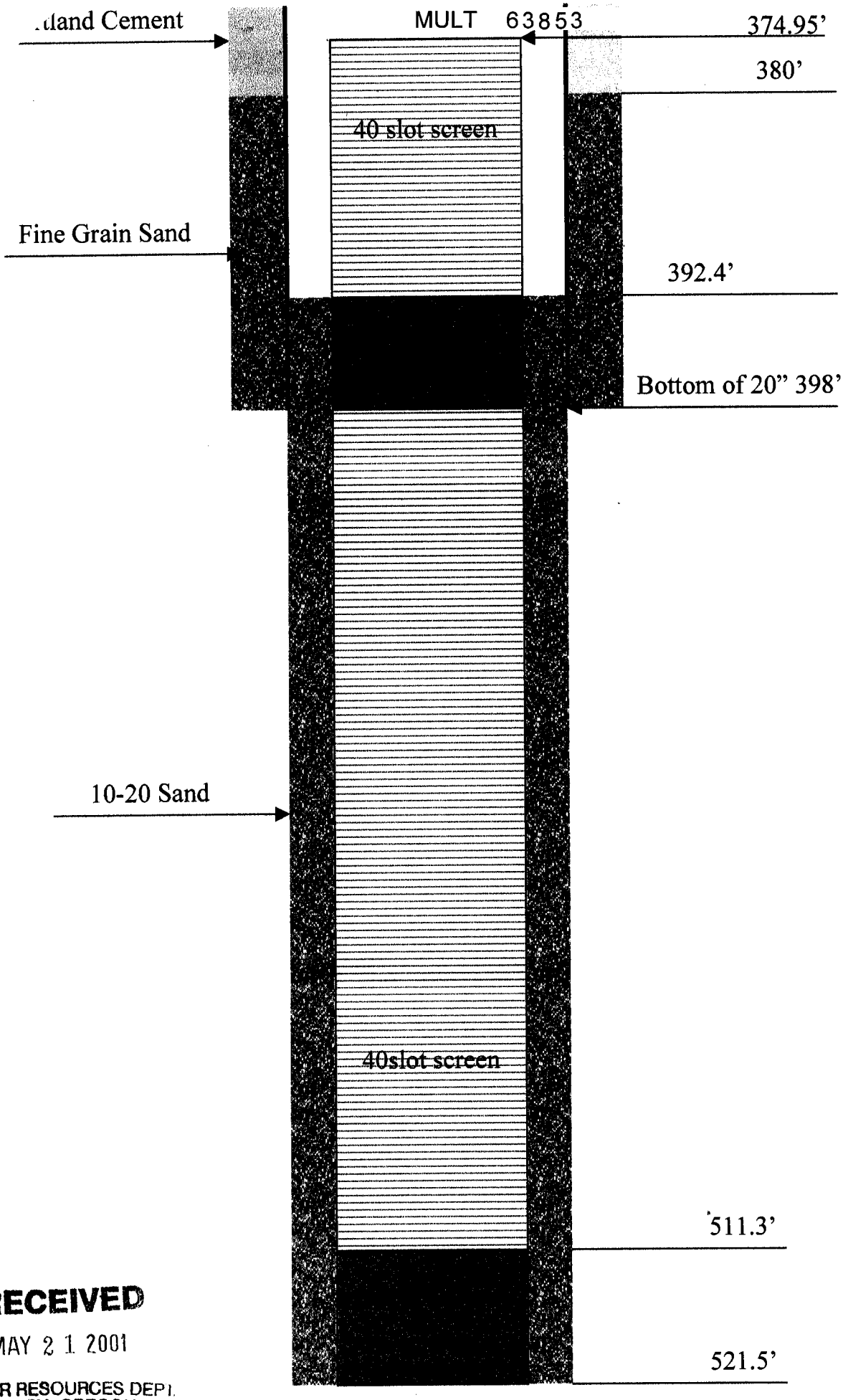
(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1164
Signed Date 5/18/01

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

Summary Log of well #36

Silt, brown	0-10	---------- overbank deposits
Silt, brown with sand and gravel	10-20	
Gravel, dark gray basaltic, fine to coarse	20-114	---------- TGA
Gravely sand, and sand, gray	114-145	
Gray silt and clayey silt	145-165	---------- CU1
Silty clay, gray	165-195	
Clay, brown	195-200	
Sand, black, fine to medium	200-215	
Silt, green-gray, trace fine sand	215-220	
Sand, black, coarse with gravel and sandstone	220-265	---------- TSA
Sandy gravel and gravel	285-330	
Clay, green-gray and interbedded silt	330-386	---------- CU2
Sand, gray, fine-grained	386-395	---------- SGA
Sandy gravel, gray to black	395-400	
Sand, gravely, fine to medium	400-414	
Sandy gravel, dark gray	414-422	
Gravel and sand, interbedded	422-450	
Sand, fine to med. black with minor gravel	450-466	
Sand, medium and gravelly sand	466-521	

RECEIVED
MAY 2 1 2001
WATER RESOURCES DEPT
SALEM, OREGON



RECEIVED
MAY 2 1 2001
WATER RESOURCES DEPT.
SALEM, OREGON

MULT 66769

MULT 66769

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

WELL I.D. # L 56157
START CARD # 149668

(1) LAND OWNER Well Number 8
Name City of Fairview
Address 1300 NE Village Street
City Fairview State OR Zip 97024

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 420.5 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
24	0	148	Cement	0	148	215 Bags
20	148	421				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from 420 ft. to 421 ft. Material Pea Gravel
Gravel placed from 226.5 ft. to 420 ft. Size of gravel 10x20

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	20	+3	235	.375	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☒ Screens Type V-Wire Material Stainless

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
218.8	394.8	35		14	Pipe	☐	☐
394.8	399.8	0		14	Pipe	☒	☐
399.8	420.5	35		14	Pipe	☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
2,400	117		72 Hr

Temperature of water 53° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Mult Latitude Longitude
Township 1 N or ☒ Range 3 E or ☒ W. WM.
Section 22 NW 1/4 SE 1/4
Tax Lot None Lot Block Subdivision
Street Address of Well (or nearest address) Approx NE 223rd and Blue Lake Road

(10) STATIC WATER LEVEL:
28.3 ft. below land surface. Date 5/18/02
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found 28.3

From	To	Estimated Flow Rate	SWL
143	421	2,400 GPM	28.3

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
See Attached Sheet			

RECEIVED
JUN 14 2002
WATER RESOURCES DEPT
SALEM, OREGON

Date started 03-07-02 Completed 05-18-02

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1523
Signed Date 6/12/02

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1464
Signed Date 6/12/02

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

MULT 66769

MULT 66769

Geo-Tech Explorations, Inc.
19700 SW Teton
Tualatin, OR 97062
Ph: (503) 692-6400, Fax: (503) 692-4759

Well Name: Fairview Well # 8
Start Card #: 149668
Label #: L56157

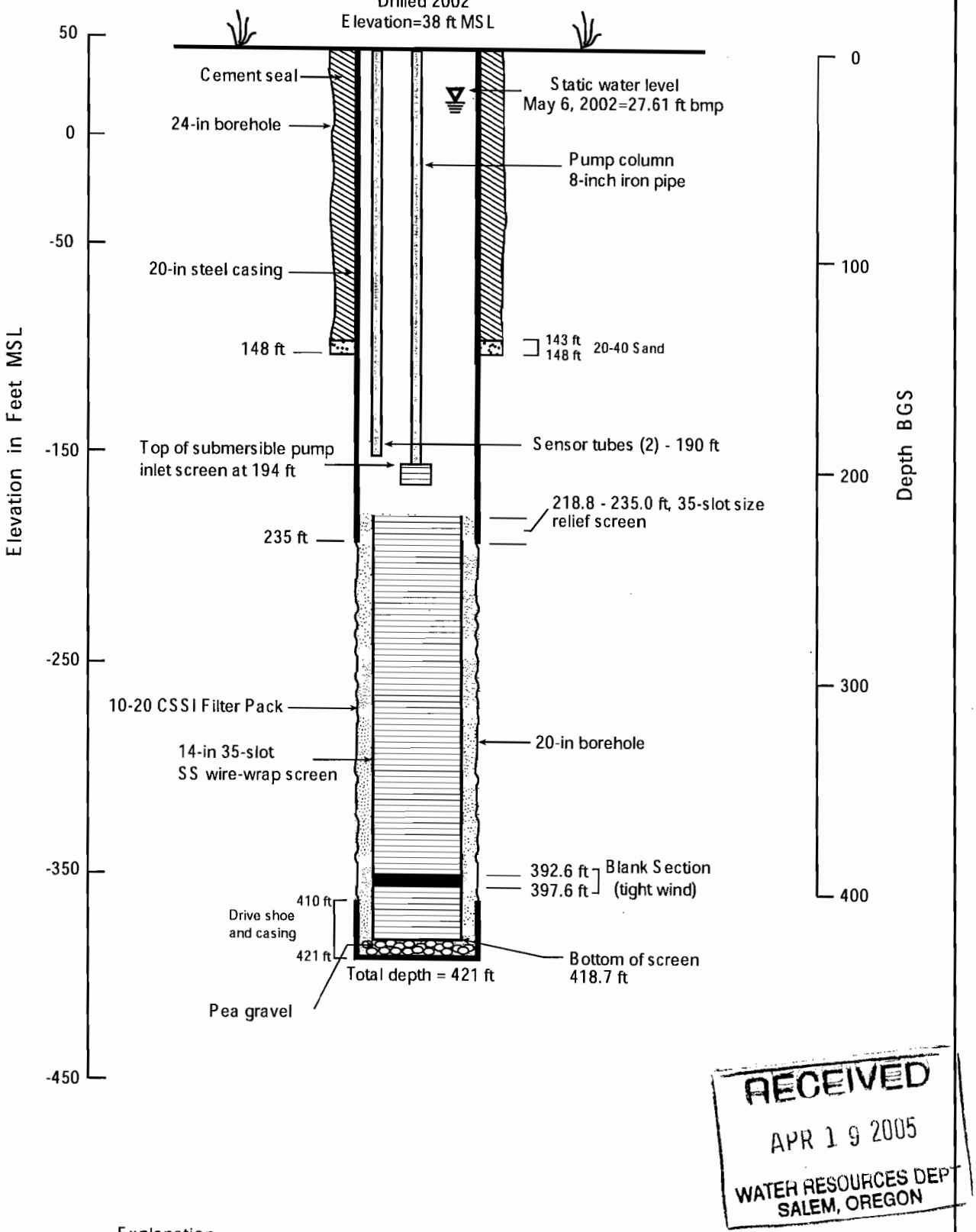
Material Description	From:	To:
Sandy Silt Brown	0	25
Large Boulders 24" +	25	29
Gravels Cemented	29	100
Clay Silty Tan Med.	100	102
Clay Green Med. Silty	123	127
Clay Green Med. Silty	127	141
Clay Brown Med	141	143
Gravels Brown Cemented	143	150
Sand Loose Brown	150	158
Sandstone some gravels	158	164
Sand Loose Grey	164	166
Gravels Cemented Black	166	189
Gravels Cemented Brown	189	225
Gravels Cemented Black	225	265
Gravels Sand with Wood Cemented	265	268
Sand Cemented Black	268	320
Sand Packed Black	320	363
Gravels, loosely cemented Black	363	374
Silty Sandstone Grey	374	375
Sand Loose Green	375	390
Sand, some gravels, grey	390	394
Silty Clay Grey	394	396
Sand Loose Grey	396	401
Gravels w/ sand, loose grey	401	410
Silty Clay Med. , grey	410	420
Silty Sand Black	420	421

RECEIVED
JUN 14 2002
WATER RESOURCES DEPT.
SALEM, OREGON

MULT 66769

From file G-14121

City of Fairview
Well No. 8



RECEIVED
APR 19 2005
WATER RESOURCES DEPT
SALEM, OREGON

Explanation

- Cement or cement/bentonite seal
- Filter pack
- Casing wall and original borehole wall
- Static water level
- bmp Below measuring point

MULT 73084

Mult 73084

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)
Instructions for completing this report are on the last page of this form.

(WELL I.D.)# L 67558
(START CARD) # 162056

(1) OWNER: Well Number 38
Name City of Portland
Address 1120 SW Fifth Ave
City Portland State OR Zip 97204

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☑ Rotary Mud ☐ Cable ☐ Auger
☑ Other reverse circulation

(4) PROPOSED USE:
☐ Domestic ☑ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☑ No Depth of Completed Well 635 ft.
Explosives used ☐ Yes ☐ No Type Amount

HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks or pounds
28"	0	8'	cement	0	8'	20 bags
24"	0	505	cement bent.	8	495'	4,200 gallons
18"	505'	639'				

How was seal placed: Method ☐ A ☑ B ☐ C ☐ D ☐ E
☐ Other
Backfill placed from 635 ft. to 618 ft. Material pea gravel
Gravel placed from 481 ft. to 618 ft. Size of gravel 8x16 css

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	24"	+1'	8'	.375	☑	☐	☑	☐
	20"	9'	495'	.375	☐	☐	☐	☐
	24" to 20"	8'	9'	.375	☑	☐	☑	☐
	reducer				☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☑ Screens Type v-wire Material stainless

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
				12"	pipe	☐	☐
						☐	☐
(	SEE ATTACHED DESIGN)					☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☑ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
2700	260		48 hr

Temperature of water 52 F Depth Artesian Flow Found
Was a water analysis done? ☑ Yes By whom CH2M Hill
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Multnomah Latitude Longitude
Township 1 N Range 2 E WM.
Section 23 SW 1/4 NW 1/4
Tax Lot 800 Lot Block Subdivision
Street Address of Well (or nearest address) 4800 NE 122nd Ave, Portland, OR

(10) STATIC WATER LEVEL:
10.6 ft. below land surface. Date 3/15/04
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 30'

From	To	Estimated Flow Rate	SWL
30'	223'	NA Mud Rotary	
231'	454'	NA Mud Rotary	
509'	569'	NA Flooded Rev Circ	
577'	614'		

RECEIVED
JUN 10 2004
WATER RESOURCES DEPT
SALEM, OREGON

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
soil	0	5'	
gravel w/ boulders	5'	22'	
cemented gravel w/ cobbles	22'	72'	
cemented gravel	72'	117'	
cemented gravel w/ cobbles	117'	223'	
green clay w/ claystone	223'	231'	
green course sand	231'	378'	
black sand	378'	405'	
black sand w/ gravel	405'	454'	
green clay w/ sand	454'	495'	
cemented sand and clay	495'	505'	
clay - brown	505'	509'	
sand (medium) w/ gravels	509'	539'	
cemented gravels	539'	554'	
gravels & sand	554'	569'	
clay - brown to grey	569'	577'	
gravels and sand	577'	614'	
clay - blue grey	614'	635'	

Date started 10/27/03 Completed 4/27/04

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1523
Signed Date 6/08/04

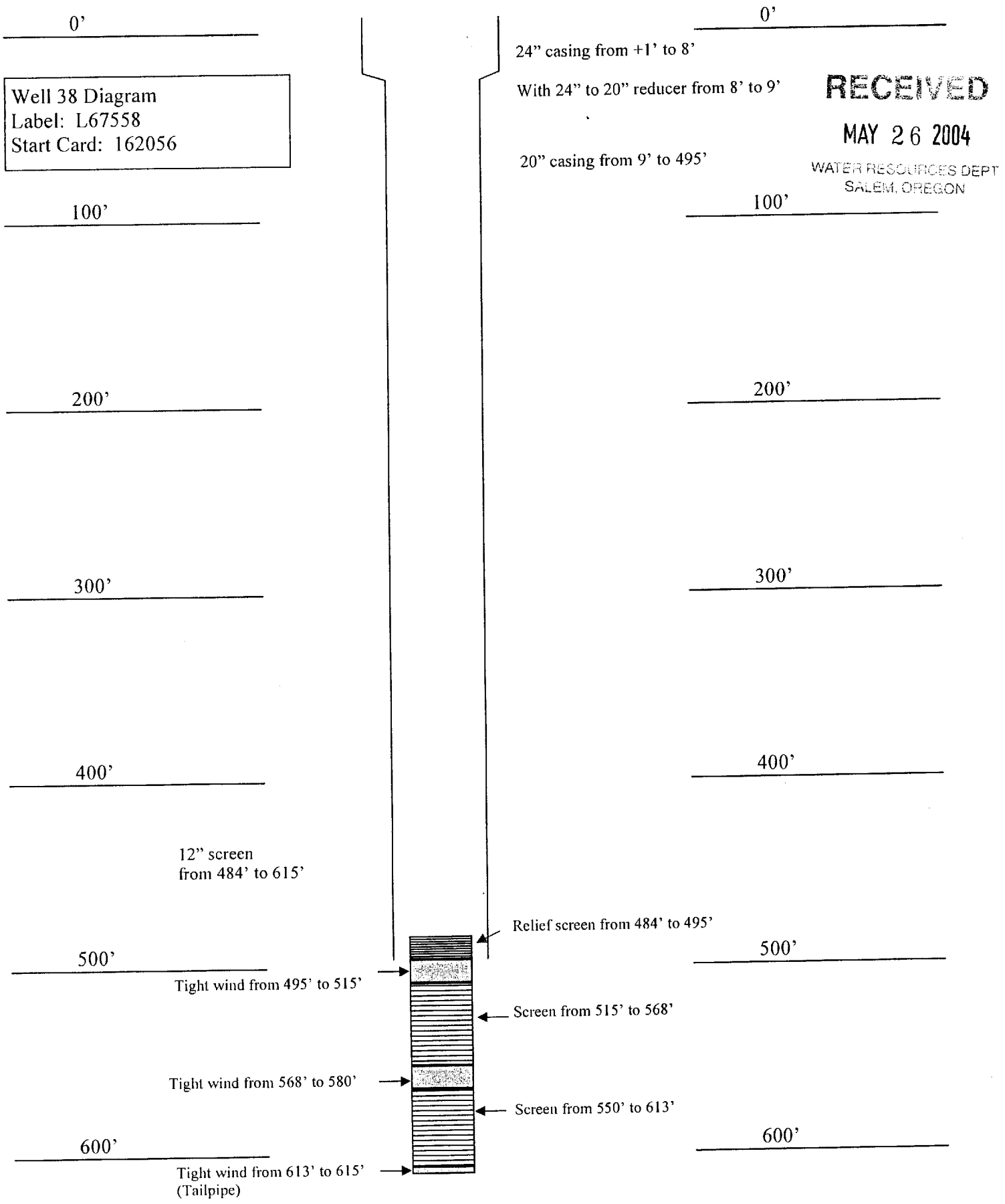
(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1464
Signed Date 6/8/04

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

MULT 73084

Well 38 Diagram
Label: L67558
Start Card: 162056

RECEIVED
MAY 26 2004
WATER RESOURCES DEPT
SALEM, OREGON



MULT 78266

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)
Instructions for completing this report are on the last page of this form.

(WELL I.D.)# L 72470
(START CARD) # 168786

(1) OWNER: Well Number 4
Name City of Wood Village
Address 2055 NE 238th Drive
City Wood Village State OR Zip 97060

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☑ Rotary Mud ☐ Cable ☐ Auger
☑ Other Reverse Circulation Rotary

(4) PROPOSED USE:
☐ Domestic ☑ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☑ No Depth of Completed Well 518 ft.
Explosives used ☐ Yes ☑ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
20 nom	0	56	cement	0	391	160 sks
16 nom	56	397				
12 nom	397	541				

How was seal placed: Method ☑ A ☐ B ☑ C ☐ D ☐ E
☐ Other
Backfill placed from 519 ft. to 541 ft. Material slough
Gravel placed from 334 ft. to 519 ft. Size of gravel CSSI 8x12

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	12	+2	391	.375	☑	☐	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
	8x6	342	343	.250	☑	☐	☑	☐
Liner:	6	343	518	.250	☑	☐	☑	☐
	except @	screen			☐	☐	☐	☐

Final location of shoe(s) 391

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☑ Screens Type v-wire wrap Material 304SS

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
383	388	.035	cont	6	PS	☐	☐
408	428	.035	cont	6	PS	☐	☐
438	458	.035	cont	6	PS	☐	☐
468	488	.035	cont	6	PS	☐	☐
493	513	.035	cont	6	PS	☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☑ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
850	98		1 hr.
850	138		72 hr

Temperature of water 58F Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Multnomah Latitude Longitude
Township 1 N Range 3 E WM.
Section 34 NE 1/4 NE 1/4
Tax Lot 600 Lot Block Subdivision
Street Address of Well (or nearest address) 23799 Shannon St.
Wood Village, OR

(10) STATIC WATER LEVEL:
168 ft. below land surface. Date 7/6/05
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found indeterminate by mud rotary

From	To	Estimated Flow Rate	SWL
???	245	indeterminate	NM
286	312	indeterminate	NM
393	518	see (8)	see
			(10)

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
see attached log			

RECEIVED
JUL 27 2005
WATER RESOURCES DEPT
SALEM, OREGON

Date started 4/29/05 Completed 7/6/05

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1797
Signed Date 7/25/05

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 649
Signed Date 7/25/05

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

City of Wood Village Well No. 4

by Schneider Drilling Co.

Start Card #168786 Label #L72470

FM	TO	DESCRIPTION
0	2	Top Soil
2	12	Clay, brown, silty, soft
12	16	Gravel, cobbles, sand, brown, medium
16	18	Boulders, gravel, cobbles & sand, brown, medium
18	168	Boulders, gravel, cobbles & sand, grey, medium
168	245	Boulders, gravel, cobbles & sand, grey, medium w/cementation
245	286	Claystone, tan & brown w/ clay layers, green-brown, soft
286	308	Gravel, multi-colored, 1"-
308	312	Sand, orange-brown, medium-fine & gravel w/clay, silty
312	341	Clay, multi-colored, soft w/sand, silty & gravel, orange & brown
341	393	Clay, multi-colored, soft
393	397	Sand, grey, medium-fine
397	400	Sand, black & gravel, 1.5"-
400	405	Sand, black & gravel, 1.5"-; w/cementation
405	425	Sand, black & gravel, 1.5"-
425	445	Sand, black & gravel, 1.4"-; some cementation
445	473	Sand, black, medium w/gravel, small & claystone, grey
473	518	Cobbles & gravel, multi-colored & sand, black, medium w/ some claystone, grey
518	526	Clay, grey, firm
526	530	Clay, green, firm
530	541	Clay, grey-green, firm

RECEIVED
JUL 27 2005
WATER RESOURCES DEPT
SALEM, OREGON

MULT 90881

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

WELL LABEL # L 91777

START CARD # 188449

(1) LAND OWNER

Owner Well I.D. 5

First Name _____ Last Name _____

Company City of Troutdale

Address 104 SE Kibling Ave

City Troutdale State OR Zip 97060

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion
[ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD

[ ] Rotary Air [X] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[X] Reverse Rotary [ ] Other _____

(4) PROPOSED USE

[ ] Domestic [ ] Irrigation [X] Community
[ ] Industrial/ Commercial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other _____

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)

Depth of Completed Well 681 ft

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
20	0	530	Cement	0	525	324	S
16	530	697					
*nominal							

How was seal placed Method [ ] A [X] B [X] C [ ] D [ ] E

[ ] Other _____

Backfill placed from _____ ft to _____ ft. Material _____

Filter pack from 491 ft to 697 ft. Material CSSI Size 'remarks'

Explosives used [ ] Yes Type _____ Amount _____

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●	○	16	X	4	525	.375	●	○	X	
○	●	12		491	515	.375	○	●	X	
○	●	12		561	575	.375	○	●	X	
○	●	12		581	636	.375	○	●	X	
○	●	12		673	697	.375	○	●	X	

Shoe [ ] Inside [ ] Outside [X] Other Location of shoe(s) 525

Temp casing [ ] Yes Dia _____ From _____ To _____

(7) PERFORATIONS/SCREENS

Perforations Method _____

Screens Type V-wire wrap Material 304SS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size
Screen		12	515	561	.04			PS
Screen		12	575	581	.04			PS
Screen		12	636	673	04			PS

(8) WELL TESTS: Minimum testing time is 1 hour

(●) Pump ( ) Bailer ( ) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
2,000	41		48

Temperature 55 ± °F Lab analysis [ ] Yes By _____

Water quality concerns? [ ] Yes (describe below)

From	To	Description	Amount	Units

RECEIVED
OCT - 1 2007
WATER RESOURCES DEPT
SALEM OREGON

(9) LOCATION OF WELL (legal description)

County MULTNOMA Twp 1 N N/S Range 3 E E/W WM

Sec 35 NE 1/4 of the NW 1/4 Tax Lot 100

Tax Map Number 1N 3E 35 Lot _____

Lat ° 0 ' " or _____ DMS or DD

Long ° 0 ' " or _____ DMS or DD

(●) Street address of well ( ) Nearest address

1297 SW Royal Anne Ave, Troutdale, OR

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening				
Completed Well	10-03-2007			304.5

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 'see remarks'

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
Most all sand/gravel formations:						
10-03-2007	521	692	2,000			304.5

(11) WELL LOG

Ground Elevation _____

Material	From	To
Top soil, brown	0	2
Clay, brown, silty w/gravel, small	2	5
Clay, brown & red, medium, sandy w/some gravel,	5	
small		27
Clay, yellow & green, medium	27	29
Clay, green & yellow, medium w/gravel, 1.5"-	29	55
Cobbles & gravel, 2"-, w/some clay, brown, medium	55	68
Cobbles & gravel, 2"-, w/clay, brown	68	81
Cobbles & gravel, 2"-, w/sand, fine & clay, blue-grn	81	85
Cobbles & gravel, 2"-, w/clay, blue-green	85	133
Cobbles & clay, brown, medium-soft	133	149
Cobbles w/clay, brown, medium-soft	149	158
Cobbles & sand, brown, fine	158	162
Cobbles w/clay, brown, medium	162	208
Cobbles, w/sand, green, cemented	208	235
Cobbles, w/sand, green, medium	235	253
Cobbles, w/clay, light brown, medium	253	310
Cobbles, w/clay, white	310	374
see page 2		

Date Started 06-04-2007 Completed 10-03-2007

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1663 Date 10-09-2007

Password : (if filing electronically) _____

Signed Clifton J. Bowman

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 649 Date 10-09-2007

Password : (if filing electronically) _____

Signed Stephen Schneider

Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version: 0.88

MULT 90881

WATER SUPPLY WELL REPORT - continuation page

WELL I.D. # L 91777

START CARD # 188449

(5) BORE HOLE CONSTRUCTION

BORE HOLE

Dia	From	To

SEAL

Material	From	To	Amt	sacks/ lbs

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plste	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

RECEIVED

OCT 1 1 2007

WATER RESOURCES DEPT
SALEM, OREGON

(10) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) WELL LOG

Material	From	To
Clay, grey, medium	374	402
Clay, blue-green, medium	402	410
Clay, blue-green w/sand, medium-fin	410	414
Clay, blue-green, medium	414	458
Sand, black & blue, medium-fine, w/cementation	458	460
Clay, blue-green, medium	460	49
Clay, blue-green w/sand, black, medium-fine	490	521
Sand, black, medium-fine, w/cementation	521	523
Boulders, cobbles, & sand, black, fine, w/cementation	523	530
Gravel, black, 2.5"- & sand, black, med. w/cementat.	530	564
Gravel, black, 2.5"- & clay, green w/sand, fine	564	565
Clay, grey & sand, fine	565	576
Gravel, black, 1.5"- w/sand, black, med., w/cementat.	576	584
Clay, grey & sand, fine	584	590
Clay, blue-green, medium	590	604
Sand, grey, medium-fine, soft, w/cementation	604	628
Sand, black, medium-fine, w/cementation	628	629
Clay, blue-green, medium	629	632
Sand, brown & black, medium-fine	632	636
Clay, brown, soft	636	638
Gravel, 2"- w/sand, black, medium, w/cementation	638	679
Sand, grey, medium-fine, w/cementation	679	692
Clay, grey, hard	692	697

Comments/Remarks

Pre-development CSSI filter pack placement: 10-20 from 697' to 673', 6-9 from 673' to 644', 10-20 from 644' to 491'.

Depth water first found was indeterminate as the upper hole that contained seal to 525' was drilled using mud rotary drilling method.

16" shoe was stab-in cementing shoe that was drilled out after grout placement.

Cement grout plug placed in bottom of 12" screen/liner assembly: 681'-697'